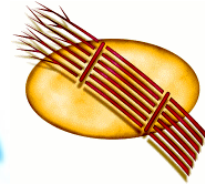


Willow Posts



Description

Willow posts are large cuttings taken from the trunk or main branches of tree form willows. These posts are placed into deep holes drilled into the streambank.

Purpose

Willow posts are an excellent means of establishing tree form willows on a streambank. Willow posts can grow at a greater distance from the water than live stakes, especially in streambanks with dry, well-drained soils. Drilling the deep holes allows the willow post to access the water table adjacent to the stream. Willow posts can be applied to sites that may be considered too unstable for live stakes.

Application

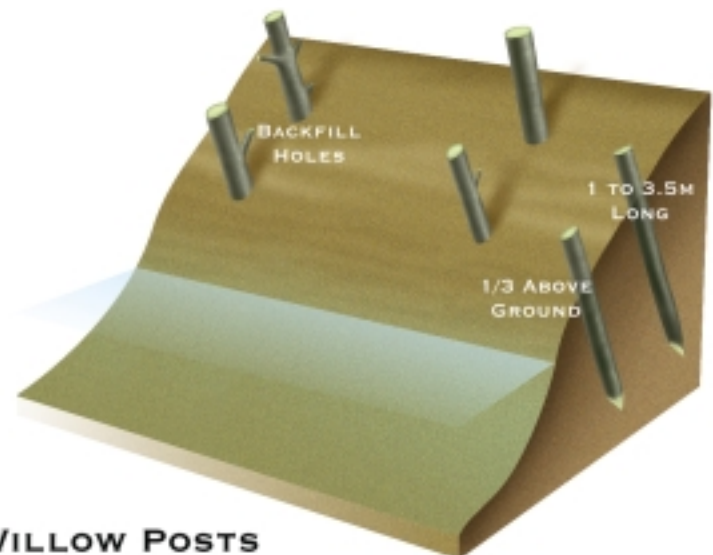
Willow posts can be installed on their own into streambanks that do not experience substantial erosion or loss of soil. An example of this would be a sand bank that loses 1-2m of soil each year. On sites such as these, an additional means of protecting the streambank and toe may be required. The large size and depth of willow posts provides stability to slopes prone to shallow soil slides or rotational failures. Live stakes planted on a similar slope would provide little protection, and would be removed with the slide.

While many of the tree form willows can withstand seasonal inundation, the posts should not be installed where they would be submerged for more than 2 months. Willow posts will grow best if they have ample soil moisture (not waterlogged) in the top 60 cm of soil. Growth is slow to poor in dense, compact soils such as clay.

Construction Guidelines

At first, willow posts appear similar to live stakes, but their construction guidelines are more complex. To build a willow post:

- 1) Harvest posts from tree form willows. Posts should be 2-3.5 m long, with a top diameter of no less than 10 cm.



WILLOW POSTS

- 2) Since the posts should be planted in the upright position, mark the top end with a dab of paint.

Installation:

- 1) Create a pilot hole slightly larger than the diameter of the post. Willow posts can be installed at depths ranging from 1-3 m deep. A steel ram or auger can be used.
- 2) Place the post in the pilot hole. Try to keep the amount of the post above ground to no more than 1/3 of the posts total length.
- 3) The bottom of the post should be in contact with the bottom of the pilot hole.
- 4) Make sure the hole is backfilled with soil to avoid the creation of air pockets. This can be accomplished by tamping soil in with an iron bar, or by washing soil in with water.
- 5) As with live stakes, care should be taken not to split or crack the posts, as they will not survive.

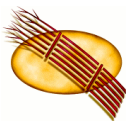
Materials

For installing willow posts, you will need the following:

- a ready supply of posts, tree form willows such as Black willow, Peachleaf willow, or Crack willow.
- a high-hoe or backhoe with a steel ram or auger attachment. Small posts can be installed with a portable post hole auger.
- chainsaw and appropriate safety equipment.
- steel bar to tamp backfill.
- shovel.

Cost and Maintenance Needs

The costs for installing willow posts can vary considerable from site to site. The most expensive part is the requirement of heavy machinery to drive, or drill the pilot hole. Since the posts can be quite large, machinery may also be required to transport the posts to the project site. Costs listed in the literature have ranged from \$15-55.00/post installed. There is no maintenance required one the posts have begun to grow.



Integration

Willow posts can be used in conjunction with:

- wing deflectors
- tree revetments
- live rock revetments
- L.U.N.K.E.R.S.

Demonstrations

This type of habitat structure has been applied in the following demonstration projects:

- Project #105, Morrison Property
- Project #109, Morningside Tributary Aquatic Habitat Rehabilitation Project

For More Information

Please refer to the following authors and their respective publications located in the bibliography:

Derrick, D. 1998.
Pezeshki, R.S. et al, 1998.
Kinney, W. nd.

