

research-by-management areas. The "gamekeeper" approach suggested ten years ago by Rod Hay is being used at Mapara, where Philip Bradfield looks after the 1,300-ha reserve. He is assisted by Te Kuiti and Hamilton DoC staff, and this summer they recorded three successful nestings.

Sponsorship from Tasman Forestry through the Threatened Species Trust, administered by Forest and Bird, supports a similar project at Kaharoa, where Hazel Speed is reporting promising results. Last summer she found six pairs of kokako and two nests successfully reared chicks. This summer there were ten pairs of kokako,

and young fledged from three nests. While the increase in successful nesting is encouraging, the increase in kokako pairs may be even more significant. It suggests that forest territories which previously only supported a single kokako may now provide food for a pair, because the forest is rejuvenating after the removal of goats and possums.

HARD DECISIONS must be made today when conservation resources are limited. There are 29 discrete populations of kokako, and not every population can be

intensively managed. Choices must be made as to which populations are more important, and the chosen populations where management may be most effective are Pureora, Mamaku (including Kaharoa), Urewera, Rotoehu, Mapara, Puketi, Little Barrier, Great Barrier and the Hunuas.

Kokako surveys and research have concentrated on the central North Island forests and, only last summer, new surveys found an unexpectedly large number of kokako in the Ureweras. Nearly 300 were recorded in the Waimana valley area, suggesting a major population exists in this remote, rugged wilderness.

Kokako recovery: for whom and at what cost?

DR JOHN CRAIG, a zoologist from Auckland University, has questioned the effectiveness of a mainland kokako recovery programme. He argues that the money could be better spent on offshore island programmes. Although Forest and Bird supports the mainland programme we believe it is important to canvass other views on this issue.

MUCH RARE species work is based on a belief that organisms have measurable habitat requirements. Researchers document the ways animals and plants currently use their environment and use this as a guide to the habitat needs of that organism. However, this approach has a number of important problems.

Firstly there is an assumption that animals and plants are optimally adapted to the environment we find them in and that they will not do as well or better anywhere else. It also assumes that present day habitat is the same as past habitat. Another problem is in the assumption that what organisms do is determined by genetics; that behaviour is fixed and hence they cannot learn to do other things. How likely are these aspects true for kokako?

Kokako are described in the recovery plan as birds that inhabit forests, especially tall forests, that maintain large territories and have a low breeding rate. Hence to manage kokako one needs a large area and tall forests.

But the historic distribution of kokako covered many forest types and in prehistoric times included vast areas of shublands. It is now known that the birds appear to feed heavily on shrubs and therefore they may do better on an island with regenerating shrubs than in an older tall forest.

If possum and other browsers have depleted the present habitat of kokako then wouldn't we expect them to use much larger areas and have greatly reduced breeding output?

The example of the saddleback, the other surviving wattle bird, is informative. Saddleback were also considered to be a bird of tall forests and to have an equally low breeding rate when they were restricted to Hen Island. When put on Cuvier Island with its regenerating shrub layers, saddleback laid larger clutch sizes, more than one clutch per year and lived in very small territories. When finally put onto Tiritiri, which had been considered unsuitable because of a minimal area of mature forest (less than 20 ha), some saddleback more than doubled their breeding rate compared to the already increased rate seen on Cuvier. How do we know that kokako won't respond similarly?

Kokako were present on Motutapu Island (1,500 ha) within the last 500 years and could probably survive on islands as small as 150 ha (early naturalists record them on islands of this size) with far less management than is currently needed on the mainland. Given the statement by the Recovery Group that many of the existing populations are probably doomed, and therefore birds from these populations may be available for transfer, shouldn't a greater range of options be considered for kokako recovery including islands that have open public access?

Another issue is cost. Given the urgency and seriousness of the conservation problems in New Zealand, which has as many rare taxa as the mainland United States, serious consideration of each programme's cost effectiveness is needed.

The present cost of mammal control in mainland areas is often much higher than the cost of eradicating mammals from an island of similar size. Furthermore, mainland control must be repeated whereas the island eradication option is permanent. Current plans to eradicate mammals from Rangitoto and Motutapu Islands offer the potential to do more for kokako and rare species management than any of the existing programmes for kokako on the mainland. It will cost less, allow the return of kokako to part of their former range and provide access for more people to their natural heritage.

In early years of recovery programmes when there is a high priority on building up numbers of individuals the cost of producing young should be considered. Rough calculations suggest that the cost of some mainland young in species such as kokako and takahe are considerably greater than the cost per bird of island-reared young.

The research on kokako has given an excellent data base on the flexibility of kokako behaviour. The first three years of the programmes of "research by management" have also provided necessary information on the relative costs and benefits of different island and mainland options. For the benefit of kokako, isn't it timely to stop, publicly evaluate all the existing information and with the help of people with a wider range of financial and advocacy expertise produce an updated plan?

Doing more doesn't mean more of the same.