

Antarctic Specially Protected Area No. 142 (Site of Special Scientific Interest No. 23)
Svarthamaren Mountain, Mulig-Hofmann Mountains, Queen Maud Land.

1. Description of values to be protected

The Area was originally designated in Recommendation XIV-5 (1987, SSSI No. 23) after a proposal by Norway based on the following factors, which still give relevant grounds for designation:

- the fact that the colony of Antarctic petrel (*Thalassoica antarctica*) is the largest known inland seabird colony on the Antarctic continent
- the fact that the colony constitutes a large proportion of the known world population of Antarctic petrel
- the fact that the colony is an exceptional "natural research laboratory" providing for research on the Antarctic petrel, snow petrel (*Pagodroma nivea*) and south polar skua (*Catharacta maccormicki*), and their adaptation to breeding in the inland/interior of Antarctica

2. Aim and objectives

The aim of managing Svarthamaren is to:

- avoid human induced changes to the population structure, composition and size of the seabird colonies present at the site
- prevent unnecessary disturbance to the seabird colonies, as well as to the surrounding environment
- allow for undisturbed research on the adaptations of the Antarctic petrel, snow petrel and south polar skua to the inland conditions in Antarctica (*Primary Research*)
- allow access for other scientific reasons where the investigations will not damage the objectives of the bird research

The focus of the Primary Research in Svarthamaren SSSI is as follows:

- *Monitoring of the population size*
- Monitoring of the annual variation in hatching success and adult survival rates in the petrel colonies in order to estimate changes in the size and structure of the colony.
- Experimental studies in order to increase the understanding of the mechanisms that regulate nesting success and survival rates, and the adaptation of the Antarctic petrel to the extreme environmental conditions in Antarctica.

3. Management activities

Management activities at Svarthamaren shall:

- ensure that the seabird colonies are adequately monitored, to the maximum extent possible by non-invasive methods.
- allow erection of signs/posters, border markers, etc. in connection to the site, and ensure that these are serviced and maintained in good condition

- include visits as necessary to assess whether the Area continues to serve the purposes for which it was designated and to ensure management and maintenance measures are adequate. Any direct intervention management activity in the area must be subject to an environmental impact assessment before any decision to proceed is taken.

4. Period of Designation

Designated for an indefinite period.

5. Maps and Illustrations

Map A: Dronning Maud Land (showing location of Map B). Map specifications:

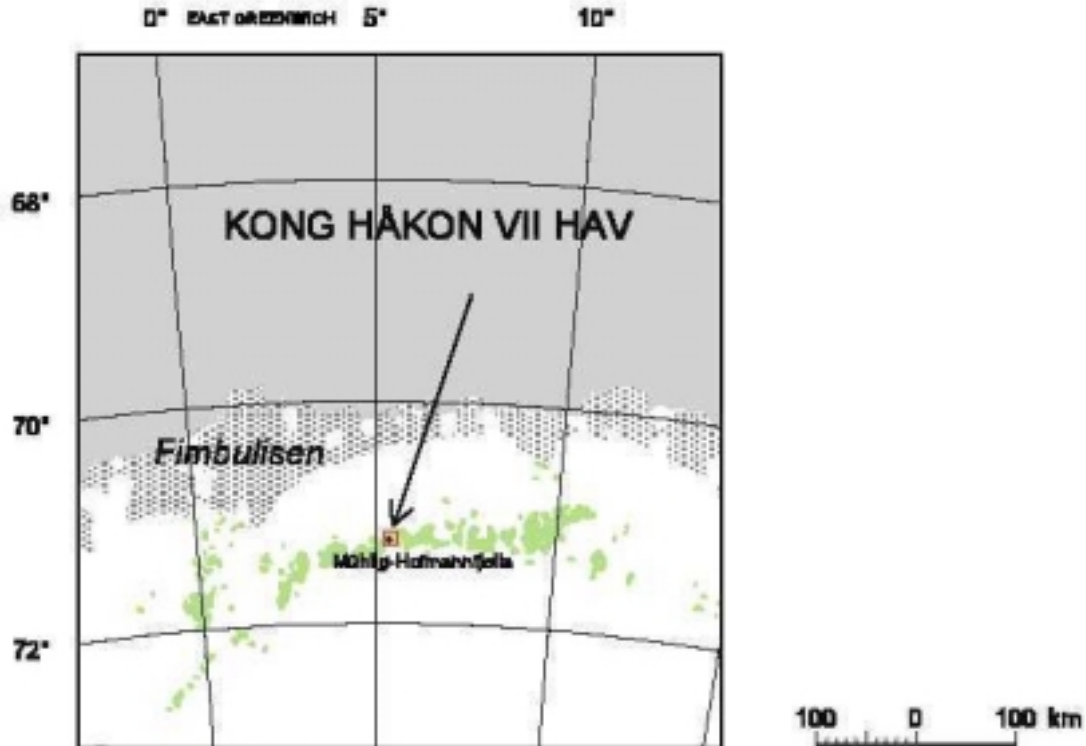
Projection: Lambert Conformal Conic;

Standard parallels: SP1 70° S, SP2 73°S

Central Meridian: 5°E

Latitude of origin: 71°30'S

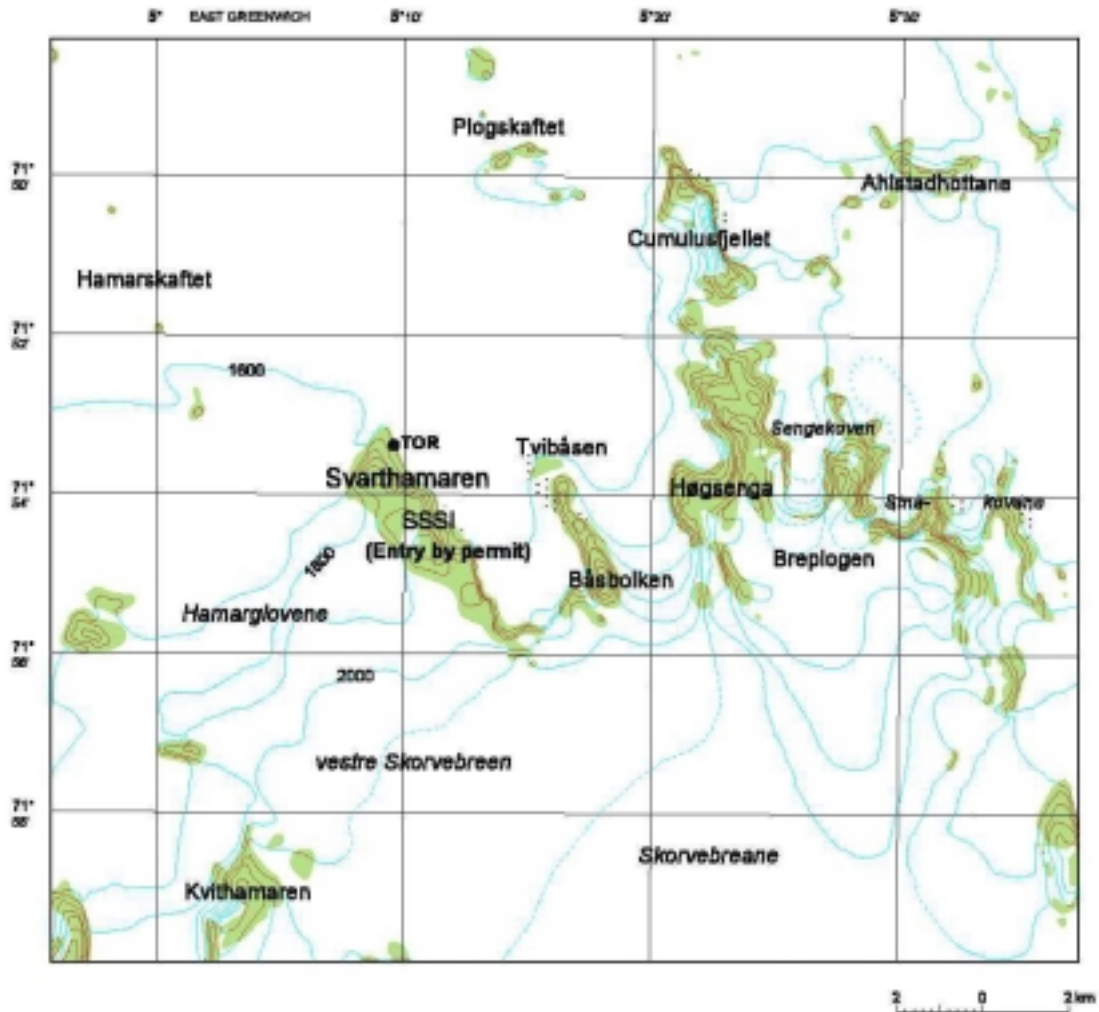
Spheroid: WGS84



ASPA 142

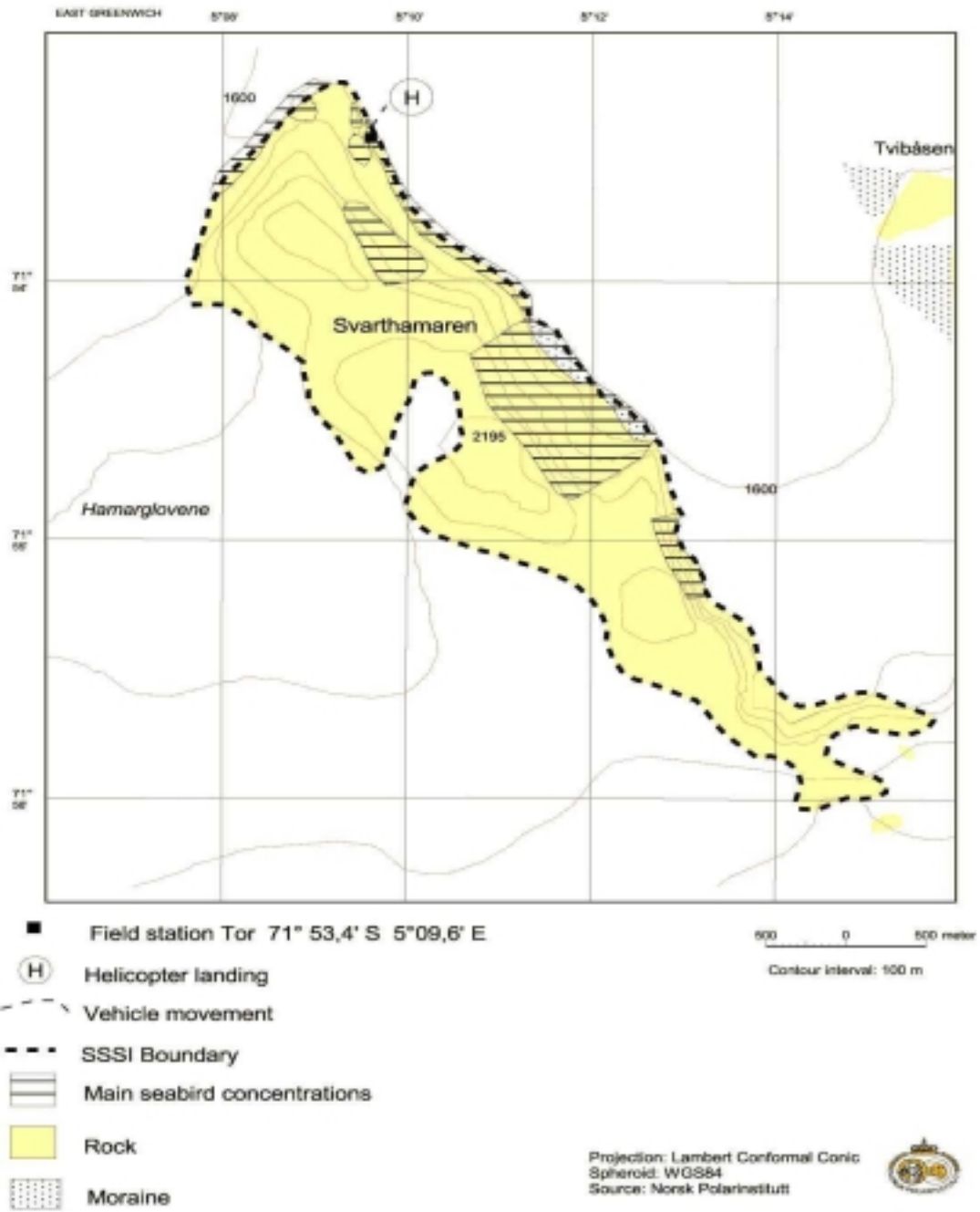
Map A*

Map B: Svarthamaren and surroundings (showing location of Svarthamaren SSSI).
Map specifications are the same as for Map A.



ASPA 142
Map B*

Map C: Site of Special Scientific Interest No. 23, protected area topographic map.
 Map specifications are the same as for Map A.



ASPA 142

Map C*

6. Description of Area

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

The Svarthamaren SSSI is situated in Mühlig-Hoffmannfjella, Dronning Maud Land, stretching from approx. 71° 33' 17" S, 5°09' 12" E the north-west to approx. 71°55'58"S, 5°15' 12" E in the south-east. The distance from the ice front is about 200 km. The Area covers approximately 6.4 km², and consists of the ice-free areas of the Svarthamaren nunatak, including the areas in the immediate vicinity of the ice-free areas naturally belonging to the nunatak (i.e. rocks). The Area is shown in Map B and C.

The Norwegian field station Tor is located in the Svarthamaren nunatak at lat. 71°53'S, long. 5°10'E. The station, including a 10 metre buffer zone around the station buildings, is excluded from the Svarthamaren Site of Special Scientific Interest. Access to the station is by the shortest route from the ice.

The main rock types in the Area are coarse and medium grained charnockites with small amounts of xenoliths. Included in the charnockitoids are banded gneisses, amphibolites and granites of the amphibolite facies mineralogy. The slopes are covered by decomposed feldspathic sand. The north-eastern side of the Svarthamaren nunatak is dominated by scree slopes (slope 31°-34°), extending 240 metres upwards from the base of the mountain at about 1600 metres above sea level. The major features of this area are two rock amphitheatres inhabited by breeding Antarctic petrels. It is this area which makes up the core of the protected site.

No continuous weather observations have been carried through in the Area, but prevalent air temperature has been observed to range between -5° and -15°C in January, with somewhat lower minimum temperatures in February. The flora and vegetation at Svarthamaren are sparse compared with other areas in Mühlig-Hofmannfjella and Gjelsvikfjella to the west of the site. 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 km 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 anghardi*, *Tydeus erebus*) protozoan, nematodes and rotifers. A shallow pond measuring about 20 x 30 m, lying below the middle and largest bird sub-colony at Svarthamaren, is heavily polluted by petrel carcasses, and supports a strong growth of a yellowish-green unicellular algae, *Chlamydomonas*, sp. No aquatic invertebrates have yet been recorded.

The colonies of breeding seabirds are the most conspicuous biological element in the Area. The north-eastern slopes of Svarthamaren are occupied by a densely populated colony of Antarctic petrels (*Thalassoica antarctica*) divided into three separate sub-colonies. The total number of breeding pairs is estimated to be approximately 250,000

pairs. In addition, 500-1000 pairs of snow petrels (*Pagodroma nivea*) and approximately 80 pairs of south polar skuas (*Catharacta maccormicki*) breed in the area. The two main colonies of Antarctic petrels are situated in the two rocky amphitheatres. The main colonies of snow petrels are located in separate parts of the scree-slope that are characterised by larger rocks.

The south polar skuas nest on the narrow strip of flat, snow-free ground below the scree-slopes. The main concentrations of seabirds are indicated on Map C. Readers should, however, be aware that birds are also found in other areas than these densely populated areas.

6 (ii). Restricted zones within the Area

None

6 (iii). Location of structures within the Area

There are no structures within the Area.

The Norwegian field station Tor is located on the Svarthamaren nunatak, at 71°53.4'S, 5°09.6'E. The station, including a 10 meter buffer zone around the station buildings, is excluded from the Area. Access to the station is by the shortest route from the ice.

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

None

7. Permit Conditions

Permits may be issued only by appropriate national authorities as designated under Annex V, Article 7 of the Protocol on Environmental Protection to the Antarctic Treaty. Conditions for issuing a permit to enter the Area are that:

- the actions permitted are in accordance with this Management Plan
- the permit, or a copy, shall be carried within the area
- any permit issued shall be valid for a stated period
- a visit report is supplied to the authority named in the permit

7 (i) Access to and movement within the Area

Access to the area is restricted by the following conditions:

- No pedestrian routes are designated, but persons on foot shall at all times avoid disturbances to birds, and as far as possible also to the sparse vegetation cover in the Area.
- Vehicles should not enter the site.
- No flying of helicopters or other aircraft over the Area is allowed.
- Helicopter landings are not allowed within the boundaries of the SSSI. Landings associated with activities at the field station Tor should preferably take place at the north-eastern tip of the Svarthamaren nunatak (as marked on map C).

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

The following activities may be conducted within the Area in accordance with permit:

- Primary biological research programs for which the area was designated.
- Other research programs of a compelling scientific nature that will not interfere with the bird research in the Area.

7 (iii) Installation, modification or removal of structures

No structures are to be erected in the Area, or scientific equipment installed, except for equipment essential for scientific or management activities as specified in a permit, or for modification of the field station, also as specified in a permit.

7 (iv) Location of field camps

No field camps should be established in the Area. The field station Tor should only be used with permission from the Norwegian Polar Institute.

7 (v) Restrictions on materials and organisms which may be brought into the Area

- No living animals or plant material shall be deliberately introduced into the Area.
- No poultry products, including food products containing uncooked dried eggs, shall be taken into the Area.
- No herbicides or pesticides shall be brought into the Area.
- Any other chemicals (including fuel), which may be introduced for a compelling scientific purpose specified in the permit, shall be removed from the Area before or at the conclusion of the activity for which the permit was granted.
- All materials introduced shall be for a stated period, shall be removed at or before the conclusion of that stated period, and shall be stored and handled so that risk of their introduction into the environment is minimised.

7 (vi). Taking or harmful interference with native flora and fauna

Taking or harmful interference with native flora and fauna is prohibited, except in accordance with a permit issued in accordance with Annex II to the Protocol of Environmental Protection to the Antarctic Treaty. Where taking or harmful interference with animals is involved, SCAR Code of Conduct for Use of Animals for Scientific Purposes in Antarctica should be used as a minimum standard.

It is recommended that those responsible for the primary research in the Area should be consulted before a permit is granted for taking of birds for purposes not associated with the primary research. Studies requiring taking of birds for other purposes should be planned and carried through in such a manner that it will not interfere with the objectives of the bird research in the Area.

7 (vii). Collection and removal of anything not brought into the Area by the Permit holder

Material may be collected or removed from the Area only in accordance with a permit, except that debris of man-made origin should be removed and that dead specimens of fauna may be removed for laboratory examination.

7 (viii) Disposal of waste

All wastes is to be removed from the area.

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

Permits may be granted to enter the Area to carry out biological monitoring and site inspection activities which may involve the collection of small amounts of plant material or small numbers of animals for analysis or audit, to erect or maintain notice boards, to maintain the field station, or to undertake protective measures.

7 (x) Requirements for reports

Parties should ensure that the principal holder of each permit issued submit to the appropriate authority a report describing the activities undertaken. Such reports should include, as appropriate, the information identified in the Visit Report form suggested by SCAR. Parties should maintain a record of such activities and, in the Annual Exchange of Information, should provide summary descriptions of activities conducted by persons subject to their jurisdiction, which should be in sufficient detail to allow evaluation of the effectiveness of the Management Plan. Parties should, wherever possible, deposit originals or copies of such original reports in a publicly accessible archive to maintain a record of usage, to be used both in any review of the management plan and in organising the scientific use of the Area.