PROPOSAL FOR INCLUSION OF SPECIES ON THE APPENDICES OF THE CONVENTION ON THE CONSERVATION OF MIGRATORY SPECIES OF WILD ANIMALS

A. PROPOSAL: Inclusion of the entire African populations of Straw-coloured Fruit Bat *Eidolon helvum* on Appendix II.

B. PROPONENT: Government of Kenya.[1]

C. SUPPORTING STATEMENT:

1. Taxon

1.1.	**Class:**	Mammalia
1.2.	**Order:**	Chiroptera
1.3.	**Family:**	Pteropodidae
1.4.	**Genus/species/subspecies:**	*Eidolon helvum* Kerr, 1792
1.5.	**Common name**:	English: Straw-coloured Fruit Bat

2. Biological data

2.1. Distribution

The subspecies *E. h. helvum* is widespread in Africa, including Gulf of Guinea islands and Zanzibar, Pemba and Mafia off Tanzania (Bergmans, 1990). Resident in much of central Africa with long-range migrations from north to southern Africa. Distribution to the northern and southern Africa extremes are patchy. Also sparse or absent in large areas of the Horn of Africa and central Africa (Bergmans, 1990). The species is also present in South-West Arabia as subspecies *E. h. sabaeum.* The population on Madagascar is now generally regarded as a separate species, *E. dupreanum* (Bergmans, 1990; Simmons 2004).

2.2. Population

Forms large colonies of 10s to 100s of thousands, occasionally colonies can be upto about one million bats, with one in Zambia estimated at up to five million. Within the colonies they form tight clusters of up to 100 animals, although in particularly large colonies this clustering may not be so obvious. The wide distribution, seasonal and erratic occurrence may mask a more complex distribution and smaller population than is apparent from distribution maps (particularly outside the rain forest areas of West and Central Africa) (Bergmans, 1990), and from records of colony size.

The colony in Kampala (in what was known as 'Bat Valley') was believed to number about one million in the early 1960s, but later estimated at 250,000 (Mutere 1967). Over the years development in and around Kampala has broken up the colony into smaller groups and the numbers are believed to be on the decline. More recently they have been regarded as a nuisance, and there have been control programmes developed and removal of roost trees (*Eucalyptus*) and poisoning of the bats has been initiated. A large colony in Lome, Togo, has similarly been regarded as a nuisance. Other such declines have been recorded.

[1] Proposals for the inclusion of *E.helvum* on Appendix II have been submitted independently by the Governments of the Democratic Republic of the Congo and Kenya. Contacted by the Secretariat, proponent governments agreed to consider the proposal of amendment as submitted jointly by them. Original submissions are transmitted as separate documents to the other Parties.

One of the largest bats of the region. An account of the species can be found in DeFrees & Wilson (1988), Mickleburgh *et al.* (1992) and Nowak (1994).

2.3. Habitat

Occupies wide range of forest, savannah and urban habitats at altitudes up to 2000m.

Feeds on fruit and flowers (Mickleburgh et al., 1992) and important for pollination and seed dispersal, although possibly not as important for pollination as smaller fruit bats (Happold, 1978). Also takes leaves and occasionally sap. Forms large, often noisy, colonies in trees, often in major cities (such as Accra, Freetown, Lagos, Douala, Kampala, Dar Es Salaam); sometimes roosts in rock crevices or the entrance zone of caves. Evening dispersal for foraging may take bats to 30 km from the roost.

2.4. Migration

Present all year in coastal areas of West African countries along the Gulf of Guinea and across to southern Kenya in the north and from northern Angola across to northern Mozambique in the south. Seasonally it extends north to southern Mauritania, across through southern Niger to most of Sudan and south through much of southern Africa.

Recorded at sea 250 km from nearest land (Rosevear, 1964).

Even in the core area seasonal use (or abandonment) of colony sites is noted in almost all major colonies; some major colonies such as in Kampala or those in Congo may only abandon the roost for as little as two months, others are only present for that length of time, such as the colony at Kasanka National Park, Zambia. Jones (1972) reported *Eidolon* as abundant in Rio Muni for only three months of the year.

An interesting feature of the migrations of this and certain other West African fruit bat species is that migration is not apparently always associated with lack of local food resources, i.e. towards improved food sources (Kingdon, 1974). Thomas (1983) showed that the bats migrate from the West African forest north into the savannah zone during the major wet season. Although fruit availability is much higher in the forest belt all year, the savannah offers a rich source of food in the wet season that it is advantageous for the bats to exploit. See also Fleming and Eby (2003).

Movements may be somewhat erratic depending on available food resources and ambient weather conditions. The northern and particularly the southern limits of migration may vary markedly from year to year.

Thomas (1983) estimated a colony in Abidjan (Cote d'Ivoire) at 300,000 to 500,000 in January/February, when the young were born. The main dispersal was in March, but colonies could be found in open savannah in February, where colonies of up to 100,000 could appear 'overnight'. There was little evidence of colonies in August to November when dispersal may be at its peak. Migration was estimated to take many bats more than 1000 km (and possibly to 1500 km). In Kampala the young are born in late February and early March, with the colony dispersed between June and August (Kingdon, 1974). A colony of up to five million accumulates in Kasanka National Park, Zambia, in November/December and that number of bats must be widely dispersed during the rest of the year. There is some evidence of movement of these bats to Democratic Republic of the Congo and to Tanzania, but it is also likely that many move south. In the extremes of southern Africa it occurs sporadically and seasonally throughout the region with most records from the wetter eastern parts during the summer months (Skinner & Smithers, 1990; Taylor, 2000).

Colonies may show extreme roost-site fidelity, e.g. Kingdon (1974) notes that the Kampala roost was present before Europeans occupied the area and even recolonised introduced *Eucalyptus* trees after an absence following clearance of the original roost trees. *Eidolon* also probably shows great flexibility in finding temporary or new food sources; the range of the species was extended into a formerly

unoccupied part of Sudan following establishment of suitable food plants at human settlements (Kock, 1969).

While some populations may follow a normal four-month foetal development, other populations may undergo delayed implantation (Kingdon, 1974); this may be related to the migratory patterns of the population. There is usually one young per year. In the Kampala colony mating is staggered from April to June, but implantation is mostly in October at the onset of the rains, and births are in February to March close to the onset of the other (major) rainy season (Mutere 1965a, 1965b, 1967; Kingdon, 1974). In the Kasanka colony, bats exhibited a great range of reproductive condition, from those in early pregnancy to those carrying new-born young (A.M.Hutson and P.A.Racey, pers.obs.); this might indicate a mixed origin for the colony, but other colonies may show extended parturition periods, such as that in Kampala, where births occur from early December to February (Kingdon, 1974). In Nigeria, mating occurred in June/July, gestation from October/November to births in March (Fayenuwo and Halstead, 1974; Happold, 1987), where implantation is timed with the beginning of the dry season and births with the onset of the wet season. Other variations in timing and the proportion of bats that migrate may relate to seasonal rainfall (Jones, 1972; Huggel-Wolf and Huggel-Wolf, 1965).

3. Threat data

3.1. Direct threats to the populations

While not in danger of extinction, the species is vulnerable, and perhaps misleadingly abundant, in large and temporary colonies. Frequently forms large colonies in towns and cities where unwelcome through fruit feeding, defoliation of roost trees, defecation on (commercial) buildings. Exploitation for meat (and medicinal use) may be a problem in some areas. However, in some areas, colonies may be protected by tradition (Funmilayo, 1979; Happold, 1987). Persecuted as a pest by fruit growers, but damage is likely to be far outweighed by benefits from pollination and seed dispersal; little evidence of damage to commercial fruit trees was found in Nigeria (Happold, 1987).

Electrocution on power lines is an obvious, and probably increasing, cause of death, but is unlikely to be a major threat to the population.

3.2. Habitat destruction

Encroachment on natural habitats through increased agriculture and developments, especially loss of tropical forest habitats.

3.3. Indirect threats

3.4. Threats connected especially with migrations

3.5. National and international utilization

Taken as food (including commercially) in towns and elsewhere – and occasionally for medicinal use (Funmilayo, 1976, 1978). As food it may be the source of fruit bat meat that appears in European food retailers.

4. Protection needs and status

4.1. National protection status

Probably not protected in any range state legislation (unless included in very general wildlife protection).

4.2. International protection status

Not protected under any international measures. IUCN status: Least Concern.

4.3. Additional protection needs

Conservation of key roosts, including those in towns. May require management of hunting and other persecution. Understanding of role in fruit damage in relation to benefits from pollination and seed dispersal. Urgent need for greater understanding of migratory patterns.

5. Range states[2]

Nominate subspecies recorded from Angola, BENIN, Bioko, Botswana, BURKINA FASO, Burundi, CAMEROON, Central African Republic, CHAD, CONGO, Equatorial Guinea, Ethiopia, Gabon, GAMBIA, GHANA, GUINEA, GUINEA-BISSAU, CÔTE D'IVOIRE, KENYA, LIBERIA, Malawi, MALI, Mozambique, Namibia, NIGER, NIGERIA, SAO TOME AND PRINCIPE, RWANDA, SENEGAL, Sierra Leone, SOMALIA, SOUTH AFRICA, Sudan, TANZANIA (including Mafia, Pemba, Zanzibar), TOGO, UGANDA, DEMOCRATIC REPUBLIC OF CONGO, Zambia, Zimbabwe.

E. h. sabaeum from North Yemen, SAUDI ARABIA, South Yemen.

6. Comments from range states

Justification for listing in Appendix II from Kenya:

Kenya is a range state for the species, and no much attention has been given to the species despite the fact that it requires adequate protection given its status in the IUCN listing (near threatened). No detailed population trends known in Kenya for the species but observations show that the population is on the decline. A detailed monitoring programme is on-going on traditional roost sites in Kenya. In Kenya its prime habitats are forested and woodland areas, and occur in western region. It roosts in tens of thousands near Kakamega forest, probably in the Mt Elgon Area, and the Cherang'ani Hills.

The species is threatened by direct poisoning which has been reported within its distribution range. In addition, there is general killing of bats particularly along the Kenya-Uganda border due to superstitions and traditional beliefs that the bats are signs of bad omen. The roosting trees in western Kenya and eastern Uganda have been cleared at alarming rate, and the future existence of the species especially in Kenya cannot be guaranteed unless urgent conservation measures are undertaken. The listing of the species in Appendix II of the CMS will be a major step and would boost the joint collaborative inventory and research that been initiated between Kenya (National Museums of Kenya) and Uganda (University of Makerere).

Although no details of direct utilization is known in Kenya for this species, it is a source of food in some West African countries. Protection of this species is particularly useful in Kenya as it is an important pollinator for critical plant species. The listing will improve its conservation in Kenya both at policy, research and monitoring levels. It will attract more research interests, and create opportunities for protection of the species distribution range.

7 Additional remarks

[2] CMS Parties in capitals

8. References

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