

The Indiana Bat

(*Myotis sodalis*)

Order: Chiroptera

Family: Vespertilionidae

Threats: The Indiana bat has been registered as an endangered species due to their large population decline. This decline is due to several interrelated factors.



White-nose Syndrome

WNS is a fungal disease caused by the fungus *Pseudogymnoascus destructans*. Native to Europe, it was introduced to a cave in New York in 2006. It has since spread across the country decimating bat populations across various

species. *M. Sodalis*, in particular, has suffered due to their already stressed population. A range-wide reduction of more than 19.2% has occurred since, with some states seeing 99% reductions.



Premature Arousal

M. Sodalis hibernates for 6 months a year from fall to late spring. During this time, they stay in tightly packed groups to conserve thermal energy. Staying warm though, is still costly. Any unnecessary arousals and movements deplete the bats' fat and too many can result in starvation. Human disturbance of hibernacula has caused this in large numbers along with WNS which also kills through arousal. The bats' tightly packed hibernation can also increase disease communicability.

Wildlife managers have been scrambling to help the species recover through various means. Policies & education which lessen human-caused disturbance and help with natural bat recovery are being implemented. This is because the main disturbance, WNS, has no known preventative measures or practical treatments. Removing human-caused hurdles will lessen stress and increase chance of adaptation to and survival of the disease. Examples of this are:

- Lessening human access to caves & mines during hibernation and implementing decontamination procedures for necessary access
- Utilizing bat friendly cave gates & *M. sodalis* specific artificial roosts
- Further researching migration corridors & preventing development
- Improving foraging habitat & increasing prey abundance & quality; for example, reducing insecticide use near migration corridors

Flight

M. sodalis has extraordinary maneuverability due to the 25 independently controlled joints and 34 degrees of freedom present in its forelimbs. This allows them, coupled with effective echolocation, to be extremely lethal hunters of nocturnal insects.

Conservation Efforts

