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Field Management During a Drought

Managing turf during drought conditions can be one of the most frustrating times for an athletic field manager. You may have perfectly groomed your field during the spring, but if you don't have an irrigation system or water restrictions are put into place, your field is at the mercy of Mother Nature. As water-use restrictions become more common across much of the country, turf areas like athletic fields and golf courses are often the first to feel the ramifications. It is important to prepare your field and have a management plan for drought conditions before the weather turns dry. Once you are in a drought, there are still some management techniques that you can use to increase the chance that your turf will green-up and start growing once it starts raining again. Here are some tips to get you through drought conditions.

Prepare for a Drought Before it Happens

Properly preparing your field to take on the stresses of a drought gives your turf the best chance for survival.

Develop a Drought Contingency Plan

- Become aware of local and state drought regulations well in advance of drought conditions.
- Monitor your water usage throughout the year so you can provide information to drought regulators during a drought emergency. In some cases, this information is required to allow you to water your fields during a drought.
- Develop a written document that outlines your plans for watering during a drought. You can then share the plan with water regulators, administrators, athletes, parents, and community.
- Establish a Best Management Practices (BMP) document for your facility. An outline/template can be found at http://commodities.caes.uga.edu/turfgrass/georgiaturf/Publicat/BMP/BMP_06.pdf
- Identify high priority areas that must be watered regularly such as a stadium field, infield, or the center of a practice field.

- Show how many gallons of water you can save by following your plan.
- Developing these documents will show that you are being proactive and have already planned out what you are going to do if a drought occurs.

Fertilization

- Take a soil sample and send it to your local testing facility (most universities can test your soil). You will get a report back with fertilizer recommendations that you can use to set up your fertilizer program. Proper nutrient levels in your soil promote healthy turf heading into drought stress.
- Avoid applying quick release nitrogen (urea, ammonium sulfate) late in the spring. These fertilizers decrease your turf's ability to handle dry conditions.

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Promote Deep Roots

- Aerify with hollow tines to relieve soil compaction, reduce thatch, and increase oxygen levels in the soil during the spring and fall.
- Raise your mowing height if drought conditions are expected. Don't wait until the drought hits to raise your mowing height—it will be too late to help.
- Alternate your mowing pattern to reduce soil compaction from mower tires.
- Water efficiently in the spring. Deep, infrequent irrigation promotes deeper rooting. Water enough to wet 6 to 8 inches deep (check with a soil probe), and then wait to irrigate again until the turf begins to turn a dull, blue color, the first sign of moisture stress.

Prepare the Irrigation System

- Perform an irrigation system audit. Place catch-cans of equal size in a grid pattern about 15 feet apart around each sprinkler and run each sprinkler for 15 minutes. You can then determine the distribution uniformity. Make adjustments to nozzles, arcs, and pressure regulators if needed.
- Make sure sprinklers are all rotating properly and are not leaking.
- Replace worn-out nozzles. You can get a water savings of up to 6% just by replacing worn-out nozzles.

What to Do During a Drought

Once the weather turns dry, do everything you can to reduce the stress on your turf. You also must be prepared to communicate the condition of your field and your watering practices to interested parties.

Communication

- Hopefully you already have a written document explaining your plan and best management practices (BMPs) for watering during a drought (see above section on writing a contingency plan). You can use this document as the basis for your communication with administrators, coaches, parents, and athletes.
- Explain the consequences of playing on non-watered fields. These include injuries because of hard surfaces and worn-out turf that is unable to recover.

Maintenance Practices

- Do not perform any cultural practices such as aerification or vertical mowing during drought conditions—the turf will not be able to recover.
- Only mow when needed. Your turf's growth rate will be much slower during dry weather. Mowing when it is not needed only puts more stress on the turf plants.
- Do not apply growth regulators or pesticides. Herbicides can be especially damaging during hot, dry conditions.
- Applying a wetting agent will help to disperse water into water-repellent soil. Be aware that wetting agents actually lower the soil's water holding capacity.
- Avoid applying fertilizer until wet weather returns.

Irrigation Practices

- Water during the early morning hours (4:00 – 9:00 AM). This is the most efficient time to water because the evaporation rate is low and wind speed is minimal.
- Eliminate overspray onto sidewalks, parking lots, etc. where possible. This not only eliminates wasted water, but it is also important for public perception. You do not want to anger the public by visibly wasting large amounts of water at any time, especially during drought conditions.
- Focus on irrigating high priority areas like the centers of your field.

Managing Water Use During Water Restrictions

- Be aware of your local water restrictions and be sure to follow them. You are breaking the law if you don't abide by them and you can be fined.
- Be prepared to report your weekly water usage to your local water authority.
- Be ready to close the field during extreme conditions in order to avoid complete turf loss and reduce the chance for athlete injury (and subsequent liability).

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Alternative Water Sources

The use of alternative water sources such as effluent (reclaimed) water is gaining popularity on golf courses. Explore the possibility of using effluent water as an irrigation source. Because this water is not safe for drinking, you will not face the same water restrictions you do using potable (drinking) water.

Monitoring Drought Conditions

Monitoring drought conditions and forecasts will help you plan your field management schedule and keep you up-to-date on drought conditions in your area. Here are some useful websites for drought information.

- <http://www.drought.gov/>
- http://www.cpc.noaa.gov/products/expert_assessment/drought_assessment.shtml
- <http://www.drought.unl.edu/>

Your state may also have its own drought-monitoring website.

Few things can be as stressful for a turf manager as watching your turf wilt and die and not being able to do anything about it. Drought conditions often bring about water restrictions for turfgrass areas including athletic fields. By properly preparing your turf before a drought occurs, you can increase your turf's chances for survival once water is scarce. Also, remember to outline your plans for watering during a drought before it occurs and be sure to communicate those plans. You can never win the battle against Mother Nature, but you can do your best to deal with her effects.



During drought conditions, focus on watering only high priority areas.