



OCCASIONAL PAPERS

FIRST RECORDS OF 13 MAMMALIAN SPECIES WITHIN THE SOUTHWESTERN CROSS TIMBERS REGION OF TEXAS

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ABSTRACT

Fieldwork from 2004 to 2008 and investigation of the mammal collection of Tarleton State University, Stephenville, Texas, resulted in the collection and discovery of 13 species of mammals that constitute county records for Brown, Callahan, Comanche, Erath, Hamilton, and Mills counties within the southwestern Texas Cross Timbers ecological region. The Cross Timbers region is a transition zone between the eastern deciduous forests and the western prairie regions. The mammalian fauna of the region has been sporadically studied and these specimens help define mammalian distributions within the southwestern Cross Timbers.

Key words: Cross Timbers, distribution records, mammals, Texas

INTRODUCTION

The Cross Timbers region of Texas constitutes a distinct biogeographical region located between the Rolling Plains to the west, the Llano Basin and Edwards Plateau to the south, and the Red River and Blackland Prairie to the north and east (Diggs et al. 1999). As delineated by Gould (1962), Correll and Johnston (1970), and Hatch et al. (1990), the Cross Timbers of Texas comprises a large area of north-central Texas encompassing all or part of 38 counties (Fig. 1). The land area of the Texas Cross Timbers is approximately 67,339 km². The Texas Cross Timbers is surrounded by prairie on eastern and western sides and consists of two belts of forest divided by the enclosed Grand Prairie (Diggs et al. 1999). The region demarcates and is a final, western, disjunct extension of the eastern deciduous forests of the United States.

The conspicuous vegetation and topography of the Cross Timbers was recognized by early travelers and described as a belt of timber varying in width and stretching from south to north as an immense wall of woods (Diggs et al. 1999). Woody vegetation of the Texas Cross Timbers is dominated by post oak (*Quercus stellata*) and blackjack oak (*Quercus marilandica*). Original vegetation ranged from open areas of prairie to dense thickets (Schmidly 2002). Although the region has a long history of human occupation and disturbance, significant remnants of virgin forests remain (Diggs et al. 1999).

Vernon Bailey recognized the importance of the Cross Timbers' vegetation and topography in limiting distributions of woodland and campestrian species

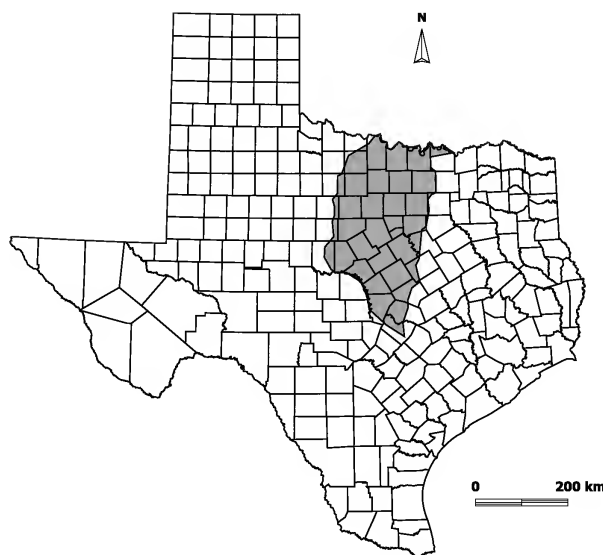


Figure 1. Map of Texas illustrating the location and counties included within the Cross Timbers ecological region (shaded area).

(Schmidly 2002). Bailey (1905) noted six mammalian species reaching eastern limits and four mammalian species with western limits along the borders of the Texas Cross Timbers. Despite recent works by Goetze and Nelson (1998, 2000, 2004) and Goetze et al. (2003, 2004), the mammalian fauna of the southwestern Cross Timbers region is incompletely known. As a result of fieldwork from 2004 to 2008 and examination of

specimens deposited in the mammal collection of Tarleton State University, thirteen species of mammals from three orders and nine families representing county records from six counties within the southwestern Cross Timbers have been obtained. These specimens assist in the documentation and clarification of species ranges within this region of Texas.

MATERIALS AND METHODS

Mammals were salvaged or trapped by the authors following methods approved by the American Society of Mammalogists (Gannon et al. 2007) or were examined from the Tarleton State University (TSU) mammal collection. Collecting localities of museum specimens from the TSU Mammal Collection not obtained by the authors are reported in units of miles from a city or county landmark, as originally recorded on the museum label. This was deemed most appropriate because the reported museum specimens represent first records of the species from their respective counties. Retention of the original collection data preserves the accuracy of the voucher specimens and allows future researchers to more easily access these specimens in the TSU Mammal Collection. However,

the original TSU localities and our (JRG and ADN) voucher specimen records also are reported in UTM coordinates (in parentheses) to facilitate incorporation into geographic information system (GIS) programs. UTM coordinates were obtained for the TSU specimens by utilizing a Maptech 1.0 Terrain Navigator program (Maptech, Inc.; Amesbury, Massachusetts). Our (JRG and ADN) localities were obtained with a WAAS enabled, Magellan eXplorist GPS receiver (Magellan; Santa Clara, California). Specimens reported herein are deposited in the mammal collections of Tarleton State University and Midwestern State University (MWSU). Species accounts are arranged according to Wilson and Reeder (2005).

SPECIES ACCOUNTS

ORDER SORICOMORPHA

Family Soricidae

Cryptotis parva (Say 1823)

Least Shrew

Two least shrews (MWSU 22807, 22808) were salvaged from 1.1 km E, 1.9 km S Beattie in Comanche County (14 530115E, 3543652N) on 14 and 20 March 2008, respectively. The individual captured on 14 March 2008 was a female; the gender of the other individual could not be determined because of decomposition and desiccation. The shrews were obtained from the immediate vicinity of an abandoned farmstead home. The surrounding area was dominated by fields of coastal bermuda grass (*Cynodon dactylon*) and an unimproved road fringed with post oak and China-berry trees (*Melia azedarach*) and other dense vegetation leading to the capture site. The least shrew has been previously reported from Brown, Erath, Mills, and Palo Pinto counties of the southwestern Cross Timbers (Riddle et al. 1999; Goetze and Nelson 2000, 2004; Goetze et al. 2004).

Family Talpidae

Scalopus aquaticus (Linnaeus 1758)

Eastern Mole

An adult male *Scalopus aquaticus* (TSU 527) was collected at the city limits of Comanche in Comanche County (14 537170E, 3529807N). The mole was obtained on 5 October 1976 by O. Hall. This specimen represents the first record of the eastern mole in Comanche County, Texas. The eastern mole has been reported from adjacent Eastland and Erath counties (Goetze and Nelson 2000; Schmidly 2004). The distribution of *S. aquaticus* within the Cross Timbers likely is limited by presence of soils suitable for excavation activities by this species.

ORDER CARNIVORA

Family Canidae

Canis latrans Say 1823

Coyote

A coyote (MWSU 22803) was collected from Mills County, 3.2 km S, 1.6 km W Mullin (14 530362 E, 3491012 N) on 28 July 2006. A government trap-

per had captured the animal by use of snares. The coyote was too decayed and desiccated for accurate measurements, so its skull was salvaged as a voucher. The area surrounding the capture site was mesquite (*Prosopis glandulosa*) pastureland and interspersed coastal bermuda fields. This specimen represents the first reported record for Mills County. Coyotes have been reported previously from Comanche and Palo Pinto counties within the southwestern Cross Timbers (Goetze and Nelson 2004; Schmidly 2004).

Family Mephitidae

Conepatus leuconotus (Lichtenstein 1832)

American Hog-nosed Skunk

An adult female hog-nosed skunk (MWSU 21665) was collected 6.4 km SE Clairette in Erath County from the roadside of State Highway 281 (14 587789E, 3542573N) on 9 August 1999. This specimen represents the first reported record of *C. leuconotus* from Erath County, Texas. The hog-nosed skunk previously has been reported only from Brown, Lampasas, and Palo Pinto counties within the Cross Timbers region (Goetze and Nelson 1998; Schmidly 2004).

Mephitis mephitis (Schreber 1776)

Striped Skunk

An adult female *Mephitis mephitis* (TSU 4) was collected 9 mi. SW Comanche, in Comanche County (14 526563E, 3519545N) on 23 March 1968 by C. Osborn. This specimen represents the first reported record for Comanche County, Texas. The striped skunk has been reported previously from Eastland, Erath, Mills, and Palo Pinto counties within the region (Goetze et al. 2004).

ORDER RODENTIA

Family Sciuridae

Sciurus niger Linnaeus 1758

Eastern Fox Squirrel

An adult male *Sciurus niger* (TSU 20) was collected 2 mi. W of Cross Plains in Callahan County (14 481161E, 3554193N) on 8 February 1967 by C. Hickman. Another adult female (TSU 15) was collected 20 mi. S of Comanche in Mills County (14 536877E,

3496056N) on 8 May 1968 by C. Osborn. These specimens represent county records for Callahan and Mills counties within the southwestern Cross Timbers region. The eastern fox squirrel has been reported from Brown, Coleman, Comanche, Coryell, Eastland, Hamilton, and Lampasas counties. The TSU specimens help to define the species' range within the Cross Timbers of Texas.

Spermophilus mexicanus (Erxleben 1777)
Mexican Ground Squirrel

An adult male *Spermophilus mexicanus* (TSU 36) was collected 8 mi. SW of Rising Star in Brown County (14 491093E, 3544125N) on 2 May 1967 by L. Pittman. An additional adult female (MWSU 22802) was collected at Oakwood Cemetery in the city of Comanche (14 537929E, 3530012N), Comanche County on 8 August 2007. A third, adult female *S. mexicanus* (MWSU 22299) was collected 1.3 km E Regency within Regency Cemetery in Mills County (14 515216 E, 3475932 N) on 3 July 2004. The Comanche and Mills county individuals were non-gestating, adult females. These three specimens represent county records for Brown, Comanche, and Mills counties of Texas. The Mexican ground squirrel has been reported previously from Eastland and Erath counties of the Cross Timbers region (Schmidly 2004).

Family Castoridae
Castor canadensis Kuhl 1820
American Beaver

An adult female *Castor canadensis* (TSU 527) was collected 8 mi. N of Comanche on the Leon River in Comanche County (14 533540E, 3545033N) on 16 May 1986 by H. Garner. The nearest reported records of *C. canadensis* listed by Schmidly (2004) are from Taylor County to the northwest, Johnson County in the northeast, and Bell and McLennan counties in the southeast. Goetze and Nelson (2004) collected a specimen of *C. canadensis* from Erath County to the east. The Comanche County specimen represents a first record for that county and an additional record of the American beaver from the southwestern Cross Timbers of Texas.

Family Heteromyidae

Perognathus merriami J. A. Allen 1892
Merriam's Pocket Mouse

Two adult female *Perognathus merriami* were collected in Brown County. One (TSU 115) was collected on 15 October 1970, 2.5 mi. NE of Zephyr (14 522393E, 3507339N) by L. Carpenter and the second (TSU 516) on 23 November 1976, 25 mi. NW of Brownwood (14 487574E, 3544010N) by P. Wright. These two specimens represent county records for the species in Brown County, Texas. Merriam's pocket mouse is reported from Coleman, Eastland, Erath, and Palo Pinto counties of the Cross Timbers (Goetze et al. 2004; Schmidly 2004).

Family Cricetidae
Baiomys taylori (Thomas 1887)
Northern Pygmy Mouse

Six *Baiomys taylori* (TSU 1008, 1009, 1010, 1011, 1012, 1013) were collected 2 mi. S Hico in Hamilton County (14 591454E, 3535492N). An adult female was collected on 22 September (TSU 1009), an adult female on 26 September (TSU 1008), an adult male on 5 October (TSU 1011), an adult female on 10 October (TSU 1012), a juvenile female on 12 October (TSU 1010), and an adult female on 17 October (TSU 1013) of 1988 by H. Garner. These specimens represent first records for Hamilton County in the Cross Timbers region. The northern pygmy mouse previously has been reported from Bosque, Comanche, and Erath counties adjacent to Hamilton County (Schmidly 2004), but curiously has not been obtained in Coryell, Lampasas, and Mills counties to the south and west.

Reithrodontomys fulvescens J. A. Allen 1894
Fulvous Harvest Mouse

An adult male *Reithrodontomys fulvescens* (TSU 1015) was collected 2 mi. S of Hico in Hamilton County (14 591454E, 3535492N) on 9 February 1989 by H. Garner. This specimen represents the first record of the fulvous harvest mouse from Hamilton County, Texas. The fulvous harvest mouse has been reported from Brown, Comanche, Eastland, Erath, and Mills counties of the Cross Timbers region (Goetze and Nelson 2000; Goetze et al. 2004).

Reithrodontomys montanus (Baird 1855)
Plains Harvest Mouse

An adult male *Reithrodontomys montanus* (TSU 534) was collected 25 mi. NW Brownwood in Brown County (14 487574E, 3544010N) on 26 October 1976 by P. Wright. This specimen represents the first reported record of the species for Brown County, Texas. The plains harvest mouse has been reported from Callahan, Eastland, and Erath counties of the Cross Timbers region of Texas (Goetze et al. 2004; Schmidly 2004).

Family Myocastoridae
Myocastor coypus (Molina 1782)
Coypu

An adult female *Myocastor coypus* (TSU 452) was collected 2.4 km S, 4.8 km W Proctor at Proctor Dam in Comanche County (14 549475E, 3537239N) on July 1974 by H. Garner. This specimen represents the first reported record for Comanche County, Texas. The coypu has previously been reported from Bosque, Brown, Erath, and Palo Pinto counties of the southwestern Cross Timbers region (Goetze et al. 2004). The coypu has dispersed throughout most of Texas since its introduction into the state (Schmidly 2004).

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LITERATURE CITED

- Baily, V. 1905. Biological Survey of Texas. North American Fauna No. 25. United States Department of Agriculture, Bureau Biological Survey, Washington, D. C.
- Correll, D. S., and M. C. Johnston. 1970. Manual of the vascular plants of Texas. Texas Research Foundation, Renner.
- Diggs, G. M., Jr., B. L. Lipscomb, and R. J. O'Kennon. 1999. Shinnery & Mahler's flora of North Central Texas. Botanical Research Institute of Texas, Fort Worth.
- Gannon, W. L., R. S. Sikes, and the Animal Care and Use Committee of the American Society of Mammalogists. 2007. Guidelines of the American Society of Mammalogists for the use of wild animals in research. *Journal of Mammalogy* 88:809-823.
- Goetze, J. R., and A. D. Nelson. 1998. Noteworthy records of mammals from Central and South Texas. *Texas Journal of Science* 50:255-258.
- Goetze, J. R., and A. D. Nelson. 2000. Distributional records and comments on mammals from six Texas counties. Occasional Papers, Museum of Texas Tech University 195:1-7.
- Goetze, J. R., and A. D. Nelson. 2004. Distributional records of mammals from the southern Cross Timbers of Texas. Occasional Papers, Museum of Texas Tech University 233:1-4.
- Goetze, J. R., A. D. Nelson, and P. D. Sudman. 2003. Noteworthy records of bats from Central and South Texas. *Texas Journal of Science* 55:365-367.
- Goetze, J. R., P. D. Sudman, and A. D. Nelson. 2004. Noteworthy records of mammals from Erath County, Texas. Occasional Papers, Museum of Texas Tech University 234:1-6.
- Gould, F. W. 1962. Texas plants: A checklist and ecological summary. Texas Agriculture Experiment Station Miscellaneous Publication 585:1-112.
- Hatch, S. L., K. N. Gandhi, and L. E. Brown. 1990. Checklist of the vascular plants of Texas. Texas Agriculture Experiment Station Miscellaneous Publication 1655:1-158.

- Riddle, W. W., B. L. Blossman-Myer, K. D. Spradling, and F. B. Stangl, Jr. 1999. Noteworthy records of mammals from Palo Pinto County, Texas. *Texas Journal of Science* 51:335-338.
- Schmidly, D. J. 2002. *Texas natural history: a century of change*. Texas Tech University Press, Lubbock.
- Schmidly, D. J. 2004. *The mammals of Texas*, Revised edition. University of Texas Press, Austin.
- Wilson, D. E., and D. M. Reeder (eds.). 2005. *Mammal species of the World, a taxonomic and geographic reference*. Third edition. Johns Hopkins University Press, Baltimore, Maryland.

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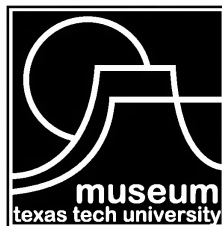
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