

A Little Bit About Dormancy

Kevin McCaleb, City of Lake Oswego Water Conservation Coordinator

Did you know that plants need very little water in September and October? September is a time when municipal water demands due to irrigation can still be high, however, during that time, it may not be necessary to add as much water to our landscapes. Plants actually need much less water in the late summer and early fall months and too much water can be harmful. Even vegetable gardens prefer less water in the late summer – cutting back on irrigation can actually help ripen those late season tomatoes. While it is true that September can have some of our highest daytime temperatures, daylight hours become noticeably shorter and the position of the sun becomes much less direct. These factors, more so than temperature, signal trees and shrubs to begin the transition into winter dormancy. By mid-September, the process is well underway for deciduous trees and shrubs to enter dormancy. Some of us may confuse the hot days and the leaves changing colors as signs of needing water, the opposite is true. As water customers, by getting a better understanding of when and how they occur, we can use the plant’s natural cycle of growth and dormancy to our advantage.

Dormancy is a defense mechanism that plants have developed to guard against damage or death in hazardous climatic conditions. You and I can go indoors and turn up the thermostat, or put on more layers of clothes to fend off winter’s chill, but trees and shrubs must survive in place. As the daylight hours diminish and the sun’s position in the sky becomes less direct, trees and shrubs will begin to slow down their metabolic system in response. A plant will encapsulate its buds in a thick covering or shell to prevent frost damage. Circulation of water and nutrients into its leaves and limbs will be restricted to prevent them from freezing and splitting during the winter. This process is what causes the leaves to change color and drop. Only the roots remain active and if the soil does not freeze too deeply, they will continue to grow, making the plant even hardier the next season.

Grasses have a seasonal dormancy as well, though it comes at a different time and protects them from a different hazard, drought. In this region, turf grasses are typically “cool season” varieties (Ryes, Fescues, and bluegrasses). These grasses grow best between 65 and 80 degrees. They are hardy enough to tolerate cold winter and most varieties will, in this climate, remain green and even continue to grow during the colder months. The natural dormant cycle for these grasses occurs during extended periods of heat and periods with no water. If left alone, the lawn grass will turn brown, but does not die. Once the temperature cools back down and Mother Nature applies rain, it will green up again. With grass, we can retard and even prevent that natural cycle from occurring by adding too much nitrogen fertilizer and water to our yards. Overwatering and over fertilizing is not only unnecessary, it is also expensive.

Deep dormancy: Trees will not resume growth			Post dormancy: Trees gradually lose frost hardiness and will resume growth when warm soil temperatures occur			Predetermined shoot elongation		Terminal bud initiation: Free growth can occur in favorable environments		Dormancy deepening: Even in warm, moist long-day environments, trees will seldom resume growth		
Period of most successful transplanting				If seedlings are planted during this period survival and/or growth potential will be reduced								
Period of infrequent and slow root elongation			Major period of rapid root elongation			Period of infrequent and slow root elongation			Period of moderate root elongation			
December	January	February	March	April	May	June	July	August	September	October	November	December

Strategies for using dormancy: As plants transition into dormancy, we can use that natural cycle to shorten the number of days that we need to supplement water for our plants. In our area, the driest periods occur from June to September, with July and August getting less than 1" of rain. Established native trees and large woody shrubs will need little if any water during this period. Nonnatives and those trees and shrubs not yet established will need additional water as they cycle into dormancy. This additional water is added to help the roots, which are the only part of the plant that is actively using water at this time. A good rule of thumb is to water the trees and shrubs once or twice every 2-3 weeks from mid-September until the first good rain. The amount of water should be enough to soak into the ground about eight inches or more each time applied. A good way to determine the depth of water is to wait an hour after watering and then poke a screwdriver down into the soil to see how moist it is below the surface and how deep that moisture goes. Add or subtract minutes if you determine you need to. Once you know how many minutes it takes to put down enough water to get to the appropriate depth, you'll use that number every time.

For turf grass, if you are an advocate of dormancy, only water once every 10 days to 2 weeks starting around the 1st of July and continuing until the first good rain in September. The time should be set to allow the water to penetrate the soil at least 6". You can use the same screwdriver method we mentioned above to check the depth. Add or subtract minutes as necessary. Once you figure out how many minutes you need to get the water down to the required depth, this will be the run time you use throughout the season.

Another choice with grass, and one I recommend, is to stress your grass. By stressing it you accomplish two things: 1) you reduce your water usage, and 2) you encourage the grass to put down deeper roots which means even less water in the future. A well-stressed lawn should never be watered more than twice per week and then only in the hottest part of the season. Again, the depth of the water should be a minimum of 6" into the soil. Use the same method as before to calculate how deep the water is penetrating the soil. Try not to fertilize, just leave the clippings on the lawn. The beauty of this method is that the grass never goes completely dormant. So, if you are having company over or you want the grass to look greener at some point, just add water. The grass will green up in a week to 10 days. When the party is over, cut your schedule back down, and you're back in business saving water.

Not only will these management tips help you save money on water bills, they can actually protect the investment you've made in your landscapes. Plants that have deeper and broader root systems will fare much better during a water emergency, should one occur, than will plants that have been watered with less attention to their natural cycles.

