

8. South Atlantic

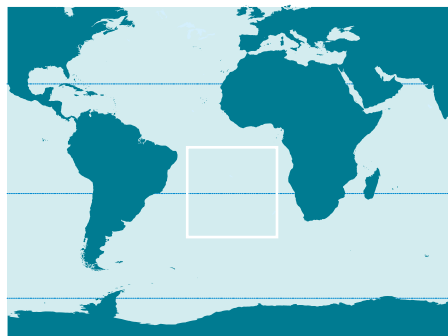


Saint Helena, Tristan da Cunha and Ascension Island



8.1 Saint Helena, Tristan da Cunha and Ascension Island (United Kingdom) OCT

Number of islands:	1 for Saint Helena (SH), 1 for Ascension (A), 4 for Tristan da Cunha (TC)
Population:	5,157 inhabitants (SH), 1,122 inhabitants (A), 284 inhabitants (TC)
Area:	122 km ² (SH), 97 km ² (A), 201 km ² (TC)
Population density:	42 inhabitants/km ² (SH), 13 inhabitants/km ² (A), 1.4 inhabitants/km ² (TC)
GDP/inhabitant:	3500 € / inhabitant (2001)
Unemployment rate:	11,8 % (1998)
Economic activities:	Fishing



The British territory of Saint Helena consists of an administrative centre, the Island of Saint Helena, and two dependencies, Ascension Island and the Tristan da Cunha archipelago. These islands are in the South Atlantic, between Africa and South America. They are separated from one another by several thousand kilometres. In the north lies Ascension Island; Saint-Helena is located 1,300 kilometres to the south-east; while 2,400 kilometres to the south-west lies the Tristan da Cunha archipelago. The three islands are of volcanic origin; a major volcanic eruption took place on the island of Tristan da Cunha in 1961, leading to the total evacuation of the island.

The highest points of each territory are respectively Queen Mary's Peak for Tristan da Cunha (2,062 metres), Green Mountain for Ascension Island (859 metres), and Mount Acateon for Saint-Helena (818 metres). Because of the

distance which separates them, and the differences in climate, fauna and flora, it is difficult to consider these territories as one whole. For this reason, this chapter has been divided into three parts.

Saint Helena is best known for having been the last place of residence of the Emperor Napoleon, after he was forced into exile and before his death in 1821. Economically, Saint Helena is dependent upon British aid, while Tristan da Cunha and Ascension are economically autonomous thanks to their fishing activities. Tourism is a minor industry, but there is a strong will to develop this activity, and there are plans to build an airport on Saint Helena to compensate for the poor sea links.

8.1.1 Current state of biodiversity

Remarkable habitats and species

The remoteness of these islands has resulted in a biodiversity characterized by a high level of endemism. For example, on the Island of Saint Helena, there are 45 endemic plants, 400 endemic invertebrates and more than a dozen endemic coastal fish species. Of the six species of endemic terrestrial birds that lived on the island before the arrival of humans, only the Saint Helena Plover (*Charadrius sanctaehelena*) has survived until today. In 2002, the last remaining (cultivated) specimen of Saint Helena Olive (*Nesiota elliptica*) disappeared.

The island of Ascension is also home to remarkable insular fauna and flora with 35 endemic species, including the Ascension Frigatebird (*Fregata aquila*). This species, like the Red-footed Booby (*Sula sula*), is especially threatened. The island is also home to one of the most important populations of breeding Green turtles (*Chelonia mydas*) in the world.

The Tristan archipelago supports five globally threatened seabirds including the vulnerable Spectacled petrel (*Procellaria conspicillata*), endemic to Inaccessible Island, and the endangered Atlantic yellow-nosed albatross (*Thalassarche chlororhynchos*). These islands are also home to four endemic land bird species, including the Tristan thrush (*Nesocichla eremite*) and the Inaccessible rail (*Atlantisia rogersi*), the world's smallest flightless bird. Both Inaccessible and Nightingale are almost pristine. The absence of human inhabitants means that there have been no human impacts on the vegetation, no introduced vertebrates, and relatively few impacts by invasive plants. The populations of Subantarctic fur seal (*Arctocephalus tropicalis*) and Southern elephant seal (*Mirounga leonina*), for their part, are slowly returning to the numbers they enjoyed prior to their intensive exploitation in the 19th century. Two endemic species of terrestrial birds, the Gough moorhen (*Gallinula nesiotis comeri*) and the Gough bunting (*Rowettia goughensis*), as well as 12 species of endemic plant can be found on the Island of

Gough, further away to the south. The island's environment is near pristine thanks to a near total absence of introduced invasive plants. The House mouse (*Mus musculus*) is the only invasive vertebrate. There has been no human-induced modification of the vegetation. Gough Island is also one of the most important seabird islands in the world. It supports the entire global population of Tristan albatross (*Diomedea dabbernea*) and millions of pairs of other seabirds including the world's largest colony of Northern rockhopper penguins (*Eudyptes chrysocome moseleyi*) and Dark mantled sooty albatross (*Phoebetria fusca*).

Current threats

DNumerous invasive species were introduced to the three territories both accidentally and deliberately. The introduction of rats and mice resulted in the disappearance of a large proportion of the indigenous bird life. Many seabirds have only survived on those islets and rocky outcrops that have not been infested by rats (*Ratus norvegicus* and *R. ratus*).

Saint Helena has lost three endemic seabirds and five endemic landbirds. The native vegetation has been destroyed in most places by a combination of soil erosion caused by over-grazing by introduced herbivores, and the spread of invasive plants.

In addition to millions of pairs of seabirds, Ascension Island for its part, has lost some common land bird species, the Dwarf bittern (*Ixobrychus sturmi*) and the Black-crowned night heron (*Nycticorax nycticorax*), the endemic Ascension rail (*Atlantisia* sp.) and in all likelihood an endemic night-heron. A very large proportion of the native vegetation has also been destroyed by Mexican thorn (*Prosopis juliflora*).

Tristan da Cunha has lost one endemic land bird and millions of seabirds of numerous species, but the other islands in the archipelago, and Gough, have been relatively little affected. However, it is now known that on Gough Island house mice now prey on seabird chicks, even those the size of large albatrosses, which is resulting in massive declines in this seabird community.



Fishing boats in Tristan da Cunha

Alison Rothwell RSPB

Illegal fishing, specifically by-catch by long-liners, and poor treatment of waste also pose a threat to the local biodiversity. Public administrations (such as the Ministry of Agriculture and Natural Resources) and NGO coalitions like the National Trust are working to protect the environment. Environmental policies, control mechanisms, and international cooperation are all contributing towards this objective. Furthermore, the Islands of Gough and Inaccessible have been listed as UNESCO World Heritage sites (Environmental Profile CE, UNESCO).

8.1.2 New threats resulting from climate change

Given the relatively limited territories in the South Atlantic, few observations and climate models are available. According to a 2003 study, there has not been any change in the levels of precipitation on the Island of Gough over the last 40 years (Jones et al., 2003). IPCC projections predict a rise in average temperatures of 2.5°C and a drop in average rainfall levels in the region, both in winter and in summer.

Impacts on biodiversity

Invasive species have already had a major impact on the biodiversity of many islands of the territory of Saint Helena. Mice, introduced to Gough Island, for example, have already decimated a large proportion of the Wandering albatross (*Diomedea exulans*) population as well as other marine birds (Glass, personal communication, Cuthbert & Hilton 2004; Wanless et al 2007). A change in climate could pave the way for greater establishment and spread by introduced species. Changes in sea level and ocean swell should not have an inordinate impact on the populations that currently nest in the coastal areas. It is possible that the Northern Rockhopper penguin or Subantarctic fur seal populations may be very slightly affected, although most of these species are used to constant changes in the coastal features (Ryan, personal communication).

Socio-economic implications

Little is known of the potential impacts of climate change on the fish stocks of Saint Helena, Ascension Island and Tristan da Cunha. The Tristan da Cunha archipelago is especially dependent on the local Tristan crayfish (*Jasus tristani*) and any change in the lobster population would be devastating for the archipelago's economy.

The prevailing conditions in the South Atlantic (water temperature, atmospheric conditions, etc.) mean that tropical storms do not tend to develop in that region of the world. That said, in 2004 a tropical storm developed for the first time in the South Atlantic and lashed the Brazilian coastline. In 2001, a strong storm resulted in serious material damage in the Tristan da Cunha archipelago, carrying off several roofs (made of asbestos) and damaging most of the islands' buildings. However, these isolated events do not make it possible to predict clearly that such extreme weather events will become the norm in the region in the future.

Furthermore, most of these territories are difficult to access, the sea is often rough and Saint Helena does not have sufficient port facilities. This is an obstacle to tourism development on the island (cruise companies tend to exclude the archipelago from traditional circuits) as well as for Tristan da Cunha's fishing and trade sectors. As a result, a potential change in the intensity of storms and ocean swell could be detrimental to the already minimal infrastructure and the current maritime routes (Personal communication, Essex, Glass and Ryan, EC Environmental Profile).



Ascension Frigatebird (*Fregata aquila*)

Mike Penhowski

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