

Louisiana Irrigation

Irrigating Louisiana Lawns and Turf

Louisiana has an abundant supply of water, but the demand for water still occasionally exceeds the amount readily available. Lawn irrigation can take a large amount of water and sometimes much of it is unnecessary. Efficient watering practices are important to all who want to conserve water, maintain healthy turf and reduce lawn maintenance costs.

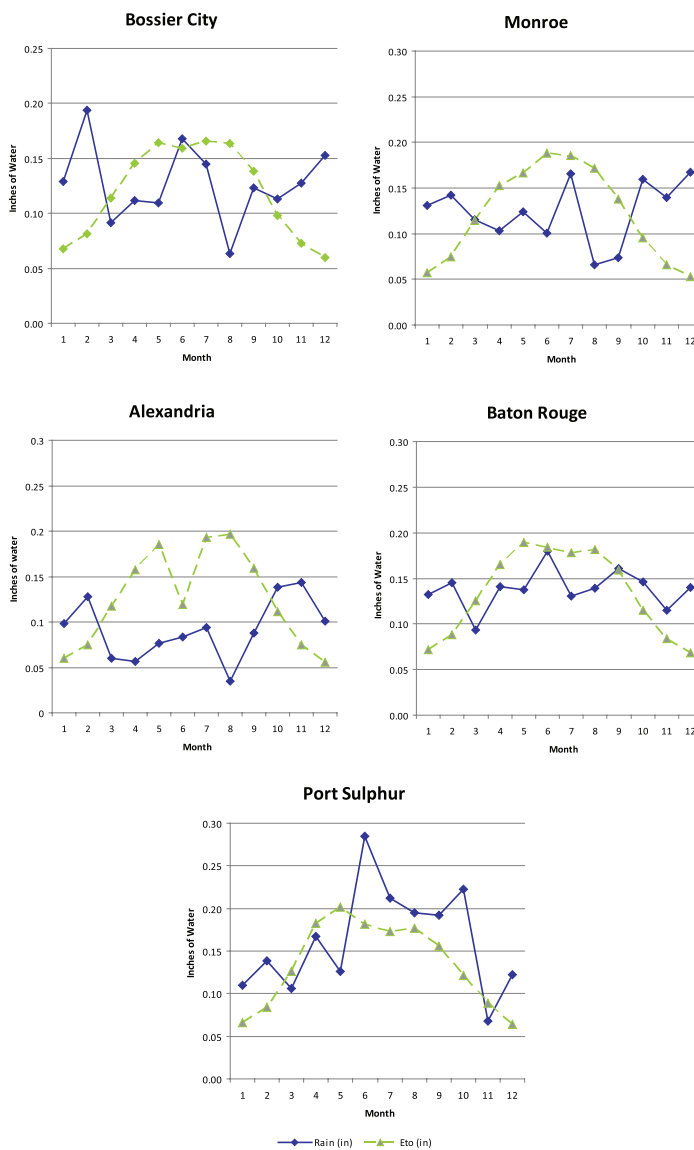
Should I irrigate my lawn?

Louisiana's climate makes lawn irrigation optional. Figure 1 shows the average rainfall and the average potential evapotranspiration for each month at five areas of Louisiana. Potential evapotranspiration is the estimated amount of water a lawn would use if water was always plentiful in the soil. As would be expected, the graphs differ somewhat depending on the area of the state. Generally, in noncoastal areas, the amount of rainfall is greater than the amount of water needed by grass plants in each month of the year except June, July, August and September. Consequently, in most years, lawn irrigation from October through March should be minimal.

More water is used during the summer months by grass than is replaced by rainfall. If supplemental irrigation is not added, some turfgrasses have mechanisms to survive the dry period. Warm-season grasses like Bermuda grass and zoysia will survive dry periods and will rebound when favorable conditions return. St. Augustine grass and centipede grass may not fare as well. During dormancy the plants stop growth of leaves and shoots, causing the existing turf to turn brown. The plants usually do not die – although the leaves cease growing. When adequate water returns, new growth will occur with no long-term damage.

If you choose not to irrigate, you should remember that for several months the lawn may be brown. When the temperature cools in the late summer, however, the grass will green up and grow again.

Figure 1. Average monthly evapotranspiration and precipitation values for five sites in Louisiana. Areas below the green lines indicate times when rainfall needs to be supplemented by irrigation. Evapotranspiration values were determined using the Thornthwalte method for Bermuda grass.



There are exceptions when it is important to keep the grass growing throughout the summer by supplemental irrigation. Any turf that is affected by or is recovering from pest damage, such as diseases, insects or excessive weed growth, should receive plenty of water to aid recovery.

Any area that has been recently seeded should be watered frequently. Whenever possible, areas subjected to wear, such as ball fields or play areas, should be watered to maintain tolerance to traffic and aid recovery.

If you decide to keep your lawn green during the summer by irrigation, here are some suggestions.

How much water should I use?

The amount of water to apply depends on the soil type and the wetness of the soil. The preferable method is to thoroughly wet the soil down to a depth of 5 inches. If the soil is very dry initially, it may take ½ inch of water to wet a sandy soil down to a depth of 5 inches, while 1½ inches of water may be needed to wet a clay soil down that far. Once the soil is thoroughly wet to a depth of 5 inches, any additional water will simply drain below the root zone. Occasional extraction of soil cores after normal irrigation can help give some idea of how deeply you are watering. Another easy method is to sink a shovel into the soil and spread the hole so you can see how far the water has penetrated. Then remove the shovel and press the soil into place with your foot.

Several aspects of lawn sprinkling are important. First, determine how uniformly and how much water is applied in a normal irrigation cycle. This can be done by placing a row of equal-sized, straight-sided cans in a line at 1- or 2-foot intervals from the sprinkler and out to the farthest point of watering. Following a normal sprinkling of a known time, measure the amount of water collected in each can. Then determine the appropriate placement of sprinklers and length of time to water for a uniform distribution of the desired amount of water.

Second, remember water should not be allowed to run off the surface or to form puddles, because these lead to poor distribution and efficiency of water. Occasionally, the rate at which water can enter the soil is less than the amount applied by the sprinkler after watering has continued for a time. If you notice water running off the surface or forming puddles but you still want to apply more water, turn the water off for 15 minutes. Then resume watering until the desired amount has been added.

The graphs in Figure 1 indicate that, for an average year, lawns use about 4 to 6 inches of water per month during June, July and August. The precipitation during each of those months usually is 3 to 4 inches, so it is appropriate to schedule lawn irrigation to add about 1 to 1½ inches per week minus any rainfall received during the hot summer months.

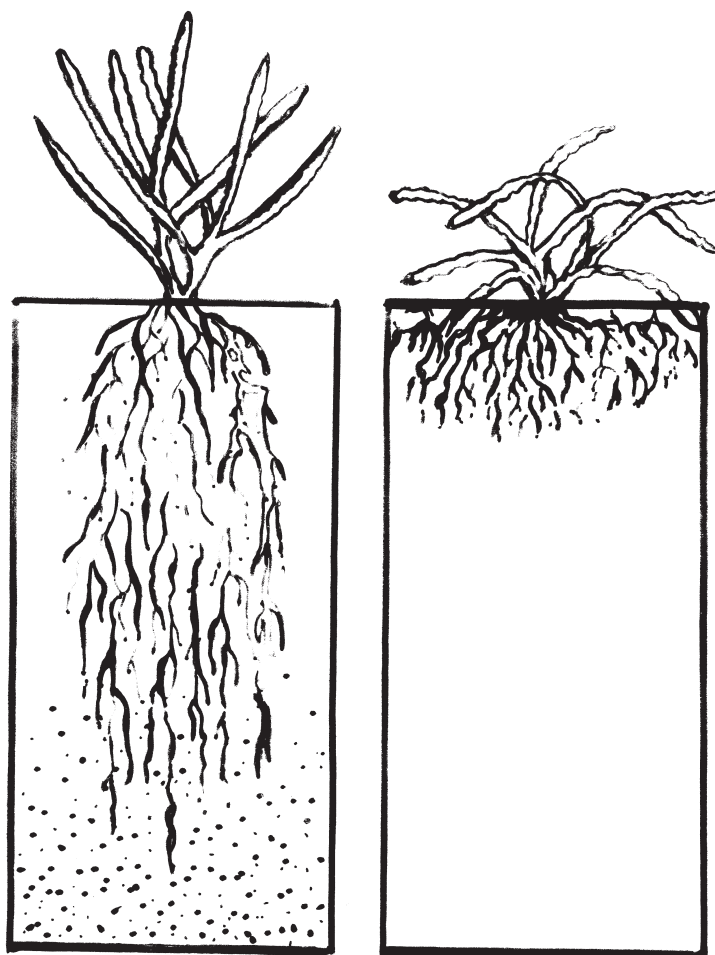
How often should I water?

This is not an easy question to answer, because the frequency of watering is affected by grass species, soil texture, climate, exposure and intensity of use. Ideally, the grass plants should dictate the watering program. Slight wilting, color change to a more grayish or bluish-green shade or “footprinting” (when plants will not rebound after walking on them) are indications irrigation is necessary.

It is desirable to keep the interval between watering as long as possible without allowing the plants to go into water stress. Deep, infrequent irrigation causes plants to develop deep, strong root systems (Figure 2) that can extract water from a much larger volume of soil than the shallow roots associated with light, frequent irrigation.

Some areas of the lawn will probably dry faster than the rest. This is common with southern exposures, sunny areas, borders of sidewalks and slopes. Hand watering of these areas may save water by extending the interval between watering of the entire lawn.

Figure 2. Deep and infrequent irrigation tends to cause grass roots to grow deeper into the soil, making the plants more drought tolerant. Shallow and frequent watering leads to shallow-rooted plants with less drought tolerance.





When should I water?

The most efficient time to water lawns probably is early in the morning hours from 4 a.m. to 8 a.m. At that time, less water is lost to evaporation because of lower temperatures and less sunlight. Also, wind velocities usually are lower than they will be later in the day, so distribution is improved. Finally, water demand on municipal systems usually is less at that time, as well.

Midday watering, although good for the plants since it cools them and reduces heat stress, is not as efficient, because some of the water evaporates before getting into the soil.

Watering in the evening should be avoided. If the grass plants go into the nighttime hours wet, they will remain wet for extended periods of time. This may favor the growth and development of turfgrass diseases.

Lawn Watering Tips

- Consider whether lawn irrigation is necessary in your situation.
- Lawn irrigation would normally be minimal in spring until May.
- Add 1 to 1½ inches of water per week (minus any rainfall) during the summer months.
- Keep the intervals between irrigation as long as possible.
- Water in early morning hours for greatest efficiency.

Adapted from:

Taylor, D. 1998. Watering Lawns and Other Turf. University of Minnesota Extension. FS-02364.

Doubrava, N. and B. Polomski. 1999. Drought. Clemson University Cooperative Extension Service. HGIC 2351.

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