



Conservation Notes

USDA - Natural Resources Conservation Service - Michigan

September/October 2015

Cover Crop Results are Not Mixed

Planting a mix of cover crops has made the corn Dan Hall grows on his farm near Traverse City even sweeter. A mix of cover crops have helped solve several problems on his farm where he grows sweet corn, hay and field corn.

"It really blew me away," said Hall.

Hall began planting a cover crop mix after enrolling in the USDA Conservation Stewardship Program. Under the program he received annual payments for his existing conservation practices, like tillage management and windbreaks, and earned additional payments for adding new conservation enhancements. Hall chose two new cover crop enhancements, use of cover crop mixes and use of deep-rooted crops to break up soil compaction.

He has been most impressed with the benefits from planting radishes as a cover crop. Hall believes that radishes, he has planted both tillage and oilseed radishes, help control harmful nematodes and also suppress weeds. One year he ran out of radish seed while planting a cover mix of radishes and oats. The next spring, the area where he'd run out of radish seed had weeds while the area planted in radishes did not.

Best of all, cover crops have improved his sweet corn harvest. Hall started growing about 5 acres of sweet corn after buying the farm from his father in 1981. He now grows 45 acres of sweet corn.

"That's a lot of sweet corn to pick," concedes Hall. Hall and his son pick the sweet corn by hand each



Grand Traverse County farmer Dan Hall (above left) stands with NRCS District Conservationist Jason Kimbrough in a field planted with a cover crop mix.

day before going to market. "I get the two rows closest to the tractor because I'm older."

Hall plants sweet corn from early May through mid-June including 14 different varieties. Their peak harvest is in late July so there are enough growing days to establish a mix of cover crops after sweet corn. The radishes can grow a tap root up to 3-feet long which breaks up soil compaction and adds organic matter to his fields. The radish will die out over the winter.

Hall grows continuous sweet corn crops in strips

- continued on page 3 -



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Department of
Agriculture

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State Conservationist's Message	Page 2
Fall Soil Testing	3
Keweenaw Bay Indian Community	4
Bee Habitat in Copper Country	6
Cliff Mine Project	7
Martinez Leadership Award	7
News Briefs and Staffing Notes	8
Event Calendar	9

State Conservationist's Message

November is American Indian/Alaska Native Heritage Month. Michigan is home to 12 of the 567 Federally-Recognized American Indian tribes in our country. There are also several tribes in Michigan that not federally recognized and many tribal members, from both Michigan tribes and tribes from other states that reside in Michigan.

As part of the federal government, NRCS is called upon to consult and coordinate our programs to benefit tribal communities. These responsibilities were spelled out in an Executive Order issued in November 2000. In addition to calling on federal agencies to work and consult with American Indian tribes, the order reminds agencies to respect the sovereignty and self-government of each tribe.

NRCS nationwide, and in Michigan, responded to this executive order by adapting our programs and practices to meet the needs of tribal communities. Many tribal communities place great value on preserving traditional agricultural practices like harvesting wild rice and native fish. NRCS has responded to their needs by offering financial assistance for practices like walleye rearing ponds, fish passages and wild rice planting.

NRCS is not alone in this effort. Other federal agencies, like the USDA Forest Service, as well as state and local governments have also provided assistance and cooperation. County road commissions have assisted by coordinating with the replacement of road culverts to allow fish passage and the Forest Service has helped the tribes find suitable locations for wild rice planting on federally-controlled lands.

Tribes in Michigan have also utilized more conventional NRCS conservation practices such as forest management, seasonal high tunnels,

streambank restorations, and tree and native grass plantings. These practices have helped tribes preserve their cultural heritage and provide healthy food to their members. NRCS employees have found working with tribes to be a rewarding and enriching experience. We look forward to our continuing and growing partnership.



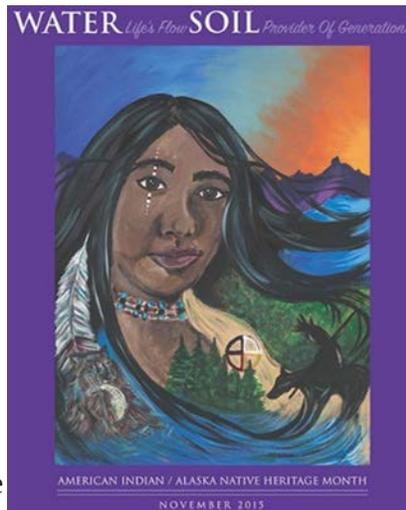
State Conservationist
Garry Lee

New Farmers

The USDA recently announced a new commitment to assist new and beginning farmers. USDA will prioritize \$5.6 billion in funding from programs and services as part of this commitment.

A new online resource, the Discovery Tool, was created to support beginning farmers. The web tool is available at www.usda.gov/newfarmers. The site was designed based on feedback from new and beginning farmers and ranchers around the country, who cited unfamiliarity with programs and resources as a challenge to starting and expanding their operations.

The site features advice and guidance on everything a new farm business owner needs to know, from writing a business plan, to obtaining a loan to grow their business, to filing taxes as a new small business owner. By answering a series of questions about their operation, farmers can use the site's Discovery Tool to build a personalized set of recommendations of USDA programs and services that may meet their needs.



2015 NRCS American Indian/
Alaska Native Heritage Month
poster by Dakota Duncan,
Rosebud Sioux Tribe

Fall is a Great Time to Soil Test

by Marilyn Thelen, Michigan State University Extension

The best way to know the fertility level of a field is to soil test. As soil test phosphorus increases, the dissolved phosphorus in runoff increases. This form of phosphorus is readily available as a food for algae and other aquatic weeds in lakes and streams. Optimal soil test phosphorus for field crops is about 25-35 ppm. Take a look at your soil test reports to see how your fields compare.

Soil tests should be taken a minimum of every three to four years. However, if you are just starting a soil testing program, sample every one to two years to get an idea on how nutrients change in your system.

The soil test is the producer's road map to nutrient management. Reports from the Michigan State University Soil and Plant Nutrient Laboratory include MSU fertilizer recommendations. However, if your soil test was from another lab and you would like to convert to MSU recommendations, simply enter the lab results into the MSU Fertilizer Recommendation Program. This program can also be used to get fertilizer recommendations when a crop has changed. Questions on interpreting soil tests can be directed to MSU Extension field crop senior educator George Silva at silva@anr.msu.edu or

517-543- 4467. Additional information on MSU soil fertility research is available at the MSU Soil Fertility Research website.

Getting the right amount of fertilizer on the field is the first step. The next is keeping it there. Fertilizer that has escaped from the rootzone will not benefit the crop or the producers bottom-line. When manure is applied, injecting the manure or incorporating it within 48 hours will protect nitrogen and phosphorus. Fall applied dry fertilizers should also be incorporated. Soils with macropores or large cracks can lose nutrients to the tile lines. This is a concern with no-till fields and liquid manure that has the consistency of water. Breaking up the soil macropores prior to application can decrease nutrient movement to the tile lines. Banding commercial fertilizers instead of broadcasting can also decrease risk of nutrient loss.

Fall is a great time to soil test. Take a look at the fertility levels of fields, determine the optimal rate for the 2016 crop and examine the nutrient management options to identify any practices that can be adopted to keep the nutrients in the field and available to the crop.

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

- continued from page 1 -

Cover Crop Results are Not Mixed

before rotating them into hay. In the past he saw a decline in production after three years of continuous sweet corn, planting a cover crop has made a big improvement. Hall has found a market for his improved sweet corn production. He sells his corn primarily at farmers markets and at a stand on his farm. He can sell 600 dozen ears of sweet corn from his farm stand in a single morning.

After his later-maturing field corn is harvested, Hall plants rye. He harvests the rye in June the next year and sells the rye as mulch to nearby organic growers. After harvesting the rye he plants the same strips to alfalfa.

Hall's cover crops even provide benefits beyond his farm. Cover crops reduce soil erosion so less sediment from his fields will enter streams and

streams. The increased organic matter from cover crops will also help his fields absorb more water, meaning less runoff from rain events that could contribute to flooding or carry fertilizers and pesticides off of the farm.

Hall invested his Conservation Stewardship Program payments into a 10-foot no-till drill. Before owning his own, Hall used a drill owned by the Leelanau Conservation District to plant his cover crops and also corn on his more highly erodible land.

"It was a perfect place to spend the money," said Hall.

For more information about the Conservation Stewardship Program including a self-assessment tool to determine if CSP is a good fit for your operation visit our [website](#).

Conservation a Top Priority for Keweenaw Tribe

The Keweenaw Bay Indian Community, whose tribal headquarters is located in the northwest Upper Peninsula, is one of twelve federally-recognized American Indian tribes in Michigan. Like many of Michigan's tribes, KBIC places a high priority on conservation and preserving its cultural heritage.

Sand Point, on the southwest shore of the Keweenaw Bay Indian Community's namesake bay, is the tribe's most high profile environmental project.

"Thanks to NRCS we have this project, otherwise it would just be stamp sands," said KBIC wildlife biologist Pan Nankervis.

The 33.6-acre Sand Point area holds cultural significance for tribal members and is also where tribal pow-wows are held. Until 2006, the site's nearly 2 miles of shoreline was covered in stamp sands that washed down from a closed stamp mill about 5 miles north. Stamp sands are waste from the area's mining days when copper was removed from ore by crushing it and dumping the sands as waste into streams and lakes, including Keweenaw Bay on Lake Superior.

In 2006, a project was completed to cover the stamp sands with soil and vegetation. NRCS provided the engineering work and oversaw the installation of the soil and initial vegetation. The tribe is now working to establish native vegetation on the site as well as provide trails and other amenities for use by tribal members and the public. The tribe is in the third year of a 5-year project to build up soils at the site and determine what plants are best suited to a challenging wind-swept environment.

"They're surviving but they're not thriving," Nankervis said of the grasses and trees planted at Sand Point. There is progress though, introduced beach grass has established itself as well as many other native plants and trees. "All it needs is a lot of tender loving care."

NRCS has provided additional assistance at Sand Point by helping the tribe design trails to make the area more accessible. Many people are using the area now, very few used it before the stamp sands were covered, said Nankervis. "It's way



Evelyn Ravindran and Pam Nankervis (l-r above) of the KBIC Natural Resources Department at the restored Sand Point site on Keweenaw Bay. NRCS assisted with restoring the site that was once covered with stamp sands from the area's copper mining period.

better than it was."

In addition to Sand Point, NRCS has played an important role in many of the tribe's projects including walleye rearing ponds, a seasonal high tunnel, fish passages and wild rice plantings.

Walleye Rearing Ponds

KBIC was the first tribe in Michigan to receive NRCS Environmental Quality Incentives Program financial assistance for the construction of walleye rearing ponds. The tribe built two one-half acre ponds with production beginning in 2009. In the first year of production the tribe raised 16,450 walleye fingerlings which were planted in Keweenaw and Huron bays on Lake Superior and in the Portage Lake system in the Keweenaw Peninsula. Production continues with the tribe planting between 10,768 and most recently, 22,831 walleye, each year. The tribe is now looking into a third walleye rearing pond.

In addition to walleye, the tribe also raises brook and lake trout in a separate facility. The brook trout are released in nearby streams while the lake trout are planted in Lake Superior. The tribe started with trout production before building its walleye rearing ponds.

Fish Passages

- continued on page 5 -

Conservation a Top Priority for Keweenaw Tribe

In 2011, KBIC began a project to improve fish habitat in cold water streams by replacing road culverts that restricted fish passage. With financial assistance provided through the Great Lakes Restoration Initiative, NRCS contracted with the tribe to install 12 fish passages, 10 are now completed.

The new road culverts replace ones that restricted fish movement during periods of low flow, or had to high of a flow to allow fish passage. Allowing fish passage gives brook trout and other species more area to find food and spawn.

The tribe worked closely with the Baraga County Road Commission since all of the culverts were at road crossings controlled by the county. The county and tribe now work together on improving habitat in county road ditches, monitoring invasive plants and identifying additional road culverts that can be replaced to improve fish passage.

Wild Rice Planting

Wild rice holds an important role in the historical and cultural identities of many of Michigan American Indian tribes. KBIC and other tribes have utilized EQIP financial assistance from NRCS for planting wild rice in Michigan lakes and streams. In 2008, KBIC planted about 10 acres of wild rice in lakes in Houghton and Iron counties. EQIP assistance for wild rice planting is provided under the program's wetland wildlife habitat management practice. Wild rice is a traditional food for tribal members that is also utilized by wildlife. The tribe is currently exploring the possibility of planting wild rice on state land in cooperation with the Michigan Department of Transportation.

Seasonal High Tunnel

This fall the tribe will plant its first crop in its seasonal high tunnel. The SHT is a metal framed structure covered in plastic that allows producers to extend the growing season. KBIC received financial assistance for the structure with EQIP financial assistance.

The SHT was constructed at the tribe's community garden north of L'Anse. The tribe



A culvert where a county road crosses Menge Creek in Baraga County was replaced to allow fish passage (above). The old road culvert did not allow trout and other fish to cross, restricting their feeding and spawning area (below).



plans to experiment with berry production in the SHT including raspberries, blackberries and strawberries. The tribe already grows pollinator plants, medicinal plants, vegetables and culturally significant native plants outdoors in addition to operating an apiary.

KBIC directly considerable resources to promoting conservation, recreation and healthy foods for its members. The tribe is also encouraging its younger members to embrace these priorities. Young people from the tribe are hired to work on environmental projects including removing invasive plants, gardening, environmental monitoring and other conservation projects.

Bees Find Prairie Home in Copper Country

When Jeanne Peters returned to the Keweenaw Peninsula she decided to bring some Wisconsin prairie back with her.

Peters grew up in Hancock but spent much of her life in Fond du Lac, Wisc., where she and her husband Jack raised their family. They now split their time between a home in Florida and a 320-acre farm near Calumet. While in Wisconsin, Peters became interested in native prairie plants and grew some in her yard.

The Peters' farm contains several plots of native prairie plants, the first was planted in 1997, the most recent one was planted in August with financial assistance through the NRCS Environmental Quality Incentives Program. Two of their neighbors raise honeybees, which made the Peters' farm eligible for EQIP Honeybee Initiative funds. The native prairie plants will provide forage for honeybees, as well as native pollinators, throughout the growing season.

The 1.3-acre plot of native prairie plants didn't look like much in mid-September, but Peters knows that it takes time. It took some plants four years to first appear in her previous prairie plantings, she said. Peters can identify a variety of native plants as she walks through her more established prairie plots, there's false sunflower, lupine, rattlesnake master, bee balm and compass plant to name a few. She gathers seed from some of her existing prairies which she'll plant in other places on the farm.

"You wonder at how you can smell a seed," she says as she examines a small pile of bergamot seed in her palm.

The newest planting doesn't have blooming flowers yet but Peters did find native grass seedlings, little blue stem, and there are young flowers that are too small for her to identify. The plot was green in spite of the dry conditions since planting. Peters planted about 6 pounds of native flowers and grasses which she mixed with oats and annual rye. The prairie plot was planted in a former hay field that was cultivated shortly before it was planted, Peters said.



Jeanne Peters (top) walks through native prairie plants she established on her farm near Calumet in 1997. In 2015, she planted a 1.3-acre plot of prairie plants (above) with financial assistance through the NRCS honeybee initiative. Over time, the recently planted prairie will resemble Peters' earlier planting with a variety of flowering plants to provide forage for honey bees and other pollinators.

The native prairie won't need watering once it is established. However, it will need to be mowed, grazed or burned rotationally about every five years or so to keep it healthy, said NRCS District Conservationist Allison George.

Peters is a painter and there are several canvases in her studio with landscapes of prairie plants in bloom. With her prairie plantings, she won't have to dream of Wisconsin to paint more, they're right outside her window. The bees appreciate it too.

Cliff Mine Project Restores Wetland, Section of Eagle River

A project completed in 2014 represents another step to alleviate the environmental impacts of the Keweenaw Peninsula's copper mining past.

The Cliff Mine Restoration Project restored a 13-acre wetland area and reconstructed a 4,078-foot natural channel on the west branch of the Eagle River in Keweenaw County. The project was funded by a 319 Non-Point Source grant provided through the Michigan Department of Environmental Quality.

The project included removing 30,000 cubic-yards of stamp sands from processing ore removed from the Cliff Mine. Stamp sand deposits up to 6-feet thick were removed from the project area. Sediment from the site created elevated levels of copper downstream and smothered instream habitat.

The Cliff Mine Restoration Project in Keweenaw County restored a wetland and reconstructed a natural channel on the west branch of the Eagle River. The project was completed in Aug. 2015. The project area before the project

Removal of the stamp sands should allow the river to recover as existing sediment is washed away. The reconstruction of a natural channel will aid the recovery of the river's natural ecosystem.

Since 2003, NRCS has provided engineering and other assistance on about 16 stamp sign reclamation projects on the Keweenaw Peninsula. Work began on sites associated with the Torch Lake Environmental Protection Agency Superfund Site.

Partners on the Cliff Mine project included the Michigan DEQ, Houghton Keweenaw Conservation District, NRCS and other state, federal and local agencies. NRCS provided engineering and construction oversight of the project.

is shown in the photograph below left. The photograph to the below right shows the area after the project was completed. The restored channel is at the bottom right of the photograph.



Martinez Selected for Leadership Award

Michigan NRCS Area Conservationist Edwin Martinez was awarded the leadership award from the National Organization of Professional Hispanic Natural Resource Conservation Service Employees during its Ray T. Margo Awards Luncheon on Oct. 23, 2015.

The leadership award recognizes the accomplishments of an NRCS

employee in their profession and the Hispanic community.

As area conservationist, Martinez oversees NRCS field activities in Northern Michigan and the Upper Peninsula. He is a native of Puerto Rico and earned a doctoral degree from MSU.

Congratulations Edwin!



Edwin Martinez

NRCS Employees, Sparrow Hospital Promote Breast Cancer Awareness

Members of the Federal Women's Program hosted a breast cancer awareness session for NRCS employees on Oct. 16, at Greenstone Farm Credit in East Lansing.

The event was held in conjunction with National Breast Cancer Awareness Month. Sharon Cosgrove and Sandra Papas O'Connor from Sparrow Hospital in Lansing spoke to attendees about the importance of early detection in treating breast cancer.

According to Breastcancer.org, about 231,000 women in the United States will be diagnosed with breast cancer this year, along with 2,350 men. About 1 in 8 U.S. women will develop breast cancer during their lifetime. NRCS thanks Sparrow Hospital and the Women's Program for helping to spread the word about early detection.



NRCS women's program committee members Katelyn Salowitz (far left), Solomon Andrews (second from left) and Tiffari Jenkins (far right), present a certificate of appreciation to Sharon Cosgrove (center) and Sandra Papas O'Connor from the Sparrow Multidisciplinary Breast Clinic.

NRCS-Michigan Staffing Update

New Hires/Reassignments:

Aisha Armstrong, Soil Conservationist, Midland

Terah Stockdale, Civil Engineer, Grand Rapids

Jasmine Hughes, Soil Conservationist, Caro

Di'Shun Melbert, Soil Conservationist, Grand Haven

Frank Packard, Soil Conservation Technician, Stanton

Amanda Karr, Soil Conservation Technician, Ann Arbor

Great Lakes Expo is Dec. 8-10

The annual Great Lakes Fruit, Vegetable and Farm Market Expo is scheduled for Dec. 8 through 10 at the Devos Place Conference Center in Grand Rapids.

The GL Expo attracts more than 4,000 attendees from 42 states and Canada. The Expo's education program includes more than 70 sessions, planned by Michigan State University Extension.

For more information about this event go to www.glexpo.com.

Soil Health PSAs Coming to TV

The NRCS soil health campaign is coming to television with the release of new video public service announcements.

NRCS has distributed a series of 15 and 30-second video public service announcements to television stations across the country. The public service ads, which are part of the agency's on-going "Unlock the Secrets in the Soil" awareness and education campaign, will play a key role in educating farm and non-farm audiences about how healthy soils sequester more carbon, increase water infiltration and improve wildlife and pollinator habitat.

In addition to commercial television stations, the ads can also be shown on local public access channels. Conservation districts and other conservation agencies can obtain the ads by contacting their state NRCS public affairs specialist.

Ultimately, the goal of the agency's awareness and education campaign is to increase the adoption of soil health-improving systems on as many of the nation's farm and ranches as possible.

Upcoming Events - Upcoming Events - Upcoming Events - Upcoming Events

November

- 13 Ottawa County 10th Annual Water Forum, 8:30 a.m. (8 a.m. registration), Ottawa County Administrative Complex - West Olive, for more information go to www.mioottawa.org
- 14 Year Around & Seasonal CSA Success, 8 a.m. to 6 p.m., MSU Student Organic Farm - Holt, \$150 to attend (\$30 additional person from same farm), for more information go to www.msuorganicfarm.org
- 19 Benzie Conservation District Annual Meeting, 6:30 p.m., Mills Community House - Benzonia, for more information go to benziecd.org

December

- 8-10 Great Lakes Fruit, Vegetable and Farm Market Expo, DeVos Place Conference Center - Grand Rapids, for more information go www.glexpo.com
- 15 Integrated Crop and Pest Management Update, 9 a.m. to 4 p.m., MSU Livestock Pavilion - East Lansing, for more information go to www.maeap.org
- 16 Marquette Conservation District 60th Anniversary Celebration, 5 p.m. to 8 p.m., Ore Dock Brewing Company - Marquette, for more information go to www.marquettecd.org

January

- 16 Michigan Family Farm Conference, Marshall High School - Marshall, (early bird registration ends Dec. 1), for more information go to www.miffs.org
- 29 Northern Michigan Small Farm Conference, Grand Traverse Resort - Acme, for more information go www.smallfarmconference.org

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