

HUDSONIA HARLEM VALLEY BIODIVERSITY MANUAL SUPPLEMENT

Southern red-backed vole (*Clethrionomys gapperi*)

Habitats in the Study Area

A boreal mouse of cool, mossy, rocky conifer forests and swamps characteristic of the Adirondacks and high Catskills (Connor 1960), but occurring sporadically farther south. Suitable habitat occurs mostly in the northern end of the study area, on the Rensselaer Plateau and northern Taconic ridges. In the upper Midwest, red-backed vole also occurs in cool, moist boulder talus, shallow swamps and bogs, coniferous, deciduous or mixed forest (Kurta 1995). J. G. Barbour and Jack Focht observed a red-backed vole in a hemlock-sphagnum swamp in Harriman State Park, Orange County, New York, in 1995. In the 1970s, E. Kiviat trapped this species in extensive talus habitat at Stissing Mountain (Town of Pine Plains, Dutchess County), and Hell's Hollow (Town of Fishkill, also Dutchess, in the Hudson Highlands). Though areas with abundant nesting sites (root channels of stumps, logs, brush piles) are preferred, red-backed vole may use tree holes above ground. Dense low vegetation (ferns, mosses, etc.) may be an important requirement (Connor 1960.) Likely in the "cool ravine" habitat described by Kiviat and Stevens (2001).

Study Area Distribution

Poorly known, but to be expected in suitable habitat anywhere outside developed areas.

Other Relevant Aspects of Ecological Niche and Behavior

Summer diet includes leafy green plants, seeds, fruits, fungi and nuts. Winter food includes seeds, leaves of small evergreen shrubs, buds, twigs, bark, roots, dormant insects, and carrion. A prolific breeder, producing up to 25 young per year in 3 or 4 litters of 2-11 young. Active night and day year round, foraging in runways of shrews or moles. Home ranges may be as large as 1.4 ha in the summer and as small as 0.14 ha in the winter, when foraging is restricted by snow. Average population density is low for a small mammal, approximately 2-3 voles per acre in favorable habitat. Populations often fluctuate widely from year to year (Kurta 1995). Red-back voles use the tunnels and burrows of other animals, and line nests with plant materials (Whitaker and Hamilton 1998).

Description and Identification

A stout mouse with short ears and a short tail. Head and body length is 80-120 mm, tail 25-60 mm, weight 15-40 g. Winter coat dense, long and soft; coarser and shorter in summer. Upper back and top of head dark red-brown or chestnut brown, face and sides gray-brown to yellowish brown, underside dark slate gray to dull white (Reid 2006). Males and females are similar in size and color; young often darker than adults. Gray phase of the Midwest resembles meadow vole (*Microtus pennsylvanicus*) (Doutt et al. 1977). In our area the rufous phase is typical (Whitaker and Hamilton 1998).

Threats and Conservation

Habitat loss and fragmentation are threats, especially in areas undergoing development. Timber rattlesnake is an important predator of this vole in mountainous terrain, and black bears may spend considerable effort digging red-backed voles from shelters (Doutt et al. 1977). Predation is probably not a threat to populations in good habitat. White-tailed deer, if very abundant, may compete for food resources with red-backed vole (Roslund 1951).

Survey Technique Constraints

Habitats are typically in rugged terrain long distances from roads, and require time and physical effort to

reach. Red-backed voles, like most small rodents, are secretive, seldom appearing in the open. Occasionally one can be found beneath a large piece of bark or a hollow space under a log, indicating that cover object surveys may help locate this species. Red-backed voles are said to freeze when alarmed, perhaps giving the researcher time to hand-capture the animal (Kurta 1995). These voles can be using standard peanut butter-oatmeal bait (Kiviat, personal communication). Several authors have reported vocalizations (squeaks and trills) of red-backed voles (e.g. Douth, et al. 1977, Whitaker and Hamilton 1998). These sounds may indicate the presence of this mammal but could be hard to distinguish from sounds made by other small rodents, shrews and bats.

References to Identification Literature

Merritt, J.F. 1999. Southern red-backed vole. Pages 613-615. In: D.E. Wilson, and S . Ruff (eds.). The Smithsonian Book of North American Mammals. Smithsonian Institution Press. Washington, D. C. 816 p.

Reid, F. 2006. A field guide to mammals of North America north of Mexico, Fourth edition. Houghton Mifflin. Boston, MA. 579 p.

References cited

Connor, P.F. 1960. The small mammals of Otsego and Schoharie Counties, New York. New York State Museum and Science Service Bulletin 382. 84 p.

Douth, J. K., C. A. Heppenstall, and J. E. Guilday. 1977. Mammals of Pennsylvania. Pennsylvania Game Commission and Carnegie Museum. Pittsburgh, Pennsylvania. 283 p. + maps.

Kurta, A. 1995. Mammals of the Great Lakes Region. The University of Michigan Press, Ann Arbor, Michigan. 376 p.

Roslund, H.R. 1951. Mammal surveys of north-central Pennsylvania. Final Report, Research Project 37-R. Pennsylvania Game Commission. Harrisburg, PA. 55 p.

Whitaker, J.O. and W.J. Hamilton. 1998. Mammals of the eastern United States, third edition. Cornell University Press. Ithaca, NY. 583 p.



Photo: U.S. National Park Service, Isle Royale National Park