

*The black robin programme could not have been successful without the cooperation of the Chatham Island tits which fostered the black robin eggs. Conservation officer Rick Thorpe demonstrates how remarkably trusting the tits are as he moves a nest tray complete with nest and incubating tomtit from a nest-box. Photo: Don Merton*



*Derek Brown carries out the delicate operation of placing a black robin egg into a tit nest. Photo: Rick Thorpe*

not occur naturally, robins are able to raise this number if supplementary food is provided. The fostered young were returned to robin nests prior to, or at fledging, so as to avoid imprinting problems which occurred when young were raised entirely by tits. Mal-imprinting has proved an obstacle in some cross-fostering programmes so that our development of a means of overcoming it is of some significance and may have application elsewhere.

Briefly then, the main elements of the programme were: to increase robin egg production by inducing breeding pairs to re-nest; to foster the additional robin eggs to Chatham Island tits for incubation and raising to near fledgling age; and to synchronise the time of hatching in fostered clutches so as to facilitate their return (as composite broods) to the few robin nests prior to fledgling in order to avoid mal-imprinting.

From what we know, this was the first time that cross-fostering had been used in the management of an endangered passerine (perching bird) living in the wild. As a consequence of the programme, cross-fostering, and the manipulation of breeding behaviour, are already being used with success in the management of some other endangered species in New Zealand and elsewhere.

The black robin programme has been relatively inexpensive yet highly successful. Since 1980 a team of between two to four people have stayed in the field for approximately four months each spring and summer. The programme has created unprecedented interest from both within New Zealand and overseas. Its success can be attributed to the patience, perseverance, attention to detail and very high level of commitment by the small dedicated team – together with the obvious cooperation of the robins and tits, and of course more than a fair measure of good luck!

Perhaps the most remarkable feature of the black robin story however, is the incredible endurance and resilience of the birds themselves – despite intense inbreeding over a very long period. For such a tiny population to survive entirely isolated for almost a century on the windswept summit of a rock stack in mid-ocean is no mean feat of endurance. I believe that no more than 30 birds could have existed at any time on Little Mangere and the population was at a critically low level – only one or two effective breeding pairs – during the late 1970s and early 1980s. All surviving robins are descended from a single pair, Old Blue and Old Yellow. Nonetheless, there is no indication of “inbreeding

depression” or “random drift” – genetic conditions which may jeopardise the survival of small isolated animal populations. The new generation of robins show no indication of genetic degeneration. They are highly productive, and fertility (about 90 percent), hatchability (83-88 percent) and recruitment to the breeding population (75 percent of young reaching independence) are surprisingly high for what must be one of the most intensely inbred wild animal populations anywhere. Adult mortality is low (21.6 percent average over the last nine years).

### **Most Important Character**

Without doubt the most important character in the black robin drama was Old Blue, a female so named for the colour of her leg band. Old Blue started life on Little Mangere Island in about 1970, and lived for at least 13 years – more than twice the life span of almost any other robin (females average 3-4 years). In 1976 Old Blue was one of two surviving females and together with the last five males was transferred to nearby Mangere Island. Old Blue's productive life began at the incredible age of about 9 years when she mated with Old Yellow at which time she was *the only productive female!* Old Blue and her mate then bred each year until her death in