



CONSERVATION OF MIGRATORY BATS

A GLOBAL ISSUE

African straw-colored fruit bats © Winifred F. Frick/Bat Conservation International

Migratory Bats Face Many Conservation Threats

The only mammals capable of powered flight, bats exhibit remarkable ecological diversity and are found across all continents except Antarctica. There are nearly 1,500 bat species known, comprising 20% of all mammalian diversity. New species are described each year, especially in biodiverse regions of equatorial Africa, Asia, and the Americas. Many bat species are threatened by human-induced forces of change. Habitat loss from deforestation and agriculture, persecution, hunting, urbanization, energy production, and climate change are among the leading threats to bat species globally.

Bat migration takes several forms, including long-distance movements within a country and across political borders. Because bats are typically nocturnal and hard to track, migratory movements of most species remain poorly documented. Identifying migratory pathways and seasonal movement patterns is crucial for global bat conservation. Some threats, such as mortality at wind energy facilities, pose a higher risk to bats when they are migrating. Mapping migratory pathways can highlight key habitats to prioritize for protection. Preserving habitat patches as ecological stepping stones along extended routes helps bats fuel their journeys and provides roosting sites. Understanding when species migrate along narrow corridors or with a dispersed broad-front pattern informs both habitat protection and the breadth of conservation strategies required for protection. And documenting the seasonal timing of species' migration can focus efforts to avoid collisions with wind energy turbines.

Regional examples of migratory bat species and their conservation threats

Nathusius' pipistrelle (*Pipistrellus nathusii*) This small species is widely distributed across Europe into Asia. It migrates to the southwest in the fall and then returns to northeastern regions in the spring. A marked *P. nathusii* completed a one-way migratory flight of 2486 km between northwest Russia and the French Alps. Conservation threats include habitat fragmentation and loss of maternity roosts in buildings and trees. This species is frequently found during fatality monitoring at wind farms across Europe, and the majority of *P. nathusii* killed by wind turbines are females and juveniles. *Pipistrellus nathusii* is listed under [EUROBATS](#). IUCN Status: [Least Concern](#).

African straw-colored fruit bat (*Eidolon helvum*) The pan-African migration of this CMS-listed species includes millions of bats gathering each year at Kasanka National Park in Zambia. These fruit and nectar-feeding bats pollinate plants and disperse seeds, supporting reforestation across sub-Saharan Africa. The gathering in Kasanka National Park from October through January is made up of bats from many colonies, some flying from distant locations like the Democratic Republic of Congo—one bat flew 2518 km in 149 days. This species is threatened by persecution and hunting, and it has been killed by wind energy turbines. After COP14, CMS adopted a Concerted Action for *E. helvum* in 2024. IUCN Status: [Near Threatened](#).



African straw-colored fruit bat © Steve Gettle/Minden Pictures

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Hoary bat (*Lasiurus cinereus*) This CMS-listed species makes up the largest proportion of bats killed at wind turbines in North America—over 30% of all fatality records from U.S. wind energy facilities. *Lasiurus cinereus* has seasonal migratory behavior with high activity in late summer and early fall. The majority of *L. cinereus* fatalities at wind turbines occur during the autumnal migratory period. Strategies to reduce bat fatalities at wind facilities could be selectively applied to high-risk seasons as a way to balance fatality reduction with energy production goals. *Lasiurus cinereus* population modeling predicts extinction within 40 years with projected wind energy expansion unless operational protections are adopted by wind energy facilities. Additional threats include droughts, temperature extremes, and habitat loss. *IUCN Status: [Least Concern](#)*

Grey-headed flying fox (*Pteropus poliocephalus*) This species lives in eastern and southeastern Australia, where it feeds on nectar and fruit, pollinating trees and dispersing seeds of economic importance. These bats follow the availability of blooming trees for their migratory routes, and inter-roost flight distance records show individuals can fly at least 2764 km annually. Flying foxes are killed in collisions at wind turbines in eastern Australia, and this species also faces threats from persecution, habitat loss, and climate change, which can alter temperature and rainfall patterns, leading to food shortages that reduce reproductive success. *IUCN Status: [Vulnerable](#)*

East Asian free-tailed bat (*Tadarida insignis*) This CMS-listed molossid bat lives in East Asia. Wind energy is expected to impact this species due to its flight traits and migratory behavior, but fatality monitoring with species identification at wind farms is not common or reported from regions where it is found. Since this species roosts in caves and rock crevices, tourism, stone quarrying, and disturbance are also potential threats, but their impact is not known. The data deficiency of this species highlights a common challenge for bat conservation. *IUCN Status: [Data Deficient](#)*

Mexican free-tailed bat (*Tadarida brasiliensis*) This is the only bat included in Appendix I of CMS. Its range extends from South America into southern U.S.A. This species has the fastest recorded powered flight speed of any animal, reaching 160 km/hr. *Tadarida brasiliensis* benefits agriculture by consuming insects that infest crops, aiding crop yields and reducing pesticide use. This species forms cave colonies of millions of bats, and migratory behavior is common but variable across its range. Fatality rates of *T. brasiliensis* are higher when wind farms are sited near large colonies. These bats also face threats from drought and habitat loss, including mining that alters caves. *IUCN Status: [Least Concern](#)*

About CMS

The Convention on the Conservation of Migratory Species of Wild Animals (CMS), also known as the Bonn Convention, works for the conservation of a wide array of migratory animals worldwide through negotiation and implementation of agreements and species action plans. It has 133 Parties (as of 1 January 2023).

CMS engages all relevant stakeholders in addressing threats to migratory species in concert with all other aspects of wildlife conservation and management.

CMS Instruments

Animals receive protection under CMS through listing on its two Appendices, global or regional agreements (e.g., [EUROBATS](#)), and action plans.

For more Fact Sheets please visit: <http://www.cms.int/en/publications/factsheets>



<https://www.facebook.com/bonnconvention>



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BAT FACTS

- 1487 described bat species; 20% of mammalian species diversity
- IUCN Red List status distribution for bats: 2% Critically endangered, 7% Endangered, 26% Vulnerable or Data Deficient
- Bats occur on all continents except Antarctica
- Bats are the only native land mammals on many archipelagos, such as Hawaii, New Zealand, and the Virgin Islands
- Longest documented bat life-span: 41 years (*Myotis sibiricus*)
- Key bat ecosystem services: insect pest consumption, pollination, seed dispersal, guano



Hoary bat © Josh Hydeman/ Bat Conservation International



Mexican free-tailed bat © Jennifer Barros/Bat Conservation International

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