

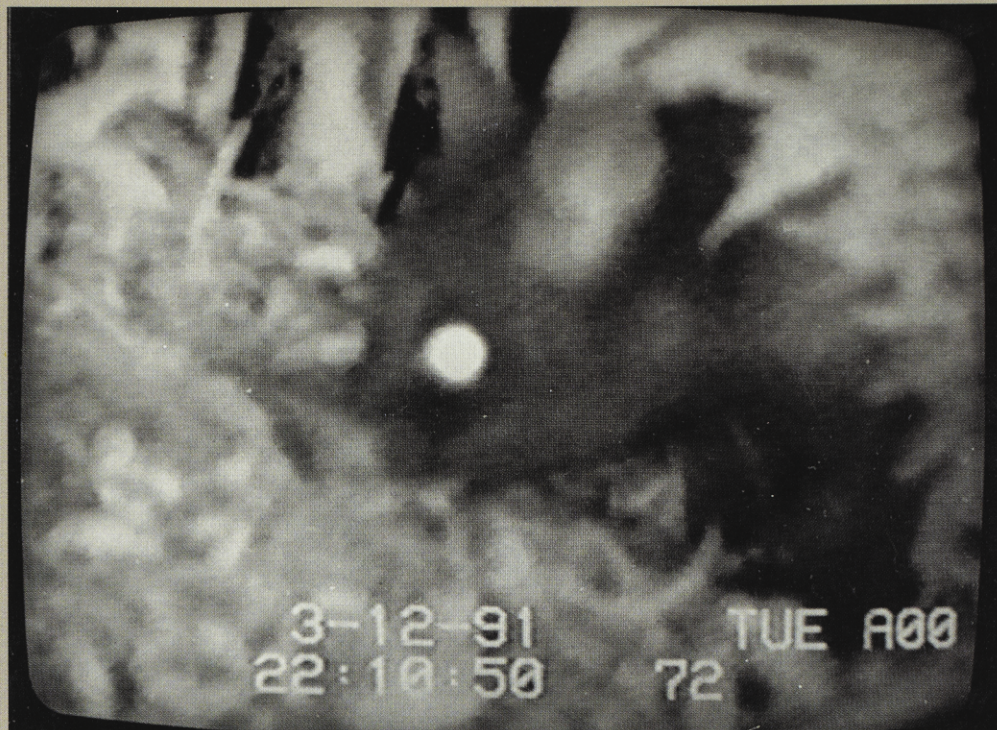
Who dunnit?

IN THE UNMANAGED forest of Rotoehu, 60 to 70 percent of kokako pairs were nesting each year, but most attempts were unsuccessful. To find out what was happening at the nests, researchers put 19 nests under 24-hour infrared video surveillance.

The cameras revealed the eating of eggs by ship rats, and of eggs and chicks by possums and harriers. Occasionally ship rats and possums were beaten off nests by protective females, or did not attack chicks when they had the chance. Nests often received visits from more than one predator, leaving a confusing trail of evidence behind.

One month of video surveillance at a single nest revealed this sequence of events:

- seven rat visits (all fought off by the female),
- a possum visit (it didn't eat the chicks for unknown reasons),
- two more rat visits,
- a harrier attack – one chick was eaten, the other jumped out of the nest and later died on the ground,
- two scavenging visits by rats that night, and finally



Time-lapse video provides an unmistakable identification of night time predators at forest nests. The extraordinary discovery that possums eat kokako eggs, chicks, and probably adults has caused a re-examination of historical correlations between the spread of possums and the decline of kokako. Here, at a kokako nest in Rotoehu Forest, is the first filmed possum predation sequence on a forest bird nest in New Zealand.

- a second scavenging visit by a harrier the next day.

Even in areas such as Mapara with intensive pest mammal management, a

few kokako eggs and young disappear without trace. It is hoped that video surveillance of nests will continue to help solve these mysteries.

SUE MOORE



Since 1990, Jeff Hudson (left) and Grant Jones – possumers turned kokako addicts – have surveyed large areas of Te Urewera National Park and located more than 600 kokako. The sprawling forests of Te Urewera contain more kokako than all other sites combined, but the numbers are in decline. The large area creates special problems for kokako managers trying to limit pest impacts.

the new recruits were soon forming new breeding pairs, and after three years the population decline was reversed.

By the 1994-95 summer, 18 breeding pairs were established and it seems that the copious forest fruit production of the preceding spring triggered an overwhelming breeding response. That season for the first time on record, all kokako pairs that attempted to breed were successful, half of these went on to fledge two broods of chicks, and one even fledged three. A stunning 54 fledglings nearly doubled the population and a community of birds in decline had now been truly rejuvenated.

Careful research on banded birds by Ian Flux (the current recovery group leader), Phil Bradfield and others suggests that the slow start at Mapara was, as at Rotoehu, due to a shortage of females and that 75 percent of pairs were male-male. The number of male-female pairs has increased sixfold to 29 since management started in 1989, thus hugely increasing the reproductive potential of the Mapara population.

In 1994-95, as a treatment switch in the Research by Management experiment, pest control was initiated at Rotoehu. That season 40 percent of monitored pairs fledged young, the highest recorded in the five years of study there. This soared to 66 percent the following (1995-96) season, when pest control was more effective, and