

## ON THE WILD SIDE

# Red leaves, red-backed salamanders---what next?

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The leaves are flying off the trees today because of the brisk wind. The flying leaves almost look like a colorful mobile. Very entertaining. But it is not the leaves I want to write about today. But it is something red...

The other day I found a small salamander in the basement of my house. I have no idea how it got there, but it did spark my curiosity. I spent some time looking it up to try to identify it and learn something about it. That turned out to be more rewarding than I had expected.



Eastern red-backed salamander found by the author during a walk in the woods.

My husband wasn't too impressed by the little fellow saying they were everywhere. He is a better naturalist than I. He said he used to see them as a kid when he turned over a log or a rock. I have seen them before but never paid much attention to them.

Everyone knows, of course, that they are amphibians (not reptiles!) and that means they spend part of their life in the water and part on land. They return to water in order to lay their eggs. Salamander eggs, like frog's eggs, are jelly masses and have no hard shells. When the eggs hatch, they release larva with feathery external gills and a tail. Eventually they undergo metamorphosis and become adult salamanders and crawl out of the water to start their lives on land...but that doesn't tell the story of this particular salamander!

In order to learn more about them, I grabbed my video camera and we took a walk in the woods. As he gently lifted a log, I recorded whatever we saw crawling around. In no time at all, we had found about a dozen salamanders of the very same kind. Each one was alone – never two under the same log and they were fairly easy to spot because each one was shiny, despite the dirt and debris all around. Some were redder than others. There were other little critters there too, like pillbugs, slugs, beetles and spiders. After looking at the videos, I was convinced that they were Eastern Red-backed Salamanders (*Plethodon cinereus*) and continued to do research but inside and online.

Much to my surprise the red-back salamander is quite a character when it comes to the amphibian world! Let me explain. I found an article published in 2007 by Brooks Mathewson

with lots of information about this salamander from studies conducted at the Harvard Forest in Petersham MA and at Hemlock Hill in the Arnold Arboretum in Boston.

[http://harvardforest.fas.harvard.edu/publications/pdfs/Mathewson\\_Arnoldia\\_2007.pdf](http://harvardforest.fas.harvard.edu/publications/pdfs/Mathewson_Arnoldia_2007.pdf)

Turns out, our little visitor plays a distinctive role in our environment. But first, I must tell you a fascinating relevant fact: these salamanders are quite exceptional because they do *not return to the water to reproduce!* They lay their eggs in moist places like under logs and rocks. The mother or father tends to the eggs, keeping them moist for six-weeks. The eggs are gelatinous with no protective shell so they would dry up without this care. The egg develops into a larva and continues development right through the larval stage before emerging. When it hatches it is a small adult! They grow to about three or four inches and may have a red stripe along the back or be all gray.

They eat the small invertebrates (soil fauna) we saw skittering around the dirt when we exposed them. They, in turn, are eaten by robins, turkeys and snakes and therefore are an important link in the food web between soil fauna and larger animals.

Because they are not confined to land close to water, they can be found nearly anywhere there is moist soil. The soil invertebrates that they eat consume leaves and other plant materials. What is left becomes available to bacteria and fungi which complete the breakdown. If the soil invertebrates are not kept in check, decomposition by bacteria and fungi speeds up. And that means that more carbon dioxide is released to the air as an end product of decomposition. Carbon dioxide is one of the greenhouse gases. So the red-back salamanders are actually helping to keep CO<sub>2</sub> levels in check! Who would have thought our little visitor was so important?

In general, the red-back salamander and other closely related salamanders are helpful in another way. They are good indicators of overall ecosystem health because their populations do not fluctuate too much from year to year and they are very sensitive to contaminants. They breathe through their skins and the lining of their mouths so they can take up contaminants and be affected by temperature and moisture changes very rapidly. As a result, they “could provide valuable warnings of impacts of global stresses caused by human activity.”

We invite you to learn more about our environment and its inhabitants of all sizes. You can help to preserve and support them by certifying your yard with the National Wildlife Federation. We hope to have 100 more homes certified as wildlife habitats in Norton. When Norton has its 300<sup>th</sup> birthday, we hope to a Community Wildlife Habitat.

For complete information, go to the National Wildlife Federation website:

<http://www.nwf.org/In-Your-Backyard.aspx>

For local information, see the Land Preservation Society of Norton website:

<http://www.nortonlandpreservation.org/>

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