

months. By the end of February most birds are past the vulnerable stages of their nesting cycles, and stoats normally tend to eat fewer birds and more mice in autumn (March-May) than in the rest of the year.

Because even a limited damage control effort will be expensive in labour and traps, it is probably worth doing only in areas known to contain a particularly vulnerable or endangered species and perhaps only in summers when stoats are expected to be particularly numerous. Fortunately, in beech forests such years can be predicted well in advance.

In the takahe area the Wildlife Service now monitors beech seedfall and mouse populations every year and can count on 9 months' notice of a stoat peak. Fortunately again, the most intensive trapping effort is required from December to February, which means that the entire field

operation for damage prevention could be run with casual labour available in the university vacation.

In non-beech forests the population biology of stoats is much less well known; it may be that there is no great variation from year to year in the numbers of young stoats born. Then the only way to protect birds such as the kokako would be to trap for damage control every year. Furthermore, we do not know whether stoats or rats are the main threats to kokako, but since both are likely to increase together after a good fruiting season for the forest trees, a kokako damage control programme should be directed at both.

Conclusion

There is good evidence that the activities of the introduced predators (including, even especially, man) were among the most important of the

reasons why many of New Zealand's unique birds (and other fauna) are now extinct or confined to off-shore islands. But we must appreciate that the historic and contemporary situations are entirely different, and it does not necessarily follow that contemporary control of predators on the mainland (even if possible) would lead to increases in the density or distribution of the birds that still survive on the mainland. Even programmes for damage control to assist the takahe and kokako are less urgent than the control of browsing mammals and the improvement and legal protection of these birds' habitats.

Much though we may regret it, stoats are here to stay. Our only hope is that, by learning more about them, we may be able to limit the damage they can do in the most sensitive remaining areas and avoid wasting resources on attempts at general control. I am now preparing a paper for the National Parks Authority setting out this idea with full supporting information and I would welcome comments on it.

Further information

King, C. M., 1980: Field experiments on the trapping of stoats (*Mustela erminea*). *N.Z. Journal of Zoology* 7: 261-266.

King, C. M., and Edgar, R. L., 1977: Techniques for trapping and tracking stoats (*Mustela erminea* L.): A review and a new system. *N.Z. Journal of Zoology* 4: 193-212.

King, C. M., and Moody, J. E., 1982: The biology of the stoat (*Mustela erminea*) in the national parks of New Zealand. *N.Z. Journal of Zoology* 9: 49-144.

King, C. M., and Moors, P. J. 1979: The life-history tactics of mustelids, and their significance for predator control and conservation in New Zealand. *N.Z. Journal of Zoology* 6: 619-622.

[Readers are invited to address comments on this article (or on anything to do with stoats) and requests for reprints of it to C. M. King at 3 Waerenga Road, Eastbourne.] ■

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