UPPER PENINSULA ENVIRONMENTAL COALITION

Summer 2020

UPEnvironment

ENBRIDGE LINE 5: A DISASTER IN WAITING

A Statement from the Upper Peninsula Environmental Coalition and Friends of the Land of Keweenaw

The Upper Peninsula Environmental Coalition (UPEC) and Friends of the Land of Keweenaw (FOLK) support Governor Gretchen Whitmer and Attorney General Dana Nessel in their efforts to hold Enbridge responsible for the safety of Line 5.

The main purpose of Line 5 is not to supply propane to Michiganders; it is to transport light crude oil and natural gas liquids (propane) to Sarnia, Ontario. The Governor's UP Energy Task Force spent a year listening, reviewing and developing viable alternative propane supplies to replace Line 5. They came up with 14 recommendations that would set up a modified system of obtaining propane from multiple sources for UP residents, especially in the case of unexpected disruptions. If implemented, the report suggests citizens of the UP would be able to reliably receive propane at reasonable costs and end the need for an ill-planned tunnel project under the Straits of Mackinac.

Enbridge, a Canadian company, recently revealed that an anchor supporting the east pipeline had shifted, sustaining significant damage. A rupture of the pipeline would have realized our worst fears.

This fast moving scenario led to a confrontation between Governor Whitmer and Enbridge. The governor demanded full disclosure and full shutdown of the pipeline. The company, after partial compliance, restarted pumping through the west line. Attorney General Nessel stepped in and filed a request for an injunction. The court ordered all pumping be stopped on Line 5 and Enbridge was to provide all documents related to the damage. According to media reports, the company complied. The arguments at the hearing on June 30th revolved around state jurisdiction and restarting pumping on the west line of Line 5. Judge James Jamo will rule within the next two weeks provided Enbridge can substantiate their safety claim.

Why are we so concerned? Enbridge is responsible for almost ten million gallons of oil spills from 1996 through 2014, including the Line 6 rupture in 2010 along the Kalamazoo River. What makes it worse is a culture of manipulation of regulatory and political systems in North America. As recent news reports show, Line 5 remains in constant danger of being damaged. Assurances by Enbridge and its allies ring hollow, which is why we support the Governor and Attorney General's actions to protect our Great Lakes and the State's citizens by shutting down Line 5.

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Line 5 runs the length of the UP before crossing under the Straits of Mackinac to downstate Michigan and the terminus in Sarnia, Ontario. While the line presents hazards all along its route, the possibility of a catastrophic underwater spill in the straits is the prime concern.

IRON COUNTY'S ABANDONED DOBER MINE

A once and future problem

Bette Premo, PhD

The Dober mine is located south of the City of Iron River, Michigan. It is part of an interconnected complex of historic but now abandoned mines also made up of the Hiawatha and Isabella mines. The mines were opened in the late 1800s and iron ore was mined and shipped directly from the Riverton Iron formation at the Dober-Hiawatha-Isabella mine complex. This formation is underlain by slate and pyrite. When exposed to air and water, the fine-grained and porous pyrite rapidly oxidizes to form iron sulfate and sulfuric acid.

Although the mine complex during its operation was not particularly wet, acid waters were pumped from the mine into the Iron River. The Iron River rapidly neutralized this acid causing the former soluble iron to become an insoluble iron hydroxide precipitate. This turned the waters into an orange-yellow color, commonly called "yellow boy." As many other mines operating in the Iron River District also produced acid waters and the economy was almost totally supported by iron ore mining, the discolored river waters were mostly accepted in the early days. When the Dober-Hiawatha-Isabella mine complex closed, the flow of acid waters into the river stopped, as did the yellow boy formation.

Production at the Hiawatha mine ceased in 1966 and all the mines of the complex flooded as the workings of the three mines had been interconnected by stopes, cross cuts,

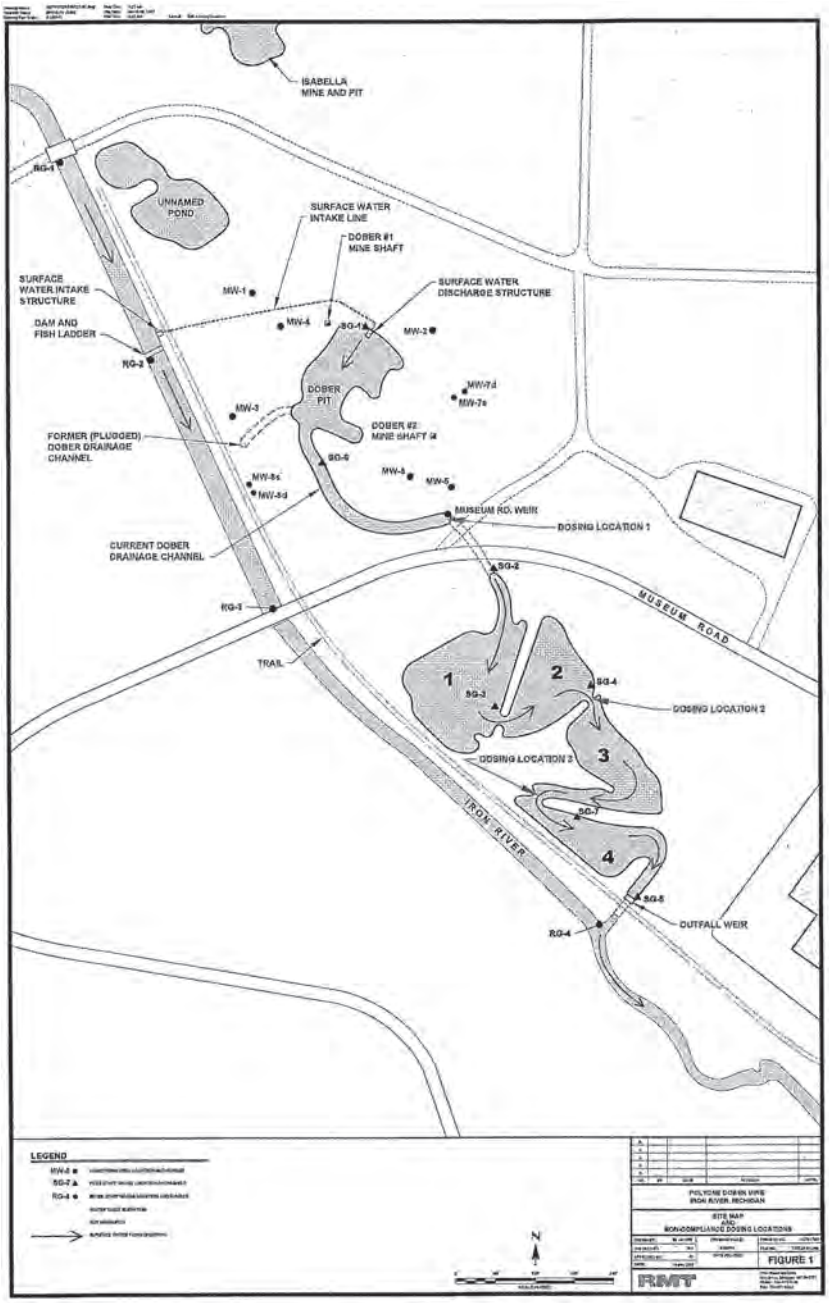
A pool of water at the outlet from the Buck mine settling ponds into the Iron River, with evidence of "yellow boy."

MAGGIE SCHEFFER

and drifts. Six years later, in the fall of 1972, water was noticed in the bottom of the open Dober mine pit. Over a period of 45 days it rose 100 feet. Residents were quite surprised to see the Dober and Isabella mine pits flood as they had been dry for as long as anyone could remember.

The rising acid waters were of more than just idle curiosity. The main sewage line feeding the nearby Stambaugh Sewage Treatment Plant passed immediately west of the Dober mine pit. When the acid waters reached the level of the sewage line they entered corroded sections of the cast iron pipe and flowed into the plant, disrupting the bacteriological sewage digester. This problem was temporarily solved by inserting a smaller-diameter plastic pipe inside the sewage line and by lowering the level of the acid water about two feet by dredging a ditch from the Dober mine pit to the Iron River.

This action diverted the acid directly into the Iron River, resulting in the seemingly intractable problem of persistent acid water drainage and billowing plumes of yellow boy forming in the river at the Dober discharge ditch. This insoluble iron hydroxide hydrate discolored the Iron River from Stambaugh, past the downstream Iron County communities of Caspian and Gaastra, to the state line with Wisconsin where the roiled waters entered the Brule River some seven miles to the south. This occurrence soon drew the attention of the State of Wisconsin and the Nicolet National Forest. Pressure from these groups caused the State of Michigan to provide funding to study these problems in 1974.



Site map of the Dober Mine system.

COURTESY OF BETTE PREMO

Mine studies funding came to what was then called the Institute of Mineral Research (IMR) of Michigan Technological University (now part of MTU's Institute of Materials Research) through the Geological Survey Division of the Michigan Department of Natural Resources. Dr. Allan Johnson, a young research engineer at IMR with degrees in geological engineering and geology, was given the responsibility of overseeing the acid mine water drainage study plus issues related to mine subsidence. These studies resulted in a series of reports that initially addressed these problems. Supplemental funding to follow up on the recommendations of the initial reports led to a plan for addressing the acid drainage problem at the Dober mine: a synergetic acid water pond treatment system.

Reviewing all options, it was recognized that the acid water from the Dober pit was readily neutralized by the Iron River and that the iron was converted to an insoluble precipitate. It was reasoned that if this could be done at a site away from the river a possible solution was at hand. Further development of this idea was to use the Dober mine open pit as a mixing chamber for neutralization and a series of natural pond areas south of the mine as settling ponds for further treatment of the effluent. The goal was to promote settling of the insoluble iron precipitates before returning a neutralized and largely iron-free effluent to the Iron River.

The favorable attributes of the synergetic pond system for treating acid mine water from the Dober mine, combined with persistent efforts by individuals of the local Acid Mine Water Clean-Up Committee, MTU, the Michigan Department of Natural Resources (MDNR), the Natural

MAGGIE SCHEFFER

Dr. Bette Premo speaking to a group of local residents at the June 2019 Legacy Mine Tour, organized by the Iron County Watershed Coalition.

Resources Commission, Trout Unlimited, the Outdoor Clubs of Iron County, and others, finally paid dividends. In August 1985, then Governor James Blanchard came to Iron River to present an Act 307 (Michigan's Superfund) check for $140,000 for the pond system design and construction. By late 1988, the system was installed and operated by the State of Michigan.

In 1994, the MDEQ brought suit against M.A. Hanna Mining Company, the company responsible for the former Dober mine, in response to the acidic water's impact on the Iron River. The parties agreed to a consent decree that required Hanna to monitor and prevent further contamination of the Iron River at the site of the old Dober mine. By the time the consent decree was completed Hanna had merged with another company to produce PolyOne Corporation. Polyone held the National Pollution Discharge Elimination System (NPDES) permit (which was handled by MDEQ) stipulating monitoring of the outfall from the Dober Mine. From 1994 until 2012 Polyone monitored the outfall and completed studies to determine the state of acid production in the pit.

In July 2012 Polyone submitted a Notice of Completion to MDEQ and received no response. In October 2012 Polyone submitted a request for a Certificate of Completion, which was ultimately issued. However, the Certificate of Completion included instructions to continue with certain remediation work.

Polyone objected to these additional requirements, claiming that the original consent decree included no such provisions. In response, MDEQ argued that the employee who signed the Certificate was not authorized to do so. MDEQ also argued that the additional requirements included in the Certificate were valid under the terms of the consent decree. At Ingham County Circuit Court on March 2, 2017, Judge William E. Collette agreed with Polyone and ordered MDEQ to pay Polyone for the work that they continued to do post receipt of the order of completion. MDEQ appealed the circuit court's decision to the Court of Appeals (COA) and the COA upheld the circuit court. MDEQ filed for reconsideration with the COA and was denied. MDEQ then filed for leave to appeal with the Michigan Supreme Court and was denied there as well. That is where the legal situation stands today.

The Dober mine synergetic pond system has been operating for a little over 32 years since its construction. For the most part, the system has performed well. An estimated 600,000 tons of iron have been precipitated from acid waters issuing from the Dober mine that otherwise would have gone into the Iron River.

Still, some problems have been encountered during this period. High water levels in the spring sometimes flood the Dober mine pit and pond system, which make its functioning questionable until water levels drop to normal. In addition, presently there is no monitoring of the Dober outfall, no maintenance of the settling ponds that prevent or minimize the acid runoff to the Iron River—ponds that are filling with iron precipitate up to and above the level of inflow pipes from the river—and no safety fences surrounding the area to prevent children from playing and falling into the acid pit ponds.

We had come a long way from the days when the Iron River ran orange, full of iron hydroxides and other heavy metals. Now, unfortunately, we are very close to reverting to those same conditions.

Bette Premo holds a doctorate degree in limnology. She is president of the Iron County Watershed Coalition.

MICHIGAN BALD EAGLE NESTING RECOVERY A TRUE WILDLIFE SUCCESS STORY

Bill Ziegler

As we all know, the bald eagle has been our national bird and symbol since 1782. Bald eagle numbers declined over the years due to loss of habitat and poaching, with accelerated decline beginning in the 1950s due to lack of successful natural reproduction. This decline in natural reproduction was because of egg breakage due to unnaturally thin shells. The thinning eagle egg shells resulted from the bird's exposure to environmental contaminants and bioaccumulation, mainly of DDT, a formerly widely used pesticide. Bald eagle populations greatly declined in Michigan and across the bald eagle range, especially in the Lower 48 states.

Bald eagle population decline

A noted bald eagle expert, Sergej Postupalsky, wrote, "The bald eagle was all but eliminated as a breeding bird at the Great Lakes shores and agricultural and fruit growing areas of Michigan. The bald eagle was placed under special federal protection prior to the passage of the Federal Endangered Species Act. The eagles' Federal Protected status started in 1967 and the bald eagle was one of the first animals to be listed in the Federal Endangered Species Act of 1973. The low point of the Michigan bald eagle population was found to be about 86 nesting pairs of eagles in the 1970's." (See attached maps of active eagle territories from that low point to present).

Bald eagle populations continued dropping through the 1960s and early 1970s according to surveys conducted annually by Postupalsky. The first sign of improvement occurred in 1977 and surveys indicted the state eagle population finally started increasing in 1981. I got my first year-round fisheries job in the Ottawa National Forest (Western UP) in 1978 and was pleased to observe a number of successful bald eagle nesting locations during the course of my fisheries work on inland National Forest lakes. At that time, wildlife biologists reported bald eagles with food sources inland, away from Great Lakes fish contaminated at that time were holding their own better with natural reproduction. Of course, after living in other parts of Michigan I knew how special it was to see active bald eagle nests with young eagles produced annually along the shores of a number of area water bodies.

Food

Bald eagles nest near water as a result of their dependence on fish as a major part of their diet. A compilation of food

Our national symbol, the bald eagle.

BILL ZIEGLER

Bald eagles build some of the largest of all bird nests.

BILL ZIEGLER

By 2007, populations had recovered so well that the bald eagle was taken off the Federal Endangered Species List.

studies revealed that fish comprised 56% of the diet of nesting eagles, birds 28%, mammals 14%, and other prey 2%. Eagles will also eat carrion. Some eagles are injured each winter feeding on vehicle-killed deer carcasses as they try to fly as vehicles approach and can be injured by the passing car or truck. Eagles are known to steal fish from their smaller cousins, the osprey. This winter I observed a bald eagle dive down and try to steal a fish from an otter that had just caught it and was eating it on the edge of the lake ice. Postupalsky reports banding has produced no evidence that adult eagles nesting south of Lake Superior are migratory, only moving nomadically when food becomes unavailable locally.

Nesting habitat

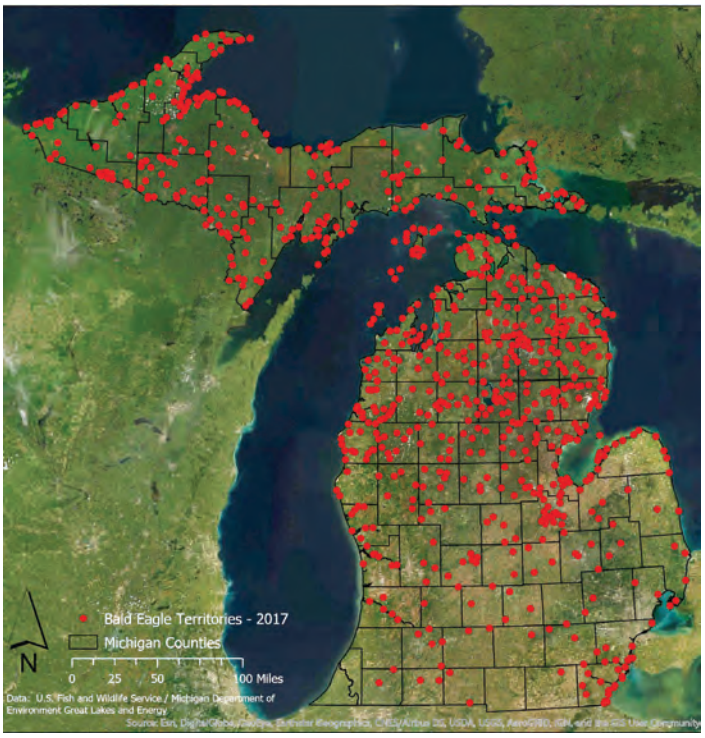
In northern Michigan bald eagles typically nest in large white pine trees that are located near lakes or rivers, sometimes right on shore. Postupalsky reports that bald eagles will also use large red pine, and deciduous trees such as cottonwood, aspen, maple, etc. as nest trees. Nesting begins late in winter, in mid-February. They are reported to be some of the earliest bird breeders. Ornithologists report bald eagles lay two to three eggs in their nest annually.

Eagle recovery

Bald eagle monitoring and active nest/territory surveys have been conducted in recent decades by the US Fish and Wildlife Service and Michigan Department of the Environment, Great Lakes, and Energy (formerly the Department of Environmental Quality) in partnership with other agencies, universities, corporations, and individuals. With cessation of the use of DDT and some other bioaccumulating contaminants, along with the protection of key habitat, eagle nest success and subsequent eagle populations improved. Bald eagle populations improved so much that they were removed from the Federal Endangered Species List in 2007. The two Michigan maps of successful bald eagle territories created by Chris Mensing, fish and wildlife biologist of the East Lansing US Fish and Wildlife Service Office, dramatically show the great improvement in bald eagle populations in Michigan. Mensing revealed that in 2019 eagle surveys in Michigan found 849 active territories, up dramatically from the low population point of 86 in the 1970s.

Nesting territory

Mensing said the resource agencies don't count eagle nests; they count active eagle territories, which is more indicative of their actual population. Mensing states there are many more eagles' nests than active eagle territories. I have observed that for many years in Iron County, Michigan. In one eagle territory that has appeared to be active every year for decades a pair uses a nest that is typically active on the edge of a large lake about three years out of four. During years when that bald eagle pair do not use that nest they use a nest site on another nearby, more remote lake. Another lake in northern Iron County has three nest sites near the shore,



COURTESY OF BILL ZIEGLER

The number of bald eagle territories in Michigan increased dramatically from 1978 to 2017 – evidence of the species' recovery.

although only one site is used each year. Mensing said that in the 849 active eagle territories counted in the 2019 Michigan survey, there were 1,630 standing eagle nests located.

Life history

Bald eagles are typically immature for their first four years and do not have the adult colors of a white feathered head and tail. Cornell University's Ornithology Department reports the oldest bald eagle on record was 38 years old, although typically they live about 20 years in the wild. Bald eagles build some of the largest of all bird nests—typically 5 to 6 feet in diameter and 2 to 4 feet tall, and ranging in shape from cylindrical to conical to flat, depending on the supporting tree. Cornell reports some nests were found to survive for decades in large trees. Bald eagles are thought to mate for life, although if one mate dies the other will reportedly seek a new mate.

Some young nature enthusiasts may not realize how excited their grandparents would have been to see a bald eagle sitting on their nest or soaring nearby. I was an enthusiastic young naturalist growing up in lower Michigan. I was constantly going around lower Michigan on nature photography outings and canoe trips. For many years I went birding during the annual migrations with my high school environmental biology teacher at the nearby Point Pelee National Park in Ontario (a migration concentration point for Lake Erie). I did not see a wild bald eagle until I moved to the inland area of the Upper Peninsula of Michigan after college graduation. Due to considerable efforts by Federal and State conservation agencies a number of species of wildlife and fish have greatly improved in their abundance and are now relatively common. A few Michigan examples include wolves, trumpeter swans, sandhill cranes, elk, wild lake trout, and coaster brook trout. The bald eagle recovery in Michigan and across the 48 contiguous states is one of the great wildlife recovery success stories of our time.

BILL ZIEGLER

Some young nature enthusiasts may not realize how excited their grandparents would have been to see a bald eagle.

Bill Ziegler is a frequent contributor to UP Environment.

TESTING THE WATERS OF DIGITAL STREAMING

As the novel coronavirus made its way across the world early in the year, before canceling events became necessary, the UPEC board decided to postpone Celebrate the UP indefinitely until we knew more. We then shifted to a virtual Celebration during Earth Week in April, featuring talks about water access by Monica Lewis-Patrick, climate action by Sarah Green, and regional food by Angie Carter. Because it was well received, the president and vice president decided to continue broadcasting on important topics like Line 5.

Streaming online has become part the "new normal." The technology is not new, but the physical isolation necessitated by the virus has pushed us into new territory and changed our lives. As the printed page loses ground, UPEC wants to find people with an environmental interest wherever they seek information. We will continue our newsletter, balancing it with new sources of information and continually evaluating the best way to reach you. Does online media seem more relevant and immediate, or do you prefer the order and reliability of print? UPEC will continue to advocate for the environment as a unique and relevant voice with your help and feedback.

We divided our programming into three shows:

- **This Is It!** covers all things environmental. The shows flow out of what we see happening in our world with a focus on local events, bringing forth informed perspectives on the latest issues. Our most recent installment, "Waste No More: New Legislation Points Toward Recycling in Michigan's Future," explored new bipartisan legislation that could transform recycling and waste reduction in Michigan.
- **The Energy Show** focuses on UP energy issues like dealing with Line 5, high electric costs, and the alternative paths we might take for a brighter future. The most recent episode—a double bill of "Enbridge Line 5—Decision Time" and "Large Solar Farms & Migratory Birds"—updated listeners on the Line 5 saga and talked about the hazards large solar farms present to migratory species of birds.
- **Let's Talk** is where we connect people who are building community through visionary, imaginative, inspiring, and creative efforts. It starts conversations about the meaning and implications of a range of relevant community issues like recycling, new cooperatives, intentional communities that rework communes, local food movements, living off the grid, and finding new ways to live together and affirm our strength and diversity. A recent example, "The Future of Energy in the UP: Make Your Voice Heard," explained and explored the UP Energy Task Force and its work.

You can view recordings of all these streams anytime on UPEC YouTube channel: https://www.youtube.com/channel/UCi_SGwX-pXW4wCz646OPJDQ.

Can we build an informed and engaged virtual community over the wide area of the UP and beyond? You can help us find out what works and make changes to reflect our changing world. We've created a short survey on our website where you can quickly give us your ideas:

https://upenvironment.org/survey/

Your participation in our streaming programs, and your input and suggestions, will shape the future of the UP environment.

What else can you do? Simply listen. Participate in our programs, ask questions, make comments. Send in ideas. Tell us what you're doing, thinking. Spread the word. If you're not on our email list, fill out the survey and we'll put you on it. Talk up our programs. The way to survive and thrive is for UPEC to carry on its mission of education and advocacy. The "new" normal is how we get it to you.

If you'd like to get notices of upcoming UPEC livestreams, just send a note with your name, address, and email to upec@upenvironment.org.

UPEC GRANTMAKING BENEFITS YOUTH & COMMUNITIES

Our 2020 Environmental Education and Community Conservation Grants

Each year, UPEC invites educators and organizations concerned with the UP environment to apply for funding through our Environmental Education and Community Conservation grant programs. The two programs share a common goal: to encourage and enable visionaries who want to create a more flourishing UP, both socially and environmentally. Our Environmental Education program makes small, strategic grants of up to $500 to teachers and other educators who are pursuing innovative ways to increase the understanding and appreciation of nature among UP youth and the wider community. Our Community Conservation programs offer robust funding of up to

$10,000 for a variety of projects, many of which involve the acquisition of critical parcels of land for preservation.

2020 Environmental Education Grants

As we all know, the Covid-19 crisis has hit education hard, upsetting the usual means of teaching and forcing schools to close classrooms and take instruction online. While some of the projects below have been delayed indefinitely or canceled, we list all the 2020 grantees to show our appreciation for the breadth of innovation we recognized.

The Dickinson Conservation District for the **Shark Tank Sustainability** program, in which students compete to develop the best project in areas such as managing invasive species or improving water quality.

The Ontonagon Conservation District for its **Educational Outreach Brochures** project. The brochures provide basic information about the District and its activities.

Michigan Tech's Center for Science & Environmental Education for **Earth Day: Celebrating 50 Years of Stewardship,** a week-long program with a wide range of stewardship activities for kids.

Gwinn Middle School for its **Salmon Release Field Trip.** Students care for eggs and help raise hatchlings before the fish are released into the wild.

Aspen Ridge Middle School for its student-initiated **West End Trails** project. The young conservationists will use the money to upgrade the school's trail system and make it more accessible.

MSU Extension for its ongoing **Life of Lake Superior** project, a holistic effort to encourage environmental awareness and more sustainable lifestyle choices.

Superior Hills Elementary School for its **Superior Hills Outdoor Learning Spaces** project, which includes a natural playground.

2020 Community Conservation Grants

Three of the four grants awarded in 2020 will help preserve key parcels of UP wildlands; the fourth funds an innovative outreach program.

A grant of $10,000 was awarded to Keweenaw Natural Areas, a conservancy active in Keweenaw County, to help fund **The Missing Linkage piece of the Gratiot River watershed**—an acquisition that helps connect currently protected tracts on the north shore of peninsula.

The Keweenaw Land Trust was given $8,000 to assist in the protection of **Lake Glazon,** also in Keweenaw County, as part of a push to conserve coastal habitats.

The **Wild and Scenic West Branch of the Ontonagon River** will be better protected with the help of our $10,000 grant to the Trust for Public Land. UPEC is pleased to play a part in bringing this long-standing acquisition of 4.6 miles of river frontage into its final stages of completion.

Finally, a $2,000 grant to the Cedar Tree Institute for its **Sacred Waters** project will underwrite this wide-ranging effort, which reaches from essays on the "gift of water" to educational forums, tree plantings, and advocacy stands.

Going shopping? You can help UPEC at the same time!

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amazonsmile

Do you shop at Econofoods? If so, please save your receipts and donate them to us. Keep an envelope handy at home where you can deposit the receipts after shopping. When it's full, mail them to us. We turn them in to Econofoods' "We Share" program and get a donation!

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COURTESY NATIONAL WILDLIFE FEDERATION

UPEC has called for permanently shutting down Enbridge's Line 5 pipeline, which passes through the Straits of Mackinac. See p. 1, this issue.

Support UPEC by becoming a member or renewing your membership today! Just fill out the form below. All memberships run with the calendar year. Not sure if your membership is current? Email us at upec@upenvironment.org – we'll be glad to help!

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You can also join, renew and donate online at www.upenvironment.org/join-donate