

# LIVE STAKES

Live staking is the placement of woody plant and tree cuttings on a graded streambank to grow and stabilize the streambank by the formation of roots and aboveground brush.

## Advantages and Disadvantages

- To increase the resistance to erosion immediately after placement, erosion control fabric can be used to protect the slope and still allow the cuttings to grow. The natural formation of the interlocking roots secures the erosion control fabric and prevents gullies from forming. The roots and woody portion of trees, shrubs, and grasses slow the flow of water in high water stages.
- Staking a streambank helps dry out a wet, unstable bank and allows it to become more stable.
- This method is effective where there is an adequate supply of live cuttings and frequent heavy stream flows.
- Staking is also useful in conjunction with other more complex erosion control methods.
- This method should not be used if immediate stabilization is required.

## Materials

- Adequate supply of live stakes.
- Erosion control fabric.
- Saw, dead blow hammer, and iron bar or water jet.

## Preparation

- The streambank should be cut back to a two feet horizontal to one foot vertical (2H: 1V) or flatter slope.
- Check with the DNR prior to any flood plain disposal of spoil material resulting from the streambank grading.
- The cuttings should be
  - Cut with a saw or machete, not an ax, and the side branches should be removed.
  - Between one-half to two inches in diameter.
  - Between two to three feet in length.
  - Note: Bark should not be damaged during installation.



**Figure 3. Live stake preparation**



**Figure 4. Growing a live stake**

## **Installation**

- Trees that can be used:
  - Young willows
  - Shrub dogwoods
  - Species with long straight branches and that root easily
- Cuttings should be installed the same day they are cut.
- Live stakes should be installed during the dormant season (October–March).

- The stake should be oriented with the buds pointed up, and the bottom should be cut at an angle for easy insertion into the ground.
- A dead blow hammer should be used to tamp all stakes. The stakes should be tamped into the ground perpendicular to the slope.
- About four-fifths of the length of the stake should be below ground and angled downstream. An iron bar can be used to make a pilot hole to prevent bark from being damaged during installation.
- The stakes should be randomly placed with two to four stakes per square yard. A list of woody plants native to Iowa and their rooting properties is included in Appendix A.



**Figure 5. Live stake installation**