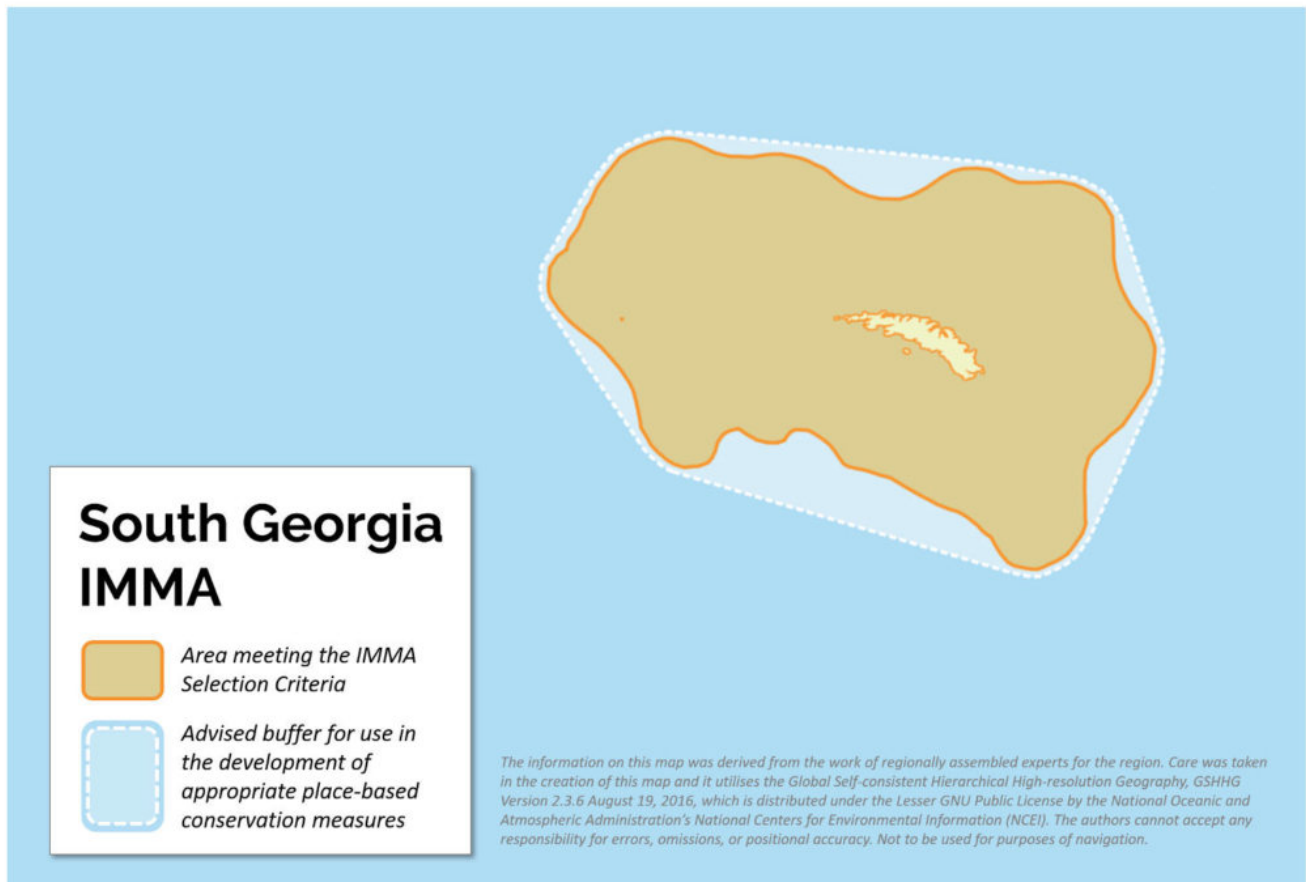


South Georgia IMMA



Criterion B: Distribution and Abundance

Sub-criterion Bii: Aggregations

Adult southern elephant seals return to land in summer (Jan – Feb) to moult for around one month (Carrick et al. 1962). Old skin and hair are replaced in a concentrated period during which elephant seals remain on land to avoid the cold water. The beaches of South Georgia are prime sites for elephant seals during this period when they form large aggregations (Le Boeuf & Laws 1994).

Criterion C: Key Life Cycle Activities

Sub-criterion Ci: Reproductive Areas

There is no recent complete worldwide estimate of southern elephant seal abundance although it is estimated that there were some 650,000 in the mid 1990s (SCAR EGS 2008). Four distinct populations are recognised in the Southern Ocean (Gales et al. 1989, Hoelzel et al. 1993, Slade et al. 1998). While there is some movement of breeding individuals between these populations, it is rare (Fabiani et al. 2003, Reisinger and Bester 2010). On South Georgia, a census of southern elephant seal females in 1995 estimated a total of 113,444 individuals which suggested the population size was stable. There have been no subsequent counts in this region. This represents over 50% of the world pup production (Boyd 1996). Elephant seals are considered capital breeders in that females provision their young using stored fat reserves and do not go to sea to feed during lactation. During the breeding season adult females typically spend a month ashore (September-October), while adult males can fast on land for one to three months (August – October). Females give birth to a single pup 3 – 7 days after their arrival, and then suckle for around three weeks. Mating takes place shortly before the pup is weaned and the adult female returns to the sea a few days later. After weaning pups remain around the breeding beaches to moult their natal pelage before they depart to sea. Breeding aggregations are ephemeral, and do not last beyond the breeding season.

The last published census of Antarctic fur seals at South Georgia was in 1991/92, when an estimated 269,000 pups were counted (Boyd 2004). However, this was, a year of low food availability and the total population of this site in 1999/2000 was estimated to be between 4.5 and 6.2 million (I. Boyd pers. comm. in SCAR EGS 2008). There is evidence from the Bird Island long-term monitoring site that there has been a decline of ~30% between 2003 and 2012 (Forcada & Hoffman 2014). Overall, the South Georgia population is considered to represent 95% of the world's Antarctic fur seals. These seals breed on beaches predominately at the north-western end of the island with smaller colonies around Cooper bay, Cooper Island and Clerke rocks (Boyd 2004). Males come ashore in

November and fight to hold territories. Females begin to arrive a few weeks later, typically peaking in numbers in the first two weeks of December. Within 1-2 days of their arrival females give birth and then suckle on the beaches for 7-10 days. Towards the end of this perinatal period, they come into oestrus and mating takes place (Forcada & Staniland 2018). By early January, when the majority of females have been mated, males vacate the island moving southwards to the pack-ice, Antarctic islands and the Peninsula. Female fur seals are income breeders in that they must alternate trips to sea to feed with periods ashore suckling their pups that remain ashore. Therefore, females and pups are dependant on the island and its surrounding waters during the four-month long lactation period. Pups are typically weaned in April after which females and juveniles disperse at sea, although many remain in the vicinity of the island (Boyd et al 2002, Warren et al. 2006, Staniland et al. 2012).

A breeding colony of Weddell seals exists in and near Larsen Harbour at the south-eastern end of South Georgia. This is the most northerly breeding site of the species, which is separated by about 800 km from the nearest colony in the South Orkney Islands (Burton 2015). This colony is unique not only because of its isolation but in that fact that pupping takes place on snow-covered beaches rather than on ice as at all other sites in Antarctica (Vaughan 1968; Bonner 1985).

Sub-criterion Cii: Feeding Areas

The central place foraging behaviour of the female fur seals during their four-month lactation period means they are restricted in how far they can travel from the breeding beaches between December and April. Tracking data from these animals at a number of representative breeding colonies around South Georgia shows that they exploit areas of the shelf, shelf break and nearby oceanic waters (up to ~350 from the colony, BAS unpublished, Boyd et al. 2002, Staniland et al. 2011, Staniland et al.

2004). Their diet in this region is dominated by Antarctic krill (*Euphausia superba*), but also contains fish (Myctophiids and Notothenids) and squid. Although male fur seals fast when holding territories, tracking data has shown that during the mating season, when they are resident in large numbers at South Georgia, they also act as central place foragers (Staniland and Robinson 2008). Although there is a degree of niche separation with males favouring the shallow shelf areas closer to the island. During the winter months a large proportion of the population is thought to remain in close to the island, as juveniles and adult males are routinely seen on the beaches, observed by fishing vessels and a significant proportion of tracked female seals are resident but do not typically come ashore (Staniland pers com., CCAMLR observer data, Staniland et al. 2012, Boyd 2002, Reid 1995).

Criterion D: Special Attributes

Sub-criterion Di: Distinctiveness

A colony of Weddell seals breeds in and near Larsen Harbour at the south-eastern end of South Georgia. This is the most northerly breeding site of the species, which is separated by about 800 km from the nearest colony in the South Orkney Islands (Burton 2015). This colony is unique not only because of its isolation but in that fact that pupping takes place on snow-covered beaches rather than on ice as at all other sites in Antarctica (Vaughan 1968; Bonner 1985). Accurate estimates of pup production are impossible with the low frequency of visitation by humans to this site, but it appears that the population has decreased over the last three decades. There was an apparent increase in the mid-1980s with a peak count of 150 adults and 58 pups and then a subsequent decline in pup production that appears to have started in the 1990s and continues to the present date with an average annual pup count of 8-9 in this century.