Snags, Brush and River Health

How to Clean Your Stream the Ecological Way

The Adopt-A-Stream Program often receives questions about removing trees and branches (snags) in the river channel or brush along riverbanks. The questions are usually in the context of removing snags for canoe passage or removing trees and brush during cleanups.

In-stream Vegetation: Snags

A snag is a tree, limb or large bush that has fallen into the stream. It may be large such as a whole tree, or small like a single limb or bush. It may be alive, with roots in the bank, or dead. Snags (also called strainers) serve an important role for the stream and for life in the stream. They are as important to river systems as pools and riffles and are a critical part of maintaining an ecological balance.

Snags:

- Provide variety to the stream which promotes diversity and abundance of species.
- Trap silt and sand and buffer the stream against rapid changes in sediment loading, protecting rearing pools, spawning gravels, and riffles.
- Provide access into and out of the water for insects, snakes and amphibians and provide perches for mammals and birds using the stream for foraging. (For example, snags provide a feeding station for mammals (mink, otter) and birds (kingfishers).
- Provide shelter by creating shade from the sun.
- Provide fish with cover from predators.
- Create a substrate where plans grow and add oxygen to the stream.
- Alter the flow regime by slowing down a portion of the stream flow and causing flow at an adjacent point to move faster. This creates good habitat for trout and other fish.
- Separate the river bottom into corridors for separate river users, allowing fish to be undisturbed by canoeists.
- Provide an important element in the food chain by increasing the number of invertebrates and adding organic matter to the stream.
- Slow down the flow of water and act as buffers to protect the banks from erosion.
- Support recreation: fishermen find snags excellent sites for fishing.

Bank Vegetation

Because they are the interface between water, wetlands and uplands, river corridors provide habitat for a surprisingly diverse wildlife population. Over 70% of endangered and threatened species live in wetlands and river corridors. Vegetated areas along rivers provide sites for foraging, corridors for travel, escape from flooding, sites for hibernation and areas for breeding and nesting.

Bank Vegetation:

- Provides food, migration and breeding habitat.

- Controls erosion.
- Traps and filters sediment that otherwise would wash into the stream
- Provides uptake of nitrogen and phosphorus.
- Provides shade from overhanging branches that keep stream temperatures down and oxygen levels up.
- Feed aquatic organisms in the stream with organic litter (leaves, twigs, insects)
- Intercepts and detains runoff from adjacent upland areas alleviating flooding conditions downstream.
- Allows two to three times more water to infiltrate the soil than land devoted to lawns.

Clean-Ups and Riparian Vegetation:

When looking at a stream, often our first instinct is to clean up logs, trees and brush caught in the stream. These often become areas that trap other debris and trash, becoming unsightly and dangerous for recreation. Stream clean-ups are a great way to bring in new volunteers, get publicity for your river protection work, help to educate town residents about the problem of trash and littering, and hopefully discourage future trash dumping. Volunteers need to realize, however, that what they may want to remove might be one of the most important elements in the stream ecosystem.

It is very important to carefully think about what kinds of "debris" you are removing from the stream and to educate your volunteers about the importance of vegetation both on the banks and in the stream. Assess the situation and come up with a strategy for removing trash from the area of the obstruction. Clean-ups must always be completed with Conservation Commission approval and assistance. Conservation Commissions have jurisdiction over land within 100’ of streams, and will need to approve any removal or disturbance of vegetation.

As a general rule, do not remove vegetation with roots in the bank. It is all right to remove piles of woody debris that have been left or dumped, but do not remove every dead tree branch you see. Remove vegetation that has fallen into the stream only when necessary. For large snags or obstructions, try to safely remove any trash that has accumulated in the area. If branches need to be cut, cut the uppermost branches that are not in the water, and remove sections of the tree that are in the fastest flowing sections of water, leaving enough room for a canoe to get past.

References and Resources:

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