

Captive breeding and release of brown teal *Anas chlorotis* into the Moehau Kiwi Sanctuary, Coromandel, New Zealand

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SUMMARY

To restore brown teal *Anas chlorotis* populations, a captive breeding and release programme has been developed. At the Moehau Kiwi Sanctuary, a first release of 60 teal had a survival rate of 45%, and the second release of 40 birds an 85% survival rate. As the survival rate of the second release was so high, the same methods will be used in the next planned release, in combination with ongoing predator control.

BACKGROUND

The pateke or brown teal *Anas chlorotis* is a small dabbling duck endemic to New Zealand (Photo 1). It inhabits damp areas ranging from moist forest to open wetland, and like most dabbling ducks, is sociable and lives in small flocks for most of the year. The brown teal has become endangered due to predation by introduced mammals, e.g. stoats *Mustela erminea*, ferrets *M. putorius*, rats *Rattus* spp. (all introduced to New Zealand in the 1800s), and cats *Felis catus* (introduced in the early 1900s). All native predators of brown teal are aerial predators such as hawks and eagles, but they have not developed a defence against the introduced ground-dwelling mammalian predators.



Photo 1. Brown teal (Photo: J.L.Kendrick, courtesy of Dept. of Conservation)

There are two surviving populations of brown teal in New Zealand, one on Great Barrier

Island off the north-eastern coast and the other in the far north in Northland. There has been a legacy for 30 years of attempted but failed translocations of these birds. In the process 1,728 birds have been translocated but all have died. There have been many factors leading to these deaths, including a lack of predator control at the release site, substandard methods used when moving the birds, and birds not being adequately conditioned to their new environment.

ACTION

Release site: To keep costs down it was decided to reintroduce brown teal to a mainland site that already had pest control in place. As the teal have reasonably versatile habitat requirements (forested or more open wetland habitats) it was fairly easy to find a suitable managed site. Moehau Kiwi Sanctuary in the Coromandel Peninsula (North Island) was selected. This sanctuary is 10,000 ha in area with predator control of stoats and ferrets, being undertaken by trapping in order to protect another rare endemic bird, the brown kiwi *Apteryx mantelli*.

Captive-breeding: Brown teal were bred in captivity. The birds were kept in aviaries that closely resembled their release sites. The aviaries had a stream running through them and the birds were fed a diet of a mixture of high fibre pellets (developed by Massey University) and natural food. This was done as there can be problems when captive birds are

released and have to adapt from a low-fibre high-protein captive diet to a high-fibre natural diet. Their natural diet would consist of e.g. insects, fruits and seeds. As such the pellets were developed and fed to the birds as a conditioning diet high in fibre mimicking their natural diet. This is believed to extend/maintain the gut length thereby increasing their ability to extract nutrients from a high-fibre diet.

Teal releases: The released teal were fitted with transmitters and monitored three times a week for the first year. A soft release method (i.e. supplementary food was made available) was used to encourage a high residency rate and assist birds during the post-release transition period. A large group was released at once to create a social environment where the birds would hopefully feel more comfortable. Birds were not kept in aviaries at the release site prior to release. Releases of the captive-bred birds were undertaken in 2003 (60 birds at one time) and 2004 (40 birds at one time).

CONSEQUENCES

2003 release: Of the 60 birds released in 2003 there was an annual survival rate of only 45%. The cause of this was found to be mainly due to feral cat predation. Cats are not controlled in the Moehau Kiwi Sanctuary as they are not one of the main threats to kiwi. Some cat control had been put in place for the brown teal but it was over an insufficient area to be effective.

Before the second release was undertaken the cat control was extended. Metal cage live-traps (approximately 1 m long x 30 cm high) were set up in the areas surrounding the release site. The traps have a hook inside on the end opposite the door with bait attached to it - when the bait is taken it pulls the lever holding the door up and the door snaps closed. As well as cage traps, Timms traps, SA Conibear traps, and a 'chimney box' with Victor leg-hold traps were used.

2004 release: The second release of 40 teal had an 85% survival rate. This higher survivorship was believed to be a direct outcome of the cat control. The teal also had some previously established birds to socialize with and this may have helped in adaptation to their new environment. There was a very high residency rate, probably a result of the previously released teal inhabiting the area. Supplementary feeding was again used to ease diet transition and encourage residency.

2005 release: The third (2005) release is coming up. Due to the success of the 2004 release, the same release methods will be used but birds will no longer be radio-tracked. Cat trapping is ongoing in the area.

Conclusions: As it has proven successful, at future release sites a similar release method consistent with this one will be used.