

Raising funds for the Great Green Macaw

by ROSEMARY LOW

The Great Green or Buffon's (*Ara ambigua*) is perhaps the most majestic of all macaws. Only the Hyacinthine is larger and is generally considered to be the most beautiful and striking; in behaviour it might be described as clown-like. The demeanour of the Great Green is quite different. It is a regal bird.

Generally speaking, it has failed to attract much attention from aviculturists or from those concerned with parrot research and conservation. If its plumage had been blue, instead of green, this would have been a totally different story. I would not now be writing this article which is a plea to help the Great Green Macaw before it's too late.

Range

Compared with other large macaws, only Lear's and the Blue-throated have smaller ranges. The Great Green's range has been contracting with alarming speed in recent years. Because this species needs to forage over large areas and so much forest has been destroyed within its range, leaving mainly fragmented areas, it is now endangered and listed on Appendix 1 of CITES.

It occurs in lowland humid forest from eastern Honduras, Nicaragua and Costa Rica to Panama and north-western Colombia. There is a tiny relict population in western Ecuador (sub-species *guayaquilensis*) which is nearly extinct. Compared with the range of the Scarlet Macaw, that of the Great Green covers an area of about one twentieth of that

species. Yet much has been made of the decline of the red macaw.

In Costa Rica

It is not always realised how small are the countries of Central America. For example, at less than 20,000 sq miles (51,000 sq km) Costa Rica is about two and a half times the size of Wales. However, the macaw's range there covers only a small area, although it was once found over about one third of the north-eastern part of the country.

Ground-breaking research

Research on La Lapa Verde, as this macaw is known in Costa Rica, commenced in 1993. One of those who initiated it was Dr George Powell, a respected and life-long conservationist who, in 1972, was involved in founding the famous cloud forest reserve of Monteverde in Costa Rica. The scientific papers which have been published as a result of Proyecto Lapa Verde surely set new standards in research on endangered parrots. When I read them last year I was impressed beyond words by the work which had been carried out on

population, diet and movements (migration).

Telemetry

The study centred around the use of radio telemetry methods to determine the home ranges and habitat use by the macaws and the fruiting phenology of tree species used as food. The location of nests and the movements of radio-tagged birds defined the study area in northern Costa Rica, just south of the border with Nicaragua. The study area was expanded during the non-breeding season when most of the macaw families migrated out of the breeding range, mostly north into Nicaragua.

A macaw-proof transmitter was tested on captive birds, then the equipment was fitted to several wild Great Green Macaws. Some adults captured after wearing a transmitter for one or two years showed no ill effects. This was the first time that radio transmitters had been successfully used on wild macaws. The transmitters are tiny and weigh only 30g - about 3% of the average body weight.

The radio-tagged macaws were tracked in off-road vehicles using a network of rudimentary logging roads. Whenever possible, a given radio signal was followed until the bird associated with it was visually detected. In that way the precise locality of the bird, its activity, the tree species it was in, and the number of macaws with it were recorded.

Food sources

At the start of the project there was little data on diet. It was known only that the seeds in the fruit of the large leguminous tree *Dipteryx panamensis* (known as 'almendro') were an important item in the diet during at least part of the year. Subsequent years of tracking resulted in the

identification of other important tree species, including *Sacoglottis trichogyna*. To measure seasonal change in canopy fruit production, monthly counts of fruit and flowers on individually marked trees were conducted. The macaws usually nest between January and May and their young are fed primarily on the fruits of *Dipteryx* and *Sacoglottis*.

Identifying priority areas

Identification of the most critical habitats for the macaws was based on four key factors: density of nests, distribution of each of the two main sources of food (the trees mentioned above) and quality of the remaining forest habitat. In this way the areas which should be given priority for the conservation of the Great Green Macaw were identified.

The researchers determined that the current breeding range of this macaw in Costa Rica is restricted to an area of about 1,120 sq km in the northern zone, the last remaining forest of its kind in the country. It is marked by the presence of large almendro trees. (Unfortunately, this tree is now one of Costa Rica's primary sources of hardwood for flooring and for truck bodies). The researchers propose that two priority areas should be given the strictest protection. They should be surrounded by a buffer zone of sustainably managed forest that encompasses the macaw's range during migration and links the breeding area with the montane protected areas in the Central Volcano Range. In this way they believe that a sustainable breeding population would be achieved.



Radio-tracking the macaws

Photo: Steve Winter



Removing a young Great Green Macaw from the nest to check its development
Photo: Steve Winter

Nests and fledgling survival

Extensive field searching and interviews with residents revealed 51 confirmed nest sites over the six years of the studies. All nests were in natural cavities of large living trees, 88% of which were almendros. Some supposed nest sites proved to be holes from which the macaws regularly drank water. Eight of the 51 nest trees were cut down during the course of the study.

Close observation of the nests indicated that the success of clutches (surviving incubation, brooding and fledging, to produce at least one young) is 60%. The productivity of 18 successful nesting attempts involving 15 nest holes during five years was equal to 1.83 young. First-year survival of 23 fledglings from 12 nests was monitored. Fifteen of them survived until the start of the next season, when juvenile birds separate from their parents.

Only 35 breeding pairs

Extensive data collection indicates that fewer than 35 pairs of Great Green Macaws are breeding annually in the northern zone of Costa Rica. The population is believed to number in the region of 200 macaws. There is no evidence of a breeding population elsewhere in the country.

Loss of habitat and nest sites

Satellite images of the macaw's breeding area in Costa Rica reveal that about 35% of the forest was eliminated between 1986 and 1992. The problem of habitat loss is compounded by the cutting of nest trees. Sixteen percent of all known nest sites since 1994 have been cut down. Half of these were felled since the 1996 law which prohibits the cutting of nest trees and hollow *Dipteryx*.

As Atlantic lowland forest throughout Central America comes under pressure from logging and colonisation, it is imperative that the reproductive potential and habitat requirements of the macaw in Costa Rica are further analysed. In this way the actions which would be most effective in preventing the elimination of this macaw throughout its Central American range can be determined. The most detailed information has



The chick's vital statistics are recorded come from the study in Costa Rica, which has important implications for the survival of this endangered macaw.

Lack of funding

Recently I was in Costa Rica and met Guisselle Arias, the director of Proyecto Lapa Verde, and her Swiss assistant Olivier Chassot. They told me that funding is desperately needed to continue the project in 2001. Last year George Powell personally donated a very large sum to enable the project to continue. He can no longer do that.

Olivier and Guisselle told me that currently the project has only one volunteer instead of the three or four needed. There is no money to fund more volunteers although food and lodgings are inexpensive. Ideally, there is one team in the field and one team processing data, writing proposals and keeping up the press campaign (on TV and in newspapers) which has reduced to almost nil the number of Great Green Macaws shot in Costa Rica.

Education Programme

Habitat loss has become the major threat to the survival of the Great Green Macaw. Direct human persecution is now rare, thanks to the extensive education programme which has been undertaken by members of the project and volunteers.

A recent paper published by IUCN suggests that the total population of the Great Green Macaw throughout its range might number fewer than 2,500 mature individuals. Without funding, this number will continue to fall.

We are determined to raise enough funds to ensure that this important project continues.

Photo: Steve Winter

When I met Olivier and Guisselle their dedication to the project and concern for its future were as strong as my desire to help in some small way to prevent the extinction of this magnificent macaw. The need to help became a matter of priority in early January when I received a communication from George Powell. It emphasised that the need for funding was extremely urgent.

He wrote: 'We cannot face giving up and had felt certain that one of our dozen or so proposals sent out would bring in the desperately needed funds. But so far this has not happened and we have been forced to set 31st January as the date we will have to shut down the project if no funding is forthcoming. It is sad to face this after building up a six-year database that is almost certainly the best data on individual wild macaws in existence. We wondered if you could consider the challenge of raising funds to pay the modest salaries of Guisselle and Olivier, plus \$200 per month to keep them operating effectively as the voice of *Ara ambigua*.

Our data is showing dramatic declines in the macaw populations in Costa Rica. It is our hope that this tragic situation known to the Costa Rican public will cause them to demand corrective action by politicians."

Magnificent response

World Parrot Trust, Zoo-de-Doue, Chase Wildlife Foundation, Natural Encounters Inc. and Parrots magazine responded magnificently to the funding challenge. We are delighted to report that funds have been diverted to the project which ensures not only payment of

salaries but funding towards a national park proposal that would be used as a fund-raising tool.

The project had just entered a new phase when the funding crisis became urgent. A proposal for the establishment of a national park in Costa Rica had just been completed. The park had been designed (on paper) on the basis of the macaw research findings. In addition, it was proposed that a wildlife-corridor would connect the proposed park with other major parks in Costa Rica and Nicaragua. This would allow the macaws to migrate between breeding and non-breeding areas which are protected. The proposal was developed at the request of Mario Boza, Costa Rica's leading conservationist.

Do you belong to a bird club or part of society? Why not suggest that the proceeds of the next raffle should be donated to this cause? Do you have a few unwanted gifts which are destined to lay unused in a cupboard? Then join forces with others who care about parrots and have a car-boot sale. Do you own a shop or a restaurant? Then ask the Trust for a collecting box which you can display with a poster promoting the Trust.

Raising funds can be a very rewarding experience. Please send your donation to the World Parrot Trust, Glanmor House, Hayle, Cornwall, TR27 4HB, clearly marked 'Great Green Macaw Fund'.

For additional information on this project, see the article in the August 2000 issue of *PsittaScene*.

Late news from Jamie Gilardi

I just spoke with Guisselle Monge, the field director of the project, today. Sad news for the birds, a tagged recognised active nest tree (almendro) was cut down this week on a farm of a landowner known to the project team. It is illegal in Costa Rica to cut a macaw nest tree, and the owner knew it very well, so we will have to see what happened. Guisselle was going to call MINAE, the Environment Ministry, to have them investigate. So, even farms with approved forestry management plans do not necessarily follow them, which strengthens our view of the need for official protection and better monitoring of 'sustainable' forestry in the area.

