

# Little Spotted Kiwi

*Apteryx owenii* (Gould, 1847)

## Getting noticed



Little Spotted Kiwi chick. DOC

## Quickfacts

The smallest of the kiwi

May have once been one of New Zealand's rarest birds, without anyone noticing

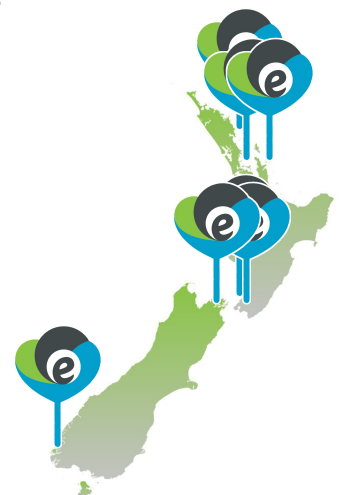
Secure on island homes and in fenced sanctuaries

Now being returned to other islands and to protected sites on the mainland as far south as Fiordland

## The luck of islands

The Maori name for this creature is kiwi pukupuku, or kiwi with a big stomach, as this bird looks like it is all stomach with a short straight beak pointing in front and short stout legs below. It is thought that early Maori named kiwi after their call, but it could also be derived from the Polynesian word "kiwi" which is the name of the bristle-thighed curlew which winters in Polynesia. It has about the same size, colour and beak length as a brown kiwi, but has long, delicate legs.

The little spotted kiwi was first described scientifically in 1847, by British ornithologist and bird artist John Gould, from a specimen collected by "F. Strang". The scientific genus name *Apteryx*, which is shared by all kiwi, is from a Greek word meaning "without a wing." Kiwi do have wings, but they are very small and need to be searched for under the feathers. Gould gave the little spotted kiwi the species name *owenii* after Sir Richard Owen, another English biologist who was prolific at naming new species at the time (including the first description of a moa), but is best remembered today as the man who coined the word Dinosauria, which became Dinosaur. Kiwi belong to a group of



birds called the ratites, which includes ostriches, emu and New Zealand's extinct moa. Recent DNA studies have shown that the kiwi's closest relative were the three metre tall extinct Madagascan elephant birds.

Kiwi are covered in hair-like feathers. The feathers of most birds have tiny hooks (barbules) that hold the feathers together during flight, but kiwi feathers lack barbules and are more like loose fine hairs. Kiwi have nostrils at the end of their beak and use their beaks to sense vibrations. They feed by listening for food disturbed by the sound of their tapping their beaks on the soil surface, making loud snuffling noises, smelling and listening for worms and other invertebrates. They are nocturnal and rely on smell and touch for foraging. The area of the kiwi's brain responsible for sight is small and poorly developed, but the area responsible for smell and touch is large and well-developed. Although kiwi beaks are often described as delicate, kiwi jab them into the ground and use them like a lever to pull out tasty treats.

Little spotted kiwi are our smallest kiwi species and grow to about 40cm tall and about 1kg in weight. Rather than being spotted (as their name suggests), their body appears to have mottled bands of darker feathers on a lighter grey background. You can tell little spotted kiwi apart from the great spotted kiwi as their legs and feet are pale throughout their lives, and the great spotted kiwi grows to twice the size of the little spotted kiwi. They are nocturnal, like all kiwi, and male and female look the same. You're more likely to be able to distinguish the males from the females by their calls. Both sexes have calls that start at a low pitch and trill higher, but the male's call is higher in pitch than the females – obviously you'd need to hear both together, at least at first, to be able to tell the difference. It is thought that the males call to warn other males away from their territories and the females call to contact their mate ("contact calls").

Little spotted kiwi are usually monogamous (only have one partner) and mate for life. They usually lay only one egg per season. All kiwi eggs are very large compared to the body size of the kiwi, and the females invest a lot of energy into producing them: a kiwi egg can be up to 20% of its mother's body weight. A kiwi egg's contents are 65% yolk, which is unusual as most other birds' eggs contain only 35-40% yolk. This large amount of yolk allows the kiwi to develop into a mini replica of an adult while still inside the egg. Little spotted kiwi nest in simple burrows in the ground, in rotten logs, or under dense vegetation. When the chick hatches it looks like a miniature adult and is already covered in feathers. Little spotted kiwi chicks are never fed by their parents. They survive for the first few days using nutrients from the yolk sac, after which they start to feed for themselves near the burrow, often supervised by its father.

Before humans arrived in NZ, the little spotted kiwi was widespread across the North and South Islands. Only two live little spotted kiwi from the North Island were ever caught by European scientists, but sub-fossil bones found in caves and sand dunes show that there was once two lineages of little spotted kiwi in the North Island. The lineage from the north of the island is now extinct, but the other is alive today, having

survived on Kapiti Island.

In the early 1900s, the little spotted kiwi was still common in the South Island, in Nelson, Westland and Fiordland. But their numbers and range decreased due to hunting, predation from exotic mammals, and habitat modification. By the 1980's there were only a few little spotted kiwi, luckily left on two offshore predator-free islands – D'Urville, in the Marlborough Sounds, and Kapiti, off Wellington's western coast. Overall, there could have been as few as five birds - making it the equal-rarest bird with the black robin. The last two surviving little spotted kiwi on D'Urville Island (a male and a female) were moved to Long Island in the Marlborough Sounds in 1982 and 1987, together with three birds from Kapiti Island. Unfortunately, none of the D'Urville birds have bred and the Long Island population became severely inbred. We also now know that the little spotted kiwi inhabiting Kapiti Island originated from only five birds caught at Jackson Bay on the West Coast in 1912. It is now known that these five birds are the ancestors of all 1,700 little spotted kiwi alive today.

Due to the population getting so small, little spotted kiwi are said to have gone through a genetic bottleneck during which much of their genetic diversity was lost, and the remaining birds are very closely related and they have the genetic characteristics of a population of only 40 birds. As it is important to keep as much of the remaining genetic diversity within the population, researchers have worked out that the populations on Long Island and Kapiti can be managed together. They have now been introduced to Tiritiri Matangi, Motuihe, Red Mercury, Hen, Chalky and Anchor Islands and Zealandia Ecosanctuary. The number of little spotted kiwi are currently increasing, and, as the entire species lives on offshore islands and in fenced sanctuaries, they don't need the same protections against dogs and predators that other kiwi species need. They do, however, still need to be intensively managed to keep the genetic diversity as wide as possible. As the populations of the kiwi live on unconnected islands or sanctuaries, this involves moving adults and chicks between the populations. Eventually, extensive predator control and re-vegetation may allow little spotted kiwi to be re-introduced to parts of their former home range.

## What next?

Little needs to be done to ensure the survival of little spotted kiwi as they inhabit several islands, including over 1,200 birds on Kapiti Island, and conservationists consider them in a recovery phase. The main task identified in the current Kiwi Recovery Plan is to increase the little spotted kiwi population by 50% by identifying and returning little spotted kiwi to four new sites (with two of these being on the mainland) that have the capacity to together hold 450 kiwi. This was identified in the Recovery Plan to occur

by 2013, but progress towards this target has been delayed by the emphasis on the more endangered kiwi species.

Preventing rats or stoats arriving on islands by restricting access to the islands and rigid biosecurity tests for those who do gain permission to visit is also of high importance.

As little spotted kiwi are fairly secure, they are an ideal subject for community projects seeking to restore islands (and in some cases, mainland sites). Approval is needed from the Department of Conservation to catch or move any little spotted kiwi (and any native New Zealand bird).

## More information

Website: Kiwis for Kiwi. [Link](#)

Website: New Zealand birds online – little spotted kiwi. [Link](#)

Scientific Paper: Genetic consequences of a century of protection: serial founder events and survival of the little spotted kiwi (*Apteryx owenii*). By Kristina M. Ramstad, Rogan M. Colbourne, Hugh A. Robertson, Fred W. Allendorf, Charles H. Daugherty. Proceedings of the Royal Society B, 2013. [Link](#)

Scientific paper: Vocal cooperation between the sexes in little spotted kiwi *Apteryx owenii*. By Andrew Digby, Ben D. Bell, Paul D. Teal. IBIS, Vol. 155, pages 229-245, 2013.

Strategic plan: Kiwi (*Apteryx* spp.) recovery plan: 2008-2018. By S. Holzapfel; H.A. Robertson; J.A. McLennan; W. Sporle; K. Hackwell; M. Impey. Threatened Species Recovery Plan 60. Department of Conservation, Wellington. 2008. [PDF](#)

Article: Kiwi – Icon in trouble. By Derek Grzelewski. New Zealand Geographic, Issue 45, Jan.-Mar. 2000.



# Photos



Rogan Colbourne taking a blood sample from a little spotted kiwi's leg. .DOC



Adult little spotted kiwi. DOC

This webpage represents the views of the Endangered Species Foundation of New Zealand and not necessarily those of other individuals or organisations involved in the conservation of this species.

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