THE REPORTER

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Yard Waste and other Natural Debris Can Cause Erosion Problems

Yard waste and other natural debris such as sticks, twigs, straw, etc…, can cause serious erosion issues. Homeowners tend to toss this type of debris in low area thinking that it will help "fill the hole" or build up new soil by capturing sediment. But these low areas, such as ditches, ravines and creek sides, are all areas were stormwater naturally flows and concentrates. The problem with putting debris in the low area, is that it will kill out any vegetation (and the roots) that would have normally grown there. Soon the concentrated flow of water will undermine the pile of debris and cause more erosion at a faster rate.

If the yard waste is deposited along a stream, it will likely end up in the stream. Decaying yard waste can remove oxygen from the water, making it difficult for fish and other aquatic species to survive. Plant nutrients such as nitrogen and phosphorus are also released during the decomposition process, and these nutrients in excess amounts can cause algal blooms in the water. This also is a threat to aquatic life.

Yard waste also is the culprit in many blockages in pipes and drains. These blockages can cause damage to infrastructure and exacerbate flooding.

Here are some things to remember when dealing with yard waste:

- Do not dump grass or yard waste onto a creek bank, or an area where it will wash into a creek
- Do not dump sticks and brush in ravines or ditches. There will be increased erosion.
- Never put yard waste into storm drains. Serious blockage problems may occur.
- Compost leaves, brush, grass clippings and other yard waste.
- Plant native trees and ground cover to slow erosion on your property.
- Mow the grass high and leave the clippings on the lawn. This helps retain moisture and add nutrients to the soil.
- Utilize curbside pickup services.

Michael Edwards Joins NRCS

We're excited to announce the addition of Michael Edwards to the St. Charles County office. He'll be working for NRCS and assisting the SWCD with farm programs and cost-share practices. Workers in the office are familiar with Michael, who worked with our partners in Troy and assisted with the Regional Envirothon in recent years. Here's Michael:

Hello. I am Michael Edwards, the new NRCS Technician in the St. Peters Office. I live with my family on our farm about 10 miles North of Troy, Mo. We have a small flock of sheep and a variety of fowl (chicken, turkey, duck and guinea) that we take care of on the farm. This year will be very exciting for me as my fiancée and I are getting married this fall. She is a nurse at Capital Region Hospital in Jefferson City.

I graduated from Silex High School in 2013 and I was involved in many aspects of the school's FFA Chapter. After high school, I attended Southwest Baptist University in Bolivar, Mo where I graduated with a Bachelor of Science Degree in Biology, emphasizing in Environmental Biology.

I began my experience in soil conservation as a summer intern for the Lincoln and Pike County SWCD's from 2014 to 2016. Since 2016 until recently I served as the shared SWCD technician in two field office service areas until joining NRCS. I look forward to meeting and assisting you soon.

Bumble Bees aren't just Bumbling Around

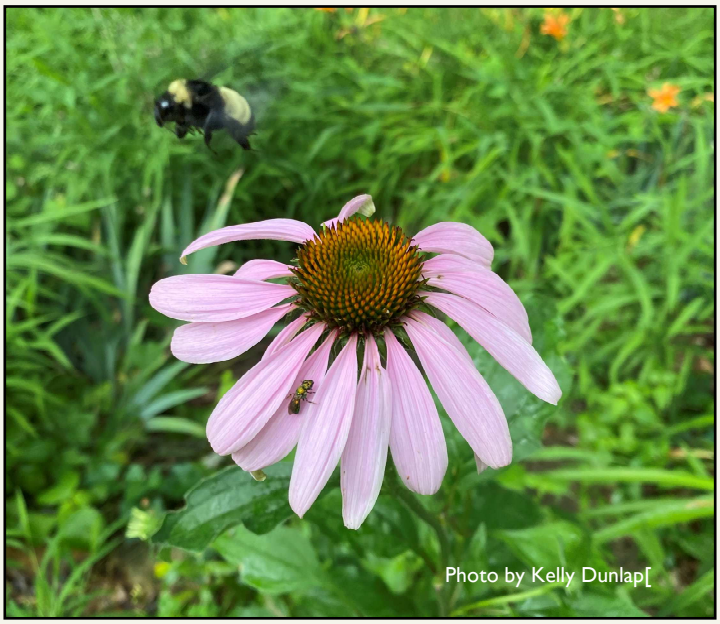
In honor of National Pollinator Week, we're going to take a closer look at one very important pollinator: the fascinating and beautiful bumble bee.

There are about 250 known species of bumble bees, 46 in North America, and *ten native to Missouri*. They include the Two-spotted (Bombus bimaculatus), the Brown-belted (Bombus griseocollis), the Half-black (Bombus vagans), and perhaps the more recognizable, Common Eastern bumble bee (bombus impatiens).

They are all relatively large with fuzzy bodies, long tongues and short, stubby wings that they flap front to back (instead of up and down) as they appear to bumble from bloom to bloom. They are often seen dusted in pollen, appearing to be very busy, yet very messy pollinators. And they are truly amazing.

They are bees with the longest work day - usually the first bees up in the morning and the last to go to bed at night. They can fly in cooler temperatures due to the rare ability to thermoregulate, generating heat in their thoracic muscles by shivering. Not only does this warm them up for early morning flights, but it also allows the queen to keep her eggs warm in early spring nests.

Bumble bees are extremely important pollinators for more reasons than the length of their work day.



For years, it was believed that bumble bees defy aerodynamics and should not be able to fly. They are large heavy bees with tiny wings. High speed photography has since shown that bumble bees flap their wings back and forth rather than up and down. The sweeping motion creates vortices described as "little hurricanes" with centers of lower pressure above the wings that help keep the bees in flight.

They also are one of the few pollinators that can get the job done for tomatoes and eggplants (to name a few). The flowers of the tomato, for example, require a long tongue, and the stubborn pollen needs to be dislodged under vibrant shaking, which the bumble bees can provide. It's called buzz pollination and is the most efficient way to release the fine-grained pollen of some tubular shaped blooms. Bombus impatiens, the Common Eastern bumble bee, are raised commercially and made available to high tunnel and greenhouse farmers growing mainly tomato plants.

Bumble bees are also important to agriculture in the wild because of their ability to forage in the cold, and in cloudy and rainy conditions. Besides tomatoes, they can pollinate cranberries, peaches, cherries, almonds, sunflowers, beans, blackberries, soybeans, peppers, alfalfa, strawberries, blueberries, apples, and much more!

Equally important are the bumble bees' services to the native plant ecosystem. Having evolved alongside native plants, Missouri bumble bees are the best pollinators of native grasses and forbs. These plants provide important food sources for all kinds of mammals and birds. Among the native plants especially loved by bumblebees are: thistles, goldenrods, milkweeds, clover, vetches, honeysuckles and bee balm.

While they don't convert nectar into honey, they do gather both pollen and nectar to feed their larvae and the bees in the colony. In spring, a new queen incubates her eggs in a little nest of straw, in a hole in the ground in which she lived out the winter months. Some species will nest above ground in thick clumps of grass. Before laying the eggs, she worked diligently to collect early sources of pollen and nectar from early bloomers such as willow, and she made a clump of the food on which to lay her eggs. Once the first nest hatches, the worker bees of the colony will assist the queen as she lays more nests and feeds more bees, all the while adding more and more able pollinators to the ecosystem.

Other interesting facts about bumble bees:

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Resource Conservationist Retires August 28

In a few short weeks, our friend and coworker, Shawn Keller will load everything she owns in her RV and head west . Shawn is closing the book on a nearly 20 year career, with 17 of those years with the Natural Resources Conservation Service stationed in St. Charles County.

Countless farmers, landowners and community citizens have been able to rely on Shawn for up-to-date information on land improvements, funding opportunities, and conservation options. Beyond that, Shawn treats every customer and every phone call as if their question or concern has top importance, providing fast and accurate information in her areas of expertise; and researching and seeking answers when the issue was outside her knowledge. Always learning and always finding a way to share new knowledge… that is Shawn. She has been the "go to" person for everything from cover crops and high tunnels to creek erosion and pest identification.

She began as a volunteer for NRCS in 2001, worked for the Soil and Water Conservation District for a time, and then was hired full-time with NRCS in 2004. As a Resource Conservationist, Shawn prepared conservation plans for local farmers which helped them stay in compliance with the Food Security Act of 1985. She quickly developed a specialty in working with farmers who have large animal numbers and who dispose of waste on their farm fields. The work Shawn performed helped keep that waste from polluting local streams. At the state level, Shawn's duties included reviewing the Comprehensive Nutrient Plans in a 22-county area (Area 3). Another special area of expertise is found in Shawn's review of numerous Pesticide and Nutrient Management Plans written by both the NRCS and SWCD in Area 3.

Among Shawn's most long-reaching accomplishments involves the work she did with a local watershed group to affect significant changes to subdivision construction setbacks on local creeks in St. Charles County. "The setbacks help to ensure the health of local creeks and their biological inhabitants," she explained. "But not only that, the setbacks also go a long way in protecting future landowners in those subdivisions from losing property due to erosion and flooding."

"The best part of my job has been interacting with local farmers, answering questions and providing information that can really help them," she explained. "And I've learned so much from them as well...from how food is grown and everything it takes for a farmer to have a successful crop. I especially enjoyed working with local market growers who are providing fresh local vegetables for local families through CSAs and farmer's markets."

"Shawn has been a true asset to our office and to the counties in which she has worked," said District Conservationist Renee Cook. "While we're going to miss her, we also applaud her career with us and wish her the best in retirement."

Retirement for Shawn will mean more sunshine and, as she said, she will "not have to deal with ICE and SNOW" unless she chooses too. This new chapter will include traveling the country in an RV, quilting, and competing with her Aussie, Ide, in agility competitions. And if we know Shawn, it will also include making lots of new friends, quilting unique and wonderful gifts for them, sharing new recipes and health hints, and voraciously reading for both pleasure and knowledge.

Best wishes and happy travels, Shawn!

- A colony can contain from 50 to 500 individuals
- The first nest of bees each year hatches all female worker bees
- Male bees and new queens are born late in the summer
- Male drones and new queens leave the nest as soon as they can fly, and never return
- Each fall, all the bees in the colony die, except the queen
- There has been a noticeable decline in bumble bee numbers, with most of them considered threatened and vulnerable
- The Rusty Patched bumblebee (Bombus affinis) was listed as an endangered species in 2017
- Bumble bee numbers have declined due to disease, pesticides, habitat loss and climate change

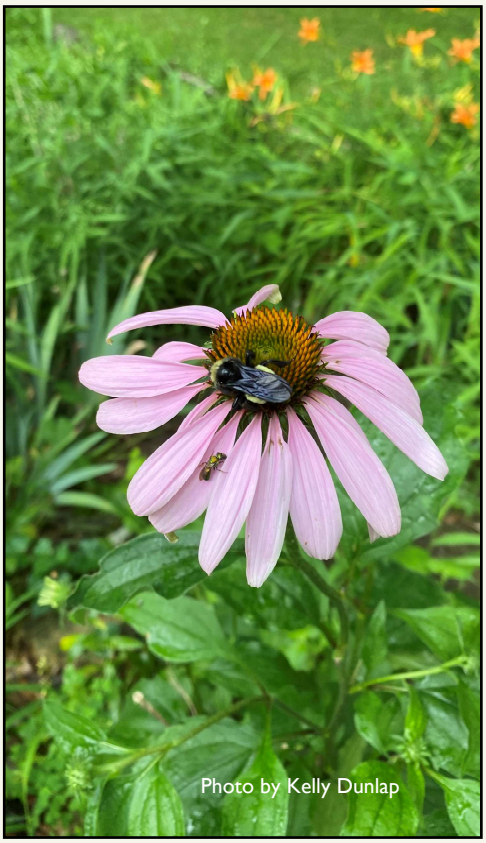
Photo by Kelly Dunlap

Ways to help:

- Plant a pollinator garden with a variety of flowering plants and grasses.
- Use containers and pots to add color around the porch and bring in more pollinators (think butterflies and hummingbirds, too!)
- Plant fruit trees and early flowering native trees such as willows. The queen bumble bee needs early foraging opportunities.
- Go native at every opportunity. While bumble bees aren't picky, they did evolve alongside the native flora
- Provide nesting spots: undisturbed soil, old mole burrows, clumps of grass, brushy areas
- Do not use pesticides in your gardens! Crop managers follow special rules and instructions on pest management. It is often the homeowner who overuses these chemicals

Encourage toleration of bumble bee nests! They are often destroyed by homeowners who fear the aggressive behavior of the bees. When the nest is threatened, they will attack and the disturber may be stung multiple times. If you find a bumble bee nest, flag its location and avoid using mowers or other equipment over or near the nest.

Lastly, grab your camera! Finding and photographing bumble bees can be entertaining and scientifically beneficial. The Xeres Society is in partnership with the citizen group, Bumlbe Bee Watch, to collect information on bumble bee sightings. Visit the site at https://www.bumblebeewatch.org/ to report a sighting or to learn more about these beautiful bees.
