

## AOS Research Project

### Trend in the population of Sooty Terns breeding on Ascension Island, South Atlantic

**Start date: February 1990**

**End date: 2025**

Reliable population estimates are essential for effective wildlife management and conservation. On Ascension Island trends in seabird populations are required to quantify the results of a feral cat eradication programme. A count of nests at the peak of their incubation period was the method adopted by the Army Ornithological Society (AOS) to census Ascension Island Sooty Terns. The total population is so large that censuses involved estimated mean Apparently Occupied Nests (AoNs) density in sample quadrats and extrapolated these to the estimated area of the colony. AoN density was determined from > 100 randomly placed 10 m<sup>2</sup> circular 'quadrats'. The number of clutches within each circle was counted (Figure 1).



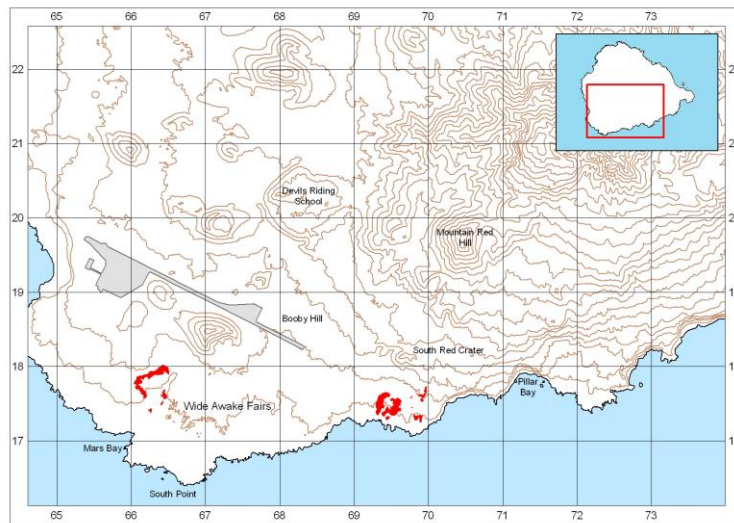
**Figure 1:** Colin Holcombe and Mike Vincent measuring Sooty Tern eggs in a 10 m<sup>2</sup> quadrat at Mars Bay, Ascension Island 2004 (Photo D. Foley)

The area of each subcolony was surveyed at the start of the study period using compass and tape ring-traverses and in later years by walking the boundary and taking GPS readings at regular intervals (Figure 2).



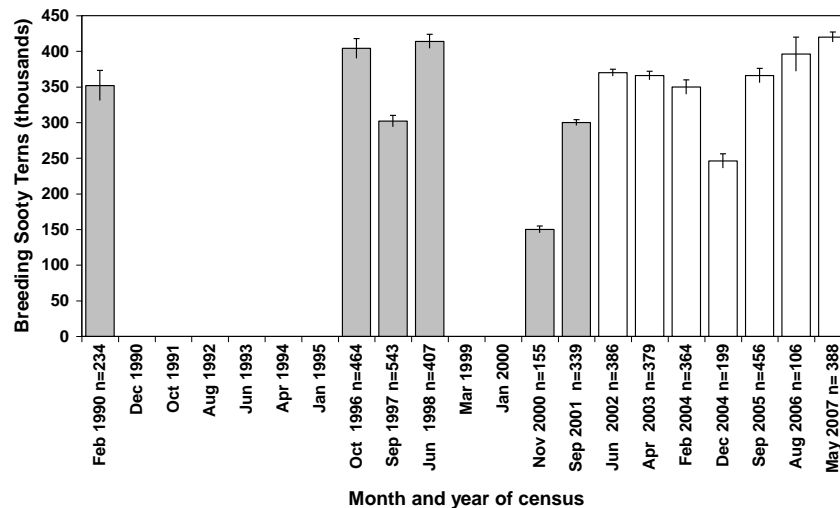
**Figure 2:** A Royal Artillery surveyor using GPS instruments to measure the area of the Sooty Tern colony at Waterside, Ascension Island 2002 (Photo J. Hughes)

GPS data was fed into a Geographical Information System (GIS) the area was calculated and the colony plotted (Figure 3). Maps of the colony between 1990 and 2011 are available using a KML file loaded into Google Earth.



**Figure 3:** GIS map showing (in red) the size and location of the sooty tern colony at Mars Bay and Waterside, Ascension Island in October 2009.

Sooty Terns are long lived birds and to cover the full life cycle of chicks that hatched at the beginning of the study period plans are to continue the population census research until 2025. The long term population study is coordinated by John Hughes (a PhD student) at the Centre for Ornithology, University of Birmingham. Results so far indicate a stable population (Figure 4).



**Figure 4:** Estimated numbers ( $\pm$  95% confidence limits) of Sooty Terns breeding on Ascension Island from 13 censuses that took place both before (grey bars) and after (open bars) the Cat eradication programme. Note that the sub-annual breeding cycle results in birds breeding twice in 2004. The number of quadrats ( $n$ ) measured to obtain the mean density each season is placed at the base of each bar. The census in 1997 was completed by N. Ratcliffe (RSPB).

**Reference:**

Hughes, B.J., Martin, G.R. & Reynolds S.J. 2008. [Cats and Seabirds: Effects of feral Domestic Cat \*Felis silvestris catus\* eradication on the population of Sooty Terns \*Onychoprion fuscatus\* on Ascension Island, South Atlantic. \*Ibis\* 150 \(Suppl. 1\): 122–131.](#)