



# Washtenaw County Conservation District

SEPT 2019

## Glacier Sculpted An Oak Opening

By Frank X. Stukenborg of Friends of the Saline River

Four massive ice sheets or glaciers, had a profound effect on the southern part of Michigan. These Glaciers occurred between 10,000- 35,000 years ago during the Late Pleistocene Epoch. Their movement and deposition of materials went through several stages but the most notable for Michigan was the most recent Wisconsin glacier which slowly retreated from Michigan between 9,500 -15,000 years ago. Much of today's land forms, soils and lakes are a result of the sculpting of the land as the ice mass moved in, across the land and eventually retreated as it deposited its accumulated soils of clay, sand and pebbles, called till. The Wisconsin glacier extended all the way to the Ohio River Valley.

The Wisconsin glacier was up to thousands of feet thick. The ice eroded the land as it progressed, transporting the soil and rock debris it picked up and eventually deposited material either through melting or glacial melt water flowing outward from the ice mass. There are two main types of glacial deposits, till and outwash. A third type are the large boulders dropped, called erratics, which are plentiful in Michigan. These erratics can range in size from a baseball to the size of a small car.

The extent of the glaciers in reaching out over the land is referred to as the Laurentide ice sheet. It includes the major lobes of the massive ice sheet. Joined, these covered the Great Lakes area as they advanced down from Canada. The two lobes influencing the glacial landscape of the great lakes were the Huron -Erie and Saginaw lobes which became divided as the glaciers melted and retreated. A vertical dividing line runs between the several moving ice lobes and is called an interlobate, dividing The Saginaw, Huron - Erie masses and terminating in the Irish Hills of Lenawee County. The confluence of the two lobes in the Irish Hills

*Continued on page 3...*

### Our Staff and Board Directors

Matt Koenn, Chair

Jill Dohner, Vice-Chair

Howard Sias, Treasurer

Julianne Chard, Secretary

Don Rentschler, Director

Megan DeLeeuw, District  
Manager

Nick Machinski, MAEAP  
Technician

### CONTACT US:

Washtenaw CD

7203 Jackson Rd

Ann Arbor, MI

48108

734-205-1219 (O)

734-718-5506 (C)

megan.deleeuw@  
macd.org

# Washtenaw County Conservation District

## Conservation District Director Elections

If you are concerned about climate change, erosion, water quality, forestry or other conservation issues, then consider running for a Conservation District Director position. One Director position will be elected at the Washtenaw County Conservation District annual meeting, January 16, 2020 to serve a four-year term.

**What do Conservation District Directors do?** Conservation District Directors are locally elected public officials, responsible for the operation and management of the Conservation District. Directors develop policy, plans and programs which are carried out by district staff and other resource personnel, to assist local landowners with the management of their natural resources. Directors meet monthly; meet with elected officials to discuss District programs and funding needs; and represent the District at meetings of other organizations. Directors are not paid, but receive compensation for expenses related to attending meetings and other activities of the District.

**Who can be a Director?** Any resident of Washtenaw County who can vote in general elections is eligible to be a District Director. Interest in, and awareness of local conservation issues is important, and a desire to serve. Director candidates must file a nominating petition, signed by at least five Washtenaw County residents, at least 60 days prior to the District annual meeting. Petitions are available from the Conservation District office and must be returned by November 14, 2019.

For additional information about the position of Conservation District Director or to obtain a nominating petition, contact the District Manager Megan DeLeeuw at: (734) 205-1219 or [megan.deleeuw@macd.org](mailto:megan.deleeuw@macd.org).



*Glaciers...continued from page 1*

resulted in the unique landscaping features of hills, valleys and lakes in that area. It was a "crash gathering" of the several ice formations pushing and grinding against each other at this stage of melting and against each other at this stage of melting and retreat which formed the Irish Hills area of Michigan. These ice masses may have been a mile thick. Moving west across the state, these lobes consisted of the Erie, Huron, Saginaw and Lake Michigan lobes.

It took several millennia for the glacial mass to melt away. This happened in stages of movement rearward, halt, melt, drop assorted till, then move rearward to continue the process until melted away. At each move the remaining deposited debris is called a moraine. These continuous "row hills" are positioned generally parallel to each other up to several miles apart. It is important to note that the first occurrence of the melt-retreat is called the end moraine, marking the terminus point in their advance. In our immediate locale, there are two of these end moraines, clearly defined on special maps drawn of their locations and spread. The two in our area are known as the Defiance End Moraine and the Fort Wayne End Moraine. They run parallel to each other running north east to south west on the map.

The Defiance End Moraine is traced from south of Detroit diagonally south-west to Defiance Ohio. It marks the final stopping point of the Wisconsin glacier formation within the Huron-Erie lobe. The Fort Wayne end moraine was left from a prior glacier and begins north of Detroit and follows diagonally the Defiance End Moraine but terminating at Fort Wayne Indiana. These two cities are roughly the terminus point locations of the last glacier, the Wisconsin.

The long melting process of the Huron-Erie lobe resulted in the massive quantity of

the water converted into a giant lake bed called Maumee, the predecessor of Lake Erie. Other end moraines formed their lakes such as the Michigan lobe forming the moraine system creating Lake Michigan. During this 5,000-year period, there were massive movements of ice throughout the State sculpting various moraine formations and changes to the topography of the land. One such movement is noted here. At around 13,000 years ago the Lake Michigan, Saginaw, Huron lobes re-advanced back into the state. It was a large advance throughout the Great Lakes region changing many features and constructing the Port Huron moraine.

The retreating ice made its last stand around 9,500 years ago. The above text only covers a small part of the overall changes in landscapes, lakes and soil types within the glacier's reach. Various areas that were left with ecosystems with major deposits of glacial till are what we today call Oak Openings. The till consisting of clay, sand and pebbles is generally present everywhere the glacier traversed. Some area Oak Openings received just the right amount of the glacial dump to have predominant resultant features not found anywhere else. The large land mass just southwest of Toledo is a recognized site. Much of this area is designated as a public preserve under the direction of the Toledo Metro Park system.

## **The Oak Openings**

According to map circa 1800 of our local area, several Oak Openings existed in south east Michigan. On example of an Oak Opening is in York Township's Sandra Richardson Park. I have been unsuccessful in determining the approximate boundaries of the Oak Openings, but it would have been much larger than the swath of land within the park. It probably

*continued on page 4*

*Glaciers...continued from page 3*

reached out miles in any direction from the park. Of interest is the fact that the park is located on top of the Wisconsin glacier's Erie lobe which terminated at the Defiance End Moraine. The melted ice flow went outward forming the pre-historic Lake Maumee, the predecessor to Lake Erie today. The ancient lake came up, covering Monroe County and ended at the present-day Ridge Road in Washtenaw County. At this point the Defiance End Moraine began stretching hundreds of miles south west through Ohio and Indiana. As the glaciers melted it left behind large deposits of gravel, sand and the erratics which historically supported the various prairie and savanna lands and more specifically an Oak Openings environment.

The York Township Parks and Recreation Committee is committed to restoring a small semblance of an Oak Openings ecosystem in Sandra Richardson Park. The area has been largely purged of brush and a grass prairie

established. As time and resources permit the open area will be enlarged and appropriate plantings established. Visitors will enjoy these as they walk the trail which passes through the prairie. Sandra Richardson Park is located on N. Platt Road south of Willis Road. The site specifically dedicated to the Oak Openings is located on the north side of the small seasonal stream flowing east-west, just under the old wood bridge.

We can speculate that this Oak Opening site may have also included Mary McCann Park on Warner Road, in York Township and may have extended westward through Saline. Thus Far, I can't find anyone who knows how far it may have extended but I will keep inquiring as time passes.

Frank X. Stukenborg of Friends of the Saline River can be reached at: [fxstuken@aol.com](mailto:fxstuken@aol.com)



## 2019 FALL TREE & NATIVE PLANT DISTRIBUTION

**Pick-up on Friday, October 11th from 2 PM to 6 PM**

**Washtenaw Farm Council Grounds (5055 Ann Arbor Saline Road, Ann Arbor, 48103)**

Balsam Fir, White Cedar, White Pine, Norway Spruce and White Spruce Transplants available! 10 native plant species as well as native garden kits are also available for pre-order. Some trees and plants will be available for purchase day-of distribution as well. Orders can be placed on our website [www.washtenawcd.org](http://www.washtenawcd.org) or by picking up an order form in the office. Species information can also be found on our website.

***Deadline for pre-order September 20th.***

## MAEAP August Verifications By Nicholas Machinski

The Michigan Agriculture Environmental Assurance Program (MAEAP) is an innovative, proactive, and voluntary program that helps farms of all sizes and all commodities voluntarily prevent or minimize agricultural pollution risks. It helps farmers evaluate their entire operation and truly make sustainable management decisions balancing society's needs, the environment, and economics.

**Old Oak Farm** was verified in its Forest, Wetlands and Habitat system. The property is an old farm field going through early succession. Cedar, box elder and walnut trees have been spreading on the property, though more recently oaks have begun to make their presence felt on the landscape. Spotted knapweed is an invasive that owner Maegen Gabriel and her husband Dean have been tackling the past few years. However, during the verification, common milkweed was widely seen as well as a few monarch caterpillars munching away. Maegen plans on experimenting on the land to see what trees grow best and plans for the property to be a haven for wildlife.

**Noble Organic Farm** is operated by Mike Cornell and has been re-verified in its Farmstead and Cropping systems. As its name implies, the farm is completely organic. But what makes Mike's operation stand out from many of the organic producers in the county is that the farm grows commodity grains such as corn, soybeans and wheat. Very few producers have gone this route with commodity grains despite the higher crop prices Mike is able demand from being organically certified. Though he admits he struggles at times with weeds (as many farmers do), Mike is proud to say that he has greatly reduced the compaction on the land in the four years he has operated on it and plans to increase the ground's organic matter in the next 5 years.

**Broadview Farms** became re-verified in its Cropping system in late August. George McCalla is now joined by his sons Nathan and David as partners in their farm that celebrated its 100th birthday back in 2012. The farm has maintained all of their filter strips and buffer strips that they have installed over the years. Cover crops have been a part of their rotation when the weather allows and the McCalla's are careful to leave a good amount of residue on the fields in the spring to help reduce erosion.

**Bristle Farms LLC** was recently re-verified in its Cropping system. Brad Bristle has taken over the operations of the farm that operates in western Washtenaw as well as part of Jackson County. The farm is primarily no-till and has used cover crops in its rotations, though Brad would like to employ this conservation practice on more fields. Brad is a young farmer eager to learn and operate Bristle Farms to its full potential and plans on pursuing verification in Farmstead in the near future.

**Rosenblum-Beecher Farm** is now verified in its Farmstead, Cropping, Livestock and Habitat systems; making it only the second farm in Washtenaw County to hold that distinction. The property consists of a woodlot with pine and hardwood sections, a small prairie, rain gardens, pasture and a pond. Susan and Lee, owners of the property love walking with their two dogs (Charlotte and Moe) around the property and even hosted their daughter's wedding there. Susan is an avid naturalist, constantly identifying new plants she finds, as well as quickly extinguishing the life of any invasive species that she comes across. Lee takes care of two horses on the property as well as the manure that they produce, composting it and giving away to whomever wants it. Rosenblum-Beecher Farm is a joy to walk through and an excellent place to explore nature.

## Algal Blooms and Lake Erie

*A series looking at the system of factors leading to algal blooms in the Western Lake Erie Basin (WLEB)*

**By Nicholas Machinski**



### **Part 4: Saving the Lake**

In Parts 1 and 2 of this series, I discussed the factors that come from the rural and urban environments that are contributing to the HABs in Lake Erie. We have non-point sources coming from the agricultural community in the form of phosphorus fertilizer (both commercial and manure). From the urban side, we have point sources, like waste treatment plants, but also combined sewer overflows.

In Part 3, I talked about the limitations of Lake Erie, or the constraints of the system. Lake Erie is incredibly shallow allowing it to warm up quickly, feeding algal growth. Invasive mussels, introduced by humans decades ago,



*Figure 1: The Western Lake Erie Basin as of September 3rd, 2019*

are filtering the lake so much that light can penetrate the water more easily, leading again to the lake warming even faster. And of course, we have the climate itself, which is warming all around the world.

Today, I'm going to talk about some solutions that people in the ag community, urban environments, and everyone in general, can take to reduce our impact and help save the lake.

First, farmers. Many of the solutions such as filter strips/buffer strips, cover crops, reduced/no-till are being implemented in the county. Nutrients tend to be applied only when the fields are ready for application. Farmers don't like to put fertilizer on their fields just to see it wash into the ditch. They know it is bad for the waterways and it is bad for their wallets as well. However, there are some that could use nutrient management plans to better apply their nutrients. Technology is getting to the point where farmers can apply a variable rate across the field based on the needs of the soil called Variable Rate Application/Variable Rate Technology. This can break a field down to the acre level, so a farmer isn't overapplying nutrients where he doesn't need it. Many farmers are in the early adoption phase of this technology, but full adaptation of this technology will greatly reduce the amount of fertilizer being spread on a field.

Another thing that should be done (and I will get some glares from the some of the farms I work with for saying this) is the banning of manure spreading in the winter. The application of manure in the winter does nothing to the soil as the ground is frozen and the nutrients are washed away as soon as the snow and ice begin to melt. I have told many farmers that I work with that it is only a matter of time before winter spreading is banned anyways. Ohio has already banned winter spreading and as

*continued on page 7*

*Algal ...continued from page 6*

a state surrounded by water, it only makes sense for Michigan to follow suit. It may not be this year. Or next year. It might be ten years from now, but I do think it will happen. However, I don't think it should be a strict ban right away. Many farmers who spread in the winter do so because they don't have proper storage facilities to store the manure. Manure is a valuable fertilizer for crops and if farmers have the opportunity to use it, they would much rather do that than see it flow away as the snow melts. I would propose giving a grace period to allow for structures to be built (which are expensive) so farmers have a way to store their manure. Banning winter spreading is an easy step to take on paper, but the details must be thought-out to make sure such an action is a win-win-win for farmers, people and the lake.

Though cities, contribute much less to the HABs than agriculture, there are steps that cities can take to reduce their impact. The step that would have the largest impact is getting rid of the combined sewer overflows. The good news is that cities are already starting to undertake this task. Detroit is investing \$500 million in upgrading its sewer and water lines. Now some of this is to replace lead pipes (a good thing to do) but some is to install greener infrastructure to manage storm water. This is all good news, because between January 2018 and May 2019 some 6.7 billion gallons of diluted or partially treated sewage entered Michigan waters last year (state-wide in other words). This is an issue that must be addressed and it seems like cities are finally getting the message. Of course, there are steps that we can all take to do our part in saving Lake Erie. Several of these can be found in the Lake Erie Lakewide Action Management Plan draft that I told you all that you should read and comment on. Did you do that? You did? Excellent! Since you've read the document you know that one thing we can all do is avoid using lawn fertilizers unless you're trying to establish a new lawn. As I ranted about in Part 2, I think lawn fertilization is expensive, wasteful and pointless. Stop trying to keep up with your neighbors and you'll keep a few extra dollars in your wallet. Other items include: picking up pet waste, installing a water catchment system and using phosphate-free soaps and cleaners.

Another step you can take is protecting wetlands. These ecosystems are literal sponges, that soak up nutrients and provide habitat for a variety of wildlife. If you have some land and you have areas that are wetlands or you believe were once a wetland, consider getting it restored. There are cost-share dollars available for landowners to help with returning a degraded wetland to its former glory. Reach out to us at the Conservation District or Solomon Andrews with NRCS (Phone #: 734-205-1517) to find out how we can help you with your wetlands!

Plant trees! Trees soak up a ton of nutrients over their lifetimes. Planting them near a waterway, helps to cool the water and make algal growth less likely. They also cool the air and fight the impacts of climate change. While, you're at it, get rid of those invasive species in your yard which are typically shrubs that shade out any tree seedlings and plant a nice tree or two! And if you're on the shores of a lake, consider planting some near the lake's edge. This will fight erosion and keep more of the phosphorus in the soil and out of the lake.

We've talked about septic tanks before, but I want to reiterate this point again. There are many failing septic systems in the state and the nutrients can leach from these systems, into the groundwater and into our waterways (or even your own drinking water). Please, get your system

*continued on page 8*

*Algal...continued from page 7*

pumped out and checked regularly. Just like the spreading of manure in the winter, I wouldn't be surprised if there are laws passed in the future about having an inspection required every certain number of years. It is better to take care of it now, before you are made to do it.

In my travels abroad, I have been fortunate to see some amazing accomplishments by humans: The Coliseum in Rome, the granite citadel of Machu Picchu and the Eiffel Tower in Paris. All of these architectural feats required hundreds, if not thousands of people working together in a system to accomplish. And it took years to do. What we have to do to save Lake Erie will require millions of people (the whole of the watershed) to work together and a time span of decades to accomplish. It will be a far more impressive feat than any of the landmarks I just mentioned if we succeed.

By the time you all open this, I will be on a boat to the middle of the western Lake Erie with my family. My son (already 5 months old) will be making his second trip to the lake, a place that I have traveled to all my life. If we succeed in saving the lake, maybe he'll be able to enjoy it the rest of his life as well.

<https://www.michiganradio.org/post/detroit-plans-5-year-500-million-investment-water-infrastructure>

<https://www.michiganradio.org/post/interactive-map-michigan-waters-affected-combined-sewer-overflows>

<https://binational.net/wp-content/uploads/2019/06/Draft-Lake-Erie-LAMP-061819-English.pdf>

## **Soil Health through Smart Farm Management**

**Tilian Farm Development Center (4400 Pontiac Trail, Ann Arbor)**

**Thursday, September 19th from 10 AM—4 PM**

- 30 types of cover crops  
We will take a look at how they grow, their benefits and their roots with Dr. Dean Baas, MSUE Cover Crop Team Leader.
- Visit the soil pit to see how cover crop roots grow, deep down, holding soil and feeding microbes with Vicki Morrone, Organic Farming Specialist, MSU.
- See how rain impacts the soil (and nutrients). A demonstration by Paul Gross, MSUE Cover Crop Team Educator.
- Join us for a field walk of sorghum-Sudan grass cover crop, planted to “fight against” Invasive thistle weeds with Kim Cassida, Forage and Cover crop specialist & Matt Keating-Farm Manager at Tilian.

*Contact Vicki Morrone to register: [sorrone@msu.edu](mailto:sorrone@msu.edu) or 517.282.3557*



## PROTECT YOUR FARM FROM RISING COSTS!

Renewable energy and farming is a cost effective combination. Solar can be harvested forever, providing farmers with a long-term source of income. Cut your overhead, increase profit, and increase-self reliance with a solar energy system.

**Call 888-90-SOLAR TODAY!**



harvest  
solar

## UPCOMING EVENTS

### **Fall Tree & Native Plant Distribution - Friday, October 11th**

**Farm Council Grounds (5055 Ann Arbor-Saline Rd), 2-6 PM**

Orders can be placed on our website or in the office. Pre-order by September 20th at [www.washtenawcd.org](http://www.washtenawcd.org)

### **Planting & Maintaining Trees Workshop - Tuesday, October 22nd**

**8778 Eiseman Rd, Manchester  
5-6:30 PM, Cost \$10 , RSVP**

Join us for hands-on experience learning about site selection, site preparation, proper planting techniques, what to look for in the first year of growth and how to care for your trees for long-term health. Featuring Ivich Fraser, U.S. Forest Service Entomologist. Hosted by Vic Mann, WCCD "Tree Conservationist of the Year 2017" award winner!

**SAVE THE DATE: WCCD 72nd Annual Meeting! Thursday, January 16th at 6:30 PM.**