

# The Door County Environmental Council News



June 2016



“Fostering the preservation of Door County’s rich heritage of natural resources for the health, welfare, and spiritual uplift not only of its inhabitants, but for generations to come.”

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## First DCEC Speaker Program of 2016 Features Kimberlee Wright, Executive Director of the Midwest Environmental Advocates

An audience of nearly 50 people listened intently on Wednesday evening, May 18th, to Midwest Environmental Advocates executive director Kimberlee Wright as she addressed the issue of Wisconsin’s clean water future.

According to Ms. Wright, “To have clean water, we need effective government. We need experienced, professional men and women in Wisconsin’s Department of Natural Resources with the resources and autonomy to fulfill their duties as trustees for our public waters. For most of our Wisconsin history, stewarding our water resources was a non-partisan issue, but in the past ten years, special interests have interfered with science-based decision-making and our state agency has faced

severe cuts to science staff in the last state budget.”

“Citizens have always played a critical role in protecting our public waters and that hasn’t changed. Midwest Environmental Advocates is working with people all over Wisconsin who are pulling together to protect our water and hold polluters and our government accountable,” stated Ms. Wright. Audience members learned more about the stories of citizens who are using creative legal and grassroots strategies to defend our natural resources.



*Kimberly Wright, MEA director*

Ms. Wright, who was born and raised in central Illinois, was introduced to the wonders of the natural world by her grandmother, a master gardener, and

naturalist. She received her law degree and a bachelor of science in rural sociology from the University of Wisconsin-Madison. Since graduating from law school she has worked statewide in the public interest on issues ranging from elder law, environmental protection, conservation, and support for people affected by family violence.

Her professional experience includes serving as the director of conservation programs for The Nature Conservancy and as the executive director for Domestic Abuse Intervention Services. Prior to joining MEA, Ms. Wright managed a statewide grant program for land trusts working in partnership with the Wisconsin DNR to protect critical habitat and natural areas.

Ms. Wright thanked the many generations of Wisconsin conservation leaders who have advocated for the protection of our natural heritage, recognizing their dedication to purpose and perseverance in the face of great challenges as a model for all. Her presentation was followed by a lively question and answer session!

The next DCEC Speaker Program was Wednesday, June 8, 7 pm, at the Door County Fire Company on Third Avenue in Sturgeon Bay. Speakers Maureen Muldoon and Kevin Masarik addressed the issue of groundwater. See the article on page 13.

If you could fit the entire population of the world into a village consisting of 100 people, maintaining the proportions of all the people on the Earth, that village would consist of:

- 57 Asians
- 21 Europeans
- 14 Americans (North, Central, and South)
- 8 Africans

## Lead Pipes Threaten Wisconsin Drinking Water

Most people have heard how lead from corroded pipes in Flint, Michigan, created a public health crisis. This occurred after the city switched its water supply to the highly corrosive water of the Flint River. This corrosive water supply leached lead from the old pipes into the Flint drinking water. Indeed this is a tragedy. But this couldn't happen in Wisconsin, could it?



*Flint drinking water lead pipes - Google Images*

Unfortunately, to a lesser degree, it is happening. Experts say that existing laws are failing to protect Wisconsin residents from harmful exposure to lead in drinking water that leaches from aging plumbing. Lead, it seems, is one of the worst toxins for developing brains. Decades ago, U. S. regulatory agencies began to eliminate the heavy metal from gasoline, paint, and new plumbing. The efforts to address the nation's existing water infrastructure, however, have been very limited. This is in spite of the known fact that lead in our water supplies continues to impair brain function, especially in children. In fact, lead can cause irreversible brain damage in children under age six, and an increased risk of miscarriages in pregnant women.

So why haven't we addressed the problem and solved it? Unfortunately, the problem

is not easily corrected, and it will be very expensive. But expensive or not, the situation is especially critical in Wisconsin.

The U. S. Environmental Protection Agency's (EPA) data indicates that water in Wisconsin municipalities exceeded allowable lead levels more often than in neighboring states. The reality is that there are 176,000 so-called lead service lines that connect mostly older Wisconsin homes to iron water mains that deliver municipal water. According to an estimate by the EPA, Milwaukee alone, where 60 percent of the state's known lead poisoned children live, has 70,000 lead service lines. But other Wisconsin cities also have high percentages of city-owned lead service lines, too. These communities include Manitowoc, Sheboygan, and Wausau. In fact, almost all Wisconsin communities have some lead service lines. Madison is one community at the forefront of addressing this problem. They have spent over fifteen million dollars since 2001 to replace 8,000 lead lines that lie between the water mains and the homes they serve.

A high percentage of lead pipes do not, however, automatically mean lead is in the water. Some municipalities have added chemicals to their water supply to keep the lead from leaching into the water. In spite of this, from 2012 to 2015 eighty-one Wisconsin municipal water systems tested above the EPA's action levels at least once. This means that more than 10 percent of the locations tested, during a given testing period, exceeded the EPA limit of 15 parts per billion. On a per-capita basis, Wisconsin then has the twelfth highest

In this village, there would be:  
52 women and 48 men  
30 Caucasians and 70 non-Caucasians  
30 Christians and 70 non-Christians  
89 Heterosexuals and  
11 Homosexuals

number of failed systems in the nation.

So what is the answer to this complicated problem of lead in our municipal water systems? A good start is consumer education and ongoing water testing in homes served by older lead service lines. Chemical treatment of water lines has also been proven effective in keeping lead from leaching into the water supply. The ultimate expensive answer, however, is the removal and replacement of all municipal lead service lines and in-home lead plumbing. The health of Wisconsin's children is well worth it!

*By Steve Eatough  
Based on an article by Silke Schmidt and  
Dee Hall.*

## **Oil and Water Don't Mix: Keep Oil Out of the Great Lakes**

*Author's note: I was born in Wisconsin and have lived in Wisconsin most of my life, but I have never heard about this pipeline and the potential for disaster until recently. Personally, I was shocked to learn about this pipeline and its actual and potential problems. We (the DCEC) want to share this information with you because we believe it to be a significant potential environmental disaster-Mike Bahrke*

Every day, nearly 23 million gallons of oil flow through two aging pipelines in the heart of the Great Lakes, just west of the Mackinac Bridge. Built in 1953 during the Eisenhower administration,

the two 20-inch-diameter “Line 5” pipelines, owned by Canadian company Enbridge, Inc., lie exposed in the water at the bottom of the Straits of Mackinac.

Enbridge’s pipelines, which run about 1,000 feet apart at depths ranging from 100 to 270 feet, have lain on the bottom of the Straits for more than six decades. Enbridge installed several support structures under the pipelines in 2006 and again in 2010, following the company’s oil spill into the Kalamazoo River - the nation’s largest ever land-based oil spill. Enbridge officials have said that properly maintained pipelines can last indefinitely, but the company’s history of major spills in Michigan and across North America proves otherwise. Today, much of the oil flowing through the Line 5 pipelines is coming from Canada and taking a shortcut through Michigan and the Straits of Mackinac before crossing back into Canada near Port Huron.

The pipelines in the Straits of Mackinac cross one of the most ecologically sensitive areas in the world. The Great Lakes are home to 20 percent of the fresh surface water on the planet. The pristine Straits area supports bountiful fisheries, provides drinking water to thousands of people, and anchors a thriving tourism industry with historic and beautiful Mackinac Island right in the center of it all.

Six people would possess 59% of the wealth and they would all come from the USA.

80 would live in poverty

70 would be illiterate

30 would suffer from hunger and malnutrition

1 would be dying

1 would be being born

1 would have a computer

1 (yes, one) would have a university degree



*Beneath the Straits of Mackinac*  
Photo courtesy of NWF

### **The Problem**

The pipeline has transported crude oil through the Straits of Mackinac without incident, but a number of troubling factors are coming together that cause grave concern:

- A recent increase in the volume and pressure of fluids moving through the pipelines
- The tarnished safety record of Enbridge, Inc., the Canadian company that operates the pipeline
- Newly discovered issues related to lack of compliance with the contract between the pipeline company and the State of Michigan
- The age, location, and condition of the pipeline
- The lack of transparency about safety inspections and what petroleum products are being transported through Line 5 in the Great Lakes
- The lack of a proactive regulatory environment in Michigan and at the federal level

## Line 5: One Pipeline of Many

Enbridge Energy Partners owns and operates a large system of pipelines that carry petroleum products and natural gas fluids to refineries in various destinations, including Texas and other U.S. states and throughout North America. This crude oil is the raw product that becomes gasoline and other transportation fuels.

Enbridge's Line 5 is a 645-mile petroleum pipeline that is part of the larger Enbridge Lakehead System. Line 5 carries oil from Superior, Wisconsin, across Michigan's

Upper Peninsula, through northern Michigan, down to the thumb region and under the St. Clair River to Sarnia, Ontario. Along the way, the pipeline crosses through the Straits of Mackinac, multiple rivers and streams, and, in northern Michigan, goes through almost

10 miles of wetlands and runs right next to many of Michigan's sparkling inland lakes. Line 5 is 30 inches in diameter, except when crossing the Straits of Mackinac, where it splits into two 20-inch pipes that lie about 1,000 feet apart.

Construction was completed in 1953, and the twin pipelines under the Straits now carry approximately 540,000 barrels, or 22.7 million gallons, of oil and natural gas liquids per day.

In addition to Line 5, the Enbridge Lakehead system includes other pipelines that



*Mackinac Bridge parallels Line 5 pipeline  
Photo courtesy of [www.oilandwaterdontmix.org](http://www.oilandwaterdontmix.org)*

move petroleum product across the Great Lakes region. This system of pipelines is the primary transporter of crude oil from western Canada to the United States, with approximately 4,700 miles of pipe and 60 pumping stations serving all the major refineries in the Great Lakes, Midwest, and Ontario.

In recent years, as production of tar sands oil in Canada and crude oil in North Dakota has exploded, there has been a dramatic increase in the number of new pipelines proposed to carry this fuel to refineries and coastal export terminals.

### What It Carries and Where It Goes

Line 5 carries synthetic crude oil from Superior, Wisconsin. The original sources are tar sands bitumen from Canada, which have been refined to a "light" oil or "high sour." Enbridge states

that "heavy" diluted bitumen, which is a less refined and more corrosive product that was released into the Kalamazoo River in 2010, does not currently run through Line 5. This pipeline also carries crude oil that originated in the Bakken oil fields of North Dakota.

Line 5 terminates in Sarnia, Canada, just across the St. Clair River from Marysville, Michigan. The pipeline was bored or tunneled just below the river bed. In 2010, adjoining Line 6B was replaced under the St. Clair River after it was found to have

a "dent."

Sarnia, Ontario is home to many refineries that

If you woke up this morning in good health, you have more good luck than 1000 people, who won't live through the week.

produce gasoline and other commercial petroleum products. In short, much of the oil transported through Line 5 originates in western Canada, is shipped through Michigan and the Great Lakes, and refined in Canada for markets in Canada.

### **Take Action: There Are Many Things You Can Do Now to Help**

The Straits of Mackinac are a natural and cultural treasure held by Michigan in trust for its residents. The Straits, which link Lake Michigan and Lake Huron and separate Michigan's Upper Peninsula from its Lower Peninsula, are capable of generating powerful currents that can create a flow of water more than 10 times greater than the flow over Niagara Falls. The strong underwater currents, fierce winds, and extreme winter weather conditions - sometimes including feet-thick ice cover - at the Straits make them ecologically sensitive and would make cleanup or recovery from a pipeline spill especially difficult.

The time is now to fully examine the use of these public waters and Great Lakes bottomlands by a private corporation, and to ensure the protection and preservation of the Straits of Mackinac. We all must act now to Keep Oil Out of the Great Lakes!

Share this information to make a difference! To see what else you can do to become involved, see [http://www.oilandwaterdontmix.org/take\\_action](http://www.oilandwaterdontmix.org/take_action).

*By Mike Bahrke  
Adapted from: Oil & Water Don't Mix:  
Keep Oil Out of the Great Lakes  
<http://www.oilandwaterdontmix.org/problem>*

*For more information contact:  
Oil & Water Don't Mix*

c/o Groundwork Center for Resilient Communities  
148 E. Front Street, Suite 301  
Traverse City, MI 49684-5725  
231-480-4112

## **Activists and Activism**

I would like to thank the Door County Peninsula Pulse staff for providing the community with another great year of journalism. Your dedication and commitment to "checking the pulse of our community" by reporting on our activities and important issues are always of great interest and high journalistic quality. Congratulations and thank you.

I was particularly impressed with this year's 10th Annual Sustainability Issue. The very first introductory article by Myles Dannhausen, Jr. about activists and activism got me thinking and it helped me to reignite my own passion for a cleaner and healthier Door County environment. This article, entitled "When It Comes to Water, the Activists Have Saved Us", points out that the word "activist" has been used these days as an insult and has often been used against environmentalists like a dirty word. It also points out that without activists a lot of things would be a lot worse today.

According to Webster's dictionary, ACTIVISM is a doctrine or practice that emphasizes direct vigorous action especially in support of or opposition to one side of a controversial issue. It makes me think about

If you have never experienced the horror of war, the solitude of prison, the pain of torture, were not close to death from starvation, then you are better off than 500 million people.

a famous quote by Harvard historian Laurel Thatcher Ulrich, “Well-behaved women seldom make history.” It makes me think that there are many of us out there who want clean water, healthy food, and a healthy atmosphere and don’t wish to trade those items for higher profits and a few short-term jobs. It makes me think that “well-behaved” people won’t save our environment from being totally consumed. It makes me think that there will be nothing left that is clean or healthy for our children or for all life on Earth. It makes me believe in activism and being an activist.

Door County and Kewaunee County have many activists trying to make a difference. There are a number of important environmental groups asking for our help, our action. The Door County Environmental Council is one of the longest standing. However, there are many others as well; The Nature Conservancy, The Land Trust, Clean Water Action Council, Door Property Owners, Door County Climate Change Coalition, Lakeshore Natural Resource Partnership and Kewaunee C.A.R.E.S., to name a few.

There are also many “un-sung” and “un-behaved” heroes fighting for us who are truly active. To name a few, DCEC’s Environmental Citizen of the Year recipients Bob Bultman (2014) and Lynn and Nancy Utesch (2015). I saw Bob during Earth Week with 3,000 trees and many people, young and old, actively re-foresting some Nature Conservancy land. I am showing my support for Lynn Utesch who announced this year that he will be running for State Assembly in our district in an effort to make a difference in water quality for the

If you can go to your place of worship without the fear that someone will assault or kill you, then you are luckier than 3 billion people.

***“To protect and enhance our natural resources: our air, land and water, our wildlife, fish and forests and the***

Northeastern Wisconsin counties.

We need more activism. We cannot sit comfortably at home and let our environment fall to waste. It is all too important to let it slide. I agree with what was printed on some Earth Day tote bags (thank you gifts for participating as a tree planter); We need “All Hands On Earth”.

There are many ways to become actively involved. Join a group and become active with them. Be politically involved with your state and federal representatives. Become an Internet activist and get other people to become active. Don’t let those who threaten our environment take away the things which cannot be replaced. Be an activist. It’s not a dirty word.

*By Paul Leline*

## **A Mission Statement Is the Heart of an Organization**

**W**hen DNR Secretary Cathy Stepp was at an agency listening session some time ago, a DNR employee told her that “clean water and clean air, those were our customers.” Secretary Stepp replied to that employee, “Well, the last time I checked, they don’t pay taxes and they don’t sign our paychecks.”

It got me to wondering what the DNR Mission Statement was, so I looked it up and it reads:

*ecosystems that sustain all life.*

*To provide a healthy, sustainable environment and a full range of outdoor opportunities.*

*To ensure the right of all people to use and enjoy these resources in their work and leisure.*

*To work with people to understand each other's views and to carry out the public will.*

*And in this partnership consider the future and generations to follow.”*

Perhaps Secretary Stepp could refer to this Mission Statement from time to time to help clarify her priorities.

*By Eileen Andera*

## **Factory Farms Cause Thousands in Rural Wisconsin to Go Without Clean Water**

Rural northeastern Wisconsin residents are facing an ongoing drinking water crisis. Pollution from large-scale dairy farms known as Concentrated Animal Feeding Operations (CAFOs) and the failure of the Wisconsin Department of Natural Resources have created unsafe drinking water for thousands in Kewaunee County.

Occupying part of the Door Peninsula on the shore of Lake Michigan, Kewaunee County is home to the largest concentration

If you have a full fridge, clothes on your back, a roof over your head and a place to sleep, you are wealthier than 75% of the world's population.

of dairy farm CAFOs in the state. The county is home to 15 farms housing 50,000 cows, with an additional 40,000 cows in smaller operations. Animal production is the county's second largest industry after manufacturing.

Tainted water across the state of Wisconsin has become a serious problem. Since 2013, 64 Wisconsin drinking water systems have tested over federal lead contamination limits. In rural Wisconsin, households use private wells where municipal water service and treatment is not available.

EPA data for 2016 indicates more than one-third of wells for Kewaunee County residents do not meet EPA safe drinking water standards. Test results from the University of Wisconsin-Oshkosh in 2014, the Wisconsin Department of Natural Resources (DNR) in 2015, and now the EPA in 2016, list nitrates and total coliform bacteria as the principal pollutants, meaning manure and fertilizer byproducts of industrial farming have entered the groundwater at toxic levels.

A network of different soils, gravel and rock purify water on its way to underground aquifers. Aquifers are the part of soil that holds water and sits on top of the bedrock. This process has been shortcut not only by a lack of topsoil from overworked farmlands, but also by the massive amounts of nitrogen fertilizer and manure irresponsibly applied to the land.

Excess nitrogenous waste is soluble in rain and snow, leading to pollutants entering the water table untreated. The water table is the water held in the aquifer that all wells



draw upon. The US Geological Survey reports, “In Wisconsin, 70% of residents and 97% of communities rely on groundwater as their drinking water source. Wisconsin has abundant quantities of high-quality groundwater, but once groundwater is contaminated, it’s expensive and often not technically possible to clean.” Such is the case in Waukesha County, Wisconsin, where radium contamination in the water table has created a technical and political quagmire.

The Wisconsin DNR is the state’s regulatory authority for groundwater concerns. They issue permits for CAFOs, for mining sand used in hydraulic fracturing and for metal ore mining. Their legal authority in groundwater matters has been undermined through adverse decisions in a series of high-profile lawsuits against CAFOs, and they have failed to adequately monitor the riskiest groundwater operations in Wisconsin.

In late 2015 the DNR lost a lawsuit to monitor high capacity wells at a CAFO in central Wisconsin. These types of wells, common to large agricultural operations, use high-capacity water pumps to draw as much as 100,000 gallons of water per day. The household well pumps most Kewaunee County residents use draw only 100 gallons per day.

High-capacity wells are dangerous to groundwater quality because they draw water much faster than the natural replacement rate and allow pollutants to become concentrated in the water table. Monitoring wells are dug and data is collected by the DNR to keep abreast of sudden changes in water table levels.

If you have money in the bank and in your wallet, or even a few coins in your purse, you are one of 8 of the privileged few amongst the 100 people of the world.

There is only a single monitoring well for the entire county of Kewaunee.

Farmers have traditionally recycled manure into natural fertilizer by spreading it on fields over the winter. This process allows slow absorption into the soil over months. However, the quantity of manure generated by CAFOs, over 1 billion gallons per year, is far beyond what arable lands can handle, and state regulation is completely inadequate to protect against nitrogen pollution of drinking water systems. CAFOs are allowed to write and sign off on their own manure management plans. The drive for profit and avoidance of regulatory scrutiny encourages more than just fraud. It becomes a criminal trespass against the social right of clean drinking water.

While the crash of 2007-2008 raised the Kewaunee County unemployment rate to more than 10 percent, two-thirds of the jobs created in the “recovery period” are in dairy farms. Some \$65 million of the county’s economy is now in dairy farming, just under one-quarter of the total.

This agricultural pollution crisis is historically based on federal policy stemming from the Great Depression of the 1930s and, three decades later, the actions of a single USDA administrator, Earl Butz. A board member of several agribusiness corporations prior to his appointment in 1971 by Nixon to head the USDA, Butz was hostile to what he called the “socialism” of the New Deal, and this played out in dramatic policy changes.

Butz not only dismantled price supports and subsidies guaranteed to American farmers

since the 1940s, he did away with payments to fallow (rest) fields, preventing soil from being overworked by intensive cultivation. He encouraged farmers to “go big or go home” by borrowing capital to expand their holdings. Reviving a largely untrammled free market in agriculture created a glut of cheap corn and soy used for producing corn syrup and ethanol. The grain commodities bubble popped in the 1980s and farmers went broke or overextended their credit to expand, leading to further bankruptcies when commodity prices continued to fall.

This drop in the price of corn and soy created the opportunity not only for corporate consolidation of farms, but the creation of CAFOs. By 1998 the USDA returned to subsidies including direct payments to farmers. These payments are directed at supporting the top producers—the factory farms. The overworked soils remaining in much of the Midwest require increasingly large quantities of fertilizer, further advantaging agribusiness corporations. These economic relationships present a race to the bottom for environmental and human health.

The conditions in Kewaunee County, Wisconsin show that the deteriorating quality of drinking water is not limited to urban areas like Flint, Michigan, where industrial byproducts have led to widespread contamination by lead, copper and other toxins. Agribusiness is a capitalistic industry driven by the same profit considerations. Groundwater is a social good which has been subverted to the profit motive globally. Capitalism is engaged in the destructive and wasteful use of natural resources worldwide. Treating the natural environment as purely

a source of private gain has devastated water, air, soil, plant diversity and animal welfare.

*By Catherine Long  
World Socialist Website  
April 25, 2016  
<https://www.wsws.org/en/articles/2016/04/25/wisc-a25.html>*

## Climate Change Forum

The Clean Water Action Council of Northeast Wisconsin Lakeshore Natural Resource Partnership sponsored the Third Annual Door County Climate Change Forum on May 7, 2016 at the Stone Harbor Resort. DCEC had a presence as a sponsor and displayed an exhibit. Three speakers addressed environmental and health issues.

Jonathan Patz, MD, MPH is professor and the John P. Holton Chair in Health and the Environment at the University of Wisconsin-Madison, where he also directs the Global Health Institute. Dr. Patz has worked on the health effects of climate change since 1993 and has faculty appointments in the Nelson Institute for the Department of Population Health Sciences. He has also co-chaired the first congressionally mandated health report of the U.S. National Assessment on Climate Change and served as lead author for the UN Intergovernmental Panel on Climate Change (IPCC) for 15 years. The IPCC shared the Nobel Peace Prize with Al Gore in 2007.

If you are reading this, then you are extremely lucky because you don't comprise of one of the 2 billion people who can't read.

Dr. Patz spoke on the many health effects of climate change, including some which would, at first blink, appear to be unrelated.



*Jonathan Patz, MD, MPH Photo by John Beck*

For example, changing climate conditions are creating ideal environments for the *Aedes aegypti* mosquitoes to breed and spread the Zika virus (NOAA predicts the unprecedented strong El Niño is expected to hang around throughout the spring and early summer of 2016).

Even small changes in climate conditions can impact how quickly vector-borne diseases evolve and spread. While there is still a great deal we don't know about how far Zika will spread in the United States or the degree of severity, it is not a stretch to appreciate the impact of climate change in the spread of diseases like Zika. Dr. Patz noted that even if some people didn't accept the science of human impact on climate change, measures to reduce greenhouse gasses in themselves have positive health benefits. His talk was entitled "Addressing the Serious Health Risks of Climate Change: Possibly the Greatest Human Health Challenge and Opportunity in More Than a Century".

Rolf Nordstrom is the President and Chief Executive Officer of the Great Plains Institute. He has nearly 30 years of experience in energy and sustainable development policy and practice in both governmental and non-profit settings and has held positions with the United States Congress, the Minnesota Environmental Quality Board (EQB), the Minnesota Office of Strategic and Long-Range Planning, World Wildlife Fund International (Brussels, Belgium), National Wildlife Federation's Corporate Conservation Council (Washington, DC), and the Global Environment Program at NYU's Stern School of Business in New York.

For much of his career Nordstrom has worked to broker agreement among disparate interests on difficult public policy issues. Among his other duties, he currently leads GPI's "e21 Initiative" to better align how utilities earn revenue with evolving customer demands and public policy goals.



*Rolf Nordstrom Photo by John Beck*

Just prior to coming to the Institute in 2003, Nordstrom served for a decade with the Minnesota Environmental Quality Board and Office of Strategic and Long-Range Planning. For seven of those years he served as Assistant Director of the then Governor Arne Carlson's Sustainable Development Initiative, working to harmonize the state's economic and environmental policies.

In his talk at the conference, entitled "The Daunting Challenges and Extraordinary Opportunities of a Clear Energy Transition," he provided information showing that energy produced from sources other than fossil fuels can be economically advantageous as well as sound environmental policy and outlined how energy companies could transition to profitable "green" alternatives.

Kevin Shafer spoke on "Changing Climate, Changing Infrastructure - How Wastewater Infrastructure Is Adapting."

Shafer became executive director at the Milwaukee Metropolitan Sewerage District (MMSD) in 2002. Since becoming executive director, Mr. Shafer has been providing regional leadership in implementing grey and green infrastructure in MMSD facilities. He also coordinated a \$58 million long-range planning process that produced the most intensive water quality research ever for six Milwaukee area watersheds. Additionally, under his leadership, MMSD instituted a

regional storm water runoff rule and has been a leader for innovative ways to manage storm water runoff.

The MMSD not only reclaims safe water from wastewater, but supplies its own energy by environmentally sound means and reclaims useful materials from wastewater and associated solids. Speaking of how climate change poses challenges to wastewater facilities, Shafer said MMSD has become a world leader in helping to meet the need for clean water and to make environmentally friendly practices economically feasible.

Shafer's leadership has also helped improve regional cooperation, most notably with the creation of the Southeastern Wisconsin Watersheds Trust (Sweet Water), an organization that brings together representatives from the private, nonprofit, and public sectors to improve the region's water quality. He is a past president of the National

Association of Clean Water Agencies and currently serves as the Chair of the U.S. Water Alliance's Urban Water Sustainability Leadership Council.

Shafer was appointed to the board of the Great Lakes Protection Fund in June of 2014.

The speakers were joined by Tia Nelson as moderator and local physician Dr. Nate Hayes for a roundtable discussion with



*Kevin Shafer* Photo courtesy of <http://www.mmsd.com/gi/green-infrastructure>

questions from the audience.

*By John Beck*

## **Hydrogeology of Karst in NE Wisconsin: Why Are Some Areas More Vulnerable to Contamination than Other Areas?**

Whether it is known as the “Bluff” or the “Ledge” or the “Great Arc”, the Niagara Escarpment was created over 430 million years ago. Older than the Rocky Mountains. Older than the Appalachians. Back when Door County was part of the Southern Hemisphere. This 1,000 mile long arc of fractured dolomite encircles the depression under the state of Michigan called the Michigan Basin. The escarpment stretches from central Wisconsin along the Green Bay shore of Door County, up across the edge of Upper Michigan, and south to Niagara Falls and New York State.

The escarpment is home to caves, waterfalls, 1500 year-old white cedars that cling to the rock face, and over 241 rare and endangered species of plants and animals. Native Americans considered the area sacred. Travelers used the cliffs as a guide. Settlers built their farmsteads and villages with the quarried stone. Today, Door County has built its economy on the visitors who come to see these dramatic rock formations and the vistas they provide.

However, despite all the economic, cultural, historical, and recreational benefits, the escarpment and the thin soil of the cuesta, the land that slopes away from it towards



*Niagara Escarpment Cave  
Photo by Mike Bahrke*

Lake Michigan, contribute to a very problematic situation. The highly fractured karst landscape of the dolomite geology of Door County is prone to groundwater contamination.

Two experts in the fields of geology and groundwater quality explained this critical situation: Maureen Muldoon PhD, of UW Oshkosh and Kevin Masarik, from UW Stevens Point. The Door County Environmental Council sponsored these speakers on June 8, at the Door County Fire Company in Sturgeon Bay.



*Dr. Maureen Muldoon* is Professor of Hydrogeology and Environmental Geology at UW Oshkosh and has, in fact, done her doctoral thesis on the *Hydrogeologic Characterization of the Silurian Dolomite in Door County*. Her topic gave an overview of how the Silurian dolomite aquifer behaves and its relation to groundwater quality.

Kevin Masarik is a groundwater education

specialist with UW-Extension in the College of Natural Resources at UW Stevens Point.

Masarik's extension teaching focuses on groundwater and drinking water quality education targeted towards populations



*Kevin Masarik*

served by rural residential well water systems. Other aspects of his work include understanding the relationship between agricultural land use and water quality, geologic related groundwater contaminants, and

utilizing well-water data to educate the public about important groundwater quality concerns where they live. He presented recent results of local well-water testing.

This timely and momentous program educated us about the reality of our drinking water problem and the importance of addressing the situation now.

*By Kaethe Gutierrez*

*For more information, go to <http://www.escarpmentnetwork.org/>*

If you are interested in becoming a board member, please contact Leslie Boden at [info@dcec-wi.org](mailto:info@dcec-wi.org).



*Sunset over the Bay*

*Photo by Mike Bahrke*

## **Welcome New DCEC Administrator Leslie Boden!**

Please help us welcome our new DCEC Administrator, Ms. Leslie A. Boden! Ms. Boden has been a resident of Door County for over 40 years and has a diverse background in environmental issues. She established the Ethical E-Waste Recycling Program, has worked with YMCA Summer Camps in teaching Recycling and Earth Preservation, organized Annual Earth Day Events, and for the past 3 years, has studied the Emerald Ash Borer invasion. Most recently, Leslie was the store manager for the Habitat for Humanity ReStore in Sturgeon Bay. More about, and an interview with, Ms. Boden in our next newsletter.

## **Welcome New DCEC Board Member Paul O'Neel!**

Kewaunee resident Paul O'Neel is our newest DCEC Board member. Paul brings a wealth of academic skills and practical experiences to the DCEC. He has degrees in conservation and wildlife ecology research and management from the University of Wisconsin - River Falls and the University of Wisconsin - Stevens Point. He also has hands-on environmental job experiences monitoring sharp-tailed grouse populations in North Dakota and enforcing vehicle emissions standards in Alaska. Working with people, protecting the environment, and helping others enjoy Wisconsin's abundant natural resources are some of Paul's passions.

## DCEC Leadership

PRESIDENT: Steve Eatough, Sister Bay

1st VICE-PRESIDENT: Mike Bahrke,  
Ellison Bay

2nd VICE-PRESIDENT: Phyllis Ingwersen,  
Sister Bay

SECRETARY: Paul Leline, Baileys Harbor

TREASURER: Eileen Andera, Sturgeon Bay

DIRECTORS:

John Beck, Sevastopol

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Paul O'Neel, Kewaunee

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