Live stakes for restoration plantings

Live stakes, like all plants, need soil, water, and sunlight. The best species to use for live stakes are willows and red osier dogwood, because they are easy to grow and have excellent root strength. Black cottonwood can also be used, but cuttings from this species do not grow as consistently well. Live stakes should be planted in areas that will remain moist throughout the growing season, such as along the water line on streambanks or in wetlands. Follow the instructions below to make and plant your own live stakes.

1. Cut stakes from long, upright branches taken off the parent plant. Typically, lives stakes should be between 18 and 24 inches long and at least three-eighths of an inch in diameter.
2. Make a straight cut at the narrow end of the stake (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.
3. Remove the leaves and small branches from the stakes as soon as possible after cutting them, to keep the stakes from drying out.
4. Plant your stakes within 24 hours for best results. In the meantime, keep them moist and wet in buckets or wet burlap sacks. On hot days, keep them in the shade until you plant them.
5. Soak or dip the bottom ends of cuttings in a solution of plant rooting hormone before planting to speed up growth (you don't need to use rooting hormone for most willows or red osier dogwood. These species have incipient root buds ready to go and will root immediately.)
6. Drive the stakes into the streambank or wetland soil at least one foot deep (the deeper the better). Leave three to six inches above ground surface so they can sprout leaves. At first, the stakes will survive by rooting, but eventually leaves will sprout from the exposed end of the stakes.
7. Drive stakes into the ground with a rubber mallet to avoid damaging them. Use a planting bar or length of rebar to start the hole in hard soils.
8. Use long stakes at least one-half inch in diameter when planting in riprap (rocks). The longer, thicker stakes will survive heating and drying better than smaller diameter cuttings.
9. Use longer stakes and leave one-foot sticking above the ground if the stake will be shaded by surrounding vegetation. If a willow stake gets too much shade, it will drop its new leaves and die. If the area you are planting will be heavily shaded, use a more shade-tolerant riparian species such as salmonberry. Bear in mind, however, that salmonberry stems dry out more easily.
10. Keep the whips! (The slender twigs snipped 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.

The best time to plant live stakes is during the dormant season. Live stakes can also be planted during the growing season, especially at sites that will remain moist.