

HELP YOUR TREES SURVIVE THE DROUGHT



BE WATER-WISE. IT'S EASY. HERE'S HOW.

Trees and water are both precious resources. Trees make our houses feel like home—they also improve property values, clean our water & air, and even make our streets safer & quieter. When we water wisely and maintain our trees carefully, we enjoy a wide range of benefits at a low cost and with little effort.

YOUNG TREES

The roots of younger trees are less established & need easier access to water to establish deep root systems.

MATURE TREES

Mature trees require MORE water when growing near heat traps such as driveways & foundations.

EXPOSED TREES

Water loss is greater where trees are exposed to hot afternoon sun & strong or constant wind.

DECIDUOUS TREES

The critical time for water is during later winter/early spring when new buds and leaves are forming.



THE RIGHT AMOUNT

Water young trees twice per week (about 5 gallons) & mature trees once per week in several places (the equivalent of 1 to 1.5 inches of rain).

IN THE RIGHT PLACE

Water the “drip zone,” area directly beneath the foliage & shaded by the tree. Also, add mulch to lower soil temperatures & reduce water evaporation.

CONSERVE & RECYCLE WATER

Inside: Place buckets in the shower to collect warm up water. Recycle water from the dehumidifier, collect air conditioning condensation, & “save a flush” to conserve. Outside: Convert irrigation systems to drip, low-flow or micro spray & fix leaks.

THE RIGHT TIME

Water early in the morning or after the sun has set, as this is when trees replace the water they’ve lost during the day. Also less water is lost to evaporation at these times. Mulching your tree will also keep soils warmer in winter & cooler in summer.

DON'T WASTE WATER

Water should soak into the ground rather than running off into the drain.

THE RIGHT WAY

During drought, water directly with a hose or 5-gallon bucket.

THE RIGHT DEPTH

Deep watering helps deep root growth & healthier trees.

THE RIGHT CHOICE

Plant native or drought resistant tree species that require less water. Choose trees over lawn, as trees are a long-term investment.



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Tree Watering During Drought Conditions in San Diego County

Trees should be given a higher priority when cutting back on landscape watering, because lawns and shrubs can easily be removed and replaced. Trees take many years to mature, and are expensive to remove and replace. Additionally, trees will shade your other landscaping, reducing its water needs. Further information on tree watering posted at www.thegarden.org/waterWise.html#trees.

- Watering rates, in the table below, are for tree survival during drought and may not be optimal for tree health.
- For large trees (30-ft canopy diameter), double the amounts for medium trees, and apply four times as much water for very large trees (50-ft or larger canopy).
- Estimates are based on clay soils. For sandy soils, split amounts into two waterings on the same day.
- Always check the soil for moisture, and water when soil is dry at 4 inches below the surface. Buy a soil water meter, or use a long screwdriver to check whether the soil is moist.
- Water slowly. When water stops soaking in, stop watering, as the soil has become saturated and reached its water-holding capacity.
- Mulch 2 to 4" deep to keep soil cool and reduce evaporation. Keep mulch at least 4" from base of the trunk.
- Look at the trees—how are they doing? Are other trees putting on new growth and yours are not? Are your trees dropping a lot of leaves (if they are deciduous) when others are not? Has your tree failed to leaf out in the spring? Are the leaves wilting or turning brown? Or are the leaves a dull color, when others are a shiny green? Then the tree is probably not getting enough water.
- When Santa Ana winds are predicted, water trees deeply in the early morning. Water 1-2 days before, daily during the wind event, and the day after winds subside.
- When lawns are removed, trees still need to be watered and tree roots need to be trained to grow deeper. In the first year, gradually increase the duration and decrease the frequency of watering the trees.
- Newly planted trees should be watered 1-2 times weekly during the first year, weekly in the second year, and every 2 weeks in the third year. Apply 20 gallons per watering. Or, make a 3" high "doughnut ring" of soil 6" beyond the root ball; pack it firmly; and fill this "ring" at the suggested frequency.
- Drought Response Level 4 (the most severe) allows for watering trees on residential and commercial properties, and landscape vegetation in parks, schools, and other public places.

Table of tree watering frequency and application rates, by tree size (canopy diameter)

Tree Size	Cool Season (Nov-Apr)	Gallons to Apply	Warm Season or no rain (May – Oct)	Gallons to apply
LOW-WATER TREES				
Small established tree (10-ft canopy)	No Water	0	Monthly	20-40
Medium tree (20-ft canopy diameter)	No Water	0	Monthly	100-140
MODERATE-WATER TREES				
Small established tree (10-ft canopy)	Monthly	30-60	Every 2 weeks	30-60
Medium tree (20-ft canopy diameter)	Monthly	110-250	Every 2 weeks	140-260
ESTABLISHED HIGH-WATER TREES (Do not plant new high-water requiring trees)				
Large tree (30-ft canopy)	Every 2 weeks	250-350	Weekly	300-400
Very large tree (50-ft canopy)	Every 2 weeks	700-1000	Weekly	800-1000

Methods to water your tree with deep, infrequent irrigation

Soaker hose – New soaker hoses often have the gallons/hr/ft of hose on the packaging. Lay the hose in concentric circles around the dripline (edge of canopy) of the tree and at least one circle outside the canopy (roots go far beyond the drip line). With a 100 ft hose that has a soak rate of 1 gal/hr/ft, water your tree for two hours to apply 200 gallons. Not recommended for long term use.



Drip irrigation – *More accurate method.* Set up concentric rings of emitters similar to the soaker hose setup, starting about four feet from the trunk and about 1 ft between each circle. To increase infiltration, use emitters that are less than 1 gal/hr. Count the number of emitters, and multiply by the gal/hr each emitter provides to determine how long to water. For example, 24 emitters with 1 gal/hr/emitter apply 24 gal/hr, so drip irrigation needs to run for 8 hrs to apply 200 gallons. Also see the Tree Ring Irrigation Contraption at <http://ccuh.ucdavis.edu/public/drought/>.

Five-gallon buckets – Drill two ¼" holes into the bottom of 5-gallon buckets. Place the empty buckets around the tree's drip line. Fill almost to the top with a hose (about one minute). Let the water drain from the buckets (about 10 minutes). Four buckets deliver 20 gallons. If you only have one bucket, rotate it around the tree's drip line and refill. Each time you water, place in slightly different locations around the drip line.