The Conservation Update is distributed monthly by mail and e-mail.

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On the Cover

Learn more about soil health processes on pages 4 and 5.

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Notes from the Acting State Conservationist

The official first day of summer has come and gone! I look forward to this time of year, the long days provide plenty of opportunity to get outside and take advantage of our beautiful state. Right now, we know many of our producers are facing challenges with high water levels and potential flooding. Our thoughts and prayers are with you. We are keeping a close eye on the situation, and along with our sister USDA agencies, stand ready to help.

As Memorial Day weekend comes to a close please join me in expressing a hearty "Thank You" to the men and women who gave the ultimate sacrifice for our freedom. We honor you and your families.

In this special issue of the Conservation Update we focus on the incredible benefits of soil health. Guest columnist, Chris Coreil, state agronomist for NRCS in Louisiana, writes about the significance of a "no-till" and cover crop combined system, and how soil health is fundamental to a productive and ultimately, cost effective crop.

The 2018 Farm Bill strongly supports programs that ensure financial assistance for improved soil health, water and air quality and other natural resource benefits. Marty Earnest of Caldwell Parish, featured this month, is a soybean and corn farmer who has embraced the principals of soil health and put them into practice on his land with amazing results.

As we enter the summer months I encourage you to reach out to your local NRCS office. There are 44 offices located across the state with NRCS and Soil and Water Conservation District (SWCD) employees who are knowledgeable and ready to guide you on the path to better soil health.

We are here to help you reach your conservation goals. I'm looking forward to serving again as Acting State Conservationist and working with all of you!

Timothy J. Landreneau
Acting State Conservationist

Get Involved With the Earth Team!

Are you interested in volunteering with conservation professionals on private lands to improve soil quality, conserve water, improve air quality and enhance wildlife habitat? If you answered yes, then volunteering as part of the Earth Team at your local NRCS office is for you!

Available to anyone 14 and older, the Earth Team provides a variety of opportunities: full- or part-time; outdoor or indoor activities; and as an individual or group. There is something for everyone.

For more information, contact Amy Robertson at 318-473-7762 or by e-mail at amy.robertson@la.usda.gov or Adele Swearingen at 318-473-7687 or by e-mail at adele.swearingen@la.usda.gov.
Crop rotations have been practiced for thousands of years. The benefits are well documented and universally accepted. The mechanisms for success were not always well understood. Only recently, however, with the new emphasis on soil health, have researchers begun to answer this lingering question.

At the heart of the success is a better understanding of microbial community health, diversity, and overall population in relation to plant growth. The key to improving microbial life lies with improving habitat and food sources within the soil. This is accomplished by changes in soil and plant management aiming to improve soil structure and nutrient cycling.

How does that happen? A couple of things need to take place. First, improving microbe habitat within the soil involves limiting soil disturbance. Tillage is the most common form of disturbance. Limiting disturbance allows soil particles to aggregate, or clump together, creating space for soil microbes. Supplying a constant food supply to soil microbes is the second part of the equation. Diverse, year-round plant cover is key to making that happen. Plants leak sugars in the soil to signal and feed those organisms that support their growth. The richer the species diversity above-ground, the more diverse the soil ecosystem below ground. However, this system does not form overnight. It can take years for the entire food web to be represented in soil ecosystems. Because of this, systems are in a state of transition during the first few years going from a conventional to a limited or no-till crop system with cover crops.

A system ‘in transition’ is characterized by an absence of primary residue shredders and soil engineers. Along with plant roots, these soil organisms are initially responsible for creating large pore space and networks, as well as mixing materials (bioturbation) and redistributing organic matter and microbes in the soil. They consist of creatures like ants, termites, centipedes, spiders, beetles, and earthworms. Residue will remain on the soil surface for months (or even over a year) when these higher trophic organisms are absent. When residue begins to disappear quickly, that is a sign that the primary shredders and engineers are working and that the system is moving out of transition into a system that supports diverse microbial life.

Cattle help to jump-start this system by replacing some of the shredder and engineers’ functions in the first few years. The chewing action and digestive system of cattle help accelerate nutrient cycling. Cattle managed properly minimize compaction, more evenly distribute nutrients, and complete a natural system that existed for millions of years.

If tillage is re-introduced into a system, the microbial habitat and food sources are disrupted when the soil structure and pore spaces are destroyed, and organic matter and residues are oxidized and rapidly lost. The system is then ‘set-back’ and possibly moves back into a transitional state. If the tillage is not too severe, and limited to furrows, then the system can recover more quickly. As complete management systems cycle for a few years without the need for repairs (soil disturbance), they become more resilient when planting or harvest conditions are poor, limiting the impact of wheel traffic and the need...
for significant repairs. This positive momentum achieves system resilience.

The majority of older soil health research has centered around no-till systems without cover crops and cover crop research with fall and/or spring tillage. Research projects seldom were conducted for more than three years, so there was little information on long-term effects of these systems. While these systems were simpler, and variables more easily controlled, the thought was that farmers could plug recommendations into existing farming systems with minimal effort. The powerful synergy of cover crops and no tillage was not understood, however. The new generation of research being conducted by partners, such as the LSU AgCenter, NRCS Plant Material Centers, and the USDA Agricultural Research Service, are being designed as more complete systems and planned to last beyond the transitional period.

If you want to see first-hand how this process works, look no further than Caldwell Parish and Marty Earnest. The land that Earnest farms exemplifies some of the best soil health properties in the state. When Earnest realized the benefits of the no-till and cover crop combination, he put down his tiller over five years ago, and never looked back.

“Having so much rain over this past spring, you would think that would cause a problem in this soil,” said Earnest. “But, it hasn’t … when you pull back the cover crops you can see that the soil is well drained but, it isn’t running off into the Boeuf River, it is draining right down into the soil.”

Rachel Stout-Evans, NRCS resource soil scientist, explains, “The organic matter that is being created through the activity of the roots and the microbes and soil critters is what is helping hold new structure and rebuild pore space, rather than just having all the soil particles jammed together, like they are in a compacted soil.” So, what does that mean? Marty’s soil is regaining its original structure that it had a hundred years ago before it was plowed.

NRCS and the Soil and Water Conservation Districts (SWCDs) across the state are dedicated to helping producers improve soil health and protect water resources with technical and financial assistance.

Through the Environmental Quality Incentives Program (EQIP) and the Conservation Stewardship Program (CSP) producers can learn how to manage complete soil health systems, as well as, work through the transitional period to a point when the system functions properly, benefits are obvious, and the producer is ‘hooked’ on soil health. Just like Earnest.

*Special thanks to this month’s guest writer, Chris Coreil, state agronomist, NRCS in Louisiana.*
Red Oak Lake Wildlife Management Area in Doyline, Louisiana was the site of a recent Trailblazer RC&D sponsored Farm Pond Workshop. The management area’s owner Tim Holland was gracious enough to allow the farm pond workshop to be held at his place.

There were 31 people in attendance at the workshop and 4 of the attendees requested follow-up assistance from NRCS.

Jacob Paul, NRCS civil engineer, gave a presentation covering pond topics such as location and suitability, drainage area, types of ponds, surveying pond site, pond construction, emergency spillway, fertilization, seeding, mulching ponds, maintenance and NRCS financial assistance that is available for ponds.

David Lowe of Wake-Robin Fisheries in Minden gave a presentation on pond stocking. David stated that over fertilization of a pond can be a problem. David also mentioned some fish predators such snapping turtles and otters. He cited a case where some otters ate about 600 pounds of catfish out of a pond in a week.

Ronnie Christ from the Louisiana Department of Wildlife and Fisheries (LDWF) gave a history of the 13-acre pond that located at the Red Oak Lake Wildlife Management area. The pond has been in existence for 80 years and in the 80-year period there has been one pond renovation. In the mid-nineties, an 8 ½ - 9 pound bass was caught out of the pond. LDWF’s Jeff Sibley spoke about Pond Management.

LDWF gave an electroshock demonstration at the pond site. LDWF personnel stated that if you seine your pond and everything that you catch is the same size, you have a problem. The best time to check for fish populations is early summer or the fall of the year. After the bass were caught from the Electroshocking Demonstration LDWF personnel showed the group how the age of a fish was determined.

Kevin Wickey met with FSA and NRCS employees, as well as, members of the FSA Pointe Coupee County Committee and the Upper Delta Soil and Water Conservation District. Northey praised the hard work of Louisiana farmers. He was also there to listen and learn more about topics that are important to Louisiana producers. The roundtable discussion was also an opportunity to showcase the great working relationship between NRCS, FSA and the County Committee and Upper Delta SWCD and the local producers.

While Northey was in Louisiana he also attend the Hypoxia Task Force meeting that was held in Baton Rouge.
Upcoming Events

June 1, 2019
12th Annual Small Ruminent Field Day

The Southern University Ag Center in partnership with SARE is hosting the 12th Annual Small Ruminent Field Day on June 1, 2019, from 8:00 am to 1:00 pm at the Maurice A. Edmond Livestock Arena located at 14600 Scenic Highway in Baton Rouge, Louisiana. For more information contact Dr. Sebhatu Gebrelul at sebhatu.gebrelul@suagcenter.com.

June 1 - 6, 2019
Louisiana FFA 90th Annual Convention & Expo

The Louisiana FFA will hold their 90th Annual Convention and Expo from June 1 - 6, 2019, at the Alexandria Riverfront Center in Alexandria, Louisiana. For more information visit www.la-ffa.org/state-convention.

June 10 - 13, 2019
National Agricultural Alumni and Development Association Annual Convention

The National Agricultural Alumni and Development Association will hold their Annual Convention on June 10 - 13, 2019, at the Hilton Baton Rouge Capitol Center. For more information visit www.naada.org.

June 12, 2019
Produce Safety Alliance Grower Training

The Central Louisiana Economic Development Alliance and Southern University are hosting a Produce Safety Alliance Grower Training Workshop on Wednesday, June 12, 2019, from 8:00 am - 5:00 pm at the Rapides Extension Office located at 300 Grady Britt Drive in Alexandria, Louisiana.

June 13, 2019
Good Agricultural Practices (GAP) Workshop

The Central Louisiana Economic Development Alliance and Southern University are hosting a GAP Workshop on June 13, 2019, from 8:30 am - 12:30 pm at the Rapides Extension Office located at 300 Grady Britt Drive, in Alexandria, Louisiana. Pre-registration is required. To register, contact Bahia Nightengale at 318-441-3408 or by e-mail at bnightengale@cenla.org or Emily King at 225-718-3705 or by e-mail at emily_king@suagcenter.com.

June 20 - 23, 2019
Louisiana Farm Bureau Federation 97th Annual Convention

The Louisiana Farm Bureau Federation will be hosting their 97th Annual Convention on June 20 - 23, 2019, in New Orleans, Louisiana. For more information visit https://lfbfconvention.org/.

June 25, 2019
Louisiana Master Farmer Phase 1 Training

The LSU AgCenter will be hosting Phase 1 Training for the Louisiana Master Farmer Program on June 25, 2019, at the Rice Research Station in Crowley, Louisiana beginning at 8:30 am. For more information, please contact Ronnie Levy or Allen Hogan at 337-788-7547.

June 26, 2019
Louisiana Master Farmer Phase 2/CEC Field Day

The Phase 2/CEC Field Day will be held in conjunction with the H. Rouse Caffey Rice Research Station Field Day on June 26th. For more information, contact Ronnie Levy or Allen Hogan at 337-788-7547.

June 26, 2019
H. Rouse Caffey Rice Research Station Field Day

The LSU AgCenter will host the H. Rouse Caffey Rice Research Station Field Day on June 26, 2019, from 7:00 am - 12:30 pm at the H. Rouse Caffey Rice Research Station located at 1373 Caffey Road in Rayne, Louisiana. For more information, contact Ronald E. Groth at 337-788-7531 or by e-mail at DGroth@agcenter.lsu.edu.

June 27, 2019
Louisiana Master Farmer Phase 2/CEC Field Day

The Phase 2/CEC Field Day will be held in conjunction with the LSU AgCenter Agricultural EXPO Field Day at the Dean Lee Research & Extension Center in Alexandria, Louisiana on June 27, 2019. For more information, contact Donna Morgan at 318-613-9278.

June 27, 2019
LSU AgCenter Agricultural EXPO Field Day

The LSU AgCenter will host the Agricultural EXPO Field Day on June 27, 2019, from 2:00 pm - 7:00 pm at the Dean Lee Research & Extension Center located at 8208 Tom Bowman Drive in Alexandria, Louisiana. The field day will feature field crops, horticulture, beef cattle and forages as well as an ag industry EXPO. For more information contact Dr. Tara Smith or Dr. Daniel Stephenson at 318-473-6520.
Josh Soileau is the new district conservationist in the Lafayette Field Office covering Lafayette and St. Martin Parishes. Josh graduated from McNeese State University with a Bachelor of Science in Wildlife Management and a Master of Science in Environmental and Chemical Sciences. His first professional job was as a district vegetation technician with the Gulf Coast Soil and Water Conservation District. He began working for NRCS in 2016 as a soil conservationist in the Ville Platte Field Office and was the acting district conservationist in Lafayette for eight months before accepting the job permanently.

Kelsey Landreville is the new rangeland management specialist working out of the Ruston Field Office. She will primarily be working in Bienville, Bossier, Caldwell, Catahoula, Claiborne, Concordia, East Carroll, Franklin, Grant, Jackson, LaSalle, Lincoln, Madison, Morehouse, Ouachita, Richland, Tensas, Webster, West Carroll and Winn Parishes. Kelsey has a Bachelor of Science and a Master of Science from the University of Arizona in Natural Resources with an emphasis in Rangeland Ecology, Management and Restoration. Prior to moving to Louisiana, she was a senior research specialist at the University of Arizona working with ranchers and U.S. Forest Service managers throughout Arizona and New Mexico to improve collaborative drought planning for livestock grazing on national forests. Kelsey is an active member of the Society of Range Management and she became a Certified Professional in Range Management in 2018.

Angela Trahan is the new wildlife biologist in the Lafayette Water Resources Office. Angela will primarily be working on coastal restoration projects funded through the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA). Angela is a graduate of Jacksonville State University in Alabama where she received a B.S. in Environmental Biology. She began her professional career with the Mississippi Department of Marine Resources as a natural resource specialist in the Coastal Zone Management Office. In 2002, Angela accepted a biological technician position with the U.S. Fish and Wildlife Service’s (FWS) Louisiana Ecological Services Office in Lafayette, Louisiana. In her 16 years with FWS, she was promoted to a fish and wildlife biologist and was also the migratory bird coordinator. Angela worked on Endangered Species consultations and listing proposals; coordinated with the U.S. Army Corps of Engineers on water resource development projects; and provided technical assistance in developing wetland mitigation plans, restoration projects, and protecting Fish and Wildlife trust resources. She also contributed to the CWPPRA program.

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