

The Value of Fallen Wood to a Healthy Environment

Property owners, land managers and park staff may want to think twice about hauling out fallen logs and large branches from wooded areas. Maintaining coarse woody debris is vital for restoring and sustaining healthy woodlands and forest biodiversity.

Coarse woody debris (CWD) is a term used for fallen dead trees and the remains of large branches on the ground in forests and in rivers or wetlands. A dead standing tree is known as a **snag**.

Since the 1970s, land managers have been encouraged to allow snags and woody debris to remain in woodlands. Up to 40% of all forest-dwelling animals are dependent on CWD. Colonizing organisms that live on the remains of dead trees aid decomposition and themselves become food for predators, and so continue the chain of life in the forest.



Coarse woody debris

CWD decomposition recycles nutrients that are essential for living organisms, including carbon, nitrogen, potassium and phosphorus. Certain fungi, bacteria and insects consume dead wood, releasing nutrients by converting them into other forms of organic matter that are then consumed by other organisms.

Stormwater and carbon sequestration

Trees store atmospheric carbon in their wood using photosynthesis. Once the trees die, fungi and other organisms transfer some of the carbon from CWD into the soil. Soil carbon sequestered in this way can last for hundreds of years. CWD stabilizes soils by slowing downslope movement of organic matter and mineral soil, slows evaporation of soil moisture, and provides damp microhabitats for moisture-loving organisms.

Habitat for plants and animals

Some plants grow out of or against large fragments of CWD; down woody material that provides such habitat are called nurse logs. Nurse logs can provide shade, support, and nutrients to seedlings.

Animals dependent on CWD and snags for habitat include salamanders, birds and small mammals. One third of all woodland birds live in the cavities of dead tree trunks. Woodpeckers, tufted titmice, Carolina chickadees, owls and some bats live in dead trees. CWD in streams provides shelter for fish, amphibians and mammals. However, large log jams can cause streambank erosion and should be reduced in size to restore normal streamflow.