



STORMY DAY REVIEW

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Testing the Waters

Have you ever stood next to a stream and wondered how clean the water was before dipping your toes in? Having access to safe and useable water is essential to life, not just for people but for all living things. Stormwater pollution can impact our water quality, which can affect our quality of life. The best and most efficient way to find out if a stream is safe is to test the water.



Missouri Stream Team is a state-sponsored program that can help us understand the streams and rivers that surround us. As Boone County develops its landscape, the impact stormwater has on our waterways increases. It is every person's responsibility to protect the health of our watersheds. It takes a collaborative network of dedicated citizens, all working together to understand and raise awareness

about water issues. This helps ensure the quality of water.

In our not so distant past, it was prevalent for people to dump trash and sewage directly into our streams. While we have come a long way and these practices are less common, stormwater runoff can still send these same pollutants into our streams. Lawn fertilizers, animal feces, and everyday trash are just a few of the things that run into our streams. Other harsh chemicals such as motor oil

can also easily find its way in, especially after a significant rain. The most effective way to find out what is actually in there is to get out and test the water!

Testing waterways using Missouri Stream Team methods is easier than one would think and can even be a ton of fun! Before getting started, always get permission from the landowner.

Trespassing is illegal, and no one needs to get in trouble.



Rock Bridge Monitoring Blitz

Please join us for the seventh Rock Bridge Monitoring Blitz is on October 12th from 8:30 AM until noon. The event will start at the Devil's Ice Box parking lot at Rock Bridge Memorial State Park. Participants will venture into the park with an experienced Stream Team volunteer and their team to one of six stream testing sites. The veteran Stream Teamer will help out with each step along the way. It is an excellent way to get your feet wet and see if you would like to become a Stream Team member.

Throughout the day, teams will catch aquatic animals, conduct chemical water quality tests, complete a visual survey, and measure the streams flow. Monitoring the health of streams passing through the park is an ongoing citizen-lead science project. This event provides meaningful information about our streams and how they change over time. There will be a free lunch after for participants.

This fantastic event is held each spring and fall and is co-sponsored by Rock Bridge Memorial State Park, Boone County Stormwater Management, and Missouri Stream Teams.

The Four Main Components of Stream Team Testing

Streams are complex systems and each part builds on the other. If one aspect is out of balance it can disrupt the whole system. This can make the water undrinkable for humans and uninhabitable for animals that live in and around the stream. The four main components of testing are explained below.

Water quality is dependent on how the surrounding land is used. Periodically completing a visual assessment survey can help you see changes over time. The visual survey helps pinpoint any areas that might be a source of pollution.



Visual Assessment

Biological

Chemistry

Flow

Biological monitoring is done by seeing what macroinvertebrates or insects live in the stream bed riffles. You can tell a lot about a stream by knowing what bugs are in a stream and what type they are. Insect type is essential because some bugs are more tolerant of pollution than others. The macroinvertebrates are collected by doing the benthic boogie. This is when you dance loose bedrocks from the stream and collect the dislodged bugs in a net. Then you count the bugs.



Types and amounts of chemicals change from stream to stream. The chemistry often looked at is Dissolved oxygen levels, pH, temperature, phosphorus, nitrogen, and conductivity. These are great red flags of something wrong with a stream. They can help explain macroinvertebrate levels.

The flow measures how much water is passing through a stream. If used in combination with the chemical analysis, it can show you the quantity of the chemicals in the stream. If the flow changes often, factors upstream are likely contributors. The flow is measured by finding how wide and deep a stream is. Then you time how long it takes for a wiffle ball to float downstream.

Family Fun Day Murals



The Boone County Family Fun Festival was held at Stephens Lake Park this past September. It was an exceptional event with great food and activities. The festival brought together many people from different departments who might not have met otherwise.

One of the activities at the festival was a collaborative mural painting focusing on stormwater. Murals are a great way to tell a story in an artistic, visual way to share knowledge and information. One of the murals we created can be seen below. The painting began as a scene of falling rain from a friendly storm cloud. The rain falls from the cloud into the park. Some of the raindrops fall onto a tree and some grass, however the majority of the rain falls on hard surfaces such as sidewalks and roads.

This water is not able to soak into the ground. Instead, water runs off these surfaces and makes its way into the storm drain system. The rain picks up soda cans and oil along its path, eventually weaving through the storm drains and reaching our local waterways untreated. Fish, turtles, and frogs can be seen under the water. In the background, you can see people getting some drinking water from the stream. (The message being that some people get their drinking water from the same waterways that are polluted). Young artists took on the mural and made a wonderful interpretation of how they viewed the world, using color and imagination to depict a standard rain event.



STORMWATER FACT

Missouri has more than 110,000 miles of rivers and streams. If the streams were attached end to end, there would be enough miles of Missouri streams to wrap around the earth's circumference 4 times.

Calendar of events

<p>October 12th 8:30AM-12:00PM Monitoring Blitz at Rock Bridge Memorial State Park, Devil's Ice Box Parking Lot</p> <p>October 15th 6:30PM-7:30PM Large Landscape Conservation at Kansas City Public Library</p> <p>October 19th Hinkson Clean Sweep coordinated out of Flat Branch Park</p> <p>October 26th 8:30AM-12:00PM Rock Bridge Renew at Rock Bridge Memorial State Park, Devil's Ice Box Parking Lot</p>	<p>November 2^{ed} Missouri River Relief Race to the Dome At Hartsburg or Providence river accesses to the Capital</p> <p>November 9th, 2019 10:00AM-12:00PM Fishing Event: Beginners Fly Fishing at Cosmo-Bethel Lake</p> <p>November 9th 8:30AM-3:30PM Grow Native Workshop on Native Plants for Pollinator Enhancement, Livestock Production and Prairie Strips within Row Crops</p>	<p>November 13th 8:30AM-12:00PM Grow Native! Professional Member Conference at the MU General Services Building</p> <p>November 23rd Missouri Stream Team 30th Anniversary Party and River Gala at Echo Bluff State Park and River</p> <p>December 14th Bonne Femme Land Management Workshop at Central Regional Conservation Office</p>
<p>For more information about these events email Stormwater@boonecountymo.org or call (573) 886-4330</p>		

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Quick Quiz

Enter to win a prize by taking this quick quiz or send in a historic photo of a Boone County stream. Send these to Michele Woolbright in Resource Management or email them to Stormwater@boonecountymo.org by October 25th. Participants are entered to win a trowel and a gift certificate to Starbucks!

- 1) What event is happening October 26th? _____
- 2) What are the four main components of stream testing?

- 3) Where does stormwater go? _____
- 4) What is counted in the biological monitoring? _____
- 5) How many miles of stream are there in Missouri? _____