

SOUTH GEORGIA AND THE SOUTH SANDWICH ISLANDS: THEIR CONSERVATION AND MANAGEMENT

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South Georgia and the South Sandwich Islands are administered by the South Georgia and South Sandwich Islands Government, based in the Falkland Islands. Heavily glaciated South Georgia provides a land base for myriad seals and penguins. Responsible ship-based tourism is encouraged. The South Sandwich Islands, actively volcanic, consist of a 390-km-long chain of 11 main islands. Fisheries in the South Georgia Maritime Zone are managed using an ecosystem approach aiming to conserve the marine environment.

Key Words: sub-Antarctic, South Georgia, South Sandwich Islands, conservation, management, fisheries, tourism.

LOCATION AND PHYSICAL CHARACTERISTICS

South Georgia is a crescent-shaped island (~160 km long x 39 km wide). The backbone of the island is formed by two mountain ranges — the Allardyce and the Salvesen ranges. The highest peak is Mt Paget at 2934 m. It lies between 53°56' and 54°55'S but its position south of the Antarctic Convergence gives it a colder climate than other sub-Antarctic islands (Burton 2005). The South Sandwich Islands lie in an arc some 650 km further southeast. Most of the human activity in the region takes place in South Georgia.

South Georgia island is long and narrow. The north coast is relatively sheltered from the prevailing westerly winds and the fjords and bays along this coast provide protected anchorages. The south coast bears the brunt of the Antarctic storms (Stone & Walton 2002). Most human activity has therefore taken place on the north coast (Headland 1984).

Half of the island is covered with permanent ice and snow and numerous glaciers (Poncet & Crosbie 2005). There are about 20 major lakes and many smaller pools, mainly along the northwest coast. There are several satellite islands of which the main ones are Bird Island and the Willis Islands off to the west, Annenkov Island and the Pickersgill Islands off the southwest and Cooper Island to the east (Stone & Tanner 2004). In the far west, Shag Rocks are usually shrouded in mist (Stone & Smellie 2002).

The South Sandwich Islands are a 390-km-long chain of 11 main islands. They are actively volcanic and, despite being north of both the South Shetlands and South Orkneys, are significantly colder owing to the presence of the current from the Weddell Sea. The islands range in size from Leskov Island, which is less than 1.6 km long, to Montagu Island — 10 x 11 km — which is 90% permanently covered by ice. Mount Belinda on Montagu Island is still erupting and the island is gradually growing larger as a result (Patrick *et al.* 2005).

FLORA AND FAUNA

The terrestrial flora and fauna of South Georgia include 25 native species of higher plants and many lower plants. The dominant species is tussock grass, *Paradiachloa flabellata* (Lam.) Hook.f. There are 86 bird species found on the island — seabirds, coastal birds and land birds — of which 30 species breed, including four species of penguin, four species of

albatross and numerous petrel species. Seals are the most numerous mammals, but there are also reindeer and rats which were introduced during the last century (McIntosh & Walton 2000, Burton 2005, Poncet & Crosbie 2005).

Marine fauna include principally krill, but there are also 41 species of fish and diverse benthic species (McIntosh & Walton 2000). Research into benthic species is ongoing, but there is still much to be done. Visiting whales feed in South Georgia waters.

From a wildlife point of view, the South Sandwich Islands are significant for being home to 1.5 million pairs of Chinstrap Penguins *Pygoscelis antarctica* (J.R. Forster, 1781) (Burton 2005).

ADMINISTRATION

A representative of the islands' administration lives on South Georgia at King Edward Point but the majority of administration is carried out from outside the islands by a small team of four people, who contract in outside expertise as necessary. The official address of the Government of South Georgia and South Sandwich Islands is Government House, Stanley, Falkland Islands, South Atlantic. Two scientific bases permanently staffed and managed by the British Antarctic Survey engage in a variety of scientific research topics, including applied fisheries research and ecosystem monitoring. There are also shorter-term projects by visiting scientists.

South Georgia is financially self-sufficient, although the British Antarctic Survey Research stations are part-funded by the Government of the United Kingdom. The vast majority of revenue for the island comes from the sale of fishing licences which totals roughly £3.5 million a year. The second largest revenue source is landing fees from tourists and other visitors but this is still less than £0.5 million. The single largest expense is fisheries management and includes both research and protection. Over the past five years revenue and recurrent expenditure has risen fairly constantly. Major public works projects have incurred significant capital expenditure which has drawn on the islands' reserves.

CONSERVATION AND MANAGEMENT

The first Environmental Management Plan was published in 2000 and set out background information and management

policies for the island of South Georgia. According to the commitment in that plan, a review was carried out in 2006 and, following extensive consultation with stakeholders, an update to the plan was published in August 2006 (Pasteur & Walton 2006).

The key policy aims which govern the management of the island are:

- To conserve the native flora and fauna and natural environment of South Georgia. To prevent further introduction of alien flora and fauna and to eradicate or control previously introduced species that affect or endanger native species or habitats.

Preliminary work is underway to examine the feasibility of eradicating rodents on South Georgia. Consideration is being given to culling one of the two herds of reindeer with a view to studying the impact of removing this species. It is also vital to prevent further introductions of alien species and stricter controls on all visitors and the import of all equipment are being introduced.

- To record and conserve the historical heritage of South Georgia, including significant examples, for future generations.

Previous human activity on South Georgia, although often regrettable, is an unavoidable part of the island's history. As well as being a reminder of the horror of the whaling and sealing industries, the island's historic heritage is a demonstration of human ingenuity and endeavour. The Lutheran church at Grytviken is now a major attraction for visitors and Christmas carol services in particular are still held annually. The grave of Sir Ernest Shackleton is also a place of pilgrimage for many.

- To encourage sustainable tourism and use revenue generated to improve the environmental management of the islands.

Conserving South Georgia's unique natural and historic heritage does not mean isolating the island. Although not officially a World Heritage Site, South Georgia is a unique place which many regard as a global asset. Allowing visitors to see this for themselves is an important way of raising awareness and educating people about the "specialness" of the place and the challenges faced by its natural inhabitants. To do this with minimal impact, careful monitoring of visitor numbers occurs and all visitors must follow guidelines on behaviour. Cruise-ship tourism, under the umbrella of the International Association of Antarctic Tour Operators (IAATO), remains the principal way of visiting the island. There is no air access, nor is there likely to be any.

- To manage human activities so that they cause minimal adverse impacts on the fauna, flora and natural features of South Georgia and to encourage activities aimed at restoring and rehabilitating damage caused by previous human activities.

Plans for activities on South Georgia should be accompanied by an Initial Environmental Evaluation (IEE) or Environmental Impact Assessment (EIA), depending on the scale of the activity. Large-scale restoration projects, such as the recent clean-up of the former whaling station at Grytviken, may be undertaken when funds are available. There are also plans to restore the former dam at Grytviken and install a hydro-electric power plant, to make human activities on South Georgia mainland carbon-neutral.

- To manage sustainable fisheries in the South Georgia Maritime Zone (see map in McIntosh & Walton 2000)

using an ecosystem approach and to conserve the marine environment.

The fisheries around South Georgia are managed in accordance with the precepts and conservation measures of the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR). The recent award of Marine Stewardship Council certification for the toothfish fishery on South Georgia, has led to higher standards of operations in these waters and has also helped raise consumer awareness of sustainable and environmentally-conscious fishing practices. Although the spotlight tends to be on the toothfish fishery because this is the most valuable, research and development into other commercial fisheries, in particular for icefish and krill, continues (Agnew 2004).

- To encourage high-quality research to enhance the understanding of South Georgia's history and natural environment and contribute to regional and global conservation.

Limited funds means that not all desirable research can be undertaken. The highest priority is given to fisheries research which underpins the economy and to research which is directed towards filling international commitments, such as those made under the Agreement for the Conservation of Albatross and Petrels.

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