

Blue-spotted Salamander, *Ambystoma laterale* And Tremblay's salamander, *A. (2) laterale-jeffersonianum*

Status:

State: Endangered

Federal: Not listed

Identification

The blue-spotted salamander is a member of a group of subterranean amphibians known as “mole salamanders.” Likened to the coloration and pattern of old-time enameled pots and pans, blue-spotted salamanders are dark blue with light blue flecking on the sides and tail. These salamanders have large heads with protruding eyes and robust, stocky bodies supported by sturdy limbs. Adults measure 10 to 14 cm (4 to 5.5 in.) in length (Conant and Collins 1991).



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Habitat

Blue-spotted salamanders inhabit mature hardwood forests such as red maple (*Acer rubrum*) swamps and oak/birch woodlands. These forests, which provide ponds suitable for breeding, are often slightly above swamp or marshland levels. They contain a deep humus layer with sandy and silt loams, gravelly, loamy sand, or muck soil types. Tree species may include pin oak (*Quercus palustris*), black oak (*Q. velutina*), northern red oak (*Q. rubra*), red maple, black willow (*Salix nigra*), and gray birch (*Betula populifolia*). Typically, the ground is littered with rotting logs, boards, rocks, or leaves, beneath which the salamanders dwell within moist depressions or subterranean burrows.

Temporary woodland ponds, marshy sedge ponds, and roadside ditches may serve as breeding pools. Ephemeral breeding ponds typically have a muddy substrate (bottom) and contain leaf litter and fallen twigs with limited wetland vegetation. Marshy breeding ponds consist of dense submergent (underwater) vegetation and tussocks of emergent vegetation. The water must be deep enough to prevent the ponds from drying up before the juveniles emerge from the water, yet be shallow enough to avoid inhabitation by predatory fish. One breeding pond located in Morris County measured 35 m (115 ft.) long by 27 m (89 ft.) wide and was 98 cm (39 in.) deep at the lowest point (Zappalorti 1983). Other occupied ponds in this county contained water at depths of 15 to 25 cm (6 to 10 in.) (Nyman et al. 1988).

Status and Conservation

Due to its restricted range within the state and the severe threats of habitat loss and pesticide use, the blue-spotted salamander was listed as an endangered species in New Jersey in 1974. The New Jersey Natural Heritage Program considers the blue-spotted salamander to be “demonstrably secure globally,” yet “critically imperiled in New Jersey” (Office of Natural Lands Management 1992).

At the end of the last ice age the ranges of the blue-spotted and another species of mole salamander, the Jefferson salamander, overlapped, which produced a series of hybrids that share many of the physical characteristics of the two parent species. One of the hybrids was found to be an all-female species that required male blue-spotted salamanders to reproduce. This hybrid was known as ‘Tremblay's salamander.’ Because of its close association and supposed reliance upon blue-spotted salamanders for reproduction, Tremblay's salamander was once listed as an endangered species in New Jersey. However, recent investigation into the genetics of the hybrids demonstrated that the Tremblay's salamander was not a true species but instead part of a dynamic hybrid complex that is still in taxonomic debate (Klemens and Bogart 1997).