
New County Records of Mammals from Oklahoma

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Abstract: Since the publication of *Mammals of Oklahoma*, second edition, the number of mammal specimens deposited in natural history collections continues to increase, and county distributions of mammal species in the state continue to change. In this study, we report 31 additional county records, plus one record along a county line, for 12 species representing 5 mammalian orders. These records were verified through 65 voucher specimens deposited in two institutions, as well as 7 new observational records. This study expands the understanding of the distribution of mammals in Oklahoma.

Introduction

Twelve EPA level III ecoregions (High Plains, Southwestern Tablelands, Central Great Plains, Flint Hills, Cross Timbers, East Central Texas Plains, South Central Plains, Ouachita Mountains, Arkansas Valley, Boston Mountains, Ozark Highlands, and Central Irregular Plains) occur in the state of Oklahoma (Caire et al. 2024). The ecoregion diversity makes this region of North America biologically significant and ideal for examining distribution patterns and impacts from land modification, including the influence of global climate change, agricultural conversion, urbanization, mining, oil and gas extraction, and wind-energy facility construction. Blair (1939) published the first comprehensive list of mammal diversity in the state. The second comprehensive compilation for mammal records was the first edition of *Mammals of Oklahoma* (Caire et al. 1989), followed by the second edition of *Mammals of Oklahoma* (Caire et al. 2024) published 35 years later. In this study, we report additional county records for 11 mammal species that have vouchered specimens deposited in natural history collections. Additional observational records for mountain lions have also been reported by the Oklahoma Department of Wildlife Conservation (ODWC) and are included here.

Methods and Materials

Mammalian orders are arranged according to Wilson and Reeder (2005). Taxonomy and common name usage follows Bradley et al. (2014), Caire et al. (2019), and Caire et al. (2024). All specimens represent the first record(s) of the species for the counties reported. The specimens are listed alphabetically within taxonomic groups. Locality data have been modified from the original tag and formatted for consistency with regards to abbreviations and GPS coordinates. Scientific voucher specimens herein reported are deposited in the following institutions: Sam Noble Oklahoma Museum of Natural History, Norman, Oklahoma (OMNH) and University of Central Oklahoma Natural History Museum, Collection of Vertebrates, Edmond, Oklahoma (UCOCV). Specimens were prepared as skins, skulls, skeletons, or fluid specimens fixed in 10% formalin and stored in 70% ethanol. Tissue samples were taken unless specimens were in a deteriorated state, as is the case with many bat specimens submitted to Oklahoma Animal Diagnostic Disease Laboratory (OADDL).

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Results and Discussion

Thirty-one new county records are reported for 12 species of mammals represented by 65 museum vouchered specimens and 7 observations from 23 of Oklahoma's 77 counties. An additional vouchered specimen was collected on a county line and not assigned as a specific county record but is an important location record because no specimen had been previously vouchered for either county. These new records include 1 armadillo, 4 bats, 2 carnivores, 2 cervids, and 3 rodents. The addition of this data expands our understanding of mammals in Oklahoma and enhances our knowledge of their diversity and distribution, which is imperative for future research in ecology, evolutionary biology, behavior, and the impact of climate change on natural communities and ecosystems. Some records may be indicative of shifts in distribution; however, some records may be more reflective of the actual distribution patterns of the species that were incomplete due to a lack of voucher specimens. The ODWC utilizes distribution data and species abundance and richness evaluation to aid in important conservation and management plans (ODWC 2016). Maps (Figure 1) are provided for each species denoting new county records as stars based on distribution maps included in Caire et al. (2024).

ORDER CINGULATA
Family Dasypodidae
Dasypus novemcinctus
Nine-banded Armadillo

The Nine-banded Armadillo has been reported in a variety of habitats throughout much of Oklahoma, but few specimen records exist for most parts of the state. Loucks et al. (2023) reported records for 42 counties, with 7 observational county records reported in Caire et al (2024). New records are reported for Kay and Murray counties, and one record is reported on the county line of Osage and Tulsa counties in the town of Skiatook. Logan County, previously reported as an observational record, is updated to hold a specimen record for the county.

Specimen records (4)—Kay County: Interstate 35 south of the Kansas border near Proc. Okla. Acad. Sci. 105: pp 25-31(2025)

mile marker 225, Blackwell Tourism Center, 1 (UCOCV-MAM 7756). Logan County: 10774 Coyote Circle, Arcadia, 1 (UCOCV-MAM 7791). Murray County: Sulphur, Nelson Rd and Williams Dr, 34.5208561, -97.0024663, 1 (OMNH 68657). Osage/Tulsa County line: Skiatook, Osage Ave and W 4th St, 36.3664598, -96.0012868, 1 (OMNH catalogue pending).

ORDER CHIROPTERA
Family Vespertilionidae
Eptesicus fuscus
Big Brown Bat

Big Brown bats have been reported across the state in a disjunct pattern historically. More bats (51%) of this species are turned in for rabies virus testing to OADDL in Oklahoma than any other bat species (Loucks et al. 2024), which has increased the number of known county records. Loucks et al. (2023) reported records from 23 Oklahoma counties in disjunct distribution pattern across the state. Although Oklahoma County was previously listed as observation only for this species (Caire et al. 2024), two recent museum specimens have been documented for this county. New records are reported for Comanche, Muskogee, Nowata, Oklahoma, Okmulgee, Pittsburg, Pontotoc, and Rogers counties, providing additional information regarding statewide distribution.

Specimen records (9)—Comanche: no specific locality, 1 (UCOCV-MAM 7757). Muskogee: no specific locality, 1 (UCOCV-MAM 7744). Nowata: no specific location, 1 (UCOCV-MAM 7728). Oklahoma: UCO campus, 1 (UCOCV-MAM 7695), no specific locality, 1 (UCOCV-MAM 7725). Okmulgee: no specific location, 1 (UCOCV-MAM 7758). Pittsburg: no specific location, 1 (UCOCV-MAM 7730). Pontotoc: no specific location, 1 (UCOCV-MAM 7717). Rogers: no specific location, 1 (UCOCV-MAM 7723).

Lasiurus borealis
Eastern Red Bat

The Eastern Red Bat is associated with eastern deciduous forests throughout North America, although it is widespread across Okla-

homa. Loucks et al. (2023) reported records of this species in most of Oklahoma's 77 counties. These bats were historically the most common species submitted for rabies virus testing in Oklahoma (Caire et al. 2014); however, in recent years *Eptesicus fuscus* has become the most frequently submitted species to OADDL (Loucks et al. 2024). A new record is reported for McIntosh County.

Specimen record (1)—McIntosh: no specific locality, 1 (UCOCV-MAM 7759).

Myotis velifer
Cave Myotis

Cave Myotis are found primarily in the western one-third of the state, reported in 24 counties in Oklahoma (Loucks et al. 2023). This specimen record is not only a new county record for Tulsa County but represents the easternmost record of Cave Myotis in Oklahoma to date. This bat species is cavernicolous, hibernating during winter months in hibernacula and transitioning to maternity roosts for summer periods (Caire et al. 2024). It is interesting to note this specimen was not located in a cave environment in February.

Specimen record (1)—Tulsa: 2.5 mi NW Lotsee, 1 (OMNH 68306).

Nycticeius humeralis
Evening Bat

The Evening Bat, typically found in the eastern United States, reaches its westernmost distribution in Oklahoma. Loucks et al. (2023) reported 93 records in 22 counties as discussed in Caire et al. (2024). Evening bats are the third most common bat species (15%) turned in for rabies virus testing to OADDL, although in much lower numbers than the two most common species submitted (Loucks et al. 2024). New records are reported for Lincoln, Pittsburg, Pontotoc, Rogers, and Washington counties.

Specimen records (6)—Lincoln: no specific location, 1 (UCOCV-MAM 7726). Pittsburg: no specific location, 1 (UCOCV-MAM 7760). Pontotoc: no specific location, 1 (UCOCV-MAM 7790). Rogers: no specific location, 1 (UCOCV-MAM 7585). Washington: no specific location, 2 (UCOCV-MAM 7747, 7761).

ORDER CARNIVORA
Family Felidae
Puma concolor
Mountain Lion

Mountain lions have been reported in Oklahoma for many years but were believed to be transient occurrences, observed in 24 counties with museum records for 3 counties (Caire et al. 2024). The ODWC began documenting and verifying reports across the state beginning in 2002 and have confirmed 85 sight records of the species in 31 counties through 2024 (ODWC 2024). Although the records reported indicate widespread distribution in Oklahoma, museum specimen records remain limited. The first reports of offspring with female mountain lions were in Osage and Cimarron counties where kittens were observed on game cameras with the mothers, indicating perhaps the species should be considered a more permanent resident of the state going forward (ODWC 2025). Seven observational records are reported for 6 counties resulting in 33 counties with at least one observational record or vouchered museum specimen.

Observational county records (7) — Creek (2), Dewey, Greer, Payne, Washington, and Woods counties.

Family Mustelidae
Lontra canadensis
Northern River Otter

The Northern River Otter has a widespread distribution in the eastern half of Oklahoma, although museum specimen records are limited. Loucks et al. (2023) reported 38 otter records in 21 counties. A new specimen record is reported for Carter County, changing an observational occurrence (Caire et al. 2024) to a vouchered museum county record.

Specimen record (1)—Carter: Ardmore, 0.36 mi E of intersection of P St and Sam Noble Pkwy, 1 (OMNH 6865).

ORDER ARTIODACTYLA
Family Cervidae
Cervus canadensis
Elk

Elk have a limited distribution in Oklahoma and few records of museum specimens exist. Loucks et al. (2023) reported 13 records in two counties, with observational records in an additional 8 counties in Oklahoma reported by Caire et al. (2024). A new specimen record is reported for one county.

Specimen record (1)—Garfield: Drummond Flats Wildlife Management Area on Turkey Creek, 1 (UCOCV-MAM 7700).

Odocoileus virginianus
White-tailed Deer

White-tailed Deer have a widespread distribution in Oklahoma (Caire et al. 2024); however, museum specimen records are limited and reported in 42 counties (Loucks et al. 2023). A new specimen record is reported for one county.

Specimen record (1)—Garfield: Drummond Flats Wildlife Management Area on Turkey Creek, 1 (UCOCV-MAM 7699).

ORDER RODENTIA
Family Cricetidae
Peromyscus attwateri
Texas Deermouse

The Texas Deermouse was reported from 36 counties primarily in southern and eastern parts of Oklahoma (Loucks et al. 2023). The distribution of the Texas Deermouse is discontinuous in Oklahoma and adjacent states due to its preference for rocky habitats (Caire et al. 2024). Two new county records are reported for Creek and Payne counties, represented by multiple specimens in both counties.

Specimen records (33)—Creek: 16.5 km WNW of Sapulpa, Pearl Jackson Crosstimbers Preserve, 1 (OMNH 68437), 15.5 km WNW of Sapulpa, Pearl Jackson Crosstimbers Preserve, 4 (OMNH 68574, 68577, 68580, 68590). Payne: Cushing, Intersection of 9th St and N Norfolk Rd, 28 (UCOCV-MAM 7762–7789).

Reithrodontomys humilis
Eastern Harvest Mouse

Museum records of the Eastern Harvest Mouse were reported from 13 counties in eastern Oklahoma by Loucks et al. (2023) and one observational county record was reported by Caire et al. (2024). A new county record is reported for Creek County.

Specimen records (3)—Creek: 16.5 km WNW of Sapulpa, Pearl Jackson Crosstimbers Preserve, 2 (OMNH 68434, 68459), 15.5 km WNW of Sapulpa, Pearl Jackson Crosstimbers Preserve, 1 (OMNH 68594).

Family Sciuridae
Sciurus carolinensis
Eastern Gray Squirrel

Common in the eastern half of Oklahoma in association with wooded areas (Caire et al. 2024), the Eastern Gray Squirrel was reported from 34 counties by Loucks et al. (2023). These records from Cleveland County extend the range to the west.

Specimen records (5)—Cleveland: Norman, Lexington Wildlife Management Area, 5 (OMNH 68412, 68415–68418).

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Figure 1. Updated county maps for *Dasyopus novemcinctus*, *Eptesicus fuscus*, *Lasiurus borealis*, *Myotis velifer*, *Nycticeius humeralis*, *Puma concolor*, *Lontra canadensis*, *Cervus canadensis*, *Odocoileus virginianus*, *Peromyscus attwateri*, *Reithrodontomys humilis*, and *Sciurus carolinensis*. The map of Oklahoma has filled circles with museum records for each county and open circles for observational published records as indicated in Caire et al. 2024. Additional records in this study are denoted by stars in each new county, filled in for museum records and open stars for observational records.



Figure 1 cont. Updated county maps for *Dasyopus novemcinctus*, *Eptesicus fuscus*, *Lasiurus borealis*, *Myotis velifer*, *Nycticeius humeralis*, *Puma concolor*, *Lontra canadensis*, *Cervus canadensis*, *Odocoileus virginianus*, *Peromyscus attwateri*, *Reithrodontomys humilis*, and *Sciurus carolinensis*. The map of Oklahoma has filled circles with museum records for each county and open circles for observational published records as indicated in Caire et al. 2024. Additional records in this study are denoted by stars in each new county, filled in for museum records and open stars for observational records.



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