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New Records of the Eastern Small-footed Bat (*Myotis leibii*) in Arkansas

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Running Title: New Records of the Eastern Small-footed Bat in Arkansas

The eastern small-footed bat (*Myotis leibii*) is a rare insectivorous bat found across parts of eastern North America, including Arkansas, which is located near the southwestern edge of its range.

The Natural Heritage Program state ranking for this species is S1 (Critically Imperiled) and it is considered an Arkansas Species of Greatest Conservation Need (Anderson 2006). In the northeastern United States, there have been significant losses in many bat populations and declines in small-footed bat summer capture rates have been noted in areas affected by White Nose Syndrome (Francl et al. 2012).

Since the discovery of this species in Arkansas in 1967, it has only been reported or documented in six counties in the Ouachita and Ozark Mountains (Graening et al. 2011, McDaniel et al. 1982, Saugey et al. 1993). We examined 111 known *Myotis leibii* observation events from 1967-2013 and report on new records of this species in 11 counties (Figure 1).

Baxter Co.

Sec 35 T17N R12W. A male and female were captured over a pond on June 15, 1999.

Sec 33 T18N R11W. A single male was captured over a pond on May 18, 2009.

Sec 36 T17N R12W. A single male was captured in a mist net on June 22, 2012.

Boone Co.

Sec 24 T18N R22W. A single female was captured over a pond on March 25, 2008 and a single male was captured in a mist net set on a road near the same pond on March 26, 2008.

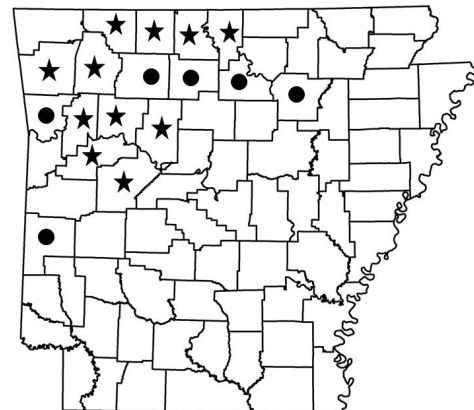


Figure 1. Distribution of the small-footed bat in Arkansas. “Stars” indicate new county records. “Solid circles” indicate historical records from Graening et al. 2011, McDaniel et al. 1982, Saugey et al. 1993.

Carroll Co.

Sec 10 T17N R28W. Two females were captured in a bridge on May 1, 2013.

Sec 3 T17N R23W. One male was captured in a bridge on May 1, 2013.

Sec 34 T18N R23W. One male was captured in a bridge on May 1, 2013.

Franklin Co.

Sec 28 T13N R27W. A single male was captured in a mist net on May 17, 2010.

Sec 27 T12N R28W. A single male was captured in a mist net set over a trail on June 10, 2012. A single female was captured in a mist net set over a

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trail at another site in this section on May 22, 2013.

Johnson Co.

Sec 31 T11N R21W. A single female was captured in a mist net on August 8, 2010.

Sec 17 T12N R21W. A single male was captured in a mist net on July 13, 2011.

Sec 20 T12N R21W. Two individuals were observed inside an abandoned school building on July 20, 2013.

Logan Co.

Sec 24 T6N R25W. Seventeen individuals (4 male, 13 female) were captured in mist nets set across trails at the Benefield Picnic Area on June 19, August 27, September 17, and October 15, 2004. One male and 2 females were captured at this site on June 16, and 1 female was captured at this site on June 21, 2006. Two males and 3 females were captured in mist nets set at this site and the nearby pond noted below on June 7, 2006.

Sec 24 T6N R25W. Two males and two females were captured in a mist net set adjacent to a pond and hiking trails located near the Benefield Picnic Area on June 19, 2004. One female was captured at this site on June 23, 2006.

Sec 22 T6N R25W. Four females were captured in a mist net set over a trail at the Cove Lake Trailhead on June 25, 2004.

Sec 10 T6N R25W. A male was captured in a mist net set over a trail on July 25, 2013.

Madison Co.

Sec 4 T14N R24W. A single female was captured in a mist net on September 8, 2011.

Sec 5 T13N R26W. Nine bats were observed in a bridge on June 20, 2013.

Sec 7 T13N R26W. One female was captured in a bridge on June 20, 2013.

Marion Co.

Reed Cave. A single bat was observed inside the cave on January 30, 1995.

Pope Co.

Sec 26 T11N R19W. A single male was captured in a mist net set over a trail on September 1, 2009.

Washington Co.

Sec 32 T14N R29W. Four females were captured and 4 other individuals were observed in a bridge on April 17, 2013. Eleven individuals were observed in the same bridge on August 19, 2013. A single female was captured in a different bridge on this road in Section 32 on August 19, 2013.

Sec 14 T14N R29W. Four females were captured in a bridge on August 19, 2013.

Sec 9 T13N R30W. Four females were captured and 3 other individuals were observed in a bridge on April 30, 2013. Eight females and 3 males were captured in this bridge on August 19, 2013.

Sec 12 T13N R30W. A single female was captured in a bridge on August 19, 2013.

Sec 25 T13N R31W. A female was captured in a mist net set over a trail and a male was captured in a mist net set over a creek on June 9, 2013. On this same night at another site in this section a male was captured in a mist net set over a trail.

Yell Co.

Sec 26 T6N R24 W. A single female was found hibernating inside a stone highway culvert underneath Highway 309 on December 4, 2004.

Although known to be rare in Arkansas (Anderson 2006), this species has no formal legal protection other than that offered to all nongame species, which prohibits them from being killed except to protect human health or personal property.

Almost half of the known observations of this species are either from inside or at the entrance of caves. Most are of single individuals, although there are five records of 5-50 bats hibernating in Cave Mountain Cave in Newton County. Of the 9 caves known to be utilized for hibernation or fall swarming, 5 are owned by the federal government, 2 by the state government, 1 is in private ownership subject to a conservation easement, and only 1 is in unencumbered private ownership. Four of these caves are gated, 2 are fenced, and 2 have closure signs designed to prevent human disturbance while caves are occupied by bats.

All but one are closed to public access due to concerns relating to potential human spread of the fungus associated with White Nose Syndrome. A crevice cave in Crawford County, in which a small-footed bat was observed on January 22, 2001 (Graening et al. 2011), has subsequently been permanently flooded by the expansion of Lake Fort Smith.

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