PLANTING IDEAS

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A County Publication of the
Boone County Soil & Water Conservation District

Soil Health: Unlock the Secrets in the Soil

Managing for soil health must begin by changing the way you think about soil.

Healthy, fully functioning soil is balanced to provide an environment that sustains and nourishes plants, soil microbes and beneficial insects. Managing for soil health is one of the easiest and most effective ways for farmers to increase crop productivity and profitability while improving the environment. Positive results are often realized within the first year and last well into the future.

Implementing Soil Health Management Systems can lead to increased organic matter, more beneficial soil organisms, reduced soil compaction and improved nutrient storage and cycling. As an added bonus, fully functioning, healthy soils absorb and retain more water, making them less susceptible to runoff and erosion as well as drought and flooding. This means more water will be available for crops when they need it. Soil Health Management Systems allow farmers to enjoy profits because they spend less on fuel and energy while benefiting from the higher crop yields resulting from improved soil conditions.

The keys to soil health: Limit disturbance, cover the soil, increase diversity and keep a live root all year round.

Unlock your farm's potential:

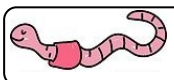
Dig a little and learn a lot. Soil is a living system, and healthy soil should look, smell and feel alive. Dig into your soil to discover what your soil can tell you about its health and production potential. Healthy soil is darker in color, crumbly and porous. Understanding how healthy soils look, smell and feel is the first step toward achieving soil health. Dig a little! If you find soil that is out of balance, try adding diversity to your cropping system by adding cover crops and/or adding all four different types of plants in your rotation. The four different types of plants are warm season grasses, warm season broadleaf, cool season grasses and cool season broadleaf. An example of a crop rotation would be: corn– soybean– wheat—clover. Adding cover crops can also be an integral part of a cropping system. Cover crops can be managed to improve soil health, as they help develop an environment that sustains and nourishes plants, soil microbes and beneficial insects. Cover crops are typically planted in late summer or fall around harvest. Examples of cover crops include rye, wheat, oats, clover and other legumes, turnips, and radishes. Planting several cover crop species together in a mixture can increase their impact on soil health. Cover crop benefits include restoring soil health, protecting natural resources, providing livestock producers with additional grazing and haying opportunities and providing cover for wildlife. Each cover crop provides its own set of benefits, so it's important to choose the right cover crop mixture to meet your management goals.

Did you know? There are more individual organisms in a teaspoon of soil than there are people on earth; thus soil is controlled by these organisms.

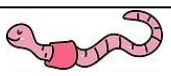
To read the publications in their entirety check out the websites below:

- http://www.mo.nrcs.usda.gov/technical/soils/out/21st_century_soil_health_factsheet.pdf
- http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/soils/health
- http://www.youtube.com/watch?v=nWXCLVCJWTU&feature=youtu.be
- http://www.sare.org/Learning-Center/Books/Managing-Cover-Crops-Profitably-3rd-Edition
- http://soils.usda.gov/sqi/concepts/soil_biology/soil_food_web.html

Conservation Programs such as EQIP (Environmental Quality Incentive Program) and CSP (Conservation Stewardship Program) provide cost-share for landowners who are interested in planting cover crops on their farms. If you are interested in signing up for cost-share to install this practice or any other practice to improve your farm, please contact your local NRCS field office.



Earthworms are free farm hands. They help move the organic matter from the top and mix



Boone County Soil and Water Conservation District

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Statement of frequency: Three/year
Mailed in Columbia, Missouri

Authorized organization's name & address:
Boone County Soil & Water Conservation District
Parkade Center, Suite 213E
601 Business Loop 70 West
Columbia, MO 65203
573-875-5540 ext. 3
www.swcd.mo.gov/boone

Hours:
Monday-Friday 8:00 a.m. - 4:30 p.m.
Closed 12:00 p.m. - 12:30 p.m.

Funding for information/education activities are provided in part by the Parks, Soils and Water Sales Tax through the Missouri Department of Natural Resources.

FY 2012 END-OF-YEAR C-S REPORT
Boone County 7/1/11-6/30/12

WQ: Water Quality Practices do not require soil erosion

		C-S DOLLARS CLAIMED	TONS OF SOIL SAVED
2 DSL-1	Perm. Vegetative Cover Establish (GM)	$ 7,286.39	648
3 DSL-5	Diversion (SRG)	$ 3,976.99	526
6 DSL-44	Terrace System w/Tile (SRG)	$ 30,936.23	1230
5 DSP-3.*	Grazing Management (GM)	$ 16,683.36	n/a WQ
5 DSP 2	Perm. Vegetative Cover Enhance (GM)	$ 10,682.37	n/a WQ
5 DWC-1	Water Impoundment Reservoir (SRG)	$ 42,061.24	2340
12 DWP-1	Sediment Ret Control Structure (SRG)	$ 76,172.38	2010
2 N351	Well Decommissioning (SA)	$ 800.00	n/a WQ
1 N 472	Use Exclusion (WE)	$ 2,472.12	n/a WQ
1 WQ 10	Stream Protection (SA)	$ 10,418.73	n/a WQ
42 contracts	**10 practices Totals**	**$ 201,489.81**	**6,754**

- There is currently a 3-4 year waiting list for Sheet/Rill/Gully erosion money. A technician will make an eligibility determination prior to placing a project on the waiting list. Schedule your field visits now!
- Projects planned in conjunction with a wheat rotation work best.
- Grazing Management, Sensitive Areas, and Woodland Erosion (including Use Exclusion) projects have no major waiting list.
- The landowner must complete a Vendor Form for payment information including information used for a state issued 1099-G prior to contracting.
- Landowners may designate a third party to sign cost-share forms and conservation plans Only the landowner can sign the Maintenance Agreement. Generally, only the landowner can receive payments.
- Termination dates are set based on construction windows, seeding periods, and nutrient application requirements. All projects have at least 60 days to complete. Time extensions may be granted provided the practice has actually been started and a good faith effort has been made to implement the practice. All extensions are at the discretion of the Board of Supervisors. All projects are expected to be completed within the fiscal year without carryover into the next fiscal year as such carryovers rob funds from the next year and those on the next year's waiting list.
- It is important to plan crop rotations in conjunction with fund availability. Preparations should also be made to meet the requirements for the Indiana Bat Habitat protection period. Bat habitat trees may be cleared during the period October 1—March 31. Clearing is not a cost-sharable component. However, failure to comply with the protection period will result in ineligibility for federal or state funds.

Impact of the 2012 Drought on Trees – by Joe Alley, NRCS Forester

As you all know, the drought of 2012 was one of the worst on record. Everyone felt or saw the impact on crops, pastures and livestock, but what about our forests? Were they impacted as severely? The answer is…maybe. We definitely lost some growth, and we lost some trees, but the long-term impacts are yet to be felt. Later in this article, I'll describe some measures that can be taken to minimize the impact of the drought, but first let's discuss some of the direct early impacts of the drought.

The earliest signs of the drought we observed on trees were early leaf drop and early drop of fruits or nuts (known collectively as mast). While these may sound severe, they are essentially survival mechanisms. A tree can't get up and move to get a drink, and it can't grow roots fast enough to chase the vanishing water in the soil, so it's only option is to conserve water. It does this by shedding unnecessary parts, parts that are using precious water. Leaves use water in their metabolic processes, and water is used to move nutrients from the soil to feed the leaves. A lot of this water is ultimately lost through pores in the leaves. By shedding its leaves, this avenue of water loss is cut off. Similarly, mast is a huge sink for water. By dropping the mast early in the development phase, all of this water is conserved. In some cases, the fruits or nuts were retained but were much smaller than normal and thus used less moisture. (Reduced mast production will likely impact food availability for many wildlife, another impact of the drought.) While these measures seem drastic, the moisture conserved by these two processes was retained to keep the root system and structural cells alive in the tree, providing it with the opportunity to sprout new leaves and produce new seeds next year.

In some cases, these survival mechanisms may not have been enough to save the tree. Trees that were already stressed for a multitude of reasons or that were growing on excessively droughty sites (south and west facing slopes in natural stands or clay subsoil in your yard) may not recover. Similarly, old trees or newly planted trees will likely not recover either. If however, the tree was healthy for the years preceding the drought and it was growing on a site suited to the species, then the tree should be OK.

What can be done to ensure that your trees or forests recover effectively? Making adequate moisture available is the key to success. This can be done relatively easily for yard trees if you are willing to pay the water bill. The ground must be thoroughly watered within the entire drip line to achieve the desired results. You should water to a depth of at least 12"-18". Tree roots need moisture during the dormant season too, so don't be afraid to water now if the soil is dry (but don't overwater!). Also recognize that trees are adapted to different soil environments, and some are pickier than others in terms of the type of soil they will grow in, the amount of shade or sun they will tolerate, and their position in the landscape. Other things to consider include mature size and clearances between buildings, streets, and utilities. There isn't much you can do about established trees, but as you plant new trees consider all of these things and consult an expert if you don't know the answers.

In a forest setting, we obviously can't water all of the trees. Instead, we manage water availability by reducing competition for water. This is done by removing trees that are undesirable for reasons of health, form, condition, species, and/or spacing. The remaining trees benefit from increased availability of water (as well as nutrients and sunlight) and should exhibit improved growth. As an added bonus, you have hopefully retained trees that are of superior quality and that meet your goals as a landowner (timber production, wildlife food and habitat, visual impact, etc.). This process, called Forest Stand Improvement (FSI) or Timber Stand Improvement (TSI), enhances the long term growth and health of your forest and is used to meet a variety of forest management goals.

Check out the following links for more information on watering trees and FSI, or contact a forester or natural resource professional.
http://extension.missouri.edu/p/G6879
http://extension.missouri.edu/drought/waternewtrees.htm
http://mdc.mo.gov/sites/default/files/resources/2010/10/timber_stand_improvement_10-20-10.pdf
http://www.na.fs.fed.us/pubs/ctm/ctm_index.html

NOVEMBER 2012 PLANTING IDEAS
Boone County Soil and Water Conservation District
Parkade Center, Suite 213E
601 Business Loop 70 West
Columbia, MO 65203
573-875-5540 ext. 3

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POND MANAGEMENT WORKSHOP

Thursday, March 7, 2013

6:30 - 9:00 p.m.

MO Dept. of Cons. Central Regional Office

The workshop will cover a wide variety of topics including pond site selection, pond construction, pond stocking, fisheries management, aquatic vegetation management, pond watershed management, and nuisance wildlife. MDC, NRCS, and SWCD will give presentations and answer questions. Literature and brochures on pond management will be available, as well as refreshments.

If you are interested in attending this free workshop, please call the MO Department of Conservation Office at 573-815-7900.

Calendar of Events

December 4	SWCD Board Mtg., 12:30 p.m.
December 25	Holiday, Office Closed
January 1	Holiday, Office Closed
January 8	SWCD Board Mtg., 12:30 p.m.
January 21	Holiday, Office Closed
February 5	SWCD Board Mtg., 12:30 p.m.
February 18	Holiday, Office Closed
March 7	Pond Workshop, 6:30-9:00 p.m. MDC Central Regional Office
March 12	Election/Open House 7:00 a.m. to 1:00 p.m.

SWCD Seeking Board of Supervisor Candidates

The Boone County Soil and Water Conservation District will hold an election for one supervisor each in Area 1 (Bourbon and Centralia Townships) and Area 3 (Rocky Fork and Columbia Townships) on March 12, 2013. There are four requirements to be a supervisor. A candidate must be: a legal land representative, a resident taxpaying citizen within the SWCD for two years preceding the election date, a cooperator of the SWCD, and reside in, or own a farm lying in, the same territory the candidate wishes to represent. A candidate's term is four years. If you are interested or know of someone interested, you may submit names for consideration to the nominating committees by contacting Cindy Bowne by Tuesday, January 15, 2013. If you have any questions, please call 573-875-5540 ext. 3.

EARTHWORM FUN FACTS:

- Earthworms neutralize soil pH.
- If a worm is cut in half, the halves do not regenerate.
- Worm castings in the soil are 5x as rich in available nitrogen as anything else in the upper 6 inches of soil.
- Worms eat and digest decaying leaves and other organic material in the soil.

http://www.naturewatch.ca/english/wormwatch/