

Live Staking



Description

Live staking is simply the installation of live cuttings that have the ability to root and grow thus acting as stakes.

Purpose

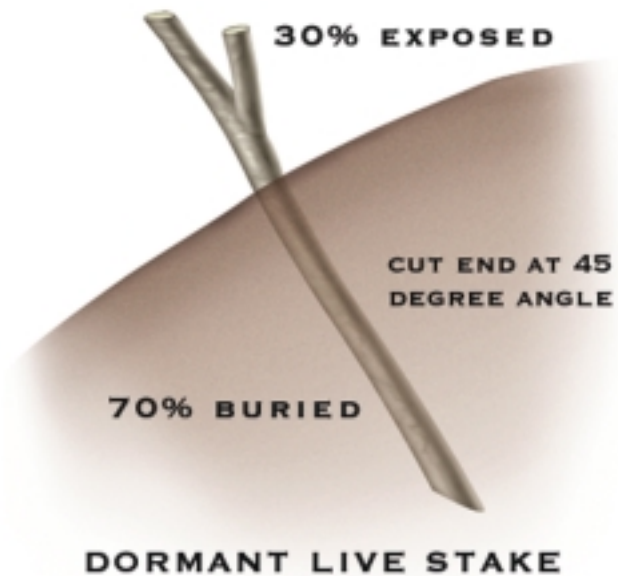
Live stakes can be used as a simple and economic means of vegetating and stabilizing small, uncomplicated areas. Live stakes also work very well as a means of introducing a particular plant species to a site. They also are used as a means of securing other soil bioengineered structures or erosion control measures to the ground.

Application

Installed on their own, live stakes can be planted in slopes and stream banks to help control minor, or shallow erosion. In this role the stability is provided by the root network of the growing plant. When using live stakes for this purpose it is important to remember that the stakes will provide no protection until they have had an opportunity to grow. Considering this aspect, live stakes should not be relied on when facing large, or deep earth movements or bank failures. They are also an effective means of securing fascines, brush mattresses, and erosion control blankets.

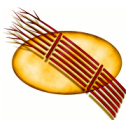
The added advantage of using a live stake to secure a treatment lies in the extra plant growth that the stake itself will provide.

Live stakes can also be used to add growth to existing treatments. For instance, if there is sufficient soil present, livestakes can be added to the rip-rap to provide some natural strength and diversity.



Construction Guidelines

Live stakes can be cut from just about all of the species listed in Appendix B. Live stakes can vary greatly in both diameter and length, but should be a minimum of 3 cm in diameter, and 30 cm long.



To build a live stake:

- Collect a supply of fresh, live cuttings. Live stakes MUST be cut from dormant materials. Mature stems with diameters over 3cm work best.
- Using a sharp pair of pruning shears, trim all side branches, taking care not to damage the bark. Cut the stake to length, then make an angle cut at the basal end, or bottom of the stake. It is important to make sure that the angle cut is at the bottom, so that the stake is not planted upside down.

Installation:

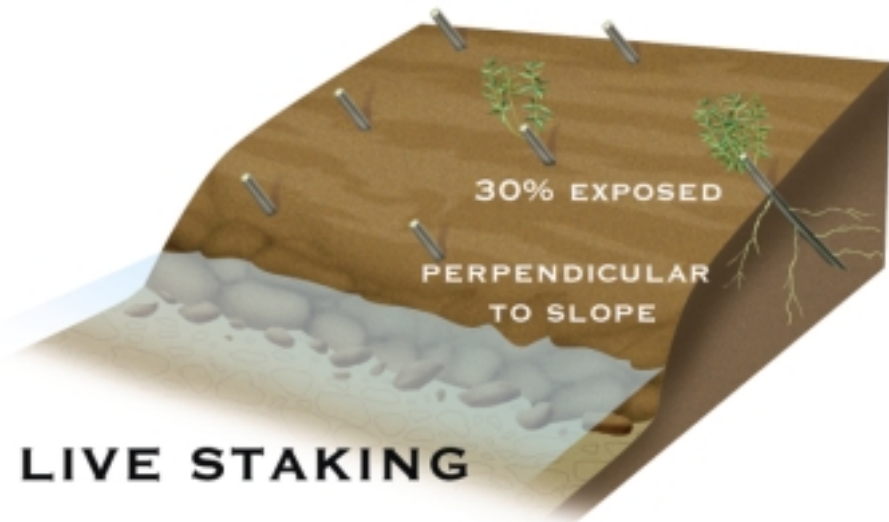
Live stakes should be installed using a deadblow hammer. This hammer is a large rubber mallet with the head filled with lead pellets. Deadblow hammers are readily available at any large building centre. This type of hammer causes less damage to the stake than a standard mallet.

- Gently tamp the live stake into the ground at right angles to the slope.
- If the soil is compact, and the stake cannot be easily installed, a pilot hole made with a steel bar should be used. If using a pilot hole, make sure the soil is packed in around the stake, or it will desiccate and die.
- When installing a live stake, make sure that at least 70% of the stem is buried and only 30% is exposed. This is very important as this forces the live stake to produce roots.

Materials

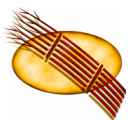
For collecting and installing live stakes, you will need the following:

- a ready supply of large, mature cuttings
- sharp pruning shears.
- deadblow hammer.
- steel bar for pilot hole.
- shovel



Cost and Maintenance Needs

Live stakes are the most cost effective soil bioengineering technique. A volunteer can cut and install as many as 75 live stakes in an hour. There is also no maintenance required once the stakes have grown.



LIVE STAKING

Integration

Live stakes can be used in conjunction with:

- fascines
- brush mattresses
- live cribwalls
- wing deflectors
- tree revetments
- rock revetments
- L.U.N.K.E.R.S.

Demonstrations

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

- Project #15, Black Ash Creek Rehabilitation
- Project #24, Brault Property Project
- Project #64, Highland Creek Rehabilitation Project
- Project #79, Loyalist Creek Rehabilitation
- Project #94, Martin Property - MacIntyre Creek
- Project #100, Scott's Plains Park
- Project #105, Morrison Property
- Project #135, Halls Creek Project

For More Information

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

Schiechl and Stern. 1996.
Gray and Sotir. 1996.

