Echo Parakeet

THE WPT 12

2000-2001 Season

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Introduction

The season of 2000 - 2001 produced 17 Echo chicks, a similar number to the previous two years. Eleven chicks were hand-reared and released back into the wild, six were fledged from wild nests. This success came despite it being a very poor season in terms of fruiting in the National Park. Most of our identified objectives from last season have already been achieved, others are in progress and further objectives for the coming season have been identified.

Objective One

To enable wild Echo Parakeet population to produce the maximum possible number of healthy wild-reared fledglings each season:

* Through provision of artificial nest boxes and
* Through establishment of Echo Parakeets in additional areas of the National Park.

Achievements

Population increasing. At the beginning of the season the population was estimated to number 106 - 126 individuals. This season we released 11 hand reared chicks into the wild. Six chicks were fledged from wild birds. Four deaths of adult birds have been confirmed from September 2000 to date. The wild population is now estimated at between 120 and 130 individuals. Thus the steady population increase has been continued.

Released birds nesting with wild birds. Two released females are known to have paired with wild males and successfully nested this season. This is a significant occurrence as it demonstrates that released birds can integrate successfully into the wild population.

Nest boxes established in key wild sites, and design adapted. At the beginning of this season eight pilot design nest boxes were set up in the main release site area. A further two boxes were set up in the Combo area to enable males released in that area to become accustomed to them. Ten more nest boxes are currently under construction and will again be set up in the main release sites. The design has been modified to make them deeper and darker. It is envisaged that these changes will deter Indian mynah birds from nesting in the boxes and keep the nest cooler. Access to the nest boxes by staff has also been improved by shifting the access hole from the front to the side.

Marie Michelle from Mauritius meets an Echo Parakeet at Paradise Park, UK. (3 members of the Mauritius team have spent time at Paradise Park this summer.)
Photo: Nick Reynolds

First ever pairs nesting in nest boxes in the wild. Released females nested successfully in artificial nest boxes for the first time ever. It appears that released birds are more willing to nest in artificial boxes than wild birds, as no wild birds have ever nested in an artificial box. We intend to release more females so we can increase the use of artificial nest boxes:

* They can be placed in areas with terrain that allows easier access by staff for cavity and chick management
* Placed in areas within the trapping grid where there are less predators
* They can be weather and predator proofed more easily than natural cavities
* The use of artificial nest boxes by Echoes will also lessen the competition for natural cavities, which are becoming more of a limiting factor as the population increases.

Productivity enhanced by females taking supplementary food. Two released females used hoppers while rearing chicks. One of these females reared two chicks of good weight in a season when most nests failed completely due to lack of wild food (native fruits in particular). This demonstrates the usefulness of supplementary feeding to increase chick production.

Cavity protection against invasive cavity nesting species. This year we developed a nest guard which successfully protected cavities from invasion by tropicbirds. This guard effectively excluded them while still allowing Echoes access.

Pilot releases at Combo field station. This year four males have been released in trials that aim to establish Echoes in new areas of the National Park. They settled in well and are being monitored with the new radio-telemetry equipment (see Objective 3 for details).

Establishment of Echo release aviary at Bel Ombre. The new release aviary, funded under this year's budget, will soon be constructed at Bel Ombre. The design is currently with Manzer Saxon - a Mauritian building contractor. Thus we expect the process of producing and constructing the Echo aviary to be smooth and rapid, and that it will be ready well in advance of release dates for the coming season.

Objective Two

To use captive-rearing and captive-breeding to produce the maximum possible number of physically and psychologically healthy Echo Parakeets for release into the wild population - through further development of captive techniques, with a focus on upgrading facilities and enabling earlier socialisation.

Achievements

Captive-rearing and captive-breeding success. A total of 11 chicks (two of which were from captive birds) were hand-reared and released back into the wild.

Hand-rearing routine. The high standards and survivorship (90%+) of hand-reared chicks was maintained this season, despite most chicks arriving in a malnourished condition and a complete change in hand-rearing personnel.

Radical improvements in juvenile socialisation. We have now adapted our hand-rearing techniques to allow the following early socialisation improvements:

* Chicks are now brooded together from an early age (7 to 9 days) as compared with previously being reared in isolation until weaned.
* Chicks are also weaned at a younger age - 65 to 70 days old instead of at around 100 days.
* Socialisation with adults was provided before weaning also for the first time ever. The first batch of hand-reared chicks of this season were housed pre- and post-weaning for a total period of three weeks in an aviary adjacent to the main Echo flight aviary. Later release batches were taken directly to the release aviary from the hand-rearing aviary, and weaned during and

after the release process, in full contact with wild adult Echoes.

Upgrading of captive-rearing equipment for next season. For next season we hope to reduce intrusion by using closed circuit cameras to monitor nesting birds and chicks without disturbing the nest. Four cameras have been purchased and are in the process of being installed. Important biological information such as the number of times eggs are turned, chicks are fed and which parent feeds, will allow us to better manage hand-reared chicks and build a more complete picture of Echo biology.

Most captive females now lay eggs. Most captive females are now mating and laying eggs, this compares with the past where only one or two pairs laid each season. However most of these eggs laid now are infertile which highlights one of our future challenges.

Government of Mauritius will build new GDEWS Captive-rearing facility. The Government of Mauritius has confirmed that it has earmarked funds for a new captive-rearing laboratory complex to replace the currently very basic hand-rearing room we work in at the Gerald Durrell Endemic Wildlife Sanctuary.

Objective Three

To maximise the successful establishment of released Echo Parakeets into the wild population - through improvement of psychological health in captivity and supported by more detailed post-release monitoring.

Achievements

Improved release techniques. We have learnt how to release the birds at a younger age (70 - 90 days old) comparable to an age when they fledge in the wild. Previously the birds were released when fully weaned and fully developed physically (120 days old or more). This season we used hand-rearing staff to complete the process of weaning in the field after the birds had been released. For some birds, this included being fed in the tree tops rather than in the release aviary. This wild weaning meant that the birds were able to go through the process of early social learning and habitat facilitation at an age comparable to wild birds.

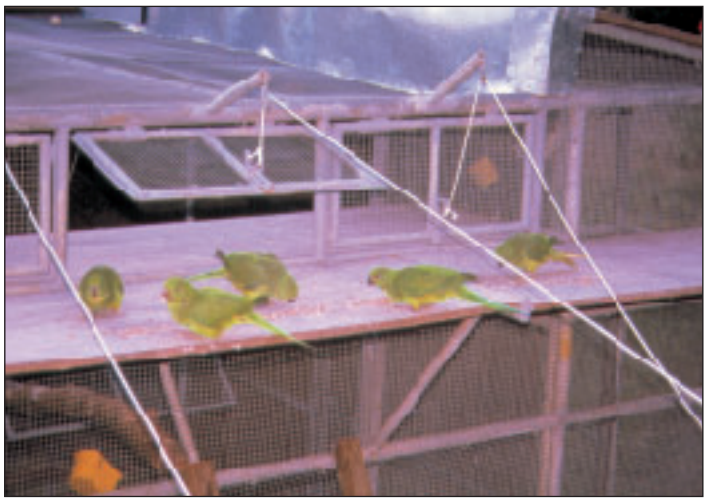
Post-release monitoring - radio-tracking study of released birds in progress. Unfortunately transmitters could not be sourced early enough in the season to be used on the main batch of release birds this season (due to a combination of funding, production and customs delays). It was thought too risky to recatch and radio-tag precious released females already established in the wild. Instead, 2 male pilot release birds were recaught at Combo field station and fitted with tail mount transmitters.

The transmitter study at Combo is intended as a pilot study to test the validity of using radio tracking equipment as a means of studying Echoes. From this study we expect to develop techniques to monitor, via radio tracking all of our future release birds. This will enable us to develop a picture of survivorship/cause of death, habitat utilisation and dispersal of released Echoes.

Objective Four

To ensure the survival of the full range of genetic variation currently available amongst wild and captive Echo Parakeets - through scientifically informed genetic management.

Members of the Mauritius team relax at 'Camp', from where the Echo fieldwork is run. *Photo: WPT*



Young Echoes at the release aviary. *Photo: Lance Woolaver*

Achievements

Continued female-biased sex ratio for releases at Plaine Lievre. It is still very difficult to accurately estimate the numbers of female Echoes in the wild. We know from observations of the wild population, for example when Echoes are prospecting for nesting cavities, that there are a significant number of excess males. Thus we continue to release mainly females into the main population at Plaine Lievre - this season five females and two males were released at that site.

Goals 2001-2002

Sustain increase in the wild Echo population. We aim to support an increase in the wild population to 150 free-living Echoes by the end of the coming season, with an annual target productivity of 20 - 30 birds per season for the coming years. The target of 500 free-living birds will be the next major milestone.

1 Wild Population Management Objectives

Continued hands-on wild nest management. We expect to manage 10-20 nests per year for the foreseeable future using the techniques proven successful over the past five years in particular.

Nest boxes at all field stations where we release Echoes. Natural cavities are absent from some areas and can be more difficult to manage if inaccessible or difficulty in predator proofing. Additional nest boxes will be set out in areas adjacent to all release sites.

2 Echo Release Programme Objectives

Boost numbers of Echoes in Bel Ombre area. There is a current 'subpopulation' (or part of the main breeding population) at Bel Ombre of at least three breeding pairs plus an estimated seven surplus males. A large area of good quality native forest exists, capable of providing habitat to more pairs. It is important that the 'surplus' males are brought into the breeding group, as they may be genetically unique. Thus mostly females will be released at this site in the coming season.

Establish breeding subpopulation in Combo area. We intend to release more birds at this site to continue the establishment of a new subpopulation.

To continue to redress the male biased sex ratio imbalance in the main wild population. Continue to release mainly females at Plaine Lievre, and similarly to release mainly females at Bel Ombre.

Detailed monitoring of released birds. We aim to make more detailed monitoring of released birds using radio telemetry equipment acquired this last season. Key issues are determination of where released birds disperse to, any deaths and investigate their habitat utilization. This is particulay important in the new release areas.

3 Echo Captive Programme Objectives

Establish aviary database. We are setting up a database system for more automatic and systematic record keeping.

Modernise captive facility. Research will be conducted by the Echo hand-rearing Coordinator to assess what other equipment may help us make further improvements. The MWF captive team will also continue to research, and give advice to the Government, for the design of the new captive rearing laboratory. We hope that construction will be started in March 2002 and completed for the following season.