

Leaf Litter Impacts

In 2011 earthworm invasions were listed in *Trends in Ecology and Evolution* as one of the top 15 emerging global conservation issues. This is because of the impacts that earthworms can have on North American forests. Although a single earthworm does not have much impact on an ecosystem, an entire population of earthworms can have significant impacts.

For example, litter-dwelling species mix organic (leaf-litter) soil layers and mineral soil (just below the surface of the soil) layers with major effects on the species that rely on those soils. In a forest with a large amount of leaf litter, the main decomposers are fungi (e.g. mushrooms). In forests where earthworms have removed much of the leaf litter layer, the primary decomposers in the forests changes from fungi to bacteria. Along with the reduction in fungi, researchers also often find a reduction in the insects found in the forest. The result of these changes is that the forests litter layer no longer decomposes in the same way as it did before the earthworms' arrival.



On the left is the soil of a forest that is worm-free, on the right is the soil of a forest that has been invaded by earthworms.

Reflections:

1. Look at the two images above, what differences do you see?

Images from: <http://www.nrri.umn.edu/WORMS/forest/index.html>

Adapted From: Cameron, E. , Boyce, M. (2013) Don't dump your worms! Earthworms are trashing our forests. *Alberta Outdoorsmen*, Volume 15 (2), 16-18.

Last Updated: October 22, 2014



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2. What impacts do you think these changes to the soil layer might have on other species?

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