



The Living Nature of Old and Dead Trees

Trees in a forest perform many functions: they capture the sun's energy and make wood, their roots hold onto the soil and prevent erosion, they produce nuts and fruits, they provide shade and cover, and they perform important chemical functions such as carbon storage and nutrient cycling. Trees do these jobs from the time they are small until the time they die, sometimes hundreds of years.

Trees do not stop providing ecological benefits when they die, however. They still store carbon and their roots still hold the soil. When trees are old or dead, they often become even more important to the greatest number of forest inhabitants. The many insects that eat dead wood, such as ants and bark beetles, provide food for almost all the animals that live in the forest. Cavities in old trees provide nesting sites and/or feeding stations for birds and mammals. Cavities and loose bark serve as daytime roosting sites for bats. The exposed, bare branches of big trees provide excellent perches for hawks and other raptors. The exposed roots of fallen trees provide habitat for small mammals. Dead trees lying on the ground provide cool, moist homes for amphibians and reptiles and also newly sprouted seedlings. As trees age and ultimately decompose, they often become covered by a beautiful mix of mosses, lichens, and fungi.



A beautiful log full of life on the forest floor

<http://www.terrageria.com/>

The only time dead trees do not help the forest is when they are removed from the forest by people. Having a tidy home is a noble ambition, but creating a forest that has only young, healthy trees and no debris on the forest floor is harmful. Too often, people perceive that trees lying on the forest floor or trees that are still standing but are not 100% alive and lush should be removed. This is not true. Maturity is often "messy." Instead of supporting a diverse, resilient community of wildlife that comes with forest maturity, "tidy" young forests support only a small fraction of wildlife and ecological functions that would otherwise be present.

The same is true of trees that fall into streams. In much the same way that trees that fall in a forest perform important functions, trees that fall into streams and rivers also perform important functions. The surfaces of submerged trees serve as substrate for algae and bacteria. These, in turn, provide food and shelter for insects and other

invertebrates. Fish and turtles living among the branches of fallen trees also find both nourishment and hiding areas. The branches of fallen trees help trap leaves and small pieces of wood and slow the flow of water in rivers. During high flow, the current of the stream or river often creates small pools below and around fallen trees. Fish make use of these areas of slower water to rest, deposit eggs, and avoid danger, especially during periods of high velocity flow. The presence of fallen trees in streams helps to create habitat diversity and increases both the diversity of fish species and overall numbers of fish. Certain fish, such as the American brook lamprey, which is endangered in New Hampshire, require a stream habitat that is rich in fallen trees to live and breed.

As on land, people often believe that old or fallen trees should be removed from streams and rivers, especially if they block passage of a canoe or snag fishing lines. Removing these “obstacles”, however, often results in fewer fish, a less diverse habitat, a faster flow of water, and an increase in erosion issues. In most cases, the damage caused by removal is far worse than the consequences of leaving the tree as is. Most people who enjoy the outdoors would agree that a stream or river is most beautiful in its natural state. Unless a portage is impossible and the tree is likely to entrap a boater causing harm, it is best to leave it alone.



A kayaker and a dead tree share the river.

<http://outdoors.webshots.com/photo/2910836500060259826TzbNkV>

In many cases, removal of significant “large woody material”, such as a fallen tree, from a stream is not only detrimental, it is also illegal. New Hampshire Law RSA 482-A states, “No person shall excavate, remove, fill, dredge or construct any structure in or adjacent to surface waters, wetlands or their banks without first obtaining a permit from the Department of Environmental Services Wetlands Bureau.” Before using any machine that might change the character of flow or the land around a body of water, always check with DES first.

The next time you walk in the woods, look closely at a young tree and see what is living on or in it. Find a big, old tree and look closely at it. Do you see lichens, fungi, moss, insects, or cavities? Lift up a section of a log lying on the forest floor. What is living underneath? Do you see these things living in bare soil? When you are out on the river, look to see what living things are making use of a fallen tree. Can you find insects and fish? Can you see how the tree might have altered the river’s current? In case you did not already know, old trees are beautiful and diverse, and a dead tree has a lot of life.



Helping communities protect the Lamprey River.