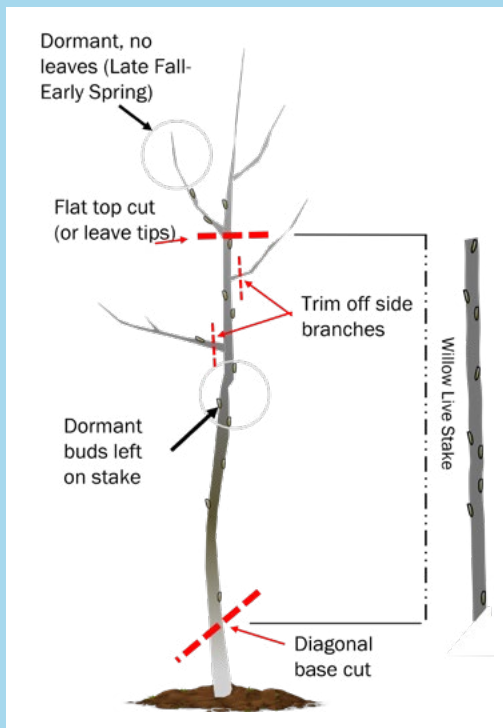


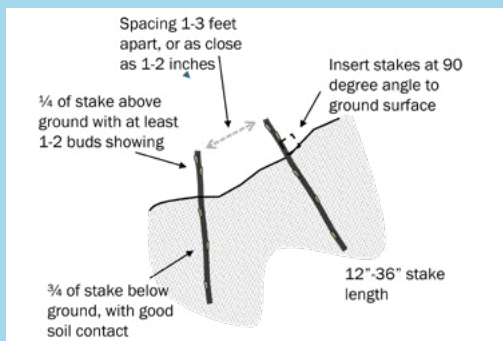
# Live Staking



Using clippers to harvest dormant dogwood live stakes.



How to cut a live stake.



How to plant a live stake.

## Purpose:

Live stakes are woody shrub cuttings that root once planted along the banks of streams, lakes, and other resources. Live stakes make a good, low-cost source of plant materials for stabilizing banks and restoring shoreland vegetation. Live stakes are also used for slope stabilization, erosion control, carbon sequestration, and for living fencing and structures.

## Materials:

### Timing of Collection & Installation

For best results, live stakes should be harvested and planted while the plant is dormant in late October until the ground is frozen, or in the spring before plants start to leaf-out. Stakes can be installed while the ground is still workable in Fall, installed immediately after harvest in early spring, or stored for use later in the growing season.

If stakes are properly-installed while dormant, with good soil contact, you can expect 50-80% success on average, depending on species. Some native willow species will also root after leaf-out, however, all leaves should be stripped off prior to installation. Expect lower success with this method.

### Harvesting Wild Live Stakes

Live stakes can be collected from wild established/mature plants. This is a very cost-effective option, but make sure that permission is granted by property owners before gathering cuttings off a healthy parent plant. Some of the best native species to use for live stakes are pussy willows and other native willows, American elder, redosier dogwood, and grey dogwood. These shrubs have strong root systems to stabilize banks, are naturally found along lakes and streams, and can grow from cuttings without much assistance. Live stakes, like other plants, should be planted in areas with suitable soils, moisture and sunlight. For more information on plant identification visit the website: [plants.USDA.gov](https://plants.USDA.gov).

When gathering live stakes, make sure part of the thick end of the branches are at 3/8 inch in diameter (the larger the diameter the better). Make a straight cut at the narrow end of the branch (toward the tip of the branch). At the thicker end (toward the trunk) cut the branch at an angle, so that it makes a point. This way you will know which end is up and it will also be easier to drive the stakes into the ground. If the wrong end of the branch is put in the ground the stake will die. Once a cut has been made, remove all side branches and leaves. This will help prevent the stakes from drying. Stakes should be 12-18 inches long, although longer cuttings can also be used. Keep in mind that the more of the plant is exposed to the air, the quicker it may dry out.



Slope stabilization using live stakes of dogwood & willow with coir blanket and slope interruption to control temporary erosion.



Site pictured above following construction and first growing season.

## Purchasing Live Stakes

Local nurseries may carry live stakes for purchase but advance notice is generally required. Live stakes are also available for purchase online. Just ensure that the plant species are native to Maine.

## Installation:

1. The site should be prepared before planting the live stakes. Invasive and competing vegetation should be cut back avoiding the use of herbicides to protect water quality.
2. Push (or use a rubber mallet) to carefully drive the pointed end of each live stake into the soil. If the stake doesn't go into the ground easily, use a metal rod (rebar) to first create a hole the length of the stake. Insert so that  $\frac{3}{4}$  of the stake length will be buried  $\frac{1}{4}$  Stake length exposed (including a few buds) sticking out of the ground. Ensure good soil contact between soil and stake.
3. If the stake will be shaded by surrounding vegetation, use longer stakes and leave one foot sticking above the ground. If a willow stake gets too much shade, it will drop its new leaves and die. The side branches, or whips, that were snipped off during the collection process will grow nicely if they are planted in very moist areas at the edges of streams and wetlands. Push them into the ground as far as they will go without breaking.
4. Live stakes can be placed as far as 1-3 feet apart or in dense, close formations for some techniques.

**NOTE:** In conjunction with live staking, cover bare soil with erosion control mulch (ECM) or annual grasses and hay mulch to hold the soil and help prevent weed establishment until the stakes are established.

## Livestake-Ready Maine Native Plants:

Name	Size	Sun
<b>Buttonbush</b> <i>Cephalanthus occidentalis</i>	Shrub, 6-8 feet tall	Full sun to partial shade in moist to wet soils
<b>Silky Dogwood</b> <i>Cornus amomum</i>	Shrub, 6-9 feet tall	Prefers partial sun
<b>Gray Dogwood</b> <i>Cornus racemosa</i>	Shrub, up to 6 feet tall	Full sun, partial shade
<b>Redosier Dogwood</b> <i>Cornus sericea</i>	Shrub, 6-9 feet tall	Full sun, partial sun, shade
<b>Bebb willow</b> <i>Salix bebbiana</i>	Shrub, up to 10 feet tall	Part sun
<b>Pussy willow</b> <i>Salix discolor</i>	Shrub or small tree, 10-15 feet tall	Full to partial sun
<b>Missouri River willow</b> <i>Salix eriocephala</i>	Shrub, 7-13 feet tall	Full sun
<b>Shining willow</b> <i>Salix lucida</i>	Shrub or tree, 12-20 feet, fast growing	Part sun
<b>Black willow</b> <i>Salix nigra</i>	Tree, 70-80 feet can be pruned to maintain shrub form	Full to partial sun
<b>White Meadowsweet</b> <i>Spiraea alba</i>	Shrub, 2-3 feet	Full sun, part shade
<b>American Elderberry</b> <i>Sambucus canadensis</i>	Shrub, 5-10 feet	Full sun, part shade
<b>Ninebark</b> <i>Physocarpus opulifolius</i>	Shrub, 3-9 feet	Full sun, light shade

Scan here for more information



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Portland Water District

From Sebago Lake to Casco Bay