



Conservation Times

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For Johnson County residents interested in agricultural and natural resource issues.

Annual Meeting

The Johnson County Soil & Water Conservation District will hold its 61st annual meeting on Wednesday January 19, 2011 at 6:30 pm. The meeting will be held at Scott Hall on the Johnson County Fairgrounds.

Our featured speaker for the evening will be Jane Hardisty, State Conservationist for the Natural Resources Conservation Service (NRCS) in Indiana.

A free buffet meal is included, and anyone is welcome to attend, however **RSVP is required.**

Among the items on the agenda are Supervisor elections. We currently have one elected position available for a three year term starting January 19th. Candidates on the ballot for this position will be Kevin Thompson and Doug Abney. Other nominations can be submitted to the SWCD office in advance, or nominations can be made at the Annual Meeting.

If you would like to attend, please **RSVP to Ric by January 13th** at 317-736-9540 ext. 102, or email: ric-schlosser@iaswcd.org

Youth Conservation Board

Do you or someone you know remember getting a pine seedling in 5th grade? This is just one of the fun conservation projects planned for the upcoming year. This project allows our Youth Conservation Board to demonstrate leadership and help educate the younger students about the advantages of conservation programs. So, if you're a high school student interested in learning more and helping preserve our natural resources, feel free to join us!! The Youth Conservation Board is open to all Johnson County High School students. Contact the SWCD office for more information.

Email Newsletter

Would you like to receive our newsletter via email instead of regular mail? In these difficult economic times, we are working to reduce our costs, and an e-newsletter is a great way to do so. If you are interested, please call us at the office or send an email to swcd@swcd.org to submit your request.

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Mission — To conserve and enhance our soil, water, and other natural resources by coordinating with local partners to provide technical, financial, and educational opportunities in Johnson County.

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Ag Conservation Programs

Published quarterly and distributed to landowners, farm operators, schools, local agencies, public officials, conservation organizations, and other interested individuals.

Soil Health for Your Farm... for You! **Managing for Soil Health must begin by changing the way you think about Soil.**

The key to building soil health is to first understand that soil is a biological system. Soil health is improved by disturbing the soil less, growing the greatest diversity of crops (in rotation and as diverse mixtures of cover crops), maintaining living roots in the soil as much as possible (with crops and cover crops), and keeping the soil covered with residue at all times. Drills, planters, seed, fertilizer, pesticides, livestock, fences, water, farm implements, etc. are all tools that can be used to manage the soil habitat for the benefit of living members of the soil food web.

Organisms in the soil food web cycle crop nutrients and release organic glues that increase soil aggregate stability. Soil aggregates provide these organisms with protected habitat. Stable soil aggregates are critical for water infiltration and gas exchange, both of which are essential to crop production.

Many soils have a water infiltration problem that causes a water runoff problem. If soil health is improved, the structure of the soil results in greater water infiltration, less runoff, less or no erosion, and reduced incidence of flooding and sedimentation.

Keep the Soil Covered as Much as Possible

Soil cover conserves moisture, intercepts raindrops to reduce their destructive impact, suppresses weed growth, and provides habitat for members of the soil food web that spend at least some of their time above ground. This is true regardless of land use (cropland, hayland, pasture, or range). If improving soil health is your goal, you should not see the soil very often.

Soil should always be covered by growing plants and/or their residues and, it should rarely be visible from above. Soil cover cannot be taken for granted. Even in a no-till system, there are times when soil cover may be lacking because of crop harvest methods, amounts of residue produced, and low carbon:nitrogen ratios of some crop residues that make them decompose quickly.

Soil cover protects soil aggregates from ‘taking a beating’ from the force of falling raindrops. Even a healthy soil with water-stable aggregates (held together by biological glues) that can withstand wetting by the rain may not be able to withstand a ‘pounding’ from raindrops. When water-stable soil aggregates are covered by crop residues or living plants, they are protected from disintegration by the hammering energy of raindrops. When soil aggregates remain intact at the soil surface, water infiltrates the soil and is available to plant roots.

A mulch of crop residues on the soil surface suppresses weeds early in the growing season giving the intended crop an advantage. This is particularly the case with a rolled cover crop that may cover the entire soil surface at once. They also keep the soil cool and moist which provides favorable habitat for many organisms that begin residue decomposition by shredding residues into smaller pieces. If these “shredders” have good residue habitat they can increase residue decomposition, and therefore nutrient cycling, by up to 25%.

Keeping the soil covered while allowing crop residues to decompose (so their nutrients can be cycled back into the soil) can be a bit of a balancing act. Producers must give careful consideration to their crop rotation (including any cover crops) and residue management if they are to keep the soil covered and fed at the same time.

Manage More by Disturbing Soil Less

Tilling the soil is the equivalent of an earthquake, hurricane, tornado, and forest fire occurring simultaneously to the world of soil organisms. Physical soil disturbance, such as tillage with a plow, disk, or chisel plow, that results in bare or compacted soil is destructive and disruptive to soil microbes and creates a hostile, instead of hospitable, place for them to live and work. Simply stated, tillage is bad for the soil.

The soil may also be disturbed chemically or biologically through the misuse of inputs, such as fertilizers and pesticides. What happens when we supply inputs to the soil? Soil and all the organisms that live and grow in it have been cycling plant nutrients for a very long time without any human intervention. Consequently, soil and plants have very efficient and sophisticated ways of working together to ensure their mutual sustainability. When we add chemical inputs to the soil, we need to understand and respect existing soil and plant relationships, or we might actually be setting the system up to be inefficient, or worse, to fail altogether.

If crop nutrients are applied to the soil in excess, plants will not develop associations with soil organisms that help them acquire water and nutrients. After the “party is over” and the synthetic fertilizer is gone, the plants are left “high and dry” with few to no soil factory workers to help them access water and nutrients for the remainder of the growing season. The plants then give up valuable energy (sugars) in an attempt to make connections with microbes mid-way through the growing season when the plant should be putting that energy into flowering and seed development to produce a harvestable yield. By applying excess fertilizer, particularly nitrogen or phosphorus, we create plants that are very inefficient as they try to function without the support system of the soil with which they evolved.

By reducing nutrient inputs, we can take advantage of the nutrient cycles in the soil to supply crop nutrients and allow plants to make essential associations with soil organisms. This ensures that plants are able to achieve their full potential, and the soil is allowed to perform all of its desired functions to its full potential. If we acknowledge the complex life in the soil and work with it instead of disturbing it, we will harness a tremendous engine for biological production (growing crops).

The ‘soil factory’ workers can be most productive when they have a good working environment with an ample supply of energy. When they are most productive, the farmer is most profitable.

Written by: Natural Resources Conservation Service Soil Quality National Technology Development Team

Cover Crops an old Friend, or...New State of the Art Technology

Barry Fisher
State Agronomist-Indiana NRCS

Many of us remember our parents or grandparents planting cover crops. It may have been clover, frost seeded into wheat, or wheat or rye planted on an erosive field after soybeans. For most of us, the blooming clover in late summer or the green field in the winter is an imprinted memory of well being and stewardship of the soil. But that alone won't pay the bills. As wheat yield improved or was dropped from the rotation and conservation tillage and CRP became the weapons of choice against soil erosion, cover crops were put on the shelf and by 1990 were practically nonexistent.

After a couple of decades of some of the greatest technological advancements in genetics, chemistry, bio-engineering, space age precision guidance systems and equipment developments, we are producing crops yields that were never before heard of, even at the most popular coffee shops.

All the while, a few dedicated conservation farmers continued a relentless pursuit of: continuous no-till, increasing organic matter, reducing soil compaction, zero erosion, improving water infiltration and drainage, improved nutrient cycling and yes experimenting with cover crops. Cover crops can take each of these goals further. What these individuals were really achieving was a very high level of soil health and soil function. This change in the capacity of soil to function, when combined with the above technological advancements, has given these farmers the ability to reach far beyond sustainability. These fields have a greater ability to withstand our recent extreme weather cycles with consistently higher yields. A healthy soil can provide even greater yield potential to these advanced hybrids.

So... why cover crops? As scientists began to look at things like nitrate leaching, eutrophication of lakes, carbon sequestration, and renewable energy, an "old friend" began to emerge as one of the most effective technologies to hold nitrogen and phosphorus in the soil, capture CO₂ from the atmosphere and store that carbon in the soil, and to harvest the sun's energy continuously. Cover crops do all of these things, with the side benefit of feeding the vast array of organisms that live, and work for us in the soil.

Many farm fields, which lay fallow from late summer to mid spring, have no mechanism to hold on to the nitrate nitrogen left over from the previous crop or released from soil organic matter through natural cycling. Conservatively, 40-60 lbs/ac of N can be lost each and every year during these months. Various cover crops can save up to 90% of these losses. Then, much of this scavenged N is released the following summer for the next crop. Any that isn't released becomes food for soil organisms and building blocks for increased organic matter and organic Nitrogen. This becomes a soil bank account.

As the cover crops die in the late winter or spring, and roots begin to decay, they leave behind, a network of pores that are nutrient rich, highly organic, enhanced with air and water movement that are the path of least resistance, where we are sure the next crops roots will grow and flourish. This benefit compounds each season in which the network of pores are left undisturbed. This is why a continuous no-till system with cover crops is such a great match.

By implementing this Conservation Cropping System, each season will raise these fields to a higher step on the ladder to higher soil health, increased soil function and overall improved productivity.

The benefit to the rest of us is cleaner water and air, improved wildlife habitat, a greener winter landscape and yes a feeling of well being and stewardship of the soil.

2011 Soil & Water Education Programs

To better facilitate County Educators, we have tried to develop programs that incorporate the Indiana Academic Standards, and most programs can be adjusted to integrate a particular standard you are trying to attain.

Our programs provide an excellent opportunity to educate on the importance of natural resource conservation and are free to all types of Educators throughout Johnson County, not just the public schools. If you are an Educator in a Public, Private, or Home school, Girl or Boy Scouts, Day Care, or any other avenue of education, please take advantage of our very informative **FREE** programs!

All of the programs provide a hands-on, educational, fun learning opportunity. A few of our most popular programs include: Soil Pizza, Fish Tales-Fred the Fish, It's Alive-Earth Worms, Water Bingo, Enviroscope, and The Incredible Journey. Call us today to schedule a program at 736-9540!

Tile Mapping Project

Do you have maps of drainage tile for your land? Have you recently installed tile or are you planning on installing tile in the future? Have you recently repaired any tiles? If you answered yes to any of these questions, please call our office.

We are currently working on creating a master private drain tile map for the county. We receive a lot of inquiries about tile locations, and unfortunately, record keeping of installed tile has been scarce for many years.

Our office utilizes a mobile GPS mapping system that does not require an ATV or any other vehicle to map tiles, so there is no disturbance to your property. Just give us a call and we'll map your tile lines at no cost to you. Please note that we will not attempt to locate tile lines or blow holes that are not visible from the ground.

As we add to our inventory of tile maps, we can create customized maps for landowners with tiles drawn over any number of layers. We can create maps with tile lines, sizes, material, aerial photos, roads, you name it! Our maps are free of charge and can be tailored to meet your needs.

We can also create computerized maps from hand-drawn installation maps.

If you would like to create your own maps, we will provide you with the data gathered and a program to use at no cost.

Please call Andy at (317) 736-9540 x103 for a map or to schedule a visit. Any tile information supplied to our office will be returned after it is entered into our computer.

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Office Space for Rent

The Johnson County SWCD has office space available for rent in our building. We are located in downtown Franklin on Jefferson Street.

For more information please contact

Ric Schlosser.

317-736-9540 ext. 102.



Visit us on the web at www.swcd.org

We are located at 550 East Jefferson Street in Franklin, Indiana in the Alva Neal Building (old² Franklin High School Building) across from Franklin College.

Available at the SWCD

2009 Plat Books \$15.00 (+ \$2.00 if mailed)

Sponsored by the Johnson County Youth Conservation Board

SWCD Marking Flags \$10.00 per bundle (100 flags per bundle)

Erosion Control Netting \$0.25 per linear foot (includes staples)

Geotextile Fabric, 8 oz. non woven, 15 ft. wide x 300 ft. long rolls or cut to length

\$1.67 per linear foot

\$1.00 per sq. yd.

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Rain Barrel Kits \$100.00

Straw Blanket (Call for Price)

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