

looks brighter as increasing successes in rodent eradication on islands (kiore off Korupuke and Raurima, Norway rats off Whale and Breaksea and mice off Mana to mention just a few) suggest that Kapiti could be rid of rodents if funds are available.

New Technologies

Transfer technologies have increased markedly in recent years.

The intensive trials of aviary holding, feeding and transfer methods requested prior to David Allen's whitehead transfer from Hauturu to Tiritiri and the provision of temporary aviaries, nest and roost boxes plus supplementary feeding for saddleback transferred to Kapiti are a vast improvement on the transfers of even the 1960s and early 1970s. Gordon Williams rightly called these and earlier attempts "marooning" as little other than selection of release sites was possible. Many early island releases were reactive attempts to save species from impending extinction but there is an increasing movement towards carefully planned transfers as part of integrated conservation management. With this change comes increasing scientific and public debate of the plethora of factors that must be considered when planning transfers.

The Conference on the Ecological Restoration of Islands held in Auckland in December 1989 brought together many of the people involved in island management and research. Advantages and disadvantages of animal and plant transfers were considered and debated. The proceedings of this conference will provide important material for future planning and discussion. One issue is the impact of transfers on existing flora and fauna. With the exception of the transfer of one lizard, one insect, and two snail species, all recorded animal transfers for conservation in New Zealand have been of birds. The increasing awareness of New Zealanders that their highly distinctive native animals include more than birds has led to questions of whether all transfers have been beneficial.

For example, many people consider the numerous transfers of weka to offshore islands as detrimental. Weka are implicated in the loss of little spotted kiwi eggs, saddleback fledglings on Kapiti and Cook's petrels on Codfish Island. They have been removed from Codfish Island in case they might harm kakapo and petrels. Most weka releases were originally to provide food for people on remote islands – conservation was not a consideration. However, the transfer of buff weka to the Chathams in 1905 has ensured the survival of that weka which subsequently disappeared from the South Island mainland.

Recently Mike Meads and Alison Ballance have suggested that saddleback introduced onto Mercury Islands and Hauturu may adversely affected the tree and giant weta populations. We can avoid similar conflicts on Maud Island by continuing to fence takahe out of sensitive areas and ensuring that saddleback are not re-released. It is important to realise that other native species have preyed on birds – the loss of Antipodes Island kakariki to tuatara predation on Stephens Island is the most obvious example.

Careful planning is the key. In the past, the least modified islands were considered the most desirable for transfers of endangered

species as these were the only places which seemed to have sufficient and suitable habitat. Our increased ability to remove noxious mammals means that we can now leave our more pristine islands untouched and select some of our highly modified islands for rehabilitation and transfers. Conflicts will still arise, however, as the example of Mana Island has shown. Use of rehabilitated islands has the added advantage of allowing involvement by the public.

There is always a danger that releasing too many species onto an island will upset the existing community balance. Careful choice of species will minimise this risk and the greatest care should be taken with our least modified islands. During the last 30 years five bird species have been released on Maud Island and Hauturu, Kapiti and Tiritiri have received four species. Releases on Maud and Kapiti have met with mixed success, and it will be some time before we know the outcome of the kakapo and black petrel releases onto Hauturu. Both were laudable experiments, but given the results of transfers of shearwaters onto Bass Strait Islands we should not be too hopeful for the black petrel work.



Popular as bird transfers are, few are accompanied by as much media interest as the recent release of a kakapo on Maud Island. DoC's Darryl Eason holds the parrot while Comalco chief executive Kerry McDonald looks on.

Phenomenal Success

Tiritiri has been a phenomenal success. All four new species have bred in their first year, with two of them breeding at far higher rates than elsewhere. Brown teal have reared two broods instead of one each year, and saddlebacks have been producing up to four broods per season. Moreover, instead of producing the usual clutch of two, some birds have been laying three and four eggs. Approximately 100 young saddlebacks were fledged in the 1989/90 season; they have been astonishingly productive!

Most past island transfers have been for the protection of threatened species. This has involved no public debate and has totally excluded public involvement both during and after the transfer. There is an increasing realization that conservation is for people of both present and future generations and we can all benefit greatly by establishing wild populations of rare birds on islands accessible to the public. Tiritiri Matangi Island is the best example of this approach. Similar projects on Mana Island and Motuora (Hauraki Gulf) are planned.

The development of Tiritiri was planned to provide an open sanctuary for rare animals. Since 1984 over 180,000 trees have been planted by thousands of volunteers. These trees have grown so rapidly that birds includ-

ing saddleback already live and breed in the regenerating forest. Releases have included red-crowned kakariki (4), saddleback, brown teal, whitehead (2) and in the near future will include more brown teal, plus robin, takahe and little-spotted kiwi. From a little-visited island of the 1970s (200-300 people per year), visitor numbers are growing rapidly with over 8,000 expected in 1990. Visits to witness bird releases are most popular.

Involving the public in conservation is important from the early planning phase. Many people do not see why indigenous species, especially birds, should receive so much attention as all animals including exotic species have the right to exist.

When Neil Mitchell and I suggested in 1982 that wallaby and possum should be removed from Rangitoto and Motutapu the response of some people was to release wallaby on Brown's and Great Barrier Island. Similarly when it was announced that weka would not be released on Tiritiri as they may compromise other transfers, someone put a weka on the island. These actions demonstrate that the public do have views, some strongly held, and it is important to allow full and open debate to ensure that plans include as many viewpoints as possible. I believe that present plans to remove wallaby and possum from Rangitoto and Motutapu will receive wider support if rodents, cats and mustelids are removed at the same time. Everyone should be informed that the value of these islands will be greatly enhanced by removing exotic animals to allow transfers of rare native birds such as stitchbird, saddleback, kakariki and whitehead. The public readily associate with birds so let us use them to ensure the best for both the plants and the animals!

Most of the previous transfers were initiated and carried out by staff of the Department of Conservation or its predecessor, the Wildlife Service. Names such as Brian Bell, Don Merton and Dick Veitch crop up time and time again. More recently private individuals, including Forest and Bird groups, have initiated island and mainland transfers. Bellbird, robin and brown teal transfers to Moturoa Island, and bellbirds to Waiheke and to Whangarei Heads are examples.

Island transfers of birds, which have been responsible for saving many species such as black robin and saddlebacks, have readily captured public attention. They take conservation into everyone's living room via the media, and as seen on Tiritiri Matangi are actively involving New Zealanders. As such, bird transfers are powerful weapons to counter public apathy and can with sponsorship be used to bolster New Zealand's small budget for conservation. Finally, bird transfers and associated pest eradications are responsible for an important part of New Zealand's international image in conservation. 🦅

John L. Craig is an Associate Professor in Zoology and Deputy Dean of Science at Auckland University. He teaches behaviour, ecology and conservation and is a keen advocate for more public participation and debate in conservation. His own and his graduate student research is largely on native birds and introduced mammals, especially fantail, pukeko, bellbird, tui, saddleback and kiore. He has been actively involved in the Tiritiri 'open sanctuary'. John considers himself fortunate to have been involved in three releases of red-crowned kakariki, two of brown teal, three of bellbird, plus one each of saddleback, kakapo and whitehead.