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2901 Western Avenue
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THE “OTHER” LIFE OF A TREE

A tree's life is not over once it falls to the forest floor. An entirely new life is only beginning.

Releasing small quantities of stress-related chemicals into the air, the tree announces its new life. Sensing minute concentrations of these compounds on their antennae, many insect species hone in on these recently fallen trees, in which they make a home and provide food for their larvae. Those locating a new home release scents which encourage others to join them. Insect predators, cued into the chemical “chatter,” arrive and scurry along surfaces to ambush new arrivals. Other large and colorful beetles or wasp-like insects arrive to lay eggs that develop into large larvae, which bore deep into the wood. As the insect larvae mature, they leave holes up to one inch in diameter which provide access to salamanders, centipedes and other insects.

Fungi, protozoa, nematodes and bacteria also hitch rides on these insect “taxi cabs” from one dead tree to the next. Wind and water carry these decomposers to the new feast, too. Among these are the fungi, the world's foremost experts in breaking down trees. They weaken the wood and thus provide food and shelter for other organisms, such as dampwood termites.

The tree is gradually decomposing.

As life changes inside the tree, so it also changes on the outside. Lichens, mosses and liverworts draping the log's surface trap falling needles and leaves from trees above. As these leaves accumulate, they form deep organic soil both around the dead tree and on its surface. This rich soil traps seeds and spores, begetting ferns and shrubs. New trees seed themselves and are nourished by the tree we called “dead.”



Seattle Vivarium's nurse log. This Western hemlock specimen was found at the Duwamish/Green River watershed, May 2006, Photo: Renée Devine

Trees and plants that root and live on the “nurse log” receive nutrients from what is left of the original fallen tree, which has been altered by insects, fungi, bacteria and other decomposers. In time, the growth and life of such nursing “babies” further reduces the original tree to a small fraction of its size.

It now has a new life—as a nurse log.

Long after the nurse log is only a brick-red residue, the plants and trees it has nurtured remain, beginning anew the cycle of life in the forest.

—Mark E. Harmon
Richardson Chair and Professor,
Department of Forest Science, Oregon State University