

FIRST RECORD OF THE WATER SHREW, *Sorex palustris*, FROM GRAHAM
COUNTY, NORTH CAROLINA

MATTHEW B. SMITH, JUSTIN CONLEY, CHARLES NELSON, AND TIMOTHY J.
GAUDIN

The University of Tennessee at Chattanooga

Department of Biological and Environmental Sciences

Chattanooga, TN 37403

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The water shrew (*Sorex palustris* Richardson) is a semi aquatic long tailed soricid (Insectivora: Soricidae) easily distinguished by its large size and fimbriated fore and hind feet (Beneski and Stinson 1987). In the eastern United States, the southern water shrew (*S. p. punctulatus* Hooper) occurs as a series of disjunct populations in the Appalachian Mountains from southwestern Pennsylvania (Hall 1981) to northern Georgia (Laerm et al. 1995) where it is found in moderate to high elevation habitats near the banks of cool mountain streams with adequate ground cover (Beneski and Stinson 1987; Linzey 1995). Relative to other sympatric soricids, the southern water shrew is rarely collected, suggesting that it may occur at low densities in localized populations (Beneski and Stinson 1987; Laerm et al. 1995). Populations of the southern water shrew are considered imperiled or critically imperiled throughout its range in the Appalachian Mountains (NatureServe 2007). However, because it is difficult to capture, its actual distribution and status may not be adequately demonstrated (Laerm et al. 1995; Webster 1987).

Records of the southern water shrew are limited. The species reaches its southern range limit in Tennessee, North Carolina, and Georgia (Hall 1981; Laerm et al. 1995). Laerm et al. (1995) reported collecting a single specimen from northern Towns County, Georgia, representing a 25 km southeast range extension from its previously known range limit in Clay County, North Carolina (Whitaker et al. 1975). Several specimens have been collected from the Great Smoky Mountains National Park in Sevier County, Tennessee (Conaway and Pfitzer 1952) and in Swain County, North Carolina (Linzey 1995). The species has also been collected from the Cherokee National Forest in Monroe County, Tennessee (Kennedy and Harvey 1980).

From 7 September 2007 to 9 September 2007, we placed a line of 50 snap traps (48 museum special snap traps and two rat-sized snap traps, for a total of 100 trap nights) along the edges of and directly on rocks within Wright Creek from the point where the stream passes through a culvert underneath North Carolina State Highway 143 (a.k.a. “the Cherohala Skyway”) in an upstream direction. We baited approximately half of the snap traps with peanut butter and the other half with catfish dough bait (a mixture of deer blood and cookie dough, Catfish Charlie Bait Co., Oskaloosa, Iowa). Wright Creek (USGS Big Junction Quad, Zone 16N, 35.31702N 083.9833W, approx. elev. 1,437 m) is a first order stream that drains in a southeast direction. It is surrounded by and abundant with large moss-covered rocks, downed woody debris, ferns, and other small herbaceous plants. The overstory is dominated by American beech (Fagus grandifolia Ehrh.), sugar maple (Acer saccharum Marsh.), American basswood (Tilia americana L.), red maple (Acer rubrum L.), cherry (Prunus spp. L.), buckeye (Aesculus spp. L.), shagbark hickory [Carya ovata (Mill.) K. Koch], and striped maple [Acer pensylvanicum L.; (Radford et al.

1968)]. Other small mammals taken from this locale include the white-footed mouse (Peromyscus leucopus Rafinesque), the southern red-backed vole (Clethrionomys gapperi Vigors), and the woodland jumping mouse [Napaeozapus insignis Miller; (see Smith and Gaudin 2006)].

On 9 September 2007, an adult male water shrew, presumably S. p. punctulatus, was collected from a museum special snap trap baited with catfish dough bait. The exact trap location and elevation was 35.31739N 083.98379W and 1,454 m. The body measurements for the specimen were: total body length, 143 mm; tail length, 74 mm; hindfoot length, 21 mm; ear length, 7 mm; mass, 11 g. The right testicular length was 2.7 mm. The stomach contents yielded approximately 45 fragments of Arthropod materials, and additional material that was unrecognizable. Among the recognizable Arthropod fragments were: 1) Insecta: Diptera with possibly two species, one of which was a Muscoid Diptera of undetermined family identity, and 2) Arachnida: Aranae (Spider). The skin, skull, and skeleton along with a tissue sample for future DNA analysis was deposited in The University of Tennessee at Chattanooga Natural History Museum, UTCM 1286. This is the first record of S. palustris from Graham County, North Carolina. This survey and future inventories in the surrounding area may increase our understanding of the actual distribution and status of S. palustris in the southern Appalachian Mountains and whether or not they exist as truly disjunct populations.

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