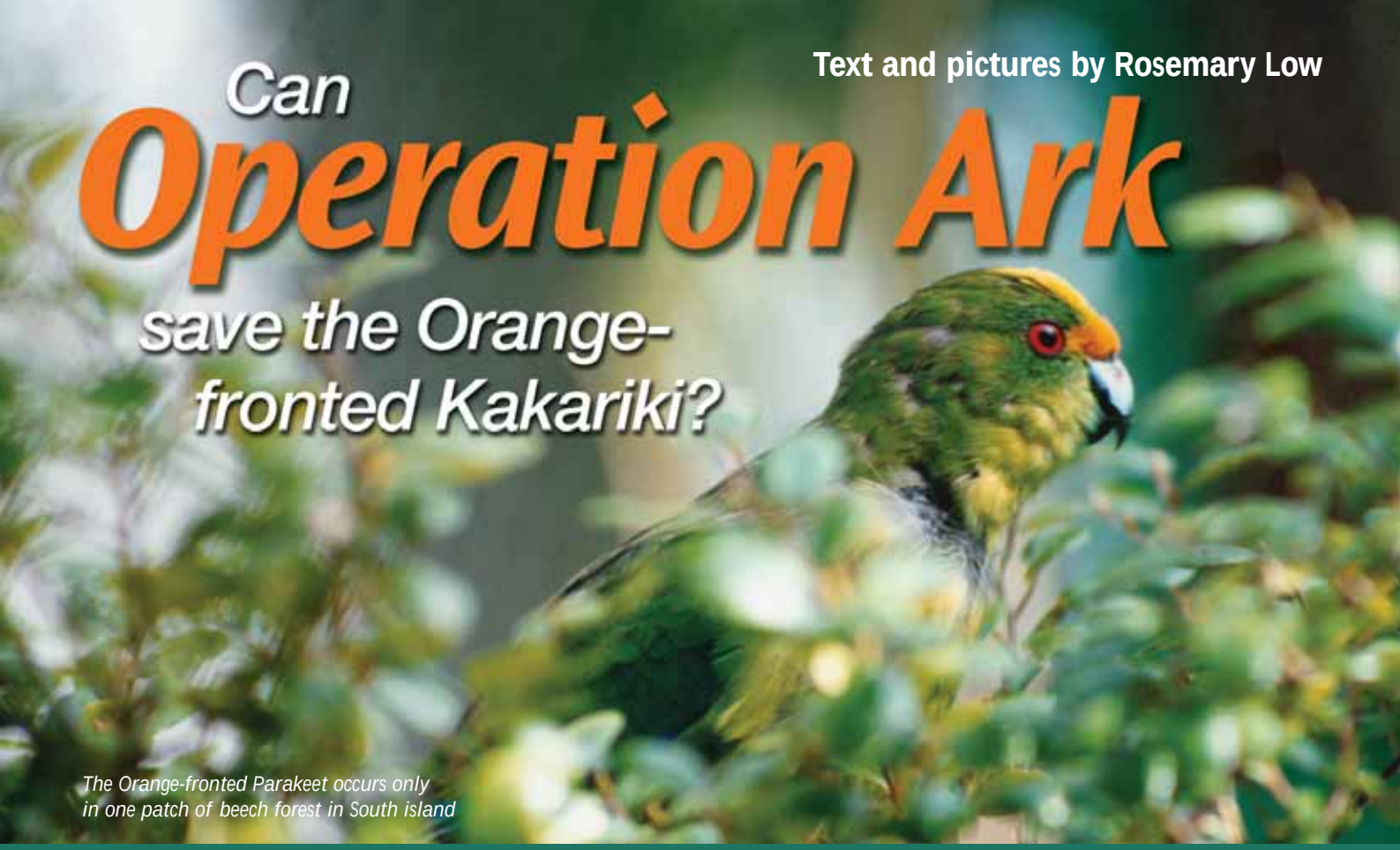
Text and pictures by Rosemary Low

Can Operation Ark save the Orange-fronted Kakariki?



The Orange-fronted Parakeet occurs only in one patch of beech forest in South island

New Zealand's Orange-fronted Parakeet, or Kakariki, has only recently been recognised as a separate and distinct species. Now it is close to extinction. Is the action now being undertaken a case of much too little, much too late?

The least known member of the genus *Cyanoramphus* is a somewhat mysterious bird. Now it is threatened with extinction. The Orange-fronted Parakeet, also known as Malherbe's Parakeet *(C. malherbi)*, is very close in appearance to the Yellow-fronted Kakariki *(C. auriceps)*. Indeed, for many years it was the subject of debate by systematists - was it just a colour morph or was it a true species? It occurs in the same areas as the Yellow-fronted Kakariki but no mixed pairs have been recorded - so the birds apparently recognise each other as separate species.

In recent years mitochondrial DNA work has been used to settle arguments over taxonomic identity. In this case it indicated that the Orange-fronted Parakeet is a distinct species and that it is most closely related to the Red-fronted Kakariki *(C. novaezelandiae)*.

Red-fronted Kakariki

"The Orange-fronted was given the status of Endangered (due to its small range and population) as soon as it was classified as a separate species"

Given the status of Endangered (due to its small range and population) as soon as it was classified as a separate species, it is known to be from only two valleys in the South Island of New Zealand. During the past decade its total population has been estimated at between 200 and 500 birds. The parakeet is now found only within a patch of beech forest with a 30km radius that is in Arthur's Pass National Park and in the Lake Sumner Forest Park.

Attempts to breed in captivity

In 1980 about 8% of the Kakariki population in the North Canterbury region consisted of Orange-fronted Parakeets. In the early 1980s four Orange-fronted Parakeets were trapped and others were reared from eggs that were removed from a nest there. These captive birds were used to try to solve the puzzle about the species' taxonomic identity. The Wildlife Service (now the Department of Conservation) had the good sense to place most of these birds with two very experienced aviculturists, Edwin and Eileen Heatherbell from the Nelson area of South Island.

I spent a day with them while in New Zealand in 1993. I found them to be extremely knowledgeable and interesting. They told me that when first brought into captivity these birds loved the scales of the beech mast. They bred well and, when the young grew up together, they were early and consistent breeders. However, when the Heatherbells were instructed by the Department of Conservation (DOC) to break up the pairs and give them new partners, not one youngster was produced for several years. Forced pairing was a failure. Then, in 1992, a male in his twelfth year bred with a new female and five young were reared.

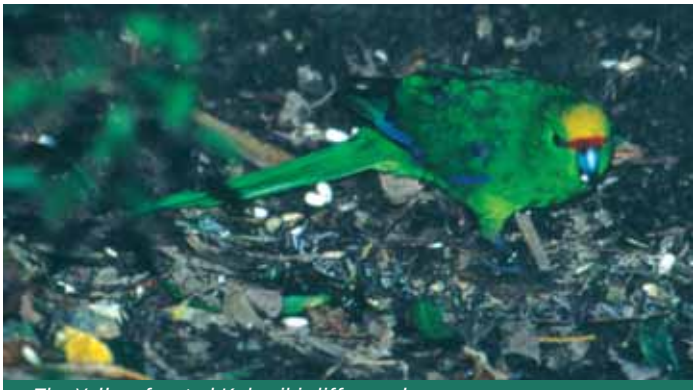
I was very interested to see these birds. They were housed in large or medium-sized aviaries. In poor light it would be difficult to distinguish them from Yellow-fronted Kakarikis as the only difference easily discernible to the human eye is the orange forehead. However, birds see ultra-violet colours (undetectable to the human eye) so to another Kakariki they could look rather different.

The prolificacy of the Orange-fronted became a problem to the Heatherbells. They were not allowed to dispose of them in any way and the aviaries became overcrowded. Eventually the DOC took these birds back. It is well known that the DOC does not promote captive breeding (except for a specific purpose like this) of endangered species and under normal circumstances they would not release captive-bred birds into the wild. What happened to the birds bred by the Heatherbells is unknown - but unfortunately one can guess at their fate.

Population wipeout

In September 2003 reports appeared in the *Christchurch Press* under the headings of "Native parrot at risk of extinction" (10 September) and (ironically) "DOC embarks on bird-saving mission" (20 September). Kamala Hayman, the writer in both cases, reported that three-quarters of the Orange-fronted Parakeet's population had been wiped out in the past two summers by a devastating explosion in rat and stoat numbers. (These introduced predators have already been responsible for the extinction of a number of native birds.) The population increase was apparently due to the masting of beech trees in which very large amounts of seed are produced, allowing the bloodthirsty mammals to breed even more prolifically.

Kakariki habitat in fiordland, South Island



The Yellow-fronted Kakariki differs only in the colour of the frontal band

Orange-fronted Kakariki in the Heatherbell's aviary

As a result, Environment Minister Chris Carter has said that the Orange-fronted Parakeet is now the most endangered forest bird in the country. (Bear in mind that most native forest birds are already endangered or critically endangered for the same reason.) He said, "The birds are in dire straits. We did not recognise them as a distinct species until 1999 when there were 700. Now there could be as few as 150. It's the worst crisis I have had to deal with as minister."

For anyone who knows of the past captive history the next statement in the report is loaded with sad irony: "Early hopes of breeding the bird in captivity were dashed when a February hunt turned up just one nest of five eggs. These were taken to the Department of Conservation (DOC) aviary in Te Anau and four hatched. Two weeks ago the only female died and with it the DOC's immediate insurance policy."

"Three-quarters of the Orange-fronted Parakeet's population had been wiped out in the past two summers by a devastating explosion in rat and stoat numbers"

One could say that the DOC burned its insurance policy a decade ago when it so carelessly squandered the valuable population of captive birds that were carefully reared by the Heatherbells. If more aviculturists had been permitted to take these birds, there could have been hundreds, perhaps thousands by now.

The birth of Operation Ark

Later in September the DOC announced its "crisis mission to save critically endangered birds". Named Operation Ark, it will set aside ten 'safe areas', or 'arks', in South Island's beech forests. Intensive monitoring in these areas, backed by an armoury of traps and poisons, are planned in order to "blunt sudden predator plagues". This appears to be a good plan - but will it work? At its present rate of decline, the Orange-fronted Parakeet will not survive the next decade if this plan fails.

According to Forest and Bird conservation manager Kevin Hackwell, the New Zealand government's decisions during this term of office might determine the fate of other endangered

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Kaka - another endangered parrot that could benefit from Operation Ark

birds, such as the Kiwi, Blue Duck and Kaka. The latter is a magnificent forest-dwelling parrot whose numbers (especially females on the nest) have also declined drastically due to predation.

Impending extinction is just one facet of the unusual history of the Orange-fronted Parakeet. Probably no one knows this bird better than the Heatherbells - and their findings were extremely interesting. Their opinion was that malherbi is not a true species but a colour morph. They were instructed by the Wildlife Service to pair some to Yellow-fronted Kakarikis. The Heatherbells could predict with certainty the percentage of each form produced from such pairings. After several years they published their results, which are as follows:

Two Orange-fronted birds produce only their like.

An Orange-fronted paired to a Yellow-fronted breeds only Yellow-fronted birds. There appeared to be strong evidence that only one species was involved because when two morphologically and genetically distinct populations are crossed, recognisable hybrids are produced.

When two first generation (F1) hybrids are paired together (that is, the offspring of Orange-fronted x Yellow-fronted) both forms occur in the proportion of three Yellow-fronted to one Orange-fronted. When F1 Yellow-fronted are paired back to Orange-fronted, approximately equal numbers of both kinds appear. In other words, the results were of the kind that one might expect from pairing together a colour mutation and the original form of the same species.

"The New Zealand government's decisions during this term of office might determine the fate of other endangered birds, such as the Kiwi, Blue Duck and Kaka"

Whatever the truth of the matter, it might prove to be fortunate for some of New Zealand's other endangered birds that the scientists decided the Orange-fronted was a true species. This decision will hopefully protect them from the greatest scourge of present-day New Zealand - the introduced predators. Some native birds now survive only on off-shore islands that have (at great cost) been cleared of these vermin. If the DOC can repeat this feat in mainland forests, many native birds will benefit. At the end of the day this is all that matters. ■