



# DEEP ROOTS

A NEWSLETTER FOR  
FARMERS AND FARMLAND OWNERS  
IN IOWA COUNTY WISCONSIN

## SUMMER 2019

### **TRANSITION TO NO-TILL**

Joe Stapleton is breaking away from conventional till and trying new practices that are paying off.

### **SIX QUESTIONS TO HELP NAVIGATE YOUR NUTRIENT MANAGEMENT PLAN**

You paid for your Nutrient Management Plan now let it pay you back.

### **SINKHOLES AND GROUNDWATER**

What you need to know.

### **MANAGING BARNYARD RUNOFF**

Install roof gutters to keep your barnyard clean.

### **SOIL AND WATER PROTECTION**

A look at Wisconsin's rules



# LAND Conservation DEPARTMENT

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DEPARTMENTS/LANDCONSERVATION

## HELLO



This year's heavy and frequent rains have been brutal. How many times have you heard (or said), "I've never seen anything like this." It doesn't seem like "normal" years are so normal anymore. Heavy rains make soil and water conservation practices all the more important. Luckily, many practices also save money, and cost-share is available for hundreds of practices through the Iowa County LCD or NRCS. Check out the following articles for information on some practices and cost-savings!

With today's media, headlines can often be misleading. The recent update about the SWIGG groundwater study is no exception. While we have concerns about drinking water quality in this area, it is not a crisis and we are working hard to learn more.

Our latest tests were in wells that were already found to be contaminated in the previous sampling. We looked deeper into contamination sources and found viruses and bacteria from both human and livestock fecal material in many of the re-tested wells. Not all of these organisms cause illness, however.

There is a press release and update document on our website with many more details. Please call me with any questions; I'd be happy to discuss the facts of the study to date.

It was my pleasure to present this year's Land Conservation awards at the Farmers Appreciation Day in Dodgeville. Congratulations to Joe Stapleton, Farmer of the Year; Brad Walter, Water Quality Leadership; Dry Dog Partnership, Wildlife Habitat; Mary Kay Baum, Friend of Conservation; and John Morton, Tree Farmer of the Year. Thanks to all of them for their great work and example!

We got to sit down with Joe Stapleton to find out more about the conservation practices he is implementing on his farm. Check out his story on the next page.

If you have a conservation story to share, or know of an Iowa County farmer or landowner that deserves recognition, please let us know! Email me at [katherine.abbott@iowacounty.org](mailto:katherine.abbott@iowacounty.org) or call 608-930-9893.

*Katie*

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**Deep Roots is published twice a year by the Iowa County Land Conservation Department. To receive a copy via email, please contact [mayme.keagy@iowacounty.org](mailto:mayme.keagy@iowacounty.org) to subscribe.**

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A few of this year's conservation award winners at the Iowa County Farmers Appreciation Day: Dan Nankee, Mary Kay Baum, Katie Abbott, Joe Stapleton. Back row: Russ Moody, Dale Moody.

# NOT YOUR AVERAGE JOE

KATIE ABBOTT

County Conservationist

**Joe Stapleton is a 4th generation farmer trying new practices to save money while protecting soil and water.**



Many changes have occurred in the 160 years that Joe Stapleton's family has farmed in Wyoming Township. In the last ten years, Joe has noticed heavier downpours, which previously would wash the smooth, worked soil that was ready for planting.

"When my dad farmed, everybody plowed, but I got tired of ruts and gullies," Joe said. Now, this 4th generation farmer is trying new practices to save money and protect soil and water.

"I started with the easy stuff," Joe explained. First trying a couple fields with no-till corn-on-sod or corn-on-beans, he has graduated to no-till corn-on-corn over the last 7 years and is now trying no-till alfalfa.

Today, Joe sees very little erosion or ruts, even with heavy rain.

He started with a 6-row planter set up with no-till coulters, and over time added row cleaners, drag chains, and seed firmers.

"It took a couple years to see the yield bounce back," Joe explained, "but in the meantime I saved money on fuel, machinery costs, and time. It's not as big a disadvantage as some think."

Joe farms the 500 acres he owns and rents mostly by himself, so his time is especially precious. "I thought, wouldn't it be nice to just jump on a tractor and plant?" he shared. "Other people were using no-till, so why wouldn't it work for me too?"

Cover crops are the next practice Joe is testing. He no-tills rye after silage or beans, then sprays it off when it's 6-8" tall. The rye residue helps suppress weeds. "I've cut my herbicide use in half for corn."

"Nothing is 100% but it sure helps a lot. There's always room for improvement, but you can't sit still on this. Try something new, try something different."

All of these practices have improved his soil health. His clay soils are better able to accept rain and hold on to more moisture in dry years. "The soil holds nitrogen better too; there's just more good bacteria and bugs," Joe explained.

Joe also participates in the Iowa County Uplands Farmer-led Watershed Group and the Lowery Creek Watershed Initiative as a way to learn, ask questions, and try different methods to conserve water and keep it clean. "I'm absolutely interested in water quality, why wouldn't I be? I live here, it's my water too."

For Joe, it's about being proactive rather than reactive. He understands that heavy rains, droughts, and price fluctuations will happen. "I knew corn would drop. I needed to do something to cut my costs." Today he sees the same amount of yield with less time and fewer inputs. "Nothing is 100% but it sure helps a lot. There's always room for improvement, but you can't sit still on this. Try something new, try something different."

## JOE'S TIPS

- Start with the easy stuff, like no-tilling corn into alfalfa or beans, or a cover crop after silage.
- Ask people who have already tried it.
- Attend a field day to see practices in person and ask questions.



PHOTOS: MAVINE KENNY

# NUTRIENT MANAGEMENT

LONDON BAUMGARTNER  
Conservation Specialist

## SIX QUESTIONS TO NAVIGATE YOUR PLAN

# 1



### AM I KEEPING MY SOIL?

Look at the *Field Data and 590 Assessment* section of your plan to find the Rotational Average Soil Loss in tons/acre. Make sure this is equal to or less than Field “T”, the “tolerable” soil loss rate for this field.

# 2



### ARE MY SOIL TESTS CURRENT?

Look at the *Soil Test Report* to make sure your soil tests are 4 years old or younger, otherwise the nutrient levels, pH, and organic matter in your soil could be very different from what you’re seeing on paper.

# 3



### WHERE ARE NUTRIENTS LOW AND WHERE ARE THEY HIGH?

On the *Spreading and Nutrient Management Sorted By Crop Report*, note where you are over or under UW recommendations with your planned application rates. Your plan lays out for you how fertile each field is, what you should be applying, and if your fertility program is too aggressive or not aggressive enough. Your plan will also give you liming recommendations for each field in Section FM5 entitled *Lime Report*.

## CALCULATE THE SAVINGS

Find out what nutrient management can do for your farm’s profits with some quick math. The value of manure, fuel, soil, and legume credits can add up to tens of thousands of dollars saved.

- The nitrogen savings from adding legumes to a continuous corn rotation are roughly \$10/acre from soybeans or \$45/acre from even a poor stand of alfalfa.
- Manure is worth about \$2.75 per ton on average. Multiply the number of cattle you have by 17 tons/year for beef or 27 tons/year for dairy. Then multiply that result by \$2.75 to estimate the value of manure’s nutrients.
- Grazing cattle saves about 80 cents/head/day in reduced costs of

collecting, hauling, and spreading manure. Winter gleaning also helps with winter manure management and adds fertility to fields.

- On average, the nutrients in a ton of soil are worth about \$4.80 per ton. Additional value comes from soil’s organic matter, micronutrients, water holding capacity, and infiltration. Reducing soil loss can really impact your bottom line!
- Diesel and machinery costs aren’t cheap. Switching from a two pass system to a one pass system saves around \$17.60/ acre. Switching from a one pass system to no-till saves an additional \$14.00/acre.

Incorporating a few changes can add up to significant savings!

\*These figures are based on estimates and averages; actual cost savings will vary with each farm. For more details and cost savings see UW-Madison Nutrient and Pest Management Program worksheet: Improve Farm Profitability, Reduce Environmental Risk. Copies are available at the Land Conservation office.

Once you've paid for your nutrient management plan, how does it pay you back and work for you? A good way to start is by asking yourself these 6 questions as you flip through your plan.

# 4

## IS IT WORTH A NITROGEN APPLICATION?



How much Nitrogen is worth it? In Wisconsin, the Maximum Return on Nitrogen (MRTN) ratio is used to help determine this. Using the current price of corn and of nitrogen fertilizers, you can determine the amount of Nitrogen to apply **based on profits, not yields**. Look at section FM9 simply entitled *Nutrient Management Plan* to see your planned Nitrogen rates. You may want to double check with your agronomist to make sure you are both on the same page.

# 5

## HAVE I CALIBRATED MY SPREADER?



Get familiar with your machinery after determining your fertilizer rates. Calibrating your manure spreader is well worth the time investment to be confident in your spreading rate. Contact your local UW-Extension agent or Land Conservation Department for more information.

# 6

## WHAT DO YOUR MAPS SAY?



### ABOUT NON-FROZEN SOILS

Nitrogen may be restricted where soils are highly permeable, shallow to bedrock, or close to the water table.

Take special care within 300 feet of a stream or creek (called a Surface Water Quality Management Area or SWQMA).

Maintain proper setbacks from wells, gravel pits, sinkholes, or old mine shafts.

### ABOUT FROZEN SOILS

Don't spread on frozen soil within 300 feet of a creek or stream (SWQMA).

Stay back 300 feet from any direct conduit to groundwater, which can include a well.

Where there is concentrated flow or greater than 6% slope, follow at least 2 winter spreading strategies.



## COST-SHARE

Would you like help covering the cost of your nutrient management plan? The Land Conservation Department provides **\$16/acre cost-sharing**, which is in addition to Farmland Preservation tax credits. Cost-share is a one-time payment that is only available on acres that have not previously received NMP cost-share through Iowa County. A contract is required before completing the plan, and funding is available first-come, first-served. Give Landon a call if you are interested: 608-930-9895.

Although this covers just the basics of interpreting your nutrient management plan, asking yourself these questions can help you cut through all of the graphs, maps, and tables that make up your plan. Want to dig deeper? The Land Conservation staff is always here to help with your questions.

For more information, technical assistance or to inquire about possible cost-sharing opportunities contact Landon Baumgartner at (608-930-9895, [landon.baumgartner@iowacounty.org](mailto:landon.baumgartner@iowacounty.org))

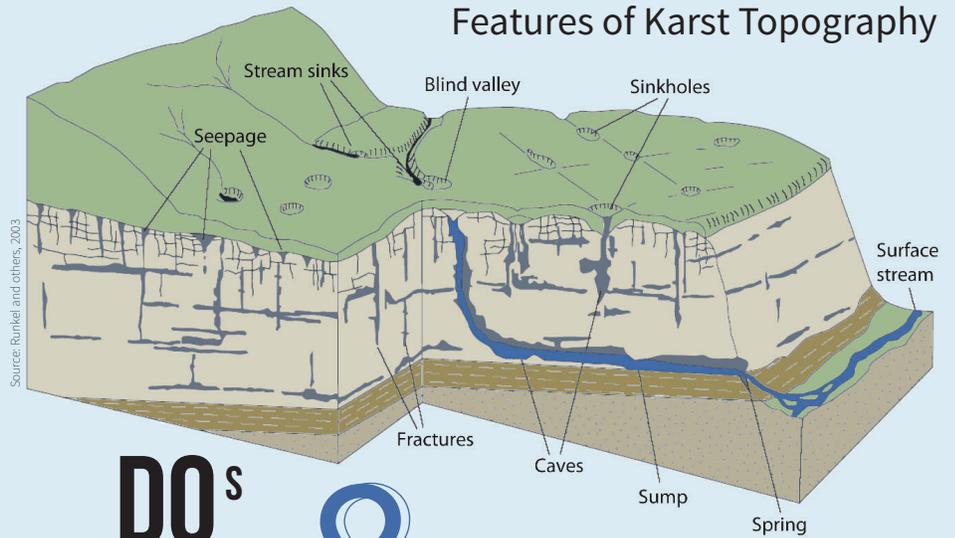


# SINKHOLES

SARAH HOVIS

Conservation Technician

You may hear stories from friends or neighbors about a “sinkhole” suddenly showing up on their property – or experienced it firsthand yourself. Sinkholes are a feature found in “karst” topography, meaning the bedrock is easily dissolved by water. Other karst features include caves and springs, which we have in abundance in Iowa County. Cracked or dissolved bedrock also means that it is easier for contaminants from the surface to get into groundwater and wells. Here is what to know about sinkholes on your property.



## DO'S

- **Do keep a safe distance as the area may not be stable. Attempting to enter a sinkhole could result in injury or death.**
- **Do use a fence to keep out livestock.**
- **Do watch the sinkhole for any increases in size. A fence or caution tape around the sinkhole is useful to judge any changes.**

## & DON'T'S

- **Don't throw anything into the sinkhole to fill it. This could contaminate drinking water. Even adding rock will generally only be a temporary fix unless the sinkhole was excavated down to bedrock. Otherwise the weight of the rock could cause the hole to open up further.**
- **Don't attempt to fill any exposed caves. Caves are home to many sensitive species protected under federal and state laws.**
- **Don't panic. Sinkholes are naturally occurring in the area. The Iowa County Land Conservation Department offers cost sharing to properly stabilize and close sinkholes.**



For more information, technical assistance or to inquire about possible cost-sharing opportunities contact Sarah Hovis at LCD (608-930-9894, sarah.hovis@iowacounty.org)

# ROOF GUTTERS

Proper manure management is an important part of protecting surface and ground water quality. Manure that accumulates in barnyards, feedlots, and other areas with impervious surfaces has a greater risk of running off into nearby creeks and rivers. This is made worse by heavy rainfall events, which have become more common over the years.

One way to reduce barnyard runoff is to install a roof runoff system, commonly referred to as roof gutters. Roof runoff systems capture clean water from rooflines before it reaches manure below.

Gutters can be discharged into a pasture, grassed waterway, or via an underground outlet in order to minimize contamination

and erosion. Capturing excess water will also keep barnyards and feedlot areas from becoming as degraded and muddy.

Gutters are a great practice to install on your own, but there are important considerations to prevent failure. A common problem is not using enough straps to secure the gutters to the building, especially with larger roof areas or larger gutters.

It is also important to make sure the correct slope is used so water flows in the desired direction and does not back up in the gutter. Slopes may seem minimal or non-existent once installed, but they are necessary for proper gutter functioning.

Adequate air space to prevent pressure from building up is also considered during design. Excess pressure could cause gutters to burst or disconnect from the roof line during a storm event.

Roof runoff systems and other clean water diversion practices may be necessary to meet Farmland Preservation Program requirements if you are within 300 feet of a river, lake or stream.

The Iowa County Land Conservation Department is able to help with both roof runoff system design and cost sharing.



# SOIL AND WATER PROTECTION: WHAT ARE THE RULES?

LONDON BAUMGARTNER  
Conservation Specialist



How much do you think about soil and water quality when making decisions about your farm?

In order to protect our shared surface and ground water resources, Wisconsin created “Agricultural Performance Standards and Prohibitions” in 2002, with updates in 2011 and 2018. All agricultural producers, regardless of operation size, should aim to meet these standards, which are found in Administrative Code Chapter NR 151, sections 151.01-151.08.

Following are some questions to ask yourself to determine if you are meeting the standards:

## Are my soil, nutrients, and manure staying where they belong?

Soil loss on cropland or pasture needs to stay below the “tolerable” level, which varies by soil type. Phosphorus runoff must also be kept below a certain level, and manure must not runoff into surface or ground water.

## Do I have a plan for where, when, and how much to apply manure and fertilizers?

Anyone mechanically applying manure or fertilizer should have and follow a Nutrient Management Plan. These plans also look at soil and phosphorus loss.

## How close am I tilling or planting next to a stream?

All surface water must have a 5 ft setback, measured from the top of the bank, which is both un-tilled and has self-sustaining vegetation.

## Is there a feedlot, manure storage, or barnyard within 300’ of a creek or stream?

Any facilities in this zone need rainwater diverted around it. Unconfined manure stacks also need to be kept out of here. Keep the clean water clean.

## Do you have pasture along a creek or stream?

If cattle have access to a creek or stream, make sure the banks don’t get too roughed up. A good rule of thumb is an average of 70% vegetation on all streambanks.

## Do you have stored silage leachate, milkhouse waste, or wash water from a barn?

These are wastewaters that need to be kept away from surface or ground water. Treat these as manure and don’t let them leave the farm unchecked.

**Most Iowa County farms are eligible for a \$7.50/acre state income tax credit if they meet NR151 standards.**

## Do you have any manure storage?

If you have a lagoon, pit, or other manure storage make sure it isn’t cracking, leaking, or at risk of overtopping. Properly close any storage facilities you no longer use. \*Note: Building, altering, or closing a manure storage will also likely require a permit from Iowa County.

Most Iowa County farms are eligible for a \$7.50/acre state income tax credit if they meet these standards.

In addition, we can often help design and cost-share installation of practices to reach some of these standards.

Please feel free to call our office with any questions. Every situation is different and needs to be looked at individually. We are always here to help.

**For more information, technical assistance or to inquire about possible cost-sharing opportunities contact Landon Baumgartner at (608-930-9895, [landon.baumgartner@iowacounty.org](mailto:landon.baumgartner@iowacounty.org))**



# DEEP ROOTS

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**LAND CONSERVATION DEPARTMENT**  
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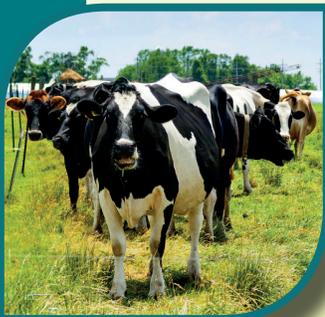
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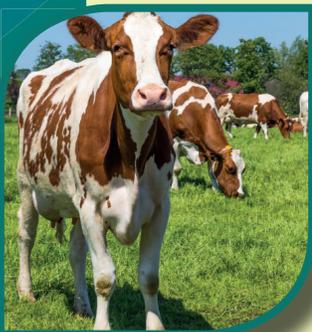
## UPCOMING EVENTS



**AGRONOMY/SOILS FIELD DAY**  
WEDNESDAY | AUGUST 28, 2019 | 8a-2:45  
UW-ARLINGTON AG RESEARCH STATION  
N695 HOPKINS ROAD | ARLINGTON, WI  
Morning field tours will emphasize soil, crop, and pest management practices that promote soil health, improve farm profitability, and enhance environmental quality. A lunch time presentation will focus on navigating today's dairy industry. Brought to you by UW College of Ag. and Life Sciences and Division of Extension. For more info and registration: <https://go.wisc.edu/n4yrl5>.



**ON-FARM TWILIGHT MEETINGS**  
THURSDAY | AUGUST 29, 2019 | 6p-8:30p  
ANDY AND LYN BUTTLES | STONE FRONT FARM  
5027 HWY 81 | EAST LANCASTER, WI  
Enjoy a 60-minute farm tour and free ice cream. Followed by an open discussion related to water, community development, resource management, changes in agriculture and rural communities, roads and transportation and other critical issues. WI Towns Assoc., WI Counties Assoc. and Professional Dairy Producers. Registration: 800-647-7379 or [mail@pdpw.org](mailto:mail@pdpw.org).



**GRASS DAIRY | PASTURE WALK**  
TUESDAY | SEPTEMBER 3, 2019 | 1:00p  
5023 WI-23 | DODGEVILLE, WI  
Scott Mericka and Andy Hatch purchased an adjoining 85 acres of pasture to their existing farm. They have work to do to put it back in production. Come discover how they plan to build the soil, layout paddocks and out-winter the heard to turn this land into quality dairy pasture. Brought to you UW-Madison Division of Extension Iowa County. No registration required.