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## Director's Note

For some of us, this time of year invites spooky tales featuring silhouettes of bats flying past a full moon that lights up a clear autumn sky. In reality, there is nothing scary about bats. Rather, these poorly understood creatures—the only flying mammals in the world—play an essential role in controlling mosquitoes and other pests, pollinating plants and dispersing seeds. That is why I am excited that this issue of *Tennessee Nature News* reports on recent efforts to study and conserve the 16 bat species that spend all or part of their life cycle here in Tennessee.

Terry Cook, State Director

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# Gray Bat Recovery

## New technology fills in research gaps to advance conservation

Native to caves located in the southeastern United States and the Ozark Mountains, gray bats occur in Tennessee more than anywhere else in their limited range. While gray bats remain on the federal Endangered Species list, efforts by The Nature Conservancy have significantly boosted populations—by more than 300 percent compared to when the species was listed 45 years ago.

Recently, TNC further advanced this work by becoming the first organization to apply a new generation of radio transmitters to bats. Small and light enough to adhere to these diminutive creatures, the transmitters can be detected by Tennessee's growing Motus Wildlife Tracking System, part of an international network of stationary towers that track migrating birds, bats and insects with radio telemetry.

"This new technology has the potential to reveal exciting new insights about highly mobile wildlife to researchers located around the world," says TNC's Tennessee bat expert, Cory Holliday.

Holliday hopes that these transmitters can fill in gaps left by research conducted in 2019, and earlier in 2021, that yielded different results about gray bat migration. In 2019, the bats flew fast and straight, stopping to forage at rivers, streams and ponds. Last spring, TNC tracked bats that moved slowly and foraged continuously.

"Differing results from these studies highlight the many variables impacting bat behavior that we do not yet understand," adds Holliday. "That's why, currently, we are working to tag 100 bats, a sample that should reveal trends that help us better understand, and conserve, these amazing animals that share our Tennessee home."

Learn more at **nature.org/tncaves**.




# Operation Fat Bats

## A buffet of bugs benefits Tennessee bats

This fall, The Nature Conservancy and our partners at the Tennessee Wildlife Resources Agency (TWRA) are embarking on the second year of a pilot project, designed by Bat Conservation International, aimed at bolstering the resilience of bats to White Nose Syndrome (WNS)—a disease that has killed millions of these creatures throughout North America.

"We are thrilled to be working with TNC, TWRA and others on the front lines of our international effort to develop scalable solutions that help the long-term survival of bats," says Winifred Frick, chief scientist at Bat Conservation International.

Specifically, "Operation Fat Bats" focuses on providing opportunities to increase calorie intake prior to hibernation because research indicates that bats with larger fat reserves have improved chances of surviving WNS. Bats with WNS expend a lot of additional energy during winter, ultimately starving.

**Bats entering hibernation with higher BMIs are more likely to survive the winter and White-Nose Syndrome.**

According to TNC's Tennessee cave and karst program director, Cory Holliday, testing this hypothesis involves placing ultraviolet lights near some of the state's most prominent bat hibernation caves to lure insects and, subsequently, hungry bats. The pilot targets little brown bats, Indiana bats, northern long-eared bats and tricolored bats, species that have been the most impacted by WNS.

"We continue to refine materials to find the best lights for attracting insects, and portable equipment since the work takes place in remote areas," says Holliday. "Finding an efficient way to support bat health in this way could potentially be scalable beyond Tennessee to recover bat populations impacted by WNS across North America."



## Legacy Club

### Planned giving can benefit nature while supplementing income

As a member of The Nature Conservancy, Dick Ledyard of Knoxville has long provided annual support to TNC's work in Tennessee. A few years ago, he named TNC as beneficiary of a charitable remainder trust, and more recently, earmarked appreciated securities for a charitable gift annuity that provides him with a quarterly dividend.



*"TNC buys assets—primarily land—maintains them and then turns a lot of them over to other organizations to be permanently protected for people to enjoy in accordance with TNC's principles. The Conservancy has made the process of supporting this work very easy. It left me with a good feeling about conserving nature in a fiscally responsible way that endures beyond my lifetime."*

—**Richard Ledyard**
TNC Legacy Club member

## Ways of Giving

Becoming a legacy donor might help you save on taxes, receive income for life or enjoy other financial benefits while supporting critical conservation work. Learn more at **nature.org/legacy**, or contact us at tn@tnc.org for additional information about other forms of charitable giving.

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