

Crawford's Desert Shrew

Notiosorex crawfordi (Coues, 1877)

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CONTENT AND TAXONOMIC COMMENTS

Notiosorex is a monotypic genus. The Crawford's desert shrew (*Notiosorex crawfordi*) has two subspecies; one (*N. c. crawfordi*) occurs in the South. The literature on Crawford's desert shrew was reviewed by Armstrong and Jones (1972).

DISTINGUISHING CHARACTERISTICS

Crawford's desert shrew is a small, short-tailed soricid with small but conspicuous ears. Similar to most shrews, the tiny eyes are concealed although Crawford's desert shrews can see well (Sealander and Heidt 1990). Measurements are: total length, 77–98 mm; tail, 22–30 mm; hind foot, 9–13 mm; weight, 3–6 g. The snout is long and pointed. The pelage is silver-gray to brownish gray dorsally and pale gray to silver-gray ventrally, with a well-haired and indistinctly bicolored tail. In addition to its mouse-like appearance, the Crawford's desert shrew can be distinguished by dental comparison from three sympatric short-tailed shrews, Elliot's short-tailed shrew (*Blarina hylophaga*), the least shrew (*Cryptotis parva*) and the southeastern shrew (*Sorex longirostris*). The Crawford's desert shrew has 3 pairs of unicuspid whereas there are 4 in the least shrew and 5 in Elliot's short-tailed shrew and the southeastern shrew. The dental formula is: I 3/1, C 1/1, P 1/1, M 3/3 = 28 (Figure 1). See keys for additional details.

CONSERVATION STATUS

The Crawford's desert shrew has a global rank of Secure (NatureServe 2007). It is considered Apparently Secure in Texas, Vulnerable in Oklahoma, and Critically Imperiled in Arkansas.

DISTRIBUTION

The Crawford's desert shrew is distributed throughout west-central and northern Mexico into southwestern and south-central United States (Figure 2). Within the region, its range extends into western Oklahoma and eastward into the Ouachita and Ozark Highlands in western Arkansas (Sealander 1952, Clark 1953, Preston and Martin 1963, Preston and Sealander 1969, Tyler and Gilliland 1979, Steward et al. 1988, Caire et al. 1989, Garland and Heidt

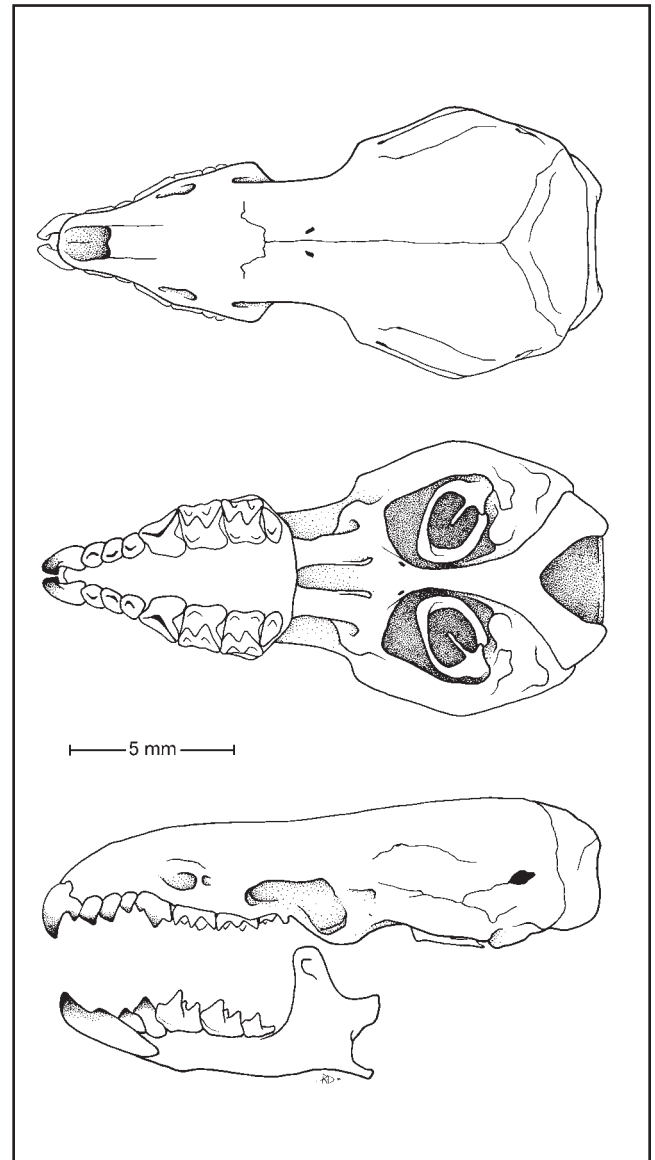


Figure 1. Dorsal, ventral, and lateral view of cranium and lateral view of mandible of *Notiosorex crawfordi* from Baja California, Mexico (USNM 146933, male).

1989, Sealander and Heidt 1990). It is not reported from eastern Texas (Schmidly 1983).

ABUNDANCE STATUS

Little information is available on Crawford's desert shrew abundance in the region. Preston and Martin (1963) estimated densities elsewhere in Oklahoma at

1 individual/ha. However, in eastern Oklahoma it is known from only a single specimen (Clark 1953, Caire et al. 1989). At the extreme periphery of its range, Sealander and Heidt (1990) indicate that the species appears to be rare in Arkansas with only a few known locality records. However, Sealander and Heidt (1990) and Caire et al. (1989) note that it may be more abundant than available records indicate.

PRIMARY HABITATS

Crawford's desert shrew is reported from a diversity of habitats throughout its range (Armstrong and Jones 1972), but its associations with habitat types in the South are not well known. It is associated with semi-arid scrub communities containing mesquite (*Prosopis* spp.), agave (*Agave* spp.), or oaks (*Quercus* spp.; Armstrong and Jones 1972), and also occurs in riparian habitats containing cottonwood (*Populus* spp.) and juniper (*Juniperus* spp.), ponderosa pine (*Pinus ponderosa*), cultivated fields, and grassy washes (Blossom 1933, Blair 1947, Lindeborg 1960, Carothers 1968, Armstrong and Jones 1972). The Crawford's desert shrew utilizes leaf litter, shrub thickets, brush, and rubbish piles for cover, and has been reported using beehives (Blair 1954, Baker 1962, 1966; Hoffmeister and Goodpaster 1962, Armstrong and Jones 1972). In Oklahoma and Arkansas, it commonly is associated with eastern woodrat (*Neotoma floridana*) nests (Preston and Martin 1963, Caire et al. 1989).

REPRODUCTION

Baker and Spenser (1965) and Armstrong and Jones (1972) suggest that reproduction is restricted to warmer periods of the year, approximately April through November. Three to 5 young are produced. Adult pelage is complete at 90 days of age (Hoffmeister and Goodpaster 1962). Annual litter numbers and longevity are unknown.

FOOD HABITS

No information is available on food habits in the region. Huey (1936) and Hoffmeister and Goodpaster (1962) report that the Crawford's desert shrew feeds on many kinds of invertebrates including larval lepidoptera, larval and adult coleoptera, orthoptera, dicoptera, and chilopods. It also consumes vertebrate carrion.

ASSOCIATED SPECIES

Associated insectivores in the region include the southeastern shrew, least shrew, Elliot's short-tailed shrew, and eastern mole (*Scalopus aquaticus*), whereas associated rodents include the eastern woodrat,

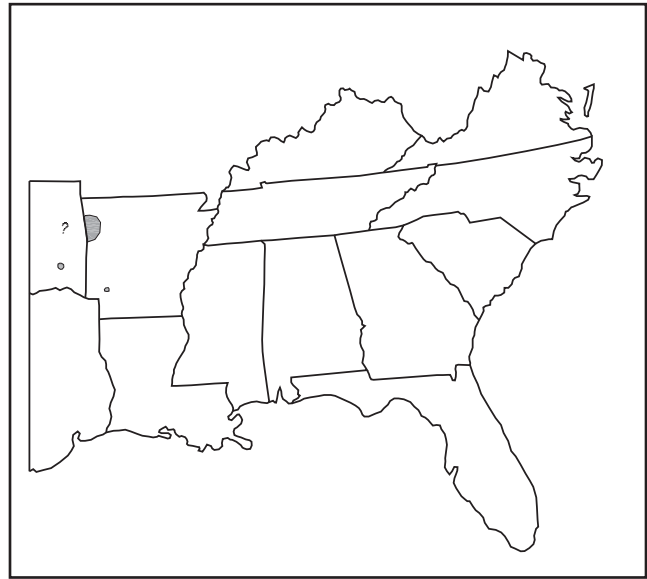


Figure 2. Distribution of *Notiosorex crawfordi* in the South.

white-footed mouse (*Peromyscus leucopus*), and deer mouse (*P. maniculatus*).

VULNERABILITY AND THREATS

Crawford's desert shrew is at the eastern limits of its range in the South representing a distributional vestige from a warmer, drier period in the late Pleistocene (Hibbard and Taylor 1960). Threats to the species viability in the region are unknown. Because its distribution and abundance status are uncertain, additional survey efforts are needed to ascertain population size and habitat preference of this unique species.

MANAGEMENT SUGGESTIONS

No specific management guidelines are known, although the close association of Crawford's desert shrews and eastern woodrats suggest that efforts favoring woodrats could be beneficial.

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