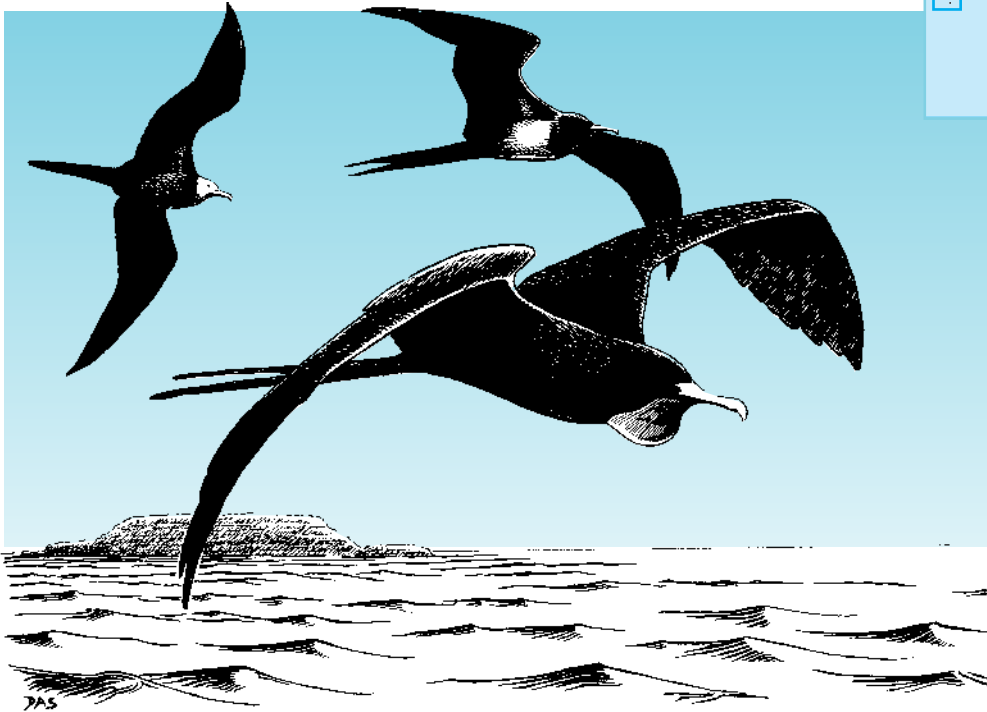
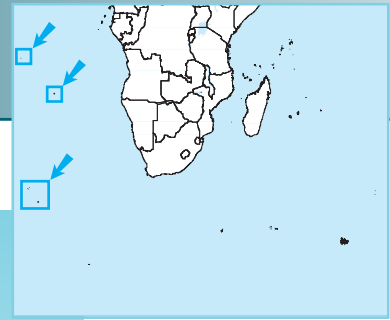


# ST HELENA AND THE DEPENDENCIES OF ASCENSION ISLAND AND TRISTAN DA CUNHA, INCLUDING GOUGH ISLAND

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Ascension Frigatebird  
*Fregata aquila*.  
(ILLUSTRATION: DAVE SHOWLER)

## GENERAL INTRODUCTION

St Helena is an Overseas Territory of the United Kingdom; Ascension Island and Tristan da Cunha, including Gough Island, are administered as Dependencies of St Helena.

### ■ Ascension Island

Ascension is an isolated and relatively young oceanic island, lying some 100 km west of the mid-Atlantic Ridge, 1,504 km south-south-west of Liberia (Cape Palmas), and 2,232 km from Brazil (Recife). The nearest land is St Helena, 1,296 km to the south-east. Apart from a few beach deposits (shell-sand), the island is entirely volcanic in origin and has a rugged terrain. The relatively low and dry western part is dominated by scoria cones and basaltic lava-flows, mantled in many places with fine pyroclastic deposits. A broad mass of higher ground in the east, with many trachytic domes and flows, culminates in the narrow ridge of Green Mountain, the highest point at 859 m. To the north and west of Green Mountain the land forms a gently sloping plain. Altogether, there are 44 volcanic vents. Ascension is geologically active, and the last onshore eruption may have occurred within the last millennium. The island is roughly triangular in plan, about 13 km across, with an area of 97 km<sup>2</sup>, and has about 100 km of coastline. While the west and north-west coasts have sandy beaches, the south and south-east coasts form steep cliffs. Inshore waters are deep and there are no reef-forming corals, but many shoreline rock surfaces are dominated by encrusting calcareous algae and sponges; the fish fauna here is diverse.

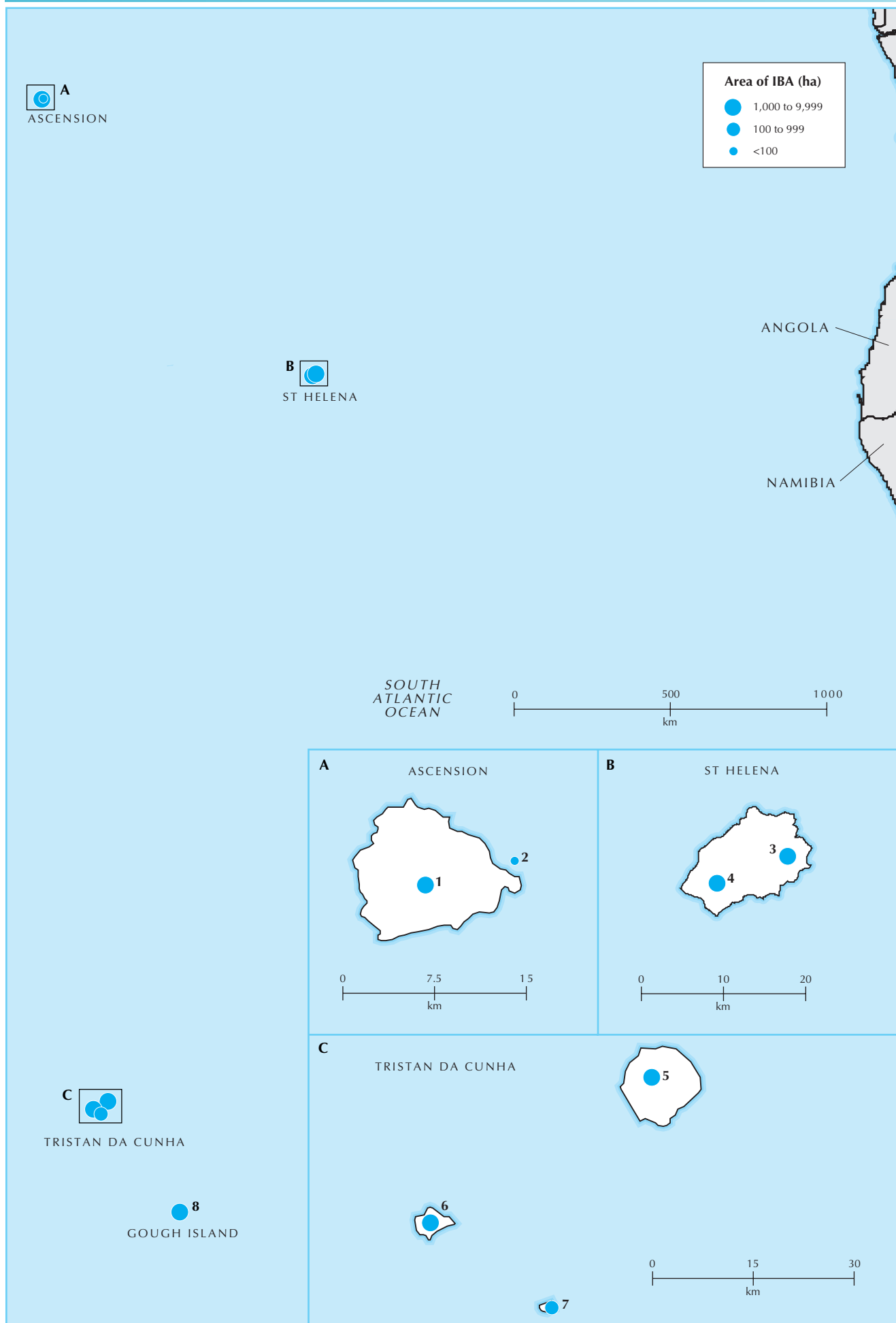
At the time of its discovery in 1501, Ascension Island was almost entirely barren, with vegetation essentially restricted to Green Mountain. The indigenous flora was minimal, with only about 25 vascular plants (12 of them ferns), together with mosses, liverworts and lichens. Nowadays, the lowland zone, about 67% of the surface, which in the past formed a desert, is being extensively colonized by a variety of introduced plants, which in the settlements include *Bougainvillea*, *Casuarina*, *Hibiscus*, *Opuntia* and *Tecoma*. The

middle zone, 330–600 m, has an extensive vegetation cover of shrubs and grasses, but also some open ground. The humid zone, above 600 m, has a luxuriant plant cover that, in places, amounts to a cloud-forest, where introduced vegetation flourishes. This includes *Acacia*, *Alpinia*, *Araucaria*, *Bambusa*, *Buddleia*, *Erythrina*, *Eucalyptus*, *Ficus*, *Grevillia*, *Juniperus*, *Mangifera*, *Musa*, *Olea*, *Pinus*, *Podocarpus* and *Psidium*.

The human population is about 1,000, made up of civilians working for contractors to the RAF and USAF, and a small number of military personnel. The personnel are mainly from the UK, USA and St Helena, none of whom are permanent residents. User organizations include the BBC World Service, Cable & Wireless Communications plc, the RAF and the USAF, with their support staff. Representatives of the organizations serve on an advisory committee with the Administrator, who is appointed by the Foreign and Commonwealth Office and responsible to the Governor of St Helena. From 1 April 2001, the Ascension Island Government assumed responsibility for the delivery of all public services, previously provided by a consortium of the British Broadcasting Corporation (BBC) and Cable and Wireless plc. Georgetown is the capital and largest settlement. There is only a small amount of tourism, plus shore excursions for transit passengers off the RMS *St Helena*, sailing regularly between Cardiff and Cape Town. The island is also served by cargo ships. Cruise ships en route to and from the Antarctic call at Ascension about six times per year. There is a US military airport, Wideawake Airfield, in the south-west. Linked to the UK by regular RAF flights, the island serves as a staging post for the Falkland Islands. Green Mountain Farm, which formerly produced fresh meat, milk and vegetables, is now abandoned. Philately is an important income and information generator.

Boatswainbird Island, the principal seabird breeding site, lies 305 m north of the eastern part of the island. Inshore, in addition, are 14 stacks (identified by number), inhabited by breeding seabirds, plus a number of smaller rocks on which birds can rest. Stacks 1 to 8 lie off the north-west and northern parts of the island, the other

**Map 1.** Location and size of Important Bird Areas in St Helena, Ascension Island and Tristan da Cunha, including Gough Island.



six between the eastern and central part of the southern coast. Stacks 13 (43 m) and 14 (33 m), namely the Pillar Rocks in Pillar Bay in the south, are the highest.

The beaches are important breeding grounds for the sea-turtle *Chelonia mydas*; *Eretmochelys imbricata* is also found, but is believed not to breed at Ascension. Land crabs *Gecarcinus lagostoma* occur throughout the main island. Other than some invertebrates, all land animals are introduced—donkeys *Equus asinus*, rabbits *Oryctolagus cuniculus*, rats *Rattus rattus*, mice *Mus musculus*, cats *Felis catus*, lizards *Liolaemus wiegmanni*, geckos *Hemidactylus mercatorius* and clawed toads *Xenopus laevis*, the last not been seen for some years. The large number of invertebrates includes five endemic pseudoscorpions. Dolphins *Steno bredanensis* and *Tursiops truncatus* occur offshore.

Ascension has a tropical but oceanic climate, with little seasonal change. It lies in the path of the South-East Trade Winds, and south-east and easterly winds blow for more than half of every month. The trade wind inversion at a height of about 1,000–1,500 m acts as a strong cap, inhibiting vertical cloud development and thus ensures generally low rainfall. Nevertheless, as the winds rise over the eastern end of the island they bring cool and misty conditions to the ridge of Green Mountain where, at an altitude of 660 m, there is a mean annual rainfall of about 680 mm. At Two Boats, north-west of Green Mountain at an altitude of 290 m, rainfall is approximately half as much, and on the western coast it averages only some 100–200 mm annually. There is, however, much variation between years. Very heavy and destructive rains occur occasionally, mainly from March to May, leading to temporary changes in the vegetation. Such events affect the insect populations and doubtless also those of the introduced rodents. The temperature is strikingly constant throughout the year. Monthly average maximum temperatures at sea-level vary only between about 27°C and 31°C. At 660 m on Green Mountain maximum temperatures are typically about 13°C lower and minimum temperatures about 7°C lower than at sea-level. The relative humidity at sea-level is around 70%.

The tidal range is less than one metre. The north-eastern and, especially, the southern coasts of the island are exposed to fairly heavy wave action under the influence of the south-east trade winds. The west coast is sheltered, but is subject to the effects of long-distance oceanic swell waves or ‘rollers’, from the south-west or north-west, that occur without warning at any time of the year. Generated by distant storms, they persist for a few days, often causing breeding failures of seabirds on the stacks, especially in the north and north-west.

The surrounding seas are tropical or equatorial, with a permanent thermocline preventing vertical enrichment of the euphotic zone. Surface temperatures are always in excess of 23°C. The island lies in the path of generally westward surface currents throughout the year. As the cold Benguela Current from the west coast of southern Africa flows north-westward, it generally warms up and loses its nutrients, before turning westwards. Around Ascension Island this becomes the South Subtropical Current, which has a general westward flow of 0.1 to 2 knots. The submerged slopes of the submarine pedestal of Ascension are steep, with deep water close inshore. The 200 m depth contour lies between 0.5 km and 5 km of the coast and the shelf area, at about 108 km<sup>2</sup>, is a little larger than the land surface. The submerged slope area is strikingly barren, with low habitat diversity and a complete lack of

reef-building corals, as reflected in extremely low fish species-diversity. As pelagic foragers, many of the seabirds depend mainly on fish and squid forced to the surface by schools of predators such as tuna or cetaceans, and often forage in mixed-species flocks.

## ■ St Helena

St Helena is an isolated mountainous island covering 121.7 km<sup>2</sup>. An overseas territory of the United Kingdom, it lies in the South Atlantic Ocean, east of the mid-Atlantic Ridge, 1,913 km west of Angola and 3,284 km east to south-east of Brazil. The nearest islands are Ascension, 1,296 km north-west, the Martin Vas Rocks, about 2,410 km west-south-west, and Tristan da Cunha, 2,435 km south-west. Its longest axis, from South-west Point to Barn Long Point in the north-east, is 17.7 km, and its maximum width is 10.4 km. Only four plains extend for any distance.

More or less rectangular in plan, the island is an extinct composite volcano system, largely made up of basalt and associated extrusive rocks. It was formed 14.5 to 7.5 million years ago by the coalescence of two broad shield volcanoes, with centres of activity in the north-east in the Flagstaff Hill–Knotty Ridge area and in the Sandy Bay area to the south-west. A third and more recent minor centre is located in the east. Now geologically extinct (6.8 million years ago), the island rises from a depth of 4,224 m to 823 m above sea-level at Diana’s Peak. Mount Actaeon at 818 m is the second-highest point. The topography is dominated by a high central ridge, occupying the major axis. Radiating out from the ridge, gorge-like valleys or ‘guts’, many deep and precipitous, are incised to depths of up to 300 m, providing a dramatic landscape. These valleys commonly drop 700 m in 3–4 km. They are narrow, steep-sided and generally drained by intermittent streams in ephemeral channels that meander across poorly developed flood-plains. There are five perennial streams—James, Lemon, Sharks, Fisher’s and Sandy Bay Valleys. Natural standing water is rare, due to porosity of the rocks and pyroclastic deposits, and high rates of evapotranspiration. The coast is dominated by imposing sea cliffs. These range from 80 m to 570 m in height, but most are 300 m or more. Access to the sea by vehicle is possible only in three places—James Bay, Rupert’s Bay and Sandy Bay. Some of the bays have pebble or boulder beaches that are generally narrow. Only Rupert’s Bay has a small strip of truly littoral sand. Offshore are at least 24 islets, stacks and rocks, of which the outermost is George Island, lying 1.3 km from Gill Point in the north-east. Clockwise from Jamestown, those supporting breeding seabirds, with heights, are Shore Island (68 m), George Island (32 m), Salt Rock (40 m), Speery Island (tallest, 120 m), The Needle (78 m), Lower Black Rock (67 m), Upper Black Rock (88 m), Thompson’s Valley Island (21 m), Peaked Island (32 m), Egg Island (79 m), and Lighter Rock (13 m). An inshore swell is felt severely on all coasts except for the north-west.

Out of a total flora of about 320 species, some 240 are introduced. The native flora consists of about 70 species, 49 of which are endemic (10 genera). Of the endemic species known to have existed, seven are now extinct, 23 are classified as Endangered and 17 are Rare.

There are no indigenous or endemic terrestrial mammals, reptiles, amphibians or freshwater fish. The one introduced amphibian is the grass frog *Rana grayi*, brought in sometime in the late nineteenth century. Besides tortoises (*Dipsosaurus elephantina*,

**Table 1.** Summary of Important Bird Areas in St Helena, Ascension Island and Tristan da Cunha, including Gough Island

8 IBAs covering 370 km<sup>2</sup>

IBA code	Site name	Administrative region	Criteria (see p. 11; for A2 codes, see Table 2)						
			A1	A2 079	A2 080	s038	A4i	A4ii	A4iii
SH001	Ascension Island—mainland and stacks	Ascension Island	✓				✓	✓	✓
SH002	Boatswainbird Island	Ascension Island	✓				✓	✓	✓
SH003	North-east St Helena	St Helena	✓			✓	✓	✓	
SH004	South-west St Helena	St Helena	✓			✓	✓	✓	
SH005	Tristan Island	Tristan da Cunha	✓	✓			✓	✓	✓
SH006	Inaccessible Island	Tristan da Cunha	✓	✓			✓	✓	✓
SH007	Nightingale Island group	Tristan da Cunha	✓	✓			✓	✓	✓
SH008	Gough Island	Tristan da Cunha	✓		✓		✓	✓	✓
Total number of IBAs qualifying:			8	3	1	2	8	8	6

*Asterochelys radiata*, *Chersina angulata*, *Geochelone pardalis babcocki* and *Kinixys belliana*) brought in between 1776 and 1988, the one alien terrestrial reptile is an Asian gecko, *Hemidactylus frenatus*. Other than livestock, the introduced mammals include cats *Felis catus*, rats *Rattus rattus* and *R. norvegicus*, mice *Mus musculus* and rabbits *Oryctolagus cuniculus*. Two marine turtles are known, *Chelonia mydas* and *Eretmochelys imbricata*, neither of which is common. The elephant seal *Mirounga leonina* that once occurred occasionally may return following a substantial recovery at South Georgia and other southern breeding grounds. Two whales, *Megaptera novaeangliae* and *Physeter macrocephalus*, are known to occur offshore, but information remains sketchy. There are at least three species of dolphin, i.e. *Stenella attenuata*, *S. longirostris* and *Tursiops truncatus*. Ten endemic species of shore fish are known.

The precise number of endemic invertebrates that can be considered extant is uncertain. In 2000, some 430 species included 18+ Hymenoptera, two Neuroptera, two Thysanoptera, five Psocoptera, c.20 Mollusca, one Annelid, three Turbellaria, five pseudoscorpions and c.42 species of mite. By then, over 200 endemic terrestrial species had been described, approximately 70% of which are insects. Many species may be facing extinction. The best-known are the giant earwig *Labidura herculeana* and giant ground beetle *Aplothorax burchelli*, last seen in the north-east in the mid-1960s. There are many introduced species, including cockroaches, flies, spiders, scorpions and centipedes. A variety of endemic marine invertebrates require intensive further study. An endemic shore crab, *Platypodiella georgei*, was discovered only in 1983.

St Helena has a Governor appointed by the UK Foreign and Commonwealth Office, supported by an elected Legislative Council of 12 members, and an advisory Executive Council. The St Helena dependencies of Ascension Island and Tristan da Cunha, the latter including also Gough Island, are each under an Administrator appointed by the Foreign and Commonwealth Office and accountable to the Governor of St Helena. On Ascension, representatives of the user organizations serve on an advisory committee with the Administrator; the Ascension Island Government, from 1 April 2001, having assumed responsibility for the delivery of all public services previously provided by a consortium of the BBC and Cable and Wireless. On Tristan, the Administrator is supported by an advisory Island Council of eight elected and three appointed members, of whom one is chosen as Chief Islander by popular ballot.

St Helena is only accessible by sea, the regular ship being the RMS *St Helena*, operating between Cardiff and Cape Town. Calls are also made by cruise ships en route to and from the Antarctic and other destinations. An initiative to establish a commercial airport was launched in 2000. St Helena has about 97 km of narrow winding roads, most covered with a bitumen surface, many with steep gradients and hairpin bends. Taxis provide the only public transport.

In February 1987, the human population was 5,644, including 85 expatriates, of whom 24% (1,332) lived in the capital, Jamestown, the other main centres of population being Longwood (1,243), and Half Tree Hollow (1,085) near Jamestown. The remainder is settled mainly in areas receiving rainfall adequate for agriculture, a large proportion living in scattered cottages and smallholdings. Built-up areas account for less than 2% of the land surface. The island, lacking in substantial manufacturing industries, now relies on British development aid. The local economy is centred mainly on agriculture and fishing. The largest income is received from fishing licences sold to foreign fleets. Rupert's Bay is the principal industrial site, with bulk fuel installation, fisheries corporation, canning company, cold storage facility and animal quarantine station. Cottage industry products, which include lace, decorative woodwork and beadwork, are exported. Philately is a major income and information generator.

The majority of the original vegetation has been almost entirely destroyed, with over 60% of the island now made up of eroded, degraded land. Semi-natural forest covers less than 1% and is found in isolated patches on the central ridge and on steep, inaccessible cliffs at lower altitudes. These remnants are of immense biological value, as they harbour the relict fragments of the island's endemic biota.

Eight recognized plant communities are here simplified into four altitudinal-climatic zones. From sea-level to 350 m is an arid zone (annual rainfall 200–500 mm), known as the 'Crown Wastes', that covers 25% of the surface. There is large-scale erosion. On the eastern (windward) side is a semi-desert, where the dominant shrub is *Suaeda helena* and large tracts of 'creeper' *Carpobrotus edulis* occur. In the west is a scrub in which *Lantana camara* or *Opuntia vulgare* dominates. Between 350 m and 500 m (annual rainfall 400–600 mm), there is pastureland and non-indigenous woodland. The main pasture grasses are *Pennisetum clandestinum*, *Cynodon dactylon* and *Digitaria ciliaris*. The woods are predominantly of *Acacia longifolia*, *A. melanoxylon* and *Pinus pinaster*. On the steeper slopes above 500 m (annual rainfall 600–1,000 mm), 'moist' and 'semi-moist' grassland types are recognized. The former, where the rainfall exceeds 900 mm, is dominated by *Agrostis tenuis* and *Pennisetum clandestinum*, while in the latter *Stenotaphrum secundatum* is co-dominant with *P. clandestinum*. This zone includes higher altitude plantations, where *Podocarpus elongata* is a major tree species; other important trees are *Acacia melanoxylon* and *Pinus pinaster*. Between the central ridge and cliffs, the intervening downland pastures are interspersed with remnant tracts of flax *Phormium tenax* and mixed-species woodland. In the upper zone, around Diana's Peak and on the east side of High Peak (annual rainfall 1,200 mm), several endemic trees occur, the dominants being *Dicksonia arborescens* and *Melanodendron integrifolium*. During the twentieth century this zone has been heavily invaded by *Phormium tenax*.

The climate is controlled by the South Atlantic High Pressure Cell and the Equatorial Trough. Although St Helena lies north of the Tropic of Capricorn, the climate is subtropical, with temperatures influenced by the South-East Trade Winds and ocean currents from the Antarctic. At Jamestown, the average maximum and minimum temperature in summer (March, warmest) is 29.2°C and 24.5°C respectively, and the corresponding winter temperatures (September, coolest) are 23.8°C and 19.6°C. Inland temperatures are 7–8°C cooler than at the coast, with an average drop of about 1.3°C per 100 m rise in elevation. Rainfall is caused principally by orographic disturbance of the flow of the trade winds, but is also influenced by frontal activity in high southern latitudes. In the 1980s total annual rainfall in Jamestown averaged 209 mm and in the central hills ranged between 477 mm (in 1984) and 1,130 mm (1982), with over 900 mm in the vicinity of the peaks. Dominated by the south-east trades (blowing 70–80% of days in all months), wind direction is uniform, almost entirely within the 90–150° range. The winds are usually strong, Force 4–5. Gales and calms are virtually absent. Orographic cloud cover at higher altitudes averages over 80% (Hutt's Gate), and at Jamestown 46–74%. Relative humidity is typically 75–85%, but below 600 m (900 mm isohyet) evapotranspiration generally exceeds rainfall.

In the surrounding seas, surface waters cool to 19.5–21.5°C by the end of winter (September–October) and warm to 24.5–25.0°C by the end of summer (March). The 23°C isotherm lies south of St Helena only during part of the summer, December–May. The arrival of the warm water brings flying fish to the inshore waters. One, *Exocoetus volitans*, is a principal prey of *Sula* spp., *Fregata aquila* and *Sterna fuscata*.

### ■ Tristan da Cunha, including Gough Island

The Dependency of Tristan da Cunha, which covers both the Tristan group (Tristan, Inaccessible, Nightingale, Middle and Stoltenhoff Islands) and Gough Island, has a total land area of 179 km<sup>2</sup>. The islands are of volcanic origin, of varying geological age and stage of erosion, the oldest rocks dating back 18 million years. However, the three largest islands all show evidence of recent activity, and therefore cannot be regarded as volcanically extinct. Isolated, the five islands of the Tristan group lie within 40 km of each other in the mid-South Atlantic Ocean, on similar latitudes 2,782 km from South Africa (Cape Town) and 3,947 km from South America (Mar del Plata). Gough Island lies 350 km to the south-south-east. Lying somewhat east of the crest of the mid-Atlantic Ridge, near its junction with the aseismic Walvis Ridge, the islands rise from a sea depth of about 3,500 m. At least 212 plant taxa have been recorded, including 35 native ferns and 58 native flowering plants. Of these, 20 fern and 34 flowering plant taxa are considered to be endemic. There are no reptiles, amphibians or freshwater fish, and there are no records, other than poultry, of

introduced birds. An invertebrate fauna includes weevils and snails of particular interest, but with a relatively low number of native species. The only native breeding mammals are seals, which have been exploited in the past. Five whales, *Eubalaena glacialis australis*, *Physeter macrocephalus*, *Megaptera novaeangliae*, *Globicephala melas* and *Tasmacetus shepherdi*, occur relatively frequently, the last with regular strandings. Various species of dolphin, including *Lagenorhynchus obscurus*, are common.

The islands are a dependency of St Helena, itself a UK overseas territory, 2,435 km to the north-north-east. There is no air link. None is on any regular shipping lane, but there is a shipping link with Cape Town, including RMS *St Helena*, and cruise ships occasionally call. The islands are governed by an Administrator appointed by the UK Foreign and Commonwealth Office, who is advised by an Island Council of eight elected and three appointed members, of whom one is chosen as Chief Islander by popular ballot. The Administrator is accountable to the Governor of St Helena. One of the most isolated communities in the world, the human population in 1993 was just over 300 (eight family names), all on the largest and main island of Tristan, but for the six non-resident members of a South African meteorological team on Gough. The Tristan settlement, Edinburgh, in the north, has some 75 homes (100 families). The community is self-sufficient in food due to the surrounding seas, to the management of the grasslands around the village and the Potato Patches (about 3 km south-west) where the staple potato crop is grown. The economy is buoyant, based on crayfish *Jasus tristani* (the frozen product is exported), philately (worldwide sales) and handicrafts (mainly woollen goods). The other islands are uninhabited, but there are traditional longboat trips to Nightingale Island to collect penguin and shearwater eggs, shearwater chicks and guano. About 30 wooden huts and shacks, and pathways, have been constructed on Nightingale for this purpose. Inaccessible Island has been less often visited since 1938, before then much more visited than Nightingale. A single research hut built on Inaccessible by the Denstone Expedition in 1982 was both demolished and replaced in January 2000. The only settlement on Gough is the meteorological station, about 10 buildings, at Transvaal Bay in the south-east of the island.

The climate of the Dependency is cool temperate oceanic, but can vary locally from island to island. Lying on the edge of the West Wind Belt, the islands are under the influence of both maritime tropical (mT) and maritime polar (mP) air masses from the western South Atlantic. The pattern is dominated by the passage of often severe cyclonic storms, generated by outbursts of mP air on the Polar Front. (A storm in May 2001, with 190 km/h winds, caused considerable disruption and damage in the Tristan settlement.) At Tristan, the prevailing winds are north-westerly to south-westerly, occasionally from the north and south and only rarely from the east. Since the mP air is cooler than the ocean, and many fronts are occluded by the time they arrive, the weather is mostly cloudy with frontal rain. The islands also induce much orographic rainfall. In summer (October to March), the Tristan group may be influenced by the subtropical high pressure cell bringing mT air with orographic cloud, fewer storms and less rain than in the winter (April to September), although summer droughts seldom exceed a few weeks. Frontal rainfall occurs throughout the year at Gough, where the mean monthly rainfall in summer is 230 mm; in winter it is 289 mm. The mean annual temperature at the Tristan settlement is 14.5°C while, near sea-level on the south-eastern coast of Gough, it is 11.3°C. Tristan (settlement) has a recorded mean annual rainfall of 1,676 mm, with rain on 250 days of the year, and Gough 3,397 mm with rain on 296 days. Rainfall on the uplands of Tristan and Gough may be at least twice as heavy as that at sea-level. Snow lies intermittently during the winter above about 600 m on Tristan and above about 300 m on Gough, but frosts at sea-level are almost unknown on either island. The cloud base at Tristan usually lies above 600 m, but frequently descends below the Base plateau. Nightingale Island is usually cloud-free, being warmer and drier than Tristan. On Inaccessible Island, orographic cloud is a common feature. At Gough the cloud base is typically between 300 m and 500 m. At all the islands it occasionally descends virtually to sea-level.

The islands lie within the West Wind Drift, where the prevailing winds in the Southern Ocean impart an easterly set to the surface waters of some 13 km per day. The Subtropical Convergence usually lies between the Tristan group and Gough, but occasionally south

of Gough. The Dependency is therefore affected by both subantarctic and cold temperate mixed water types. Mean sea temperatures are around 18°C and 13°C in summer and 13°C and 11°C in winter at Tristan and Gough Island, respectively.

The six islands of the Dependency each have distinct topographical, floral and faunistic characteristics.

Tristan Island: roughly circular in plan, covering 96 km<sup>2</sup>, with an average diameter of some 12 km, Tristan is a strato-volcano made up of interbedded lavas (mainly basaltic) and pyroclastic deposits, with a central cone, the Peak, rising to 2,060 m. It is geologically the youngest in the group, c.500,000 years old. At the summit it is an unbreached crater, containing a shallow lake that is frozen in winter. The flanks are steepest near the summit, and gradients slacken to a more gently inclined area known as the Base plateau, lying between 600 m and 900 m. To seaward, the Base is truncated by precipices and cliffs, but there are discontinuous lowlands between the cliffs and the sea, the three most prominent being the Settlement Plain (8 km by 1 km) in the north-west, Sandy Point in the east and Stony Hill and Cave Point in the south. Numerous parasitic cones, resulting from secondary eruptions, protrude from the flanks of the Peak, the Base plateau and coastal strips. At least eight on the Base plateau are considered less than 25,000 years old. The last eruption was that of October 1961, at the eastern end of the Settlement Plain, when about 0.5 km<sup>2</sup> of land, mostly as lava-flows, was added. Seaward erosion of both the main flows and the coastal strips has produced a precipitous cliffed coastline fringed by narrow boulder beaches and rocky headlands. Two stacks, The Hardies, the higher 37 m, lie about 3 km south-west of Herald Point in the north-west. The island retains a youthful drainage system, with radially arranged flat-bottomed gorges, or 'gulches', deeply incised into the main sequence of lava-flows on the Base plateau. Permanent running water is found only on the Settlement Plain, although small water-bodies, including three crater lakes, exist just above 600 m.

There are five native vegetation-types, clearly zoned according to altitude and topography. On the coast and up to 600 m the vegetation consists of grassland (remnants of native *Spartina arundinacea* tussock and dominant imported pasture grasses), with fern-bush (including tree-ferns *Blechnum palmiforme*) and scattered thickets of island trees *Phyllica arborea*. The *Phyllica* is recovering on cliffs above the Settlement Plain, following an Island Council ban on cutting. *Blechnum palmiforme* and *P. arborea* dominate the zone above, between 600 m and 750 m. Above 750 m, to about 900 m, around the lower part of the Peak, the ground is generally boggy, the tree-ferns giving way to mats of *Blechnum penna-marina* and the aliens *Rumex acetosella* and *Holcus lanatus*. Above 900 m lies a wet heath comprising extensive mats of *Empetrum rubrum* and *Rhacomitrium lanuginosum*, together with *Acaena stangii* and scattered sedges, followed by moor and feldmark vegetation (an assemblage of dwarf, cushion-forming and crevice plants) on higher slopes. Above 1,500 m, on loose cinders, is an alpine tundra of very sparse vegetation. However, *Empetrum* and bryophytes can be found in the main crater at some 2,000 m. Encircling the island is a sublittoral zone of *Macrocystis* kelp.

The Settlement Plain has been overgrazed by sheep and cattle; the original cover virtually replaced by the imported pastures. Stony Beach is badly eroded by feral cattle, likewise Sandy Point where there is also an orchard and a conifer plantation. However, goats, pigs and possibly rabbits did not build up large, destructive feral populations, as on St Helena, the reasons for which remain obscure. Introduced rats and mice are present, but feral cats have been extirpated.

Inaccessible Island lies 40 km south-west of Tristan. Roughly rhomboidal in plan, it is 14 km<sup>2</sup> in size, 5.7 km from west to east, and 4.6 km north-south. The highest part, Swales Fell, in the west, rises to 511 m. Geologically, it is the second-youngest in the Tristan group, around three million years, and it is a volcanic remnant dominated by interbedded basalt flows and pyroclastic deposits that gently dip towards the north-east. Sheer cliffs rise from sea-level around most of the coastline, to 300 m at South Hill. The inland plateau comprises three principal drainage systems, with numerous additional ravines and 'gulches', a shallow central basin and a few small, conical hills. Narrow boulder beaches are present at the base of most cliffs, but are wider at Salt Beach and Waterfall Beach, in the north-east. Landslide material at West Point forms the only extensive, relatively flat land area at sea-level. A recent bog, about

400 years old, incorporates the only area of open standing freshwater on the island. The vegetation comprises three main types. The lower slopes are blanketed with dense, uniform *Spartina* tussock-grassland, up to 2.5 m high. The western part of the plateau comprises largely *Blechnum* tree-ferns, interspersed with stunted thickets (about 1 m) of *Phyllica* trees. Dense stands of taller *Phyllica* (3 m or more) occur in the lower, eastern part of the plateau and at sea-level at Skua Bog in the west. Scattered *Phyllica* occurs elsewhere over much of the island, particularly in sheltered 'gulches'. Up to 22 species of alien flowering plants have been recorded, largely at the landing sites at Salt Beach and Blenden Hall, but seven alien species have been found on the plateau. There are no introduced mammals; pigs and goats were brought to the island in the nineteenth century, but no longer occur, while Inaccessible has remained free of rats and cats. Offshore are a number of stacks, of which the largest is Cave Rock on the south-east coast, reaching c.150 m and well vegetated. The outermost, Pyramid Rock, 18 m, lies 440 m to the south-west of South Hill. Encircling the island is a sublittoral zone of *Macrocystis* kelp. Inaccessible Island has the largest submarine plateau of all the islands.

Nightingale Island lies 38 km south-west of Tristan and 22 km south-east of Inaccessible Island. It measures 2.5 km from west to east, 1.5 km north-south, and covers 4 km<sup>2</sup>. It has the shape, in plan, of a squat dumb-bell, with two hill masses separated by a broad waist. High Ridge, in the east, rugged and precipitous, rises to 337 m, appearing conical when seen from north-east or south-west. The other, 293 m, slopes gently on all but its southern side. With the exception of the north-east, the coasts are precipitous and cut into deep recesses and caves. A volcanic skeleton, the island retains no trace of its original form, but a wide, shallow submerged platform to the north may mark its former extent. Much of Nightingale is composed of intrusive trachyte lavas, and these extend northwards to Middle and Stoltenhoff Islands, which are part of the same complex. A secondary centre in the south (Ned's Cave and Seahen Rocks) may have produced lavas and tuff that overlie peaty deposits, tentatively dated at 400,000 years. There are no streams or 'gulches', but in the centre are four marshy areas known as 'The Ponds', in two of which are pools of open water. The flora of the site is poor in species, due to the small size and narrow range of environments. Nineteen species of vascular plants and 15 pteridophytes are native, and by 1968 only six alien vascular plants had been recorded. The predominant vegetation is dense *Spartina* tussock-grassland, forming almost pure stands 2–3 m in height, usually on hard fibrous peat. There are some 20 ha of *Phyllica*, in small groves, which have few epiphytes, other than lichens, and a sparse understorey. Around the central swamps, and on some of adjoining gently sloping ground, meadows of hummock-forming *Scirpus bicolor* replace the *Spartina*. Kelp extends offshore in the east, but there is less to the south and west. There are no introduced mammals.

Known also as Alex Island, Middle Island lies 100 m north to north-west of Nightingale Island. Containing the oldest rocks, it has an area of 0.5 km<sup>2</sup> and rises to 46 m. The island is covered in *Spartina* tussock and has a few boggy areas. Pin Rock, 9 m high, lies off the north-western extremity.

Known also as Stoffenberg Island, Stoltenhoff Island lies 1.5 km north of Nightingale Island. It is 0.2 km<sup>2</sup> in size, and rises gradually to 99 m at its southerly point. On its westerly (windward) side, low cliffs give way to bare rock where brackish water collects. The island is otherwise covered with short *Spartina* tussock below 1 m in height, through which many rocky outcrops protrude. Only one stunted tree (*Phyllica*) has been recorded. To the east, separated from the island and each other by narrow chasms, are a high narrow pinnacle and a large, vegetated stack.

Politically a part of the Dependency, Gough Island is the most complex in both terrain and structure. Gough is a basaltic shield volcano with a complex structure resulting from four main periods of volcanic activity, the last of which ceased at least 0.2 to 0.1 million years ago. More or less rectangular, 65 m<sup>2</sup>, it is 13 km in length from north-west to south-east, and over 5 km from south-west to north-east at its widest point. The summit, Edinburgh Peak, reaches 910 m, and the second-highest point, Expedition or Gonçalo Alvarez Peak, 894 m. Both rise from a central upland of rounded hills and broad boggy plateaus, in the north-western half of the island. The northern and eastern sides of the island form a deeply dissected landscape of narrow ridges and steep-sided valleys or 'glens'. There are seven main

valleys, ranging from 1.2 km to 2.5 km in length and the ridges between them attain a rather uniform elevation of around 600 m. On the western side, the upland plateaus slope more gently down to precipices 450 m to 170 m in height. Towards the south is an undulating, but thickly wooded lowland, the only area below 200 m, much of which is drained by a meandering stream behind Transvaal Bay in the south-east. The entire coastline is cliffed; of the numerous streams, only those draining The Glen (the largest of the eastern valleys), its neighbour Sophora Glen, and the southern slopes, discharge their water close to sea-level. The other valleys are truncated by cliffs over which their streams form picturesque cascades, or into which they have incised deep gullies. Boulder beaches lie beneath the cliffs. Offshore are some 20 islets, stacks and rocks, the largest of which support vascular plants and breeding birds. Most lie within 100 m of the main island, none at a distance greater than 1 km. The tallest is Tristania Rock, 164 m, in the north-west, and the outermost is Penguin Island, off the north-east coast.

The vegetation exhibits marked changes with altitude in relation to climatic differences, and five types are described. At the coast it consists of tussock-grassland on the offshore stacks, sea cliffs and adjacent slopes where salt spray is regular. This is up to 300 m on the exposed western side of the island, below 100 m on the east, with *Spartina arundinacea* and *Poa* (= *Parodiocloa*) *flabellata* dominant. The endemic *Cotula goughensis* is restricted to the upper beach and coastal cliffs. Scattered *Phyllica* trees also occur. Sites disturbed by marine erosion (landslips, slumps and rockslides) and trampling by seals and penguins support the greatest diversity of introduced species, including *Agrostis stolonifera*, *Holcus lanatus*, *Poa annua*, *Plantago lanceolata*, *Rumex obtusifolius*, *Stellaria media* and *Sonchus* spp. Native species found in these disturbed habitats include *Scirpus bicolor*, *Cotula goughensis*, *Apium australe* and *Callitriche christensenii*.

Fern bush occurs above the coastal grassland, up to about 500 m. It is better developed on the more sheltered eastern side and is most extensive on the southern coastal lowlands. The deciduous fern *Histiopteris incisa* forms the dominant climax assemblage. Fern bush is also characterized by *Phyllica arborea* (canopy 2–3 m high) and *Blechnum palmiforme* (0–1 m high, up to 2 m in sheltered spots). *Sophora microphylla*, the only other woody tree on the island, is restricted to a few individuals in Sophora Glen.

Fern bush, a dynamic community, is dependent on peat slips to maintain plant diversity. Fresh slip-faces are first colonized by mosses and *Scirpus bicolor*, followed by *Nertera depressa*, *Empetrum rubrum*, *Lycopodium diaphanum* and various grasses and sedges, as well as *Phyllica* and *Blechnum* seedlings. As the slip-site ages, *Histiopteris incisa* and *Acaena sarmentosa* appear, the former eventually dominating the area. The fern bush is a mosaic of recent and old slips, each supporting different plant assemblages. These are more open on steeper slopes, where slips are more frequent, whereas on flatter ground, where slips occur less frequently, there is a preponderance of *Histiopteris*-dominated assemblages.

Wet heath occurs from the upper limit of fern bush to above 800 m in sheltered locations. It is a transitional vegetation-type, with fairly short plants, less than 1 m high. Diverse, it contains species found in virtually all other vegetation-types. Three assemblages are recognized, dominated by *Blechnum*, *Empetrum* and grasses and sedges respectively. Feldmark, a community of dwarf, cushion-forming or crevice plants, is found on exposed areas such as ridges, above 600 m. Dwarf *Empetrum rubrum*, *Lycopodium magellanicum*, *Huperzia insularis*, *Acaena stangii*, *Agrostis media*, *A. carmichaelii* and several sedges, mosses and lichens characterize this alpine community. Peatbogs are widespread on the level uplands above 600 m. The bogs are sodden, and are dominated by *Sphagnum* mosses and a number of hepatics. The only abundant vascular plants are *Tetronicum magellanicum* and *Scirpus* spp. However, a wider diversity occurs along bog margins, including *Empetrum rubrum* and various grasses.

Offshore, 40 species of algae are recorded, of which two are endemic. From sea-level to 5 m depth, the principal species is the bull kelp *Durvillea antarctica*. Beyond 20 m the dominants are *Laminaria pallida* and the giant kelp *Macrocystis pyrifera*.

Gough is the largest, relatively unmodified, cool temperate island ecosystem in the South Atlantic. Only some 24 introduced plant species have been recorded, and they form a relatively minor component; most are transient, requiring some form of disturbance to penetrate native vegetation. An invasive weed, *Sagina*

*procumbens*, was eliminated in 2000 by a project funded by the Foreign and Commonwealth Office. House mice *Mus musculus* are the only introduced mammals, and there is no record of them on the offshore islets and stacks. Goats and sheep have been introduced in the past, but are no longer present.

## ORNITHOLOGICAL IMPORTANCE

### ■ Ascension Island

The main island of Ascension, together with Boatswainbird Island and the stacks, currently support 11 species of seabird, of which *Fregata aquila* (CR) is endemic to the island and has a world population of fewer than 10,000 individuals. Ascension is the type-locality for three other species of seabird—*Phaethon aethereus*, *Sula dactylatra* and *Gygis alba*. The numbers of breeding seabirds and the proportions of the various species have changed drastically since the arrival of man and his commensal mammals. Most species now breed only on Boatswainbird Island or on the stacks, and numbers of many of them are now probably only a small fraction of those originally present. Except perhaps for one shearwater, *Puffinus lherminieri*, there is no indication, unlike St Helena, that additional species bred in the past. Populations may now be fairly stable, but *Sula sula* barely survives as a breeding species and *Sterna fuscata*, although remaining numerous has, for nearly two centuries, suffered heavy predation by feral cats and may still be decreasing. *Fregata aquila*, which was once abundant in many parts of the main island, breeds only on Boatswainbird Island, where its numbers may be lower than they were in the 1950s. Cats, introduced in 1815, and now feral, are the principal cause of the elimination of most of the birds from the main island. Their eradication should lead to a substantial restoration of the original seabird community.

### ■ St Helena

The avifauna of St Helena includes eight species of resident breeding seabird (two of which are known as breeders only from the late 1980s, and are possibly recolonizations) and two other naturally occurring species, the endemic *Charadrius sanctaehelena* and *Gallinula chloropus*, which reached the island, of its own accord, after the arrival of people. In addition, at least 41 species have been recorded as vagrants, summer visitors and passage migrants, some probably ship-assisted. The South-East Trade Winds create favourable conditions for a crossing from southern Africa, which would explain the occurrence on St Helena of non-breeding Afrotropical landbirds.

*Charadrius sanctaehelena*, the St Helena Plover or Wirebird, is classified as Endangered and is also a species of restricted-range, whose distribution defines the St Helena Secondary Area (s038). Studies in 1988–1989 showed the population to number some 450 birds of all ages, with densities highest in relatively dry, flat pasture, and that the principal threat appeared to be potential changes in land-use. There was since a decrease to 315 birds (lowest point) in 1993, but numbers have steadily increased again to 435 birds in 2001 (February–March). In terms of the number of adults, the 2001 census shows a decrease of 17% on the 1989 census, but with a partial recovery from 1993 levels. The decrease is due to habitat degradation, but this has levelled out following less grazing of livestock for economic reasons.

There are also a number of non-native species, introduced mainly as sources of food, but later used in agriculture to control insect pests, and for ornamental purposes. Of these, only the following nine survive as residents: *Alectoris chukar* (introduced c.1531), *Phasianus colchicus* (introduced c.1531), *Columba livia* (introduced before 1578), *Geopelia striata* (introduced before 1775), *Acridotheres tristis* (introduced c.1815 and again in 1885), *Foudia madagascariensis* (introduced by 1776, possibly in 1765), *Padda oryzivora* (introduced before 1775), *Estrilda astrild* (introduced probably in the 1770s, certainly by 1813) and *Serinus flaviventris* (introduced probably in 1776).

In addition, the fossil record is well represented. This includes evidence of at least four endemic landbirds (two flightless rails, a cuckoo and a hoopoe), and two endemic seabirds (petrels), which were probably present when the island was discovered in 1502, after which they quickly succumbed to the effects of predation by man and his commensal animals and deforestation. Three other species are found only in Pleistocene deposits.

Also lost from the island were five other breeding seabirds—a shearwater, a storm-petrel, and a booby, now known only as vagrants, and two frigatebirds. A Pacific petrel *Pterodroma ultima* has since occurred, at Hooper's Ridge in the south of the island, and it is possible that with effective conservation management of the island's endemic habitats, and controls of feral cats and rats, former breeding seabirds would be induced to recolonize.

### ■ Tristan da Cunha, including Gough Island

Nine species of global conservation concern occur in the Dependency, six of which are endemic and of restricted-range, whose distributions define two Endemic Bird Areas. These are *Atlantisia rogersi* (VU), *Nesocichla eremita* (LR/nt), *Nesospiza acunhae* (VU) and *N. wilkinsi* (VU), all confined to the Tristan group and comprising the Tristan Islands Endemic Bird Area (EBA 079). *Gallinula comeri* (VU) and *Rowettia goughensis* (VU) are endemic to Gough Island Endemic Bird Area (EBA 080). The remaining three species are breeding seabirds, *Diomedea exulans dabbenena* (VU), *Pheobertia fusca* (LR/nt) and *Pterodroma incerta* (VU).

The Tristan group is exceptional in having three endemic genera—*Atlantisia*, *Nesocichla* and *Nesospiza*. The *Nesospiza* buntings are of particular interest because, as with the famous Darwin's finches (*Geospiza* spp.) of the Galapagos Islands, they have undergone remarkable speciation, with the two species (*N. acunhae* and *N. wilkinsi*) differing markedly in size and, on Nightingale Island, co-occur without interbreeding. On Inaccessible Island, where they also co-occur, there are two altitudinally segregated colour-morphs of *N. acunhae*, as well as a hybrid complex involving *N. acunhae* and *N. wilkinsi*. Distinct subspecies of the thrush *Nesocichla eremita* are recognized from each of the three main islands.

On Tristan Island, the modification of vegetation by grazing livestock may have contributed to the extinction of the Tristan Moorhen *Gallinula nesiotis* (Ex) and, locally, of *N. acunhae*, although introduced predators (cats and rats) are expected to have had a more significant role. *N. eremita* is the only native landbird surviving on the island, although the population has decreased markedly since the arrival of man and his commensals. *Gallinula comeri* has been introduced to Tristan from Gough—see site account.

On Inaccessible and Nightingale Islands, habitat destruction (by fire and the possible introduction of livestock) is a threat, but a far greater one is the accidental introduction of alien species, especially predatory mammals. *Atlantisia rogersi* is arguably the most vulnerable, being flightless (indeed, the world's smallest flightless bird), even though it occurs at high density (probably at carrying capacity) and numbers an estimated 8,400 birds.

All of the Tristan group's restricted-range species are found in a wide variety of habitats, but are more abundant in some than in others (e.g. *Atlantisia rogersi* is most common in coastal tussock-grassland away from the cliffs). On Inaccessible Island all the extant species occur, and *A. rogersi* is confined to the island.

**Table 2.** The occurrence of restricted-range species at Important Bird Areas in St Helena, and the Dependencies of Ascension Island and Tristan da Cunha, including Gough Island. Sites that meet the A2 criterion are highlighted in **bold**. Species of global conservation concern are highlighted in **blue bold**.

<b>079 – Tristan Islands Endemic Bird Area</b> (four species in St Helena and Dependencies; three sites meet the A2 criterion)			
IBA code:	<b>005</b>	<b>006</b>	<b>007</b>
<i>Atlantisia rogersi</i>		✓	
<i>Nesocichla eremita</i>	✓	✓	✓
<i>Nesospiza acunhae</i>		✓	✓
<i>Nesospiza wilkinsi</i>		✓	✓
Number of species recorded:	1	4	3
<b>080 – Gough Island Endemic Bird Area</b> (two species in St Helena and Dependencies; one site meets the A2 criterion)			
IBA code:			<b>008</b>
<i>Gallinula comeri</i>			✓
<i>Rowettia goughensis</i>			✓
Number of species recorded:			2
<b>s038 – St Helena Secondary Area</b> (two sites meet the A2 criterion)			
IBA code:	<b>003</b>		<b>004</b>
<i>Charadrius sanctaehelena</i>		✓	✓

On Gough Island, both *G. comeri* and *R. goughensis* are considered at risk from the threat of alien predators (especially cats and rats) being introduced. This is despite their numerical strength; up to 3,000 pairs of *G. comeri* and possibly 1,000 pairs of *R. goughensis*.

Several seabird taxa are largely confined to the Dependency when breeding. Both the Tristan da Cunha group and Gough are internationally important for their breeding populations of some 20 species. They include *Diomedea exulans dabbenena* (at its northernmost breeding locality on Inaccessible, only a few pairs, and on Gough, about 1,000 pairs per season), *Procellaria aequinoctialis conspicillata* (Inaccessible only), *Puffinus gravis* (almost confined to the Dependency) and *Pterodroma incerta* (some hundreds of pairs on Tristan, some thousands of pairs on Gough). Note that the taxonomy and threat status used here follow Collar *et al.* (1994).

## CONSERVATION INFRASTRUCTURE AND PROTECTED-AREA SYSTEM

### ■ Ascension Island

Conservation legislation is provided for under the Wildlife (Protection) (Ascension) Ordinance of 1944, Wildlife (Protection) (Ascension) Regulation of 1948, and Endangered Species Control Ordinance of 1976. Other legislation is provided by the Fish and Fish Products (Export) Ordinance of 1928, Crayfish Export Ordinance of 1933, the Green Mountain (Natural Resources) Protection Ordinance of 1955 and the Ascension Land Ordinance of 1967. The St Helena Government has declared an Ascension Island Exclusive Fishing Zone (EFZ), extending 200 nautical miles (370 km) around the island. A management plan includes a proposal to designate Ascension as a 'Protected Natural Area'. In 1989 Boatswainbird Island was declared a Site of Special Scientific Interest and Bird Sanctuary, but there is no enforcing legislation. Initial restrictions on access to the islet were instituted in 1977. Vehicular access to the breeding sites of *Sterna fuscata* in the south-west is strictly controlled.

### ■ St Helena

Conservation on St Helena is provided for under the Endangered, Endemic and Indigenous Species Protection Ordinance of 1996, and the Birds Protection Ordinance of 1996, both of which were enacted on 29 March 1996, repealing previous Ordinances. Provision is made under Section 5 of the latter for the collection of eggs and specimens under licence for reputable scientific purposes.

Under the Forestry Ordinance No. 9 of 25 October 1954, the Forestry Advisory Committee, and subsequently its successor, the Agricultural and Natural Resources Committee, has been empowered to declare three areas of protected forest. These are National Forest, i.e. any area of Crown land, Dedicated Forest, i.e. any area of privately-owned land under the control of the Agricultural and Forestry Officer, and Protected Private Forest. In all three categories, strict controls govern disturbance and removal of soil and forest produce, the entry of livestock and the lighting of fires. There are four principal nature reserves—see the site accounts.

### ■ Tristan da Cunha, including Gough Island

The first Protection Ordinance was passed at Tristan in 1950, with several subsequent additions. Under the Tristan da Cunha Conservation Ordinance of 1976, Gough Island and its territorial waters out to three nautical miles was proclaimed a Wildlife Reserve. This was modified by the Tristan da Cunha Conservation Ordinance (Amendment) of 1997, such that Gough Island was renamed a Nature Reserve and the boundary was extended to 12 nautical miles. The Tristan da Cunha Fisheries Limits Ordinance of 1983, as amended in 1991, 1992 and 1997, defines the fisheries limit around Gough Island as 200 nautical miles, and makes provision for fishing within these limits. The objectives of this comprehensive legislation are the maintenance of fauna, flora, geological, scenic and historical features of the island. Gough Island is divided into a logistic zone (6 ha for support of the meteorological station), marine zone, scientific research zones, and the conservation zone that encompasses the vast majority of the island.

Inaccessible Island was declared a Nature Reserve under Tristan da Cunha Conservation Ordinance (Amendment) of 1997, including

the surrounding waters, up to 12 nautical miles. Under this legislation, although Tristan islanders still retain the right to collect driftwood and guano, other access is restricted and all living resources are protected.

While Tristan Island and the Nightingale Island group are not protected as Nature Reserves, they are subject to the Tristan da Cunha Conservation Ordinance as given above.

In total, some 44% of the land area of the Tristan da Cunha Dependency has been set aside for conservation.

## INTERNATIONAL MEASURES RELEVANT TO THE CONSERVATION OF SITES

St Helena, and its dependencies Ascension Island, Tristan da Cunha and Gough Island, are included under the ratification by the UK of the Convention on Biological Diversity, the Convention on International Trade in Endangered Species, the Ramsar Convention, the Convention on Migratory Species, the Convention on Climate Change, the Convention to Combat Desertification and the World Heritage Convention. Gough Island was granted the status of World Heritage Site in December 1995, only the third British site to be so recognized for its biological value. The island and its surrounding waters have, with the support of the UK Dependent Territories Conservation Forum, been promoted as an internationally recognized site of natural and cultural heritage.

## OVERVIEW OF THE INVENTORY

### ■ Ascension Island

Two Important Bird Areas (IBAs) are included, covering the entire island (97 km<sup>2</sup>) with all its natural habitats (Map 1, Table 1). These are the mainland and all offshore stacks and rocks (SH001) and Boatswainbird Island (SH002). The latter site, which supports the entire breeding population of *Fregata aquila*, is recognized separately.

### ■ St Helena

Two Important Bird Areas (IBAs) are identified here, covering c.93 km<sup>2</sup> or some 76.4% of St Helena (Map 1, Table 1). These sites are the north-east, with Shore Island and George Island (SH003), and the south-west, with Egg Island and Speery Island (SH004). The two sites, only a small proportion of both of which are legally protected as reserves, include all the important breeding areas for *Charadrius sanctaehelenae*, as well as all the known fossil sites. All other offshore islets, stacks and rocks are included, together with the marine habitat out to three nautical miles. The sites provide for all resident landbirds and seabirds. The central part of the island, which includes the peaks and the more settled areas, including Jamestown, is omitted, for although this area includes almost all of Diana's Peak National Park, the uplands are poorer in bird species and are not important for *Charadrius sanctaehelenae*.

### ■ Tristan da Cunha, including Gough Island

A total of four Important Bird Areas (IBAs) have been included in this inventory (Map 1, Table 1), covering the entire Dependency and all its natural habitats (179 km<sup>2</sup>). The sites are Tristan Island (SH005), Inaccessible Island (SH006), Nightingale Island, together with Middle and Stoltenhoff Islands (SH007), and Gough Island (SH008). All include their offshore islets, stacks and rocks, and the marine habitat, out to three nautical miles in the case of Tristan and the Nightingale group, in line with the Tristan da Cunha Conservation Ordinance as given above, and 12 nautical miles for Inaccessible and Gough, following the Tristan da Cunha Conservation Ordinance (Amendment) of 1997. The sizes given in the site-accounts refer, however, to land areas only.

## ACKNOWLEDGEMENTS

The site-accounts and introductory sections were compiled from information gained locally, and sources supplied by the library at BirdLife International, Cambridge, in particular Christine Alder. Lincoln Fishpool reviewed the first draft of the inventory. Geoff Fairhurst and Jim Stevenson also commented upon the inventory for Ascension Island and provided additional information. Selection



of IBAs on Ascension Island was made in consultation with Ken Simmons, who has undertaken several research visits to the island and was partly instrumental in having access to Boatswainbird Island controlled. Rebecca Cairns-Wicks and Neil McCulloch commented upon the inventory for St Helena and provided additional information. Selection of IBAs for Tristan da Cunha, including Gough Island, was made in consultation with Michael K. Swales, a member of the Gough Island Scientific Survey Expedition of 1955–1956 who also led the Denstone Expeditions to Inaccessible Island in 1982–1983 and Tristan da Cunha in 1993. John Cooper and Peter Ryan also commented upon the inventory for Tristan da Cunha and Gough Island, and provided additional information.

## SITE ACCOUNTS

### Ascension Island—mainland and stacks SH001

Admin region Ascension Island

Coordinates 07°57'S 14°22'W

Area 9,700 ha Altitude 0–859 m

A1, A4i, A4ii, A4iii

Unprotected

#### Site description

The site comprises the whole of Ascension Island and the 14 inshore stacks, as well as the marine habitat out to three nautical miles, and is described in the 'General introduction'.

#### Birds

See Box for key species. At least 30 bird taxa are known. There are 11 resident seabird species, *Oceanodroma castro*, *Phaethon aethereus*, *P. lepturus*, *Sula dactylatra*, *S. sula*, *S. leucogaster*, *Fregata aquila*, *Sterna fuscata*, *Anous stolidus*, *A. minutus* and *Gygis alba*. Of these, *O. castro* and *F. aquila* now breed only on Boatswainbird Island (SH002), but the latter occurs regularly on the main island and both are expected to return as breeders once feral cats are eradicated. In addition, *Puffinus lherminieri* is thought to have once bred. The main colonies of *S. fuscata*, by far the most numerous breeding species, are in the south-west of the island, and occupied 9.14 ha in 1997.

Although now deserted, many former seabird breeding sites are likely to be reoccupied following the removal of cats. Already, successful recolonization attempts by *Sula dactylatra* have been noted, e.g. 20 pairs with eggs and chicks at Letterbox in October 1996, and a single pair on a hill at Georgetown from 1993. Both *Phaethon aethereus* and *P. lepturus* nest on cliffs opposite Boatswainbird Island and along the south-eastern coast. *Anous minutus* breeds at Spire Beach, Letterbox, South-east Bay and Coconut Bay, while *Gygis alba* breeds on cliffs inland at Green Mountain and Weatherpost, as well as at South-east Head and opposite Boatswainbird Island. The stacks are important for *Anous stolidus* (500 pairs) which does not breed on Boatswainbird Island, and also *Sula leucogaster* and *A. minutus*.

There are five resident landbirds, all introduced; *Francoelinus afer* (introduced 1851), *Acridotheres tristis* (introduced 1879 and 1880), *Passer domesticus* (introduced 1985 onwards, Georgetown only), *Estrilda astrild* (introduced 1860) and *Serinus flaviventris* (introduced 1890). There are also records of non-breeding visitors and vagrants with fewer than five records. The former include *Bubulcus ibis*, *Gallinula chloropus*, *Arenaria interpres*, *Apus apus*, *Hirundo rustica*, and *Delichon urbica*. In the fossil record, two species are known, an extinct night heron *Nycticorax* nov. sp. and the extinct flightless rail *Atlantisia elpenor*.

#### Key species

A1	<i>Fregata aquila</i>		
A4i		Breeding (pairs)	Non-breeding
	<i>Sterna fuscata</i>	194,000 (1997)	—
	<i>Anous minutus</i>	5,000 (1990)	—
A4ii	<i>Phaethon aethereus</i>	55 (1959)	—
A4iii	More than 20,000 waterbirds occur regularly at this site.		

#### Other threatened/endemic wildlife

The beaches of Ascension are important breeding grounds for turtles, *Chelonia mydas* (EN), protected locally since 1926. Hatchlings are taken by feral cats. There is a long list of invertebrates, including two endemic pseudoscorpions *Apocheiridium cavicola* and *Allowithius ascensionis*. Yellow and purple land-crabs *Gecarcinus lagostoma* occur throughout the main island, returning to the sea to breed, laying in

## GLOSSARY

**pyroclastic** fragmented rocky materials formed by volcanic explosion or aerial projection from a volcanic vent.

**scoria** a type of rock formed from ejected fragments of fluid lava.

**shield volcano** a gently sloping volcano, resembling a flattened dome.

**strato-volcano** a conical, steep-sided volcano.

**trachyte** fine-grained, volcanic alkaline rock.

**tuff** pyroclastic rock formed from volcanic ash.

shell-sand or soft ash. A shrimp *Procaris ascensionis*, found in coastal rock pools, is endemic.

#### Conservation issues

The management plan for the island includes the recommendation that the UK Government designate the whole island (i.e. covering SH001 and SH002) a 'Protected Natural Area'. Apart from the proposed eradication of cats and rats, the plan provides for a substantial programme of conservation education, maintenance of strict and consistent control of access to seabird and turtle breeding sites, a strict control of refuse disposal, and vigilance regarding further alien introductions. Funding by the Foreign and Commonwealth Office was announced on 26 March 2001 to support a two-year project by the Ascension Island Government and the RSPB to restore the seabird breeding colonies, including measures to remove the feral cats and reduce the spread of invasive plants like the Mexican thorn that provides food and cover for rats. Other threats include disturbance to breeding colonies of *Sterna fuscata*, hence controls on vehicular access, and accidental hooking of seabirds by sports fishermen. Significant quantities of polychlorinated biphenyls (PCBs) in *Sterna fuscata* are indicated to have come from squid or fish caught within the foraging range of the IBA. By the 1960s, Japanese longline fishing had spread throughout the Atlantic, with a fleet of up to 50 boats operating under licence in the EFZ from 1988. The threat of over-exploitation of fish stocks, as a result of longline, purse-seine and other forms of fishing in the area, has important implications for seabirds. The airport in the south-west is near the principal breeding sites of *Sterna fuscata*, but air-strikes are considered unlikely as disturbed birds fly low as they move out to sea.

#### Further reading

Allan (1962), Ashmole (1962, 1963a, b), Ashmole and Ashmole (1997, 2000), Ashmole, Ashmole and Simmons (1994), Bell and Ashmole (1995), Blair (1989), Chapin (1954), Cronk (2000), Dorward (1962a, b, 1963), Dorward and Ashmole (1963), Duffey (1964), Hughes (1991, 1992a, b, 1994, 1997), Hughes *et al.* (1994), Nash *et al.* (1991, 1992), Olson (1973, 1977), Osborn (1994), Packer (1983), Ratcliffe (1997), Ratcliffe and Roberts (1997, 1998), Rowlands (1992), Simmons (1967, 1968, 1970, 1990), Stonehouse (1960, 1962a, b), Stonehouse and Stonehouse (1963), Walmsley (1991, 1992, 1994).

### Boatswainbird Island

Admin region Ascension Island

Coordinates 07°56'S 14°18'W

Area 5 ha

Altitude 0–104 m

SH002

A1, A4i, A4ii, A4iii

Site of Special Scientific Interest, Bird Sanctuary, Unprotected

#### Site description

The site is a barren, steep-sided trachytic rock, about 340 m by 220 m in size, rising to 104 m, with a relatively flat basaltic top nearly 3 ha in extent, located 305 m north of the eastern part of Ascension Island (SH001). Included also is a small, isolated rock 670 m east of the southern end. The site is heavily overlaid with guano, and there are traces of a guano industry that operated in the 1920s.

#### Birds

See Box for key species. Of the 11 resident species of seabirds one, *Anous stolidus*, does not breed, breeding instead on the main island and stacks (SH001). Breeding species are *Oceanodroma castro*,

*Phaethon aethereus*, *P. lepturus*, *Sula dactylatra*, *S. sula*, *S. leucogaster*, *Fregata aquila*, *Sterna fuscata*, *Anous minutus* and *Gygis alba*. *Puffinus lherminieri* is thought to have once bred. The world population of *F. aquila* breeds at this site.

Key species			
A1	<i>Fregata aquila</i>		
A4i		Breeding (pairs)	Non-breeding
	<i>Anous minutus</i>	5,000 (1990)	—
A4ii	<i>Oceanodroma castro</i>	c.1,500 (1959)	—
	<i>Phaethon aethereus</i>	c.500 (1959)	—
	<i>Phaethon lepturus</i>	c.1,000 (1959)	—
	<i>Sula dactylatra</i>	c.1,300 (1990)	—
	<i>Fregata aquila</i>	c.6,000 (1997)	—
A4iii	More than 10,000 pairs of seabirds occur regularly at this site.		

### Other threatened/endemic wildlife

The dolphins *Steno bredanensis* (DD) and *Tursiops truncatus* (DD) occur, the former common around the island. There are several invertebrates, including the endemic pseudoscorpions *Garypus titanius*, *Neocheiridium* sp. and *Stenowithius duffeyi*.

### Conservation issues

Initial restrictions on access were instituted in 1977, and permits to visit can only be granted by the Administrator, now only seldom given. Besides the accidental introduction of mammalian predators such as cats and rats, the main threat is disturbance. Supervision is poor due to the location of the site at the opposite end of Ascension, away from the authorities at Georgetown. The adjacent mainland, from where the site can be monitored, is seldom visited due to a lack of vehicular access—tracks are poor. Boatloads of visitors have landed illegally, and captains of passing vessels have been known to blow the ship's whistle to put up the birds as a 'spectacle' for passengers and crew. This displaces eggs and chicks, which are lost due to exposure to the sun, and predation. A further threat is commercial fishing; there is potential for over-exploitation of fish stocks.

### Further reading

Allan (1962), Ashmole (1962, 1963a, b), Ashmole and Ashmole (1997, 2000), Ashmole, Ashmole and Simmons (1994), Blair (1989), Dorward (1962a, b, 1963), Dorward and Ashmole (1963), Duffey (1964), Hughes (1992b), Hughes *et al.* (1994), Nash *et al.* (1991, 1992), Osborn (1994), Packer (1983), Ratcliffe (1997), Simmons (1967, 1968, 1970, 1990), Stonehouse (1960, 1962 a, b), Stonehouse and Stonehouse (1963).

## North-east St Helena

**SH003**

Admin region St Helena

Coordinates 15°57'S 05°40'W

A1, A2 (s038), A4i, A4ii

Area c.4,800 ha Altitude 0–616 m

National Park, Unprotected

### Site description

The site covers the north-eastern part of the island, north of a line linking Long Point in the south-east and Banks Point in the north-west, via Hutt's Gate in the interior, together with Shore Island (68 m), George Island (32 m) and all other offshore rocks. There are three vegetation zones. Below 350 m, c.25% of the area, the landscape is arid with large-scale erosion, dominated by *Suaeda*, *Lantana* and *Carpobrotus*. This gives way, up to 500 m, to pasture and non-indigenous woodland dominated by *Pennisetum*, *Cynodon* and *Digitaria*, with *Acacia* and *Pinus*. Above 500 m lies 'moist' and 'semi-moist' grassland, woodland (dominants include *Agrostis*, *Pennisetum* and *Stenotaphrum*, with *Podocarpus*, *Acacia* and *Pinus*), and flax *Phormium tenax* plantations. The coast is dominated by imposing sea cliffs, rising mainly to between 300 m and 570 m. The Barn (616 m), in the far north-east, is the highest point, but the elevation is almost the same at Hutt's Gate (609 m). Shore Island is a large, steep basaltic stack, whereas George Island, also basaltic, is shoe-shaped, less steep, its 'toe' pointing into the south-easterly swell. Encircled by breakers, with landing difficult, both islets are barren, with heavy guano deposits at upper levels. Included are eight important *Charadrius sanctaehelena* breeding sites, Sane Valley, Deadwood Plain (the main site), Longwood Farm, Bottomwoods, Horse Point Plain, Prosperous Bay North, Prosperous Bay Plain and Upper Prosperous

Bay. Important fossil sites are at Sugarloaf, Flagstaff Hill, Prosperous Bay and Dry Gut.

### Birds

See Box and Table 2 for key species. Although as many as 48 bird taxa have been recorded, there are now only eight known species of breeding seabirds and 11 species of resident landbirds, i.e. *Oceanodroma castro*, *Phaethon aethereus*, *Sula dactylatra*, *S. leucogaster*, *Alectoris chukar*, *Phasianus colchicus*, *Gallinula chloropus*, *Charadrius sanctaehelena*, *Sterna fuscata*, *Anous stolidus*, *A. minutus*, *Gygis alba*, *Columba livia*, *Geopelia striata*, *Acridotheres tristis*, *Foudia madagascariensis*, *Padda oryzivora*, *Estrilda astrild* and *Serinus flaviventris*. *Bulweria bulwerii* may also breed. Shore Island has the highest seabird breeding diversity in St Helena, with at least seven species, possibly eight. There are also records from the site of non-breeding visitors, and vagrants with fewer than five records. The former include *Diomedea exulans*, *Pterodroma mollis*, *Oceanites oceanicus*, *Fregetta grallaria*, *Fregata* sp., *Ardea cinerea*, *Bubulcus ibis*, *Ciconia ciconia*, *Calidris alba*, *Stercorarius parasiticus* and *Sterna paradisaea*. The site requires further study.

#### Key species

 A1 *Charadrius sanctaehelena*

 A2 (s038) St Helena Secondary Area: *Charadrius sanctaehelena* has been recorded at this site.

	Breeding (pairs)	Non-breeding
A4i		
	<i>Charadrius sanctaehelena</i>	c.335 (2001)
A4ii	<i>Phaethon aethereus</i>	c.43 (1992)

### Other threatened/endemic wildlife

Of particular importance are the endemic invertebrates, of which the best known are *Labidura herculeana* (CR) and *Aplothorax burchelli* (CR), known alive only from the area of Horse Point Plain, and last seen in the mid-1960s. Both may well be extinct. This highlights the extreme importance of habitat protection of the northern plains areas.

### Conservation issues

Within the IBA is the eastern end (63 ha) of Diana's Peak National Park, proclaimed in 1995, which contains the largest area of what remains of the native tree-fern thicket and cabbage-tree woodland, but which is poor in birds. Also included is Prosperous Bay Plain which is protected as a 'national forest' (c.300 ha), and the new Millennium Forest of endemic gumwoods *Commidendrum robustum* (c.4,000 trees), planted on Horse Point Plain in 2000 and to be extended. Strict protection of all bird species, with the possible exception of *Acridotheres tristis*, is provided for under the St Helena Birds Protection Ordinance of 1996. Species regarded as 'game', i.e. *Alectoris chukar* and *Phasianus colchicus*, are subject to the appropriate game laws. With the fall in numbers of *Charadrius sanctaehelena* further conservation measures are needed.

### Further reading

Ashmole (1963), Ashmole and Ashmole (2000), Benson (1950), Chapin (1954), Cronk (2000), Drucker and Pearce-Kelly (1992), Hartog (1984), Haydock (1954), Maunder *et al.* (1993), McCulloch (1991, 1992, 1999), McCulloch and Norris (in press), Melliss (1875), Olson (1973, 1975), Pearce-Kelly and Cronk (1990), Rowlands (1992, 1995, 2001), Rowlands *et al.* (1998), Wetmore (1963).

## South-west St Helena

**SH004**

Admin region St Helena

Coordinates 15°59'S 05°45'W

A1, A2 (s038), A4i, A4ii

Area c.4,500 ha Altitude 0–798 m

Nature Reserve, Unprotected

### Site description

The site covers the south-western part of the island, south of a line linking Powell Point and 'The Buoys' in the south-east and Horse Pasture Point in the north-west, via Clifford Arboretum in the interior, together with Egg Island (79 m), Speery Island (120 m) and all other offshore islets, stacks and rocks. All four vegetation zones on the island are represented. Below 350 m, c.25% of the area, the landscape is arid with large-scale erosion, dominated by *Suaeda*, *Lantana* and *Carpobrotus*. This gives way to pasture and non-indigenous woodland, up to 500 m, dominated by *Pennisetum*, *Cynodon* and *Digitaria*, with *Acacia* and *Pinus*. Above 500 m lies 'moist' and 'semi-moist' grassland,

woodland (dominants include *Agrostis*, *Pennisetum* and *Stenotaphrum*, with *Podocarpus*, *Acacia* and *Pinus*) and flax *Phormium tenax* plantations. At High Peak is a small remnant native thicket of endemic *Dicksonia* ferns and *Melanodendron* cabbage trees. The coast is dominated by imposing sea cliffs, rising mainly to between 300 m and 570 m. High Peak (798 m), in the far north-east, is the highest point. Egg Island, off the north-west lee side, is a mass of pale bedded lavas with an apparent dip towards the south-west, while nearby Peaked Island (32 m) is a sharp pyramid of scoriaceous slag. Speery Island is a spectacular steep-sided, jointed monolithic pipe of paler alkaline trachyte, whilst neighbouring Salt Rock (40 m) is a remnant of a wide basaltic dyke. The remaining islets and stacks are basaltic. Vegetation (shrubs, grasses, weeds) has been noted only on Lighter Rock, Ladies Chair, Egg Island, Peaked Island and Thompson's Valley Island, all in the lee. Lichens have been found at the summit of Egg Island. The heaviest guano deposits are on Egg, Peaked and Speery Islands. In the south, the Speery Island group of outliers is much more exposed and, but for Speery Island itself, has not been visited by ornithologists and may therefore harbour unrecorded seabirds. Included in the IBA are three important breeding sites for *Charadrius sanctaehelenae*, i.e. at Broad Bottom, Southern Pastures and Man and Horse. There is an important fossil site at Sandy Bay.

### ■ Birds

See Box and Table 2 for key species. Although as many as 45 bird taxa have been recorded, there are now only seven known species of breeding seabirds and 11 species of resident landbirds, i.e. *Oceanodroma castro*, *Phaethon aethereus*, *Sula dactylatra*, *Alectoris chukar*, *Phasianus colchicus*, *Gallinula chloropus*, *Charadrius sanctaehelenae*, *Sterna fuscata*, *Anous stolidus*, *A. minutus*, *Gygis alba*, *Columba livia*, *Geopelia striata*, *Acridotheres tristis*, *Foudia madagascariensis*, *Padda oryzivora*, *Estrilda astrild* and *Serinus flaviventris*. *Sula leucogaster* may also breed. Speery Island has the highest seabird breeding diversity in the IBA with, probably, seven species. There are also records of non-breeding visitors and vagrants with fewer than five records. The former include *Diomedea exulans*, *Pterodroma mollis*, *Oceanites oceanicus*, *Fregetta grallaria*, *Fregata* sp., *Ardea cinerea*, *Bubulcus ibis*, *Ciconia ciconia*, *Calidris alba*, *Stercorarius parasiticus*, *S. pomarinus* and *Sterna paradisaea*. The site requires further study.

#### Key species

A1	<i>Charadrius sanctaehelenae</i>		
A2 (s038)	St Helena Secondary Area: <i>Charadrius sanctaehelenae</i> has been recorded at this site.		
A4i		Breeding (pairs)	Non-breeding
	<i>Charadrius sanctaehelenae</i>	c.100 (2001)	—
A4ii	<i>Phaethon aethereus</i>	c.43 (1988)	—

### ■ Other threatened/endemic wildlife

As with North-east St Helena (SH003), the endemic invertebrates are of particular importance.

### ■ Conservation issues

The site includes three Nature Reserves. The Norman Williams Nature Reserve (Horse Ridge, 7.2 ha) was proclaimed in 1982. The Old Joan Point National Forest (south-west coast, 560 ha), proclaimed in 1994, is an area of steep cliffs that supports remnant populations of endemic and indigenous plants. The High Peak–Peak Dale Forest Reserve (in the south, 6.4 ha), proclaimed in 1995, includes not only the native tree-fern thicket, but also the largest remaining population of Gumwoods. Strict protection of all bird species, with the possible exception of *Acridotheres tristis*, is provided for under the St Helena Birds Protection Ordinance of 1996. Species regarded as 'game', i.e. *Alectoris chukar* and *Phasianus colchicus*, are subject to the appropriate game laws. With the fall in numbers of *Charadrius sanctaehelenae* further conservation measures are needed. Seabird eggs and guano continue to be taken at intervals from the stacks off the lee side, north-western coast, by fishermen.

### ■ Further reading

Ashmole and Ashmole (2000), Benson (1950), Chapin (1954), Cronk (2000), Drucker and Pearce-Kelly (1992), Hartog (1984), Haydock (1954), Maunder *et al.* (1993), McCulloch (1991, 1992, 1999), McCulloch and Norris (in press), Melliss (1875), Olson (1973, 1975), Pearce-Kelly and Cronk (1990), Rowlands (1992, 1995, 2001), Rowlands and Trueman (1999), Rowlands *et al.* (1998).

## Tristan Island

Admin region Tristan da Cunha

Coordinates 37°06'S 12°18'W

A1, A2 (079), A4i, A4ii, A4iii

Area 9,600 ha Altitude 0–2,060 m

SH005

Unprotected

### ■ Site description

The site comprises the whole of Tristan Island, as described in the 'General introduction'.

### ■ Birds

See Box and Table 2 for key species. Although as many as 56 bird taxa have been recorded, there are now only 13 known species of breeding seabirds and two species of resident landbirds. The seabirds include *Eudyptes chrysocome moseleyi*, *Diomedea chlororhynchus*, *Phoebastria fusca*, *Pterodroma macroptera*, *P. mollis*, *P. incerta*, *Pachyptila vittata*, *Procellaria cinerea*, *Puffinus gravis*, *P. griseus*, *Catharacta antarctica*, *Sterna vittata* and *Anous stolidus*. Tristan is the only known breeding site within the group for *Pterodroma incerta* and of *Puffinus griseus*, while numbers of *Diomedea chlororhynchus* are the highest for any island in the Dependency. *Pterodroma brevirostris* and *Puffinus assimilis* may also breed. *Pterodroma macroptera*, *P. incerta* and *Procellaria cinerea* have not been proven to breed elsewhere in the Tristan group, possibly because they are winter breeders. There are currently an estimated 40,000 breeding pairs of seabirds, most known from the south-eastern quadrant, which has suffered least from human disturbance. The estimated breeding density is only 500 pairs per km<sup>2</sup>.

The terrestrial species include the restricted-range *Gallinula comeri*, introduced from Gough Island (SH008) in 1956 (3,000 pairs, 1993 estimate), and *Nesocichla e. eremita*, confined to this island and numbering 40–60 pairs in 1974.

There are more records of non-breeding visitors and vagrants on Tristan than from the other islands of the group. This is probably due to the island's larger size and permanent human presence. Also, due to persecution, there are fewer *Catharacta* to prey upon them as they arrive. Most records are from the settlement area. Seabirds include *Diomedea exulans*, *D. melanophris*, *Macronectes giganteus*, *M. halli*, *Fulmarus glacialis*, *Daption capense*, *Procellaria a. aequinoctialis*, *P. a. conspicillata*, *Puffinus gravis*, *Oceanites oceanicus*, *Pelagodroma marina* and *Larus dominicanus*. Shorebirds and landbirds include *Casmerodius albus*, *Egretta thula*, *Bubulcus ibis*, *Porphyryla martinica*, *Calidris fuscicollis* and *Hirundo rustica*. The strong westerlies create favourable conditions for a crossing from South America, and this would explain the presence of gallinules and other non-breeding landbirds that have reached Tristan from that continent. The site requires much further field study, especially the southern side.

#### Key species

A1	<i>Phoebastria fusca</i>		<i>Nesocichla eremita</i>
	<i>Pterodroma incerta</i>		
A2 (079)	Tristan Islands EBA: One of the four species of this EBA occurs at this site; see Table 2.		
A4i		Breeding (pairs)	Non-breeding
	<i>Gallinula comeri</i>	3,000 (1993)	—
	<i>Sterna vittata</i>	50–70 (1974)	—
A4ii	<i>Diomedea chlororhynchus</i>	16,000–30,000 (1974)	—
	<i>Phoebastria fusca</i>	2,000–3,000 (1974)	—
	<i>Pterodroma macroptera</i>	1,000–3,000 (1974)	—
	<i>Pterodroma incerta</i>	100–200 (1974)	—
	<i>Pterodroma mollis</i>	100–500 (1974)	—
	<i>Pachyptila vittata</i>	1,000–10,000 (1974)	—
A4iii	More than 10,000 pairs of seabirds occur regularly at this site.		

### ■ Other threatened/endemic wildlife

There are no endemic mammals. The only breeding native mammal is the fur seal *Arctocephalus tropicalis*, of which there is a small colony at Cave Point on the southern side of the island. Elephant seals *Mirounga leonina* haul out regularly on Tristan beaches and breed sporadically. *Eubalaena glacialis* (EN) occurs in offshore waters between September and November, but in very low numbers. Of 62 native terrestrial invertebrates recorded, only four are endemic.

### ■ Conservation issues

Protection of the birds of the Tristan group is provided for by the Tristan da Cunha Conservation Ordinance of 1976 (amended 1984 and 1986).

Tristan itself, as the only inhabited island, has incurred the greatest effects of human activity. These include overgrazing by sheep, tree-felling, fire and, in particular, predation by introduced mammals.

Before the arrival of man, the island may have supported 19 seabird species and four landbird species. *Diomedea exulans dabbenena* became extinct as a breeder between 1880 and 1907 due to excessive culling, and *Macronectes* (probably *M. giganteus*) became similarly extinct around 1870, due to disturbance and a decrease in its food-supply, and is now only a non-breeding visitor to the Tristan group. *Catharacta antarctica* may soon also disappear as a breeding species due to persecution. *Nesospiza acunhae* became extinct on Tristan between 1852 and 1873, probably due to the destruction of the low-lying tussock. *Gallinula nesiotis* is thought to have become extinct between 1873 and 1906.

The south-eastern sector, which remains the largest refuge for *Nesocichla* and seabirds and is rarely visited, should remain a wilderness area, a yardstick against which to assess the human impact on the avifauna elsewhere on Tristan.

On Tristan, *Nesocichla eremita* has decreased markedly, due to overgrazing, introductions of alien plants, predation by cats and nest-predation by rats. The current population is restricted largely to ‘gulches’ on the Base plateau. There are no accurate data on population trends, but a decrease is suggested by reports that the species no longer inhabits ‘gulches’ near the Hillpiece (Settlement Plain), nor visits the settlement itself, although in the last 25 years birds have been seen in *Phylica*, above the new volcano. The genetic identity of the population is threatened by introgression from birds (other subspecies) brought over from Inaccessible and Nightingale Islands.

#### Further reading

Broekhuysen and Macnae (1949), Brooke (1979), Christophersen (1947), Cooper *et al.* (1995), Crawford (1941, 1982, 1999), Elliott (1953, 1957), Fraser *et al.* (1994), Glass *et al.* (2000), Hagen (1952), Helyer and Swales (1998), Holdgate (1958, 1965), Richardson (1984), Rowan (1951), Rowlands (1992, 1994), Ryan *et al.* (1990), Stattersfield *et al.* (1998), Swales (1996), Swales *et al.* (1993), Wace and Holdgate (1976).

### Inaccessible Island

**SH006**

Admin region Tristan da Cunha

Coordinates 37°18'S 12°41'W

Area 1,400 ha Altitude 0–511 m

A1, A2 (079), A4i, A4ii, A4iii

Nature Reserve

#### Site description

The site comprises the whole of Inaccessible Island as described in the ‘General introduction’.

#### Birds

See Box and Table 2 for key species. At least 33 bird taxa are known. Sixteen species of breeding seabirds and four of native landbirds occur. The seabirds include *Eudyptes chrysocome moseleyi*, *Diomedea exulans dabbenena*, *D. chlororhynchus*, *Phoebetria fusca*, *Pterodroma brevirostris*, *P. mollis*, *Pachyptila vittata*, *Procellaria a. conspicillata*, *Puffinus gravis*, *P. assimilis*, *Pelagodroma marina*, *Fregetta grallaria*, *Pelecanoides urinatrix*, *Catharacta antarctica*, *Sterna vittata* and *Anous stolidus*. It is possible that the three Tristan Island winter breeders, *Pterodroma macroptera*, *P. incerta* and *Procellaria cinerea*, also breed here.

*Procellaria aequinoctialis conspicillata* is entirely restricted to Inaccessible Island when breeding; estimates in 1999 put the population as between 2,500–10,000 individuals and declining.

The terrestrial species include *Atlantisia rogersi*, *Nesocichla eremita gordonii* (850 pairs, 1990 estimate) *Nesospiza acunhae acunhae* (2,500 pairs, 1983 estimate) and *N. wilkinsi dunnei* (200 pairs, 1983 estimate).

Non-breeding visitors include *Diomedea melanophris*, *Macronectes giganteus*, *M. halli*, *Fulmarus glacialis*, *Daption capense*, *Pachyptila desolata*, *Puffinus griseus*, *Oceanites oceanicus*, *Porphyryla martinica*, *Calidris fuscicollis*, *Larus dominicanus*, *Sterna paradisaea* and *Hirundo rustica*.

#### Key species

A1	<i>Diomedea exulans dabbenena</i>	<i>Nesocichla eremita</i>
	<i>Phoebetria fusca</i>	<i>Nesospiza acunhae</i>
	<i>Atlantisia rogersi</i>	<i>Nesospiza wilkinsi</i>

A2 (079)	Tristan Islands EBA: all four species of this EBA occur at this site; see Table 2.		
A4i		Breeding (pairs)	Non-breeding
	<i>Atlantisia rogersi</i>	2,500–5,000 (1989)	—
	<i>Sterna vittata</i>	86+ (1983)	—
A4ii	<i>Eudyptes chrysocome</i>	17,000–27,000 (1990)	—
	<i>Diomedea chlororhynchus</i>	1,100 (1983)	—
	<i>Phoebetria fusca</i>	200 (1987)	—
	<i>Pterodroma mollis</i>	5,000–50,000 (1987)	—
	<i>Pachyptila vittata</i>	50,000–500,000 (1987)	—
	<i>Puffinus gravis</i>	1,500,000–2,000,000 (1987)	—
	<i>Puffinus assimilis</i>	5,000–50,000 (1987)	—
	<i>Pelagodroma marina</i>	5,000–50,000 (1987)	—
	<i>Fregetta grallaria</i>	5,000–50,000 (1987)	—
A4iii	More than 10,000 pairs of seabirds occur regularly at this site.		

#### Other threatened/endemic wildlife

The only breeding native mammal is *Arctocephalus tropicalis*. At least 39 species of native terrestrial invertebrates are known. The island is particularly rich in the listroderine weevils, endemic to the Tristan group as a whole.

#### Conservation issues

The island, including the surrounding waters up to 12 nautical miles, was declared a Nature Reserve in 1997. Perhaps its greatest value is its virtually unspoilt state. The greatest and most immediate threats are the introduction of alien predators, most notably rats, and the accidental firing of the tussock.

#### Further reading

Cooper *et al.* (1995), Fraser (1983, 1989), Fraser and Briggs (1992), Fraser *et al.* (1983, 1988, 1992, 1994), Olson (1973), Richardson (1984), Rowan (1951), Rowan *et al.* (1951), Ryan (1998), Ryan and Moloney (in press), Ryan *et al.* (1990, 1994, 2001), Swales (1996), Wace and Holdgate (1976).

### Nightingale Island group

**SH007**

Admin region Tristan da Cunha

Coordinates 37°25'S 12°29'W

Area c.390 ha Altitude 0–337 m

A1, A2 (079), A4i, A4ii, A4iii

Unprotected

#### Site description

The site comprises the whole of Nightingale Island as well as Middle and Stoltenhoff Islands and the offshore islets and stacks, as described in the ‘General introduction’.

#### Birds

See Box and Table 2 for key species. At least 30 bird taxa are known. Thirteen species of breeding seabird and three of the native landbirds occur. The seabirds comprise *Eudyptes chrysocome moseleyi*, *Diomedea chlororhynchus*, *Phoebetria fusca*, *Pterodroma mollis*, *Pachyptila vittata*, *Puffinus gravis*, *P. assimilis*, *Pelagodroma marina*, *Fregetta grallaria*, *Pelecanoides urinatrix* (>20,000 pairs), *Catharacta antarctica*, *Sterna vittata* and *Anous stolidus*. The breeding population of *P. gravis* is the largest known, and at the highest density, in the world, with an estimated one million pairs per km<sup>2</sup>. *Pterodroma brevirostris* may also breed. The terrestrial species include *Nesocichla eremita procax* (330–560 pairs, 1974 estimate), *Nesospiza acunhae questi* (560–1,120 pairs, 1974 estimate) and *N. wilkinsi wilkinsi* (30 pairs, 1974 estimate).

Non-breeding visitors include *Diomedea melanophris*, *Macronectes giganteus*, *M. halli*, *Fulmarus glacialis*, *Daption capense*, *Procellaria a. aequinoctialis*, *P. a. conspicillata* and *Larus dominicanus*.

#### Key species

A1	<i>Phoebetria fusca</i>	<i>Nesospiza acunhae</i>
	<i>Nesocichla eremita</i>	<i>Nesospiza wilkinsi</i>
A2 (079)	Tristan Islands EBA: Three of the four species of this EBA occur at this site; see Table 2.	
A4i		Breeding (pairs)
	<i>Sterna vittata</i>	100–400 (1974)
A4ii	<i>Eudyptes chrysocome</i>	c.125,000 (1974)
	<i>Diomedea chlororhynchus</i>	c.5,000 (1974)
	<i>Phoebetria fusca</i>	125–250 (1974)
	<i>Pterodroma mollis</i>	100–1,000 (1974)

A4i ... continued	Breeding (pairs)	Non-breeding
<i>Pachyptila vittata</i>	10,000+ (1974)	—
<i>Puffinus gravis</i>	c.3,000,000 (1990)	—
<i>Pelagodroma marina</i>	10,000+ (1974)	—
<i>Fregetta grallaria</i>	100–1,000 (1974)	—
<i>Catharacta antarctica</i>	100–510 (1974)	—
A4iii	More than 10,000 pairs of seabirds occur regularly at this site	

### Other threatened/endemic wildlife

The only breeding native mammal is *Arctocephalus tropicalis*. At least 31 species of native terrestrial invertebrates are known, including five endemic listroderine weevils and seven endemic drosophilid *Scaptomyza*.

### Conservation issues

The site has been less affected by alien animals than the other sites, and no alien vertebrates have become established. Besides the annual harvest by Tristan islanders of *Eudyptes chrysocome moseleyi* eggs and *Puffinus gravis* eggs and chicks, of which the annual toll is not high, the remaining seabirds are little affected. The introduction of mammalian predators and tussock fires are the principal threats, while the recent die-back of trees, possibly caused by an introduced fungal pathogen, is being investigated, but is potentially, serious for *Nesospiza wilkinsi*.

### Further reading

Broekhuysen (1948), Cooper *et al.* (1995), Fraser *et al.* (1994), Hydrographer of the Navy (1977), Richardson (1984), Rowan (1951, 1952), Ryan *et al.* (1990), Wace and Holdgate (1976).

Gough Island		SH008
Admin region	Tristan da Cunha	
Coordinates	40°19'S 09°56'W	A1, A2 (080), A4i, A4ii, A4iii
Area	6,500 ha	Nature Reserve,
Altitude	0–910 m	World Heritage Site

### Site description

The site comprises the whole of Gough Island as well as the offshore islets and stacks, as described in the 'General introduction'.

### Birds

See Box and Table 2 for key species. The site has been described as 'a strong contender for the title of most important seabird colony in the world'. As many as 54 bird taxa are recorded, of which 20 are non-breeding seabirds and two are endemic landbirds. The seabirds include *Eudyptes chrysocome moseleyi* (about 48% of world population), *Diomedea e. dabbenena*, *D. chlororhynchos*, *Phoebetria fusca*, *Macronectes giganteus*, *Pterodroma brevirostris*, *P. macroptera*, *P. mollis*, *P. incerta*, *Pachyptila vittata*, *Procellaria cinerea*, *Puffinus gravis*, *P. assimilis*, *Garrodia nereis*, *Pelagodroma marina*, *Fregetta grallaria*, *Pelecanoides urinatrix* (>20,000 pairs), *Catharacta antarctica*, *Sterna vittata* and *Anous stolidus*. The terrestrial species are *Gallinula comeri* and *Rowettia goughensis* (1,000 pairs, 1993 estimate).

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Non-breeding visitors include *Diomedea melanophris*, *Macronectes halli*, *Fulmarus glacialis*, *Daption capense*, *Pachyptila desolata*, *Procellaria a. aequinoctialis*, *Puffinus griseus*, *Oceanites oceanicus*, *Fregetta tropica*, *Bulbulcus ibis* and *Larus dominicanus*.

### Key species

	Breeding (pairs)	Non-breeding
A1	<i>Diomedea exulans dabbenena</i>	<i>Gallinula comeri</i>
	<i>Phoebetria fusca</i>	<i>Rowettia goughensis</i>
	<i>Pterodroma incerta</i>	
A2 (080)	Gough Island EBA: Both of the species of this EBA occur at this site; see Table 2.	
A4i		
	<i>Gallinula comeri</i>	2,500 (1993)
	<i>Sterna vittata</i>	500 (1993)
A4ii	<i>Eudyptes chrysocome</i>	144,235 (1993)
	<i>Diomedea exulans</i>	1,000 (1993)
	<i>Diomedea chlororhynchos</i>	5,000 (1993)
	<i>Phoebetria fusca</i>	5,000 (1993)
	<i>Pterodroma brevirostris</i>	20,000+ (1993)
	<i>Pterodroma macroptera</i>	5,000 (1993)
	<i>Pterodroma incerta</i>	20,000+ (1993)
	<i>Pterodroma mollis</i>	50,000+ (1993)
	<i>Pachyptila vittata</i>	100,000+ (1993)
	<i>Procellaria cinerea</i>	10,000+ (1993)
	<i>Puffinus gravis</i>	300,000+ (1993)
	<i>Puffinus assimilis</i>	10,000+ (1993)
	<i>Garrodia nereis</i>	10,000+ (1993)
	<i>Pelagodroma marina</i>	10,000+ (1993)
	<i>Fregetta grallaria</i>	10,000+ (1993)
	<i>Catharacta antarctica</i>	500 (1993)
A4iii	More than 10,000 pairs of seabirds occur regularly at this site.	

### Other threatened/endemic wildlife

*Arctocephalus tropicalis* (200,000 individuals and increasing) and *Mirounga leonina* (about 100 individuals) are the only two native breeding mammals. Of 100 free-living species of terrestrial invertebrates recorded, at least eight are endemic, while 14 are native to the Dependency as a whole. Only eight species of freshwater invertebrates are known.

### Conservation issues

In 1976 Gough Island was declared a Wildlife Reserve and in 1997 it was renamed a Nature Reserve and its boundaries were extended to 12 nautical miles. It was listed as a World Heritage Site in 1995. Principal threats include unlicensed fishing within the reserve, the illegal use of drift-nets, pollution from the meteorological station (now minimal), pollutants from vessels passing through territorial waters, the introduction of alien organisms (especially mammalian predators, the main threat), fires and disturbance.

### Further reading

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