



KNIFE RIVER INDIAN VILLAGES NATIONAL HISTORIC SITE 2017 RESOURCE BRIEF



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The big brown bat is present at Knife River Indian Villages NHS. The big brown bat call can be heard at <https://www.nps.gov/subjects/bats/big-brown-bat.htm>.

White-nose Syndrome

A rapidly expanding fungal disease called white-nose syndrome is spreading quickly, threatening bat populations in North America. This disease has been associated with more than seven million bat deaths in the last decade. It spreads from bat to bat and perhaps by humans who carry nearly invisible fungal spores on their shoes and clothing from one cave to another.

This disease has not yet been detected at Knife River Indian Villages NHS. Bat monitoring helps us understand the spread of this devastating fungus. To learn more and see a map of white-nose syndrome in national parks, go to www.nps.gov/articles/white-nose-syndrome-in-national-parks.htm.

Bat Acoustic Monitoring

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Overview

Knife River Indian Villages National Historic Site (NHS) is a 1,749-acre park just north of Stanton in central North Dakota that protects and interprets the remains of historic Hidatsa villages. The upland woodlands and cottonwood forests along the Knife and Missouri rivers provide foraging and roosting habitat for bats. Bats can eat thousands of mosquitoes each night, making them important for insect control in the croplands that surround this park.

The Northern Great Plains Inventory & Monitoring Network monitors bats to detect long-term trends in bat populations at the park. Acoustic recorders detect the unique ultrasonic calls bats use for echolocation.

Highlights (2015-2017):

- Seven species were confirmed present or probably present in the park.
- Silver-haired bats were most commonly recorded.
- The woodland trees, especially the dying trees with loose bark provide quality roosting habitat.
- Riparian and upland forests should be maintained to protect bats at Knife River Indian Villages NHS.



A bat acoustic monitoring station near the visitor center at Knife River Indian Villages NHS.

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Bat Species Detected at Knife River Indian Villages NHS, 2015–2017

Common Name	Scientific Name	2015-2017 Status*	Previously detected?
Big brown bat	<i>Eptesicus fuscus</i>	Present	Yes**
Eastern red bat	<i>Lasiurus borealis</i>	Present	No
Hoary bat	<i>Lasiurus cinereus</i>	Present	Yes
Silver-haired bat	<i>Lasionycteris noctivagans</i>	Present	Yes**
Western small-footed myotis	<i>Myotis ciliolabrum</i>	Probably Present	Yes**
Little brown bat	<i>Myotis lucifugus</i>	Present	Yes
Long-legged myotis	<i>Myotis volans</i>	Present	No

*Status based on acoustic recording classifications in specialized software and researcher expertise.

**Previously reported as probably present.

Monitoring

Four acoustic recording stations were established in 2015 at Knife River Indian Villages NHS for long-term monitoring: one near the visitor center, two along the Knife River, and one in the upland woodland area. A total of 18,058 bat call recordings across all survey nights were analyzed to identify bat species using specialized software.

Two of the seven bat species detected were new to the park: Eastern red bat and western long-legged myotis. About half of the recordings were silver-haired bats. Next most detected were big brown, hoary, and little brown bats. The threatened northern long-eared bat (*Myotis septentrionalis*) was not detected though it may occasionally visit the park.

The highest bat activity was in the upland woodlands where trees are likely providing high quality roosting habitat. The lowest activity was along the river in an area with small

trees. Peak activity near the visitor center was after sunset, but not again before dawn probably indicating that bats use this area for foraging. In the woodlands, there was a strong peak just before sunrise when bats are likely swarming before roosting in trees for the day.

Diversity was similar between stations. Little brown bats, a woodland species, were detected more often in the woodlands and hoary and silver-haired bats, open country foragers, were recorded more frequently in open areas.

Missouri River riparian forest is being cleared for agriculture so it will be very important to conserve the remaining forests in around the park to protect bat roosting habitat. Thus far, we have not detected white-nose syndrome at Knife River Indian Villages NHS. Continued monitoring—and park staff and visitor observations—will help us protect the rich bat communities that live and forage in the park.



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For More Information:

Dan Licht

Midwest Region Wildlife Biologist

dan_licht@nps.gov

Eastern red bat is a new detection for Knife River Indian Villages NHS (a mother and three babies are pictured here). The Eastern red bat call can be heard at <https://www.nps.gov/subjects/bats/eastern-red-bat.htm>.

Bat population monitoring to detect changes helps us conserve bat communities.

Resource Brief created by: Tani Hubbard

National Park Service &
Northern Rockies
Conservation Cooperative



Northern Great Plains Network
231 East St. Joseph Street
Rapid City, SD 57701
<http://science.nature.nps.gov/im/units/ngpn/>

Network Parks: Agate Fossil Beds NM • Badlands NP • Devils Tower NM • Fort Laramie NHS • Fort Union Trading Post NHS • Jewel Cave NM • Knife River Indian Villages NHS • Missouri NRR • Mount Rushmore NM • Niobrara NSR • Scotts Bluff NM • Theodore Roosevelt NP • Wind Cave NP