

Conserving Water in the Garden

Landscape and Lawn Care

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Landscapes are a valuable part of residential properties. Maintaining your landscape is important for property values as well as aesthetic reasons. When water supplies are restricted, you can keep your landscape healthy by developing watering priorities, applying water efficiently, and modifying your maintenance practices.

From a positive standpoint, a drought might force you to reevaluate your existing landscape. Look for plants in the wrong location (azaleas on the south side of a building, for example), plants that are not adapted to Oregon's dry summers, or plants that are not growing well or show signs of disease. Often these plants will perish during severe drought. Their demise can give you the opportunity to replace them with more suitable species.

Watering priorities

During a drought, consider watering strategically. Select small, important areas within your landscape to water regularly. Allow peripheral areas of your lawn, or those that aren't highly visible, to go dormant by watering less.

Trees

As trees increase in size, they become increasingly valuable. Mature trees usually receive supplemental water when you water

shrubs or lawn areas. If you water your shrubs less and let your lawn go dormant during times of water restrictions, you might want to water your trees deeply every 2 weeks or so.

Shedding leaves are a sign of drought stress. If your trees begin dropping leaves, increase your watering frequency.

Shrubs

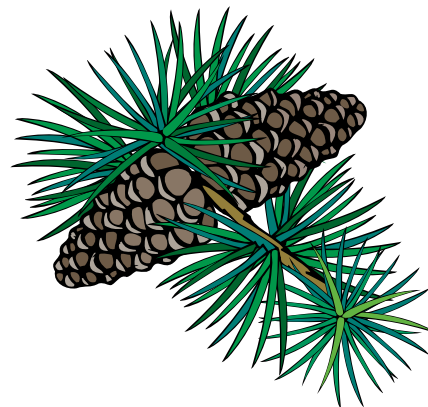
Well-established, healthy shrubs contribute significantly to the overall landscape. These plants should be second in priority for watering. To conserve water, consider removing shrubs that are overgrown, unhealthy, or in the wrong place.

Perennial plants

Your next priority should be large perennial areas or individual plants that had a high initial cost. Perennials require less water than trees and shrubs. Mulch the bed to reduce soil moisture evaporation.

Annual bedding plants

These plants have a relatively high water requirement compared to perennials. In times of severe drought, you might want to forego annual plantings and instead apply a 3- to 5-inch layer of mulch to your annual beds. After the drought has passed, plant the area the following year.



Containers

Plants in containers dry out more quickly than those in the ground. During a drought, you might want to reduce the number of container plants you grow. If you do plant in containers, consider incorporating hydrophilic polymers into the potting mix. These crystals, available at many garden centers, absorb water and release it slowly to plants over a number of days, thus allowing you to water less frequently.

Lawns

Many turfgrass varieties are relatively drought-resistant. Although they turn brown if not watered during dry weather, they will survive. Be sure to give your lawn proper care before and after the drought. See "Lawn care," page 3.

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Watering your landscape

Where, when, and how to water a landscape are critical factors in making the most of available water.

Where to water

The majority of tree and shrub feeder roots (those that take up water and nutrients from the soil) are in the top 12 inches of soil and extend as much as one and a half times past the canopy diameter (Figure 1). To be most effective, apply water in this area. You can use a drip system with emitters, a soaker hose, buried cans (see “How to water,” below), or a garden hose with a slow stream of water.

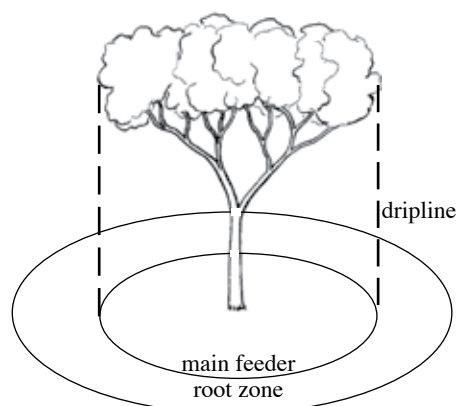


Figure 1.—The feeder roots extend to 1½ times the diameter of the canopy.

When to water

Watering late at night or very early in the morning is your best option. Temperatures are lower, humidity is higher, and the air is calmer at these times, so less water evaporates from the soil surface.

With the clay-type soils often found in western Oregon, it is important to water at least a little before the soil dries out. Once dry, clay soils are extremely difficult to rewet.

How to water

Irrigate plants infrequently and deeply prior to and during drought. This encourages plants to send their roots deep into the soil. The goal is to saturate the area to a depth of 8 to 10 inches. Your soil type will affect how quickly water moves through the soil, and watering large trees and shrubs can take several hours (Figure 2). To encourage deep root growth, gradually lengthen the interval between irrigations as the growing season progresses.

For shrub beds, consider using a drip or trickle system. These systems apply water directly to the soil, avoiding runoff and loss of water due to wind and evaporation.

Another option is to apply water below the soil surface. Punch holes in the bottoms of juice or coffee cans and push the cans 6 to 12 inches into the soil. Fill the cans with water. The water will seep out the bottom into the soil directly surrounding plant roots. This method can greatly reduce evaporation and unnecessary wetting of surrounding soil.

Although sprinklers are the least efficient way to apply water, in some cases, such as lawns, they are the only alternative.

Landscape maintenance

Mulch to conserve water

A 3- to 5-inch layer of mulch can reduce soil water evaporation by 70 percent compared to bare soil. Mulch also reduces soil temperature, prevents soil compaction, improves water infiltration, reduces runoff, and suppresses weed growth. When you water, make sure the water penetrates through the mulch and reaches the soil.

Both organic and inorganic mulching materials are available. Examples of inorganic mulches include lava rock, river rock, and landscape fabrics. Often landscape fabrics are used beneath rock or organic mulch to inhibit weed growth. Landscape fabrics are *not* black plastic. Like plastic, they block light, thereby suppressing weed growth. Unlike plastic, however, they allow water and air to pass through to the soil.

Organic mulches come in different particle sizes. Mulches with small particles include sawdust, decomposed compost, and grass clippings. A 2- to 3-inch layer of these products is sufficient and allows for air exchange between the soil and atmosphere.

If you use grass clippings, make sure the lawn wasn't treated with a broadleaf weed (e.g., dandelion)

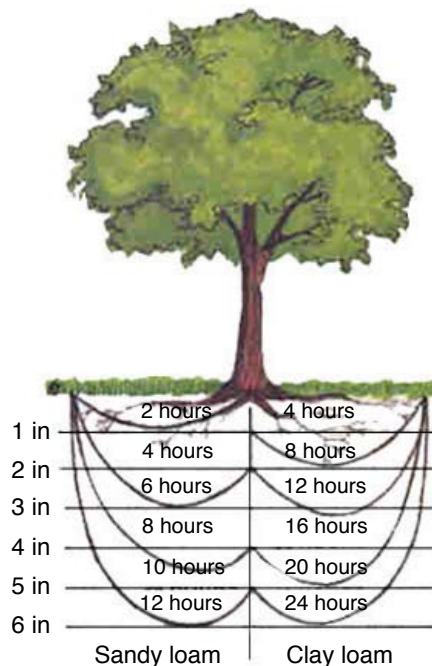


Figure 2.—Infiltration rates for sandy loam and clay loam soil. Silt loam soil absorbs water at a rate between these two extremes.

herbicide and that the clippings have dried out before you apply them. A thick layer of fresh grass clippings can mat down, get slimy, smell bad during decomposition, and prevent air from reaching the soil. To avoid these problems, apply only a ¾- to 1-inch layer. A better use of grass clippings is to use a mulching mower that chops them up and leaves them on the lawn where they can decompose and return nutrients to the soil.

Mulches with large particle sizes include shredded bark, bark chips, beauty bark, and conifer needles. You can apply these mulches 3 to 5 inches deep since they don't readily decompose or compact. Bark chips are one of the most desirable mulches since they are long-lasting. Pine needle mulch can acidify the soil slightly and is a good choice for acid-loving plants such as azaleas and blueberries.

Apply mulch evenly and leave a few inches bare around the stem or trunk of the plant. This space will allow for air circulation around the base of the plant and help avoid disease problems.

Fertilize lightly

Overfertilization can stimulate new, lush growth that increases a plant's demand for water. If not enough water is available to meet this demand, the plant will suffer drought stress. Also, heavy fertilizer applications increase the salt concentration in the soil and make it difficult for plants to use whatever moisture might be available.

Prune lightly

Heavy pruning during late winter or spring stimulates new growth and increases a plant's susceptibility to drought. In the spring, remove only dead or diseased branches. If soil moisture is extremely scarce during the summer, you might

consider careful, selective pruning to remove leaf area. Prune in such a way that inner, shaded leaves won't be sunburned, and don't remove too much plant material or you might stimulate new growth.

Lawn care

Many people water their lawn more than necessary. As a result, lawns have a reputation for using a lot of water. During droughty summers, consider watering half as much as usual. Lawns will stay mostly green with some localized brown spots if they receive ½ to ¾ inch of water per week. Watering once or twice a week to apply this amount of water should be sufficient. Another option is to not water at all and allow the turf to go dormant and turn brown during the summer.

Instead of following a predetermined watering schedule, observe your turf and check the soil moisture regularly. You then can alter your watering schedule to better meet the needs of your lawn. The key is to apply only as much water as the turf actually requires.

Initial signs of drought stress include wilting and discoloration of the grass. To check soil moisture, insert a screwdriver into the soil. If it penetrates the soil easily, the soil is moist. If it requires effort, the soil is getting dry.

In general, the healthier the turf is when drought stress begins, the longer it will stay green and the better it will weather the drought. In the spring, dethatch, fertilize with 1 to 1½ lb N/1,000 sq ft, and water only as much as necessary to produce a healthy lawn. Dethatching and aerating established turf helps develop a deeper root system, which makes it better able to withstand drought.

While the grass is actively growing, weekly mowing can maximize turf density and prevent excess evaporation. See Table 1 for proper mowing heights for various grass types. Mow at the upper end of the range to encourage maximum root development and slightly improve drought tolerance.

If water restrictions occur, follow local government directions, even if it means no lawn watering for the remainder of the summer.



Table 1.—Mowing height

1½ to 2 inches	½ to 1 inch*
<ul style="list-style-type: none"> • Perennial ryegrass • Fine fescue • Tall fescue • Kentucky bluegrass 	<ul style="list-style-type: none"> • Bentgrasses (alone or in a mixture) • Annual bluegrass • Roughstalk bluegrass

*Although the optimum height is ½ to 1 inch, acceptable turf can be maintained at heights up to 1½ inch. With a mowing height over 2 inches, the turf quality drops dramatically.

Once temperatures cool down and fall rains come, fertilize at a rate of 1½ to 2 lb N/1,000 sq ft to encourage recovery and minimize weed encroachment. You might want to overseed areas that died or look particularly thin. For more information, see EC 1278, *Fertilizing Home Lawns*.



For more information

Conserving Water in the Garden: Designing and Installing a New Landscape, EC 1530-E.

Conserving Water in the Garden: Growing a Vegetable Garden, EM 8375-E.

Fertilizing Home Lawns, EC 1278.

Gardening with Composts, Mulches, and Row Covers, EC 1247.

Maintaining a Healthy Lawn in Western Oregon, EC 1521.

El Riego en Los Huertos y Jardines (Watering Vegetable and Flower Gardens), EM 8765-S.

Sustainable Gardening: The Oregon-Washington Master Gardener Handbook, EM 8742.

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