

This conference was sponsored by Lake Erie Waterkeeper, which observes and attempts to protect all waterways in the Lake Erie Watershed which is comprised of the lake and all tributaries flowing into it. In the west end of Lake Erie some examples of how far this watershed reaches – a creek near my Grandfather Brackney's boyhood home on a farm in St. Johns Ohio just south of Lima, tributaries around Ft. Wayne, the St. Joseph River which flows into the Maumee River from near Hillsdale MI, the Raisin River that originates around Hillsdale, the Sandusky River which originates south of Upper Sandusky Ohio and empties near my Grandfather Wonnell's home on a farm in Ottawa County east of Port Clinton Ohio, and the Portage River running from west of North Baltimore Ohio to Port Clinton.

The rest of the Lake Erie Watershed runs up into Canada, roughly the northern half of Ohio, a small part of Pennsylvania around Erie, and a small area of northwestern New York State around Buffalo. Lake Erie has 872 miles of shoreline; provides drinking water for 11 million people (Lake Erie Waterkeeper). It has hundreds of rivers, creeks and streams discharging into it. The Lake Erie Waterkeeper area is obviously a huge area to try to protect.

The director of Lake Erie Waterkeeper is Sandy Bihn, a prominent Toledo Lucas County League of Women Voters member. Its president is Dave Spangler who is a charter boat captain and lobbyist, regularly visiting Washington supporting healthy waterways and the fishing industry. LE Waterkeeper meetings are the second Thursday of each month at 7 pm at the Toledo Yacht Club. The speaker on April 10, 2014, is scheduled to be Dr. Earl Campbell discussing his research on algal toxins. Website: www.lakeeriewaterkeeper.org

The conference ran from 8 a.m to 3:30 p.m., considerable information and data was covered in a short amount of time allowed for most speakers, and it was impossible to report on all discussions. Questions about the conference should be directed to the various experts who spoke at the conference. Some basic principles about common sense environmental ideas brought out in the conference are not hard to understand, however I apologize in advance for any errors or omissions in this summary of a highly technical conference. The following is my opinion of major discussions at the conference.

William Myers was a speaker offering environmental solutions for farmers who farms 2,000 acres near the entrance to Maumee Bay State Park. He said he was an early no till farmer, that 50% of all crop area in Ohio is no till, and 40% of the Maumee Watershed is no till. Part of Mr. Myer's farm has been in the family for two generations. He is experimenting with putting gypsum on fields which reportedly reduces phosphorus and increases yield. He is president of the Lucas County Farm Bureau, a Board Member of Waterkeeper, and a former Oregon City councilman. Mr. Myers is a great resource for those farmers willing to work for good environmental farming practices, such as reducing algae and erosion. In my opinion we need to congratulate Mr. Myers on his efforts in environmental farming methods. His email address is farmerbill21@aol.com

Janet Kauffman showed pictures of pollution along southern Michigan tributaries including the Raisin River and Bear Creek. She has worked with the Bean / Tiffin Watershed Coalition on Lake Erie headwaters education. Ms. Kauffman lives near the former Rehebhoff (sp?) Dairy which she said emitted up to 114 million gallons of liquid fertilizer (per year?), possibly much of it into local creeks. She also stated liquid manure has excess P (phosphorus) and N (nitrogen) bacteria pathogens. She said there are 248 CAFOs (Concentrated Animal Feeding Operations) in Michigan and about 4,000 CAFOs in Ohio. jkauffman@emich.edu

Ohio Senator Randy Gardner spoke about some environmental groups that have been discussed in Waterkeeper meetings - agricultural nutrients working group, the Clean Ohio Fund, and the Healthy Lake Erie initiative. He said just recently there has been proposed a \$10 million fund for these purposes. \$1.5 million has been proposed to find alternatives to open lake dumping. Dredging and acquiring wetlands to preserve them are several aims. He mentioned Senator Copara and Representatives Davilla and Chris Redfern of Ottawa County as being active in environmental issues in Ohio. Senator Gardner said he had no idea several weeks before this conference of the magnitude of these environmental issues. Gardner@ohiosenate.gov

A spokesman from the Army Corps of Engineers named Tim Winewski spoke about the dredging operations of channels at Toledo, Cleveland, Fairport Harbor, Ashtabula, Sandusky and in Huron that are the responsibility of the Corps. He said the Toledo Harbor channel requires 75% of the dredging on Lake Erie due to the shallow water and the sediment coming out of the Maumee River.

Mr. Winewski said 84% of the dredgings are deposited in the open lake and 14% in near shore locations. He said the Toledo Combined Disposal Facility (believe this includes Island 3 in Maumee Bay) can only take one more year of deposits. Arnold Paige, U.S. Army Corps of Engineers (USACE) Toledo Office project Engineer, was scheduled to speak at the conference but Mr. Winewski spoke instead. An email contact: Michael.Asquith@usace.army.mil

Mary Anne Evans of the U. S. Geological Survey and Meghan Price of Environment Control Technologies spoke on sediments and nutrients. She specializes in ecosystem conservation, global climate change, environmental impacts on humans, and harmful algal blooms (HABs). Ms. Evans is currently working at the U. S. G. S. Great Lakes Science Center focusing on harmful algal blooms, nutrients, etc., in the Western Lake Erie watershed. maevans@usgs.gov

Meghan Price is a Senior Associate Scientist at Environment Control Technologies (ECT). She worked for years on water quality monitoring using water sampling collection equipment and water quality data using sensors, sample collection and lab analysis. Ms. Price developed the Quality Assurance Project Plan (QAPP) for all water related projects at ECT. She has worked on environmental studies in the St. Clair area and Raisin, Detroit Rouge Rivers, and is secretary for the Detroit River AOC PAC. Ms. Price stated that pollutants are attracted to sediment. mprice@ectinc.com

Heather Raymond of the Ohio Environmental Agency has worked on the Water Quality Characterization and Protection Section and is currently a lead hydrogeologist and the Public Water System Harmful Algal Bloom Coordinator for Ohio. She said the Lake St. Marys algal blooms cost \$7.2 billion to try to curtail, and mentioned an Algal Toxin Treatment White Paper and also a state revolving loan fund.

Heather.Raymond@epa.ohio.gov

Patrick Nicholson retired as chairman and CEO of NVIRO Soils, and President of the Toledo Lucas County Port Authority. He was the keynote speaker, and said animal manure has an impact on the environment over 500 times more than human solids. He also stated animal manure is second only to pulp and paper sludge in organic waste; and that impacts of antibiotics in animal feed on manure pathogens are huge.

jpnicholson@bex.net

Cassandra May is working on a PhD at Ohio State University. She has worked on preserving Lake Michigan Yellow Perch, Lake Erie Walleye, and conducted research on a predator in Ohio reservoirs (Saugeye). She said plankton which lake fish rely on to feed is greatly reduced in the past 3 years. may.265@buckeyemail.osu.edu

Jeffrey Ram of Wayne State University is Directory of Science and Education at the Belle Isle Aquarium. He conducted research on zebra mussels soon after they appeared in the Great Lakes, and has several patents on preservation and analysis of microorganisms including those in ballast water. Dr. Ram earned his PhD from Caltech. Sandy Bihn contracted him to do sampling. He mentioned the 2011 GLRI Project and the 2013 Great Lakes Protection Fund. jeffram@gmail.com

Emily Collins is Supervising Attorney at the University of Pittsburg School of Law's Environmental Law Clinic. Her research is on legal systems and hydrologic systems, anti-degradation of environmental systems, and public participation in environmental decisions. She started an environmental legal services incubator named Fair Shake Environmental Legal Services to provide services to modest means clients and assist young private attorneys in Ohio, Pennsylvania, and West Virginia.

Ms Collins discussed Total Maximum Daily Load (TMDL) studies under the Clean Water Act which plan for returning waterways to fishable, swimmable levels. They show a level of pollution that a waterway can safely take. She said if a state doesn't submit TMDLs, the EPA must act. In general 60% of pollution levels in waterways must be controlled by 2017, 100% of the levels must be controlled by 2025. Lawsuits by the U. S. Farm Bureau against the Federal EPA challenged TMDLs. The court determined it's the responsibility of states to implement these controls. It may require lawsuits to get some states to do TMDL studies. If nothing is done, Lake Erie for example may become a dead lake as far as being able to sustain most fish or any fish. eac50@pitt.edu

Ken Elvey – President of the Lake Erie Marine Trades Association, former Chief of ODNR's Division of Watercraft, current member of ODNR Coastal Resources Advisory Council, active in the Ohio Sea Grant Advisory Council, and experienced in marine law enforcement. He stated that 117,000 full time jobs and 10% of employment in the 8 Lake Erie counties relies on tourism; and 30% of tourism in Ohio is in the 8 Lake Erie counties. kenalvey@lemta.com

Tim Murphy of the City of Toledo is Commissioner of Environmental Services for the city. Responsibility includes air and water regulations brownfield redevelopment, citizen complaints, emergency response, sustainability, education and outreach. He has administered \$15 million in environmental grants, worked with the Toledo – Lucas County Port Authority to form an Energy Special Improvement District (ESID) and is Vice Chairman of the Toledo Ohio Advanced Energy Improvement Corp. He said the City of Toledo had to spend an additional \$1 million to counteract increased algae to provide safe drinking water. tim.Murphy@toledo.oh.gov

Kelly Frey, Ottawa County Sanitary Engineer, discussed Carroll Township, Ottawa County, where he said they had to completely shut down their water plant for two weeks this winter due to algal blooms in the area. This meant the plant could supply no water for drinking and other purposes for this period. Mr. Frey was responsible for the construction of over \$180 million of environmental infrastructure including the regional water plant serving Port Clinton, Oak Harbor and 7 nearby townships supplying 200,000 people. kfrey@co.ottawa.oh.us

Some recent news articles and reports were discussed by some speakers at various points in the conference. One report was the Spatially Referenced Regressions On Watershed (Sparrow) report of October 2010 in the Journal of the American Water Resources Association which estimates loads and sources of nutrients phosphorous (P) and nitrogen (N) from US portions of the Great Lakes. These two nutrients are identified as far back as 1973 in the International Joint Commission (IJC) Water Quality Board assessment as being major contributors to toxic contamination, degraded aquatic communities, eutrophication and fish advisories (limit eating one or a few of various kinds per week or month or eat none at all). Eutrophication is defined in Wikipedia as “admission of substances such as nitrates and phosphates to an aquatic system. One example is bloom increasing phytoplankton.” Also in Wikipedia “ploughing in agriculture and development... contributes the most to nutrient loading”.

The Sparrow report further states “reductions in loading have reduced most open lake eutrophication problems, except for Lake Erie”. “inputs from agricultural sources represented from 33% to 44% of the total input into each lake except into Lake Superior....Inputs from farm fertilizers were more important for Lake Erie (26% of the total input”. “agricultural inputs were the largest source of N to each lake, except for Lake Superior...Inputs from agricultural sources (manure, fertilizer, and additional agricultural inputs from ...fixation and mineralization0...represented ~58% of the input for Lakes Huron and Erie”.

The articles included the NY Times article “Fertilizer limits sought for farms near Lake Erie” reprinted in the Blade on 2/28/14. Excerpts from this article: A US – Canadian agency has called for sweeping limits on the use of fertilizer around Lake Erie to reduce the amount of phosphorus entering the water and creating a vast blanket of algae each summer, threatening fisheries, tourism, and even drinking water....

It recommended that crop insurance be tied to farmers' adoption of practices that limit fertilizer runoff... The proposals are likely to encounter strong opposition from the agricultural industry and fertilizer manufacturers. Both groups have asked a federal appeals court to prohibit the Environmental Protection Agency from regulating farm-related pollution from phosphorus and other chemicals along Chesapeake Bay.

This Times article further states that Phosphorus - and especially phosphorus in fertilizer, which is designed to be easily absorbed by plants - is the source of the algal blooms, some of which are so toxic that they have killed dogs and sickened swimmers. ...the blooms returned in the late 1990s as farmers started applying fertilizer on frozen fields in the winter and spreading or spraying it instead of injecting it into the ground....to return the lake to the mostly algae-free state it enjoyed in the mid-1990s...the Maumee's (Maumee River) phosphorus runoff must be cut by 39 percent.

Information from the Lake Erie Waterkeeper website: Ohio Senate bill 150 passed the Ohio Senate and is in the Ohio House of Representatives, however was significantly weakened. The bill requires certification for fertilizer and farmers are required to prepare volunteer nutrient management plans, however there is no requirement for manure.

Further from the Lake Erie Waterkeeper website: the cost for treating algae in Toledo is \$3 to \$4 million a year. Carroll Twp. shut down its plant that provides water for drinking and other purposes on 9/5/14 due to toxin microcystin (algae related) at 3 times the recommended level of the World Health Organization. The Detroit Wastewater plant discharges 1/2 of all wastewater into Michigan (into the Detroit River and Lake Erie), is the largest wastewater plant in the US, and contributes 5% of the Lake Erie phosphorus load. Lake Erie Waterkeeper has been asking for many years to have assistance to help with environmental issues. As I recall it started as Western Lake Erie Waterkeeper over a decade ago. A comment by Waterkeeper was hope that the Ohio legislature spend as much on Lake Erie as Lake St. Marys.

From the Waterkeeper Lake Erie Conference: Lake Erie - drinking water for millions, over 100,000 jobs, over \$1 billion to the economy, more consumable fish than all (the other) Great Lakes.