

Conservation Notes

USDA - Natural Resources Conservation Service - Michigan



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Complaint Spurs Awareness



Eddie Mackay's Scottish highland cattle graze on his farm in St. Joseph County. Mackay is an active environmentalist serving as a conservation district board member and having his operation MAEAP verified.

An environmental complaint from the Michigan Department of Agriculture led Eddie Mackay to assess his farming practices and become a conservation district board member.

"It wasn't in my background, my interest in conservation was started by a complaint," said Mackay.

Mackay's background includes growing up on a dairy farm near Dundonald, Scotland, a career as an engineer in the United States, and a return to farming in St. Joseph County.

The Prairie River runs across his

58-acre farm and a complaint was made about his Scottish Highland cattle being in the river. People like to canoe and kayak on the river and that's probably where the complaint came from, said Mackay.

"People like to blame livestock for everything."

The complaint was made in 2003 and Mackay was instructed to work with his local district conservationist, John Barclay. 'No problem, we'll put together a plan,' Mackay remembers Barclay telling him.

Mackay spent a lot of time

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Message from the Acting State Conservationist

Assistant State Conservationist Brian MacMaster is acting state conservationist while Garry Lee serves on a detail in Washington, D.C.

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Farm Bill programs and sign-ups get a lot of attention but the work of NRCS includes much more than financial assistance to get conservation on the land. A great deal of research goes into developing conservation practices that will protect our natural resources while keeping farmers and their operations productive.

This issue of Conservation Notes includes articles on two research projects funded by NRCS through Conservation Innovation Grants, part of the Environmental Quality Incentives Program. Conservation Innovation Grants are awarded at the state and national level to promote the development of new conservation methods and technologies. The two CIG projects described in this newsletter are research to supplement managed honey bees with native pollinators and technology that may allow sandy arid land to be utilized for agricultural production.

CIG grants are just one example of how NRCS strives to make the most advanced conservation methods available to farmers. NRCS employees are continuously involved in research through its regional technology and plant material centers, in partnership with universities and at

the local level to solve conservation challenges facing producers.

In Michigan, the NRCS staff from Montcalm County field office along with state office staff assisted a local potato grower with disposing of cull potatoes after a late blight in 2009. The usual method of disposing of culled

potatoes is to spread them on fields. However, the huge amount of cull potatoes that year lead to complaints about odor. NRCS staff, utilizing research conducted in Maine, worked with the farmer to compost cull potatoes while minimizing odor. The effort was successful and the data obtained will be used in a technical note to assist other producers.



Acting State Conservationist
Brian MacMaster



NRCS-Michigan staff conducted a real-world study of composting cull potatoes in Montcalm County. The research results will be used for a technical note to assist other producers.

This is just one example of the conservation research conducted by NRCS staff and partners in Michigan. Other recent examples include soil erosion research on muck soils, the use of an oriental mustard cover crop to control nematodes and vegetative barriers to control erosion.

As agriculture continues to change and new environmental challenges arise, NRCS will be working to find the best ways to ensure productive lands and a healthy environment.

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St. Joseph County Farmer Embraces Conservation

cleaning up the neglected farm he bought in 1977 but he had never worked with NRCS before.

“John could tackle anything, he promoted my real interests,” Mackay said of Barclay.

Mackay was not receptive to fencing off his property from the river and was skeptical that a controlled access for watering his livestock could withstand regular flooding. He worked with the NRCS staff in Centreville to find a solution he was more comfortable with. It eventually included a combination of fencing and a natural barrier of fallen trees to keep his cattle out of the river and a watering pond on an area that was less prone to flooding. The solution is working.

Mackay raises highland cattle and Cheviot sheep, both breeds originated in his native Scotland. He grazes 40 to 45 head of registered highlands and about 25 Cheviot ewes. Highland cattle are Mackay’s passion which he raises for breeding purposes while the sheep are raised for slaughter. Highland cattle have bushy coats they developed to withstand the harsh conditions in Scotland’s mountainous northern region. With long bangs that hang in their eyes they’re an unusual site in Michigan.

Highland cattle are very efficient grazers, have a good temperament and durable feet, said Mackay. The greatest value of highlands is crossing them with other breeds like angus, he said. Mackay moves the cattle and sheep among several paddocks for grazing and irrigates about 27 acres of his pasture. The soil on most of his pasture dries out quickly and needs about an inch and a quarter of rain a week to stay productive through the summer, Mackay said.

Mackay’s early good experience with NRCS and some environmental concerns on nearby farms led him to become active in conservation efforts. He served on the St. Joseph Conservation Board from 2005 until May 2011 to represent the interests of livestock producers. He also had his



Mackay installed this livestock watering pond with assistance from NRCS (above). He installed the watering facility after he received a complaint from the MDA about his cattle entering the Prairie River which runs through his property.

farm verified through the Michigan Agriculture Environmental Assurance Program in farmstead and livestock systems.

Mackay liked that MAEAP is a voluntary program. Farmers work with a MAEAP verifier to identify and address environmental concerns on their land. Most of the process involved housekeeping and keeping good records. Mackay tracks where he spreads sheep manure on his land and has it analyzed to determine its nutrient content for example.

Although Mackay is no longer serving on the conservation district board he is still active in conservation. He works with Michigan State University Extension and local 4-H members to promote and keep up on the latest technologies and farming methods.

“I try to do my best as far as the environment.”

Role Seen for Native Pollinators

They don't make much honey but native pollinators are still worth having around. In the wake of colony collapse disorder and other mortality issues affecting European honeybees, the USDA is encouraging landowners to establish native pollinator habitat.

Dennis Hartmann of True Blue Farms, a third-generation blueberry farmer in Van Buren and Allegan counties, allowed Michigan State University Extension researchers to establish a three-acre plot of native pollinator habitat adjacent to one of his blueberry fields. Hartmann rents three hives of honeybees for each acre of blueberries. Even with his investment in honeybees, he sees many potential benefits for increasing the number of native pollinators.

"The good thing about the flower plots is they attract beneficial insects that eat pests like aphids. The plots can have benefits throughout the year. It's much more than just pollination," said Hartmann.

About 30 percent of food and fiber crops depend on pollination including several important crops in Michigan such as blueberries, cherries, apples, cucumbers and strawberries. Blueberry plants at an MSU research site demonstrate the impact of pollination on fruit production. Blueberry branches with mesh bags placed over them to prevent pollination had dramatically fewer berries and the berries present were much smaller than those on surrounding branches accessible to pollinators.

"I'm not recommending that people cut their honeybee use, it's more of an insurance plan. I definitely see adding bee habitat to farms as a way of providing more sources for pollination," said Rufus Isaacs, a professor and researcher with the MSU Department of Entomology. Isaacs is working on several projects involving native pollinators including one funded by a Conservation



Dennis Hartmann (above) provided a 3-acre field adjacent to a blueberry orchard he operates for native pollinator habitat. The native pollinator plot (below) started off slowly after it was planted in 2009 but the diversity of flowering plants and insects continues to improve.



Innovation Grant from NRCS. Isaacs is assisted in the new studies at MSU by postdoctoral scientist Julianna Tuell, graduate student Brett Blaauw, and technician Keith Mason.

It has been well publicized that the number of honey bee colonies in the United States is declining. Beekeepers reported a loss of over 38 percent of their bee colonies from 2010 to 2011, according to the National Agricultural Statistics Service. This has led Isaacs, among others, to promote the incorporation of native pollinators into grow-

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Native Pollinators Flourish in Habitat Plots



Native pollinators like bumblebees (above) are effective crop pollinators and are more active during cold weather than honey bees.

ers' pollination efforts. Researchers don't expect native pollinators to replace managed honeybees for crop pollination but they can augment this source of pollination and serve as a safeguard if managed hives become less available. Native pollinators already contribute about 15 percent to the value of pollinated crops in the United States.

The plot Hartmann provided for MSU researchers was planted with a variety of flowering plants in 2009. The original planting established slowly but it has been improving each year, he said. The cost and labor inputs for the planting were kept low, said Hartmann.

MSU researchers have been studying a variety of data related to native pollinators and native pollinator plantings. These include evaluating different seed mixes used for pollinator habitat, observing the abundance and variety of native pollinators in adjacent crop fields and the effects of increasing native pollinators on crop production.

The results in Michigan have been encouraging.

Conservation Assistance for Pollinators

NRCS provides technical assistance for establishing native pollinator plots by helping landowners select plant species and site preparation. Financial assistance may also be available through the Conservation Stewardship Program and the Wildlife Habitat Incentive Program.

The USDA Farm Service Agency can provide financial assistance for establishing pollinator habitat through its State Acres for Wildlife Enhancement (SAFE) program. The program is available to landowners in 22 counties in the western lower peninsula.

Studies of native pollinator plots have shown an increase in native bees and an increase in native bees pollinating crop fields. After two years of study, increasing the number of native pollinators has not yet shown an increase in pollination rates on adjacent crop fields however.

"We would expect it to take some time to see a response in pollination rates, it will take time for the populations to build up," said Isaacs.

Native pollinators offer some advantages over European honeybees. Many native pollinators are more effective pollinators on an individual basis than honey bees. They are also more active in cold temperatures. Honey bees had good weather conditions for pollinating during his study, said Isaacs. Native pollinators may have had more of an impact on pollination rates if temperatures had been cooler.

Another impact of pollinator plantings being studied is their effect on populations of pests and beneficial insects. Researchers found that the larger the pollinator plot that was established, the greater the abundance and diversity of beneficial insects found. As part of their study they placed soybean aphid colonies into different sized polli-

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Research Project Increases Fertility in Dry Sandy Soils

Researchers at Michigan State University are testing a technology that could restore fertility to dry sandy soils. Alvin Smucker, a professor of soil biophysics at MSU, is leading research on subsurface water retention technology with financial assistance from a conservation innovation grant from NRCS.

Smucker's research involves placing a polyethylene membrane beneath the root zone of crops to retain water and nutrients. The membrane is installed in a u-shape and prevents water from filtering below the root zone, allowing crops to expend less energy on extending their roots to find water. The system enables farmers in dry regions to make the most of limited rainfall. The technology has the capacity to bring marginal land back into full agricultural production, said Smucker.

Similar systems have been tested in many parts of the world and on a variety of crops with great success, said Smucker. It has been tested on crops ranging from grains to vegetables to fruit crops and has increased yields by up to 200 percent. Smucker first tested the system using asphalt. Asphalt proved to retain water too well and depleted oxygen to the roots, he said. The polyethylene membrane now being tested will only hold water for four or five days. Cover crops and crop residue will help build up organic matter in the sandy soils.

The membrane should continue to function for at



MSU Professor Alvin Smucker, far left, observes testing of an implement to dig trenches prior to the installation of a polyethylene membrane that will help sandy soils retain water. (above) Research on the subsurface water retention system is funded through a grant from NRCS.

least 50 years, Smucker said. In addition to testing the system, researchers are also experimenting with equipment and techniques to efficiently install it. The cost for the membrane alone is about \$400 per acre and installation may double the price. With these costs the system could still pay for itself in three years, said Smucker.

MSU will test the subsurface water technology at four sites beginning in 2012. Smucker believes the technology has the potential to bring an additional 40 billion acres of land into agricultural production worldwide.

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Habitat Plots Benefit More than Bees

nator plots. The aphid colonies declined in larger pollinator plots while colonies in smaller plots suffered less predation.

So far the conservation benefits of planting pollinator habitat has been pretty well established, said Isaacs. About 110 species of native pollinators have been observed in Michigan blueberry fields. The research has shown that these populations can be increased by providing additional pollinator habitat that consists of a variety of

flowering plants.

The results from ongoing research should make establishing pollinator habitat more enticing to growers as the best and most cost-effective methods are determined. As native pollinator populations increase their financial benefits to growers of crops that require bees for pollination may also become apparent.

Complaints often Target Dairy and Horses

by Robert Osborne, MSU Extension educator

Farms in Michigan enhance rural communities. Dairy, the largest livestock sector in the state, contributes over 20 percent of all cash receipts in agriculture in Michigan. But looking at Right to Farm complaints tells us that dairy farms still need to be vigilant about maintaining a viable industry within the rural landscape. The most common complaints include air quality (odor) and surface water issues.



Nutrient Management, Animal Care and others. By following these guidelines, farmers can continue to operate with Right to Farm nuisance protection.

However, people can report a farm to the Michigan Department of Agriculture and Rural Development when they feel that particular farm is not operating according to GAAMPS. Complaints are typically about odor, dust, surface water issues, noise and others.

Curiously, the number of complaints against horse farms is also very high. This is often due to manure stacking issues; many horse owners lack the equipment to spread manure. So learning how to compost manure effectively would be a good management practice that horse owners could implement to decrease complaints.

It isn't about size of the livestock operation in Michigan; it is about management. All farmers of all sizes and all species of livestock can implement small changes that make a big difference. To find a copy of the entire GAAMPS for manure management and practices that will keep you in conformance, affording you nuisance protection, visit www.michigan.gov/gaamps.

Michigan Right to Farm Complaints				
Enterprise	2007	2008	2009	2010
Beef	19	18	17	20
Dairy	29	33	27	29
Crops	15	12	8	10
Equine	18	23	21	16
Poultry	6	2	4	4
Swine	8	9	17	8
Exotic	5	3	4	7

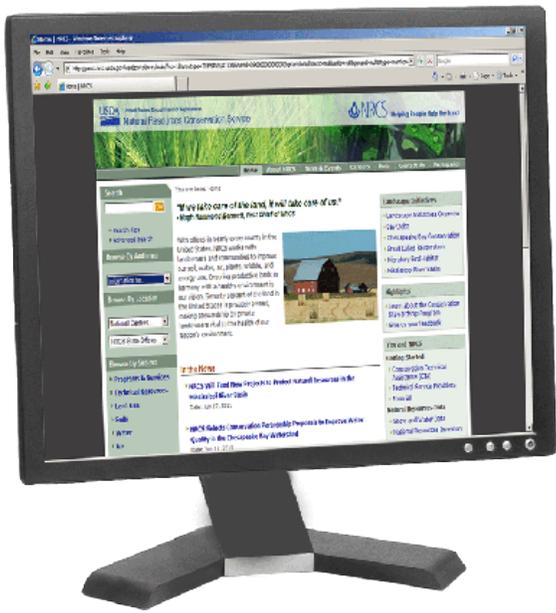
Michigan Right to Farm complaints by percentage of complaints for fiscal years 2007-2010

Agriculture is a key economic force in Michigan. Allowing farmers to operate while following GAAMPS keeps Michigan agriculture growing while minimizing friction with others.

This article was re-published from The Scoop. The Scoop is produced every other month by MSU Extension. See the latest from MSU Extension at news.msue.msu.edu.

The Right to Farm law allows farmers to operate with protection from nuisance complaints as long as they are following Generally Accepted Agricultural Management Practices or GAAMPS. These GAAMPS are operating guidelines farmers follow; they include Manure Management,

NRCS Debuts New National Website



On Aug. 1, the NRCS national website debuted a new look and feel, as well as a new web content management system to improve how the agency communicates with the public. With this move, the agency strived to improve how web users can find the site's vast amount of content.

The new website organizes content by subject, such as Soil, Water, and Air. Visitors are able to search for information about a subject by name, as opposed to having to navigate through countless program or division pages.

NRCS also worked to improve the search capability, giving users an advanced search capability to better define what they are seeking.

If users want to stay up to date on the latest NRCS news, the new site has an RSS (Really Simple Syndication) feature. This allows users to receive news releases through our email or RSS reader, such as the free ones available through Google, Yahoo, and others.

The public can also provide feedback through the website feedback forms, which can be found in the "Contact Us" section of our new site.

NRCS state websites will move to the new web content management system over the next 12-18 months. The NRCS Soils center website and Water and Climate Center website will also move to the new web system.



CONSERVATION CONNECTION

Showcasing Michigan Farmers and NRCS Conservation Opportunities

MFB Receives Award for Video

Michigan Farm Bureau received the Best Communications Tool Award for its video production "Conservation Connection" which describes NRCS conservation assistance.

MFB received the award in June at the American Farm Bureau Federation's Information Conference. The video was produced through a partnership agreement between NRCS-Michigan and MFB. "Conservation Connection" was selected from among 253 entries for the award.

The Best Communications Tool Award recognizes the state Farm Bureau with the best communications or training kit—printed handbook, notebook, video, A/V, Web or mixed media—that informs employees or volunteer leaders of a specific issue or the policies or procedures of Farm Bureau.

The DVD was created to inform farmers about the conservation opportunities available through NRCS. DVDs were created and disseminated at the 2010 Michigan Farm Bureau State Annual Meeting, given to participants of the 2011 Michigan Young Farmers Leaders Conference, distributed to county Farm Bureau members and made available at various functions.

NRCS, conservation district and farmers from Eaton, Ingham and Shiawassee counties participated in producing the video.

If you would like a copy of the video contact NRCS-Michigan Public Affairs Specialist Brian Buehler at brian.buehler@mi.usda.gov.

WRP Easement Provides Home for Bald Eagles



Wildlife biologists with the U.S. Fish and Wildlife Service found these two fledgling bald eagles when examining a nest in Jackson County. The fledgling bald eagles are the first verified by the USFWS in Jackson County since the 1960s when bald eagles were on the brink of extinction.

photo courtesy of the U.S. Fish and Wildlife Service

Land enrolled in the Wetlands Reserve Program in Jackson County is providing a good home for a pair of bald eagles.

The pair have been nesting at the site for at least two years. In early May, U.S. Fish and Wildlife Service wildlife biologists visited the nest and found two fledglings. The fledglings, then about 28 days old, are the first verified by the USFWS in Jackson County since the 1960s.

The bald eagle nested on a 200-acre parcel enrolled in the NRCS Wetlands Reserve Program. The area surrounding the nest contains about

1,900 acres of land enrolled in WRP, said District Conservationist Andrew Gust. Jackson County has 2,623 acres enrolled in the program, the third most of any county in Michigan.

Bald eagles will leave the nest when they are about 10 or 11 weeks old. The USFWS estimates there are about 660 bald eagle nests in Michigan. The Michigan Department of Natural Resources assists in locating bald eagle nests by doing aerial surveys of known nesting sites and areas offering good bald eagle habitat.

Field and Hunt Day Planned

On September 9 the Lenawee Conservation District along with partner organizations will host a field day event and hunt.

The field day is targeted at potential pheasant cooperative leaders and landowners in Hillsdale, Lenawee and Monroe counties.



Informational sessions planned for the event include Farm Bill programs, Michigan Pheasant Restoration Initiative, pheasant cooperatives, Hunter Access Program, a habitat tour, lunch/refreshments and an afternoon of hunting.

Space for this event is limited with a cost of \$25 for the full day which includes lunch/refreshments and a hunt. Participants must attend the morning session in order to hunt in the afternoon. The cost for only the morning session and lunch is \$15 per person.

The deadline for RSVPs with enclosed check or cash to the Lenawee Conservation District is August 23. Attendees of this event accept their own liabilities. Hunters need to have a valid hunter's license.

Refreshments and registration will start at 8:30 a.m. on the day of the event. The morning sessions start at 8:50 a.m. and will go into the late afternoon. The field day will be held at 14736 Mulberry Rd., Morenci.

For more information call (517) 263-7400, ext. 119.

Video Contest Reminder

Farmer/videographers still have until Sept. 2 to submit a video in Michigan Farm Bureau's "Share How You Care" video contest.



The purpose of the contest is for farmers to show how they protect our natural resources while providing us with the food we need. A panel of judges will select the best video with the winning contestant awarded \$500. Second and third place winners will be awarded \$250 and \$125 respectively.

The prizes are provided by Michigan Farm Bureau. The videos can be a maximum of four minutes long. Contestants must include at least one of four themes in their videos including: protecting the environment, committed to growing safe food, compassion for animals, and dedicated to Michigan's future.

Only Michigan residents are eligible for the contest. For complete contest rules and information visit the Farmers Care Web site at: www.farmers-care.com/care/videocontest.

The public is invited to view the videos and vote for their favorites. The videos can be seen on YouTube at the "Share How You Care" channel. Public voting will begin on Sept. 9.



Upcoming Events

September

- 9 Michigan Soil and Water Conservation Society Highway Clean-Up, 12 p.m., meet at NRCS state office - East Lansing
- 9 Game Habitat Field Day and Hunt, 14736 Mulberry Rd., Morenci, for more information see page 10
- 17 MiCorps - Coldwater River Stream Monitoring - Stream Training, 8:30 - 11:30 a.m., Water Works Park - Coldwater, for more information call 517/278-8008 ext. 5
- 20 Trevor Nichols Research Center Field Day, Fennville, for more information call 269/561-5314 or e-mail: wisejohn@msu.edu
- 21 Upper Grand River Watershed Bus Tour, begins at 1 p.m., for more information contact the Jackson Conservation District at 517/784-2800 ext. 214
- 24 MiCorps - Coldwater River Stream Monitoring - Stream Sampling, 8:30 - 11:30 a.m., Branch Area Career Center - Coldwater, for more information call 517/278-8008 ext. 5
- 28 MiCorps - Coldwater River Stream Monitoring - Insect Identification, 8:30 - 11:30 a.m., Branch Area Career Center - Coldwater, for more information call 517/278-8008 ext. 5
- 28 Montcalm County MAEAP Phase One Meeting, 9 a.m. - noon, Black Locust Farm, 5644 N Derby Rd - Stanton, for more information call 989/831-4606

September Ctd.

- 30 3rd Annual Agri Palooza, sponsored by Marquette and Alger CDs, MSU Experiment Station- Chatham, for more information call 906/226-2461 ext 128

October

- 7-9 23rd Annual Michigan Alliance for Environmental & Outdoor Education Conference, Delta College Bay City, for more information go to: www.michiganenvironmentaled.org/conference2011.html
- 23-25 Sustainable Forests and Economic Development: Domestic and Global Challenges Conference, MSU - East Lansing, for more information go to: miforestpathways.net/111025-MSU.pdf

November

- 3 Marquette County Conservation District 56th , Marquette Mountain Ski Chalet - Marquette, for more information call 906/226-2461 ext 128
- 10 Upper Peninsula Invasive Conference, Masonic Temple - Marquette, for more information call 906/226-7487 Ext. 4

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