



Helping People Help the Land

Conservation Notes

USDA - Natural Resources Conservation Service - Michigan

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Precision Ag Protects Water Quality

Precision application of fertilizers combined with conservation tillage are helping a Lenawee County farm improve soil health and protect water quality in Lake Erie.

Water quality, particularly reducing the amount of phosphorus and other fertilizers reaching Lake Erie, is an important issue in the Western Lake Erie Basin where Jim Isley and his son Jake own and operate Sunrise Farms, Inc. Jake is the sixth generation of the family to work the 900-acre family farm where they grow corn and soybeans.

Jake returned to full-time farming in 2012 after graduating from Michigan State University. That first year back was a dry one in Lenawee County and Jake didn't like what he saw. There were spots with no corn, and there was no soil structure, it was just powder, said Jake. "We had to do something different."

With Jake returning to the farm, the timing was right to make some changes. They enrolled the farm in the NRCS Conservation Stewardship Program, which provides incentives for conservation enhancements. The program also provides annual payments for their existing conservation activities like no-till and windbreaks. Two major changes made on the farm were strip tilling and precision application of phosphorus and nitrogen fertilizers.

Their neighbor had been strip tilling for 10 years and it seemed to be working for them, said Jim.



(l-r) District Conservationist Erin Busscher, Soil Conservationist Nicole Bishop, Jake Isley and his father Jim Isley look over a no-till drill on the Isleys' Lenawee County farm.

The Isleys were already using no-till for soybeans and conventional tillage for corn. Strip-till is more challenging because the seed bed is stripped in the fall and a no-till drill is used to plant on those strips in the spring, requiring precise placement of the seed. Precision farming requires a skilled operator, you need the right kind of help, said Jim.

Strip till has worked well with no reduction in corn yields and they expect even better results in dry years. Strip tilling also requires much less fuel than the chisel plowing they formerly employed.

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State Conservationist's Message

Dave White retired as NRCS Chief in December 2012 but he has not stopped being a strong advocate for the agency and the importance of conservation.

White made this clear during his opening address at the Michigan Association of Conservation District's Summer Meeting in Bay City on June 7. About 240 people attended the meeting including 70 NRCS employees.

White recounted the beginning of NRCS at the urging of congress by its future chief, Hugh Hammond Bennett. His efforts, and those of other conservationists, led to the creation of the Soil Erosion Service, the predecessor to NRCS, in 1933. The Michigan Soil Conservation Districts Law was passed in 1937 and the state's first conservation district, the West Ottawa Soil Conservation District, was created the same year.

"Stated, simply, the function of the district is to develop and help land operators carry out a

program of proper use for all the land within its boundaries. The district itself may undertake to carry out the work; or it may request the assistance of the Soil Conservation Service and other action agencies of the government," said Bennett in a 1938 speech.

Today, Michigan's 77 conservation districts work closely with NRCS and the Michigan Department of Agriculture and Rural Development to protect the natural resources of their communities. Local districts are vital in getting conservation on the ground and promoting the importance of private conservation efforts to their constituents.

However, people should not take support for conservation for granted. There has always been some opposition to government-led conservation programs, both at the national and local level, said White. Public backing is vital for ensuring future support for conservation on private lands.



Former NRCS Chief Dave White was the keynote speaker at this year's MACD Summer Meeting.



About 240 people attended the MACD Summer Conference in Bay City on June 7 and 8. Among the attendees were representatives from 58 conservation districts and 70 NRCS employees.

MDARD Receives USDA Award for Food Donations

Michigan Department of Agriculture and Rural Development

The USDA recently presented the Michigan Department of Agriculture and Rural Development the Platinum Hall of Fame Award for donating more than 18,000 pounds of food to charities across the state through its Pesticide Data Program.

Each year, MDARD's Pesticide Data Program tests 3,000 – 5,000 pounds of food for pesticide residue. The Pesticide Data Program provides data through a cooperative agreement with USDA established in 1991. As part of MDARD's commitment to food safety, the department participates in a national pesticide testing effort to sample, test, and report pesticide residue on a variety of foods – both domestic and imported.

"The Lab's sampling team collects food from the public supply by purchasing samples from warehouses, terminal markets and retail grocery stores that volunteer to participate. The donated food is the same food Michigan citizens are putting on their tables," said Craig VanBuren, Acting Laboratory Division Director, MDARD. "The food is then donated to the Greater Lansing Food Bank which distributes food to people in need in Ingham, Eaton, Clinton, Shiawassee, Clare, Isabella and Gratiot counties."

PDP helps to assure consumers the food they feed their families meets federal food safety requirements as well as ensures the quality and fair marketing of Michigan's agricultural products across the globe.

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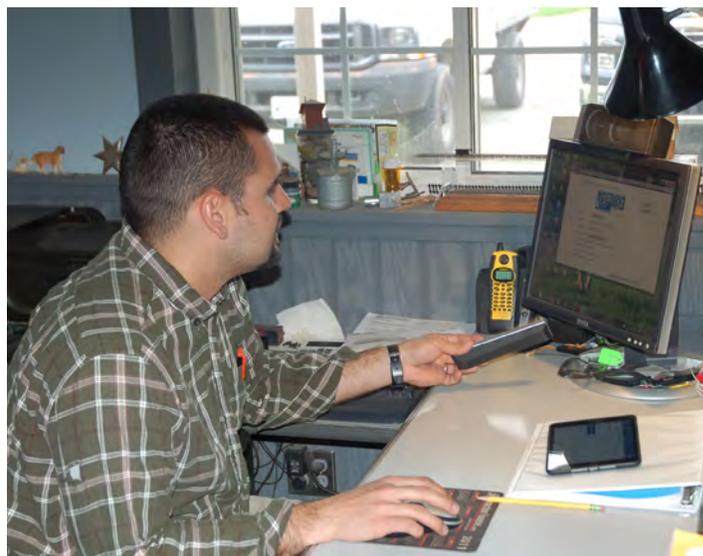
Precision Ag Protects Water Quality in Lake Erie

Conservation tillage also reduces the amount of time involved in preparing fields. "You don't see me on a tractor right now," said Jim.

In addition to strip-till, the Isleys began using variable rate technology to apply their nitrogen and phosphorus which is also eligible for an enhancement. The financial assistance from CSP accelerated the changes they made. "We wouldn't be where we're at today without CSP," said Jake.

They soil test half their acres every other year, said Jim. Using GPS technology the Isleys are able to compare a number of variables for every acre including yields, fertilizer application, tillage and seeding rates among others. This allows them to band apply only as much phosphorus as their crops need. When they blanket applied their phosphorus they found that some areas received too much and others too little, said Jake. With soil testing and variable rate application the right amount of phosphorus is applied to the right spots.

When crop prices were high, a lot of phosphorus was applied to fields in the area, said Jim. With the 2014 water crisis in Toledo caused by algae



Jake Isley utilizes GPS software to analyze nearly every variable on the family's crop land from the amount of fertilizer applied, planting rates, hybrid varieties, yields to planting speed.

blooms on Lake Erie, the thinking on fertilizer application has changed. 'If it doesn't get used, it will be around next year,' was the thinking, said Jim. "We've learned that's not really true."

Conservationists Learn to Talk Soil Health

A tilling spade is all you need to have a conversation about soil health with a landowner. That was the message delivered to NRCS and conservation district employees during a soil health field day held on a farm in Shiawassee County.

About 45 conservationists from southeast Michigan and throughout the Lower Peninsula attended the training event, said NRCS Biologist Jim Marshall. Marshall “co-instructed” the training with NRCS Regional Soil Health Specialist Justin Morris. The training was held on June 9, following the Michigan Association of Conservation Districts Summer Meeting in Bay City.

Three soil pits were dug on the Larry Lee farm to demonstrate the benefits of soil health practices. Lee has utilized conservation tillage on his farm for about 30 years and has been planting cover crops including tillage radishes. Attendees were able to observe how soil health practices on the Lee farm were restoring a healthy soil profile.

“It was a great day, spirits were high and people were really into it, said Marshall.

In addition to receiving instruction, participants broke up into groups of two to record their observations about the condition of soils on the farm. Observations included residue coverage, pores in soil left by the radish cover crop and the success of cover crop plantings.

“There were a ton of great questions,” said Marshall.

The Shiawassee Conservation District provided lunch during which attendees had a discussion on how to engage landowners about the benefits

of soil health. Some benefits include increased organic matter, greater water holding capacity and significantly reduced soil erosion.

Other benefits of soil health go beyond the field, said Marshall. Lee talked about how conservation tillage reduce the amount of time he spent working his fields. That time can now be spent with his grandchildren.

Improving soil health is a long process and it needs to be a continuing conversation between

conservation professionals and landowners, said Marshall. Marshall believes the soil health field day helped participants expand their soil health vernacular.

Two more field days are planned for the summer and fall, said Marshall. One will focus on improving wildlife habitat and the other on forest management.



NRCS and conservation district employees from throughout the lower Peninsula took part in a soil health field day conducted by NRCS staff and hosted by the Shiawassee Conservation District. NRCS Regional Soil Health Specialist Justin Morris (above) provides instruction from a soil pit dug on the Larry Lee farm near Laingsburg.



High Tunnel Provides Learning Experience

Kids in south Lansing will learn about growing, and eating, their own food as well as provide healthy food for their neighbors. Much of that learning will take place in a high tunnel, also called a hoop house, the South Side Community Coalition purchased with financial assistance from NRCS.

"I told someone we had a hoop house at the center," said SSCC Director Pete Cunningham. "He said, 'you guys are playing basketball?'"

Fittingly, the high tunnel was erected next to the organization's community center on April 16, Global Youth Service Day. The 70 by 32-foot high tunnel is constructed of a metal frame covered with a layer of plastic. It will allow the center to grow vegetables throughout most of the year. Participants in the center's after school youth program helped with the building along with volunteers and a crew from the company the high tunnel was purchased from.

"It was put up in one day, amazing," said Cunningham.

The SSCC, which opened a community center in October 2003, focuses on kids but also provides programs for seniors and operates a food pantry. They offer an after school program and about 35 kids between the ages of 5 and 15 take part in the center's summer program, said Yolanda Sherrer who coordinates the program. Gardening has been part of the youth program for about 5 years and the high tunnel provides an opportunity to extend the gardening component into the fall and winter.

The goal of the youth program is to provide experiences for young people that they don't get at home. Many of them don't get the opportunity to grow their own food at home and they enjoy doing it here, said Cunningham. They also go on field trips in the summer to places like the Air Zoo in Kalamazoo and the Charles H. Wright Museum of African American History in Detroit.

The gardening program is getting assistance from Kelsey Allan, an AmeriCorps volunteer



AmeriCorps Volunteer Kelsey Allan looks over plants in a recently built high tunnel while Yolanda Sherrer (left) youth programs director for the South Side Community Coalition in Lansing, and NRCS Soil Conservationist Linda Ortiz (far right) look on.



South Side Community Coalition program participants and volunteers helped with the construction of the high tunnel at the center on Holmes Road.

- photo provided by South Side Community Coalition

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Adapting Soil Health Practices to the UP - Part 2

by Jim Isleib, Michigan State University Extension

There is great interest across Michigan agriculture in cover crops and their many benefits to soil health and crop production. Upper Peninsula farmers displayed their interest by turning out for cover crop educational meetings held by Michigan State University Extension in February 2015. However, most of the cover crop research and available information relates to annual crop rotations in areas with longer growing seasons.

In Michigan's far north, cropping systems often include long rotations of perennial forage broken by small grains. This is especially true in the eastern and western farming areas of the Upper Peninsula where untilled clay soils are most common. Soil organic matter levels on these soils are likely to be quite high, although few organic matter soil tests are documented. On the better drained, coarser-textured soils in the central Upper Peninsula, more annual cropping is common, including corn, potatoes, small grains, field peas and other crops. Tillage practices generally do not include no-till. Across the region, the relatively short growing season



limits use of cover crops as a fall-seeded option following harvest. The alternative is to find economically practical ways to include soil-building cover crops with good utility as forage in northern cropping rotations, and hopefully build up soil organic matter depleted by tillage.

On clay soil areas in the Upper Peninsula, many perennial forage fields are harvested as a combination of hay and pasture. When that old field on untilled clay soil gets worked up for a new small grain crop with hay seeding underneath, grazing can become a problem for the following season. Hoof action from cattle can damage the new forage seeding until root development becomes dense enough to support livestock under moist soil conditions. Tillage also results in a loss of soil organic matter through oxidation.

Two Upper Peninsula farmers from Ontonagon and Rudyard, Michigan, are approaching this issue by considering a no-till approach to re-establishing pasture on clay soil. A sequence of annual "cover crops" with known value for

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High Tunnel Provides Learning Experience

who worked in a high tunnel at Michigan State University for two years. She helped kids in the center's after school program plant vegetables in the high tunnel in May. In addition to teaching gardening, Allan plans to do cooking demonstrations with the kids once they start harvesting. Fresh vegetables, along with recipes, will be included with food distributed through the food pantry.

The high tunnel will be utilized by the 4-H program that operates out of the center, said Sherrer. She also hopes they'll be able to grow

enough vegetables for the salads they provide at the center's Summer Showcase Event.

When summer is over, kids in the after school program will be able to keep on growing food in the high tunnel well through fall and into the winter months. Once the tomatoes, peppers, eggplant and other summer crops are harvested, salad greens can be grown during the colder months, said Allan.

After school when Sherrer asks "who want to go in the garden with Kelsey?" there are always raised hands, she said.

MSU to Host 9th Annual Hop Field Day and Tour

by Rob Serrine, Michigan State University Extension

Michigan State University Extension and partners will be hosting the 9th annual hop field day and tour on Friday, July 29 from 8 a.m. – 5 p.m.

The tour is designed for both beginning and advanced hop growers as well as those interested in learning more about hop production and craft beer. Participants will park at Incredible Mo's in Grawn and travel by tour bus to young and established hop yards in Manistee and Leelanau Counties and Stormcloud Brewing Company in Frankfort.

Local growers will be on hand to talk about all aspects of hop production: initial costs, plant



care, disease & insect management, trellis construction, quality control, propagation, organic & conventional growing practices, and picking and processing.

The tour will visit Midwest Organic Hops (Leonard Olson Farm), as well as Big Daddy Hops. The group will end the day with an educational tasting conducted by the Michigan Brewers Guild at Empire Hops Farm and return by tour bus to Incredible Mo's.

The cost is \$85 per person and includes lunch and charter bus transportation. Pre-registration is required and space is limited. Registration and more information is available at www.events.anr.msu.edu

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Adapting Soil Health Practices to the UP - Part 2

grazing will be no-tilled on a test area on both farms over three years. Harvest will include carefully managed grazing and mechanical hay harvest if necessary. In spring of the third year, the final perennial forage seeding will be no-tilled, along with a small grain/forage pea mixture to provide midseason grazing. Soil organic matter and other soil health measurements will be collected as the project moves along. This plan is meant to establish a new pasture or hay stand without tillage while providing productive grazing of annual forages on firm soil throughout the multi-year process.

In areas where annual cropping is more common, the interest in cover crops may fit into a more conventional scheme. On Oct. 15, 2015, Menominee County farmers attending an MSU AgBioResearch and Extension cover crop demonstration field day in Daggett, Michigan, saw several cover crop possibilities planted in replicated strip plots following harvest of a short season sorghum silage crop. The cover crops include oilseed radish, winter rye, oats, oats and radish and a "control" strip with no cover crop. This project will continue in 2016 with cover crop

termination and tillage as needed, planting and managing a new corn silage crop, and sampling to detect yield differences based on cover crop effect. A large change in soil organic matter is not expected after only one year; however, Solvita testing is planned to check for differences in soil biological activity. This can be an indicator that good things are happening below ground.

This project was developed based on farmer interest and informal observations of the positive effect of cover crops in recent years and is meant to document yield impacts, if any, of cover cropping on-farm. Additional efforts add to our experience, including a small-scale, single year 2013 cover crop evaluation in Alger County, cover crop evaluations on the MSU farm in Chatham, Michigan, and a cover crop demonstration strip on a Chippewa County farm in 2014.

Gradually, meaningful and documented results of cover cropping efforts in the Upper Peninsula are being gathered.

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

Glen Lake Team Top Finisher in Michigan Envirothon

Michigan Association of Conservation Districts

The Otter Brigade, a team of students from Glen Lake High School, received top honors this year at the Michigan Envirothon State Competition.

In addition to being named State Champs, the team also took first place for their community outreach project. The team includes seniors Rowan Brady, Anne Marie Dunklow, Drake Parker and Garrett Schaub.

The team put their skills of environmental science, public speaking and civic engagement to the test finishing first among teams from across Michigan. The state champs will represent Michigan this summer at the North American Envirothon where they will battle it out against other top teams from the U.S. and Canada in Peterborough, Ontario. Team Knope from Caro High School and The Eh Team, also from Glen Lake, finished second and third respectively.

Follow the Otter Brigade from Glen Lake on Facebook as they represent Michigan this summer at the North American Envirothon Competition. Michigan Envirothon's State champs will battle it out against other top teams from the U.S. and Canada July 24th - 29th at Trent University in Peterborough, Ontario, Canada.

The 22nd Michigan Envirothon hosted

remarkable students from around the state.

Twenty four teams qualified and received invitations to the state competition held May 11 through 13 at Lake Superior State University in Sault Ste. Marie. Teams qualified for the competition through regional contests held throughout the month of March.

During the State Competition, teams travel to five "eco-stations" for hands-on testing in the areas of agriculture, aquatic ecology, energy, forestry, invasive species, soils and geology, and wildlife. This year's eco-stations featured a bog, a local farm, a coastal park on Lake Superior and local forest habitats. .

Teams also identified and remedied a natural resource concern in their communities as part of the challenge to be named state champ. A panel of judges evaluated oral and written presentations given by each team and detailing their community outreach project. As always, the students implemented impressive community action and outreach projects.

Michigan Envirothon was established in 1994 and is run by the Michigan Association of Conservation District. High school students from anywhere in Michigan are invited to participate. For more information about Michigan Envirothon visit the MACD website at macd.org or email mienvirothon@macd.org.



NRCS Goes to Kindergarten

Joanna Senske, area administrator in Gaylord, visited a kindergarten class at St. Mary Cathedral School to present a program on agriculture and conservation.

Senske (left) read *P.B. and J Hooray* to discover where our P.B. and J comes from and *Sugar White Snow and Evergreens* to discover where maple syrup comes from.

"Best day of work with NRCS ever," said Senske.

Field to Great Lakes Events Planned

The Lenawee Conservation District is hosting several shipboard conservation workshops on Lake Erie and the Maumee River during July and August.

Five different workshops are planned and will highlight conservation and water quality. The workshops are targeted to farmers and owners of agricultural land. Attendees will learn about water quality issues affecting the Great Lakes and how farmers can utilize USDA conservation programs and the Michigan Agriculture Environmental Assurance Program.



There is no cost to attend but advance registration is required.

- July 28 - MAEAP Water Quality Sandpiper Boat Cruise on the Maumee River in Ohio, meet bus at Cabela's in Dundee at 3:45 p.m., bus returns around 9 p.m.
- Aug. 23 - Young Farmers Western Lake Erie Basin trip to Lake Erie Islands, meet bus at Cabela's at 7:40 a.m., bus returns around 8:10 p.m.
- Aug. 29 - MAEAP Tall Ship Sail Workshop in Toledo, meet bus at Walmart in Adrian at 9:30 a.m., bus returns around 5 p.m.
- Aug. 30 - The Stewardship Network Tall Ship Sail Workshop, meet bus at Cabela's at 10 a.m., bus returns around 9 p.m.
- Aug. 31 - MAEAP Tall Ship Sail Workshop in Toledo, meet bus at Walmart in Adrian at 2 p.m., bus returns around 9 p.m.

For more information and to register contact Amy Gilhouse at the Lenawee Conservation District at (517) 263-7400 ext. 117 or email amy.gilhouse@macd.org.

Beneficial Insects Workshop

Beneficial insects provide valuable pest control and pollination services to farms and gardens, but they need a little help from you as well.

Many insect natural enemies and pollinators depend on a diversity of

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flowering plants for critical nectar and pollen foods. MSU entomologists have been testing Michigan native and other plants for these purposes and want to share their results with you at the Supporting Beneficial Insects with Flowering Plants workshop.

The workshop will include presentations, hands-on insect and plant identification, and field tours to view over 55 species of insect-supportive plants. Speakers will include representatives from MSU Department of Entomology, MSU Department of Plant Biology, USDA-NRCS and Michigan Native Plant Producers Association.

Participants will learn to identify key pollinators and natural enemies of insect pests, as well as learn about programs that can help them establish beneficial insect habitats on farms and other property. Field tours will demonstrate which plants are best for attracting beneficial insects and include information on establishing and caring for insectary habitats.

Registration is open until July 23 with a fee of \$20 to cover lunch and materials. Register at the MSU Extension Events Management website at events.anr.msu.edu.

Upcoming Application Cut-off Dates

July 8

- **Edge of Field Monitoring** (in selected watersheds)

End of Each Month

- **Saginaw Bay Conservation Partnership Program**

Upcoming Events - Upcoming Events - Upcoming Events - Upcoming Events

July

- 15 Farmer Veteran Coalition Soil Health Workshop, 8:30 a.m. to 4 p.m., Rose Lake Plant Material Center - East Lansing, for more information call 951/237-5311 or email beewisefarms@gmail.com
- 20 Monroe County Agriculture Field Day, 9:30 a.m. to 3 p.m., Heck Farms - Monroe, RSVP required call 734/241-7755 ext. 5
- 21 15th National Friends and Family Farms Field Day, 9 a.m. to 3 p.m., 75127 28th Ave. - Covert, RSVP to Jeffrey.nian@fns.usda.gov or call 312/353-1044
- 22 Farm Economics: Diversifying your Portfolio and Crops, 10 a.m. to 2 p.m., Carlson-Arogast Farm - Howard City, for more information call 231/796-2659 ext. 109
- 27 Kalamazoo 2016 Summer Ag Tour, 1 p.m. to 6:15 p.m., Kalamazoo Valley Community College Food Innovation Center - Kalamazoo, \$10 registration donation due by **July 20**, for more information call 269/342-0212
- 28 MAEAP Water Quality Sandpiper Boat Cruise, more information on page 9
- 30 Together at the Farm: UP Local Food Conference, 8 a.m. to 11:30 p.m., MSU Extension Center - Chatham, for more information and to register go to upfoodexchange.com

August

- 2 Supporting Beneficial Insects with Flowering Plants, 10 a.m. to 2 p.m., MSU Clarksville Research Center - Clarksville, registration open until **July 23**, \$20 fee includes lunch, for more information go to events.anr.msu.edu
- 2 Soil Health Workshop, 2 p.m. to 5 p.m., Gains Township Hall - Genesee County, for more information call 810/230-8766 ext. 3
- 2 Guided Prairie Walk, 6 p.m. to 7:30 p.m., Ingham Conservation District - Mason, more information and free registration at www.inghamconservation.com

August ctd.

- 6 Fun on the Farm, 11 a.m. to 3 p.m., Packard Dairy Farm - Clare
- 13 Mecosta & Montcalm Forestry Tour, 9 a.m. to 3 p.m., Chippewa Hills High School - Remus, register by July 29, for more information or to register call 989/831-4606 ext. 106 or email nick.sanchez@mi.nacd.net
- 13 Breakfast on the Farm, 9 a.m. to 1 p.m., Zwerk & Sons Farm - Vassar, free, advance tickets required, for more information go to breakfastonthefarm.com
- 17 Center for Excellence Field Day, registration begins at 8 a.m., Bakerlads Farm - Clayton, for more information call 517-263-7400 ext. 3
- 20 Eastern UP Tree Farm Field Day, 10 a.m. to 3 p.m., meet at intersection of Trout Lake Rd. and Fibron Quarry Road, for more information call 906/632-9611 ext. 109
- 23 Young Farmers Western Lake Erie Basin Conservation Practices Conference, more information on page 9
- 24 MSU Agricultural Innovations: Focus on Soils, Saginaw Valley Research and Extension Center - Frankenmuth, for more information go to msue.anr.msu.edu
- 27 Breakfast on the Farm, 9 a.m. to 1 p.m., Hartland Farms - Clayton, free, advance tickets required, for more information go to breakfastonthefarm.com
- 29 MAEAP Tall Ship Workshop, more information on page 9
- 30 The Stewardship Network Tall Ship Workshop, more information on page 9
- 31 MAEAP Tall Ship Workshop, more information on page 9



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