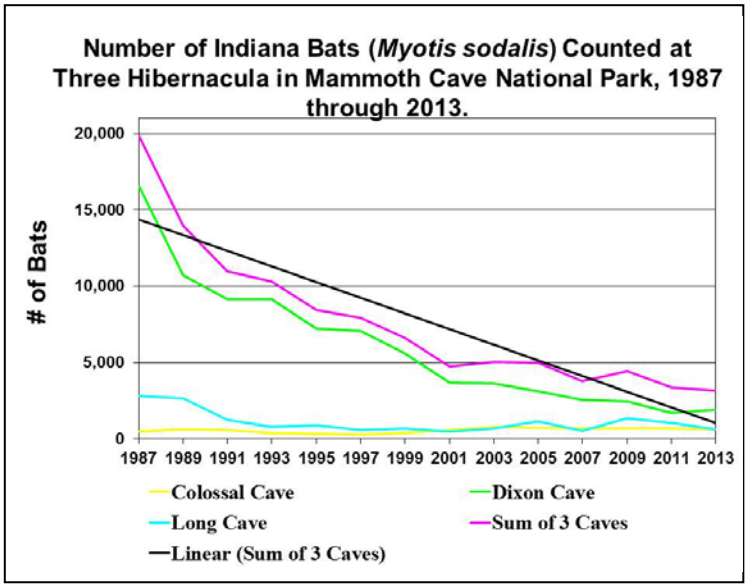
# Cave Bats Monitoring in CUPN Parks

## Importance

Population monitoring of cave-roosting bats is being conducted during the summer and winter at Chickamauga and Chattanooga National Military Park, Cumberland Gap National Historical Park, Russell Cave National Monument, and Mammoth Cave National Park.

Cave-roosting bats are important to the nutrient-poor cave ecosystem because they import organic material which supports a specialized cave invertebrate community. They play a crucial role in controlling certain nocturnal insect populations, and reducing agricultural and forestry pests. Several bat species are listed as "endangered," "proposed endangered," or "species of special concern" under the Endangered Species Act. All species of cave-dwelling bats in these parks are under threat from the deadly fungal disease of bats called white-nose syndrome which has been found in caves at all four Network parks. Since bats are important to both surface and subsurface ecosystems, and because many bat species rely on cave habitat for their survival, monitoring of bats and their cave roosts is of great importance for managing and protecting bat populations and critical bat (cave) habitat in Network parks.

## Status & Trends Example




## Monitoring Objectives

1. Determine status and trend of summer cave-roosting bat abundance within selected caves in four parks in the Cumberland Piedmont Network during annual and rotating surveys.

2. Determine status and trends of hibernating bat abundance and spatial distribution within selected hibernacula caves in four parks in the Cumberland Piedmont Network during surveys done every-other-winter.

3. Determine the status and trends of key habitat parameters (cave air temperature and relative humidity) within selected caves used by bats in four parks in the Cumberland Piedmont Network.



*Indiana bat (*Myotis sodalis*) cluster. Photo by Steve Thomas*

## Management Applications

Summer cave-roosting bat demographic parameters will need to be established and changes tracked over time to understand the baseline dynamics of the summer cave-roosting bat populations on the parks.

Hibernating bat abundance trends in known hibernacula caves and hibernating bat distribution within these caves will be tracked over time in order to understand how management actions can impact hibernating bat abundance and cave use on the parks.

Knowing cave air temperature and relative humidity status and trends in selected park caves used by bats, and how these datasets might correlate with the summer and winter cave bat abundance changes we observe, will enable ecologists to understand how park management actions can alter cave environs which affect bat cave use.

## Contact

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