

TIMELY INFORMATION

Agriculture & Natural Resources

Live Staking 101: Harvesting and Installing Live Stakes

Live stakes are cuttings of dormant woody vegetation installed into a streambank to promote stream stability and reduce further erosion. Live stakes should be harvested and installed during winter dormancy (typically between November and March in Alabama). Installing live stakes during the winter months allow the stakes to produce roots before spring bud break. Roots can assist with holding soil in place and can support the above ground biomass that is produced when plants leaf out.



Step 1. Identify plant species.

- A site visit can help determine which plant species are best suited to the location. Consider the sunlight conditions present at the stream where you plan to install the live stakes. If there is already a tree canopy present, the live stake plant material should tolerate part shade to full shade conditions. Make a list of plant characteristics necessary to the site. This list should include sunlight requirement, size, wildlife benefit or habitat, and other desired qualities.

Step 2. Find a local plant source.

- If you are new to live staking, you may have to ask around to locate a place where you can harvest hardwood cuttings for the live stakes. It can be helpful to incorporate live stake species in your landscape to provide a consistent plant material source. It may be necessary to order your live stakes from a nursery and use these plants later as a source for future live staking.

Step 3. Cut the stakes.

- Clean tools should always be used to harvest live stakes. A 10% bleach solution or rubbing alcohol can be used to sanitize tools. Select straight branches from the mother plant that are 0.5 – 2" in diameter and 2 – 3' long. Cut the branch at an angle just below a leaf node. Cutting the bottom of the stake at an angle will help the stake push more easily into the streambank and help you easily distinguish the bottom from the top of the stake.
- Lateral branches should be removed taking care not to damage the stake. Finally, make a straight cut at the top of the stake; this straight cut will come in handy when the stake is being pounded into the streambank. If you are harvesting more than one species, it is helpful to label bundles or use marking paint on the tops of the stakes to differentiate among species. Don't worry – the painted tips will be removed during installation!



Step 4. Store the stakes.

- Ideally, live stakes should be immediately installed after harvest. However, the stakes can be stored for a couple of days either in the stream or in buckets of water. Water should be changed often when storing in buckets to decrease fungal growth. Live stakes should be secured when storing them in the stream; flashy flows can carry stakes downstream.



Step 5. Mark your planting area.

- Live stakes should be installed on a triangular spacing pattern and the center of each stake should be 2 – 4 feet apart from the adjacent stake. The stakes need to be in contact with stream base flow and two to three staggered rows usually work best. You may need a measuring tape to mark your first few holes or you may be able to estimate it. Live stakes are spaced more closely than these plants would be in a conventional landscape setting because it is not likely that every stake planted will survive and we are promoting a dense cover of stems, leaves, and roots to improve stream stability.



Step 6. Make a pilot hole.

- It is helpful to make a pilot hole using a metal bar or a piece of rebar so that pounding the stake into the streambank is an easier process. The pilot hole and live stake should be made at a 90° angle to streambank.



Use a dead blow hammer or sledge hammer to make your pilot hole approximately 2 feet into the bank. Dead blow hammer heads may become damaged with repeated forces applied to rebar. Do not insert the rebar so far into the bank that you cannot pull it out! Remove the rebar from the streambank.

Step 7. Install the live stake.

- If stakes were shipped or harvested a couple of days prior to installation, a fresh angled cut should be made to the bottom of the live stake. Assembly line installation can be useful when installing a large quantity of live stakes.



- Insert the bottom of the stake into pilot hole with the leaf buds facing upward and use the dead blow hammer to pound the stake in at the same 90° angle so that about 2/3 of the stake is installed in the bank. Make sure at least 2 or 3 buds are below ground and remember that the deeper the stake the better, to not only make contact with stream base flow, but to encourage rooting.

Step 8. Prune the stake.

- Do not get discouraged if you find that the hammer damages or splits the stake! Use a pair of loppers to snip off the “mushroom top” resulting from hammer damage. Make a straight cut to leave approximately 4” of wood or at least two leaf buds above the ground. Removing the excess above ground portion of the live stake can minimize potential disease introduction if the stake was damaged and relieve stress to the plants as it produces roots.



For more information, see Backyard Stream Protection – Live Staking, WQ-03-10.

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Questions? Contact your local Alabama Cooperative Extension Office. www.aces.edu