



SCOTTS BLUFF NATIONAL MONUMENT 2017 RESOURCE BRIEF

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Bat Acoustic Monitoring

Overview

Scotts Bluff National Monument (NM) is a 3,003-acre park in western Nebraska that conserves the namesake bluff as well as badlands, prairie, and riparian habitats. The bluffs and the riparian forest along the North Platte River provide good habitat for bats. Bats can eat more than 1,000 insects per hour, making them particularly important for insect control in the croplands and cities that surround this urban 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 (2015-2016):

- Ten species were confirmed present or probably present in the park.
- Silver-haired, hoary, and big brown bats were recorded most often. Western small-footed myotis and eastern red bat were the next most recorded species.
- Riparian areas had more bat detections than the badlands and prairies. These forested areas provide roosting and foraging habitats.
- The bluffs provide roosting habitat for cliff roosting bats like the western small-footed myotis.



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Eastern red bats are present at Scotts Bluff NM (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>.

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 Scotts Bluff NM. 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.



A bat acoustic monitoring station in the bluffs at Scotts Bluff NM.

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Bat Species Detected at Scotts Bluff NM, 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	No
Silver-haired bat	<i>Lasionycteris noctivagans</i>	Present	Yes**
Western small-footed myotis	<i>Myotis ciliolabrum</i>	Present	Yes
Little brown bat	<i>Myotis lucifugus</i>	Probably Present	Yes**
Northern long-eared bat	<i>Myotis septentrionalis</i>	Probably Present	Yes**
Long-legged myotis	<i>Myotis volans</i>	Present	No
Evening bat	<i>Nycticeius humeralis</i>	Probably Present	No
Tri-colored bat	<i>Perimyotis subflavus</i>	Present	No

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

**Previously reported as probably present

Monitoring

Five acoustic recording stations were set up in 2015 and a sixth station was established in 2016 at Scotts Bluff NM for long-term monitoring: two in riparian forests and four in the badlands/prairie habitats. A total of 26,241 bat call recordings across all survey nights were analyzed to identify bat species using specialized software. An average of 328 bat calls were recorded per night per station.

Ten bat species were identified (see above). Five were new detections for the park: Eastern red bat, hoary bat, long-legged myotis, evening bat, and tri-colored bat. Most frequently recorded were silver-haired, hoary, and big brown bats. Western small-footed myotis and eastern red bat were also common. The eastern red bat is near the western edge of its range at

the park, but the large cottonwoods along the river provide good roosting habitat for this bat.

Species classifications varied by habitat. For example, the tree-roosting eastern red bat was identified more frequently in the forested North Platte River riparian zones, whereas the cliff roosting western small-footed myotis was identified more frequently in the bluffs. Riparian areas had the most detections per night. These riparian zones provide excellent bat habitat with old trees for roosting and surface water for foraging and drinking.

Thus far, we have not detected white-nose syndrome at Scotts Bluff NM; bats will soon be captured and swabbed for the fungus. 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:

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The big brown bat is one of the three most frequently classified species at Scotts Bluff NM. The big brown bat call can be heard at <https://www.nps.gov/subjects/bats/big-brown-bat.htm>.

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

Resource Brief created by: Tani Hubbard

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