

FIRST RECORD OF THE EASTERN PIPISTRELLE (*PIPISTRELLUS SUBFLAVUS*) FROM SOUTHERN NEW MEXICO

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ABSTRACT—The range of the eastern pipistrelle (*Pipistrellus subflavus*) recently has expanded westward in the United States. New records of this species have been reported along the entire western boundary of its range from South Dakota to Texas. In August 2004, we captured an adult, male eastern pipistrelle at Carlsbad Caverns National Park in southeastern New Mexico. Our record represents the second capture of this species in New Mexico and the first in the southern part of the state. Because no eastern pipistrelle was captured at this site during previous surveys (1973 to 2003), this record represents the continued westward expansion of the distribution of this species in the United States.

RESUMEN—Recientemente, la distribución de *Pipistrellus subflavus* se ha extendido hacia el oeste de los Estados Unidos. Registros nuevos de esta especie han sido reportados a lo largo de todo el límite occidental de su distribución desde South Dakota hasta Texas. En agosto del 2004, aprehendimos un macho adulto en Carlsbad Caverns National Park en el sudeste de Nuevo México. Nuestro registro representa la segunda captura de esta especie en Nuevo México, y la primera en la parte del sur del estado. Ya que ningún *Pipistrellus subflavus* fue apresado en este sitio durante muestreos anteriores (1973–2003), este registro representa la expansión continua occidental de la distribución de esta especie en los Estados Unidos.

Recent evidence suggests that the range of the eastern pipistrelle (*Pipistrellus subflavus*) has expanded westward in the United States during the past 25 years (Geluso et al., 2005). In 1981, western limits of the known distribution of eastern pipistrelles extended into Minnesota, Iowa, Nebraska, Kansas, Oklahoma, and Texas (Hall, 1981). Since 1981, new records of *P. subflavus* have been reported along the entire western boundary of its range in the United States, including first records for South Dakota, Wyoming, Colorado, and New Mexico (Fitzgerald et al., 1989; Bogan and Cryan, 2000; Geluso et al., 2005). Geluso et al. (2005) concluded that these captures of eastern pipistrelles probably do not represent accidental records or undetected populations, but instead represent recent westward expansion of the species. Herein, we report yet another capture of *P. subflavus* along the western edge of its range. This capture represents the second record for New Mexico and the first record from the southern part of the state.

On 4 August 2004, we captured an adult, male eastern pipistrelle at Carlsbad Caverns National Park, Eddy County, in southeastern New Mexico (32°06.605'N, 104°28.265'W; NAD 83). The individual was captured at 2245 h in a 20-m long by 3-m high mist net over the southeastern corner of a large, rock-lined storage pond (41.6 × 35.7 m) that collects water from a spring. The storage pond is located at Rattlesnake Springs, an isolated parcel (0.32 km²) of Carlsbad Caverns National Park that is 7.4 km south-southwest of the visitor center (Geluso and Geluso, 2004). In addition to the mist net over the pond, we deployed 2 mist nets among trees in the front yard of a ranger station and 2 mist nets in an orchard at Rattlesnake Springs. Other species of bats captured that evening included *Lasiurus borealis*, *Tadarida brasiliensis*, *Antrozous pallidus*, *Eptesicus fuscus*, *Myotis thysanodes*, and *M. californicus/ciliolabrum*. All bats were released at the site of capture except the eastern pipistrelle, which was collected as a voucher specimen and deposited in the Biological Survey Collection at the Museum of Southwestern Biology, University of New Mexico, Albuquerque (MSB 124824).

The nearest published records of eastern pipistrelles to our capture in New Mexico are 175 and 260 km to the south in southwestern Texas (Yancey et al., 1995; Geluso et al., 2005)

and 290 km to the northeast in Lubbock County, Texas (Jones et al., 1993). The first capture of this species in New Mexico was 550 km to the north in the extreme northeastern corner of the state (Geluso et al., 2005). Because of recent captures to the north and south of southern New Mexico, our record probably was not an individual wandering far from its normal range. Moreover, because surveys of bats were conducted at Rattlesnake Springs and other areas of Carlsbad Caverns National Park from 1973 to 2003 without capturing an eastern pipistrelle (Geluso and Geluso, 2004; K. N. Geluso, pers. comm.), we believe our record represents recent colonization of southeastern New Mexico by *P. subflavus*.

Eastern pipistrelles often forage over waterways (Fujita and Kunz, 1984; Schmidly, 2004), and expansion of their distribution into more western localities probably has occurred along riparian corridors (Baker, 1956; Sparks and Choate, 2000; Geluso et al., 2005). In the Great Plains, movement of this species might be due to increases in wooded habitats along rivers and increases in the number of human-made structures that might be used as hibernacula (Sparks and Choate, 2000; Geluso et al., 2005). In Coahuila, Mexico, Baker (1956) captured eastern pipistrelles only along the Rio Grande and its tributaries that were bordered by large trees and suggested that this species dispersed westward to northern Coahuila via the Rio Grande. Recent captures of eastern pipistrelles in the Trans-Pecos region of southwestern Texas also suggest that individuals might have dispersed northward from the Rio Grande (Yancey et al., 1995; Ammerman, 2005; Geluso et al., 2005).

Suitable habitat for eastern pipistrelles certainly occurs in southeastern New Mexico. For example, human-planted deciduous trees at Rattlesnake Springs, adjacent Washington Ranch, and residential areas of the nearby town of Carlsbad provide summer habitat, and over 300 caves in the Guadalupe Mountains provide potential hibernacula (Geluso and Geluso, 2004). However, the route of dispersal to this area is unclear. Our site of capture at Rattlesnake Springs in southeastern New Mexico is 41 km from the Pecos River, which eventually empties into the Rio Grande in southwestern Texas. If suitable habitat and hibernacula occur along the Pecos River, then perhaps this

system provided a route of dispersal for eastern pipistrelles from southwestern Texas to southeastern New Mexico. Other routes of dispersal also are possible, and future surveys for eastern pipistrelles along the Rio Grande and other waterways in western Texas and eastern and southern New Mexico might clarify the route of dispersal to Rattlesnake Springs.

We thank D. Roemer (Carlsbad Caverns National Park) for permission to net bats at Rattlesnake Springs, and K. Geluso and C. A. Ramotnik (U.S. Geological Survey, Biological Survey Collection) for depositing and cataloging the specimen at the Museum of Southwestern Biology at the University of New Mexico, Albuquerque. We also thank B. Cave, M. L. Ewald, G. Gil, Y. Hakima, K. McCarley, L. A. McWilliams, D. L. Moosman, and C. Smith for their assistance in the field; K. Geluso, K. N. Geluso, and 2 anonymous reviewers for helpful comments on the manuscript; and L. C. Hester for translating the abstract into Spanish.

LITERATURE CITED

- AMMERMAN, L. K. 2005. Noteworthy records of the eastern pipistrelle, *Perimyotis subflavus*, and silver-haired bat, *Lasionycteris noctivagans*, (Chiroptera: Vespertilionidae) from the Chisos Mountains, Texas. *Texas Journal of Science* 57:1–6.
- BAKER, R. H. 1956. *Mammals of Coahuila, Mexico*. University of Kansas Publications, Museum of Natural History 9:125–335.
- BOGAN, M. A., AND P. M. CRYAN. 2000. Bats of Wyoming. In: J. R. Choate, editor. *Reflections of a naturalist: papers honoring Professor Eugene D. Fleharty*. Fort Hays Studies, Special Issue 1:71–94.
- FITZGERALD, J. P., D. TAYLOR, AND M. PRENDERGAST. 1989. New records of bats from northeastern Colorado. *Journal of the Colorado-Wyoming Academy of Science* 21:22.
- FUJITA, M. S., AND T. H. KUNZ. 1984. *Pipistrellus subflavus*. *Mammalian Species* 228:1–6.
- GELUSO, K., T. R. MOLLHAGEN, J. M. TIGNER, AND M. A. BOGAN. 2005. Westward expansion of the eastern pipistrelle (*Pipistrellus subflavus*) in the United States, including new records from New Mexico, South Dakota, and Texas. *Western North American Naturalist* 65:405–409.
- GELUSO, K. N., AND K. GELUSO. 2004. Mammals of Carlsbad Caverns National Park, New Mexico. *Bulletin of the University of Nebraska State Museum* 17:1–180.
- HALL, E. R. 1981. *The mammals of North America*, second edition. John Wiley and Sons, New York.
- JONES, J. K., JR., R. W. MANNING, F. D. YANCEY, II, AND C. JONES. 1993. Records of five species of small mammals from western Texas. *Texas Journal of Science* 45:104–105.
- SCHMIDLY, D. J. 2004. *The mammals of Texas*, revised edition. University of Texas Press, Austin.
- SPARKS, D. W., AND J. R. CHOATE. 2000. Distribution, natural history, conservation status, and biogeography of bats in Kansas. In: J. R. Choate, editor. *Reflections of a naturalist: papers honoring Professor Eugene D. Fleharty*. Fort Hays Studies, Special Issue 1:173–228.
- YANCEY, F. D., II, C. JONES, AND R. W. MANNING. 1995. The eastern pipistrelle, *Pipistrellus subflavus* (Chiroptera: Vespertilionidae), from the Big Bend Region of Texas. *Texas Journal of Science* 47:229–231.

Submitted 11 May 2005. Accepted 26 January 2006.
Associate Editor was Philip D. Sudman.