



UP Environment

UPEC: THE UP'S OLDEST GRASSROOTS ENVIRONMENTAL GROUP

Open House: 12 PM to 1PM EDT

July 16, 2016 - UPEC Board Meeting 1 PM to 4 PM EDT

Marquette Commons

Spring 2016



A Message From President Schmidt

In the Keweenaw, spring should be here by June 21st. I'm writing at the beginning of May, a particularly grudging spring in the upper Midwest on a thumb of land that sticks into Lake Superior. A clear, cold water lake that still leaves me in awe as I traverse the south shore: The Porkies, Brockway Mountain, Marquette's Presque Isle, Pictured Rocks right to the Soo.

The UP is not just Lake Superior; it also is bordered by the other two lakes, Michigan and Huron, plus all that is in between. Each with their own beauty. When UPEC was founded forty years ago, board members came from across the UP. Over the decades that tradition has continued. However, the focus of most activities remained in Marquette and Houghton/Hancock.

Our annual Celebration of outdoor activities made a move to Baraga this year to reach those who don't normally come to the events in either of those cities. We were happy with the large turnout, the support of Baraga County community organizations, the Keweenaw Bay Indian Community, the great speakers and the dedication of our board members. We are exploring the possibility of having Celebration events in different communities each year. I would like to start the ball rolling.

One of the reasons I decided to run for president is to broaden our membership base to encompass the entire peninsula. This can only be done effectively, even in this day and age, by personal visits. Even though distance conferencing is available and useful to encourage board member participation, a talk, an open house, conveys a message that we are interested in your communities, what you have to say, your concerns.

By the time you read this, I will have hosted UPEC Meet 'n Greet in Marquette and Escanaba and possibly other communities in the south central region to get to know you and your environmental concerns and introduce you to UPEC. In June I hope to be in the Soo, Munising, St. Ignace, and an environmental conference

in Lansing. In July, Seney Wildlife Refuge and Iron Mountain. August is still up in the air. If you would like me to come to your community where a meeting can be held, email me at Horsthear@yahoo.com. I will try to arrange to be there during the course of the year.

Our quarterly meetings will be spread around different communities so you can meet our board members. We plan to have open houses prior to board meetings which we will advertise in the local media.

So, I'm serious about making UPEC UP-wide. It's important to convey the message of not only keeping our natural environment natural, but to prevent long lasting damage. Some past extractive industries in the UP have been devastating, impacts of which are still affecting us today. What makes UPEC unique is the commitment we have to restoring and preserving our pristine lands and clear waters. With your financial help and individual support, we can continue UPEC's tradition for another four decades. I look forward to meeting all of you.

Some background information

I spent four decades in social services in the Milwaukee area working in almost the full range of human problems. My career coincided with the many changes occurring in our society: civil rights activities of minorities, women, our mentally and physically-challenged individuals; deindustrialization of our Midwestern communities; political polarization; and, of course, the environmental movement. Being in the midst of this, I became involved with different groups seeking changes which we hoped would lead to greater equality in our society. My community organizing skills evolved over the years. I have transferred those over to my work in volunteer organizations in the Keweenaw and now to the UP. Among the organizations in which I am active,

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A Growing Concern by Laura Rotegard, Superintendent, Pictured Rocks National Lakeshore

The Wake-Up Call:

Conditions at Pictured Rocks National Lakeshore beaches reached a point of fullness summer of 2015, never before experienced in the 49 year history of the park. The west end of Miners Beach close to Munising and popular with residents as well as visitors, hosted the most noticeable changes, being the favorite location for kayaking, a recreational activity soaring in popularity. However, use statistics compiled from traffic counters showed a 46% visitation increase across the entire park, from Grand Marais, to Sand Point, at all park attractions, on trails and in the campgrounds. An increase of this magnitude creates an infrastructure nightmare for any park.

Alerted to soaring numbers on July 4th weekend, park staff began to collect observations of crowding via photographs and daily logs. Although some believed the increase was due to the commercial kayak businesses, we observed that numbers of independent kayakers were increasing as fast as commercial users.

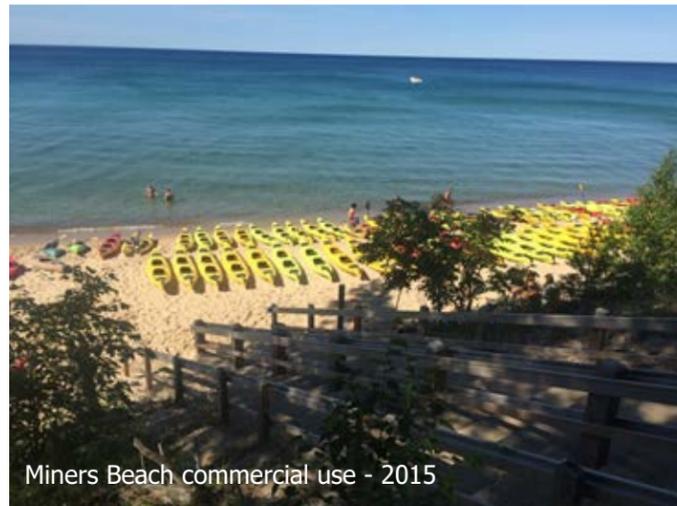
We also learned that the high use season had lengthened. Typically, the summer season commences 4th of July and ceases mid-August. During this 6 week period, a 51 car parking lot at Miners Beach may be full Friday-Monday. Summer 2015 saw 200-250 car days every day from June 20-September 20, with only a few days not spilling over into nearby woods at Miners Beach.

Concerns from visitors and local supporters were raised in July and August 2015 spotlighting the congestion in parking lots, on the beach and particularly on the 4' wide wood boardwalk that carries visitors from the parking lot to the water at Miners Beach's west end. Local citizens signed petitions in protest of the commercial uses on Miners Beach, and posted photographs of company kayaks to Facebook and social media. The park received calls from Congressman's Benishek's office as well as from local leaders asking us to respect access to the park and not arbitrarily limit use. With civic leaders and local naysayers, the park joined forces to understand the issues and find solutions.

Managing the Short Term 2015:

While the two businesses were operating under legal permits called a Commercial Use Authority (CUA)

conditions of those permits, enacted 2 years prior by the park, were loose with little to no mechanisms to require the businesses to change behaviors and/or lessen numbers. More importantly, the businesses had good safety records and the question had to be asked, "why limit a service that the public obviously wants, executed by a good partner?" So the issue became and remains: how much combined boating use, both commercially guided and privately initiated- is appropriate for this beach, its resources and facilities? With that asked, the park instituted a moratorium on new land based kayak businesses, until such time as carrying capacity could be determined.



Miners Beach commercial use - 2015

Finding Solutions - short and long term:

It is not the Park Service's best practice to limit use to popular sites, unless resources are becoming 'impaired'. Immediate examination of overflow parking areas by staff ecologists revealed no such damage, though some common shrubs, mainly blueberry had been heavily trampled. Equally, beach impacts were negligible except at midday landing sites, like Mosquito Beach, where sanitation facilities were lacking, 'toilet paper flowers,' bloomed. End of season analysis also corroborated that no significant resource damage had occurred. Impacts were of a 'social' nature, not so much on the natural or cultural side, requiring different tools and science to alleviate.

The park defined two types of issues; 1) land based congestion, and 2) water based safety concerns moving quickly to address these during the remainder of 2015 season. Working with the businesses, the park

requested operational adjustments, all outside the requirements of their permits, to which they 'voluntarily' complied. The end result was a minor lessening of the parking congestion at Miners Beach.

Successful commercial adaptations (client shuttles, boat unloading/loading during quieter times, using less popular beach areas), tested occasionally in 2015, have formed the backbone of new permit conditions for 2016 operations with the hope that major congestion issues will subside. In total, 24 new conditions have been built into 2016 CUA permits that will exit 95% of commercial vehicles from the area every day, require safer and more sanitary behaviors on the water and at landing zones, and create smaller, guided groups to improve safety and visitor experience.

In October 2015, the park, with civic leaders and boat operators, developed a workgroup that in five meetings defined issues, developed action items, selected priorities, developed teams and is implementing water safety action items. Summer 2016 will see increases in arrival communication to independent kayakers, those most at risk on the water, and a pilot program to staff beaches with volunteers to intercept and deliver effective safety messages. This group is pledged to seeing that every boater returns home safely.

In addition the park has posted 'no parking' signs along one side of the access roads to keep emergency response lanes open and to better define circulation. Park staff will be regularly patrolling and either warning drivers not to park or ticketing non-compliant vehicles. Sanitation facilities have been increased and obsolete ones will be removed, relocated or rebuilt.

Long Term 2017 and beyond

The park has engaged the services of two major research communities: social scientists to collect visitor use data to verify and corroborate 2015 observations, and a national team of landscape architects to inventory scenic resources along the 12 miles of shoreline boated by 30,000 kayakers, and viewed by 240,000 others on park partner Pictured Rock Cruises. Both teams will be onsite summer 2016, collecting information that will help management answer the primary question of establishing carrying capacity.

Once basic information is understood, the park will develop alternatives for use for Miners Beach in a two year planning process beginning October 2017. Sum-



Miners Beach parking - 2015

mer of 2017 a business team specialized in commercial services will be developing a plan for the park that will also inform management as to appropriate use limits. Stay tuned, that effort will have plenty of opportunities for public input.

So for those still hoping for a quiet paddle along the famous vistas of the UP's most scenic shoreline words to the wise: try a sunrise, a sunset or a midweek break to avoid crowds. We have it on good authority that the demand for a kayaking experience at Pictured Rocks is still a 'growing' concern.

For more information, contact:

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the environmental ones are Friends Of The Land In Keweenaw (FOLK), Torch Lake Public Advisory Committee, DNR Western Upper Peninsula Citizens Advisory Council, and the DEQ/Environmental Stakeholders group. Citizen involvement is a key element in maintaining our democratic society with a balance between interest groups.

The change from social services to environmentalism is still about working with people to achieve the goals of a healthy society and a safe environment. The two are not mirror opposites, but two sides of the same coin. Approaching my third year of full time residence in the UP I feel as invigorated as ever to move UPEC forward.

I live in Tamarack City, a little village north of Houghton, overlooking Torch Lake, one of Michigan's lakes polluted by mining companies in the last two centuries.

What Happened to the Grayling Reintroduction in Michigan?

by Bill Zeigler



When I was studying fisheries at the University of Michigan's School of Natural Resources my major professor was Karl Lagler. Lagler was one of the pioneers of Michigan fisheries. He proudly told us young students how he had collected a specimen from one of Michigan's last grayling populations. There have been several historical attempts to re-introduce grayling to Michigan and Wisconsin waters without success. According to retired Fisheries Supervisor Ray Juetten one such attempt was in the Otter River in Upper Michigan's Keweenaw Peninsula. This and many other historical reintroduction attempts failed. Reportedly, although the main population of grayling in Michigan was in Northern Lower Michigan's streams, the last population of grayling in Michigan was found in the Keweenaw Peninsula's Otter River. Grayling disappeared from the Otter River in the mid 1930's.

Troy Zorn, Michigan DNR fisheries research biologist and other researchers like Gaylord Alexander extensively checked grayling history for a study of the Au Sable River. The researchers found a historical account documenting that construction of the railroad to Grayling in 1873 and the discovery of a world

renowned recreational fishery in the Au Sable River led to the great increase in recreational fishery for grayling. Reportedly anglers came from all over the U. S. and Europe in "quest of Arctic grayling". This resulted in an increase in fishing guides and development of a specialized Au Sable River boat to float clients down the river to fish. The Michigan Fisheries Centennial Report states that the most famous grayling streams were Au Sable, Manistee, Muskegon, Boardman, Pine and Hershey (tributary to the Muskegon).

Grayling are relatively easily caught and very susceptible to exploitation. In those days with no bag limits it was reportedly easy to catch extremely large numbers (reportedly hundreds) of grayling. In part exploitation led to the demise of grayling populations in Northern Lower Peninsula rivers. The grayling is a member of the trout/salmon family of fish. Aggressive stocking of brook, brown, and rainbow trout established those species in places that only grayling were native. The grayling did not compete well with the other species of trout and other fish species. As other species of trout established themselves in former grayling waters grayling greatly declined.

Brook trout and other naturalized species of Michigan trout spawn in the fall. Grayling spawn in the very early spring. Pine logs were transported down to mills by river drives in the late 1800's. The timing of these very disruptive spring flooding and scouring events of the log drives were thought to be extremely detrimental to the spring spawning grayling natural reproduction. It appears logging permanently altered former good grayling habitat and facilitated the shift to other species like brook and brown trout.

Many reintroductions have failed due to transferring limited number of a species to minimal waters or in some cases; the wrong fish strain was used. This

was not the case in the most recent grayling reintroduction to Northern Michigan in the late 1980's. DNR fisheries research biologists studied potential strains and obtained two strains that were thought to best suited to Michigan habitat conditions. Grayling were introduced to 8 streams and 15 lakes in Northern Lower and the Upper Peninsula of Michigan. Grayling were reintroduced to the Au Sable and Manistee Rivers where they had been indigenous. However, a few streams in the UP were thought to be the grayling's best chance of successful reintroduction. Grayling do not tolerate competition even from other trout species very well. Several streams in Alger County had high water quality and barrier falls in the lower sections of the stream. Brook trout populations were limited in these streams and no other salmonid species were present. Introductions were made in 1987 and 1988 to the best candidate streams although follow up evaluation indicated the stocked grayling had moved out of the host streams. Surveys indicated no stream introductions were successful in establishing a naturally reproducing population of grayling.

Survival in a number of small trout lakes and ponds was significantly better and a viable sport fishery was developed in a number of the lakes and ponds targeted for grayling introduction. Grayling, like most trout species need to spawn in streams. Unfortunately the lake portion of the grayling reintroduction was an expensive "Put, Grow and Take" program and was finally dropped in the early 1990's.

In the end the experiment with reintroduction of grayling to Michigan failed to re-establish naturally reproducing populations. The reasons are not entirely clear although the consensus was that habitat conditions and certainly fish communities have changed significantly in the rivers where grayling were indigenous. More puzzling even in high water quality streams in the U P where competition from other fish and trout species was minimal the habitat was still not adequate

for grayling to establish a resident population. Apparently, some habitat aspect was missing. In the end, of course, grayling were not native to those UP streams where there was both high water quality and minimal trout species competition.



Grayling are similar sized to brook trout. The comprehensive text, Fresh Water Fishes of Canada states the average size is 12 to 15 inches in length. From personal angling observation many of the stream resident grayling we have caught (like brook trout) are more like 6 to 10 inches in length. Grayling readily will take small spinners although the most effective presentation is to use flies.

For those trout angling enthusiasts that want to fish for this species that was a significant part of Michigan's trout stream heritage; they will have to travel to a distant state for that experience. My family has found excellent stream and lake grayling angling in a number of streams and lakes in Alaska where they are both native in streams and stocked in lakes. This experience is also possible in some northern areas of Canada and to limited degree in some Northwestern Rocky Mountain States. If you get the chance to fish for this scrappy member of the salmon family, I would highly encourage you to take it.

UPEC's Mission

"As the longest serving environmental organization in Michigan's U.P., the Upper Peninsula Environmental Coalition (UPEC) strives to preserve the unique cultural and natural resources of the Upper Peninsula through public education, the promotion of sound land stewardship, and reasoned dialogue with communities, governments, industries and others with whom we share this land."

About UPEC... The Upper Peninsula Environmental Coalition has a four-decade track record of protecting and seeking to enhance the unique environmental qualities of the UP through public education and monitoring of industry and government. UPEC seeks common ground with diverse individuals and organizations to promote sound planning and management decisions for all the region's natural resources.

UP Environment is published quarterly and available online to share with family & friends. Send comments or contributions to UPEC by standard mail at **P.O. Box 673, Houghton, MI 49931**. Call us at **906-201-1949**. E-mail us at: **upec@upenvironment.org**. Website: **www.upenvironment.org** and **Facebook**.

Green Burial Movement Takes Hold on the Keweenaw Peninsula by Stephen Jukuri

For green burial advocates in the Western U.P., 2015 was a ground-breaking year. They are now able to carry their land use ethics to their graves.

Working in conjunction with the Keweenaw Green Burial Association (KGBA), two Houghton County municipal cemeteries—Portage and Chassell Townships—are now offering green burial options. While definitions of green burial can vary, at a minimum it means burial with biodegradable materials, no toxic embalming, and no concrete vault.

The two cemeteries offer residents and non-residents different options. Portage Township cemetery has waived the vault rule for all burials through their cemetery and is currently plotting a special green-only section that will be maintained as an open prairie with native wildflowers. Chassell Township has designated a separate green burial section which will be maintained as a natural woodland forest, and lots are already selling—17 and counting since they were made available last December. Chassell is also permitting winter interments for green burial plot owners, which eliminates a significant concern for those who wish to avoid embalming for winter vault storage. Both green burial sites permit grave markers that are flush with the ground.

While it is clear that green burial is less resource and energy intensive than conventional vault burials, many people still believe cremation is their best option. KGBA members point to the intense energy use and air pollution of cremation as reasons why people should consider green burial: it is like the difference between composting organic waste and incinerating it, except that cremation produces no usable energy in the process.

Green burial can also provide opportunities for environmental protection beyond that provided at gravesite. In fact, over much of the past decade the primary goal of the KGBA was to establish a conservation burial ground that restores and/or preserves the land to its most natural state. However, with barriers to establishing new cemeteries quite high in Michigan, in recent years the KGBA shifted its focus toward encouraging existing cemeteries to offer green burial within

their current sites. While the new green sections of both of these Houghton County cemeteries still fall a little short of a true conservation burial ground, the KGBA considers their existence to be a major victory in their mission to assure that local residents have a full range of burial options available to them.

To learn more about green burial and burial planning, the Portage and Chassell Township cemeteries, and the activities of the KGBA, they welcome you to visit their website at www.kgba.weebly.com and/or to find (and like) them on Facebook. The KGBA is also willing to share their experience and insights with people throughout the U.P. who are interested in creating green burial choices within their own communities.



KGBA members participate in a "green burial practicum" during the summer of 2015, where they learned about home funerals, green burial practices, and promotional strategies.

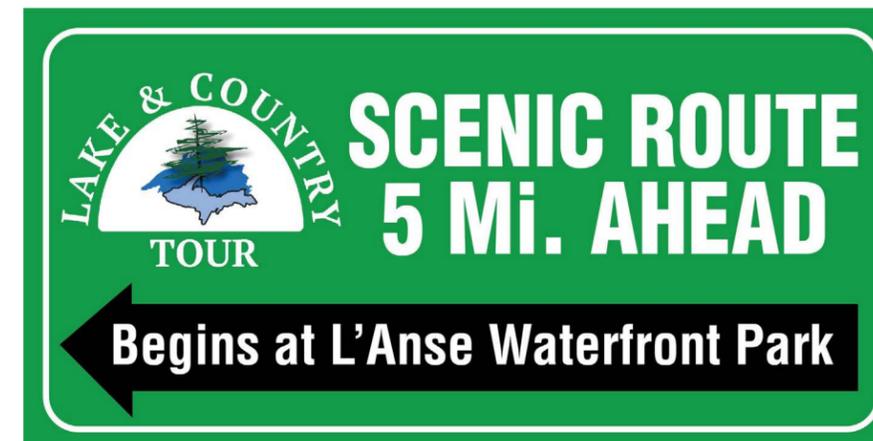
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THE LAKE & COUNTRY TOUR: GUIDING STRANGERS IN A GRAND LAND by Grant Fenner

Baraga County is home to many natural, historical, and cultural attractions, and until recently many have remained some of the best kept secrets known only to locals or to visitors who happened to have stopped by the local Convention and Visitor's Bureau (CVB). As of this summer things will be a little different. On Saturday, June 4th, bicycle riders will make an inaugural ride along Baraga County roads shared with motorcycles and other vehicular traffic along its newly marked, 52-mile long Lake and Country Tour route. Visitors following this scenic route will be experiencing and exploring many of the County's unique attractions that include, but are not limited to capturing 8-miles of pristine Lake Superior shoreline lying just a few feet from the shoulder of the road; passing by the Ojibwa ceremonial grounds at Pequa-quaming, rolling through the historic 100+ year old Finnish settlement of Aura - settled following a major strike affecting all of the copper mines on the Keweenaw in 1913 and 1914; driving past the road leading to Mt Arvon - Michigan's highest natural point; as well as wandering past three different sets of waterfalls.

There is also an economic component that justifies the time, money and effort that has gone into this project. According to a study of visitor behaviors performed by Shifflet & Associates (2010) and presented to the State of Michigan in 2011, the average visitor cohort to the U.P. spends \$375 per visit. However, visitor cohorts who are cycling, hiking and camping during their stay spend on average \$750 per visit in 2010 dollars. That being said, in order to more successfully vie for these visitor dollars, a handful of local activists/citizens and representatives from Baraga County's Chamber of Commerce, CVB, Road Commission and the Village of L'Anse met a year and a half ago to articulate a vision, define a route, create a name and lay out a plan for taking a concept for a piece of visitor infrastructure heralding Baraga County's natural/cultural history and crafting it into a finished product. In the months that followed the signage was designed, sign locations mapped and \$9,000 raised from local township and village governments. These monies enabled those steering this project to (1) contract with local suppliers to create and install forty-four road signs



Visitors planning on traveling this scenic trail are encouraged to pick up a brochure at the local Convention and Visitors Bureau (CVB) or from a weather-proof box located on a large wooden sign that describes the Lake and Country Tour located where it begins at the L'Anse Waterfront Park. A total of eighteen natural and historical destinations can be found along the tour's route.

along the tour's route to direct travelers along its length, (2) pursue the process of constructing a large rustic wooden sign describing the Lake and Country Tour for prominent display at the L'Anse Waterfront Park, and (3) prepare two 6'x8' billboards for a two year promotional campaign along Hwy 41 designed to help cause drivers to leave the highway and detour into L'Anse to explore this new scenic trail.

In summary, this project has served to unveil many of the hid-

den, natural and historic treasures found in Baraga County for enjoyment by local residents and visitors as a means of helping to inject valuable visitor dollars into the local economy. It is a project whose success is attributable solely to the collaborative efforts among local citizens holding a passion for making Baraga County a better place to live and by sharing many of its valued attributes that would otherwise remain hidden from view.

Preparing for a Changing Climate – Two Private Landowner Examples by Stephen Handler

No two landowners are alike. This might sound totally obvious, but it's worth stating the obvious sometimes. Everyone has different values that they're trying to maintain or improve on their land, and everyone responds to risks and incentives in a different way. I get to appreciate this diversity all the time, because my job is to help landowners and agencies prepare their woods for climate change. The organization I work for, the Northern Institute of Applied Climate Science (NIACS), is focused on helping people think about climate change in a way that's practical and relevant to their goals. With lots of willing partners, we're creating a growing network of examples that illustrate how landowners across the Midwest and Northeast are preparing and adapting to climate change, including many examples from Michigan: www.forest-adaptation.org/demonstration-projects. It might seem like an impossible job to measure up against an issue as big and complex as climate change, but I'm continually impressed with how foresters and landowners assess risk and come up with common-sense ways to prepare.

To show you what I mean, I'll describe two recent examples of climate adaptation from Michigan. Matt Watkeys and Warren Suchovsky are both private landowners who happen to have a lot of experience with forest management: Matt is the Forestry Assistance Program forester with the Marquette Conservation District, and Warren owns a logging company that operates all over the UP and northeast Wisconsin. Over the last 2 years, I've worked with both Matt and Warren to consider climate change on their properties. I led them both through the "Adaptation Workbook," a step-by-step process to design custom management actions that help adapt for climate change (Published version: www.nrs.fs.fed.us/pubs/40543, Online version: www.adaptationworkbook.org).

I recently talked with both Matt and Warren to learn more about the work they've done on their properties since we had our climate change discussions. Let's take a closer look and see what they've been up to!

Matt Watkeys Family Camp

Matt and his family own a 20-acre camp next to the Laughing Whitefish River near Deerton, MI. Their property includes a 12-acre stand of northern hardwoods that Matt intends to manage for sugarbush and wildlife habitat. When Matt considered climate change risks that might be most important for his woods, a few big things came to mind. Climate change has the potential to cause



more stress for sugar maple in the future, particularly if droughts become more common and if more variable snowpack will lead to freeze-thaw events that can damage fine tree roots. Beech bark disease (BBD) has also moved through Matt's property in recent years, which has removed an important food source for wildlife. The BBD outbreak was also a reminder that climate change might result in more pest and disease outbreaks that target particular tree species.

With these thoughts in mind, Matt planned a timber harvest to improve the resilience of his hardwood stand, or its ability to withstand future stress and change. The timber sale was implemented in late 2015, and a few key components were:

- Thinning the hardwoods to help keep the stand vigorous and healthy, which will give trees a better chance to withstand a variety of stressors
- Matt favored more red maple in this stand than he might have otherwise. Red maple is one of the species expected to be best able to tolerate future climate change.
- In gaps created by dying beech, Matt will plant a variety of tree species that are expected to gain suitable habitat in the UP under climate change. These include mast species like northern red oak, black walnut, and hazelnut. Matt will protect these test trees with tree tubes or fencing.

Warren Suchovsky Property

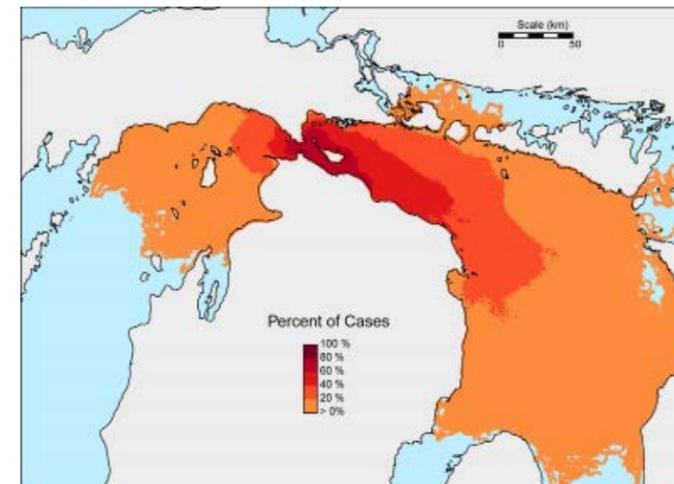
Warren owns 848 acres in Menominee County near Stephenson, MI. His property includes farm fields and several forest types, as well as the headquarters of his logging operation. Warren's management goals include managing the land for a sustainable income, providing habitat for a

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Enbridge #5 Update: Mackinac Straits Pipeline

by Constance Sherry

An article in the Summer 2014 UPEC newsletter, "Enbridge's Oil Trail Beneath Straits Focus of Concern" described Enbridge's #5 pipeline beneath the straits of Mackinac and the reasons for widespread concern about an oil spill from the aging 63 year old pipeline. Enbridge is a Canadian company that serves the Athabasca oil sands production facilities there. In the U.S. it is called the Lakehead System.



Percent of cases in which oil is present at any time after initial release. Dave Schwab, U-M Water Center

The thirty-inch pipeline #5 crosses under the water at the Straits after dividing into two twenty-inch lines. But it also runs along US2 in the upper Peninsula 90 miles from Manistique to St Ignace close to Lake Michigan, crossing 20 rivers and streams in its path. In an article in the Detroit Free Press, author Keith Matheny reports that this segment of the pipeline poses just as large or greater threat to water resources as the part under the Straits. Allyn Garavaglia, supervisor of Hudson township in Mackinac County, is quoted as being concerned about an oil spill in such a rural area. There are just over 200 residents in the township. "Pretty much what we would do is keep people away" he said. "We don't have any equipment for the containment of oil or anything like that. That would be Enbridge's responsibility."

Politicians have become vocal, some using the pipeline as a campaign issue in this election year. The ramifications from an oil leak in this most vulnerable area of the Great Lakes is bringing together both Republican and Democratic candidates. Not only has the

debate not split along party lines but residents from all parts of the state are seeking to increase pipeline safety regulations and calling for an independent safety study of the Straits pipeline.

Senator Rick Jones, a Republican state senator from Grand Ledge introduced legislation in April of this year to stop future pipelines from running through the Great Lakes. The bill, S.B. 880 would require operators of current oil pipelines to undergo a full risk analysis by a qualified independent third party. Senator Tom Casperson (R-Escanaba) does not support the bill. He pointed out that propane for heating U.P. homes flows through Line #5 as far as Rapid River. Jones in response said "Simply cut it off when it reaches the Great Lakes." It can still deliver all the oil and propane the Upper Peninsula needs. The line does not need to cross the Great Lakes to do that.

Another political figure is Lon Johnson (D), candidate for Michigan's first Congressional District seat. Clean water in Michigan is one of his top priorities. Johnson says there is more fresh water in the first congressional district than any other district in America. He says "The time is now to shut down Line #5 until it is proven independently to be safe. The impact of an oil leak from this aging pipeline is too important to be risked. How oil might move under ice is still unknown. We are lucky to have made it through another winter without an incident. There are too many uncertainties. With lack of data and no clear winter cleanup plan Line #5 is an unnecessary risk to this vital ecosystem."

On April 27 Candice Miller, U.S. Representative from Michigan's 10th district, introduced The Great Lakes Pipeline Safety Act of 2016 which calls for an evaluation of the integrity of pipelines as well as a study to determine the risks to the Great Lakes of spills or leaks under the Straits. It also would require the Administrator of the Pipeline and Hazardous Materials Safety Administration (PHMSA) to shut down the pipelines if they are determined to pose a risk to life, property or the environment.

The University of Michigan just completed one such computer modeling study that determined that 700

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Pipeline from page 11

miles of Great Lakes shoreline are at risk if pipeline #5 should rupture under the Straits. Enbridge counters that this model does not take into account the companies system of alerts and plans to shut off and control possible pipeline leaks. However, two recent incidents bring such arguments into question. In 1999 a leak in Enbridge Line #5 occurred on the north side of US 2 between Iron River and Crystal Falls in the Upper Peninsula. The mixed petroleum product leak was not detected by Enbridge but was reported by passing motorists who phoned the sheriffs department. The resulting spill (226,000 gallons of mixed petroleum products) was disposed of by burning it on the site. The burn plume lasted for 36 hours. Then too, residents in southwest Michigan still remember the Enbridge oil spill in 2010 from Enbridge pipeline 6B near the Kalamazoo River. This spill was also missed by Enbridge and, instead, was reported by a resident who saw oil rising in the water. A four-year long massive cleanup effort removed 80% of the 800,000 gallons of heavy crude. Michigan State University ecologist Stephen Hamilton points out that "no one is doing much research on how the oil might affect wildlife in the long term. Now, nearly six years later you can find oil rings on trees along the river that never came off. " These pipeline spills have some looking askance at statements like that of Ryan Duffy, Enbridge supervisor of regional communications and media relations. He is quoted in the Escanaba Daily Press as saying that if an oil spill occurred at the Straits "we'd be on it right away within hours."

Since the 2014 UPEC report, environmental groups such as 350.org, Oil and Water Don't Mix (oiland-waterdontmix.org), FLOW (For The Love of Water, flowforwater.org) in Traverse City and Native Americans from tribes such as the Sault Ste. Marie Tribe of

Chippewa Indians have joined hands in raising public awareness about the pipeline by holding meetings, rallies and circulating petitions. Such public activities can be quite effective. Recently, Plains LPG Services wanted to start using pipelines under the St Clair River, pipelines that were built in 1918 - 98 years old! The pipelines were only a few miles from Detroit's water supply facilities. The public outcry that followed from both residents and state and federal officials lead to a withdrawal of the permit request in April of this year.



When the elections of 2016 are finished and politicians' strong rhetoric has calmed, environmentalists and citizen activists must keep the pressure on campaign promises of our elected officials. And we must ask ourselves how much of a risk is low enough to keep Line #5 in use.

We have much to learn by studying nature and taking the time to tease out its secrets - David T. Suzuki

Ways to Support UPEC

Consider contributing to UPEC in honor or memory of a special friend or loved one.

When you make a gift on behalf of another person, we will send an acknowledgment of the gift to that person or his/her family, so enclose mailing information. When you contribute on behalf of someone else, encourage them to become a UPEC member through your gift.

Do you or someone you know have a wedding or other special celebration in the future?

Consider making it a "green occasion" by designating UPEC as a recipient of honor gifts.

UPEC has a JustGive link at its website that can help you to do this.

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Climate adaptation from page 8

variety of songbirds, and protecting riparian and ecological features on the property. Warren recently had Rexx Janowiak, a consulting forester from Green Timber Consulting Foresters, prepare a 20-year NRCS Management Plan. I worked with Warren and Rexx while they were preparing the plan to help them consider climate change impacts. The final plan is available on the NIACS website: www.forestadaptation.org/suchovsky.

One of the first areas Rexx recommended addressing was a lowland conifer stand. Researchers and managers agree that lowland conifers are the most vulnerable cover type under climate change, because warmer temperatures and changing precipitation patterns could be beyond the limits for many northern species like balsam fir, northern white-cedar, and black spruce. Also, warmer winters (like this past winter) will make it more difficult to operate harvesting equipment in these lowland stands. Despite these risks, Warren says, "We can't just write these areas off, because they grow a tremendous amount of timber!" Rexx and Warren developed management recommendations for these stands to help them stay healthy, while encouraging a diversity of species and age classes and favoring a few species that might fare better under future conditions. Here's what Warren recently did:

- Create patch clearcuts throughout the lowland conifer

stands to encourage regeneration of tamarack, balsam fir, and black spruce. Having a young age cohort of these species can reduce their overall risk.

- Retain random patches of cedar, black spruce, white pine, and other species to keep an older age cohort and to provide a seed source.

- Retain individual white pine throughout the patch clearcuts as seed trees, to gradually increase the proportion of this species. White pine is one of the conifers expected to do well under future climate change.

The Moral of the Story

Both of these examples illustrate a great point about preparing for future climate change - we can make decisions RIGHT NOW that reduce risk and keep forests healthy, and good forestry practices offer "win-win" opportunities to prepare for future change. We'll keep following Matt and Warren's examples, and creating more of these real-world case studies on our website: www.forestadaptation.org. Contact me if you're interested to learn more about how climate adaptation could make sense for your property or the lands that you manage!

Stephen Handler (sdhandler@fs.fed.us; 906-482-6303x21) works with the Northern Institute of Applied Climate Science (NIACS) and coordinates the Northwoods Climate Change Response Framework. Contact Stephen with any questions about climate change impacts or adaptation.



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Indian River Trumpeter swans by Gregg Bruff