

## Goat control on Arapawa Island scenic reserve for the protection of distinctive native vegetation

### *Arapawa Island's distinctive vegetation*

Arapawa Island, in the Marlborough Sounds, consists mainly of private landholdings but also areas of scenic reserve land administered by the Department of Conservation (DOC). The scenic reserve area on the north-eastern part of the island contains important remnant Cook Strait forest communities and plant species which today only survive in a few areas. The island is free of possums but goats and pigs have a significant impact on this vegetation if left unchecked.

The native vegetation in the Arapawa Island Scenic Reserve is representative remnants of forest that was once more widespread in the Cook Strait area. It is shaped by the distinctive climate of the Cook Strait narrows - wind, humidity and salt spray - combined with rugged and spectacular topography. The composition of the native bush is an unusual mix of subtropical kohekohe, warm temperate tawa and montane beech-

podocarp-broadleaved forests, in distinct altitudinal zones. It is rare in New Zealand to have possum-free kohekohe forest on such a scale.

Feral goats in high numbers have been devastating to the undergrowth and regeneration capacity of all types of forest; it doesn't take many goats to keep it in that state. Where goats have been controlled to low levels in the reserve there is excellent regeneration of undergrowth and tree species.



Differences in native vegetation are evident between the area of the reserve protected from goats and pigs by fencing, to the left of the fence in the photo, and the unfenced area to the right where vegetation is affected by goats and pigs. There is more plant diversity in the fenced area.

Nationally threatened forest plants in the reserve at risk from goats include large-leaved milk tree (*Streblus banksii*) and raukawa (*Raukaua edgerleyi*). Also in the reserve are low coastal and rock outcrop native vegetation communities. They include nationally and regionally threatened plants including Cook Strait kowhai (*Sophora molloyi*), fierce lancewood (*Pseudopanax ferox*), Cook Strait porcupine shrub (*Melicytus crassifolius*) and others. Goats and pigs are the main threat to all of these species in the reserve.

With goat-induced degradation of the native vegetation goes loss of native fauna. For species such as giant land snails and large ground beetles (both nationally threatened), eaten-out bush is reduced to life-threatening habitat: they need deep leaf litter and dense undergrowth. Feral pigs are also a great threat to these special native animals.



## ***Protecting scenic reserve vegetation***

Control of goats on Arapawa Island scenic reserve land for the protection of its native vegetation began back in 1978 by the then New Zealand Forest Service.

In 1984, an electric fence was built around part of the reserve to protect the native forest which is the most botanically diverse portion of the reserve. This failed and was replaced by a 4 km netting fence by DOC in 1994. This restricted most movement of goats and pigs into the forested part of the reserve.

As a result, dramatic changes in the vegetation are now obvious within the fenced area with impressive re-growth of the understory shrubs and trees transforming it into more natural, healthy forest. Seedlings are now abundant whereas before the forest floor was almost bare of new growth due to grazing by goats and pig rooting.

Little fencing exists though between private land and the majority of the reserve, which runs along the backbone of the northern part of the island, allowing goats and wild pigs to roam freely into the reserve from private land. Consequently, native vegetation in this unfenced part of the reserve is still undergoing damage from goats and pigs. Ongoing goat and pig control is needed to reduce their numbers to low levels to protect the vegetation; this control has generally taken place each year.

## ***DOC's approach***

The Department of Conservation has responsibility for the preservation of New Zealand's native plants and animals for the people of New Zealand. This includes a responsibility to preserve the important remnant Cook Strait forest and plants on Arapawa Island scenic reserve which are part of our country's unique natural heritage.



There is healthy understory re-growth in the fenced area of the reserve, as shown to the left of the fence in this photo, whereas the forest is practically bare of understory shrubs and trees outside the fence due to goat and pig damage as seen here in forest on private land to the right of the fence.

majority of a group of neighbours to the reserve with a close interest in the goat control on use of a range of techniques for goat and pig control. The measures include ground hunting, using indicator dogs to locate goats, and helicopter control on reserve land. Representatives of advocates for the goats were at the meeting.

DOC has attempted to work with all parties to reach amicable agreements in relation to control of goats in the Arapawa Island scenic reserve. DOC Sounds Area staff have met with goat advocates and discussed with them workable options for management of the goats which take into account animal ethics and local considerations. For example, it was agreed hunting would not take place during the period nannies are kidding.

Two years ago the department reached an agreement with the

Goat and pig control planned for 2008 is to take place on the reserve and an adjoining area of private land with the permission of the owners of that land. Goats on other areas of private land – covering a larger proportion of their range - will not be affected.

## *Arapawa goats*

It is believed the goats that have come to be known as Arapawa goats were brought from England and first liberated by Captain Cook on Arapawa in 1773.

The Arapawa goats are considered by some to be an old English breed and a rare breed. This has always been in debate. The view has also been held that given the movement of feral goats of different breeds and ancestry around New Zealand since European settlement, even if the earlier Cook's goats survived, they would likely now be of mixed ancestry.

Protection of the goats is best achieved by people who value them holding and managing them on private land. The Arapawa Island scenic reserve is not an appropriate place for them given their impact on the unique native vegetation growing there.

Ongoing control of the goats over around three decades by DOC and preceding agencies has been concentrated on the scenic reserve and adjoining private land where landowners support goat control taking place. The fact that ongoing goat control has been required on the reserve since the 1970s makes it clear that a viable breeding population of goats remains on areas of private land on the island.

Additionally, Arapawa goats have been secured at a number of sites within New Zealand and also in the United States and Great Britain. The New Zealand Rare Breeds website indicates that a population of the goats has been established at Plimoth Plantation, a living museum in southern Massachusetts, North America. A number of Arapawa goats are also held by breeders in the United States and United Kingdom and they are being bred by a few enthusiasts in various places around New Zealand.



The destructive impact goats and pigs have on the scenic reserve's native forest is evident in the lack of regenerating undergrowth in this photograph taken in 1982 in an area that is now fenced off.

