

## Why study the foraging patterns of non-breeding albatrosses?

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Since 1992 a joint NIWA/Te Papa team has been studying the foraging of southern Buller's albatrosses (*Thalassarche bulleri*) at sea using satellite transmitters. This work is funded by the Foundation for Research, Science & Technology to allow construction of a simulation model that could be used to predict (and avoid) longline bycatch. Earlier results showed major differences between the foraging patterns of males and females, and between birds from different colonies (Solander Island compared with the nearby Snares Islands). To add to the complexity, these birds foraged over different sea areas according to the stage of the breeding cycle. However, almost half of the world population of Buller's albatrosses are non-breeders (failed breeders, divorced breeders, young birds). Work on other species (especially grey-headed albatrosses *Thalassarche chrysostoma*) showed that most birds dying on longlines were young. Could this mean that young birds forage in different areas and, if so, at what age do they start foraging like adults? Are there differences that would make them susceptible to longline capture? Eight pre-breeders have now been tracked throughout most of the season from Snares and Solander colonies. In this paper we show the results of this new work.

## Hatching failure in South Island robins (*Petroica australis australis*): a consequence of inbreeding depression or food limitation?

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A population of the South Island robin (*Petroica australis australis*) on Motuara Island in the Marlborough Sounds was founded in 1973 by only 5 individuals. Subsequent inbreeding has resulted in the current population of c.600 having much

lower genetic variability than outbred mainland populations. This has been implicated as the cause of a high level of hatching failure in the Motuara population, which is also characterised by smaller clutch sizes and fewer clutches year<sup>-1</sup> than in outbred populations. However, the high density of robins on Motuara Island means that resource limitation could be an alternative explanation.

Between August and November 2001 I performed a food supplementation experiment to determine which of these 2 hypotheses best accounted for hatching failure in the Motuara Island robins. Preliminary results indicate that pairs in which the female's diet was supplemented by *Tenebrio* larvae had higher hatching success than control pairs, but hatching success was still lower than in outbred mainland populations. Incubation attentiveness and egg size did not vary between treatment and control birds. Eggs and sperm samples were collected from Motuara Island and will be examined in an attempt to determine the mechanism causing hatching failure. This study has implications for the conservation of endangered birds, as translocation to offshore islands is a technique widely used in New Zealand and elsewhere.

## Waders of the northwestern South Island, New Zealand

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Waders have been counted regularly at Farewell Spit since 1961 and in Golden Bay and Tasman Bay since 1984. Data are presented from 20 study sites within this area that show the distribution of each species and changes in their abundance between seasons and over the duration of the study up until the winter of 2001. Of 163,000 mainly migratory waders from overseas that visit the New Zealand coast during the southern spring, 23% were found in the northwestern South Island. During winter, 130,000 mainly New Zealand breeding waders visit New Zealand shores, and 14% of these occur in the study area. During spring, c. 30,000 waders visited Farewell Spit, increasing to almost 40,000 in the late summer. More than 1% of the total population of South Island pied oystercatcher (*Haematopus fischeri*), variable oystercatcher (*Haematopus unicolor*), banded dotterel (*Charadrius bicinctus*), eastern bar-tailed godwit (*Limosa lapponica baueri*), red knot (*Calidris canutus*), and ruddy turnstone (*Arenaria interpres*) used Farewell Spit during the year. Motueka Sandspit was similarly important for both oystercatchers and bar-tailed godwit. Waimea