



Native Plant Propagation Methods

Cuttings

This method uses 4" nursery pots to start many cuttings in one container, saving space and effort checking on the progress of the cuttings. It's easy to see when roots start coming out of the bottom of the pot, so you know when to separate and repot the cuttings.

Supplies

- Nursery pots: (new or [sanitized](#))
 - 4" nursery pots, for starting the cuttings
 - 4" or deeper nursery pots, for growing rooted cuttings
- Pruners (sharp, cleaned, and disinfected)
- Rooting hormone
- Planting medium. Some options:
 - Commercial cactus & succulent mix
 - 2 parts perlite + 1 part vermiculite
 - Perlite alone
- Optional: Mycorrhizal fungi granules to add to the planting medium
- Water-tight tray to hold the pots, so they can be watered from below
- Plant markers for each pot
- Covers for the potted cuttings (plastic dome or substitute)

Selecting cutting material

Timing: [California Native Plant Propagation Calendar \(PDF\)](#)

Cuttings will be most successful if they are taken from plants at the right time, and the right part of the plant. For many plants, this means when the stems are actively growing and the tips are young and flexible. With natives, the best time is often spring to early summer. By mid-summer, many plants have developed woody stems and are slowing down in growth to conserve moisture. Some plants, for example Ceanothus, can be used for cuttings any month of the year but the recommended type of cuttings changes with the seasons.

Time of day can be a factor as well. If you can, take cuttings in the morning when the plant is not stressed from the hot afternoon sun.

Cut actively growing stem tips. Typically, avoid stems that are blooming. If you do try a blooming stem, cut off the flowers so the energy can be focused on growing roots. Take cuttings that have about 4 nodes on them.

Trimming

- Remove the tip of the shoot and any flowers or fruit.
- Remove leaves and side shoots that will be below the soil line (rub them off if they are very small and soft, otherwise cut them off).
- Trim off all but a very few leaves at the top of the cutting. The cutting gets a lot of its energy from the stem and will lose too much moisture to transpiration if many, large leaves are kept. In some cases, no leaves are needed.
- Typically, having two nodes below the soil works well. Longer is not necessarily better! Most roots will come from the bottom node.

Unless the plant is a succulent, cuttings should be potted within a day or two. Keep the cutting stems in water until potting them up. For succulents, leave them in a cool, dry place for a while (up to a few days) so that the cut calluses over.



Trimmed cuttings: Left - stem tip, soft wood; Middle - mid-stem, semi-hard wood; Right - base of stem, hard wood. The soft cutting worked best, semi-hard OK, hard died. (Eastern Mojave Buckwheat)

Potting

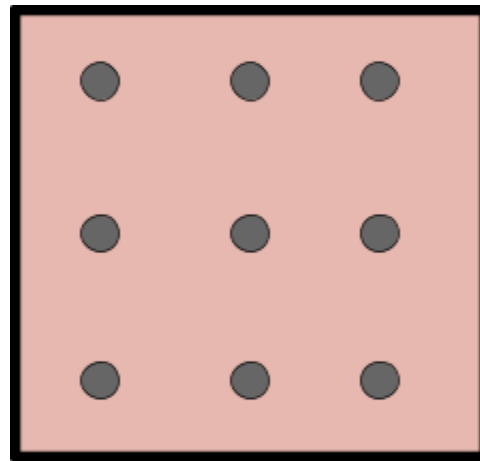
Setup

- Prepare the growing space: a warm, sheltered place with light but no direct sun. A window sill with grow lights is one example. Outdoors, a shelf with shade cloth covering can work well. If you have a greenhouse, that can be a good location, taking care that it doesn't get too warm. Be sure it's a place you'll remember to check frequently.

- Prepare the potting medium by getting it thoroughly damp.
- Ready the rooting hormone by pouring some into a wide-mouthed small container. Any extra that has been in contact with the cuttings should be discarded.
- (Optional) Have a clear cover ready to put over the pot(s). Large plastic domes can go over multiple pots in a flat. For individual pots, you can cut the end off of a bread bag and fit it loosely over a single pot. The dome should not completely seal the cuttings, but should allow some air to get to them, and should not touch the stems or leaves.

For each pot

- Fill the 4" pot with the medium and water it, to settle out any air pockets. Make sure it ends up filled nearly to the rim.
- Trim the cuttings (if not already done) – up to 9 cuttings for each pot. Slightly dampen the ends of the cuttings.
- Using a pencil or similar tool, make a hole in the medium.
- Stir the cutting's damp base in the rooting hormone and tap off any excess. There should be a thin layer of hormone on the bottom node and base of the cutting.
- Insert the cutting into the hole and gently push the medium toward the stem to fix the cutting in place. There should be at least two nodes beneath the surface.
- Repeat until the pot is full.
- Gently water in the cuttings from above to settle the soil without compacting it.
- Place a plant label in each pot with: the species/variety, the date potted, cutting source.



Example cutting placement

Growing: water, watch and wait.

When all cuttings have been potted, arrange them in the trays, move them to the growing space and cover with the domes.

Keep the cuttings moist but not soggy. Water from below, but don't leave much standing water in the tray. Mist the cuttings from time to time, unless you have them covered. You should see condensation on the cover that will show the humidity is higher inside it.

Watch for signs of mold on the cuttings and pull out any stems that develop it.

If you see fungus gnats (tiny, dark flying insects), use yellow sticky traps or Mosquito Bits sprinkled on the soil to control them. If this is a frequent problem, try adding a layer of sand or rock dust ("fines") on top of the potting medium.

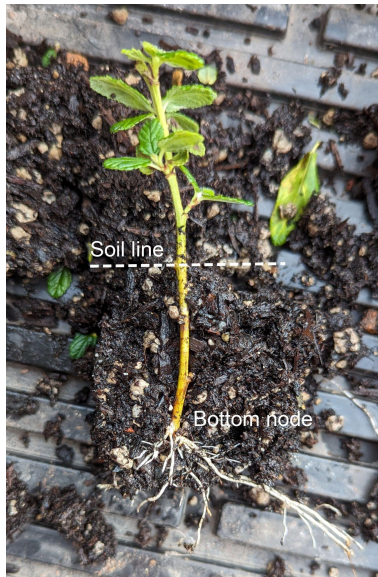
It's a balancing act: New cuttings have no roots to take up water, so minimizing moisture loss is critical to survival. The humidity around the cuttings should be 98-100% in summer, 90% in winter. They also need warmth and light, but not too much of either (no direct sunlight). And, this environment is ideal for mold growth. Removing the domes for a while every few days may reduce the risk of mold.

When the cuttings there are roots coming out the bottom of the pot, it's time to up-pot.

Don't give up too soon! The cutting may look dead from above, but check below. Sometimes new growth will come up from below even though the upper stem dies back.



Up-potting



Nursery pots

You'll need a supply of nursery pots and potting mix to grow the cuttings to the next stage.

If most or all of the roots are at the bottom of the cutting (as in the example to the left), you should up-pot it into a deeper pot to give the roots room to grow.

Potting mix

Cactus & succulent mix often works well for natives, because it doesn't hold too much moisture. Do not use garden soil as it will compact in the container and may carry pathogens or weed seeds.

Steps

- Take each pot full of cuttings and use your fingers between each cutting to support the potting medium, while tilting the pot downwards with the other hand. The cuttings and rooting medium should slide out of the pot – slightly squeeze the pot to help it get free.
- Gently place the whole clump into a tray and tease apart the cuttings' roots.
- Replant each cutting into its own pot, watering in well.
- Put a marker in each pot that notes the species and when it was potted. (It can be useful to add the original cutting date and the cutting source as well.)

Put the repotted cuttings in a protected location out of direct sunlight for a couple of weeks. Keep moist.

After they have put on enough additional growth you can plant them or continue growing them and then up-pot again to 1 gallon pots, until they reach the desired size.

References

- Toogood, Alan. *Propagating Plants: How to Create New Plants for Free*. Edited by Alan Toogood, DK, 2019.
- Smith, M. Nevin. *Native Treasures: Gardening with the Plants of California*. University of California Press, 2006.
- Popper, Helen Ann. *California Native Gardening: A Month-by-month Guide*. University of California Press, 2012.
- Materials and advice provided by Ed Pease: propagation [training guide](#) and [native plant cuttings](#) notes

- Propagation calendar:

https://drive.google.com/file/d/1WVq-DBA2wqrfBUcX38VmsZ6O7vNt1kFR/view?usp=drive_link



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