

CONSERVATION MEASURE 91-03 (2000)
Protection of the Seal Islands CEMP Site

Species	all
Area	48.1

1. The Commission noted that a program of long-term studies is being undertaken at Seal Islands, South Shetland Islands, as part of the CCAMLR Ecosystem Monitoring Program (CEMP). Recognising that these studies may be vulnerable to accidental or wilful interference, the Commission expressed its concern that this CEMP site, the scientific investigations, and the Antarctic marine living resources therein be protected.
2. Therefore, the Commission considers it appropriate to accord protection to the Seal Islands CEMP site, as defined in the Seal Islands management plan.
3. Members are required to comply with the provisions of the Seal Islands CEMP site management plan, which is recorded in Annex 91-03/A.
4. In accordance with Article X, the Commission shall draw this conservation measure to the attention of any State that is not a Party to the Convention and whose nationals or vessels are present in the Convention Area.

**MANAGEMENT PLAN FOR THE PROTECTION OF SEAL ISLANDS,
SOUTH SHETLAND ISLANDS, AS A SITE INCLUDED IN THE
CCAMLR ECOSYSTEM MONITORING PROGRAM²**

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 '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 1997, 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).

² As adopted at CCAMLR-XVI (paragraphs 9.67 and 9.68), and revised at CCAMLR-XIX (paragraph 9.9).

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 March 1999 no structures remained on Seal Island. Between 1996 and 1999, all structures were dismantled and retrograded from the island.
- (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. However in some years this site is not occupied. 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: Seven species of birds are known to breed on the Seal Islands: chinstrap penguins (*Pygoscelis antarctica*), macaroni penguins (*Eudyptes chrysolophus*), Cape petrels (*Daption capense*), Wilson's storm petrels (*Oceanites oceanicus*), southern giant petrels (*Macronectes giganteus*), southern black-backed gulls (*Larus dominicanus*) and American Sheathbills (*Chionis 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 to 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 chrysocome*) are among the avian visitors to the area.
5. Pinnipeds: 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. During the last few years approximately 600 fur seal pups have been born in the Seal Islands group, 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. However, recent geological assessments of Seal Island have indicated that soil composition of cliff areas above and around the camp site are unstable and might result in catastrophic failure during periods of intense rainfall. Therefore, in 1994 the AMLR Program terminated its research at Seal Island and between 1996 and 1999 dismantled and retrograded all camp and observation blind structures.
2. No CEMP studies are being conducted at Seal Island and the USA has no plans to occupy the site in the future except to conduct seal and bird censuses.

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 CEMP monitoring and directed research which potentially could be conducted 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 2 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) 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).
- (b) 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.
- (c) Human occupation of these structures is not permitted during the period 1 June to 31 August (see Section D.1(c)).

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: +1 (202) 647 3262

Facsimile: +1 (202) 647 1106

2. Organisation(s) which potentially might conduct CEMP studies at the site:

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

Telephone: +1 (858) 546 5601

Facsimile: +1 (858) 546 5608

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 USA 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 long-term 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 long-term monitoring program, a temporary, multi-year field camp for a small group of researchers was established on Seal Island. This camp was occupied annually by US scientists during the austral summer (approximately December to February) between 1986/87 and 1993/94. Because of the geological assessment that the cliff areas above and around the camp site are unstable and might result in catastrophic failure during periods of intense rainfall, the camp was closed. Between 1995/96 and 1998/99 all buildings, equipment, and supplies were retrograded from the island.

In 1991, to protect the site from damage or disturbance that could adversely affect the long-term CEMP monitoring and directed research which were being conducted and planned for the future, the Seal Islands were proposed as a CEMP Protected Area. At its 1997 meeting (SC-CAMLR-XVI, paragraphs 4.17 to 4.20), the CCAMLR Scientific Committee reviewed the status of the Seal Island CEMP site management plan. Based on the expectation that research at the site would end, the Scientific Committee agreed that site protection would be extended for five years.

BIBLIOGRAPHY

- Bengtson, J.L., L.M. Ferm, T.J. Härkönen 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.
- 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.

