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Golden - Capped Fruit Bat



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Foreword

This issue features one of the Philippine megabats, and the heaviest among the world's bats – the Golden-capped fruit bat (*Acerodon jubatus* Eschscholtz). This bat species is endemic and can be found throughout the country except in Palawan and other island provinces such as Batanes and Babuyan Island.

Due to habitat loss, hunting, and roosting area disturbance, the species has been declining its population trend and is regarded as threatened species. It is categorized as endangered species in the IUCN RedList of threatened species while DENR Administrative Order no. 2019-09, known as “*Updated National List of Threatened Philippine Fauna and their Categories*,” listed *A. jubatus* as critically endangered. On the other hand, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) included Golden-capped fruit bat in its Appendix I.

The species protection and conservation are covered by Republic Act no. 9147 or the Wildlife Resources Conservation and Protection Act.



MARIA LOURDES G. FERRER, CESO III

Golden - Capped Fruit Bat



Acerodon jubatus Eschscholtz

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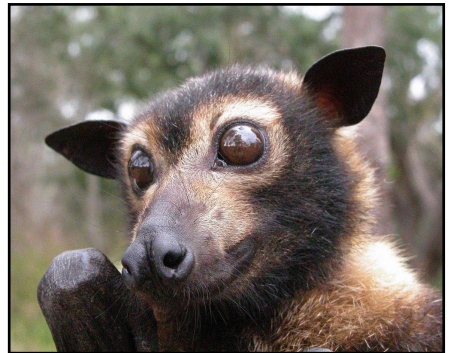
For. Ma. Kristina P. Orpia

Taxonomic Classification

Kingdom	:	Animalia
Phylum	:	Chordata
Class	:	Mammalis
Order	:	Chiroptera
Family	:	Pteropodidae
Scientific Name	:	<i>Acerodon jubatus</i> Eschscholtz, 1831
Synonyms	:	<i>Acerodon lucifer</i> Elliot, 1896
Common Name	:	Golden-capped Fruit Bat, Golden-crown Flying Fox
Vernacular Name	:	Paniki, Bayakan

Description

The golden capped fruit bat is known to be the heaviest among the world's bats weighing up to 2.6 lbs (1.2 kg). Males are larger and heavier than females. A combined measurement of head and body length ranges from 178 to 290 mm. The tail is absent. Its forearm varies between 125 and 203 mm while the wingspan varies between 1.51 and 1.7 m. (Heaney and Heideman, 1987; Ingle and Heaney



Close-up photo of *Acerodon jubatus* Eschscholtz source:<https://ainawgsd.tumblr.com/post/178929713135/embedding-fox>

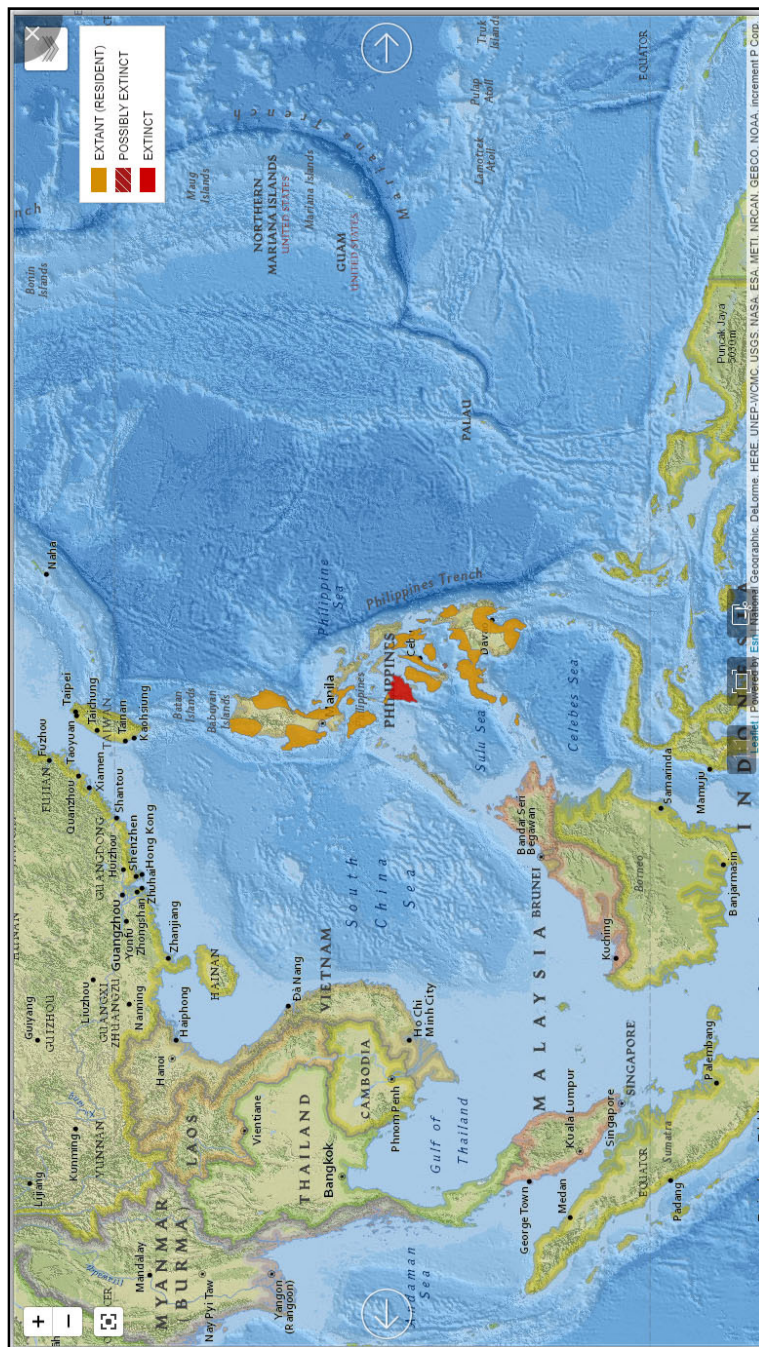
1992; Mudar and Allen 1986; Nowak 1991 cited in Heinen 2009)

The species has large, bright eyes and pointed external ears that are about as long as the muzzle. A claw on the second digit of its wing is present. The skull has strong, incomplete postorbital processes, with supraorbital foramina, while the teeth are sharp and pointed, except for the last two molars. (Ingle and Heaney 1992; Taylor 1934 cited in Heinen 2009).

Its fur is thin in the throat and ear membrane, and short and smooth on the body, but absent on the wing membranes. There is considerable variation in color but the typical scheme is dark brown or black on the forehead and sides of the head, reddish-brown on the shoulders, and a dark brown or black on the lower back and underside. The nape ranges from cream to golden yellow. A narrow line of orange at the back of the neck is present. Variable numbers of yellow hairs are scattered throughout the fur, especially on the lower body. Variation in color does not depend on age, sex, or locality. (Nowak 1991; Taylor 1934 cited in Heinen 2009).

Geographic Range and Distribution Status

Acerodon jubatus is endemic to the Philippines. It is widespread in the country except in Palawan and other island provinces such as Batanes and Babuyan Island. Historic records revealed the presence of *A. jubatus* in the following islands: Basilan, Biliran, Bohol, Bongao, Boracay, Cabo (in Igat Bay, Zamboanga del Sur), Cebu, Dinagat, Jolo, Leyte, Luzon, Marinduque, Maripipi, Mindanao, Mindoro, Negros, Panay (previously known as *Acerodon lucifer*), Polillo, Sibutu and Siquijor. However, populations in Panay are extinct (Heaney et al. 1998 cited in IUCN 2020) while Siquijor populations are possibly extinct since *A. jubatus* has been reported absent recently (A.B. Carino pers. Comm. 2006 cited in IUCN 2020).



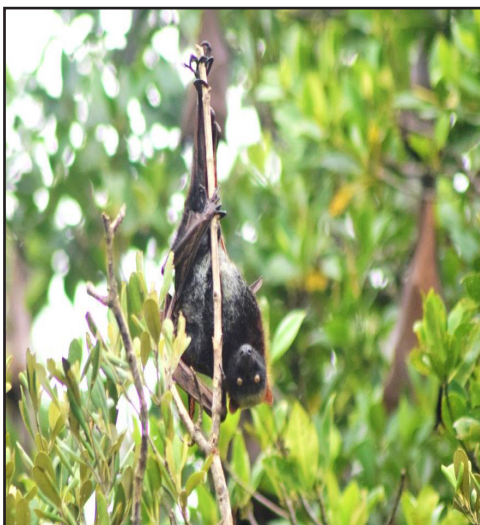
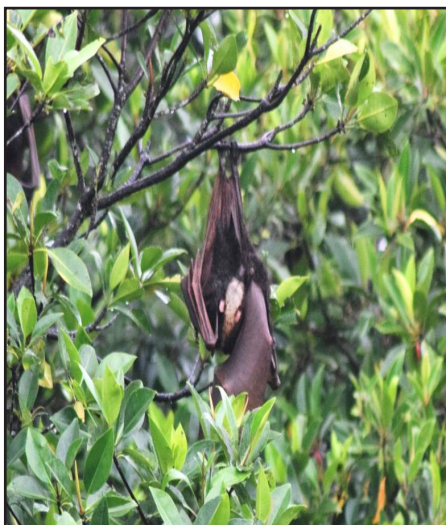
Habitat

The golden - capped fruit bat is a forest - dependent species. It prefers primary and high-quality second - growth forests for foraging. The species may seldom leave this type of habitat, using streams where fig trees grow on banks, and rarely forage in orchards on agricultural trees. In Mindanao, *A. jubatus* is considered a pest by farmers in fruit plantations, but this remains unverified, and it is possible that these individuals are misidentified *Pteropus vampyrus* which are known to use orchards regularly. (Stier and Mildenstein 2005; Mildenstein et al. 2005; T.L. Mildenstein in litt. 2007 cited in IUCN 2020)

In Infanta, Quezon, *A. jubatus* roosts in mangroves together with other species of large bats – *Pteropus vampyrus*.



In-flight picture of *A. jubatus* in mangroves of Infanta, Quezon. (Photo by MKPORpia)



Photos of roosting *A. jubatus* in mangroves of Infanta, Quezon. (Photos by MKPORpia)



Photos of roosting *A. jubatus* in mangroves of Infanta, Quezon.
(Photos by MKPORpia)

Behavior

Acerodon jubatus individuals roost with other bat species, especially *P. vampyrus* and occasionally *P. hypomelanus*. Golden-capped fruit bats are usually outnumbered by these other species, making up less than 20% of the total roost population. In the early 1900s to the 1920s, mixed colonies of 100,000 to 150,000 individuals were reported. Recently, however, there were no colonies over 30,000 individuals have been observed, and many

are no larger than 5,000 individuals. Bats emerge from the colony at sunset, fly into the mountains to feed on fruit and return before sunrise. (Heaney and Heideman 1987; Mildenstein, et al. 2008; Taylor 1934 cited in Heinen 2009). Actual observation of the species roosting in Infanta, Quezon, initially identified as *A. jubatus* and *P. vampyrus* revealed that these bats hover around 6:00 PM to feed into forest areas and return in the roosting site around 3:00-5:00 AM, before sunrise.

The species have large eyes and may use visual cues in communication. They have a distinctive odor, suggesting olfactory communication, but no specific scent glands have been identified. (Heinen 2009).

Food Habits



Photo on Left : Trunk for *F.variegata* developing fruits (photo by Mokie.), source: <https://tropical.theferns.info/image.php?id=Ficus+variegata>

From the name itself, Golden - capped fruit bats are fruit - eaters or frugivores. Its main diet consists of figs (*Ficus*) comprising 41% fig seeds of droppings on average. The most commonly eaten species is *F. cordata* while to some extent, they also feed on *F. variegata*.

Considering these figs are only found in mature lowland forests makes *A. jubatus* forest - dependent species. (Stier and Mildenstein, 2005 mentioned in Heinen 2009; IUCN 2020).

Reproduction

Populations of *A. jubatus* on all islands reproduce at approximately the same time, indicating that they probably use photoperiod as a cue instead of

more localized environmental conditions. Females give birth from April to June, but gestation periods are unknown, thus, the breeding season has yet to be determined. In captivity, females give birth only once every two years, while those in the wild likely reproduce less often. Not much about litter size is known, but females have not been observed with more than one offspring at a time. (Heideman 1987; Mildenstein, et al. 2008 cited in Heinen 2009)

Females have been observed to carry a single offspring. The young clings to their mothers fur with their claws, while the mothers fan them with one wing to keep them cool. Females invest significantly in their young through gestation and lactation. (Taylor, 1934 cited in Heinen 2009).

Population and Threats

The population of *A. jubatus* is regarded to be decreasing with a rough estimate of around 10,000 individuals (and perhaps no more than 20,000) based on the 2011 and 2012 reports of Mildenstein. The population decline is suspected to be more than 50% over the last three generations (30 years; Pacifici et al. 2013 cited in IUCN 2020). Among the threats to the species identified are habitat loss, hunting, and disturbance of roosting sites.

Conservation Status

The species is listed as endangered in the IUCN RedList of threatened species. In DENR Administrative Order no. 2019-09, otherwise known as "*Updated National List of Threatened Philippine Fauna and their Categories*," *A. jubatus* is under its critically endangered category. In addition, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) categorized *A. jubatus* under Appendix I which means that the species is threatened with extinction and its trade is permitted only in exceptional circumstances (CITES 2020).

Conservation Actions

The protection and conservation of the species are covered by Republic Act no. 9147 or the Wildlife Resources Conservation and Protection Act. Its trade has also been regulated under CITES being included in its Appendix I since 1995.



Photo of attaching GPS tracker to golden-capped fruit bat to track its foraging behavior. source <https://journals.plos.org/plosone/article/figure?id=10.1371/journal.pone.0079665.g002>

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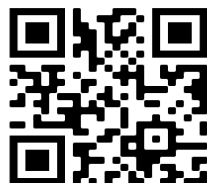
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