Antarctic Conservation Act of 1978

(Public Law 95–541)

with

Regulations

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Descriptions and Maps of Special Areas

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Permit Application Form

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Agreed Measures for the Conservation of Antarctic Fauna and Flora (1964)

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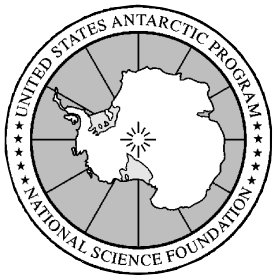
Protocol on Environmental Protection (1991)



NATIONAL SCIENCE FOUNDATION
ARLINGTON, VA 22230

OCTOBER 1995

Contents

INTRODUCTION

The Antarctic Conservation Act of 1978 (ACA), Public Law 95-541, conserves and protects the native mammals, birds, and plants of Antarctica and the ecosystems of which they are a part.

The law applies to—

- U.S. citizens in Antarctica
- certain persons in Antarctica who participate in U.S. government activities
- U.S. corporations or other legal entities that organize expeditions into the Antarctic
- U.S. persons wherever located, or foreign persons while in the United States, who handle certain antarctic animals and plants

A permit system authorized by the ACA allows certain activities, otherwise prohibited, when performed within prescribed restrictions for scientific or other worthwhile purposes.

The ACA applies to land and fast ice south of 60° South latitude. The 1973 International Convention for the Prevention of Pollution from Ships (MARPOL), the 1978 Protocol that amended MARPOL, and implementing regulations apply to ships at sea south of 60° South latitude.

The ACA provides penalties of up to $10,000 and 1 year imprisonment for violations.

The National Science Foundation (NSF), the agency of the U.S. Government that funds and manages the U.S. Antarctic Program (USAP), administers the ACA and its permit system.

Certain NSF employees in Antarctica are designated enforcement officers. These Federal officials are responsible for ensuring compliance with the ACA, implementing regulations, and permits. They also are available to help people understand their obligations. They review permits to ensure terms and conditions are fulfilled; and are authorized to serve warrants; search and seize property without a warrant; take affidavits; detain for inspection and inspect packages, crates, or other containers; and make an arrest with or without a warrant.

NSF also at times designates observers to record and report activities of nongovernmental expeditions to Antarctica.

If you believe you may have witnessed a violation of the ACA, report your observation to an enforcement officer, an observer, or other authority.

SUMMARY OF THIS BOOK

This book contains the ACA, its regulations, and supplementary information.

SECTION ONE:
Regulations Pursuant to the Antarctic Conservation Act of 1978

It is unlawful, unless authorized by permit, to:

1. take native mammals or birds
2. enter specially designated areas
3. introduce nonindigenous species to Antarctica
4. use or discharge designated pollutants
5. discharge wastes
6. import certain antarctic items into the United States

1. Taking native mammals or birds

It is unlawful, unless authorized by permit, to take antarctic native mammals or birds. To take means to remove, harass, molest, harm, pursue, hunt, shoot, wound, kill, trap, capture, restrain, or tag a native mammal or bird or to try to do so.

For example, herding a seal or a penguin into position for a photograph constitutes an illegal taking. An ornithologist with a grant to study penguin population dynamics must have a permit before banding the penguins. (A grant and a permit are two different things.) A scientist permitted to handle ten skuas would be performing an illegal taking if he or she handled eleven.

Entering a bird nesting area or approaching seals with their pups will almost certainly stimulate agitation or defensive behavior. Any action that alters the normal behavior of wildlife may be considered harassment and therefore a taking. Section 5 of this book tells how to apply for a permit.

2. Entering specially designated areas

Some precisely defined places in Antarctica are designated under the Antarctic Treaty, and in the U.S. law, as Specially Protected Areas or Sites of Special Scientific Interest. You must have a compelling need to enter a Specially Protected Area, and you must have a permit. A permit is required for entry into most Sites of Special Scientific Interest, and all entries must be consistent with a site management plan.

Sections 2 and 3 of this book describe these areas and contain their management plans.

3. Introducing species

You need a permit to introduce nonindigenous species to Antarctica. Only domestic plants and animals and laboratory plants and animals may be considered for a permit.

4. Introducing substances designated as pollutants

Waste regulations authorized under the ACA ban certain substances from Antarctica. The banned substances include pesticides (other than those required for science, medical, or hygiene purposes), polychlorinated biphenyls (PCBs), nonsterile soil, and polystyrene beads and plastic chips.

The ACA identifies some substances as designated pollutants. Designated pollutants must be used, stored, and disposed of in a way that prevents their release to or adverse impact on the environment. Designated pollutants include any substance listed by name or characteristic (ignitability, corrosivity, reactivity, and toxicity) in the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, and other U.S. regulations specified in 45 CFR Part 671.

Many research and industrial supplies and common substances such as fuels, lighter fluid, and fingernail polish remover contain designated pollutants. A permit is required to use or release these substances in Antarctica. See section 5 of this book.

5. Management of designated pollutants

The USAP employs specialists to handle and remove designated pollutants in accordance with applicable regulations. Program participants receive assistance and instructions in the Antarctic, but are required to keep track of the designated pollutants they use, to sort and store them according to instructions provided, and to turn the waste over to USAP officials in accordance with specified procedures.

Any U.S. citizen or expedition planning to use or release designated pollutants or release wastes in Antarctica must make a plan for the use, storage, and disposal of these materials and apply for a waste management permit, if they are not already covered by a Master Permit (see section 5 for discussion of the USAP Master Permit).

Some categories of waste must be removed from Antarctica. The list includes materials that have designated pollutants as constituents (these materials are antarctic hazardous wastes) as well as other substances that are not designated pollutants but that are persistent in the environment and could pose an inherent hazard to wildlife. Radioactive materials, batteries, fuel, heavy metals, lubricants, treated timbers, plastic (except low-density storage bags), solid noncombustibles, and drums that held oil or chemicals are explicitly listed in antarctic waste regulations as materials that must be removed from Antarctica.

6. Importing into and exporting from the United States

In the United States it is unlawful, unless authorized by regulation or permit, to have or sell, or to import or export, antarctic plants from Specially Protected Areas, antarctic mammals, or antarctic birds. An application for a permit must demonstrate that the import or export would further the purposes for which the species was taken or collected, demonstrate that the import or export is consistent with the purposes of the Antarctic Conservation Act, and state which U.S. port will be used.

Mailing items to or from the United States constitutes an import or an export.

SECTION TWO:
Specially Protected Areas

Some areas of Antarctica have features that require special care. Specially Protected Areas were created to preserve particularly important ecological systems. A permit is required to enter these areas. Historically, only Sites of Special Scientific Interest were required to have management plans. Many Specially Protected Areas now have existing management plans or management plans under development. Once in place, adherence to management plans is

required. Specially Protected Areas were designated under Article VIII of the Agreed Measures for the Conservation of Antarctic Fauna and Flora (see appendix A). Since the Agreed Measures were written, sites have been added or changed. In this section of the book, Specially Protected Areas designated as of late 1994 are described.

SECTION THREE:
Sites of Special Scientific Interest

Sites of Special Scientific Interest were developed to protect scientific investigations in the Antarctic. Like Specially Protected Areas, Sites of Special Scientific Interest require special provisions and management plans to prevent the disturbance of investigations. Section three includes descriptions, management plans, and organizational histories for each site. Nearly all these sites require permits for entry and/or activity. It is important to contact NSF to obtain permit information and any information about revisions or additions to the sites.

A brief but important note following sections two and three describes possible changes in the terminology regarding Specially Protected Areas and Sites of Special Scientific Interest, as follows:

New classification system for area protection and management

In 1991, representatives of the Antarctic Treaty Nations signed the Protocol on Environmental Protection to the Antarctic Treaty and its five annexes. When the Protocol enters into force, Specially Protected Areas, Sites of Special Scientific Interest, and some historic sites will be combined into a single category of protected area, Antarctic Specially Protected Areas (ASPAs). An additional category, Antarctic Specially Managed Areas (ASMAs), will also be created for areas where activities pose risks of mutual interference or cumulative environmental impacts and sites of recognized historic value that do not require strictly controlled access. Entry into an ASPA will require a permit, while entry into ASMAs will not.

SECTION FOUR:
Historic Monuments

Just as the ecosystems of Antarctica are important, so also is Antarctica's exploration and development. It was decided at the first Antarctic Treaty consultative meeting to protect artifacts and areas that commemorate Antarctica's exploration. At the 5th consultative meeting it was agreed that lists of historic monuments and sites would be created. Since that meeting, lists have been consolidated into one list that has been updated periodically. The monument areas have special provisions to ensure their protection. A list of the historic monuments with a brief description of each monument makes up section four of this book.

SECTION FIVE:
Permits
Individual or group permit

Individuals and groups traveling to Antarctica are responsible for obtaining any required permits. An initial assessment of permit needs should be made by the individual (or group) based on the planned itinerary, the nature of interactions with wildlife, materials to be handled and shipped to and from

Antarctica, and a thorough review of the ACA and associated waste management regulations. For assistance, call or write an Office of Polar Programs science manager or the permit office at the address shown at the end of this summary. Or simply fill out and send in an application using the permit form in this book which is appropriate for all but waste management permits. Waste management permit applications should include the information outlined in the waste regulations, 45 CFR Part 671. Applicants should first check with the NSF permit office to verify that the planned activities are not already covered by an existing permit. Permit requirements should be assessed well in advance (a minimum of 3 months) of planned travel dates to allow for public review periods and resolution of any issues which may arise. The permit officer may determine that no permits are required.

Once an application is received, a minimum of 60 days is required for NSF to review the application and decide on a permit. During that time, a summary of the application is published in the Federal Register so that any member of the public can comment on it during the 30-day comment period mandated by the ACA. The Foundation evaluates the public comments and performs an internal review. It then approves the application, approves it with modifications, or disapproves it.

You may not do things that require a permit unless you have a permit. Activities authorized by a permit may not take place before the permit is issued. Violating the terms of a permit can lead to a fine of up to $10,000, imprisonment, removal from Antarctica, recision of a grant, or sanctions by an employer.

A copy of a permit issued under the ACA must be in the personal possession of the individual directing or performing the permitted activity. An ACA permit is required in addition to permits issued under other applicable acts (*e.g.*, the Marine Mammal Protection Act of 1972, Endangered Species Act of 1973, Migratory Bird Treaty Act, and the Convention on the Conservation of Antarctic Marine Living Resources).

Master Permit (United States Antarctic Program)

In 1994 NSF, after providing an opportunity for public comment, issued a Master Permit, which expires on 30 September 1999, to its antarctic support contractor and the Naval Support Force Antarctica. This Master Permit establishes standards for management of all designated pollutants and wastes, including requirements for the removal and recycling or proper disposal in the United States of most wastes and excess materials generated by the USAP. Each USAP participant is required to adhere to procedures established by the Master Permit for handling, inventorying, storing, monitoring, and disposing of these wastes.

APPENDIX A:
Antarctic Treaty Agreed Measures (1964)

Representatives to the first Antarctic Treaty consultative meeting in 1961 decided that preservation and conservation of living resources in Antarctica needed to be considered further. The Agreed Measures for the Conservation of Antarctic Fauna and Flora (1964) resulted from this decision. The Measures specify conservation for native mammals and birds and designate Specially Protected Areas and Sites of Special Scientific Interest. They are printed as appendix A of this book with the exception of annexes A through D, which are described but not included. The United States formalized its adherence to the Agreed Measures by passing the Antarctic Conservation Act.

APPENDIX B:
Public Law 95-541 (1978)

Public Law 95-541 is the Antarctic Conservation Act of 1978. The ACA regulations in section one of this book derive from and implement this law.

APPENDIX C:
Antarctic Treaty environmental protocol (1991)

The Protocol on Environmental Protection to the Antarctic Treaty and its five annexes comprise a comprehensive system to protect the antarctic environment. The parties to the Antarctic Treaty held a special consultative meeting to discuss and explore proposals for protection of the antarctic environment and its dependent and associated ecosystems. This meeting consisted of several sessions held over a year. At the final session in Madrid, Spain, in October 1991 representatives of the Antarctic Treaty nations signed the Protocol on Environmental Protection to the Antarctic Treaty, including annexes I through IV. The 16th Antarctic Treaty consultative meeting, also held in October 1991, adopted Annex V. In the Protocol, the representatives agree to means for providing comprehensive protection of Antarctica's environment and dependent and associated ecosystems in order to preserve the region as a natural reserve devoted to peace and science.

NSF's antarctic waste management regulations are consistent with the Protocol.

For further information

Laws change periodically. Consult the U.S. Code of Federal Regulations or contact the NSF Office of Polar Programs for any updated information.

Address questions or correspondence to:

Permit Office
Office of Polar Programs, Room 755
National Science Foundation
4201 Wilson Boulevard
Arlington, Virginia 22230

Phone: 703–306–1033
Fax: 703–306–0139
E-mail: nkennedy@nsf.gov

1995 changes

The 1995 (XIX) Antarctic Treaty consultative meeting adopted resolutions, summarized here, regarding protected areas and historic monuments. The texts will be in the December 1995 *Antarctic Journal of the United States* (National Science Foundation). Copies may be obtained from the Polar Information Program (703-306-1031, dfrisic@nsf.gov).

Management plan expirations for SSSIs 1, 3, 8, 9, 13, 14, 15, 16, 17, 19, 20, and 21 were extended to 31 December 2000 (the plans were to have expired 31 December 1995).

Revised area descriptions and management plans were adopted for:

SPA 13, Moe Island, South Orkney Islands
SPA 15, Southern Powell Island, South Orkney Islands
SPA 24, Pointe-Geologie, Terre Adelie
SSSI 11, Tramway Ridge, Mt. Erebus, Ross Island

These historic sites and monuments were approved:

No. 61, Port Lockroy (Base A), Goudier Island, Wiencke Island
No. 62, Argentine Islands (Base F), Winter Island, Argentine Islands
No. 63, Horseshoe Island (Base Y), Marguerite Bay
No. 64, Stonington Island (Base E), Marguerite Bay
No. 65, Message Post, Svend Foyn Island
No. 66, Prestrud's Cairn, Scott Nunataks, Queen Alexandra Mountains
No. 67, Rock Shelter Granite House, Cape Geology, Granite Harbor
No. 68, Depot, Hells Gate Moraine, Inexpressible Island, Terra Nova Bay
No. 69, Message Post, Cape Crozier
No. 70, Message Post, Cape Wadworth, Coulman Island
No. 71, Whalers Bay Whaling Station, Whalers Bay, Deception Island

The description of Historic Site 14, Inexpressible Island, Terra Nova Bay, was amended.

SECTION ONE:
Regulations Pursuant to
Antarctic Conservation Act of 1978

PART 670—CONSERVATION OF FAUNA, FLORA, AND ECOSYSTEMS

AUTHORITY: Sec. 11. Pub. L. 81-507, 64 Stat. 149 (42 U.S.C. 1870) as amended; Pub. L. 95-541, 92 Stat. 2048 (16 U.S.C. 2401).

Part 671—USE AND RELEASE OF BANNED SUBSTANCES, DESIGNATED POLLUTANTS, AND WASTES

AUTHORITY: 16 U.S.C. 2405.

PART 672—ENFORCEMENT AND HEARING PROCEDURES; TOURISM GUIDELINES

AUTHORITY: 16 U.S.C. 2401 et seq.

PART 670—CONSERVATION OF FAUNA, FLORA, AND ECOSYSTEMS

Margin notes throughout this section clarify or highlight topics, but are not part of the regulation.

Subpart A—Introduction

§ 670.1 Purpose of regulations.

The purpose of these regulations is to conserve and protect the native mammals, native birds, and native plants of Antarctica and the ecosystem upon which they depend and to implement the Antarctic Conservation Act of 1978, Public Law 95-541.

§ 670.2 Scope.

These regulations apply to:

(a) Taking any mammal or bird native to Antarctica,

(b) Collecting any plant native to Antarctica in a Specially Protected Area,

(c) Entering any Specially Protected Area or site of special scientific interest,

(d) Importing into or exporting from the United States any mammal or bird native to Antarctica or any plant collected in a Specially Protected Area, and

(e) Introducing into Antarctica any nonindigenous plant or animal.

§ 670.3 Definitions.

In this part:

"Act" means the Antarctic Conservation Act of 1978, Public Law 95-541, 92 Stat. 2048 (16 U.S.C. 2401 et seq.).

"Agreed Measures" means the Agreed Measures for the Conservation of Antarctic Fauna and Flora, as recommended for approval at the Third Antarctic Treaty Consultative Meeting, and as amended in accord with Article IX (1) of the Treaty.

"Antarctica" means the area south of 60 degrees south latitude.

"Collect" means to cut, sever, or move any native plant or to attempt to engage in any such action.

"Director" means the Director of the National Science Foundation, or an officer or employee of the Foundation designated by the Director.

"Foreign person" means any individual who is a citizen or national of a foreign nation; any corporation, partnership, trust, association or other legal entity existing or organized under the laws of a foreign nation; any department, agency, or other instrumentality of any foreign nation and any officer, employee, or agent of any such instrumentality.

"Management plan" means the restrictions applicable to activities in Sites of Special Scientific Interest.

"Native bird" means a member of any species of the class Aves, which is indigenous to Antarctica or occurs there through natural agencies of dispersal that is designated in Subpart D of this part. Includes any part, product, egg, or offspring of or the dead body or parts thereof excluding fossils.

"Native mammal" means a member of any species of the class Mammalia, except species regulated by the International Whaling Commission, which is indigenous to Antarctica or occurs there through natural agencies of dispersal that is designated in Subpart D of this part. It includes any part, product, or offspring of or the dead body or parts excluding fossils.

"Native plant" means any kind of vegetation at any stage of its life cycle indigenous to Antarctica or occurring there through natural agencies of dis-

persal, including seeds but excluding fossils, that is designated in Subpart F of this part.

"Site of Special Scientific Interest" means an area of unique value for scientific investigation designated in Subpart H of this part as needing protection from interference.

"Specially Protected Area" means an area of outstanding scientific or ecological interest designated in Subpart G of this part.

"Specially Protected Species" means any species of native mammal or native bird that is approved by the United States for special protection under the Agreed Measures and is designated in Subpart E of this part.

"Take" means to remove, harass, molest, harm, pursue, hunt, shoot, wound, kill, trap, capture, restrain, or tag any native mammal or native bird or to attempt to engage in such conduct.

"Treaty" means the Antarctic Treaty signed in Washington, D.C., on December 1, 1959.

"United States" means the several States of the Union, the District of Columbia, the Commonwealth of Puerto Rico, American Samoa, the Virgin Islands, Guam, and the Trust Territory of the Pacific Islands, including the Government of the Northern Mariana Islands.

"United States citizen" means any individual who is a citizen or national of the United States; any corporation, partnership, trust, association, or other legal entity existing or organized under the laws of any of the United States; any department, agency, or other instrumentality of the Federal Government or of any State; and any officer, employee, or agent of any such entity of instrumentality.

Without proper permits, activities with regard to native plants, mammals, and birds are very limited.

Subpart B—Prohibited Acts, Exceptions

§ 670.4 Prohibited acts.

Unless a permit has been issued pursuant to Subpart C of this part or unless one of the exceptions stated in §670.5 through §670.8 of this title is applicable, it is unlawful to commit, attempt to commit, or cause to be committed any of the acts described in paragraphs (a) through (h) of this section.

(a) *Taking any native mammal or native bird.* It is unlawful for any U.S. citizen to take within Antarctica any native mammal or native bird.

(b) *Collecting native plants.* It is unlawful for any U.S. citizen to collect a native plant in a Specially Protected Area.

(c) *Entry into designated area.* It is unlawful for any U.S. citizen to enter any Specially Protected Area or to enter sites of special scientific interest, except sites of special scientific interest for which §670.34 states no permit is required.

(d) *Possession and transfer of native mammals, plants, or birds.* It is unlawful for any U.S. citizen wherever located or any foreign person while within the United States to possess, sell, offer for sale, deliver, receive, carry, transport, or ship by any means whatever any native plant collected in a Specially Protected Area or any native mammal or native bird taken in Antarctica.

(e) *Import into or export from the United States.* It is unlawful for any U.S. citizen wherever located or any foreign person while within the United States to import into the United States or export from the United States any

native mammal or native bird or any native plant collected in a Specially Protected Area.

(f) *Introduction of nonindigenous animals and plants into Antarctica.* It is unlawful for any U.S. citizen to introduce into Antarctica any animal or plant that is not indigenous to Antarctica as specified in Subpart J of this part, except as provided in §670.7 and §670.8.

(g) *Violation of regulations.* It is unlawful for any U.S. citizen wherever located or any foreign person while within the United States to violate the regulations set forth in this part.

(h) *Violation of permit conditions.* It is unlawful for any permit holder, whether or not a U.S. citizen, to violate any term or condition of any permit issued under Subpart C of this part.

§ 670.5 Exceptions in extraordinary circumstances.

(a) *Human life.* No act described in §670.4 of this title shall be unlawful if committed under emergency circumstances to prevent the loss of human life.

(b) *Aiding or salvaging native mammals or native birds.* The prohibition on taking shall not apply to taking native mammals or native birds if such action is necessary to:

(1) Aid a sick, injured, or orphaned specimen;

(2) Dispose of a dead specimen; or

(3) Salvage a dead specimen that may be useful for scientific study.

(c) *Reporting.* Any actions taken under the exceptions in this section shall be reported promptly to the Director.

§ 670.6 Prior possession exception.

(a) *Exception.* Section §670.4 of this title shall not apply to:

(1) Any native mammal, bird or plant that is held in captivity on or before October 28, 1978; or

(2) Any offspring of any such mammal, bird, or plant.

(b) *Presumption.* With respect to any prohibited act set forth in §670.4 of this title, which occurs after April 29, 1979, the Act creates a rebuttable presumption that the native mammal, native bird, or native plant involved in such act was not held in captivity on or before October 28, 1978, or was not an offspring referred to in paragraph (a) of this section.

§ 670.7 Food exception.

Paragraph (f) of §670.4 shall not apply to the introduction of animals and plants into Antarctica for use as food so long as animals and plants used for this purpose are kept under controlled conditions. This exception shall not apply to living nonindigenous species of birds.

§ 670.8 Foreign permit exceptions.

Paragraphs (d) and (f) of § 670.4 shall not apply to transporting, carrying, receiving, or possessing native mammals, native plants, or native birds or to the introduction into Antarctica of nonindigenous animals and plants when conducted by an agency of the U.S. Government on behalf of a foreign national operating under a permit issued by a foreign government to give effect to the Agreed Measures.

Permit applicants must provide all necessary information to the Director, who is responsible for the issuance and regulation of permits.

Subpart C—Permits

§ 670.9 Applications for permits.

(a) *General content of permit applications.* All applications for a permit shall be dated and signed by the applicant and shall contain the following information:

(1) The name and address of the applicant;

(i) Where the applicant is an individual, the business or institutional affiliation of the applicant; and

(ii) Where the applicant is a corporation, firm, partnership, institution, or agency, either private or public, the name and address of its president or principal officer.

(2) The scientific names and the numbers of native plants to be collected in a Specially Protected Area; or the scientific names and the numbers of native mammals or native birds to be taken;

(3) A description of the native mammals, native birds, or native plants to be taken or collected, including as appropriate the age, size, sex, and condition, e.g., whether pregnant or nursing;

(4) A complete description of the location, time period, and manner of taking or collecting, including the proposed access to the location;

(5) Whether the native mammals, birds, or plants or parts of them are to be imported into the United States, and if so, their ultimate disposition;

(6) Where the application is for the introduction of nonindigenous plants and animals, indicate the scientific name, and the number to be introduced;

(7) Whether agents as referred to in §670.12 will be used; and

(8) The desired effective date of the permit.

(b) *Content of specific permit applications.* In addition to the general information required for permit applications set forth in this subpart, the applicant must submit additional information relating to the specific action for which the permit is being sought. These additional requirements are set forth in the sections of this part dealing with the subject matter of the permit applications as follows:

Native Mammals and Native Birds—§ 670.16.

Specially Protected Species—§ 670.21.

Native Plants—§ 670.25.

Specially Protected Areas—§ 670.29.

Sites of Special Scientific Interest—§ 670.33.

Import into or Export from the United States—§ 670.38

Introduction of Nonindigenous Plants and Animals—§ 670.42.

(c) *Certification.* Applications for permits shall include the following certification:

I certify that the information submitted in this application for a permit is complete and accurate to the best of my knowledge and belief. Any false statement will subject me to the criminal penalties of 18 U.S.C. 1001.

(d) *Address to which applications should be sent.* Each application shall be in writing, addressed to: Permit Office, Office of Polar Programs, Room 755, National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230.

(e) *Sufficiency of application.* The sufficiency of the application shall be determined by the Director. The Director may waive any requirement for

information, or require such additional information as determined to be relevant to the processing of the application.

(f) *Withdrawal.* An applicant may withdraw the application at any time.

(g) *Publication of permit applications.* The Director shall publish notice in the *Federal Register* of each application for a permit. The notice shall invite the submission by interested parties, within 30 days after the date of publication of the notice, of written data, comments, or views with respect to the application. Information received by the Director as a part of any application shall be available to the public as a matter of public record.

§ 670.10 General issuance criteria.

Upon receipt of a complete and properly executed application for a permit and the expiration of the applicable public comment period, the Director will decide whether to issue the permit. In making this decision, the Director will consider, in addition to the specific criteria set forth in the appropriate subparts of this part:

(a) Whether the authorization requested meets the objectives of the Act and the requirements of these regulations;

(b) The judgment of persons having expertise in matters germane to the application; and

(c) Whether the applicant has failed to disclose material information required or has made false statements about any material fact in connection with his application.

§ 670.11 Permit administration.

(a) *Issuance of permits.* The Director may approve an application in whole or in part. Permits shall be issued in writing and be signed by the Director. Each permit may contain such terms and conditions as are consistent with the Act and this part.

(b) *Denial.* The applicant shall be notified in writing of the denial of any permit request or part of a request and the reason for such denial. If authorized in the notice of denial, the applicant may submit further information, or reasons why the permit should not be denied. Such further submissions shall not be considered a new application.

(c) *Amendment of applications or permits.* An applicant or permit holder desiring to have any term or condition of his application or permit modified must submit full justification and supporting information in conformance with the provisions of this subpart and the subpart governing the activities sought to be carried out under the modified permit. Any application for modification of a permit that involves a material change beyond the terms originally requested will normally be subject to the same procedures as a new application.

(d) *Notice of issuance or denial.* Within 10 days after the date of the issuance or denial of a permit, the Director shall publish notice of the issuance or denial in the *Federal Register*.

(e) *Agents of the permit holder.* The Director may authorize the permit holder to designate agents to act on behalf of the permit holder.

(f) *Marine mammals, endangered species, and migratory birds.* If the Director receives a permit application involving any native mammal which is a marine mammal as defined by the Marine Mammal Protection Act of 1972 (16 U.S.C. 1362(5)), any species which is an endangered or threatened

species under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), or any native bird which is protected under the Migratory Bird Treaty Act (16 U.S.C. 701 et seq.), the Director shall submit a copy of the application to the Secretary of Commerce or to the Secretary of the Interior, as appropriate. If the appropriate Secretary determines that a permit should not be issued pursuant to any of the cited acts, the Director shall not issue a permit. The Director shall inform the applicant of any denial by the appropriate Secretary and no further action will be taken on the application. If, however, the appropriate Secretary issues a permit pursuant to the requirements of the cited acts, the Director still must determine whether the proposed action is consistent with the Act and these regulations.

§ 670.12 Conditions of permits.

(a) *Possession of permits.* Permits issued under these regulations, or copies of them, must be in the possession of persons to whom they are issued and their agents when conducting the authorized action.

(b) *Display of permits.* Any permit issued shall be displayed for inspection upon request to the Director, designated agents of the Director, or any person with enforcement responsibilities.

(c) *Filing of reports.* Permit holders may be required to file reports of the activities conducted under a permit. Reports shall be submitted to the Director not later than June 30 for the preceding 12 months.

§ 670.13 Modification, suspension, and revocation.

(a) The Director may modify, suspend, or revoke, in whole or in part, any permit issued under this section:

(1) In order to make the permit consistent with any change to any regulation in this part made after the date of issuance of the permit;

(2) If there is any change in conditions which makes the permit inconsistent with the purpose of the Act and these regulations; or

(3) In any case in which there has been any violation of any term or condition of the permit, any regulation in this part, or any provision of the Act.

(b) Whenever the Director proposes any modifications, suspension, or revocation of a permit under this subsection, the permittee shall be afforded opportunity, after due notice, for a hearing by the Director with respect to such proposed modification, suspension, or revocation. If a hearing is requested, the action proposed by the Director shall not take effect before a decision is issued by him after the hearing, unless the proposed action is taken by the Director to meet an emergency situation.

(c) Notice of the modification, suspension, or revocation of any permit by the Director shall be published in the *Federal Register* within 10 days from the date of the Director's decision.

§ 670.14 [Reserved]

Subpart D—Native Mammals and Native Birds

§ 670.15 Specific issuance criteria.

With the exception of specially protected species of mammals and birds designated in Subpart E of this part, permits to take a mammal or bird in Antarcti-

ca designated as a native mammal in § 670.17 or as a native bird in § 670.18 may be issued:

(a) Only for the purpose of providing:

(1) Specimens for scientific study or scientific information, or

(2) Specimens for museums, zoological gardens, or other educational or cultural institutions or uses;

(b) Shall ensure, as far as possible, that

(1) No more native mammals or native birds are taken in any year than can normally be replaced by natural reproduction in the following breeding season; and

(2) The variety of species and the balance of the natural ecological systems within Antarctica are maintained; and

(3) The authorized taking, transporting, carrying, or shipping of any native mammal or native bird is carried out in a humane manner.

§ 670.16 Content of permit applications.

In addition to the information required in Subpart C of this part, an applicant seeking a permit to take a native mammal or native bird shall include a complete description of the project including the purpose of the proposed taking, the use to be made of the native mammals or native birds, and the ultimate disposition of the native mammals or native birds. Sufficient information must be provided to establish that the taking, transporting, carrying, or shipping will be humane.

§ 670.17 Designation of native mammals.

The following are designated native mammals:

Dolphin:

Hourglass *Lagenorhynchus cruciger*.

Seal:

Crabeater *Lobodon carcinophagus*.

Elephant *Mirounga leonina*.

Kerguelen fur *Arctocephalus gazella*.*

Leopard *Hydrurga leptonyx*.

Ross *Ommatophoca rossi*.*

Weddell *Leptonychotes weddelli*.

Whales:

Arnoux's Beaked *Berardius arnuxii*.

Killer *Orcinus orca*.

Long-finned Pilot *Globicephala melaena*.

Southern Bottlenose *Hyperoodon planijrons*.

§ 670.18 Designation of native birds.

The following are designated native birds:

Albatross:

Black-browed *Diomedea melanophris*.

Gray-headed *Diomedea chrysostoma*.

Light-mantled Sooty *Phoebetria palpebrata*.

Wandering *Diomedea exulans*.

*These species of mammals have been designated as specially protected species and are subject to Subpart E of this part.

Fulmar:
Northern giant *Macronectes halli*.
Southern *Fulmarus glacialoides*.
Southern giant *Macronectes giganteus*.
Gull:
Southern black-backed *Larus dominicanus*.
Jaeger:
Parasitic *Stercorarius parasiticus*.
Pomarine *Stercorarius pomarinus*.
Penguin:
Adélie *Pygoscelis adeliae*.
Chinstrap *Pygoscelis antarctica*.
Emperor *Aptenodytes forsteri*.
Gentoo *Pygoscelis papua*.
King *Aptenodytes patagonicus*.
Macaroni *Eudyptes chrysolophus*.
Rockhopper *Eudyptes crestatus*.
Petrel:
Antarctic *Thalassoica antarctica*.
Black-bellied storm *Fregetta tropica*.
Blue *Halobaena caerulea*.
Gray *Procellaria cinerea*.
Great-winged *Pterodroma macroptera*.
Kerguelen *Pterodroma brevirostris*.
Mottled *Pterodroma inexpectata*.
Snow *Pagodroma nivea*.
Soft-plumaged *Pterodroma mollis*.
South-Georgia diving *Pelecanoides georgicus*.
White-bellied storm *Fregetta grallaria*.
White-chinned *Procellaria aequinoctialis*.
White-headed *Pterodroma lessoni*.
Wilson's storm *Oceanites oceanicus*.
Pigeon:
Cape *Daption capense*.
Pintail:
South American yellow-billed *Anas georgica spinicauda*.
Prion:
Antarctic *Pachyptila desolata*.
Narrow-billed *Pachyptila belcheri*.
Shag:
Blue-eyed *Phalacrocorax atriceps*.
Shearwater:
Sooty *Puffinus griseus*.
Skua:
Brown *Catharacta lonnbergi*.
South Polar *Catharacta maccormicki*.
Swallow:
Barn *Hirundo rustica*.
Sheathbill:
American *Chionis alba*.

Tern:
Antarctic *Sterna vittata.*
Arctic *Sterna paradisaea.*

§ 670.19 [Reserved]

Subpart E—Specially Protected Species of Mammals and Birds

§ 670.20 Specific issuance criteria.

Permits authorizing the taking of mammals or birds designated as a specially protected species of mammals and birds in § 670.22 may only be issued if:

(a) There is a compelling scientific purpose for such taking;

(b) The actions allowed under any such permit will not jeopardize the existing natural ecological system, or the survival of that species; and

(c) The authorized taking, transporting, carrying, or shipping of any native mammal or native bird is carried out in a humane manner.

§ 670.21 Content of permit applications.

In addition to the information required in Subpart C of this part, an applicant seeking a permit to take a special protected species shall include the following in the application:

(a) A detailed scientific justification of the need for taking the specially protected species, including a discussion of possible alternative species;

(b) Information demonstrating that the proposed action will not jeopardize the existing natural ecological system or the survival of that species; and

(c) Information establishing that the taking, transplanting, carrying, or shipping of any native mammal or native bird is carried out in a humane manner.

§ 670.22 Designation of specially protected species of mammals and birds.

The Act states that the Director shall designate as a specially protected species any native species of mammal or bird which is approved by the United States for special protection under the Agreed Measures. The following two species have been so approved and are hereby designated specially protected species:

Common Name and Scientific Name
Kerguelen Fur Seal *Arctocephalus tropicates gazella.*
Ross Seal *Ommatophoca rossi*.

§ 670.23 [Reserved]

Subpart F—Native Plants

§ 670.24 Specific issuance criteria.

Permits authorizing the collection of any native plant designated in § 670.26 from a Specially Protected Area designated in § 670.30 of this title may be issued only if:

(a) There is a compelling scientific purpose for such collection which cannot be served elsewhere; and

(b) The actions allowed under any such permit will not jeopardize the natural ecological system existing in that area.

§ 670.25 Content of permit applications.

In addition to the information required in Subpart C of this part, an applicant seeking a permit to collect a native plant in a Specially Protected Area shall include the following in the application:

(a) A detailed scientific justification of the need for the collection, including a discussion of alternatives; and

(b) Information demonstrating that the proposed action will not jeopardize the unique natural ecological system existing in the area.

§ 670.26 Designation of native plants.

All plants found in Antarctica are designated native plants, including:

Fungi—Lichens

Vascular Plants—Marine algae

Bryophytes—Freshwater algae

§ 670.27 [Reserved]

Subpart G—Specially Protected Areas

§ 670.28 Specific issuance criteria.

Permits authorizing entry into any Specially Protected Area designated in § 670.30 of this title may be issued only if:

(a) There is a compelling scientific purpose for such entry which cannot be served elsewhere;

(b) The actions allowed under any such permit will not jeopardize the natural ecological system existing in that area; and

(c) The actions permitted thereunder are in accordance with any Management Plan accompanying the description of a Specially Protected Area. No permit shall be issued that allows the operation of any surface vehicle in a Specially Protected Area.

§ 670.29 Content of permit applications.

In addition to the information required in Subpart C of this part, an applicant seeking a permit to enter a Specially Protected Area shall include the following in the application:

(a) A detailed scientific justification of the need for such entry, including a discussion of alternatives; and

(b) Information demonstrating that the proposed action will not jeopardize the unique natural ecological system existing in that area.

§ 670.30 Designation of Specially Protected Areas.

The Act states the Director shall designate as a Specially Protected Area, each area identified under the Agreed Measures as needing special protection. The following areas have been so identified and are designated as Specially Protected Areas:

(a) “Taylor Rookery” 67°26' South, 60°50' East, Mac. Robertson Land.

(b) Rookery Islands in Holme Bay.

(c) Ardery Island and Odbert Island in Vincennes Bay.

(d) Sabrina Island and Balleny Islands in the Ross Sea.

(e) Beaufort Island in the Ross Sea.

(f) Cape Hallett in Victoria Land.

(g) Dion Islands in Marguerite Bay.

(h) Green Island in the Berthelot Islands.

(i) [Reserved].

(j) Moe Island in the South Orkney Islands.

(k) Lynch Island in the South Orkney Islands.

(l) Powell Island (southern portion only), Fredriksen Island, Michelsen Island, Christofferson Island, Grey Island and all unnamed islands within one mile of these islands; all of which are part of the South Orkney Islands.

(m) Coppermine Peninsula on Robert Island.

(n) Litchfield Island in the Palmer Archipelago.

(o) North Coronation Island, South Orkney Islands.

(p) Lagotellerie Island, Marguerite Bay.

(q) "New College Valley," Caughley Beach, Cape Bird, Ross Island.

(r) Cryptogam Ridge, Mount Melbourne, Victoria Land.

(s) Forlidas Pond and Davis Valley ponds.

Maps specifying these areas in greater detail may be obtained from the Director.*

§ 670.31 [Reserved]

Subpart H—Sites of Special Scientific Interest

§ 670.32 Specific issuance criteria.

Sites of Special Scientific Interest, designated in § 670.34, are sites where scientific investigations are being conducted or are planned and there is a demonstrable risk of interference which would jeopardize those investigations. Certain of these sites do not require limitations on entry to protect their value for scientific investigations. No permit is required for entry into these sites but entrants must comply with the management plan. Permits to enter sites for which an entry permit is required may be issued only if the proposed entry is consistent with the management plan.

§ 670.33 Content of permit applications.

In addition to the information required in Subpart C of this part, an applicant seeking a permit to enter a Site of Special Scientific Interest shall include the following in the application:

(a) The justification for such entry;

(b) Information demonstrating that the proposed action will not jeopardize the unique scientific value of the area; and

(c) A statement demonstrating the consistency of the proposed action with the management plan.

§ 670.34 Designation of Sites of Special Scientific Interest and management plans for those sites.

(a) The Director is required to designate as a Site of Special Scientific Interest each area approved by the United States in accordance with Recommen-

*See section two for descriptions and maps of all Specially Protected Areas. (This footnote is not part of the Federal Regulations.)

dation VIII-3 of the Eighth Antarctic Treaty Consultative Meeting. The Director is also required to prescribe a management plan for such sites which is consistent with any management plan approved by the United States in accordance with that Recommendation. Accordingly, the areas listed below are designated as Sites of Special Scientific Interest to be managed in accordance with the management plan recommended at the applicable consultative meeting and any subsequent amendments to that plan. The number of the recommendation, including any modifications made at subsequent consultative meetings, is included below after each site, as is the site number established at the consultative meetings. If there are any variations or additional management measures required by the United States they shall also be included in the listing below. Any specific conditions or limitations included in permits issued under this regulation will be consistent with these plans. More detailed maps and descriptions of the sites and the complete management plans as recommended at the consultative meetings can be obtained from the Office of Polar Programs, Room 755, National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230.**

(b) The sites of special scientific interest are as follows:

(1) *Cape Royds, Ross Island*: Site No. 1 as described in Recommendation VIII-4 as revised by Recommendations X-6, XII-5, and XIII-9.

(2) *Arrival Heights, Hut Point Peninsula, Ross Island*: Site No. 2 as described in Recommendation VIII-4 as revised by Recommendations X-6, XII-5, XIII-7, and XIV-4. This site does not require an entry permit.

(3) *Barwick Valley, Victoria Land*: Site No. 3 as described in Recommendations VIII-4 as revised by Recommendations X-6, XII-5, and XIII-7.

(4) *Cape Crozier, Ross Island*: Site No. 4 as described in Recommendation VIII-4 as revised in Recommendations X-6, XII-5, and XIII-7.

(5) *Fildes Peninsula, King George Island, South Shetland Islands*: Site No. 5 as described in Recommendation VIII-4 as revised in Recommendations X-6, XII-5, and XIII-7.

(6) *Byers Peninsula, Livingston Island, South Shetland Islands*: Site No. 6 as described in Recommendation VIII-4 as revised in Recommendations X-6, XII-5, and XIII-7.

(7) *Haswell Island*: Site No. 7 as described in Recommendation VIII-4 as revised in Recommendations X-6, XII-5, and XIII-7.

(8) *Western Shore of Admirality Bay, King George Island*: Site No. 8 as described in Recommendation X-5 as revised in Recommendations XII-5 and XIII-7.

(9) *Rothera Point, Adelaide Island*: Site No. 9 as described in Recommendation XIII-8.

(10) *Caughley Beach, Cape Bird, Ross Island*: Site No. 10 as described in Recommendation XIII-8.

(11) *"Tramway Ridge," Mt. Erebus, Ross Island*: Site No. 11 as described in Recommendation XIII-8.

(12) *Canada Glacier, Lake Fryxell, Taylor Valley, Victoria Land*: Site No. 12 as described in Recommendation XIII-8.

**See section three: Sites of Special Scientific Interest. (This footnote is not a part of the Federal Regulations.)

(13) *Potter Peninsula, King George Island, South Shetland Islands*: Site No. 13 as described in Recommendation XIII-8.

(14) *Harmony Point, Nelson Island, South Shetland Islands*: Site No. 14 as described in Recommendation XIII-8.

(15) *"Cierva Point" and nearby islands, Danco Coast, Antarctic Peninsula*: Site No. 15 as described in Recommendation XIII-8.

(16) *Bailey Peninsula, Budd Coast, Wilkes Land*: Site No. 16 as described in Recommendation XIII-8.

(17) *Clark Peninsula, Budd Coast, Wilkes Land*: Site No. 17 as described in Recommendation XIII-8.

(18) *White Island, McMurdo Sound*: Site No. 18 as described in Recommendation XIII-8.

(19) *Linnaeus Terrace, Asgard Range,Victoria Land*: Site No. 19 as described in Recommendation XIII-8.

(20) *Biscoe Point, Anvers Island, Palmer Archipelago*: Site No. 20 as described in Recommendation XIII-8.

(21) *Shores of Port Foster, Deception Island, South Shetland Islands*: Site No. 21 as described in Recommendation XIII-8.

(22) *"Yukidori Valley," Langhovde Lutzow–Holm Bay:* Site No. 22 as described in Recommendation XIV-5.

(23) *Svarthamaren Mountain, Mühlig–Hofmann Mountains, Queen Maud Land*: Site No. 23 as described in Recommendation XIV-5.

(24) *Summit of Mt. Melbourne, North Victoria Land*: Site No. 24 as described Recommendation XIV-5.

(25) "*Marine Plain," Mule Peninsula Vestfold Hills, "Princess Elizabeth Land"*: Site No. 25 as described in Recommendation XIV-5.

(26) "*Chile Bay" (Discovery Bay), Greenwich Island, South Shetland Islands*: Site No. 26 as described in Recommendation XIV-5.

(27) *Port Foster, Deception Island, South Shetland Islands*: Site No. 27 as described in Recommendation XIV-5.

(28) *South Bay, Doumer Island, Palmer Archipelago*: Site No. 28 as described in Recommendation XIV-5.

(29) *Ablation Point–Ganymede Heights, Alexander Island*: Site No. 29 as described in Recommendation XV-6.

(30) *Avian Island, North-West Marguerite Bay*: Site No. 30 as described in Recommendation XV–6.

(31) *Mount Flora, Hope Bay, Antarctic Peninsula*: Site No. 31 as described in Recommendation XV-6.

(32) *Cape Shirreff, Livingston Island, South Shetland Islands*: Site No. 32 as described in Recommendation XV-7.

(33) *Ardley Island, Maxwell Bay, King George Island, South Shetland Islands:* Site No. 33 as described in Recommendation XVI-2.

(34) *Lions Rump, King George Island, South Shetland Islands*: Site No. 34 as described in Recommendation XVI-2.

(35) *Western Bransfield Strait, off Low Island, South Shetland Islands*: Site No. 35 as described in Recommendation XVI-3.

(36) *East Dallmann Bay, off Brabant Island*: Site No. 36 as described in Recommendation XVI-3.

§ 670.35 [Reserved]

Importing and exporting native plants, birds, and mammals is allowed with the proper permit if collection and usage criteria are met.

Subpart I—Import into and Export from the United States

§ 670.36 Specific issuance criteria for imports.

Subject to compliance with other applicable law, any person who takes a native mammal or native bird or collects a native plant under a permit issued under these regulations may import it into the United States unless the Director finds that importation would not further the purpose for which it was taken or collected. If the importation is for a purpose other than that for which the native mammal or native bird was taken or the native plant collected, the Director may permit importation upon a finding that importation would be consistent with the purposes of the Act, these regulations, or the permit under which they were taken or collected.

§ 670.37 Specific issuance criteria for exports.

The Director may permit export from the United States of any native plant taken from a Specially Protected Area or of any native mammal or native bird upon a finding that exportation would be consistent with the purposes of the Act, these regulations, or the permit under which they were taken or collected.

§ 670.38 Contents of permit applications.

In addition to the information required in Subpart C of this part, an applicant seeking a permit to import into or export from the United States a native plant taken from a Specially Protected Area, a native mammal, or a native bird shall include the following in the application:

(a) Information demonstrating that the import or export would further the purposes for which the species was taken or collected; or

(b) Information demonstrating that the import or export is consistent with the purposes of the Act or these regulations; and

(c) A statement as to which U.S. port will be used for the import or export.

The application shall also include information describing the intended ultimate disposition of the imported or exported item.

§ 670.39 Entry and exit ports.

Any native plant collected in a Specially Protected Area and any native mammal or native bird imported into or exported from the United States must enter or leave the United States at ports designated by the Secretary of Interior in 50 CFR Part 14. The ports presently designated are:

(a) New York, New York.

(b) Miami, Florida.

(c) Chicago, Illinois.

(d) San Francisco, California.

(e) New Orleans, Louisiana.

(f) Seattle, Washington.

(g) Honolulu, Hawaii.

Permits to import or export at nondesignated ports may be sought from the Secretary of Interior pursuant to Subpart C, 50 CFR Part 14.

§ 670.40 [Reserved]

Subpart J—Introduction of Nonindigenous Plants and Animals

See § 671.12 for procedures on disposal of introduced materials.

§ 670.41 Specific issuance criteria.

For purposes consistent with the Act, only the following plants and animals may be considered for a permit allowing their introduction into Antarctica:

(a) Sledge dogs;

(b) Domestic animals and plants; and

(c) Laboratory animals and plants including viruses, bacteria, yeasts, and fungi.

Living nonindigenous species of birds shall not be introduced into Antarctica.

§ 670.42 Content of permit applications.

Applications for the importation of plants and animals into Antarctica must describe:

(a) The need for the plants or animals;

(b) How the applicant will ensure that the plants or animals will not harmfully interfere with the natural system; and

(c) How the plants or animals will be removed from Antarctica or destroyed after they have served their purpose.

§ 670.43 Conditions of permits.

(a) *General.* All permits allowing the introduction of nonindigenous plants and animals will require that the animal or plant be kept under controlled conditions to prevent harmful interference with the natural system and that after serving its purpose the plant or animal shall be removed from Antarctica or destroyed in a manner that protects the natural system of Antarctica.

(b) *Dogs.* In addition to the requirements of paragraph (a) of this section, all dogs imported into Antarctica shall be inoculated against the following diseases:

The Protocol on Environmental Protection to the Antarctic Treaty prohibits dogs.

(1) Distemper;

(2) Contagious canine hepatitis;

(3) Rabies; and

(4) Leptospirosis (L. canicola and L. icterohaemorragicae).

Each dog shall be inoculated at least two months before importation, and a certificate of inoculation shall accompany each dog. No dog shall be allowed to run free in Antarctica.

§ 670.44 [Reserved]

Part 671—USE AND RELEASE OF BANNED SUBSTANCES, DESIGNATED POLLUTANTS, AND WASTES

Subpart A—Introduction

These regulations pertain to any U.S. citizen's use or release of a banned substance, pollutant, or waste in Antarctica.

§ 671.1 Purpose of regulations.

The purposes of these regulations in Part 671 are to protect the antarctic environment and dependent and associated ecosystems, to preserve Antarctica's value as an area for the conduct of scientific research, and to implement the Antarctic Conservation Act of 1978, Public Law 95-541, consistent with the provisions of the Protocol on Environmental Protection to the Antarctic Treaty, signed in Madrid, Spain, on October 4, 1991.

§ 671.2 Scope.

These regulations in Part 671 apply to any U.S. citizen's use or release of a banned substance, designated pollutant, or waste in Antarctica.

§ 671.3 Definitions.

(a) *Definitions.* In this part:

"Act" means the Antarctic Conservation Act of 1978, Public Law 95-541, 92 Stat. 2048 (16 U.S.C. 2401 et seq.).

"Antarctic hazardous waste" means any waste consisting of or containing one or more designated pollutants.

"Antarctica" means the area south of 60 degrees south latitude.

"Banned substance" means any polychlorinated biphenyls (PCB's), nonsterile soil, polystyrene beads, plastic chips or similar loose polystyrene packing material, pesticides (other than those required for scientific, medical, or hygiene purposes), or other substance designated as such under Subpart E of this part.

"Designated pollutant" means any substance designated as such by the Director pursuant to Subpart E of this part; any pesticide, radioactive substance, or substance consisting of or containing any chemical listed by source, generic, or chemical name at 40 CFR 61.01, Table 116.4A of 40 CFR 116.4; Subpart D of 40 CFR Part 261, 40 CFR 302.4, Part 355 and Part 372; and any substance which exhibits a hazardous waste characteristic as defined in Subparts B and C of 40 CFR Part 261; but shall not include any banned substance.

"Director" means the Director of the National Science Foundation or an officer or employee of the Foundation designated by the Director.

"Incinerate" or "Incineration" means the processing of material by mechanisms that (1) involve the control of combustion air and/or fuel so as to maintain adequate temperature for efficient combustion; (2) contain the combustion reaction in an enclosed device with sufficient residence time and mixing for complete processing; and (3) control emission of gaseous or particulate combustion products.

"Master Permit" means a permit issued to a Federal agency, or its agents or contractors, or any other entity, covering activities conducted in connection with the USAP or other group activities in Antarctica.

"NSF" or "Foundation" means the National Science Foundation.

"Open burning" means combustion of any material by means other than incineration.

"Permit" means a permit issued pursuant to Subpart C of this part.

"Private permit" means any permit other than a Master Permit.

"Protocol" means the Protocol on Environmental Protection to the Antarctic Treaty, signed by the United States in Madrid on October 4, 1991, and any and all Annexes thereto, as amended or supplemented from time to time.

"Release" means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, leaching, dumping, burying, or disposing of a substance, whether intentionally or accidentally.

"Station" means McMurdo Station, Palmer Station, Amundsen–Scott South Pole Station and any other permanent USAP facility in Antarctica designed to accommodate at least 50 persons at any one time.

"Substance" means any gas, liquid, or solid or mixture thereof, including biological material.

"Treaty" means the Antarctic Treaty signed in Washington, D.C., on December 1, 1959.

"United States" means the several States of the Union, the District of Columbia, the Commonwealth of Puerto Rico, American Samoa, the Virgin Islands, Guam and the Trust Territory of the Pacific Islands, including the Federated States of Micronesia and the Commonwealth of the Northern Mariana Islands.

"United States Antarctic Program" or "USAP" means the United States national program in Antarctica.

"U.S. citizen" means any individual who is a citizen or national of the United States; any corporation, partnership, trust, association, or other legal entity existing or organized under the laws of any of the United States; and any department agency or other instrumentality of the Federal government or of any State, and any officer, employee, or agent of such instrumentality.

"Use" means to use, generate, or create a substance or to import a substance into Antarctica, but does not include the shipboard use of a substance, provided that substance is not released or removed from the vessel.

"Waste" means any substance that will no longer be used for any useful purpose, but does not include substances to be recycled in Antarctica, or substances to be reused in a manner different than their initial use, provided such substances are stored in a manner that will prevent their dispersal into the environment, and further provided that they are recycled, reused, or disposed of in accordance with the provisions of this part within three years. Recycling includes, but is not limited to, the reuse, further use, reclamation or extraction of a waste through a process or activity that is separate from the process or activity that produced the waste.

(b) *Pollutants, generally.* All banned substances, designated pollutants, and waste shall be considered pollutants for purposes of the Antarctic Conservation Act.

Subpart B—Prohibited Acts, Exceptions

§ 671.4 Prohibited acts.

Unless one of the exceptions stated in §671.5 is applicable, it is unlawful for any U.S. citizen to:

(a) Use or release any banned substance in Antarctica;

(b) Use or release any designated pollutant in Antarctica, except pursuant to a permit issued by NSF under Subpart C of this part;

(c) Release any waste in Antarctica, except pursuant to a permit issued by NSF under Subpart C of this part; or

(d) Violate any term or condition of a permit issued by NSF under Subpart C of this part, or any term or condition of any of the regulations issued under this part.

§ 671.5 Exceptions.

A permit shall not be required for any use or release of designated pollutants or waste allowed under the Act to Prevent Marine Pollution from Ships

(33 U.S.C. 1901 et seq.), as amended, or for any shipboard use of banned substances or designated pollutants, provided such substances are not removed from the vessel in Antarctica.

A permit is required to use or dispose of a designated pollutant or to dispose of wastes in Antarctica.

Subpart C—Permits

§ 671.6 Applications for permits.

(a) *General content of permit applications.* Each application for a permit shall be dated and signed by the applicant, and shall include the following information:

(1) The applicant's name, address, and telephone number; the business or institutional affiliation of the applicant; or the name, address, and telephone number of the president, principal officer, or managing partner of the applicant, as applicable;

(2) A description of the types, expected concentrations, and volumes of wastes and designated pollutants to be released in Antarctica; the nature and timing of such releases; arrangements for waste management, including, without limitation, plans for waste reduction, minimization, treatment and processing, recycling, storage, transportation and disposal; arrangements for training and educating personnel to comply with these waste management requirements and procedures, and arrangements for monitoring compliance; and other arrangements for minimizing and monitoring the environmental impacts of proposed operations and activities;

(3) A description of the types, expected concentrations, and volumes of designated pollutants to be used in Antarctica; the nature and timing of such uses; the method of storage of designated pollutants; and a contingency plan for controlling releases in a manner designed to minimize any resulting hazards to health and the environment;

(4) The desired effective date and duration of the permit; and

(5) The following certification:

"I certify that, to the best of my knowledge and belief, and based upon due inquiry, the information submitted in this application for a permit is complete and accurate. Any knowing or intentional false statement will subject me to the criminal penalties of 18 U.S.C. 1001."

(b) *Address to which application should be sent.* Each application shall be in writing, and sent to: Permits Office, Office of Polar Programs, National Science Foundation, Room 755, 4201 Wilson Boulevard, Arlington, Virginia 22230.

(c) *Sufficiency of application.* The sufficiency of the application shall be determined by the Director. The Director may waive any requirement for information or require such additional information as he determines is relevant to the processing and evaluation of the application.

(d) *Publication of permit applications.* The Director shall publish notice in the *Federal Register* of each application for a permit and the proposed conditions of its issuance (including duration). The notice shall invite the submission by interested parties, the Environmental Protection Agency, and other Federal agencies, within 30 days after the date of publication of notice, of written data, comments, or views with respect to the application. Information received by the Director as a part of any application shall be available to the public as a matter of public record.

§ 671.7 General issuance criteria.

(a) Upon receipt of a complete and properly executed application for a permit, the Director will decide whether and on what conditions he will issue a permit. In making this decision, the Director will carefully consider any comments or suggestions received from interested parties, the Environmental Protection Agency, and other Federal agencies pursuant to §671.6(d) and will determine whether the permit requested meets the objectives of the Act, the Protocol, and the requirements of these regulations.

(b) Permits authorizing the use or release of designated pollutants or wastes may be issued only if, based on relevant available information, the Director determines that such use or release will not pose a substantial hazard to health or the environment, taking into account available information on the possible cumulative impact of multiple releases.

§ 671.8 Permit administration.

(a) *Issuance of permits.* The Director may approve an application for a permit in whole or in part and may condition such approval upon compliance with additional terms and conditions. Permits shall be issued in writing, shall be signed by the Director, shall specify duration, and shall contain such terms and conditions as may be established by the Director and as are consistent with the Act and this part.

(b) *Denial.* An applicant shall be notified in writing of the denial of any permit request or part of a request, and the reason for such denial. If authorized in the notice of denial, the applicant may submit further information or reasons why the permit should not be denied. Such further submissions shall constitute amendments of the application.

(c) *Amendment of applications or permits*. An applicant or permit holder desiring to have any term or condition of his application or permit modified must submit full justification and supporting information in conformance with the provisions of this part. Any application for modification of a permit that involves a material change beyond the terms originally requested will be subject to the same procedures as a new application.

(d) *Public notice of issuance or denial.* Within 10 days after the date of the issuance or denial of a permit, the Director shall publish notice of the issuance or denial in the *Federal Register*, including the conditions of issuance or basis for denial, as appropriate.

§ 671.9 Conditions of permit.

(a) *Conditions.* All permits issued pursuant to Subpart C of this part shall be conditioned upon compliance with the relevant provisions of the ACA, the Treaty, the Protocol, such specific conditions or restrictions as may be imposed by the Director under §671.7, and the provisions of Subpart D hereof.

(b) *Possession of permits.* Permits issued under this part, or copies of them, must be in the possession of persons to whom they are issued or their agents when conducting the authorized action. Any permit issued shall be shown to the Director or to any other person with enforcement authority upon request.

(c)(1) *Reports*. Permit holders must provide the Director with written reports of:

(i) Any nonpermitted release of designated pollutants or waste within fourteen days after the occurrence of such release, including

the date, quantity, and cause of the release, and plans for remediation;

(ii) The identity and quantity of all designated pollutants removed from Antarctica or otherwise disposed of, and the method of disposal; and

(iii) Any other violations of the terms and conditions of their permits.

(2) The Director may also require permit holders to file reports of activities conducted under their permits. Such reports shall be submitted to the Director not later than June 30 for the preceding 12-month period ending May 31.

§ 671.10 Review, modification, suspension, and revocation.

(a) The Director may modify, suspend, or revoke, in whole or in part, any permit issued under this part:

(1) In order to make the permit consistent with any change to any regulation in this part made after the date of issuance of the permit;

(2) If there is any change in conditions which makes the permit inconsistent with the Act and any regulation in this part; or

(3) In any case in which there has been any violation of any term or condition of the permit, any regulation in this part, or any provision of the Act.

(b) The Director shall review all unexpired permits issued under this part at least biennially to determine whether those permits should be modified, suspended, or revoked as set forth in paragraph (a) of this section.

(c) Whenever the Director proposes any modifications, suspensions, or revocations of a permit under this §671.10, the permittee shall be afforded the opportunity, after due notice, for a hearing by the Director with respect to such proposed modification, suspension, or revocation. If a hearing is requested, the action proposed by the Director shall not take effect before a decision is issued by him after the hearing, unless the proposed action is taken by the Director to meet an emergency situation.

(d) Notice of the modification, suspension, or revocation of any permit shall be published in the *Federal Register* within 10 days from the date of the Director's decision.

Subpart D—Waste Management

Proper waste management is crucial to the environment, and waste management regulations are strictly enforced.

§ 671.11 Waste storage.

(a) Pending the treatment, disposal, or removal of any wastes pursuant to §671.12, all wastes shall be contained, confined, or stored in a manner that will prevent dispersal into the environment;

(b) All antarctic hazardous wastes generated at or transported to any USAP station may be temporarily stored at such station prior to the treatment, disposal, or removal of any wastes pursuant to §671.12, provided all such antarctic hazardous waste is stored in either closed containers or tanks labeled to indicate their contents and the beginning date of accumulation of such waste and further provided the following conditions are satisfied:

(1) If antarctic hazardous wastes, radioactive wastes, or medical wastes are generated at or transported to McMurdo Station, they may be temporarily stored at that station for a period not to exceed 15 months;

(2) If antarctic hazardous wastes, radioactive wastes, or medical wastes are generated at or transported to South Pole Station, they may be temporarily stored at that station while awaiting transport to McMurdo Station, for a period not to exceed 15 months;

(3) If antarctic hazardous wastes, radioactive wastes, or medical wastes are generated at or transported to Palmer Station, they may be temporarily stored at that station while awaiting transport to McMurdo Station or other disposition, for a period not to exceed 28 months;

(4) Containers holding antarctic hazardous wastes must be:

(i) In good, nonleaking condition with sufficient structural integrity for the storage of antarctic hazardous waste;

(ii) Made of or lined with materials which will not react with, and are otherwise compatible with, the antarctic hazardous waste to be stored, so that the ability of the containers to contain such waste is not impaired;

(iii) Stored in a manner that allows access for inspection and response to emergencies; and

(iv) Inspected at least weekly for leakage and deterioration. All inspections must be appropriately documented.

(5) Tank systems used for storing antarctic hazardous wastes must be in good, nonleaking condition with sufficient structural integrity for the storing of hazardous wastes; and systems must be inspected weekly to detect corrosion or releases of waste and to collect data from monitoring and leak detection equipment, to the extent available, to ensure that they are functioning properly. All inspections must be appropriately documented. Prior to the expiration of the 15 month period referred to in §671.11(b)(1), all antarctic hazardous wastes shall be treated or removed from Antarctica in accordance with §671.12.

(6) Ignitable, reactive, or incompatible wastes shall be properly segregated and protected from sources of ignition or reaction, as appropriate.

(c) All antarctic hazardous wastes generated at a location other than a permanent station may be temporarily stored at such location for a period not to exceed 12 months, in closed, nonleaking containers marked to indicate their contents. Such containers must be in good condition and made of or lined with material which will not react with and is otherwise compatible with the antarctic hazardous waste stored therein so as not to impair the ability of the container to contain the waste. Prior to the expiration of the 12-month period referred to above, all such hazardous wastes shall be either:

(1) Treated or processed, disposed of, or removed from Antarctica pursuant to §671.12, or

(2) Removed to a permanent station and temporarily stored at that station in accordance with paragraph (b) of this section.

§ 671.12 Waste disposal.

(a)(1) The following wastes shall be removed from Antarctica:

(i) Radioactive materials;

(ii) Electrical batteries;

(iii) Fuel (both liquid and solid);

(iv) Waste containing harmful levels of heavy metals or acutely toxic or harmful persistent compounds;

(v) Polyvinyl chloride (PVC), polyurethane foam, polystyrene foam, rubber and lubricating oils, treated timbers, and other products containing additives which can produce harmful emissions or releases;

(vi) All other plastic wastes except low-density polyethylene containers (such as bags for storing wastes) provided such containers are incinerated in accordance with paragraph (e) of this section;

(vii) Solid, noncombustible wastes; and

(viii) Fuel, oil, and chemical drums that constitute waste.

(2) Notwithstanding Paragraph (a)(1), the obligations set forth in paragraphs (a)(1) (vii) and (viii) of this section shall not apply if the Director determines that the removal of such wastes by any practicable option would cause greater adverse environmental impacts than would be caused by leaving them in their existing locations.

(b) All liquid wastes other than sewage and domestic liquid wastes and wastes referred in paragraph (a) of this section shall be removed from Antarctica to the maximum extent practicable.

(c) Sewage and domestic liquid wastes may be discharged directly into the sea, taking into account the assimilative capacity of the receiving marine environment, and provided that such discharge occurs, wherever practicable, where conditions exist for initial dilution and rapid dispersal, and further provided that large quantities of such wastes (generated in a station where the average weekly occupancy over the austral summer is approximately 30 individuals or more) shall be treated at least by maceration. If biological treatment processes are used, the by-product of such treatment may be disposed of into the sea provided disposal does not adversely affect the local environment.

(d) Residues of introduced animal carcasses, laboratory culture of microorganisms and plant pathogens, and introduced avian products must be removed from Antarctica unless incinerated, autoclaved, or otherwise sterilized.

(e) Combustible wastes not removed from Antarctica other than wastes referred to in paragraph (a) of this section, shall be burnt in incinerators which reduce harmful emissions or discharges to the maximum extent practicable and the solid residue of such incineration shall be removed from Antarctica; provided, however, that the USAP may continue to bury such combustible wastes in snow pits at South Pole Station, but must phase out such practices before March 1, 1995. Any emission or discharge standards and equipment guidelines which may be recommended by the Committee for Environmental Protection constituted or to be constituted pursuant to the Protocol or by the Scientific Committee on Antarctic Research shall be taken into account.

(f) Sewage and domestic liquid wastes and other liquid wastes not removed from Antarctica in accordance with other provisions of this section, shall, to the maximum extent practicable, not be disposed of onto sea ice, ice shelves, or grounded icesheet unless such wastes were generated by stations located inland on ice shelves or on the grounded icesheet. In such event, the wastes may be disposed of in deep ice pits if that is the only practicable option, provided the ice pits are not located on known iceflow lines which terminate at ice-free land areas or in blue ice areas of high ablation.

(g) No wastes may be disposed of onto ice-free areas or into any fresh water system.

(h) Open burning of wastes is prohibited at all permanent stations and shall be phased out at all other locations by March 1, 1994, allowance shall be made for the wind direction and speed and the type of waste to be burnt to limit particulate deposition and to avoid such deposition over areas of special biological, scientific, historic, aesthetic, or wilderness significance.

(i) Each unauthorized release of waste in Antarctic shall be, to the maximum extent practicable, promptly cleaned up by the person responsible for such release.

§ 671.13 Waste management for the USAP.

(a) In order to provide a basis for tracking USAP wastes and to facilitate studies aimed at evaluating the environmental impacts of scientific activity and logistic support, the USAP shall classify its wastes in one of the following categories:

(1) Sewage and domestic liquid wastes;

(2) Other liquid wastes and chemicals, including fuels and lubricants;

(3) Solid wastes to be combusted;

(4) Other solid wastes; and

(5) Radioactive material.

(b) The USAP shall prepare and annually review and update a waste management plan (including plans for waste reduction, storage, and disposal) specifying for each of its permanent stations, field camps, and ships (other than small boats that are part of the operations of permanent stations or are otherwise taken into account in existing management plans for ships):

(1) Current and planned waste management arrangements, including final disposal;

(2) Current and planned arrangement for assessing the environmental effects of waste and waste management;

(3) Other efforts to minimize environmental effects of wastes and waste management; and

(4) Programs for cleaning up existing waste disposal sites and abandoned work sites.

(c) The USAP shall designate one or more waste management officials to develop and monitor waste management plans and ensure that members of expeditions receive training so as to limit the impact of their activities on the antarctic environment and to inform them of the requirements of the Protocol and of this part.

(d) The USAP shall, to the extent practicable, prepare an inventory of locations of past activities (i.e., traverses, fuel depots, field bases, crashed aircraft) so that such locations can be taken into account in planning future scientific, logistic, and waste management programs.

(e) The USAP shall clean up its past and present waste disposal sites on land and abandoned work sites, except that it shall not be required to:

(1) Remove any structure designated as a historic site or monument; or

(2) Remove any structure or waste in circumstances where the removal would result in greater adverse environmental impact than leaving the structure or waste in its existing location.

(f) The USAP shall circulate waste management plans and inventories described in this section in accordance with the requirements of the Treaty and the Protocol.

Visitors to the Antarctic must be aware of the most up-to-date designations of banned substances and pollutants as determined by the Director.

Subpart E—Designation of Banned Substances; Reclassification of Pollutants

§ 671.14 Annual review.

The Director shall review the list of banned substances and designated pollutants at least annually and may propose the designation or redesignation of any substance as a banned substance, designated pollutant, or other waste, based on the following criteria:

(a) If the Director determines that a substance, including a designated pollutant, poses a substantial immediate hazard to health or the environment and such hazard cannot be eliminated through waste management practices or other methods, or if the Parties to the Protocol or Treaty agree that a substance should be banned from use in Antarctica, the Director may designate such substance a banned substance.

(b) If the Director determines that a substance is liable to create a hazard to health or the environment if improperly treated or processed, stored, transported, or disposed of, the Director may designate such substance a designated pollutant.

(c) If the Director determines that a substance previously designated a banned substance no longer displays the characteristics described in paragraph (a) of this section, the Director may remove such substance from the list of banned substances (to the extent consistent with the provisions of the Protocol), but if the Director determines that such substance has the characteristics described in paragraph (b) of this section, it shall be redesignated a designated pollutant.

(d) If the Director determines that a substance previously designated a designated pollutant no longer displays the characteristics described in paragraph (b) of this section, the Director may remove such substance from the list of designated pollutants.

(e) In making the determinations referred to in paragraphs (a) through (d) of this section, the Director shall take into account all relevant new information obtained through monitoring activities or otherwise.

§ 671.15 Publication of preliminary determination.

Prior to any designation or redesignation of substances pursuant to §671.14 (including removal of such substances from lists of banned substances or designated pollutants), the Director shall publish notice in the *Federal Register* of any proposed designation or redesignation, including the basis therefore. The notice shall invite the submission by interested parties, the Environmental Protection Agency, and other Federal agencies, within 30 days after the date of publication of notice, of written data, comments, or views with respect to such action.

§ 671.16 Designation and redesignation of pollutants.

After review of any comments or suggestions received from interested parties, the Environmental Protection Agency and other Federal agencies pursuant to §671.15, the Director will make a final determination to designate and redesignate various substances as set forth above. Within 10 days after the date of such final determination, the Director shall publish notice of any action taken in the *Federal Register*. Such action shall become effective no earlier than thirty days following publication of notice.

Subpart F—Cases of Emergency

§ 671.17 Cases of emergency.

The provisions of this part shall not apply in cases of emergency relating to the safety of human life; or of ships, aircraft, or other equipment and facilities of high value; or the protection of the environment. Notice of any acts or omissions resulting from such emergency situations shall be reported promptly to the Director, who shall notify the Treaty parties in accordance with the requirements of the Treaty and the Protocol and publish notice of such acts or omissions in the *Federal Register*.

PART 672—ENFORCEMENT AND HEARING PROCEDURES; TOURISM GUIDELINES

Because of its length and complicated nature, Part 672 has been excluded from this book. The rules set forth in Part 672 govern all adjudicatory proceedings for the assessment of civil penalties or imposition pursuant to the Antarctic Conservation Act of 1978 and other ajudicatory proceedings that the Foundation, in its discretion, determines are appropriate for handling under these rules. For further information on enforcement and hearing procedures, contact the Office of Polar Programs.

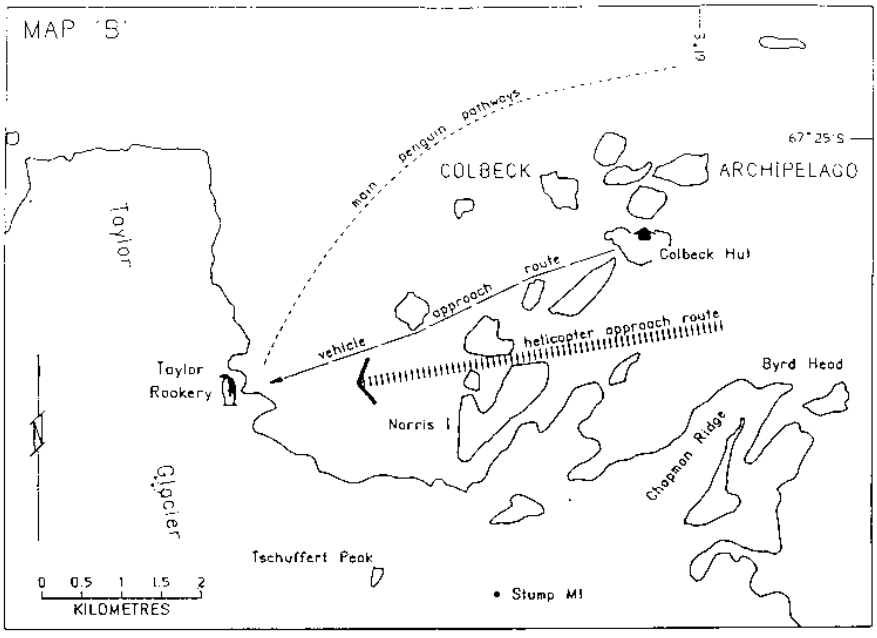
SECTION TWO:
Specially Protected Areas

Specially Protected Area No. 1

Recommendation IV–4, designation. Recommendation XVII–2, revision of description and management plan

"Taylor Rookery," Mac. Robertson Land

(1) *Description.* The Area was originally designated a Specially Protected Area because it contains a colony of emperor penguins (*Aptenodytes forsteri*), which is one of the few, and probably the largest, of the known colonies of this species located wholly on land. Almost all other emperor penguin rookeries are located on sea ice. The rookery is also important because of long-term monitoring of the population of the penguins (since 1954). The colony is ideal for counting since it is surrounded by small rocky hills which make it possible to observe every bird without entering the breeding area. A photographic census program has been carried out annually since 1988, and it is believed that this method has resulted in near complete accuracy of counting.



Map 1

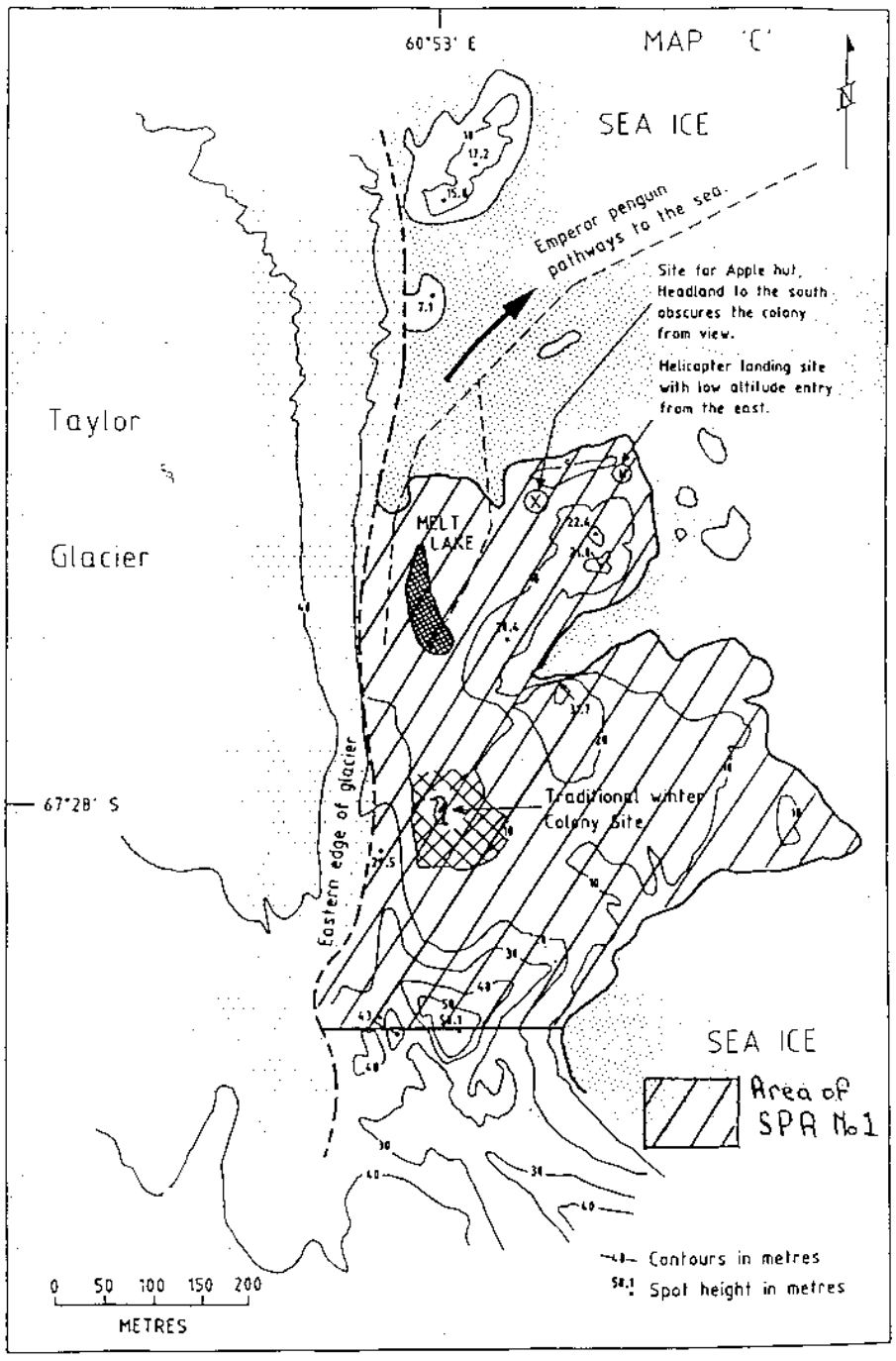
(2) *Aims and objectives.* Management of the Area aims to:

(a) Prevent unnecessary disturbance to the emperor penguin colony at "Taylor Rookery"; and

(b) Permit research of a compelling scientific nature that cannot be undertaken elsewhere, while ensuring no significant disturbance to the ecosystem of the area including the penguin colony.

(3) *Management activities.* The management plan and activities in the Area should be kept under review to ensure that the values for which the Area was designated are being fully protected. Inspection visits may be made only when considered essential for management purposes.

(4) *Period of designation.* Designated in November 1966, for an indefinite period.



Map 2

(5) *Description of the area.*

(a) Geographical coordinates and natural features of the Area.

The area consists of the whole of the northernmost rock exposure on the east side of Taylor Glacier, Mac. Robertson Land (67°26' S. 60°50' E.). The rookery is located on a low-lying rock outcrop in the southwest corner of a bay formed by Taylor Glacier to the west, the polar ice cap to the south, and the islands of the Colbeck Archipelago to the east. The Area is surrounded by sea ice to the north and east. The area is some 90 kilometers west of Mawson station. There is ice-free terrain adjacent to the glacier on the western boundary, and to the south the rock rises steeply to meet the ice of the plateau. The rock itself forms a horseshoe around a central flat area of exposed rock and moraine. This area is covered with snow in winter and is occupied by the emperor penguins. The compressed snow melts in summer to form a shallow lake and stream which exits to the northeast. The sides of the horseshoe are rounded ridges of rock which are bare and smoothed by ice. Otherwise the terrain is rough and dissected with cracks and fissures. The average height of the ridges is about 30 meters. The area has a raised beach which is typical of several found along the coast of Mac. Robertson Land. The beach is composed of locally derived pebbles, cobbles, and boulders between 1 centimeter and 1 meter across. It slopes upward from the shoreline to a well-defined platform several meters broad and 3 to 6 meters above sea level.

There are no boundary markers since the Area is easily defined by its natural features.

(b) Access to the Area.

Access to the Area is only in accordance with a permit or authority issued by a contracting party or its authorized representative.

Restrictions apply to the mode of transport to and within the Area and access points are prescribed; see Section 8(a).

(c) Location of structures including scientific stations, research facilities, and refuge facilities both within and near the Area.

There are no structures within the Area, and no permanent structures are permitted. A four-berth refuge is located in the Colbeck Archipelago, approximately 5 kilometers to the northeast of the Area (see map 1). Mawson station (67°36' S. 62°53' E.) is approximately 90 kilometers to the east.

(d) Location of other protected areas in or near the Area.

The Rookery Islands (Specially Protected Area No. 2) are located some 80 kilometers to the east of "Taylor Rookery."

(6) *Identification of restricted zones.* Access to the emperor penguin colony, marked on map 2, is prohibited unless authorized in a permit.

(7) *Maps of the area.* Map 1 shows the location of the field hut on the Colbeck Archipelago, and access routes to the Area; and map 2 shows the Area in greater detail, including the usual location of the penguin colony and the area where activity such as landing helicopters and installing field huts or field camps should take place, when permitted.

(8) *Conditions under which permits may be granted.* Criteria for issuing a permit to enter the Area are that it is issued for a compelling scientific purpose which cannot be undertaken elsewhere; the actions permitted will not jeop-

ardize the natural ecological system existing in the Area; and the actions permitted are in accordance with the Management Plan for the Area.

Conditions applying:

(a) Access to and movement within the Area.

(i) Wherever possible, access should be from the sea ice to the east of Colbeck Archipelago, to avoid disturbance to the birds by crossing their pathways from the rookery to the sea (see map 1). Persons in the vicinity, not approaching the colony, should also be aware of the penguin's pathways and take care to cause as little disturbance to them as possible.

(ii) Travel to the Area may be by over-snow vehicle, which is generally possible only during the period May 1 to December 25, or by helicopter. Vehicle entry to the Area is prohibited. Over-snow vehicles used for transport to the Area are to be left outside the Area, to the east, and entry must be by foot. The approach route for vehicles is marked on map 1.

(iii) Helicopters are not permitted to land in the Area unless sea ice conditions outside the Area are such that it would be hazardous for aircraft to land on ice or for personnel to walk on it. If sea ice conditions are not suitable, helicopters are authorized to land in the Area to the northeast at the point marked "H," where a headland to the south obscures the colony from view (see map 2). Map 1 shows the helicopter route.

(iv) The following conditions apply to the use of helicopters:

- Helicopters are to approach the Area from the east over the sea ice and, where sea ice conditions permit, land outside the Area with access being by foot (see map 2);
- Overflight of the rookery is prohibited;
- When landing outside the Area, helicopters should not land, take off, or fly within 500 meters of the rookery;
- If landing inside the Area is essential as a result of sea ice conditions, helicopters should land in the northeast of the Area at the point marked "H," where a headland to the south obscures the colony from view (see map 2);
- Helicopters approaching to land in the Area must fly as low as possible over the sea ice to avoid disturbing the colony; and
- Helicopters are not to be refueled within the Area.

(v) There are no marked pedestrian routes within the Area; pedestrians should keep well away from the penguins, unless disturbance to the penguins is authorized by permit. Movement in and around the Area should be such that, in general, the routes used by the birds are not crossed.

(vi) Dogs are not to be used for transport to the Area.

(b) Activities that are, or may be, conducted within the Area, including restrictions on time and place.

(i) The penguins are particularly sensitive to disturbance during the following periods:

- When they are incubating eggs, from mid-May to mid-July; and
- From mid-July, when feeding chicks, to mid-December, when the chicks fledge. However, penguins are known to be present at the rookery during every month except February, when no recorded

expeditions to the rookery have been made; restrictions therefore apply year-round.

(ii) The emperor penguin colony is ideal for counting. Normally the best vantage point for viewing and photographing the penguins is a rocky headland that runs adjacent to Taylor Glacier, on the western side of the rookery. The ideal time for a census is from June 22 to July 5, since during this time only incubating males are present, each representing one breeding pair. An ongoing photographic census program has been carried out since 1988.

(iii) Other activities that may be conducted in the Area:

- Compelling scientific research that cannot be undertaken elsewhere and that will not jeopardize the ecosystem of the Area; and
- Compelling management activities that if not carried out, would jeopardize the values for which the Area was designated.

(c) The installation, modification, or removal of structures.

No structures are to be installed in the Area unless essential for scientific purposes; any structure installed should be removed when it is no longer required. Only the minimum number of personnel necessary to install and to remove the structure should be used. Temporary field huts, if permitted, should be placed well away from the penguin colony at the point marked "X," to the northeast of the Area, where a headland to the south obscures the colony from view (see map 2).

(d) The location of field camps.

See (c) above.

(e) Restrictions on materials and organisms that may be brought into the Area.

(i) No poultry products, including dried food containing egg powder, are to be taken into the Area.

(ii) No depots of food or other supplies are to be left within the Area beyond the season for which they are required.

(iii) Fuel is not to be depoted in the Area, unless required by a visitor for personal use, i.e., for cooking / heating in a field hut, and is to be removed when no longer required.

(f) The taking of or harmful interference with native flora and fauna.

Taking of, or harmful interference with, native flora and fauna is prohibited unless specifically authorized by permit issued in accordance with the Agreed Measures for the Conservation of Antarctic Flora and Fauna or with Article 3 of Annex II to the Protocol on Environmental Protection to the Antarctic Treaty, whichever is appropriate.

(g) The collection or removal of anything not brought into the area by the permit holder.

There is to be no collection or removal of anything not brought into the Area by permit holder unless specifically authorized by permit for scientific or management purposes.

(h) The disposal of waste.

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

(i) Measures that may be necessary to ensure that the aims and objectives of the Management Plan can continue to be met.

(i) Permits should specify the maximum number of people allowed entry at one time.

(ii) Visits to the Area should be kept to the minimum necessary to achieve the research and management objectives.

(iii) Access should be permitted where necessary to place or remove structures or equipment.

(j) Requirement for reports.

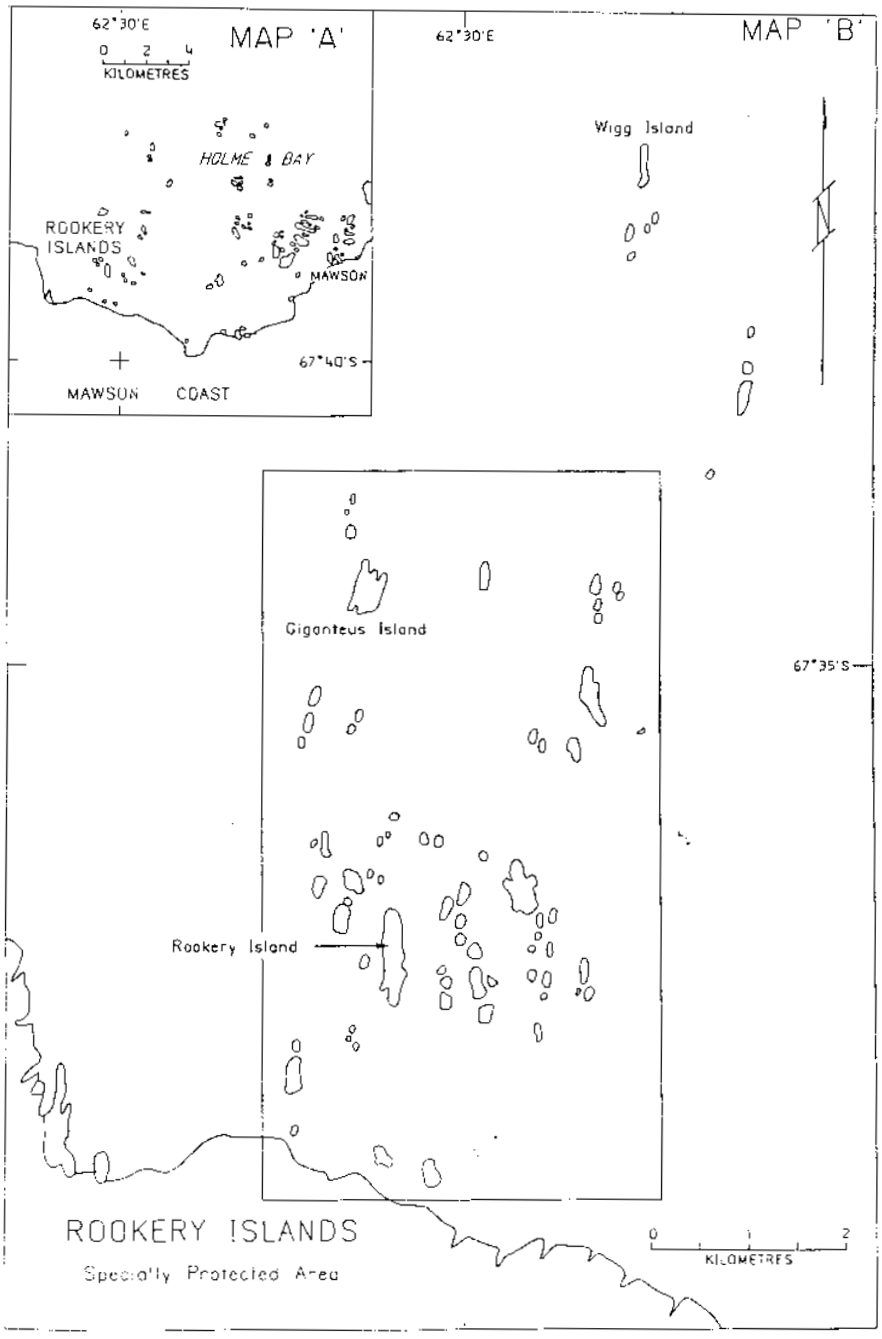
Each permit holder shall submit a report to the permit-issuing authority detailing the activities undertaken within the Area, including a summary of research findings and comments indicating measures taken to ensure compliance with conditions. Where appropriate, the report may make recommendations relevant to the management of the Area, in particular, as to whether the values for which the Area was designed are being adequately protected. The report should be submitted as soon as possible after the visit to the Area has been completed.

Specially Protected Area No. 2

Recommendation IV–2, designation
Recommendation XVII–2, revision of description and management plan

Rookery Islands, Holme Bay

(1) *Description.* The Rookery Islands contain breeding colonies of six bird species resident in the Mawson area; Adélie penguin (*Pygoscelis adeliae*), Cape petrel (*Daption capensis*), snow petrel (*Pagodroma nivea*), southern giant petrel (*Macronectes giganteus*), Wilson's storm petrel (*Oceanites oceanicus*), and the Antarctic skua (*Catharacta maccormicki*). The southern giant petrel breeds nowhere else in the region. The designation of the Area aims to safeguard this unusual association of species and ensure the preservation of a sample offshore island habitat.



Map 3

(2) *Aims and objectives.* Management of the Area aims to:

(a) Maintain a reference area unmodified by human interference;

(b) Permit research of a compelling scientific nature which cannot be undertaken elsewhere, while ensuring no significant disturbance to the ecosystem of the Area and maintaining the status of the Area as a reference area; and

(c) Ensure that the breeding colony of southern giant petrels is closer to the point of local extinction, is not endangered by human impacts.

(3) *Management activities.* The management plan and activities in the Area should be kept under review to ensure that the values for which the Area was designated are being fully protected. Inspection visits may be made only when considered essential for management purposes.

(4) *Period of designation.* Designated in November 1966 for an indefinite period.

(5) *Description of the area.*

(a) Geographical Coordinates and natural features of the Area rookery islands are a group of small islands and rocks in the southwestern part of Holme Bay, Mac. Robertson Land, approximately 10 kilometers to the west of the Australian station, Mawson. The Area (67°37' S. 62°33' E.) comprises the islands and rocks lying within the rectangle marked on the map (see Subsection 7). There are no boundary markers delimiting the Site.

There are approximately 75 small islands. They range in size from small rocks, which barely remain above water at high tide to the largest members of the group which are Giganteus Island (approximately 400 meters long, 400 meters wide and 30 meters high) and Rookery Island, which is of similar area but slightly more elongated. Rookery Island is the highest of the group, reaching an altitude of 62 meters. Raised beaches are evident on Giganteus Island.

The Rookery Islands are outcrops of the Mawson charnockite, a rock type which is found over an area of at least 2,000 square kilometers along the Mawson coast of Mac. Robertson Land.

(b) Access to the Area.

Access to the Area is only in accordance with a current permit issued by a contracting party or its authorized representative.

(c) Location of structures including scientific stations, research facilities, and refuge facilities both within and near the Area.

There are no structures within the Area. Mawson station (67°36' S. 62°53' E.) is approximately 10 kilometers to the east.

(d) Location of other protected areas in or near the Area.

"Taylor Rookery" (Specially Protected Area No. 1) is approximately 80 kilometers west of the islands at 67°26' S. 60°50' E.

(6) *Identification of restricted zones.* Access to Giganteus Island is prohibited except where a permit specifies otherwise. See 8(a)(vi) below.

(7) *Maps of the area.* Map 3-A shows the location of the Rookery Islands in the Mawson area, and map 3-B is a more detailed map of the Area.

(8) *Conditions under which permits may be granted.* Criteria for issuing a permit to enter the Area are that it is issued for a compelling scientific purpose which cannot be undertaken elsewhere; the actions permitted will not jeopardize the natural ecological system existing in the Area; and the actions permitted are in accordance with the Management Plan for the Area.

Conditions applying:

(a) Access to and movement within the Area.

(i) Travel may be by over-snow vehicle from around November 20 for between 4 and 6 weeks (allowing for seasonal variations in sea ice conditions). Visitors must ensure that vehicles are taken no closer than 200 meters from concentrations of birds and that they are always left at the shoreline.

(ii) As helicopter access may at times be the only reasonable means of reaching the islands, and as the islands are small in size, aircraft may land within 500 meters of breeding colonies. Permission to land a helicopter may be granted for essential scientific purposes only if it can be demonstrated that disturbance will be minimal.

(iii) No refueling is permitted within the Area.

(iv) Overflight of the islands is prohibited except where essential for scientific purposes. Such overflight is to be at an altitude of no less than 500 meters.

(v) Dogs are not to be used for transport within the Area.

(vi) Access to Giganteus Island is prohibited except for the purpose of monitoring the southern giant petrels (*Macronectes giganteus*) or for activities that may be conducted without threat to their population status. As the breeding colony is close to the point of local extinction and the birds are easily disturbed, the number of persons granted entry for this purpose must be strictly limited and include an experienced ornithologist.

(b) Activities that are, or may be, conducted within the Area, including restrictions on time and place.

(i) Compelling scientific activities that cannot be conducted elsewhere.

(ii) Compelling management activities, that if not carried out, would jeopardize the values for which the Area was designated.

(c) The installation, modification, or removal of structures.

No structures, including field huts, are to be installed in the Area unless essential for scientific purposes; any structure installed should be removed when no longer required. Only the minimum number of personnel necessary to install and remove the structure should be used.

(d) Location of field camps.

See (c) above.

(e) Restrictions on material and organisms which may be brought into the Area.

(i) Fuel is not to be depoted in the Area unless required by a researcher for personal use, i.e., for cooking / heating in a field hut, and is to be removed when no longer required.

(ii) No poultry products, including dried food containing egg powder, are to be taken into the Area.

(iii) No food or other supplies should be left within the Area beyond the season for which they are required.

(f) The taking of or harmful interference with native flora and fauna.

Taking of, or harmful interference with, native flora and fauna is prohibited unless specifically authorized by permit in accordance with the Agreed Measures for the Conservation of Antarctic Fauna and Flora or

with Article 3 of Annex II to the Protocol on Environmental Protection to the Antarctic Treaty, whichever is appropriate.

(g) The collection or removal of anything not brought into the Area by the permit holder.

There is to be no collection or removal of anything not brought into the Area by the permit holder unless specifically authorized by permit for scientific or management purposes.

(h) The disposal of waste.

No wastes, including human waste, are to be left in the Area.

(i) Measures that may be necessary to ensure that the aims and objectives of the Management Plan can continue to be met.

(i) Permits should specify the maximum numbers of personnel who may enter the Area.

(ii) Visits to the Area should be kept to the minimum necessary to achieve research and management objectives.

(iii) Access should be permitted where necessary to place or remove structures or equipment.

(j) Requirements for reports.

Each permit holder shall submit a report to the permit-issuing authority detailing the activities undertaken within the Area, including a summary of research findings and comments indicating measures taken to ensure compliance with conditions. Where appropriate, the report may make recommendations relevant to the management of the Area, in particular, as to whether the values for which the Area was designated are being adequately protected. The report should be submitted as soon as practicable after the visit to the Area has been completed.

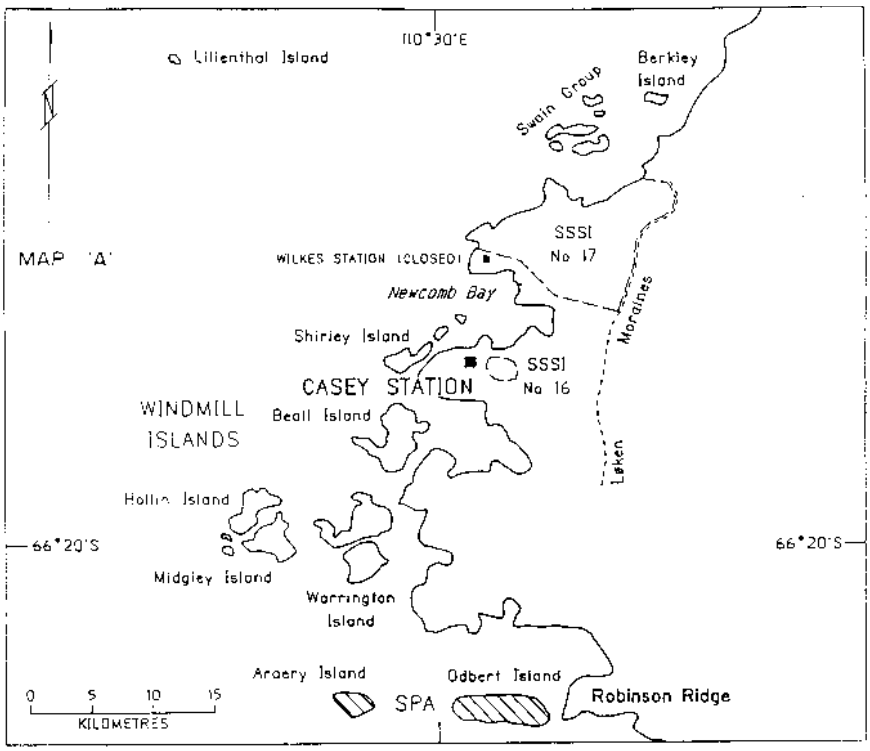
Specially Protected Area No. 3

Recommendation IV–3, designation
Recommendation XVII–2 revision of description and management plan

Ardery Island and Odbert Island, Budd Coast

(1) *Description.* Ardery and Odbert Islands support several breeding species of petrel and provide a sample of their habitat. There is no other readily accessible place in eastern Antarctica where the four genera of fulmarine petrels (*Thalassoica antarctica, Fulmarus glacialoides, Daption capensis*, and *Pagodroma nivea*) breed in the same place in sufficient numbers to allow comparative study. Study of these four genera at the one location is of high ecological importance both from the point of view of understanding and of monitoring the Southern Ocean ecosystem. It is believed that Ardery Island is unique insofar as it is the only area in the Antarctic that harbors 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*).



Map 4

(2) *Aims and objectives.* Management of the Area aims to:

(a) prevent unnecessary disturbance to the colonies of petrels on Ardery and Odbert Island; and

(b) permit research of a compelling scientific nature which cannot be undertaken elsewhere, while ensuring this has no significant impact on the ecosystem in that area.

(3) *Management activities.* The Management Plan and activities in the Area should be kept under review to ensure that the values for which the Area

was designated are being fully protected. Inspection visits may be made only when considered essential for management purposes.

(4) *Period of designation*. Designated in November 1966 for an indefinite period.

(5) *Description of the area.*

(a) Geographical coordinates and natural features.

Ardery Islands (66°22' S. 110°28' E.) and Odbert Island (66°22' S. 110°33' E.) form part of the Windmill Islands group lying in the east of Vincennes Bay, off the Budd Coast (see map 4). They are located 5 kilometers and 0.6 kilometer respectively, to the west of Robinson Ridge, south of Casey station. Odbert Island is approximately 2.5 kilometers long and 0.5 kilometer wide. It has a rocky coast that rises steeply from the sea to plateau. The highest point is 100 meters above sea level. The plateau is dissected by a series of valleys that 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 kilometer long and 0.5 kilometer wide, with an east–west orientation. The highest point is 113 meters above mean sea level.

The terrain on both islands is rugged and dissected by fissures. The cliffs are fractured and have many 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. Both islands have several small tarns which are frozen in winter and filled with melt water in summer. Many of these are ephemeral and dry out toward the end of summer. Others, which are located below snow banks, are fed continuously by melt water.

(b) Access to the Area.

Access to the Area may only be in accordance with a permit or authority issued by a contracting party or its authorized representative.

Defined landing sites for access by sea and helicopter to Ardery and Odbert Islands are shown on maps 5 and 6. On Ardery Island the preferred boat landing site is at Robertson landing, where there are rock anchors present to tie down a boat or other equipment. All three boat landing sites marked on map 5 are within 200 meters of colonies of birds; however, they represent the only safe landing sites on the island, and if landings are undertaken carefully there is no disturbance to the birds.

There are no defined pedestrian routes within the Area; however, pedestrians should avoid disturbance of the birds at all times.

(c) Location of structures including scientific stations, research facilities, and refuge facilities both within and near the Area.

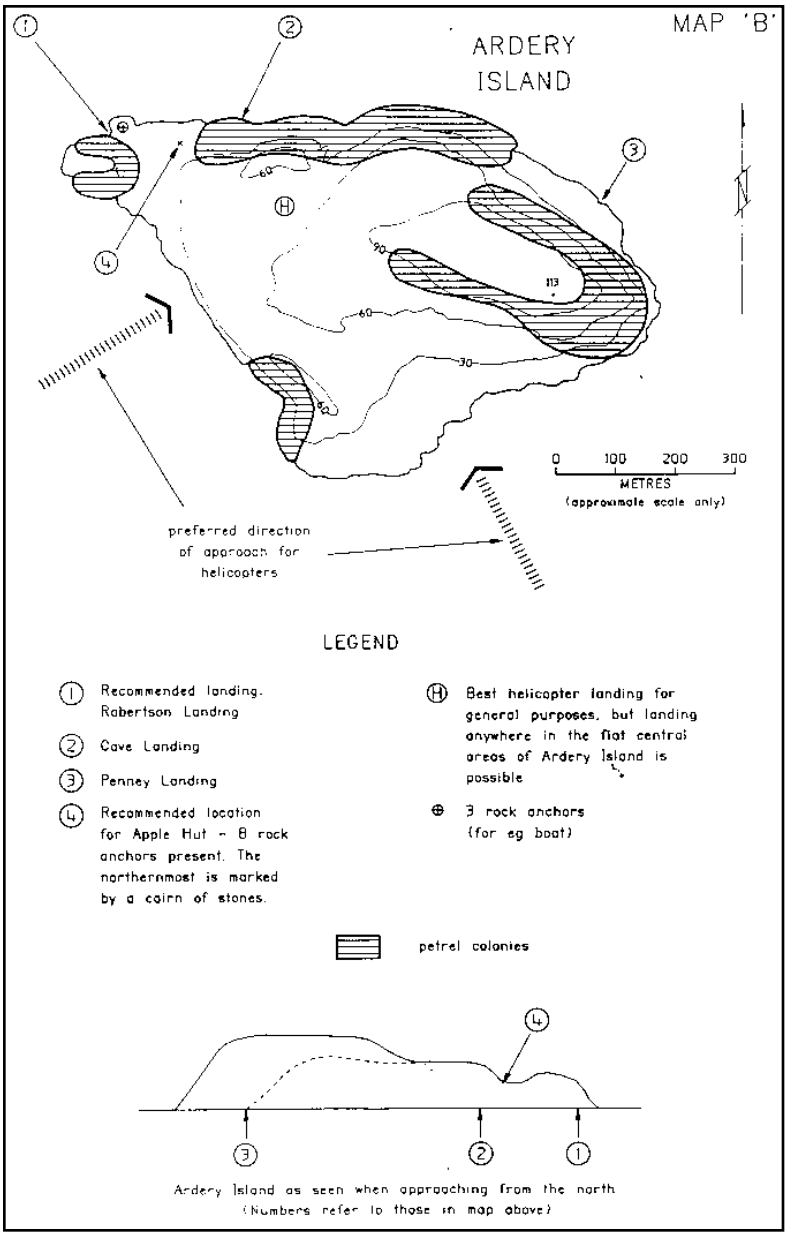
There are no structures within the Area, and no permanent structures are permitted.

The islands lie approximately 12 kilometers south of Casey station.

A four-berth refuge hut is located on Robinson's Ridge, 0.5 kilometer from the shore.

(d) Location of other protected areas in or near the Area.

Northeast Bailey Peninsula (66°17' S. 110°32' E.; Site of Special Scientific Interest No. 16) and Clark Peninsula (66°15' S. 110°36' E.; Site of Special Interest No. 17) lie opposite the Windmill Islands.

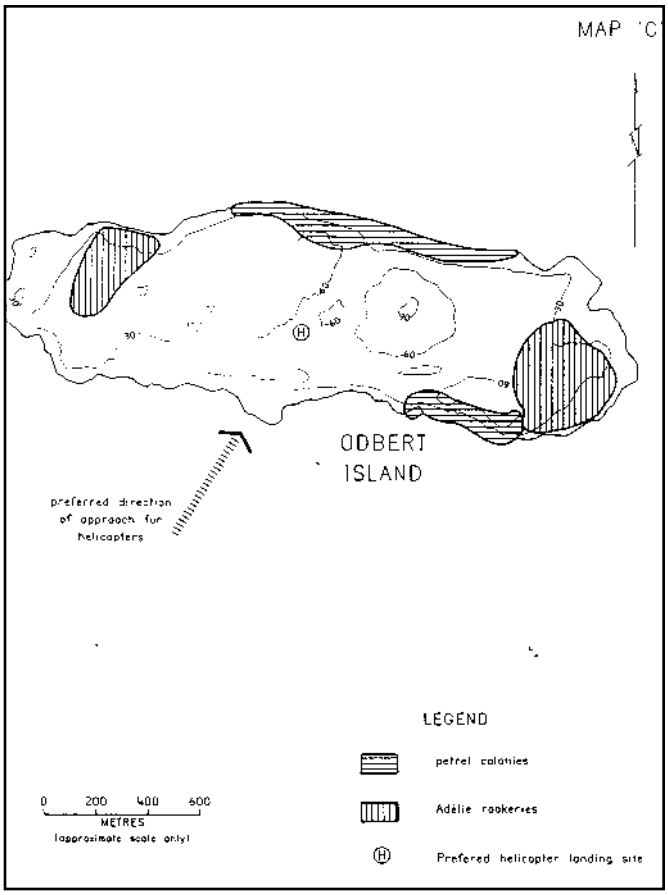


Map 5

(6) *Identification of restricted zones.* Access to the petrel and Adélie penguin colonies marked on maps 5 and 6 is prohibited unless authorized in a permit.

(7) *Maps of the area.* Three maps of the Area are attached. Map 4 shows the Area and its location. Map 5 (Ardery Island) and map 6 (Odbert Island) show preferred helicopter approaches and landing sites, landing sites for access by water, and the location of the petrel and Adélie breeding colonies.

(8) *Conditions under which permits may be granted.* Criteria for issuing a permit to enter the Area are that it is issued for a compelling scientific purpose which cannot be undertaken elsewhere; the actions permitted will not jeopardize the natural ecological system existing in the Area; and the actions permitted are in accordance with the Management Plan for the Area.



Map 6

Conditions applying:

(a) Access to and movement within the Area.

(i) Travel to the islands 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.

(ii) 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 an altitude or horizontal distance of no less than 500 meters;
- During the breeding season of penguins and petrels, defined here as their period from November 1 to April 1, helicopter movement to the islands should be kept to the minimum;
- Refueling 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 map 5);
- The approach to Odbert Island should preferably be from the south, avoiding cliff areas because of the nesting petrels (see map 6).

(b) Activities that are, or may be, conducted within the Area, including restrictions on time and place.

(i) Compelling scientific activities that cannot be conducted elsewhere;

(ii) Compelling management activities, that, if not carried out, would jeopardize the values for which the Area was designed. Where activities necessitate interference with the birds, care should be taken to cause the least possible disturbance, particularly during the period of November 1 to April 1.

(c) The installation, modification, or removal of structures.

No structures may be erected in the Area unless essential for research purposes. Any structures installed on the islands must be removed when no longer required.

Installation of a field hut on Ardery Island should take place wherever possible before November 1 when the breeding season commences, and removal should be after April 1 when the fledglings have departed. Installation and removal should be over-snow transport unless sea ice conditions prevent this. For use of helicopter see (a) ii above.

(d) The location of field camps.

If required for fieldwork a hut may be erected on Ardery Island at the point specified on map 5. There are eight solid rock anchors available at this spot.

(e) Restrictions on materials and organisms which may be brought into the Area.

(i) Fuel is not to be depoted on the islands, unless required by a researcher for personal use, i.e., for cooking / heating, etc., in a field hut on Ardery Island, and is to be removed at the same time as the hut.

(ii) No poultry products, including dried food containing egg powder, are to be taken into the Area.

(f) The taking of or harmful interference with native flora and fauna.

Taking of, or harmful interference with, native flora and fauna is prohibited unless specifically authorized by permit issued in accordance with the Agreed Measures for the Conservation of Antarctic Flora and Fauna or with Article 3 of Annex II to the Protocol on Environmental Protection to the Antarctic Treaty, whichever is appropriate.

(g) The collection or removal of anything not brought into the Area by the permit holder.

There is to be no collection or removal of anything not brought into the Area by the permit holder unless specifically authorized by permit for scientific or management purposes.

(h) The disposal of waste.

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

(i) Measures that may be necessary to ensure that the aims and objectives of the Management Plan can continue to be met.

(i) Permits should specify the maximum number of people allowed entry at any one time.

(ii) Visits to the Area should be kept to the minimum necessary to achieve the research and management objectives.

(iii) Access should be permitted where necessary to place or remove structures or equipment.

(j) Requirement for reports.

Each permit holder shall submit a report to the permit-issuing authority detailing the activities undertaken within the Area, including a summary of research findings, and comments indicating measures taken to ensure compliance with conditions. Where appropriate, the report may make recommendations relevant to the management of the Area, in particular as to whether the values for which the Area was designated are being adequately protected. The report should be submitted as soon as practicable after the visit to the Area has been completed.

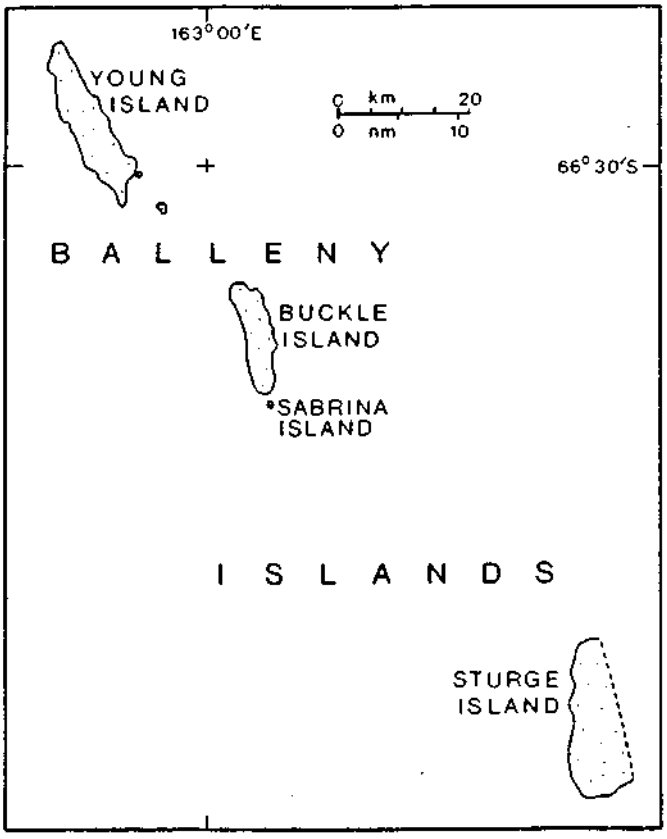
Specially Protected Area No. 4

Recommendation IV–4, designation

Sabrina Island, Balleny Islands

(1) *Description.* A small island some 2 kilometers south of Buckle Island in the Balleny Islands. The Area (66°54' S. long 163°20' E.) is shown on map 7.

(2) *Designation.* On the grounds that the Balleny Islands, as the most Northerly antarctic land in the Ross Sea region, support fauna and flora that reflect many circumpolar distributions at this latitude and that Sabrina Island in particular provides a representative sample of such fauna and flora.



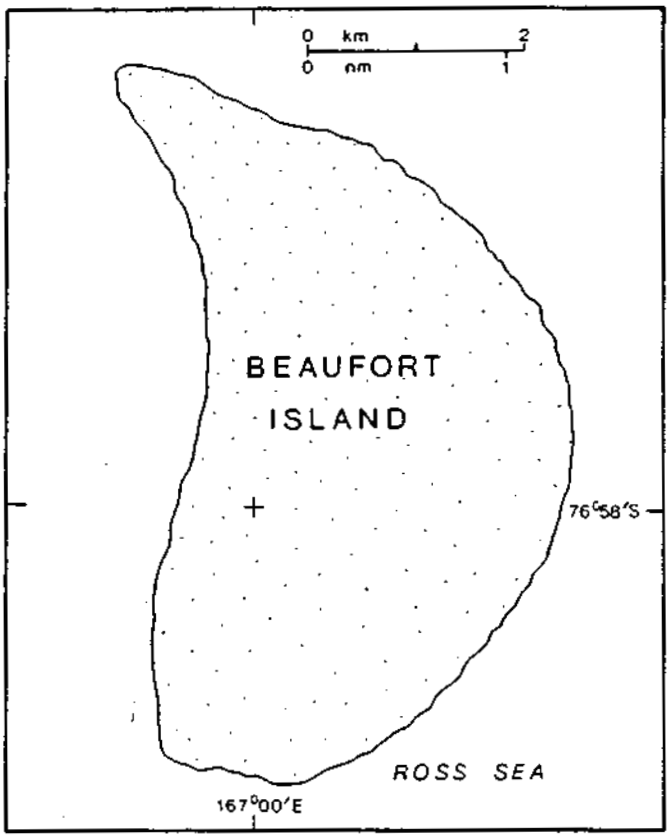
Map 7

Recommendation IV–5, designation

Specially Protected Area No. 5

Beaufort Island, Ross Sea

(1) *Description.* Beaufort Island (76°58' S. 167°03' E.) measures 6 kilometers by 3 kilometers and is located 20 nautical miles north of Ross Island. The area is shown on map 8.



Map 8

(2) *Designation.* Created on the grounds that Beaufort Island contains substantial and varied avifauna, that it is one of the most important breeding grounds in the region, and that it should be protected to preserve the natural ecological system as a reference area.

Recommendation IV–6, designation
Recommendation VIII–2, termination
Recommendation VIII–4, redesignation as Site of Special Scientific Interest No. 4

Specially Protected Area No. 6

Cape Crozier is now Site of Special Scientific Interest No. 4.

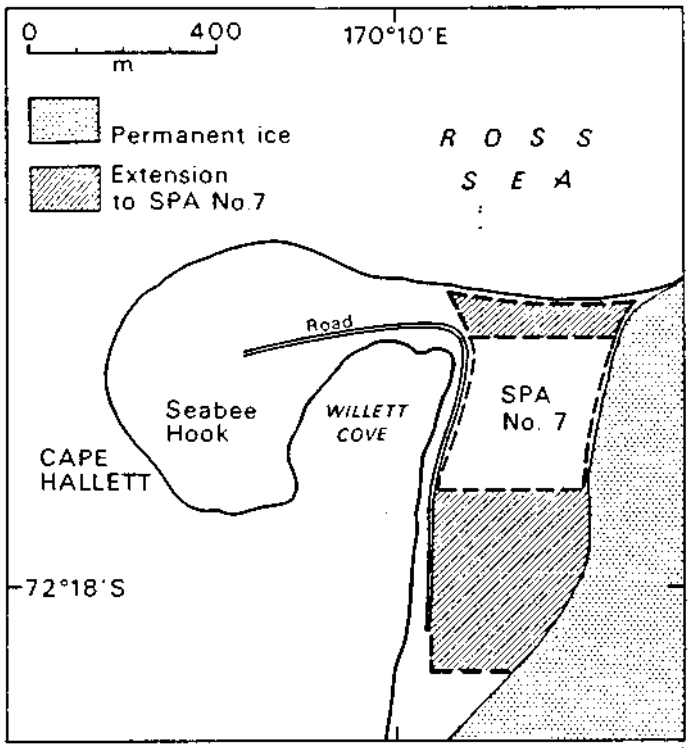
Specially Protected Area No. 7

Recommendation IV–7, designation
Recommendation XIII–13, extension of boundaries and revision of description

Cape Hallett, Victoria Land

(1) *Description.* The Area (72°18' S. 170°19' E.) comprising a roughly rectangular block lies south of the northern coast of Cape Hallett between the road, which runs along the eastern side of Willett Cove and the western margin of the permanent ice sheet and to the north of an east–west line from a projection of the line of the road southward to a point 200 meters south of latitude 72°18' S. to the margin of the permanent ice sheet.

(2) *Designation.* Cape Hallett includes a small patch of particularly rich and diverse vegetation which supports a variety of terrestrial fauna and that the ecosystem, which includes a rich avifauna, is of outstanding scientific interest.



Map 9

Recommendation IV–8, designation
Recommendation XVI–6, revision of description and management plan

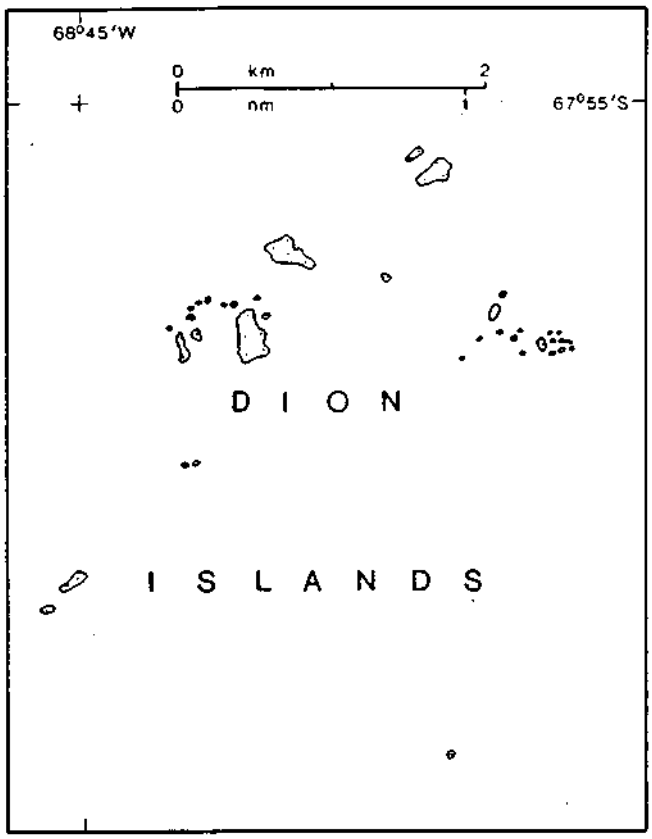
Specially Protected Area No. 8

Dion Islands, Marguerite Bay, Antarctic Peninsula

(1) *Geographical location*. The Dion Islands (67°52' S. 68°43' W.) are a small group of low-lying rocky islands lying about 13 kilometers south of the southern end of Adelaide Island, in the northwestern part of Marguerite Bay.

(2) *Management Plan*.

(a) *Description of Area*. The Area comprises all of the Dion Islands archipelago, which lie within an area of about 12 square kilometers, together with the intervening sea. The islands and islets are small, rocky, and often precipitous, notably Emperor Island, which is also the highest (46 meters altitude). The main islands are the largest of the Courtier Islands group (approximately 8 hectares), Emperor Island (approximately 5 hectares), and the largest of the Consort Islands group (approximately 3 hectares). Low-lying areas occur on the two largest islands. There are a few small permanent ice patches, but there are no streams or permanent pools.



Map 10

(b) *Reason for designation*. The Area possesses the only known breeding population of emperor penguins (*Aptenodytes forsteri*) on the west side of the Antarctic Peninsula. It is situated on a low-lying raised beach and rocky headland in the southeastern part of Emperor Island. It is also the most northerly and probably the smallest colony (annual numbers fluctuate between about 50 and 500 pairs) and is one of only two in which breeding occurs on land (see also Specially Protected Area No. 1). It is also the most isolated emperor colony, being about 2,500 kilometers (by

sea) from the nearest other known rookery. Other breeding birds within the Area include a small colony of Adélie penguins (*Pygoscelis adeliae*), near the emperor penguin colony, and about 200 pairs of blue-eyed shags (*Phalacrocorax atriceps*) on the precipitous north side of the same island.

(c) *Date of designation and originator*. The Area was designated in November 1966 by the United Kingdom.

(d) *Access points*. None is specified, but access should be from the sea; landing on Emperor Island should be at least 100 meters from the emperor penguin colony or any nonbreeding aggregations of these birds.

(e) *Entry permit requirement*. Entry into the Area is only in strict accordance with a current permit, issued by a participating government or its authorized representative, specifically for a compelling scientific purpose which cannot be served elsewhere, or for site inspection, and which will not jeopardize any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII). Details of the visit should be included in the national annual report of Exchange of Information for the same Antarctic season in which the activities were carried out.

(f) *Prohibitions*. For human impact to be avoided or minimized, it is prohibited to:

(i) Land a helicopter within the Area;

(ii) Overfly the Area by any aircraft below 250 meters above the highest point;

(iii) Use any of the Area's coves, bays, or intervening water for anchoring or mooring sea craft, except in accordance with the permit;

(iv) Incinerate, bury, or otherwise dispose of any nonhuman waste within the Area; all such waste must be removed from the Area;

(v) Leave depots of fuel, food, or any other supplies within the Area, unless they are further required within the same season, at the end of which they must be removed;

(vi) Erect any form of building within the Area.

(g) *Pedestrian routes*. None is specified, but every precaution must be taken to avoid disturbance of any breeding bird or seal, particularly emperor penguins, which pedestrians should not approach closer than 50 meters, unless required as specified in the permit.

(h) *Scientific research and sampling*. All activities must conform strictly with those specified in the permit to enter the Area.

(i) *Inspection and maintenance*. Inspection visits to the Area should be made at least once every 5 years to assess the state of the Site and to monitor any significant biological or environmental changes. Other visits should be made as necessary to maintain boundary markers, notices, etc.

Recommendation IV–9, designation
Recommendation XVI–6, revision of description and management plan

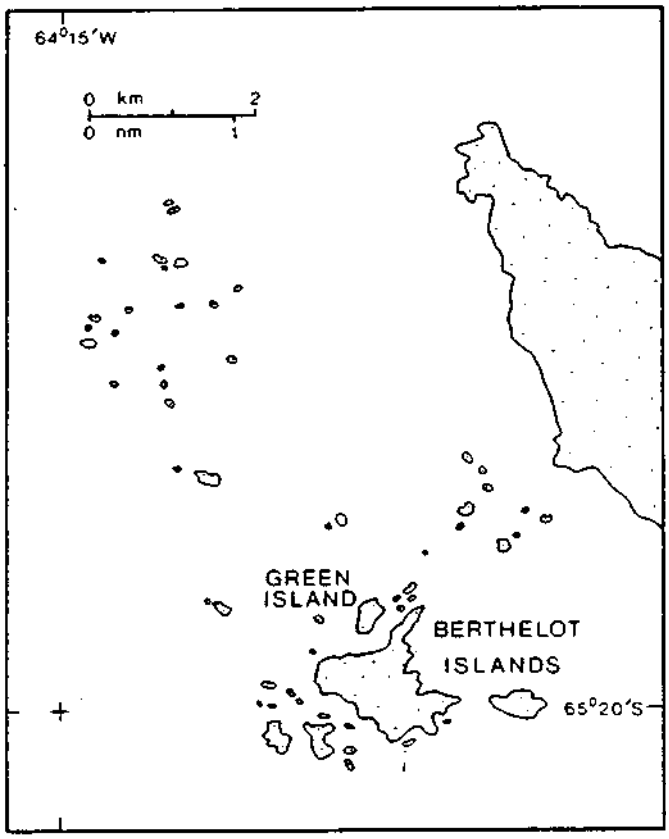
Specially Protected Area No. 9

Green Island, Berthelot Islands, Antarctic Peninsula

(1) *Geographical location.* Green Island (65°19' S. 64°10' W.) is a small island on the north side of the Berthelot Islands group, lying between the northwest side of Collins Bay and Grandidier Channel, about 3 kilometers off the Graham Coast of the midwestern Antarctic Peninsula.

(2) *Management plan.*

(a) *Description of area.* The Area comprises all of Green Island, a small rocky island lying about 0.25 kilometer to the north of the largest of the Berthelot Islands. It is about 500 meters from north to south and 300 meters from east to west, rising to a dome-shaped peak at about 80 meters' altitude. The island rises steeply on all sides, with high precipitous cliffs on the south and east sides. Along the north side is a gently sloping rock platform. There are several permanent snow patches, with the largest occurring to the south and east of the summit. There are no streams or pools.



Map 11

(b) *Reason for designation.* Green Island is extensively vegetated on the north-facing slopes and has especially well-developed continuous banks of moss turf formed by *Chorisodontium aciphyllum* and *Polytrichum alpestre* which, over much of their extent, overlie peat of more than 1 meter in depth. Antarctic hair grass (*Deschampsia antarctica*) is frequent in small patches near the shag colony. The island has two important bird colonies. A large blue-eyed shag (*Phalacrocorax atriceps*) colony with about 250 nests occurs on the steep, rocky northwest corner; this is one of the largest shag

colonies on the Antarctic Peninsula. There are also large numbers of brown skuas (*Catharacta lonnbergii*) and a few south polar skuas (*C. maccormicki*) and hybrids, but only a few of the former are known to breed.

(c) *Date of designation and originator*. The Area was designated in November 1966 by the United Kingdom.

(d) *Access points*. None is specified, but landings by boat or helicopter are easiest on the north side of the island.

(e) *Entry permit requirement*. Entry into the Area is only in strict accordance with a current permit, issued by a participating government or its authorized representative, specifically for a compelling scientific purpose that cannot be served elsewhere, or for site inspection, and that will not jeopardize any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII). Details of the visit should be included in the national annual report of Exchange of Information for the same antarctic season in which the activities were carried out.

(f) *Prohibitions*. For human impact to be avoided or minimized it is prohibited to:

(i) Land a helicopter within the Area, except on the rock platform near sea level on the north side of the island;

(ii) Overfly the Area by any aircraft below 250 meters above the highest point;

(iii) Use any of the Area's coves for anchoring or mooring sea craft, except in accordance with the permit;

(iv) Incinerate, bury, or otherwise dispose of any nonhuman waste within the Area; all such waste must be removed from the Area;

(v) Leave depots of fuel, food, or any other supplies within the Area, unless they are further required within the same season, at the end of which they must removed;

(vi) Erect any form of building within the Area.

(g) *Pedestrian routes*. None is specified, but every precaution must be taken to cause minimal damage to the luxuriant moss banks and avoid disturbance of any breeding bird or seal, unless required as specified in the permit.

(h) *Scientific research and sampling*. All activities must conform strictly with those specified in the permit to enter the Area.

(i) *Inspection and maintenance*. Inspection visits to the Area should be at least once every 5 years to assess the state of the Site and to monitor any significant biological or environmental changes. Other visits should be made as necessary to maintain boundary markers, notices, etc.

Recommendation IV–10, designation
Recommendation VIII–2, termination
Recommendation VIII–4, redesignation as Site of Special Scientific Interest No. 6

Specially Protected Area No. 10

Byers Peninsula is now Site of Special Scientific Interest No. 6.

Recommendation IV–11, designation
Recommendation XV–7, termination and redesignation as Site of Special Scientific Interest No. 32

Specially Protected Area No. 11

Cape Shirreff, Livingston Island, South Shetland Islands, is now Site of Special Scientific Interest No. 32.

Map 12 [reserved]

Recommendation IV–12, designation
Recommendation V–5, modification
Recommendation VIII–2, termination
Recommendation VIII–4, redesignation as Site of Special Scientific Interest No. 5

Specially Protected Area No. 12

Fildes Peninsula is now Site of Special Scientific Interest No. 5.

Specially Protected Area No. 13

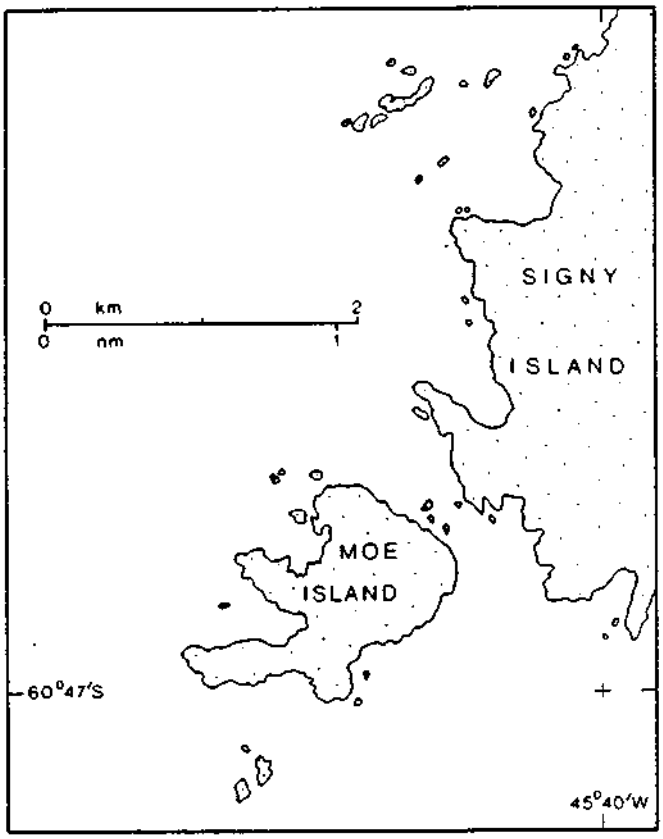
Recommendation IV–13, designation
Recommendation XVI–6, revision of description and management plan

Moe Island, South Orkney Islands

(1) *Geographical location.* Moe Island (60°45' S. 45°41' W.) is a small island lying about 0.5 kilometer off the southwest extremity of Singy Island, South Orkney Islands, from which it is separated by Fyr Channel.

(2) *Management Plan.*

(a) *Description of area.* The Area is an irregularly shaped island about 1.8 kilometers from northeast to southwest and 1 kilometer from northwest to southeast. It rises precipitously on the northeastern and southeastern sides to Snipe Peak (226 meters altitude); there is a subsidiary summit above South Point (102 meters altitude) and lower hills on each of three promontories on the western side above Corral Point (92 meters), Conroy Point (89 meters), and Spaull Point (56 meters). Small areas of permanent ice remain on the east- and south-facing slopes, with late-lying snow patches on the steeply dipping western slopes. There are no streams or pools.



Map 13

(b) *Reason for designation*. Moe Island provides an excellent representative sample of the maritime antarctic terrestrial ecosystem, with particularly well-developed stands of vegetation typical of the South Orkney Islands. The dominant plant communities are *Andreaea–Usnea* fell fields and banks of *Chorisodontium–Polytrichum* moss turf (the main stand of which is continuous over 5 hectares, including large areas of eroded peat, and represents the largest known example of this community type in the Antarctic). The cryptogamic flora and arthropodal fauna are diverse. There

are five colonies of chinstrap penguins (*Pygoscelis antarctica*) totaling about 11,000 pairs. Numerous other birds breed on the island, notably about 2,000 pairs of cape petrels (*Daption capensis*) and large numbers of antarctic prions (*Pachyptila desolata*). Weddell seals (*Leptonychotes weddellii*) and leopard seals (*Hydrurga leptonyx*) are sometimes frequent in the bays on the west side of the island. An increasing number of immature bull fur seals (*Arctocephalus gazella*) come ashore on the north side of Landing Cove and are causing some damage to vegetation. However, the nature of the terrain should restrict the animals to this small headland. Because of the long-established intensive experimental field research and the very extensive destruction of the lowland terrestrial and freshwater ecosystems caused by fur seals on neighboring Signy Island, Moe Island serves as an important control site with which future comparisons may be made with particular regard to biological and environmental change in the region.

(c) *Dates of designation and originator.* The area was designated in November 1966 by the United Kingdom.

(d) *Access points.* None is specified, but preferably and most safely, from the sea at the northeastern corner of Landing Cove.

(e) *Entry permit requirement.* Entry into the Area is only in strict accordance with a current permit, issued by a participating government or its authorized representative, specifically for a compelling scientific purpose that cannot be served elsewhere or for site inspection, and that will not jeopardize any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII). Details of the visit should be included in the national annual report of Exchange of Information for the same antarctic season in which the activities were carried out.

(f) *Prohibitions.* For human impact to be avoided or minimized, it is prohibited to:

(i) Land a helicopter within the Area, except on the col between hill 89 m and the western slope of Snipe Peak, to the south of Landing Cove;

(ii) Overfly the Area by any aircraft below 250 meters above the highest point, except for access to the landing area specified in (i), which should be directly from the cove to the north or south avoiding any sea bird colonies;

(iii) Use any of the Area's coves or bays for anchoring or mooring sea craft, except in accordance with the permit;

(iv) Incinerate, bury, or otherwise dispose of any nonhuman waste within the Area; all such waste must be removed from the Area;

(v) Leave depots of fuel, food, or any other supplies within the Area, unless they are further required within the same season, at the end of which they must removed;

(vi) Erect any form of building within the Area.

(g) *Pedestrian routes.* None is specified, but every precaution must be taken to avoid disturbance of any breeding bird or seal or stand of vegetation, unless required as specified in the permit; in particular, stands of *Polytrichum-Chorisodontium* moss banks and areas of eroding peat should be avoided wherever possible.

(h) *Scientific research and sampling.* All activities must conform strictly with those specified in the permit to enter the Area.

(i) *Inspection and maintenance.* Inspection visits to the Area should be made once every year to assess the state of the Site and to monitor any significant biological or environmental changes, particularly with regard to increasing damage caused by fur seals to the island's vegetation. Such visits should also be used to maintain boundary markers, notices, etc.

Recommendation IV–14, designation
Recommendation XVI–6 revision of description and management plan

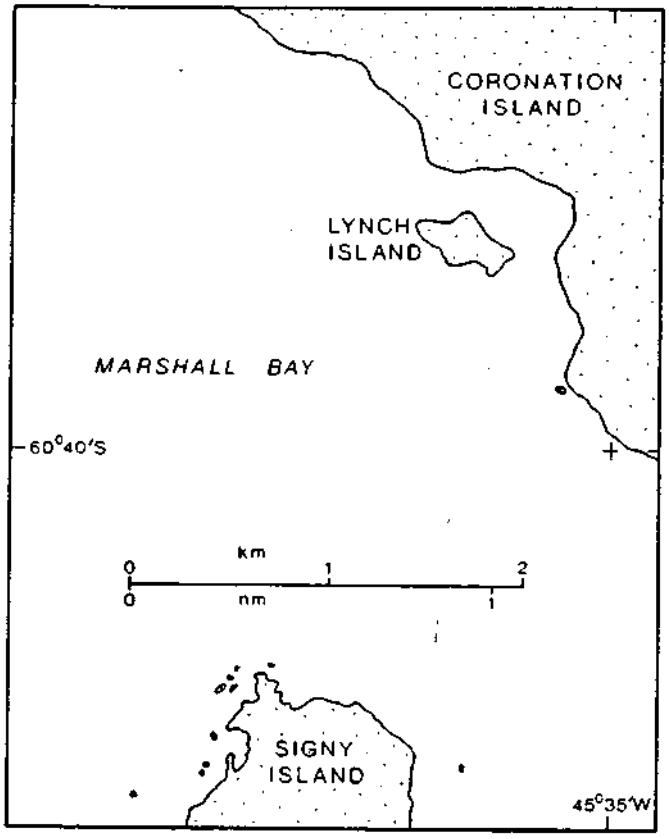
Specially Protected Area No. 14

Lynch Island, South Orkney Islands

(1) *Geographical location.* Lynch Island (60°40' S. 45°38' W.) is a small island situated at the east end of Marshall Bay, in the middle southern coast of Coronation Island and directly to the north of Signy Island, South Orkney Islands.

(2) *Management Plan.*

(a) *Description of area.* The Area is a small rocky island, about 200 meters from the south coast of Coronation Island, and about 500 meters from east to west and 300 meters from north to south, rising to a flat plateau with a maximum altitude of 33 meters. On the south, east, and west sides there are low cliffs up to 20 meters high and boulder-filled gulleys, while the northern side has a low cliff below a rock terrace at about 5–8 meters altitude. There are no streams or pools, and only a few small late-lying snow patches occur on the southern side of the island.



Map 14

(b) *Reason for designation.* Lynch Island supports one of the most extensive and dense stands of antarctic hair grass (*Deschampsia antarctica*) known in the Treaty Area. The only other antarctic flowering plant, antarctic pearlwort (*Colobanthus quitensis*), is also abundant. The cryptogamic vegetation is typical of the region, but several species of moss are unusually fertile here (notably *Polytrichum alpinum* and *Muelleriella crassifolia*). Beneath the grass awards on the moist north-facing slope, a shallow loamlike earth resembling tundra brown soil has developed and contains a rich invertebrate fauna. Moist moss in rock crevices on the north side of

the island harbors a rare terrestrial enchytraeid worm. Breeding birds are poorly represented, but most species of antarctic seals are common around the island and occasionally ashore (particularly an increasing number of immature bull fur seals, *Arctocephalus gazella*, which come ashore in summer).

(c) *Date of designation and originator.* The Area was designated in November 1966 by the United Kingdom.

(d) *Access points.* Access should be from the sea, landing at a prominent low rocky promontory or the adjacent cove to the west, on the north side of the island.

(e) *Entry permit requirement.* Entry into the Area is only in strict accordance with a current permit, issued by a participating government or its authorized representative, specifically for a compelling scientific purpose that cannot be served elsewhere or for site inspection, and that will not jeopardize any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII). Details of the visit should be included in the national annual report of Exchange of Information for the same antarctic season in which the activities were carried out.

(f) *Prohibitions.* For human impact to be avoided or minimized, it is prohibited to:

(i) Drive any vehicle within the Area;

(ii) Land a helicopter within the Area;

(iii) Overfly the Area by any aircraft below 250 meters above the highest point;

(iv) Use any of the Area's coves or bays for anchoring or mooring sea craft, except in accordance with the permit;

(v) Incinerate, bury, or otherwise dispose of any nonhuman waste within the Area; all such waste must be removed from the Area;

(vi) Leave depots of fuel, food, or any other supplies within the Area, unless they are further required within the same season, at the end of which they must removed;

(vii) Erect any form of building within the Area.

(g) *Pedestrian routes.* None is specified, but every precaution must be taken to avoid disturbance of any breeding bird or seal or stand of vegetation, unless required as specified in the permit; in particular, areas of *Deschampsia* and *Colobanthus* should be avoided wherever possible.

(h) *Scientific research and sampling.* All activities must conform strictly with those specified in the permit to enter the Area.

(i) *Inspection and maintenance.* Inspection visits to the Area should be made at least once every year to assess the state of the Site and to monitor any significant biological or environmental changes, particularly with regard to increasing damage caused by fur seals to the island's grass-dominated communities. Such visits should also be used to maintain boundary markers, notices, etc.

Recommendation IV–15, designation
Recommendation XVI–6, revision of description and management plan

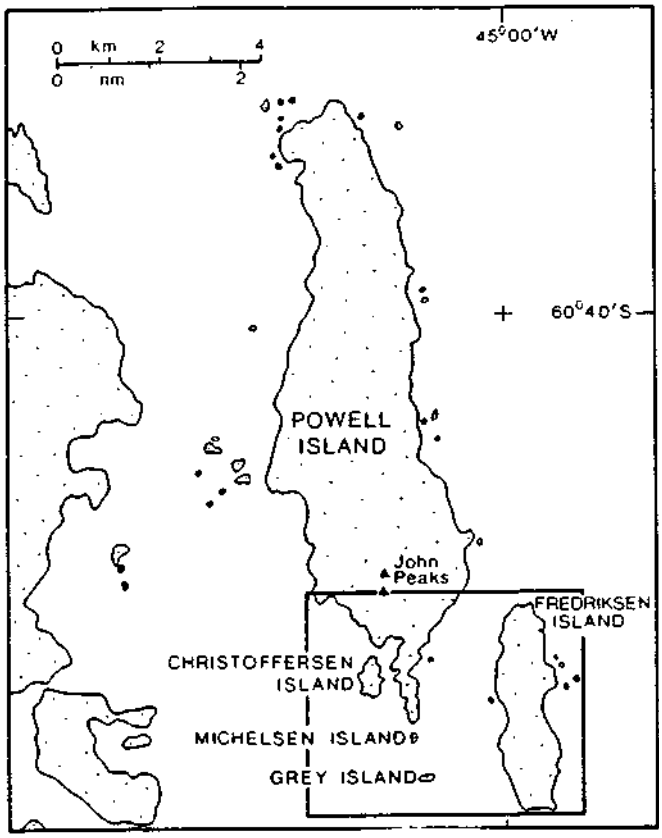
Specially Protected Area No. 15

Southern Powell Island and Adjacent Islands, South Orkney Islands

(1) *Geographical location.* Powell Island (60°45' S. 45°02' W.) is the third largest of the South Orkney Islands, lying between Coronation Island to the west and Laurie Island to the east.

(2) *Management Plan.*

(a) *Description of area.* The Area includes all of Powell Island south of the latitude of the southern summit of John Peaks (375 meters altitude), together with Michelsen Island (a peninsula rising to 38 meters altitude and separated from a long promontory at the south end of Powell Island by a low isthmus which floods at high tide) and adjacent unnamed rocky islets, Christoffersen Island (96 meters altitude) to the west, Grey Island (43 meters altitude) to the south, and Fredriksen Island (about 300 meters altitude) to the east. All but southern Powell Island ("Crutchley Ice Piedmont") are mainly ice free in summer. All intervening sea is included within the Area.



Map 15

(b) *Reason for designation.* The Area is of exceptional biological interest, supporting limited stands of vegetation typical of biotically influenced coastal habitats of the region and considerable populations of a diversity of bird and seal species. The bryophyte vegetation is best developed at the extreme northwest corner of the Area on southwest Powell Island, on Christoffersen Island and locally on northern Fredriksen Island; elsewhere there are extensive nitrophilous lichen communities on the rocks and cliffs. There are several biotically contaminated meltpools and streams, especial-

ly on the beach on the east side of southern Powell Island where "Crutchley Ice Piedmont" is receding. Large numbers of penguins and petrels breed throughout the Area. There are about 50,000 breeding pairs of chinstrap penguins (*Pygoscelis antarctica*), of which about 80 percent occur on Fredriksen Island, and about the same number of Adélie penguins (*P. adeliae*), of which almost all occur in the southern Powell–Michelsen Island area. There are about 3,000 pairs of gentoo penguins (*P. papua*) breeding on the southern promontory of Powell Island, Michelsen Island, and Christoffersen Island. There are also a few pairs of macaroni penguins (*Eudyptes chrysolophus*). Other breeding birds include southern giant petrels (*Macronectes giganteus*), cape petrels (*Daption capensis*), snow petrels (*Pagodroma nivea*), Wilson's storm petrels (*Oceanites oceanicus*), blue-eyed shags (*Phalacrocorax atriceps*), Dominican gulls (*Larus dominicanus*), antarctic terns (*Sterna vittata*), brown skuas (*Catharacta lonnbergii*), sheath bills (*Chionis alba*), and possibly antarctic prions (*Pachyptila desolata*), and black-bellied storm petrels (*Fregatta tropica*). The isthmus between southern Powell Island and Michelsen Island is the longest-known breeding site in the Antarctic for fur seals (*Arctocephalus gazella*) since their near extermination in the nineteenth century. However, the small number of pups born annually has not increased substantially; a few pups are also born on suitable beaches on Fredriksen IsIand. Other seals are frequent on the beaches, e.g., elephant seals (*Mirounga leonina*), Weddell seals (*Leptonychotes weddellii*), and leopard seals (*Hydrurga leptonyx*), and crab eater seals (*Lobodon carcinophagus*) are occasionally seen on icefloes within the Area.

(c) *Date of designation and originator.* The Area was designated in November 1966 by the United Kingdom.

(d) *Access points.* None is specified, but access should preferably be from the sea.

(e) *Entry permit requirement.* Entry into the Area is only in strict accordance with a current permit, issued by a participating government or its authorized representative, specifically for a compelling scientific purpose that cannot be served elsewhere or for site inspection, and that will not jeopardize any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII). Details of the visit should be included in the national annual report of Exchange of Information for the same antarctic season in which the activities were carried out.

(f) *Prohibitions.* For human impact to be avoided or minimized, it is prohibited to:

(i) Drive any vehicle within the Area;

(ii) Land a helicopter within the Area, except on the northeastern part of the beach on the east side of the promontory of southern Powell Island, providing there are no aggregations of wildlife, or on unvegetated areas in the north of Fredriksen Island, both to be at least 0.5 kilometer from any bird or seal colonies or aggregations;

(iii) Overfly the Area by any aircraft below 250 meters above the highest point;

(iv) Use any of the Area's coves or bays for anchoring or mooring sea craft, except in accordance with the permit; ships may anchor only in the strait between Michelsen Island and Fredriksen Island;

(v) Incinerate, bury, or otherwise dispose of any nonhuman waste within the Area; all such waste must be removed from the Area;

(vi) Leave depots of fuel, food, or any other supplies within the Area, unless they are further required within the same season, at the end of which they must removed;

(vii) Erect any form of building within the Area.

(g) *Pedestrian routes.* None is specified, but every precaution must be taken to avoid disturbance of any breeding bird (especially giant petrels, which pedestrians should not approach closer than 100 meters) or seal or stand of vegetation, unless required as specified in the permit.

(h) *Scientific research and sampling.* All activities must conform strictly with those specified in the permit to enter the Area.

(i) *Inspection and maintenance.* Inspection visits to the Area should be at least once every 5 years to assess the state of the Site and to monitor any significant biological or environmental changes. Other visits should be made as necessary to maintain boundary markers, notices, etc.

Specially Protected Area No. 16

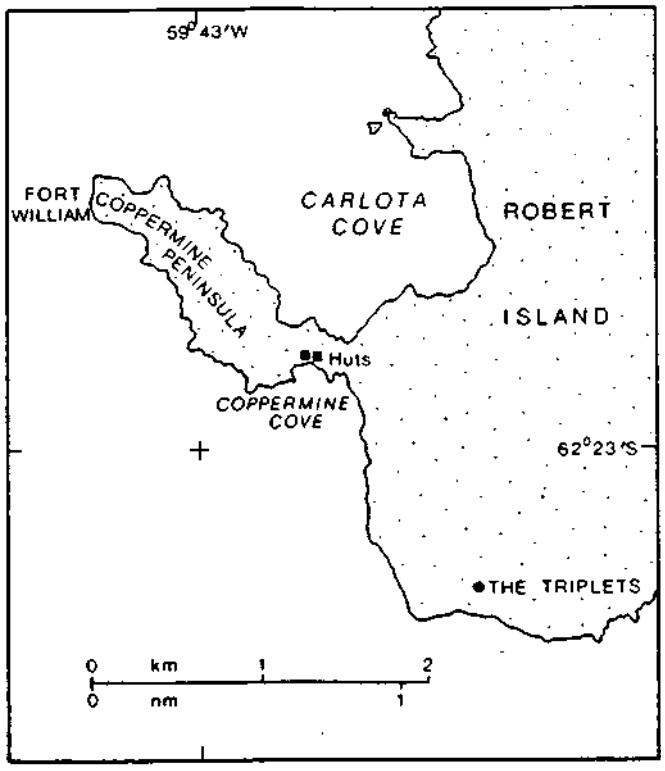
Recommendation VI–10, designation
Recommendation XVI–6, revision of description and management plan

Coppermine Peninsula, Robert Island, South Shetland Islands

(1) *Geographical location.* Coppermine Peninsula (62°23' S. 59°44' W.) is situated on the west side of Robert Island, which lies between Nelson Island to the east and Greenwich Island to the west, midway along the South Shetland Islands archipelago.

(2) *Management Plan.*

(a) *Description of area.* The Area comprises all land west of a north–south line across the isthmus between Carlota Cove and Coppermine Cove, 100 meters west of a small group of Chilean refuge huts. The peninsula is about 1.7 kilometers from southeast to northwest and up to 0.6 kilometer from northeast to southwest and is largely surrounded by precipitous cliffs. There are three prominent low hills which reach a highest point at about 220 meters. The easternmost lies close to the isthmus; there is a central hill composed of basaltic columns and referred to as "Neptune's Cathedral," and the westernmost is situated above Fort William at the extreme west of the peninsula. The isthmus (mainly outside the Area) is a 250-meter-wide raised beach reaching about 10 meters' altitude. Much of the higher ground is permanently ice covered. There are numerous small streams and pools in summer.



Map 16

(b) *Reason for designation.* Coppermine Peninsula is a biologically rich area with a diverse biota typical of the South Shetland Islands. It supports a wide range of plant communities with associated invertebrate fauna; the vertebrate fauna is also particularly well represented. The outstanding feature of the vegetation is a 1.5-hectare closed carpet of the mosses *Calliergidium austro-stramineum*, *Calliergon sarmentosum*, and *Drepanocladus*

uncinatus, representing one of the largest continuous moss stands in the Antarctic. It overlies a thick layer of wet moss peat. Large stands of the foliose cyanobacterium *Nostoc commune* occur on moist slopes and in depressions. A large number of bryophyte and lichen species occur within the Area, and antarctic hair grass (*Deschampsia antarctica*) is frequent. A small colony of chinstrap penguins (*Pygoscelis antarctica*) occurs at Fort William. There are about 30 small colonies of southern giant petrels (*Macronectes giganteus*). Other breeding species include about 2,000 nests of Wilson's storm petrels (*Oceanites oceanicus*) in at least 13 colonies, up to 1,000 antarctic terns (*Sterna vittata*) in 9 colonies, 300–400 Dominican gulls (*Larus dominicanus*) in 10 colonies, and numerous brown skuas (*Catharacta lonnbergii*). Seals are common around the peninsula and frequently haul out at the isthmus, notably elephant seals (*Mirounga leonina*), Weddell seals (*Leptonychotes weddellii*), and increasingly large numbers of fur seals (*Arctocephalus gazella*).

(c) *Date of designation and originator.* The Area was designated in November 1966 by Chile.

(d) *Access points.* Access should be from the isthmus outside the Area by sea from Coppermine Cove or Carlota Cove, or by helicopter also to the east of the Area.

(e) *Entry permit requirement.* Entry to the Area is only in strict accordance with a current permit, issued by a participating government or its authorized representative, specifically for a compelling scientific purpose that cannot be served elsewhere or for site inspection, and that will not jeopardize any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII). Details of the visit should be included in the national annual report of Exchange of Information for the same antarctic season in which the activities were carried out.

(f) *Prohibitions.* For human impact to be avoided or minimized, it is prohibited to:

(i) Drive any vehicle within the Area;

(ii) Land a helicopter within the Area;

(iii) Overfly the Area by any aircraft below 250 meters above the highest point;

(iv) Use any of the Area's coves or bays for anchoring or mooring sea craft, except in accordance with the permit;

(v) Incinerate, bury, or otherwise dispose of any nonhuman waste within the Area; all such waste must be removed from the Area;

(vi) Leave depots of fuel, food, or any other supplies within the Area, unless they are further required within the same season, at the end of which they must removed;

(vii) Erect any form of building within the Area.

(g) *Pedestrian routes.* None is specified, but every precaution must be taken to avoid disturbance of any breeding bird (especially giant petrels, which pedestrians should not approach closer than 100 meters) or seal or stand of vegetation (especially the extensive carpet of moss on the isthmus), unless required as specified in the permit.

(h) *Scientific research and sampling.* All activities must conform strictly with those specified in the permit to enter the Area.

(i) *Inspection and maintenance.* Inspection visits to the Area should be at least once every 3 years to assess the state of the Site and to monitor any significant biological or environmental changes. Other visits should also be used to maintain boundary markers, notices, etc.

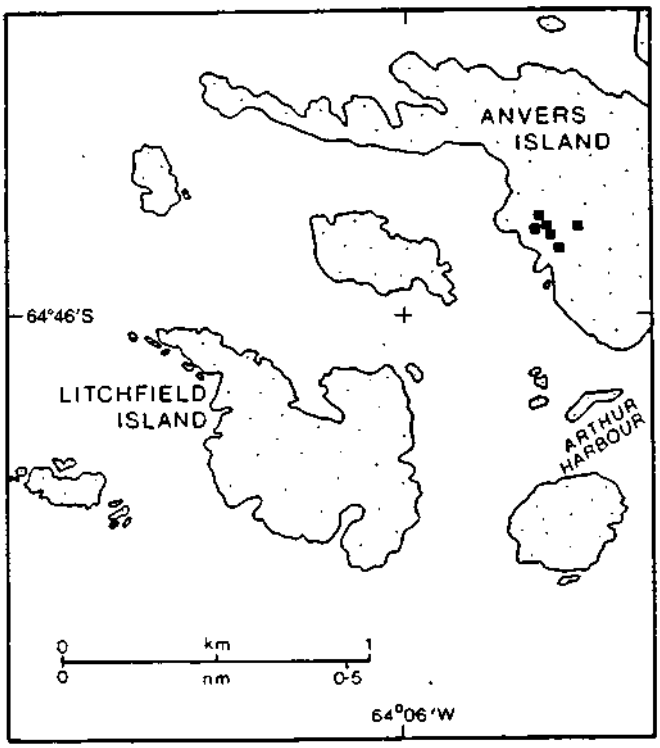
Recommendation VIII–1, designation

Specially Protected Area No. 17

Litchfield Island, Arthur Harbor, Palmer Archipelago

(1) *Description.* Litchfield is a small island, about 2.5 square kilometers in area. The Area (64°46' S. 64°06' W.) is shown on map 17.

(2) *Designation*. The area was designated on the grounds that Litchfield Island, together with its littoral, possesses an unusually rich collection of marine and terrestrial life, is unique among the neighboring islands as a breeding place for six species of native birds, and provides an outstanding example of the natural ecological system of the Antarctic Peninsula area.



Map 17

Specially Protected Area No. 18

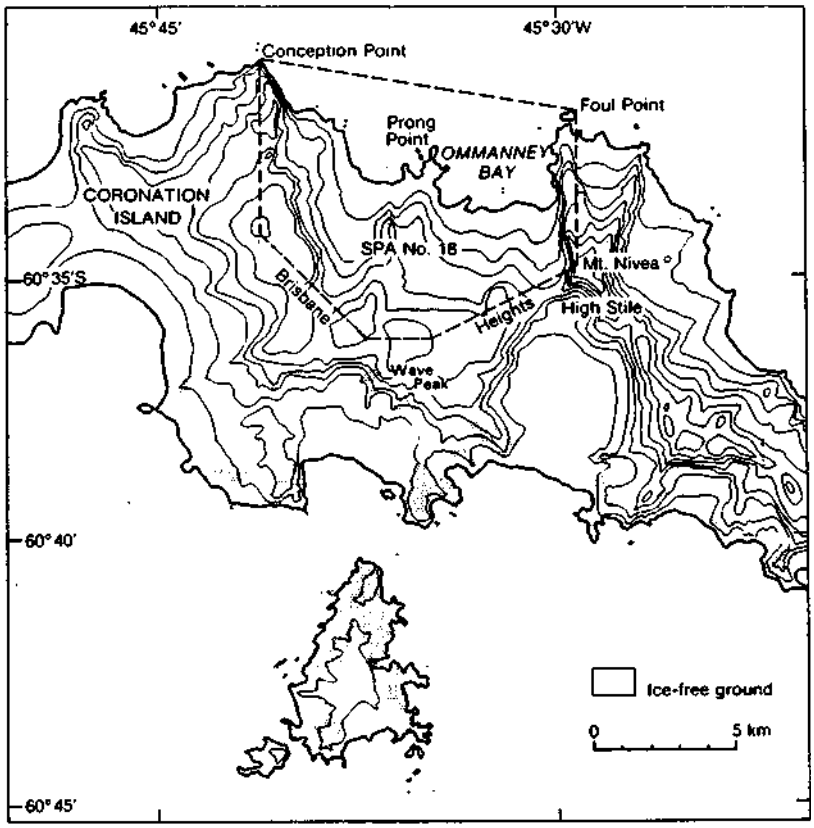
Recommendation XIII–10, designation
Recommendation XVI–6, revision of description and management plan

North Coronation Island, South Orkney Islands

(1) *Geographical location.* Coronation Island (60°37' S. 45°35' W.) is the largest of the South Orkney Islands, situated at the west end of the archipelago.

(2) *Management Plan.*

(a) *Description of area.* The Area lies on the central north side of Coronation Island. It is bounded to the east by Foul Point (60°32' S. 45°29' W.) and to the west by Conception Point (60°31' S. 45°41' W.); the entire area between these points, together with the intervening sea, is included in the Site. The eastern boundary follows a precipitous ridge 6 kilometers southward to a position at 2,500 feet (approximately 750 meters) altitude immediately to the west of Mount Nivea summit (60°35' S. 45°29' W.), thence west–southwestward for 5.5 kilometers to a position at 3,000 feet (approximately 900 meters) altitude to the northeast of Wave Peak summit (60°37' S. 45°36' W.), and from there 4 kilometers westward across the Brisbane Heights plateau, then 4 kilometers north–northwest to an unnamed summit at 3,532 feet (approximately 1,060 meters) and north for 6 kilometers to Conception Point. The summits of Mount Nivea and Wave Peak and the col known as High Stile are outside the Area. Ommanney Bay and the unnamed bay to the west are included within the Area, south of the boundary between Conception and Foul points (11.5 kilometers).



Map 18

(b) *Reason for designation.* The Area embraces areas of coastal ice-free terrain (Conception, Prong, and Foul Points), with large sea bird colonies and lichen-dominated cliffs, and permanent ice fields (two major glaciers

and ice cliffs rising to the Brisbane Heights plateau) which provide an excellent representative area of a pristine ice environment near the northern limit of the maritime Antarctic and Antarctic Treaty Area. The interrelated terrestrial, ice, and marine components of the Area are an integrated example of the coastal permanent ice and sublittoral ecosystems typical of the maritime antarctic environment.

(c) *Date of designation and originator.* The Area was designated in October 1985 by the United Kingdom.

(d) *Access points.* None is specified.

(e) *Entry permit requirement.* Entry into the Area is only in strict accordance with a current permit, issued by a participating government or its authorized representative, specifically for a compelling scientific purpose that cannot be served elsewhere or for site inspection, and that will not jeopardize any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII). Details of the visit should be included in the national annual report of Exchange of Information for the same antarctic season in which the activities were carried out.

(f) *Prohibitions.* For human impact to be avoided or minimized, it is prohibited to:

(i) Drive any vehicle within the Area; land a helicopter within 0.5 kilometer of any bird or seal colonies or aggregations, or on any of the ice fields;

(ii) Overfly Conception, Prong, or Foul Points below 250 meters above their respective highest points;

(iii) Use any of the Area's coves or bays for anchoring or mooring sea craft, except in accordance with the permit; ships must not enter the Area;

(iv) Incinerate, bury, or otherwise dispose of any nonhuman waste within the Area; all such waste, including human waste in all ice-covered areas, must be removed from the Area;

(v) Leave depots of fuel, food, or any other supplies within the Area, unless they are further required within the same season, at the end of which they must removed;

(vi) Erect any form of building within the Area.

(g) *Pedestrian routes.* None is specified, but every precaution must be taken to avoid disturbance of any breeding bird or seal.

(h) *Scientific research and sampling.* All activities must conform strictly with those specified in the permit to enter the Area.

(i) *Inspection and maintenance.* Inspection visits to the Area should be made no more than once every 5 years to assess the state of the Site and to monitor any significant biological or environmental changes. Other visits should be made as necessary to maintain boundary markers, notices, etc.

Specially Protected Area No. 19

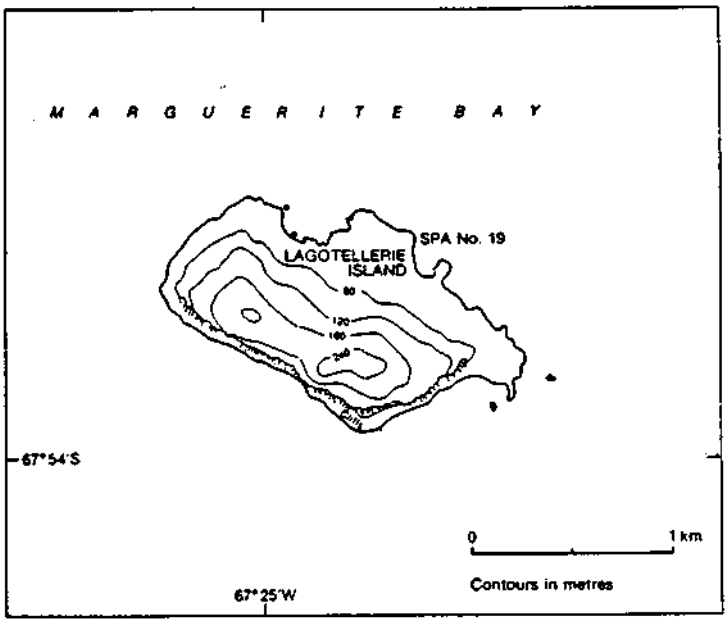
Recommendation XIII–11, designation
Recommendation XVI–6, revision of description and management plan

Lagotellerie Island, Marguerite Bay, Antarctic Peninsula

(1) *Geographical location*. Lagotellerie Island (67°53' S. 67°24' W.) lies about 3 kilometers west of the southern part of Horseshoe Island, Marguerite Bay, southwest Antarctic Peninsula.

(2) *Management Plan.*

(a) *Description of area.* Lagotellerie Island is about 2 kilometers from east to west by about 1 kilometer from north to south and rises steeply to twin summits of approximately 270 and 290 meters' altitude separated by a broad saddle. The north side of the island is largely snow free, with extensive low-lying ground. The south and east sides have precipitous cliffs up to 180 meters high; much of the north side also has steep cliffs dissected by gulleys and traversed by broad rock terraces. There are no permanent streams or pools.



Map 19

(b) *Reason for designation.* The island has a relatively diverse flora and luxuriant development of plant communities, representative of the southern maritime antarctic region. The north side supports an abundance of antarctic hair grass (*Deschampsia antarctica*), which on some of the terraces forms closed awards up to 10 square meters. antarctic pearlwort (*Colobanthus quitensis*) is also frequent. Both species are close to the southern limit of their range. There is also a rich cryptogamic flora with well-developed communities containing several rare mosses and lichens. Beneath the closed grass and moss stands, a rich loamy earth up to 25 centimeters deep has developed, with a rich invertebrate fauna and microbiota. The island is one of the southernmost sites for the apterous midge *Belgica antarctica*. There is a colony of about 1,000 pairs of Adélie penguins (*Pygoscelis adeliae*) at the southeastern corner of the island. Here, there is also a small colony of about 30 pairs of blue-eyed shags (*Phalacrocorax atriceps*), which is one of the farthest south breeding sites for the species.

Brown and south polar skuas (*Catharacta lonnbergii* and *C. maccormicki*) are abundant and several pairs of each nest on this island.

(c) *Date of designation and originator.* The Area was designated in October 1985 the United Kingdom.

(d) *Access points.* None is specified.

(e) *Entry permit requirement.* Entry into the Area is only in strict accordance with a current permit, issued by a participating government or its authorized representative, specifically for a compelling scientific purpose that cannot be served elsewhere or for site inspection, and that will not jeopardize any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII). Details of the visit should be included in the national annual report of Exchange of Information for the same antarctic season in which the activities were carried out.

(f) *Prohibitions.* For human impact to be avoided or minimized, it is prohibited to:

(i) Land a helicopter within the Area, except on the low-lying unvegetated ground in the midnorthern side of the island and on the saddle between the two peaks;

(ii) Overfly the Area by any aircraft below 250 meters above the highest point;

(iii) Use any of the Area's coves for anchoring of mooring seacraft, except in accordance with the permit;

(iv) Incinerate, burn, or otherwise dispose of any nonhuman waste within the Area; all such waste must be removed from the Area;

(v) Leave depots of fuel, food, or any other supplies within the Area, unless they are further required within the same season, at the end of which they must removed;

(vi) Erect any form of building within the Area.

(g) *Pedestrian routes.* None is specified, but every precaution must be taken to avoid disturbance of any breeding bird or seal or stand of vegetation, unless required as specified in the permit.

(h) *Scientific research and sampling.* All activities must conform strictly with those specified in the permit to enter the Area.

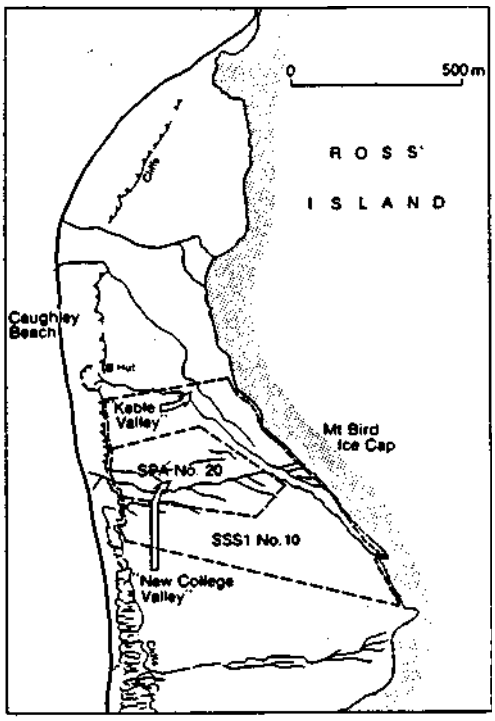
(i) *Inspection and maintenance.* Inspection visits to the Area should be at least once every 5 years to assess the state of the Site and to monitor any significant biological or environmental changes. Other visits should be made as necessary to maintain boundary markers, notices, etc.

Specially Protected Area No. 20

Recommendation XIII–12, designation
Recommendation XVII–2, revision of description and management plan

"New College Valley," Caughley Beach, Cape Bird, Ross Island

(1) *Geographical location.* The Site (77°14' S. 166°23' E.) is in the northern part of the Cape Bird ice-free area. It lies between Northern Rookery and Middle Rookery and is about 250 meters south of the summer research station.



Map 20

(2) *Management Plan.*

(a) *Description of area.* The area consists of the generally west-facing slopes lying between the cliff top above Caughley Beach and a line parallel to and about 100 meters east of the edge of Mount Bird Ice Cap and between a line south of the main stream bed of "Keble Valley" and the south ridge of "New College Valley." It is surrounded to the north, south, and east by Site of Special Scientific Interest number 10 and to the west terminates at the cliff tops above Caughley Beach. Its total area is about 10 hectares.

The ground is largely covered by stones and boulders of volcanic origin, which have been reworked by glacial action. There are a few glacial erratic boulders of different origin.

The major feature of the Site is "New College Valley," which has been cut by the vigorous flows of meltwater received from the Mount Bird Ice Cap during summer. Tributaries to this stream and two other smaller streams in the area are fed by melt from persistent summer snowdrifts and have eroded their own shallow gullies and channels.

A general description of the vegetation is provided by Broady (1984,1989) as part of a broad survey of vegetation at Cape Bird and two other ice-free areas on Ross Island. Longton (1973, 1974) classified the bryophyte community at Caughley Beach as the *Bryum antarcticum* sociation in which *B. antarcticum* is dominant with occasional *B. argenteum*. It is

not clear from the information presented whether the Site examined was actually inside the Area but, if not, it was certainly very close. Sketch maps of moss and algae stands within the Area are provided by Broady (1984).

Stream vegetation includes luxuriant red–brown oscillatoriacean (Cyanobacteria) mats, rich epilithic green filaments, and crusts of chlorophyll algae, as well as colonies of *Nostoc* (Cyanobacteria).

The more or less northwest-facing slopes of the main valley and smaller gullies support extensive moss stands as scattered small cushions and as confluent growths up to several square meters in extent (total cover more than 200 square meters). Often the plants and surrounding soil become covered with a white mineral encrustation if meltwater supply ceases during the summer and vegetation and soils desiccate. The maximum development of moss is found along the borders of shallow channels taking meltwater from snow drifts. Also scattered cushions no more than 5 centimeters' diameter are found on moist ground where melt percolations are not channeled but seep broadly over the surface. Bryophyte biomass at Caughley Beach (Longton, 1974) was estimated as 14 and 938 grams dry weight per square meter for two stands, with 1.4 percent and 84.7 percent cover, respectively.

The mosses are generally associated with abundant red–brown oscillatoriacean mats and occasionally with colonies of *Nostoc*. Other areas of soaked ground are dominated by either *Nostoc* colonies (approximately 100 square meters) or oscillatoriacean mats (approximately 200 square meters).

Skuas (*Catharacta maccormicki*) nest on the beach below the cliffs to the west of the Site and frequently overfly and land within the Area. Adélie penguins (*Pygoscelis adeliae*) from large nearby rookeries occasionally traverse the area. Nutrient enrichment of soils occurs from deposited guano as well as from windblown particulates from the large penguin rookeries to the north and south.

(b) *Reason for designation*. The area contains some of the most luxuriant stands on Ross Island of moss and algae vegetation and associated microflora and microfauna. Because of the susceptibility of this vegetation to damage from trampling, the designation of the area provides protection for its biota, so that the area may serve as a conservation reserve representative of the adjacent Site of Special Scientific Interest.

(c) *Date of designation and originator.* The Area was designated on October 1984 by New Zealand.

(d) *Access points.* The Site can be reached only by passing through the adjacent Site of Special Scientific Interest. It is best reached by a route directly southeast from the summer research station to the north. Care should be taken to avoid any areas of vegetation along the way.

(e) *Entry permit required.* Entry to the area is only in strict accordance with a current permit, issued by a participating government or its authorized representative, specifically for a compelling scientific purpose that cannot be served elsewhere or for site inspection (but see "Inspection and Maintenance" below), and that will not jeopardize any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Flora and Fauna, Article VIII). Details of

the visit should be included in the national annual report of Exchange of Information for the same antarctic season in which the activities were carried out.

(f) *Prohibitions.* For human impact to be avoided or minimized, it is forbidden to:

(i) Drive any vehicle within the Area;

(ii) Land a helicopter within the Area;

(iii) Overfly the Area by an aircraft below 250 meters above the highest point;

(iv) Incinerate, bury, or otherwise dispose of any nonhuman waste within the Area; all such waste must be removed from the Area;

(v) Leave depots of fuel, food, or any other supplies within the Area;

(vi) Erect any form of building within the Area;

(vii) Use any sampling or other equipment within the Area which has not been sterilized using an acceptable method.

(g) *Pedestrian routes.* Every precaution must be taken to keep clear of visible vegetation and also waterlogged ground, whether this has visible vegetation or not. During summer all these areas are easily damaged by trampling. saturated ground, especially where situated on sloping terrain, is very prone to slip when traversed by foot and the marking of deep footprints would be unavoidable. Routes should be taken which pass upslope of persistent summer snow drifts, especially during times of thaw. In this way saturated ground would be most easily avoided.

(h) *Scientific research and sampling.* All activities must conform strictly with those specified in the permit to enter the Area. Only for exceptional purposes would sampling of vegetation be permitted as there are similar areas of vegetation in the adjacent Site of Special Scientific Interest, as well as outside the designated areas to the south of the Site.

Persons permitted to enter the Site should take all reasonable precautions to avoid introducing plants and micro-organisms from else where. All sampling apparatus should be sterilized before use and boots should be thoroughly cleaned before entry.

(i) *Inspection and maintenance.* Inspection visits to the Area should be made once every year to assess the state of the Site and to monitor any significant biological or environmental change. However, entry to the Site is not necessary for these visits as its state can be readily viewed from the surrounding Site of Special Scientific Interest. Also, as the Site is small and contains rich terrestrial moss and algal vegetation, on-site inspection visits could themselves cause damage.

Recommendation XVI–4, designation from former Site of Special Scientific Interest No. 30

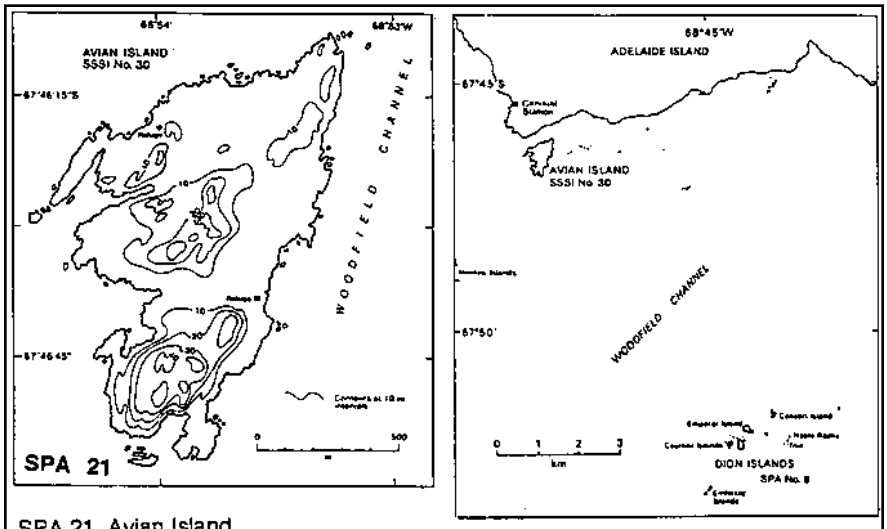
Specially Protected Area No. 21

Avian Island, Northwest Marguerite Bay

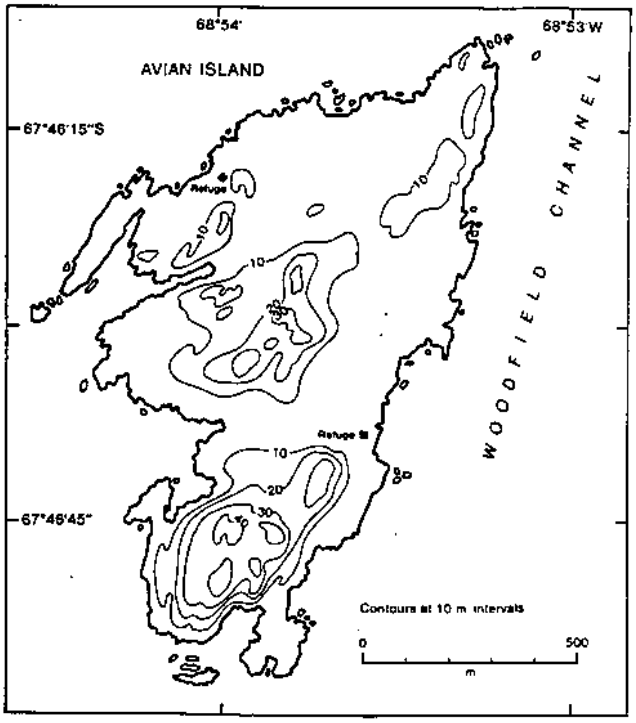
(1) *Geographical location.* Avian Island (67°46' S. 68°54' W.) lies about 0.25 kilometer south of the southwest tip of Adelaide Island in northwest Marguerite Bay.

(2) *Management Plan.*

(a) *Description of site.* The Area consists of Avian Island together with its littoral zone. It is 1.45 kilometers long by 0.8 kilometer at its widest, and rises about 45 meters' altitude. It is largely ice free in summer, and there are several shallow meltpools, the largest being on the eastern raised beach area. Excluded from the Area is the northwestern corner of the island where there is a small refuge hut; this area is bounded by a line



SPA 21, Avian Island



Map 21

extending from the northeast end of the southern of two long inlets at the northwest of the island, due north over the western slope of a low rocky hill, to the north coast of the island. All land to the west of this line is not included in the Area.

(b) *Reason for designation.* The Area is exceptional for its abundance and diversity of breeding seabirds (e.g., Adélie penguins, *Pygoscelis adeliae*, about 40,000 pairs; blue-eyed shags, *Phalacrocorax atriceps*, about 300 pairs; southern giant petrels, *Macronectes giganteus*, about 200 pairs; Dominican gulls, *Larus dominicanus*, about 60 breeding pairs, total adult birds about 200; south polar skuas, *Catharacta maccormicki*, 30 breeding pairs, total adult birds about 200; Wilson's storm petrels, *Oceanites oceanicus*, several hundred pair. The giant petrel colony is the farthest south known breeding population, while the blue-eyed shags are very close to the southern limit of their breeding range. Avian Island is therefore of outstanding ornithological importance and merits protection from human disturbance.

(c) *Outline of research.* None is currently proposed but protection is justified to safeguard the avian populations from potential tourist visits and other disturbance, for the reasons outlined in (b).

(d) *Date of expiry of designation.* 31 December 1999. Date provided by Antarctic Treaty resolution; the U.S. regulation does not specify an expiration date.

(e) *Access points.* None is specified.

(f) *Pedestrian and vehicular routes.* Vehicles should not be used within the Area. No pedestrian routes need to be marked, but every care must be taken to avoid unnecessary disturbance of the avifauna. No helicopter landing should be made anywhere on the island.

(g) *Other kinds of scientific investigations which would not cause harmful interference.* None is specified.

(h) *Scientific sampling.* All activities involving banding, capture, killing, etc., of any birds must conform with the Agreed Measures for the Conservation of Antarctic Fauna and Flora. Any other sampling should be restricted to the minimum required for the purpose of the respective studies.

(i) *Other restraints.* None is specified.

Recommendation XVI–8, designation

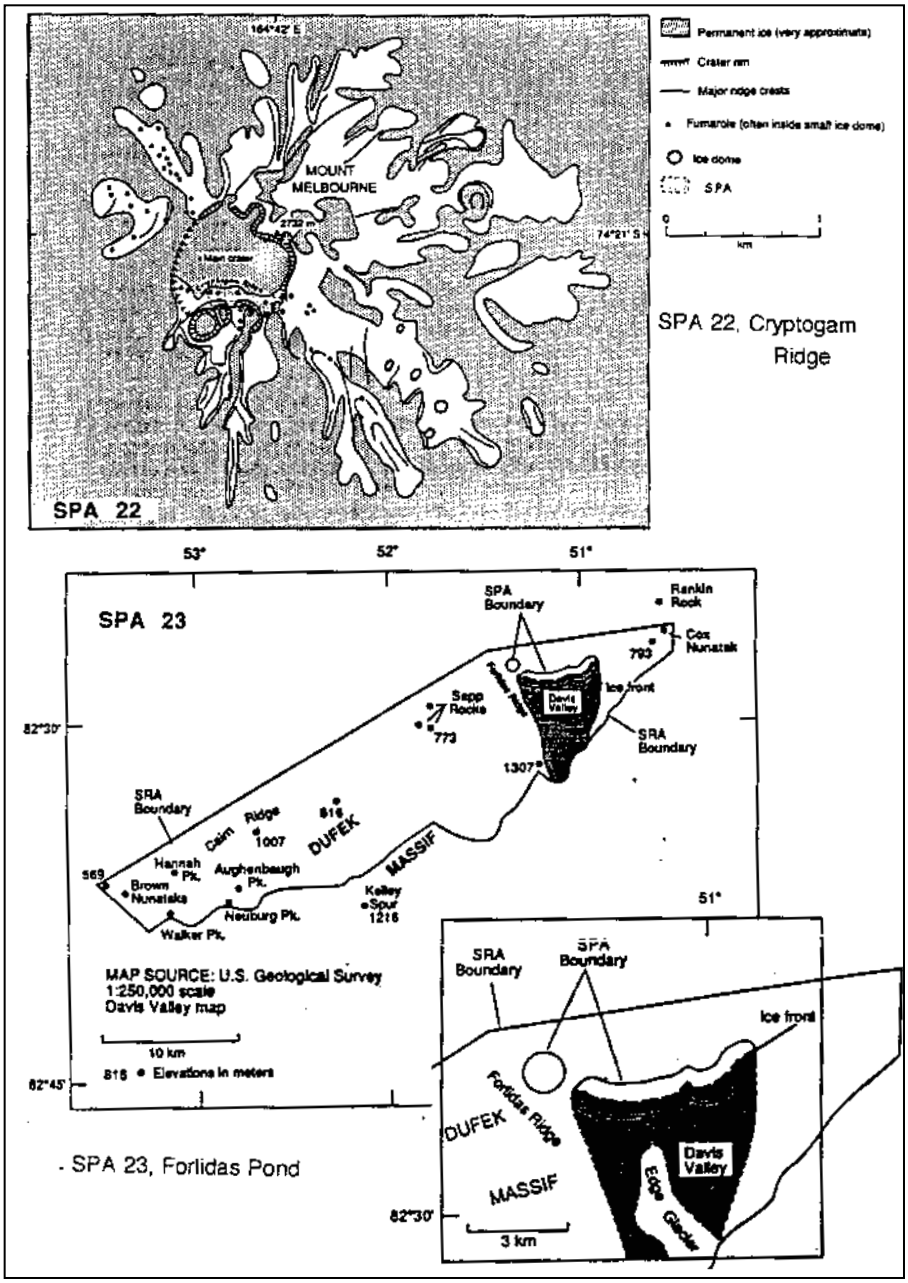
Specially Protected Area No. 22

Cryptogam Ridge, Mount Melbourne, Victoria Land

(1) *Geographical location.* The Area is found on Mount Melbourne (74°21' S. 164°42' E.) between Wood Bay and Campbell Glacier, Northern Victoria Land, on the western side of the Ross Sea.

(2) *Management Plan.*

(a) *Description of area.* The Area includes most of Cryptogam Ridge on the southern rim of the main summit crater (2,733 meters' altitude) and extends about 1,200 meters by 500 meters. Geothermal activity occurs along about 300–400 meters of the ridge and is marked by discontinuous areas of ice-free ground, surrounded by numerous ice hummocks up to 1 meter high and scattered hollow ice towers up to several meters in diame-



Map 22

ter and 4 meters high. The warm ice-free areas are mostly gently sloping with narrow terraces up to 1.5 meters wide. More general details for the adjacent areas are given for the surrounding Site of Special Scientific Interest Number 24.

(b) *Reason for designation.* The geothermal ground within the Area supports a unique community of bryophytes, algae, and microbiota, including the only known occurrence in the Antarctic of the moss *Campylopus pyriformis* and the very rare continental occurrence of the liverwort *Cephaloziella exiliflora*, otherwise unknown above about 500 meters elsewhere in the Antarctic. This Site is comparable with the only other known high-altitude, geothermally influenced ice-free area near the summit of Mount Erebus. This fragile and sterile habitat is of exceptional biological interest and should be afforded maximum protection from human influence to maintain its unique pristine state.

(c) *Date of designation and originator.* The Area was designated in June 1990 by New Zealand and Italy.

(d) *Access points.* Access should be only from either end of Cryptogam Ridge and not from the ridge slopes.

(e) *Entry permit requirement.* Entry to the Area is only in strict accordance with a current permit, issued by a participating government or its authorized representative, specifically for a compelling scientific purpose that cannot be served elsewhere, or for site inspection, and that will not jeopardize any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII). Details of the visit should be included in the national annual report of Exchange of Information for the same antarctic season in which the activities were carried out.

(f) *Prohibitions.* For human impact to be avoided or minimized, it is prohibited to:

(i) Enter the Area without wearing sterile protective overclothing and footwear, to be provided by the supporting national operator;

(ii) Use any sampling or other equipment within the Area which has not been first sterilized using an acceptable method;

(iii) Land a helicopter within the Area; helicopters should land near the summit of Mount Melbourne only at a specified point in or adjacent to the main crater no closer than 200 meters from the boundary of the Area;

(iv) Incinerate, bury, or otherwise dispose of any waste, including all human waste, within the Area; all such waste must be removed from the Area;

(v) Bring into the Area any fuel or food, or leave any form of other supplies within the Area, other than markers required for monitoring studies;

(vi) Erect any form of building within the Area.

(g) *Pedestrian routes.* None is specified, but pedestrians must not use the ridge crest as a way of access to parts of the surrounding Site of Special Scientific Interest. Extreme precautions must be taken to avoid disturbance of all ice-free ground or interference with ice structures within the Area, unless required as specified in the permit.

(h) *Scientific research and sampling.* Where at all possible, collections and general observations of geothermal soils and organisms should be made from positions outside the Area, unless directly related to the monitoring of Cryptogam Ridge; all activities within the Area must conform strictly with those specified in the permit to enter the Area.

(i) *Inspection and maintenance.* Inspection visits should be made to the Area No more than once every 5 years to assess the state of the Site and to monitor any significant biological or environmental changes. Other visits should be made as necessary to maintain boundary markers, notices, etc.

Specially Protected Area No. 23

Recommendation XVI–9, designation

Forlidas Pond and Davis Valley ponds

(1) *Geographical location*. Forlidas Pond (82°27'15" S. 51°21' W.) is about 100 meters east of the northern edge of Forlidas Ridge and about 1 kilometer northwest of Davis Valley. The unnamed dry valley is separated from Davis Valley by a northeast-trending ridge several kilometers The Area includes smaller ponds that occur along the ice margin at the northern edge of Davis Valley, a short distance east of Forlidas Pond.

(2) *Management Plan*.

(a) *Description of area.* The Area consists of two parts shown on map 22 about 500 meters apart:

(i) All that area within 500 meters of the center of Forlidas Pond;

(ii) All that area within a 500-meter radius of several meltwater ponds at the ice margin along the northern edge of Davis Valley.

(b) *Reason for designation.* The Area contains some of the most southerly freshwater ponds known in Antarctica containing plant life which would be threatened by possible contamination by human activity. The only visitors to Forlidas Pond have been geologists and geophysicists in 1957 and possibly one or two other parties. The ponds in Davis Valley were visited in 1978 by geologists. No botanists or zoologists have visited the Area. These ponds are located in Specially Reserved Area No. 1, north side of Dufek Massif, which could attract visitors such as scientists or tourists. They should be protected as examples of unique near-pristine freshwater ecosystems and their catchments.

(c) *Date of designation and originator.* The Area was designated in October 1991 by the United States.

(d) *Access points.* None is specified.

(e) Entry permit requirements.

Entry to the Area is only in strict accordance with a current permit, issued by a participating government or its authorized representative, specifically for a compelling scientific purpose that cannot be served elsewhere or for site inspection, and that will not jeopardize any aspect of the natural ecosystem or its biota within the Area. Details of visits should be included in national annual reports of Exchange of Information for the same antarctic season in which the activities were carried out.

(f) *Prohibitions.* None is specified, but camping and the landing of helicopters should be avoided within 1 kilometer of the Area.

(g) *Pedestrian routes.* None is specified, but every precaution must be taken to avoid disturbance of biota, soil, water, and periglacial features, unless required as specified in the permit.

(h) *Scientific research and sampling.* Taking of samples of biota or soils should be done only for a compelling scientific purpose and must conform strictly with the activities specified in the permit to enter the Area.

(i) *Inspection and maintenance.* Inspection visits should be made when the opportunity arises to assess the state of the Area and to monitor biological and environmental change, as well as to maintain boundary markers, notices, etc.

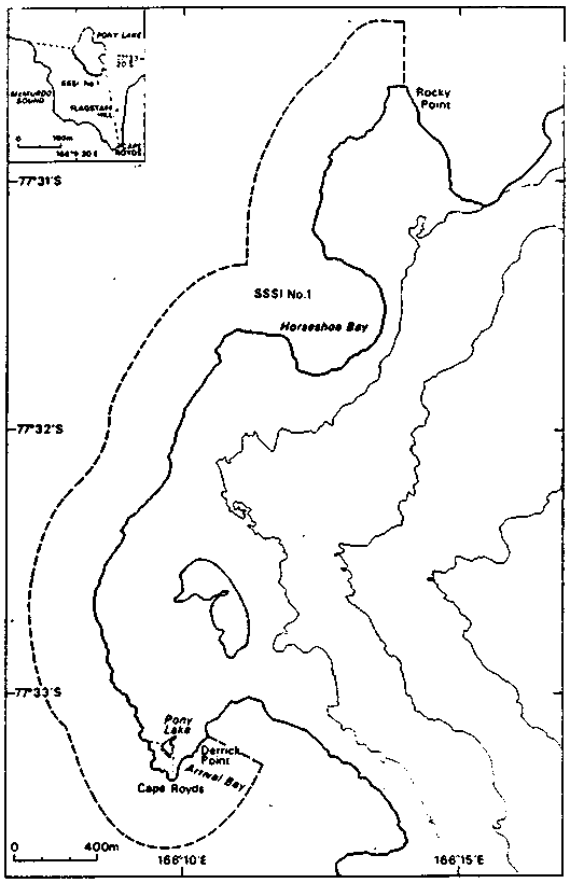
SECTION THREE:
Sites of Special Scientific Interest

Site of Special Scientific Interest No. 1: Management Plan

Recommendation VIII–4, designation
Recommendation X–6, extension of expiry date
Recommendation XII–5, extension of expiry date

Cape Royds, Ross Island

(1) *Description of Site.* Cape Royds is situated at the western extremity of Ross Island, McMurdo Sound (77°33' S. 166°08' E.), about 37 kilometers north–northwest of McMurdo station. The Site consists of all that area of Cape Royds west of a line drawn from the south coast of the Cape through Flagstaff Hill to the southeastern tip of Pony Lake, as well as the west shoreline of this lake; and south of a line drawn from the western extremity of Pony Lake 280° true to the coast; including the littoral and sublittoral zones



Map 23

from Derrick Point on the east side of Arrival Bay about 4 kilometers northward to Rocky Point to the north of Horseshoe Bay, extending 500 meters offshore from the highwater mark. The boundaries of the Site are shown on map 23.

(2) *Reason for designation.* The structure and dynamics of the Cape Royds ecosystem, and the relationship with the penguin rookery are the subjects of scientific research. The research area and the main seaward access by Adélie penguins to the rookery should be protected by the creation of a reserve. The coastline of Cape Royds is an important feeding ground for Adélie penguins. The coast between Flagstaff Point and Green Lake is the main access route for birds traveling to and from the rookery. Proposed future research on the Cape Royds coastline incorporates further research on the dynamics of the Cape Royds inshore marine ecosystem. The Cape Royds penguin rookery and historic Site provide an attraction for sightseers from the nearby station complexes at Scott Base and McMurdo. Regular visits are made to the area by tourists from vessels that sail into McMurdo Sound. The Site will help control any possible impact from these activities in the future.

(3) *Outline of research.* The coastal area of Cape Royds is the Site of continuing New Zealand research studies on Nototheniid fish population structure and dynamics. These studies, which began in 1981, involve the capture, measurement, tagging, and release of *Trematomus bernacchii*. The Adélie penguin rookery population at Cape Royds has been continuously monitored since 1965, and these studies will also continue.

(4) *Date of expiry of designation.* 31 December 2000. Date provided by Antarctic Treaty resolution; the U.S. regulation does not specify an expiration date.

(5) *Access points.* The Site should not be entered during the period of penguin occupation (approximately mid-October to mid-March) except by the marked tracks. Only scientists engaged in the scientific studies should approach the penguin colonies at this period. Photographs of the colonies, except for scientific purposes, should be taken from the boundaries of the Site. Access points to the seaward portions of the Site are unrestricted. Boat access from tourist ships or casual visitors should be via the northernmost cove in Backdoor Bay.

(6) *Pedestrian and vehicular routes.* No vessels, vehicles, or helicopters of any description should enter the Site except in event of emergency. Pedestrians should keep to the marked tracks and not move through areas populated by penguins, except as necessary in the course of scientific investigations.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* None is specified.

(8) *Scientific sampling.* This activity should be restricted to the minimum required in connection with the research program.

(9) *Other restraints.* Any activity that would detract from the scientific research for which the area has been designated should be avoided. In particular, the following activities should be avoided:

(i) Landscaping and removing surface material;

(ii) Constructing of huts and buildings; and

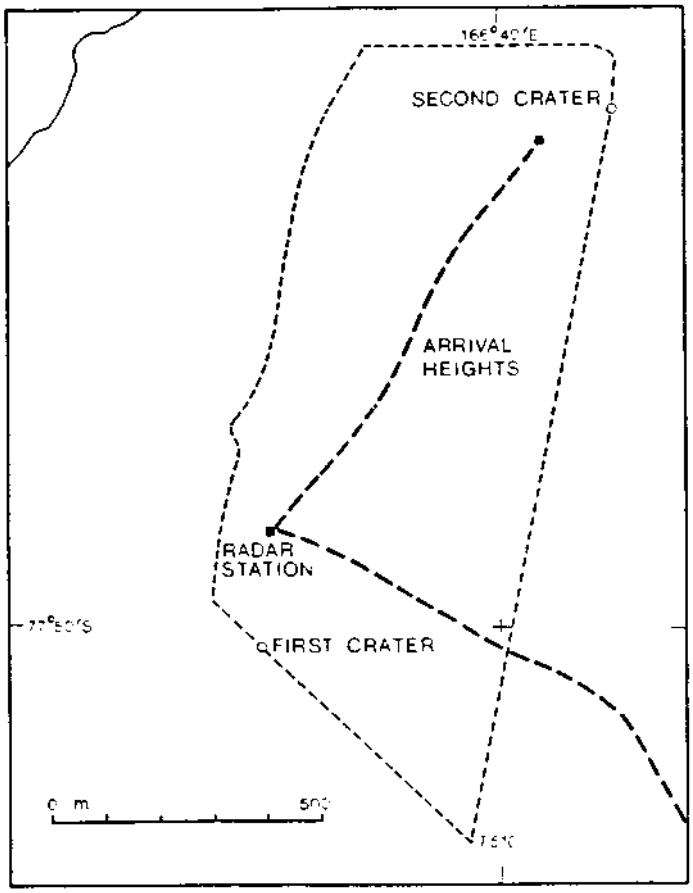
(iii) Depositing any pieces of equipment or material that would in any way hinder reoccupation of nests by penguins.

Sites of Special Scientific Interest No. 2: Management Plan

Recommendation VIII–4, designation
Recommendation X–6, extension of expiry date
Recommendation XII–5, extension of expiry date
Recommendation XIII–7, extension of expiry date

Arrival Heights, Hut Point Peninsula, Ross Island

(1) *Description of Site.* All that area of Arrival Heights enclosed with a line drawn from trigometric station T510 northwest over First crater to the 500-foot contour, then north along this contour to a point immediately west of Second Crater, then around the lip of this crater and south to trigometric station T510. The boundary, which is demarcated, is shown on map 24.



Map 24

(2) *Reason for designation.* This area is an electromagnetically and natural "quiet site" offering ideal conditions for the installation of sensitive instruments for recording minute signals associated with upper atmosphere programs.

(3) *Outline of research.* Upper atmosphere investigations associated with auroral and geomagnetic studies will be undertaken.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* None is defined, but movement within the area by vehicles or personnel other than those directly concerned with the investigations should be kept to the minimum necessary for implementing the program.

(6) *Pedestrian and vehicular routes.* Vehicles and pedestrians should keep to the tracks shown on map 24.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Scientific investigations other than those associated with the upper atmosphere program should be kept to a minimum.

(8) *Scientific sampling.* Not applicable.

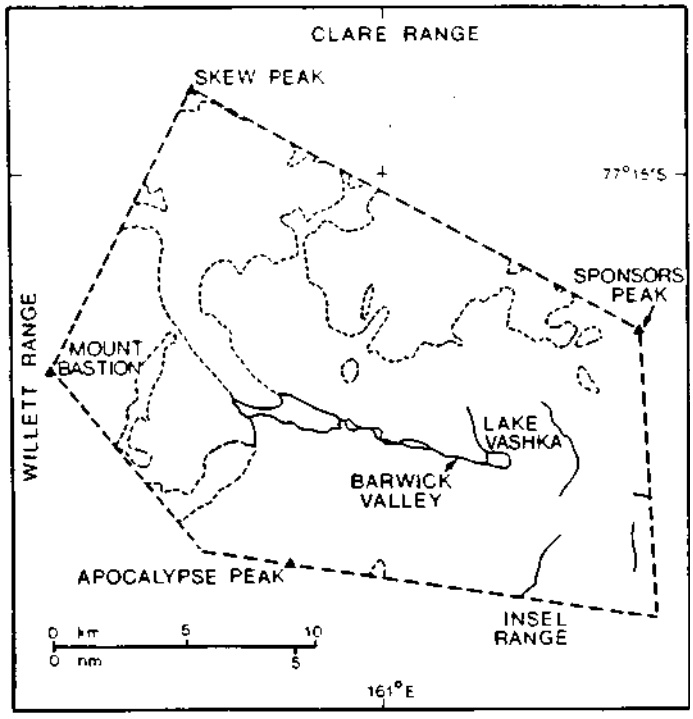
(9) *Other restraints.* No radio frequency transmitting equipment other than low-power transceivers for local essential communication may be installed within this Site. Every precaution should be taken to ensure that electrical equipment is adequately suppressed and correctly installed to keep man-made electrical noise to an absolute minimum.

Site of Special Scientific Interest No. 3: Management Plan

Recommendation VIII–4, designation
Recommendation X–6, extension of expiry date
Recommendation XII, extension of expiry date

Barwick Valley, Victoria Land

(1) *Description of Site.* The Site includes the greater part of Barwick Valley and Victoria Land and contains parts of several glaciers, exposed soils, a lake about 3 kilometers wide and 16 kilometers long, and a connecting stream about 5 kilometers long leading to Lake Vashka. It is bordered on the south, west, and north by the Olympus, Willett, and Clare Ranges, respectively. The boundary of the Site approximates to an irregular pentagon enclosing about 325 square kilometers. The Site is defined by lines joining Skew Peak (77°13' S. 160°43' E.), Sponsors Peak (77°18' S. 161°24' E.), a point on the Insel Range (77°24' S. 161°26' E.), a point in the Apocalypse Peaks (77°24' S. 160°46' E.), Mount Bastion (77°19' S. 160°34' E.), and Skew Peak again. The boundaries are shown on map 25.



Map 25

(2) *Reason for designation.* Barwick Valley is one of the least disturbed and contaminated of the Dry Valleys of Victoria Land, which are environmentally unique and possess extreme polar desert ecosystems. The Site is important as a reference base against which to measure changes in comparable ecosystems of the other dry valleys where a considerable variety of scientific investigations have been conducted regularly over the past decade. It is also expected to be of use in connection with global environmental monitoring.

(3) *Outline of research.* Investigations are proposed of the microbiology, bacteriology, and mycology (especially of yeasts and molds) and of the terrestrial and aquatic ecosystems, with special programs to establish baseline measurements for biological and environmental monitoring.

(4) *Date of expiry of designation.* 31 December 2000. Date provided by Antarctic Treaty resolution; the U.S. regulation does not specify an expiration date.

(5) *Access points.* Access should be by helicopter to Wright Valley, thence into the Barwick Valley Site on foot past Lake Vashka.

(6) *Pedestrian and vehicular routes.* Vehicles should not be used. Pedestrian routes should keep to well-drained ground avoiding streams and the lake margins as much as possible.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Geological, pedological, and glaciological studies, except those which would introduce exotic species and those which would disrupt or damage the existing ecosystems, are to be undertaken.

(8) *Scientific sampling.* Scientific sampling in the Site should be restricted to that which can be accomplished without introducing new organisms, including micro-organisms, and without disturbing the environment.

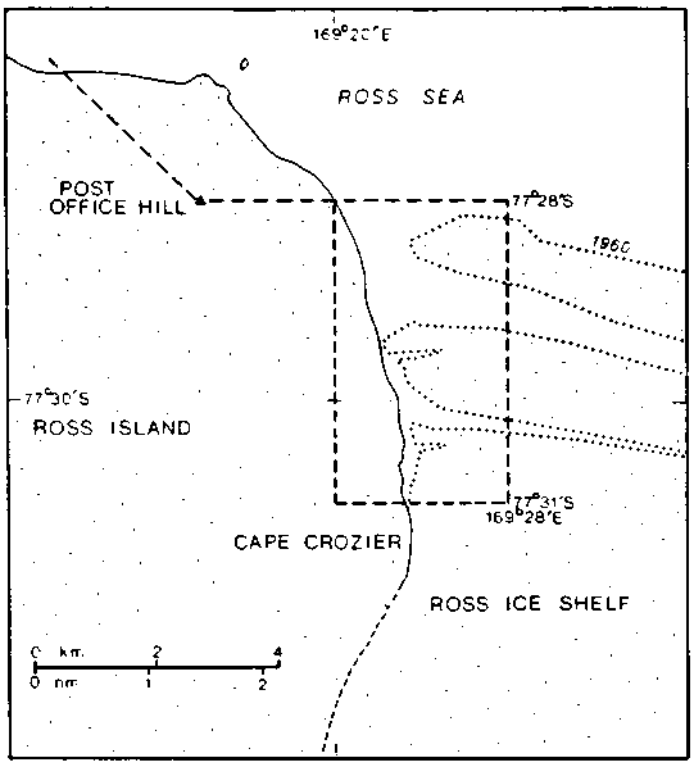
(9) *Other restraints.* Overflight of the Site should be avoided. Aircraft landing and vehicle parking should be kept well outside the boundaries of the Site. Field activities should be kept to a minimum. Permanent field camps, landfill disposal, and other activities which would introduce new materials or organisms, including micro-organisms, into the Site should be avoided. All materials carried into the Site should be removed.

Site of Special Scientific Interest No. 4: Management Plan

Recommendation VIII–4, designation from former Specially Protected Area No. 6
Recommendation XII–5, extension of expiry date
Recommendation XIII–7, extension of expiry date
Recommendation XVI–7, extension of expiry date

Cape Crozier, Ross Island

(1) *Description of Site.* The Site comprises 40 square kilometers and includes the land areas where the Adélie Penguins (*Pygoscelis adeliae*) nest and the adjacent fast ice where the emperor penguins (*Aptenodytes forsteri*) annually breed. It is bounded by lines joining four points (77°28' S. 169°20' E., 77°28' S. 169°28' E., 77°31' S., 169°28' E., 77°31' S. 169°20' E.);and also includes the land area lying north of a line from one point (77°28' S. 169°20' E.) to the summit of Post Office Hill and northeast of a line that bears 315° true from the summit of Post Office Hill to the coast. The boundaries of the Site are indicated on map 26.



Map 26

(2) *Reason for designation.* The penguin colonies are the subject of long-term studies of population dynamics and social behavior, and are relatively accessible by air from McMurdo station and Scott base. Access to the Site should be restricted to scientists engaged in investigations within the Site.

(3) *Outline of research.* Studies of the emperor and Adélie penguin populations and their ethology, life cycles, physiological adaptation, and natural population fluctuations are to be undertaken. Possible changes in their biological characteristics that may be due to man-induced changes in the environment will be studied.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* Access should be at points on the boundary closest to the refuge hut and the helicopter landing place.

(6) *Pedestrian and vehicular routes.* Helicopters and low-flying aircraft should avoid the Site. Vehicles should not enter the Site and should

approach the Site boundary, when serving authorized activities, on courses at right angles to the boundary orientation. Pedestrian movement within the Site should be limited to the shortest routes consistent with the scientific activity.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Biological, pedological, and geological observations except those which would cause harm to the birds or interfere with the breeding success of the penguin colonies may be undertaken. As far as possible such studies should be made at time when the Adélie penguin colony is absent or when the emperor penguin colony is at least 1 kilometer from the locality under scientific consideration.

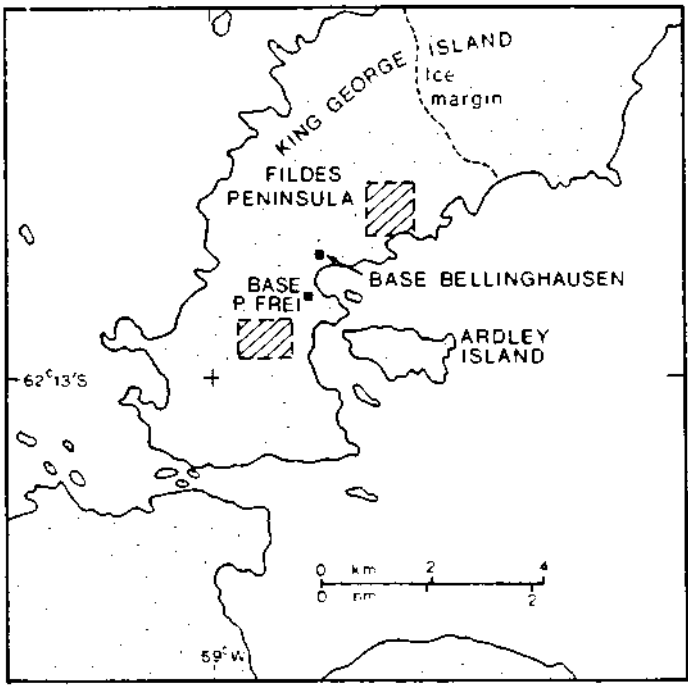
(8) *Scientific sampling.* Taking samples of the bird populations by killing, capture, or taking of eggs should be done only for a compelling scientific purpose and in accordance with the Agreed Measures for the Conservation of Antarctic Fauna and Flora. Close inspection of birds, including photography, or taking blood or other biological samples, should be kept to a minimum.

Site of Special Scientific Interest No. 5: Management Plan

Recommendation VIII–4, designation from former Specially Protected Area No. 12
Recommendation X–6, extension of expiry date
Recommendation XII–5, extension of expiry date
Recommendation XIII–7, extension of expiry date
Recommendation XVI–7, extension of expiry date

Fildes Peninsula, King George Island, South Shetland Islands

(1) *Description of Site.* The two areas on Fildes Peninsula shown on map 27.



Map 27

(2) *Reason for designation.* The unique fossil ichnolites found in these areas are located close to two permanent scientific stations that have been visited frequently by tourist groups. The areas also contain representative sequences of Tertiary strata.

(3) *Outline of research.* The main object of the research program is to describe the Tertiary stratigraphic sequences and to understand the geological evolution of this part of the Antarctic Peninsula.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* None is defined.

(6) *Pedestrian and vehicular routes.* Vehicles and helicopters should not enter the Site except in an emergency.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Scientific research other than geological should be kept to a minimum.

(8) *Scientific sampling.* Samples of rocks should be taken only for compelling scientific purposes.

(9) *Other restraints.* Buildings and other facilities should not be erected in the Site.

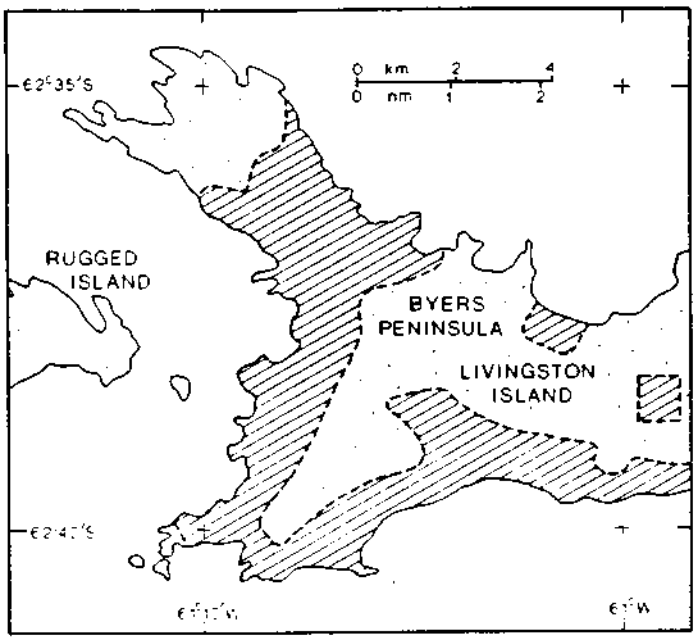
Recommendation VIII–4, designation from former Specially Protected Area No. 10
Recommendation X–6, extension of expiry date
Recommendation XII–5, extension of expiry date
Recommendation XIII–7, extension of expiry date
Recommendation XVI–5, revision of management plan

Sites of Special Scientific Interest No. 6: Management Plan

Byers Peninsula, Livingston Island, South Shetland Islands

This Site currently comprises three areas of varying shape and size on Byers Peninsula designated solely for their sedimentary and paleontological interest. However, the peninsula is also of considerable biological and archeological importance. The following amended management plan is proposed:

(1) *Description of Site.* Byers Peninsula is an extensive, largely ice-free area at the western end of Livingston Island, South Shetland Islands, centered on latitude 62°38' S. longitude 61°05' W. The Site comprises the entire area of Byers Peninsula extending from the ice margin on the west side of Rotch Dome (to a point directly north of Stackpole Rocks) westward to the west end of Ray Promonotory. The littoral zone of the peninsula is included within the Site. The nearby offshore islets and islands are not included in the Site. Most of the Site is low and undulating, below 100 meters' altitude, except for Ray Promontory which has a more rugged topography, rising to over 200 meters at Penca Hill and Start Hill. Numerous volcanic plugs, lakes, pools, and streams occur between Ray Promontory and the Rotch Dome ice field. Coastal areas often have broad beaches several hundred meters wide, with raised beaches behind.



Map 28

(2) *Reason for designation.* The fossils found in this area provide evidence of the former link between Antarctica and the other southern continents. A long-term paleontological research program has been in progress since the mid-1960's. It is important to protect these Jurassic and Cretaceous rocks from being used as building materials or taken as souvenirs.

The Site is of special biological importance. It has a sparse but diverse flora of both calcicolous and calcifuge plants and cyanobacteria associated with the lavas and basalts, respectively. Basaltic plugs are particularly well vegetated. Several rare cryptogams and the two native vascular plants (*Colobanthus quitensis* and *Deschampsia antarctica*) occur at several sites. There

are several coastal and inland lakes, the latter having a particularly important biota, including aquatic mosses, and serving as breeding sites for the midge *Parochlus steineni,* the only native winged insect in the Antarctic and with exceptionally restricted distribution. The only other antarctic dipteran, the apterous *Belgica antarctica,* occurs in stands of wet moss.

The Site is also unique in possessing the greatest concentration of historical sites in Antarctica, namely the remains of refuges, together with contemporary artifacts, and shipwrecks of early nineteenth century sealing expeditions.

It is important that both the biological and archeological features are also afforded protection.

(3) *Outline of research.* A long-term geological and paleontological research program was established in 1964. The main objectives are the description of sediments and fossils found in this area. Botanical, zoological, limnological, ornithological, and archeological investigations have also been undertaken throughout the Site at various times since the late 1950's.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* None is defined.

(6) *Pedestrian and vehicular routes.* Vehicles should not enter the Site, except in an emergency. Helicopters should land only on unvegetated ground at least 500 meters from any bird or seal concentrations or freshwater bodies.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Scientific research other than archeological, biological, and geological should be kept to a minimum.

(8) *Scientific sampling.* Samples of rocks or biological specimens should be taken only for compelling scientific purposes.

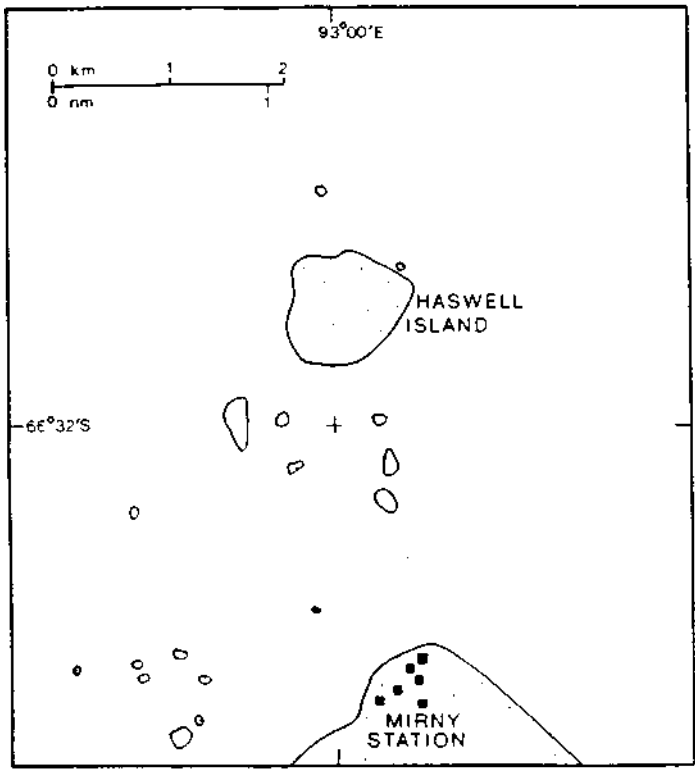
(9) *Other restraints.* Buildings and other facilities should not be erected in the Site. All nonhuman waste should be removed from the Site. No combustible waste should be incinerated within the Site. There should be no interference of any sealers' refuges (huts, caves, etc.) nor removal of any associated artifacts (including implements, timbers, fabrics, etc.) from these features or from the beaches. No skeletal remains of any animal should be moved within or removed from the Site.

Recommendation VIII–4, designation
Recommendation X–6, extension of expiry date
Recommendation XII–5, extension of expiry date
Recommendation XIII–7, extension of expiry date
Recommendation XVI–7, extension of expiry date

Site of Special Scientific Interest No. 7: Management Plan

Haswell Island

(1) *Description of Site.* The Site consists of Haswell Island (66°31' S. 93°00' E.), about 1 square kilometer in area, the largest of a group of islands lying close to Mirny station, together with its littoral zone and the area of fast ice, when present, lying within the delimitation shown on map 29.



Map 29

(2) *Reason for designation.* The Site is an exceptionally prolific and representative breeding locality for all the species of birds that occur in this part of the Antarctic: five species of petrel (*Procellariiformes*), one species of skua (*Catharacta skua*), and one species of penguin (*Pygoscelis adeliae*). The Site provides exceptional opportunities for research and needs protection in view of its close proximity to a large antarctic station.

(3) *Outline of research.* A long-term biological program associated with the bird colonies and studies of the inshore marine biology are expected to continue in the Site.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* The Site may be entered from any direction but access should cause minimum disturbance to the bird colonies.

(6) *Pedestrian and vehicular routes.* Vehicles should not enter the Site. Pedestrians should not move through the populated areas except as necessary in the course of scientific investigations. Helicopters and low-flying aircraft should avoid the bird colonies in accordance with the Agreed Measures for the Conservation of Antarctic Fauna and Flora.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Any scientific investigation that will not cause significant distur-

bance to the biological programs for which the Site has been designated may be undertaken.

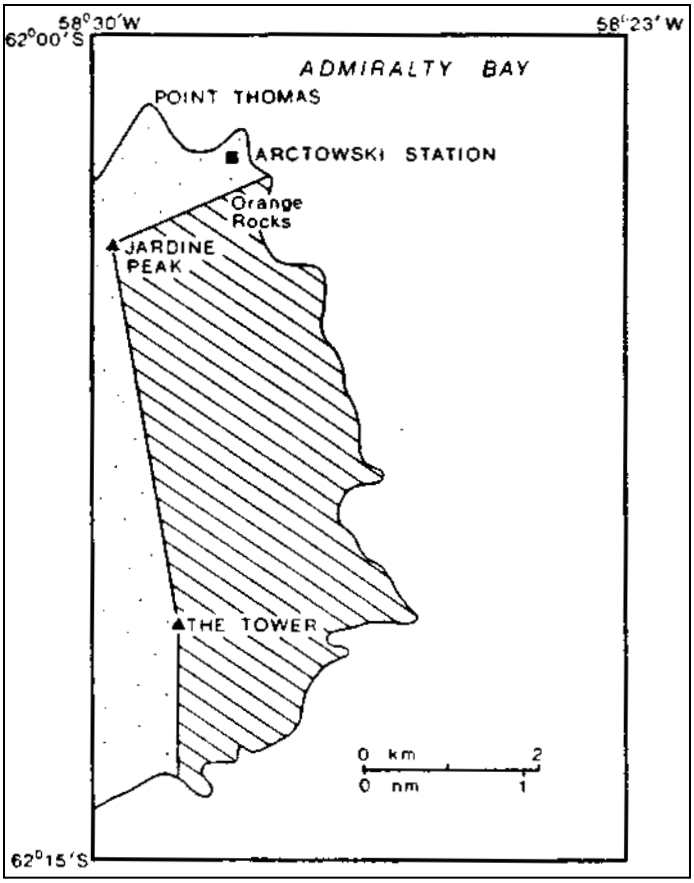
(8) *Scientific sampling.* Taking samples of the bird population by killing, capture, or taking of eggs should be done only for a compelling scientific purpose and in accordance with the Agreed Measures for the Conservation of Antarctic Fauna and Flora.

Recommendation X–5, designation
Recommendation XII–5, extension of expiry date
Recommendation XIII–7, extension of expiry date

Site of Special Scientific Interest No. 8: Management Plan

Western Shore of Admiralty Bay, King George Island

(1) *Description of Site.* All that area on the western shore of Admiralty Bay, south of Ezcurra Inlet, south of a line connecting Jardine Peak and the shoreline immediately to the north of a prominent group of rocks characterized by a covering of orange lichens bearing approximately 68° from Jardine Peak, and east of a line joining Jardine Peak, the Tower and a point on shore line bearing 180° from the Tower.



Map 30

(2) *Reason for designation.* This area is one of exceptional scientific interest close to a research station frequently visited by tourist ships. It supports an exceptional assemblage of antarctic birds and mammals. Long-term research programs could be jeopardized by accidental interference, especially during the breeding season of these animals.

(3) *Outline of research.* The area supports a breeding colony of elephant seals and the three species of pygoscelid penguins in association with eight species of flighted birds. The purpose of the investigations is to gain insight into the dynamics of a typical, but particularly rich, antarctic coastal ecosystem. Studies of the functioning of the inshore and coastal zone in relation to the ecosystem will include quantitative studies of the circulation of matter and energy between the coastal and marine environments.

(4) *Date of expiry of designation.* 31 December 2000. Date provided by Antarctic Treaty resolution; the U.S. regulation does not specify an expiration date.

(5) *Access points.* The Site should be entered only from the vicinity of Point Thomas.

(6) *Pedestrians and vehicular routes.* Vehicles should not enter the Site. Pedestrians should not move through the populated areas, especially during the breeding season, except as necessary in the course of scientific investigations.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Scientific investigation that will not cause significant disturbance to the biological programs mentioned in subsection (3) above may be undertaken.

(8) *Scientific sampling.* Scientific sampling, other than that associated with the research program described above, should be kept to a minimum and in accordance with the Agreed Measures for the Conservation of Antarctic Fauna and Flora.

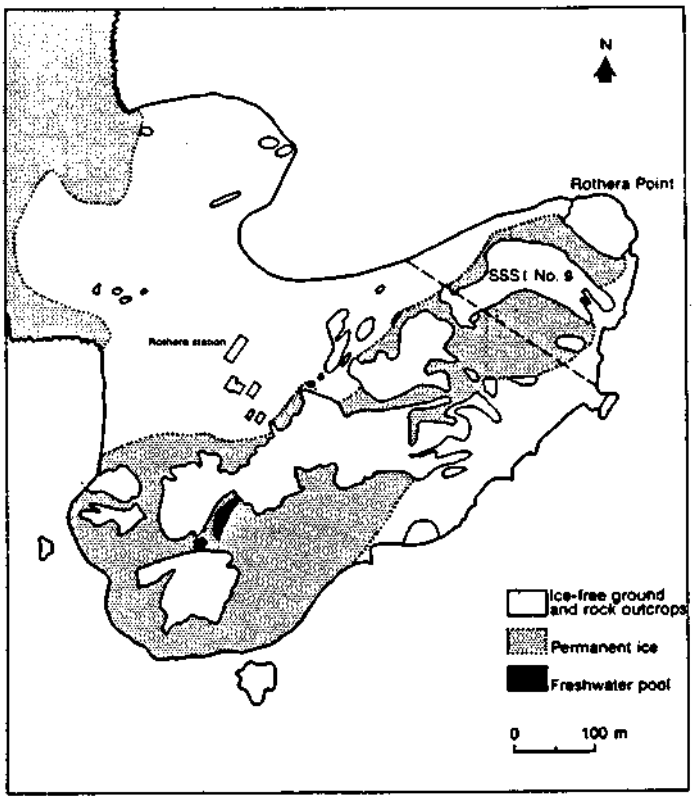
(9) *Other restraints.* Helicopters and low-flying aircraft should avoid the breeding colonies of birds in accordance with the Agreed Measures for the Conservation of Antarctic Fauna and Flora.

Recommendation XIII–8, designation

Site of Special Scientific Interest No. 9: Management Plan

Rothera Point, Adelaide Island

(1) *Description of Site.* Rothera Point (67°34' S. 68°08' W.) is situated in Ryder Bay, at the southeast corner of "Square Peninsula" on the east side of Adelaide Island, southwest Antarctic Peninsula. The Site is the northeastern one-third of the point and is representative of the area as a whole. The British station Rothera lies about 350 meters west of the western boundary of the Site. The boundaries of the Site are shown on map 31.



Map 31

(2) *Reason for designation.* This Site serves to monitor the impact of man on an antarctic fell-field ecosystem. The vegetation is not rich or well developed, and the soils are shallow and confined to small pockets; there is no significant avifauna. Some monitoring studies have been in progress since before the establishment of the research station in 1975.

(3) *Outline of research.* Investigations incorporating the monitoring of terrestrial and freshwater macrobiota and microbiota, as well as soils and heavy metal deposition within the Site (control area) and near the Site (impact area), will continue with a view to assessing the impact of the neighboring research station.

(4) *Date of expiry of designation.* 31 December 2000. Date provided by Antarctic Treaty resolution; the U.S. regulation does not specify an expiration date.

(5) *Access points.* None is designated.

(6) *Pedestrian and vehicular routes.* Vehicles and helicopters are excluded. Pedestrians should enter the Site only in connection with monitoring activities. Pedestrian access is allowed to the beaches seaward of the Site.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Investigation that would not adversely affect the purpose for which the Site has been designated may be undertaken.

(8) *Scientific sampling.* This should be restricted to the minimum required in connection with the monitoring program.

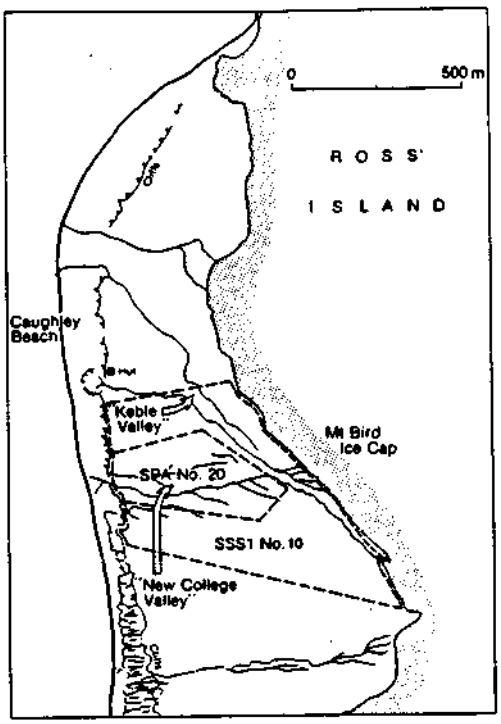
(9) *Other restraints.* Sledge dogs associated with the research programs at Rothera station must not be permitted to enter the Site. Human wastes must not be deposited in the Site.

Recommendation XIII–8, designation
Recommendation XVI–7, extension of expiry date

Site of Special Scientific Interest No 10: Management Plan

Caughley Beach, Cape Bird, Ross Island

(1) *Description of Site.* Caughley Beach and its hinterland lie between the areas known as the Cape Bird Northern and Middle Penguin Rookeries, about 1 kilometer north of Cape Bird, northern Ross Island (77°10' S. 166°40' E.). The proposed Site encompasses the area between the top of the coastal cliffs of Caughley Beach and the Mt. Bird Ice Cap and between a line 200 meters south of the New Zealand Antarctic Research Program's summer station and a line 500 meters north of Cape Bird Middle Adélie Penguin Rookery. The Site surrounds Specially Protected Area No. 20 on three sides and its boundaries are shown on map 32.



Map 32

(2) *Reason for designation.* The Cape Bird area is the Site of the most extensive stands of moss, algae, and lichens in southern Victoria Land. The terrestrial ecosystem within the Site is the subject of long-term research. Designation of the Site will protect biological experiments and monitoring sites and provide a buffer zone around the Specially Protected Area's conservation zone.

(3) *Outline of research.* Investigations incorporate monitoring of plant colonization sites, bacteriology, mycology and phycology of terrestrial and aquatic ecosystems, physiology of terrestrial and freshwater fauna, and nitrogen cycling. The research is designed to provide a better understanding of the biogeochemical processes in antarctic ecosystems.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* There are no restrictions on access points other than that section of the Caughley Beach cliff top which is a designated boundary shared with the Specially Protected Area.

(6) *Pedestrian and vehicular routes.* Vehicles and helicopters are excluded. Pedestrians should keep to ridge lines and well-drained ground.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Research studies and access to the U.S. Naval Astrofix may be permitted with the provision that exotic biota are not introduced and ecosystems are not damaged or disrupted.

(8) *Scientific sampling.* Sampling should be restricted to the minimum required and should not be undertaken to the detriment of the functioning of existing ecosystems or of the purposes for which the Site has been designated.

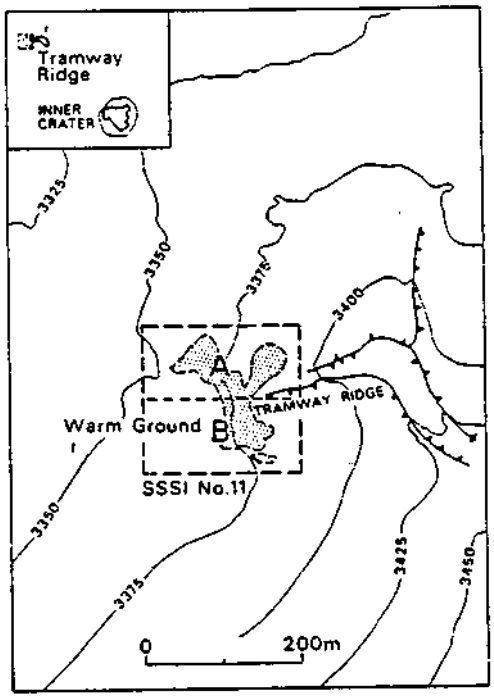
(9) *Other restraints.* None is specified.

Recommendation XIII–8, designation
Recommendation XVI–7, extension of expiry date

Site of Special Scientific Interest No. 11: Management Plan

"Tramway Ridge," Mt. Erebus, Ross Island

(1) *Description of Site.* Mt. Erebus (3,795 meters) Ross Island, South Victoria Land, is one of two active volcanoes on continental Antarctica. "Tramway Ridge" is situated between altitudes 3,350 and 3,400 meters, 1 kilometer northwest of the Mt. Erebus crater (77°32' S. 167°8' E.). The Sites comprises an extensive area of gently sloping warm ground located 1 kilometer northwest of the main crater of Mt. Erebus at the lower end of "Tramway Ridge." The boundary of the Site is a square with sides of 100 meters and encompasses the entire warm ground area of lower "Tramway Ridge." The 1-hectare Site is divided into two areas of permitted use. The northern area "A" is designated as a reference site with all access prohibited except for pressing research reasons. The southern area "B" is designated as a research site to accommodate ongoing research programs and sample collection. The boundaries of the Site are shown on map 33.



Map 33

(2) *Reason for designation.* Mt. Erebus provides one of only two known high-altitude areas of fumarolic activity and associated vegetation in the Antarctic. The warm ground of the Site and its associated vegetation are of interest to botanists, phycologists, and microbiologists. The Site serves as a study area for descriptive purposes and provides a reference site for future studies. For research status of the Site to be preserved and to protect the Site against trampling damage and alien introductions that may find conditions here favorable for survival, the area has been designated as a Site of Special Scientific Interest.

(3) *Outline of research.* Botanical, phycological, and microbiological studies of the Site and its associated vegetation, with particular reference to the presence of warm ground in an extremely rigorous environment may be undertaken.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* There are no restrictions on access points.

(6) *Pedestrian and vehicular routes.* Vehicles and helicopters are excluded. Pedestrians should ensure great care is taken to avoid, wherever possible, walking on any visible vegetation and areas of heated ground.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Scientific investigations that will not cause disturbance to the environment and its biota or to the biological programs may be undertaken.

(8) *Scientific sampling.* Samples are not to be taken from area "A." Sampling from area "B" should be restrained and not be undertaken to the detriment of the sustainability of the biological communities or the interests of future investigations.

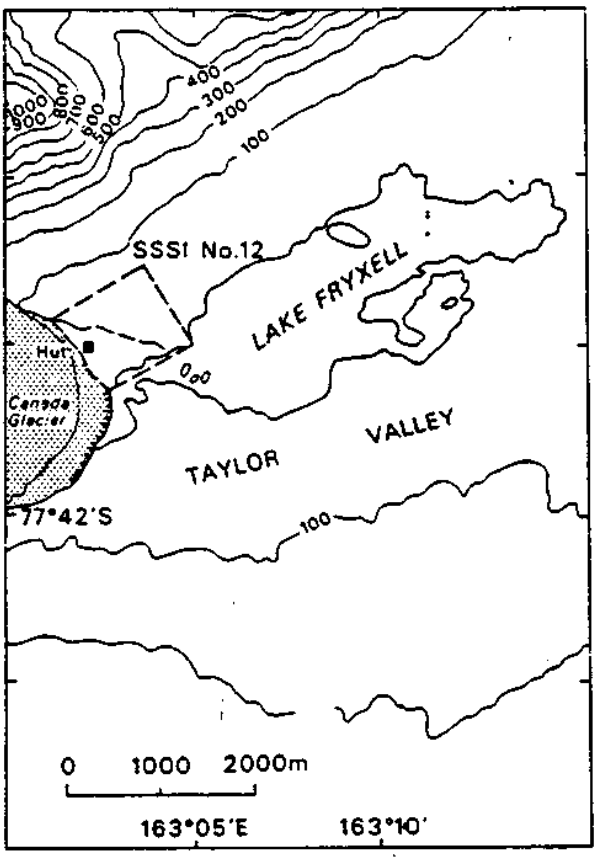
(9) *Other restraints.* Sterile protective overclothing should be worn and footwear should be sterilized before entering the Site to minimize the risk of introducing alien biota to the geothermal areas. Human wastes must not be deposited within the Site.

Recommendation XIII–8, designation
Recommendation XVI–7, extension of expiry date

Site of Special Scientific Interest No. 12: Management Plan

Canada Glacier, Lake Fryxell, Taylor Valley, Victoria Land

(1) *Description of Site.* The Site lies between Canada Glacier and Lake Fryxell in lower Taylor Valley, south Victoria Land (77°37' S. long 163°05' E.). The Site encompasses an area of 1 square kilometers located between the tongue of Canada Glacier and the shoreline of Lake Fryxell. Surface features include old moraine deposits and ancient lake levels. During summer months small meltwater streams drain from the glacier to the lake creating an extensive area of flushes. The central flush area is about 100 meters west of the New Zealand Antarctic Research Program field hut. The boundaries of the Site are shown on map 34.



Map 34

(2) *Reason for designation*. The Site contains some of the richest plant growth (algae and mosses) in the southern Victoria Land Dry Valleys. With the concentration of research activity within this area, there is a need to regulate human impact with regard to trampling, water quality, and sampling.

(3) *Outline of research.* The Site is the center of scientific research for freshwater and terrestrial biological research and a reference site for other dry valley biological ecosystems.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* Access should be from the northeast side of the Site.

(6) *Pedestrian and vehicular routes.* Vehicles are excluded; access to the Site by helicopter is allowed, but landings should be restricted to the helicopter

landing pad 50 meters northeast of the New Zealand Antarctic Research Program hut. Pedestrian movement within the Site should be restricted to designated paths and shortest routes consistent with scientific activity.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* None is specified.

(8) *Scientific sampling.* Sampling should be restricted to the minimum required and should not be undertaken to the detriment of the environment and its biota. It should be accomplished without causing introduction to new biota, including micro-organisms.

(9) *Other restraints.*

(a) Collection of ice for water supply should be taken from the edge of the glacier immediately south of the area of rich algal growth.

(b) All human wastes must be containerized and returned to Scott or McMurdo stations.

(c) Tent sites are to be restricted to within a 50 meters radius of the hut.

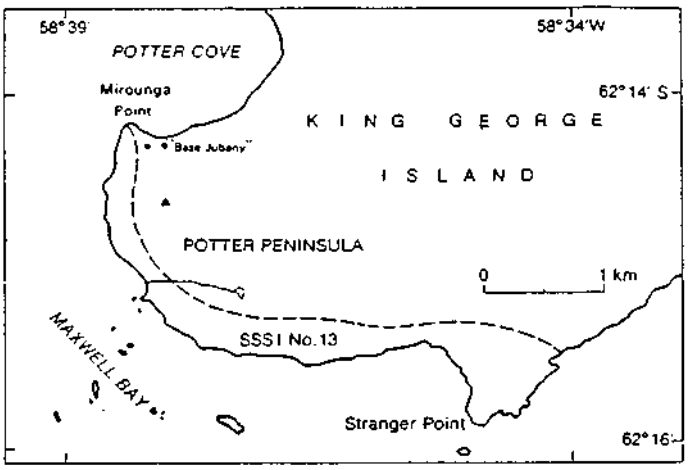
(d) Entry into the area of rich moss growth west of the hut is prohibited except for compelling scientific purposes.

Recommendation XIII–8, designation

Site of Special Scientific Interest No. 13: Management Plan

Potter Peninsula, King George Island, South Shetland Islands

(1) *Description of Site.* The Site is located on the east side of Maxwell Bay, southwest King George Island between "Mirounga Point" and the east side of Stranger Point (62°l5' S. long 58°37' W.). The Site occupies the coastal zone of variable width up to 500 meters from the shoreline (low-water mark) and rising to about 70 meters altitude at Stranger Point. It is mainly an area of raised beaches, mostly pebble covered and backed by basalt cliffs, terminal or lateral moraines, and small glaciers. The coastline is very irregular and alternates with small bays and rocky headlands. The boundaries of the Site are shown on map 35.



Map 35

(2) *Reason for designation*. This area has a diverse avian and mammal fauna and locally rich vegetation and is located close to an Argentine research station (Jubany) frequently visited by tourist cruises. Long-term research programs could be endangered by accidental interference, especially during breeding periods.

(3) *Outline of research.* The Site contains a fairly large breeding population of elephant seals (*Mirounga leonina*). Various research projects are being carried out, including population censuses, tagging, studies of population structure, birth and mortality rates, growth rates, and analysis of blood samples for the study of protein polymorphism. The status of fur seals (*Arctocephalus gazella*) and other seals is also being monitored. Studies of breeding sea birds are also being made on Adélie penguins (*Pygoscelis adeliae*), gentoo penguins (*P. papua*), giant petrels (*Macronectes giganteus*), Dominican gulls (*Larus dominicanus*), sheath bills (*Chionis alba*), brown skuas (*Catharacta lonnbergii*) and antarctic terns (*Sterna vittata*). This work includes nest censuses, fledgling development, predation, and analysis of egg albumen to determine protein polymorphism. All the investigations have the objective of assessing the population dynamics of the different species and the biotic and abiotic factors that regulate them.

(4) *Date of expiry of designation*. 31 December 2000. Date provided by Antarctic Treaty resolution; the U.S. regulation does not specify an expiration date.

(5) *Access points.* Access to the Site is restricted to the northern end in the vicinity of "Mirounga Point."

(6) *Pedestrian and vehicular routes.* Pedestrians and vehicles must use established routes particularly during the breeding season. No vehicles or helicopters should be used near any of the breeding sites.

(7) *Other kinds of scientific investigation which would not cause harmful interference.* None is specified.

(8) *Scientific sampling.* Scientific sampling, both by killing or capturing, must be the minimum required for the research program described above and must conform with the Agreed Measures for the Conservation of the Antarctic Fauna and Flora.

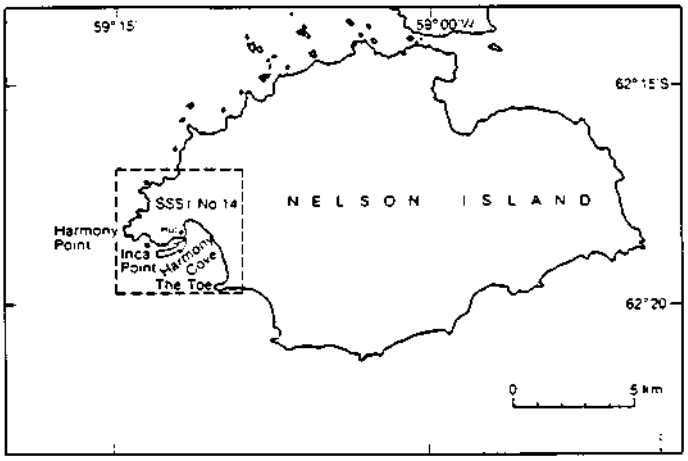
(9) *Other restraints.* None is specified.

Recommendation XIII–8, designation

Site of Special Scientific Interest No. 14: Management Plan

Harmony Point, Nelson Island, South Shetland Islands

(1) *Description of Site.* The Site is on the northwest coast of Nelson Island, between King George Island to the northeast and Robert Island to the southwest (62°18'S. long 59°14'W.). The Site includes Harmony Point and the Toe, the adjacent ice-free land, and intertidal zone within the rectangle shown on map 36.



Map 36

(2) *Reason for designation*. This area is of special scientific interest, being situated in an area rich in avian species. Vegetation cover is extensive, is often dense, and comprises a relatively rich flora including both species of vascular plants. Its five rocky coasts are inhabited by large numbers of marine invertebrates. Long-term research programs could be disrupted by accidental interference, the destruction of the vegetation and substratum, and the perturbation of nesting areas.

(3) *Outline of research.* Argentine and Chilean research in the area includes the following ornithological activities: nest censuses, juvenile mortality studies, growth studies, banding, and studies on predators, i.e., leopard seal (*Hydrurga leptonyx*), giant petrel (*Macronectes giganteus*), and skuas (*Catharacta*). The relationships between the flora and nesting areas of the various bird species are being studied. In the tide pools ecological studies are continuing. The results are compared with those from other research sites in order to understand the relationships among different littoral systems.

(4) *Date of expiry of designation*. 31 December 2000. Date provided by Antarctic Treaty resolution; the U.S. regulation does not specify an expiration date.

(5) *Access points.* Access to the Harmony Point area is restricted to access from the sea, across the pebble beach situated to the southwest of Inca Point, 400 meters south–southwest of the refuge. Special access points are not specified for the Toe.

(6) *Pedestrian and vehicular routes.* Pedestrians must use established routes, particularly during the bird breeding season. Helicopters must not overfly any of the bird breeding areas below the height stated in the Agreed Measures, and should land only in the vicinity of the refuge or landing beach, and should not land anywhere on the Toe. There is no vehicular access.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* None is specified.

(8) *Scientific sampling.* All sampling, including killing or capturing of fauna, must be the minimum required for the approved scientific programs and must conform to the Agreed Measures for the Conservation of the Antarctic Fauna and Flora.

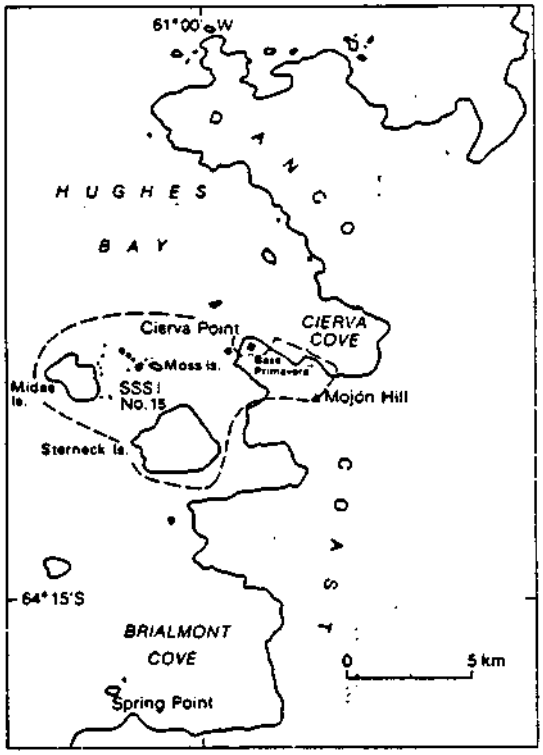
(9) *Other restraints.* No refuse should be deposited within the Site, or at sea beyond the Site in a manner that may allow it to be washed ashore within the Site. The refuge should be maintained in a habitable state, and all refuse and unwanted materials associated with it should be removed from the Site.

Recommendation XIII–8, designation

Site of Special Scientific Interest No. 15: Management Plan

"Cierva Point" and nearby islands, Danco Coast, Antarctic Peninsula

(1) *Description of Site.* "Cierva Point" (64°l0' S. 60°57' W.) is at the northwest of the peninsula on the south side of Cierva Cove at the north end of Hughes Bay. (It should not be confused with Spring Point on the south side of Brialmont Cove in Hughes Bay.) The Site comprises the "Cierva Point" peninsula encompassing the land west of an imaginary line from the southeast of the north side of the Point through the summit of Mojon Hill to the southeast of the south side of the Point. Also included are Sterneck Island and Midas Island and Moss Islands, which lie mainly between Midas Island and "Cierva Point." Although the intertidal zone of each of these areas is included in the Site, the subtidal marine environment is not included. Base Primavera and all its associated installation and areas of disturbance are excluded from the Site.



Map 37

(2) *Reason for designation.* The area has a special scientific value in that it sustains important avian populations, extensive vegetation, and a diverse flora, including the two antarctic flowering plants and several liverworts, and invertebrate fauna; its littoral possesses abundant tidal pools inhabited by large numbers of marine invertebrates. Long-term research programs could be endangered by accidental interference, destruction of the vegetation and soil, pollution of rock pools, and perturbation of breeding birds.

(3) *Outline of research.* Eight species of bird are being studied. The studies include nesting censuses, growth of fledglings, banding, mortality of young by predation, and study of predators, especially leopard seals (*Hydrurga leptonyx*) and giant petrels (*Macronectes giganteus*). The relationship between the vegetation and bird colonies is being studied. Studies of antarctic hair grass

(*Deschampsia antarctica*) and antarctic pearlwort (*Colobanthus quitensis*) are being undertaken. The ecology of the relatively diverse fauna of the intertidal pools is being studied in detail.

(4) *Date of expiry of designation.* 31 December 2000. Date provided by Antarctic Treaty resolution; the U.S. regulation does not specify an expiration date.

(5) *Access points.* Access to "Cierva Point" should be at one point only, a landing area to the west of the research station. No access points are specified for any of the islands.

(6) *Pedestrian and vehicular routes.* Pedestrians must keep to established routes, particularly in densely vegetated areas and in bird breeding areas.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Any research that will not have a detrimental impact on the environment.

(8) *Scientific sampling.* All sampling must be the minimum required for approved scientific projects and must conform to the Agreed Measures for the Conservation of the Antarctic Fauna and Flora. No sampling of any kind (e.g., for souvenirs) is permitted for any other reason, especially by tourists.

(9) *Other restraints.* No waste of any description should be disposed of within the Site or at sea in a manner which will allow it to be washed ashore within any part of the Site.

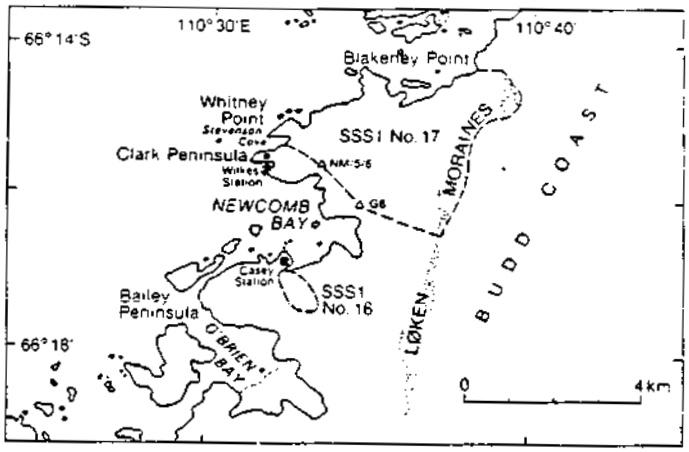
Recommendation XIII–8, designation

Site of Special Scientific Interest No. 16: Management Plan

Bailey Peninsula, Budd Coast, Wilkes Land

(1) *Description of Site.* Bailey Peninsula is situated between Newcomb and O'Brien Bays at the west end of Vincennes Bay, opposite the Windmill Islands, on Budd Coast (66°17' S. 110°32' E). The Site consists of an irregular area of rock exposed during summer, surrounding the Casey station transmitter building. The boundary, which is demarcated, is shown on map 38.

(2) *Reason for designation.* The Site is not unique in the Windmill Islands region context but is representative of a diverse assemblage of vegetation; it contains contrasting habitats and water bodies; has extremely rich (by continental antarctic standards) lichen and moss communities; and has an important stand of liverwort. Proximity to Casey station minimizes logistic problems with respect to field research and, at the same time, maximizes the potential for disturbance of study areas. It is primarily for this reason that this Site, where research is concentrated, requires protection.



Map 38

(3) *Outline of research.* The Site contains three extensive and contrasting moss fields that are the subject of taxonomic, ecological, and physiological studies which commenced during the summer of 1982–83. Additional studies include population ecology of invertebrates, associated with the vegetation, and soil/water chemistry. Permanent lichen growth monitoring sites have also been established, as have sites monitoring annual growth increments in mosses.

(4) *Date of expiry of designation.* 31 December 2000. Date provided by Antarctic Treaty resolution; the U.S. regulation does not specify an expiration date.

(5) *Access points.* None is specified, although access to the transmitter building near the southeast end of the Site should be via the ice/snow of the over-snow access route to Law Dome, several kilometers to the south.

(6) *Pedestrian and vehicular routes.* Access to the area should be restricted as far as possible to that necessary to conduct scientific work and operate the transmitter building. Vehicles should be restricted to existing access routes. These are clearly demarcated. No helicopter landing is permitted within the Site. Particular care should be taken to avoid damage to bryophytes and lichens, to avoid disrupting soils and periglacial features, and to avoid causing changes to water quality or drainage. Selected study reference areas

(e.g., three contrasting moss communities) have been delimited by marked stakes without causing disturbance to the environment. Access to these areas should be restricted to scientists participating in the study program.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Scientific research other than the programs for which the Site has been designated should be kept to a minimum.

(8) *Scientific sampling.* Sampling should be kept to the minimum and should not affect the existing research programs.

(9) *Other restraints.* No storage or disposal of any products relating to human occupancy of the station should occur in the Site.

Recommendation XIII–8, designation

Site of Special Scientific Interest No. 17: Management Plan

Clark Peninsula, Budd Coast, Wilkes Land

(1) *Description of Site.* Clark Peninsula is situated on the north side of Newcomb Bay at the west end of Vincennes Bay, opposite Windmill Islands, on Budd Coast (66°15' S. 110°36' E.). The Site comprises all land on Clark Peninsula within the southern boundary line connecting the east site of Stevenson Cove to trigonometrical station NM/5/6, trigonometrical station G3, and a point to the east–southeast on Loken Moraines. The western boundary is the eastern most limit of Loken Moraines as far north as a point due east of Blakeney Point, and thence to the coast. The boundary of the Site is indicated by prominent markers, and is shown on map 38.

(2) *Reason for designation.* Within the Site moss and lichen communities are being used as control sites to monitor environmental impact at Casey station. These remote study areas provide baseline data with which to compare changes associated with the research station.

(3) *Outline of research.* Lakes in a valley running southwest from Stevenson Cove toward the former Wilkes station contain cope pods which are not known elsewhere in the Windmill Islands area and are the subject of ongoing studies. The Adélie penguin colony at Whitney Point has been the site of intensive studies. This well-studied Site will provide a baseline for comparison with changes in other colonies in the region. Monitoring studies commenced during the summer of 1982–83. Physiological studies of mosses are underway. Ecological studies of bryophyte and lichen vegetation and associated invertebrate fauna, algae, and fungi and studies of moss growth and development in relation to taxonomic interpretation will be undertaken.

(4) *Date of expiry of designation.* 31 December 2000. Date provided by Antarctic Treaty resolution; the U.S. regulation does not specify an expiration date.

(5) *Access points.* None is specified.

(6) *Pedestrian and vehicular routes.* Access to Wilkes station is via a well-defined route on the southern side of the Site. Pedestrian and vehicular traffic should keep to this route and in particular should not stray northward of it. Vehicular traffic within the Site should be restricted to over-snow access to Wilkes station. Helicopters should not land within the Site. It is unlikely that pedestrian traffic will cause undue disturbance to the Site. However, travel should, where possible, be via snow avoiding ice-free areas.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Scientific research other than the programs for which the Site has been designated should be kept to a minimum.

(8) *Scientific sampling.* Sampling should be the minimum required for the approved research programs.

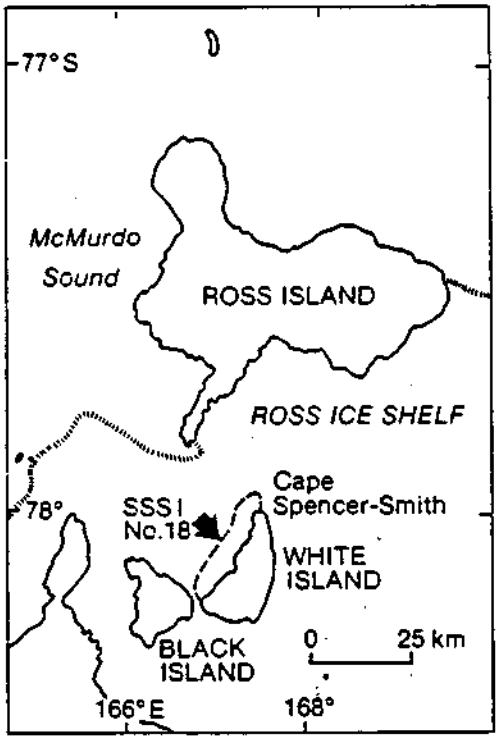
(9) *Other restraints.* Field refuge huts, if deemed necessary for facilitation of scientific studies, should be placed with care so as to avoid any potential contamination of the environment or interference with plant or animal life. Maintenance of the existing state of the Site is important for fulfillment of the stated research objectives.

Site of Special Scientific Interest No. 18: Management Plan

Recommendation XIII–8, designation
Recommendation XVI–7, extension of expiry date

White Island, McMurdo Sound

(1) *Description of Site.* White Island (78°10' S., 167°25' E.) rises out of the Ross Ice Shelf, about 30 kilometer south-southeast of Hut Point, Ross Island. The Site includes the northwest coastline of White Island from Cape Spencer-Smith in the north to a point protruding into the Strait between White and Black Islands in the southwest. It extends from high water mark to 5 kilometers offshore, across the Ross Ice Shelf. The boundary of the Site is shown on map 39.



Map 39

(2) *Reason for designation.* This Site supports a small breeding population of Weddell seals (Leptonychotes weddellii) which is physically isolated from the rest of mainland Antarctica by shelf ice. It is one of very few areas where Weddell seals feed under shelf ice. It is also one of the most southerly Weddell seal populations and has been studied year round.

(3) *Outline of research.* The unique Weddell seal population is the focus of continuing research in this area. Several hypotheses have been proposed to explain how this population originated and has remained isolated, 25 kilometers from the nearest open water.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* None is designated.

(6) *Pedestrian and vehicular routes.* Vehicles should approach no closer than 50 meters to the seal population and helicopters and low-flying aircraft should avoid the area, approaching no lower than 250 meters altitude.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* None is specified.

(8) *Scientific sampling.* Taking samples of Weddell seals by killing or capture should be done only for compelling scientific purpose and in accordance with the Agreed Measures for the Conservation of Antarctic Fauna and Flora.

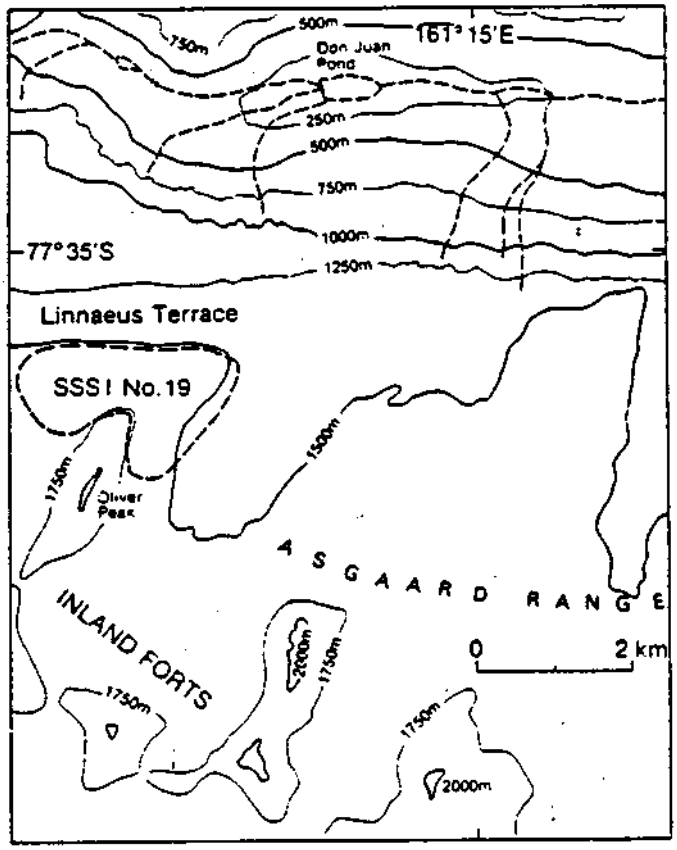
(9) *Other restraints.* No underwater explosives may be used for any purpose.

Site of Special Scientific Interest No. 19: Management Plan

Recommendation XIII–8, designation

Linnaeus Terrace, Asgard Range, Victoria Land

(1) *Description of Site.* The Site (77°36' S. 161°07' E.) lies at the east end of the Asgard Range to the north of Oliver Peak. It is between Don Juan Pond in South Fork Valley, southeast of Wright Valley, and Inland Forts, a small mountain range southeast of the Asgard Range. The Site includes the flat terrace north and east of Oliver Peak, between about 1500 meters' and 1650 meters' altitude. Its boundaries are shown on map 40.



Map 40

(2) *Reason for designation.* Linnaeus Terrace is one of the richest localities for the unique cryptoendolithic communities that colonize the Beacon Sandstone. Exposed rock surfaces exhibit a range of biological and physical weathering forms.

(3) *Outline of research.* Numerous scientific investigations have been and will continue to be conducted at the Site. The lichen flora has been extensively surveyed. The Site is typical for the monotypic green algal genus *Hemichloris* (*H. antarctica*). Microbiological studies of the cryptoendolithic ecosystem and year-round meteorological and micrometeorological measurements have been undertaken.

(4) *Date of expiry of designation.* 31 December 2000. Date provided by Antarctic Treaty resolution; the U.S. regulation does not specify an expiration date.

(5) *Access points.* No access points are specified for pedestrians but access by helicopter should be at the designated and marked landing site only.

(6) *Pedestrian and vehicular routes.* Vehicles should not enter the Site. Pedestrian traffic should be kept to a minimum.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* All other scientific activities should be kept to an absolute minimum.

(8) *Scientific sampling.* Scientific sampling and field activities should be restrained and cause minimal disturbance to the environment. Rocks should not be moved from their natural position. Great care should be exercised to avoid accidental breakage of fragile rock formations and disturbing periglacial features.

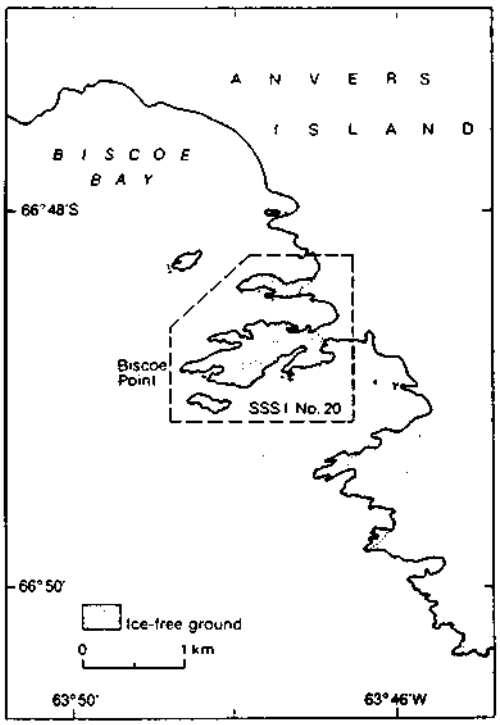
(9) *Other restraints.* Camping should be limited to the designated camping area in the immediate vicinity of the landing pad. Urinations should be limited to a marked spot about 20 meters east of the landing pad. Other human waste and all refuse should be removed from the Site.

Site of Special Scientific Interest No. 20: Management Plan

Recommendation XIII–8, designation

Biscoe Point, Anvers Island, Palmer Archipelago

(1) *Description of Site.* Biscoe Point (64°49' S. 63°49' W.) is situated on the southeast side of Biscoe Bay on the south side of Anvers Island in the Palmer Archipelago off the midwest coast of the Antarctic Peninsula. The Site includes the rocky promontory ending in Biscoe Point, the smaller headland immediately to the north, and the small islet off the southwest of Biscoe Point. A narrow area of land between the two promontories is included, as is the inshore marine environment within the Site boundaries, which are shown on map 41.



Map 41

(2) *Reason for designation.* This Site contains a large (approximately 5,000 square meters) but discontinuous stand of the two native vascular plants, antarctic hair grass (*Deschampsia antarctica*) and, less commonly, antarctic pearlwort (*Colobanthus quitensis*). A relatively well-developed loam occurs beneath closed swards of the grass and contains a rich biota, including the apterous midge *Belgica antarctica.* Long-term research programs could be jeopardized by interference from nearby Palmer station and from tourist ships.

(3) *Outline of research.* Several plant community studies are in progress. Most of the available surfaces support the two antarctic vascular plants which form several communities, particularly on the north-facing slope. Some communities are dominated by the vascular plants, particularly the grass; in others the co-dominants or subordinate taxa are mosses or lichens. The discontinuous vascular plant stand occurs on more or less flat, mesic terrain with fine mineral soil. It contains large (up to 20 square meters) patches of dead vascular plants which appear to be produced by environmental fluctuations, such as desiccation, flooding, and frost during some summers.

(4) *Date of expiry of designation*. 31 December 2000. Date provided by Antarctic Treaty resolution; the U.S. regulation does not specify an expiration date.

(5) *Access points.* None is specified.

(6) *Pedestrian and vehicular routes.* Vehicles should not enter the Site and helicopter landing should be made outside the Site. Boat landings are permitted at any point. Tourists and other casual visitors should not enter the Site.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Besides the botanical studies outlined above, the Site offers excellent opportunities for research on invertebrate fauna and pedology. The littoral and sublittoral, particularly of the cove between the two promontories, could be used for comparative studies with the more perturbed marine environment associated with Palmer station in Arthur Harbour.

(8) *Scientific sampling.* Sampling the biota and soils should be the minimum required for the research program, and should not cause undue disturbance to the environment particularly the closed stands of vascular plants.

(9) *Other restraints.* Any long-term experiments left *in situ* should be checked regularly for maintenance and all artifacts removed when they are no longer required. No refuse should be deposited within the Site or at sea beyond the Site in a manner which may allow it to be washed ashore within the Site.

Site of Special Scientific Interest No. 21: Management Plan

Recommendation XIII–8, designation

Shores of Port Foster, Deception Island, South Shetland Islands

(1) *Description of Site.* The Site includes five areas on the coast of Port Foster, Deception Island (62°55' S. 60°37' W.):

Area A. From the west side of Entrance Point to the west side of Collins Point on the south side of Neptune's Bellows, and extending 500 meters inland from the shore.

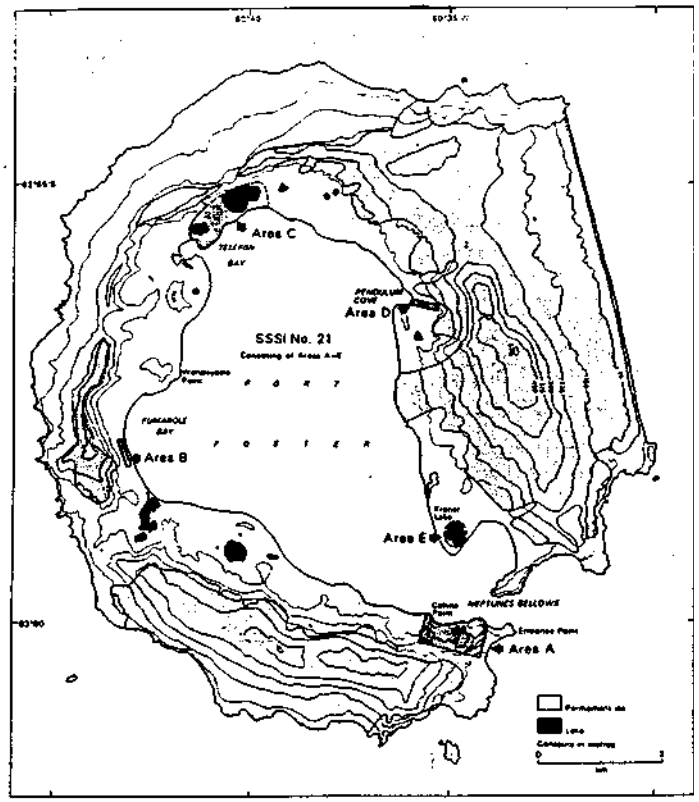
Area B. Mid-Fumarole Bay, southwest of Wensleydale Point extending for 500 meters along the shore, to the line of precipitous lava cliffs about 100 meters inland.

Area C. The "island" created during the 1967 eruption in Telefon Bay and including the low land, containing a lake, which currently joins the new island to the main island.

Area D. A strip 100 meters wide extending from the high-water mark of the heated shoreline of Pendulum Cove inland to a series of gullies about 750 meters inland. The area lies about 300 meters south of the former Chilean station Pedro Aguirre Cerda.

Area E. Kroner Lake including the land within 50 meters of its shore.

The boundaries of these areas of the Site are shown on map 42.



Map 42

(2) *Reason for designation.* Deception Island is exceptional because of its volcanic activity, having had major eruptions in 1967, 1969, and 1970. Parts of the island were completely destroyed, new areas were created, and others were covered by varying depths of ash. Few areas of the interior were unaffected. The island offers unique opportunities to study colonization processes

in an antarctic environment (the South Sandwich Islands and Bouvetoya are at a more advanced stage of colonization while Mt. Erebus and Mt. Melbourne are at considerable altitude and the biota are restricted to microorganisms. Each of the areas has been selected for different reasons:

Area A contains stands of closed vegetation buried by shallow ash that have regenerated as isolated colonies. The beach area was occupied in summer 1981 by about 200 fur seals.

Area B was unaffected by the three eruptions and contains the most diverse flora on the island, including a few endemic and rare mosses and lichens.

Area C provides an entirely new substrate of known age, the colonization of which has been studied since its creation.

Area D includes two areas of heated ground—on the beach close to the shore and inland in a gully—where unique bryophyte communities have developed containing several species not known elsewhere in the Antarctic.

Area E is a small shallow crater lake with geothermal activity, the water and shore being warm to hot and the benthos colonized by various thermophilic algae.

(3) *Outline of research.* Several studies of the terrestrial and freshwater biota have been carried out before and after the eruptions, and changes in the biota and recolonization of new surfaces are being studied. These will continue but will also be extended to other areas of the island, while the succession of organisms associated with heated ground and the biota of the various types of lakes will be investigated in greater detail.

(4) *Date of expiry of designation*. 31 December 2000. Date provided by Antarctic Treaty resolution; the U.S. regulation does not specify an expiration date.

(5) *Access points.* No access points are stated.

(6) *Pedestrian and vehicular routes.* Entry to the Areas should be limited to research scientists. Tourists should be excluded. No vehicles, including helicopters, should be used within any area of the Site. Pedestrians should exercise great care when walking over the terrain, which is loose and soft, where the substrate and vegetation are extremely vulnerable to damage by trampling.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Other research which would not interfere with that outlined above may be carried out.

(8) *Scientific sampling.* The collection of specimens should be the minimum required for the research being undertaken.

(9) *Other restraints.* For minimization of microbial and cryptogamic contamination of the substrate, the soles of footwear should be cleaned and disinfected (for example, by rinsing with alcohol) before entering the Areas.

Site of Special Scientific Interest No. 22: Management Plan

Recommendation XIV–5, designation
Recommendation XVI–7, extension of expiry date

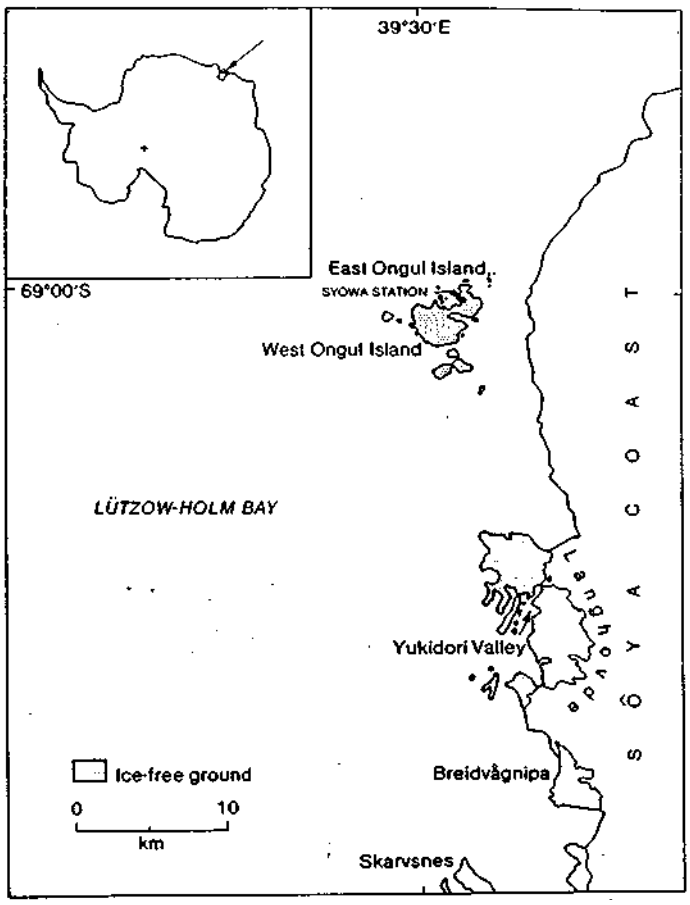
"Yukidori Valley," Langhovde, Lutzow–Holm Bay

(1) *Description of Site.*

(a) *Physical features*

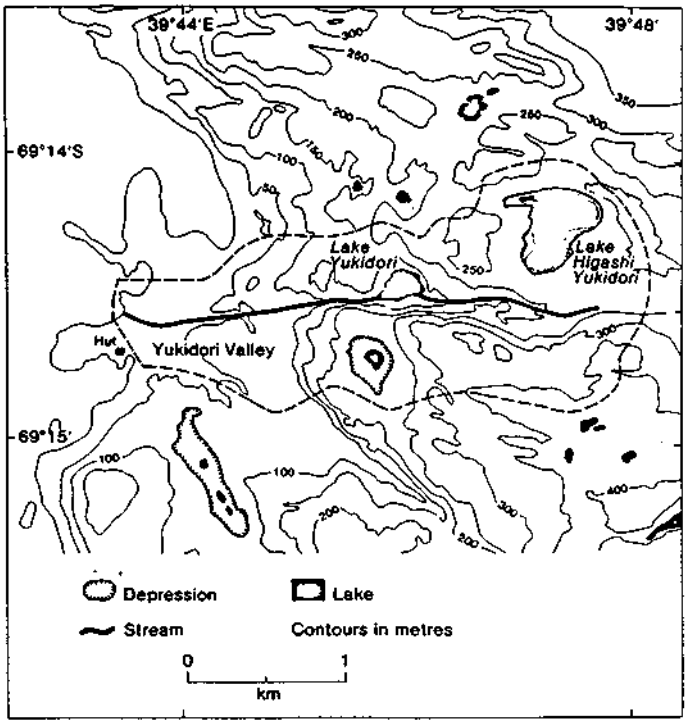
"Yukidori Valley" (69°14'30" S. 39°46'00" E.) is situated in the middle part of Langhovde, on the east coast of Lutzow–Holm Bay, Greater Antarctica.

The Site encompasses an area of 3 kilometers by 0.5–1.5 kilometers located between a tongue of the ice cap and the sea at the western end of the valley; it extends up to 50 meters offshore near the mouth of the stream. The location of the Site and its boundaries are shown on maps 43 and 44.



Map 43

Topography. The valley is about 3 kilometers in length from east to west and 0.5 to 1.5 kilometers in width and contains a prominent melt stream and two lakes; the head of the valley, about 200 meters above sea level, abuts the edge of the ice cap. Lake Higashi Yukidori lies north of the head of the valley. The stream flows from the ice cap toward the sea through V-shaped and U-shaped sectors of the valley and enters Lake Yukidori, in the middle of the valley, 125 meters above sea level; it then flows from the southwest corner of the lake and runs through the lower valley formed by steep cliffs. Fluvioglacial terraces in the lower part of the valley consist of fine sand and gravel. There is a dissected deltaic fan formed at the mouth of the stream.



Map 44

Geology and soils. The valley is underlain by well-layered sequences of late Proterozoic metamorphic rocks, consisting of garnet–biotite gneiss, biotite gneiss, pyroxene gneiss, and hornblende gneiss with metabasite. The foliation of the gneisses strikes N 10° E. and dips monoclinally to the east.

Meteorology. A continuous climatic record has been maintained since 1957 at Syowa station, Ongul Island, 30 kilometers north of the Site (published as "Antarctic Meteorological Data" by the Japan Meteorological Agency).

(b) *Biological features*

Terrestrial. Almost all of the plant species recorded from the Langhovde area occur within the Site. They include the mosses *Bryum pseudotriquetrum* (= *B. algens*), *B. argenteum*, *Ceratodon purpureus*, *Pottia heimii*, *Grimmia lawiana*, and the lichens *Usnea sphacelata* (= *U. sulphurea*), *Umbilicaria antarctica*, *U. decussata*, *Alectoria* (= *Pseudephebe*) *minuscula*, *Xanthoria elegans.* There are no liverworts or vascular plants. Two species of free-living mites (*Nanorchestes antarcticus* and *Tydeus erebus*) have been reported.

Inland waters. Sixty-four species of microalgae, including cyanobacteria and green algae, have been reported from Lake Yukidori and the adjacent area. Among them were one new species of *Cosmarium* (*C. yukidoriense*) and three new varieties of *C. clepsydra.*

Birds and seals. Several pairs of the south polar skua (*Catharacta maccormicki*) and numerous snow petrels (*Pagodroma nivea*: Note "Yukidori" is Japanese for the snow petrel) breed in the Site. The excrement of snow petrels is especially important as a major supply of nutrients for lichens and mosses. There is no information on seals.

(2) *Reason for designation.* "Yukidori Valley" is representative of the typical continental antarctic fell-field ecosystem. The area has been chosen for an

ongoing biological research program and for long-term monitoring studies. It is therefore necessary to afford protection to the Site so as to minimize human impacts. With more extensive expeditions in the ice-free areas, pedestrial traffic is increasing in the vicinity of the exceptional stands of vegetation. A biological research hut has been constructed near the beach at the mouth of the valley, 250 meters from the western boundary of the Site, for the purpose of minimizing impact on the fauna, flora, and terrain of the Site. Pedestrian access has been limited, and no vehicular access has been permitted since the construction of the hut. The valley has not been subjected to any environmental disturbance, with the exception of carefully controlled small-scale biological sampling of lake water, soil, lichens, mosses, invertebrates, and sea birds.

(3) *Outline of research.* Field surveys of geoscience and biological science have been carried out in the Langhovde area, including the Site, since the first Japanese Antarctic Research Expedition in 1957.

A preliminary biological survey of the Site was made during Japanese Antarctic Research Expeditions 15 and 16 (1973–75). This survey obtained information on the pristine state of the terrestrial ecosystem to compare with that influenced by man around Syowa station on East Ongul Island. The studies were mainly undertaken in summer and terminated after two seasons. A 3-year intensive study of the ecosystem commenced during the 1985–86 season. The present program is planned to gain a deeper understanding of the terrestrial ecosystems in this Site; it consists of several ecological studies on fauna and flora in relation to the climatic and edaphic environmental conditions. Long-term monitoring of fauna and flora in some selected areas has been conducted from the early stages of the investigation and will be continued.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* None is specified.

(6) *Pedestrian and vehicular routes.* Pedestrians should enter the Site only in connection with research activities. Surface vehicles should not be operated and helicopters should not land within the Site.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Research of other disciplines that would not affect the continuing biological studies for the protection of which the Site has been designated may be undertaken.

(8) *Scientific sampling.* This activity should be restricted to the minimum required in connection with the program. No rock samples may be obtained.

(9) *Other restraints.* None is specified.

Recommendation XIV–5, designation

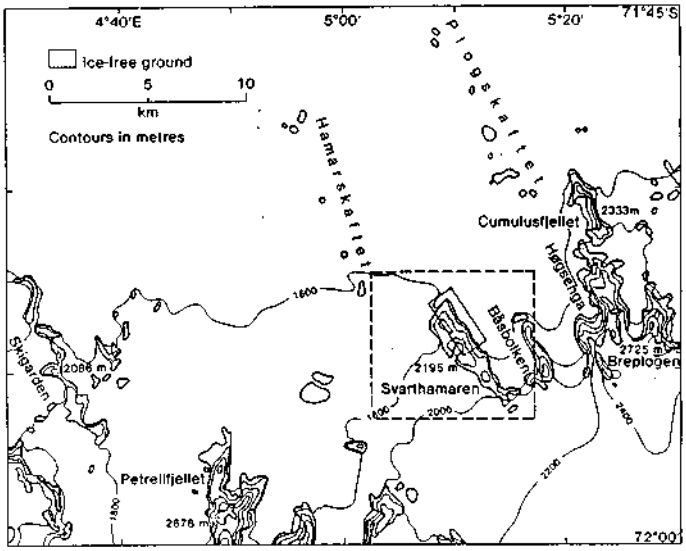
Site of Special Scientific Interest No. 23: Management Plan

Svarthamaren Mountain, Mühlig–Hofmann Mountains, Queen Maud Land

(1) *Description of Site.*

(a) *Physical features*

Svarthamaren Mountain is an ice-free area (71°53' S. 5°10' E.) situated in Mühlig–Hofmann Mountains, Queen Maud Land. The distance from the ice front is about 200 kilometers. The Site consists of about 3.9 square kilometers of the northeastern-facing cliffs and screes north of the summit of Svarthamaren Mountain. The location of the Site and its boundaries are shown in maps 45 and 46.



Map 45

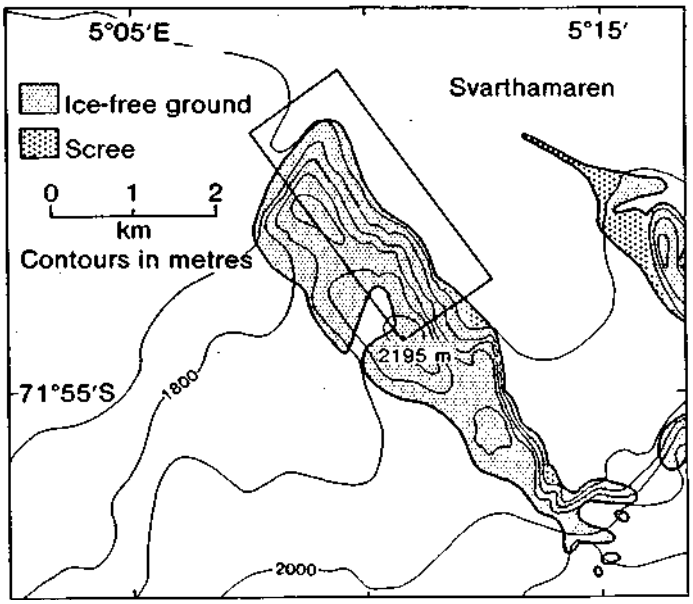
Topography. Svarthamaren Mountain is surrounded by ice and is about 6 kilometers long along a northwest–southeast axis, with the highest point at 2,195 meters above sea level. The northern part of the northeast side is dominated by screes (slope 31–34°), extending 240 meters upward from the base of the mountain at about 1,600 meters above sea level. Above these screes are almost vertical cliffs. Beneath the screes is a narrow area of flat ground bordered by glacier ice. The major features of this Site are two rock amphitheaters inhabited by breeding antarctic petrels.

Geology and soils. The main rock types are coarse- and medium-grained charnockitoids and small amounts of zenoliths. Banded gneisses, biotite amphibolites, and granites of the amphibolite facies mineralogy are included in the charnockitoids. The slopes are covered by decomposed feldspathic sand.

Meteorology. Data exist for the period January 13 to February 15, 1985 (prevalent air temperature ranged between –5°C and –15°C). An automatic weather station was set up by the Norwegian Antarctic Research Expedition 1984–85 in an analogous situation at Jutulsessen Mountain, 100 kilometers west of Svarthamaren, to obtain long-term weather statistics.

(b) *Biological features*

Terrestrial. The flora and vegetation at Svarthamaren Mountain are sparse compared with other areas in Mühlig–Hofmannfjella and Gjelsvikfjella to the west of the Site. This condition is apparently due to



Map 46

the elevation of Svarthamaren, the shortage of meltwater, and the excessive nutrient deposition from the bird colonies. The only plant species occurring in abundance, but peripherally to the most manured areas, is the foliose green alga, *Prasiola crispa.* There are a few lichen species on glacier-borne erratics 1–2 kilometers away from the bird colonies: *Candelariella hallettensis* (= *C. antarctica*), *Rhizoplaca* (= *Lecanora*) *melanophthalma*, *Umbilicaria* spp., and *Xanthoria* spp. Areas covered with *Prasiola* are inhabited by Collembola (*Cryptopygus sverdrupi*) and a rich fauna of mites (*Eupodes angardi, Tydeus erebus*), protozoans, nematodes, and rotifers.

Inland waters. A shallow pond measuring about 20 by 30 meters, lying below the middle and largest bird subcolony, is heavily polluted by petrel carcasses, and supports a strong growth of a yellowish–green unicellular algae, *Chlamydomonas* sp. Smaller concentrations of algae occur on the fringes of a small frozen lake below the northern face of the mountain. No invertebrates have been recorded.

Birds. There are important breeding colonies of seabirds. The northeast slopes of Svarthamaren are occupied by a densely populated colony of antarctic petrels (*Thalassoica antarctica*), divided into three separate subcolonies. Fewer than 10 breeding colonies of antarctic petrels are described in the literature, and the Svarthamaren colony is by far the largest known. The colony was first closely examined in January/February 1985 by Norwegian ornithologists. The total number of breeding pairs was estimated to be 208,000. In addition, 500–1,000 pairs of snow petrels (*Pagodroma nivea*) and 50 pairs of south polar skuas (*Catharacta maccormicki*) were breeding in the area. The antarctic petrels nest in the two rocky amphitheaters with a mean density of 0.75 nest per square meter. Most of the snow petrels nest in separate parts of the scree characterized by larger rocks. The south polar skuas nest on the narrow strip of flat, snow-free ground below the screes.

(2) *Reason for designation*. The Svarthamaren antarctic petrel colony is the largest known seabird colony situated on the inland Antarctic continent, and

probably represents a significant proportion of the world population of this species.

The Site is of exceptional scientific interest and provides for research on the antarctic petrel, snow petrel, and south polar skua and for the study of adaptations in seabirds breeding inland on the Antarctic continent.

(3) *Outline of research.* A study of the breeding biology and ecophysiological adaptations in the antarctic petrel was initiated in 1985. This is planned to continue during future Norwegian Antarctic Research Expeditions. The accessibility of the Site is limited by its location far inland.

The antarctic petrel colony was discovered by Soviet geologists in January 1961 when a party landed in the area with an AN-2 aircraft and unexpectedly encountered thousands of birds. During the period January 9 to February 16, 1985, 10 of the scientists of the Norwegian Antarctic Research Expedition worked in Mühlig–Hofmannfjella and Gjelsvikfjella and established a base camp (Camp Norway 5) on the glacier approximately 500 meters northeast of the northernmost slope of the Site.

Three ornithologists, a botanist, and an invertebrate zoologist worked in the area, and researchers of other disciplines surveyed this and nearby areas. Helicopter landings during the period were kept to a minimum. A wooden laboratory hut has been left to be used by future parties.

(4) *Date of expiry of designation*. U.S. regulation does not specify an expiration date.

(5) *Access points.* The Site may be entered from any direction, but access should cause minimum disturbance to the bird colonies.

(6) *Pedestrian and vehicular routes.* Vehicles should not enter the Site. Pedestrians should not move through the populated areas except in the course of scientific investigations. Helicopters and low-flying aircraft should avoid the bird colonies in accordance with the Agreed Measures for the Conservation of Antarctic Fauna and Flora.

(7) *Other kinds of scientific investigations which will not cause harmful interference.* Any scientific investigation that will not cause significant disturbance to the biological programs for which the Site has been designated may be undertaken.

(8) *Scientific sampling.* Taking samples of the bird population by killing, capture, or taking of eggs should be done only for a compelling scientific purpose and in accordance with the Agreed Measures for the Conservation of Antarctic Fauna and Flora.

(9) *Other restraints.* None is specified.

Site of Special Scientific Interest No. 24: Management Plan

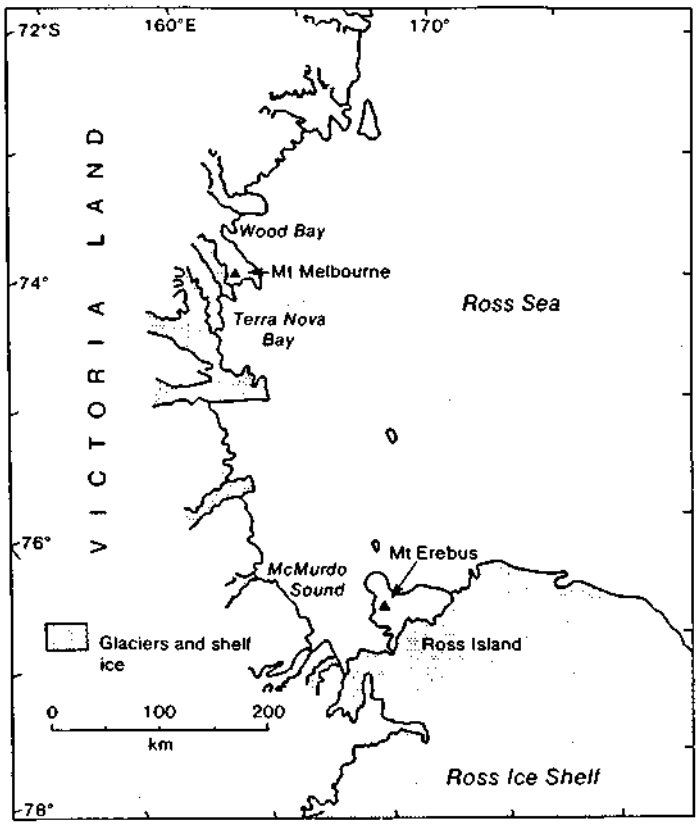
Recommendation XIV–5, designation

Summit of Mt. Melbourne, North Victoria Land

(1) *Description of Site.*

(a) *Physical Features*

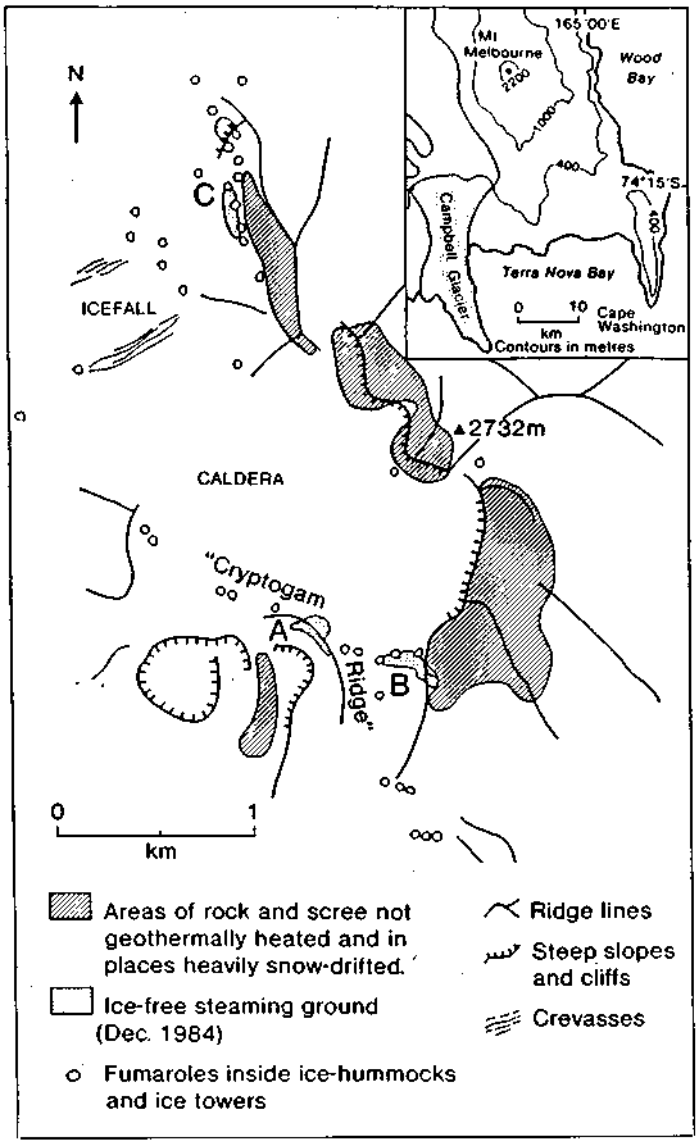
Mt. Melbourne, North Victoria Land (74°21' S. 164°42' E.) is situated between Wood Bay and Terra Nova Bay, on the west side of Ross Sea, and Campbell Glacier, about 10 kilometers to the west. The Site comprises all terrain above the 2,200-meter contour surrounding the main crater of Mt. Melbourne. The location of the Site is shown in map 47.



Map 47

Topography. In profile, Mt. Melbourne is an almost perfect low-angle volcanic cone rising to 2,732 meters above sea level, showing only slight dissection and little or no glacial erosion. Many smaller basaltic cones and mounds occur near the base and on the flanks of the mountain. The summit caldera is about 1 kilometer in diameter and forms a névé for a glacier flowing westward. The two areas of ice-free steaming ground (at A, Cryptogam Ridge, and B on map 48 are on the edge of the caldera, with a third area (C) 250 meters lower on the northern slopes. Cryptogam Ridge, on the southern side of the main crater, is an area of geothermal activity. About 300–400 meters of this ridge is ice free, with the remainder covered by numerous ice hummocks. These hummocks are hollow, contain fumaroles, and are 1–6 meters in diameter and up to 4 meters high.

Geology and soils. Mt. Melbourne is part of the McMurdo Volcanics, which are a line of dormant and extinct volcanoes running along the coast of Victoria Land. The Mt. Melbourne area is more likely to be late Quater-



Map 48

nary than late Tertiary in age, and the most recent eruption may have been only about 150 years ago. The mountain is a large low-angle strato-volcano containing basalt, trachyandesite, and trachyte flows and including pyroclastics. Small basalt scoria cones are scattered around the base, some of which appear to be very recent as they are undissected. Several older slightly dissected cones occur on the summit caldera.

Surface ground temperatures vary markedly over distances of centimeters on ice-free warm ground, up to a recorded maximum of 47°C. Random probing to depths of 1 meter and detailed temperature transects to depths of 15 centimeters indicate substrate temperatures of up to 60°C. Within the ice pinnacles, soil surface temperatures range from 10°C to over 40°C. Frost heave occurs at some warm areas.

Although the substratum is classified as azonal, there are two distinct soil zones within some areas of hot ground probably caused by heat, moisture, and gases from below. A typical profile comprises an upper 0–5-centimeter layer of dark sandy soil with a lower 6–30-centimeter horizon

consisting of large lighter-colored scoria gravels. The upper layer contains organic matter in which there is microbiological activity, including cyanophaecean nitrogen fixation. No clay minerals have been detected.

No detailed data are available for the Site. Field party records, during 1 week in late November 1984, indicate summer air temperatures in the caldera area of –6°C to –20°C, with an absolute minimum of –32°C.

(b) *Biological features*

Terrestrial. The warmest areas of ground support patches of yellow–green moss, liverwort, and brownish crusts of algae. The Site contains a unique bryophyte community comprising the moss *Campylopus pyriformis* and the liverwort *Cephaloziella exiliflora*. *C. pyriformis* is not known elsewhere in the antarctic biome, and *C. exiliflora* is known from only three other (low-altitude) areas of continental Antarctica. Other than at a similar geothermal site at the summit of Mt. Erebus (protonemata only), this is the highest altitude at which bryophytes have been found in Antarctica. A single unidentified lichen has been observed as a component of black crusts over small areas of warm soil. The unusual occurrence of shallow peat is evidence of bryophyte growth having taken place over at least several decades.

Algae grow over wide areas of the warm ground and on the surface of warm rocks in some fumaroles. The microflora comprises a range of unicellular and filamentous algar, including the green *Chroococcus sp.*, *Tolypothrix sp.* and *Stigonema sp.* and the cyanobacteria *Mastigocladus laminosus* and *Pseudococcomyxa simplex*. Thermotolerant and thermophilic microorganisms have been isolated from the soil. The only invertebrate reported is a testate amoeba, *Corythion dubium*, among the vegetation. The occurrence of plant life is made possible only by the water droplets formed by the condensation of steam. Very small "pools" up to about 50 square centimeters and about 1 centimeter deep have been observed on occasions where dripping condensate gathered in small depressions.

Birds. No observations of birds have been made near the summit of the volcano.

(2) *Reason for designation*. The Site is of exceptional scientific interest because of its extensive ice-free geothermal areas, at high altitude, supporting a unique cryptogamic flora and microbiota and accumulations of organic matter. The closest documented, high-altitude fumarolic ground is 400 kilometers to the south of the summit of Mt. Erebus (see Site of Special Scientific Interest No. 11, "Tramway Ridge," Mt. Erebus), but there the organisms differ significantly from those on Mt. Melbourne. Elsewhere in Antarctica vegetation on steam-warmed ground is known only in low-altitude maritime areas of the Antarctic Peninsula region where, again, the vegetation differs significantly from the Mt. Melbourne community. The Site is scientifically significant for botanists, microbiologists, volcanologists, and geophysicists. Uncontrolled human activity within this area could cause severe damage by trampling plants, compacting soil and altering soil temperature gradients, changing rates of steam release, and possibly causing the introduction of alien micro-organisms and cryptogamic plants.

(3) *Outline of research.* There has been little previous research activity in the Site. The studies that have been undertaken have involved investigations of geothermal and volcanic activity and a survey of the plant and microbial

communities. Future research is likely to include studies of soil microbiology and microfauna, vegetation, volcanology, and the geophysics of the area.

Mt. Melbourne was first sighted in 1841 by James Ross and first climbed in January 1967 by a New Zealand party. Since then the summit area has been visited by New Zealand parties in December 1972 and November 1984. The 1984 party surveyed the biota on Cryptogam Ridge. Brief visits were also made in January 1983 by a U.S. party and more recently by West German (1984–85) and Italian (1985–86) parties.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* Access to the Site is normally by helicopter and landings should be made only on the glacier ice in the caldera, thereby avoiding any of the vegetated or other sensitive areas.

(6) *Pedestrian and vehicular routes.* No vehicle should be used within the Site. Pedestrians should avoid, whenever possible, walking on any obvious areas of warm ground or disturbing any vegetation. Entry to the Cryptogam Ridge area of the Site should be made only from either end of the ridge. Entering the ridge directly up its slopes should be avoided.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Low-impact studies having a minimal effect on the environment of the Site.

(8) *Scientific sampling.* Samples should be taken only for compelling scientific reasons.

(9) *Other restraints.* For the prevention of the introduction of foreign organisms, sterile protective overclothing should be worn, and footwear should be sterilized before entering the Site. Sterilized sampling equipment should also be used. All wastes should be removed from the Site.

Site of Special Scientific Interest No. 25: Management Plan

Recommendation XIV–5, designation

"Marine Plain," Mule Peninsula, Vestfold Hills, "Princess Elizabeth Land"

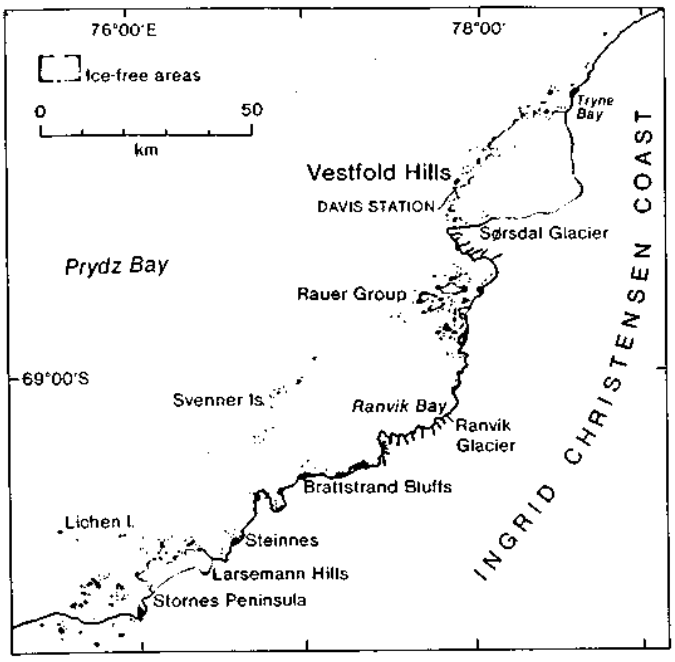
(1) *Description of Site.*

(a) *Physical features*

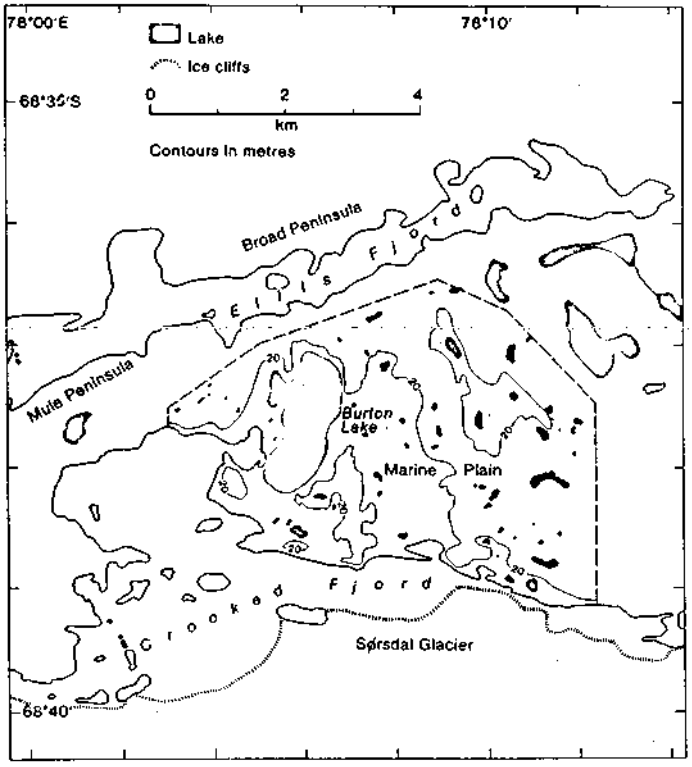
"Marine Plain" (23.4 square kilometers, 68°38' S. 78°08' E.) opens into an arm of Crooked Fjord on the southern side of Mule Peninsula, the southernmost of the three major peninsulas that make up the Vestfold Hills. The Vestfold Hills comprise an essentially ice-free oasis (approximately 400 square kilometers) of bedrock, glacial debris, lakes, and ponds at the eastern side of Prydz Bay, "Princess Elizabeth Land."

The boundary of the Site is as follows: commencing at latitude 68°36'30" S. longitude 78°09'00" E., it runs southeasterly to latitude 68°36'45" S., longitude 78°10'30" E.; thence southeasterly to latitude 68°37'30" S. longitude 78°10'30" E.; then south along the parallel of longitude 78°12'30" E. to its intersection by the low-water mark on the northern shore of Crooked Fjord; from here it follows the low-water mark of the northern shore of Crooked Fjord to its intersection with the meridian of longitude 78°03'00" E.; thence north along the meridian of longitude 78°03'00" E. to its intersection with the parallel of latitude 68°37'30" S., then northeasterly to latitude 68°37'00" S., longitude 78°05'00" E., and finally northeastward to the point of commencement.

Topography. The Site includes Burton Lake (surface at sea level) as a major component of the western part of the region. An extensive low-level (less than 20 meters above sea level) area occupies the center of the Site with a north–south orientation. In the northeast is another area below 10 meters. Areas above 10 meters are mostly low, rugged hills of Precambrian rock acting as divides between the lower part and characterized at their base by a marked change in their slope, probably representing an old (Holocene?) shoreline. The surface of the lower areas below 20 meters is marked by a series of concave-to-the-south recessional moraine ridges.



Map 49



Map 50

Geology. The Precambrian rock consists for the most part of 3,000-million-year-old-gneisses from both igneous and metamorphic protoliths intruded in the course of at least three intervals between 1,800 and 1,375 million years ago by numerous metabasalt dykes with a rough north–south orientation. These dykes are a major feature of the Vestfold Hills. Low-lying areas consist of at least 8 meters of early Pliocene (40–46 million years) diatomites and, less commonly, lenticular sandstone overlying the Precambrian rock and occupying the sites of what were embayments in the early Pliocene. In the western part of the central area below 20 meters above sea level, the Pliocene deposits are overlain by a thin veneer of Holocene (6,490–130 years ago) glacial debris covering an area of 8–10 square kilometers, in places containing a few mollusks (*Laternula elliptica* King and Broderip) *in situ*. Low scarps in the Pliocene adjacent to small lakes have yielded remains of a new genus, species and probably family—all extinct—of dolphin, and there is evidence of another larger, fossil form.

Meteorology. No data are available from the area, but conditions are similar to those at Davis station, 6 kilometers to the northwest.

(b) *Biological features*

Terrestrial. Reconnaissance studies have reported few species and no significant stands of vegetation within the Site.

Inland waters. There are many small lakes and ponds.

Marine. Burton Lake opens to Crooked Fjord at its southwestern corner and is affected by tides in summer. It has been the site of biological research for several years.

Birds and seals. No bird or seal surveys have been conducted, but it is relatively devoid of birds and sea mammals. Wilson's storm petrels

(*Oceanites oceanicus*) and snow petrels (*Pagodroma nivea*) occur sporadically and nest in the Precambrian hills.

(2) *Reason for designation*. The Site is of exceptional scientific interest because of its vertebrate fossil fauna. In addition to the dominant important fossils such as mollusks and diatoms, which define the age of the Pliocene marine sediments, the Site has yielded well-preserved vertebrate remains of a new species, genus, and probably family of fossil dolphin and evidence of at least one other vertebrate species.

Burton Lake, as a hypersaline lake that is still in seasonal connection with sea, presents the opportunity for important limnological research. It represents a unique stage in the biological and physicochemical evolution of a terrestrial water body from the marine environment. Burton Lake, together with several of the smaller lakes, provides important examples of the spectrum of lake types in the Vestfold Hills.

Davis (68°85' S. 77°58' E.), a permanently occupied Australian scientific station, is located on Broad Peninsula, the central peninsula of the Vestfold Hills, 6 kilometers to the northwest of the Site. It is the focus of continuing biological, including limnological, studies within the Vestfold Hills. As a result of its proximity to Davis station, the scientific value of the Site could be diminished by accidental interference. The Site lies on the frequently used pedestrian route to the Mule Peninsula lakes (Clear, Laternula, Cemetery, and McCallum) from Ellis Rapids, and it is critical that fossil fauna should be protected from unrecorded sampling or collection.

(3) *Outline of research.* A paleontological research program has commenced following the initial discovery of vertebrate fossils at the Site in 1985. The program consists of the collection of well-preserved fossil mollusks and diatoms and, in particular, fossil vertebrates, with the aim of documenting the fauna of the epoch. Oxygen isotope studies on the well-preserved bivalve fauna will be employed to help quantify water temperature at that time.

Burton Lake is the subject of detailed year-round research as part of a program aimed at understanding the evolution of the hydrological system in the Vestfold Hills, by looking at various stages of isolation from the marine environment.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* Access should, where possible, be from the sea ice in Ellis Fjord or Crooked Fjord, or by helicopter at places where no disturbance can be caused by the aircraft to water bodies, vegetation, or sediment deposits. If these means of access are not possible, access by land, either by vehicle or on foot, should be via Ellis Rapids at the eastern end of Ellis Fjord.

(6) *Pedestrian and vehicular routes.* Vehicles should not be used within the Site except for over-snow travel by motorized toboggan. Pedestrians or vehicles must not damage areas of vegetation, or disturb steep inclines marking sediment outcrops or the lake margins near these outcrops.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Research on the ecology of Wilson's storm petrels, snow petrels, mosses and lichens, and other biota and investigation of water bodies other than Burton Lake may be undertaken. Other scientific investigations that do not disturb the palaeontological, ecological, and limnological programs being conducted, may also take place.

(8) *Scientific sampling.* Scientific sampling should be restricted to that required for the programs described in (3) and (7) above.

(9) *Other restraints.* All waste materials taken into, or generated within the Site should be removed as soon as practicable. No fuel depots should be made within the Site, nor should refueling operations be undertaken. No permanent buildings should be erected within the Site. Power boats should not be used on Burton Lake, and use of other boats should be restricted to the minimum necessary to support programs consistent with this plan.

Site of Special Scientific Interest No. 26: Management Plan

Recommendation XIV–5, designation

"Chile Bay" (Discovery Bay), Greenwich Island, South Shetland Islands

(1) *Description of the Site.*

(a) *Physical features*

The Site comprises two small areas of benthic habitat in "Chile Bay" located as follows: Benthic habitat A—Between 50- and 100-meter depths and the coordinates latitude 62°28.9' S. longitude. 59°41'12" W. and latitude 62°29.3' S. longitude 59°41'43" W.; Benthic habitat B—Between 100- and 200-meter depths and between the coordinates latitude 62°28.3' S. 59°40'15" W. and latitude 62°28.7' S. longitude 59°40'47" W.

The bottom of both Sites consists of coarse to fine silt. The lithological and mineralogical composition of the sediments shows their provenance from the outcrops and littoral deposits surrounding "Chile Bay," i.e., porphyritic andesite, aphanitic andesite, diorite, and andesitic volcanic breccia and tuffs. This material is transported to the coastline mainly by glaciers, solifluction, and mud flows. These processes are intensified in the inner part of the bay where the glacier terminates. "Chile Bay" has a transverse submarine barrier, possibly a submerged moraine separating habitats A and B dividing the bay into an inner and an outer part. Sediments in the inner bay are protected from the action of waves and currents, thereby preserving the grain size distribution, sorting, and shape of the contained material.

(b) *Biological features*

The benthic assemblages have high species diversity and biomass. Bottom topography and sediment features influence the structure of the communities and distribution pattern. Two assemblages have been recognized. One, dominated by the polychaete *Maldane sarsi antarctica*, is located in the outer part of the bay, mainly below a 100-meter depth; other characteristic species are *Genaxinus bongranii*, *Cyamonactra denticulum*, *Typhlotanais greenwichensis*, and *Pycogonida* spp. The inner assemblage, on the other hand, is not dominated by any one species but contains *Yoldia eightsii* and *Eudorella gracilor* as characteristic fauna.

(2) *Reason for designation.* In "Chile Bay" there has been continued quantitative and qualitative benthic research since 1967. Data being accumulated provide a baseline for long-term investigations. The Site is of exceptional scientific interest and therefore requires long-term protection from possible harmful interference.

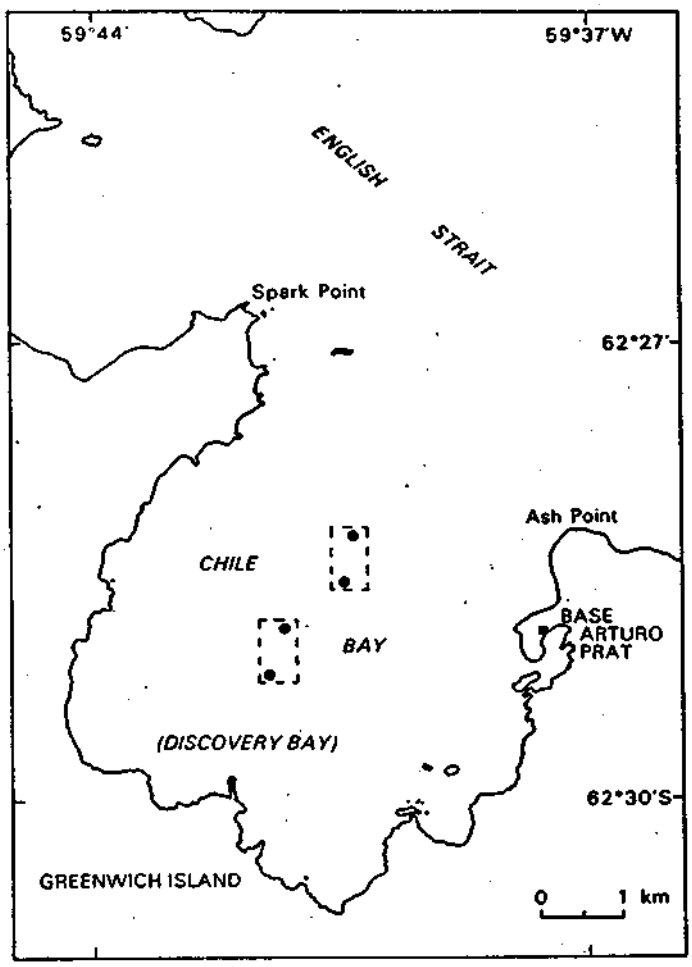
(3) *Outline of research.* A long-term research program was started in 1967 in connection with the study of benthic fauna re-establishment within Port Foster, Deception Island, following the volcanic eruption of December 1967.

"Chile Bay" has been designated a control area. These studies are performed yearly in the summer. Community studies to observe biota changes will be augmented with other relevant studies to suit the requirements of a long-term biological monitoring program.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* Although access points as such are not applicable, free passage of ships through these areas is not in any way prejudiced.

(6) *Pedestrian and vehicular routes.* Not applicable.



Map 51

(7) *Other kinds of scientific investigations that would not cause harmful interference.* Scientific research other than that disturbing benthic habitats and communities.

(8) *Scientific sampling.* Samples from the benthic habitats should be taken only for compelling scientific purposes.

(9) *Other restraints.* The dumping of waste from ships and bottom hauling should be avoided. Anchoring should be avoided except in compelling circumstances. Siting of bottom devices should be avoided.

Site of Special Scientific Interest No. 27: Management Plan

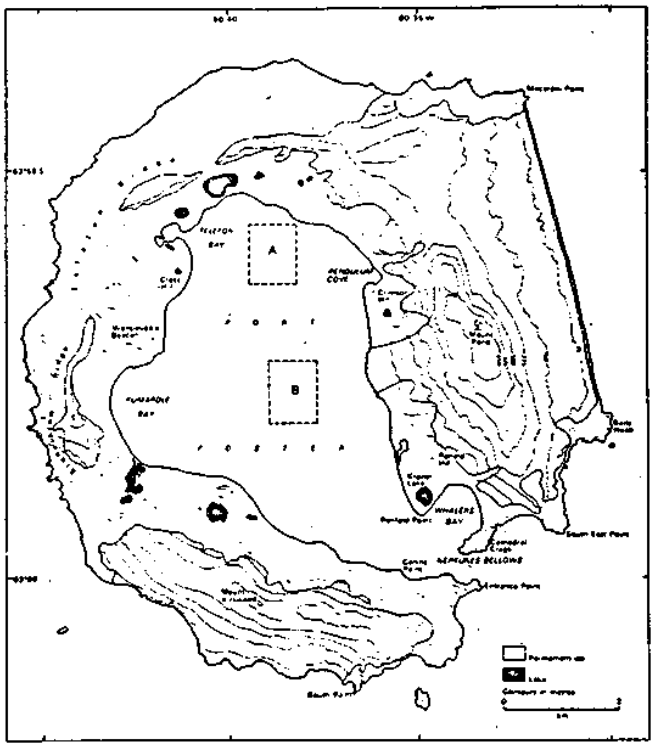
Port Foster, Deception Island, South Shetland Islands

(1) *Description of Site.*

(a) *Physical features*

The Site comprises two small areas of benthic habitat located in Port Foster as follows: Benthic habitat A—Between 50- and 150-meter depths and coordinates latitude 62°55.5' S. longitude 60°38'00" W. and latitude 62°56.2' S. longitude 60°37'00" W.; Benthic habitat B—Between 100- and 150-meter depths and the coordinates latitude 62°57.2' S. longitude 60°37'20" W. and latitude 62°57.9' S. longitude 60°36'20" W.

Deception Island is a caldera formed by subsidence of a group of Cenozoic volcanoes superimposed along radial faults. Port Foster is an almost entirely enclosed body of water that receives large volumes of fresh water during periods of melt. In several places there is geothermal activity. The bottom of habitat A consists of coarse- to medium-sized, poorly sorted volcanic sediment, and that of habitat B of medium to fine, better sorted volcanic ash.



Map 52

(b) *Biological features*

The composition of the benthic assemblages has varied greatly since the volcanic eruption of December 1967. The most recent data indicate a high dominance of polychaetes, both in terms of numbers and biomass. The most conspicuous macrofauna in dredge samples include the nemerteans *Lineus* sp. and *Paraborlasia corrugatus,* the isopod *Serolis kemp,* the bivalve *Yoldia eightsii,* the echinoids *Abatus agassizi* and *Sterechinus neumayeri,* the asteroids *Lysasterias perrieri* and *Odontaster validus,* the ophiuroid *Ophionotus victoriae,* and the holothurian *Ypsilothuria* sp.

(2) *Reason for designation*. The area is of exceptional ecological interest because of its actively volcanic character. The two habitat areas are subject to long-term research programs, and the purpose in designating them is, as far as is possible, to reduce the risk of accidental interference which could jeopardize these scientific investigations.

(3) *Outline of research.* Following the volcanic eruption of December 1967, at Deception Island, a long-term program of research was initiated at Port Foster to study the mechanism and paths of the re-establishment of the benthic communities. Community studies to observe biota changes, augmented with other relevant studies to suit the requirement of a long-term biological monitoring program, are performed periodically.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* Although access points as such are not designated, free passage of ships through these areas is not in any way prejudiced.

(6) *Pedestrian and vehicular routes.* Not applicable.

(7) *Other kinds of scientific investigation that would not cause harmful interference.* Scientific research other than that disturbing benthic habitats and communities may be undertaken.

(8) *Scientific sampling.* Samples from the benthic habitats should be taken only for compelling scientific purposes.

(9) *Other restraints.* The dumping of waste from ships and bottom trawling should be avoided. Anchoring should be avoided except in compelling circumstances. Siting of bottom devices should be avoided.

Site of Special Scientific Interest No. 28: Management Plan

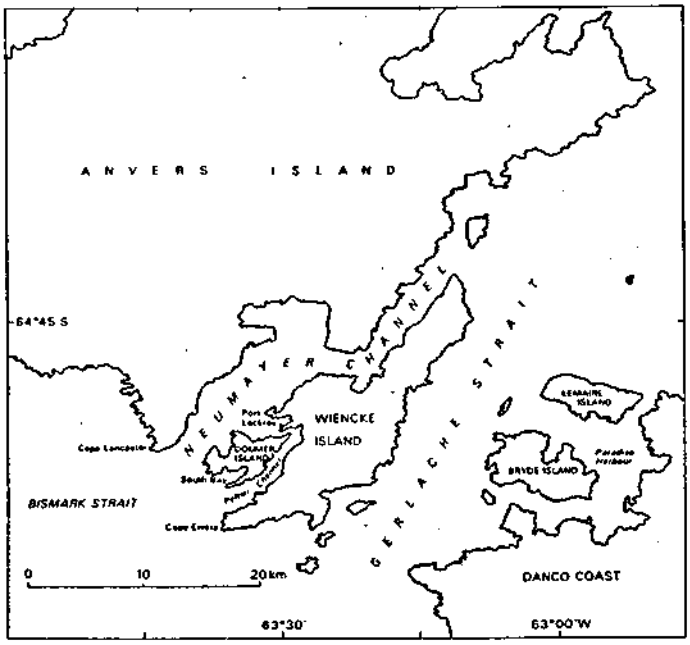
Recommendation XIV–5, designation

South Bay, Doumer Island, Palmer Archipelago

(1) *Description of Site.*

(a) *Physical features*

Doumer Island lies at the southwest entrances to Neumayer Channel. It is separated from Wiencke Island by the Peltier Channel. South Bay lies on the south coast of Doumer Island. The Site consists of a small area of coastal and subtidal benthos down to a 45-meter depth as follows: latitude 64°51'42" S. to the North, between longitude 63°34'00" W. and longitude 63°35'20" W. and to the south by a diagonal line that starts at a point 100 meters north of the Refuge (Sub-base Yelcho) on the southern shore of South Bay and extends to latitude 64°51'58" S. and longitude 63°34'00" W. Boundaries are shown on maps 53 and 54.

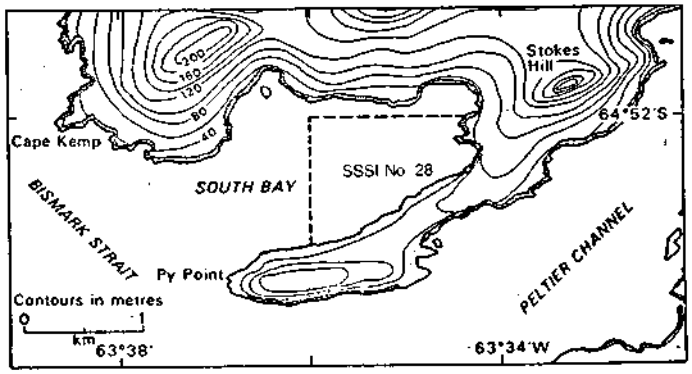


Map 53

(b) *Biological features*

Four different kinds of bottom surface have been described: rocky with algae growth, from 0- to 30-meter depth; predominantly rock, covered by algae, silt, and large quantities of sponges, from 30- to 110-meter depth; mixed bottoms with predominantly deposits of mud and few rock outcrops with sponges, from 100- to 150-meter depth; and soft bottoms of silt and mud, from 150- to 200-meter depth, corresponding to the deepest depression and occurring near the center of the bay just outside the Site. The benthic macrofauna richness increases with depth and is accentuated in bottoms with a steep slope. Ice scour exerts a strong influence on the patterns of distribution and the abundance of benthic fauna. Seals, in particular Weddell seals, *Leptonychotes weddellii,* visit the area to feed. Cetaceans, such as killer whales, *Orcinus orca* and humpback whales, *Megaptera novaeangliae,* enter the bay. Many antarctic seabirds occur transiently in the Site.

(2) *Reason for designation.* The Site is the subject of a long-term research program on marine ecology, and the purpose of designating it is to reduce,



Map 54

as far as is possible, the risk of accidental interference that might jeopardize these scientific investigations.

(3) *Outline of research.* The research covers the study of the relationships of the marine organisms in the area. This research was started by scuba diving in 1972. Since 1981 advanced experiments to elucidate community structure and functioning have been in progress and will continue in the future.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* None is specified. The area is not affected by the passage of boats.

(6) *Pedestrian and vehicular routes.* Not applicable.

(7) *Other kinds of scientific investigation that would not cause harmful interference.* Scientific research other than that disturbing benthic habitats and communities.

(8) *Scientific sampling.* Collection of samples should be made only for compelling scientific purposes.

(9) *Other restraints.* The dumping of wastes from ships or boats and bottom trawling should be avoided. Anchoring should be avoided except for compelling reasons.

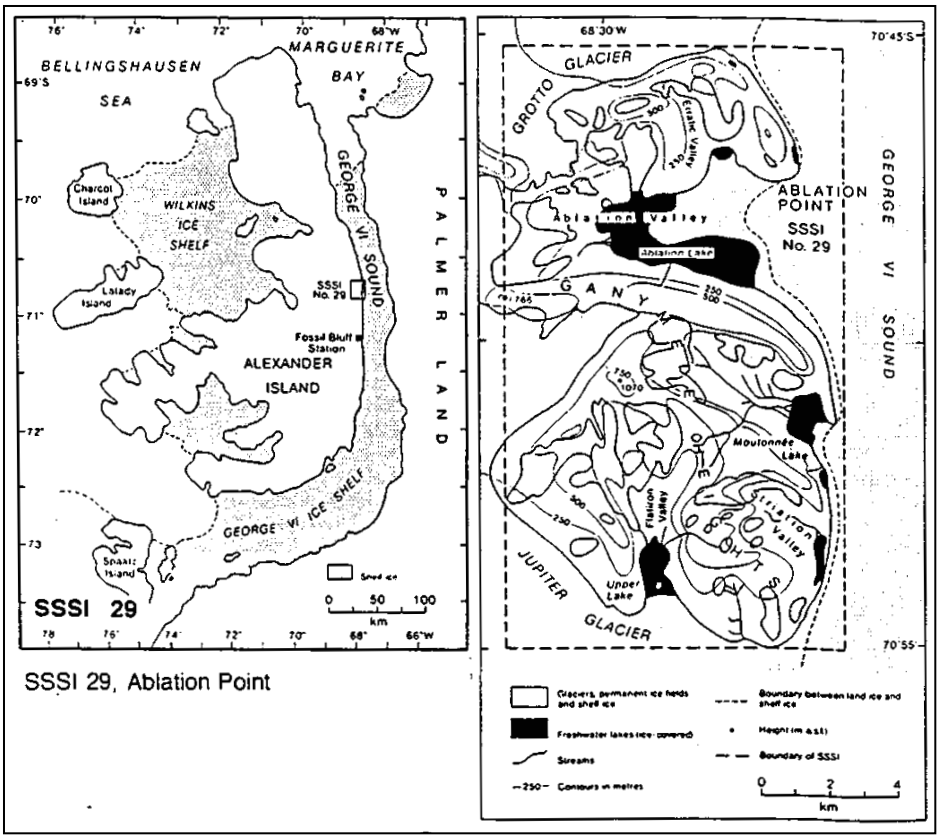
Site of Special Scientific Interest No. 29: Management Plan

Recommendation XV–6, designation

Ablation Point–Ganymede Heights, Alexander Island

(1) *Description of Site.* The Ablation Valley–Ganymede Heights massif and its valley systems (70°40' S. 68°25' W.) are situated on the mideast coast of Alexander Island overlooking the shelf ice of George VI Sound and about 120 kilometers from open sea to the north. The Site extends from latitude 70°45' S. to 70°55' S. and from longitude 68°40' W. to the George Vl Sound coastline.

The largely ice-free area comprises three main and two lesser valley systems separated by often precipitous ridges and plateaus 650–760 meters high. The Site is bounded by Grotto Glacier to the north, Jupiter Glacier to the south and west, and George Vl Sound to the east. The area extends 18 kilometers from north to south and 10 kilometers from east to west, rising to a maximum altitude of 1,070 meters.



Map 55

(2) *Reason for designation.* The Site represents one of the largest ablation areas in west Antarctica. It has a complex geology, the main rock types being conglomerates, arkostic sandstones, and shales with subordinate pebbly mudstones and sedimentary breccias. The vase of the succession is formed of a spectacular melange, including large blocks of lava and agglomerate. This outcrops on the valley floors and at the base of several cliffs. It possesses a wide range of geomorphological features, including raised beaches, moraine systems, and patterned ground. There are several permanently frozen freshwater lakes and many ice-free ponds supporting a diverse flora (including aquatic briophytes) and fauna. There are a few major streams and

many smaller ones in summer. The vegetation is generally sparse, with a unique moss and liverwort-dominated community type being restricted to "oases" where water issues from otherwise dry barren hillsides. The terrestrial and freshwater ecosystems are vulnerable to human impact and therefore merit protection from the uncontrolled human presence.

(3) *Outline of research.* Several detailed geological, geomorphological, glaciological, and limnological studies have been made by British Antarctic Survey scientists within the Site, and it is proposed to undertake terrestrial ecological research throughout the area.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* None is specified, but the most convenient point is by landing on Ablation Lake. Access is not possible from the shelf ice of George VI Sound because of the dangerous and variable condition of the pressure ice.

(6) *Pedestrian and vehicular routes.* Vehicles may be used on land with the utmost care, avoiding areas of vegetation, patterned ground, and streams whenever possible. Pedestrians should avoid, as far as possible, areas of oasis vegetation, patterned ground, streams, and lake margins.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* None is specified.

(8) *Scientific sampling.* Scientific sampling within the Site should be minimal and restricted to that which can be accomplished as far as possible without introducing new organisms, including micro-organisms, and without disturbing the environment.

(9) *Other restraints.* All materials, including combustibles, introduced into the Site should be removed after each visit. Solid human waste should be disposed of into the sea through tide cracks.

Recommendation XV–6, designation
Recommendation XVI–4, termination and redesignation as a Specially Protected Area No. 21

Site of Special Scientific Interest No. 30

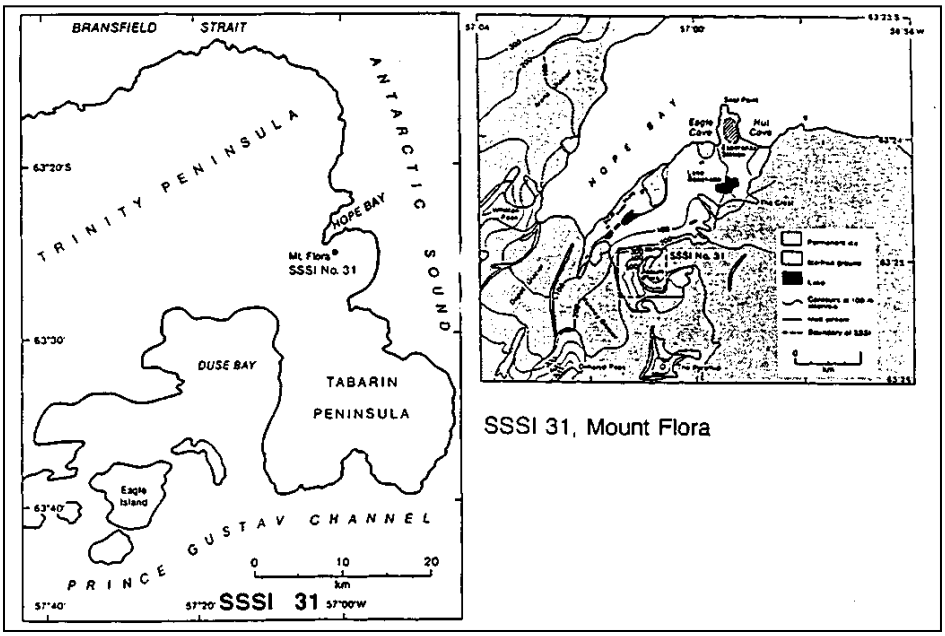
[Reserved]

Site of Special Scientific Interest No. 31: Management Plan

Recommendation XV–6, designation

Mount Flora, Hope Bay, Antarctic Peninsula

(1) *Description of Site.* Mount Flora (63°25' S. 57°01' W.) is situated about 1 kilometer south of Hope Bay and about 1 kilometer southeast of the Argentine station Esperanza, at the northern tip of Trinity Peninsula. The Site comprises the upper slopes of Mount Flora above 250 meters' altitude where the plant beds of sandstone and siltstone outcrops as a distinct black band between the lower band of conglomerates and light-colored volcanic rocks that cap the mountain.



Map 56

(2) *Reason for designation.* The Site is of exceptional scientific importance for its rich fossil flora. It was one of the first fossil floras discovered in Antarctica and has played a significant stratigraphic role in deducing the geological history of the Antarctic Peninsula. Its long history as an easily accessible site and the large amount of fossiliferous debris occurring in scree has made it vulnerable to souvenir collectors, and the amount of material available for serious research has been considerably depleted. For this reason the Site merits urgent protection.

(3) *Outline of research.* None is specified. Designation as a Site of Special Scientific Interest is justified by the exceptional scientific interest of the Site and the vulnerability of its fossils to overcollecting.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* None is specified.

(6) *Pedestrian and vehicular routes.* None is specified.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* None is specified.

(8) *Scientific sampling.* The collection of fossiliferous rocks should be restricted to the minimum required for the perspective research studies. Unnecessary destruction of *in situ* rock and boulders should be avoided.

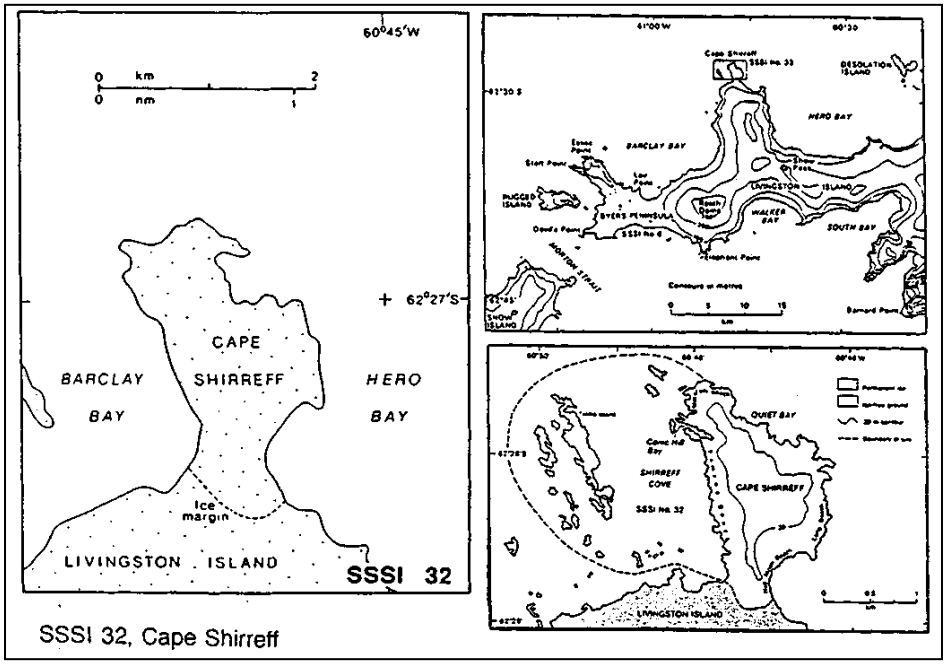
(9) *Other restraints.* None is specified.

Recommendation XV–7, designation from former Specially Protected Area No. 11

Site of Special Scientific Interest No. 32: Management Plan

Cape Shirreff, Livingston Island, South Shetland Islands

(1) *Description of Site.* Cape Shirreff is a low, ice-free peninsula toward the western end of the north coast of Livingston Island, situated at latitude 62°27' S. longitude 60°47' W. between Barclay Bay and Hero Bay. Telmo Island is the largest of a small group of ice-free rock islets, approximately 2 kilometers west of Cape Shirreff. The Site includes the entire area of the Cape Shirreff peninsula north of the glacier ice tongue margin and most of the Telmo Island group (see map 57).



Map 57 SSSI 32, Cape Shirreff

(2) *Reason for designation.* The presence of both antarctic fur seal and penguin breeding colonies and of krill fisheries within the foraging range of these species, make this a critical site for inclusion in the ecosystem monitoring network being established to help meet the objectives of the Convention on the Conservation of Antarctic Marine Living Resources. The purpose of the designation is to allow planned research and monitoring to proceed, while avoiding or reducing, to the greatest extent possible, other activities that could interfere with or affect the results of the research and monitoring programs or alter the natural features of the Site.

(3) *Outline of research.* Long-term studies are being planned better to assess and monitor the feeding ecology, growth and condition, reproductive success, behavior, vital rates, and abundance of pinnipeds and sea birds that breed in the area. The results of these studies will be compared with environmental data, offshore sampling data, and fishery statistics to identify possible cause–effect relationships.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* The Cape Shirreff part of the Site may be entered at any point where pinniped or seabird rookeries are not present on or near the beach. Access to the islands in the Telmo group is unrestricted but should be

at the least densely populated areas and cause minimal disturbance to the fauna. Those gaining access for other than the aforementioned types of research should avoid disturbing pinnipeds and seabirds.

(6) *Pedestrian and vehicular routes.* Boats, helicopters, fixed-winged aircraft, and land vehicles should avoid the Site except for operations directly supporting authorized scientific activities.

During these operations, boats and aircraft should travel routes that avoid or minimize disturbance of pinnipeds and sea birds. Land vehicles should not be used except to transport needed equipment and supplies to and from the field camp to be established. As far as possible, establishment and resupply of the field camp should be done before or after the pinniped and seabird breeding seasons. Pedestrians should not walk through wildlife population areas, especially during the breeding season, or disturb other fauna or flora except as necessary to conduct authorized research.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Geological, glaciological, and other studies that can be done outside of the pinniped and seabird breeding seasons, and that will not damage or destroy pinniped or seabird breeding areas or access to those areas, would not adversely affect the planned assessment and monitoring studies. Likewise, the planned assessment and monitoring studies would not be affected adversely by periodic biological surveys or studies of other species that do not result in killing, injuring, or disturbing pinnipeds or seabirds or in damaging or destroying pinniped or sea bird breeding areas or access to those areas.

(8) *Scientific sampling.* Killing, capturing, handling, photographing, and taking eggs, blood, or other biological samples from pinnipeds and sea birds should be limited to that necessary to characterize and monitor individual and population parameters that may change in detectable ways in response to changes in food availability or other environmental factors. Sampling should be done and reported in accordance with the Agreed Measures for the Conservation of Antarctic Fauna and Flora and the Convention for the Conservation of Antarctic Seals.

(9) *Other restraints.*

(a) Only structures directly supporting authorized scientific research and monitoring programs may be built within the Site to house research personnel and their equipment and shall be occupied only within the period of September 1 to June 1.

(b) All nonburnable or nonbiodegradable materials brought to the Site should be removed when no longer in use. Landfill disposal of nonbiodegradable materials and the burning of nonorganic materials is not permitted.

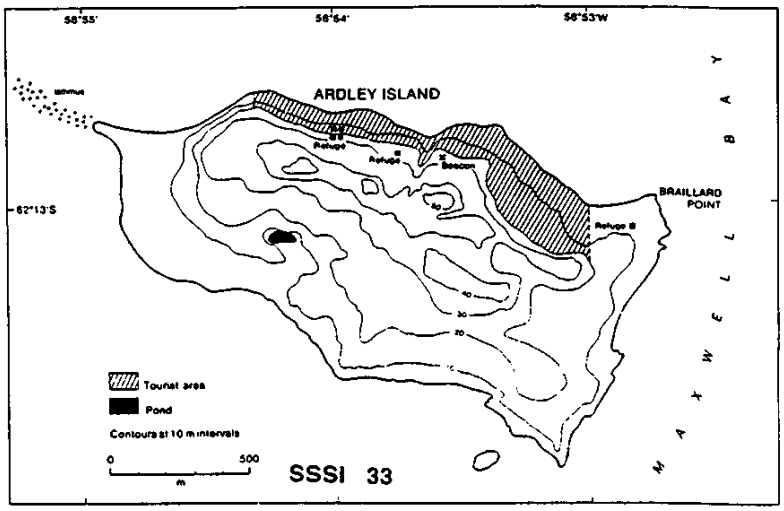
Recommendation XVI–2, designation

Site of Special Scientific Interest No. 33: Management Plan

Ardley Island, Maxwell Bay, King George Island

(1) *Description of Site.* Ardley Island (62°13' S. 58°54' W.) is situated about 500 meters east of the coast of Fildes Peninsula, Maxwell Bay, King George Island. It is about 1 kilometer southeast of the Russian station Bellingshausen and the Chilean station Teniente Marsh and approximately 0.5 kilometer east of the Chinese station Great Wall.

The Site comprises the entire island and its associated littoral zone, including the isthmus between the island and Fildes Peninsula to the west. The island is about 2.0 kilometers long and 1.5 kilometers, at its widest, and rises about 50 meters in altitude. It comprises mainly Tertiary andesitic–basaltic lavas and tufts, and there are some raised beach terraces. It is snow and icefree in summer. There is a small (about 100-meter-long) freshwater pond on the southwest of the island. There is a refuge hut (Germany) near Braillard Point, and two more refuge huts (Argentina, Chile) are situated near the middle of the northern coast of the island, the Chilean camp comprising several huts.



Map 58

SSSI 33 Ardley Island

(2) *Reason for designation.* The Site is of exceptional biological interest. It has a diverse avifauna with 12 breeding species and is of particular importance for its breeding colonies of gentoo penguins (*Pygoscelis papua*); the average number of breeding pairs is about 4,000, which is the largest concentration of gentoos within the South Shetland Islands and probably in the Antarctic. There are also about 1,200 pairs of breeding Adélie penguins (*P. adeliae*) and a small number of chinstrap penguins (*P. antarctica*). Other breeding species of particular importance are southern giant petrels (*Macronectes giganteus*), Wilson's storm petrels (*Oceanites oceanicus*), and black-bellied storm petrels (*Fregatta tropica*).

The island possesses some of the best developed and most extensive plant communities in the South Shetland Islands, notably the climax fell-field ecosystem dominated by macrolichens (*Himantormia lugubris, Usnea* spp.). Such vegetation is extremely sensitive to human intervention and is very easily damaged.

(3) *Outline of research.* Detailed ornithological and botanical research has been undertaken on Ardley Island for many years by Chilean and German scientists, with brief studies made also by scientists from other national stations in the area.

Results of a 10-year census and breeding study, commencing in 1979, of pygoscelid penguins have revealed large between-season fluctuations in numbers and the breeding success of each species. Also, the giant petrel breeding population has declined by about 80 percent in recent years. There is strong evidence that these population fluctuations are a direct response to disturbance by large numbers of visitors and to vehicles and low-flying aircraft. The effects of these impacts will continue to be monitored as an integral part of the long-term ornithological research being undertaken at this Site.

Detailed investigations of the phytosociology of the island's vegetation and of the physiology of selected lichen species have been undertaken. Further terrestrial botanical, zoological, and littoral research is planned. Because of the extreme importance of this area to biological research, it is imperative that it is protected from the severe threat of human intervention so as to minimize its impact on this exceptional ecosystem.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* None is specified, although not more than five persons should enter the Site from the sea anywhere east of a north–south line running through the beacon on the midnorth coast of the island.

(6) *Pedestrian and vehicular routes.* Pedestrian activity should be restricted whenever possible to areas with minimal vegetation and should avoid any bird breeding sites, except as required for approved research studies. Tourists and non-scientific-station and ship personnel should visit only the area designated for this purpose (see 9) in order to minimize disturbance of biota. The use of any type of vehicle, including amphibious craft on land, is not permitted. Helicopters should not land on or overfly the island below a 300-meter altitude. Aircraft landing at and taking off from Teniente Marsh airfield should avoid overflying the island.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Other kinds of scientific investigations may be permitted as long as they cause minimum impact on the biota and ecosystems. All markers and structures associated with field experiments must be removed as soon as the research is completed.

(8) *Scientific sampling.* All activities involving banding, capturing, killing, etc., of any bird must conform with Agreed Measures for the Conservation of Antarctic Fauna and Flora. Any other sampling should be restricted to the minimum required for the purpose of the respective studies.

(9) *Other restraints.* Large groups of visitors to the Site should be limited to a maximum of 20 persons at any time. Such groups of persons should have access only to the "tourist area" marked on the map, i.e., the north coast of the island as far as 300 meters west of Braillard Point and 300 meters west of the Chilean refuge, up to an altitude of 20 meters above sea level. Groups should be accompanied by a guide, provided from the national station approving the visit, who will be responsible for their conduct and who is fully conversant with the Site Management Plan, the Agreed Measures for

the Conservation of Antarctic Fauna and Flora, and the current research programs. There should be no access to dogs whether or not they are required for sledding purposes. All human waste materials should be removed from the Site and returned to the station of origin; no combustible materials should be incinerated within the Site.

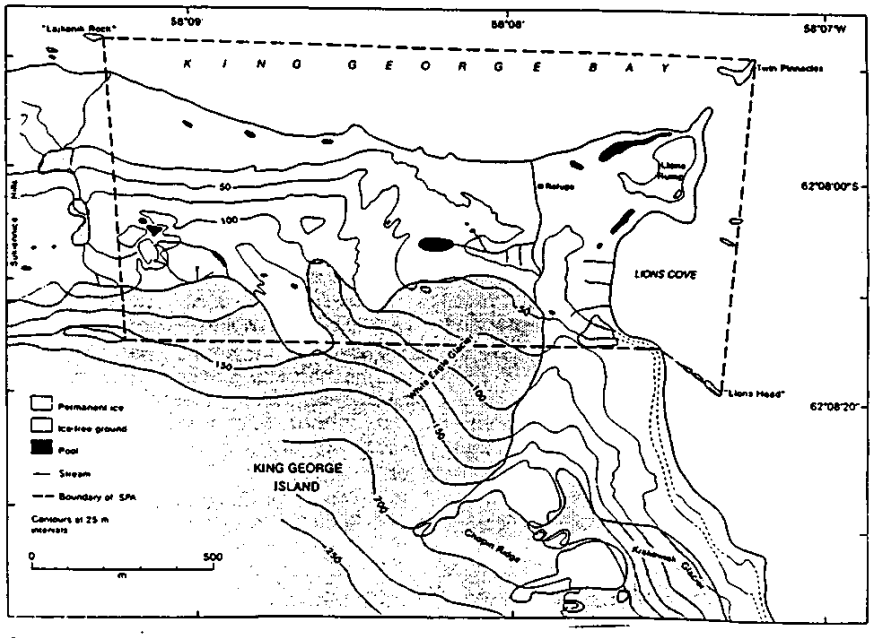
Site of Special Scientific Interest No. 34: Management Plan

Recommendation XVI–2, designation

Lions Rump, King George Island, South Shetland Islands

(1) *Description of area.* The Site is situated on the south coast of King George Bay, King George Island, South Shetland Islands, and is bounded by the following coordinates: latitude 62°07'48" S. longitude 58°09'17" W., latitude 62°07'49" S. longitude 58°07'14" W., latitude 62°08'19" S. longitude 58°07'19" W., latitude 62°08'16" S. longitude 58°09' 15" W.

The area is named after Lions Rump, a prominent rocky hill between the southern extremity of King George Bay and "Lion Cove." It includes the littoral and sublittoral extending from the eastern end of "Lajkonik Rock" to the northernmost end of Twin Pinnacles Island and from that point to the easternmost end of the columnar plug "Lions Head" to the east of "White Eagle Glacier." On land, the Site includes the coastline of raised beaches, freshwater pools and the streams on the south side of King George Bay and around "Lion Cove," moraines, and slopes leading up to the lower ice tongue of "White Eagle Glacier" and westward to a small moraine protruding through the ice cap southeast of "Sukiennice Hills." Lions Rump comprises Tertiary lavas and tufts with thin brown coal intercalations and silicified wood fragments. The moraine west of "Lion Cove" consists of several Holocene stages of glacier advance and retreat. A small refuge is situated near the shore close to the main stream within the Site, about 300 meters west of Lions Rump.



Map 59

SSSI 34, Lions Rump

(2) *Reason for designation.* The Site is representative of the terrestrial, limnological, and littoral ecosystems of King George Island, possessing diverse biota and rock formations. There is a rich flora, especially of lichens, and the two native vascular plants, *Colobanthus quitensis* and *Deschampsia antarctica*, are frequent. Twelve species of birds breed within the Site, including many colonies of three species of pygoscelid penguins, Adélie, chinstrap, and gentoo. There are large numbers of elephant seals and fur seals on the beaches.

It is a rich part of the coastal ecosystem that has not been disturbed by human activity, other than various biological, geological, and geomorphological studies which have been undertaken within the Site.

(3) *Date of designation and originator.* The Site was designated in July 1990 by Poland.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* Access from the sea should be close to the outflow of the main stream within the Site about 300 meters west of Lions Rump. Helicopter landings should be restricted to the area south of the southern boundary of the Site, so as not to disturb the fauna.

(6) *Entry permit requirement.* Entry into the Site should be in strict accordance with a current permit, issued by a participating government or its authorized representative, specifically for a compelling scientific purpose that cannot be served elsewhere or for Site inspection, and that will not jeopardize any aspect of the natural ecosystem or its biota with the Site (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII).

However, access to the Site shall be unlimited to parties wishing to traverse or pass through the Site only to carry out *bona fide* scientific research inland of the Site. Such parties shall pass through the Site as speedily as is reasonable and shall not disturb any part of the Site. Details of the visit should be included in the national annual report of Exchange of Information for the same antarctic season in which the activities were carried out. Research parties passing through the Site as permitted above should also report their visits in the same way.

(7) *Prohibitions.* For human impact to be avoided or minimized, it is prohibited to:

(i) Drive any vehicle within the Site;

(ii) Land a helicopter within the Site;

(iii) Overfly the Site by any aircraft below 250 meters above the highest point;

(iv) Anchor or moor any seacraft within the Site, except in accordance with the permit;

(v) Incinerate, bury, or otherwise dispose of any human waste within the Site; all such waste must be removed from the Site;

(vi) Leave depots of fuel, food, or any other supplies within the Site, unless they are further required within the same season, at the end of which they must be removed;

(vii) Erect any form of building additional to the existing refuge within the Site.

(8) *Pedestrian routes.* None is specified, but precautions must be taken to avoid disturbance to any breeding bird or seal or stand of vegetation, unless required as specified in the permit.

(9) *Scientific research and sampling.* All activities must conform strictly with those specified in the permit to enter the Site.

(10) *Inspection and maintenance.* Inspection visits to the Site should be made at least once every 5 years to assess its state and to monitor significant biological or environmental changes. Other visits should be made as necessary to maintain boundary markers, notices, etc..

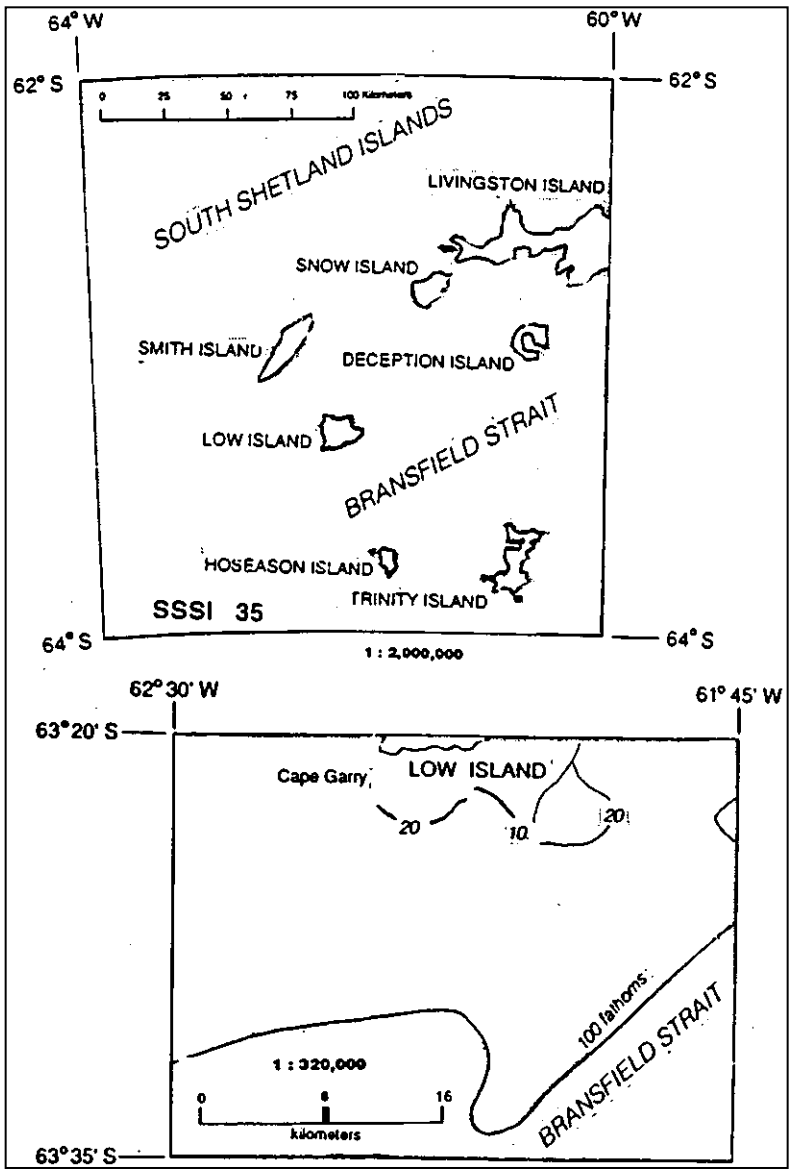
Marine Site of Special Scientific Interest No. 35: Management Plan

Recommendation XVI–3, designation

Western Bransfield Strait, off Low Island, South Shetland Islands

(1) *Description of Site.* The Site is located off the southern shore of Low Island, western South Shetland Islands, between latitudes 63°20' S. and 63°35' S. and between longitudes 61°45' W. and 62°30' W. (with reference to U.S. Defense Mapping Agency Hydrographic Topographic Center chart number 29121). A small portion of the Low Island landmass/snowmass projects into the northern boundary of this domain; here the northern limit of the Site will be associated intertidal zone. East, west, and south of the island the bottom slopes gently from the intertidal zone to depths of approximately 200 meters and then drops off rapidly near the boundary limits of the Site.

The bottom consists of a sand/mud/cobbled-rock matrix and supports a rich benthos, e.g., numerous fish species, invertebrates (sponges, anemones, annelids, mollusks, crustaceans, asteroids, ophiuroids, echinoids, holothurioids, brachiopods, tunicates), and marine plants, in several distinct commu-



Map 60

nities. Fish species commonly collected near Low Island include *Notothenia gibberifrons, Chaenocephalus aceratus, Harpagifer bispinis, Parachaenichthys charcoti, Trematomus newnesi,* and *N. coriiceps neglecta*. Species rarely found at Low Island include *Pseudochaenichthys georgianus*, *Champsocephalus gunnari*, and *Chionodraco rastrospinosus*. In addition, the Low Island shelf appears to be a major spawning ground for several fish species (e.g., *N. coriiceps neglecta* and the ice fish *C. aceratus*).

(2) *Reason for designation.* The shallow shelf south of Low Island is one of only two known sites in the vicinity of Palmer station that are suitable for bottom trawling for fish and other benthic organisms. From an ecological standpoint, the Low Island site offers unique opportunities to study the composition, structure, and dynamics of several accessible marine communities. The Site, and in particular, its benthic fauna, is of exceptional scientific interest and requires long-term protection from potential harmful interference.

(3) *Outline of research.* Studies of this area by scientists from Palmer station began in the early 1970's. The current research program uses fish from Low Island to study the biochemical adaptations that enable proteins to function at low temperatures and physiological adaptation of muscle and energy metabolism to low temperatures. These studies are conducted each year during the austral summer.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* Any boundary point may be used for entry. Free passage of ships through this Site is permitted.

(6) *Pedestrian and vehicular routes.* Not applicable.

(7) *Other kinds of scientific investigations that would not cause harmful interference.* Ecological studies of the sea floor and its benthos by any method should be restricted to the minimum necessary for research activities and should be carried out with minimal disturbance of the Site.

(8) *Scientific sampling.* Sampling of the sea floor and its benthos by any method should be restricted to the minimum necessary for research activities and should be carried out with minimal disturbance of the Site.

(9) *Other restraints.* Ships should, where possible, avoid anchoring within the boundaries of the Site.

Marine Site of Special Scientific Interest No. 36: Management Plan

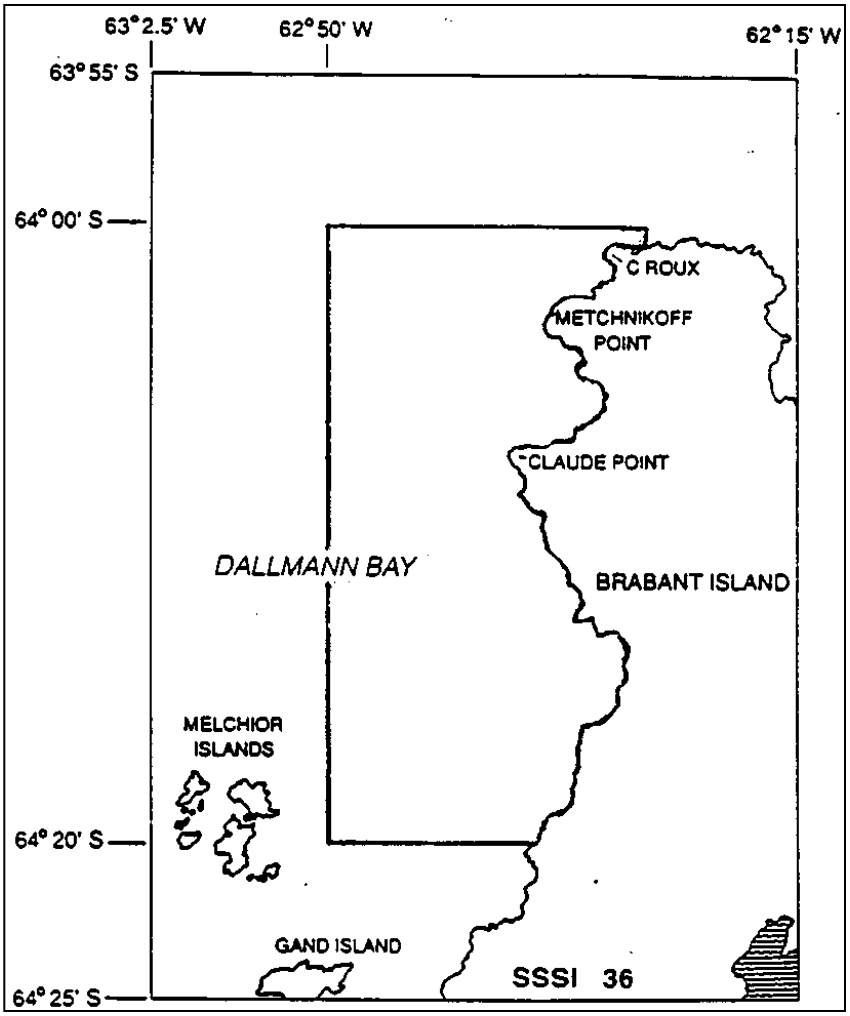
Recommendation XVI–3, designation

East Dallmann Bay, off Brabant Island

(1) *Description of Site.* The Site is located in East Dallmann Bay off the western shore of Brabant Island, Palmer Archipelago, between latitudes 64°00' S. and 64°20' S. and from longitude 62°50' W. east to the intertidal zone of the island's western shore (with reference to U.S. Defense Mapping Agency Hydrographic/Topographic Center, chart number 29121). West of Brabant Island the bottom forms a gently sloping shelf from the intertidal zone to depths of approximately 200 meters and then drops off rapidly near the western boundary of the Site.

The bottom consists of a sand/mud/cobbled-rock matrix. The benthic community includes numerous fish species, invertebrates (sponges, anemones, annelids, mollusks, crustaceans, asteroids ophiuroids, echinoids, holothurioids, tunicates) and marine plants. Fish species commonly collected at East Dallmann Bay include *Notothenia gibberifrons, Chaenocephalus aceratus, Champsocephalus gunnari, Pseudochaenichthys georgianus,* and *Chionodraco rastrospinosus.* Specimens of *Trematomus newnesi* and *N. coriiceps neglecta* are rare in this area.

(2) *Reason for designation.* The shallow shelf west of East Dallmann Bay is one of only two known sites near Palmer station that are suitable for bottom



Map 61

trawling for fish and other benthic organisms. The Site and, in particular, its benthic fauna are of exceptional scientific interest and require long-term protection from potential harmful interference.

(3) *Outline of research.* Studies of this area by scientists from Palmer station began in the early 1970's. The current research program uses fish from East Dallmann Bay to study the biochemical adaptations that enable proteins to function at low temperatures and the physiological adaptation of muscle and energy metabolism to low temperatures.

(4) *Date of expiry of designation.* U.S. regulation does not specify an expiration date.

(5) *Access points.* Any boundary point may be used for entry. Free passage of ships through this area is permitted.

(6) *Pedestrian and vehicular routes.* Not applicable.

(7) *Other kinds of scientific investigations which would not cause harmful interference.* Ecological studies of the composition, structure, and dynamics of the marine communities would not be harmful.

(8) *Scientific sampling.* Sampling of the sea floor and its benthos by any method should be restricted to the minimum necessary for research activities and should be carried out with minimal disturbance of the Site.

(9) *Other restraints.* Ships should, where possible, avoid anchoring within the boundaries of the Site.

New Classification System for Area Protection and Management

Annex V to the Protocol on Environmental Protection to the Antarctic Treaty calls for a reclassification of antarctic sites that require restrictions on entry and/or special management to protect historical, cultural, environmental, or scientific values. These areas have been grouped into two classes in order to simplify classification:

"Antarctic Specially Protected Areas," areas that require a management plan and permit for entry; and

"Antarctic Specially Managed Areas," areas which require the preparation of and adherence to a management plan, but do not require a permit for entry.

After the Protocol on Environmental Protection to the Antarctic Treaty is implemented through federal legislation in the United States, Sites of Special Scientific Interest and Specially Protected Areas would be reclassified as Antarctic Specially Protected Areas. Treaty parties will designate other areas as an Antarctic Specially Managed Areas; these areas may include any marine area that would benefit from special classification to assist in the planning and coordination of activities, avoid possible conflicts, improve cooperation among Antarctic Treaty member nations, or minimize environmental impact.

Management plans for Antarctic Specially Protected Areas and Antarctic Specially Managed Areas are now under preparation among Antarctic Treaty member nations including the United States. As these plans are developed, they will be implemented by NSF under current Federal law and regulation.

SECTION FOUR:
Historic Monuments in Antarctica

The need to protect historic monuments and sites became apparent as the number of expeditions to the Antarctic increased. At the Seventh Antarctic Treaty Consultative Meeting it was agreed that a list of historic monuments and sites be created. So far 60 sites have been identified. All of them are monuments—human artifacts rather than sites or areas—and, many of them are in close proximity to scientific stations. Provision for protection of these sites is contained in Annex V, Article 8, on the grounds that the Antarctic Specially Protected Area permit system is the best means of ensuring protection of historic monuments where direct oversight is not possible.

List of Historic Monuments Identified and Described by the Proposing Government or Governments

(1) *Flag mast* erected in December 1965 at the South Geographical Pole by the First Argentine Overland Polar Expedition.

(2) *Rock cairn and plaques* at Syowa station (69°00' S. 39°35' E.) in memory of Shin Fukushima, a member of the 4th Japanese Antarctic Research Expedition, who died in October 1960 while performing official duties. The cairn was erected on January 11, 1961 by his colleagues. Some of his ashes repose in the cairn.

(3) *Rock cairn and plaque* on Proclamation Island, Enderby Land, erected in January 1930 by Sir Douglas Mawson. The cairn and plaque (65°51' S. 53°41' E.) commemorate the landing on Proclamation Island of Sir Douglas Mawson with a party from the British, Australian, and New Zealand Antarctic Research Expedition of 1929–31.

(4) *Station building* to which a bust of V.I. Lenin is fixed, together with a plaque in memory of the conquest of the Pole of Inaccessibility by Soviet Antarctic explorers in 1958 (83°06' S. long 54°58' E.).

(5) *Rock cairn and plaque* at Cape Bruce, Mac. Robertson Land, erected in February 1931 by Sir Douglas Mawson. The cairn and plaque (67°25' S. 60°47' E.) commemorate the landing on Cape Bruce of Sir Douglas Mawson with a party from the British, Australian, and New Zealand Antarctic Research Expedition of 1929–31.

(6) *Rock cairn* at Walkabout Rocks, Vestfold Hills, "Princess Elizabeth Land," erected in 1939 by Sir Hubert Wilkins. The cairn (68°22' S. 78°33' E.) houses a canister containing a record of his visit.

(7) *Stone with inscribed plaque,* erected at Mirny Observatory (66°33' S. 93°01'

E.), Mabus Point, in memory of driver-mechanic Ivan Khmara, who perished on fast ice in the performance of official duties in 1956.

(8) *Metal monument-sledge* at Mirny Observatory (66°33' S. 93°01' E.), Mabus Point, with plaque in memory of driver-mechanic Anatoly Shcheglov, who perished in the performance of official duties.

(9) *Cemetery* on Buromskiy Island (66°32' S. 93°01' E), near Mirny Observatory, in which are buried Soviet, Czechoslovak, and German Democratic Republic citizens, members of Soviet Antarctic Expeditions, who perished in the performance of official duties on August 3, 1960.

(10) *Building (magnetic observatory)* at Dobrowolsky station (66°16' S. 100°45' E.), Bunger Hills, with plaque in memory of the opening of Oasis station in 1956.

(11) *Heavy tractor* at Vostok station (78°28' S. 106°48' E.) with plaque in memory of the opening of the station in 1957.

(12) *Cross and plaque* at Cape Denison (67°00' S. 142°42' E.), George V Land, erected in 1913 by Sir Douglas Mawson on a hill situated 300 meters west by south, from the main hut of the Australasian Antarctic Expedition of 1911–14. The cross and plaque commemorate Lieutenant B.E.S. Ninnis and Dr. X. Mertz, members of the expedition, who died in 1913 while engaged in the work of the expedition.

(13) *Hut* at Cape Denison (67°00' S. 142°42' E.), George V Land, built in January 1912 by Sir Douglas Mawson for the Australasian Antarctic Expedition of 1911–14. This was the main base of the expedition.

(14) *Remains of rock shelter* at Inexpressible Island (74°54' S. 163°43' E.), Terra Nova Bay, constructed in March 1912 by Victor Campbell's Northern Party, British Antarctic Expedition, 1910–13. The party spent the winter of 1912 in this shelter and a nearby ice cave.

(15) *Hut* at Cape Royds (77°38' S. 166°07' E.), Ross Island, built in February 1908 by Ernest Shackleton. The hut was restored in January 1961 by Antarctic Division of New Zealand Department of Scientific and Industrial Research.

(16) *Hut* at Cape Evans (77°38' S. 166°24' E.), Ross Island, built in January 1911 by Captain Robert Falcon Scott. The hut was restored in January 1961 by Antarctic Division of New Zealand Department of Scientific and Industrial Research.

(17) *Cross* on Wind Vane Hill (77°38' S. 166°24' E.), Cape Evans, Ross Island, erected by the Ross Sea Party of Ernest Shackleton's Trans-Antarctic Expedition, 1914–16, in memory of three members of the party who died in the vicinity in 1916.

(18) *Hut* at Hut Point. (77°51' S. 166°37' E.), Ross Island, built in February 1902 by Captain Robert Falcon Scott. The hut was partially restored in January 1964 by the New Zealand Antarctic Society, with assistance from the U.S. Government.

(19) *Cross* at Hut Point (77°51' S. 166°37' E.), Ross Island, erected in February 1904 by the British Antarctic Expedition, 1901–04, in memory of T. Vince, a member of that expedition who died in the vicinity.

(20) *Cross* on Observation Hill (77°51' S. 166°40' E.), Ross Island, erected in January 1913 by the British Antarctic Expedition, 1910–13, in memory of Captain Robert Falcon Scott's party, which perished on the return journey from the South Pole, March 1912.

(21) *Stone hut* at Cape Crozier (77°32' S. 169°18' E.), Ross Island, constructed in July 1911 by Edward Wilson's party (British Antarctic Expedition, 1910–13) during the winter journey to collect emperor penguin eggs.

(22) *Hut* at Cape Adare (71°17' S. 170°15' E.) built in February 1899 during *Southern Cross* expedition led by C.E. Borchgrevink. There are three huts at Cape Adare: two date from Borchegrevink's expedition and one from Scott's Northern Party, 1910–11. Only the southernmost Borchgrevink hut survives in a reasonable state of repair.

(23) *Grave* at Cape Adare (71°17' S. 170°15' E.) of Norwegian biologist Nicolai Hanson, a member of C.E. Borchgrevink's *Southern Cross* expedition, 1899–1900. This is the first known grave in the Antarctic.

(24) *Rock cairn*, known as "Amundsen's Cairn," on Mount Betty (85°11' S. 163°45' W.), Queen Maud Range. This was erected by Roald Amundsen on January 6, 1912 on his way back to Framheim from the South Pole.

(25) *Hut and plaque* on Peter I Oy, built by the Norwegian Captain Nils Larsen in February 1929 at Framnaesodden (68°47' S. 90°42' W.). The plaque is inscribed "Norvegia-ekspedisjonen 2/2 1929."

(26) *Abandoned installations of Argentine station* General San Martin on Barry Island (68°08' S. 67°08' W.), Debenham Islands, Marguerite Bay, with cross, flag mast, and monolith built in 1951.

(27) *Cairn with plaque* on Megalestris Hill (65°10' S. 64°10' W.), Petermann Island, erected in 1909 by the second French expedition led by J.B. Charcot. It was restored by the British Antarctic Survey in 1958.

(28) *Rock cairn* at Port Charcot (65°03' S. 64°01' W.), Booth Island, with wooden pillar and plaque inscribed with the names of the first French expedition led by J.B. Charcot, who wintered here in 1903 aboard *Le Francais.*

(29) *Lighthouse* named "Primero de Mayo" erected on Lambda Island (64°18' S. 62°59' W.), Melchior Islands, by Argentina in 1942. This was the first Argentine lighthouse in the Antarctic.

(30) *Shelter* at Paradise Harbor (64°49' S. 62°51' W.) erected in 1950 near the Chilean Base Gabriel González Videla to honor Gabriel González Videla, the first Head of State to visit the Antarctic.

(31) *Memorial plaque* marking the position of a cemetery on Deception Island (62°59' S. 60°34' W.), where some 40 Norwegian whalers were buried in the first half of the twentieth century. The cemetery was swept away by a volcanic eruption in February 1969.

(32) *Concrete monolith* erected in 1947 near Arturo Prat Base on Greenwich Island (62°29' S. 59°40' W.). This monolith served as the point of reference for Chilean Antarctic hydrographic work.

(33) *Shelter and cross with plaque* near Arturo Prat Base, Greenwich Island (62°30' S. 59°41' W.). The shelter was named in memory of Lieutenant-Commander González Pacheco, who died tragically while in charge of the station in 1960.

(34) *Bust* of the Chilean naval hero Arturo Prat erected in 1947 at the base of the same name on Greenwich Island (62°30' S. 59°41' W.).

(35) *Wooden cross and statue* of the Virgin of Carmen erected in 1947 near Arturo Prat Base on Greenwich Island (62°30' S. 59°41' W.). There is also nearby a metal plaque of the Lions International Club.

(36) *Metal plaque* at Potter Cove (62°13' S. 58°42' W.), King George Island, erected by Eduard Dallmann to commemorate the visit of his German expedition on March 1, 1874.

(37) *Statue of Bernardo O'Higgins*, erected in 1948 in front of the station of the same name (63°19' S. 57°54' W.) to honor the first ruler of Chile to envision the importance of Antarctica.

(38) *Hut* on Snow Hill Island (64°24' S. 57°00' W.) built in February 1902 by the main party of the Swedish South Polar Expedition, led by Otto Nordenskjold.

(39) *Stone hut* at Hope Bay (63°24' S. 56°59' W.) built in January 1903 by a party of the Swedish South Polar Expedition.

(40) *Bust of General San Martin, grotto with a statue of the Virgin of Lujan, and a flag mast* at "Base Esperanza" (63°24' S. 56°59' W.), Hope Bay, erected by Argentina in 1955; together with a graveyard with stele in memory of members of Argentine expeditions who died in the area.

(41) *Stone hut* on Paulet Island (63°35' S. 55°47' W.) built in February 1903 by C.A. Larsen, Norwegian captain of the wrecked vessel *Antarctic* of the Swedish South Polar Expedition led by Otto Nordenskjold, together with the grave of a member of that expedition.

(42) *Area at Scotia Bay*, Laurie Island (60°46' S. 44°40' W.), South Orkney Islands, in which are found a stone hut built in 1903 by the Scottish Expedition led by W.S. Bruce; the Argentine Meteorological and Magnetic Observatory, built in 1905; and a graveyard with seven tombs dating from 1903.

(43) *Cross* erected in 1955, at a distance of 1300 meters northeast of the Argentine Base General Belgrano at "Piedrabuena Bay," Filchner Ice Shelf (77°49' S. 38°02' W.).

(44) *Plaque* erected at the temporary Indian station Dakshin Gangotri, Princess Astrid Coast (70°45' S. 11°38' E.), Queen Maud Land, listing the names of the members of the First Indian Antarctic Expedition, which landed nearby on January 9, 1982.

(45) *Plaque* on Brabant Island, on Metchnikoff Point (64°02' S. 62°34' W.), mounted at a height of 70 meters on the crest of the moraine separating this point from the glacier and bearing the following inscription: "This monument was built by Francois de Gerlache and other members of the joint services expedition 1983–85 to commemorate the first landing on Brabant Island by the Belgian Antarctic Expedition 1897–99:

Adrien de Gerlache (Belgium) leader
Roald Amundsen (Norway)
Henryk Arctowski (Poland)
Frederick Cook (United States) and
Emile Danco (Belgium)

camped nearby from 30 January to 6 February 1898."

(46) *All the buildings and installations of Port Martin base* (66°49' S. 141°24' E.), Terre Adélie, constructed in 1950 by the 3rd French expedition and partly destroyed by fire the night of January 23–24, 1952.

(47) *Wooden building* called Base Marret on the Ile des Petrels off Terre Adélie (66°40' S. 140°01' E.) where seven men under the command of Mario Marret wintered in 1952 following the fire at Port Martin base.

(48) *Cross* erected on the northeast headland of the Ile des Petrels (66°40' S. 140°01' E.), Terre Adélie, in memory of Andre Prudhomme, head meteorologist in the 3rd International Geophysical Year expedition, who disappeared during a storm on January 7, 1959.

(49) *Concrete pillar* erected by the First Polish Antarctic Expedition at Dobrowolski station on the Bunger Hills (66°16.3' S. 100°45' E., h = 35.4 meters) to measure acceleration due to gravity g = 982,349.4 milligals, plus or minus 0.4 milligals in relation to Warsaw, according to the Potsdam system, in January 1959.

(50) *Plaque* bearing the Polish eagle, the national emblem of Poland, the dates 1975 and 1976, and this text in Polish, English, and Russian: "In memory of the landing of members of the first Polish Antarctic marine research expedition on the vessels *Professor Siedlecki* and *Tazar* in February 1976." The plaque is on a shore cliff on Fildes Peninsula, King George Island, Maxwell Bay, southwest of the Chilean and Russian stations.

(51) *Grave* of Wladzimierz Puchalski, surmounted by an iron cross, on a hill to the south of Arctowski station on King George Island. W. Puchalski was an artist, a producer of documentary nature films, who died on January 19, 1979 whilst working at the station.

(52) *Monolith* erected to commemorate the establishment on February 20, 1985, by the People's Republic of China of the Great Wall station (62°13' S. 58°58' W.) on Fildes Peninsula, King George Island, in the South Shetland Islands. Engraved on the monolith is this inscription in Chinese: "Great Wall station, First Chinese Antarctic Research Expedition, 20 February 1985."

(53) *Monolith and commemorative plaques* celebrating the rescue of survivors of the British ship *Endurance* by the Chilean Navy cutter *Yelcho* displaying the following words:

> "Here, on 30 August 1916, the Chilean Navy cutter *Yelcho*, commanded by Pilot Luis Pardo Villalon, rescued the 22 men from the Shackleton Expedition who survived the wreck of the *Endurance* living for four and one half months in this Island."

The monolith and the plaques have been placed on Elephant Island (61°03' S. 54°50' W.) and their replicas on the Chilean bases Arturo Prat (62°30' S. 59°49'W.) and Lieutenant Rodolfo Marsh (62°12' S. 62°12' W.). Bronze busts of the pilot Luis Pardo Villalon were placed on the three above-mentioned monoliths during the XXIVth Chilean Antarctic Scientific Expedition in 1987–1988.

(54) *Richard E. Byrd Historic Monument*, McMurdo station (77°51' S. 166°40'E.). A bronze bust on black marble, the monument stands 1.55 meters high by 0.625 meter square, on a wood platform, and bears inscriptions describing the polar achievements of Richard Evelyn Byrd. The monument was erected at McMurdo station in 1965.

(55) *East Base*, Stonington Island (68°11' S. 67°00' W.); buildings and artifacts and their immediate environs. These structures were erected and used during two U.S. wintering expeditions: the Antarctic Service Expedition (1939–1941) and the Ronne Antarctic Research Expedition (1947–1948). The historic area is 1000 meters in the north–south direction (from the beach to Northeast Glacier adjacent to Back Bay) and 500 meters in the east–west direction.

(56) *Waterboat Point*, Danco Coast, Antarctic Peninsula (64°49' S. 62°52' W.); the remains and immediate environs of the Waterboat Point hut, situated close to the unoccupied Chilean station, Presidente Gabriel González Videla. The Waterboat Point hut, of which only the base of the boat, roots of door posts, and an outline of the hut and extension still exist, was occupied by the United Kingdom two-man expedition of Bagshawe and Lester in 1921–1922. This was, and indeed remains, the smallest expedition to ever overwinter in Antarctica.

(57) *Commemorative plaque* at Yankee Harbor, McFarlane Strait, Greenwich Island, South Shetland Islands, near the Chilean refuge located at latitude 62°32' S. longitude 59°45' W., to the memory of Captain Robert McFarlane, who in 1820 explored the Antarctic Peninsula Area in the brigantine *Dragón*.

(58) *Cairn* with memorial plaque erected at Whalers Bay, Deception Island, South Shetland Islands, in the vicinity of the whalers' cemetery (historic monument number 31, 62°59' S. 60°34' W.), to honor captain Adolfus Amandus Andresen, antarctic pioneer who was first to establish a whaling operation at Deception Island in 1906.

(59) *Cairn* on Half Moon Beach, Cape Shirreff, Livingston Island, South Shetland Islands, commemorating the officers, soldiers, and seamen on board the *San Telmo*, which sank in September 1819; possibly the first people to live and die in the wastes of the Antarctic.

(60) *Wooden plaque and rock cairn*, southern coast of Seymour Island (64°16' S. 56°39' 10" W.). On November 10, 1903, the rescue crew of the Argentine corvette *Uruguay* placed the plaque where they met members of the Swedish expedition led by Dr. Otto Nordenskjöld. The plaque reads: "10.XI.1903 'Uruguay' (Argentine Navy) in its journey to give assistance to the Swedish Antarctic Expedition." In January 1990 Argentina erected the rock cairn in memory of the event.

This list was developed at Antarctic Treaty Consultative Meetings VII, XII, XIII, XIV, XV, XVI, and XVII.

SECTION FIVE:
Antarctic Conservation Act Application and Permit Form (NSF Form 1078)

According to Regulations Pursuant to the Conservation Act of 1978, a permit is required to "take" native animals or birds, enter Specially Protected Areas and Sites of Special Scientific Interest, introduce nonindigenous species, or export into the United States any antarctic fauna and flora.

Applicants should note that processing a permit application takes a minimum of 45 days due to the required 30-day public comment period [Section 670.9(g)]. Questions on the Conservation Act and requests for application forms should be directed to:

Permit Office
Office of Polar Programs, Room 755
National Science Foundation
4201 Wilson Boulevard
Arlington, Virginia 22230

Phone: 703–306–1033
Fax: 703–306–0139
E-mail: nkennedy @ nsf.gov

A copy of the Antarctic Conservation Act Application and Permit Form follows. Permits also are discussed in the summary section of this book.

FORM APPROVED
OMB NO. 3145-0034

NATIONAL SCIENCE FOUNDATION ARLINGTON, VIRGINIA 22230	ANTARCTIC CONSERVATION ACT APPLICATION AND PERMIT FORM	PROPOSAL NO.

1. TYPE OF PERMIT REQUESTED
☐ TAKE
☐ IMPORT INTO USA—PORT OF ENTRY _____
☐ EXPORT FROM USA
☐ ENTER SPECIALLY PROTECTED AREA
☐ ENTER SITE OF SPECIAL SCIENTIFIC INTEREST
☐ INTRODUCE NON-INDIGENOUS SPECIES INTO ANTARCTICA

2. NAME, ADDRESS, PHONE/FAX NO. AND E-MAIL ADDRESS OF APPLICANT (IF A CORPORATION, FIRM, PARTNERSHIP, INSTITUTION, OR AGENCY, EITHER PUBLIC OR PRIVATE, COMPLETE BLOCK 3).

3. NAME AND ADDRESS OF PRESIDENT OR PRINCIPAL OFFICER	4. IF APPLICANT IS AN INDIVIDUAL, INCLUDE BUSINESS OR INSTITUTIONAL AFFILIATION
5. NAME OF APPLICANT'S AGENTS (FIELD PARTY MEMBERS), IF ANY (USE "TBA" IF NAMES UNKNOWN)	6. DESIRED EFFECTIVE DATES

7. LOCATION(S)—INCLUDE MANNER OF TAKING AND PROPOSED ACCESS TO THE LOCATION

8. SPECIMEN INFORMATION

SPECIES	NUM-BER	AGE	SEX	SIZE	CONDITION	IMPORT TO USA	ULTIMATE DISPOSITION

CERTIFICATION

I certify that the information submitted in this application for a permit is complete and accurate to the best of my knowledge and belief. Any false statement will subject me to the criminal penalties of 18 U.S.C. 1001.

SIGNATURE	DATE

FOR NSF USE ONLY

This application for a permit under the Antarctic Conservation Act, P.L. 95-541, and NSF regulations contained in title 45 part 670 of the Code of Federal Regulations is approved subject to the following conditions:

THIS PERMIT EXPIRES ON: _____
(Date)

TYPED NAME AND TITLE AND SIGNATURE OF NSF AUTHORIZING OFFICIAL	DATE

CONTINUE ON REVERSE SIDE

9. DESCRIPTION OF ACTIVITY FOR WHICH PERMIT IS NEEDED AND JUSTIFICATION FOR PROJECT. ALSO INCLUDE HERE ADDITIONAL INFORMATION RELATING TO THE SPECIFIC ACTION FOR WHICH THE PERMIT IS BEING SOUGHT.

PRIVACY ACT NOTICE

The information requested in this application is solicited pursuant to the Antarctic Conservation Act of 1978, P.L. 95-541, and NSF regulations contained in title 45 part 670 of the Code of Federal Regulations, and will be used in administration of the overall program. Although provision of any of the requested information is voluntary, failure to provide full and complete information necessary for eligibility determination may reduce the possibility of receiving a permit.

MAIL THIS APPLICATION TO:	OFFICE OF POLAR PROGRAMS (PERMIT OFFICE) NATIONAL SCIENCE FOUNDATION, ROOM 755 ARLINGTON, VIRGINIA 22230

APPENDIX A:
Agreed Measures for the Conservation of Antarctic Fauna and Flora

At the First Antarctic Treaty Consultative Meeting in 1961 it was ruled that the general rules of conduct for the preservation and conservation of living resources in Antarctica needed to be considered further. It was from this consideration that the Agreed Measures were developed. The Agreed Measures include information on the treatment of native mammals, the designation of Specially Protected Areas and Sites of Special Scientific Interest, and consultative parties' information exchange. The Agreed Measures follow with the exception of Annexes A–D, which are described but not included. The Agreed Measures were adopted in 1964 as Recommendation VIII at the Third Antarctic Treaty Consultative Meeting.

Recommendation III–VIII: Agreed Measures for the Conservation of Antarctic Fauna and Flora

The Representatives, taking into consideration Article IX of the Antarctic Treaty, and recalling Recommendation I-VIII of the First Consultative Meeting and Recommendation II-II of the Second Consultative Meeting, recommend to their Governments that they approve as soon as possible and implement without delay the annexed "Agreed Measures for the Conservation of Antarctic Fauna and Flora."

Agreed Measures for the Conservation of Antarctic Fauna and Flora

Preamble

The Governments participating in the Third Consultative Meeting under Article IX of the Antarctic Treaty,

Desiring to implement the principles and purposes of the Antarctic Treaty;

Recognizing the scientific importance of the study of antarctic fauna and flora, their adaptation to their rigorous environment, and their inter-relationship with that environment;

Considering the unique nature of these fauna and flora, their circum-polar range, and particularly their defenselessness and susceptibility to extermination;

Desiring by further international collaboration within the framework of the Antarctic Treaty to promote and achieve the objectives of protection, scientific study, and rational use of these fauna and flora; and

Having particular regard to the conservation principles developed by the Sci-

entific Committee on Antarctic Research (SCAR) of the International Council of Scientific Unions;

Hereby consider the Treaty Area as a Special Conservation Area and have agreed on the following measures:

Article I
[Area of Application]

(1) These Agreed Measures shall apply to the same area to which the Antarctic Treaty is applicable (hereinafter referred to as the Treaty Area) namely the area south of 60 degrees south latitude, including all ice shelves.

(2) However, nothing in these Agreed Measures shall prejudice or in any way affect the rights, or the exercise of the rights, of any State under international law with regard to the high seas within the Treaty Area, or restrict the implementation of the provisions of the Antarctic Treaty with respect to inspection.

(3) The Annexes to these Agreed Measures shall form an integral part thereof, and all references to the Agreed Measures shall be considered to include the Annexes.

Article II
[Definitions]

For the purposes of these Agreed Measures:

(a) "Native mammal" means any member, at any stage of its life cycle, of any species belonging to the Class Mammalia indigenous to the Antarctic or occurring there through natural agencies of dispersal, excepting whales.

(b) "Native bird" means any member, at any stage of its life cycle (including eggs), of any species of the Class Aves indigenous to the Antarctic or occurring there through natural agencies of dispersal.

(c) "Native plant" means any kind of vegetation, at any stage of its life cycle (including seeds), indigenous to the Antarctic or occurring there through natural agencies of dispersal.

(d) "Appropriate authority" means any person authorized by a participating government to issue permits under these Agreed Measures. The functions of an authorized person will be carried out within the framework of the Antarctic Treaty. They will be carried out exclusively in accordance with scientific principles and will have as their sole purpose the effective protection of Antarctic fauna and flora in accordance with these Agreed Measures.

(e) "Permit" means formal permission in writing issued by an appropriate authority as defined at paragraph (d) above.

(f) "Participating government" means any Government for which these Agreed Measures have become effective in accordance with Article XIII of these Agreed Measures.

Article III
[Implementation]

Each participating government shall take appropriate action to carry out these Agreed Measures.

Article IV
[Publicity]

The participating governments shall prepare and circulate to members of

expeditions and stations information to ensure understanding and observance of the provisions of these Agreed Measures, setting forth in particular prohibited activities, and providing lists of specially protected species and specially protected areas.

Article V
[Cases of extreme emergency]

The provisions of these Agreed Measures shall not apply in cases of extreme emergency involving possible loss of human life or involving the safety of ships or aircraft.

Article VI
[Protection of native fauna]

(1) Each participating government shall prohibit within the Treaty Area the killing, wounding, capturing or molesting of any native mammal or native bird, or any attempt at any such act, except in accordance with a permit.

(2) Such permits shall be drawn in terms as specific as possible and issued only for the following purposes:

(a) to provide indispensable food for men or dogs in the Treaty Area in limited quantities, and in conformity with the purposes and principles of these Agreed Measures;

(b) to provide specimens for scientific study or scientific information;

(c) to provide specimens for museums, zoological gardens, or other educational or cultural institutions or uses.

(3) Permits for Specially Protected Areas shall be issued only in accordance with the provisions of Article VIII.

(4) Participating governments shall limit the issue of such permits so as to ensure as far as possible that:

(a) no more native mammals or birds are killed or taken in any year than can normally be replaced by natural reproduction in the following breeding season;

(b) the variety of species and the balance of the natural ecological systems existing within the Treaty Area are maintained.

(5) The species of native mammals and birds listed in Annex A of these Measures shall be designated “Specially Protected Species,” and shall be accorded special protection by participating governments.

(6) A participating government shall not authorize an appropriate authority to issue a permit with respect to a Specially Protected Species except in accordance with paragraph 7 of this Article.

(7) A permit may be issued under this Article with respect to a Specially Protected Species, provided that:

(a) it is issued for a compelling scientific purpose; and

(b) the actions permitted will not jeopardize the existing natural ecological system or the survival of that species.

Article VII
[Harmful interference]

1. Each participating government shall take appropriate measures to minimize harmful interference within the Treaty Area with the normal living conditions of any native mammal or bird, or any attempt at such harmful interference, except as permitted under Article VI.

2. The following acts and activities shall be considered harmful interference:

(a) allowing dogs to run free;

(b) flying helicopters or other aircraft in a manner which would unnecessarily disturb bird and seal concentrations, or landing close to such concentrations (e.g. within 200 meters);

(c) driving vehicles unnecessarily close to concentrations of birds and seals (e.g. within 200 meters);

(d) using explosives close to concentrations of birds and seals;

(e) discharge of firearms close to bird and seal concentrations (e.g. within 300 meters);

(f) any disturbing of bird and seal colonies during the breeding period by persistent attention from persons on foot.

However, the above activities, with the exception of those mentioned in (a) and (e) may be permitted to the minimum extent necessary for the establishment, supply and operation of stations.

3. Each participating government shall take all reasonable steps towards the alleviation of pollution of the waters adjacent to the coast and ice shelves.

Article VIII
[Specially Protected Areas]

1. The areas of outstanding scientific interest listed in Annex B shall be designated "Specially Protected Area" and shall be accorded special protection by the participating governments in order to preserve their unique natural ecological system.

2. In addition to the prohibitions and measures of protection dealt with in other Articles of these Agreed Measures, the participating governments shall in Specially Protected Areas further prohibit:

(a) the collection of any native plant, except in accordance with a permit;

(b) the driving of any vehicle;

(c) entry by their nationals, except in accordance with a permit issued under Article VI or under paragraph 2(a) of the present Article or in accordance with a permit issued for some other compelling scientific purpose.

3. A permit issued under Article IV shall not have effect within a Specially Protected Area except in accordance with paragraph 4 of the present Article.

4. A permit shall have effect within a Specially Protected Area provided that:

(a) it was issued for a compelling scientific purpose which cannot be served elsewhere;

(b) the actions permitted thereunder will not jeopardize the natural ecological system existing in that Area; and

*(c) the actions permitted thereunder are in accordance with any Management Plan accompanying the description of a Specially Protected Area.

*Subparagraph C is added in accordance with Recommendation XV-8. (This footnote is not part of the Agreed Measures.)

Article IX
[Introduction of nonindigenous species, parasites and diseases]

1. Each participating government shall prohibit the bringing into the Treaty Area of any species of animal or plant not indigenous to that Area, except in accordance with a permit.

2. Permits under paragraph 1 of this Article shall be drawn in terms as specific as possible and shall be issued to allow the importation only of the animals and plants listed in Annex C. When any such animal or plant might cause harmful interference with the natural system if left unsupervised within the Treaty Area, such permits shall require that it be kept under controlled conditions and, after it has served its purpose, it shall be removed from the Treaty Area or destroyed.

3. Nothing in paragraphs 1 and 2 of this Article shall apply to the importation of food into the Treaty Area so long as animals and plants used for this purpose are kept under controlled conditions.

4. Each participating government will ensure that all reasonable precautions shall be taken to prevent the accidental introduction of parasites and diseases into the Treaty Area. In particular, the precautions listed in Annex D shall be taken.

Article X
[Activities contrary to the principles and purposes of these Measures]

Each participating government undertakes to exert appropriate efforts, consistent with the Charter of the United Nations, to the end that no one engages in any activity in the Treaty Area contrary to the principles or purposes of these Agreed Measures.

Article XI
[Ships' crews]

Each participating government whose expeditions use ships sailing under flags of nationalities other than its own shall, as far as feasible, arrange with the owners of such ships that the crews of these ships observe these Agreed Measures.

Article XII
[Exchange of information]

1. The participating governments may make such arrangements as may be necessary for the discussion of such matters as:

(a) the collection and exchange of records (including records of permits) and statistics concerning the numbers of each species of native mammal and bird killed or captured annually in the Treaty Area;

(b) the obtaining and exchange of information as to the status of native mammals and birds in the Treaty Area, and the extent to which any species needs protection;

(c) the number of native mammals or birds which should be permitted to be harvested for food, scientific study, or other uses in the various regions;

(d) the establishment of a common form in which this information shall be submitted by participating governments in accordance with paragraph 2 of this Article.

2. Each participating government shall inform the other Governments in writing before the end of November each year of the steps taken and information collected in the preceding period of 1st July to 30th June relating to the implementation of these Agreed Measures. Governments exchanging information under paragraph 5 of Article VII of the Antarctic Treaty may at the same time transmit the information relating to the implementation of these Agreed Measures.

Article XIII
[Formal provisions]

1. After the receipt by the Government designated in Recommendation I-XIV(5) of notification of approval by all Governments whose representatives are entitled to participate in meetings provided for under Article IX of the Antarctic Treaty, these Agreed Measures shall become effective for those Governments.

2. Thereafter any other Contracting Party to the Antarctic Treaty may, in consonance with the purposes of Recommendation III-VII, accept these Agreed Measures by notifying the designated Government of its intention to apply the Agreed Measures and to be bound by them. The Agreed Measures shall become effective with regard to such Governments on the date of receipt of such notification.

3. The designated Government shall inform the Governments referred to in paragraph 1 of this Article of each notification of approval, the effective date of these Agreed Measures and of each notification of acceptance. The designated Government shall also inform any Government which has accepted these Agreed Measures of each subsequent notification of acceptance.

Article XIV
[Amendment]

1. These Agreed Measures may be amended at any time by unanimous agreement of the Governments whose Representatives are entitled to participate in meetings under Article IX of the Antarctic Treaty.

2. The Annexes, in particular, may be amended as necessary through diplomatic channels.

3. An amendment proposed through diplomatic channels shall be submitted in writing to the designated Government which shall communicate it to the Governments referred to in paragraph 1 of the present Article for approval; at the same time, it shall be communicated to the other participating governments.

4. Any amendment shall become effective on the date on which notifications of approval have been received by the designated Government and from all of the Governments referred to in paragraph 1 of this Article.

5. The designated Government shall notify those same Governments of the date of receipt of each approval communicated to it and the date on which the amendment will become effective for them.

6. Such amendment shall become effective on that same date for all other participating governments, except those which before the expiry of two months after that date notify the designated Government that they do not accept it.

ANNEXES TO THESE AGREED MEASURES

There are four annexes to the Agreed Measures:

ANNEX A: Specially Protected Species {lists all species of the genus *Arctocephalus*, Fur Seals; *Ommatophoco rossii*, Ross Seal};

ANNEX B: Specially Protected Areas {lists, describes, and provides maps for the 19 specially protected areas designated under the original Agreed Measures (see Section Two of this book)};

ANNEX C: Importation of Animals and Plants {is incorporated into the U.S. Regulations (see Section One of this book)}; and

ANNEX D: Precautions to Prevent Accidental Introduction of Parasites and Diseases into the Treaty Area {is incorporated into the U.S. Regulations (see Section One of this book)}.

APPENDIX B:
The Antarctic Conservation Act of 1978

Public Law 95-541
95th Congress

An Act

To implement the Agreed Measures for the Conservation of Antarctic Fauna and Flora, and for other purposes.

Oct. 28, 1978
[H.R. 7749]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that this Act may be cited as the "Antarctic Conservation Act of 1978."

Antarctic Conservation Act of 1978.

SEC. 2. FINDINGS AND PURPOSE.

16 USC 2401 note.
16 USC 2401.
12 UST 794.
17 UST 991.

(a) FINDINGS.—The Congress finds that—

(1) the Antarctic Treaty and the Agreed Measures for the Conservation of Antarctic Fauna and Flora, adopted at the Third Antarctic Treaty Consultative Meeting, have established a firm foundation for the continuation of international cooperation and the freedom of scientific investigation in Antarctica; and

(2) the study of antarctic fauna and flora, their adaptation to their rigorous environment, and their interrelationships with that environment has special scientific importance for all mankind.

(b) PURPOSE.—The purpose of this Act is to provide for the conservation and protection of the fauna and flora of Antarctica, and of the ecosystem upon which such fauna and flora depend, consistent with the Antarctic Treaty, the Agreed Measures for the Conservation of Antarctic Fauna and Flora, and Recommendation VII-3 of the Eighth Antarctic Treaty Consultative Meeting.

SEC. 3. DEFINITIONS.

16 USC 2402.

For purposes of this Act—

(1) The term "Agreed Measures" means the Agreed Measures for the Conservation of Antarctic Fauna and Flora—

(A) as recommended to the Consultative Parties for approval at the Third Antarctic Treaty Consultative Meeting; and

(B) as amended from time to time in accordance with Article IX (1) of the Treaty.

(2) The term "Antarctica" means the area south of 60 degrees south latitude.

(3) The term "collect" means to cut, sever, or move, or to attempt to engage in any such conduct.

(4) The term "Director" means the Director of the National Science Foundation or an officer or employee of the Foundation designated by the Director.

(5) The term "foreign person" means—

(A) any individual who is a citizen or national of a foreign nation,

(B) any corporation, partnership, trust, association, or other legal entity existing or organized under the laws of any foreign nation, and

(C) any department, agency, or other instrumentality of any foreign nation and any officer, employee, or agent of any such instrumentality.

(6) The term "native bird" means any member, at any stage of its life cycle (including eggs), of any species of the class Aves which is designated as a native species by the Director under Section 6(b)(1), and includes any part of any such member.

(7) The term "native mammal" means any member, at any stage of its life cycle, of any species of the class Mammalia, other than any species regulated by the International Whaling Commission, which is designated as a native species by the Director under Section 6(b)(1), and includes any part of such member.

(8) The term "native plant" means any member of any species of plant at any stage of its life cycle (including seeds) which is designated as such by the Director under Section 6(b)(1), and includes any part of any such member.

(9) The term "pollutant" means any substance designated as such by the Director under Section 6(b)(6).

(10) The term "site of special scientific interest" means any area designated as such by the Director under Section 6(b)(3).

(11) The term "specially protected area" means any area designated as such by the Director under Section 6(b)(4).

(12) The term "specially protected species" means any species of native mammal or native bird designated as such by the Director under Section 6(b)(5).

(13) The term "take" means to harass, molest, harm, pursue, hunt, shoot, wound, kill, trap, or capture, or to attempt to engage in any such conduct.

12 UST 794.

(14) The term "Treaty" means the Antarctic Treaty signed in Washington, D.C., on December 1, 1959.

(15) The term "United States" means the several States of the Union, the District of Columbia, the Commonwealth of Puerto Rico, American Samoa, the Virgin Islands, Guam, and the Trust Territory of the Pacific Islands, including the Government of the Northern Mariana Islands.

(16) The term "U.S. citizen" means—

(A) any individual who is a citizen or national of the United States;

(B) any corporation, partnership, trust, association, or other legal entity existing or organized under the laws of any of the United States; and

(C) any department agency, or other instrumentality of the Federal Government or of any State, and any officer, employee, or agent of any such instrumentality.

SEC. 4. PROHIBITED ACTS. **16 USC 2403.**

(a) IN GENERAL.—It is unlawful—

(1) for any U.S. citizen, unless authorized by regulation prescribed under this Act or a permit issued under Section 5—

(A) to take within Antarctica any native mammal or native bird,

(B) to collect within any specially protected area any native plant,

(C) to introduce into Antarctica any animal or plant that is not indigenous to Antarctica,

(D) to enter any specially protected area or site of special scientific interest, or

(E) to discharge, or otherwise to dispose of, any pollutant within Antarctica;

(2) for any U.S. citizen wherever located, or any foreign person while within the United States, unless authorized by regulation prescribed under this Act or a permit issued under Section 5—

(A) to possess, sell, offer for sale, deliver, receive, carry, transport, or ship by any means whatsoever, or

(B) to import into the United States, to export from the United States, or to attempt to so import or export, any native mammal or native bird taken in Antarctica or any native plant collected in any specially protected area;

(3) for any U.S. citizen wherever located, or any foreign person while within the United States, to violate any regulation prescribed under this Act; or

(4) for any person, whether or not a U.S. citizen, to violate any term or condition of any permit issued under Section 5.

No act described in paragraphs (1) through (4) shall be unlawful if committed, under emergency circumstances, to prevent the loss of human life.

(b) EXCEPTION.—Subsection (a) shall not apply to—

(1) any native mammal, native bird, or native plant which is held in captivity on the date of the enactment of this Act; or

(2) any offspring of any such mammal, bird, or plant.

With respect to any act prohibited by Subsection (a) which occurs after the 180th day after such date of enactment, there shall be a rebuttable presumption that the native mammal, native bird, or native plant involved in such act was not held in captivity on such date or was not an offspring referred to in paragraph (2).

SEC. 5. PERMITS. **16 USC 2404.**

(a) IN GENERAL.—The Director may issue permits which authorize acts otherwise prohibited by Section 4(a).

(b) APPLICATIONS FOR PERMITS.— **Regulation.**

(1) Applications for permits under this section shall be made in such manner and form, and shall contain such information, as the Director shall by regulation prescribe.

(2) The Director shall publish notice in the Federal Register of each application which is made for a permit under this section. The notice shall invite the submission by interested parties, within 30 days after the date of publication of the notice, of written data, comments, or views with **Publication in Federal Register.**

respect to the application. Information received by the Director as a part of any application shall be available to the public as a matter of public record.

(c) ACTION BY APPROPRIATE SECRETARIES ON CERTAIN PERMIT APPLICATIONS.—

(1) If the Director receives an application for a permit under this section requesting authority to undertake any action with respect to—

(A) any native mammal which is a marine mammal with the meaning of Section 3(5) of the Marine Mammal Protection Act of 1972 (16 U.S.C. 1362(5)); or

(B) any native mammal, native bird, or native plant which is an endangered species or threatened species under the Endangered Special[1] Act of 1973 (16 U.S.C. 1531 et seq.); or

(C) any native bird which is protected under the Migratory Bird Treaty Act (16 U.S.C. 701 et seq.);

the Director shall submit a copy of the application to the Secretary of Commerce or to the Secretary of the Interior, as appropriate (hereinafter in this subsection referred to respectively as the "appropriate Secretary").

(2) After receiving a copy of any application from the Director under paragraph (1) the appropriate Secretary shall promptly determine, and notify the Director, whether or not any action proposed in the application also requires a permit or other authorization under any law administered by the appropriate Secretary.

(3) If the appropriate Secretary notifies the Director that any action proposed in the application requires a permit or other authorization under any law administered by the appropriate Secretary, the Director may not issue a permit under this section with respect to such action unless such other required permit or authorization is issued by the appropriate Secretary and a copy thereof is submitted to the Director. The issuance of any permit or other authorization by the appropriate Secretary for the carrying out of any action with respect to any native mammal, native bird, or native plant shall not be deemed to entitle the applicant concerned to the issuance by the Director of a permit under this section.

(d) ISSUANCE OF PERMITS.—As soon as practicable after receiving any application for a permit under this section, or, in the case of any application to which Subsection (c) applies, as soon as practicable after the applicable requirements of such subsection are complied with, the Director shall issue, or deny the issuance of, the permit. Within 10 days after the date of the issuance or denial of a permit under this subsection, the Director shall publish notice of the issuance or denial in the Federal Register.

Publication in Federal Register.

(e) TERMS AND CONDITIONS OF PERMITS.—

(1) Each permit issued under this section shall—

(A) if applicable, specify—

(i) the number and species of native mammals, native birds, or native plants to which the permit applies.

(ii) if any such mammal or bird is authorized to be taken, transported, carried, or shipped, the manner (which manner must be determined by the Director to be humane) in which such action

[1] So in original. Probably should be "Species."

must be accomplished and the area in which such taking must occur, and

(iii) if any such plant is authorized to be collected, the location and manner in which it must be collected;

(B) the period during which the permit is valid; and

(C) such other terms and conditions as the Director deems necessary and appropriate to ensure that any act authorized under the permit is carried out in a manner consistent with the purpose of this Act, the criteria set forth in paragraph (2), if applicable, and the regulations prescribed under this Act.

Criteria.

(2) The terms and conditions imposed by the Director in any permit issued under this section that authorizes any of the following acts shall be consistent with the following criteria:

(A) Permits authorizing the taking within Antarctica (other than within any specially protected area) of any native mammal or native bird (other than a specially protected species of any such mammal or bird)—

(i) may be issued only for the purpose of providing—

(I) specimens for scientific study or scientific information, or

(II) specimens for museums, zoological gardens, or other educational or cultural institutions or uses; and

(ii) shall ensure, as far as possible, that—

(I) no more native mammals and native birds are taken in any year than can normally be replaced by net natural reproduction in the following breeding season, and

(II) the variety of species and the balance of the natural ecological systems with[2] Antarctica and[3] maintained.

(B) Permits authorizing the taking of specially protected species may be issued only if—

(i) there is a compelling scientific purpose for such taking; and

(ii) the actions allowed under any such permit will not jeopardize any existing natural ecological system, or the survival, of such species.

(C) Permits authorizing the entry into any specially protected area—

(i) may be issued only if—

(I) there is a compelling scientific purpose for such entry which cannot be served elsewhere, and

(II) the actions allowed under any such permit will not jeopardize the natural ecological system existing in such area; and

(ii) shall not allow the operation of any surface vehicle within such area.

(D) Permits authorizing the entry into any site of special scientific interest shall be consistent with the management plan prescribed under Section 6(b)(3) for such site.

5 USC 701 *et seq.*

(e) JUDICIAL REVIEW[4].—Any applicant for a permit may obtain judicial review of the terms and conditions of any permit issued by the Director under this section or of the refusal of the Director to issue such a permit.

[2] So in original. Probably should be "within."

[3] So in original. Probably should be "are."

Such review, which shall be pursuant to chapter 7 of title 5, U.S. Code, may be initiated by filing a petition for review in the U.S. District Court for the district wherein the applicant for a permit resides, or has his principal place of business, or in the U.S. District Court for the District of Columbia, within 60 days after the date on which such permit is issued or denied.

(f) MODIFICATION, SUSPENSION, AND REVOCATION.

(1) The Director may modify, suspend, or revoke, in whole or part, any permit issued under this section—

(A) in order to make the permit consistent with any change made after the date of issuance of the permit, to any regulation prescribed under Section 6;

(B) if there is any change in conditions which makes the permit inconsistent with the purpose of this Act; or

(C) in any case in which there has been any violation of any term or condition of the permit, any regulation prescribed under this Act, or any provision of this Act.

(2) Whenever the Director proposes any modification, suspension, or revocation of a permit under this subsection, the permittee shall be afforded opportunity, after due notice, for a hearing by the Director with respect to such proposed modification, suspension, or revocation. If a hearing is requested, the action proposed by the Director shall not take effect before a decision is issued by him after the hearing, unless the proposed action is taken by the Director to meet an emergency situation. Any action taken by the Director after such a hearing is subject to judicial review on the same basis as is provided for with respect to permit applications under Subsection (e).

Notice, publication in Federal Register.

(3) Notice of the modification, suspension, or revocation of any permit by the Director shall be published in the Federal Register within 10 days from the date of the Director's decision.

(g) PERMIT FEES.—The Director may establish and charge fees for processing applications for permits under this section. The amount of such fees shall be commensurate with the administrative costs incurred by the Director in undertaking such processing.

16 USC 2405.
Consultation.

SEC. 6. REGULATIONS.

(a) IN GENERAL.—The Director, after consultation with the Secretary of State and other appropriate Federal officials, shall prescribe such regulations as are necessary and appropriate to implement the provisions of this Act.

(b) SPECIFIC REGULATIONS.—The regulations required to be prescribed under Subsection (a) shall include, but shall not be limited to, regulations which—

(1) designate, as native species—

(A) each species of the class Aves,

(B) each species of the class Mammalia, and

(C) each species of plant,

which is indigenous to Antarctica or occurs in Antarctica through natural agencies of dispersal;

[4] So in original. Two subsecs. (e) have been designated by Pub. L. 95–542, § 5.

(2) specify those actions which must, and those actions which must not, be taken within Antarctica in order to protect, in accordance with the applicable provisions of the Agreed Measures, members of each native species designated under paragraph (1); **17 UST 991.**

(3) identify, as a site or special scientific interest, each area approved by the United States in accordance with Recommendation VIII-3 of the Eighth Antarctic Treaty Consultative Meeting as having unique value for scientific investigation and needing protection from interference, and prescribe a management plan for such site which is consistent with any management plan approved by the United States for such site in accordance with such Recommendation;

(4) identify, as a specially protected area, each area designated for special protection under the Agreed Measures because of its outstanding scientific or ecological interest;

(5) designate, as a specially protected species, any native species of mammal or bird which is approved by the United States for special protection under the Agreed Measures;

(6) designate as a pollutant any substance which the Director finds liable, if the substance is introduced into Antarctica, to create hazards to human health, to harm living resources or marine life, to damage amenities, or to interfere with other legitimate uses of Antarctica;

(7) specify those actions which must, and those actions which must not, be taken in order to prevent or control the discharge or other disposal of pollutants, from any source with Antarctica;

(8) designate those animals and plants, not indigenous to Antarctica, which either may, or may not, be introduced into Antarctica, and specify those control measures which must be observed with respect to any such animals or plants which are allowed to be so introduced;

(9) specify the emergency circumstances with respect to which the exclusion set forth in the last sentence of Section 4(a) applies; and

(10) set forth the form, content, and manner of filing, if applicable, of all notices, reports, declarations, or other documentation which may be required incident to the carrying out of any act for which a permit is required under Section 5.

SEC. 7. NOTIFICATION OF TRAVEL TO ANTARCTICA.

Regulations. 16 USC 2406.

The Secretary of State shall prescribe such regulations as may be necessary and appropriate to implement, with respect to United States citizens, paragraph 5 of Article VII of the Treaty pertaining to the filing of advance notifications of expeditions to, and within, Antarctica. For purposes of this section, the term "United States citizen" shall include any foreign person who organizes within the United States any expedition which will proceed to Antarctica from the United States.

12 UST 794.

"United States citizen."

SEC. 8. CIVIL PENALTIES.

16 USC 2407.

(a) ASSESSMENT OF PENALTIES.—Any person who is found by the Director, after notice and opportunity for a hearing in accordance with Subsection (b), to have committed any act prohibited by Section 4(a) or to have violated any regulation prescribed under Section 7 shall be liable to the United States for a civil penalty. The amount of the civil penalty shall not exceed

$5,000 for each violation unless the prohibited act was knowingly committed, in which case the amount of the civil penalty shall not exceed $10,000 for each violation. Each day of a continuing violation shall constitute a separate offense. The amount of any civil penalty shall be assessed by the Director by written notice. Any civil penalty assessed under this subsection may be remitted or mitigated by the Director.

(b) HEARINGS.—Hearings for the assessment of civil penalties under Subsection (a) shall be conducted in accordance with Section 554 of title 5, United States Code. For the purposes of conducting any such hearing, the Director may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, and documents, and may administer oaths. Witnesses summoned shall be paid the same fees and mileage that are paid to witnesses in the courts of the United States. In case of contumacy or refusal to obey a subpoena served upon any person pursuant to this subsection, the district court of the United States for any district in which such person is found, resides, or transacts business, upon application by the United States and after notice to such person, shall have jurisdiction to issue an order requiring such person to appear and give testimony before the Director, or to appear and produce documents before the Director, or both, and any failure to obey such order of the court may be punished by such court as a contempt thereof.

(c) REVIEW.—Upon failure of any person against whom a civil penalty is assessed under Subsection (a) to pay such penalty, the Director may request the Attorney General to institute a civil action in a district court of the United States for any district in which such person is found, resides, or transacts business to collect the penalty and such court shall have jurisdiction to hear and decide any such action. The court shall hear such action on the record made before the Director and shall sustain the decision of the Director if it is supported by substantial evidence on the record considered as a whole.

(d) PENALTIES UNDER OTHER LAWS.—The assessment of a civil penalty under Subsection (a) for any act shall not be deemed to preclude the assessment of a civil penalty for such act under any other law, including, but not limited to, the Marine Mammal Protection Act of 1972, the Endangered Species Act of 1973, and the Migratory Bird Treaty Act.

16 USC 1361 note, 1531 note. 16 USC 710.

16 USC 2408.

SEC. 9. CRIMINAL OFFENSES.

(a) OFFENSES.—A person is guilty of an offense if he willfully commits any act prohibited by section 4(a).

(b) PUNISHMENT.—Any offense described in Subsection (a) is punishable by a fine of $10,000, or imprisonment for not more than one year, or both.

(c) OFFENSES UNDER OTHER LAWS—A conviction under Subsection (a) for any act shall not be deemed to preclude a conviction for such act under any other law, including, but not limited to, the Marine Mammal Protection Act of 1972, the Endangered Species Act of 1973, and the Migratory Bird Treaty Act.

16 USC 1361 note, 1531 note. 16 USC 710.

16 USC 2409.

SEC. 10. ENFORCEMENT.

(a) RESPONSIBILITY.—The provisions of this Act and of any regulation prescribed, or permit issued, under this Act shall be enforced by the Director, the Secretary of the Treasury, the Secretary of Commerce, the Secretary

Cooperation.

of Interior, and the Secretary of the department in which the Coast Guard is operating. The Director and such Secretaries may utilize by agreement, on a reimbursable basis or otherwise, the personnel, services, and facilities of any other Federal agency or any State agency in the performance of such duties.

(b) POWERS OF AUTHORIZED OFFICERS.—Any officer who is authorized (by the Director, the Secretary of the Treasury, the Secretary of Commerce, the Secretary of the Interior, the Secretary of the department in which the Coast Guard is operating, or the head of any Federal or State agency which has entered into an agreement with the Director or any such Secretary under Subsection (a)) to enforce the provisions of this Act and of any regulation or permit issued under this Act may—

(1) secure, execute, and serve any order, warrant, subpoena, or other process, which is issued under the authority of the United States;

(2) search without warrant any person, place, or conveyance where there is reasonable grounds to believe that a person has committed or is attempting to commit an act prohibited by section 4(a);

(3) seize without warrant any evidentiary item where there is reasonable grounds to believe that a person has committed or is attempting to commit any such act;

(4) offer and pay rewards for services or information which may lead to the apprehension of violators of such provisions;

(5) make inquiries, and administer to, or take from, any person an oath, affirmation, or affidavit, concerning any matter which is related to the enforcement of such provisions;

(6) detain for inspection and inspect any package, crate, or other container, including its contents, and all accompanying documents, upon importation into, or exportation from, the United States; and

(7) make an arrest with or without a warrant with respect to any act prohibited by Section 4(a) if such officer has reasonable grounds to believe that the person to be arrested in committing such act in his presence or view, or has committed such act.

(c) SEIZURE.—Any property or item seized pursuant to Subsection (b) shall be held by any person authorized by the Director, the Secretary of the Treasury, the Secretary of Commerce, the Secretary of the Interior, or the Secretary of the department in which the Coast Guard is operating pending the disposition of civil or criminal proceedings, or the institution of an action in rein for forfeiture of such property or item; except that such authorized person may, in lieu of holding such property or item, permit the owner or consignee thereof to post a bond or other satisfactory surety.

(d) FORFEITURE.—(1) Any animal or plant with respect to which an act prohibited by Section 4(a) is committed shall be subject to forfeiture to the United States.

(2) All guns, traps, nets, and other equipment, vessels, vehicles, aircraft, and other means of transportation used in the commission of any act prohibited by Section 4(a) shall be subject to forfeiture to the United States.

Property Disposal, regulation.

(3) Upon the forfeiture to the United States of any property or item described in paragraph (1) or (2), or upon the abandonment or waiver of any claim to any such property or item, it shall be disposed of by the Director, the Secretary of the Treasury, the Secretary of Commerce, the

Secretary of the Interior, or the Secretary of the department in which the Coast Guard is operating, as the case may be, in such a manner, consistent with the purposes of the Act, as may be prescribed by regulation; except that no native mammal, native bird, or native plant may be disposed of by sale to the public.

(e) APPLICATION OF CUSTOMS LAWS.—All provisions of law relating to the seizure, forfeiture, and condemnation of a vessel for violation of the customs laws, the disposition of such vessel or the proceeds from the sale thereof, and the remission or mitigation of such forfeiture, shall apply to the seizures and forfeitures incurred, or alleged to have been incurred, under the provision of this Act, insofar as such provisions of law are applicable and not inconsistent with the provisions of this Act; except that all powers, rights, and duties conferred or imposed by the customs laws upon any officer or employee of the Customs Service may, for the purposes of this Act, also be exercised or performed by the Director, the Secretary of Commerce, the Secretary of the Interior, or the Secretary of the department in which the Coast Guard is operating, or by such persons as each may designate.

Regulations.

(f) REGULATIONS.—The Director, the Secretary of the Treasury, the Secretary of Commerce, the Secretary of the Interior, and the Secretary of the department in which the Coast Guard is operating may prescribe such regulations as may be appropriate to enforce the provisions of this Act and of any regulation prescribed or permit issued under this Act, and charge reasonable fees for the expenses of the United States incurred in carrying out inspections and in transferring, boarding, handling, or storing native mammals, native birds, native plants, animals and plants not indigenous to Antarctica, and other evidentiary items seized or forfeited under this Act.

16 USC 2410.

SEC. 11. JURISDICTION OF COURTS.

The district courts of the United States shall have exclusive jurisdiction over any case or controversy arising under the provisions of this Act or of any regulation prescribed, or permit issued, under this Act.

16 USC 2411.

SEC. 12. FEDERAL AGENCY COOPERATION.

Each Federal department or agency whose activities affect Antarctica shall utilize, to the maximum extent practicable, its authorities in furtherance of the purposes of this Act, and shall cooperate with the Director in carrying out the purposes of this Act.

16 USC 2412.

SEC. 13. RELATIONSHIP TO EXISTING TREATIES.

Nothing in this Act shall be construed as contravening or superseding the provisions of any international treaty, convention, or agreement, if such treaty, convention, or agreement is in force with respect to the United States on the date of the enactment of this Act, or of any statute which implements any such treaty, convention, or agreement.

SEC. 14.

(a) The first section of the Fishermen's Protective Act of 1967 (22 U.S.C. 1971) is amended by adding at the end thereof the following new sentence: "Notwithstanding any other law, the documentation or certification of any such vessel shall not be considered to be affected, for the purposes of this

Act, in any manner or to any extent if at any time during any voyage for the purpose of fishing beyond the fishery conservation zone (as defined in Section 3(8) of the Fishery Conservation and Management Act of 1976 (16 U.S.C. 1802(8)), the vessel is commanded by other than a citizen of the United States."

(b) The amendment made by Subsection (a) shall take effect January 1, 1978. **Effective date. 22 USC 1971 note.**

Approved October 28, 1978.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 95–1031, Parts I and II (Comm. on Merchant Marine and Fisheries, and Comm. on Science and Technology).

CONGRESSIONAL RECORD, Vol. 124 (1978):

Sept. 25, considered and passed House.

Oct. 13, considered and passed Senate, amended.

Oct. 14, House concurred in certain Senate Amendment.

APPENDIX C: Protocol on Environmental Protection to the Antarctic Treaty

Recognizing the need for a comprehensive system to protection the antarctic environment, the parties to the Antarctic Treaty called for a special consultative meeting to discuss and explore proposals for protection of the antarctic environment and its dependent and associated ecosystems. This special consultative meeting was convened and consisted of several sessions held over a year. At the conclusion of the final session, in Madrid, Spain, in October 1991, the Protocol on Environmental Protection to the Antarctic Treaty, including Annexes I–IV, was adopted. Annex V was adopted by the XVIth Treaty meeting, also held in October 1991. In the Protocol, the parties committed themselves to the comprehensive protection of Antarctica's environment and dependent and associated ecosystems, and they designated Antarctica as a natural reserve devoted to peace and science.

To the greatest extent possible, the National Science Foundation has adopted procedures consistent with the Protocol. The United States in October 1995 had not yet passed legislation adopting and thereby ratifying the Protocol.

Contents

Preamble

The States parties to this Protocol to the Antarctic Treaty, hereinafter referred to as the parties,

Convinced of the need to enhance the protection of the antarctic environment and dependent and associated ecosystems;

Convinced of the need to strengthen the Antarctic Treaty system so as to ensure that Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord;

Bearing in mind the special legal and political status of Antarctica and the special responsibility of the Antarctic Treaty Consultative Parties to ensure that all activities in Antarctica are consistent with the purposes and principles of the Antarctic Treaty;

Recalling the designation of Antarctica as a Special Conservation Area and other measures adopted under the Antarctic Treaty system to protect the antarctic environment and dependent and associated ecosystems;

Acknowledging further the unique opportunities Antarctica offers for scientific monitoring of and research on processes of global as well as regional importance;

Reaffirming the conservation principles of the Convention on the Conservation of Antarctic Marine Living Resources;

Convinced that the development of a comprehensive regime for the protection of the antarctic environment and dependent and associated ecosystems is in the interest of mankind as a whole;

Desiring to supplement the Antarctic Treaty to this end;

Have agreed as follows:

Article 1
Definitions

For the purposes of this Protocol:

(a) "The Antarctic Treaty" means the Antarctic Treaty done at Washington on 1 December 1959;

(b) "Antarctic Treaty area" means the area to which the provisions of the Antarctic Treaty apply in accordance with Article VI of that Treaty;

(c) "Antarctic Treaty Consultative Meetings" means the meetings referred to in Article IX of the Antarctic Treaty;

(d) "Antarctic Treaty Consultative Parties" means the Contracting Parties to the Antarctic Treaty entitled to appoint representatives to participate in the meetings referred to in Article IX of that Treaty;

(e) "Antarctic Treaty system" means the Antarctic Treaty, the measures in effect under that Treaty, its associated separate international instruments in force and the measures in effect under those instruments;

(f) "Arbitral Tribunal" means the Arbitral Tribunal established in accordance with the Schedule to this Protocol, which forms an integral part thereof;

(g) "Committee" means the Committee for Environmental Protection established in accordance with Article 11.

Article 2
Objective and designation

The parties commit themselves to the comprehensive protection of the antarctic environment and dependent and associated ecosystems and hereby designate Antarctica as a natural reserve, devoted to peace and science.

Article 3
Environmental principles

1. The protection of the antarctic environment and dependent and associated ecosystems and the intrinsic value of Antarctica, including its wilderness and aesthetic values and its value as an area for the conduct of scientific research, in particular research essential to understanding the global environment, shall be fundamental considerations in the planning and conduct of all activities in the Antarctic Treaty area.

2. To this end:

(a) activities in the Antarctic Treaty area shall be planned and conducted so as to limit adverse impacts on the antarctic environment and dependent and associated ecosystems;

(b) activities in the Antarctic Treaty area shall be planned and conducted so as to avoid:

(i) adverse effects on climate or weather patterns;

(ii) significant adverse effects on air or water quality;

(iii) significant changes in the atmospheric, terrestrial (including aquatic), glacial, or marine environments;

(iv) detrimental changes in the distribution, abundance, or productivity of species or populations of species of fauna and flora;

(v) further jeopardy to endangered or threatened species or populations of such species; or

(vi) degradation of, or substantial risk to, areas of biological, scientific, historic, aesthetic, or wilderness significance;

(c) activities in the Antarctic Treaty area shall be planned and conducted on the basis of information sufficient to allow prior assessments of, and informed judgments about, their possible impacts on the antarctic environment and dependent and associated ecosystems and on the value of Antarctica for the conduct of scientific research; such judgments shall take full account of:

(i) the scope of the activity, including its area, duration, and intensity;

(ii) the cumulative impacts of the activity, both by itself and in combination with other activities in the Antarctic Treaty area;

(iii) whether the activity will detrimentally affect any other activity in the Antarctic Treaty area;

(iv) whether technology and procedures are available to provide for environmentally safe operations;

(v) whether there exists the capacity to monitor key environmental parameters and ecosystem components so as to identify and provide early warning of any adverse effects of the activity and to provide for such modification of operating procedures as may be necessary in the light of the results of monitoring or increased knowledge of the antarctic environment and dependent and associated ecosystems; and

(vi) whether there exists the capacity to respond promptly and effectively to accidents, particularly those with potential environmental effects;

(d) regular and effective monitoring shall take place to allow assessment of the impacts of ongoing activities, including the verification of predicted impacts;

(e) regular and effective monitoring shall take place to facilitate early detection of the possible unforeseen effects of activities carried on both

within and outside the Antarctic Treaty area on the antarctic environment and dependent and associated ecosystems.

3. Activities shall be planned and conducted in the Antarctic Treaty area so as to accord priority to scientific research and to preserve the value of Antarctica as an area for the conduct of such research, including research essential to understanding the global environment.

4. Activities undertaken in the Antarctic Treaty area pursuant to scientific research programs, tourism, and all other governmental and nongovernmental activities in the Antarctic Treaty area for which advance notice is required in accordance with Article VII (5) of the Antarctic Treaty, including associated logistic support activities, shall:

(a) take place in a manner consistent with the principles in this Article; and

(b) be modified, suspended, or canceled if they result in or threaten to result in impacts upon the antarctic environment or dependent or associated ecosystems inconsistent with those principles.

Article 4
Relationship with the other components of the Antarctic Treaty System

1. This Protocol shall supplement the Antarctic Treaty and shall neither modify nor amend that Treaty.

2. Nothing in this Protocol shall derogate from the rights and obligations of the parties to this Protocol under the other international instruments in force within the Antarctic Treaty system.

Article 5
Consistency with the other components of the Antarctic Treaty System

The parties shall consult and cooperate with the Contracting parties to the other international instruments in force within the Antarctic Treaty system and their respective institutions with a view to ensuring the achievement of the objectives and principles of this Protocol and avoiding any interference with the achievement of the objectives and principles of those instruments or any inconsistency between the implementation of those instruments and of this Protocol.

Article 6
Cooperation

1. The parties shall cooperate in the planning and conduct of activities in the Antarctic Treaty area. To this end, each party shall endeavor to:

(a) promote cooperative programs of scientific, technical and educational value, concerning the protection of the antarctic environment and dependent and associated ecosystems;

(b) provide appropriate assistance to other parties in the preparation of environmental impact assessments;

(c) provide to other parties upon request information relevant to any potential environmental risk and assistance to minimize the effects of accidents which may damage the antarctic environment or dependent and associated ecosystems;

(d) consult with other parties with regard to the choice of sites for prospective stations and other facilities so as to avoid the cumulative impacts caused by their excessive concentration in any location;

(e) where appropriate, undertake joint expeditions and share the use of stations and other facilities; and

(f) carry out such steps as may be agreed upon at Antarctic Treaty Consultative Meetings.

2. Each party undertakes, to the extent possible, to share information that may be helpful to other parties in planning and conducting their activities in the Antarctic Treaty area, with a view to the protection of the antarctic environment and dependent and associated ecosystems.

3. The parties shall cooperate with those parties which may exercise jurisdiction in areas adjacent to the Antarctic Treaty area with a view to ensuring that activities in the Antarctic Treaty area do not have adverse environmental impacts on those areas.

Article 7
Prohibition of mineral-resource activities

Any activity relating to mineral resources, other than scientific research, shall be prohibited.

Article 8
Environmental impact assessment

1. Proposed activities referred to in Paragraph 2 below shall be subject to the procedures set out in Annex I for prior assessment of the impacts of those activities on the antarctic environment or on dependent or associated ecosystems according to whether those activities are identified as having:

(a) less than a minor or transitory impact;

(b) a minor or transitory impact; or

(c) more than a minor or transitory impact.

2. Each party shall ensure that the assessment procedures set out in Annex I are applied in the planning processes leading to decisions about any activities undertaken in the Antarctic Treaty area pursuant to scientific research programs, tourism, and all other governmental and nongovernmental activities in the Antarctic Treaty area for which advance notice is required under Article VII (5) of the Antarctic Treaty, including associated logistic support activities.

3. The assessment procedures set out in Annex I shall apply to any change in an activity whether the change arises from an increase or decrease in the intensity of an existing activity, from the addition of an activity, the decommissioning of a facility, or otherwise.

4. Where activities are planned jointly by more than one party, the parties involved shall nominate one of their number to coordinate the implementation of the environmental impact assessment procedures set out in Annex I.

Article 9
Annexes

1. The Annexes to this protocol shall form an integral part thereof.

2. Annexes, additional to Annexes I-IV, may be adopted and become effective in accordance with Article IX of the Antarctic Treaty.

3. Amendments and modifications to Annexes may be adopted and become effective in accordance with Article IX of the Antarctic Treaty, pro-

vided that any Annex may itself make provision for amendments and modifications to become effective on an accelerated basis.

4. Annexes and any amendments and modifications thereto which have become effective in accordance with Paragraphs 2 and 3 above shall, unless an Annex itself provides otherwise in respect of the entry into effect of any amendment of modification thereto, become effective for a Contracting Party to the Antarctic Treaty which is not an Antarctic Treaty Consultative Party, or which was not an Antarctic Treaty Consultative Party at the time of the adoption, when notice of approval of that Contracting Party has been received by the Depositary.

5. Annexes shall, except to the extent that an Annex provides otherwise, be subject to the procedures for dispute settlement set out in Articles 18 to 20.

Article 10
Antarctic Treaty Consultative Meetings

1. Antarctic Treaty Consultative Meetings shall, drawing upon the best scientific and technical advice available:

(a) define, in accordance with the provisions of this Protocol, the general policy for the comprehensive protection of the antarctic environment and dependent and associated ecosystems; and

(b) adopt measures under Article IX of the Antarctic Treaty for the implementation of this Protocol.

2. Antarctic Treaty Consultative Meetings shall review the work of the Committee and shall draw fully upon its advice and recommendations in carrying out the tasks referred to in Paragraph 1 above, as well as upon the advice of the Scientific Committee on Antarctic Research.

Article 11
Committee for Environmental Protection

1. There is hereby established the Committee for Environmental Protection.

2. Each party shall be entitled to be a member of the Committee and to appoint a representative who may be accompanied by experts and advisers.

3. Observer status in the Committee shall be open to any Contracting Party to the Antarctic Treaty which is not a party to this Protocol.

4. The Committee shall invite the President of the Scientific Committee on Antarctic Research and the Chairperson of the Scientific Committee for the Conservation of Antarctic Marine Living Resources to participate as observers at its sessions. The Committee may also, with the approval of the Antarctic Treaty Consultative Meeting, invite such other relevant scientific, environmental and technical organizations which can contribute to its work to participate as observers at its sessions.

5. The Committee shall present a report on each of its sessions to the Antarctic Treaty Consultative Meeting. The report shall cover all matters considered at the session and shall reflect the views expressed. The report shall be circulated to the parties and to observers attending the session, and shall thereupon be made publicly available.

6. The Committee shall adopt its rules of procedure which shall be subject to approval by the Antarctic Treaty Consultative Meeting.

Article 12
Functions of the Committee

1. The functions of the Committee shall be to provide advice and formulate recommendations to the parties in connection with the implementation of this Protocol, including the operation of its Annexes, for consideration at Antarctic Treaty Consultative Meetings, and to perform such other functions as may be referred to it by the Antarctic Treaty Consultative Meetings. In particular, it shall provide advice on:

(a) the effectiveness of measures taken pursuant to this Protocol;

(b) the need to update, strengthen, or otherwise improve such measures;

(c) the need for additional measures, including the need for additional Annexes, where appropriate;

(d) the application and implementation of the environmental impact assessment procedures set out in Article 8 and Annex I;

(e) means of minimizing or mitigating environmental impacts of activities in the Antarctic Treaty area;

(f) procedures for situations requiring urgent action, including response action in environmental emergencies;

(g) the operation and further elaboration of the Antarctic Protected Area system;

(h) inspection procedures, including formats for inspection reports and checklists for the conduct of inspections;

(i) the collection, archiving, exchange, and evaluation of information related to environmental protection;

(j) the state of the antarctic environment; and

(k) the need for scientific research, including environmental monitoring, related to the implementation of this Protocol.

2. In carrying out its functions, the Committee shall, as appropriate, consult with the Scientific Committee on Antarctic Research, the Scientific Committee for the Conservation of Antarctic Marine Living Resources and other relevant scientific, environmental and technical organizations.

Article 13
Compliance with this Protocol

1. Each party shall take appropriate measures within its competence, including the adoption of laws and regulations, administrative actions and enforcement measures, to ensure compliance with this Protocol.

2. Each party shall exert appropriate efforts, consistent with the Charter of the United Nations, to the end that no one engages in any activity contrary to this Protocol.

3. Each party shall notify all other parties of the measures it takes pursuant to Paragraphs 1 and 2 above.

4. Each party shall draw the attention of all other parties to any activity which in its opinion affects the implementation of the objectives and principles of this Protocol.

5. The Antarctic Treaty Consultative Meetings shall draw the attention of any State which is not a party to this Protocol to any activity undertaken by that State, its agencies, instrumentalities, natural or juridical persons, ships, aircraft, or other means of transport which affects the implementation of the objectives and principles of this Protocol.

Article 14
Inspection

1. In order to promote the protection of the antarctic environment and dependent and associated ecosystems, and to ensure compliance with this Protocol, the Antarctic Treaty Consultative Parties shall arrange, individually or collectively, for inspections by observers to be made in accordance with Article VII of the Antarctic Treaty.

2. Observers are:

(a) observers designated by any Antarctic Treaty Consultative Party who shall be nationals of that party; and

(b) any observers designated at Antarctic Treaty Consultative Meetings to carry out inspections under procedures to be established by an Antarctic Treaty Consultative Meeting.

3. parties shall cooperate fully with observers undertaking inspections, and shall ensure that during inspections, observers are given access to all parts of stations, installations, equipment, ships, and aircraft open to inspection under Article VII (3) of the Antarctic Treaty, as well as to all records maintained thereon which are called for pursuant to this Protocol.

4. Reports of inspections shall be sent to the parties whose stations, installations, equipment, ships, or aircraft are covered by the reports. After those parties have been given the opportunity to comment, the reports and any comments thereon shall be circulated to all the parties and to the Committee, considered at the next Antarctic Treaty Consultative Meeting, and thereafter made publicly available.

Article 15
Emergency response action

1. In order to respond to environmental emergencies in the Antarctic Treaty area, each party agrees to:

(a) provide for prompt and effective response action to such emergencies which might arise in the performance of scientific research programs, tourism, and all other governmental and nongovernmental activities in the Antarctic Treaty area for which advance notice is required under Article VII (5) of the Antarctic Treaty, including associated logistic support activities; and

(b) establish contingency plans for response to incidents with potential adverse effects on the antarctic environment or dependent and associated ecosystems.

2. To this end, the parties shall:

(a) cooperate in the formulation and implementation of such contingency plans; and

(b) establish procedures for immediate notification of, and cooperative response to, environmental emergencies.

3. In the implementation of this Article, the parties shall draw upon the advice of the appropriate international organizations.

Article 16
Liability

Consistent with the objectives of this Protocol for the comprehensive protection of the antarctic environment and dependent and associated ecosys-

tems, the parties undertake to elaborate rules and procedures relating to liability for damage arising from activities taking place in the Antarctic Treaty area and covered by this Protocol. Those rules and procedures shall be included in one or more Annexes to be adopted in accordance with Article 9 (2).

Article 17
Annual report by parties

1. Each party shall report annually on the steps taken to implement this Protocol. Such reports shall include notifications made in accordance with Article 13 (3), contingency plans established in accordance with Article 15 and any other notifications and information called for pursuant to this Protocol for which there is no other provision concerning the circulation and exchange of information.

2. Reports made in accordance with Paragraph 1 above shall be circulated to all parties and to the Committee, considered at the next Antarctic Treaty Consultative Meeting, and made publicly available.

Article 18
Dispute settlement

If a dispute arises concerning the interpretation or application of this Protocol, the parties to the dispute shall, at the request of any one of them, consult among themselves as soon as possible with a view to having the dispute resolved by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement, or other peaceful means to which the parties to the dispute agree.

Article 19
Choice of dispute settlement procedure

1. Each party, when signing, ratifying, accepting, approving, or acceding to this Protocol, or at any time thereafter, may choose, by written declaration, one or both of the following means for the settlement of disputes concerning the interpretation of application of Articles 7, 8 and 15 and, except to the extent that an Annex provides otherwise, the provisions of any Annex and, insofar as it relates to these Articles and provisions, Article 13:

(a) the International Court of Justice;

(b) the Arbitral Tribunal.

2. A declaration made under Paragraph 1 above shall not affect the operation of Article 18 and Article 20 (2).

3. A party which has not made a declaration under Paragraph 1 above or in respect of which a declaration is no longer in force shall be deemed to have accepted the competence of the Arbitral Tribunal.

4. If the parties to a dispute have accepted the same means for the settlement of a dispute, the dispute may be submitted only to that procedure, unless the parties otherwise agree.

5. If the parties to a dispute have not accepted the same means for the settlement of a dispute, or if they have both accepted both means, the dispute may be submitted only to the Arbitral Tribunal, unless the parties otherwise agree.

6. A declaration made under Paragraph 1 above shall remain in force until it expires in accordance with its terms or until 3 months after written notice of revocation has been deposited with the Depositary.

7. A new declaration, a notice of revocation, or the expiry of a declaration shall not in any way affect proceedings pending before the International Court of Justice or the Arbitral Tribunal, unless the parties to the dispute otherwise agree.

8. Declarations and notices referred to in this Article shall be deposited with the Depositary who shall transmit copies thereof to all parties.

Article 20
Dispute settlement procedure

1. If the parties to a dispute concerning the interpretation or application of Articles 7, 8, or 15 or, except to the extent that an Annex provides otherwise, the provisions of any Annex or, insofar as it relates to these Articles and provisions, Article 13, have not agreed on a means for resolving it within 12 months of the request for consultation pursuant to Article 18, the dispute shall be referred, at the request of any party to the dispute, for settlement in accordance with the procedure determined by Article 19 (4) and (5).

2. The Arbitral Tribunal shall not be competent to decide or rule upon any matter within the scope of Article IV of the Antarctic Treaty. In addition, nothing in this Protocol shall be interpreted as conferring competence or jurisdiction on the International Court of Justice or any other tribunal established for the purpose of settling disputes between parties to decide or otherwise rule upon any matter within the scope of Article IV of the Antarctic Treaty.

Article 21
Signature

This Protocol shall be open for signature at Madrid on 4 October 1991 and thereafter at Washington until 3 October 1992 by any State which is a Contracting party to the Antarctic Treaty.

Article 22
Ratification, acceptance approval, or accession

1. This Protocol is subject to ratification, acceptance, or approval by signatory States.

2. After 3 October 1992 this Protocol shall be open for accession by any State which is a Contracting party to the Antarctic Treaty.

3. Instruments of ratification, acceptance, approval, or accession shall be deposited with the Government of the United States of America, hereby designated as the Depositary.

4. After the date on which this Protocol has entered into force, the Antarctic Treaty Consultative Parties shall not act upon a notification regarding the entitlement of a Contracting Party to the Antarctic Treaty to appoint representatives to participate in Antarctic Treaty Consultative Meetings in accordance with Article IX (2) of the Antarctic Treaty unless that Contracting party has first ratified, accepted, approved, or acceded to this Protocol.

Article 23
Entry into force

1. This Protocol shall enter into force on the thirtieth day following the date of deposit of instruments of ratification, acceptance, approval, or acces-

sion by all States which are Antarctic Treaty Consultative Parties at the date on which this Protocol is adopted.

2. For each Contracting Party to the Antarctic Treaty which, subsequent to the date of entry into force of this Protocol, deposits an instrument of ratification, acceptance, approval, or accession, this Protocol shall enter into force on the thirtieth day following such deposit.

Article 24
Reservations

Reservations to this Protocol shall not be permitted.

Article 25
Modification or amendment

1. Without prejudice to the provisions of Article 9, this Protocol may be modified or amended at any time in accordance with the procedures set forth in Article XII (1) (a) and (b) of the Antarctic Treaty.

2. If, after the expiration of 50 years from the date of entry into force of this Protocol, any of the Antarctic Treaty Consultative Parties so requests by a communication addressed to the Depositary, a conference shall be held as soon as practicable to review the operation of this Protocol.

3. A modification or amendment proposed at any Review Conference called pursuant to Paragraph 2 above shall be adopted by a majority of the parties, including three-fourths of the States which are Antarctic Treaty Consultative Parties at the time of adoption of this Protocol.

4. A modification or amendment adopted pursuant to Paragraph 3 above shall enter into force upon ratification, acceptance, approval, or accession by three-fourths of the Antarctic Treaty Consultative Parties, including ratification, acceptance, approval or accession by all States which are Antarctic Treaty Consultative parties at the time of adoption of this Protocol.

5. (a) With respect to Article 7, the prohibition on antarctic mineral-resource activities contained therein shall continue unless there is in force a binding legal regime on antarctic mineral-resource activities that includes an agreed means for determining whether, and, if so, under which conditions, any such activities would be acceptable. This regime shall fully safeguard the interests of all States referred to in Article IV of the Antarctic Treaty and apply the principles thereof. Therefore, if a modification or amendment to Article 7 is proposed at a Review Conference referred to in Paragraph 2 above, it shall include such a binding legal regime. (b) If any such modification or amendment has not entered into force within 3 years of the date of its adoption, any party may at any time thereafter notify to the Depositary of its withdrawal from this Protocol, and such withdrawal shall take effect 2 years after receipt of the notification by the Depositary.

Article 26
Notifications by the Depositary

The Depositary shall notify all Contracting Parties to the Antarctic Treaty of the following:

(a) signatures of this Protocol and the deposit of instruments of ratification, acceptance, approval, or accession;

(b) the date of entry into force of this Protocol and any additional Annex thereto;

(c) the date of entry into force of any amendment or modification to this Protocol;

(d) the deposit of declarations and notices pursuant to Article 19; and

(e) any notification received pursuant to Article 25 (5) (b)

Article 27

Authentic texts and registration with the United Nations

1. This Protocol, done in the English, French, Russian, and Spanish languages, each version being equally authentic, shall be deposited in the archives of the Government of the United States of America, which shall transmit duly certified copies thereof to all Contracting Parties to the Antarctic Treaty.

2. This Protocol shall be registered by the Depositary pursuant to Article 102 of the Charter of the United Nations.

Schedule to the Protocol: Arbitration

Article 1

1. The Arbitral Tribunal shall be constituted and shall function in accordance with the Protocol, including this Schedule.

2. The Secretary referred to in this Schedule is the Secretary General of the Permanent Court of Arbitration.

Article 2

1. Each party shall be entitled to designate up to three Arbitrators, at least one of whom shall be designated within 3 months of the entry into force of the Protocol for that party. Each Arbitrator shall be experienced in antarctic affairs, have thorough knowledge of international law, and enjoy the highest reputation for fairness, competence, and integrity. The names of the persons so designated shall constitute the list of Arbitrators. Each party shall at all times maintain the name of at least one Arbitrator on the list.

2. Subject to Paragraph 3 below, an Arbitrator designated by a party shall remain on the list for a period of 5 years and shall be eligible for redesignation by that party for additional 5-year periods.

3. A party which designated an Arbitrator may withdraw the name of that Arbitrator from the list. If an Arbitrator dies or if a party for any reason withdraws from the list the name of an Arbitrator designated by it, the party which designated the Arbitrator in question shall notify the Secretary promptly. An Arbitrator whose name is withdrawn from the list shall continue to serve on any Arbitral Tribunal to which that Arbitrator has been appointed until the completion of proceedings before the Arbitral Tribunal.

4. The Secretary shall ensure that an up-to-date list is maintained of the Arbitrators designated pursuant to this Article.

Article 3

1. The Arbitral Tribunal shall be composed of three Arbitrators who shall be appointed as follows:

(a) The party to the dispute commencing the proceedings shall appoint one Arbitrator, who may be its national, from the list referred to in Article 2. This appointment shall be included in the notification referred to in Article 4.

(b) Within 40 days of the receipt of that notification, the other party to the dispute shall appoint the second Arbitrator, who may be its national, from the list referred to in Article 2.

(c) Within 60 days of the appointment of the second Arbitrator, the parties to the dispute shall appoint by agreement the third Arbitrator from the list referred to in Article 2. The third Arbitrator shall not be either a national of a party to the dispute, or a person designated for the list referred to in Article 2 by a party to the dispute, or of the same nationality as either of the first two Arbitrators. The third Arbitrator shall be the Chairperson of the Arbitral Tribunal.

(d) If the second Arbitrator has not been appointed within the prescribed period, or if the parties to the dispute have not reached agreement within the prescribed period on the appointment of the third Arbitrator, the Arbitrator or Arbitrators shall be appointed, at the request of any party to the dispute and within 30 days of the receipt of such request, by the President of the International Court of Justice from the list referred to in Article 2 and subject to the conditions prescribed in subparagraphs (b) and (c) above. In performing the functions accorded him or her in this subparagraph, the President of the Court shall consult the parties to the dispute.

(e) If the President of the International Court of Justice is unable to perform the functions accorded him or her in subparagraph (d) above or is a national of a party to the dispute, the functions shall be performed by the Vice-President of the Court, except that if the Vice-President is unable to perform the functions or is a national of a party to the dispute the functions shall be performed by the next most senior member of the Court who is available and is not a national of a party to the dispute.

2. Any vacancy shall be filled in the manner prescribed for the initial appointment.

3. In any dispute involving more than two parties, those parties having the same interest shall appoint one Arbitrator by agreement within the period specified in paragraph 1 (b) above.

Article 4

The party to the dispute commencing proceedings shall so notify the other party or parties to the dispute and the Secretary in writing. Such notification shall include a statement of the claim and the grounds on which it is based. The notification shall be transmitted by the Secretary to all parties.

Article 5

1. Unless the parties to the dispute agree otherwise, arbitration shall take place at The Hague, where the records of the Arbitral Tribunal shall be kept. The Arbitral Tribunal shall adopt its own rules of procedure. Such rules shall ensure that each party to the dispute has a full opportunity to be heard and to present its case and shall also ensure that the proceedings are conducted expeditiously.

2. The Arbitral Tribunal may hear and decide counterclaims arising out of the dispute.

Article 6

1. The Arbitral Tribunal, where it considers that *prima facie* it has jurisdiction under the Protocol, may:

(a) at the request of any party to a dispute, indicate such provisional measures as it considers necessary to preserve the respective rights of the parties to the dispute;

(b) prescribe any provisional measures which it considers appropriate under the circumstances to prevent serious harm to the antarctic environment or dependent or associated ecosystems.

2. The parties to the dispute shall comply promptly with any provisional measures prescribed under paragraph 1 (b) above pending an award under Article 10.

3. Notwithstanding the time period in Article 20 of the Protocol, a party to a dispute may at any time, by notification to the other party or parties to the dispute and to the Secretary in accordance with Article 4, request that the Arbitral Tribunal be constituted as a matter of exceptional urgency to indicate or prescribe emergency provisional measures in accordance with this Article. In such case, the Arbitral Tribunal shall be constituted as soon as possible in accordance with Article 3, except that the time periods in Article 3 (1) (b), (c), and (d) shall be reduced to 14 days in each case. The Arbitral Tribunal shall decide upon the request for emergency provisional measures within two months of the appointment of its Chairperson.

4. Following a decision by the Arbitral Tribunal upon a request for emergency provisional measures in accordance with paragraph 3 above, settlement of the dispute shall proceed in accordance with Article 18, 19, and 20 of the Protocol.

Article 7

Any party which believes it has a legal interest, whether general or individual, which may be substantially affected by the award of an Arbitral Tribunal, may, unless the Arbitral Tribunal decides otherwise, intervene in the proceedings.

Article 8

The parties to the dispute shall facilitate the work of the Arbitral Tribunal and, in particular, in accordance with their law and using all means at their disposal, shall provide it with all relevant documents and information, and enable it, when necessary, to call witnesses or experts and receive their evidence.

Article 9

If one of the parties to the dispute does not appear before the Arbitral Tribunal or fails to defend its case, any other party to the dispute may request the Arbitral Tribunal to continue the proceedings and make its award.

Article 10

1. The Arbitral Tribunal shall, on the basis of the provisions of the Protocol and other applicable rules and principles of international law that are not incompatible with such provisions, decide such disputes as are submitted to it.

2. The Arbitral Tribunal may decide, *ex aequo et bono*, a dispute submitted to it, if the parties to the dispute so agree.

Article 11

1. Before making its award, the Arbitral Tribunal shall satisfy itself that it has competence in respect of the dispute and that the claim or counterclaim is well founded in fact and law.

2. The award shall be accompanied by a statement of reasons for the decision and shall be communicated to the Secretary who shall transmit it to all parties.

3. The award shall be final and binding on the parties to the dispute and on any party which intervened in the proceedings and shall be complied with without delay. The Arbitral Tribunal shall interpret the award at the request of a party to the dispute or of any intervening party.

4. The award shall have no binding force except in respect of that particular case.

5. Unless the Arbitral Tribunal decides otherwise, the expenses of the Arbitral Tribunal, including the remuneration of the Arbitrators, shall be borne by the parties to the dispute in equal shares.

Article 12

All decisions of the Arbitral Tribunal, including those referred to in Articles 5, 6, and 11, shall be made by a majority of the Arbitrators who may not abstain from voting.

Article 13

1. This Schedule may be amended or modified by a measure adopted in accordance with Article IX (1) of the Antarctic Treaty. Unless the measure specifies otherwise, the amendment or modification shall be deemed to have been approved, and shall become effective, 1 year after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one or more of the Antarctic Treaty Consultative Parties notifies the Depositary, within that time period, that it wishes an extension of that period or that it is unable to approve the measure.

2. Any amendment or modification of this Schedule which becomes effective in accordance with paragraph 1 above shall thereafter become effective as to any other party when notice of approval by it has been received by the Depositary.

Annex I to the Protocol on Environmental Protection to the Antarctic Treaty: Environmental Impact Assessment

Article 1
Preliminary Stage

1. The environmental impacts of proposed activities referred to in Article 8 of the Protocol shall, before their commencement, be considered in accordance with appropriate national procedures.

2. If an activity is determined as having less than a minor or transitory impact, the activity may proceed forthwith.

Article 2
Initial Environmental Evaluation

1. Unless it has been determined that an activity will have less than a minor or transitory impact, or unless a Comprehensive Environmental Evaluation is being prepared in accordance with Article 3, an Initial Environmental Evaluation shall be prepared. It shall contain sufficient detail to assess whether a proposed activity may have more than a minor or transitory impact and shall include:

(a) a description of the proposed activity, including its purpose, location, duration, and intensity; and

(b) consideration of alternatives to the proposed activity and any impacts that the activity may have, including consideration of cumulative impacts in the light of existing and known planned activities.

2. If an Initial Environmental Evaluation indicates that a proposed activity is likely to have no more than a minor or transitory impact, the activity may proceed, provided that appropriate procedures, which may include monitoring, are put in place to assess and verify the impact of the activity.

Article 3
Comprehensive Environmental Evaluation

1. If an Initial Environmental Evaluation indicates or if it is otherwise determined that a proposed activity is likely to have more than a minor or transitory impact, a Comprehensive Environmental Evaluation shall be prepared.

2. A Comprehensive Environmental Evaluation shall include:

(a) a description of the proposed activity including its purpose, location, duration, and intensity, and possible alternatives to the activity, including the alternative of not proceeding, and the consequences of those alternatives;

(b) a description of the initial environmental reference state with which predicted changes are to be compared and a prediction of the future environmental reference state in the absence of the proposed activity;

(c) a description of the methods and data used to forecast the impacts of the proposed activity;

(d) estimation of the nature, extent, duration, and intensity of the likely direct impacts of the proposed activity;

(e) consideration of possible indirect or second order impacts of the proposed activity;

(f) consideration of cumulative impacts of the proposed activity in the light of existing activities and other known planned activities;

(g) identification of measures, including monitoring programs, that could be taken to minimize or mitigate impacts of the proposed activity and to detect unforeseen impacts and that could provide early warning of any adverse effects of the activity as well as to deal promptly and effectively with accidents;

(h) identification of unavoidable impacts of the proposed activity;

(i) consideration of the effects of the proposed activity on the conduct of scientific research and on other existing uses and values;

(j) an identification of gaps in knowledge and uncertainties encountered in compiling the information required under this paragraph;

(k) a nontechnical summary of the information provided under this paragraph; and

(l) the name and address of the person or organization which prepared the Comprehensive Environmental Evaluation and the address to which comments thereon should be directed.

3. The draft Comprehensive Environmental Evaluation shall be made publicly available and shall be circulated to all parties, which shall also make it publicly available, for comment. A period of 90 days shall be allowed for the receipt of comments.

4. The draft Comprehensive Environmental Evaluation shall be forwarded to the Committee at the same time as it is circulated to the parties, and at least 120 days before the next Antarctic Treaty Consultative Meeting, for consideration as appropriate.

5. No final decision shall be taken to proceed with the proposed activity in the Antarctic Treaty area unless there has been an opportunity for consideration of the draft Comprehensive Environmental Evaluation by the Antarctic Treaty Consultative Meeting on the advice of the Committee, provided that no decision to proceed with a proposed activity shall be delayed through the operation of this paragraph for longer than 15 months from the date of circulation of the draft Comprehensive Environmental Evaluation.

6. A final Comprehensive Environmental Evaluation shall address and shall include or summarize comments received on the draft Comprehensive Environmental Evaluation. The final Comprehensive Environmental Evaluation, notice of any decisions relating thereto, and any evaluation of the significance of the predicted impacts in relation to the advantages of the proposed activity, shall be circulated to all parties, which shall also make them publicly available, at least 60 days before the commencement of the proposed activity in the Antarctic Treaty area.

Article 4
Decisions To Be Based on Comprehensive Environmental Evaluations

Any decision on whether a proposed activity, to which Article 3 applies, should proceed, and, if so, whether in its original or in a modified form, shall be based on the Comprehensive Environmental Evaluation as well as other relevant considerations.

Article 5
Monitoring

1. Procedures shall be put in place, including appropriate monitoring of key environmental indicators, to assess and verify the impact of any activity that proceeds following the completion of a Comprehensive Environmental Evaluation.

2. The procedures referred to in Paragraph 1 above and in Article 2 (2) shall be designed to provide a regular and verifiable record of the impacts of the activity in order, *inter alia*, to:

(a) enable assessments to be made of the extent to which such impacts are consistent with the Protocol; and

(b) provide information useful for minimizing or mitigating impacts, and, where appropriate, information on the need for suspension, cancellation, or modification of the activity.

Article 6
Circulation of Information

1. The following information shall be circulated to the parties, forwarded to the Committee and made publicly available:

(a) a description of the procedures referred to in Article 1;

(b) an annual list of any Initial Environmental Evaluations prepared in accordance with Article 2 and any decisions taken in consequence thereof;

(c) significant information obtained, and any action taken in consequence thereof, from procedures put in place in accordance with Articles 2 (2) and 5; and

(d) information referred to in Article 3 (6).

2. Any Initial Environmental Evaluation prepared in accordance with Article 2 shall be made available on request.

Article 7
Cases of Emergency

1. This Annex shall not apply in cases of emergency relating to the safety of human life or of ships, aircraft, or equipment and facilities of high value, or the protection of the environment, which require an activity to be undertaken without completion of the procedures set out in this Annex.

2. Notice of activities undertaken in cases of emergency, which would otherwise have required preparation of a Comprehensive Environmental Evaluation, shall be circulated immediately to all parties and to the Committee and a full explanation of the activities carried out shall be provided within 90 days of those activities.

Article 8
Amendment or Modification

1. This Annex may be amended or modified by a measure adopted in accordance with Article IX (1) of the Antarctic Treaty. Unless the measure specifies otherwise, the amendment or modification shall be deemed to have been approved, and shall become effective 1 year after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one or more of the Antarctic Treaty Consultative Parties notifies the Depositary, within that period, that it wishes an extension of that period or that it is unable to approve the measure.

2. Any amendment or modification of this Annex which becomes effective in accordance with Paragraph 1 above shall thereafter become effective as to any other party when notice of approval by it has been received by the Depositary.

Annex II to the Protocol on Environmental Protection to the Antarctic Treaty: Conservation of Antarctic Fauna and Flora

Article 1
Definitions

For the purpose of this Annex:

(a) "native mammal" means any member of any species belonging to the Class Mammalia, indigenous to the Antarctic Treaty area or occurring there seasonally through natural migrations;

(b) "native bird" means any member, at any stage of its life cycle (including eggs), of any species of the Class Aves indigenous to the Antarctic Treaty area or occurring there seasonally through natural migrations;

(c) "native plant" means any terrestrial or freshwater vegetation, including bryophytes, lichens, fungi, and algae, at any state of its life cycle (including seeds, and other propagules), indigenous to the Antarctic Treaty area;

(d) "native invertebrate" means any terrestrial or freshwater invertebrate, at any stage of its life cycle, indigenous to the Antarctic Treaty area;

(e) "appropriate authority" means any person or agency authorized by a party to issue permits under this Annex;

(f) "permit" means a formal permission in writing issued by an appropriate authority;

(g) "take" or "taking" means to kill, injure, capture, handle, or molest, a native mammal or bird, or to remove or damage such quantities of native plants that their local distribution or abundance would be significantly affected;

(h) "harmful interference" means:

(i) flying or landing helicopters or other aircraft in a manner that disturbs concentrations of birds and seals;

(ii) using vehicles or vessels, including hovercraft and small boats, in a manner that disturbs concentrations of birds and seals;

(iii) using explosives or firearms in a manner that disturbs concentrations of birds and seals;

(iv) willfully disturbing breeding or moulting birds or concentrations of birds and seals by persons on foot;

(v) significantly damaging concentrations of native terrestrial plants by landing aircraft, driving vehicles, or walking on them, or by other means; and

(vi) any activity that results in the significant adverse modification of habitats of any species or population of native mammal, bird, plant, or invertebrate.

(i) "International Convention for the Regulation of Whaling" means the Convention done at Washington on December 2, 1946.

Article 2
Cases of Emergency

1. This Annex shall not apply in cases of emergency relating to the safety of human life or of ships, aircraft, or equipment and facilities of high value, or the protection of the environment.

2. Notice of activities undertaken in cases of emergency shall be circulated immediately to all parties and to the Committee.

Article 3
Protection of Native Fauna and Flora

1. Taking or harmful interference shall be prohibited, except in accordance with a permit.

2. Such permits shall specify the authorized activity, including when, where, and by whom it is to be conducted and shall be issued only in the following circumstances:

(a) to provide specimens for scientific study or scientific information;

(b) to provide specimens for museums, herbaria, zoological and botanical gardens, or other educational or cultural institutions or uses; and

(c) to provide for unavoidable consequences of scientific activities not otherwise authorized under subparagraphs (a) or (b) above, or of the construction and operation of scientific support facilities.

3. The issue of such permits shall be limited so as to ensure that:

(a) no more native mammals, birds, or plants are taken than are strictly necessary to meet the purposes set forth in Paragraph 2 above;

(b) only small numbers of native mammals or birds are killed and in no case more native mammals or birds are killed from local populations than can, in combination with other permitted takings, normally be replaced by natural reproduction in the following season; and

(c) the diversity of species, as well as the habitats essential to their existence, and the balance of the ecological systems existing within the Antarctic Treaty area are maintained.

4. Any species of native mammals, birds, and plants listed in Appendix A to this Annex shall be designated “Specially Protected Species,” and shall be accorded special protection by the parties.

5. A permit shall not be issued to take a Specially Protected Species unless the taking:

(a) is for a compelling scientific purpose;

(b) will not jeopardize the survival or recovery of that species or local population; and

(c) uses nonlethal techniques where appropriate.

6. All taking of native mammals and birds shall be done in the manner that involves the least degree of pain and suffering practicable.

Article 4
Introduction of Nonnative Species, Parasites, and Diseases

1. No species of animal or plant not native to the Antarctic Treaty area shall be introduced onto land or ice shelves, or into water in the Antarctic Treaty area except in accordance with a permit.

2. Dogs shall not be introduced onto land or ice shelves and dogs currently in those areas shall be removed by April 1, 1994.

3. Permits under Paragraph 1 above shall be issued to allow the importation only of the animals and plants listed in Appendix B to this Annex and shall specify the species, numbers, and, if appropriate, age and sex and precautions to be taken to prevent escape or contact with native fauna and flora.

4. Any plant or animal for which a permit has been issued in accordance with Paragraphs 1 and 3 above, shall, prior to expiration of the permit, be

removed from the Antarctic Treaty area or be disposed of by incineration or equally effective means that eliminates risk to native fauna or flora. The permit shall specify this obligation. Any other plant or animal introduced into the Antarctic Treaty area not native to that area, including any progeny, shall be removed or disposed of, by incineration or by equally effective means, so as to be rendered sterile, unless it is determined that they pose no risk to native flora or fauna.

5. Nothing in this Article shall apply to the importation of food into the Antarctic Treaty area provided that no live animals are imported for this purpose and all plants and animal parts and products are kept under carefully controlled conditions and disposed of in accordance with Annex III to the Protocol and Appendix C to this Annex.

6. Each party shall require that precautions, including those listed in Appendix C to this Annex, be taken to prevent the introduction of microorganisms (e.g., viruses, bacteria, parasites, yeasts, fungi) not present in the native fauna and flora.

Article 5
Information

Each party shall prepare and make available information setting forth, in particular, prohibited activities and providing lists of Specially Protected Species and relevant Protected Areas to all those persons present in or intending to enter the Antarctic Treaty area with a view to ensuring that such persons understand and observe the provisions of this Annex.

Article 6
Exchange of Information

1. The parties shall make arrangements for:

(a) collecting and exchanging records (including records of permits) and statistics concerning the numbers or quantities of each species of native mammal, bird, or plant taken annually in the Antarctic Treaty area;

(b) obtaining and exchanging information as to the status of native mammals, birds, plants, and invertebrates in the Antarctic Treaty area, and the extent to which any species or population needs protection;

(c) establishing a common form in which this information shall be submitted by parties in accordance with Paragraph 2 below.

2. Each party shall inform the other parties as well as the Committee before the end of November of each year of any step taken pursuant to Paragraph 1 above and of the number and nature of permits issued under this Annex in the preceding period of 1 July to 30 June.

Article 7
Relationship with Other Agreements Outside the Antarctic Treaty System

Nothing in this Annex shall derogate from the rights and obligations of parties under the International Convention for the Regulation of Whaling.

Article 8
Review

The parties shall keep under continuing review measures for the conservation of antarctic fauna and flora, taking into account any recommendations from the Committee.

Article 9
Amendment or Modification

1. This Annex may be amended or modified by a measure adopted in accordance with Article IX (1) of the Antarctic Treaty. Unless the measure specifies otherwise, the amendment or modification shall be deemed to have been approved, and shall become effective, 1 year after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one or more of the Antarctic Treaty Consultative Parties notifies the Depositary, within that time period, that it wishes an extension of that period or that it is unable to approve the measure.

2. Any amendment or modification of this Annex which becomes effective in accordance with Paragraph 1 above shall thereafter become effective as to any other party when notice of approval by it has been received by the Depositary.

Annex III to the Protocol on Environmental Protection to the Antarctic Treaty: Waste Disposal and Waste Management

Article 1
General Obligations

1. This Annex shall apply to activities undertaken in the Antarctic Treaty area pursuant to scientific research programs, tourism and all other governmental and nongovernmental activities in the Antarctic Treaty area for which advance notice is required under Article VII (5) of the Antarctic Treaty, including associated logistic support activities.

2. The amount of wastes produced or disposed of in the Antarctic Treaty area shall be reduced as far as practicable so as to minimize impact on the antarctic environment and to minimize interference with the natural values of Antarctica, with scientific research and with other uses of Antarctica which are consistent with the Antarctic Treaty.

3. Waste storage, disposal, and removal from the Antarctic Treaty area, as well as recycling and source reduction, shall be essential considerations in the planning and conduct of activities in the Antarctic Treaty area.

4. Wastes removed from the Antarctic Treaty area shall, to the maximum extent practicable, be returned to the country from which the activities generating the waste were organized or to any other country in which arrangements have been made for the disposal of such wastes in accordance with relevant international agreements.

5. Past and present waste disposal sites on land and abandoned work sites of antarctic activities shall be cleaned up by the generator of such wastes and the user of such sites. This obligation shall not be interpreted as requiring:

(a) the removal of any structure designated as a historic site or monument; or

(b) the removal of any structure or waste material in circumstances where the removal by any practical option would result in greater adverse environmental impact than leaving the structure or waste material in its existing location.

Article 2
Waste Disposal by Removal from the Antarctic Treaty Area

1. The following wastes, if generated after entry into force of this Annex, shall be removed from the Antarctic Treaty area by the generator of such wastes:

(a) radioactive materials;

(b) electrical batteries;

(c) fuel, both liquid and solid;

(d) wastes containing harmful levels of heavy metals or acutely toxic or harmful persistent compounds;

(e) polyvinyl chloride (PVC), polyurethane foam, polystyrene foam, rubber and lubricating oils, treated timbers, and other products which contain additives that could produce harmful emissions if incinerated;

(f) all other plastic wastes, except low-density polyethylene containers (such as bags for storing wastes), provided that such containers shall be incinerated in accordance with Article 3 (1);

(g) fuel drums; and

(h) other solid, noncombustible wastes; provided that the obligation to remove drums and solid noncombustible wastes contained in subparagraphs (g) and (h) above shall not apply in circumstances where the removal of such wastes by any practical option would result in greater adverse environmental impact than leaving them in their existing locations.

2. Liquid wastes which are not covered by Paragraph 1 above and sewage and domestic liquid wastes, shall, to the maximum extent practicable, be removed from the Antarctic Treaty area by the generator of such wastes.

3. The following wastes shall be removed from the Antarctic Treaty area by the generator of such wastes, unless incinerated, autoclaved, or otherwise treated to be made sterile:

(a) residues of carcasses of imported animals;

(b) laboratory culture of microorganisms and plant pathogens; and

(c) introduced avian products.

Article 3
Waste Disposal by Incineration

1. Subject to Paragraph 2 below, combustible wastes, other than those referred to in Article 2 (1), which are not removed from the Antarctic Treaty area shall be burnt in incinerators which to the maximum extent practicable reduce harmful emissions. Any emission standards and equipment guidelines which may be recommended by, *inter alia*, the Committee and the Scientific Committee on Antarctic Research shall be taken into account. The solid residue of such incineration shall be removed from the Antarctic Treaty area.

2. All open burning of wastes shall be phased out as soon as practicable, but no later than the end of the 1998–1999 season. Pending the completion of such phase-out, when it is necessary to dispose of wastes by open burning, allowance shall be made for the wind direction and speed and the type of wastes to be burnt to limit particulate deposition and to avoid such deposition over areas of special biological, scientific, historic, aesthetic, or wilderness significance including, in particular, areas accorded protection under the Antarctic Treaty.

Article 4
Other Waste Disposal on Land

1. Wastes not removed or disposed of in accordance with Articles 2 and 3 shall not be disposed of onto ice-free areas or into fresh water systems.

2. Sewage, domestic liquid wastes, and other liquid wastes not removed from the Antarctic Treaty area in accordance with Article 2, shall, to the maximum extent practicable, not be disposed of onto sea ice, ice shelves, or the grounded ice-sheet, provided that such wastes which are generated by stations located inland on ice shelves or on the grounded ice-sheet may be disposed of in deep ice pits where such disposal is the only practicable option. Such pits shall not be located on known ice-flow lines which terminate at ice-free areas or in areas of high ablation.

3. Wastes generated at field camps shall, to the maximum extent practicable, be removed by the generator of such wastes to supporting stations or ships for disposal in accordance with this Annex.

Article 5
Disposal of Waste in the Sea

1. Sewage and domestic liquid wastes may be discharged directly into the sea, taking into account the assimilative capacity of the receiving marine environment and provided that:

(a) such discharge is located, wherever practicable, where conditions exist for initial dilution and rapid dispersal; and

(b) large quantities of such wastes (generated in a station where the average weekly occupancy over the austral summer is approximately 30 individuals or more) shall be treated at least by maceration.

2. The by-product of sewage treatment by the Rotary Biological Contacter process or similar processes may be disposed of into the sea provided that such disposal does not adversely affect the local environment, and provided also that any such disposal at sea shall be in accordance with Annex IV to the Protocol.

Article 6
Storage of Waste

All wastes to be removed from the Antarctic Treaty area, or otherwise disposed of, shall be stored in such a way as to prevent their dispersal into the environment.

Article 7
Prohibited Products

No polychlorinated biphenyls (PCBs), nonsterile soil, polystyrene beads, chips or similar forms of packaging, or pesticides (other than those required for scientific, medical, or hygiene purposes) shall be introduced onto land or ice shelves or into water in the Antarctic Treaty area.

Article 8
Waste Management Planning

1. Each party which itself conducts activities in the Antarctic Treaty area shall, in respect of those activities, establish a waste disposal classification system as a basis for recording wastes and to facilitate studies aimed at evaluating the environmental impacts of scientific activity and associated logistic support. To that end, wastes produced shall be classified as:

(a) sewage and domestic liquid wastes (Group 1);

(b) other liquid wastes and chemicals, including fuels and lubricants (Group 2);

(c) solids to be combusted (Group 3);

(d) other solid wastes (Group 4); and

(e) radioactive material (Group 5).

2. In order to reduce further the impact of waste on the antarctic environment, each such party shall prepare and annually review and update its waste management plans (including waste reduction, storage, and disposal), specifying for each fixed site, for field camps generally, and for each ship (other than small boats that are part of the operations of fixed sites or of ships and taking into account existing management plans for ships):

(a) programs for cleaning up existing waste disposal sites and abandoned work sites;

(b) current and planned waste management arrangements, including final disposal;

(c) current and planned arrangements for analyzing the environmental effects of waste and waste management; and

(d) other efforts to minimize any environmental effects of wastes and waste management.

3. Each such party shall, as far as is practicable, also prepare an inventory of locations of past activities (such as traverses, fuel depots, field bases, crashed aircraft) before the information is lost, so that such locations can be taken into account in planning future scientific programs (such as snow chemistry, pollutants in lichens, or ice core drilling).

Article 9
Circulation and Review of Waste Management Plans

1. The waste management plans prepared in accordance with Article 8, reports on their implementation, and the inventories referred to in Article 8 (3), shall be included in the annual exchanges of information in accordance with Articles III and VII of the Antarctic Treaty and related Recommendations under Article IX of the Antarctic Treaty.

2. Each party shall send copies of its waste management plans, and reports on their implementation and review, to the Committee.

3. The Committee may review waste management plans and reports thereon and may offer comments, including suggestions for minimizing impacts and modifications and improvement to the plans, for the consideration of the parties.

4. The parties may exchange information and provide advice on, *inter alia*, available low-waste technologies, reconversion of existing installations, special requirements for effluents, and appropriate disposal and discharge methods.

Article 10
Management Practices

Each party shall:

(a) designate a waste management official to develop and monitor waste management plans; in the field, this responsibility shall be delegated to an appropriate person at each site;

(b) ensure that members of its expeditions receive training designed to limit the impact of its operations on the antarctic environment and to inform them of requirements of this Annex; and

(c) discourage the use of polyvinyl chloride (PVC) products and ensure that its expeditions to the Antarctic Treaty area are advised of any PVC products they may introduce in the Antarctic Treaty area in order that they may be removed subsequently in accordance with this Annex.

Article 11
Review

This Annex shall be subject to regular review in order to ensure that it is updated to reflect improvement in waste disposal technology and procedures and to ensure thereby maximum protection of the antarctic environment.

Article 12
Cases of Emergency

1. This Annex shall not apply in cases of emergency relating to the safety of human life or of ships, aircraft, or the protection of the environment.

2. Notice of activities undertaken in cases of emergency shall be circulated immediately to all parties and to the Committee.

Article 13
Amendment or Modification

1. This Annex may be amended or modified by a measure adopted in accordance with Article IX (1) of the Antarctic Treaty. Unless the measure specifies otherwise, the amendment or modification shall be deemed to have been approved, and shall become effective, 1 year after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one or more of the Antarctic Treaty Consultative parties notifies the Depositary, within that time period, that it wishes an extension of that period or that it is unable to approve the amendment.

2. Any amendment or modification of this Annex which becomes effective in accordance with Paragraph 1 above shall thereafter become effective as to any other party when notice of approval by it has been received by the Depositary.

Annex IV to the Protocol on Environmental Protection to the Antarctic Treaty: Prevention of Marine Pollution

Article 1
Definitions

For the purposes of this Annex:

(a) “discharge” means any release howsoever caused from a ship and includes any escape, disposal, spilling, leaking, pumping, emitting, or emptying;

(b) “garbage” means all kinds of victual, domestic, and operational waste excluding fresh fish and parts thereof, generated during the normal operation of the ship, except those substances which are covered by Articles 3 and 4;

(c) "MARPOL 73/78" means the International Convention for the Prevention of Pollution from Ships, 1973, as amended by the Protocol of 1978 relating thereto and by any other amendment in force thereafter;

(d) "noxious liquid substance" means any noxious liquid substance as defined in Annex II of MARPOL 73/78;

(e) "oil" means petroleum in any form including crude oil, fuel oil, sludge, oil refuse, and refined oil products (other than petrochemicals which are subject to the provisions of Article 4);

(f) "oily mixture" means a mixture with any oil content; and

(g) "ship" means a vessel of any type whatsoever operating in the marine environment and includes hydrofoil boats, air-cushion vehicles, submersibles, floating craft, and fixed or floating platforms.

Article 2
Application

This Annex applies, with respect to each party, to ships entitled to fly its flag and to any other ship engaged in or supporting its antarctic operations, while operating in the Antarctic Treaty area.

Article 3
Discharge of Oil

1. Any discharge into the sea of oil or oily mixture shall be prohibited, except in cases permitted under Annex I of MARPOL 73/78. While operating in the Antarctic Treaty area, ships shall retain on board all sludge, dirty ballast, tank washing waters, and other oily residues and mixtures which may not be discharged into the sea. Ships shall discharge these residues only outside the Antarctic Treaty area, at reception facilities or as otherwise permitted under Annex I of MARPOL 73/78.

2. This Article shall not apply to:

(a) the discharge into the sea of oil or oily mixture resulting from damage to a ship or its equipment:

(i) provided that all reasonable precautions have been taken after the occurrence of the damage or discovery of the discharge for the purpose of preventing or minimizing the discharge; and

(ii) except if the owner or the Master acted either with intent to cause damage, or recklessly and with the knowledge that damage would probably result; or

(b) the discharge into the sea of substances containing oil which are being used for the purpose of combating specific pollution incidents in order to minimize the damage from pollution.

Article 4
Discharge of Noxious Liquid Substances

The discharge into the sea of any noxious liquid substance, and any other chemical or other substances, in quantities or concentrations that are harmful to the marine environment, shall be prohibited.

Article 5
Disposal of Garbage

1. The disposal into the sea of all plastics, including but not limited to synthetic ropes, synthetic fishing nets, and plastic garbage bags, shall be prohibited.

2. The disposal into the sea of all other garbage, including paper products, rags, glass, metal, bottles, crockery, incineration ash, dunnage, lining, and packing materials, shall be prohibited.

3. The disposal into the sea of food wastes may be permitted when they have been passed through a comminuter or grinder, provided that such disposal shall, except in cases permitted under Annex V of MARPOL 73/78, be made as far as practicable from land and ice shelves but in any case not less than 12 nautical miles from the nearest land or ice shelf. Such comminuted or ground food wastes shall be capable of passing through a screen with openings no greater than 25 millimeters.

4. When a substance or material covered by this article is mixed with other such substance or material for discharge or disposal, having different disposal or discharge requirements, the most stringent disposal or discharge requirements shall apply.

5. The provisions of Paragraphs 1 and 2 above shall not apply to:

(a) the escape of garbage resulting from damage to a ship or its equipment provided all reasonable precautions have been taken, before and after the occurrence of the damage, for the purpose of preventing or minimizing the escape; or

(b) the accidental loss of synthetic fishing nets, provided all reasonable precautions have been taken to prevent such loss.

6. The parties shall, where appropriate, require the use of garbage record books.

Article 6
Discharge of Sewage

1. Except where it would unduly impair antarctic operations:

(a) each party shall eliminate all discharge into the sea of untreated sewage ("sewage" being defined in Annex IV of MARPOL 73/78) within 12 nautical miles of land or ice shelves;

(b) beyond such distance, sewage stored in a holding tank shall not be discharged instantaneously but at a moderate rate and, where practicable, while the ship is en route at a speed of no less than 4 knots.

This paragraph does not apply to ships certified to carry not more than 10 persons.

2. The parties shall, where appropriate, require the use of sewage record books.

Article 7
Cases of Emergency

1. Articles 3, 4, 5, and 6 of this Annex shall not apply in cases of emergency relating to the safety of a ship and those on board or saving life at sea.

2. Notice of activities undertaken in cases of emergency shall be circulated immediately to all parties and to the Committee.

Article 8
Effect on Dependent and Associated Ecosystems

In implementing the provisions of this Annex, due consideration shall be given to the need to avoid detrimental effects on dependent and associated ecosystems, outside the Antarctic Treaty area.

Article 9
Ship Retention Capacity and Reception Facilities

1. Each party shall undertake to ensure that all ships entitled to fly its flag and any other ship engaged in or supporting its antarctic operations, before entering the Antarctic Treaty area, are fitted with a tank or tanks of sufficient capacity on board for the retention of all sludge, dirty ballast, tank washing water, and other oily residues and mixtures, and have sufficient capacity on board for the retention of garbage, while operating in the Antarctic Treaty area and have concluded arrangements to discharge such oily residues and garbage at a reception facility after leaving that area. Ships shall also have sufficient capacity on board for the retention of noxious liquid substances.

2. Each party at whose ports ships depart en route to or arrive from the Antarctic Treaty area undertakes to ensure that as soon as practicable adequate facilities are provided for the reception of all sludge, dirty ballast, tank washing water, other oily residues and mixtures, and garbage from ships, without causing undue delay, and according to the needs of the ships using them.

3. Parties operating ships which depart to or arrive from the Antarctic Treaty area at ports of other parties shall consult with those parties with a view to ensuring that the establishment of port reception facilities does not place an inequitable burden on parties adjacent to the Antarctic Treaty area.

Article 10
Design, Construction, Manning, and Equipping of Ships

In the design, construction, manning, and equipping of ships engaged in or supporting antarctic operations, each party shall take into account the objectives of this Annex.

Article 11
Sovereign Immunity

1. This Annex shall not apply to any warship, naval auxiliary, or other ship owned or operated by a State and used, for the time being, only on government noncommercial service. However, each party shall ensure by the adoption of appropriate measures not impairing the operations or operational capabilities of such ships owned or operated by it, that such ships act in a manner consistent, so far as is reasonable and practicable, with this Annex.

2. In applying Paragraph 1 above, each party shall take into account the importance of protecting the antarctic environment.

3. Each party shall inform the other parties of how it implements this provision.

4. The dispute settlement procedure set out in Articles 18 to 20 of the Protocol shall not apply to this Article.

Article 12
Preventive Measures and Emergency Preparedness and Response

1. In order to respond more effectively to marine pollution emergencies or the threat thereof in the Antarctic Treaty area, the parties, in accordance with Article 15 of the Protocol, shall develop contingency plans for marine pollution response in the Antarctic Treaty area, including contingency plans for

ships (other than small boats that are part of the operations of fixed sites or of ships) operating in the Antarctic Treaty area, particularly ships carrying oil as cargo, and for oil spills, originating from coastal installations, which enter into the marine environment. To this end they shall:

(a) cooperate in the formulation and implementation of such plans; and

(b) draw on the advice of the Committee, the International Maritime Organization and other international organizations.

2. The parties shall also establish procedures for cooperative response to pollution emergencies and shall take appropriate response actions in accordance with such procedures.

Article 13
Review

The parties shall keep under continuous review the provisions of this Annex and other measures to prevent, reduce, and respond to pollution of the antarctic marine environment, including any amendments and new regulations adopted under MARPOL 73/78, with a view to achieving the objectives of this Annex.

Article 14
Relationship with MARPOL 73/78

With respect to those parties which are also parties to MARPOL 73/78, nothing in this Annex shall derogate from the specific rights and obligations thereunder.

Article 15
Amendment or Modification

1. This Annex may be amended or modified by a measure adopted in accordance with Article IX (1) of the Antarctic Treaty. Unless the measure specifies otherwise, the amendment or modification shall be deemed to have been approved, and shall become effective, 1 year after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one or more of the Antarctic Treaty Consultative Parties notifies the Depositary, within that time period, that it wishes an extension of that period or that it is unable to approve the measure.

2. Any amendment or modification of this Annex which becomes effective in accordance with Paragraph 1 above shall thereafter become effective as to any other party when notice of approval by it has been received by the Depositary.

Annex V to the Protocol on Environmental Protection to the Antarctic Treaty: Area Protection and Management

Article 1
Definitions

For the purposes of this Annex:

a. “appropriate authority” means any person or agency authorized by a party to issue permits under this Annex;

b. “permit” means a formal permission in writing issued by an appropriate authority;

c. “Management Plan” means a plan to manage the activities and protect the special value or values in an Antarctic Specially Protected Area or an Antarctic Specially Managed Area.

Article 2
Objectives

For the purposes set out in this Annex, any area, including any marine area, may be designated as an Antarctic Specially Protected Area or an Antarctic Specially Managed Area. Activities in those Areas shall be prohibited, restricted or managed in accordance with Management Plans adopted under the provisions of this Annex.

Article 3
Antarctic Specially Protected Areas

1. Any area, including any marine area, may be designated as an Antarctic Specially Protected Area to protect outstanding environmental, scientific, historic, aesthetic or wilderness values, any combination of those values, or ongoing or planned scientific research.

2. Parties shall seek to identify, within a systematic environmental-geographical framework, and to include in the series of Antarctic Specially Protected Areas:

a. areas kept inviolate from human interference so that future comparisons may be possible with localities that have been affected by human activities;

b. representative examples of major terrestrial, including glacial and aquatic, ecosystems and marine ecosystems;

c. areas with important or unusual assemblages of species, including major colonies of breeding native birds or mammals;

d. the type locality or only known habitat of any species;

e. areas of particular interest to ongoing or planned scientific research;

f. examples of outstanding geological, glaciological, or geomorphological features;

g. areas of outstanding aesthetic and wilderness value;

h. sites or monuments or recognized historic value; and

i. such other areas as may be appropriate to protect the values set out in Paragraph 1 above.

3. Specially Protected Areas and Sites of Special Scientific Interest designated as such by past Antarctic Treaty Consultative Meetings are hereby designated as Antarctic Specially Protected Areas and shall be renamed and renumbered accordingly.

4. Entry into an Antarctic Specially Protected Area shall be prohibited except in accordance with a permit issued under Article 7.

Article 4
Antarctic Specially Managed Areas

1. Any area, including any marine area, where activities are being conducted or may in the future be conducted, may be designated as an Antarctic Specially Managed Area to assist in the planning and coordination of

activities, avoid possible conflicts, improve cooperation between parties or minimize environmental impacts.

2. Antarctic Specially Managed Areas may include:

a. areas where activities pose risks of mutual interference or cumulative environmental impacts; and

b. sites or monuments of recognized historic value.

3. Entry into an Antarctic Specially Managed Area shall not require a permit.

4. Notwithstanding Paragraph 3 above, an Antarctic Specially Managed Area may contain one or more Antarctic Specially Protected Areas, entry into which shall be prohibited except in accordance with a permit issued under Article 7.

Article 5
Management plans

1. Any party, the Committee, the Scientific Committee for Antarctic Research or the Commission for the Conservation of Antarctic Marine Living Resources may propose an area for designation as an Antarctic Specially Protected Area or an Antarctic Specially Managed Area by submitting a proposed Management Plan to the Antarctic Treaty Consultative Meeting.

2. The area proposed for designation shall be of sufficient size to protect the values for which the special protection or management is required.

3. Proposed Management Plans shall include, as appropriate:

a. a description of the value or values for which special protection or management is required;

b. a statement of the aims and objectives of the Management Plan for the protection or management of those values;

c. management activities which are to be undertaken to protect the values for which special protection or management is required;

d. a period of designation, if any;

e. a description of the area, including:

i. the geographical coordinates, boundary markers and natural features that delineate the area;

ii. access to the area by land, sea or air including marine approaches and anchorages, pedestrian and vehicular routes within the area, and aircraft routes and landing areas;

iii. the location of structures, including scientific stations, research or refuge facilities, both within the area and near to it; and

iv. the location in or near the area of other Antarctic Specially Protected Areas or Antarctic Specially Managed Areas designated under this Annex, or other protected areas designated in accordance with measures adopted under other components of the Antarctic Treaty System;

f. the identification of zones within the area, in which activities are to be prohibited, restricted or managed for the purpose of achieving the aims and objectives referred to in Subparagraph b. above;

g. maps and photographs that show clearly the boundary of the area in relation to surrounding features and key features within the area;

h. supporting documentation;

i. in respect of an area proposed for designation as an Antarctic Specially Protected Area, a clear description of the conditions under which permits may be granted by the appropriate authority regarding:

i. access to and movement within or over the area;

ii. activities which are or may be conducted within the area, including restrictions on time and place;

iii. the installation, modification, or removal of structures;

iv. the location of field camps;

v. restrictions on materials and organisms which may be brought into the area;

vi. the taking of or harmful interference with native flora and fauna;

vii. the collection or removal of anything not brought into the area by the permit holder;

viii. the disposal of waste;

ix. measures that may be necessary to ensure that the aims and objectives of the Management Plan can continue to be met; and

x. requirements for reports to be made to the appropriate authority regarding visits to the area;

j. in respect of an area proposed for designation as an Antarctic Specially Managed Area, a code of conduct regarding:

i. access to and movement within or over the area;

ii. activities which are or may be conducted within the area, including restrictions on time and place;

iii. the installation, modification, or removal of structures;

iv. the location of field camps;

v. the taking of or harmful interference with native flora and fauna;

vi. the collection or removal of anything not brought into the area by the visitor;

vii. the disposal of waste; and

viii. any requirements for reports to be made to the appropriate authority regarding visits to the area; and

k. provisions relating to the circumstances in which parties should seek to exchange information in advance of activities which they propose to conduct.

Article 6
Designation procedures

1. Proposed Management Plans shall be forwarded to the Committee, the Scientific Committee on Antarctic Research and, as appropriate, to the Commission for the Conservation of Antarctic Marine Living Resources. In formulating its advice to the Antarctic Treaty Consultative Meeting, the Committee shall take into account any comments provided by the Scientific Committee on Antarctic Research and, as appropriate, by the Commission for the Conservation of Antarctic Marine Living Resources. Thereafter, Management Plans may be approved by the Antarctic Treaty Consultative Parties by a measure adopted at an Antarctic Treaty Consultative Meeting in accordance with Article IX(1) of the Antarctic Treaty. Unless the measure specifies otherwise, the Plan shall be deemed to have been approved 90 days after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one or more of the Consultative Parties notifies the Depositary, within that time period, that it wishes an extension of that period or is unable to approve the measure.

2. Having regard to the provisions of Articles 4 and 5 of the Protocol, no marine area shall be designated as an Antarctic Specially Protected Area or an Antarctic Specially Managed Area without the prior approval of the Commission for the Conservation of Antarctic Marine Living Resources.

3. Designation of an Antarctic Specially Protected Area or an Antarctic Specially Managed Area shall be for an indefinite period unless the Management Plan provides otherwise. A review of a Management Plan shall be initiated at least every 5 years. The Plan shall be updated as necessary.

4. Management Plans may be amended or revoked in accordance with Paragraph 1 above.

5. Upon approval Management Plans shall be circulated promptly by the Depositary to all parties. The Depositary shall maintain a record of all currently approved Management Plans.

Article 7
Permits

1. Each party shall appoint an appropriate authority to issue permits to enter and engage in activities within an Antarctic Specially Protected Area in accordance with the requirements of the Management Plan relating to that Area. The permit shall be accompanied by the relevant sections of the Management Plan and shall specify the extent and location of the Area, the authorized activities and when, where and by whom the activities are authorized and any other conditions imposed by the Management Plan.

2. In the case of a Specially Protected Area designated as such by past Antarctic Treaty Consultative Meeting which does not have a Management Plan, the appropriate authority may issue a permit for a compelling scientific purpose which cannot be served elsewhere and which will not jeopardize the natural ecological system in that Area.

3. Each party shall require a permit holder to carry a copy of the permit while in the Antarctic Specially Protected Area concerned.

Article 8
Historic Sites and Monuments

1. Sites or monuments of recognized historic value which have been designated as Antarctic Specially Protected Areas or Antarctic Specially Managed Areas, or which are located within such Areas, shall be listed as Historic Sites and Monuments.

2. Any party may propose a site or monument of recognized historic value which has not been designated as an Antarctic Specially Protected Area or an Antarctic Specially Managed Area, or which is not located within such an Area, for listing as a Historic Site or Monument. The proposal for listing may be approved by the Antarctic Treaty Consultative Parties by a measure adopted at an Antarctic Treaty Consultative Meeting in accordance with Article IX(1) of the Antarctic Treaty. Unless the measure specifies otherwise, the proposal shall be deemed to have been approved 90 days after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one or more of the Consultative Parties notifies the Depositary, within that time period, that it wishes an extension of that period or is unable to approve the measure.

3. Existing Historic Sites and Monuments which have been listed as such by previous Antarctic Treaty Consultative Meetings shall be included in the list of Historic Sites and Monuments under this Article.

4. Listed Historic Sites and Monuments shall not be damaged, removed, or destroyed.

5. The list of Historic Sites and Monuments may be amended in accordance with Paragraph 2 above. The Depositary shall maintain a list of current Historic Sites and Monuments.

Article 9
Information and publicity

1. With a view to ensuring that all persons visiting or proposing to visit Antarctica understand and observe the provisions of this Annex, each party shall make available information setting forth, in particular:

a. the location of Antarctic Specially Protected Areas and Antarctic Specially Managed Areas;

b. listing and maps of those Areas;

c. the Management Plans, including listings of prohibitions relevant to each Area;

d. the location of Historic Sites and Monuments and any relevant prohibition or restriction.

2. Each party shall ensure that the location and, if possible, the limits of Antarctic Specially Protected Areas, Antarctic Specially Managed Areas and Historic Sites and Monuments are shown on its topographic maps, hydrographic charts and in other relevant publications.

3. Parties shall cooperate to ensure that, where appropriate, the boundaries of Antarctic Specially Protected Areas, Antarctic Specially Managed Areas and Historic Sites and Monuments are suitably marked on the site.

Article 10
Exchange of information

1. The parties shall make arrangements for:

a. collecting and exchanging records, including records of permits and reports of visits, including inspection visits, to Antarctic Specially Protected Areas and reports of inspection visits to Antarctic Specially Managed Areas;

b. obtaining and exchanging information on any significant change or damage to any Antarctic Specially Managed Area, Antarctic Specially Protected Area, or Historic Site or Monument; and

c. establishing common forms in which records and information shall be submitted by parties in accordance with Paragraph 2 below.

2. Each party shall inform the other parties and the Committee before the end of November of each year of the number and nature of permits issued under this Annex in the preceding period of July 1 to June 30.

3. Each party conducting, funding or authorizing research or other activities in Antarctic Specially Protected Areas or Antarctic Specially Managed Areas shall maintain a record of such activities and in the annual exchange of information in accordance with the Antarctic Treaty shall provide summary descriptions of the activities conducted by persons subject to its jurisdiction in such areas in the preceding year.

4. Each party shall inform the other parties and the Committee before the end of November each year of measures it has taken to implement this Annex, including any site inspections and any steps it has taken to address instances of activities in contravention of the provisions of the approved Management Plan for an Antarctic Specially Protected Area or Antarctic Specially Managed Area.

Article 11
Cases of emergency

1. The restrictions laid down and authorized by this Annex shall not apply in cases of emergency involving safety of human life or of ships, aircraft, or equipment and facilities of high value or the protection of the environment.

2. Notice of activities undertaken in cases of emergency shall be circulated immediately to all parties and to the Committee.

Article 12
Amendment or modification

1. This Annex may be amended or modified by a measure adopted in accordance with Article IX(1) of the Antarctic Treaty. Unless the measure specifies otherwise, the amendment or modification shall be deemed to have been approved, and shall become effective, one year after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one or more of the Antarctic Treaty Consultative Parties notifies the Depositary, within that time period, that it wishes an extension of that period or that it is unable to approve the measure.

2. Any amendment or modification of this Annex which becomes effective in accordance with Paragraph 1 above shall thereafter become effective as to any other party when notice of approval by it has been received by the Depositary.