Species: Jefferson Salamander (*Ambystoma jeffersonianum*)
Global Rank: G4
State Rank: S4
State Wildlife Action Plan: Pennsylvania Responsibility Species
Climate Change Vulnerability: Highly Vulnerable
Confidence: Low

Habitat:

Jefferson salamander is found in well-drained deciduous or mixed upland forests within 250 to 1600m of a small vernal pool or pond (MA NHESP 2007). Within the United States, the species range extends from southern New York, northern New Jersey, and most of Pennsylvania to Ohio and southern Indiana. Their range extends southward to Kentucky, West Virginia, and Virginia (NatureServe 2010).

Threats:

Current threats to the species include alteration of vernal pool breeding sites, loss and alteration of forested habitats surrounding pools, road mortality during migration to and from breeding sites, and acidification of vernal pools due to acid deposition (NatureServe 2010).

Main Factors Contributing to Vulnerability Rank:

Dispersal ability: Young tend to move less than 100m year during dispersal process (Douglas and Monroe 1981; Semlitsch 2007).

Predicted micro sensitivity to changes in temperature: Jefferson salamanders prefer a moist and cool microhabitat

Predicted micro sensitivity to changes in precipitation, hydrology, or moisture regime: Jefferson salamanders are completely dependent on aquatic habitats (vernal pools or small ponds) for egg laying and the larval stage. The hydrology of these systems may be altered due to climate change effects.

Physical habitat specificity: The species is moderately to highly specialized in its physical habitat requirements (vernal pools). Vernal pools not only have hydrological requirements but must also have the right soils and underlying geology to provide a stable pool with the proper chemistry for successful reproduction (Freda and Dunson 1986).

Dietary versatility: While adults eat a wide range of invertebrate prey, larvae are largely limited to a diet dependent on anuran larvae and the aquatic invertebrates that also reproduce in seasonal pools.

Migrations and movements: Jefferson salamanders are nonmigratory and populations do not make substantial distributional shifts in response to changing environmental conditions.

Literature Cited:

Douglas, M. E., and B. L. Monroe, Jr. 1981. A comparative study of topographical orientation in Ambystoma (Amphibia: Caudata). Copeia 1981:460-463.

Freda, J. and W.A. Dunsin. 1986. Effects of low pH and other chemical variables on the local distribution of amphibians. Copeia 1986:454-466.

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NatureServe. 2010. NatureServe central Databases. Arlington, Virginia. USA.

Semlitsch, R. 2007. Differentiating migration and dispersal processes of pond-breeding amphibians. Journal of Wildlife Management 72:260-267.