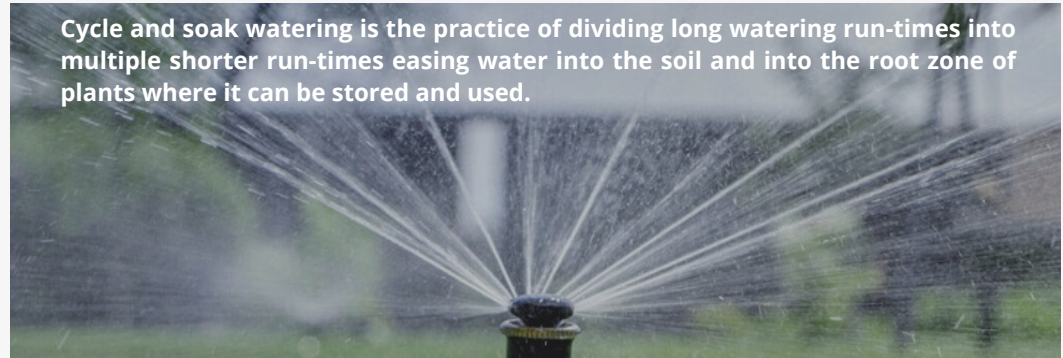


Cycle and Soak Lawn Watering

Prevent Runoff : Improve Plant Health

Brad Voss, MS., Dean Minchillo: Texas A&M AgriLife Extension Service



Cycle and soak watering is the practice of dividing long watering run-times into multiple shorter run-times easing water into the soil and into the root zone of plants where it can be stored and used.

Why Cycle and Soak?

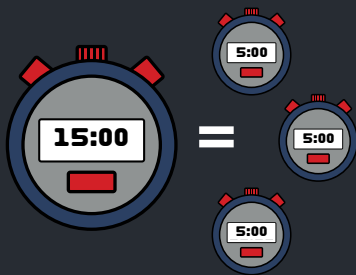
Cycle and soak is one of the most efficient ways to water your lawn and can improve plant health, enhance drought resistance, and reduce water waste. The heavy clay soils of north central Texas are prone to runoff when watered too fast for too long as the soil cannot absorb the water quickly enough. The cycle and soak method breaks up the total lawn watering time into smaller cycles, allowing the water to soak into the soil. Many municipalities in the metroplex consider runoff to be water waste, which is a violation of water management plans and can be a finable offense.

Below is an example watering schedule illustrating how single, long watering times can be broken into multiple shorter cycles with a soaking period between cycles to allow the water to infiltrate into the soil.

Cycle and Soak Scheduling

Divide long run-times into multiple shorter run-times

15 minutes / 3



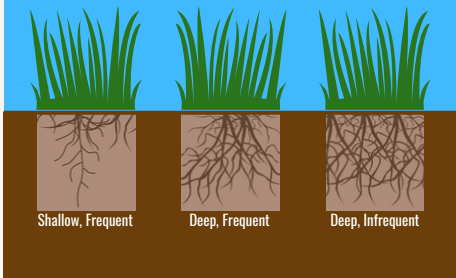
Allow 60 minutes between watering start times



Cycle and Soak Example Schedule

Original Schedule	Start Time 1	Start Time 2	Start Time 3
	7 a.m.		
Zone 1 (Sprays) Front Yard Turf	22 Minutes		
Zone 2 (Sprays) Side Yard Turf	16 Minutes		
Zone 3 (Drip) Front Yard Flower Bed	44 Minutes		
Zone 4 (Rotors) Backyard Turf	38 Minutes		
Total Run-Time	120 Minutes		
New Cycle and Soak Schedule (2 Cycles)			
	6 a.m.	8 a.m.	
Zone 1 (Sprays) Front Yard Turf	11 Minutes	11 Minutes	
Zone 2 (Sprays) Side Yard Turf	8 Minutes	8 Minutes	
Zone 3 (Drip) Front Yard Flower Bed	22 Minutes	22 Minutes	
Zone 4 (Rotors) Backyard Turf	19 Minutes	19 Minutes	
Total Run-Time		120 Minutes	
New Cycle and Soak Schedule (3 Cycles)			
	4 a.m.	6 a.m.	8 a.m.
Zone 1 (Sprays) Front Yard Turf	7 Minutes	7 Minutes	7 Minutes
Zone 2 (Sprays) Side Yard Turf	5 Minutes	5 Minutes	5 Minutes
Zone 3 (Drip) Front Yard Flower Bed	15 Minutes	15 Minutes	15 Minutes
Zone 4 (Rotors) Backyard Turf	13 Minutes	13 Minutes	13 Minutes
Total Run-Time			120 Minutes

Watering Methods and Root Growth



Know Your Sprinkler Type

Different types of sprinklers are used to meet the watering needs of the landscape in the most efficient way possible.

Here are some of the commonly used sprinklers:



Fixed Spray

Sprays can be pop-ups or fixed position with a radius of 10-15 feet including many different spray patterns. Generally used for watering home lawns and plant beds.



Rotor

Rotors mechanically rotate to distribute water from a radius of 15 degrees - full circle with spray pattern adjustments. Generally used on large turfgrass areas.



Multi-Stream

Multi-streams are a good mix between sprays and rotors with several adjustable radius options from 8-30+ feet. A low precipitation rate makes them a great option for slopes and heavy clay soils.



Oscillating Hose-End

Oscillating sprinklers are a popular hose-end option because they can cover a large area. However, precipitation rates can vary between models and may need to run longer than you think.

Precipitation Rate

The precipitation rate for sprinklers is the amount of water that is applied over a specific period of time in a given area, usually measured in inches per hour. Sprinkler systems are designed to meet the needs of a specific landscape and therefore will have different sprinkler heads and designs, making a one-size-fits-all approach nearly impossible. As a general precipitation rate guide fixed sprays will range from 1.3 - 2 inches per hour; rotors are closer to .4 - 1 inch per hour; and multi-stream rotary nozzles have a low rate of .4 - .6 inches per hour.

The absolutely best method to calculate precipitation rate is with a catch can test. Visit this link to learn about catch-can tests:

<https://agrillife.org/itp/files/2018/05/Using-Aggie-Catch-Cans-SP424.pdf>

What Type of Soil Do I Have?

Different soils have different infiltration rates, or how fast or slow they absorb water. For example, sandy soils have larger particles and absorb water quickly. Whereas clay soils consist of smaller particles that are closer together and absorb water much slower. An estimation of soil texture can be determined with a ribbon test. The table below describes some of the more common soil types. If you are unsure about which soil type you have, contact your local county Extension office for assistance.

Description of Common Soil Types	
Soil Type	Description
Clay	Fine textured soil that is sticky when wet. A long ribbon can be formed when when rolled.
Clay Loam	Breaks into hard clods. A compact mass will form when rolled in the hand.
Silty Loam	Smooth feeling with moderate amounts of sand and some clay but will not form a ribbon when rolled.
Loam	Contains a mix of sand, silt, and clay that can be handled without breaking when wet.
Sandy Loam	Contain a lot of sand, but the silt allows it to stay formed with careful handling.
Sand	Very gritty feel that will form a cast when squeezed, but crumble when touched.

Soil Infiltration Rate

Soil Type	Steady Infiltration Rate (in/hr)
Sands	> 0.8
Loams	0.2 - 0.4
Clays	0.04 - 0.2

As this USDA basic soil infiltration rate chart shows, the precipitation rate of a sprinkler can quickly exceed the absorption rate of the soil, especially clay soils.

Other Ways to Reduce Runoff

- Adjust Sprinklers: Keep sprinklers from spraying on impervious surfaces like driveways, sidewalks, and streets.
- Repair Leaks: Fix broken sprinkler components as soon as possible. A broken sprinkler head can waste over a thousand gallons a month.
- Control Compaction: Compacted soil makes it more difficult to absorb water. Aeration and soil amendments are ways to correct compacted soil.
- Slow the Flow: Choose low precipitation rate sprinkler heads and drip irrigation to slow the flow of water for better absorption into the soil.

Warm-Season Turfgrass Fall/Winter Preparation

Dean Minchillo: Extension Program Specialist - Urban Water
Texas A&M AgriLife Extension Service



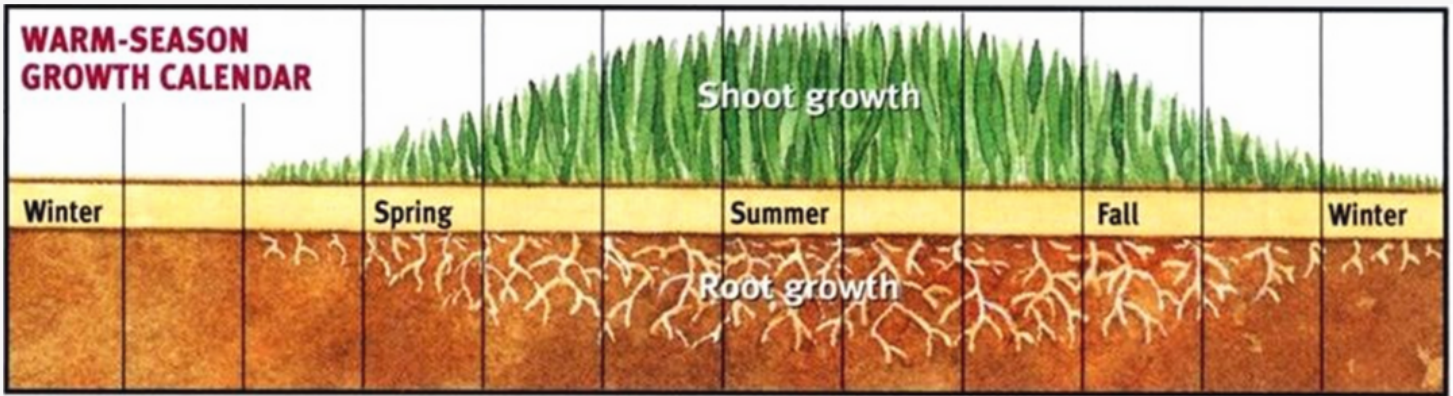
For many Texans, September typically means cooler temperatures, rain showers, and the end of the long hot summer. This change of seasons has an effect on the growth of warm-season grasses like St. Augustinegrass, zoysiagrass, and bermudagrass. Three management practices to focus on this fall and winter are watering, mowing, and fertilizing. Adjusting these to match the seasonal change can create a strong healthy lawn throughout the fall and into winter dormancy.

Watering

As the days get shorter and temperatures become cooler, the growth rate of grass slows down, therefore less water is necessary to maintain plant health. This drop in water need can be $\frac{1}{2}$ or $\frac{3}{4}$ of what is required in summer. Overwatering during this time of year can have a devastating effect on turfgrass. Common warm-season turfgrass diseases are large patch (caused by *Rhizoctonia solani*) and take-all root rot (caused by *Gaeumannomyces graminis*). Both are fungal diseases brought on by cool, moist conditions. When temperatures drop below 70°F, automatic irrigation should be stopped and done only as necessary under dry weather conditions. Follow local watering recommendations to prevent overwatering. Websites like Water My Yard (watermyyard.org); Texas ET Network (texaset.tamu.edu); and Water Is Awesome (waterisawesome.com) provide weekly watering advice based on local weather information so you know whether to water or not. Some of these services are app-based as well. Check for availability in your local area.

Mowing

The slowdown in turfgrass growth naturally comes with a slowdown in mowing frequency. However, the mowing done during this period can have an impact on the turfgrass leading up to winter dormancy. Consider raising the mower height a bit, but don't exceed the recommended height of cut for your turfgrass. Raising the cut height will encourage deeper root growth below ground, aiding in overwintering. The taller grass also shades to soil, helping with moisture retention and preventing the germination of winter weeds. Finally, a sharp cut is best for your lawn any time of year, so take advantage of the season and sharpen your mower blades.



Fertilizing

Fall lawn fertilization can be tricky due to the varied weather we see in Texas. It is highly recommended that a soil test be done in late summer or early fall to confirm the existing nutrient status before adding fertilizer. Low plant nitrogen levels can have adverse effects on turfgrass emergence from winter dormancy. However, applying additional nitrogen when current levels are elevated can result in increased disease pressure (especially in St. Augustinegrass and zoysiagrass), winter weed growth, and potential localized water pollution. Our recommendation is to apply your final nitrogen fertilization no later than 6 weeks prior to the historical first frost date for your region. If a soil test is not possible, simple observations of the growth of your lawn in the weeks prior to the recommended fertilizer application date can be used as an indicator. If growth levels are still high, additional nitrogen may not be needed at all.

City	First Frost	Last Nitrogen Application
Amarillo	Oct 21 - Oct 31	Sept 10 - Sept 17
Austin	Dec 1 - Dec 10	Oct 20 - Oct 27
Corpus Christi	Dec 21 - Dec 31	Nov 9 - Nov 16
Dallas/Fort Worth	Nov 21 - Nov 30	Oct 10 - Oct 17
El Paso	Nov 1 - Nov 10	Sept 20 - Sept 27
Houston	Dec 1 - Dec 10	Oct 20 - Oct 27
Lubbock	Nov 1 - Nov 10	Sept 20 - Sept 27
Odessa	Nov 11 - Nov 20	Sept 30 - Oct 7
San Antonio	Nov 21 - Nov 30	Oct 10 - Oct 17

Texas Lawn Companion - aggieturf.tamu.edu

Summary

Remember, observing your local weather conditions and adjusting the lawn care management practices above to match can provide a beautiful lawn that's ready for a nice winter rest without all the guesswork. For additional information on turfgrass care and maintenance visit <https://aggieturf.tamu.edu> or contact your County Extension Agent for local advice.