

# OBSERVATIONS, DISCUSSIONS AND UPDATES

## FLYING FOXES (PTEROPODIDAE: *PTEROPUS*) IN THE WESTERN INDIAN OCEAN: A NEW REGIONAL INITIATIVE

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### Introduction

The islands of the western Indian Ocean Islands differ in size, language, topography, culture and history but most are home to *Pteropus* flying foxes (MICKLEBURGH *et al.* 1992). These large bats are important seed dispersers and pollinators and contribute important ecosystem services to oceanic islands (BOLLEN and VAN ELSACKER 2002; ENTWISTLE and CORP 1997; NYHAGEN *et al.* 2005; POWELL and WEHNELT 2003; REASON and TREWHELLA 1994). Seven of the eight species in the region are listed as threatened on the IUCN Red List (Table 1) with most threatened by habitat loss, hunting for food and persecution. A number of different non-governmental organizations, universities and governments are actively engaged in conservation activities to secure wild populations of threatened *Pteropus* bats but there has been limited inter-island communication between the different stakeholders.

The first western Indian Ocean Islands *Pteropus* Workshop was held in Mauritius from 11-14<sup>th</sup> November 2008. The main objective was to bring together representatives from the different islands to exchange experiences about conserving *Pteropus*, to learn about successful conservation activities, to develop common approaches to shared problems and to investigate possibilities for future collaboration. The workshop was attended by representatives from the islands of Comoros (Anjouan and Mohéli), Madagascar, Mauritius, Pemba, Reunion, Rodrigues, Seychelles and Zanzibar. Participants also included international experts, including the co-Chair of IUCN Chiroptera Specialist Group and the Director of the Lube Bat Conservancy, and a range of stakeholders from Mauritius.

The main topics of discussion and presentations were:

- (i) development of a regional group for *Pteropus*,
- (ii) monitoring,
- (iii) public communication,
- (iv) conflict with fruit growers,
- (v) role of environmental education and
- (vi) future directions.

### Regional *Pteropus* Group

Representatives from eight islands were selected following the meeting to act as a focal point for communication and disseminating information between and within islands (Table 2). These individuals will establish networks of interested stakeholders or individuals within their respective islands for inclusion within the regional group. There was also general support for the creation of a website to facilitate the dissemination of news and other information.

### Monitoring

Monitoring results were presented for *P. livingstonii*, *P. rufus*, *P. niger*, *P. rodricensis* and *P. voeltzkowi*. *Pteropus* populations on Pemba and Rodrigues have increased notably in recent years and this helped to emphasize the importance of collecting regular monitoring data. Representatives from other islands were encouraged to undertake, or fund, similar monitoring programmes to



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Above: Greater Mascarene Flying Fox (*Pteropus niger*)

provide a long-term regional data set. It was decided that a standard methodology for the monitoring *Pteropus* region was not required, nor was even feasible, but it is necessary to tailor the various approved counting techniques (e.g. direct-, patch-, evening dispersal-counts) on a case by case basis and to make sure that the same methods are applied at the same sites on each visit.

### Public communication

There is a growing need to provide the general public and the media with factual information on *Pteropus* flying foxes. This is particularly important in Mauritius where there is public debate about the damage that *P. niger* inflicts on the commercial litchi crop. With the growing concern of the role that flying foxes play as a disease vector it is possible that this issue will soon enter the public domain in the region. The convincing monitoring data from Rodrigues and

**Table 1:** Summary of the IUCN Red List conservation status for *Pteropus* species in the western Indian Ocean in 2004 (\*1996 status) and 2008 (downloaded from [www.redlist.org](http://www.redlist.org) on 5 March 2009).

Species	2004	2008	Population trend
Aldabra Flying Fox <i>Pteropus aldabrensis</i>	CR	VU	Stable
Comoro Flying Fox <i>Pteropus livingstonii</i>	CR	EN	Decreasing
Greater Mascarene Flying Fox <i>Pteropus niger</i>	VU*	EN	Decreasing
Rodrigues Flying Fox <i>Pteropus rodricensis</i>	CR	CR	Increasing
Malagasy Flying Fox <i>Pteropus rufus</i>	VU	VU	Decreasing
Seychelles Flying Fox <i>Pteropus seychellensis</i>	LC	LC	Stable
Pemba Flying Fox <i>Pteropus voeltzkowi</i>	VU	VU	Increasing

**Table 2:** List of the island representatives identified following the workshop

Island	Representative
Pemba (Tanzania)	Said Ali Juma
Mafia (Tanzania)	Hajji Mahingika
Zanzibar (Tanzania)	Bakari Asseid
Mayotte (France)	Michel Charpentier Sarah Caceres
Anjouan & Mohéli (Comoros)	Nassuri Toilibu
Madagascar	Radosoa Andrianaivoarivelo
Mauritius	Vikash Tatayah
Rodrigues (Mauritius)	Andrea Waterstone
Seychelles	<i>Nature Seychelles</i>
Réunion (France)	Jean Michel Probst, Marc Salamolard Sarah Caceres

Pemba represent good news for *Pteropus* bats and scientists working on these species should publish their results in the public domain.

### Conflict between *Pteropus* bats and people

There was considerable discussion about the current situation in Mauritius where economic damage to litchi crops is blamed on *P. niger*. Participants discussed mitigation measures and ways of assessing the amount of damage caused by other vertebrate species. An opportunity was identified to link research teams in Mauritius and Madagascar because *Pteropus* bats are persecuted on both islands to protect litchi crops.

### Environmental education

Representatives from Madagascar, Rodrigues, Pemba and Comoros provided convincing evidence that raising the awareness of people about flying foxes is an important component of conservation programmes on the islands. Pemba and Seychelles had very positive experiences from creating wildlife clubs whilst representatives from Madagascar were hoping to integrate bat-positive messages into the national curriculum. There was wide support for the idea of a regional bat conservation day each year.

### Future directions

Research priorities were identified as

- (1) using good science to explore the conflict between *Pteropus* bats and commercial fruit growers, preferably under experimental conditions, (
- (2) 2) investigating the sustainability of hunting and
- (3) (3) studying the feeding ecology and diet of *Pteropus* bats.

Conservation priorities also received wide consensus as

- (1) reducing illegal hunting/killing,
- (2) reducing the loss of roosting and foraging habitats and
- (3) raising awareness about flying foxes.

The recent arrival of *P. niger* in Reunion was identified as unique opportunity to study a small founder population. A follow-up workshop within three or four years was identified as a priority, to include an expanded group of islands (i.e. Mafia, Mayotte and Aldabra), and to address issues such as hunting, disease and feeding ecology.

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