

tect ground birds like little spotted kiwis and wekas. Often as many as 1500 traps were set in a night. Many different kinds of traps: snares, instant-kill traps and bird-proof poison bait stations were tried, but none proved as efficient or as safe for native birds as the gin traps.

The first complete trapping of the island ended in December 1984. In less than two years about 4000 possums had been killed in more than 600,000 trap nights (= number of traps x number of nights set). This is the most concentrated trapping programme ever undertaken in New Zealand. Thus only a quarter as many possums were removed as were killed by the commercial trappers and with about ten times as much effort. This highlights the effort and dedication needed to eradicate possums from the island. We estimate there are no more than 5-600 possums now left (the actual number could be considerably lower) and eradication appears feasible.

Kapiti's steep western cliffs were initially considered a serious problem. Trapping began on the cliffs but was not considered sufficient, and after discussions with various conservation organisations (including the Royal Forest and Bird Society), the Forest Service was contracted to drop 1080-poisoned carrots onto the western cliffs in August 1983. This reduced possum numbers on the cliffs by about 75 percent, with little effect on native birds detected by either the Wildlife Service or the Ornithological Society of New Zealand. Since then, however, the trapping team has cut a network of tracks over the entire length of the cliffs; if further aerial poisoning is required, it may only be on small areas where access is dangerous.

### Not without cost

A campaign as intense as that on Kapiti, is not without cost. During the last two years, 52 native birds, mostly NZ pigeons, moreporks and wekas, have been killed in traps. No little spotted kiwis, saddlebacks or stitchbirds have been caught. The losses have occurred at an average rate of one bird per 11,000 trap nights (approximately equal to 1 bird per 365 possums, a remarkable achievement), a rate far less than that for commercial operators using traps or cyanide paste on the mainland. The trappers take all practicable precautions to minimise bird deaths. The small number of birds killed poses no threat to the survival of their populations on Kapiti, and the long-term benefits to the birds from the removal of possums far outweigh the few regrettable deaths.

In February 1985, the trapping team started their second sweep of the island from the southern end. As the surviving possums could be trap-shy, they began using trained dogs with muzzles to locate individual possums. The dogs have proved their worth locating trap-shy possums, some of which were living in dense flax. If the last possum is to be eradicated from Kapiti, still further techniques may be needed — for example, night-shooting



Tawa tree killed by possums on Kapiti Island.  
Photo: Ian Atkinson

and the playing of taped possum calls to attract male possums.

The possum campaign is presently costing more than \$100,000 a year, and it is important that this expense is justified in terms of its expected benefits. Why should possums be eradicated from Kapiti Island?

### Three good reasons

There are several reasons. The first is that with possums eradicated, the island's native vegetation can develop unchecked by possums. The extensive browsing of kohekohe and tawa, and the more localised browsing of northern rata, toro and kamahi, would cease. Thus the regeneration and life-span of five of the more important trees on the island would no longer be either inhibited or shortened by possums. Species such as fuchsia and wineberry, which in the absence of possums would have been much more abundant in the young vegetation, would be able to recover. Other plants such as swamp maire, Kirk's tree daisy and at least two species of mistletoe, all very palatable to possums, could re-establish healthy populations.

Possums eat flowers and fruit of many native plants, foods that are also eaten by native birds. Eliminating possums from Kapiti would increase the flowers and fruit available for birds as well as removing any effect that possums have in disturbing nests and eggs.

Tim Lovegrove has made annual counts of all birds seen and heard in three sample areas on the island from 1982 to 1985. His results show a steady increase in bird numbers in all three areas during the four-year period suggesting that the great reduction in possums could already be having a measurable benefit. Even insectivorous birds can benefit because increased foliage can result in more insects.

A third reason for eradicating possums is the scientific value of having areas without any browsing mammals. On the mainland this is possible only in fenced enclosures or temporarily after intensive

control. Enclosures are usually not made possum-proof. Thus to measure the effects of possums on a species like northern rata, a possum-free island can provide a suitable area for appropriate comparisons. The value of doing so can be seen when one considers that northern rata is a major tree of lowland rain forest in the North Island but it is declining. Unless we understand the extent to which possums are responsible we have a poor chance of protecting this tree for the future.

### Endangered birds located

The adverse effects of possums on some native trees greatly exceed the effects of foliage-eating birds like pigeons, parakeets and kokako. Although we cannot restore Kapiti to its pristine state, we do have a responsibility to protect it in such a way that what is unique to New Zealand is not submerged by the influence of plants and animals that belong to other countries — in the case of the possum, Australia.

Three endangered species have been introduced to Kapiti Island from other parts of New Zealand: the little spotted kiwi, North Island saddleback and stitchbird. There are others that could be introduced and hopefully established, especially if possums are removed. For example, kokako are continuing to decline in some parts of the North Island but this endangered wattle bird has been introduced to only one island — Little Barrier. It does occur naturally on Great Barrier Island but in low numbers. There is a significant overlap in the foods eaten by kokako and possums so that removing possums from Kapiti would increase the chances of establishing kokako there. A second example is the takahe which has now been introduced to Maud Island in Pelorus Sound. If island-bred takahe become available from Maud, Kapiti is another possible island where the future of this endangered rail could be secured.

New Zealand has very few offshore islands larger than 1000 ha that are suitable as bird refuges. With an area of 1900 ha Kapiti is the second largest such island. At any time it could become even more important if a catastrophic event on an island elsewhere necessitated transfer of further endangered species to Kapiti.

The alternative to eradication is continuing control of possums. But nobody can guarantee that their present low numbers could be maintained indefinitely. Lack of money and loss of motivation would probably return the island to its 1960's state, an island with a reduced biological value and requiring a never-ending expenditure for possum control. Eradication of possums is a permanent solution to the problem. It may also be the cheapest solution as well.

Footnote: The Nature Conservation Council, through its sub-committee Conservation New Zealand, has recently awarded conservation citations to Bob Cairns and Geoff Alexander.