

# NATIVE BIRD MANAGEMENT

*The following is a personal view of the future management of our vulnerable and endangered native birds by Wildlife Service scientist Dr Murray Williams. The article raises more questions than it answers, giving readers pause to think who have always accepted that prevailing management practices are correct.*



As greater New Zealand emerged from the last ice age, about 15,000 years ago, it did so in concert with a rising sea level. Greater New Zealand, with its now three main islands then as one, shrank, its extensive lowlands were drowned and its old coastline disappeared eventually under some 180–200m of water.

Just as the land connections between North, South and Stewart Islands were sunken, so were those between the hinterland and the near coast hills. These hills became islands, now termed landbridge islands — Kapiti, D'Urville, Great Barrier and Hauraki Gulf islands may be viewed as remnants of that Greater New Zealand.

These islands carried with them, at separation, all the floral and faunal heritage of the mainland. But viewed some 10–15 millennia later, each island now has its own special character, its own, and in many cases unique flora, and an assemblage of native birds that may also be different from that of its near neighbours.

## Obvious pattern

When the native forest-inhabiting bird faunas of New Zealand's many landbridge islands are compared (see Box 1), an obvious pattern emerges. The large islands contain more native species than do the small islands, and the particular assemblage of native bird species on any island is directly related to the island's size. Simply, this is because large islands contain larger tracts of forest and a greater diversity of habitats within those forests. Thus, a greater number of species can live there side by side and each can exist in abundance. On the other hand, small islands

have few different habitat types and their bird populations are smaller; small islands characteristically contain only birds like fantail, silvereye and grey warbler, species which have small territories, are good at moving from one isolated habitat to another, and are capable of exploiting a wide variety of habitats.

These relationships between an island's size and the number and identity of bird species living there are but some of the findings of a branch of ecology called island biogeography. Throughout the world, the faunas of many groups of islands are being subjected to analyses by students of this discipline seeking to identify new relationships. This pursuit is not a flight of scientific fancy but has special relevance to the conservation of bird and other animal species in mainland reserves. Isolated patches of forest on the mainland, surrounded by a sea of grass farmland, are essentially islands, with some species of forest-inhabiting birds no more able to cross the sea of grass than they are to cross the water to landbridge islands. Thus, it is agreed, a study of landbridge island faunas, and the processes that affect them, can provide guidance for the conservation of species restricted to mainland forest "islands."

**Perhaps the simplest and most obvious extrapolation from these island studies is that if a species has failed to survive the 10–15 millennia of isolation on a landbridge island of a particular size, then it is equally unlikely to survive long term in a similar sized isolated forest block on the mainland. The**

**The black stilt, the world's rarest wading bird, is being genetically swamped by the more aggressive pied stilt in what is a natural process. The author asks whether there is any point in fighting against such a process, and whether a species like the grey duck, which is being genetically swamped by the mallard, should also be protected in the same way.** Photo: Ray Pierce

corollary to this, of course, is that if a species — stitchbird, for example — failed to survive on Mercury Island (22 km<sup>2</sup>), but did so on Little Barrier Island (30 km<sup>2</sup>), then any mainland reserve for it has to be in the order of 30 km<sup>2</sup> to ensure its long term survival.

## Ignores vital point

This simplistic extrapolation, while correct in general terms, ignores at least one vital point: that the modification of each island's avifauna after it separated from the mainland, took place under pressures which did not include a suite of mammalian predators or herbivores, nor other human-induced changes. The kokako, for example, failed to survive on Little Barrier Island, disappearing from there without being faced by deer, goats and possums, now known to compete with it for food in Pureora Forest, and without the attention of cats, mustelids and rats which have plundered their nests in Pureora. The number of kokako able to live on Little Barrier Island was simply too few to allow the bird to sur-