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The Wisconsin Experiment

Donald Trump's war on the environment was prototyped by far-right politicians in state government. We can learn from Indigenous communities who fought back in the name of science and democracy — and won.

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Wisconsin Governor Scott Walker holds a copy of SB1, the controversial mining bill he signed in 2013. [Dinesh Ramde/AP]

In the opening months of the Trump administration, we have seen concerted attacks on science, environment, and democracy. Climate change denier Scott Pruitt was put in charge of the Environmental Protection Agency, although he could not name a single regulation he favors. Congress revoked rules against dumping mining waste in streams, and the president began rolling back Obama-era climate actions. The draft federal budget includes deep cuts to the EPA, NOAA, and public lands agencies, slashing more than 50 programs, including environmental justice.¹ If dismantling environmental law is the first step toward what White House strategist Steve Bannon calls “the deconstruction of the administrative state,”² that’s because it

touches everything Trump holds in contempt: empirical evidence, international cooperation, democratic process, the rights of minorities, the future itself.

While Trump is a uniquely dangerous figure, he did not start this war. Since 2010, far-right politicians in the Midwest have been running their states as experimental laboratories where they refine efforts to undermine science and democracy. (Pruitt himself rose to prominence as attorney general of Oklahoma, where he sued the EPA fourteen times on behalf of corporate polluters and trade associations, many of them campaign donors.)³ The Wisconsin Experiment is particularly egregious. In the past six years, Governor Scott Walker and the Republican legislature, backed by the Koch brothers, have transformed a state once known for pragmatic, decent, common-sense politics into fertile ground for Tea Parties and Trump rallies. Walker now has a direct line to the president through House speaker Paul Ryan and White House chief of staff Reince Priebus, who also hail from the state. To put it bluntly: *What's the matter with Wisconsin?*

Or, to flip the question, what can we do about it? Last weekend, hundreds of thousands of professional scientists and concerned citizens joined the March for Science in cities around the world. The academic journal *Nature* endorsed the march, in a rare statement by its editorial board, as have dozens of nonpartisan scientific organizations.⁴ And here you are, reading this article in *Places*. What are the next steps in the defense of science and democracy? What are the models of effective action? I submit that we should look at recent history in Wisconsin. Study the Scott Walker playbook, and learn from those who have been resisting, especially the Indigenous communities who have won legal challenges.

Everyone concerned about science and democracy should know the story of the Bad River Band of the Lake Superior Tribe of Chippewa Indians, who in 2015 stopped a mining operation that threatened critical wetlands on the lake. The Bad River Band went up against the Koch brothers, the far-right Walker regime, the American Legislative Executive Council, and the mining industry — and they won a decisive victory that stunned political observers. More important than the win,

though, is how they achieved it. They connected environmental concerns to cultural values, and they framed both within a vigorous defense of democracy and the rule of law. They won because they refused to separate science from culture and politics.

Penokee Hills, northern Wisconsin. [Aaron
Carlson]

“A Heck of a Process”

The story starts in 2011, shortly after Walker’s election, when the mining company Gogebic Taconite sought approval to develop the world’s largest open-pit mine in the remote Penokee Hills of northern Wisconsin. The mine would exploit the region’s low-grade iron ore deposits (known as taconite), which are manufactured into steel. Despite the proposed location near Lake Superior, the initial response from many environmental groups was muted. Iron ore mining has a reputation for being less toxic than other industry practices, and state law required a careful permitting process, ensuring adequate protection for streams and wetlands. Observers expected the company to operate within that regulatory framework. But, instead, GTAC set about rewriting the state’s environmental laws and undermining its regulatory agencies. The company’s tactics presaged what we now see at the federal level. When Trump invited manufacturers to nominate regulations to be cut, more than half targeted the EPA.⁵

I first learned about GTAC’s efforts that spring, when I joined a group of academics who visited the Mole Lake Sokaogon tribe to learn how they had defeated a proposed Exxon mine near their reservation in the 1990s. In that earlier fight, the Wisconsin Department of Natural Resources had set industrial-level water standards that would allow for the release of 40 million tons of tailings and acidic mining waste, threatening the tribe’s wild rice. Tribal opposition resulted in the bipartisan passage of Wisconsin Act 171, nicknamed the Mining Moratorium, which halted all new permits for mining sulfide ore unless companies could prove that they had successfully controlled waste from similar mines for at least ten years.⁶ That victory ushered in an era of progress in environmental

justice for tribes in the state. My colleagues and I were eager to learn how the tribe had translated their health concerns into political action.

As the meeting began, a dozen leaders from the Bad River Band filed into the crowded room. They had driven three hours to recruit allies in their fight against the GTAC mine proposed near their reservation. (Both the Mole Lake Sokaogon and the Bad River Band are Anishinaabe, a group of Indigenous peoples that includes the Ojibwe, Potawatomi, Ottawa, and other Great Lakes tribes.) The chair of the Bad River Band, Mike Wiggins, Jr., said that staff at the mining company had pointed to Act 171, assuring tribal members that the project would follow existing law and therefore be environmentally responsible. Wiggins characterized the company's position: "There's a heck of a process. We're committed to following the process. You guys don't need to bother reading that stuff, it's too complicated." But quietly the company had already hired a law firm to write a new bill exempting iron mines from state regulatory standards.⁷

Young eagle in Kakagon Sloughs. [Bad River
Band of Lake Superior Chippewa Indians]

Our conversation that day focused initially on the technical details of pyrite ore bodies, sulfide oxidation, and water quality. But it grew deeper when tribal members spoke about their personal motivations for opposing the mines. "When I was twenty years old, I was riding on the sloughs in a john boat," Wiggins said. "Riding on about four bags of rice, nice soft bags. I was dragging my hand in the Kakagon. There were all kinds of birds, and dark water in the slough. I'm dragging my hand in there, I'm looking at how it colors my hand. I was just so in love with that river. I set nets for walleye, harvested cranberries in the fall and wild rice. I was thinking, 'I wonder if it will always be there, for my children?' I was thinking, 'If something ever came for this place, man, I'd fight for this place, I'd die for this place.'"

The taconite mine was to be located just beyond the reservation boundary, on ceded territories where the tribes had hunting, fishing, gathering, and co-management rights under the treaties that enabled white settlement. Contaminants could potentially flow downstream to the Bad River-Kakagon Sloughs, threatening water, wild rice, fish, and

communities on the reservation, and then Lake Superior itself. Notably, they would not directly harm nearby white communities, which would benefit from the mining jobs. As environmental justice scholars have shown, pollution is not evenly distributed, and Indigenous communities are disproportionately exposed to toxic mining wastes. Until the 1990s, when U.S. courts recognized treaty rights on ceded territories, the tribes rarely had much power in the planning process.⁸

The Bad River watershed is a particularly sensitive area. At 16,000 acres, the Bad River and Kakagon Sloughs make up 40 percent of the remaining wetlands on the coast of Lake Superior. They contain the largest natural wild rice beds in the world, and in 2012 they were designated under the Ramsar Convention as wetlands of international importance, “critical to ensuring the genetic diversity of Lake Superior wild rice.”⁹ The wild rice beds are also central to the cultural identity and economy of the tribes. *Manoomin*, the Anishinaabe word for wild rice, translates as “the good berry,” yet it is more than food — for the Anishinaabe, it is a sacred gift from the Creator. The proposed mine was thus not merely an environmental concern; it also threatened a vital cultural landscape.

According to oral tradition, the Anishinaabe left their homes along the Atlantic Seaboard, perhaps about 1,500 years ago, and journeyed into the Upper Great Lakes. At the Straits of Mackinac, they split into three groups. The Potawatomi moved south into the area between Lakes Michigan and Huron, the Ottawa moved north of Lake Huron, and the Ojibwe explored the south shores of Lake Superior. Upon reaching the St. Louis River estuary at the base of the lake (near today’s Duluth), the Ojibwe found manoomin, the “food that grows on water.” Fifty miles east, they reached what is today Madeline Island, which became the trading hub and spiritual center for all the Anishinaabe tribes. Ancestors of the Bad River Band settled a few miles south along the Kakagon Sloughs, where they found manoomin in abundance. It became a major part of their subsistence, as it could be stored throughout much of the winter, providing sustenance in lean times.¹⁰

Over the past century and a half, the Lake Superior basin has been transformed by industrial use, and especially by mining of the iron ranges in Minnesota, Ontario, Wisconsin, and Michigan. Wild rice is sensitive to hydrological changes from development and to sulfates in the watershed, which can be released by taconite mines and tailings piles. That's one reason why Wisconsin's Act 171 was so important, as it required companies to prove they could control their wastes. Now GTAC aimed to subvert that law with a new bill making it legal to dump iron tailings into streams and wetlands. Bad River Band members argued that the mine could threaten wild rice beds and fisheries, and, even more important, fracture cultural and spiritual relationships. As Chairman Wiggins told Wisconsin legislators at the sole public hearing for the new bill: "Because we're directly downstream and set to endure the impacts of this project, we view this as an imminent threat. We view this as an act of genocide."¹¹

Many of their Euro-American neighbors saw it differently. Residents of Hurley, Wisconsin, hoped the new mine would reverse the economic devastation that followed the closure of local hematite iron mines in the 1960s. Those earlier projects were deep-shaft mines targeting a higher quality ore that needed little processing and left few piles of fine tailings to leach into area watersheds. An open-pit taconite mine like GTAC proposed would bring greater risk, but Hurley lies outside the Bad River watershed, so water quality concerns were secondary. Hurley is typical of many struggling towns in the basin, with a population of 1,500 (less than half what it was two generations ago) and median household income under \$25,000. As many residents saw it, denying permits for the mine would be economic suicide.

But in remembering the boom times when miners had good jobs, the residents I talked with rarely mentioned the lung diseases that haunted the iron ranges, or the bitter battles to win the few rights they had enjoyed. Nancy, a woman from Hurley, told me that she and her neighbors trusted the mining companies, so there was no need for regulation or oversight. She recalled that local impact funds created good schools, hospitals, well-maintained roads. But she and her neighbors seemed to forget that those benefits weren't just given to

them by the mining companies. They were won through political fights led by unions that have since lost much of their power. “Companies left to themselves never gave us anything,” one resident confided at a mining forum. He was worried that new laws might undermine labor as well as environmental protections.

Hurley, Wisconsin. [Alexei and Verne
Stakhanov]

Toxic Legacies

Most of the accessible high-quality ore in the Lake Superior iron ranges was exploited in the late 19th and early 20th centuries, but the recent steel boom spurred mining companies to look for new opportunities. The Ironwood Formation, running 75 miles along the Penokees from northern Wisconsin to the Upper Peninsula of Michigan, is estimated to contain at least 3.7 billion tons of accessible iron ore, or 20 percent of known iron ore deposits in the United States. This translates into 1 billion tons of steel, making it a significant resource in a global context.

¹² GTAC lobbyists claimed that the ore deposit was so large that mining was inevitable. But as U.S. Steel found when it did bulk sampling in the 1980s — before abandoning its own plan for a taconite mine — the geological context makes it extremely difficult to exploit without losing money.¹³ The hard rock requires heavy blasting, and the deposit is tilted at a 65 degree angle, overlaid with up to a thousand feet of overburden and banded with quartzite and shale. In the first phase of its project, GTAC planned to create a pit five miles long and a thousand feet deep. Eventually, they would carve off 22 miles along the ridge of the Penokees with heavy explosives — the first “mountain top removal” mine in the Upper Great Lakes.

The man behind the project was Chris Cline — dubbed “New King Coal” by *Bloomberg Markets Magazine* — who had become “a billionaire by betting on a dirty fuel the world can’t get enough of.”¹⁴ He had no experience mining taconite, but he had a strong track record of leveraging high-risk mining projects with other peoples’ money. Why did GTAC think it could succeed where giants like U.S. Steel had failed? One

reason was that it planned to cut labor costs by using new mining machines that could extract up to 200 tons of rock in a single load. The company also thought it could save costs by cutting regulatory compliance. Nationally, GTAC supported an industry-wide move to block new federal standards that would limit mercury emissions from facilities that process taconite. In Wisconsin, the company began efforts to rewrite state law, exempting itself from the Mining Moratorium.

That moratorium was meant to protect the critically important and increasingly vulnerable waters of the Lake Superior basin. Ore mined in the first phase of the GTAC project would require 5 to 10 trillion gallons of water for processing alone. The mine would also need to be dewatered when the hole dipped beneath the groundwater level, so that the pit did not fill with water. One report noted, “Pumping would certainly draw down the water table in the area, so wells close to the mine would have less water than today, or even dry up completely. The hydrogeology is not well understood though, so the extent of impacts on groundwater — like many of the environmental impacts that come with mining — are uncertain.”¹⁵

Penokee Range iron deposit and the Bad
River watershed. [Great Lakes Indian Fish
and Wildlife Commission]

And water that flowed through the mine or tailings would be a potential source of acid drainage. Many iron formations contain heavy metals that would be toxic if they were mobilized into biological systems. Typically they are bound in stable formations, so they don't move into the atmosphere or the water on a human time scale. But when acid conditions are present, those chemicals and heavy metals can rapidly move into biological systems. Mines with acid drainage issues need to be cared for in perpetuity, guarding against toxic leakages that can flow for millennia, altering ecosystems, eradicating wild rice and the cultures that depend on it. Thus, before communities can weigh the risks of a proposed mining project, it's important to determine whether the site has ores called pyrites. When ground to a fine dust and exposed to oxygen and water, pyrites create sulfuric acid, which can leach harmful

chemicals such as lead, arsenic, and mercury into ground and surface water, and from there into fish and human bodies.

In 1929, the Wisconsin Geological Survey reported that pyrite was associated with local ore and waste rock in the Penokee Hills, and a 2009 USGS report came to the same conclusion. But GTAC denied the presence of pyrite ores in the formation and refused to allow the state, tribes, or residents to view samples it had obtained from U.S. Steel. In late 2015, the corporate owners of the land agreed to move forward with a study of core samples taken years earlier. The samples will be analyzed by current and former federal geologists, but the USGS signed a confidentiality agreement stating that no “preliminary findings will be released without the consent” of the lease owners, so results are not yet available.¹⁶

Although taconite has never been mined in Wisconsin or Michigan, in nearby Minnesota it saved the iron ranges from postwar economic collapse. But while the economic benefits were real, so were the environmental and health effects. Nancy Schuldt, water quality coordinator for the Fond Du Lac Band, a neighboring Anishinaabe tribe, described how iron mines have changed water quality in Minnesota. One major problem is sulfates. Taconite tailing disposal basins are designed to seep waters into downstream creeks in order to keep the disposal basins from overflowing during heavy rain. This effluent sometimes contains elevated sulfate, which impairs wild rice beds, increases methylmercury in waters and fish, causes eutrophication of lakes and rivers, and at some sites kills aquatic species and communities. Taconite plants are required to install scrubbers on smoke stacks to mitigate airborne releases, but the highly concentrated scrubber wash water is emptied into tailings basins, adding to the toxicity of any waters that seep downstream.¹⁷

Taconite stored at Two Harbors, Minnesota,
on the North Shore of Lake Superior. [Pete
Markham]

Some taconite mines in Minnesota have leached sulfates decades after closure, with devastating effects. The tribes have documented that wild

rice was abundant in the St. Louis River watershed before the 1950s, until taconite mining boomed. Now sulfate levels are high in the river, and wild rice stands are few and stunted. A tailings basin once owned by LTV Steel still leaches contaminants into the St. Louis River, and from there into Lake Superior. Elsewhere on the north shore, a tailings basin owned by Minntac leaches 3 million gallons per day of sulfates and related pollutants into two watersheds. Legacies like these worried members of the Bad River Band as they confronted the possibility of a new taconite mine above their reservation.

The history of the Dunka taconite mine near Babbitt, Minnesota, illustrates the challenge of containing toxic wastes. That site was covered with sulfide rock similar to the overburden in the Penokees, and between 1964 and 1994, the operator of the Dunka mine, LTV Steel, produced a 20-million-ton waste rock pile that was a mile long and 80 feet high. Almost immediately, it leached copper, nickel, and other metals. Decades later, the site releases as much as a half million gallons of contaminated water each month, according to state records. In one recent five-year period, the runoff violated state water standards nearly 300 times, yet rather than force the owner to stop the toxic runoff, the Minnesota Pollution Control Agency issued a mere \$58,000 in fines. That contaminated water flows into the Boundary Waters Canoe Area Wilderness, an area that is supposed to be protected from toxic discharges.¹⁸

What do these histories — some quite recent — say to communities that are trying to evaluate the potential harm from new mines? Christopher Dundas, chair of Duluth Metals Limited, argues that past problems have no bearing on future practice. “This is a completely different era,” he told reporters in 2010. “Our operation will be state of the art and will be totally planned and designed to absolutely minimize every environmental issue.” But to advocates for Lake Superior, history matters. Barry Johnson, a field chemist who worked for the state of Minnesota, said that political pressure to create mining jobs can lead agencies to overlook environmental concerns. “I want to have good jobs, too, but I want to do it right,” Johnson said. “These guys are going to

make multi-millions of dollars. We don't want to be left with a bunch of mining pits full of polluted water that even ducks won't land on."¹⁹

Mining operations and exploration in the Lake Superior basin, including the Penokee Taconite Area near the Bad River Reservation, in the southwest. [Great Lakes Indian Fish and Wildlife Commission]

Even when states have strong environmental protections, they are not always enforced. "The mining industry in Minnesota is very powerful and exerts political pressure to prevent agencies from strictly implementing the laws," Schuldtsaid.²⁰ One standard requires mining facilities upstream of wild rice beds to limit sulfate discharges to less than ten parts per million. Although the rule has been on the books since 1973, regulators have only once tried to apply it to a taconite permit. The company sued, and the state halted enforcement. In 2010, the EPA began working with Minnesota regulators to enforce the sulfate standard, but Schuldtsaid that not a single facility on the iron range has come into compliance. Water treatment technology is expensive, and taconite facilities have not been required to treat the effluents from their basins.

Taconite handling also creates tremendous amounts of dust, which can contain silica, asbestos, and other toxins that cause fluid build-up and scar tissue in the lungs. One form of asbestos is linked to mesothelioma, a particularly virulent form of lung cancer, which is three times as prevalent among workers on the iron range compared to the general population. Asbestos fibers can also contaminate the water. Beginning in 1956, an enormous taconite processing facility owned by Reserve Mining Company began dumping tailings directly into Lake Superior. After decades of lawsuits, the operation was shut down, but not before dumping 400 million tons of waste. Asbestiform fibers were dispersed throughout a third of the lake, eventually reaching Duluth, where the drinking water had over 100 billion fibers per liter.²¹

Mercury is another concern. Taconite ore varies considerably in mercury content, so no one can evaluate the risk without studying samples, and again GTAC refused to share its samples with the public or

with regulators. We do know that Minnesota's taconite plants release hundreds of kilograms of mercury per year to the Lake Superior basin, and a recent study found that ten percent of newborn babies in the region have levels above EPA standards.²² In fact, taconite mining is now the primary *local* source of mercury in the basin, although greater amounts come from global sources, such as coal burning in Asia. Identifying and tracing exposures presents enormous challenges for regulatory communities. Pro-mining groups manipulate scientific uncertainty by arguing that regulating taconite in the Lake Superior basin could actually increase mercury levels in the lake by displacing mining operations to China.

One end of the Hull-Rust-Mahoning pit near Hibbing, Minnesota, the largest open pit iron mine in the world when this photo was taken in 1941. [John Vachon/Library of Congress]

Mining, microbial ecology, and mercury interrelate in complex ways in the watershed. When mining exposes the natural metal sulfides in ore to air and water, the result is oxidation, which can lead to acid drainage. Microbes exist in many rocks, but usually in low numbers because the lack of water and oxygen keeps them from reproducing. However, when the rocks are disturbed by mining, the microbes multiply, forming colonies that can greatly accelerate acidification. The sulfates also encourage conversion of elemental mercury (not particularly toxic) to methylmercury (extremely lethal), which then accumulates in fish tissue.

The U.S. Geological Survey reported in 2009 that mercury was found in every fish tested at nearly 300 streams across the country, and that the highest levels were detected in places distant from industrial activity.²³ Remoteness offers no protection, and the biodiversity of wetlands increases their vulnerability. Mercury exposure is particularly strong in Indigenous communities that rely on fish as a food staple. People living in those environments must balance their beliefs with the risks they are willing to assume. How much fish do you eat when it's culturally important? How much do you eat when you're pregnant? Contaminants transform not only the health of lakes, fish, and forests, but also cultural

practices and identities. Interpreting the historic evidence of contamination has become a politically complex exercise.

Bad River Reservation, Wisconsin.
[Wisconsin Department of Natural
Resources]

Undermining Democracy

As the news spread in 2011 that Gogebic Taconite wanted to circumvent the law to open a new mine, the issue became extremely polarized. Because the project lay in ceded territories, the Anishinaabe tribes were furious that the state had failed to consult with them. Meanwhile, the Tea Party movement was gaining strength, riding the discontent of the Great Recession. The next four years would bring a swirl of lawsuits, hearings, political accusations, and even death threats, as GTAC lobbied for an iron mining bill that would allow them to mine with minimal constraints.

In the election year of 2012, the iron mining bill that GTAC wrote (AB426) was defeated in the state senate, when one Republican joined all Democrats in voting against it. Bill Williams, the president of GTAC, signaled that the project was dead. “Wisconsin will not welcome iron mining,” he said. “We get the message.” But that sulking comment turned out to be political theater. Pro-mining groups funneled \$15.6 million in campaign contributions to Walker and his allies during that campaign cycle, and they succeeded in flipping one senate seat into their column.²⁴ Now firmly in control of both legislative chambers and the governorship, Republicans could rewrite Wisconsin’s mining laws — and they swiftly did so. When their new iron mining bill (SB1) passed in February 2013, state senator Fred Risser, a Democrat from Madison and the longest-serving state legislator in U.S. history, thundered on the floor: “This bill is the biggest giveaway of resources since the days of the railroad barons.”²⁵

With the bill, the Wisconsin legislature did not merely authorize the taconite project. They also laid the groundwork for a broad assault on

science and democracy. The bill exempted taconite mining from many state water quality standards, and it formally established the expansion of the iron mining industry as state policy. This meant that if any provision of the iron mining laws were to contradict other state environmental laws, the conflict would be resolved in favor of the former. The new law also eliminated the public right to challenge state permits and scientific findings. Contested case hearings — where the state faces expert witnesses who might challenge the official interpretation of evidence — were outlawed. So were citizen suits against corporate or state employees who were alleged to have violated mining laws, even if they did so knowingly.

Cyrus Hester, an environmental specialist with the Bad River Band, holding chunks of iron oxide and iron sulfide at the tribal offices in Odanah, Wisconsin. [Todd Richmond/AP]

That is a remarkable thing, to insist that the scientific community speak with one voice, and that the only sanctioned voice belongs to the state. The precedent should be watched closely as the Trump administration begins its deconstruction of federal environmental law. Those who marched for science this past weekend need to study how the far-right Walker regime stripped away the mechanisms by which dissenting voices could challenge official findings.

And yet, the Walker regime could not prevent legal challenges from the Anishinaabe. The earlier battle over the Mole Lake mine had led to a landmark U.S. Supreme Court decision, in 2002, that affirmed the right of Indian nations to work with the EPA to set and enforce their own clean air and water standards. Treaties signed between the United States and the sovereign Indian nations guarantee the right to formal consultation when environmental permits are issued on ceded territories.²⁶ In Wisconsin, that process was ignored when the iron mining bill was drafted. State senate majority leader Scott Fitzgerald explicitly refused to consult with the Bad River members.²⁷ After the bill passed, six tribes joined forces to create the Wisconsin Chippewa Federation to protect ceded territories against environmental threats. In August 2013, the Federation sent a letter to President Obama urging

federal intervention to protect Wisconsin waters and Anishinaabe treaty rights.

As the Obama administration was considering its response, public opinion in many of the white communities began to shift against the mine. The news that the mining industry had essentially bought the recent election didn't help its image. Equally important, tribal members reached out to their neighbors. They hosted a "Harvest Camp" on county land near the proposed mine site and invited people to learn more about treaty rights and tribal concerns.²⁸ GTAC responded by hiring paramilitary guards from an outfit named Bulletproof Security in Arizona, which outraged Wisconsinites across the political spectrum. Ashland County commissioners passed a mining ordinance that would require GTAC to pay the county to hire independent scientists to evaluate the company's claims submitted in the county permit process.²⁹

After two years of increasingly bad press and growing legal challenges, GTAC backed out of the Penokee Hills project in 2015, claiming that the federal EPA was plotting to block the mine. (Not coincidentally, iron prices that year plummeted from a high of over \$180/metric ton to under \$60.) The agency disputed that claim and noted that the regional EPA administrator had actually denied the request of six tribes to evaluate the ecological risks. There was no federal plot, just effective political action. In addition to reaching out to local communities to find common ground, the tribes turned directly to the scientific community, hiring wetland ecologists to document the full extent of wetlands at the proposed mining site. It was that ecological knowledge that eventually helped to stop the mine. The company essentially admitted that if it was forced to protect wetlands, the mine could not be profitable.³⁰

Tyler Forks River, a tributary of Bad River
which runs alongside the proposed mining
site. [John W. Iwanski]

Our Common Waters

In a landscape as complex and dynamic as the Lake Superior basin, local processes are shaped at different scales. When the Asian building boom in 2011 forced steel prices to new highs, what had been a pile of useless rock to U.S. Steel was suddenly reframed as the nation's most important source of iron ore. Global capitalism cast a spell of inevitability. "Only a primitive, backward people would stand in the way of our prosperity," one white woman from Hurley told me, complaining bitterly about the Bad River Band. But from the tribe's perspective, how can you destroy the water, the wild rice, the rivers, the slough, for a few hundred jobs and a billionaire's profit? Water isn't a commodity resource; it's the blood at the heart of their place and life.

Some analysts have noted that forbidding taconite projects in the Lake Superior basin may shift mining to places where environmental and labor protections are even weaker than in today's Wisconsin. And it's been happening for decades: China is now the leading importer and producer of iron ore, with a 42 percent share of global mining in 2015, compared to less than 3 percent for Canada and the United States combined.³¹ But who gets to decide how to measure the risks and benefits of industrial activity? Do we empower local communities who face the potential of direct harm? Global markets and logisticians? Or policymakers at the tribal, regional, and national scale who can weigh environmental and economic concerns?

Land use conflicts in North America revolve around these fundamental questions. What kinds of relationships to natural and social communities will be supported by development, and who has the right to decide outcomes? In the late 19th and early 20th centuries, capital and state interests converged to exploit mineral resources in the Great Lakes region. Industrial colonizers saw that as a story of progress and human improvement: the advance of enterprising capitalists, civilization, and modernity into lands considered empty and unproductive. Urban governments envisioned the north as a remote hinterland from which resources could be extracted without leaving any real scar. Yet the people who live there understand that industrial sites are intimately connected to animal migrations, toxic mobilizations, and cultural histories.

Environmental history cannot tell us whether mining in a particular place should happen. That is a social decision, not a scientific or historical one. But historical perspectives can remind us that there is nothing natural or inevitable about resource development. Resources are contingent and they change over time. Calling something a resource pulls it out of social and ecological relationships, isolating it in our gaze. Yet we still live in intimate relationships with those elements. The language of inevitability masks the fact that government actions promote one vision of resources over another. So treaty rights and environmental quality bend to the march of progress. What's hidden is the texture of the wild rice beds, the lake trout that swim through the waters of Lake Superior, the children of women poisoned by mercury, the asbestos released into the watershed by the processing of certain kinds of taconite deposits.

Ceded territories in the upper Great Lakes.
[Bill Nelson]

In the Lake Superior basin, modern mining technologies have produced a deeply scarred landscape. Historian Tim LeCain calls these tools of “mass destruction.”³² And the scars are cultural as well as ecological. Indigenous communities often bore the greatest burden from toxic wastes and social instability, but until recently, they rarely had much influence in the planning process. Powerful tensions developed between Indigenous efforts to sustain wild rice, clean water, and abundant fisheries and metropolitan efforts to extract iron ore. Like the toxics mobilized by mining, those tensions have continuing legacies.

We have to recognize that current conflicts are shaped by those past events. Decisions about sustainable mine planning are social as well as technical. The mining companies now exploring the Lake Superior basin argue that while past mining practices may have caused some damage, the future will be different because the industry has embraced sustainability. They say new mines will bear little resemblance to the old. Further, they insist, mining is an essential part of sustainable development because it helps to fund economic development and environmental protection. Sacrifice zones in remote regions will enable

nations to experience the full benefits of neoliberal development. Indigenous groups view those claims skeptically. They point out that they have historically borne the brunt of sacrifices made in the name of economic development, and they say the rhetoric that surrounds mining debates is distorted by assumptions that places remote from urban centers are essentially barren and empty, rather than landscapes peopled with Indigenous communities.

The right-wing capture of the Wisconsin state government led to the dismantling of environmental protections that have been in place for decades. What's more, the state attempted to silence public protest and marginalize challenges to a narrow range of technical expertise. This is an assault on democratic checks and balances. Yet the Indigenous peoples of the region have asserted their federally protected rights to stop destructive land uses. Those are rights that cannot be eliminated by any government. In the last several decades, the Anishinaabe have become central to the protection of the Great Lakes.

Indigenous peoples of North America, and the globe, offer an alternative vision of the future, and they have critical legal tools and strategies for protecting clean water and healthy watersheds. So when you read that President Trump's proposed budget slashes funding for environmental restoration in the Great Lakes from \$300 million to \$10 million, or that it makes deep cuts to programs that affect landscapes near you, consider that one of the most effective actions you could take would be to stand with the tribes. Help them document environmental risks, defend treaty rights, and protect our common waters.

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NOTES

1. Of course, these are just the opening moves in an ongoing war on environmental protections. For updates after this article is published, see Michael Greshko, “A Running List of How Trump Is Changing the Environment,” *National Geographic*. ↩
2. Philip Rucker and Robert Costa, “Bannon Vows a Daily Fight for ‘Deconstruction of the Administrative State,’” *The Washington Post*, February 23, 2017. See also Stephanie Mencimer, “Steve Bannon Wants to Destroy the ‘Administrative State.’ Neil Gorsuch Could Be the Key,” *Mother Jones*, April 5, 2017. ↩
3. Eric Lipton and Coral Davenport, “Scott Pruitt, Trump’s E.P.A. Pick, Backed Industry Donors Over Regulators,” *The New York Times*, January 14, 2017. ↩
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weaken environmental laws, that's going to weaken federal and state air and water quality, the answer is no." That turned out to be a misleading statement, as GTAC was lobbying to exempt the taconite industry from regulations. Barbara With, "[Wisconsin Mining Bill SB1/AB1: A Review of AB426](#)," *Wisconsin Citizens Media Cooperative*, January 22, 2013. ↩

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