

Research notes

Effects of small-mammal trapping on birds at sub-Antarctic Marion Island

Trapping methods used to study, control or eradicate introduced mammals at oceanic islands can have deleterious effects on the naturally occurring avian fauna, unless procedures are adopted to reduce incidental mortality (e.g. Bloomer & Bester 1992).

The house mouse, *Mus musculus*, has been present at sub-Antarctic Marion Island, southern Indian Ocean since the early 19th century (Berry *et al* 1978). As part of a study of the species' influence on the Marion Island ecosystem (Matthewson *et al* 1994), regular trapping programmes were undertaken during 1991/92 and 1993/94, during which observations were made of birds interacting with traps.

Sherman live traps (7.5 x 9 x 23 cm) were set out in coastal habitats in the vicinity of the meteorological station at Transvaal Bay (46°54'S, 37°45'E) for varying periods in each month during the periods April 1991 to March 1992 and May 1993 to April 1994. Baited traps were opened just before or after dusk and their contents checked shortly before or after dawn. Some traps were left open for 24 h in the first year of study, but the majority (79.4% of 46 500 trapnights) were left open at night only. Non-quantified observations were made of birds investigating traps and all birds caught were recorded.

Birds investigating traps set open during daylight hours sometimes sprung them, either by jumping onto them, as in the case of lesser sheathbills, *Chionis minor*, or by attempting to get the bait, as in the case of sheathbills, Subantarctic skuas, *Catharacta antarctica*, and less often kelp gulls, *Larus dominicanus*. Opening traps after dusk alleviated this problem to a large extent.

Out of a total of 46 500 trapnights only four birds were found caught in Sherman traps: three Subantarctic skuas and one lesser sheathbill. A skua was found in a trap and released uninjured on 21 October 1991. It had moved the trap about 5 m. A second skua had its head wedged tightly into the trap and was found drowned in a nearby pond on 22 June 1993. The third skua was alive when found on 6 December 1993, but had torn its web on one foot and had moved the trap about 50 m while trying to escape. The bird was released. The sheathbill was found dead with its head wedged into the trap on 15 September 1993, having moved it a short distance before dying.

During the study reported here a very low incidental mortality rate for birds per trap set occurred (0.0086%, assuming all birds caught would have died if not released) and the four birds captured represent negligible

proportions of their species' populations at Marion Island (Cooper & Brown 1990). Incidental mortalities of Subantarctic skuas and lesser sheathbills were far higher in a successful cat eradication programme at Marion Island (Bloomer & Bester 1992).

Use of Sherman live traps therefore resulted in insignificant mortality of birds at Marion Island, indicating that such a procedure is acceptable for studies of small mammals at subantarctic islands.

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