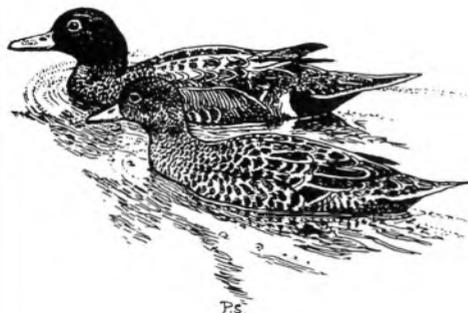


Progress in Brown Teal *Anas a. chlorotis* conservation

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The Brown Teal population is now largely restricted to the Northland area of the New Zealand mainland, and to Great Barrier Island. Some success is being achieved in retarding the decline of teal on the mainland, and between 1984 and 1989 just over 500 captive-reared Brown Teal have been released in Northland. On Great Barrier Island, research has determined that the teal population is much higher than previous figures had indicated.

This paper summarises progress in a unique conservation project that aims to halt the decline of an endemic bird and to ensure a future for the species. The project is Ducks Unlimited's "Operation Pateke" which started in 1976.

Status of the Brown Teal

The Brown Teal *Anas aucklandica chlorotis* is the most threatened of New Zealand's mainland waterfowl and is one of the world's rarest waterfowl (Dumbell 1986). Reasons for the decline of the Brown Teal have not been clearly defined, but habitat destruction, introduced predators (stoats, ferrets and feral cats) and excessive shooting have all played a part. The Brown Teal, once widespread throughout the country, has declined dramatically on the New Zealand mainland during this century (Hayes & Williams 1982).



Figure 1. New Zealand Brown Teal *Anas aucklandica chlorotis*. One male and two females in captivity.

OPERATION "PATEKE" (Pateke being Maori for Brown Teal). The recovery programme involves most facets of wildlife management, namely:

- Creation, restoration and preservation of Brown Teal habitat
- Research
- Captive breeding
- Release of captive-reared birds
- Control of introduced predators
- Public and hunter education
- Close liaison with wildlife agencies, environmental groups and the farming community

Habitat work

Ducks Unlimited in association with the Department of Conservation and the farming community is creating lagoons, and enhancing and preserving existing habitat at critical sites. Such work is, of course, vital to the survival of Brown Teal. This work has so far been carried out mainly in Northland, but some habitat has also been preserved on Great Barrier Island.

Research

Ducks Unlimited, together with the now defunct NZ Wildlife Service, financed a four-year research project on Great Barrier Island – the last stronghold of Brown Teal. This research was completed in 1988 and determined habitat preferences, population size, and the value of the roost site – where teal gather after the breeding season. The very existence of a roost site appears to be

critical to the success of Brown Teal populations. The teal population on Great Barrier was determined as 1500 birds (Dumbell 1987) – twice the size that had been estimated earlier (Hayes & Williams 1982). Research is now being carried out in Northland – the last significant area on the mainland. Initial surveys carried out in 1988 suggested a **minimum** population level of 700 teal (Dumbell 1988). Many areas of Northland still have to be surveyed and predictions are that the population could be as high as 1000 birds (Dumbell 1988). These population figures are also considerably higher than the previous figures quoted (Hayes & Williams 1982).

Captive breeding

In many successful waterfowl recovery programmes, captive breeding has formed a vital part. Ducks Unlimited's breeding programme for the Brown Teal has been very successful, with over 1150 Brown Teal reared by Ducks Unlimited members since the project started in 1976. In 1989, 36 members held 66 pairs and annual productivity is around 110 individuals. Several key factors account for the success of the programme, namely:

1. A natural pairing technique which allows each Brown Teal to choose its own mate.
2. Placing each pair of naturally paired birds in their own specially designed aviary.
3. Leaving parent birds to rear their own young – this results in much hardier progeny than when incubators or bantams are used. To boost productivity a brood will be removed from the parent Brown Teal at around five weeks and often the female will re-nest within a short time.
4. The enthusiasm and dedication of Ducks Unlimited members – not only those members directly involved in the project, but members at large. Without their financial support the project would not be possible.

In December 1987 and in September 1988, ten and five wild Brown Teal respectively were removed from Great Barrier Island to provide new blood for the eleven-year-old

captive breeding programme. A stud book has been established for the birds.

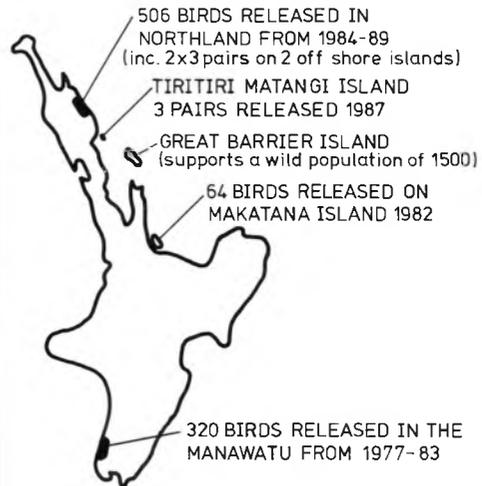


Figure 2. Brown Teal releases since 1977. All Ducks Unlimited releases have taken place in the North Island.

Release of captive-reared birds

In 1968 the NZ Wildlife Service released ten Brown Teal on Kapiti Island off the Manawatu Coast. These were a mixture of captive-reared and wild caught birds (Williams 1969). Some 20 years later, a small self-supporting population still exists on the island, showing great survival tenacity.

Between 1977 and 1983 Ducks Unlimited released 320 captive-reared Brown Teal onto lagoons in the Manawatu. These birds adapted well to the wild and successful breeding was recorded (Hayes & Williams 1982). In 1982, 64 birds were also released on Matakana Island in the Bay of Plenty (Hayes & Williams 1982). Unfortunately the factors which forced the decline were still present in these two areas and in 1984 it was decided that the recovery programme should be concentrated in Northland – an area with lower hunting pressure, few mustelids, reasonable habitat and several hundred Brown Teal still surviving – in an effort to stabilise the declining population, rather than attempt to re-establish new ones (Hayes & Williams 1982).

In the early 1980s, the NZ Wildlife Service had carried out, with Ducks Unlimited's assistance, a programme of Brown

Teal habitat work in Northland. This resulted in new habitat being created and existing habitat enhanced and protected. The new Department of Conservation and Ducks Unlimited, with considerable support from the Northland farming community, are creating large lagoons specifically for Brown Teal. These artificial lagoons will, we hope, become teal roost sites. Fencing of all roosts to keep out grazing stock and extensive planting to provide overhanging vegetation is also being carried out in Northland and on Great Barrier Island. From 1984–89, 494 captive-reared Brown Teal have been released at five mainland sites in Northland and three pairs on to created habitat on each of two offshore Northland islands – Moturoa Island and Urupukapuka Island. The bulk of releases in Northland has taken place at the Mimiwhangata Farm Park, where two large lagoons had been created in 1982.

In Northland successful breeding of released birds has been recorded on a number of occasions and it is apparent from the survey figures that some progress is being made in supplementing the wild population. No captive-reared birds have yet been released **directly** into the wild Northland populations and all releases have taken place in either newly created habitat or in habitat recently vacated by wild birds. At Mimiwhangata, however, pairings of released birds with wild birds has been recorded.

In October 1987 three pairs were also released onto created habitat on Tiritiri Matangi Island, in the Hauraki Gulf. From these birds two broods were recorded during the 1988–89 breeding season.

During 1989 a new 7 ha lake on the Purerua Peninsula, near Kerikeri, Northland, is being used as a major release site and in January 1989 the release of 70 birds took place. This lake is on the fringe of the existing Brown Teal population and within the bird's historic range. It is felt that lakes such as this could well hold the key to survival on the mainland, for in Northland Brown Teal have shown great adaptability to artificial lagoons.

Over the years 1985–88, birds reared by members were held in a large single aviary and released **after** the duck hunting season – in either late July or late September. Of 45 birds released in late September 1987 at the Mimiwhangata Farm Park, 35 were posi-

tively identified as surviving three months later (Hayes 1988). Experiments regarding releases at different times of the year and from on-site aviaries, or straight from the box, are also taking place.

Control of predators

At the Mimiwhangata release site, which is some 30 km from any major human population, a feral cat control programme is in operation and over 20 cats have been trapped. No hunting is allowed and the population of around 100 Brown Teal has been established. Predator control work is also being carried out at the Purerua site and hunting will also not be allowed. It is of value to note that on Great Barrier Island no waterfowl hunting is allowed, much habitat remains unmodified, and feral cats are the only ground predators. It can be assumed that the Great Barrier population is stable and perhaps even increasing because these factors, which are thought to have influenced the decline on the mainland, are missing.

Public and hunter education

This is another vital aspect of the recovery programme. In Northland, attempts are being made to use all forms of communication in an effort to educate everyone towards a greater appreciation of the unique Brown Teal.



Figure 3. The all important Brown Teal roost site. This one is at Parekura Bay, near Russell, in Northland.

Liaison

Ducks Unlimited (NZ) and the new Department of Conservation are working closely together on operation '**Pateke**' and

an excellent relationship exists between the two groups, other environmental groups, many individuals and the farming communities in Northland and on Great Barrier Island – whose support is critical to the whole programme.

Conclusion

The efforts being made to preserve the NZ Brown Teal are making satisfactory pro-

gress. Operation 'Pateke' is in many ways a unique conservation exercise which is becoming a successful recovery programme, although there is still work to be done.

There are many aspects which could be readily adapted to other rare waterfowl recovery exercises, particularly the natural pairing technique used in captive breeding, the considerable emphasis on habitat restoration and the public education programme.

References

- Dumbell G.S. 1986. The New Zealand Brown Teal: 1845–1985 *Wildfowl* 37:71–87.
Dumbell G.S. 1987. *The ecology behaviour and management of New Zealand Brown Teal or Pateke*. Unpublished Ph.D. thesis. University of Auckland. 222 pp.
Dumbell G.S. 1988. Northland Brown Teal progress report. *Flight* 56:16–19.
Hayes F.N. 1988. *Flight* 55:16.
Hayes F.N. & Williams M. 1982. The status, aviculture and re-establishment of Brown Teal in New Zealand. *Wildfowl* 33:73–90.
Williams M.J. 1969. Brown Teal released on Kapiti Island. *Notornis* 16:61.

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