



Your Landscape During Drought

Contra Costa County has a Mediterranean climate characterized by long, hot, dry summers, and most landscape plants should be watered to survive under these conditions. We must learn how to use water more efficiently as demand rises and drought conditions continue.

PRIORITIZE YOUR PLANTS

Be aware there may be NO landscape watering allowed if conservation measures are inadequate. Consider letting go of high water use plants (even those that are high priority), and replacing them later with more drought tolerant plants. When prioritizing what to keep and what to let go, consider replacement costs, prominence in the landscape, and the length of time for plants to reach maturity.

High priority plants are usually trees, shrubs, and fruit and nut trees. They provide shade, are expensive to replace, and take a long time to mature.

Medium priority plants are ground covers, perennials and vines that grow quickly and are usually inexpensive to replace.

Low priority plants are annual ornamentals, annual vegetables and lawns. These are the least expensive to replace and reach maturity in a season. The lowest priority should be given to lawns, which use a lot of water and are not sustainable in summer dry climates like ours.

PLANT CARE ACTION PLAN

- Hold off on planting anything new in drought conditions. If rains return in the fall, take advantage of cool temperatures and fall & winter rains, since all new plants require a steady supply of moisture for 1 to 2 years.
- Remove medium and low priority plants from planting beds if they will compete with high priority plants for soil moisture. Remove any turf within the canopy of trees, and replace with 4" of mulch.
- Keep beds weed free, as weeds will out compete plants for soil moisture.
- Mulch heavily (3–4 inches) to prevent weed germination and evaporation from the soil surface. Keep mulch at least 2" from the base of all plants and 6" from tree trunks.
- Avoid fertilizing and dormant pruning, since both will stimulate heavy top growth that will require additional water to support.
- Spring and summer prune (April through July) plants that are too big or have excess foliage. This will lower water demand without stimulating a lot new growth. If dieback occurs, prune out deadwood.
- Water as little as possible to keep plants alive.
 - **Ornamental trees:** One or two deep irrigations several weeks apart in spring and summer will keep most trees alive.
 - **Fruit and nut trees:** Keep alive with a few early-season water applications, but don't expect good production.
 - **Shrubs:** Most established shrubs can survive with spring watering and 1 or 2 thorough waterings in the summer.
 - **Ground covers:** They often survive on half the water they would normally receive. Water at least every 3–6 weeks April through September, depending on location and soil condition.
- Many species will drop leaves/wilt when drought stressed, but will survive. Fruit size will be reduced and future production will be limited, but will return to normal over time once adequate irrigation is resumed.



DROUGHT STRESS

Plants are like water pumps, drawing in moisture from the soil to use for plant growth, then releasing water from the stems and leaves through a process called transpiration. Plants begin to wilt and suffer drought stress when the transpiration rate exceeds water uptake. Plants require the most irrigation in June and July when day length is longest. In August and September water needs begin to diminish as the days become shorter, despite temperatures that may remain largely the same. Dry winds also contribute significantly to drought stress, and may occur at any time of the year.

Primary signs of drought stress:

- Wilting or drooping leaves that do not return to normal by evening
- Yellowing and browning of leaves, especially along leaf margins and tips, or foliage that becomes grayish and loses its luster
- Under-sized leaves and limited shoot growth
- Blossom and fruit drop; under-sized and off-flavored fruits, nuts and vegetables
- Interior needle browning and leaf drop on conifers and evergreens

Secondary signs of drought stress:

- Spider mite infestations
- Increased damage from insects

Long-term consequences of drought:

- Increased susceptibility to plant diseases and attack by insect borers
- Root death
- Diminished winter hardiness
- Terminal die-back; dead twigs and branches
- Eventual plant death

WATERING YOUR LANDSCAPE

- Check, adjust and repair pipes, valves and sprinkler heads; convert to drip irrigation where possible.
- Water in the early morning when there is no wind and little evaporation.
- Water deeply every 3 to 4 weeks through fall and winter if there is no rain, to maintain plant reserves and the plants' ability to handle drought stress during the summer.
- Apply water slowly around the drip line of trees and shrubs. The goal is to have the water seep down to the root area. Don't dig holes in an effort to get water deeper. Digging kills roots and makes it more

difficult for the tree to take up water. You can use a deep root water spike if the spike can easily be inserted into the soil. Use low pressure to apply water slowly and apply water to a minimum of four sites around the perimeter of the tree.

- Over-irrigation is very common! Most established trees and shrubs can survive on 20 to 40 percent less irrigation than is normally given. Gradually reduce by no more than 10% at a time over several weeks to allow plants to adjust to less water. Thereafter, a few deep, thorough irrigations spaced several weeks apart will keep most trees and shrubs alive through the summer.

ADDITIONAL ONLINE RESOURCES

For information on selecting water wise plants:

- *Gardening in Contra Costa County, Guided Plant Search*, Contra Costa Water District, <http://www.contracosta.watersavingplants.com/search.php>.
- *WUCOLS IV Water Use Classification of Landscape Species*, UC Agriculture & Natural Resources, <http://ucanr.edu/sites/WUCOLS/>.
- *Arboretum All-Stars*, UC Davis Arboretum, http://arboretum.ucdavis.edu/arboretum_all_stars.aspx.
- *Eco-Friendly Landscape Design Plans for the New California Landscape*, EcoLandscape California, <http://www.ecolandscapes.org/new-ca/index.html>.

Special thanks to the UC Master Gardener Program of Sonoma County for allowing us to use the excellent materials their members prepared as the starting point for this document. Edited by Susan Heckly and Martha Lee, UC Master Gardeners of Contra Costa County, March 2014.