

Clean Water Action Council

OF NORTHEAST WISCONSIN

CELEBRATING 36 YEARS OF WORKING TO PROTECT PUBLIC HEALTH AND THE ENVIRONMENT IN NORTHEAST WISCONSIN

WINTER 2020 - 2021

CWAC Continues to Fight for Mining Protections ❄️

Introduction by CWAC President Dean Hoegger

Clean Water Action Council was formed in 1985 to fight for the cleanup of the Fox River. That focus quickly expanded as CWAC was asked to help bring attention to environmental issues regarding the Flambeau Mine. In 1991, members were urged to support legislation proposed by State Reps. Harvey Stower and Spencer Black that among other protections, would introduce a moratorium on mining until certain provisions could be met. It was not until 1997 that the Wisconsin State Senate passed the Mining Moratorium Bill.

In the meantime, Exxon and Rio Algom had proposed a mine near Mole Lake and Crandon. CWAC called upon members to attend a hearing on April 23, 1994, to express concerns about the proposed Crandon Mine. Contaminated wastewater would be dumped into pristine trout streams at a rate of 2.9 million gallons per day. The WDNR said that in nearby creeks, sulphate levels would rise fivefold and lead and arsenic levels threefold.

Longtime CWAC members may remember that their efforts, along with many state environmental groups and Native American tribes, successfully stopped the construction of the mine. The threat was permanently ended when the Sokaogon Ojibwe and Forest County Potawatomi were able to purchase the mine site for \$16 million in 2003.

However, environmental threats from mining would return, beginning in 2011 with Assembly Bill 499, which dramatically loosened Wisconsin's iron mining regulations. This cleared the way for Gogebic Taconite mining company



The Flambeau Mine on the banks of the Flambeau River. (Photo by Bob Olsgard of Sarona, WI, 1994).

to construct an open pit low-grade iron ore mine near Lake Superior. At that time, CWAC actively shared the concerns of the Bad River Ojibwe Tribe about the impact this mine would have on area wetlands, tribal rice beds, drinking water, and the quality of life for the tribe. Fortunately, Gogebic Taconite withdrew from the project.

Then in 2017, Act 134 repealed the Mining Moratorium Bill which opened up the state to sulfide mining. Wisconsin Conservation Voters attributed Governor Scott Walker's "extreme anti-conservation agenda" and State Sen. Tom Tiffany who "loves toxic mines" for again opening up Wisconsin to metallic sulfide mining. Support by Wisconsin Manufacturers & Commerce, noted by some as Wisconsin's shadow government, also promoted the bill. Efforts made by our members to educate lawmakers that this was a bad bill were unsuccessful, even though no sulfide mines had

operated and then later closed without significant pollution. The partisan bill was passed.

Today, we must be more vigilant than ever. Without the protections of the Mining Moratorium Bill our water resources will be at risk. The recent exploratory drilling near the headwaters of the Wolf River by Badger Minerals indicates the threat is real.

Read more in this newsletter about mining in Wisconsin and the threats to human health and the environment and watch the three part series about the Wild and Scenic Wolf River, Keepers of the Water at:
<https://wolfriveractioncommittee.com/2020/08/03/keepers-of-the-water-1996-film/>

The History of Mining in Wisconsin

By Lauren Felder

Mining is a large part of Wisconsin's history, so much so that it is even reflected in the state nickname. Wisconsin has been known as the "Badger State" since before it was even a state, although the phrasing did not stay the same. In the 1820s, there was a lead mining boom in Wisconsin that led to an influx of prospectors. During the cold winter months, miners did not have anywhere to live, and many took shelter in the mine tunnels. The similarity in this behavior to the behavior of tunneling badgers earned these miners the nickname "badger boys" or just "badgers." By the 1840s, the nickname began to be associated with state pride, and in the 1880s, the University of Wisconsin-Madison began to use the nickname for its sports teams, leading to the creation of Bucky Badger.

Lead ore was the first metal to be mined by European settlers in Wisconsin. Native Americans mined the metal for thousands of years to use it in ornamental decorations. The earliest mention of lead mining in Wisconsin by a European dates back to the mid-1600s, although the industry did not become a large part of the state economy until the 1820s and 1830s.



Miners in the present-day Fountain City, WI area; 1902. Courtesy of Wikimedia:
https://commons.wikimedia.org/wiki/File:Fountain_City,_WI,_1902,_Oenning%27s-Quarry.jpg

During this period of the "lead rush," Grant, Iowa, and Lafayette counties were some of the largest lead-producing counties in Wisconsin. The lead mining industry peaked in the 1840s and by 1849, most lead miners switched to zinc mining, farming, or headed west to join the California Gold Rush.

Zinc was discovered in Wisconsin beginning in the 1850s at the bottom of spent lead mines and helped to fill the void left by the end of major lead mining operations. Mineral Point, Wisconsin, which began as a lead-mining town, became the largest producer of zinc oxide in the United States from 1891 until the 1920s.

Iron ore mining also began in the 1850s in the Black River Falls District in Jackson County and around the Ironton District in Sauk County. Similar small iron mining operations began in Baraboo and Mayville in southern Wisconsin. More substantial iron mining operations were set up in northern Wisconsin in Bayfield, Ashland, and Florence counties. The Gogebic Range in Bayfield County was particularly important to the development of the Midwest during the industrial revolution and operated from 1884 to 1967.

Copper mining also occurred primarily in the late 1800s and early 1900s, although Native Americans began mining copper between 4,000 and 12,000 BCE for jewelry and tools. Deposits of copper were primarily found in Bayfield, Washburn, Douglas, and Polk counties.

Today, there are relatively few active metallic mining sites. The Bend Project in Taylor County is being evaluated for copper mining, as is the Reef Project in Marathon County as a gold mine. Both of these sites are owned by Aquila Resources and have not gone past exploratory drilling phases which were completed in the early 2010s.

Badger Minerals, LLC applied for and received an exploratory drilling permit in February of this year for the Shoepke site in Oneida County. The deposit contains minerals such as lead, zinc, copper, silver, and gold and would be the first active metallic mining site in Wisconsin since 1997 when the Flambeau Mine closed. The site has faced some opposition due to its proximity to the Wolf River. At this time with some sampling completed, Badger Minerals state they have no plans to go forward with mining operations.

The heyday of metallic mining may have come and gone, but non-metallic mining is still a booming business in Wisconsin. Non-metallic mining consists of quarries and pits which provide, among other materials, crushed limestone, sand, and dolomite for road construction, peat for horticulture and landscaping, volcanic andesite for shingles as well as granite, sandstone, and clay.

Sand mining in Wisconsin has a comparatively long history, having started more than 100 years ago. The New London Quarry in northeast Wisconsin has been in continuous operation for 75 years, producing limestone, dolomite, and industrial sand.

Industrial sand, also referred to as frac sand is a large part of non-metallic mining operations in Wisconsin. This



Frac sand mining operation.

sand is often sent out-of-state to oil drilling operations after being processed locally, and it is also used in the manufacturing of glass.

Frac sand mining primarily occurs in the western part of the state (see the frac sand article on page 5). 128 frac sand mining operations are registered for operation in Wisconsin. You can see their locations here: <https://dnr.wisconsin.gov/topic/AirQuality/ISMMMap.html>

In contrast with metallic mines, non-metallic mines are not under the jurisdiction of the Wisconsin DNR but are regulated by local governments.

Environmental Impacts of Sulfide Metallic Mining

By Hannah Keuler, UW-Green Bay Student Intern

The mining process is dangerous for miners, but it can be dangerous to the environment and nearby residents as well. Mining poses threats such as drained aquifers, water pollution, air contamination, and damaged ecosystems.

In order to keep underground mine shafts running, they must be dry. However, groundwater naturally flows into less saturated areas within the ground, so water begins to fill the shaft. As a result, mining companies pump out groundwater that is in proximity to the shaft.

Massive amounts of water are pumped from the ground for ore processing as well. This water can be used to cool down equipment, separate minerals from the parent rock, and to transport ore as well as waste, which accounts for over 99% of the excavated material according to the Sierra Club.

Overall, the requirement for huge amounts of water results in drained aquifers. During the time of the proposed Crandon, Wisconsin mining operation, it was estimated that a drawdown area of four square miles would be created. This is problematic, as citizens' water supply can diminish. Local water systems may also be affected, as they are not as easily recharged.

Wisconsin is home to thousands of waterbodies. These waterbodies provide Wisconsinites with areas for recreational activities, as well as a source for drinking water. Now imagine if these waters were no longer usable. Heavily polluted waterbodies are a possible outcome from a cyanide accident or from acid-mine drainage.

Wisconsin has an abundance of sulfide minerals, and when these minerals become broken up and exposed to air and water, they can become highly acidic metals such as lead, mercury, zinc, copper, and arsenic. These waste metals are dumped into what the EPA admits as "loosely regulated"

empty mine shafts lined with only several inches of clay.

Due to the lack of monitoring of these waste ponds, acid-mine drainage can go unnoticed, contaminating surface water. Because of northern Wisconsin's thin soil, acid mine drainage can also seep through the bedrock into groundwater.

Sulfide mining produces tailings, a waste product that is then stored in mine dumps. The EPA knows that even with the best engineered mine dumps, leaking "will inevitably occur." This can lead to a poisoned local water supply and a damaged ecosystem; yet the practice is still allowed. According to The Sierra Club, a 2012 study completed on 14 out of the 16 operating copper sulfide mines in the nation found that they all had failures such as pipeline breaches and acid overflows, and 92% of these failures did not contain the seepage.



Acid mine drainage enters into a local stream, impairing the quality of water as well as the marine-life.

Photo courtesy of Earthworks:

<https://www.flickr.com/photos/earthworks/30152883588>

Ecosystems can become destroyed through direct mining operation. It is likely that wildlife tries to relocate away from the noise pollution coming from the rocks being crushed by mining machinery. According to the *Seattle-Post Intelligencer*, "If one species in the food web ceases to exist, one or more members in the rest of the chain could cease to exist too," resulting in a devastating domino effect on the ecosystem.

Wildlife, especially aquatic, can also become poisoned through cyanide spillages, acid mine drainage, or simply by drinking water out of tailing ponds. Trout and salmon are very sensitive fish, and the slightest change in water chemistry can stunt their growth, or cause fish kills.

Ecosystems can also become destroyed indirectly. When mines move into a town, there is a population boom. A growing population requires more infrastructure and businesses. Of course, this may have short term benefits to a town, but drastic landscape changes must occur to accommodate for the larger roads needed for industrial mining. The loss of forests and wetlands often occurs, and the resulting loss of habitat can have a long-term impact as wildlife dies off or migrates away.

Air degradation brought on by mining is another concern. The mining process involves grinding up thousands of tons of rock. This leads to large amounts of dust particles being put into the air. In addition, “mine tailings, which may contain finely ground and even toxic waste, can become airborne. This air pollution can directly affect human health,” according to Western Mining Action Network. Blasting rock can also release smoke and dust into the air.

It is important to mention that throughout the entire mining process, thousands of trucks will be involved; hauling large equipment, waste product, and/or ore to and from the mining site. This alone leads to dust particles and emissions being released into the atmosphere.

Wisconsin is a beautiful, yet sensitive state. It has the potential to do well for mining companies, but can mining companies do the same for Wisconsin? Mining can, and is notorious for draining aquifers, contaminating local drinking water supplies, causing air degradation, and destroying nearby ecosystems.

Resources:

<https://wman-info.org/resource/environmental-impacts-of-mining/>

https://www.wilderness.org/articles/blog/horror-stories-about-mining-why-we-shouldnt-fast-track-mining-public-lands?gclid=CjwKCAjw5Kv7BRBSEiwAXGDEIV_GMneAnxYxvK5vkLj7Qk9b9O04b4Key-246HKAHT4BvMTq3ChoCiKqQAvD_BwE#

<https://www.cleanwateractioncouncil.org/issues/resource-issues/mining/>

<https://education.seattlepi.com/happens-something-food-chain-goes-extinct-4656.html>

A Discussion of Wisconsin's Mining Laws & Regulations Since the 1990s

By Cassie Vanlanen, UW-Green Bay Student Intern

Gold, copper, zinc, nickel and other metals are typically found bonded to sulfur. Such compounds produce sulfuric acid when exposed to oxygen and water, creating the risk of runoff which could pollute Wisconsin streams and rivers. Sulfuric acid then mixes with water and can kill fish, plants, and insects, as well as burn human skin according to the National Wildlife Federation.

Acidic waters can also release heavy metals such as arsenic and mercury when they pass through waste mining rock and tailings. Thus, mining and processing metals found together with sulfides causes acid mine drainage. When the sulfides are exposed to air and water, acid production occurs that can then leach toxic metals into waters.

In the 1990s, state regulators were asked by the Wisconsin Natural Resources Board to search for examples of metallic sulfide mines that had been safely operated and closed without polluting the environment by acid mine drainage. State regulators were unable to document any successful metallic sulfide operations and in 1995, the Wisconsin Department of Natural Resources (WDNR) issued a report that discussed the risk of acid mine drainage. They stated, **“There are no ideal metallic mineral mining sites which can be pointed to as the model approach in preventing acid drainage industry wide.”**

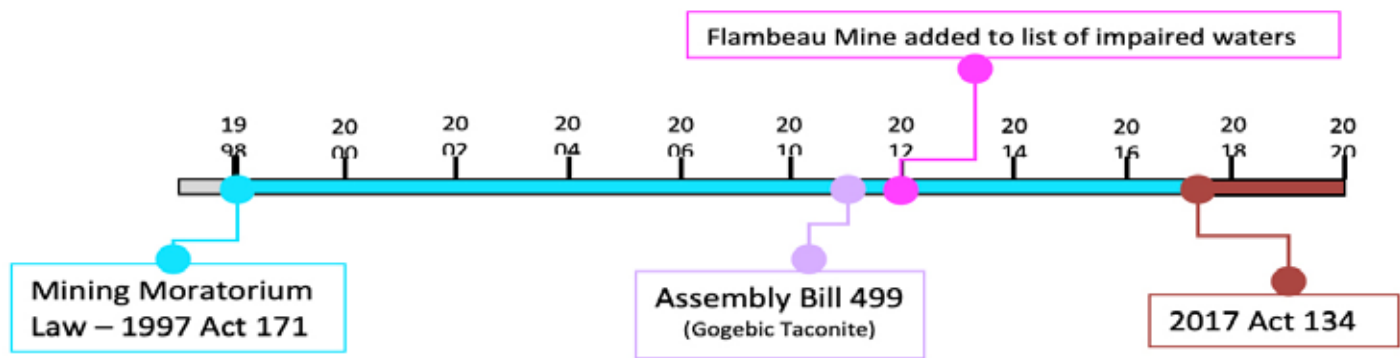
As a result, the Wisconsin State Legislature passed the Mining Moratorium Law, which was signed into law by Governor Thompson as 1997 Act 171. The Moratorium Law established a condition that must be met before final mining permits are granted. The law requires sulfide mining applicants to prove a similar mine has operated for 10 years somewhere in North America without causing pollution, and it requires that applicants prove a similar mine has been closed in North America for a decade without causing pollution as well.

It was originally argued that the Flambeau Mine was the one mine that was successfully operated and had been closed for ten years without causing pollution. However, the WDNR completed an investigation of water quality at the Flambeau Mine site. The agency recommended that “Stream C,” a tributary of the Flambeau River into which the Flambeau Mining Company has been discharging runoff from the mine site since 1999, be included on its list of “impaired waters” for 2012 for “acute aquatic toxicity” caused by copper and zinc.

To date, there have been no metallic sulfide mines documented as an example of a fully successful operation that has not polluted the environment. Wisconsin's Moratorium Law was in place for nearly 20 years providing protection from the mining of sulfide or sulfide-bearing minerals before it was repealed.

In 2011, Scott Walker signed Assembly Bill 499 which was designed to jumpstart the mining industry in northern Wisconsin. This dramatically loosened Wisconsin's iron mining regulations. The bill was designed to clear the way for Gogebic Taconite, which according to reporters Jason Stein and Lee Bergquist, was reported to have donated \$700,000 to a group that helped some state legislators survive recall elections in 2011 and 2012. This helped ensure the Senate had the votes to pass the iron mining legislation in 2013. The company promised the mine would create hundreds of jobs, but they ultimately gave up on this project, as they indicated it wasn't worth continuing.

In 2017, Scott Walker then signed the second significant piece of



TIMELINE OF WISCONSIN'S RECENT METALLIC MINING

legislation designed to jumpstart the mining industry in northern Wisconsin as 2017 Act 134. The act repealed the “Prove it First Law” even though the industry still failed to demonstrate safe examples of metallic sulfide mining.



According to the Sierra Club, this law also eliminated the prohibition on groundwater pumping over 100,000 gallons per day, even if the pumping negatively impacts wells and public waters like rivers, lakes, and streams. It allows bulk sampling of up to 10,000 tons of ore without requiring an environmental analysis or impact statement.

This law also repealed the Irrevocable Trust Rule requiring funding for long-term contingencies for closed mines and replaced it with a limited substitute that could leave cleanup costs to taxpayers. It also fast-tracks permitting by removing the required contested case hearing before permit decisions are made and instead makes citizens pay for challenging permits in court. In other words, Act 134 opened up the state to sulfide mining after years of protection from the Mining Moratorium Law.

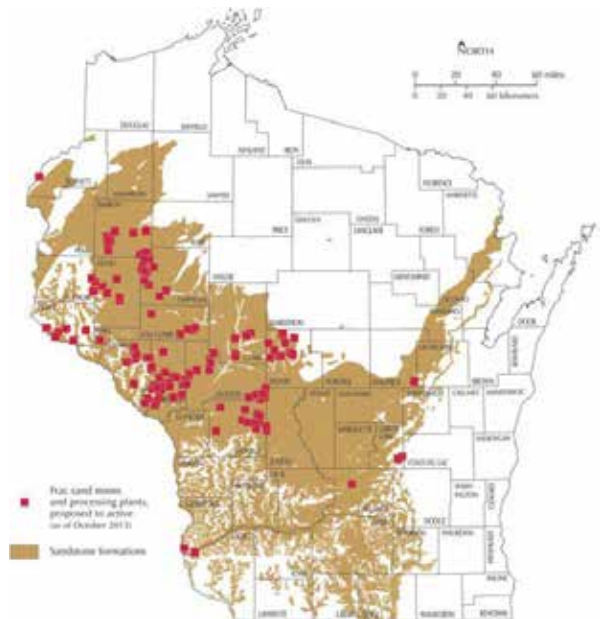
Nonmetallic mining operations are present in a wide variety of locations throughout the State of Wisconsin as well. As stated by the WDNR, Chapter 30, Wis. Stats. and Ch. NR 340, Wis. Adm. Code are designed to protect the waters of the state. In 2000, Chapter NR 135 Wis. Adm. Code “Nonmetallic Mining Reclamation” was promulgated with the intent of establishing reclamation criteria to mines where there had previously been no jurisdiction under Chapter 30, Wis. Stats. The laws and regulations for non-metallic mining can be found summarized by the DNR at <https://dnr.wi.gov/files/pdf/pubs/wa/wa1689.pdf>.

The Impact of Frac Sand Mining in Wisconsin

By Carol Pearson

When you think of sand in Wisconsin hopefully the first thing that comes to mind is our beautiful sandy beaches along the lakeshore, but it is also a resource being mined in our state. Sand has been mined in Wisconsin for more than 100 years.

Sand deposits are mainly located on the western side of the state along the Mississippi River, and are sought after because of the high silica content and uniform size and shape of the sand. It is well rounded, extremely hard, and almost pure quartz.



Frac sand mining locations in Wisconsin.
Courtesy of Wisconsin Network for Peace, Justice and Sustainability.
<http://www.wnpj.org/fracsand>

These properties make it sought after by industries, especially for the petroleum industry. The sand in the eastern and southern parts of the state is finer-grained in size, and too angular and impure for use in fracking. However, frac sand mining comes with potential hazards.

The dust from the mining process causes air pollution. The process produces particulate matter that is extremely fine. When breathed in, it migrates deep into the lungs where it causes respiratory and cardiovascular problems. In the worst cases, it causes cancer or silicosis. Silicosis of the lungs is incurable and deadly.

The mining also affects the groundwater in the area of the mine. Processing the sand requires large amounts of water. This can lower the level of surface and groundwater in the area. These waters can also be polluted by processing the sand. Different chemicals called flocculants along with water are used to clean the sand and to remove impurities such as unwanted minerals and particles.

The runoff water from sand processing can contain high levels of these chemicals, as well as sediments, clay, and heavy metals, which are by-products of the process. These chemicals can get into drinking water. Long-time exposure can affect the nervous system, blood system, or lead to cancer.

Other environmental effects include the impact on the area's topography and habitats. Wetlands can be impacted by the runoff from the mine — such that they become super-saturated with water, or become altered by the construction of a mine. Habitats of endangered or threatened species may be impacted by the sand mine. One example is the Karner blue butterfly. Its habitat is in parts of the state with the most sand mining locations. The state has a program to protect this species, but most of the sand mining operations do not participate in this program.

Quality of life can also be impacted by a nearby sand mine. Mining involves the use of large noisy machines and trucks. It also involves blasting to expose new deposits. This produces noise pollution along with the noise of the trains carrying sand to the fracking mines in other states. There also is stress from having house and land values fall because of proximity to a sand mine.

Has the downturn in demand for Wisconsin frac sand and the resulting closing of mines reduced the impact of the sand mines on us and our environment? The answer is a resounding NO! Even though the mines may be closed, particulate air pollution continues because nobody is there to water down the silica piles left behind.

Closed or abandoned mines become time bombs just waiting to go off. Patricia Popple, an environmental activist opposed to frac sand mining told the *Wisconsin Examiner*, "There may be no controls to stop them due to the fact that no one is at the scene and we could have damages to lakes, rivers, streams, fisheries, and animals living downstream as well as home well owners could find their wells polluted."

With the weakening of mining regulations under Governor Walker, reclamation laws are lax. There is little assurance that reclamation will be done and done properly. Companies do not want to pay the high price for reclamation. Some of these companies have gone bankrupt. So who will pay? The answer: Us and our environment.

"Back Forty" Mine is a Threat to the Menominee River

by Al Gedicks

The Menominee River, named after the Menominee Indians of Wisconsin, is the largest river system in Michigan's Upper Peninsula. The Menominee River watershed encompasses 4,000 square miles and drains into Lake Michigan's Green Bay. In April 2020, American Rivers, a national conservation group, named the Menominee River one of the 10 most endangered rivers in America, citing the threat from Aquila Resources' proposed "Back Forty" open pit metallic (gold and zinc) sulfide mine a mere 150 feet from the Menominee River, near Stephenson, Michigan.

Aquila Resources is a Canadian exploration company that has no experience with mining. The name "Back Forty Mine" is highly misleading; rather than the forty acres suggested by the name, the footprint of the mine and tailings dam encompasses 1,087 acres – or 1435 football fields. The pit would be 2,000 feet wide, 2,500 feet long and 750 feet deep (the equivalent of a 57-story skyscraper).

The proposed mine would produce 70 million tons of acid-producing waste rock and milled tailings. When sulfide minerals in mines and mining wastes are exposed to air and water, the chemical reaction produces sulfuric acid and metal pollution known as acid mine drainage (AMD). AMD is toxic to fish and wildlife due to dissolved metals and contaminants such as mercury, lead and arsenic. These contaminants would threaten the Menominee River and eventually Lake Michigan, which provides drinking water to millions in the upper Midwest. Aquatic life, including the largest source of sturgeon for Lake Michigan, as well as property values and tourism in nearby communities would also be adversely affected.

The location of the proposed Back Forty mine project has special significance for the Menominee Indian Tribe of Wisconsin because it is their original homeland. They occupied the Menominee River area for millennia, until an 1836 Treaty with the U.S. forced them to cede their original territory in Michigan. The present-day Menominee reservation is sixty miles southwest of the proposed mine. However, the Menominee Nation never gave up its right to protect its traditional cultural resources that are essential to their identity. The Back Forty project threatens to desecrate prehistoric burial mounds, garden beds and religious ceremonial grounds within the footprint of the proposed mine.

While Aquila says it conducted its own archaeological survey and that it will not encroach on these cultural sites, the Menominee say Aquila did not consult with them. Aquila's failure to consult with the Menominee Nation is in violation of the United Nations Declaration on the Rights of Indigenous Peoples that requires all extractive resource projects to obtain the free, prior and informed consent of Indigenous peoples.

The greatest threat to the water and communities downstream from the proposed mine is the massive release



of toxic mine waste into the Menominee River from Aquila's proposed tailings dam. Tailings are the finely ground muddy or sandy mine wastes left behind after the valuable metals and minerals have been extracted from the ore. The Back Forty proposed mine would produce millions of tons of tailings that contain substances that can harm human health,

drinking water supplies and destroy entire communities and livelihoods. However, unlike water-retaining dams made of concrete and steel, the proposed Back Forty tailings dam is made of crushed waste rock and overburden soil. Such dams are extremely unstable in areas of heavy rainfall such as the upper Midwest.

The upstream tailings dam design proposed by Aquila is the lowest cost option but the most prone to failure, according to experts. Such dams are involved in approximately 76% of tailings dam failures worldwide. After a catastrophic tailings dam collapse in Brazil killed 270 people in January of 2029, Brazil banned that design from future mines. Because of the demonstrated risk associated with upstream dam construction, an international group of 142 scientists representing 24 nations urged that upstream dams must not be built at any new facilities.

Downstream residents rely on the river (which is also the Michigan-Wisconsin border) for their drinking water, fishing and tourism. They are skeptical of the mining company's safety assurances. Eight counties – including Menominee (MI), and Marinette, Oconto, Menominee, Shawano, Door, Outagamie and Brown in Wisconsin - have passed resolutions against the mine.

Aquila's claim that they have all the permits required for construction of the mine is false. There are three permits "issued" but not "effective" due to the number of pre-mining conditions attached. All three permits are currently involved in court cases. Aquila withdrew its original Dam Safety Permit application in December 2019 due to insufficient information and has just submitted a new permit application to Michigan's Department of Environment, Great Lakes and Energy (EGLE). However, the company has not yet submitted an Emergency Action Plan in the event of a dam failure and the release of toxic mine waste into the Menominee River. The Coalition to SAVE the Menominee River (www.jointherivercoalition.org) is urging EGLE to protect our communities from catastrophic damage by prohibiting the upstream dam construction design for the proposed Back Forty tailings dam.

Al Gedicks is the Executive Secretary of the Wisconsin Resources Protection Council (www.wrpc.net).

Don't believe what mining industry promoters are telling you about Wisconsin's Flambeau Mine! It has not operated without polluting local waters.

By Laura Gauger

The Flambeau Mine, a small copper-sulfide mine that operated near Ladysmith, Wisconsin in the 1990s, is being promoted by supporters of the **PolyMet** and **Twin Metals** projects in Minnesota as an example of a mine that operated "without polluting local waters." Similar claims have been made by proponents of the Back Forty project on the Michigan/Wisconsin border, the **Eagle** and **Copperwood** projects in Michigan, the **GTac**, **Bend** and **Reef** projects in Wisconsin, and the **Pebble** project in Alaska. To see for yourself, check out this link: <https://deertailsscientific.files.wordpress.com/2019/11/flambeau-promotional-materials.pdf>

It's as if the Flambeau Mine, owned by Rio Tinto of London and managed by its Utah-based subsidiary, Flambeau Mining Company (FMC), has become the Industry's *calling card*.

Why does any of this matter? Because Rio Tinto's own environmental monitoring data for the Flambeau Mine does *not* support the claim that Flambeau is a non-polluting mine. In fact, it shows the exact opposite, as documented in a recently-released report authored by hydrogeologist Robert E. Moran (Michael-Moran Associates, Golden, CO; <https://remwater.org>).

"I know of no metal-sulfide mines anywhere in the world that have operated without degrading the original water quality, long-term — even those employing modern technologies." - R.E. Moran

After reviewing thousands of pages of FMC's own water quality data and technical reports on file with the Wisconsin Department of Natural Resources (DNR), Dr. Moran concluded the following:

"Flambeau ground and surface water quality is being and has been degraded — despite years of industry public relations statements touting the success of the FMC operation. Rio Tinto said in a 2013 public relations (PR) release regarding the Flambeau Mine: "Testing shows conclusively that groundwater quality surrounding the site is as good as it was before mining." In efforts to encourage development of the other metal-sulfide deposits in northern Wisconsin and the Great Lakes region, the industry approach has been to simply repeat this false statement over and over, assuming that repetition will make it believed. Unfortunately, the FMC data show otherwise."



The Flambeau Mine disturbed about 180 acres of forest, farm and swampland next to the Flambeau River. The mine's high sulfur waste rock stockpile, ore crusher, runoff pond and water treatment plant are visible in the middle of the photograph. Also note the steepness of the pit walls and how the mine came to within 140 feet of the Flambeau River (October 1995).

For example, FMC submitted a report to the Wisconsin DNR in December 2015 in which the company itself acknowledged 45 exceedances of groundwater quality standards in 17 different wells at the Flambeau site. Unfortunately, Wisconsin law has legalized groundwater pollution within a mine's boundaries, so such violations cannot be prosecuted in court.

Following are just a few more examples of problems identified by Dr. Moran in his 116-page report: *Flambeau Mine: Water Contamination and Selective "Alternative Facts"* (available online as a free download at <https://deertailscientific.wordpress.com/moran-report/>, including a 2-page summary of Dr. Moran's key findings):

- FMC is **FILTERING** all Flambeau groundwater samples before running them in the lab instead of following best practices and reporting both filtered *and* unfiltered concentrations. The latter, of course, undoubtedly would expose additional contamination, as discussed at length by Dr. Moran in his report. Why does this matter? As noted by Dr. Moran, **"most families using private wells or springs and all farms, livestock, wildlife, fish and vegetation, etc. use and consume unfiltered water."**
- The number and location of monitoring wells along the Flambeau Mine's so-called "compliance boundary" (where groundwater standards are enforced by the state) are inadequate. There is only **one nested well** along the entire 3.5-mile boundary encircling the mine site, and it appears to be positioned outside the main groundwater flow path identified by FMC.
- FMC's surface water monitoring program for the Flambeau River has been **"totally inadequate"**, both in terms of the number and location of sampling sites and the number of different contaminants being tested. **No samples have been collected for analysis in the section of the river immediately adjacent to the backfilled pit**, even though FMC's own modeling submitted to the Wisconsin DNR

showed that groundwater flowing through the waste rock in the backfilled pit would "flow directly into the bed of the Flambeau River."

- FMC has conducted **no follow-up testing** to determine the fate of endangered species found in the Flambeau River near the mine site prior to operations.
- In 2012, the Wisconsin DNR and United States Environmental Protection Agency (EPA) listed a Flambeau River tributary that crosses a section of the Flambeau Mine site as **"impaired"** due to high copper and zinc concentrations linked to the mine operation. The tributary remains impaired to this day, despite several failed attempts by FMC to clean it up.

Don't let FMC's aerial photos of the grassed-over Flambeau site fool you! The water over there is highly contaminated. As Dr. Moran stated:

"Obviously the mining and remediation practices employed at Flambeau do not represent a *sustainable, long-term solution*. While FMC may have satisfied the State oversight and disclosure requirements, the site groundwaters are contaminated, and these waters would require expensive, active water treatment to be made suitable for most foreseeable uses. The operating and maintenance costs for such plants are extremely high. I have worked on several projects where the present water treatment costs have been hundreds of millions of dollars, and in some cases the costs must be paid by the taxpayers."

Mind you, the high levels of pollution at the Flambeau Mine site were caused by a *tiny, state-of-the-art mine* that operated for only *four years* and has *no tailings pond* (all of the Flambeau ore was shipped by rail to Canada for processing, so that's where all of the nasty tailings are stored). Compare that to the *much larger* PolyMet, Twin Metals and Back Forty proposals that are being pushed by those who falsely claim Flambeau was a non-polluting mine!

After his thorough review of FMC documents, Dr. Moran concluded his report with the following comment: **"In short, the Flambeau Mine is the poster child for a severely-flawed permitting and oversight process that has likely generated long-term public liabilities."** He added: **"I know of no metal-sulfide mines anywhere in the world that have operated without degrading the original water quality, long-term – even those employing modern technologies."**

It's sheer *folly* for the mining industry to be using the Flambeau Mine as their *calling card*. Rather, Flambeau is the consummate *poster child* for how *all* metal-sulfide mines, no matter how small or high-tech, inevitably cause serious, long-term water contamination problems.

Laura Gauger of Duluth, MN is the Chair of Deer Tail Scientific, a nonprofit organization founded in 2017. Gauger also co-authored a book about the Flambeau Mine that's available online as a free download (<https://deertailpress.wordpress.com/on-line-access/>) and was a plaintiff in a 2012 Clean Water Act lawsuit against the Flambeau Mine's owner. For more information, go to the Deer Tail Scientific website at: <https://deertailscientific.wordpress.com/>.

Sport Fishing and the Threat from Mining Pollution

By Charlie Frisk

Almost fifty years ago, as a member of the University of Northern Iowa football team, I was on a bus riding through West Virginia, on the way to play Eastern Kentucky. As we drove through the mountains of West Virginia, I was in awe of the beautiful, crystal clear streams tumbling out of the mountains. Although in a few hours I would be playing in a football game, all I could think about at that moment was how fantastic the trout fishing must be in those streams.

Four years later I was at pre-season football camp with the Atlanta Falcons, hoping to earn a spot on their roster (I didn't). Another player was from West Virginia, and like me he loved fishing and hunting, so when we weren't practicing that is what we were talking about. I asked him about those beautiful trout streams, and he said, "Charlie, those streams are all dead, they were polluted by acid mine drainage from coal mines in the 1800s, and they are unlikely to ever support fish again."

The 2017 Wisconsin Act 134 made it much more probable that Wisconsin could see stream destruction to match what occurred in West Virginia in the 1800s. Act 134 removed the "Prove it First" permit requirement that would require finding an example of a metallic sulfide mine that did not pollute while operating or after being closed for 10 years. *(To read more about the impact of recent changes to Wisconsin's sulfide mining laws see Cassie's article on pg. 4 "A Discussion of Wisconsin's Mining Laws & Regulations Since the 1990's".)*

The Back 40 Mine located on the banks of the Menominee River would be a metallic sulfide mine. At any point in the mining process or even after the mine is closed, if the sulfide is exposed to water, sulfuric acid will result. The sulfuric acid will leach from the mine or from tailing ponds until the sulfur deposits are used up, potentially for thousands of years.

I recently talked to Tim Landwehr, the owner of Tight Lines Fly Fishing Shop in De Pere about what is at stake if the Back 40 Mine is built on the banks of the Menominee River. He said that the Menominee River supports a world class fishery for smallmouth bass and walleye, and also has good populations of northern pike and musky.

The Menominee River supports 15-20 fishing guides throughout the summer. Just the fishing guides from Tight Lines Fly Fishing have guided approximately 9,000 fishing trips down the Menominee in the past decade. Those fishermen stay in motels in the area, eat in local restaurants, and purchase gasoline and other products.

The Menominee River also supports one of the largest river populations of lake sturgeon in North America. It is the only body of water in Wisconsin where an angler can keep a lake sturgeon caught on hook and line. (The Lake Winnebago sturgeon harvest is by spear fishing only.) Anglers have to pay \$20 for a permit and are allowed to keep only one sturgeon, which must be over 60 inches to be legally harvested.

Lake sturgeon have disappeared from most of their original range. This population is considered a great treasure by anglers and ecologists, just another example of what could be lost by opening the Back 40 Mine.

Tim said, "If this mine were something that could provide a young person coming out of school a lifelong job, I could at least wrap my head around it. I still wouldn't support the mine, what it could destroy is so much more valuable, but I could understand why some people support it. But the mine will only provide jobs for a 7 to 10 year lifespan, and then you just have a giant hole in the ground, 150 feet from the Menominee River, and potentially a poisoned, dead river."

Tim talked about other communities in northern Wisconsin whose



The author's niece fishing on the Menominee River.
Photo courtesy of the author.

economies were based on mining, "Niagara is mostly boarded up businesses today, once the minerals were depleted, the jobs disappeared. You can buy a nice 3-bedroom home there for \$35,000, but there is no way to make a living."

The most popular federally designated Wilderness in the U.S. is the Boundary Waters Canoe Area (BWCA), receiving between 200-250 thousand visitors annually. A major portion of northeast Minnesota receives much of its income as the gateway to the BWCA, particularly the cities of Ely and Grand Marais. Millions of young people have experienced their first taste of wilderness on canoe trips to the BWCA.

The BWCA is under threat from the Twin Metals mine, a sulfide deposit mine, which would be located outside the protected wilderness area, but on Superior National Forest land which is within the BWCA watershed. In fact, any pollutants leaking from the Twin Metals Mine could potentially contaminate the BWCA, the Quetico Wilderness Area in Canada and Voyageur National Park in Minnesota.

The Obama administration proposed a ban on all new mining projects within the BWCA watershed for 20 years, but the Trump administration ended that ban in 2017, and fast-tracked approval of the Twin Metals Mine. Former forest supervisor of the Superior National Forest, Brenda Halter said, "We must stop the political do-over on the Twin Metals mine. Experience shows that pollution is probable. It may be catastrophic. The BWCA is at stake."

"The history of copper mining clearly demonstrates that the vast majority of these

mines fail”, Brenda said. “Once the mine fails, there is simply no way to contain it without sacrificing the wilderness and the long term economic sustainability that it supports.”

“There are places that are just too valuable to risk the damages that can be caused by mining.”

There are many people that visit the BWCA that don’t fish, but even for them a fishless BWCA would hardly seem worth the trip. Without fish there would be no loon music, no eagles, otters or osprey. The soul of the wilderness would be destroyed.

Society does need minerals, but there are places that are just too valuable to risk the damages that can be caused by mining. The Menominee River, the Wolf River and the BWCA certainly qualify as some of those places.

Environmental Threats of Non-Metallic Mining (Limestone Quarrying) in NE Wisconsin

By Lora Jorgensen – Administrator, Door County Environmental Council

In Door County we have seen a sudden surge in applications for Non-Metallic Mine permits, primarily to quarry limestone to be used as fill, road material and “rip-rap” for shoreline protection. Unfortunately, the land parcels that lend themselves best to the quarrying of limestone also



Hines emerald dragonfly

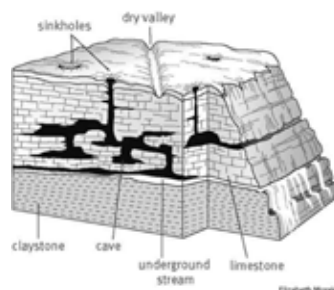
happen to be some of the most environmentally sensitive areas in the county. For instance, the Hine’s Emerald Dragonfly was listed as an endangered species by the federal government in 1995 and remains the only dragonfly species

included on the federal endangered species list.

Allowing mining activities in these sensitive areas not only can create serious environmental threats, including destruction of habitat for protected animal and native plant species, but also threaten the health of residents who live in the surrounding area through degraded air quality, noise pollution, and water contamination.

Groundwater Contamination

All of Door County resides in a karst area, which consists largely of dolomite which were once ancient sea bottoms and then carved out by glacial activities. (Brown, Calumet and Kewaunee also have some karst areas.) This karst topography has many unique characteristics: sinkholes, caves, and areas of rock fractures that form underground drainage areas.



Mining in karst areas results in a disruption to natural aquifers or flows of underground water. Often, mining operations remove ground water to expose the quarrying site, which can lower the water table and change how water flows

through the rock formations.

Groundwater quality can be affected during the quarrying of limestone by increasing sediment (limestone dust) and accidental spills directly into the aquifers. These contaminants can also include material like oil and gas from mining equipment. Because contaminants in ground water move faster through limestone than other types of rocks, quarries in karst areas are particularly sensitive.

Quarrying also removes the entire subcutaneous zone (topsoil, vegetation, roots) which is an important groundwater storage area that helps prevent flooding and erosion during large rain events. Bare open-pit mines create an unnatural depression in the topography, which collects rainwater and sediment.

Pumping water out of quarries changes the direction and the amount of groundwater flow in underground aquifers, which can interrupt the water supply to residential wells in the area. Alternatively, in the event of large rain events, a surplus of unfiltered water can be unnaturally introduced into aquifers and area wells via underground cavities and rock fracturing produced by blasting and mining activity.

Health Impacts on Humans

Typical activity in a limestone quarry includes blasting, quarrying, and passage of heavy-duty vehicles. These processes typically cause high rates of particulate matter (PM) emissions. Dust is one of the most visible impacts associated with limestone quarrying due to the drilling, crushing, and screening of the rock. This airborne dust can travel long distances from mining sites and affect both urban and rural residential areas downwind. Fugitive dust can also escape from trucks traveling on excavation haul roads. See: <https://sciencing.com/environmental-hazards-of-limestone-mining-13663264.html>

Limestone quarrying produces dust that contains crystalline silica, which has been classified as a human lung carcinogen. Breathing crystalline silica dust can cause silicosis, which in severe cases can be disabling, or even fatal. The respirable silica dust enters the lungs and causes the formation of scar tissue, thus reducing the lungs’ ability to take in oxygen. There is no cure for silicosis. Since silicosis affects lung function, it increases one’s risk of lung infections, including those caused by COVID-19.

In Conclusion

Due to the karst geology of NE Wisconsin, local municipalities must use their authority to only permit quarries where they least impact human health, ground water, and the environment.

The Threat of Mining Impacts Wisconsin Residents

By Dean Hoegger

On June 1 this year, Badger Minerals began exploratory drilling in Oneida County raising concerns that a metallic sulfide mine would be a threat to the pristine streams, wetlands and forests of northern Wisconsin. It could even impact the future of the Wolf River, a National Wild and Scenic River.

Many residents were not aware the exploratory drilling would be taking place and were alarmed when equipment began being hauled to drill sites. Even the Zabler family, with a seasonal cabin on property adjacent to a drill site was not notified.

Ron B. Zabler, whose parents own the cabin, would later testify at the DNR administrative rules hearing for implementing the 2017 Act 134 mining bill. He would tell the DNR that notification is lacking, and should be given especially to adjoining property owners.

As word of the exploratory drilling got out to the public, over 100 people attended a "prayer walk" in March led by Wisconsin Native Americans. A second one was held in June. On April 22, nearly 50 people commented to the Oneida County Planning and Development Committee about their opposition to metallic sulfide mining in the county. Citizen anxiety was growing and for many, memories of the Crandon Mine fight were returning.

I reached out to **Tina VanZile, Environmental Director at Sokaogon Chippewa Community** to learn more about how the threat of the construction of the Crandon Mine back in the 1990's impacted her community and how the tribe was reacting to the recent exploratory drilling in Oneida County. Tina provided detailed answers to my questions as noted below including great advice for opposing mining.

How was the tribe impacted by the Badger Minerals exploratory drilling in the Oneida County Town of Schoepke, either actual or psychological?

The recent drilling by Badger Minerals brought back that same stress from the Crandon Mine Era fight. Any potential mining activity in our ceded territory is cause for concern because we do a lot of hunting and gathering. There are some specific cultural legends that I can't talk about publicly but we were afraid of the impacts from the exploratory drilling. Not to mention our concern about wild rice on the Wolf River (which is near the Town of Schoepke site).

How were the Sokaogon, and/or tribal members individually, impacted by the Crandon Mine?

The proposed Crandon Mine never actually opened. Our people and Tribe fought hard for 28 years to prevent that mine from every operating. Even though it didn't open, our people went through a great deal of emotional stress every day wondering if the mining company would obtain all their necessary permits and open just 2 miles upstream from our reservation boundaries.

Our Tribe spent every last dollar we had available in order to hire technical experts to help us review the Environmental Impact Statement (EIS) submitted by the mining company back then. The EIS consisted of several binders of documents and we had to review and comment on how the project would affect our water, homelands, culture, traditions, natural resources, especially our natural producing wild rice lake. It's hard to put into words how our cultural existence would have been totally destroyed if the Crandon Mine would have opened.

What challenges did the tribe face with opposing the Crandon Mine?

The biggest challenge was manpower, money and getting federal agencies

to understand our culture. We had to do a lot of grant writing to fund positions such as hydrogeologist, limnologist, biologist, fisheries biologist, toxicologists, attorneys, etc. The Tribe used every last dollar available to fight the mine and in turn our people/community went without a lot of basic necessities for all those years but it was a sacrifice we had to make for our homelands.

How was the tribe able to bring other tribal and non-tribal grass roots groups into the fight?

Typically, us Tribes stick together when each other are facing big threats such as mining. We are Anishinabe people and it's just natural for us to stand behind one another in times of need. As for the non-tribal grass root organizations, it was Midwest Treaty Network and a couple others who offered their help to the Sokaogon at first and it just grew over time and before you knew it we were working with 35 grass roots organizations. We all had a common goal of wanting to protect our environment and the Wolf River.

How do the tribes view the decision to purchase the Crandon Mine today?

When the opportunity came around to purchase the mining company and all the land they owned, we knew we had to move heaven and earth to get this done. The mining company approached Sokaogon's Tribal Attorney and asked if we'd be interested in buying some of the mining land and we without hesitation we said "YES!" and as things progressed in negotiations it led to the owner saying he'd consider selling all the land.

Then we contacted Forest County Potawatomi and let them know what was developing and we ended up working together to make it happen and we purchased the mining company, all the land and the mineral rights for 16 million dollars. We are still happy to this day about the purchase and tribal members enjoy hunting and gathering on the lands.

Was there actual or psychological threat from the 2017 Act 134?

Tom Tiffany weakened mining regulations with 2017 Act 134 and these roll backs affect the whole State of Wisconsin because it made it easier for mining

companies. The psychological threat to Sokaogon is worrying about the Town of Schoepke mineral deposit because it is located roughly 5-7 miles as a bird fly's from our reservation border. But that site is located in our ceded territories, which is a huge portion of northern Wisconsin, our ancestors negotiated treaties that reserved our right to hunt, fish and gather (see GLIFWC for Treaty ceded territory maps) in these areas.

What recommendations do tribal leaders have for others opposing mining in their area?

Our advice: Get involved, go to your local government meetings, go to WI DNR website and stay up to date on all mining activity in the state, form your own small group of



Tina's granddaughter Rikki holds her sign "Water is Life" at a recent water walk.

people and work on reviewing documents associated to mining, look at the current mining laws (because they don't protect us as much as people would think), feel free to contact the Tribe and work together with them, write letters to the editor, write or email your state elected officials and demand answers and educate others so they know what's going on too.

Is Mining Worth the Cost?

By Jim Wagner

Mining has a rich history in Wisconsin, but are the short-term economic gains of individual mines worth the long-term economic and social costs today?

We live in a time where high-paying trade jobs are more difficult to come by, with the decades-long erosion of union rights, especially in rural and remote cities located in northern Wisconsin. So, it is understandable why there are many proponents of mining projects in their community. For the individual, it's the opportunity to demand a good wage; for local and county government officials, it's tax revenues from the mine and ancillary support companies.

According to research conducted by the University of Wisconsin-Madison in 2018, the net economic impact of the Lynne Deposit mining project — a proposed open-pit mine containing 5.6 million pounds of lead, zinc sulfide and, silver — is 700 jobs, \$44 million in labor income (average pay of \$72,568) and \$6.8 million in state and local taxes.

It is economic gains like this that led then-Governor Walker to end the mining moratorium in 2017, which had the enthusiastic support of the Wisconsin Manufacturers & Commerce (WMC). Considered from a purely financial perspective, it would be a win for the state with a long history as one of the country's largest lead mining states.

A referendum conducted in 2018 for Oneida County

residents to determine whether residents wanted a mine, however, demonstrated that from a pure dollars-and-cents perspective, building a mine was too much of a cost: approximately 62 percent of the county voted against the mine. The mine was also opposed by the Great Lakes Inter-Tribal Council, a consortium of 11 Native American tribes located in Wisconsin and Michigan's Upper Peninsula.

There is a reason why Wisconsin had a mining moratorium law in place from 1998-2017, though moratorium is a confusing moniker. 1997 Wisconsin Act 171 doesn't ban sulfide-ore mining in Wisconsin outright — it only prohibits mining companies from starting a project until they can prove that a similar mine to the one they are proposing can operate for 10 years and be closed for 10 years without polluting groundwater and surface waters. Despite repeated claims by pro-mining interests over the decades, their inability to prove it has in effect resulted in a ban.

While acknowledging the need for metals in our daily consumer life, the reality is that Wisconsin — home of Earth Day and Aldo Leopold — and the United States in general must deal with the long-term economic and social consequences of mining.

There are approximately 500,000 abandoned mines in the U.S., with an estimated cleanup cost of \$54 billion. At the present time, the cost to cleanup the environment destroyed by those mines is footed through taxpayer dollars. Between 1998-2007, according to the Government Accountability Office (GAO), taxpayers paid \$2.6 billion in mine remediation costs.

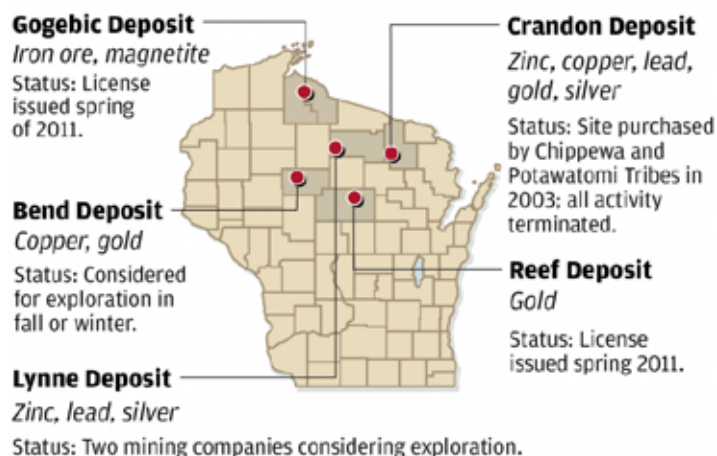
A proposal by the U.S. Environmental Protection Agency (EPA) that would have required all hard rock mining companies to prove they could pay all remediation costs was scuttled in 2017. In Wisconsin, the repeal of the moratorium law also repealed the Irrevocable Trust requirement, which required mining companies to set aside funds in perpetuity for long-term remediation. Current legislation requires mining companies to set aside a bond for estimated remediation costs.

These abandoned mines have long-term health consequences — and subsequent health care costs — for individuals as well. Research published in *Nature Magazine* in February 2020 <https://www.nature.com/articles/s41598-020-60386-8> linked lead and zinc exposures to vegetables produced in areas with closed or abandoned mines in Poland. This has an immediate impact on Wisconsin communities that have sprung up around the sites of the many lead and zinc mines closed or abandoned in the 19th & 20th centuries. It's estimated that by the time lead and zinc mining ended in 1979, there were more than 2,000 mining sites. (If you are concerned you might be near one of those mines, you can purchase a digital map through UW-Madison that highlights suspected contamination areas: <https://learningstore.extension.wisc.edu/products/digital-atlas-of-historic-mining-features-and-potential-impacts-in-southwestern-wisconsin>)

What can you do? Voice your concerns directly or through organizations such as Clean Water Action

Council. Barring a state legislature that will resurrect the moratorium law, citizen action is proving to be an effective and essential force preventing mining companies from starting new projects in Wisconsin. Badger Minerals conducted exploratory drilling for a potential mine site earlier this summer in eastern Oneida county. The company later determined there wasn't a significant enough quantity to justify mining, but the company and local government officials certainly heard the complaints from residents, who questioned the legality and potential damage to the nearby Wolf River.

Metallic mining in Wisconsin



SOURCE: Wisconsin Department of Natural Resources

State Journal



The Action in Clean Water Action Council

By Dean Hoegger

Thank you to the many members who renewed in 2020, often at higher amounts to help us make up the budget difference from not having a banquet and a fundraiser in 2020. And thank you to our members who supported the online "descending bid" auction this fall. Please save the date, Thursday, April 29, 2021 for our next spring banquet. Hopefully, the COVID-19 pandemic will be behind us by then.

Memberships for 2021 are due with receipt of this newsletter. If you are thinking you paid your membership recently, please know we patiently wait for members to renew as soon as they are able. Sometimes that is later in the year, or longer. We keep memberships active and hope that when a member misses a year their next renewal will be more generous.

Mailed newsletters have a label showing your last renewal year, and the emailed newsletters include the last renewal year in the body of the email. What we do not do, is ask renewed members for additional donations throughout the year. Once a year is all we ask. Membership donations provide funding for most of our operations, and we also offer the opportunity to sponsor a newsletter or an intern, beginning at the \$250 dollar level.

You can mail your membership donation or join CWAC with the enclosed form, or go online to <http://www.cleanwateractioncouncil.org/membership/>.

Read below about the actions we have taken in the last three months. Be sure to contact us if an environmental issue arises in your community. CWAC is here to support citizen action.

LEGAL ACTIONS

CWAC comments on water pollution permit renewals, variances, and monitors for permit compliance.

We monitor for new permit notices and hearings and publish those in our Weekly Update and at times attend hearings and/or submit comments.

In October, we signed on to comments to the DNR about proposed Administrative Rules to implement the mining bill, Act 134. The comments were prepared by attorneys at Midwest Environmental Advocates and submitted by Wisconsin River Alliance.

Also in October, we signed on to comments to the DNR requesting greater testing for the presence of per- and polyfluoroalkyl substances (PFAS) in public drinking water. The comments were prepared by Midwest Environmental Advocates and Citizens for Safe Water Around Badger. In early November, Governor Tony Evers' administration proposed new groundwater quality standards for 16 PFAS chemicals.

We were asked to present CWAC's position on fluoridation of municipal drinking water to the City of Green Bay's Protection and Policy Committee who is considering a request to end fluoridation of the city's drinking water. In 2014 CWAC Board of Directors passed a resolution opposing fluoridation of municipal water primarily because they saw it as a social justice issue. All users of fluoridated municipal water were forced to ingest the chemical in drinking water even though the Center for Disease Control states that any beneficial effect was from a topical application. Not all users can afford to purchase non-fluoridated drinking water for themselves, their children, or for making infant formula. See the resolution at: <https://www.cleanwateractioncouncil.org/issues/resolutions/>.

Please monitor the emailed *Weekly Update* for permit renewals, variances, and hearings for rule changes. Previously approved variances have included much higher levels of mercury and arsenic in wastewater effluent.

CWAC promotes ordinances to ban manure spraying.

CWAC continues to offer presentations to residents and town officials. Thus far, at least 17 northeast Wisconsin towns and cities have passed a ban. If your town has not passed an ordinance, contact us to help get a ban and protect your family from this health threat. Virtual presentations are available.

For more information on this concern, go to our website for Priority Issues: "Ban Manure Spraying." <http://www.cleanwateractioncouncil.org/issues/spray-irrigation/>.

CWAC monitors for plowing violations.

The plowing or cultivation setback is only five feet from

a stream bank, a very modest distance. Violations create a greater risk of soil and nutrients entering the watershed and finding their way to Green Bay and Lake Michigan. Contact us if you observe a suspected violation, which will be easier to observe if fields were plowed and not yet snow covered.

Our staff has been monitoring plowing setbacks from streams in northeast Wisconsin and we reported one possible violation in Sheboygan County. Brown County Soil and Water recently reported that the lack of a legal plowing setback was resolved with a future setback to be 20 feet from the center of the road. Unfortunately, we have not heard from Kewaunee County regarding violations reported this summer.

CITIZEN COMPLAINTS

Many of our more extensive actions, some requiring legal work, result from a follow up of citizen complaints. We reviewed data and interviewed several persons regarding wastewater from a cheese factory going to a former trout stream in Kewaunee County. Fall interns researched and wrote an article in this newsletter about the concern.

B&D Dairy's Oconto County manure pit was a continued concern this quarter, and additional contacts were made with the DNR regarding the lack of fencing and around the pit and extensive top soil disturbance without soil retention fencing in place.

A complaint about an unusual blue/green substance coming on shore at Voyager Park in De Pere came to us in late September. Photos were sent to the WDNR who then took samples that identified the substance as blue-green algae, not an industrial waste as first suspected.

In the days that followed, more of the algae washed ashore from De Pere to Green Bay. Some blue-green algae can produce toxins that can cause problems for people and animals when it is swallowed, touched, or when airborne droplets are inhaled. CWAC urged the WDNR to give notice to the public about the health threat.



Member submitted photo showing Voyager Park shoreline covered in blue-green algae.

Numerous concerns about exploratory drilling for future mining in Oneida County and the ongoing threat from the Back 40 Mine were expressed to CWAC, which caused the Board to devote this issue to mining concerns in Wisconsin and Michigan and have the executive director to participate in bi-weekly No Back 40 Mine online meetings.

WATER SAMPLING



Intern Hannah prepares to take stream velocity measurements at Baird's Creek.

For the fourth consecutive year, CWAC participated in the WDNR's Lower Fox River water sampling program with the third year of water sampling and stream assessments for Baird's Creek on Green Bay's east side. Phosphorous levels for August, September, and October were found to be 0.160 MG/L, 0.069 MG/L, and 0.075 MG/L, respectively. This year, creek water levels were much lower with better water clarity.

Other informal observations along the Fox River and Green Bay waters at Bay Shore Park and in southern Door County also indicated improved water clarity and fewer algal blooms. Send us your observations in words or photos.

EDUCATIONAL EFFORTS IN THE COMMUNITY

Newsletter Outreach

We mailed 100 *The Fox River: Then, Now, and in the Future* newsletters to residents living along the river which provided education about Fox River issues to stakeholders.

Health Forums

Contact us if you have suggestions for topics or speakers. We are **seeking business or member sponsors for individual health forums at the \$250 level**, either full or in part. Forums will be held online until they can be presented in person. Let us know if you will be a sponsor or can find a business sponsor. Past presentations included topics on indoor air quality, reducing breast cancer risk, toxic chemical exposures and endocrine disrupting chemicals, diet and health, safe lawns, climate change, and fluoridation of municipal water.

Presentations and Exhibits

Due to the Covid-19 pandemic, we have not had a live presentation or exhibit since March. A presentation created by CWAC fall 2019 intern Brenna Nicholson about microplastics is now available on YouTube. Watch *Preventing Microplastic Pollution* at <https://www.youtube.com/watch?v=BYmbDBwm8pM>

The Health Threat from Coal Tar Pavement Sealants is also a YouTube video, which can be found at <https://www.youtube.com/watch?v=0xjvi-leDHg&feature=youtu.be>. Unfortunately,

this remains a local issue as the Wisconsin Senate failed to take action on a bill that the Wisconsin Assembly passed to ban these sealants. Has your community passed a ban? We can give a presentation to your local government.

Here is a list of current presentations that can be given online. Many of these will be available soon via YouTube. The presentations can be tailored to your group's geographic location, age, and available time. Also, contact us if you would like us to promote or co-sponsor your event or presentation.

- Citizen Action to Protect the Waters of Northeast Wisconsin
- Communities on the Road to Zero Waste
- The Health Hazards of Burn Barrels
- The Impacts on the Health and Quality of Life from Manure Spraying
- The Health Threat from Coal Tar Pavement Sealants
- Micro-plastic Pollution from Clothing

Outreach through Newspaper and Radio

CWAC sends press releases to local media and is often contacted to comment on developing environmental issues.

Website Updates

Past newsletter issues can be found at the website as well as article updates and resources at <https://www.cleanwateractioncouncil.org/newsletter/>

CWAC provides interns with valuable experiences.

We provide our interns with valuable experiences and strategies for managing a non-profit organization. We invite them to attend area conferences and meetings, provide them with networking opportunities in environmental fields, encourage them to research and write for our newsletter and website, invite them to attend board meetings, and to represent CWAC at meetings with partner organizations. We are currently accepting spring semester internship applications.

We are thankful for five 2021 intern sponsorships by Marge and Ken Bukowski. Contact us if you would like to learn more about sponsoring a student intern.

Attendance at conferences and meetings with other environmental groups.

We attended several online conferences about recycling issues held by the Global Alliance for Incinerator Alternatives in preparation for a likely spring newsletter about recycling. Our recent inquiries about the impact of mining in Wisconsin brought us an invite to the bi-weekly meetings of the NO BACK 40 MINE group and whenever possible we sit on the Sustain Rural Wisconsin Network meetings. All of these have been online.

Get Our Weekly Update by email.

Each Tuesday we email the CWAC Weekly Update with actions, alerts, events, and the latest information on topics of concern. Send your postings by Monday evening. If you are a member with an email address and you are not getting the CWAC Weekly Update, check your spam folder before

emailing us to request to be put on the mailing list. If you are reading this newsletter as a non-member, email us at contact@cleanwateractioncouncil.org to be placed on the free Weekly Update list. Emails are sent via BCC to protect your privacy.

Not receiving the Update? Send us an email request. It is sent out once a week via BCC email.

CWAC's Non-Profit Status

To learn more about our non-profit status and financials, go to the Wisconsin Department of Financial Institutions, and then go to Credential Search for Clean Water Action Council: <https://www.wdfi.org/ice/berg/Registration/OrganizationCredentialSearch.aspx>



Please follow us on Facebook.

Click here for our page: [Facebook](#)

Impairments to the East Twin River

By CWAC Interns Hannah Keuler and Cassie Vanlanen

The East Twin River of Kewaunee County had long been known as a world-class trout stream. It was around 2005 that a once-filled trout stream tributary leading into the East Twin River began to change, according to West Kewaunee citizens such as Joe Dorner and Joe Musial. But what changed, and what initiated these changes?

One noticeable change within the stream by Kewaunee long-time residents is the decrease in aquatic-life, especially brook and brown trout. Macroinvertebrates test completed by Blue Iris Environmental, Inc. found that "there was a sparse population of macroinvertebrates — even species tolerant of poor water quality were found to be low in numbers." Essentially, the location tested has evolved into a dead zone. But just what led to the dead zone?

The East Twin Water Quality Survey, completed in



Agropur, the Canadian-based dairy cooperative, is a point-source of pollution ending up in the East Twin River. Their actions are believed to have contributed to a massive aquatic-life kill off, as well as poor water quality in an unnamed tributary of the East Twin River.

2017 by the DNR, states that the water pollution is believed to be from agricultural runoff. Another potential source of the water pollution is Agropur, a cheese factory, that releases its wastewater into the unnamed stream tributary leading

into the East Twin River.

Test results from the Dennis Grzezinski Law Office suggest that chlorine, phosphorus, temperature, and volume of wastewater discharge have been found to exceed the Environmental Protection Agency (EPA) and Clean Water Act levels.

According to Grzezinski Law Office, studies have shown that the chlorine levels are 2.5 times higher than that stated

by the National Secondary Drinking Water Regulation set by the EPA. The EPA notes that “National Secondary Drinking Water Regulations are non-enforceable guidelines regarding contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply.”

The EPA recommended amount of chlorine is 250 ppm.



Agricultural run-off is seen affecting the unnamed tributary, adding phosphorus and nitrate to the already impaired stream.

However, Grzezinski Law Office states that, “The DNR instead set a mass limit for chloride using a much higher 395 ppm water quality standard. In allowing Agropur to increase the amount of its chloride discharges, DNR failed to follow the anti-degradation requirements regarding protection of the remaining trout stream waters of the East Twin River.”

The East Twin River is surrounded by agricultural fields. With that being said, the river is already phosphorous-impaired. Agropur’s WPDES permit allows for a final limitation of 0.25 ug/l of phosphorus, meaning that Agropur should only be enabled to release 0.59 ug/l for the duration of their permit. However, within their permit, the DNR has allowed for the release of 0.79 ug/l of phosphorus until the expiration of the permit.

Yet another problematic concern is the volume of wastewater being discharged. Agropur has increased the discharge entering the tributary by over 200%. Now, over 1 million gallons of discharge enter the stream. The larger amounts of water being discharged allow for even more chlorine and phosphorus to be released into the tributary and East Twin River.

The temperature at which the treated wastewater is being released is also an area for concern. “DNR determined that Agropur’s final temperature limitation, needed to protect the aquatic life downstream in the East Twin River, should be 86° F. However, the permit authorizes Agropur to discharge its wastewater at a temperature up to 120° F.”

The unnamed tributary is spring-fed, meaning the East Twin River has historically been cold. The cold water, along with the gravel stream beds are what made the East Twin River a class I trout stream. The colder water allowed for more readily-available dissolved oxygen for the trout. Now that the East Twin River has become infested with high volumes of warm, chlorine and phosphorus filled water, it appears the aquatic-life is disappearing at alarming rates.



Unnamed East Twin tributary 3000211 (near the Agropur plant) is not meeting water quality standards for phosphorus as of 2017. The DNR is proposing that it be added to the impaired list and will also be added to the impaired listing for water temperatures exceeding standards, as this water is at temperatures exceeding 120°F.

The Clean Water Action Council has reached out more than four times to the WDNR to request information regarding their WPDES permit information and wastewater treatment processes, via phone and email. CWAC has also reached out to Agropur in an attempt to gather information regarding their permit and wastewater treatment

processes. However, all contact efforts have resulted in no responses.

It is also important to note that Agropur, the Canadian-based company, has over 39 locations across all North America and it has made itself known for their noncompliance. Many of these additional locations have seriously violated their permits, especially regarding chloride levels/limits. In fact, companywide, “47 of their 55 chloride exceedances have occurred since November of 2013.”

In addition to the 55 violations, in March 2015, the company had a treatment plant failure at one of their factories. This plant failure released between 10,000 and 15,000 gallons of untreated wastewater into an unnamed tributary.

These other reported violations have caused Kewaunee residents to be concerned about the possibility, and extent, to which the Agropur factory is polluting the East Twin River.

This issue has also caused frustration to mount in citizens such as Joe Musial, who thinks “all laws involving public health and public waterways are being ignored by all agencies; town, county, state, and federal government.” In an attempt to find a solution, he believes that “the only remedy is to construct a direct pipeline to Green Bay Metropolitan Sewerage District (to treat Agropur’s wastewater).”

The Kewaunee County Land and Conservation Committee has also provided their input on this concerning issue. In a summary report they state, “...aquatic life conditions on the East Twin River and its tributaries are NOT improving under the current DNR management plans and in fact some conditions, especially those in the lower river, are worsening. Current efforts do not appear to be adequate to maintain a marginal fishery and it is difficult to see that without further efforts, there is little hope to return the East Twin River and its tributaries to the robust sport fishery long-term residents have reported...”

Let it be concluded that, according to 2017 findings by the DNR East Twin Water Quality Survey, conditions of the East Twin River are not improving under current DNR management plans and permit specifications in place. Without updating these management plans, it is unlikely that the East Twin River will return to a healthy body of water.

CWAC Accomplishments for 2020



Despite the pandemic, here are some significant actions that member donations supported. Thank you!



- Educated members and the public through our quarterly newsletters. Main topics included: *Protect Your Family from the Threat of PFAS Contamination*, *The Impact of Factory Farms in Northeast Wisconsin*, *The Fox River: Then, Now and in the Future*, and *CWAC Continues to Fight for Mining Protections*.
- Shared important actions, events, and news through the emailed Weekly Update to 1030 recipients each week.
- Provided education through 6-10 weekly Facebook posts.
- We co-sponsored a bus with the Brown County Conservation Alliance to Clean Water Lobby Day at the capitol. Attendees met with state legislators to share their concerns about water related bills.
- CWAC Vice-President Charlie Frisk testified in Madison at a hearing of the Committee on Natural Resources and Energy in favor of two bills, SB 772 and SB 773.
- Hosted six student interns guiding them with strategies for managing an environmental non-profit organization, and providing workshops, trainings, and networking opportunities to advance their education and career. We sent two of our interns to Wisconsin Environmental Health Network Conference prior to the pandemic, and then numerous virtual meetings and conferences.
- Shared concerns and gave recommended actions to the public, and provided comment on bills and administrative rules that would impact the environment and/or human health including the administrative rules to implement the mining bill, Act 134.
- Reviewed EPA data for compliance with air and water pollution permits in NE WI and submitted several to Midwest Environmental Advocates for possible legal action.
- Testified or submitted comments on permit renewals, permit variances, and the B&D Dairy Contested Case hearing regarding requirement for ground water monitoring. Testified for three City of Green Bay hearings about ending fluoridating drinking water.
- Continued to research perfluorinated chemicals (PFAS), educated members and the public about the threat, reported hearing dates, and published a newsletter on the topic.
- Monitored plowing setbacks for violations in three counties and reported ten potential violations with two receiving agreements for greater setbacks and three receiving warnings or education from soil and water conservation departments.
- Educated the public about the phosphorus in lawn fertilizer ban and monitored sales. Violations were discussed with one retail outlet and two violations were reported to DATCP.
- Followed up on numerous member concerns regarding potential manure spreading violations, manure pit violations, waste-water discharge above pollution permit allowance by a cheese factory, and a DOT plan for a highway bypass near sensitive water resources.
- Participated in the DNR's Lower Fox River water quality monitoring project with monthly sampling August through October.
- Participated in Congressman Gallagher's Save the Bay Committee.
- Gave presentations about citizen action to protect the waters of NE WI to the Appleton Lions Club, SB Noon Rotary Club, and Sturgeon Bay Methodist Church Women's Group. Gave a presentation and hosted a discussion about zero waste at UW-Green Bay Mauthe Center. Numerous additional presentations were cancelled because of the pandemic. However, the Manitowoc/Sheboygan County Lifelong Learning Institute class was moved online in September.
- Updated website articles and resources as new information became available and added video resources for threats from coal tar pavement sealant and micro plastics in clothing.
- Applied for grants for Health Forums through the Green Bay Packers Foundation, Green Bay Community Foundation, and a Zero Waste education grant through CHEJ Small Grants Program.
- Offered presentations to the public and town boards about the health threats from spraying manure.
- Furthered efforts to increase membership in our Planned Giving Circle of Friends.
- Scheduled two April Health Forums: Safe Lawns and Fluoridation of Drinking Water, to be rescheduled in 2021.
- Planned for annual fundraiser featuring locally sourced Dinner, Program, Dance, and Silent Auction. Due to the pandemic it was rescheduled for September, but then cancelled for 2020. The silent auction was moved online.
- Continued efforts with petitions to the EPA under the Safe Drinking Water Act and the Clean Water Act.

MARK YOUR CALENDAR!

1st and 3rd Saturdays, November 2 – April 18

9:00 AM – 2:00 PM

Winter Market on Military

Green Bay Plaza, 1481 W. Mason St.

Hand crafted, home-made and locally grown. Plus, seasonal specialties, TJ Maxx and BayCare bags! Fall and winter produce, organic foods, preserved foods, meat, eggs, honey, bakery, maple syrup products, pet treats, arts and crafts and more! Each week is unique!

For more information, visit: <https://militaryave.org/>

December 14, 11:00 AM - 12:00 PM

Mitigation Banking Webinars Session 5:

Enhancement

Online/Virtual

This webinar will focus on enhancement project design, performance standards, and crediting for wetland mitigation banks. This event will be held remotely via webex and requires registration in advance. After you register, you should receive an email with a link from webex to join the meeting at the designated time.

For more information, visit: <https://dnr.wi.gov/Calendar/Meetings/>

January 26, 11:00 AM - 12:00 PM

Mitigation Banking Webinars Session 6: Developing Hydrology Monitoring Plans

Online/Virtual

This webinar will focus on developing hydrology monitoring plans for wetland mitigation banks. This event will be held remotely via webex and requires registration in advance. After you register, you should receive an email with a link from webex to join the meeting at the designated time.

For more information, visit: <https://dnr.wi.gov/Calendar/Meetings/>

January 30-31

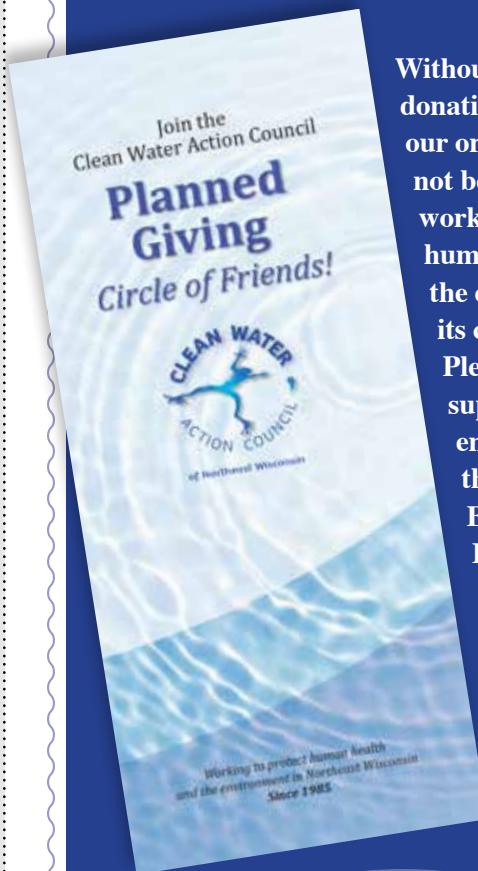
Wisconsin Farmers Union 90th Annual State Convention

Virtual Event

The Wisconsin Farmer Union's annual convention gives the opportunity to gather the Wisconsin Farmers Union community. Ninety years ago, our founders knew family farms were worth fighting for. They gathered in solidarity to set policy that would improve life on their family farms and in their communities. We'll continue that legacy — although virtually — as we celebrate Wisconsin Farmers Union's 90th year.

For more information visit: <https://www.wisconsinfarmersunion.com/convention>

Join Our Planned Giving Circle of Friends



Without planned giving donations or legacies, our organization would not be able to do the work of protecting human health and the environment at its current level. Please consider supporting our endowment fund at the Greater Green Bay Community Foundation with a gift in your will or bequest.

*Contact us for a
Planned Giving
Brochure*

**Thank you to Ken and Marge Bukowski
for providing funds for
five intern scholarships in 2021**

*Please contact us
if you would like to sponsor an intern.*

**Thank you to the
Scott and Cindy Wochos Family Fund
of the Greater Green Bay
Community Foundation
and Anonymous Donor for
providing funds for this issue.**

Join or Renew Your Membership to Clean Water Action Council for 2021!

☐ Renewal ☐ New Member Date _____

() \$25 Individual () \$35 Family (this amount would really help)

() \$50 Sustaining () \$100 Donor () \$500 Benefactor

() Non-member donation of \$ _____ for _____

() Other \$ _____

() Please send me information about making a planned gift to CWAC

Name(s) _____

Address _____

City _____ State _____ Zip _____

Phone _____

E-mail _____

Receive FREE newsletters with each membership.

Please choose one...

☐ Printed version ☐ E-mailed version

PLEASE VOLUNTEER!

(BE SURE TO PROVIDE PHONE NUMBER ABOVE)

☐ the newsletter ☐ events ☐ work at office ☐ mailings

☐ joining or leading one of the committees ☐ other

Send check or money order to: **Clean Water Action Council**
P.O. Box 9144
Green Bay, WI 54308

*CWAC is a registered non-profit organization.
Your contributions may be tax-deductible. **Thank you!***

Office location:

A307 MAC Hall, UW-Green Bay
2420 Nicolet Drive
Green Bay, WI 54311

www.cleanwateractioncouncil.org



Find us on [Facebook](#) or updates on hearings
and current or upcoming events.

The newsletter, "Clean Water Action Council of N.E. WI" is published quarterly by
the Clean Water Action Council of Northeast Wisconsin, Inc., P.O. Box 9144, Green Bay, WI 54308,
a registered non-profit charitable, educational organization.

Contributions may be tax-deductible.

BOARD MEMBERS

Dean Hoegger

President & Executive Director
Door County
920-495-5127

Charlie Frisk, Vice President

Brown County
920-406-6572

John Hermanson, Treasurer

Door County
920-615-5978

Rebecka Eichhorn, Secretary

Brown County
920-290-2199

Caitlin Cravillion

Brown County

Lauren Felder

Jefferson County

Richard Kloes

Oconto County

Carol Pearson

Brown County

David Verhagen

Brown County

Jim Wagner

Brown County

Andy Wallander

Kewaunee County

INTERNS

Hannah Keuler

Cassie Vanlanen

NEWSLETTER

Dean Hoegger, Editor

Bev Watkins, Graphic Design

<https://www.beverlyjanedesign.com>

CONTACT US

By phone: 920-421-8885

*If you leave us a message, we will try
to get back to you within 24 hours.*

By mail:

Clean Water Action Council
P.O. Box 9144, Green Bay, WI 54308

By e-mail:

contact@cleanwateractioncouncil.org



Clean Water Action Council
of Northeast Wisconsin
P. O. Box 9144
Green Bay, WI 54308



in this issue...

Page 1:

- **CWAC Continues to Fight for Mining Protections**

Page 2:

- **The History of Mining in Wisconsin**

Page 3:

- **Environmental Impacts of Sulfide Metallic Mining**

Page 4:

- **A Discussion of Wisconsin's Mining Laws & Regulations Since the 1990s**

Page 5:

- **The Impact of Frac Sand Mining in Wisconsin**

Page 6:

- **"Back Forty" Mine is a Threat to the Menominee River**

Page 7:

- **Don't believe what mining industry promoters are telling you about Wisconsin's Flambeau Mine! It has not operated without polluting local waters.**

Page 9:

- **Sport Fishing and the Threat from Mining Pollution**

Page 10:

- **Environmental Threats of Non-Metallic Mining (Limestone Quarrying) in NE Wisconsin**

Page 11:

- **The Threat of Mining Impacts Wisconsin Residents**

Page 12:

- **Is Mining Worth the Cost?**

Page 13:

- **The Action in Clean Water Action Council**

Page 15:

- **Impairments to the East Twin River**

Page 17:

- **CWAC Accomplishments for 2020**

Page 18:

- **Mark Your Calendar!**



For previous newsletters, go to: www.cleanwateractioncouncil.org