



WILLOW “LIVE STAKE” CUTTING AND PLANTING GUIDANCE

Live stakes - like all plants - need soil, water, and sunlight. The best time to plant live stakes is during the dormant season. In Western Washington, this is roughly between late October and mid-March. Live stakes can also be planted during the growing season, especially at sites that will remain moist, although survival rates will be lower. Experiment with planting at your site - any stakes that die can easily be replaced during the dormant season.

Typical Planting Time: October 15th – March 15th (the earlier the better)

Planting Tools: In difficult sites, use a piece of rebar or another metal bar at least an inch in diameter to create a “pilot” hole into which you put the willow stake.

Option 1: Cutting live stakes from a willow on your property

1. If you are fortunate enough to have willow already growing along your shoreline, take cuttings from those plants to use for additional bank stabilization. You already know they will thrive on your property!
2. Cut stakes from long, upright branches taken off the parent plant. Cut wood that appears at least 2-5 years old, with smooth bark. Typically, live stakes should be between 24 and 36 inches long and at least three-eighths of an inch in diameter.
3. Make clean cuts and remove all the side branches and twigs, so that you end up with cuttings that look like bare sticks. Removing the leaves and small branches from the stakes will help to keep the stakes from drying out.



Recently cut willow stakes. (Image: Watershed Institute)



A willow stake planted the previous winter is starting to leaf out.

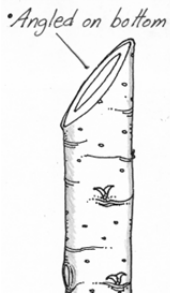


4. **Make a straight cut at the narrow end of the branch (toward the tip of the branch). At the thicker end (toward the trunk) cut the branch at an angle, so that it makes a point.** This way you will know which end is up and it will also be easier to drive the stakes into the ground. It is important to plant live stakes with the correct end in the ground; otherwise they will die.

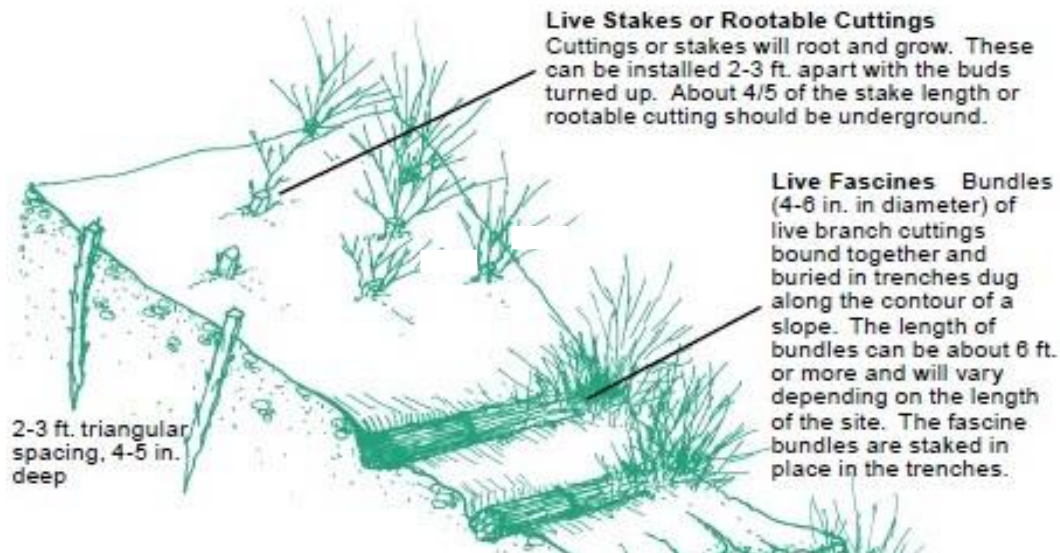
Example of the FLAT TOP cut: (This end sticks out of the ground after you plant the stake – make sure at least two buds remain above the ground surface)



Example of the ANGLED BOTTOM cut: (This end goes into the ground when you plant)



5. **Plant your stakes as soon as possible after cutting,** for best results.
6. **In the meantime, keep them cool and moist.** Thoroughly wet them daily. Before planting, place them angle-side down in buckets of water or under wet burlap sacks. On hot days prior to planting keep your stakes in moist, shady conditions right up until you plant them.





Planting live stakes (purchased or recently cut)

1. Create a "pilot hole" with a 1 inch or greater diameter iron rod, planting bar, or piece of rebar. Push the willow stake into the hole. Next, create another pilot hole nearby to push the soil back into contact around the planted stake. Tamp down the soil surface.
2. Drive stakes into the ground with a rubber mallet to avoid damaging them. You don't want to split the ends, which invites disease and dries the stake out more quickly.
3. Insert the stakes into the bank or wetland soil a minimum of half of the stake length – but preferably $\frac{3}{4}$ of the stake length - leaving at least 2 buds above ground (generally, the deeper the better). Initially the stakes will survive by rooting, but eventually leaves will sprout from the exposed end of the stake.
4. Keep the whips! (The slender twigs snapped off during stake cutting.) Whips 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.

Additional Considerations

5. Plant into areas that will remain moist through the summer as much as possible. On marine shorelines, this might be sites near groundwater seeps or natural drainages. Sites consisting of completely dry, gravelly banks will have less chance of success in getting the willow rooted without supplemental water.
6. Use larger - $\frac{1}{2}$ inch+ diameter stakes - for planting into rip-rap or rock revetments. Larger stakes will dry out less quickly and will have a better chance of survival. For planting into rock walls, be sure you get the stake into contact with soil behind the revetment, and not just into a layer of drain rock. Without soil contact, the willows will die.
7. Use longer stakes (4 – 5 feet long) for sites where competition from grasses or other plants will be significant.
8. Be patient! The plant will first survive by generating roots and spreading them into the surrounding soil. Eventually you will see small leaves sprouting. If after the first spring you don't see any signs of life, you can gently pull at the stake to see if there is resistance- if so, there are roots forming, so leave the stake in place. If it pulls out easily, the willow stake is likely dead and you will need to replace it with a new one at the appropriate time of year.
9. Monitor your stakes through the summer – if the planting site dries out, try to water the area periodically for the first summer or two, until the plants are well-established.



RECOMMENDED WILLOW SPECIES FOR MARINE SHORELINES

- **Hooker’s Willow** (*Salix hookeriana*)-seen below, is typically found near saltwater



WILLOW SPECIES FOR FRESHWATER SHORELINES

The following species would do well near streams or wetland, out of the reach of saltwater spray:

- **Sitka willow** (*Salix sitchensis*), Fast rooter
- **Pacific willow** (*Salix lucida (lasiandra)*), Fast rooter, vulnerable to breakage when planted
- **Scouler willow** (*Salix scouleriana*), Handles drier sites, roots slowly

Questions? If additional concerns or questions arise, please feel welcome to contact us at Pierce CD (253) 845-9770 or www.piercecd.org

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