University of Wisconsin-Stevens Point

Collecting Bat Data from Private Organizations Can Yield More Information on Bat Densities

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Introduction

- White-nose syndrome (WNS) and windmill-related injuries are prominent causes of decline in Wisconsin bat populations.
- The little brown bat (*Myotis lucifugus)* and the northern long-eared bat *(Myotis septentrionalis)* are struggling the most from population threats.
- Other bat species rely on the frequency of little brown bat calls to determine the location of insects.

Objective: Work with public partners to determine the presence and absence of bat calls from bat species to assess the stability of Wisconsin bat populations.

These Wisconsin bat species are threatened by white-nose syndrome, a fungal disease that attacks the skin and causes bats to exhaust fat reserves during hibernation.

Wind turbines pose a risk to these Wisconsin bat species. Barotrauma and collisions primarily occur during seasonal migration.

The Big Brown Bat (*Eptesicus fuscus*) is the most resilient Wisconsin bat species to population threats.

WI map: Bat detector locations.
Catholic Ecology Center (CEC)
Wildwood Park and Zoo (WW)
Chambers Island (CI)

Methods

We analyzed privately collected data from the Catholic Ecology Center, Wildwood and a landowner on Chambers Island. The detectors used were a Wildlife Acoustics Minibat (CEC) and Wildlife Acoustics SM4Bat (WW and CI).

Results

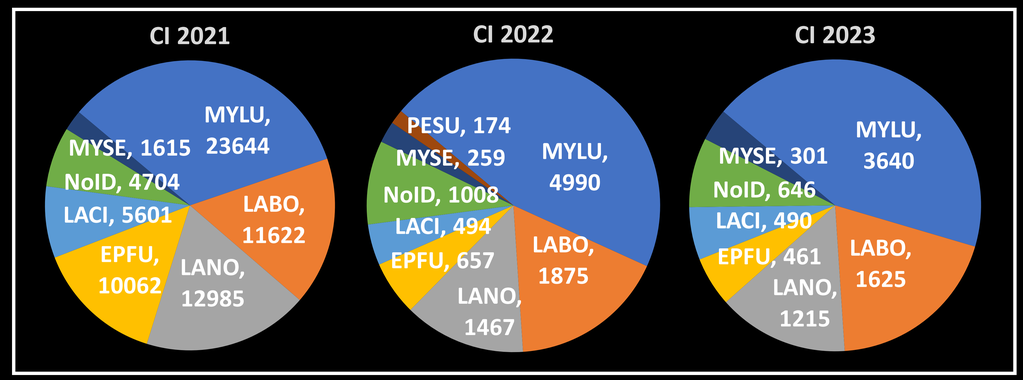

Fig 1. Bat call frequencies Chambers Island from 2021 to 2023. The little brown bat, MYLU, is the dominating bat species.

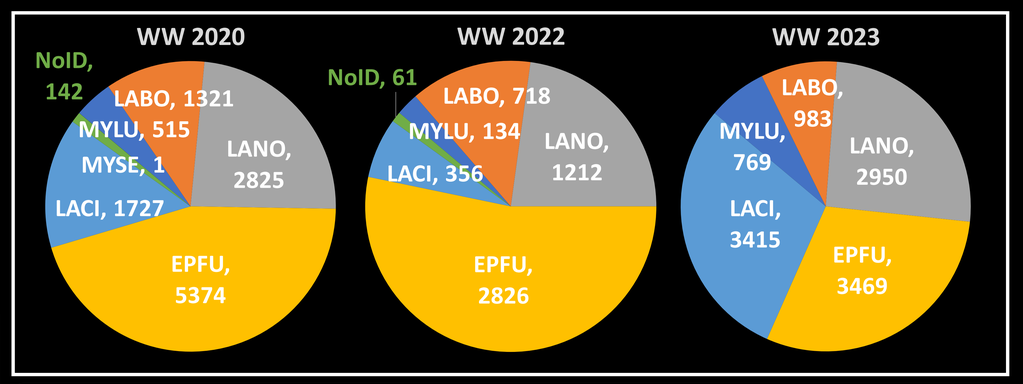

Fig 2. Bat call frequencies at the Wildwood Zoo monitoring station. Various bat species have shown a rebound in 2023. EPFU has been the dominant species.

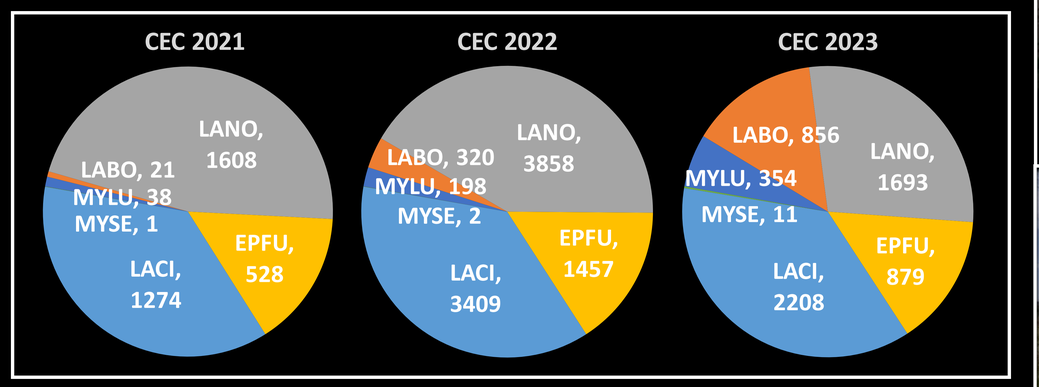

Fig 3. Bat call frequencies at the Catholic Ecology Center from 2021 to 2023. Migrating bats dominated with hibernating bats rebounding in 2023.

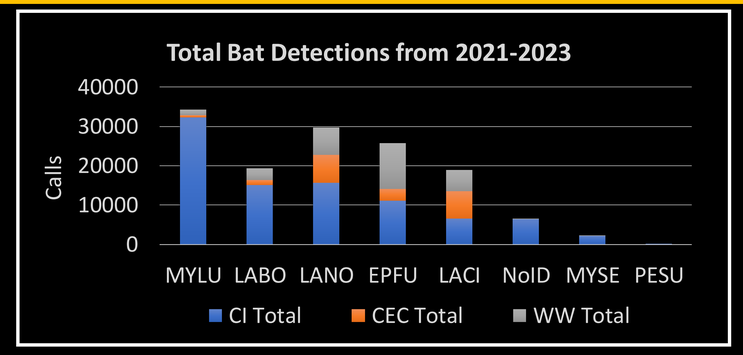

Fig 4. Total bat calls by species from 2021-2023. The monitoring station is indicated by color.

Discussion

- Prioritizing long-term monitoring on private lands and establishing more monitoring stations across the state can tell us more about WNS recovery and bat population trends.
- Our data shows the highest frequency of hibernating bat calls at Chambers Island. This data is crucial to future land use decisions in the area, especially with newly found interest in logging efforts in the area.

Guano under bat house at Chambers Island.

Catholic Ecology Center Monitoring Station est. 2021.

Wildwood Zoo bat station with sign designed by UWSP alum Josh Skattum. Josh wrote the grant for this station in 2016. He died tragically in a car accident in 2022.