

Dwarf Shrew found in Rocky Mountain National Park

By ERIN MUTHS

The dwarf shrew (*Sorex nanus*) is one of the smallest mammals in the world and is the smallest mammal in the southern Rocky Mountains (Armstrong 1987; Fitzgerald et. al 1994). Rocky Mountain National Park (Colorado) currently has no information of the dwarf shrew occurring in the park although Estes Park is the type locality (Armstrong 1987) for this species. The holotype was collected by E. A. Preble in 1895 at "Estes Park" and could easily have been taken at a location now within the park boundaries. Additionally, shrews have recently been suggested as potential bioindicators of environmental change and degradation by researchers at the University of Toronto (Ray 1998) and may provide important information for resource managers in this regard.

I found a dead dwarf shrew at Lake Husted (UTM zone 13; 448385E, 4484207W; 3,388 m; 11,116 ft) in the northeast corner of Rocky Mountain National Park on 17 July 1997. This specimen represents a new locality for *Sorex nanus* and is the first reported within Rocky Mountain National Park¹ (Jeff Connor, Rocky Mountain National Park, telephone conversation with author, 21 January 1999). Previously, the altitudinal record for *Sorex nanus* was 3,350 m (Hoffman and Pattie 1968; Hoffman, personal communication). This specimen was found 38 m (125 ft) higher, at the edge of Lake Husted in a mossy area surrounded by rocky glacial debris and low-lying juniper shrubs. The specimen was intact except for a small hole in its skull. I measured its total length, tail length, and hind foot length and examined the skull in the laboratory.

The shrew had brown fur dorsally with a lighter underbelly and measured <90 mm (3.5 in) total length. Its tail was 40 mm (1.6 in), and its hind foot was 12 mm (0.5 in). The carcass weighed approximately 2.5 g (<0.1 oz) but

was considerably decayed when weighed. From these measurements, I determined the specimen to be *Sorex nanus*. The specimen was also examined by D. Armstrong (University of Colorado) and compared to a confirmed *Sorex monticolus* specimen; this shrew was smaller in all dimensions. Based on measurements and direct comparison my identification as *Sorex nanus* was confirmed.

Dwarf shrews are primarily montane in distribution and have been collected from rock slides and spruce-fir bogs (Brown 1967), alpine tundra (Hoffman and Taber 1960; Hoffmann and Pattie 1967), and marsh and forest clear-cut (Spencer and Pettus 1966). Hoffmann and Owen (1980) report an altitudinal range of "at least" 740-3,350 m (2,428-10,991 ft). Although the carcass appeared intact and essentially undisturbed, it is possible that the shrew was carried to the site by a bird and dropped, but this could not be confirmed.

Rocky Mountain National Park has listed the dwarf shrew in its Resource Management Plan (USDI National Park Service 1998), but the project is currently unfunded. When funding is obtained, potential projects might include a simple determination of the abundance and distribution of the dwarf shrew in the park to provide baseline data for monitoring population trends; studies of the habitat requirements of the shrew; studies of predator-prey interactions, and the potential for visitor impacts on the shrew.

As more people travel into the backcountry risks associated with human disturbance clearly increase. Even low volume human activity at higher elevations can have profound effects on the delicate alpine tundra plant communities and may have related effects on small mammals, such as the shrew, which may use these ecosystems exclusively. Shrews exist within very small areas that must sustain them throughout their lives. Even small disturbances of fragile ecosystems have the potential to disrupt individuals and perhaps to disrupt entire populations of shrews.

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¹A dwarf shrew was documented in 1967 for Larimer County, Colorado, just north of the park (Jeff Connor, Rocky Mountain National Park, telephone conversation with author, 21 January 1999).