broods hatching. The 5 main causes of nest failure during incubation were flooding by high tides or storms (22.3%), unidentified predators (14.0%), black-backed gulls (13.4%), cats (11.7%) and people (10.1%). The proportion of eggs that hatched was fairly stable during the 1993/94 to 1997/98 seasons at 27.8 to 31.7%, but was 72.5 and 53.7% in the past 2 years. This sudden improvement in nesting success was attributed to the increased duration of pest control. Nesting success during incubation in managed habitat (47.2%) was significantly greater than in unmanaged habitat (19.5%), mainly as a result of fewer losses by flooding and predation. Overall, 52.6% of hatched chicks fledged. The number of chicks fledged per season (5–33), and fledglings produced per breeding pair (0.26–1.08) increased through the study. However, although fledgling productivity was greater in managed habitat (57.2%) than unmanaged habitat (47.5%), the difference was not significant.

State of the play with hihi (stitchbird) (*Notiomystis cincta*) recovery

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Recovery of hihi is currently at a standstill. Only 1 population, on Little Barrier Island, is self-sustaining and 20 years of effort to establish other self-sustaining populations has failed. Three translocated populations have gone extinct and the 3 surviving translocated populations along with the single captive population all require intervention to persist. Hihi are therefore still at risk of extinction from a single catastrophic event such as the introduction of predators or disease to Little Barrier Island. A synopsis of the hihi recovery programme is given, with particular attention to the question of why translocated hihi populations have failed to establish. Research questions that still need to be answered are outlined and future management options that might answer some of these questions are proposed.

UV reflectance, bill colour, and territory defence in blackbirds (*Turdus merula*)

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The visual properties of conspicuous male ornaments may be important in social-signalling during intra-sexual interactions. In this study, we used intruder models to examine the effect of altering the UV reflectance and colour of a single male ornament on intra-sexual interactions of the blackbird, *Turdus merula*. We presented stuffed models of male blackbirds with brown, yellow, or orange bills to residents in their natural habitat, and altered UV reflectance from the bills by applying nail varnish. We found no evidence to suggest that UV reflectance from the bills of male blackbirds affected the response of resident males to a simulated territory intruder under natural signal and viewing conditions. However, models with brown bills received less attention from resident males than models displaying carotenoid-based colouration (yellow and orange). The brown bill is typical of first year males and may be an effective signal of subordinate status, reducing aggression from adult males. Furthermore, resident males came closer to orange-billed than to yellow-billed models during presentations, suggesting that orange-billed models may be perceived by residents as more of a threat to territory ownership. Bill colour may be a reliable status signal used for revealing competitive ability between as well as within age classes of blackbirds, but UV reflectance does not appear to play an important role during intra-sexual interactions.

Post-fledging mortality in black-fronted terns (*Sterna albostriata*): does fledging equal success?

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Black-fronted terns (*Sterna albostriata*), are listed globally as endangered and are in decline primarily as a result of the impacts of introduced mammalian predators. Mortality rates are high for black-fronted tern eggs (60%) and chicks (70%), but little is known about the impact of predation at other lifestages. In this study, I attached radio transmitters to black-fronted tern chicks before fledging to monitor rates and causes of mortality in the immediate post-fledging period. Minimum mortality rates for the first month after fledging were 31% (n=13), 22% (n=18) and 13% (n=32) in the 1998, 1999, and 2000 breeding seasons, respectively. Introduced predators such as feral cats (*Felis catus*) and Norway rats Ten years studying grey-faced petrel (*Pterodroma macroptera gouldi*) at Mauao/Motuotau

We investigated whether Norway rats (*Rattus norvegicus*) were responsible for a minimum of 75% of all deaths. Additional causes of mortality included starvation and necrotising enteritis. All except 1 of the juveniles that died did so within the first week after fledging, all other juveniles survived until they dropped