

began to germinate. Novel methods of rodent eradication such as releasing male stoats on to islands were suggested, but could not be tried in situations like Breaksea Island where the robins in particular would be at risk. New and more effective poisons were becoming available, and by the early 1980s Wildlife Service, Ecology Division and Lands and Survey were beginning to succeed with rat poisoning campaigns on some small islands in the Hauraki Gulf and Marlborough Sounds. There was now a need for a more closely monitored programme to give information on the benefits and costs of rat eradication. Although we now had the ability to clean up small islands, could we manage a large one?

Hawea and Breaksea Islands seemed ideal to provide these answers but there was also much, much more to be gained. A mere 300m away from Hawea is Wairaki Island, the type-locality of Fiordland's endemic skink *Leiopismis acrinus*. These skinks are no longer found on Hawea or Breaksea Island, yet on sunny days Wairaki's rocks virtually ooze lizards as they

emerge from the cracks to bask. This island gem is also home to at least two undescribed species of large weevils, known nowhere else. The long-term survival of this fascinating fauna could be assured by ridding the adjacent islands of rats. Compared with rat-free islands nearby, Hawea also has a reduced distribution and density of breeding seabirds, such as broadbilled prions and sooty shearwaters. The importance of restoring one small piece of coastal Fiordland to something of its former pristine state cannot be overemphasised.

Successful Eradication Programme

With a financial grant and logistic support from Fiordland National Park, preparation for the eradication of rats on Hawea Island began in October 1985. Tracks were established and experimental and control plots were set up on Hawea and nearby islands to monitor any changes in the populations of the land and breeding seabirds, invertebrates, intertidal fauna, and vegetation once rats were eliminated. Using the m.v. *Re-*

nown as a comfortable base wasn't without its problems, and resulted in one broken wrist and several bad frights during the daily landing and pick-up operations in the all-too-frequent heavy seas.

In April 1986, two Talon (brodifacoum) poison baits were put in each of the 73 plastic drainage-pipe tunnels that had been placed on a 40m grid over the island. These tunnels were necessary to protect native birds from the poison, and were checked and replenished daily. By the third day all baits were being taken and rats were seen waiting at some of the tunnels for replacement baits. After the fourth day the take of bait declined and on the last day of the trip, 12 days after poisoning began, none was touched. On the next inspection, six weeks later, only two more baits had gone, and there has been no new sign of rats on Hawea Island since. Many changes, such as large numbers of seedlings and uneaten fruits littering the forest floor, are already noticeable. Obviously, this part of the programme has been a complete success.

which the kiore clearly found no less attractive. When Ian, Derek, DoC technician Murray Douglas and I left Korapuki in mid-November, none of us suspected that our next trip to the island would be to New Zealand's newest rodent-free habitat. Korapuki has now been checked five times, but despite a range of baits, lures and traps, not one rat has been seen, nor evidence found of their presence. All going well, by early 1988 Whitaker's skinks may have their first opportunity to expand, rather than decrease, in number for 150 years or more.

The success of this and other eradication programmes lessens the pressure on rare species, and also provides an opportunity for a complete change in the way we look at those islands which are already free of rodents. They are no longer a diminishing resource, nor has their value as biological time capsules of ancient New Zealand decreased. If anything they have become even more biologically important. Because rodent extermination on islands up to 40 or 50 ha might be possible (or even larger, if Bruce Thomas and Rowley Taylor, of Ecology Division, DSIR, are successful), we have to be extremely careful how island conservation should proceed. It now becomes difficult to justify shifting any species to small islands which are naturally free of predators. Fortunately most such islands remain untouched, so their values as living laboratories demonstrating the effects of over 10,000 years of isolation are relatively intact. We now have the responsibility of ensuring that those same values are passed to other generations

Note of Caution

The queue of organisms proposed for rodent-free islands seems to grow without check, and includes such diverse groups as large flightless insects, lizards and threatened landsnails. Island rehabilitation can be designed around the requirements of each



Ian McFadden contemplating his handiwork on Korapuki Island. Photo: Yanse Martin - NZ Herald

of these. In addition, new advances in population genetics can now help to define the right combination of individuals within each species which should establish new island populations. The time is now right for a note of caution. Our successes could, without careful thought, lead to some islands becoming little more than open zoos housing odd combinations of species which have never previously occurred in the region, or which have never been naturally associated with each other.

Our challenges are now in defining how island liberations should be approached so that subsequent generations will thank us for our forward thinking as well as our abilities as rodent eradicators. Who would have thought a few years ago that soon we would have the luxury of contemplating challenges like these?

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