



# Bats at Risk

## *Threats facing Indiana Bats*

**Materials:** Research materials: magazines, encyclopedias, internet, etc. ● poster board ● markers ● construction paper ● other poster-making supplies

Indiana bats have been on the Federal Endangered Species list since 1967. Unfortunately the current population (about 457,000 in 2005) is about half as many bats as when the species was initially listed. The following summary is from the US Fish and Wildlife Services fact sheet for the Indiana bat (<http://www.fws.gov/midwest/endangered/mammals/inbafacts.html>)

## **Why is the Indiana Bat Endangered?**

### **Human Disturbance**

Indiana bats, because they hibernate in large numbers in only a few caves, are extremely vulnerable to disturbance. During hibernation, they cluster in groups of up to 500 per square foot. Since the largest hibernation caves support from 20,000 to 50,000 bats, it is easy to see how a large part of the total population can be affected by a single event. Episodes of large numbers of Indiana bat deaths have occurred due to human disturbance during hibernation.

### **Cave Commercialization and Improper Gating**

The commercialization of caves – allowing visitors to tour caves during hibernation – drives bats away. Changes in the structure of caves, such as blocking an entrance, can change the temperature in a cave. A change of even a few degrees can make a cave unsuitable for hibernating bats. Some caves are fitted with gates to keep people out, but improper gating that prevents access by bats or alters air flow, temperature, or humidity can also be harmful. Properly constructed gates are beneficial because they keep people from disturbing hibernating bats while maintaining temperature and other requirements and allowing access for bats.

### **Summer Habitat Loss or Degradation**

Indiana bats use trees as roosting and foraging sites during summer months. Loss and fragmentation of forested habitats can affect bat populations.

### **Pesticides and Environmental Contaminants**

Insect-eating bats may seem to have an unlimited food supply, but in local areas, insects may not be plentiful because of pesticide use. This can also affect the quality of the bats' food supply. Many scientists believe that population declines occurring today might be due, in part, to pesticides and environmental contaminants. Bats may be affected by eating contaminated insects, drinking contaminated water, or absorbing the chemicals while feeding in areas that have been recently treated.





## What is Being Done to Prevent Extinction of the Indiana Bat?

### Listing

Prompted by declining populations caused by disturbance of bats during hibernation and modification of hibernacula, the Indiana bat was listed in 1967 as “in danger of extinction” under the Endangered Species Preservation Act of 1966. It is listed as “endangered” under the current Endangered Species Act of 1973. Listing under the Endangered Species Act protects the Indiana bat from take (harming, harassing, killing) and requires Federal agencies to work to conserve it.

### Recovery Plan

The Endangered Species Act requires that recovery plans be prepared for all listed species. The U.S. Fish and Wildlife Service developed a recovery plan for the Indiana bat in 1983 and is now revising that Plan. The recovery plan describes actions needed to help the bat recover.

### Habitat Protection

Public lands like National Wildlife Refuges, military areas, and U.S. Forest Service lands are managed for Indiana bats by protecting forests. This means ensuring that there are the size and species of trees needed by Indiana bats for roosting; and providing a supply of dead and dying trees that can be used as roost sites. In addition, caves used for hibernation are managed to maintain suitable conditions for hibernation and eliminate disturbance.

### Education and Outreach

Understanding the important role played by Indiana bats is a key to conserving the species. Helping people learn more about the Indiana bat and other endangered species can lead to more effective recovery efforts.

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### Activity:

There are many ways people can help the Indiana bat. For this activity, students should:

- research why Indiana bats are endangered and things they can do to help.
- design and make posters showing ways Indiana bats can be helped.

Share with the students that their posters can be part of the education and outreach program. Hang them in the classroom or school.

**Extension Activity:** Raise funds as a class for the construction of cave gates or other bat conservation projects.



**Indiana Bats, Kids & Caves - Oh My!**