Webster's Salamander

Plethodon websteri

Contributors (2005): Stephen H. Bennett and Kurt A. Buhlmann [SCDNR]
Reviewed and Edited (2012): Stephen H. Bennett (SCDNR) and Kurt A. Buhlmann (SREL)

DESCRIPTION

Taxonomy and basic description

Webster's salamander is a small member of the woodland salamander family. This species reaches lengths of 7 to 8.2 cm (2.7-3.2 in.) (Conant and Collins 1991). Both striped and unstriped individuals of this species may be found. Striped individuals typically have a wavy yellowish brown to orange-red dorsal stripe extending from the head to the tail tip (Petranka 1998). Unstriped individuals are usually uniform in color, ranging from brown to reddish-orange. The belly of the salamander is mottled with black, white, and reddish-orange (Martof et al. 1980). This is a relatively non-descript salamander but is typically the only salamander of its size and coloration within its limited range in South Carolina.

Status

Webster's salamander is listed as State Endangered in South Carolina with a ranking of S2/G3, G4 (NatureServe 2013). This species was originally considered to be *Plethodon dorsalis,* but was split from that species based on molecular genetics.

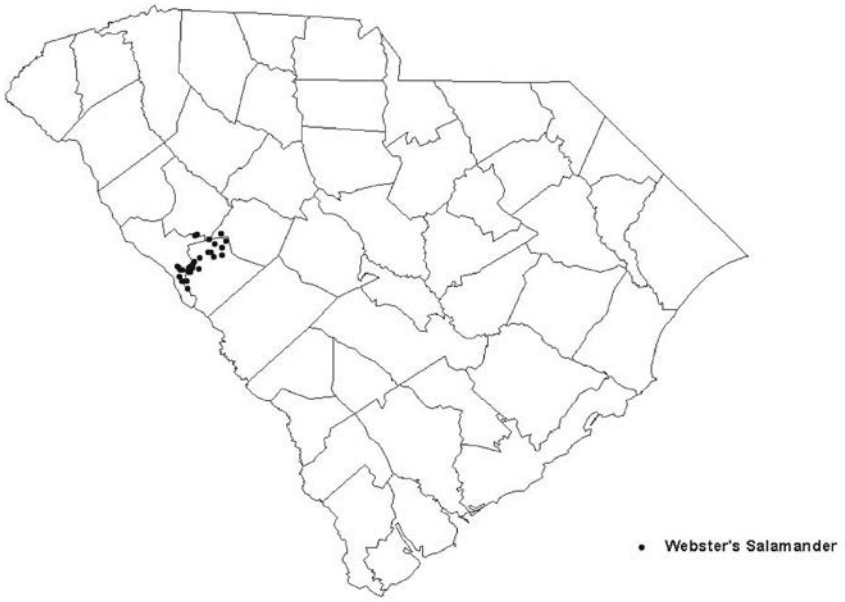
Generalized Range Map of Webster's Salamander in south Carolina
Adapted from Conant and Collins 1991

POPULATION SIZE AND DISTRIBUTION

Webster's salamander occurs across the southeast in several disjunct populations. The majority of the species' range is in western Georgia and eastern Alabama in the lower Piedmont. In South Carolina the species is restricted to several counties along the Savannah River in the lower Piedmont. Semlitsch and West (1983) surveyed this region of the state and found several new populations of this species. Little data exists on the size of the Webster's salamander populations in South Carolina, however the species is

abundant at Turkey Creek in the Long Cane district [Sumter National Forest]. Webster's salamanders were also found in the Lickfork Lake area (Metts and Gibbons 2003**.**

Element Occurrence Records for Webster's Salamander in South Carolina



HABITAT AND NATURAL COMMUNITY REQUIREMENTS

Webster's salamander is found in moist, mixed hardwood forests on steep north-facing slopes (Martof et al. 1980). Optimal habitat for this species has a rocky substrate with abundant coarse, woody debris (Petranka 1998). This species is typically associated with forests that have a relatively dense canopy that prevents drying of the forest floor substrate.

CHALLENGES

The primary threat to Webster's salamander is habitat loss or alteration due to forestry practices, conversion to agriculture, or development. Loss of the dense hardwood forest canopy this species prefers can lead to drying of the habitat and an elevation of soil temperatures, making the habitat unsuitable for the salamander.

CONSERVATION ACCOMPLISHMENTS

Stevens' Creek Heritage Preserve in McCormick County protects a population of Webster's salamander. In the 1980's the Nongame and Heritage Trust Program funded a survey of the Webster's salamander (Semlitsch and West 1983) that led to the discovery of several new locales for this species. Several of these locations are on the Sumter National Forest, and Forest Service biologists have been made aware of these sites. A

2009-2013 study on the same Heritage Preserve found that the species is typically found in the hardwoods creek-side but will range into the nearby pine plantations (Trousdale 2013).

CONSERVATION RECOMMENDATIONS

The primary conservation objectives for the Webster's salamander are to ensure appropriate management on public lands and to determine the population status, life history, and demography of the species. Responsibility for ensuring this species survival in South Carolina rests with the US Forest Service's Sumter National Forest on which the majority of known populations occur.

In 2011, the US Forest Service contracted with the Savannah River Ecology Laboratory of the University of Georgia to survey for and monitor Webster's salamander on Forest Service lands in McCormick and Edgefield counties.

MEASURES OF SUCCESS

As results from current research and surveys or future efforts are identified and analyzed, projects will be initiated to address specific needs that arise from these results.

LITERATURE CITED

Conant, R. C. and J. T. Collins. 1991. A Field guide to Reptiles and Amphibians: Eastern and Central North America. Peterson Field Guide series. Houghton Mifflin Co. Boston, Massachusetts. 450 pp.

Martof, B. S., W. M. Palmer, J. R. Bailey and J. R. Harrison III. 1980. Amphibians and Reptiles of the Carolinas and Virginia. University of North Carolina Press. Chapel Hill. 264 pp.

Metts, Brian and J.W. Gibbons. 2003. Amphibian and reptile diversity in the Sumter National Forest of South Carolina. Unpublished Report to Sumter N.F.

NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, VA. (On-line) Accessed Feb. 21, 2013 at http://www.natureserve.org/explorer.

Petranka, J. W. 1998. Salamanders of the United States and Canada. Smithsonian Institution Press. Washington, D.C. 587 pp.

Semlitsch R. D. and C. A. West. 1983. Aspects of the life history and ecology of Webster's salamander, *Plethodon websteri*. Copeia 1983:339-346.

Trousdale, A. W. 2013. Monitoring a South Carolina Population of the Endangered

Salamander, *Plethodon websteri*. Lander University. Ninth Annual SC Upstate Research Symposium. Pp. 9-11.