Helping People Help the Land
# Conservation Notes
USDA - Natural Resources Conservation Service - **Michigan**
July/August 2018

# Soil Tests Open Farmer's Eyes to Soil Health

Every farmer employs unique wrinkles in his or her operation believing they make a difference, even if they don't have quantifiable evidence. This was the case with Clinton County farmer Clair Armbrustmacher. After a chance meeting with NRCS State Soil Scientist Marty Rosek and State Agronomist Jerry Grigar, he's confident that his cropping practices are improving his soil.

Armbrustmacher farms about 1,200 acres in addition to operating a 100-cow dairy. In 1988, he made the decision to convert to no-till and was determined to make it work. He even sold all his conventional tillage equipment so he wouldn't be tempted to go back.

"It wasn't as hard as people think, you just go do something else when you think you should be in the field," Armbrustmacher said.

He received conservation financial assistance from NRCS for adopting no-till practices which helped, Armbrustmacher said. USDA assistance along with the fuel and eventual equipment cost savings convinced him to make the change.

Armbrustmacher's crop rotation includes corn, corn silage, soybeans, wheat and some alfalfa. Along with a no-till drill, his cropping equipment includes an AerWay® implement for shallow vertical tillage to incorporate manure and a basket roller. Over the years he's refined his practices to a system that makes sense for his operation.

He began using the rolling baskets about 7 years ago. A frequent concern for farmers who use non-till is excessive crop residue, particularly corn stalks. Knocking down his corn stalks with the basket roller has eliminated the problem for Armbrustmacher. Stalks degrade faster when they're close to the ground and operating the basket roller is cheaper than cutting them, he said. Another benefit of rolling the stalks instead of cutting them is that they stay in place instead of forming concentrated piles. He applies 5,000 gallons of dairy manure per acre prior to rolling the stalks which are powder by spring, said Armbrustmacher.

*Clinton County farmer Clair Armbrustmacher has utilized conservation tillage, cover crops and regular manure applications to improve soil health on his farm.*

After years of experimentation, Armbrustmacher utilizes cover crops after wheat and silage corn. After wheat harvest he plants Roundup ready soybeans. The soybeans allow him to apply less nitrogen the following year and he can make an additional herbicide application in the fall. "Never miss a chance to kill a weed," is one of Armbrustmacher's mottos. Some years he has even been able to harvest

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# State Conservationist's Message

Leadership of the USDA's Farm Production and Conservation Mission Area visited Michigan to attend the Lenawee County Center for Excellence Field Day on Aug. 8. FPAC is led by Under Secretary Bill Northey who was accompanied by NRCS Acting Chief Leonard Jordan and Farm Service Agency Administrator Richard Fordyce. FPAC also includes the USDA Risk Management Agency.

Under Secretary Northey was the featured speaker at the Center for Excellence event's luncheon where he talked about the new Farm Bill. Congress is currently drafting a new Farm Bill to replace the current version which is set to expire on Sept. 30. The visiting FPAC leaders also held a meeting with Lenawee County farmers the evening before the field day to discuss USDA conservation programs and issues specific to Lenawee County.

Their final stop in Michigan was a visit to Sunrise Farms near Palmyra, operated by Jim Isley and his son Jake. The stop provided a good example of how producers in the Western Lake Erie Basin are taking steps to protect water quality. The Isleys utilize no-till on their cropland as well as nutrient management and precision application of fertilizers to minimize the risk of phosphorus and nitrogen runoff. Most recently they enrolled in an edge-of-field monitoring program by Michigan State University Extension.

The Western Lake Erie Basin remains a high priority for USDA. The FPAC leaders traveled to Ohio to attend meetings about the WLEB following their Michigan visits.

*State Conservationist Garry Lee*

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Since 2014, Michigan Farm Bureau and NRCS have partnered together under a contribution agreement to promote USDA conservation programs. After a one-year hiatus, local Farm Bureau chapters applied for grants to host events this year promoting conservation. Several of these events are included in this newsletter's events calendar.

*USDA Under Secretary Bill Northey (far left) visited the Jim Isley (second from left) farm in Lenawee County following the Lenawee County Center for Excellence Field Day on Aug. 8. Accompanying Under Secretary Northey were acting NRCS Chief Leonard Jordan (blue shirt on left) and FSA Administrator Richard Fordyce (blue shirt on right).*

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As was mentioned, the current Farm Bill is set to expire at the end of September and congress is working on its replacement. For those interested in what is contained in the new Farm Bill, good sources of information are the House Committee on Agriculture's Farm Bill web page and the Senate Committee on Agriculture, Nutrition and Forestry's web page.

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On a sad note, my deepest sympathies go out to the family, friends and co-workers of NRCS Civil Engineering Technician Craig Ogg. Craig was a valued member of the NRCS-Michigan family whose knowledge, skills, and ability to work with landowners were a great asset to the agency. Part of Craig's legacy will be his contribution to the conservation of natural resources throughout northern Michigan.

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# Soil Tests Open Farmers Eyes to Soil Health

his soybean cover crop.

After applying manure, Armbrustmacher plants wheat as a cover crop after he harvests corn silage. He finds it easier to manage because it grows slower than other cover crops he's tried like rye, and the wheat provides straw for his dairy operation. After the wheat stubble has broken down over the winter he plants alfalfa in the spring.

Armbrustmacher is happy with the system he's developed over many years of experimentation. "Mistakes are not so bad if you learn from them," he said. Over the years he's noticed more earthworms in the soil and an improvement in soil tilth. His implements show less wear and he no longer needs to add weights to his AerWay® which he uses each spring.

His observations were quantified after meeting Rosek and Grigar. Rosek was conducting a wetland determination on Armbrustmacher's farm. The three ended up having a conversation about cropping practices and soil health which led to advanced soil testing on Armbrustmacher's fields. Three advance soil tests, the Comprehensive Assessment of Soil Health from the Cornell Soil Health Laboratory, the Haney Soil Health Test developed by the USDA Agricultural Resource Service and a Nematode Community Structure Test by the Michigan State University Diagnostics Lab through Dr. George Bird.

The test results "opened my eyes," said Armbrustmacher. Among other things, the tests showed a high level of biological activity in his soil and a low level of harmful nematodes. Soil from Armbrustmacher's farm scored a perfect 100 in four categories of the Cornell test, these included soil pH, extractable phosphorus, extractable potassium and levels of minor elements. His sample also scored above 90 in subsurface hardness and active carbon. His overall quality score from Cornell was 80, just reaching the test's highest soil category of optimal or near-optimal functioning.

Results from the Haney test compared Armbrustmacher's soil to conventionally-tilled soil and soil from a long-term no-till field without regular manure applications. Armbrustmacher's soil topped the others in every beneficial category but one, where the three were nearly equal. His soil tested dramatically higher in soil respiration, indicating a high level of biological activity, likely a result of regular manure applications according to Grigar and Rosek. Armbrustmacher's soil had the highest amount of organic matter at 4 percent, compared to 3.4 for the long-term no-till and 2.1 percent for the conventionally-tilled soil.


*Armbrustmacher uses a rolling basket and a shallow tillage tool (above) in addition to a no-till drill on his rotation of corn, corn silage, soybeans, wheat and alfalfa. He plants soybeans as a cover crop after harvesting winter wheat (below). The soybeans are shown in mid-August and received little rain since planting.*

# NRCS-Michigan Family Mourns Loss of Craig Ogg

The NRCS-Michigan family is mourning the loss of Civil Engineering Technician Craig Ogg. Craig passed away on Aug. 16 at Mid-Michigan hospital in Midland at the age of 60.

*Craig Ogg*

Craig began his NRCS career in 1999 as a soil conservation technician in the West Branch field office. He later worked in Standish as CET before relocating to the Gladwin field office in 2012. Prior to working for NRCS, Craig worked for conservation districts in the area surrounding his farm in Gladwin as well as the Saginaw RC&D.

Throughout his NRCS career Craig assisted with projects wherever he was needed in Area 2 which includes all of the northern lower peninsula. His work included tasks such as inventory and evaluations, surveying, designs, and construction inspection. He received several USDA awards for his work and was well liked by his co-workers and customers. Craig always brought a good perspective to NRCS being a farmer himself. His ability to communicate NRCS requirements to landowners was appreciated by many.

We at NRCS-Michigan express our sincerest sympathies to Craig's wife Joy, his children Emily, Allison and Andy along with Craig's siblings and grandchildren. He will be greatly missed.

# Gun Lake Tribe Hosts NRCS American Indian Heritage Event

*NRCS and tribal staff discuss a planned prairie restoration at the Gun Lake Tribe's Jijak Camp. (above left) Tribal elder Punkin Shananaquet talks about folklore at a praire planting with NRCS Area Biologist Jim Marshall and Gun Lake Stewardship Specialist Doug Galvas. (above right)*

NRCS-Michigan staff were guests at the Match-E-Be-Nash-She-Wish Band of Potawatomi Gun Lake Tribe's Jijak Camp near Hopkins for an American Indian Heritage Day Program.

NRCS staff and other guests learned how the tribe's conservation and agricultural practices are closely tied with its culture and traditions. Tribal staff provided a tour around the Jijak Camp which included a native prairie planting, a maple syrup processing facility, a cedar tree re-establishment site, honey bee hives, and a community garden.

The field day was part of the NRCS-Michigan Special Emphasis Program, organized by the American Indian/Alaska Native Emphasis Program.

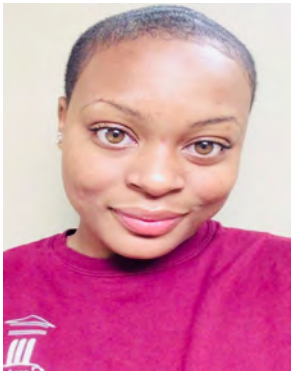
# Internships Provide NRCS Experience for Returning Students

**Andres Carles**

Andres, from San Sebastian, Puerto Rico, worked on the engineering staff at the state office in East Lansing. This fall he will be a sixth-year civil engineering student at the University of Puerto Rico.

Andres enjoyed working in the field with the state and area engineering staff and in his free time took in some area trampoline parks. Following graduation he is interested in attending graduate school.

**Alisha Helm**



Alisha spent her summer working out of the Genesee County office in Flint. Alisha is from Cinicinnai but remembers visiting Flint as a child, especially the farmers' market. She enjoyed the family atmosphere of NRCS as well as the farmers she interacted with. Alisha plans to attend graduate school at Rensselaer Polytechnic Institute this fall.

**Kwesi Huffman**


For a second summer, Kwesi worked at the Tuscola County field office in Caro. He is from Detroit and spent his weekends selling blueberries with his parents at the Eastern Market.

Kwesi developed his first conservation plan over the summer and observed the pouring of concrete pads for a fueling facility. He attends Alcorn State University in Lorman, Miss., where he'll be a junior this fall. He hopes to begin a career with NRCS after graduation.

**Alexandra Ross**

Ross will begin her college career this fall at Northern Michigan University after spending her summer working at the Marquette field office. Ross if from upstate New York but is making Marquette her new home. She enjoyed the people and the beautiful scenery of Michigan. She plans to prepare for a career with NRCS.

**Senca Stairs**

Seneca spent her first summer with NRCS at the Traverse City field office near her hometown of Empire.

She will begin her third year as an engineering student at Michigan Technological University. Over the summer she helped develop a Michigan soil health card a checklist fo Source 4 engineers. Seneca enjoyed working on aquatic organism passages with the area engineering staff.

**Grant Young**

Grant worked out the Grant Rapids field office but also visited other NRCS offices in SW Michigan. He is from Madison, Miss. and enjoyed the cooler summer temperatures.

Grant liked meeting NRCS employees and hearing about their careers. He attends Alcorn State University where he will be a junior this fall.

# Sustain our Great Lakes Announces 2018 Grants

Sustain our Great Lakes, a public-private partnership that includes the USDA, announced the awarding of 10 grants for projects in Michigan and an additional project that includes Michigan and New York.

Among the Michigan grantees were the Mason-Lake, Huron, Marquette, Kent and Clinton conservation districts and the Huron Pines Resource Conservation and Development Council and the Conservation Resource Alliance. Grants were awarded to other organizations in Michigan along with groups in other Great Lakes states.

Sustain Our Great Lakes offers funding annually, with grant awards ranging from $100,000 to $1 million. Eligible recipients include nonprofit organizations, educational institutions, and state, tribal and local governments. Significant program funding is provided by the Great Lakes Restoration Initiative, a federal program designed to protect, restore and enhance the Great Lakes ecosystem.

**Conservation District and RC&D Awarded Projects**

*Farmer-led Approach to Reduce Sediment and Nutrient Loading in the Lincoln and Sable Watersheds - Grantee: Mason-Lake Conservation District*

Improve the health of the Sable River and Lincoln River watersheds by reducing sediment and nutrients inputs through the implementation of Farm Bill conservation practices. Project will expand landowner technical assistance capacity to implement priority conservation practices, such as cover crops, field borders, filter strips and improved nutrient management practices on 10,000 acres of farmland.

*Landowner Technical Assistance in Saginaw Bay - Grantee: Huron Conservation District*

Provide planning and technical support to improve soil heath and water quality in the high-risk and need Saginaw Bay watershed. Project will provide planning and technical support to landowners to facilitate the timely installation of soil health and water quality best management practices.

*Landowner Technical Assistance in Michigan's Central Upper Peninsula - Grantee: Marquette County Conservation District*

Hire a soil conservationist for a three-year term to increase private, non-industrial landowner participation in forest management planning and implementation of recommended conservation practices within the central Upper Peninsula.

*Protecting Middle and West Michigan Soil and Water Resources - Grantee: Kent Conservation District*

Hire a full time qualified engineer or civil engineering technician to be based out of the NRCS Area 3 Grand Rapids, Michigan field office. Project will address significant gaps in landowner technical assistance capacity by installing contracted conservation practices that will help prevent thousands of pounds of nutrients and sediment from entering Lake Michigan tributaries annually.

*Assistance Initiative for the Maple River Watershed - Grantee: Clinton Conservation District*

Increase the availability of technical assistance to landowners in the Clinton County area of the Maple River watershed. Project will engage landowners though outreach programs, assist in the development of conservation plans and implement conservation practices aimed at improving soil health and water quality.

*Restoring Total Aquatic Connectivity Within the Carp Lake River - Grantee: Conservation Resource Alliance*

Rectify and restore the three remaining aquatic species passage barriers within the entire Carp Lake River. Project will restore aquatic organism passage for brook trout and other coldwater species, improve degraded riparian habitat benefiting species such as the federally endangered Hungerford's crawling water beetle, and reduce sediment loading up to 15 tons per year.

*Enhancing Brook Trout Habitat in the Pigeon River - Grantee: Huron Pines Resource Conservation and Development Council*

Install a timber bridge structure to restore natural river function, reduce aquatic organism passage-impeding flow velocities and enhance the recreational capacity of the Pigeon River. Project will reconnect 55 upstream miles of aquatic habitat and decrease sediment loading by 0.5 tons annually.

# Wildlife Comebacks

*by Bill Cook, MSU Extension Service Educator*

Bald eagles, white-tailed deer, wild turkeys, ruffed grouse, black bears, and many other popular species have made dramatic comebacks over the past several decades. Not all recoveries have been entirely welcomed by all people. Much of the reason for successful comebacks is related to habitat recovery and forest management. National and state wildlife policies and programs have worked well, in many cases.

In the 1930s, well-known forester and wildlife biologist Aldo Leopold foretold the demise of the sandhill crane in his essay "Marshland Elegy", which is included in his 1949 famed Sand County Almanac. Leopold feared that the sandhill crane would go the way of the extinct passenger pigeon, which once numbered in the billions, where flocks would darken the sky. Now common, the recovery of the magnificent sandhill crane is not merely an act of nature, but closely linked to environmental laws and habitat protection.

Our national bird, the bald eagle, was one of many raptors threatened by DDT exposure in the 1960s. At that time, seeing a bald eagle was a notable event. Today, it's possible to hit an eagle while driving a car. A windshield filled with the wingspread of an eagle is a different kind of notable event! Bald eagles, ospreys, and other raptors have recovered, in part, due to the banning of DDT. They have also benefited from special habitat management protocols, such as setbacks from eagle nests and the construction of osprey platforms.

As an aside, did you know that the "scream" of an eagle in movies is usually the scream of a red-tailed hawk? Eagles don't possess such a "noble" scream! Those old enough to remember might recall when white-tailed deer were uncommon, especially in the agricultural areas of southern Michigan and southern Wisconsin. Now, both states sport more deer than the entire North American population from a hundred years ago. In many regions, the deer are now causing significant environmental and economic damage. Overabundant populations also contribute to the spread of diseases, such as chronic wasting disease.

Again, deer rebounds have been all about management and habitat recovery. However, maybe some of these tenets should be adapted to reflect current population conditions. No small set of controversies there! Considering controversial topics, gray wolf recovery has reached a population of about 650 to 700 in the Upper Peninsula. Few wildlife species have more myths and misinformation (from all sides) associated with them than wolves. It may be important to note that wolves migrated back to Michigan on their own. No agency introduced them.

Another somewhat unpopular recovery, for some people, is the double-crested cormorant. Again, rarely seen in the 1970s, current populations now have conflicts with human uses. The USDA Wildlife Services have run programs to reduce the size of some local cormorant populations.

In northern Michigan, elk have been re-established with animals from the western USA, after being extirpated from Michigan by about 1875. Elk recovery has had ups and downs over the last century. However, a relatively stable population has supported a hunting season since 1984. The poster child of recovery, perhaps, is the endangered Kirtland's warbler, which (until recently) bred only on the jack pine plains of the northern Lower Peninsula. They have expanded their range to both the U.P. and northern Wisconsin. Due to intense forest management, the warbler is scheduled to be removed from the list this year.

While natural resource managers have many wildlife success stories to tell, other species have become (or remain) the focus of recovery programs. Sometimes, it's a matter of three steps forward and two steps backward.

*This article was published by Michigan State University Extension. For more information, visit* http://www.msue.msu.edu.

# Lucas to Receive SAF Presidential Field Forester Award

*Mecosta Conservation District*

The Society of American Foresters (SAF) will be honoring one member from each of the 11 SAF voting districts across the U.S. with the Presidential Field Forester Award at the 2018 SAF National Convention, to be held October 3-7 in Portland, Oregon. The national award recognizes foresters who have dedicated their professional careers to the application of forestry on the ground using sound, scientific methods and adaptive management strategies. Lucas was nominated for the award as a representative of District 5, which includes the states of Michigan, Iowa, Wisconsin and Minnesota. What follows was drawn from profile information provided by SAF District 5 and printed in the July issue of The Forestry Source, a monthly publication of the SAF.

Rick Lucas, a member of the Michigan SAF for more than 30 years, is highly regarded as an authority on issues and opportunities facing family forest owners. His expertise and respect are evident by the partnerships he has fostered among consulting foresters, the forest industry, state and federal agencies, and nongovernmental organizations. He earned a bachelor's degree in forestry from Michigan State University.

Lucas' grandfather and father were loggers. After working for the family's logging business and buying timber for a downstate sawmill, he began his career as a conservation district forester in 1988. Through his hard work, leadership, and people skills, Lucas has been able to build a strong forestry program for the Osceola-Lake and Mecosta Conservation Districts.

Lucas is the consummate public service forester. His passion for helping family forest owners realize the potential in their wooded property is contagious to both landowners and other professionals. Lucas has mastered the art of the landowner site visit. He is quickly able to articulate a landowner's values; seeing the forest from their perspective. He is then able to describe the forest-management options in an attractive way that makes sense, helping them implement a plan every step of the way. He offers his expertise to other conservation district foresters by hosting training for new foresters and helps design continuing education for those with more experience.

Among the awards Lucas has received are the Michigan Association of Conservation District's Employee of the Year in 1992 and 2013, the MACD President's Award in 1999, the Michigan Forest Association's Woodland Service Award in 2008, and the Silver Hard Hat Award in 2012 from the American Tree Farm System for completing 50 tree-farm inspections.

Lucas writes "At Your Service," a column in Michigan Forest Association's quarterly magazine, Michigan Forests, to help family forest owners understand the issues and opportunities they face.


SATURDAY, SEPTEMBER 8 • 9-11AM
HILEMAN FARM - HARRISON

## Upcoming Events - Upcoming Events - Upcoming Events - Upcoming Events

### September

**7** Forest Management Workshop, 2 p.m., George & Sue Lane Preserve - Gladwin, for more information call 989/835-4886 or email shuetteman@littleforks.org

**8** Breakfast & Pature Tour, 9 to 11 a.m., Hileman Farm - Harrison, RSVP by Sept. 5, to the Clare Conservation District at 989/539-6401

**8** Forestry Field Day, 9 a.m. to noon, Palmer Woods Forest Preserve - Leelanau County, for more information or to register contact Kama Ross, District Forester, at 231-256-9783, or kama.ross@macd.org.

**11** Conservation & Cost Share: Start to Finish Tour, tour bus boarding at 8:15 a.m., Countryside Greenhouse - Allendale, to register call 616/895-5846 or email jaustin@ctyfb.com

**11** Forest Mushrooms of Northern Michigan, 6:30 to 8 p.m., Leelanau County Building, Community Room - Suttons, Bay, for more information or to register, contact Kama Ross, District Forester, at 231-256-9783, or kama.ross@macd.org.

**12** Healthy Home Fair, 3 to 7 p.m., Ely Park - Hartford, for more information go to vanburencd.org or call 269/657- 4030 ext. 5

**18** Barry Conservation District Aerial Cover Crop Seeding Field Day, 8:30 a.m. to noon, Wilson Farms, for more information and to RSVP call 269/908-4099 or email david. comeau@macd.org

### September ctd.

**19** Water Quality Tall Ship Sail Workshop, 8:30 a.m. to 5 p.m., meet at National Museum of the Great Lakes dock - Toledo, OH, for more information or to register contact Amy Gilhouse, Crossroads Farm and Wildlife Center Inc., at Crossroadsfarm@ yahoo.com or call 517/673-1655

**20** Growing Green: Improving Forages & Maximizing Results, 2 to 7 p.m., Single Tree Farms - Olivet, for more information and to RSVP call 517/543-1512 ext. 5 or email tim.redder@mi.usda.gov

**22** Healthy Habitats Tour, 10 a.m. to 1 p.m., Wicked Ridge - Reed City, RSVP by Sept. 18, at 231/832-3283

### October

**5-7** Michigan Alliance for Environmental & Outdoor Education Conference, Blue Water Convention Center - Port Huron, for more information go to www.maeoe.com

**29-31** Michigan Association of Conservation Districts Fall Convention, Shanty Creek Resort - Bellaire, for more information go to macd.org

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