

Native Plant Propagation

Hardwood Cuttings

Adapted from Gardening in Western Washington: Hardwood Cuttings and Live Stakes © WSU Cooperative Extension (<http://gardening.wsu.edu/text/nvcuthw.htm>)

When it comes time to add plants to the native plant habitat garden, we commonly think about a trip to the nursery. There are, however, several other ways to secure suitable plants. One method you can use successfully with students is hardwood cuttings. Propagation from cuttings involves removing certain parts of a living plant and putting them in a growing medium so they form roots. Cuttings are a good way to obtain new plants, and often produce useable plants more quickly than seeds.

Hardwood cuttings are cuttings taken when the plant is not actively growing – usually late fall through winter. Hardwood cuttings can be taken from both deciduous and evergreen plants. (Since broadleaf and conifer evergreen plants are not completely dormant, purists often refer to these cuttings as “semi-hardwood cuttings”.) Because hardwood cuttings from deciduous plants are collected after their leaves have fallen off, the cuttings can focus on developing roots and require less care than other types of cuttings. Here’s what to do:

1. Take cuttings from deciduous plants beginning as soon as the plant has dropped its leaves. Wait until early winter to take cuttings from needle or broadleaf evergreens.
2. Clean your pruning shears with rubbing alcohol or a 10% bleach solution (one part bleach to nine parts water) to avoid spreading disease. Clean them before use in each new area. Protect the donor plant by using only sharp tools, making all of your cuts just above a leaf node (so you don't leave stubs that will die back), and taking no more than 1/20 (5%) of the branches for cuttings.
3. Select young, straight shoots growing up from the center of the plant or from near the ground, as these usually root better than those taken from other regions. Take shoots that are at least the diameter of a pencil (except snowberry, which can be thinner). Collect long branches– you will be dividing them into individual cuttings later.
4. As you collect, put the cuttings in a plastic bag, and keep them cool, moist, and out of direct sunlight. Cuttings may be stored in this way for up to one week.
5. To prepare individual cuttings from the long branches:
 - a) Clean your shears again with rubbing alcohol or a 10% bleach solution to avoid spreading disease.
 - b) Cut the branches into pieces long enough to have at least two leaf nodes- preferably three or four (for most species, cuttings will be about six inches long). The end of the cutting closest to the roots (the "bottom") should be cut at a 45° angle, just below a node. In order to avoid confusing the bottom with the top of the cutting (a critical mistake), cut the top at a right angle (straight across).
 - c) Continue making cuttings out of the branch until it becomes too short or too thin, then discard the remainder into your compost pile.
 - d) For cuttings from needle or broadleaf evergreens, strip off all needles or leaves on the lower half of each cutting (the end near the slant cut).
 - e) If you are not planning to plant the cuttings immediately, store them in bundles, covered with damp sawdust or bark, in a cool place. Be sure to label them! If necessary cuttings may be stored for up to a week before proceeding to the next step, however, it is best to use them as soon as possible.
6. Before planting, treat the bottom inch of the cutting with a rooting hormone, available at most garden centers. (Follow the directions on the hormone container; usually you have to wet the cutting and then dip the slanted end in rooting hormone.) This will stimulate the cutting to produce roots.

Always wear rubber gloves when using rooting hormone. A few species, such as willows, do not require rooting hormone, but the success rate for most species improves dramatically with treatment, and many species will not root without it.

7. Cuttings can be planted in pots (1 gal. containers work well) or into outdoor beds. While garden soil will work fine, adding vermiculite, perlite, or well-composted sawdust helps retain water and avoids soil compaction. Plant the cuttings with the top (straight-cut) ends up, deep enough that only one or two nodes protrude above the soil.

8. Cuttings planted in pots can stay outside over the winter, but they should be protected from freezing, wind, and full sunlight. Cuttings from deciduous plants can be left exposed to the rain, but need to be in containers that drain well. Cuttings from needle and broadleaf evergreens need to be kept under plastic and misted at least once a day to keep them from losing too much moisture through their leaves. If kept inside, cuttings need to be kept in a spot that is cool and humid. By the end of their first growing season, most cuttings should be well established and ready to plant.

Native plants that propagate well from hardwood cuttings

For detailed propagation information for these plants consult 'Propagation of Pacific Northwest Native Plants' - Rose, Chachulski, Haase

Red Osier Dogwood- *Cornus sericea*

Oceanspray- *Holodiscus discolor*

Orange honeysuckle- *Lonicera ciliosa*

Black twinberry- *Lonicera involucrate*

Indian Plum- *Oemleria cerasiformis*

Mock Orange- *Philadelphus lewisii*

Pacific ninebark- *Physocarpus capitatus*

Black cottonwood- *Populus trichocarpa*

Red-flowering currant- *Ribes sanguineum*

Thimbleberry- *Rubus parviflorus*

Salmonberry- *Rubus spectabilis*

Dewberry- *Rubus ursinus*

Willows- *Salix species*

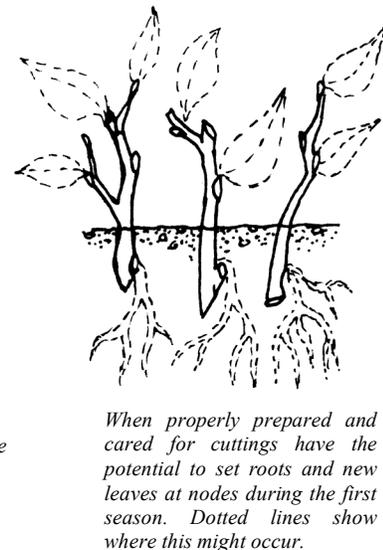
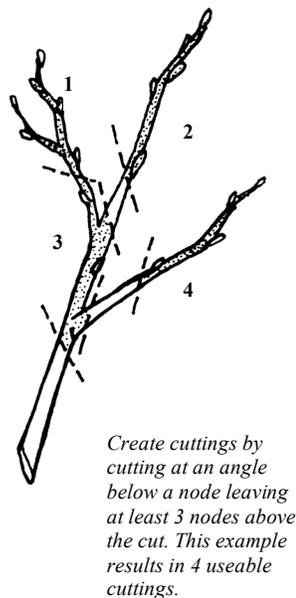
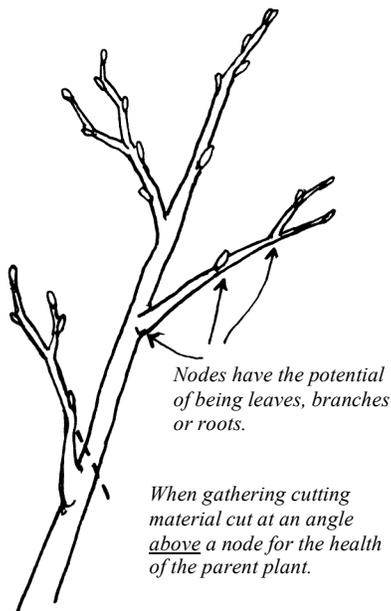
Elderberries- *Sambucus species*

Douglas spirea- *Spirea douglasii*

Snowberry- *Symphoricarpos albus*

Western yew- *Taxus brevifolia*

Western Red Cedar- *Thuja plicata*



Native Plant Propagation

Live Stakes

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Similar to hardwood cuttings, live stakes provide a good way to involve students in propagating plants for the native plant habitat garden. Live stakes are long hardwood cuttings that are planted outdoors without rooting hormone. Live stakes can only be used if the soil is fairly wet at the time of planting, and the stakes need to be long enough to reach the moisture. As with other hardwood cuttings, cut the lower end of the stake at an angle, and the upper end flat across.

- Live stakes can be planted in late fall through early spring. If they are going to be stored before planting, bundle them in groups of 50-100 and place in plastic bags. They can be left outdoors—normal freezing should not harm them. However, if the stakes have been sitting around for a while and have developed roots, they need to be kept just above freezing, since freezing will kill the roots.
- Live stakes can be driven into the ground with a mallet, and should be placed in a random fashion (not in rows). Spacing should take into account how large the plants will eventually become, and the fact that some of them will probably die. Leave the top two nodes above ground. To make sure no one trips over them, paint the tops of the cuttings a bright color or fence off the area.
- Water the cuttings occasionally through at least the first growing season, and cut back any encroaching vegetation.

Native plants that propagate well from live stakes:

Red osier dogwood- *Cornus sericea*

Black twinberry- *Lonicera involucrate*

Pacific ninebark- *Physocarpus capitatus*

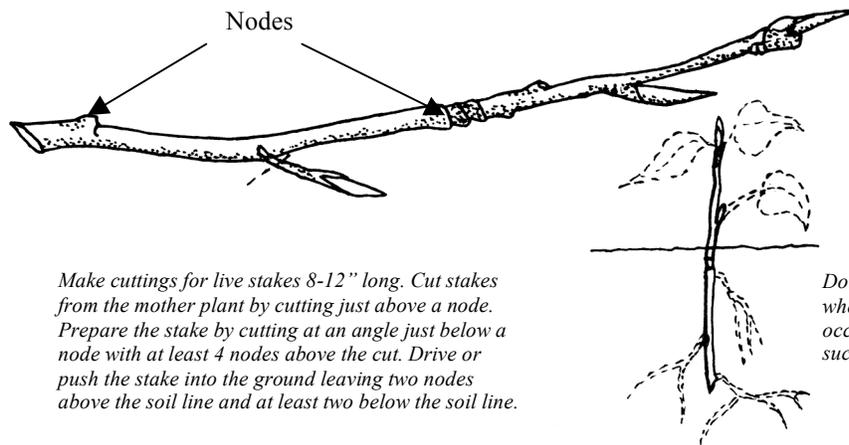
Black cottonwood- *Populus trichocarpus*

Nootka rose- *Rosa nutkana*

Salmonberry- *Rubus spectabilis*

Willows- *Salix species*

Elderberries- *Sambucus species*



By Heidi Bohan 2003