

Molecular ecology of kakapo (*Strigops habroptilus*)

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There are now about 60 kakapo (*Strigops habroptilus*), with little genetic variation amongst them. The single exception is the individual “Richard Henry” from Fiordland. The other individuals are either from Stewart Island or bred from Stewart Island stock. Samples of DNA

are being used to sex offspring at hatching, determine paternity of chicks and even sex an individual from its faeces. Paternity patterns of recently hatched chicks are consistent with the lek mating system reported for kakapo.

Welcome swallow (*Hirundo tahitica*) nesting in Hawkes Bay and adaptation to a variable food supply

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The welcome swallow (*Hirundo tahitica*) has rapidly expanded its range this century in both Australia and New Zealand, matching the expansion of farmland. Driveway bridges over irrigation ditches on the Heretaunga plains make ideal nesting habitat. These sites are protected from ground predators and over 90% of chicks hatched survive to fledging. Each bridge tends to have 1 pair nesting at a time, raising up to 3 broods in a season, with 2-5 chicks in each brood. Swallows are superficially similar to swifts. Swifts and oceanic seabirds are both adapted to grow in a highly variable food supply. Similarities include very slow growth and high amounts of fat in chicks. The food supply

of the swallow is more moderately variable. However, swallows still grow more slowly than other birds of their size. Experiments on some seabirds show that when they are deprived of food, they slow the growth of their wings to help maintain weight. By contrast, when I did similar experiments on the welcome swallow, chicks deprived of food maintained the growth of their wings at a normal rate (whilst losing body fat). This may be an adaptation to a moderately variable food supply that helps swallows to avoid “fault bars” in their feathers and to maintain “symmetry” thus making them more attractive to mates.