

UPPER WALNUT EL DORADO LAKE



JULY 2019

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Butler County
Conservation District



WRAPS — Watershed Restoration And Protection Strategy

Changes Coming to El Dorado Lake WRAPS Program

Sandy Koontz, WRAPS Coordinator

Kansas Department of Health and Environment (KDHE) recently proposed changes to the structure of the Watershed Restoration and Protection Strategy (WRAPS) Program in Kansas. These changes directly affect El Dorado Lake WRAPS and our efforts to protect Butler County's water supply.

Administering the rules and regulations of the Clean Water Act is one of the Environmental Protection Agency's (EPA's) responsibilities. In early 2018, the Trump Administration cut funding to the program that provides grants to help states address non-point source pollution (known as Section 319 of the Clean Water Act).



KDHE is the sponsoring state agency that received grant funds from EPA through the Section 319 Grant Program. WRAPS programs around the state of Kansas applied for grants through KDHE and through a selection process, received grant funds yearly to help local WRAPS groups meet water quality standards set forth by EPA.

Now that EPA funding has been cut, the funding cuts are trickling down to the local level.

El Dorado Lake WRAPS is a casualty of these cuts & will be one of the programs in Kansas that faces major changes.

The new funding approach KDHE has come up with for WRAPS in Kansas will be to reallocate funds to high priority projects in Kansas (shown in light gray on the map). These high priority projects (selected by KDHE) will continue to use the grant application process and be funded to include salary for a WRAPS Coordinator to implement the program and for information and education activities.

The other WRAPS projects in Kansas fall under a Partnership Program (shown in dark gray on the map). El Dorado Lake WRAPS is in this category. We will have access to cost share for landowners for implementing conservation practices but will have to compete with 16 other partnership WRAPS programs around Kansas for the \$300,000 in funding available for Partnership programs.

The agency responsible for the Partnership Cost Share Program is the Kansas Department of Agriculture/ Division of Conservation, the same agency that administers the Water Resources and Non-Point Source Pollution Control Cost share programs through local conservation districts.

In addition, Partnership WRAPS projects do not include funding for personnel or education and information activities.

El Dorado Lake WRAPS is currently in year 3 of a 3 year grant and will have till December 2019 to complete conservation practices (most of these funds are under contract for cover crops) and education/information activities.

The Partnership program begins July 1, 2019. An application form is included in this newsletter, see pages 7 and 8.

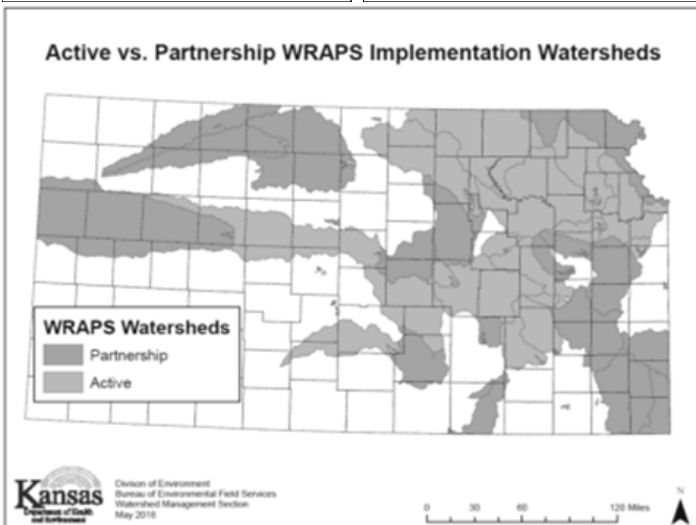
For questions, contact Sandy Koontz at the Conservation District, 316-320-3554 or sandy.koontz@ks.nacdnet.net.

WRAPS Q & A at Cassoday Park—July 31

Join us at Cassoday Park Wednesday, July 31 from 8:30 AM to 9:30 AM for breakfast!

We will be providing an update on WRAPS and answer questions regarding changes in the WRAPS program.

The event is sponsored by the El Dorado Lake WRAPS Stakeholder Leadership Team.



KANSAS 2018 FARM REAL ESTATE VALUE AND CASH RENT

MANHATTAN, Kansas - Kansas's farm real estate value, a measurement of the value of all land and buildings on farms, decreased from 2017, according to USDA's National Agricultural Statistics Service.

Farm real estate value for 2018 averaged \$1,800 per acre, down \$50 per acre (3 percent) from last year.

Cropland value increased 2 percent from last year to \$2,010 per acre. **Dryland cropland value** averaged \$1,910 per acre, \$40 higher than last year. **Irrigated cropland value** averaged \$2,900 per acre, \$50 above a year ago.

Pastureland, at \$1,280 per acre, was unchanged from the previous year.

Cash rents paid to landlords in 2018 for cropland increased from last year. **Irrigated cropland rent** averaged \$131 per acre, \$3 above last year. **Dryland cropland rent** averaged \$58 per acre, \$2 higher than a year earlier. **Pasture** rented for cash averaged \$19.50 per acre, \$0.50 above the previous year.

KANSAS FARM NUMBERS HIGHER

Kansas's number of farms and ranches increased during 2018. The number of farms and ranches in the State, at 58,900, was up 300 farms from 2017.

Numbers of farms and ranches in Kansas with less than \$100,000 in agricultural sales increased 200 farms from a year earlier while operations with more than \$100,000 in agricultural sales increased 100 farms.

Land in farms and ranches in Kansas totaled 45.8 million acres, unchanged from 2017. The average size of operation, at 778 acres, was down 4 acres from a year earlier.

Find agricultural statistics for every county, State, and the Nation at www.nass.usda.gov.



Still Looking for Volunteers to Measure Rainfall in the El Dorado Lake Watershed through CoCoRaHS

You may have noticed we had a lot of rain in May and June. Ever wonder how much rain you had for a particular month or year? One way to keep track is to join CoCoRaHS and become a precipitation reporter.

To give you an example of how precipitation varies county-wide, in May 2019, the following rainfall amounts were recorded through CoCoRaHS stations in Butler County: Walnut River above El Dorado Lake—14.22 inches, Rosalia area—15.13 inches, southwest of Beaumont—18.76 inches, east of Whitewater—14.79 inches, Augusta, 24.03 inches and near Rose Hill, 30.08 inches.

CoCoRaHS is an acronym for the Community Collaborative Rain, Hail and Snow Network.

CoCoRaHS (pronounced KO-ko-rozz) is a unique, grassroots non-profit, community-based network of volunteers of all ages and backgrounds working together to measure and map precipitation (rain, hail and snow) on their farms, ranches and in their back yards. The National Weather Service is one of the key agencies assisting with this project.



Complimentary training is provided online including training slide shows and YouTube animations to help you become an effective weather observer.

CoCoRaHS is easy to join and takes only five minutes a day to report precipitation from your CoCoRaHS approved rain gauge. CoCoRaHS recommends reading the rain gauge within 2 hours of 7 AM each morning and reporting the results online. These precipitation reports are then recorded on their website www.cocorahs.org.

You, as well as everyone else, can access the data and compare data.



One of the neat things about participating in this network is coming away with the feeling that you have made an important contribution that helps others. By providing your daily observation, you help to fill in a piece of the weather puzzle that affects many across your area in one way or another.

For more information on CoCoRaHS, go to their website: <https://www.cocorahs.org/state.aspx?state=ks>.

If you are serious about reporting and recording weather conditions in the El Dorado Lake WRAPS area, sign up at <https://www.cocorahs.org/Application.aspx> then contact Sandy Koontz, El Dorado Lake WRAPS Coordinator at 316-320-3554 and she will provide you with the "official" rain gage for you to use.

(excerpts from the CoCoRaHS website, cocorahs.org)

RENT A DRILL—

The Conservation District has two Great Plains Model 1006NT No-till Drills for rent. They are 13 feet wide with a 10 foot planting width.



The drills have a single hitch and hydraulic lift. A 70 horsepower tractor or bigger is recommended for pulling in the field. You can pull it behind your truck when you pick it up from the office. These drills rent for \$9.50 an acre with a 10 acre minimum (\$95 minimum charge).

Butler County Conservation District Staff:

Brenda Nyberg—District Manager
 Email: brenda.nyberg@ks.nacdnet.net
 Sandy Koontz—Water Quality/WRAPS Coordinator
 Email: sandy.koontz@ks.nacdnet.net
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Natural Resources Conservation Service Staff:

Justin Kneisel, District Conservationist
 Email: justin.kneisel@usda.gov
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 Keith Murrow, Pheasants Forever Private Lands Conservationist
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 Email: olivia.haselwood@ks.usda.gov
 316-321-5803



Helping People Help the Land

*USDA is an Equal Opportunity
 Provider and Employer*

*"You may be able to
 fool the voters,
 but not the
 atmosphere."*

~ Donella Meadows



*Butler County Conservation District is an equal
 opportunity provider and employer.*

*The Kansas Department of Health and Environment has provided
 financial assistance to produce this newsletter through EPA Section
 319 Nonpoint Source Pollution Control Grant #C900740523.*

*"If you think you are too small to be
 effective, you have never been in the dark
 with a mosquito."*

~ Betty Reese

2019 Kansas Range School Announced

Kansas Grazing Lands Coalition (KGLC) has announced the Kansas Range School is scheduled for August 20-22 at Camp Wood YMCA near Elmdale, Kansas.

Learn more about rangeland management in a friendly setting with other ranchers, land managers, range management students and natural resource professionals.

The school costs \$350 per student and covers room, board and tuition for the 2 ½ day event. Scholarships of \$175 are available for most ranchers and eligible college students while scholarships of \$125 are available for most natural resource agency personnel.

NOTE: Landowners/students in the El Dorado Lake WRAPS area can be reimbursed for their tuition in full. Contact Sandy Koontz for more information.

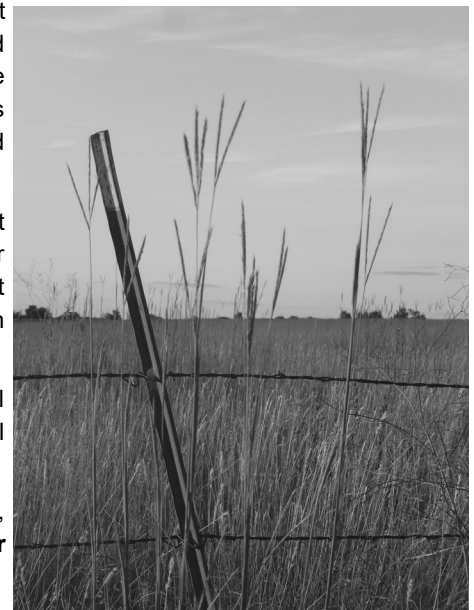
The theme for the school this year is **"Managing Outside of Normal"**. There will be rancher and expert panels that will talk about how to plan for all the myriad of ways that weather and other forces can change your plans for your ranch in this and every year so you can focus on caring for your greatest ranching asset, your native grasslands.

Events for Tuesday, August 20 include registration from 9:30 to 10. Jeff Hutton with the National Weather Service in Dodge City will give a talk, "Managing Outside of Normal". Walt Fick, KSU, will talk about plant physiology and David Kraft will discuss what a rancher or producer needs to know and know about.... Chris Tecklenburg with NRCS will talk about ecological sites and the connection between soils, plants, management and weather. There will be instructors discussing and assisting with plant identification and to close out the day, ranchers and managers Mike and Nathan Marker will discuss, "Managing Outside of Normal".

On Wednesday, August 21, the group will travel to Geiger Ranch and learn about management goals and impacts. You will also learn how to measure and monitor rangeland sites and learn more about stocking rates from Doug Spencer, NRCS. Walt Fick will talk about adapting management and there will be rancher presentations from Shane Tiffany and K C Olson.

On Thursday, August 22, there will be a plant identification challenge, Jess Crockford will discuss forming prescribed burning associations and Dr. Lydia Zeglin from KSU will discuss soil microbiomes and grazing.

Learn more about the Range School at the Kansas Grazing Lands Coalition website, KGLC.org or email barth.crouch@gmail.com or call 785-452-0780 **but please register before July 24th.**



Conservation Practice Highlight

Residue and Tillage Management— No Till

DEFINITION

Limiting soil disturbance to manage the amount, orientation and distribution of crop and plant residue on the soil surface year round.

PURPOSE

To reduce sheet, rill and wind erosion and excessive sediment in surface waters, reduce tillage induced particulate emissions, maintain or increase soil health and organic matter content, increase plant available moisture, reduce energy use and provide food and escape cover for wildlife.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all cropland. Residue shall not be burned. The soil tillage intensity rating (STIR) value shall include all field operations that are performed during the crop interval between harvest and termination of the previous cash crop and harvest or termination of the current cash crop (includes fallow periods). The crop interval STIR value shall be no greater than 20.

WHAT'S INCLUDED IN THE PRACTICE

Specifications for establishment and operation of this practice shall be prepared for each field or treatment unit. The specifications are:

- ⇒ The resource concern to be treated or the purpose for applying the practice,
- ⇒ Planned crop (s),

- ⇒ Amount of residue produced by each crop,
- ⇒ All field operations or activities that affect residue orientation, including height, surface disturbance, the amount of residue (pounds/acre or percent surface cover) required to accomplish the purpose and the time of year it must be present,
- ⇒ Planned soil tillage intensity rating (STIR) value, soil condition index value and erosion rate and the time of year that soil disturbance is allowed.
- ⇒ Target species of wildlife, if applicable and,
- ⇒ Benchmark and planned fuel consumption, if applicable.

Specifications are recorded using the current approved water and or wind erosion prediction technology.

If you'd like to visit with us about no till, contact the El Dorado Field office of the Natural Resources Conservation Service at 316-321-5803.



NOTE:

No-Till is a cost-share-able practice!
If you sign up for cost share or if you have been implementing no-till on your fields, then you may be eligible for cost share based on the rate of \$30 per pound of phosphorus reduced using this practice. The practice must meet NRCS Standards and Specifications in order for cost share to be paid.



"The old complex life, at once economic and social, was fairly coherent and self-sustaining because each community was focused upon its own local countryside and upon its own people, their needs, and their work. That life is now almost entirely gone. It has been replaced by the dispersed lives of dispersed individuals, commuting and consuming, scattering in every direction every morning, returning at night only to their screens and carryout meals. Meanwhile, in a country everywhere distressed and taxed by homelessness, once-used good farm buildings, built by local thrift and skill, rot to the ground. Good houses, that once sheltered respectable lives, stare out through sashless windows or have disappeared."

~ Wendell Berry, "The Art of Loading Brush"



United States
Department of
Agriculture

Natural Resources Conservation Service

"How we treat our land, how we build upon it, how we act toward our air and water, in the long run, will tell what kind of people we really are."

~ Laurence S Rockefeller



Patch Burning Important for Wildlife and Native Grass Health

Keith Murrow, Pheasants Forever Private Lands Conservationist

For thousands of years before the settlement of the Great Plains, the North American prairie was maintained through a combination of fire and wildlife grazing.

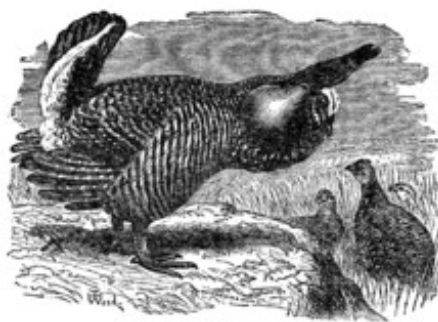


Lightning from thunderstorms started the fires prior to the arrival of the first Native Americans. These naturally-occurring fires likely ranged from relatively small to many thousands of acres in size.

Eventually, early peoples noticed something remarkable. After a fire, the grass grew back quickly and was full of protein and flavor, which attracted herds of bison and elk that would linger and graze for weeks. Native Americans began starting fires themselves, enticing animals to graze in areas where they could hunt them more safely and efficiently. Because both the animals and the people were usually on the move, the prairie was a patchy mosaic of burned and grazed areas in different stages of growth. The prairie not only benefitted from fire, it became dependent on it. Burning clears the ground from thatch (dead grass from previous years), returns nutrients to the soil, opens up areas for weeds and wildflowers to flourish, and helps keep trees from taking over. Native wildlife adapted and evolved to live and reproduce in these conditions. With nutritious, tasty grass always available somewhere, large herbivores thrived. Native grassland birds could move about more easily on the ground and raise their young. Many different types of pollinators fed among the plentiful wildflower blossoms.

Once the plains were settled and converted into farms and ranches, fire became far less prevalent. Fenced-in domestic livestock replaced the free-ranging native herbivores. Native grasses and forbs became overgrazed and were increasingly supplanted by nonnative grasses. Trees began to spread, consuming precious acres of what had once been open native grassland. With the establishment of man-made structures and permanent residents, suppressing fire became a matter of protecting life and property. Along the way, we forgot that some of our most valuable resources need fire. Even our old friend Smokey Bear misled us into believing that all fire is inherently bad.

Of course, we can't let wildfires burn uncontained in today's world. But we can come close to replicating the original fire processes that once regulated the prairie in a way that is targeted, strategic, and as safe as possible. Prescribed burning is the single most effective means available for preserving and protecting our native grassland and wildlife resources.



In this part of Kansas, maximum benefit is usually derived from a three- to four-year burn cycle. While annual burning can sometimes offer optimal cattle gains, we know that it does not provide long-term health for native rangeland or wildlife.

Patch burning works to mimic original native prairie conditions on a much smaller scale. Under this system, a specific area is divided into three or more "patches", and one patch is burned per year.

This system offers excellent long-term range health and wildlife benefit while still providing livestock gains competitive to annual burning. Refinements can be made to the timing of burns to address specific problems or objectives.

Prescribed burning isn't only for grazed rangeland. As long as the burn can be conducted safely and there is sufficient fuel to carry a fire, other native grass areas can be burned, too. Native grass buffer strips, hay meadows, CRP ground, fence rows, and crop field edges all benefit from fire.

Assistance is available to producers and landowners who are interested in starting a burn program on their land. To see if patch burning is right for your operation, contact the El Dorado USDA Natural Resources Conservation Service (NRCS) office at 316-321-5803. We can provide you with no-obligation technical advice on prescribed burning, as well as information on federal or state cost-share assistance to get you started on the path to ensuring your grassland and wildlife resources are healthy now, and for the long run.



**"The Holy Land is everywhere."
~ Black Elk**

Interested in Cost Share through WRAPS?

Beginning July 1, 2019, new El Dorado Lake WRAPS cost share contracts will be administered through the Kansas Association of Conservation Districts (KACD) and the Kansas Department of Agriculture/Division of Conservation (KDA/DOC)—or more specifically, through Butler County Conservation District.

This is not a big change for El Dorado Lake WRAPS because the Conservation District has sponsored the WRAPS program from its beginning in 1998 and is part of the Stakeholder Leadership Team that approves cost share applications. The difference will be that now all applications will be required to be run through DOC's Cost Share Information Management System (CSIMS).

But there are some changes to the cost share program due to the fact that El Dorado Lake WRAPS has to compete for funds with 16 other WRAPS projects in Kansas.

First off, the only eligible practices for cost share through WRAPS include filter strips, permanent vegetation (brome, native grass), buffers and field borders, grass waterways, cover crops, relocation of feeding pens, alternative water supplies, relocation of pasture feeding sites, grazing management plans, no till, terraces, strategic fencing of ponds and stream sites and grade stabilization structures.

Second, the entire watershed above El Dorado Lake is eligible for cost share, not just the 3 priority areas that were used in the past.

Third, the cost share is based on an incentive payment only. As per WRAPS policy, this is to assure funds are used on practices that provide the most beneficial pollutant load reduction that will show the best results in improved water quality.

The incentive payment will be based on \$30/pound of phosphorus reduced.

These practices are eligible for cost share through WRAPS:

- filter strips
- permanent vegetation (brome, native grass)
- buffers and field borders
- grass waterways
- cover crops
- relocation of feeding sites or pens
- alternative water supplies
- grazing management plans
- no till
- terraces
- strategic fencing of ponds and stream sites
- grade stabilization structures

Practices such as seeding crop fields back to grass, filter strips, buffer strips, waterways and cover crops will all rank high in the application process because they provide the most phosphorus reduction.

As in the past, the landowner will be required to sign a landowner agreement (contract) for the cost share funds and agree to not start any work on the practice until cost share has been approved.

In addition, all work must be completed by May 22, 2020.

Each of the 17 WRAPS projects in the new "Partnership" pool will be allocated \$10,000.00 and will have until the middle of August 2019 to put those funds under contract with their local WRAPS landowners. After August 15, if the funds are not allocated locally, they are returned to the State and re-allocated to other WRAPS Partnership groups who need additional funding for their projects.

A cost share application form is included with this newsletter. Feel free to fill it out and drop it by the office or mail it back. You can also scan and email the application if that's easier.

If you are interested in cost share, stop in and visit with Sandy Koontz, call 316-320-3554 or email sandy.koontz@ks.nacdnet.net.

K-State Farm Bill Meetings

Plan to attend K-State's Farm Bill Meeting in Wichita Friday, August 30, 2019 from 8:30 AM to Noon. The meeting will be held at the Sedgwick County Extension Office, 7001 W 21st Street North, Wichita, Kansas. Contact Jeff Seiler at 316-660-0153 or email jseiler4@ksu.edu for more information.

The 2018 Farm Bill was passed in December, 2018. Though it has much in common with the previous farm bill, there are some significant differences. These in-depth Farm Bill meetings will cover the new provisions of the programs, economic decisions to consider when making a decision, and present a new decision tool for producers to use. Specifically the discussion will look at commodity programs, particularly the economics of the ARC/PLC decision and the OSU-KSU Farm Program Decision Aid. There will also be discussion of SCO and changes in crop insurance.

Speakers are Dr. Mykel Taylor, Dr. Monte Vandever, Robin Reid, and Dr. Dan O'Brien, as well as local extension agents and FSA personnel.

SFY 2020 KACD WRAPS Partnership Initiative**Cost-Share Financial Assistance****Request Form****For Administrative Use Only**

Date Received _____

Submitted by _____

Eligible Practice? YES NO

Est. Lbs. of Phos Reduced _____

HUC _____

Livestock: YES NO

Cropland: YES NO

Est. Incentive Payment _____

Please complete for cost-share financial assistance consideration:Cost-share financial assistance requested for the following conservation practice(s):

When will the practice(s) be installed/completed? _____

What is the current land use? _____

Legal Description: _____ 1/4 _____ 1/4 Sec. _____ Twp. _____ Rng. _____ Tract #: _____ Field #: _____
(Indicate location of proposed project on aerial map.)

Are you willing to allow this project to be used for demonstration purposes? YES NO

Landowner's Name (as appearing on deed):

Participant's SSN/FEIN: _____

Mailing Address: _____

Telephone Number(s): _____

Operator's Name & Telephone Number: _____

Multiple participants? Yes No If yes, please add additional participants' information on next page with percent share.

NOTE:

- Completing this form does not guarantee cost-share financial assistance.
- Construction/installation/implementation of this practice(s) started prior to contract approval will result in ineligibility for cost-share financial assistance.
- Each proposed project will be evaluated and ranked based on established criteria.
- An on-site evaluation of proposed projects may be conducted by the conservation district/NRCS staff to determine eligibility of the project.
- If approved for cost-share financial assistance, the landowner(s) must sign a contract agreeing to the terms set forth in the contract. Certain projects have additional requirements.
- You will be notified of the status of your request for cost-share financial assistance by the BUTLER County Conservation District.
- Incentive payments will be based on a rate of \$30 per pound of Phosphorous reduced by the approved installed practice not to exceed 100% of Landowner Actual Cost.

SFY 2020 KACD WRAPS Partnership Initiative**Cost-Share Financial Assistance****Request Form (Continued)****Multiple Participant's:**

Participant's Name:

SSN/FEIN:

Mailing Address:

Telephone Number(s):

Percent Share:

Participant's Name:

SSN/FEIN:

Mailing Address:

Telephone Number(s):

Percent Share:

Participant's Name:

SSN/FEIN:

Mailing Address:

Telephone Number(s):

Percent Share:

What is a HAB??

Excerpts from the Kansas Department of Health and Environment Website
<http://www.kdheks.gov/algae-illness/index.htm>

HAB stands for Harmful Algal Bloom

Blue-green algae are simple aquatic organisms that exist naturally in marine and freshwater rivers, lakes and ponds.

Blue-green algae are a natural part of water-based ecosystems. They become a problem when nutrients (phosphorus and nitrogen) are present in concentrations above what would occur naturally.

An "algal bloom" refers to a dense growth of any type of algae. A "harmful algal bloom" refers to a dense growth of algae that has the potential for creating toxins or other nuisance compounds. "Harmful algal bloom" is often condensed into the acronym "HAB." Blue-green algae can also be known as cyanobacteria. Some researchers have started using the phrase "CyanoHAB" to further define a harmful algal bloom that consists of blue-green algae.

Blue-green algae can reproduce very rapidly, creating a dense growth known as a bloom. Some species or strains of blue-green algae produce toxins, which can be released when they become stressed and/or die. It is still not fully understood why these compounds are produced – whether they are adaptations that benefit the organism, or whether they are merely by-products of some other important process. Some other types of algae can also produce harmful blooms; the famous marine "red tides," produced by overgrowth of red algae, are an important example.

People and animals may be exposed to toxins via ingestion, skin contact or inhalation of contaminated water. The most common human health effects from HABs can include vomiting, diarrhea, skin rashes, eye irritation and respiratory symptoms. HABs may become more or less visible with changing environmental conditions.

Also, animal deaths due to HAB toxins have been documented, SO:

When in Doubt, Stay Out!

Summer heat and calm water can increase the likelihood of a bloom occurring because blue-green algae are especially adapted to take advantage of such conditions.

What to Look For—

If the water is scummy, has a thick mat of growth, or is foamy, it can be an indication that there is a HAB present. Another indicator of a potential HAB is the color.

The water could be colored pea-green, blue, or blue-green, and a cyanobacterial bloom can look like a vivid paint spill or floating grass clippings.

If you see what you believe to be a HAB, keep everyone, including animals from entering the water.

If the bloom is on a public lake or pond you can report it to the following: www.kdheks.gov/algae-illness and fill out the report form online. You can also call 785-296-1664.

WARNING

Harmful Algae Expected or Present

People & Animals May Get Sick



No water contact,
swimming, or wading



No skiing or jet skis



No pets or livestock

- If people or pets contact lake water: wash with clean, potable water afterward
- Avoid areas of algae accumulation
- Do not let people or pets eat dried algae or drink untreated water
- Clean fish well and discard guts

In case of contact with harmful algae: Call doctor or veterinarian if people or animals have nausea, vomiting, diarrhea, rash, irritated eyes, seizures, breathing problems or other unexplained illness.

Report harmful algal blooms to
Kansas Department of Health and
Environment at:
www.kdheks.gov/algae-illness/
Or call: 785-296-5606

Report possible algal bloom
related illness to Kansas
Department of Health and
Environment at:
www.kdheks.gov/algae-illness
Or call: 877-427-7317



For more information:
Scan this code or visit
kdheks.gov/algae-illness

Posted by:

Posted on:

Ten Ways Cover Crops Enhance Soil Health

Dr. Rob Myers, North Central SARE Regional Director of Extension Programs

The USDA Natural Resources Conservation Service (NRCS) has identified four basic principles or goals for maintaining and improving soil health: keep the soil covered as much as possible, disturb the soil as little as possible, keep plants growing throughout the year to feed the soil and diversify crop rotations as much as possible. Cover crops help achieve these goals.

Besides contributing to the four basic goals or principles for soil health, there are a number of specific ways that cover crops lead to better soil health and potentially better farm profits.

10 Key Impacts of Cover Crops on Soil Health

1. **Cover crops feed many types of soil organisms.** Most fungi and bacteria that exist in the soil are actually beneficial to crops. Many of these soil fungi and bacteria feed on carbohydrates that plants release through their roots. In return, some fungi and bacteria will trade other nutrients, such as nitrogen or phosphorous, to the crop roots. While cover crops directly feed bacteria and fungi, many other soil organisms eat the fungi and bacteria, including earthworms and arthropods. Thus cover crops can help support the entire soil food web throughout the year.
2. **Cover crops increase the number of earthworms.** Earthworms are usually the most visible of the many organisms living in the soil. Cover Crops typically lead to much greater earthworm numbers and even types of earthworms. Some earthworms, like night crawlers, tunnel vertically while other smaller earthworms, like redworms, tunnel more horizontally. Both create growth channels for crop roots and for rainfall and air to move into the soil.
3. **Cover crops build soil carbon and soil organic matter.** Like all plants, cover crops use sunlight and carbon dioxide to make carbon-based molecules. This process causes a buildup of carbon in the soil. Some of that carbon is rapidly cycled through the many organisms in the soil, but some eventually become humic substances that can gradually build soil organic matter. A higher level of soil organic matter improves both the availability of nutrients and soil moisture for crops.
4. **Cover crops contribute to better management of soil nutrients.** By building soil organic matter, cover crops can gradually impact the need for some types of fertilizer. Just as important to nutrient management is the way cover crops can scavenge or collect any nutrients left at the end of the season, such as nitrogen left in the field after corn is done growing. The cover crop will hold that nitrogen rather than letting it escape into tile lines leading to rivers and lakes or drain away in to groundwater. Eventually that nitrogen will be released the next season to help the next year's cash crops.
5. **Cover crops help keep the soil covered.** When it rains on bare soil, the soil is much more likely to erode, form an impermeable crust and then overheat in summer when exposed to direct sun.

Some bare soils can reach 140 degrees Fahrenheit, hot enough to kill soil organisms and stress the crop from both the heat and excessive soil moisture evaporation. The residue of a cover crop like cereal rye can protect the soil while cash crops are getting established and keep it from getting too hot.

6. **Cover Crops improve the biodiversity in farm fields.** Generally, the more plant diversity in a field and the longer the living roots are growing, the more biodiversity there will be in soil organisms, leading to healthier soil. Growing mixes of cover crops or adding a few different cover crop species to an overall crop rotation-such as cereal rye before soybeans and oat, radishes or crimson clover before corn-improves diversity.
7. **Cover crops aerate the soil and help rain go into the soil.** It's not just earthworms that open up soil channels for rain but also the roots of the cover crops themselves. This is particularly the case where soil disturbance is minimal from tillage. The extra rain that gets into the soil instead of running off can make a big difference for crop yields. The extra aeration created by cover crop roots and earthworms also benefits crop roots and other soil organisms.
8. **Cover crops reduce soil compaction and improve the structure and strength of the soil.** The typical solution to compaction from heavy farm equipment has been more tillage, but that provides only the briefest of benefits while compounding the problem in the long term. Excess tillage destroys soil structure, while cover crops and the soil organisms they feed create the glue (glomalin) that binds soil particles together, leading to better soil aggregation and strong soil structure. Research shows that cover crops (with assistance from earthworms) help loosen compacted soil even more effectively than subsoil equipment which takes a lot of diesel fuel. A field with cover crops and minimal tillage, or better yet, no-till, will lead to much better soil structure without compaction issues. *(continued on next page)*

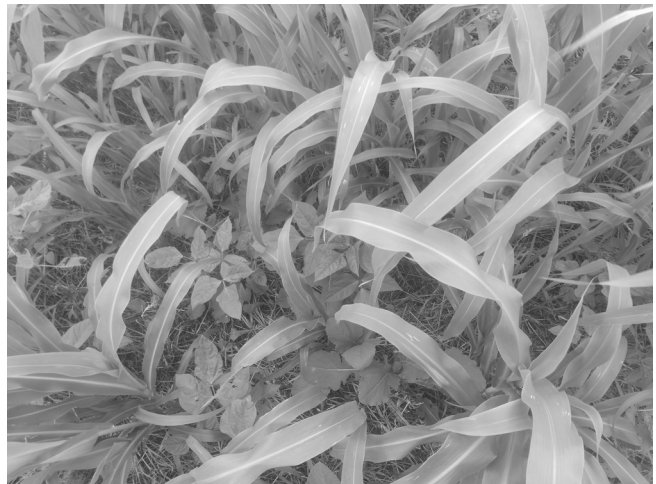


Photo Courtesy Justin Grunder

Ten Ways Cover Crops Enhance Soil Health *(Continued from Page 10)*

9. **Cover crops make it easier to integrate livestock with field crops.** Livestock are usually kept in pastures and out of crop fields which has some conveniences but is not ideal for soil health. Think of buffalo herds foraging the prairies and you can see how natural systems evolved to have an integration of plants and grazing animals. The manure from livestock grazing on cover crops in a grain field can be beneficial for building organic matter and soil health. It is also a great way to get immediate profit from cover crops, as certain cover crop species can be very high quality forage for late fall or early spring.
10. **Cover crops reduce soil erosion and loss.** On many fields that have some slope to them, half the topsoil has already been lost from the days when they were first farmed. The future success of farming and our food supply depends on keeping the topsoil we still have, and cover crops are exceptional at helping stop erosion. Using no till with cover crops can reduce erosion to a tiny fraction of what it would otherwise be in a conventional corn and soybean system. Even with some light tillage, a field with cover crops is still much better protected, especially with winter annual cover crops like cereal rye.

For more information on cover crops, go to the SARE cover crop website:

www.sare.org/covercrops.



Highly Erodible Land (HEL) and Wetland Determinations

Jeff Parks, DOC Technician
El Dorado Field Office

Landowners and/or Operators, if you are participating in government programs and are unsure if your land has an HEL determination or Wetland determination, you should contact the Farm Service Agency (FSA) or Natural Resources Conservation Service (NRCS).

If you have plans to create a new drainage system, do land leveling, filling, dredging or land clearing of trees, an AD-1026 form will need to be completed with the FSA office.

If there are questions regarding tree removal or hydric soil, check with NRCS while you are visiting with FSA.

The best plan is to have the HEL and Wetland determination completed before starting your projects.

A copy of Form AD-1026 can be found online at:
www.fsa.usda.gov/ad1026form

Kansas NRCS Announces Funding to Plant Cover Crops on Flooded Cropland Acreage

USDA's Natural Resources Conservation Service (NRCS) is offering a special Environmental Quality Incentives Program (EQIP) sign-up for farmers in Governor-declared counties in Kansas who could not plant their crops because of flooded or wet fields. This sign-up provides technical and financial assistance to help farmers plant cover crops, an alternative to letting fields go fallow and uncovered. The deadline to apply is **July 26, 2019**.

Excessive moisture and flooding in 2019 have prevented or delayed planting on many farms across the country. Many producers are unable to plant crops by a final planting date or have experienced significant delays in planting.

To apply for this special EQIP funding, contact the El Dorado USDA NRCS Field Office at 316-321-5803

What is Household Hazardous Waste (HHW)?

Products like cleaning agents, herbicides, pesticides, paints, automobile fluids and batteries contain toxic ingredients. When these products are used or disposed of improperly, they can be harmful to humans, pets and the environment.

By taking household hazardous waste to a special collection center at the Butler County Landfill, materials can be shared with others or disposed of in a manner that does not harm our environment.

Stop and Think Before You Purchase Household Hazardous Products!

- ⇒ Read the Label!
- ⇒ Buy only what you need. More is not better if you do not use it up.
- ⇒ Check with the HHW facility before you purchase a product to see if someone may have dropped off what you are planning to purchase.
- ⇒ If you have to buy a product, share any leftovers with friends, neighbors, relatives, schools, shelters, religious organizations, etc.
- ⇒ Visit your household hazardous waste facility to dispose of any excess that you can't use up or share.

Contact the landfill at 316-322-4127 for more information or visit their website:

<http://www.bucoks.com/282/Recycling>



Butler County Conservation District
2503 Enterprise, Suite B
El Dorado, Kansas 67042
Phone: 316-320-3549



ON A PERSONAL NOTE.....

What's really behind that door...

I grew up in an old two story farmhouse with a gabled roof on the east and west side of the house. There were 3 rooms upstairs along with a hallway closet and a bathroom.

My older sister and I shared one of the rooms upstairs while my two brothers shared another room.

Julia, being the oldest, decided she needed a room to herself so she eventually moved in to what we called the "North Room" upstairs which was smaller and very, very cold in the winter.

I guess being cold was easier for Julia to put up with than sharing a room with little sister.

Or, maybe it was because of the attic in the big closet in the room. When I was little that attic door was just the door to nothing and nowhere until night time came along. It never bothered me, or I never noticed it till Julia moved out.

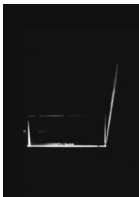
The closet was a walk in closet with a long wooden rod for hanging clothes on one side and shelves on the other side. The gabled roof came down at an angle at the back but you could still walk down the middle to the back where I had my play cabinet. I spent hours in there having tea parties with my imaginary friends, reading my books and playing with my toys.

It was great fun during the day, but that all changed at bedtime.

In the corner of this closet above the shelves was a little door in the ceiling about 2 feet by 2 feet square that lead to the attic. It was just a piece of plywood, 1/4 to 1/2 inch thick. This door had no hinges or latch.

To move it, you just pushed it upwards out of the way.

Why anyone would want to go up there was beyond me, but I sometimes thought about hiding stuff in the attic so my brothers wouldn't find it.



When it was windy (and when is it not windy in Kansas) the wind would blow through the ventilation in the roof into the attic and lift that little attic door. When it came back down, it would make a thump. To a little girl at night, it sounded like all the monsters in the world were jumping out of that attic and lining up at the closet door just waiting for me to fall asleep and....

Whether it was windy or not, (I wasn't taking any chances) that closet door was shut before I jumped into bed every night. On really windy nights, I'd lock the closet door with my church key for extra security. In the morning after really big winds, I'd find the attic door whomp sheid in the opening with pieces of insulation on the floor. Who knows what would have happened to me if I had not had the closet door closed?

And this routine continued until I moved out after college and my folks moved to town. I probably should have left a note on the closet door for the next child sleeping in that room about the attic; that they would be wise to keep the door shut at night.

I was intimidated by the attic door to say the least. I couldn't control the wind so the best I could do was to shut the door to keep "those monsters" from getting to me. I could never muster enough courage to overcome my fear, even when I knew the wind was the culprit I still felt more secure if I kept the closet door closed.

I think we all face those "thumps in the night." Is it the weather that keeps us out of the field, health issues, a family crisis, low market prices for livestock and grain, expensive equipment breakdowns or maybe regulations that we are required to follow?

Difficulties will come and we won't have control over everything that happens to us. The fear of the unknown is scary, but how we react to what's behind the door can make all the difference whether those "monsters" get us or not.

A little courage and a lot of faith will get us through. We'll learn eventually to accept the things we cannot change and to do our best to change those things we can change. But we first have to open that door... SK