

Conserving the lupe —after Cyclone Heta



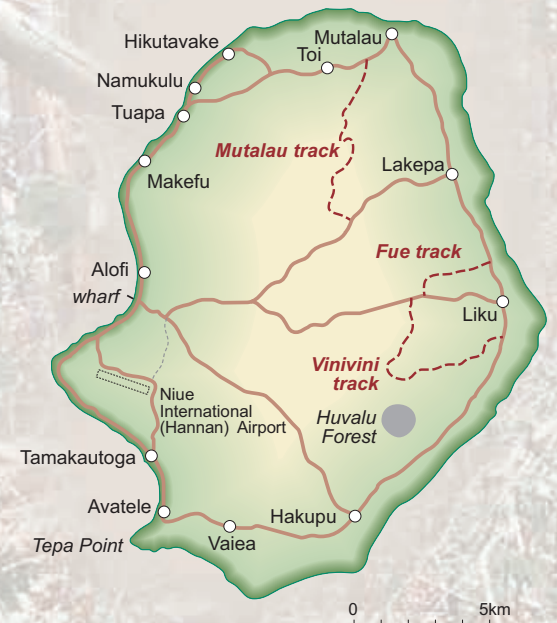
Lupe (Pacific Pigeon)

Cyclone Heta hits Niue's lupe and kulukulu hard

On 6 January 2004, cyclone Heta devastated Niue Island and its forest. Many trees and shrubs were blown over, or stripped of leaves, flowers, fruit and thin branches.

Those birds not killed in the storm then had to survive a long period of drought: for several months there were hardly any flowers and fruit. Starving and thirsty lupe and kulukulu entered villages—a very unusual occurrence.

How much did the cyclone affect the lupe and kulukulu?

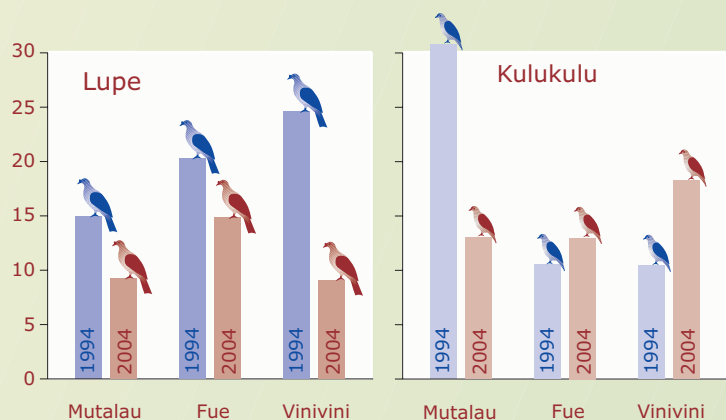


Lupe numbers have declined

In September 1994, Niue's forest birds had been surveyed using the 5-minute count method. We decided to count the birds again in September 2004, 8 months after cyclone Heta. We marked 20 count sites at 200-metre intervals along the Mutalau, Fue and Vinivini tracks (see map). We counted all birds seen or heard within 100 metres of each site during a 5-minute period.

Fewer lupe, but similar numbers of kulukulu

The graphs show that far fewer lupe were counted in 2004 than in 1994, but the counts of kulukulu were more variable.



Why were there fewer lupe?

Some lupe and kulukulu must have been killed by the cyclone, and others would have died later from starvation and thirst. Some lupe were so weak from lack of food that they could be caught by hand, so it's likely that many were caught and eaten by cats and dogs.

If lupe and kulukulu were similarly affected by cyclone Heta, why did only the lupe population decline from 1994 to 2004?

The most likely answer is **hunting**. The lupe is hunted, but not the kulukulu.

Female lupe lay just one egg per nest, and many eggs and chicks will be taken by ship rats and wild cats.

The lupe population has not been able to maintain its numbers because of rat and cat predation, and hunting by people.

Cyclone Heta and the drought put an extra stress on an already declining population.



Kulukulu (Purple-capped Fruit Dove)



Forest damage from Cyclone Heta

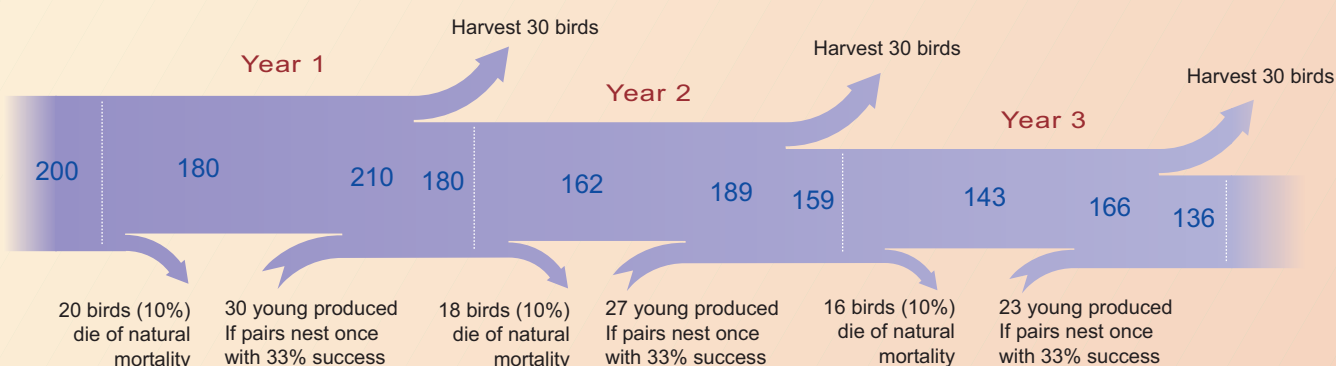


What is sustainable harvesting?

- If the population is 200 birds and 10% (i.e. 20) die of natural causes each year, that leaves 180 birds (90 pairs) to breed.
- If those 90 pairs have 1 nest each and a third produce a chick, then there will be 30 young birds. (Note: Less than a third of the nests of New Zealand pigeons produce chicks unless predator control is carried out).
- This allows a sustainable harvest of 10 birds.

But if 30 birds are harvested, then the population will decline by half in just 5 years. Therefore it is important to monitor lupe numbers prior to each hunting season to ensure enough young have been raised to replace those that have died of natural causes and been shot during the previous hunting season.

If there are not enough, then it may be necessary to restrict the number that can be shot or declare a rahui/tapu (no hunting) for a year.



The future

The lupe is a toaga species, and we want to make sure that it survives for future generations. There are three ways this can be done:

- Ensure that any hunting of lupe by people is **sustainable**. This means that enough lupe must survive the hunting season and be able to raise enough young before the **next** hunting season to ensure that the shot birds as well as those that die naturally are replaced (see diagram).
- Stop reducing the area of mature forest that is best for lupe.
- Control rats and cats in mature forest during the lupe breeding season.

The first point is the most important. The ban on hunting for the 2004/05 season will have helped lupe numbers to increase, but if we go back to the usual hunting practices, these birds will probably be shot, and the population will continue to decline.

Do you think lupe can be hunted sustainably?