

Chautauqua Watershed Notes
From the Chautauqua Watershed Conservancy
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The Chautauqua Watershed's Mole Salamanders
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For the Chautauqua Watershed Conservancy



Spotted Salamanders live underground for most of the year, but may be seen in and around their forest breeding pools in spring. Good forest stewardship in the Chautauqua Watershed includes protecting the habitat of these beautiful creatures. (Photo by Solon Morse)

It's a warm, wet, rainy night in the Chautauqua Watershed, the first such night of spring. Mole salamanders slowly nose their way up from their subterranean forest homes onto the now hospitable moist surface. Step by step, wriggle by wriggle, these creeping creatures crawl to a shallow forest pools filled with melted snow and spring rains. Most of these travelers are Spotted Salamanders spectacularly decorated with bright yellow spots against a black background. Some of them are Blue-spotted Salamanders whose dark skin is spattered with small blue spots. Others are Jefferson Salamanders simply dressed in dark colors occasionally adorned with light blue flecks along their sides and tail. In the Chautauqua Watershed the latter two species hybridize, resulting in populations of "Jefferson-Blue-spotted complex" salamanders.

Upon arriving at their destination, the pool, the male salamanders deposit neat little packets of sperm (spermatophores) all across the bottom. The females, who arrive soon after, draw these valuable reproductive gifts into their cloacas and fertilize the eggs within. Once the eggs are fertilized they are “laid” in a gelatinous mass usually attached to sticks or vegetation in the pool. The salamanders then take a few days’ rest in or around the pool then return to their subterranean homes disappearing from observation until next spring. Meanwhile the eggs incubate for two to eight weeks depending on the species and the water temperature (warmer temperatures hasten incubation). Tiny fish-like larvae emerge, so tiny it might require a magnifier to view the external feathery gills that protrude from either side of their faces.

The salamander larvae are voracious little carnivores gobbling up tiny aquatic invertebrates and sometimes their own siblings. These larvae are like and unlike their amphibian cousins the frogs. Frog larvae are also aquatic and resemble fish. However a tadpole’s gills are internal and they are strictly herbivores. The aquatic mole salamander larvae transform into terrestrial animals in two to three months with metamorphosis occurring sooner – resulting in smaller adults – if the pool they inhabit begins to dry up too soon. Should it completely evaporate too soon many larvae die before metamorphosis. Complete evaporation is not unlikely. The forest pools that the mole salamanders breed in are shallow and have no inlet or outlet. You would think it unwise of the salamanders to place their precious offspring in such a precarious nursery but the pool also lacks fish that would quickly devour the eggs.

The adult animals that do crawl out of their temporary aquatic habitats are, as the term metamorphosis implies, quite different from their original larval form. The tails, which on the larvae were keeled for swimming, are now rounded and used more for balance while walking. Now that the creatures breathe air their gills have disappeared. Off into the forest the young adult salamanders creep, step by step, wriggle by wriggle, to slowly nose their way down into subterranean homes not to emerge again for at least two to three years when as mature adults they are ready to crawl to the shallow forest pools where they were born and continue the cycle of life.

If you tramp through the Chautauqua Watershed’s woodlands this spring, you may be lucky enough to see one of these secretive, beautiful animals – yet another reason to preserve and protect our natural heritage.

The Chautauqua Watershed Conservancy is a local 501 (c)(3) not-for-profit, public benefit corporation supported primarily by membership donations. Its mission is to preserve, and enhance the water quality, scenic beauty and ecological health of the lakes, streams and watersheds of the Chautauqua region. Its annual membership campaign is currently underway. For more information or to support these efforts, please call 664-2166 or go to www.chautauquawatershed.org.