



## WATER CONSERVATION: How to Save Water *and* Have a Green Lawn

With California facing an unprecedented drought along with chronic water shortages and increasing water rates, outdoor watering has come under increasing water conservation methods. Home lawns in particular have unfairly been targeted as wasteful. This can be true if traditional watering methods are not changed but with advancements in research and technology there exists a variety of products and techniques that can be implemented to dramatically reduce water use. There are three distinct categories where water savings can be achieved; water management, turfgrass selection and cultural practices.

**Water Management.** This is where significant water savings can be achieved. If your sprinklers are currently on a timer it is time to consider converting to a new “smart” water system. These are advanced timers that are connected to a small weather station. The timers are then programmed with other data such as the type of sprinkler head, slope, exposure, soil type, plant material, zip code and other factors. The system then takes into account the weather in the area with the programmed

data and develops a watering schedule that applies water in the most efficient manner. It is easy to convert a standard sprinkler timer to a smart system and the payback on investment is immediate and can be significant. As an added bonus many water utilities offer incentive or rebate programs for converting to a smart system. Check your water utility website to see if any promotions are being offered.

Another target for water savings is the sprinkler nozzle. Recent advancements in nozzle design produce water droplets of greater size that reduces misting and evaporation and puts the water where it is needed. Depending on the type of sprinkler heads that you have it may be very simple to switch older, less efficient nozzles for the newer efficient types. If not then it is probably time to replace your sprinkler heads that contain the new types of nozzles.

Finally, do an audit of your sprinkler system. Make sure all heads and nozzles are working properly. All heads and nozzles get dirty and need to be cleaned periodically. Also make sure that the lawn is getting uniform coverage. This is critical for achieving water savings. Efficient sprinkler coverage ensures optimal sprinkler run times and saves water. Consider replacing any sprinkler heads that are not 4 inch pop up. 4 inch heads are ideal in that they clear grass height sufficiently to avoid spray blockage.

If you do not have a smart irrigation system and use a standard timer it is critical that you make regular adjustments to your system to account for seasonal changes in the weather. The ideal time to water is early morning between 2 A.M. and 8 A.M. It is important that timers be set to water deeply but to avoid runoff. Watering deeply encourages roots to grow deeply thus increasing drought tolerance. Frequent light watering should be avoided as it promotes a shallow root system.

**Turfgrass Selection.** Additional water savings can be achieved by careful consideration of the type of turfgrass that is used. First it is important to consider what use



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the lawn will be. Heavy traffic, pets, light traffic, aesthetics or a combination? Once a determination is made on the use then grass selection becomes easier.

All grasses fall into one of two categories; cool season and warm season. Cool season grasses grow during the cooler months of the year (fall-spring) and stay green throughout the year in mild, Southern California climates. The most popular cool season grasses include Tall Fescue, Perennial and Annual Ryegrass, Fine Fescues and Kentucky Bluegrasses. Of these grasses the Tall Fescues are the most heat and drought resistant. Conversely the warm season grasses prefer the warm months (late spring-

early fall). They thrive in heat and go dormant in the winter turning brown in colder inland valleys but staying relatively green along the milder coast. Warm season grasses can use between 30 to 50 percent less water than cool season grasses when measured over one year. Types of warm season grasses include Bermuda grass (common, improved and hybrid types), Zoysia, St Augustine, Kikuyu and Buffalo grass. Of these the bermudagrasses and kikuyu are the most wear tolerant and the most aggressive growing while the St Augustine and Zoysia are less aggressive and have some shade tolerance.

It is not necessary to restrict your turfgrass choice to solely a cool or

warm season type. Many lawns and sports fields contain a combination of both cool and warm season grasses. However the water usage of these combination lawns will need to reflect the needs of a cool season grass.

## Cultural Practices

Cultural practices involve fertilization and maintenance as outlined below.

## Fertilization

All fertilizers have a three digit analysis label that indicates the percentage of Nitrogen, Phosphorus and Potassium (also known as “NPK”). Fertilizers that are high in nitrogen (over 15) promote growth. This can sometimes be beneficial but for fertilizers to be effective



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they need water and fertilizers that are high in nitrogen will create excessive leaf growth which in turn consumes more water. The key here is to use fertilizers that are low in nitrogen or that are labeled “slow release”. Slow release fertilizers are encapsulated with a polymer that allows a slower release of nutrients that results in more steady, stable growth that uses water more efficiently. Most organic fertilizers are low in nitrogen and don’t need excessive watering to be effective however organic fertilizers take more time to show results. The best fertilizers are those with a nitrogen content of 15 or less and/or fertilizers labeled as “slow release”.

## Mowing

How you mow your lawn has an effect on the health of the grass as well as water consumption. The first rule of mowing is never to remove more than one-third of the leaf blade. So if the grass is 3 inches high it should be mowed no lower than 2 inches. Removing more than one-third of the leaf blade creates stress on the grass causing increased water consumption and susceptibility to diseases and weed infestation. With respect to mowing height of grasses, the height varies depending on the season and grass type. Mowing grasses too high or too low will create conditions that increase water needs.

Higher mowing heights should be practiced in the summer while lower mowing heights can be practiced in the winter.

Avoid mowing during the hottest part of the day as it increases stress on the grass. It is also important to sharpen your mowing blades at least once a year as mowing with a dull blade creates more plant stress and water usage.

### Cool Season Grasses

	Mowing heights (in.)
Tall Fescue	1.5 to 2.5
Perennial Ryegrass	1.5 to 2.5
Kentucky Bluegrasses	1.5 to 2.5
Fine Fescue	1.5 to 2.5

### Warm Season Grasses

Common Bermudagrass	1.0 to 2.0
Hybrid Bermudagrass	0.5 to 1.0
Kikuyugrass	1.0 to 2.0
Zoysia	1.5 to 2.5
St Augustine	1.5 to 2.5
Buffalograss	1.5 to 2.5

## Aeration

This is the practice of removing small sod cores in order to improve water penetration and root development. It is done either manually with a small aeration tool that is pushed into the ground with your foot or with a machine that can be rented that forces metal tubes into the ground which force up small cores. The cores are left on the ground to decompose. This technique is particularly useful on heavily compacted (high traffic) or on heavy soils. It is also useful in areas of poor drainage. Aeration should be done during the cooler times of the year.

## Dethatching

Thatch buildup is the layer of

dead and living plant material that exists between the soil and the blades of grass. Thatch is good for a lawn in that it improves turf wear and cools the surface however too much thatch can inhibit water penetration and create disease problems. Thatch buildup is mainly an issue with warm season grasses. When the thatch layer is more than ½ inch then dethatching is beneficial for the lawn. The best way to remove thatch is with a vertical mower which can be rented. The vertical mower brings the thatch to the surface where it can be removed. This is also a good time to do aeration and overseeding. Best times to perform dethatching are fall through spring.

By reviewing these water saving tips, regardless of what irrigation system or lawn you may have there are still ways to increase water efficiency, reduce your water costs and have a great looking lawn.



**Turfgrass managers interested in water conservation should strongly consider using TWCA qualified turfgrass varieties. Find out why... visit:**

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