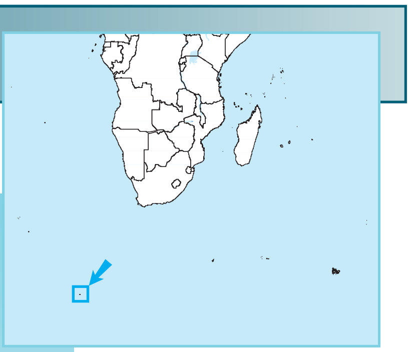
BOUVETØYA (BOUVET ISLAND)

ONNO HUYSER



Macaroni Penguin
Eudyptes chrysolophus
and Lesser Sheathbill
Chionis minor.
(ILLUSTRATION: DAVE SHOWLER)

GENERAL INTRODUCTION

Bouvetøya or Bouvet Island is a small, uninhabited island situated in the south Atlantic Ocean, c.2,600 km south-west of South Africa and 1,600 km from the Antarctic continent. This isolated island, 9.5 km long and 7 km wide, is the southernmost island on the extensive Mid-Atlantic Ridge, and is thus of volcanic origin. Although Bouvetøya was discovered in 1739, the island was only sporadically visited, mainly by sealers, during the following two centuries. The *Norvegia* expedition of 1927–1928 claimed Bouvetøya for Norway, and in 1930 the island officially became a Norwegian dependency by law.

Bouvetøya is positioned in the cold waters south of the Antarctic Polar Frontal Zone. With a mean annual air temperature range at sea-level of -2.7–1.6°C, the polar marine climate of Bouvetøya is characterized by small daily and seasonal temperature variations. An automatic weather station has been in place at Nyrøysa in the north-west of the island since 1977.

The Norwegian Polar Institute is the environmental administrative authority for Bouvetøya. The island and surrounding territorial waters of four nautical miles was declared a Nature Reserve by Royal Decree in 1971. The pertinent regulations protect the landscape of the reserve from physical encroachment and disturbance, and protect the flora and fauna against unnecessary disturbance (although fur seals *Arctocephalus gazella* have been protected since 1935). Additionally, species alien to the Reserve are not to be introduced, terrestrial and airborne landings are prohibited without permission, and disposal of waste on the island is prohibited.

Only seven species of free-living terrestrial arthropods have been recorded at Bouvetøya. Three of these are springtails (Collembola) and four are mites (Acari). Oligochaete worms (Annelida) are common under rocks in the Nyrøysa colony of *Arctocephalus gazella*. There are no records of introduced flora or fauna occurring at Bouvetøya. With the island only slightly modified and remaining in essentially a natural state, the conservation value of Bouvetøya is high.

ACKNOWLEDGEMENTS

Kjell Isaksen and Fridtjof Mehlum kindly commented on and corrected earlier drafts. John Cooper kindly assisted with locating early, and obscure, references, and also commented on various drafts.

GLOSSARY

nunatak a rocky summit or range that stands above a surrounding ice-sheet.

Map 1. Location and size of Important Bird Areas in Bouvetøya.

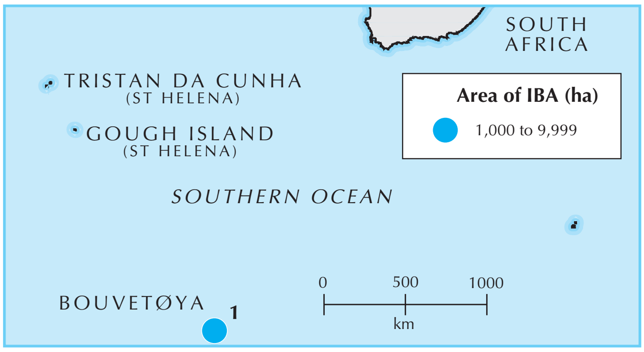


Table 1. Summary of Important Bird Areas in Bouvetøya. 1 IBA covering c.50 km²

IBA code	Site name	Administrative region	Criteria (see p. 11) A4ii	 A4iii
BV001	Bouvetøya (Bouvet Island) Nature Reserve	Bouvet Island	✓	✓
	Total number of IBAs qualifying:		1	1

SITE ACCOUNTS

Bouvetøya (Bouvet Island) Nature Reserve

BV001

Admin region Bouvet Island
Coordinates 54°25′S 03°20′E — A4ii, A4iii
Area c.5,000 ha **Altitude** 0–780 m — Nature Reserve

Site description

Bouvetøya rises to 780 m a.s.l. (Olavtoppen) and is bounded by steep slopes on the northern, western and south-western sides, with narrow beaches. Permanent ice covers 93% of the island, leaving only a few ice-free areas along the coast. The largest such area is Nyrøysa, which was formed between 1955 and 1958, probably by a large landslide. The Nyrøysa platform is c.700 m long with an average height of between 25 and 40 m. The surface is irregular, consisting of jumbled boulders, lava blocks and gravel. Inland, the platform is bounded by scree slopes created by rockfalls from the high (c.150 to 350 m) cliffs and, at the southern and northern ends, by the shingle-beaches of Westwindstranda. Abrasion by the action of the sea on the seaward cliff of Nyrøysa above Westwindstranda is pronounced and ongoing, with an estimated 50–100 m lost from 1966–1979, and 6–9 m disappearing in places from 1996–1997 to 1998–1999. All recent research expeditions to Bouvetøya have been based at Nyrøysa, since it is the most accessible part of the island and supports breeding populations of seabirds and seals.

The vegetation of Bouvetøya is entirely non-vascular, and consists of ascomycete fungi and lichens, and mosses and liverworts (Bryophyta). Algae are also represented. Engelskjøn (1981) classified the vegetation of Bouvetøya into 20 communities, including those of snow algae on glaciers and two of marine algae in the littoral zone. It is of typical maritime Antarctic composition and structure, and bears phytogeographical affinities with the vegetation of more westerly peri-Antarctic archipelagos such as the South Sandwich and South Shetland Islands. Owing to the extensive ice-covering of Bouvetøya, vegetation is largely restricted to the coastal cliffs, capes and boulderine beaches, and the few ice-free nunatak ridges and sections of summit plateau. However, most ice-free areas are so steep and exposed to avalanches that only crustose lichen and algal formations are able to persist. Five species of moss, five lichens, one fungus and 20 algae have been recorded at Nyrøysa. Here, the manuring from seabirds and seals promotes development of algal *Prasiola* and *Ulothrix* communities but, where trampling from penguins and seals occurs, no macro-vegetation is able to exist.

Birds

See Box for key species. To date, 12 bird species—all seabirds—have been recorded breeding on Bouvetøya. These are *Pygoscelis antarctica*, *Eudyptes chrysolophus*, *Fulmarus glacialoides*, *Daption capense*, *Pachyptila desolata*, *Oceanites oceanicus*, *Fregetta tropica* and *Catharacta antarctica lonnbergi*, together with *Pygoscelis adeliae*, *Macronectes giganteus*, *Pagodroma nivea* and *Sterna vittata* for which, however, there are no recent confirmed breeding records. The infrequency of surveys, however, means that it is possible that these latter species continue to breed undetected, and also hampers whole-island population estimates of confirmed breeding species. In addition, *Pachyptila belcheri* is currently thought to breed at Nyrøysa, and *Larus dominicanus* has been suspected of breeding in the past.

Up to 100,000 *Fulmarus glacialoides* are estimated to breed on cliffs at, in particular, Kapp Valdivia, Kapp Circoncision, Nyrøysa, and the south-west part of the island from Norvegiaodden to Rustadkollen. Nyrøysa alone supports up to 1,000 breeding individuals of *Fregetta tropica*. Other than at Nyrøysa, the major penguin colonies on Bouvetøya are situated at Posadowskybreen, Kapp Circoncision, Norvegiaodden and opposite Larsøya (a small rocky offshore islet situated to the south-west of Bouvetøya). The Kapp Circoncision colony is the largest, with an estimated 25,000 individuals recorded in 1989–1990. In 1978–1979 there were an estimated 117,000 penguins on Bouvetøya, the majority being *Eudyptes chrysolophus*, with *Pygoscelis antarctica* making up the bulk of the remainder; in 1989–1990 the estimate was 62,125 individuals.

Nineteen species have been recorded as summer visitors to the island and its nearby waters: *Aptenodytes patagonicus* (moulters), *Diomedea exulans*, *D. melanophris*, *D. chrysostoma*, *D. chlororhynchos*, *Phoebetria fusca*, *P. palpebrata*, *Macronectes halli*, *Thalassoica antarctica*, *Halobaena caerulea*, *Pterodroma mollis*, *P. brevirostris*, *P. lessonii*, *Pachyptila turtur*, *Procellaria aequinoctialis*, *Puffinus gravis*, *Pelecanoides urinatrix*, *Catharacta maccormicki* and *Stercorarius parasiticus*.

Key species

		Breeding (pairs)	Non-breeding
A4ii			
	Fulmarus glacialoides	20,000+ (1998–1999)	—
	Fregetta tropica	1,000+ (1998–1999)	—
A4iii	More than 10,000 pairs of seabirds breed regularly at this site.		

Other threatened/endemic wildlife

No recognized globally threatened or endemic animal taxa occur at Bouvetøya, but at least three endemic ascomycete fungus species have been recorded, as have three lichen species, including an endemic genus *Bouvetiella*. Other plant and invertebrate species are restricted to a few other Antarctic sites (e.g. South Georgia, South Orkney Islands) and thus can be considered near-endemics. Breeding by the seal *Mirounga leonina* at Bouvetøya was reconfirmed in 1998–1999 for the first time in many years; 88 weaned pups were counted at Nyrøysa in December 1998. In January 1999 there were an estimated 13,010 live pups of the seal *Arctocephalus gazella* at Nyrøysa. The whale *Megaptera novaeangliae* (VU) was frequently sighted from Nyrøysa in the summers of 1996–1997 and 1998–1999, and *Orcinus orca* (LR/cd) has been recorded previously.

Conservation issues

The whole island is a Nature Reserve. In 1997 Nyrøysa, incorporating the platform and northern and southern beaches of Westwindstranda, was declared a CCAMLR Ecosystem Monitoring Programme (or CEMP) site. This is as part of the CCAMLR (Commission for the Conservation of Antarctic Marine Living Resources) objective of establishing a network of sites throughout the southern ocean for conducting long-term monitoring studies of the foraging ecology, demography and population trends of vertebrate predator populations. A draft management plan exists for Nyrøysa, but is not yet in force. Norwegian and South African biologists have cooperated in three CEMP expeditions to date, in 1996–1997, 1998–1999 and 2000–2001, when monitoring of *Eudyptes chrysolophus*, *Pygoscelis antarctica* and *Arctocephalus gazella* was undertaken.

Surveys at Nyrøysa indicate an annual decline of 4.8% in penguin numbers between 1979–1980 and 1989–1990, while more recent data suggest an accelerated decline since then. Infrequent aerial surveys also suggest that declines may have continued elsewhere on the island in the 1990s. A contributing factor to decreases at Nyrøysa has been the expansion, in recent years, of the population of fur seals *Arctocephalus gazella*. Fur seals impact upon penguins in at least three ways: interference competition on land for breeding territories, incidental injury and mortality in disputes over breeding territories, and predation at sea. However, inferred long-term declines elsewhere on the island, where fur seals do not breed, suggest that larger-scale impacts such as oceanographic change or competition for food might also be important contributory factors. Expansion of the fur-seal colony at Nyrøysa has also resulted in destruction of *Brachythecium* moss hummocks and the cessation of breeding by *Macronectes giganteus*.

Since Nyrøysa is one of the most important areas for breeding birds on Bouvetøya, the continuing loss of the seaward cliff is of concern. Should the platform retreat until nothing but the inland scree slope remains, it is conceivable that most, if not all, breeding by *Pygoscelis antarctica*, *Eudyptes chrysolophus, Pachyptila desolata*, *P. belcheri*, *Oceanites oceanicus*, *Fregetta tropica* and *Catharacta antarctica lonnbergi* will cease at Nyrøysa.

A source of unprecedented concern for seabird populations throughout the southern ocean is the current expansion of commercial longline fisheries. CCAMLR approved a new longline fishery for toothfish *Dissostichus* spp. in CCAMLR Statistical Subarea 48.6, into which Bouvetøya falls, in 1997. The catch limit for *D. eleginoides* was set at 888 tons for the area north of 65°S, but no catches were reported to CCAMLR for the period July 1997–June 1998. There is no information on unregulated fishing. Although the island is not known to support breeding populations of species—with the possible exception of *Macronectes giganteus*—likely to incur incidental mortality from longline activities, birds visiting the waters will be at risk unless suitable mitigation measures are employed, and fishing gear that is improperly disposed of will be an entanglement hazard for fur seals.

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