



FORT LARAMIE NATIONAL HISTORIC SITE 2017 RESOURCE BRIEF

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An Eastern red bat mother with three babies. The Eastern red bat call can be heard at: <https://www.nps.gov/subjects/bats/eastern-red-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 Fort Laramie 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

Overview

Fort Laramie National Historic Site (NHS) is an 833-acre park that conserves and interprets historic Fort Laramie in southeastern Wyoming. The North Platte and Laramie rivers converge in the park. Riparian forest along these rivers provides good roosting and foraging habitat for bats. The Fort grounds attract bat species that roost in structures.

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 (2015-2016):

- Eight species were confirmed present or probably present in the park.
- Little brown bats and big brown bats were recorded most often; both roost in the buildings at the park.
- Riparian areas had more bat species (higher diversity) than the Fort grounds. These forested areas provide roosting and foraging habitats.
- Bats, primarily little brown bats, also roost in a bat house the park built away from the historic district.
- Fort Laramie NHS has the highest rate of bat activity of any park in the Northern Great Plains Network.



Little brown bats are roosting in the bat house at Fort Laramie NHS. The bat house was created to help keep bats out of the historic structures.

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Bat Species Detected at Fort Laramie NHS, 2015–2016

Common Name	Scientific Name	2015-2016 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
Tri-colored bat	<i>Perimyotis subflavus</i>	Probably Present	No

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

Monitoring

Six acoustic recording stations were set up at Fort Laramie NHS for long-term monitoring: three in riparian forests, one at the bat house, one on the Fort grounds, and one along a canal that borders the park.

A total of 142,807 bat call recordings across 95 nights (2015–2016) were analyzed to identify bat species using specialized software. Monitoring stations detected an average of 1,656 bats per night in 2015 and 1,925 in 2016. The difference is not statistically significant.

Eight bat species were recorded (see above). Three were new detections for the park: Eastern red bat, long-legged myotis, and tri-colored bat. Half the bat recordings were classified as little brown bats and a quarter as big brown bats. Both of these species were using the riparian forests as well as the historic buildings and the bat house. The little brown bats on the park are likely a maternity colony. Three other species may occur in the park, but were not confirmed (Townsend's big-eared bat, long-eared myotis, and Yuma myotis).

Bats were most active just before daylight on the Fort grounds. They likely swarm near the historic buildings prior to roosting for the day and depart the buildings quickly at night in search of food and water. The canal site had the most detections shortly after sunset and little activity the rest of the night; the canal is probably used for foraging and drinking only.

Riparian areas had the most species and no period of peak activity, perhaps due to the presence of both foraging and roosting habitat.

Fort Laramie NHS has a healthy bat community and the bat house appears to be very effective at supporting a population of little brown bats. Bats are also using the historic buildings as roosts. Thus far, we have not detected white-nose syndrome at the park. Continued monitoring—and observations by park staff and visitors—will help us protect the rich bat communities that live and forage in the park.



A bat monitoring station in the riparian area at Fort Laramie NHS.

For More Information:

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

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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 NMEM • Niobrara NSR • Scotts Bluff NM • Theodore Roosevelt NP • Wind Cave NP