



## **Agreement on the Conservation of Albatrosses and Petrels**

### **Fourth Meeting of Seabird Bycatch Working Group**

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### **Proposal that addressing bycatch of wandering albatrosses should be considered as an ACAP priority**

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# Proposal that addressing bycatch of wandering albatrosses should be considered as an ACAP priority

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## Background

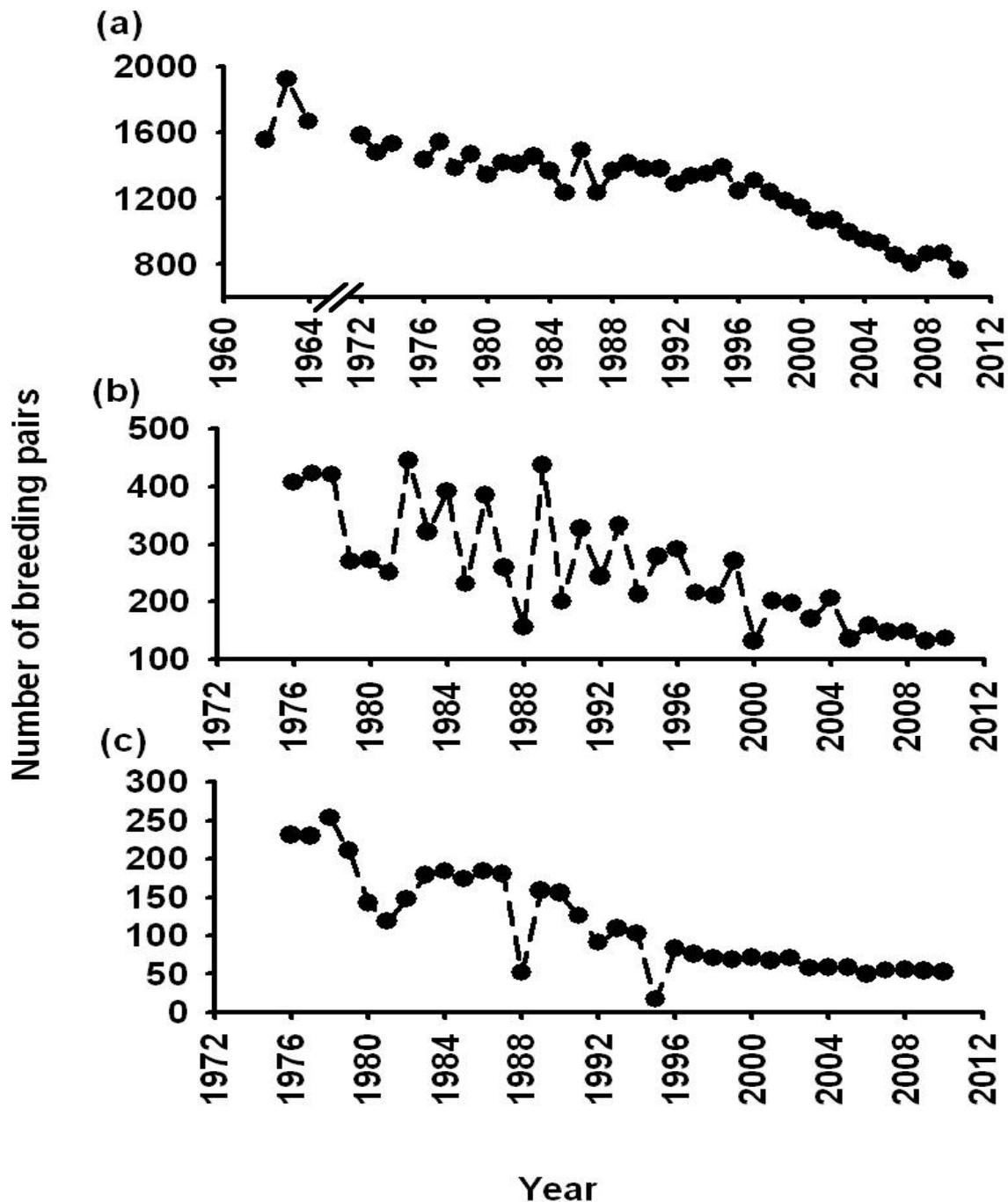
There are advantages to ACAP of identifying priority areas where management intervention is likely to improve the conservation status of one or more ACAP-listed species. The objectives of this paper are to (i) describe the long-term status of the wandering albatross *Diomedea exulans* population at South Georgia (Islas Georgias del Sur), (ii) present an analysis of data on bird distribution and fishing effort to identify the areas of greatest interaction with fisheries, and (iii) propose that addressing the bycatch of this population should be considered as an ACAP priority.

## Population trends of albatrosses in the South Atlantic

Although albatrosses are the most globally threatened multi-species family of birds according to IUCN, some species that are endemic to a single island or island group qualify for Red Listing because of their restricted breeding range rather than projected time to extinction based on population data. Others, however, are very clearly in decline. This includes seven of the eight populations breeding in the islands of Tristan da Cunha, the Falklands (Malvinas) and South Georgia (Islas Georgias del Sur) which were considered to be decreasing at 1-4% per annum, making the South Atlantic the worst affected region in the Southern Ocean (Cuthbert et al. 2003; Poncet et al. 2006; Wanless et al. 2009) (Fig. 1).

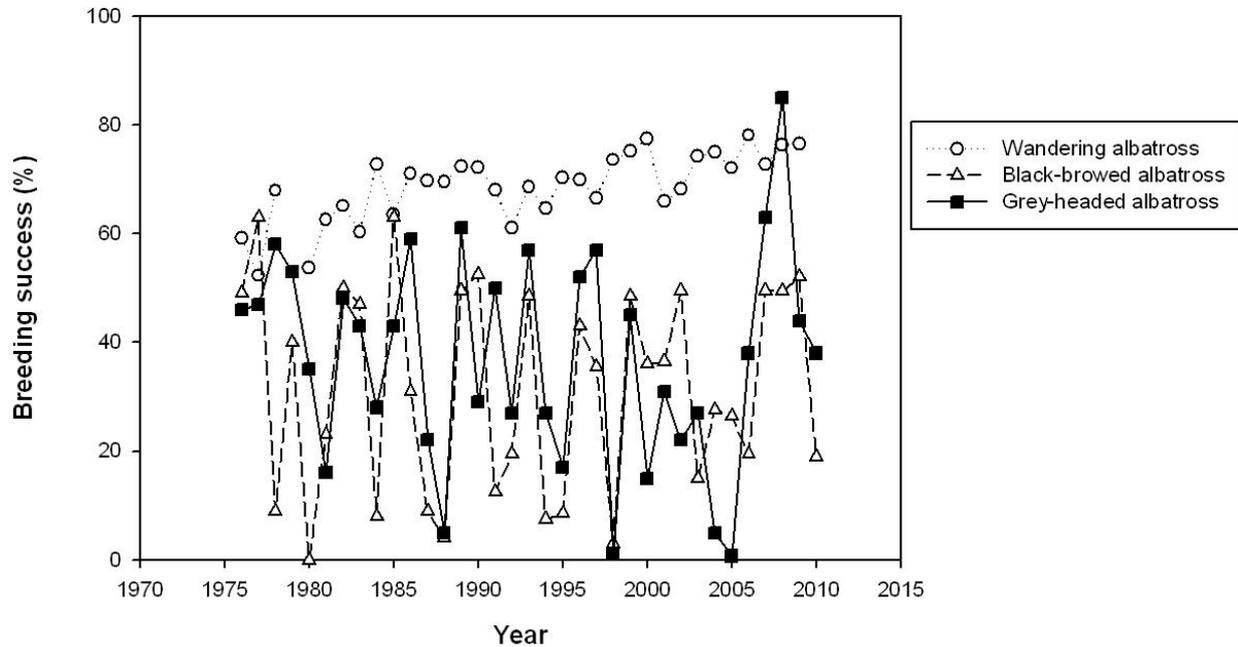
South Georgia (Islas Georgias del Sur) holds major populations (the largest to third largest, globally) of wandering albatross, grey-headed albatross *Thalassarche chrysostoma*, black-browed albatross *T. melanophris* and light-mantled albatross *Phoebastria palpebrata*. The light-mantled albatross is the least known because it nests solitarily or in small groups, and a proportion of nests is inaccessible, limiting the possibilities for long-term demographic study because permanent movement to an unvisited site is indistinguishable from mortality. Intensive monitoring of the other species provides unequivocal evidence of long-term population decreases beginning in the 1960s or 1970s (British Antarctic Survey unpublished data; Fig. 1). The wandering albatross population at Bird Island has declined from 1554-1922 (mean 1714) pairs in 1962-1964, to 779-865 (mean 834 pairs) in 2006-2011. The trend at Bird Island, which holds 61% of the local breeding population, is the same as in the rest of the island group (Poncet et al. 2006). From 1997 to 2007, when the rate of decline increased to 4.5% per annum, this represented the removal, without replacement, of 95 breeding birds per year.

Fig. 1. Population trends of (a) wandering albatross, (b) grey-headed albatross and (c) black-browed albatross at Bird Island, South Georgia (Islas Georgias del Sur). Data are from British Antarctic Survey.



Breeding success shows a very different pattern, highly variable for both grey-headed and black-browed albatross, but gradually increasing in the wandering albatross (Fig. 2). In both black-browed and grey-headed albatross, the high variability in breeding success is assumed to relate to the long-term decline in krill abundance in the south-west Atlantic or to other changes in prey abundance or oceanography. In contrast, the gradual but sustained increase in breeding success of the wandering albatross suggests that environmental conditions for this species have been improving (as in the Indian Ocean; Weimerskirch et al., unpublished manuscript), discard availability has increased, or there has been a density-dependent reduction in intra-specific competition as the population has declined.

Fig. 2. Long-term changes in breeding success of albatrosses at Bird Island, South Georgia (Islas Georgias del Sur). Data are from British Antarctic Survey.



### Wandering albatross distribution in relation to fisheries

Comprehensive data on distribution of wandering albatrosses from South Georgia (Islas Georgias del Sur) are available from deployment of satellite-transmitters, GPS loggers or GLS loggers (geolocators) on breeding adults, nonbreeders, pre-breeders and juveniles. The distribution data were weighted by sex, number of birds of different status in 2005 (based on a demographic model developed by CSIRO Marine and Atmospheric Research, Hobart: Tuck et al. in press) and the duration of each phase/stage (Fig. 3). Fisheries data were collared by CSIRO, Hobart. The areas of greatest potential interaction with fisheries were then mapped, based on the product of the proportion of the year-round, global wandering albatross distribution, and the total effort from all pelagic, or demersal fisheries in each 5 x 5 degree grid square (Figs. 4 and 5). The largest fisheries in the areas of greatest interaction are shown in boxes. It is important to note that a high level of interaction is not indicative of high bycatch rates as some fisheries catch few seabirds for operational or other reasons.

Fig. 3. Year-round distribution of wandering albatrosses from South Georgia (Islas Georgias del Sur) in 2005, based on tracking data. Data are from British Antarctic Survey.

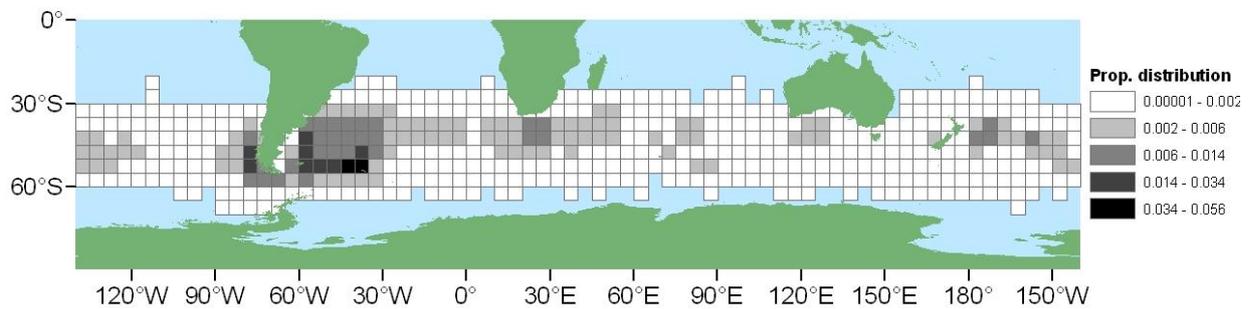


Fig. 4. Areas of greatest potential interaction (bird distribution x fishing effort) of wandering albatrosses from South Georgia (Islas Georgias del Sur) in 2005 and pelagic longline fisheries. The largest fisheries in the three areas of greatest interaction are shown in boxes. Bird distribution data are from British Antarctic Survey and fisheries data were collated by CSIRO, Hobart.

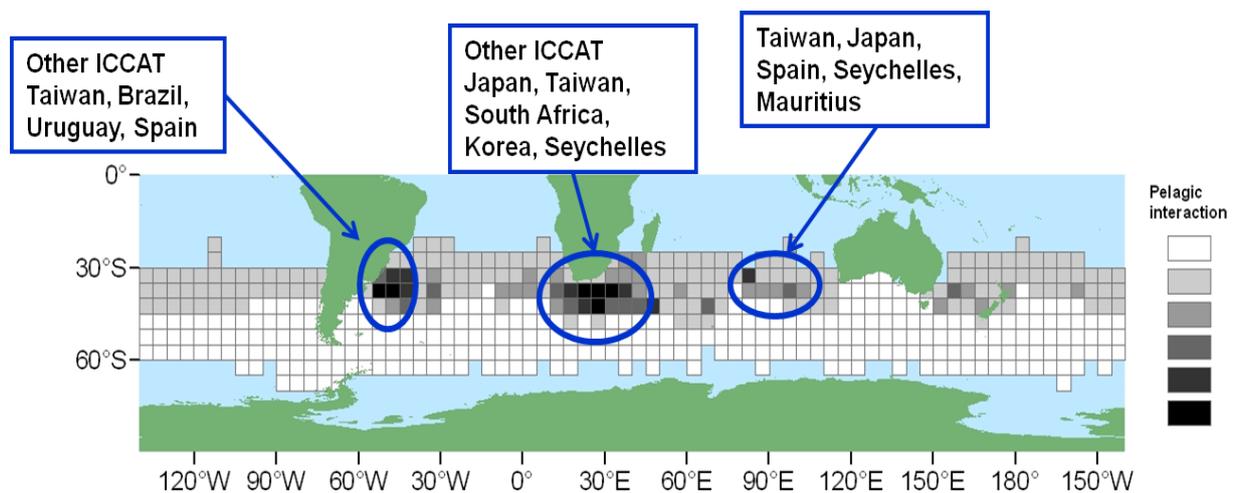
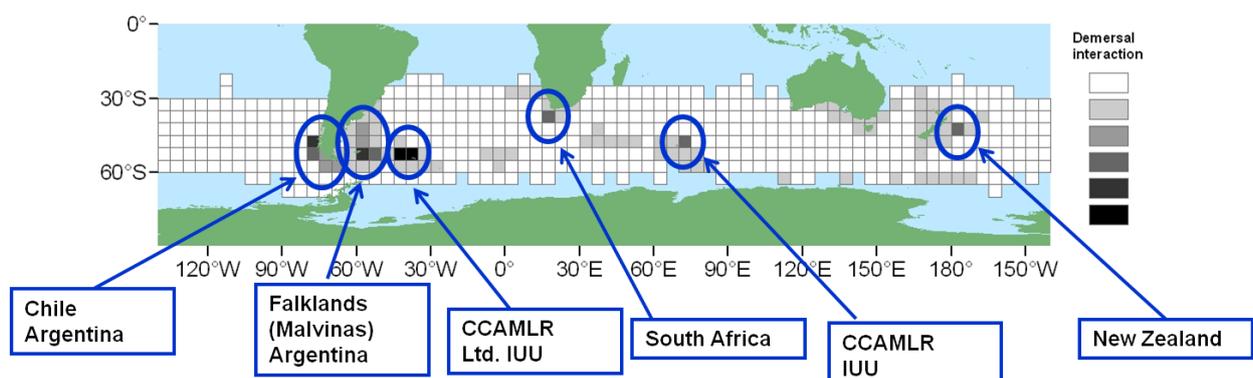


Fig. 5. Areas of greatest potential interaction (bird distribution x fishing effort) of wandering albatrosses from South Georgia (Islas Georgias del Sur) in 2005 and demersal longline fisheries. The largest fisheries in the areas of greatest interaction are shown in boxes. Bird distribution data are from British Antarctic Survey and fisheries data were collated by CSIRO, Hobart.



### **Justification for addressing bycatch of the wandering albatross as a priority**

Work is in progress on the ACAP prioritisation framework which can be expected to identify the wandering albatross, and potentially the south-west Atlantic population in particular, as a priority bycatch issue. However, the final conclusions from this process are not expected to be available in time for AC6. As the next opportunity to identify conservation priorities at an Advisory Committee meeting would be 2013 (no AC meeting is scheduled for 2012), there is a clear advantage to highlighting particularly strong cases on which ACAP might focus its efforts in the interim. The reason for advocating that the wandering albatross is one such ACAP priority is the clear acceleration of the downward trend since the late 1990s, indicating that its population is in a particularly parlous state. Given the gradual long-term improvement in breeding success, the lack of evidence that land-based threats (human disturbance or introduced species), or disease, are affecting birds, and the apparent avoidance of trawlers by this species because of low manoeuvrability compared with white-chinned petrels *Procellaria aequinoctialis* and *Thalassarche* albatrosses, the conclusion that bycatch in longline fisheries is the main or only driver of the observed population decline of this population is compelling.

### **Conclusions**

Noting that the prioritisation framework for at-sea threats appears unlikely to provide detailed advice to the AC until 2013, SBWG members are requested to recommend to the Advisory Committee :

- that the bycatch of the southwest Atlantic population of wandering albatross be considered a high priority threat requiring urgent and coordinated international action;
- that the urgent action should include:
  - (i) urging ACAP Parties to immediately submit to ACAP any existing bycatch data, in order to improve assessment of bycatch of wandering albatross;
  - (ii) urging ACAP Parties which authorise fishing in the range of this species/population to commence gathering bycatch data in relevant fisheries if they have not already done so and to submit those data to ACAP; and
  - (iii) ACAP specifically highlighting the conservation threat to this species/population in its engagement with RFMOs with responsibility for managing fisheries within its foraging distribution, and to request that those RFMOs implement best practice seabird bycatch mitigation measures recommended by ACAP, gather seabird bycatch data at a species level and promptly provide ACAP with any existing seabird bycatch data.

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## References

- Cuthbert R, Ryan PG, Cooper J, Hilton GD (2003) Demography and population trends of the Atlantic yellow-nosed albatross. *Condor* 105: 439-452
- Poncet S, Robertson G, Phillips RA, Lawton K, Phalan B, Trathan PN, Croxall JP (2006) Status and distribution of wandering, black-browed and grey-headed albatrosses at South Georgia. *Polar Biology* 29: 772-781
- Tuck GN, Phillips RA, Small C, Thomson RB, Klaer N, Taylor F, Wanless RM, Arrizabalaga H (in press) An assessment of seabird-fishery interactions in the Atlantic Ocean. *ICES Journal of Marine Science*
- Wanless RM, Ryan PG, Altwegg R, Angel A, Cooper J, Cuthbert R, Hilton GD (2009) From both sides: dire demographic consequences of carnivorous mice and longlining for the Critically Endangered Tristan albatrosses on Gough Island. *Biological Conservation* 142: 1710-1718