Bats without borders: World's largest bats need international protection

August 25 2009

Without at least a temporary reprieve from hunting, the world's largest species of fruit bat, *Pteropus vampyrus* or the "large flying fox", could be driven to extinction in Peninsular Malaysia at the current hunting rate, scientists have warned. Writing in the new issue of the British Ecological Society's *Journal of Applied Ecology*, they say around 22,000 flying foxes are legally hunted (in addition to those illegally hunted) each year in Peninsular Malaysia, a level of hunting that is unsustainable based on their estimates of the number of bats in the country.

Dr Jonathan Epstein, a veterinary epidemiologist at Wildlife Trust, and colleagues surveyed 33 roost sites across Peninsular Malaysia and repeatedly counted the numbers of bats at eight sites between 2003 and 2007. They compared this data along with the number of hunting licenses issued by the Malaysian Department of Wildlife and National Parks using computer models to see whether the number of bats hunted each year was sustainable. They also used satellite transmitters attached to bats to see how far the species migrated and found that they travel from Malaysia to Indonesia and Thailand. This is the first study of its kind on flying foxes in Asia.

Flying foxes - which are important seed dispersers and pollinators in tropical rainforests - are commonly hunted for food, medicine and sport in Malaysia and many other countries in Southeast Asia. Hunting is regulated by the Malaysian Department of Wildlife and National Parks, which participated in the current study because there was interest in generating data to help assess the impact of current hunting rates.

The team found that based on the average number of licenses issued each year, around 22,000 flying foxes per year were allowed to be killed in Peninsular Malaysia, yet this rate was unsustainable even with the most optimistic population level of 500,000 assumed by their model. Even without taking into account illegal hunting and the killing of flying foxes as agricultural pests, models suggest that this level of hunting will drive the species to extinction in between six and 81 years.

According to Epstein: "Our models suggest that hunting activity over the period between 2002 and 2005 in Peninsular Malaysia is not sustainable, and that local populations of Pteropus vampyrus are vulnerable to extinction."

"Now that we know that these bats migrate between Malaysia, Thailand and Indonesia, coordinated assessments of their status throughout their range will be important for developing effective management strategies. Any additional hunting pressure on this species that occurs in Thailand or Indonesia may hasten the population's decline."

In order to save the species from local extinction, Epstein and his colleagues recommend at least a temporary ban on hunting flying foxes to allow the population to recover and to allow for a more comprehensive assessment. The Department of National Parks and Wildlife is currently reviewing their policy on bat hunting in light of this study.

Epstein and his colleagues used satellite tracking devices on seven bats to study how far they fly to forage each night and how far they travel between roosting camps. The study revealed that Pteropus vampyrus may travel up to 60 km a night in search of food before returning to its roost, and these bats may travel hundreds of kilometres, crossing international borders into Sumatra (Indonesia) and Thailand as they move from one roost site to another.

Hunting and habitat loss are considered the greatest threats to flying fox survival globally. Flying foxes can be legally hunted in all Malaysian states except Sarawak on Borneo. In Thailand flying fox hunting is illegal, but the species is unprotected in Indonesia. Action needs to be taken at a regional, rather than a national level, the study recommends.

"Our study illustrates that bats, like other migratory species, require comprehensive protection by regional management plans across their range," says Epstein.

More information: Jonathan H. Epstein et al (2009). Pteropus vampyrus, a hunted migratory species with a multinational home-range and a need for regional management, Journal of Applied Ecology, DOI: 10.1111/j.1365-2664.2009.01699.x , is published on 26 August 2009

Source: Wiley (news : web)