

Project Report: January 2005

*Objective #1: Understand roost site selection of the threatened Madagascar Flying Fox*

Eight roost sites were surveyed to provide an estimate of abundance. Six roosts were located in natural forest areas and two in *Eucalyptus* plantations. Both evening and morning dispersal counts were taken. Data seemed to indicate that permanent roost sites were situated in forest fragments with a high canopy and the actual girth of the trees is a less important factor. Permanent sites were oriented on a NE-SE axis, whilst unused forests were oriented more on a W-NW axis. Other areas that might be important, such as the surface area of the roost and the species composition of the trees are currently being analyzed.

Given the close proximity of the roost sites to each other, it is possible that frequent exchange of bats occurs between the fragments and this would be good reason to manage the cluster of sites as a single, dynamic roost. The area holds a significant number of flying foxes and they are likely to play an important role in seed dispersal and pollination. As the bats' roosts are currently unprotected by national and local law, more conservation action and education is required to safeguard these sites. During the visits to the roosts throughout this study, the team observed frequent changes in the occupancy of both roost sites and areas used within a single forest, and it is recommended that a small number of *P. rufus* are radio tagged to allow their movement patterns to be better understood.

*Objective #2: Incorporate bat awareness into primary school teaching*

Teachers and pupils from 17 primary schools located close to at least one of the flying fox roost nests were worked with. A training workshop was held for teachers to enable them to disseminate information about the role of bats in the environment. A film was shown about fruit bats to the children; many parents and other family members also attended. A student poster competition was held in the 17 schools so that teachers could disseminate their new knowledge and students could express what they had learned. The winning artist was Fanjanirina Lydia of Antaniditra Primary School. The picture was liked by all the judges for artistic merit and because it shows a good likeness to *Pteropus rufus* and it depicts seed dispersal. The 220 posters submitted into the contest were later evaluated to assess the inclusion of key messages about the important role of bats in the environment. It was found that 46% depicted bats carrying fruits in flight, 37% depicted bat faeces and forest growth, 19% included a written message and 13% showed insectivorous bats. These were good indicators that the children understood and remembered key messages learned from their teachers and the film. The winning children were acknowledged at an awards ceremony at the World Environment Day celebrations and were also taken on a day trip to visit the national zoological and botanical gardens in Antananarivo.



*Winning Poster by Fanjanirina Lydia*

*Objective #3: Provide field and classroom training to Malagasy biologists*

The grant from Cleveland Metroparks Zoo also helped to fund a wide range of training and learning opportunities for Malagasy biologists. Four biologists and two members of the NGO ACCE attended training courses in GIS and GPS. The techniques learned were used in the field during a flying fox survey in June 2004. Two students, less familiar with computers, followed a month-long course on Word and Excel to give them the necessary skills to prepare their research theses. Four students also followed an English training course. Two Malagasy students completed their master's theses during the field work for the project. One studied the conservation ecology of *P. rufus* and received training in bat catching and handling, faeces collection and identification, evening dispersal counts at roosts and methods for habitat description. A second student compared the bat community in two protected areas and was trained in bat identification, mist netting, using harp traps, insect collection habitat description and using bat detectors.

*Objective #4: Advise protected area managers on bat-friendly methods of cave ecotourism*

Ecotourism is often seen as one of the ways that Madagascar can stimulate rural development and increase income from biodiversity. During the course of this project we visited a number of protected areas in Madagascar and provided reserve managers with advice and information on bat conservation and the potential for ecotourism. For example, a brochure was produced (in English, Malagasy and French) on cave bats to advise guides on bat-friendly practices and to give tourists information on the identity

and ecology of each species likely to be encountered in the caves. 5,000 of these brochures were donated to Tsingy Bemaraha National Park.

