

Eastern Red-backed Salamanders and the Department of Defense



Picture by Seth Berry

The Eastern Red-backed Salamander (*Plethodon cinereus*) is one of the more commonly found salamanders in the northeastern United States and the third-most common salamander species on DoD installations. The Latin word, *cinereus*, means “ash-colored” and refers to the dorsal coloration of the lead-backed phase.

Description: Adults are typically 2.25 to 4 in (5.7 to 10 cm) long, with approximately 18-20 costal grooves. There are three color morphs in this species. The striped or red-backed morph is the most common, and consists of a broad, orange-red, light tan, or red dorsal stripe that extends from the head onto the tail. The sides of the body are dark and the venter is mottled black and white. The unstriped or lead-backed morph is similar, but with an entirely ash-colored dorsum. The erythristic morph is the least common, and it's entire dorsum is light red.



Range: This species occurs from southern Quebec and the Maritime Provinces, southward to western and southeastern North Carolina and northeastern Tennessee, and westward to eastern Minnesota.

Habitat: Preferred habitats include leaf litter, rocks, and woody debris in mature deciduous, northern conifer, and mixed deciduous-conifer forests with well-drained, deep soils. Populations are usually absent or in low densities in soils that are associated with wetlands (e.g., highly acidic and poorly drained) or exposed mountain ledges or peaks (e.g., shallow and rocky). Soils that retain abundant moisture at the surface (without flooding) during normal weather conditions support the largest populations of Eastern Red-backed Salamanders.

Behavior: Eastern Red-backed Salamanders mate from October to April. Females breed biennially and males breed annually. Eggs are laid in the crevices of rotting logs/stumps or rocks from May to July. The average clutch size is 5-12 eggs, and the female will remain with the eggs until the young hatch from August to September. This species remains under cover during the day, and emerges at night to forage and mate when weather conditions are favorable (e.g., mild and damp). Small invertebrates make up its diet, including beetles, flies, earthworms, and spiders, with a preference for ants and termites. Adults are most active on the surface during the spring and fall. This species will move to subsurface areas with the arrival of freezing temperatures or drought conditions, and emerge in late winter/early spring and fall as temperatures become warm or moist again. Adults are highly territorial and will aggressively defend areas, most likely for the purpose of foraging and breeding.

Military Interactions: This species commonly occurs on DoD properties that have mature, forested habitats. It is most commonly encountered under rocks and wood debris, including downed logs and leaf litter.

Conservation Status: The Eastern Red-backed Salamander is not federally- or state-listed as threatened or endangered. NatureServe lists this species as G5 –Secure, and the IUCN ranks the species as Least Concern. It is a Species of Greatest Conservation Need (SGCN) in Washington DC, Kentucky, and Minnesota.

Threats/Planning Considerations: Habitat fragmentation, deforestation, intensive timber harvests, and disease are all threats to this species. Military natural resource managers should try to maintain forested habitats and leave woody debris on the forest floor.

Occurrence on Military Lands	
Confirmed	Potential
Confirmed present on 55 military properties (26 Army; 22 Navy; 5 Air Force; and 2 Marine Corps).	Up to an additional 49 military properties (26 Army; 11 Navy; 10 Air Force; and 2 Marine Corps).

