Volume 3, Issue 9

The Flow

Fourteen Mile Creek Goose Creek-OH River WATERSHED Improvement Project

New Natural Resources Podcasts

Podcasts are a hot topic in today's world of social media and technology. There are podcasts on a wide array of topics; everything from audiobooks, news and sports to programs for kids. Now, there is a podcast network focused on delivering science-based natural resource management information. The series within this natural resources network include four different topic areas consisting of 55 episodes currently.

The podcasts originate from Purdue University. The four different topic areas are: Deer University, Fire University, Pond University, and Habitat University. Deer University discusses topics on deer biology, ecology, and management to help landowners and hunters apply science to practical management objectives. Fire University is a science-based podcast covering the latest research in fire ecology and how it relates to management of wildlife and plant communities. Conversations with aquatic scientists, landowners and pond professionals cover topics like pond habitat, fish stocking, vegetation control and pond construction are covered on Pond University. Habitat University discussed the science behind wildlife management and how landowners and managers can use different habitat management practices to improve their land for wildlife.

If these topics sound interesting to you, tune in to the network at https://naturalresourcesuniversity.libsyn.com/

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Whether you're in the field, on a tractor or even on horseback, this service enables producers and stakeholders to receive notifications while on the go. Subscribers will receive text messages or emails about important program information, eligibility requirements and deadlines from the Farm Service Agency (FSA), Natural Resources Conservation Service (NRCS), and Risk Management Agency (RMA).

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Clark County Soil & Water Conservation District

Partners helping to make our project happen:

- Clark/Jefferson/Scott County Health Departments
- Jefferson and Scott County SWCDs
- IDNR Division of Nature Preserves
- Indiana State Department of Agriculture
- Natural Resources Conservation Service

Inside this issue:

Cover Crops – The Hidden Benefit

There's more to cover crops than meets the eye – in fact there may be much more. The "hidden half" of a cover crop is the root system. The root system is that major contributor to the soil health benefits of cover cropping that is always out of sight and therefore often out of mind.

Nearly everything we know about the growth of cover crops has been obtained from measuring the above ground parts of the plants however, much of the benefit from cover crops comes from the roots. In an effort to draw attention to the value of the below-ground portion of cover crops, the Conservation Cropping Systems Initiative (CCSI) recently launched The Root Project. The project's detailed illustrations of the typical rooting patterns of 13 of the more common cover crops has quickly become a hit in the soil health community.

After an extensive search for science based information and past demonstration and research plots, CCSI has created high-quality graphic images of the typical root systems of annual ryegrass, cereal rye, wheat, oats, Oilseed and Daikon radish, buckwheat, sunflower, hairy vetch, barley, winter pea, rapeseed and favabean. These root images are available free to non-commercial users and can be downloaded at ccsin.org/root-project

Farmers and conservation agency folks (as well as others) have long recognized the value of a diverse cover crop mixture in improving soil health. Early research through CCSI also indicates that beyond the tangled biomass above ground, there is a similar benefit below the ground in the diversity of the various root systems.

The ideal cover crop mixture will have roots that explore all corners of the soil using coarse roots that grow vertically to reach deep and fine roots that grow horizontally and spread out at shallow depths. Joseph Amsili, extension associate with Cornell Soil Health Laboratory, emphasizes that storing carbon in the soil is critical to building soil health and that carbon exuded from the roots or that comes from root cycling is more stable than carbon from plant parts that grew above ground.

Amsili's early research while still at Penn State prior to joining the Cornell lab involved an exhaustive sampling and washing of root profiles of three cover crop species (triticale, canola and crimson clover) and a mixture that included those species. Results of that research showed that individual species excelled at specific goals. Triticale produced two to three times more roots between the rows compared to the other cover crops and it had the largest root-to-shoot ratio, meaning there can be an equal amount of biomass above and below ground. Because it is a legume species, crimson clover was able to fix nitrogen and meanwhile the tap root on the canola grew vertically to break up compaction layers, promote infiltration and access additional water and nutrients.

This early work shows that diversity in the plant species can ensure that there are different functional root traits in the soil and should be a help in designing cover crop systems using species whose root traits below the soil surface will complement the beneficial traits provided by the biomass growing above the surface.

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Falling: Leaves and Water Quality

Indiana is now beginning to experience fall foliage. The colors can make for a great hike or photography session in Charlestown State Park, Clark State Forest or at Deam Lake SRA. While the leaves are beautiful, they can become a problem to our water flow and quality.

Leaves accumulate around storm drains and block the flow of water, causing flooding in streets and yards. The larger concern is when those leaves and nutrients make their way into the stormwater pipes and waterways. In a natural setting, the leaves that fall during this time of year are naturally recycled. As leaves decompose they keep the forest floor full of nutrients. When leaves fall onto paved surfaces found in urban areas, their decomposition leaches those nutrients onto roads, which will be picked up by stormwater runoff. These nutrients can reduce water quality in local waterways and lakes. They can also contribute to the nutrient loading that causes the harmful algal blooms (HAB) that plague the Gulf of Mexico. The extra nutrients feed the algal growth, which in turn uses a large amount of oxygen. This depletes the water of oxygen and blocks sunlight needed for the survival of native fish and plants below. Here are some tips for protecting water quality:

Mulching: Use your fall leaf litter as mulch for your yard and garden. Mowing over leaves will aid in their breakdown and decomposition, which will provide a natural and free way to add nutrients to your yard. The same can be done for your idle garden. If you missed planting a cover crop, you can effectively provide erosion control and add nutrients to your soil by using natural leaf litter as mulch on your garden.

Composting: You can start a compost pile in your yard to use in the spring for your garden. This will take some space, time and other supplies, but it can be a worthwhile practice for those wanting to naturally fertilize their garden. It also helps to reduce trash and food wastes.

Leaf Pick-up in Municipalities: If you live within the limits of a municipality you can bag your leaves, leave them curbside on your trash day or alternate day and they will be picked up. There may be limits on how many bags per week, so be sure to check with your municipal office for details.

Don't Burn Your Leaves: Not only do burning leaves create plumes of smoke and harm air quality, but it is illegal to do so in Clark County. It can earn you a visit from your local fire department and a hefty fine.

Before you mulch your leaves, compost them for the spring or have them hauled away, be sure to make a pile of them and have some fun!

Here's a Flow Fact for You!

Carefully storing and disposing of household cleaners, chemicals and oils can go a long way in protecting and even improving water quality in the 14 Mile Creek Watershed. Antifreeze, household cleaners, gasoline, pesticides, oil paints, solvents, and motor oil are just some of the common household products that can impact water quality. Keeping these products out of the normal household waste stream and not down storm drains or poured out on the ground will make a big difference in protecting our other natural resources as well. Here are some simple steps you can take to carefully dispose of household wastes and help keep our water clean. Give them a try. A few simple changes can make a big difference!

*Identify it. Be aware of household products that can harm children, pets, and the environment. The words "danger", "caution", "warning", or "toxic" indicate that you need to be careful in how you use and dispose of the product.
*Less is better. Reduce waste and save money by purchasing only the materials you need. When possible, choose less toxic alternatives. For example, try cleaning your windows with vinegar and water.
*Store properly. Keep unused products in their original containers with labels intact. Select cool, dry storage areas that are away from children, pets, food products, and wildlife.
*Disposal is key. Never dump motor oil, chemicals, or other toxic materials down storm drains, sinks, toilets, or on the ground. Contact your local solid waste management district for disposal locations, guidelines, and possible collection/disposal events.
*Don't forget the RV. Dispose of recreational vehicle sanitary waste at a nearby drop-off location. Never put it down a storm drain or roadside ditch!

By keeping these toxic materials out of our waterways, you making living much easier for aquatic critters and plants.

Check Your PARP Status

Now is the time to check on your private pesticide applicator permit (PARP) status. Private applicator permits are renewable for a five-year period provided the applicator has attended at least 3 Private Applicator Recertification Programs (PARP) during the 5 years since they either received or renewed their permit. It is pretty simple to check on your status online, just go to: inplants.oisc.purdue.edu/USAPlantsIN?Index.aspx

Here are some contacts you can use if you have pesticide applicator questions:

*General pesticide licensing information and questions (including continuing education for commercial applicators and for private applicators) – Cassie Davis, 765-494-9563, davil090@purdue.edu
*Farmers and restricted use pesticide dealers – Laura Fritz, 765-494-6271, lfritzl@purdue.edu
*Commercial applicators and businesses – Jill David, 765-494-1594, davisjs@purdue.edu
*Pesticide products – L.E. Bradford, 765-496-7378, pestproducts@groups.purdue.edu
*Pesticide licensing – Leo Reed, 765-494-1588, reedla@purdue.edu

If you need additional PARP credits, the Extension Educators in Area 2 will be offering an opportunity on November 9 at three locations as follows:

9:00 am – 11:00 am --- Clark County 4-H Center (Community Building), Charlestown
RSVP-Tom Springstun, 812-752-8450
1:00 pm – 3:00 pm --- Lawrence County (Otis Park Bath House), Bedford
RSVP-Ophelia Davis, 812-275-4623
6:00 pm – 8:00 pm --- Crawford County Extension Office
RSVP-Molley Scott, 812-338-5466

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