

CONSERVATION MEASURE 18/IX
Procedure for According Protection to CEMP Sites

The Commission,

Bearing in mind that the Working Group for the CCAMLR Ecosystem Monitoring Program (WG-CEMP) has established a system of sites contributing data to the CCAMLR Ecosystem Monitoring Program (CEMP), and that additions may be made to this system in the future;

Recalling that it is not the purpose of the protection accorded to CEMP sites to restrict fishing activity in adjacent waters;

Recognizing that studies being undertaken at CEMP sites may be vulnerable to accidental or wilful interference;

Concerned, therefore, to provide protection for CEMP sites, scientific investigations and the Antarctic marine living resources therein, in cases where a Member or Members of the Commission conducting or planning to conduct CEMP studies believes such protection to be desirable;

hereby adopts the following Conservation Measure in accordance with Article IX of the Convention:

1. In cases where a Member or Members of the Commission conducting, or planning to conduct, CEMP studies at a CEMP site believe it desirable that protection should be accorded to the site, it, or they, shall prepare a draft management plan in accordance with Annex A to this Conservation Measure.
2. Each such draft management plan shall be sent to the Executive Secretary for transmission to all Members of the Commission for their consideration at least three months before its consideration by WG-CEMP.
3. The draft management plan shall be considered in turn by WG-CEMP, the Scientific Committee and the Commission. In consultation with the Member or Members of the Commission which drew up the draft management plan, it may be amended by any of these bodies. If a draft management plan is amended by either WG-CEMP or the Scientific Committee, it shall be passed on in its amended form either to the Scientific Committee or to the Commission as the case may be.
4. If, following completion of the procedures outlined in paragraphs 1 to 3 above, the Commission considers it appropriate to accord the desired protection to the CEMP site, the Commission shall adopt a Resolution calling on Members to comply, on a voluntary basis, with the provisions of the draft management plan, pending the conclusion of action in accordance with paragraphs 5 to 8 below.
5. The Executive Secretary shall communicate such a Resolution to SCAR, the Antarctic Treaty Consultative Parties and, if appropriate, the Contracting Parties to other components of the Antarctic Treaty System which are in force.
6. Unless, before the opening date of the next regular meeting of the Commission, the Executive Secretary has received:
 - (i) an indication from an Antarctic Treaty Consultative Party that it desires the resolution to be considered at a Consultative Meeting; or
 - (ii) an objection from any other quarter referred to in paragraph 5 above;

the Commission may, by means of a conservation measure, confirm its adoption of the management plan for the CEMP site and shall include the management plan in Annex B to Conservation Measure 18/IX.

7. In the event that an Antarctic Treaty Consultative Party has indicated its desire for the Resolution to be considered at a Consultative Meeting, the Commission shall await the outcome of such consideration, and may then proceed accordingly.
8. If objection is received in accordance with paragraphs 6 (ii) or 7 above, the Commission may institute such consultations as it may deem appropriate to achieve the necessary protection and to avoid interference with the achievement of the principles and purposes of, and measures approved under, the Antarctic Treaty and other components of the Antarctic Treaty System which are in force.
9. The management plan of any site may be amended by decision of the Commission. In such cases full account shall be taken of the advice of the Scientific Committee. Any amendment which increases the area of the site or adds to categories or types of activities that would jeopardize the objectives of the site shall be subject to the procedures set out in paragraphs 5 to 8 above.
10. Entry into a CEMP site included in Annex B shall be prohibited except for the purposes authorized in the relevant management plan for the site and in accordance with a permit issued under paragraph 11.
11. Each Contracting Party shall, as appropriate, issue permits authorizing its nationals to carry out activities consistent with the provisions of the management plans for CEMP sites and shall take such other measures, within its competence, as may be necessary to ensure that its nationals comply with the management plans for such sites.
12. Copies of such permits shall be sent to the Executive Secretary as soon as practical after they are issued. Each year the Executive Secretary shall provide the Commission and the Scientific Committee with a brief description of the permits that have been issued by the Parties. In cases where permits are issued for purposes not directly related to the conduct of CEMP studies at the site in question, the Executive Secretary shall forward a copy of the permit to the Member or Members of the Commission conducting CEMP studies at that site.
13. Each management plan shall be reviewed every five years by WG-CEMP and the Scientific Committee to determine whether it requires revision and whether continued protection is necessary. The Commission may then act accordingly.

**INFORMATION TO BE INCLUDED IN MANAGEMENT
PLANS FOR CEMP SITES**

Management plans shall include:

A. GEOGRAPHICAL INFORMATION

1. A description of the site, and any buffer zone within the site, including:
 - (a) geographical coordinates;
 - (b) natural features;
 - (c) boundary markers;
 - (d) natural features that define the site;
 - (e) access points (pedestrian, vehicular, airborne, sea-borne);
 - (f) pedestrian and vehicular routes in the site;
 - (g) preferred anchorages;
 - (h) location of structures within the site;
 - (i) areas or zones within the site, described in generic or geographical terms, or both, in which activities are prohibited or otherwise constrained;
 - (j) location of nearby scientific stations, research or refuge facilities; and
 - (k) location of areas or sites, in or near the site, which have been accorded protected status in accordance with measures adopted under the Antarctic Treaty or other components of the Antarctic Treaty System which are in force.
2. Maps showing:
 - (a) the location of the site in relation to major surrounding features; and
 - (b) where applicable, the geographical features listed in paragraph 1 above.

B. BIOLOGICAL FEATURES

1. A description of the biological features of the site, in both space and time, which it is the purpose of the management plan to protect.

C. CEMP STUDIES

1. A full description of the CEMP studies being conducted or planned to be conducted, including the species and parameters which are being or are to be studied.

D. PROTECTION MEASURES

1. Statements of prohibited activities:
 - (a) throughout the site at all times of the year;
 - (b) throughout the site at defined parts of the year;

- (c) in parts of the site at all times of the year; and
 - (d) in parts of the site at defined parts of the year.
- 2. Prohibitions regarding access to and movement within or over the site.
- 3. Prohibitions regarding:
 - (a) the installation, modification, and/or removal of structures; and
 - (b) the disposal of waste.
- 4. Prohibitions for the purpose of ensuring that activity in the site does not prejudice the purposes for which protection status has been accorded to areas or sites, in or near the site, under the Antarctic Treaty or other components of the Antarctic Treaty System which are in force.

E. COMMUNICATIONS INFORMATION

- 1. The name, address, telephone, telex and facsimile numbers of:
 - (a) the organization or organizations responsible for appointing national representative(s) to the Commission; and
 - (b) the national organization or organizations conducting CEMP studies at the site.

Notes:

- 1. A code of conduct. If it would help towards achieving the scientific objectives of the site, a code of conduct may be annexed to the management plan. Such a code should be written in hortatory rather than mandatory terms, and must be consistent with the prohibitions contained in Section D above.
- 2. Members of the Commission preparing draft management plans for submission in accordance with this Conservation Measure should bear in mind that the primary purpose of the management plan is to provide for the protection of CEMP studies at the site through the application of the prohibitions contained in Section D. To that end, the management plan is to be drafted in concise and unambiguous terms. Information which is intended to help scientists, or others, appreciate broader considerations regarding the site (e.g., historical and bibliographic information) should not be included in the management plan but may be annexed to it.

MANAGEMENT PLANS FOR CEMP SITES

**MANAGEMENT PLAN FOR THE PROTECTION OF SEAL ISLANDS,
SOUTH SHETLAND ISLANDS, AS A SITE INCLUDED IN THE
CCAMLR ECOSYSTEM MONITORING PROGRAM**

A. GEOGRAPHICAL INFORMATION

1. Description of the site:

- (a) Geographical coordinates. The Seal Islands are composed of small islands and skerries located approximately 7 km north of the northwest corner of Elephant Island, South Shetland Islands. The Seal Islands CEMP Protected Area includes the entire Seal Islands group, which is defined as Seal Island plus any land or rocks exposed at mean low tide within a distance of 5.5 km of the point of highest elevation on Seal Island. Seal Island is the largest island of the group, and is situated at 60°59'14"S, 55°23'04"W (coordinates are given for the point of highest elevation on the island - see Figures 1 and 2).
- (b) Natural features. The Seal Islands cover an area approximately 5.7 km from east to west and 5 km from north to south. Seal Island is approximately 0.7 km long and 0.5 km wide. It has an altitude of about 125 m, with a raised plateau at about 80 m, and precipitous cliffs on most coastlines. There is a raised, sandy beach on the western shore and several coves on the northern and eastern shores. Seal Island is joined to the adjacent island to the west by a narrow sand bar that is approximately 50 m long; the bar is rarely passable on foot, and only when seas are calm and the tide is very low. Other islands in the group are similar to Seal Island, with precipitous cliffs, exposed coasts, and a few sand beaches and protected coves. There is no permanent ice on any of the islands. Seal Island is mainly composed of poorly consolidated sedimentary rocks. Rocks crumble and fracture easily, resulting in prevalent erosion from water runoff and coastal wave action. Geologists have characterised the bedrock as "pebbly mudstone". No fossils have been reported from the site. Because colonies of penguins are present in virtually all sectors of Seal Island (including the summit), the soil in many areas as well as several vertical rock faces are enriched by guano.
- (c) Boundary markers. As of 1991, no man-made boundary markers indicating the limits of the protected area had been established. The boundaries of the site are defined by natural features (i.e., coastlines).
- (d) Natural features that define the site. The Seal Islands CEMP Protected Area includes the entire Seal Islands group (see Section A.1(a) for definition). No buffer zones are defined for the site.
- (e) Access points. The site may be accessed by boat or aircraft at any point where pinnipeds and seabirds will not be adversely affected (see Sections D.1 and D.2). Access by small boat is recommended in most circumstances because the number of beach landing spots for helicopters (which must approach these spots by flying over water rather than over land) is very limited. There are no landing sites for fixed-winged aircraft.

- (f) Pedestrian and vehicular routes. Pedestrians should follow the advice of the local scientists in selecting pathways which will minimise disturbance to wildlife (see Section D.2(d)). Land vehicles are not permitted except in the immediate vicinity of the field camp and the beach (see Section D.2(c)).
- (g) Preferred anchorages. Numerous shoals and pinnacles are known to exist in the vicinity of the Seal Islands, and navigation charts of the area are incomplete. Most ships visiting the area recently have preferred an anchorage spot approximately 1.5 km to the southeast of Seal Island (Figure 2), which has a rather consistent depth of approximately 18 m. A second anchorage utilised by smaller vessels is located approximately 0.5 km to the northeast of Seal Island (Figure 2) at a depth of about 20 m. Organisation(s) conducting CEMP studies at the site can provide further details about sailing instructions pertaining to these anchorages (see Section E.2).
- (h) Location of structures within the site. As of 1991 there were structures at four locations on Seal Island: a research camp and three observation blinds (Figure 2 insert). The temporary field camp, established in December 1986, is located near the sand beach on the western coast of Seal Island. The camp is comprised principally of four structures: the main living quarters, two storage sheds, and an outhouse. In addition, three small blinds are located at various spots on Seal Island (two near penguin and fur seal colonies, and one at the top of the island) to facilitate scientific observations and to house research equipment.
- (i) Areas within the site where activities are constrained. The protection measures specified in Section D apply to all areas within the Seal Islands Protected Area, as defined in Section A.1(d).
- (j) Location of nearby scientific, research or refuge facilities. The nearest research facility to the site is the scientific field camp maintained by the Brazilian government at Stinker Point, Elephant Island (61°04'S, 55°21'W), which is approximately 26 km south of Seal Island. Numerous scientific stations and research facilities are located on King George Island, which is approximately 215 km southwest of Seal Island.
- (k) Areas or sites protected under the Antarctic Treaty System. No areas or sites within or near (i.e., within 100 km) the Seal Island Protected Area have been accorded protected status in accordance with measures adopted under the Antarctic Treaty or other components of the Antarctic Treaty System which are in force.

2. Maps of the site:

- (a) Figure 1 shows the geographical position of the Seal Islands in relation to major surrounding features, including the South Shetland Islands and adjacent bodies of water.
- (b) Figure 2 illustrates the location of the entire Seal Islands archipelago and preferred vessel anchorages. The detailed insert of Seal Island in Figure 2 shows the location of structures associated with CEMP studies and the location of the point of highest elevation (indicated by a cross).

B. BIOLOGICAL FEATURES

1. Terrestrial. There is no information on soil biology at Seal Island but it is likely that similar types of plants and invertebrates are found as at other sites in the South Shetland Islands. Lichens are present on stable rock surfaces. There is no evidence of well-developed moss or grass banks being present on Seal Island.
2. Inland waters. There are no known lakes or ephemeral ponds of significance on Seal Island.
3. Marine. No studies on littoral communities have been carried out.
4. Birds and seals. Seven species of birds are known to breed on the Seal islands: chinstrap penguins (*Pygoscelis antarctica*), macaroni penguins (*Eudyptes chrysolophus*), cape petrels (*Daption capensis*), Wilson's storm petrels (*Oceanites oceanicus*), southern giant petrels (*Macronectes giganteus*), southern black-backed gulls (*Larus dominicanus*), and American sheathbills (*Chionus alba*). The chinstrap penguin population on Seal Island numbers approximately 20 000 breeding pairs, nesting in about 60 colonies throughout the island. About 350 pairs of macaroni penguins nest on Seal Island in five separate colonies. The nesting and chick-rearing period for chinstrap and macaroni penguins at Seal Island extends from November through March. No surveys have been made of cape petrel or storm petrel populations, however, both species are numerous; the cape petrels nest on cliff faces and the storm petrels nest in burrows in the talus slopes. Brown skuas (*Catharacta lönnerbergi*) are common. Blue-eyed shags (*Phalacrocorax atriceps*), Adélie penguins (*Pygoscelis adeliae*), gentoo penguins (*Pygoscelis papua*), king penguins (*Aptenodytes patagonicus*) and rockhopper penguins (*Eudyptes crestatus*) are among the avian visitors to the area.
5. Five species of pinnipeds have been observed at Seal Island: Antarctic fur seals (*Arctocephalus gazella*), southern elephant seals (*Mirounga leonina*), Weddell seals (*Leptonychotes weddellii*), leopard seals (*Hydrurga leptonyx*) and crabeater seals (*Lobodon carcinophagus*). Of these fur seals are the only confirmed breeders on the island, although small numbers of elephant seals probably breed on the island early in the spring. Nearly 600 fur seal pups were born in the Seal Islands group in December 1989, with approximately half of these born on Seal Island and half on Large Leap Island (Figure 2). The fur seal pupping and pup-rearing period at Seal Island extends from late November to early April. During the austral summer, elephant seals are ashore during their moult period; Weddell seals regularly haul out on the beaches; crabeater seals are infrequent visitors; and leopard seals are common both ashore and in coastal waters where they prey on penguins and fur seal pups.

C. CEMP STUDIES

1. The presence at the Seal Islands of both Antarctic fur seal and penguin breeding colonies, as well as significant commercial krill fisheries within the foraging range of these species, make this an excellent site for inclusion in the CEMP network of sites established to help meet CCAMLR objectives.
2. The following species are of particular interest for CEMP routine monitoring and directed research at this site: Antarctic fur seals, chinstrap penguins, macaroni penguins and cape petrels.

3. Longterm studies are underway to assess and monitor the feeding ecology, growth and condition, reproductive success, behaviour, vital rates, demography and abundance of pinnipeds and seabirds that breed in the area. Since an initial survey and pilot field program at Seal Island during the 1986/87 austral summer, United States scientists have conducted monitoring and directed research annually. It is intended that this program will continue for at least another 10 years (through 2000).
4. A program of routine monitoring using CEMP Standard Methods is being carried out by US scientists. Penguin parameters being monitored include trends in population size (A3), demography (A4), duration of foraging trips (A5), breeding success (A6), chick fledging weight (A7), chick diet (A8) and breeding chronology (A9). Fur seal parameters being monitored include duration of foraging/attendance cycles (C1) and pup growth rates (C2). As new CEMP Standard Methods are approved, additional pinniped and seabird parameters may be included in future monitoring efforts.
5. Directed research relevant to CEMP is also being undertaken on fur seals and seabirds. Research topics include foraging behaviour, foraging areas, energy requirements, seasonal movements, penguin chick growth rates and relationships between monitored parameters and the physical environment.

D. PROTECTION MEASURES

1. Prohibited activities and temporal constraints:

- (a) Throughout the site at all times of the year. Any activities which damage, interfere with, or adversely affect the planned CEMP monitoring and directed research at this site are not permitted.
- (b) Throughout the site at all times of the year. Any non-CEMP activities are not permitted which result in:
 - (i) killing, injuring, or disturbing pinnipeds or seabirds;
 - (ii) damaging or destroying pinniped or seabird breeding areas; or
 - (iii) damaging or destroying the access of pinnipeds or seabirds to their breeding areas.
- (c) Throughout the site at defined parts of the year. Human occupation of the site during the period 1 June to 31 August is not permitted except under emergency circumstances.
- (d) In parts of the site at all times of the year. Building structures within the boundaries of any pinniped or seabird colony is not permitted. For this purpose, colonies are defined as the specific locations where pinniped pups are born or where seabird nests are built. This prohibition does not pertain to placing markers (e.g., numbered stakes, posts, etc.) or situating research equipment in colonies as may be required to facilitate scientific research.
- (e) In parts of the site at defined parts of the year. Entry into any pinniped or seabird colonies during the period 1 September to 31 May is not permitted except in association with CEMP activities.

2. Prohibitions regarding access to and movement within or over the site:

- (a) Entry of the site at locations where pinniped or seabird colonies are present in the immediate vicinity is not permitted.
- (b) Aircraft overflight of the site is not permitted at altitudes less than 1 000 m unless the proposed flight plan has been reviewed in advance by the organisation(s) conducting CEMP activities at the site (see Section E.2).
- (c) The use of land vehicles is not permitted except to transport equipment and supplies to and from the field camp.
- (d) Pedestrians are not permitted to walk through areas used regularly by pinnipeds and seabirds (i.e., colonies, resting areas, pathways) or to disturb other fauna or flora, except as necessary to conduct authorised research.

3. Prohibitions regarding structures:

- (a) Building structures other than those directly supporting CEMP directed scientific research and monitoring activities or to house personnel and/or their equipment is not permitted.
- (b) Human occupation of these structures is not permitted during the period 1 June to 31 August (see Section D.1(c)).
- (c) New structures are not permitted to be built within the site unless the proposed plans have been reviewed in advance by the organisation(s) conducting CEMP activities at the site (see Section E.2).

4. Prohibitions regarding waste disposal:

- (a) Landfill disposal of non-biodegradable materials is not permitted; non-biodegradable materials brought to the site are to be removed when no longer in use.
- (b) Disposal of waste fuels, volatile liquids and scientific chemicals within the site is not permitted; these materials are to be removed from the site for proper disposal elsewhere.
- (c) The burning of any non-organic materials or the open burning of any materials is not permitted (except for properly used fuels for heating, lighting, cooking or electricity).

5. Prohibitions regarding the Antarctic Treaty System:

It is not permitted to undertake any activities in the Seal Islands CEMP Protected Area which are not in compliance with the provisions of: (i) the Antarctic Treaty, including the Agreed Measures for the Conservation of Antarctic Fauna and Flora; (ii) the Convention on the Conservation of Antarctic Seals; and (iii) the Convention on the Conservation of Antarctic Marine Living Resources.

E. COMMUNICATIONS INFORMATION

1. Organisation(s) appointing national representatives to the Commission:

Bureau of Oceans and International Environmental and Scientific Affairs
US Department of State
Washington, DC 20520 USA

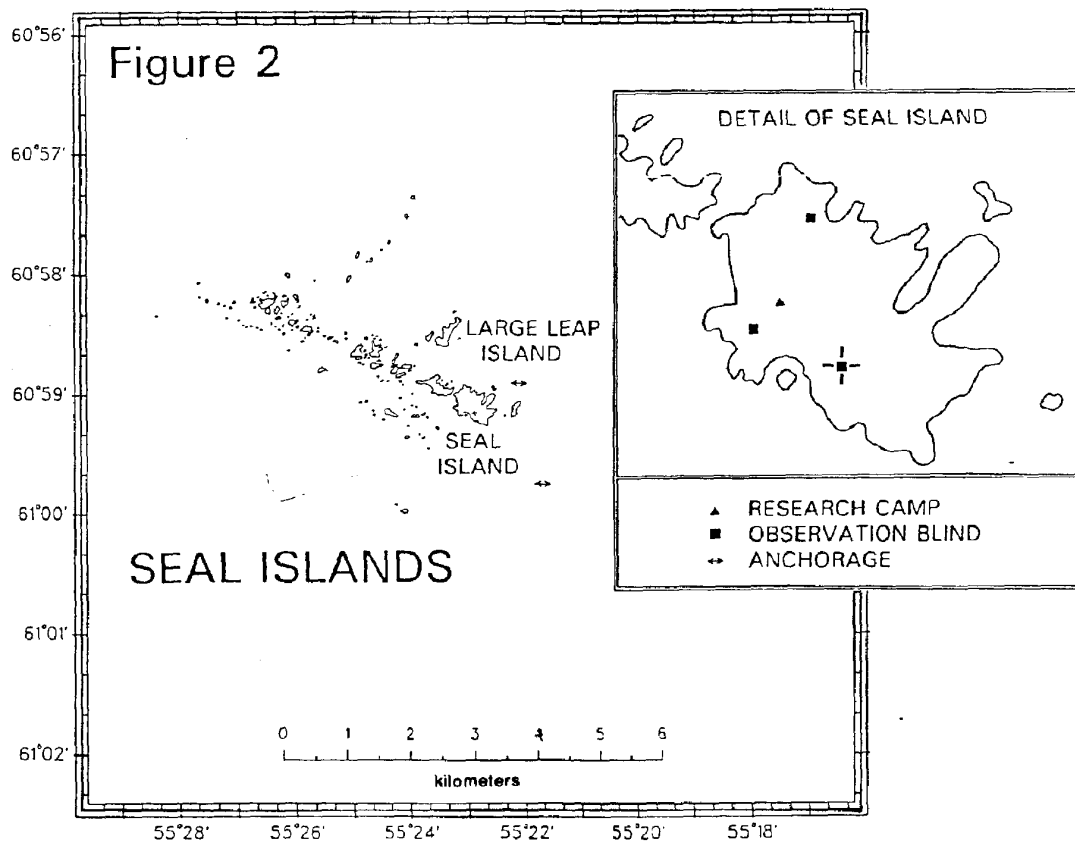
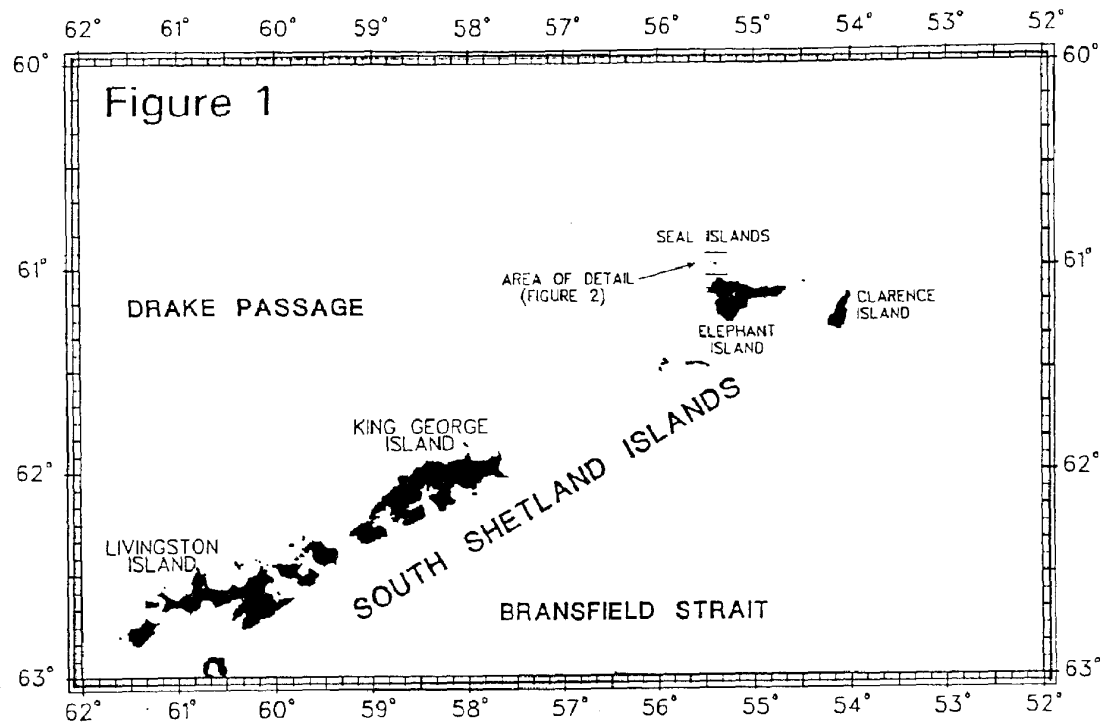
Telephone: (202) 647-3262
Facsimile: (202) 647-1106
Telex: not available

2. Organisation(s) conducting CEMP studies at the site:

US Antarctic Marine Living Resources Program
Southwest Fisheries Science Centre
National Marine Fisheries Service, NOAA
PO Box 271
La Jolla, CA 92038 USA

BIBLIOGRAPHY

- BENGTSON, J.L., L.M. FERM, T.J. HARKONEN and B.S. STEWART. 1990. Abundance of Antarctic fur seals in the South Shetland Islands, Antarctica, during the 1986/87 austral summer. In: KERRY, K. and G. HEMPEL (Eds). *Antarctic Ecosystems, Proceedings of the Fifth SCAR Symposium on Antarctic Biology*. Springer-Verlag: Berlin. 265-270 pp.
- O'GORMAN, F.A. 1961. Fur seals breeding in the Falkland Island Dependencies. *Nature, Lond.*, 192: 914-916.
- O'GORMAN, F.A. 1963. The return of the Antarctic fur seal. *New Scientist*, 20: 374-376.
- SHUFORD, W.D. and L.B. SPEAR. 1987. Surveys of breeding penguins and other seabirds in the South Shetland Islands, Antarctica, January-February 1987. Report of the US National Marine Fisheries Service.
- STACKPOLE, E.A. 1955. The voyage of the Huron and the Huntress: the American sealers and the discovery of the continent of Antarctic. *The Marine Historical Association, Inc., Mystic, Conn.*, 29: 1-86.



CODE OF CONDUCT FOR THE SEAL ISLANDS, ANTARCTICA

Investigators should take all reasonable steps to ensure that their activities, both in implementing their scientific protocols as well as in maintaining a field camp, do not unduly harm or alter the natural behaviour and ecology of wildlife in the Seal Islands. Wherever possible, actions should be taken to minimise disturbance of the natural environment.

Capturing, handling, killing, photographing and taking eggs, blood or other biological samples from pinnipeds and seabirds should be limited to that necessary to provide essential background information or to characterise 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: (i) the Antarctic Treaty, including the Agreed Measures for the Conservation of Antarctic Fauna and Flora; (ii) the Convention for the Conservation of Antarctic Seals; and (iii) the Convention on the Conservation of Antarctic Marine Living Resources.

Geological and other studies which can be done inside of the pinniped and seabird breeding seasons in such a way as they do not damage or destroy pinniped or seabird breeding areas, or access to those areas, would be permitted as long as they 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 which do not result in killing, injuring or disturbing pinnipeds or seabirds, or damage or destroy pinnipeds or seabird breeding areas or access to those areas.

**BACKGROUND INFORMATION CONCERNING THE SEAL ISLANDS,
ANTARCTICA**

Prior to the discovery of the South Shetland Islands in 1819, there were substantial colonies of fur seals, and possible elephant seals, throughout the archipelago. Commercial exploitation began shortly after discovery and, by the mid-1820s, fur seal breeding colonies had been completely destroyed throughout the South Shetland Islands (Stackpole, 1955; O’Gorman, 1963). Antarctic fur seals were not observed again in the South Shetland Islands until 1958, when a small colony was discovered at Cape Shirreff, Livingston Island (O’Gorman, 1961). The original colonisers probably came from South Georgia where surviving fur seal colonies had substantially recovered by the early 1950s. At present, the fur seal rookeries in the Seal Islands group are the second largest in the South Shetland Islands, with the largest rookeries being at Cape Shirreff and Telmo Islands, Livingston Island (Bengtson *et al.*, 1990).

During the past three decades, the population of Antarctic fur seals in the South Shetland Islands grew to a level at which tagging or other research could be undertaken at selected locations without threatening the population’s continued existence and growth.

During the 1986/87 austral summer, researchers from the United States surveyed areas on the South Shetland Islands and the Antarctic Peninsula to identify fur seal and penguin breeding colonies that might be suitable for inclusion in the network of CEMP monitoring sites being established. The results of that survey (Shuford and Spear, 1987; Bengtson *et al.*, 1990), suggested that the Seal Island area would be an excellent site for longterm monitoring of fur seal and penguin colonies that might be affected by fisheries in the Antarctic Peninsula Integrated Study Region.

To safely and effectively carry out a longterm monitoring program, a temporary, multi-year field camp for a small group of researchers was established on Seal Island. This camp has been occupied annually by US scientists during the austral summer (approximately December to February) since 1986/87.

To protect the site from damage or disturbance that could adversely affect the longterm CEMP monitoring and directed research currently being conducted and planned for the future, in 1991 the Seal Islands were proposed as a CEMP Protected Area.