



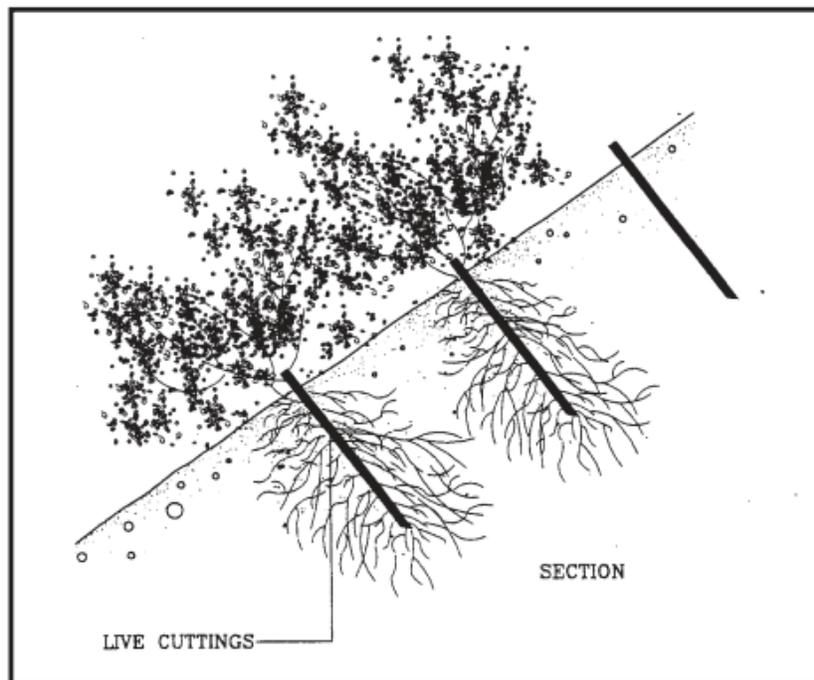
## Collecting Hardwood Cuttings for Living Shorelines

### What is a hardwood cutting?

A hardwood cutting is a method of plant propagation which uses growth of a tree or shrub from within the last year. Unlike a softwood cutting, a hardwood cutting is older, tougher plant material that has hardened into wood. They're one of the only plant propagation activities one can undertake in the winter- they should be taken when the tree or shrub is dormant.

### Why should I collect hardwood cuttings for my Living Shoreline project?

Hardwood cuttings are the main way to plant directly into an exposed eroding slope. The species which form roots well are also species that do well in wet, salty areas and are known to be great soil stabilizers. When a hardwood cutting is deeply staked into a bank, roots should sprout along the length of the stake in the soil, providing strong, 3-D soil holding power. See the diagram below to visualize this (MN DNR).



**Figure 4: Schematic diagram of an established, growing live stake installation.**

From *Biotechnical and Soil Bioengineering Slope Stabilization, A Practical Guide for Erosion Control*, by Donald H. Gray and Robbin B. Sotir, John Wiley & Sons, 1996. Reprinted by permission of John Wiley & Sons, Inc. Tamp the live stake into the ground at right angles to the slope, using a mallet to avoid splitting the stake. At least two buds should be above the ground after planting, and 80% of the stake should be in the ground. The butt of the stake should be cut diagonally, for easier insertion. Soil must be firmly tamped around the stake. Install the stakes 2-3 feet apart, using triangular spacing. There should be 2-4 stakes per square yard. (See Figure 4.)

**Which Species should I use?**

Black Willow (*Salix nigra*), Red Oiser Dogwood (*Cornus sericea*), or Speckled Alder (*Alnus serrulata*)  
See the Nova Scotia Tree Identification Guide for photos, identification tips and other info on Black Willow and Speckled Alder, and the Evergreen Native Plant Database for Red Oiser Dogwood

[http://novascotia.ca/natr/forestry/treeid/Trees\\_Of\\_Acadian\\_Forest2.pdf](http://novascotia.ca/natr/forestry/treeid/Trees_Of_Acadian_Forest2.pdf)

<http://nativeplants.evergreen.ca/search/view-plant.php?ID=07255>

**When?**

March- April or before leaf out occurs

**How?**

Identify healthy shoots that have grown in the previous growing season. These are usually long, skinny, flexible and at the base of a tree or shrub. Using pruning shears or secateurs, cut as close to the bud node as possible, because this area contains the most rooting hormone. For use as live stakes on a living shoreline, they can be cut anywhere from 40 cm to 100 cm in length. Cuttings for other purposes may be much shorter. Because these will be pounded in with a rubber mallet as stakes, they should be at least 1 cm in width. Cut the bottom on a diagonal so that pounding the stake in place is easier.

**Storage?**

Store cuttings in a deep bucket of water kept in the dark. It will take about a month for the cuttings to grow roots. Roots can develop anywhere along the stem of the cutting that is covered by water. Ideally, there should be 8 to 12 inches of roots growing along the cutting.

**Planting?**

Using a rubber mallet, pound rooted stakes into the slope at a right angle to the slope until approximately 80% of the length is in the soil. The area covered by soil can grow roots, as seen in the figure above. Place two to four stakes per square meter of slope in a staggered pattern. Make sure to tamp the soil down around each stake. Water in well until the soil is moist.

**References**

Lohnes, Rosmarie. Personal Communication. September 1, 2013.

Minnesota Department of Natural Resources. Guidelines for Managing and Restoring natural Plant Communities Along Trails and Waterways. Chapter 4. Retrieved from [http://www.dnr.state.mn.us/trails\\_plantcommunities/index.html](http://www.dnr.state.mn.us/trails_plantcommunities/index.html).