

Clean Water Starts With Us

WATERSHED IMPROVEMENT IN IOWA

DNR • DSC • NRCS

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Planning for the big time with future farmers

As farm owners grow older and land changes hands, economists predict an emerging group of farm owners who are

David Kohl, Ph.D, as quoted in *Ag Professional*, calls these non-agricultural owners “energetic lifelong earners,” who

putting interdisciplinary teams, including financial advisors, to work with producers.

“I will tell you that greed is alive and well,” he said, tying it to extraordinarily high grain prices.

The consultant’s job, which may also apply to watershed coordinators, is to provide objective assessments of different scenarios and their risks. One way to relate to this neo-farmer is to build upon their anxiety, and to say “Slow down,” says Kohl.

Blanchfield, who chairs the ABA Center for Agricultural and Rural Banking, said the big operations are looking for a return on their investment in a global market. He suggests consultants ask their clients, “What are you doing to hedge your interest rate risk?”

The ag consultant may have to help their client through a stock market or real estate crash, rising interest rates and less power in the Washington farm lobby.

The watershed coor-
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Iowa's farm owners are growing older and many Iowa farms will be changing hands in coming years.

technologically savvy, hands-on managers and entrepreneurial.

According to John Blanchfield, of the American Bankers Association, these new owners will use their business know-how to get start-up capital as they expand.

They may have recently inherited a farm. They may be working with relatives and multiple family farm units, but they are likely to include non-family investors.

Agricultural economist

are progressive and may farm across counties, states or even countries.

Making up less than 13 percent of all farms, the largest operations – those with annual farm sales of \$250,000 and up – produce 80 percent of agricultural commodities and owe approximately 60 percent of farm debt, according to Kohl.

Speaking at the American Society of Agricultural Consultants annual meeting in Washington, D. C., Kohl suggested

Iowa Water Conference March 3-4 in Ames

At the eighth annual Iowa Water Conference, “Making Connections – Solving Problems: Water Strategies for Success in a Changing World,” conference-goers will explore urban and rural water resource management trends, with a particular emphasis on the interconnected nature of our water resources, and the opportunities this offers for collaboration. www.aep.iastate.edu/iwc/

Preparing for a new kind of farm owner

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dinator might ask the same client what they are doing to hedge their risk against climate extremes, and nutrient and soil quality depletion. Both drought and flooding have impacted soil conservation practices in Iowa during the last five years, washing out terraces and waterways, preventing planting, drying up crops in the field.

How can farmers protect their investment? Build soil quality.

Install and repair conservation practices. Hedge risks by putting some land in long-term leases or conservation reserve. Experiment with cover crops.

Taking the time to educate new landowners, especially non-agricultural landowners, on the importance of soil resources to future yields could pay off in increased conservation practices; a willingness to try new technologies, new

crops or cover crops; and new management strategies.

Think about reframing soil conservation in an economic risk-based format. Read the article “Consulting for the big players” in the Nov. 14, 2013, issue of *Ag Professional* at <http://www.agprofessional.com/agprofessional-magazine/Consulting-for-the-Big-Players-231595291.html?view=all>.

- Karen Grimes

A different kind of healthcare taking root in Iowa

There’s a potentially game-changing movement coming from America’s heartland. It has broad implications regarding the vitality of our farms, the health of our planet and our ability to feed more than 9 billion people who will be coming to dinner by the year 2050.

This movement continues to grow thanks to a different kind of healthcare—the health and care of our precious soil.

Previously, we looked at soil in terms of its “quality.” But as one farmer observed recently, “Anything can have quality, but only living things can have health.”

So while it might seem like a trivial, word-choice decision important only to copy writers in the marketing department, focusing on “soil health” versus “soil quality” reflects a fundamental shift in the way we now care for our nation’s soil.

Talk to any farmer working to improve the health of the soil and he or she will likely tell you that the “ah-ha” moment came upon the realization that soil isn’t just an inert growing medium. In fact,



USDA-NRCS State Conservationist Jay Mar

the soil is alive and teeming with trillions of microorganisms and fungi that are the foundation of an elegant, symbiotic ecosystem.

This new reality has quietly spawned an agricultural revolution. Increasingly, more and more producers in Iowa and throughout the nation are harvesting a wide range of production, environmental, sustainability and business benefits—on and off the farm—by improving soil health.

USDA’s Natural Resources Conservation Service recently launched a new education and awareness

campaign titled “Unlock the Secrets in the Soil” to help more farmers and ranchers discover the basics and benefits of soil health—and to encourage the adoption of soil health-improving practices like cover cropping, no-till and diverse crop rotations.

We realize the journey to improving soil health has its challenges. Every farm is different and has its own set of unique resource issues.

Fortunately, our nation’s farmers are innovative, courageous and tenacious. NRCS is committed to assist these soil health pioneers—and to help make their farms more productive, resilient and profitable along the way.

As we face mounting production, climate and sustainability challenges, we believe there is no better time to make a long-term commitment to improve the health of our living and life-giving soil.

The promise of our future depends on it.

Jay T. Mar is the State Conservationist for USDA’s Natural Resources Conservation Service in Iowa. For more information on soil health visit www.nrcs.usda.gov.

Watershed, in-lake work pays off for Black Hawk Lake

From 6 inches of water clarity in 2012 to 6 feet this year, the restoration of Black Hawk Lake is progressing well.

"The local community is very excited about the project and the direction it's heading," said Ben Wallace, DNR fisheries biologist.

With water clarity and quality improving from in-lake and watershed work, native aquatic vegetation is growing in the Sac County lake for the first time in decades.

Fish are growing fast, helping sport fish populations to rebound quickly.

Since the effort began, 33 landowners and operators in the watershed have used 13 different conservation practices to reduce sediment and nutrients reaching the lake. That includes stabilizing

8,720 feet of streambank, installing 29,500 feet of terraces and using strip till or no-till on 962 acres.

"Cover crops are really being promoted and 1,050 acres were planted with cover crops, representing more than 10 percent of the total crop production acres in the watershed," Wallace said.

Watershed work has also included nutrient management, filter strips, grassed waterways, wetland restoration and conservation easements. Urban practices include rain barrels and rain gardens.

The work has been evident to the community, as shown by the City of Lake View presenting the Sac SWCD and the DNR the "Public Partners of the Year Award" at its annual Progress as Promised Meeting in Lake View.



Former watershed coordinator Darcy Keil passes away

Recently, the Iowa watershed coordinator community lost long-time conservationist and former coordinator Darcy Keil.

Keil served as project coordinator for South Fork of Big Mill Creek, Upper Big Mill Creek and Little Mill Creek in Jackson County; and Mineral Creek, Big Bear Creek and Farm Creek in Jones County.

An excerpt of his obituary follows below, while you can read it in full at www.carsonandson.com/obituary/119424/Darcy-Keil-of-Baldwin-Iowa/.

Darcy L. Keil, 57, of Baldwin, died on Oct. 16 at his home surrounded by family and loved ones.

Darcy Lee Keil was born on Dec. 11, 1955 in Maquoketa to Lorin R. and Marilyn E. (Ringen) Keil. He grew up in Maquoketa and was a



1974 graduate of Maquoketa High School. He married Susan Mary Bronson on May 24, 1975 in Sugar Creek.

He worked for more than 20 years as an environmental specialist for the Jackson and Jones County soil conservation districts, retiring in 2012. In retirement he stayed on as the assistant commissioner for Jackson County.

Darcy was a member of the

Izaak Walton League, Pheasants Forever, Ducks Unlimited, Turkey Federation and Whitetails Unlimited.

Being a conservationist, Darcy loved anything outdoors no matter what the season might be. He was passionate about hunting, fishing, trapping and "timber time." He made friends easy and loved to visit. He especially enjoyed spending time with his family, and

some of the best and most fulfilling times were coaching baseball when his boys were younger.

He always enjoyed mentoring to youngsters who wanted to learn about the outdoors and helping them find their passion.

In lieu of other expressions of sympathy, a Darcy Lee Keil memorial fund has been established.

WIRB approves 10 new grant applications

The Watershed Improvement Review Board (WIRB) recently approved 10 applications, totaling \$2,307,554 in grants, to support projects that will improve water quality.

The grant funds will be matched by recipients, who will provide \$6,523,949 in funding from their local communities to support these projects.

As a result, \$8.8 million will be going to support water quality improvements in priority watersheds

throughout the state.

WIRB received a total of \$3 million this year and at least half of the funds must be used to support voluntary, science-based water quality practices referenced in the Iowa Nutrient Reduction Strategy.

“With the selection of these 10 applications for funding, approximately \$560,000 remains and is set aside for this purpose,” said Jerry Neppel, WIRB coordinator. “I anticipate \$1 million to be available for a second request for applica-

tions to be announced very soon.”

The Watershed Improvement Review Board is comprised of representatives from agriculture, drinking water and wastewater utilities, environmental organizations, agribusiness, and the conservation community, along with two state senators and two state representatives.

To receive more information or for questions, contact Neppel at 515-281-3599.

WATERSHED	ORGANIZATION	COUNTIES	GRANT AMOUNT
Yellow River headwaters	Winneshiek SWCD	Winneshiek	\$300,000
Clear Creek	City of Coralville	Johnson	\$263,540
Honey Creek, Lindsey Creek, Dry Run Creek	Delaware SWCD	Delaware, Clayton	\$60,000
Central Park Lake	Jones County Conservation Board	Jones	\$121,698
West Fork Middle Nodaway River	Adair SWCD	Adair, Cass	\$298,563
Gere Creek	Cherokee SWCD	Cherokee	\$299,942
Rathbun Lake	Rathbun Lake and Water Alliance	Appanoose, Lucas, Wayne	\$144,000
Silver Creek	Howard SWCD	Howard, Winneshiek	\$240,000
Mosquito Creek	West Pottawattamie SWCD	Pottawattamie	\$279,811
Hurley Creek, McKinley Lake	City of Creston	Union	\$300,000

Pollutant Load Calculator replaces Sediment Delivery Calculator

One of the most valuable tools in an Iowa watershed coordinator’s toolbox has a new name and a new look – the Pollutant Delivery Calculator has replaced the Sediment Delivery Calculator.

The new calculator is web-based, protecting information and making access simple. Data is now backed up daily, making information easy to retrieve. It also gives improved

data summaries for reporting.

The Pollutant Delivery Calculator boasts a few features not found in the old calculator. With a mapping component similar to Google Maps, users can mark the location of conservation practices with a point, line or polygon on the map. These new mapping features will make it easy to perform complex spatial summaries on practices.

An urban conservation practice calculator estimates pollutant reductions from urban practices. The urban calculator estimates a practice’s reduction of total suspended solids, nitrogen, phosphorus and gallons of water.

Coordinators can access the new Pollutant Delivery Calculator at <https://programs.iowadnr.gov/tmdl/PollutantCalculator>.

DATES TO REMEMBER

Jan. 17: Conservation Stewardship Program signup deadline www.nrcs.usda.gov/wps/portal/nrcs/detail/ia/newsroom/releases/?cid=STELPRDB1239757

Jan. 31: IDALS-DSC Watershed Development and Planning Assistance Grant applications due www.iowaagriculture.gov/requestForApplications.asp

Feb. 12: Donald A. Williams Soil Conservation Scholarship due www.swcs.org/scholarships

Feb. 28: WIRB grant applications due www.iowaagriculture.gov/IWIRB.asp

March 3: SRF Sponsored Projects applications due www.iowasrf.com

March 3-4: Iowa Water Conference, Ames. www.aep.iastate.edu/iwc/

Soil and Water Conservation Society seeks conference submissions

The Soil and Water Conservation Society is currently seeking oral presentations, posters, symposia and workshops for its 69th international annual conference.

Visit www.swcs.org/14ac for instructions on how to submit proposals, which are due Jan. 8.

This year's conference includes three tracks for submission:

- Lake Erie Case Studies: The Challenge of Maintaining Improvements
 - Cover Crop Practices: Application, Innovation and Management
 - 2014 General Conference Submissions – Making Waves in Conservation: Our Life on Land and Its Impact on Water
- Special consideration will be given

to general conference proposals addressing new insights, techniques or advancements in these 10 traditional areas of focus.

- Adaptive Management of Conservation Efforts
- Agricultural and Conservation Economics
- Biodiversity Conservation and Management
- Conservation in Nontraditional Agriculture
- Conservation in Urban Settings
- Conservation Models, Tools and Technologies
- Conservation Policy and Program Design
- Outreach, Education and Community Engagement
- Soil Health Resources, Indicators,

Assessment and Management

- Water Resource Assessment and Management
- In addition to the three conference tracks, presenters may choose from two specialized symposia topics. Submitting to one of these symposia will require Q&A or panel discussion as part of the presentation.

- Increasing Intensity: Rethinking Precipitation Averages and Outliers in Conservation Design and Planning
- Informing Conservation through Social Sciences: Understanding the Human Component of Land Management Stewardship

To view detailed topic descriptions, visit www.swcs.org/14ac.

New study investigates bacteria movement in the environment

On a sunny day at a research farm in northern Ames, scientist Michelle Soupir considers her data source—a freshly deposited cow pie on rain-drizzled grass. A soil and water quality researcher at Iowa State University, Soupir is interested in how gut bacteria from livestock survive and move from manure on the field into nearby waterbodies.

“We would like to see manure applications to land,” Soupir says in a new *On the Ground* video from the Leopold Center for Sustainable Agriculture. “It’s a great organic source of fertilizer.” But some of the gut bacteria found in manure have potential to cause disease in humans if they wash into waterways after rainfall. “By better understanding the movement of bacteria,” Soupir says, “we can help to prevent that.”

Funded by a three-year competitive grant from the Leopold Center’s Ecology Initiative in 2012, Soupir’s project looks at two different sources of manure—cows and hogs. Her lab collects samples of cow pies to study how many bacteria are present and whether they are attached to smaller or larger sized manure particles—smaller particles are transported farther with runoff.

“We would like to see animals integrated into pastureland and back into the landscape,” says Soupir. Management of bacterial transport may be something as simple as keeping grazing animals further from flowing waterways. Bacteria survival and transport also are decreased as the cow pie dries up. But this is not the only means of manure application.

Swine operations are another important source of fertilizer, which is injected in liquid form in bands in crop fields. Soupir’s swine manure studies involve sampling from various locations on and off a field site near Nashua. Her lab collects soil from along and between the manure application bands on the field, and also water samples from the adjacent tile line. These samples are tested for bacterial content, but also specifically for antibiotic-resistant bacteria. The swine portion of her study also is supported by the National Pork Board.

“Antibiotics are very important to our current agricultural production systems,” Soupir says. She goes on to explain that while frequent low doses of antibiotics promote the overall health and growth of livestock in a swine operation, it also means that some of the gut bacteria in swine ma-

nure have evolved resistance to those antibiotics—they cannot be killed by that antimicrobial agent any more.

“Many of the antibiotics we use in agriculture are similar (to the ones) that are used to treat humans,” Soupir says. This reduces our disease treatment options if people are exposed to antibiotic-resistant bacteria in manure that runs off into waterways. “So we need to be careful with the antibiotics we have available...for both the treatment of animals and humans.”

“I think of a sustainable system as having an integrated crop and livestock system in place,” Soupir says. But bacteria are part of that system. Soupir hopes by understanding how bacteria survive and move from livestock to soil to stream, we can limit their transport into waterbodies in Iowa by designing “better and more effective conservation practices.”

Watch the Leopold Center’s *On the Ground* video, “From gut to soil to water: Bacterial transport through the environment,” at www.leopold.iastate.edu/news/on-the-ground. See more at: www.leopold.iastate.edu/news/08-12-2013/bacterial-transport#sthash.iW1DA8t7.dpuf

Courtesy of the Leopold Center for Sustainable Agriculture

NRCS awards Conservation Innovation Grants

USDA-NRCS aims to improve Iowa soil health with several projects selected this month through its Conservation Innovation Grants program.

NRCS recently set sail on a campaign to “Unlock the Secrets in the Soil.” First-year Iowa NRCS State Conservationist Jay Mar believes the selected projects will help support his agency’s mission to improve soil health in the state.

“Even though many of the projects focus on soil health, they do it in very different ways, from researching innovative ways to create healthier soil to conservation lease agreements to finding cover crop seed solutions,” he said.

NRCS will provide \$655,174 to 11 projects, which range from one to three years. Grant recipients are all non-governmental organizations partnering with other organizations. Iowa’s 2013 CIG projects:

Cedar Basin Crop Consulting, Inc. will coordinate a project with conservation partners to help build resiliency to climate change by improving soil health and nitrogen management through the use of soil quality testing and the Adapt-N Management Tool. (\$75,000 through Sept. 30, 2015)

The **City of Griswold** will use winter-hardy cover crops to help reduce nitrates from nonpoint sources in the city’s municipal wells and water supply. (\$62,000 through Sept. 20, 2016)

The Iowa Soybean Association will develop cover crop and soil health implementation planning and evaluation protocol for Iowa farmers. (\$59,573 through March 31, 2016)

Drake University Agricultural Law Center will conduct demonstrations of conservation farm lease contracts to promote soil conservation and health, and nutrient management. (\$26,652 through Sept. 30, 2014)

Hagie Manufacturing will investigate innovative cover crop seeding solutions to increase the adoption rate of emerging nutrient management and load reduction practices such as cover crops, drainage water management, and bioreactors. (\$75,000 through July 31, 2015)

Iowa State University will evaluate planting technologies for the successful establishment of cover crop mixtures and single species in Iowa. (\$75,000 through Dec. 31, 2015)

The Boone Soil and Water Conservation District will use a mobile soil health outreach laboratory to educate central Iowa’s agricultural community about soil health-improving technologies and practices. (\$39,280 through Sept. 30, 2015)

Keyline Silvopasture will research ways of reducing soil erosion and increasing forage yields, livestock comfort, and water-holding capacity of grassland soils and ecosystems. (\$63,305 through Sept. 20, 2014)

Trees Forever, Inc. will provide outreach to landowners and resource conservation professionals about long-term reductions in nutrient loading through agroforestry in Iowa. (\$28,044 through Sept. 30, 2016)

The Iowa Natural Heritage Foundation will use tools and training for Technical Service Providers who provide farm flood mitigation plans.

(\$75,000 through Sept. 30, 2015)

The Iowa League of Resource Conservation and Development will find ways to communicate with people traveling Iowa’s byways about Iowa’s agricultural landscapes and innovative conservation systems that are being used to protect and preserve them. (\$74,520 through Sept. 30, 2015)

Four projects with local ties were selected for national Conservation Innovation Grants, announced by U.S. Secretary of Agriculture Tom Vilsack:

Women, Food and Agriculture Network will improve soil health across the upper Midwest by increasing soil health literacy among women farmland owners, and supporting them to improve soil health on the land they own and lease. (\$525,043)

Iowa State University will demonstrate and evaluate cover crop mixtures using emerging technologies on 15 demonstration sites throughout Iowa. (\$485,850)

Environmental Defense Fund, Inc. will demonstrate and document how NRCS and partners can design and implement a systems approach to agricultural conservation to achieve greater water quality improvements. (\$992,022)

Conservation Technology Information Center will assess costs and benefits of cover crops with proven tools, from mathematical models to nitrogen rate strip trials, and documentation of pollinators in project fields. (\$482,000)

For more information about the grants, visit www.ia.nrcs.usda.gov and click on “Programs.”

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