



# STORMY DAY REVIEW

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### STORMWATER FACT

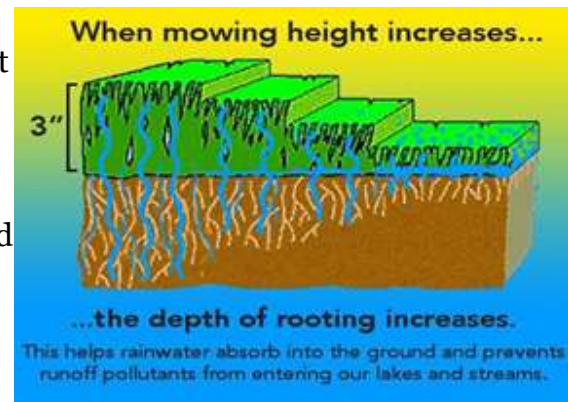
Leaves count for 75% of solid waste in streams each fall.

## YARD SMART

Caring for our yards directly affects the quality and quantity of the water in our lakes and streams. Each person has their own idea of how a yard should be kept. Some people love a native landscape with small areas of turf grass while others find pride in a perfectly manicured green lawn. The golf course look may bring joy to many people, but if it is done carelessly it can be harmful to our streams and the local environment. Rain and irrigation water picks up the litter, debris, and chemicals from the ground and takes them to the local stream. Native plants have many benefits to our stormwater and ecosystem. However, many people like to incorporate trimmed grass as well. You can minimize the impact of well-manicured lawns by making the following small alterations to your summer lawn care and improve your stormwater runoff!

### Let it Grow Taller

Increasing the mower height to 3 inches or more is a small alteration with many benefits including healthier lawns. The taller grass can establish longer and denser root systems. The roots act as a pathway for water to trickle down into the soil, reducing the need for watering. Vegetation and roots slow down runoff allowing for more water to be used by the grass. Additionally, the thicker roots and taller grass naturally blocks the ability of weeds to grow in your yard, saving you time and energy while decreasing pollution entering the water.[3]



## Mulch Don't Waste

Bagging grass clippings can help supply a clean-cut look. However, by taking the clippings and leaves, you are mining the soil. Grass cutting and leaves have many nutrients such as phosphorus and nitrogen necessary for plant growth. The removal of plant matter from yards drives the need for outside nutrients from substances such as fertilizer.[1]

Using a mulching mower on grass and leaves can supply a clean-cut look while allowing organic material and nutrients to remain in your yard. Mulched organic material on and in the soil slow down runoff and increase infiltration of water into the soil.

## Fertilize Appropriately

It is best to avoid using fertilizer on lawns. Inadequate use of fertilizer, using too much, or using it when it is not needed is very harmful to grass. When and if fertilizer is used, it is critical to know the proper methods to minimize the amount of pollution leaving your yard. Incorrectly applied fertilizer can run off yards and hard surfaces entering our lakes and streams. When fertilizer gets into our waterways, it can cause massive amounts of algae blooms that can be toxic to animals that live in and drink the water, the algae also strips the oxygen from the water. This results in areas with no oxygen, such as the 'dead zone' in the Gulf of Mexico, as seen in the image below. The problem hits even closer to home once it reaches drinking water, lakes, rivers, and streams because as little as 10 milligrams of nitrogen in a liter can cause 'blue baby syndrome' in newborns.[6]



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## Aerate

- Early fall is the best time to aerate lawns
- Aerating soil allows for water, air, and fertilizer to reach roots

## Keep it Clean

- Keep grass, leaves, and fertilizer off the roads; away from storm drains and grates.
- Do not apply within 30 ft of streams
- Sweep stray fertilizer onto lawn [3]
- Store fertilizer in a shelter away from moisture

## Test

Testing the soil every 3 to 5 years is crucial to know what nutrients are in the land and what might be lacking. You can get your soil checked through MU. It is best to combine multiples samples taken from a range of places in the yard.[2,3]

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## Compost

- Composting your clippings, leaves, and food waste is a great alternative if you do not like the look of mulched grass clippings or using fertilizer. Incorporating a wide range of nutrients helps with water retention.
- Apply matured compost the following spring.[1]

## Types of Fertilizer

- Start with fertilizer with low concentrations of phosphorus and nitrogen to prevent runoff and burning the grass.
- Slow-release Nitrogen can prevent fertilizer from being lost in runoff.
- Fertilizer with a high concentration of nitrogen applied in large amounts and too late in the season can limit root growth and the resilience of the turf.
- 1 pound per 1000 square feet is the advised application maximum for all types of fertilizer.
- Phosphorus is important when setting up lawns. However, little is often needed after the first year. Purple and red pigments in grass blades is an indicator of low phosphorus.
- Organic fertilizer releases nutrients slower requiring fewer applications and reducing runoff concentrations [2,5]

## When to Apply Chemical Fertilizer

- During Growing season ~March-October nitrogen is the most beneficial in the spring. [3]
- Do not apply before it rains or watering the yard, because the water will wash away the fertilizer [3]
- Fertilize after watering the lawn
- Always clearly read the bag specified application instruction, check to see if amounts are given per application or per year

## Stay Away from Streams

Mowing directly next to streams can have significant ramifications on local streams and surface water bodies. By leaving at least 25 feet of “No Mow Zone” around a stream, the plants act as a buffer protecting the water. Grasses, trees, and shrubs offer many benefits. The plants can slow down the water leaving the land, uptake nutrients, and stabilize stream banks.



# NO MOW ZONE



## **BONNE FEMME WATERSHED WEATHER STATION**

*Do you want to stay up to date with local temperature, rain amount, and wind direction?  
There is a weather station behind the Southern Road and Bridge building.*

*To get hourly updated information go to*

**<https://bit.ly/2RNIS22>**



# **HINKSON CREEK WATERSHED LAND MANAGEMENT WORKSHOP FOR YOUR YARD**

**WHEN:** September 28<sup>th</sup>  
9am-1:30pm

**WHERE:** Columbia City  
Council Chambers

**REGISTRATION:**  
By September 23<sup>rd</sup>

at  
[helpthehinkson.org](http://helpthehinkson.org)

or

Call Boone County  
Stormwater at  
573-886-4330

## **Come Learn About**

- Hinkson Creek's History
- Attracting Pollinators
- Invasive Species
- Stormwater Pollutants
- Columbia's Climate Action & Adaptation Plan
- Columbia's Landscape Management Ordinance



## Calendar of events

<p><u>Friday, July 12</u>  <b>Boone Electric Annual Meeting</b>            4:30-8:00            Battle High School  <u>Saturday, July 13</u>  <b>Rock Bridge Water Festival</b>            9:00-12:00            Rock Bridge Memorial State Park  <u>Thursday, Aug 1</u>  <b>Tomato Day</b>            6:00pm            Horticulture and Agroforestry Research Center</p>	<p><u>Saturday, Aug 10, 2019</u>  <b>Columbia Crawdads cleanup</b>  <u>Tuesday, Aug 13, 2019</u>  <b>Big Muddy Speaker Series</b>            7:00-8:00PM            Les Bourgeois  <u>Saturday, Sept 28<sup>th</sup>, 2019</u>  <b>Hinkson Creek Land Management Workshop</b>            9:00-1:30            City of Columbia Council Chambers</p>	<p><u>Saturday, Oct 5, 2019</u>  <b>Race to the Dome</b>            9:00am            Hartsburg, boat ramp  <u>Saturday, Oct 19</u>  <b>Missouri River Cleanup at the Capital</b>            9:00 am            Wilson's Serenity Point at Noren Access  <u>Saturday, Nov 9,</u>  <b>Grow Native! Workshop</b>            8:30-3:30            Bradford Farm</p>
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1) MS4 fact sheet - Park & Open Space Fertilizer / Chemical Application Programs. (n.d.). Retrieved from

[https://stormwater.pca.state.mn.us/index.php?title=MS4 fact sheet - Park & Open Space Fertilizer / Chemical Application Programs](https://stormwater.pca.state.mn.us/index.php?title=MS4_fact_sheet_-_Park_&_Open_Space_Fertilizer_/Chemical_Application_Programs)

2) Soil Testing for Lawns. (n.d.). Retrieved from <https://extension2.missouri.edu/g6954>

3) Bay, A. F. (n.d.). Reduce Your Stormwater. Retrieved from <http://www.stormwater.allianceforthebay.org/take-action/habits-to-help/lawn-and-garden-care>

4) Environmental impacts of road salt and other de-icing chemicals. (n.d.). Retrieved from [https://stormwater.pca.state.mn.us/index.php/Environmental\\_impacts\\_of\\_road\\_salt\\_and\\_other\\_de-icing\\_chemicals](https://stormwater.pca.state.mn.us/index.php/Environmental_impacts_of_road_salt_and_other_de-icing_chemicals)

5) Gulf's 'dead zone' is biggest ever. (2017, August 04). Retrieved from <https://www.thegazette.com/subject/news/nation-and-world/gulfs-dead-zone-is-biggest-ever-20170804>

6) Fertilizer Recommendations – Turfgrass Science at Purdue University - Purdue University. (n.d.). Retrieved from <https://turf.purdue.edu/fertilizer-recommendations/>

7) Manassaram, Deana M, et al. "A Review of Nitrates in Drinking Water: Maternal Exposure and Adverse Reproductive and Developmental Outcomes." *Environmental Health Perspectives*, National Institute of Environmental Health Sciences, Mar. 2006, [www.ncbi.nlm.nih.gov/pmc/articles/PMC1392223/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1392223/).

8) Bay, Alliance for the Chesapeake. "Reduce Your Stormwater." Reduce Your Stormwater, [www.stormwater.allianceforthebay.org/take-action/habits-to-help/lawn-and-garden-care](http://www.stormwater.allianceforthebay.org/take-action/habits-to-help/lawn-and-garden-care)

## Quick Quiz

Take this quick quiz and return it to Michele Woolbright in Resource Management or email your answers to [stormwater@boonecountymo.org](mailto:stormwater@boonecountymo.org) by August 1<sup>st</sup>. Participants can win a free soil test!

Name: \_\_\_\_\_

Department: \_\_\_\_\_

- 1) Where can soil testing be completed? \_\_\_\_\_
- 2) What event is happening September 28th? \_\_\_\_\_
- 3) Should you mow along stream banks? YES or NO
- 4) Should you apply fertilizer before it rains, or you water your lawn? YES or NO