Population decline of Cape Petrel on Fildes Peninsula

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***Introduction***

Seabirds and in particular specialist predators are valuable indicators of the health of the ecosystem of which they are part (Furness & Camphuysen, 1997; Thibault et al., 2019). Their population trends provide information on their prey stocks and hence reflect a variety of environmental parameters. This is of particular importance in view of the current environmental changes in the Antarctic and the surrounding Southern Ocean. The cape petrel (*Daption capense*), a pelagic feeder, is considered as indicator species within the Ecosystem Monitoring Program (CEMP) of the Conservation of Antarctic Marine Living Resource (CCAMLR) as this species is being likely to be affected by changes in the availability of commercially harvested species (currently krill and fish). However, no CEMP data about population trends of the cape petrel in the Antarctic are currently available.

Based on ecological studies in the 1980s a long-term sea-bird monitoring program on the Fildes Peninsula has been carried out since 2003/04 (ATCM XXVII IP5 *Research Project "Risk assessment for the Fildes Peninsula and Ardley Island and the development of management plans for designation as Antarctic Specially Protected or Managed Areas*" and ATCM XL IP37 *Bird Monitoring in the Fildes Region*). As a result, information on the local cape petrel population has recently been published (Braun, C. et al. (2021)). The data presented give a valuable hint to changes in the Antarctic marine environment. Moreover, this is the first known report of a significant decline in a local Cape Petrel population in Antarctica.

***Abstract***

The Antarctic and the surrounding Southern Ocean are currently subject to rapid environmental changes and increasing anthropogenic impacts. Seabird populations often reflect those changes and accordingly act as indicators of environmental variability. Their population trends may provide information on a variety of environmental parameters on the scale of years or decades. The polar ornithology working group of the Institute of Ecology and Evolution of the University of Jena (Germany) therefore collects and evaluates long-term data on the cape petrel population from a long-term monitoring program on Fildes Peninsula, South Shetland Islands, Maritime Antarctic, an area of considerable long-lasting human activity.

Gráfico

Descripción generada automáticamente

Fig. 1 Number of breeding pairs of cape petrel (*Daption capense*) on the Fildes Peninsula and Ardley Island in the southwest of King George Island, South Shetland Islands, Antarctica. Year refers to time of chick fledging (source: Braun, C., Esefeld, J., et al. (2021))

The data presented, covering a period of 36 years, indicate some variability, but no clear trend in the number of breeding pairs between the breeding seasons 1985 and 2006 (see fig. 1). However, beginning in the 2008 season when 179 breeding pairs were observed, the population declined significantly and reached a minimum in the 2020 season with only one breeding pair. The mean annual decrease between 2008 and 2020 was 10.6%. In the study, possible causes of this strong negative population trend were discussed. Anthropogenic disturbance only affects a few breeding sites in the area and therefore cannot, on its own, explain the consistent population decline at all the breeding sites studied. It might be more likely that reduced food availability was the main reason for the drastic decline in the cape petrel population.

***Concluding remarks***

The significant decline in the local cape petrel population at Fildes Peninsula, which follows a long period without a clear population trend, shows the unpredictability of such developments and that the causes of population declines are not always obvious at first sight. It would be particularly interesting to gather further information on local petrel population trends in other areas to see whether parts of the Fildes Peninsula population have moved to other nesting sites or if similar declines in breeding pairs can be observed elsewhere, which could provide valuable insights into the extent and possible causes for the decline in the marine food web. Finally, the observed population decline underlines the high importance of local long-term monitoring programs.

***References***

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