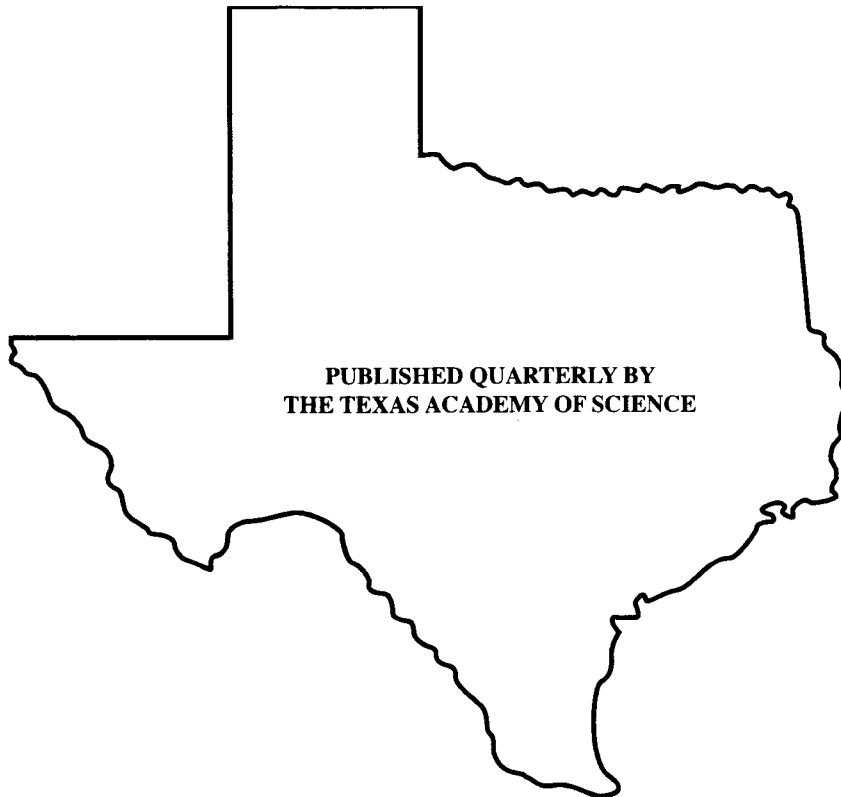


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FOOD HABITS OF THE SOUTHERN SHORT-TAILED SHREW
(*BLARINA CAROLINENSIS*) IN EAST TEXAS

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Generally, an urban habitat is characterized as being fragmented and heterogenous (Schmid-Holmes & Drickamer 2001). Because of the heterogeneity, urban settings can place multiple pressures that may affect the foods present for a species. Little is known of the food habits of the southern short-tailed shrew (*Blarina carolinensis*) throughout its range (see McCay

2001). No published reports were found on the food habits of the species in the extreme western part of its range, or any information concerning the species in an urban ecosystem. The purpose of this paper was to investigate the food habits of *B. carolinensis* in an urban ecosystem in east Texas.

The study site was located on the East Texas Baptist University campus (Marshall; 32°33' N; 94°22' W) in a mixed pine-hardwood forested area, and is surrounded on three sides by forested areas and on the fourth by an athletic field. Within 150 m on two wooded sides there are residential areas. Several locations within the study site contain discarded trash.

Dominant canopy trees found on the site are oaks (*Quercus sp.*), sweet gums (*Liquidambar styraciflua*), hickories (*Carya sp.*), elms (*Ulmus sp.*), and loblolly pines (*Pinus taeda*). Poison ivy (*Toxicodendron radicans*) and grape (*Vitis sp.*) are found in the canopy with poison ivy being extensive in the herbaceous layer. Understory vegetation is dominated by saplings of the canopy trees, flowering dogwood (*Cornus florida*), poison ivy (*Toxicodendron radicans*) and green briar (*Smilax sp.*). Ground layer vegetation is sporadic and is primarily poison ivy and green briar.

Twenty-two *Blarina carolinensis* taken from 5 October to 21 December 2004 were the result of trap mortality from a larger study investigating habitat use. Traps (7.6 cm by 8.9 cm by 22.9 cm folding Sherman Traps; H. B. Sherman Traps, Tallahassee, FL) were baited with oatmeal rolled in peanut butter. Shrews were placed in sealed plastic bags and placed in a freezer for later investigation of the stomachs.

Presence or absence of selected groups of food items was assessed in each of the stomachs. Foods were placed into the

following groups: grasshoppers and crickets, earthworms, spiders, snails and slugs, fungi, and unidentified items. To analyze the importance of each food group, Cochran's Q (Tate & Brown 1970) was used. Because Zar (1999) suggested Cochran's Q can be affected by individuals with no food items, only 20 individuals were included in the analysis.

Twenty of 22 individuals examined contained food in the five selected categories. Individuals with at least three different food categories ($n = 8$) and four different food categories ($n = 7$) were the most common. One individual contained five categories. Two individuals contained one and two food categories, each.

The most common food item was snails and slugs (42.7% of all food items). Grasshoppers and crickets comprised 22.2% and earthworms 14.9% of food items identified in the stomachs. Spiders comprised 1.2% of food items. A single shrew contained fungal spores in the stomach. Unidentified food items comprised 18.9% of food items and were found in 13 individuals. Most unidentified food items appeared to be remnants of bait used in the traps.

The food habits of *B. carolinensis* in an urban ecosystem on the western part of its range are similar to those in the eastern part of the species range (Whitaker et al. 1994) with noticeable differences. No beetle remains (adults or larvae) or centipedes were recorded in this current study. Individuals in a bottomland hardwood forest were found to have consumed beetles in Tennessee in May (Calhoun 1941), and Georgia from June to September (Whitaker et al. 1994) and those in a xeric pine forest in Georgia, centipedes (McCay 2001). The habitat examined during this study is a mixed pine-deciduous forest in which both of these groups of arthropods are found. The lack of beetles and centipedes may simply reflect seasonal differences in timing of

the previous studies and this study.

This is the first study, to the authors' knowledge, to investigate the food habits of *B. carolinensis* in the western part of its range and, also, in an urban ecosystem. It appears that the food habits of *B. carolinensis* in this habitat are similar to that in other parts of its range. *Blarina carolinensis* is known to exhibit population irruptions that are potentially controlled by extrinsic factors (Gentry et al. 1971; Smith et al. 1974). Therefore, urban habitats may provide unique situations related to abundance of food resources that could have a greater influence on the population size and structure of a species exhibiting population irruptions.

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