

## Westward Range Extension of the Eastern Chipmunk, *Tamias striatus* (Rodentia: Sciuridae), in Central Oklahoma

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The eastern chipmunk, *Tamias striatus*, is common in the eastern portions of Oklahoma (Caire et al 1989). The type specimen of subspecies *T. s. venustus* was collected by Thaddeus Surber 110 years ago near Stilwell when the state of Oklahoma was still known as Indian Territory (Bangs 1896). Caire et al (1989) listed all records known for Oklahoma and suggested the chipmunk was limited in distribution to eastern portions of the state. The westernmost specimens were reported by Black and Hunsicker (1977) from 14.5 km (9 mi) and 25.8 km (16 mi) southeast of Shawnee in Pottawatomie and Seminole counties respectively. In the last few years, there have been reports of sightings of chipmunks farther west in central Oklahoma, in Oklahoma County near Jones (Neil Garrison, Naturalist, Martin Park Nature Center, Oklahoma City, personal communication 2005). Recent sightings and a collection of a specimen from southern Logan County suggest an expansion of the range of the eastern chipmunk is indeed occurring in Oklahoma. The Logan County records are approximately 70 km northwest of the known records in Pottawatomie and Seminole counties. These new records are noteworthy in that they redefine the range limits of *T. striatus* within the state and stimulate questions about why the species is expanding its range to the west.

In early May 2006, at approximately 0600 h an adult (sex unknown) chipmunk was observed by Caire about 6.6 km northeast (lat 35°43'30"N, long 97°17'53"W, 357 m elev) of Arcadia in Oklahoma County. The animal emerged from the weedy vegetation near the road edge, ran south and entered the field on the opposite side of the road. The field is bordered by post oak (*Quercus stellata*) - blackjack oak (*Q. marilandica*)

woodland. Another adult chipmunk was seen later the same month about 1.1 km to the east of the original sighting (lat 35°43'33"N, long 097°17'18"W, 332 m elev) at about the same time of day and in similar habitat but in Logan County.

On 19 June 2006 (at approximately 1030 h) an adult eastern chipmunk was observed near the Caire/Caddell residence in Logan County (lat 35°43'55"N, long 97°17'21"W, 342 m elev). Later in the afternoon, a black rat snake, *Elaphe obsoleta*, (approx. 137 cm in length) was noticed trying to enter a French drain system adjacent to the residence where the chipmunk was last seen. The snake was removed from the area and the chipmunk was subsequently trapped the next day in a Sherman live trap set at the opening to the drain system. External measurements of the female chipmunk were: total length, 255 mm; length of tail, 114 mm; length of hind foot, 31 mm; length of ear, 15 mm; and weight, 107 g. The specimen was deposited in the University of Central Oklahoma Collection of Vertebrates. On 21 June, an adult male was trapped and subsequently released at the same location. The surrounding habitat near the residence is hilly, with cross timber vegetation composed primarily of post oak, blackjack oak, eastern red cedar (*Juniperus virginiana*), sumac (*Rhus glabra*), elm (*Ulmus* spp.), and green-briar (*Smilax* sp.), and there is ornamental vegetation near the house. Mixed-grass prairie fragments and small ponds are in the vicinity.

After capturing the chipmunks in Logan County, three additional sightings of chipmunks were made along section roads in Logan County on 24 June 2006. One was at 0750 h near the above listed locality for early May (lat 35°43'30"N, long 97°17'53"W, 357 m elev), another at 0830 h (lat 35°44'42"N,

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long 97°15'53"W, 244 m elev), and a third at 0850 h (lat 35°42'40"N, long 97°17'27"W, 350 m elev). All sightings were in habitats similar to that described above.

These records of chipmunks in Logan and Oklahoma counties, and the absence of previous reports from the area, are probably best interpreted as a recent range expansion of the species to the west. These records are from sites near where we have resided for 14 years. We have live trapped this 2.4 ha property for small mammals many times over the years, have driven the section roads, and have driven the main roads on an almost daily basis. We saw no chipmunks in this area prior to May 2006.

Extrapolating from the date of the sightings in Pottawatomie and Seminole counties (Black and Hunsicker 1977) to the date of these sightings and capture of chipmunks in Logan and Oklahoma counties, it has taken approximately 29 years for the westward edge of the chipmunk's range to expand to this location. The post oak and blackjack oak cross timbers does not extend much beyond Oklahoma County. These chipmunks are now close to the northwestern limit of the Northern Cross Timbers Ecoregion (Oklahoma 2005) in Logan County. The northern border nearly coincides with the Cimarron River (a small portion extends north above the river). The aridity and grasslands to the west could block their further westward

expansion. However, it might be possible for them to expand along some of the river drainage systems extending westward that contain riparian vegetation and uplands of cross timber habitats.

The number and pattern of sightings in Logan and Oklahoma counties suggest that it is unlikely that these chipmunks were captured elsewhere, kept as pets for a period of time, and then released. None of the pet stores contacted in the greater Oklahoma City area had any information regarding chipmunks for sale.

This documentation of the recent expansion of the range of chipmunks in Oklahoma is important for future comparisons of the impact that climate change might be having on the distribution of small mammal populations.

## REFERENCES

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