

# IUCN

The World Conservation Union

## SPECIES ACTION PLAN FOR LIVINGSTONE'S FRUIT BAT

*Pteropus livingstonii*



IUCN  
1992  
034  
ann.

IUCN  
1992  
034  
ann.



Bristol, Clifton and  
West of England  
Zoological Society

IUCN Bibliothèque  
CH - 1196 Gland

# SPECIES ACTION PLAN FOR LIVINGSTONE'S FRUIT BAT

## *Pteropus livingstonii*

### Background

Livingstone's fruit bat or flying fox *Pteropus livingstonii* is endemic to the Federal Islamic Republic of the Comores (RFIC) and its known distribution is restricted to the upland forests of the islands of Anjouan and Moheli. The species is critically endangered and has been given highest rating (Priority Grade 1) for its conservation in the IUCN Action Plan for Old World Fruit Bats. Current total population is estimated at about 400 individuals and extinction of this species is a very real possibility within 10 years unless active conservation measures are implemented. Survival of *P. livingstonii* is dependent upon the continued integrity of the upland forests. These are crucial, not only as feeding and roosting sites for *P. livingstonii*, but also for other endangered wildlife. In addition the forests are a major resource for local people and are vitally important to sustain remaining watersheds. This Species Action Plan has been drawn up to highlight the problems facing the bat and its habitat and to propose practical solutions.

### Problems

1. There is rapid degradation and deforestation of upland forest resulting in a direct threat to roosts, loss of food plants, and increased vulnerability to cyclones. Since 1972 it is estimated that 70% of natural forest has disappeared (21.6 km<sup>2</sup> and 15.5 km<sup>2</sup> remain on Anjouan and Moheli respectively). Watershed loss has resulted in only 11 of an original 45 rivers still flowing year-round on Anjouan. Forest destruction is a result of:

- high levels of subsistence agriculture due to the poverty of the human population
- use of forest materials for construction
- rapid human population growth and consequent need for land
- problems of land tenure legislation
- use of fertile lowland areas for cash crops.

2. A serious lack of information on the ecology of the bat; little is known about:

- diet
- seasonal movements between roosts and islands
- social organisation and population dynamics
- possible competition with sympatric frugivores
- factors confining *P. livingstonii* to upland forests.

3. Geographical isolation, economic problems, and lack of knowledge of environmental issues result in:

- few resources being devoted to *in-situ* conservation and environmental education
- limited enforcement of environmental legislation and protection.

### Potential Solutions

Solutions will only be effective in collaboration with the Government of the Comores and the Centre National de Documentation et de Recherche Scientifique (CNDRS) (the Scientific Institute of the Comores) in Grande Comore.

- Captive breeding programme as a safeguard against extinction and reintroduction or re-stocking with captive-bred stock as appropriate.
- Environmental education programmes.
- Protection agreements for bats and roosts and enforcement of environmental legislation.
- Establishment of forest reserves (simultaneously protecting watersheds).
- Implementation of a long-term environmental management strategy for the forests of Anjouan and Moheli.
- Long-term field studies on the behavioural ecology of *P. livingstonii*.

## Action to Date

- An Accord with Government of RFIC and CNDRS.
- Roost monitoring protocols have been implemented.
- Legislation has been drafted to protect the bat and its roosts.
- A captive breeding programme has been initiated at Jersey Wildlife Preservation Trust.
- Research is under way on comparative ecology of the two Comorien *Pteropus*, on systematics of Western Indian Ocean *Pteropus*, and on the biology of the captive bats.
- Environmental education materials stressing the interdependence of fruit bats, forests and local people have been distributed.

## Strategies

- Population and Habitat Viability Analyses (PHVA) for *P. livingstonii* on Anjouan and Moheli, to assist with the management plan process.
- *In-situ* captive breeding programme, which has educational and political value as well as providing animals for reintroduction.
- Establishment of a field station, to provide a year-round operational base for research and education on *P. livingstonii* and on other endangered species and their habitats.
- Develop partnerships for conservation with Government of RFIC and CNDRS.
- Integrate work with local NGOs such as ULANGA, with aid agencies such as CARE and with UN agencies, particularly UNDP and IUCN.
- Establish informal local protection agreements and effective reserve areas.
- Expand environmental education programmes.

## Goals and Time Frame

Short-term goals (12 months from mid-1995):

- Complete the establishment of the *ex-situ* captive breeding programme
- Commitment to 3 yr funding for local personnel for roost monitoring

Three year goals (mid-1995 to mid-1998):

- 10 captive-bred individuals, 1st generation breeding in captivity
- PHVA completed
- Local personnel in place for monitoring of all known roosts
- Substantial progress towards establishment of field site and 2+ year study of behavioural ecology of *P. livingstonii*
- Local agreements in place for protection of roosts
- Substantial progress towards establishment of reserves

Five year goals (mid-1995 to 2000):

- Functioning protected areas established
- 2nd generation captive breeding and at least one other captive colony of *P. livingstonii* established (*in* or *ex situ*)

## Projects to be Funded

- Local salaries for roost monitoring and reserve management.
- Infrastructure and resourcing of *in-situ* field station.
- Grants for field researchers and local counterparts.
- Infrastructure and training for *in-situ* captive breeding facility.
- Materials and local personnel for environmental education programmes.

## Summary

*Pteropus livingstonii* is possibly a keystone species in the upland forests of the Comores. In addition, being one of the largest fruit bats and endemic to the Comores, it could act as a flagship for biodiversity conservation in the Comores. Without effective action in the immediate future, a whole ecosystem will disappear.

## Organisations Working for the Conservation of *Pteropus livingstonii*

- The Government of the République Fédérale Islamique des Comores
- The Centre National de Documentation et de Recherche Scientifique des Comores
- IUCN Species Survival Commission Chiroptera Specialist Group
- The Jersey Wildlife Preservation Trust
- Action Comores
- Fauna and Flora International
- Bristol, Clifton and West of England Zoological Society

## Contact address

John Hartley, Comores Coordinator, Jersey Wildlife Preservation Trust, Les Augrès Manor, Trinity, Jersey JE3 5BP, Channel Islands, British Isles. Tel: +44 1534 864666, Fax: 44 1534 865161.

