

# Headwaters



Special Issue:

## Mining, Land & Water

Where do  
we go from  
here?

### Defend Public Land

for Hunting, Fishing,  
and Future Generations

By Richard Sloat

### A Legacy of Waste:

Uranium Mining in the  
Serpent River Watershed

By Lorraine Rekmans

### Waking Up to the Realities of a Mining Economy

By Bob Tammen

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## Why a Special Issue on Mining?

While other mass industrial activities have had a profound effect on the Great Lakes region, mining, like no other industry, has left deep environmental and economic scars.

Many of us grew up learning of the iron ore heydays of decades past in Minnesota and Michigan, the copper booms of the Upper Peninsula and the uranium booms around Elliot Lake, Ontario. These periods of prosperity certainly employed many, often at good wages, once miners were able to unionize in an industry notoriously hesitant to recognize workers' rights. Yet those booms came and went, with the mines often leaving a legacy of pollution and impairment of the region's other natural resources – clean water and healthy forests, as well as quality public lands to hunt, fish and spend good time on.

But the concern with mining is not only one of maintaining a clean environment and sound public health. Most former mining regions in the United States and Canada remain chronically depressed areas economically. This negative long-term economic impact to our communities is an issue as critical to any discussion of the region's future as other mining-related concerns.

Jobs have been rapidly declining in the mining industry and the US Department of Labor expects a loss of roughly 100,000 mining jobs between 2008 and 2018. At the same time, ore production and export continue to rise, along with corporate profits. The few jobs that are left are typically well paying – higher than the private industry average – if you can get one. The mining industry continues to further automate mines, which tends to make mining safer, but at the cost of requiring far fewer workers than in the past. Unfortunately, these trends do not suggest long-term economic stability for communities dependent upon mining employment.

As evidenced by this economic reality, this is a complex issue – one that cannot be divided into two starkly opposite and competing sides with any honesty. There are no definite answers in the mining, lands and water debate or concrete solutions as to what the future of this region should be. Solutions should come as the result of an ongoing, open and respectful discussion among citizens of the Great Lakes region. To make that discussion productive, we must first recognize where we are in order to better determine where we will go

Editor's Note



Sportsmen with the day's catch, Michigan, circa 1890s; Photo courtesy Superior View

from here. What elements of the past should be retained? What should be changed? What is holding us back?

Mining is an important part of the cultural heritage of the Great Lakes region. Yet, a focus on historic mining often leaves the impression that our ancestor's most important contribution to society was digging holes in the ground and crawling through damp, dangerous spaces in rickety underground mines.

Truly, our most important heritage is tied to our love of this beautiful land, its rivers, lakes and forests. Decades of efforts by ordinary citizens to conserve this cultural bounty have kept the region unique from many other areas with its abundance of quality public lands for hunting, fishing, camping and other recreation. It is this heritage that miners of decades past lived and worked for and ensured would be left for their children. It is this part of our heritage that makes the future of this region worth fighting for.

## What is Headwaters News?

Headwaters News is a new citizen-based media project focusing on environmental, public health and economic concerns in the water-rich region from Minnesota to eastern Ontario.

This special issue was published with the help of small, but very generous donations, and hundreds of volunteer hours from dozens of people – your neighbors.

We hope that you will join in this regional discussion.

For more information, please visit our website at [HeadwatersNews.net](http://HeadwatersNews.net)

If you are interested in submitting photos, video or written content, please contact us at (906) 361-0413 or [editor@headwatersnews.net](mailto:editor@headwatersnews.net)

Headwaters News relies on donations from generous readers to help us continue this media project. Please send donations to: Headwaters News, PO Box 833, Marquette, MI 49855

# Waking Up to the Realities of a Mining Economy

By Bob Tammen



View of Minnesota's Iron Range; Photo courtesy Lori Andresen

Listening to a mining company representative brag about their contributions to our economy is like listening to a rooster on a dunghill crow until he makes the sun rise.

The economic theory of the "resource curse" documents the fact that economies dependent on natural resource exploitation generally grow at a slower rate than economies that rely only upon the creative abilities of their citizens. Just look at mining regions in the coalfields of Appalachia, the Ozarks lead district, Idaho's Silver Valley, Arizona and Montana's copper towns,

New Mexico's uranium district, Michigan's Upper Peninsula iron and copper ranges and Minnesota's own Iron Range for examples.

This generation of mining no longer creates enough jobs to maintain healthy schools and vibrant main streets over the long-term. Any short term gain from a construction boom in mining is soon offset by

the realities of a modern mining economy. The realities are expensive environmental clean up and long-term declines in employment.

There's no denying that the discussion over the benefits and hazards of a mining economy gets pretty intense. A serious problem in mining country is that during the debate about

the economy and the environment, we don't often address the culture of an established mining area. If you want to know what a mining economy looks like, don't just picture ugly waste dumps, polluted tailings ponds and huge pits. Picture grass growing under the playground swings.

Thirty-five years ago I worked on an upgrade at the Empire mine in Michigan's Upper Peninsula. I stayed in the town of Palmer, which was just across the highway. Last year my wife, Pat, and I returned for a visit. The mine was still operating but when we drove past the school we saw grass growing under the playground swings.

I struck up a conversation with a miner leaving the city offices across the street and he said they weren't able to keep their school open even with an operating taconite plant next door. This story isn't unique to the Michigan mining district.

In 1969 I went to work for US Steel at their Minntac plant, in Minnesota. On a large sign at the main gate, Minntac advertises itself as the largest taconite mining operation in North America. The main street of Mountain Iron begins just a half-mile from the main gate. During my bachelor days I rented an apartment on the main street of Mountain Iron. There was a grocery store next door and a bar across the street. Life was good.

Last winter Pat and I went to a meeting in Mountain Iron. We drove past the main gate of Minntac and into town. The bar is still there but the grocery store is gone. Life is still good for me but the main street of Mountain Iron isn't doing so well.

When I went to work at Minntac, mining productivity was approximately 6,000 tons per employee per year. Now each employee averages 13,000 tons per year. Productivity more than doubled in my working lifetime. Now, it only takes half as many employees to ship the same amount of ore.

We have living memory of a time when mining was manpower intensive and families were large. Automation and family planning have changed much, yet our society can't accept the fact that mining can no longer serve as a foundation for healthy communities.

In Minnesota and elsewhere around the upper Great Lakes, many of our leaders have said that we need to mine low-grade ore bodies so we can use the minerals for manufacturing. The problem is, they're so focused on extracting minerals that they have no energy for promoting manufacturing. We have an educated work force and a strong work ethic. So why don't we have a manufacturing industry? It's because our culture is dominated by the extraction mindset that keeps leading us to dead-end development projects.

The proposed PolyMet NorthMet copper-sulfide mine is a good example of the development dead end we're facing. We've heard politicians say we need copper to make wind turbines in Minnesota but there are no proposals on the table for wind turbine factories on the Iron Range.

As a matter of fact, PolyMet has already signed a marketing agreement with Glencore, a Swiss commodities trader. Our copper is likely to be used to make wind turbines in China long before we have a factory in northern Minnesota.

Much of the metal demand now is coming from China. Rio Tinto, a company trying to mine in Michigan's Upper Peninsula and Aitkin County, Minnesota, increased its

sales to China by nearly ten times from 2000 to 2006. In 2008, when asked what other rapidly growing primary markets the company saw, in addition to China, CEO Tom Albanese said, "China, China – and then again, I would say, China."

The US has rapidly increased exports of raw materials such as food crops, metals

American worker. From 2001 to 2007, before the current recession, US trade with China cost roughly 2.3 million, mostly manufacturing, America workers their jobs. This trend is expected to continue.

According to the Natural Resources Research Institute, "There are real opportunities for Minnesota to be a supplier

of raw materials to China in both the ferrous and nonferrous areas."

According to economist Thomas M. Power, "some citizens and leaders" in Minnesota's Iron Range are stuck with the belief that mining is essential to the regional economy, even though mining jobs contribute to only five percent of personal income on the Iron Range and a scant two-tenths of one percent for the state:

"This belief in the importance of metal mining [to the economy] is partially tied to the historical role that industry played in the European settlement of northeastern Minnesota. But economic history is not usually a good guide to the economic present or future. Trying to explain current day Pittsburgh, Chicago, Denver, or Portland, for instance, in terms of steel, meat packing, ranching, or timber, respectively, would not be very useful."

and lumber over the past nine years while importing higher-end products, such as electronics and other manufactured goods, with disastrous effects for the

environmental consequences

To make matters worse, the

of mining are fairly well documented and pretty much ignored by regulators in mining country.

Minnesota has a sweetheart arrangement with the mining industry whereby they create "Voluntary Investigation And Cleanup" agreements. You don't have to be a hardened cynic to suspect that voluntary activities in the mining industry will lead us to the same wonderful outcomes we got from voluntary regulation in the financial industry.

In the upper Great Lakes we have leaking tailings ponds, blowing dust, polluted surface water, polluted ground water, and a mining company sense of entitlement that is outright shameless.

Pat and I live in Soudan, Minnesota, an old mining town. When the mine was closed down in the 1960's it was converted to a state park. We both love to take our company for a tour of the underground mine when we get visitors. Unfortunately, our mine is still polluting. The water that's pumped out of the mine contains elevated levels of copper, cobalt, and mercury.

If a relatively innocuous underground iron mine is still polluting over forty years after closure, what should we expect from a copper mine in an acid-producing sulfide ore body?

Promoters claim we should mine copper here so we don't mine it in some foreign country with lower standards, yet they never identify a polluting mine that will be closed down if we open up a mine in our wetlands. That's because we won't actually replace a polluting mine someplace else. We'd just be competing with them in a race to the bottom.

New copper mining would be a wetland killer and an energy pig. It's capital intensive and job stingy. There's nothing radical about opposing new copper mining in wetlands around the Great Lakes.

Bob Tammen is a veteran of Vietnam, the mining industry, and several battles to save wetlands. He and his wife, Pat, live between the Boundary Waters and Lake Superior. They are dedicated to protecting both.

# Defend Public Lands for Hunting, Fishing and Future Generations

By Richard Sloat



Preparing for an October river hunt; Photo courtesy Richard Sloat

Opening day 2009, a spike horn buck came from behind me. The hunt started about half an hour before it would be light enough to fire off a round. Cradled in my arm was my Remington 35 caliber pump with peep sites. The temperature was below freezing, but no snow covered the ground, only crunchy leaves, and I still had feeling in my toes and fingers.

The red squirrels were active, and in the distance I could hear the jungle-like calls of Pileated Woodpeckers as black capped Chickadees and Red-breasted Nuthatches gathered in the branches of the young maples and popples that surrounded me. I didn't hear the buck coming over the hill forty feet away. Moving at a rapid pace, the deer passed within twenty feet—I was unknowingly on its rub line. Being caught by surprise and out of good shooting position, the spike horn continued along its path. It still mystifies me how deer can move so silently at

times through the forest and a person can hear a squirrel one hundred feet away under the same conditions.

On day four I decided to hunt the perimeter of the clear-cut. I had situated myself on a hill when a crack from a stick behind me heightened my senses. This time, without hesitation, I turned poised ready to aim and fire, but a small amount of hunter's orange, two hundred feet away, flashed through the balsam branches. At first I was upset as great effort was taken to get to this spot without detection and now possibly every deer within a square mile had heard that same crack of the stick. But as I glimpsed a gray haired

man and his much younger companion moving off into the distance, I began to think. We share a hunting bond, we share the land.

My father and I enjoyed hunting public lands. Because my dad was a miner, swing shifts made it difficult to make time on the weekends for recreation, but I happily skipped school in order to go hunting. One October day we left town with the 17-foot Grumman canoe strapped to the roof of the car, our second car, the one my dad took to work, the one a person really didn't want to be riding in if the gravel road was dusty. We headed out to try our luck at duck hunting on the Perch River, in Iron County, Michigan. It started to snow huge flakes about the size of 50-cent pieces. Traveling down the gravel Forest Service road we entered a sweeping curve and happened upon two mature Bald Eagles. In the early 1970s it was rare to witness eagles due to the heavy use of pesticides.

Launching the canoe, we headed upstream with my dad paddling and me in the bow with the Mossberg 20-gauge. The river was thirty feet wide, choked with tag alders on both sides. Rounding a bend in the river, three mallards leaped into the air from a little cove. Two shots, three mallards down. "Good shooting!" my dad shouted with excitement. Compliments and recognition were few and far between

from my dad—maybe that's why I enjoy hunting and canoeing so much, remembering my youth with my dad, his stories and the stories he told me about my grandfather and his outdoor excursions.

We did not have access to private land or a camp, depending on public land as our only means to hunt, fish, camp, hike and canoe. I continue to live in the Upper Peninsula of Michigan because of the many acres of accessible public land. Today that access is threatened.

I recently discovered that foreign hardrock mining companies are laying claim to public lands. Raised in an iron ore mining community, Iron River, Michigan, and a third generation miner myself, I was aware of the problems of past mining. When I was a kid, the river winding through town was known as the "Red River" due to the color of the water created from the mine discharge. The red is gone but the leakage from abandoned mines and the acid drainage from the tailings piles along the river continue to contaminate the water. I assumed problems like these would have been addressed and corrected using modern mining methods. Despite advances in technology, the mining industry has been using relatively the same practices for well over thirty years.

Considering the poor track record of hardrock mining, it doesn't make sense to leave the health of our public land and water in the hands of foreign mining corporations. So, a group of us in Iron River sponsored a "Mining Heritage Forum" at our library featuring local historians who presented a history of our mining heritage in the community. We invited speakers who promote hardrock mining and those who oppose it in order to inform the citizens what this new era of mining might mean for our community's future.

Shortly after, we heard that exploration companies were applying for permits to explore for precious metals in the Ottawa National Forest. Six permit areas were requested, totaling 2,155 acres. The area affecting Iron County was, coincidentally, the Bates Parcel, a tract of land consisting of 395 acres encompassing the Perch River—the same Perch River I mentioned earlier, a tributary to Lake Superior where my dad and I went duck hunting.

Our group organized a letter writing campaign. Through our efforts over fifty letters were written opposing exploration on the Bates Parcel. Bates Township officials received numerous documents detailing the hazards of hardrock mining, elevating their concerns. Months later, I learned the



A successful hunt; Photo courtesy Richard Sloat

Kennecott Exploration Company, a subsidiary of Rio Tinto, withdrew its permit application to explore along Perch Lake. I attribute the withdrawal to the many letters opposing Kennecott's exploration plans and skepticism from Bates Township about hardrock mining exploration.

In Michigan the Yellow Dog Plains, Ottawa National Forest and the Shakey Lakes Savanna in the Escanaba River State Forest are currently being considered for mining operations. The Upper Peninsula is not a unique situation. Public lands throughout the Great Lakes are being explored, such as the Superior National Forest in Minnesota. Areas of potential concern from mining and exploration in Canada include the Lake Superior Provincial Park and the Pukaskwa National Park in Ontario. Native American and First Nation lands are also being considered for

mining in Canada and the US. Development of these areas would be disastrous for the water, land and wildlife.

We have a daunting task before us. Our pleas to government agencies responsible for protecting our public lands are falling on deaf ears. Today's mining would limit our land use, poison much of the land and water, and leave future generations questioning our decisions.

A very wise man once told me, "It was said many years ago a time would come when many peoples would gather to protect mother earth". I believe that time has arrived. We need to act now with one voice. Defend our public land!

*Richard Sloat is a life-long resident of the Upper Peninsula, living in Iron County the majority of his life. He loves the outdoors. Canoeing the Paint River is his favorite past time, especially running the Hemlock Rapids in high water.*

# Freshwater: Mining's Most Common Casualty

By Teresa Bertossi



There are bobbers and there are sinkers. My parents were sinkers. They couldn't swim, and they never taught us to swim.

*Yellow Dog River, Michigan;  
Photo courtesy Alexis Raney*

We all have our own individual childhood stories and relationships with the water, but we share a common responsibility to protect it. And that's no easy challenge.

Over the last thirty years we have certainly made progress in cleaning up America's waters—it has been a while since one of them caught fire—but according to American Rivers, almost 40% of the rivers and streams in the US are too polluted for fishing and swimming and more than 50% of wetlands have been lost in the past century.

Already, contaminated fish advisories have become a part of our daily lives. In the past century nearly 20% of all freshwater fish have vanished. Today, according to Learning Disabilities Worldwide, the recommended weekly allowance for fish consumption is about one meal (six ounces) for adults and two ounces for children.

Consider a recent US Geological Survey study that found mercury contamination in every fish sampled in 291 streams across the country, between 1998 and 2005, including waters of the Northeast and the Upper Midwest.

Mercury contamination has also affected the Common Loon. This water-loving creature has survived on our planet for 65 million years, and is now considered "threatened" or a "species of special concern" in parts of the US.

If the loss and contamination of one of our most primitive birds and our freshwater fish isn't cause for concern, what is?

But, water pollution isn't our only problem. In many parts of the world freshwater is hard to come by. Water resources are running dry. Although developing nations bear the brunt of water shortages, in 2003 water managers from thirty-six states said they expect water shortages over the next ten years.

Currently in the Midwest, officials and citizens of Waukesha, Wisconsin, and Lake County, Illinois are eyeing the Great Lakes as a solution to insufficient or contaminated drinking water supplies.

It may sound crazy, but while water-hungry communities are turning to the Great Lakes as a solution to water scarcity, the US and Canada are allowing water bodies to be used as tailings waste dumps for the mining industry.

The Clinton and Bush administrations helped to make lake filling possible by redefining the definition of "fill" material and weakening the Clean Water Act. The change allows mining companies to dispose of their wastes in natural water bodies throughout the US.

For example, a recent US Supreme Court decision allowed the Coeur d'Alene Mines Corporation to dump waste in the Lower Slate Lake, near Juneau, Alaska, even though doing so would kill all aquatic life in the lake.

The weakening of the Clean Water Act is also responsible for stream filling as a result of "mountain top removal" coal mining in the Appalachian region of the US. A similar situation, in 2002, led to a change to Canada's Fisheries Act, allowing water bodies in Canada to be used as "tailings impoundment facilities" (waste dumps) for the mining industry.

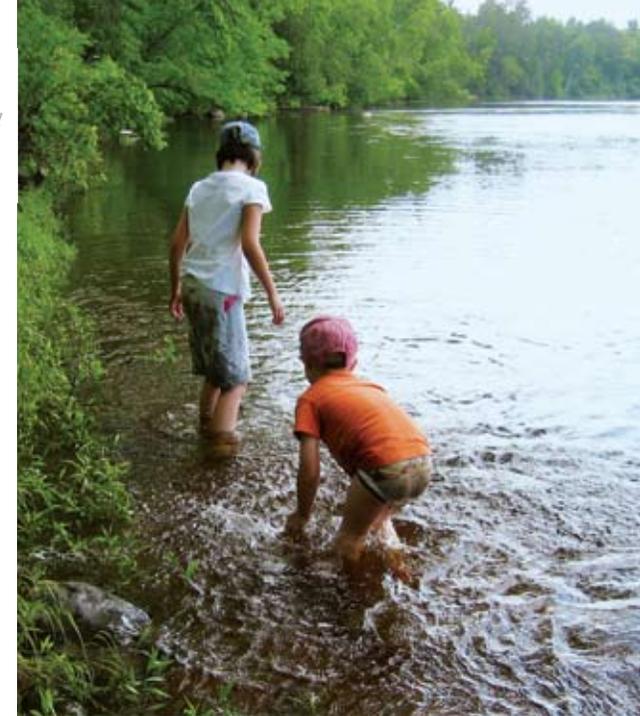
Tailings disposal in water bodies comes with many risks, as evidenced by the contamination of Lake Superior by the Reserve Mining Company between 1955 and the 1970s. Despite outcry from local sportsmen, fishermen, labor representatives, and a public health officer the company was granted a permit, and the finely ground waste product was dumped into Lake Superior, along with over 50,000 pounds of chemicals per day.

The pollution contaminated Lake Superior for thirty-five miles from Reserve's plant, turning lake water green and killing fish. The pollution continued to spread, covering 2,000 square miles of the bottom of the lake. In 1977 the people of Duluth, Two Harbors, Beaver and Silver Bay were forced to foot the bill for water filtration plants to remove contaminants from the public water supply.



*Autumn sunset on Lake Michigan; Photo courtesy Alexis Raney*

*Children playing in the  
Menominee River, Michigan;  
Photo courtesy Ron and Carol  
Henriksen*



As evidenced by the Reserve case, mining activities can impair freshwater even in the largest of lakes. Sadly, according to the Environmental Mining Council of British Columbia (EMC), water is "mining's most common casualty." This is partly due to the fact that it can be difficult to pinpoint the source of contaminated drainage from a mine.

And mining and metals processing is considered one of the world's worst pollution problems (Blacksmith Institute, 2006). Often, modern mining requires a greater dependence on technology to control or contain the chemicals produced or used during mining and processing. Human error, improper or malfunctioning equipment, and natural hazards can result in accidents, fires, spills, or landslides, causing sudden increases in contaminants in air and water supplies and increased exposure to humans and wildlife.

Some examples of the most risky mining ventures are the mining of uranium and gold, as well as the mining of minerals found in sulfide ore bodies.

In gold mining, cyanide is often poured on piles of rock to extract gold. According to the World Health Organization, cyanide is highly toxic to humans

and readily absorbed by the stomach.

And in the case of uranium mining, processing and exploration, radioactive dust particles can spread through air and water. Exposure to radioactive elements from drinking water, food supplies, or radon gas can cause cancer and numerous reproductive problems.

When sulfides are removed from the ground and exposed to air and water a chemical reaction can create sulfuric acid which can introduce heavy metals to waterways and be harmful to humans and aquatic life.

Now, due to rich geologic formations and a high demand for metals, the Great Lakes region is facing a potential metallic sulfide and uranium mining boom. Mineral exploration companies are actively pursuing mineral leases near Lake Michigan and around Lake Superior throughout

Minnesota, Michigan and Ontario.

The Great Lakes is a fragile ecosystem vulnerable to degradation. When we are considering a new mining district near 20% of the world's freshwater, there is little room for accidents.

If we protect our water, this region has the potential to specialize in world-leading water technology and conservation jobs (from construction to landscaping and engineering), eventually helping other communities so they won't have to divert Great Lakes' water to survive.

We need brave citizens around the world to stand up to protect the water—it is a difficult task, and it's going to take everything we have hook, line, and yes, even sinkers.

*Teresa Bertossi lives in Michigan's Upper Peninsula. Her concerns with hardrock uranium mining in the Great Lakes stem from her family's hardships due to their coal mining heritage.*

# Mining Companies Shake Their Moneymakers

By Gabriel Caplett



Photo courtesy Flickr/Creative Commons by BlankBlankBlank

With new mining activity in Minnesota and Michigan the biggest supporters of projects such as PolyMet's NorthMet and Rio Tinto's Eagle Project are, not surprisingly, state politicians.

While most Americans, according to a recent poll, consider politics to be the least trustworthy profession, it has been elected officials that have come to the mining industry's rescue, readily using the bully pulpit to corporate advantage.

This was starkly evident at a December Minnesota public hearing on PolyMet's project. The state changed protocol at the hearing and the public was only able to comment in written format or, privately, with a stenographer. The only three speakers allowed? Three Iron Range politicians who gave strong and unequivocal endorsements of PolyMet's plans.

Companies trying to mine in northeast Minnesota and Michigan's Upper Peninsula are benefiting from a revolving door relationship between the mining industry and the state agencies and officials

charged with enforcing it. In November 2008 Michigan Governor Jennifer Granholm's representative for the Upper Peninsula, Matt Johnson, resigned from his post to take a job as "manager of governmental and community relations" for Rio Tinto, a company under review by Granholm's administration.

In 2007 Franconia Minerals hired former Director of the Minnesota Department of Natural Resources' Division of Lands & Minerals, William Brice, as the company's Director of Government & Community Relations. Brad Moore, recently the commissioner of the Minnesota Pollution Control Agency (MPCA), now works for Barr Engineering, a Minneapolis-based consulting firm working with PolyMet, while Ann Glumac, former deputy MPCA commissioner, is assisting PolyMet as a consultant.

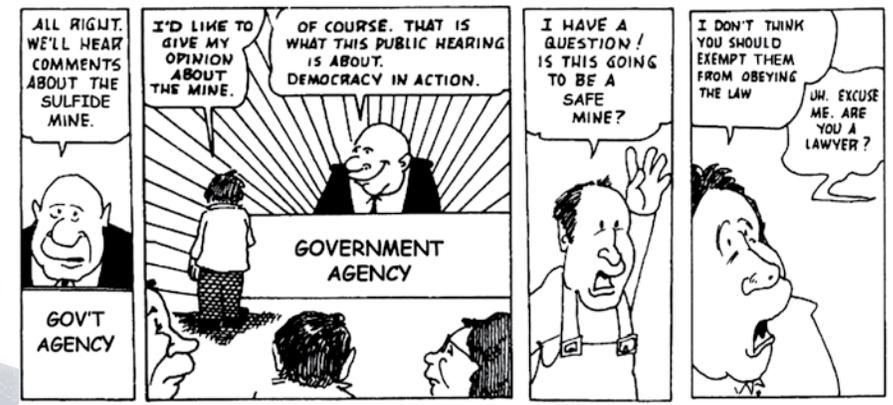
In Michigan, the Department of Environmental Quality (DEQ) – recently recombined

with the Department of Natural Resources (DNR) offers a clear example of a state agency that has been ample in its generosity toward helping industry get projects approved - the law, sound science and public opinion be damned.

A 2001 open records request revealed that former DEQ Director Russ Harding suppressed an internal state health assessment recommending immediate action to clean up extensive dioxin contamination around Dow Chemical's lower Michigan chemical

operations. If Harding was successful, his efforts would have increased the amount of allowable dioxin in residential and industrial areas to levels more than ten times above public health standards. Dioxin, highly toxic in even minute doses, damages the nervous and reproductive systems, child and fetal development and causes cancer.

In 2007, the highest level of dioxin ever reported to the Environmental Protection Agency was found in the river adjacent to Saginaw's Wickes Park.



Adapted from the Flambeau Funnies

"We simply don't have the kind of funding we need to adequately implement the laws we're required to implement."

- Michigan DEQ Director Steven Chester

In October 2004, Harding, working for the Dow-funded Mackinaw Center for Public Policy, wrote that the cost of cleanup for Dow "would be a huge expense for them for what they think is not money well-spent."

Harding is not alone in his disregard for the public's health. Steven Chester, before succeeding Harding as DEQ head, worked for a law firm representing Dow Chemical. An August 2007 confidential memo obtained from the US Environmental Protection Agency contains a scathing criticism of both Governor Jennifer Granholm and Steven Chester, expressing concern that the DEQ and Michigan politicians tried to weaken Michigan law and delay clean-up in an effort to reduce potential future liability for Dow.

This careless attitude toward protecting the environment, wildlife and the public's health in Michigan has readily extended into behavior surrounding the state's review and approval of Rio Tinto's proposed Eagle Mine.

Charges have been made by well-respected mining expert Jack Parker that the mine, as designed, is not safe and

could collapse. The state's own commissioned expert, Dr. David Sainsbury, said that Rio Tinto's mine plan is "technically antiquated, sloppy and equivalent to high school level work," that Rio

Tinto's methodology does "not reflect industry best practice" and the company's conclusions regarding the mine's stability "are not considered to be defensible." The DEQ did not include Sainsbury's reports in the public record and dropped his references comparing the nearby collapsed Athens Mine to Rio's proposed mine.

In 2007, before being transferred to work overseas Sainsbury e-mailed Rio Tinto's subsidiary, Kennecott, because he was "concerned that there was no one with any rock mechanics expertise on the Kennecott side." When asked if anyone at the company took any action regarding his request, Sainsbury said, "I believe they didn't."

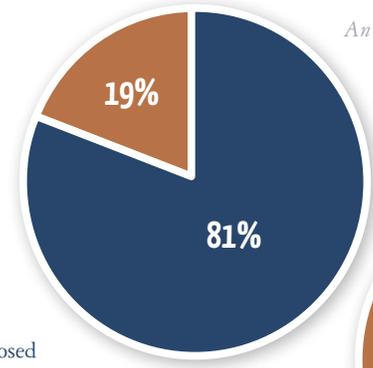
In court, Joe Maki, a geologist with the DEQ's Office of Geological Survey and "application review coordinator" for Rio Tinto's Eagle Project, said his agency did not consider a central tenet of Michigan's current

sulfide mining law requiring that a mine application has to establish that the proposed mining operation "reasonably minimize[s] actual or potential adverse impacts on air, water and other natural resources."

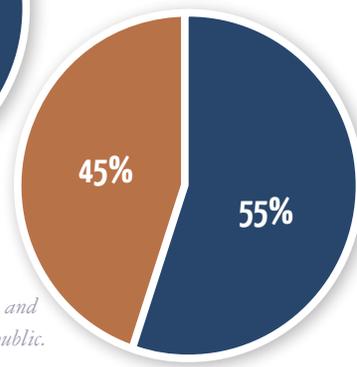
On June 19, 2008, shortly before 6 p.m., when asked if either he or his mine team followed that law in recommending approval of the project, Maki said, "I did not, no," and "I don't believe so, no."

Undeterred by all the problems, state politicians, such as Senator Mike Prusi, Governor Granholm and DEQ brass continue to insist everything is above board in the DEQ's handling of Rio Tinto's Eagle Mine. In a February 2009 op-ed, Prusi went so far as to claim that Rio Tinto "has met Michigan's strict mining and environmental protection laws."

Minnesota politicians tell similar tales. In February, State Representative Tom Rukavina said PolyMet's project would be "the most environmentally sound copper nickel mine, I think, in the world." US Senators Al Franken and Amy Klobuchar, as well as US Representative Jim Oberstar have described the environmental review for the project as "diligent," "responsible," and "innovative." Meanwhile, the



More than half of employees thought the Michigan DEQ does not disseminate complete and accurate information to the public.



An overwhelming majority of Michigan DEQ employees did not trust top agency management to protect Michigan's resources and public health.

## Trust Issues at the Michigan DEQ

Corruption and negligence has certainly had an effect on morale at the Michigan Department of Environmental Quality (DEQ) (now part of the Department of Natural Resources and Environment). According to a survey by Public Employees for Environmental Responsibility – 609 of 1,462 DEQ employees (41.6%) responded to the survey - 81% of DEQ employees said that they "did not trust top agency management to protect Michigan's resources and public health." 55% of respondents either "disagreed" or "strongly disagreed" that "the DEQ disseminates complete and accurate agency information to the general public."

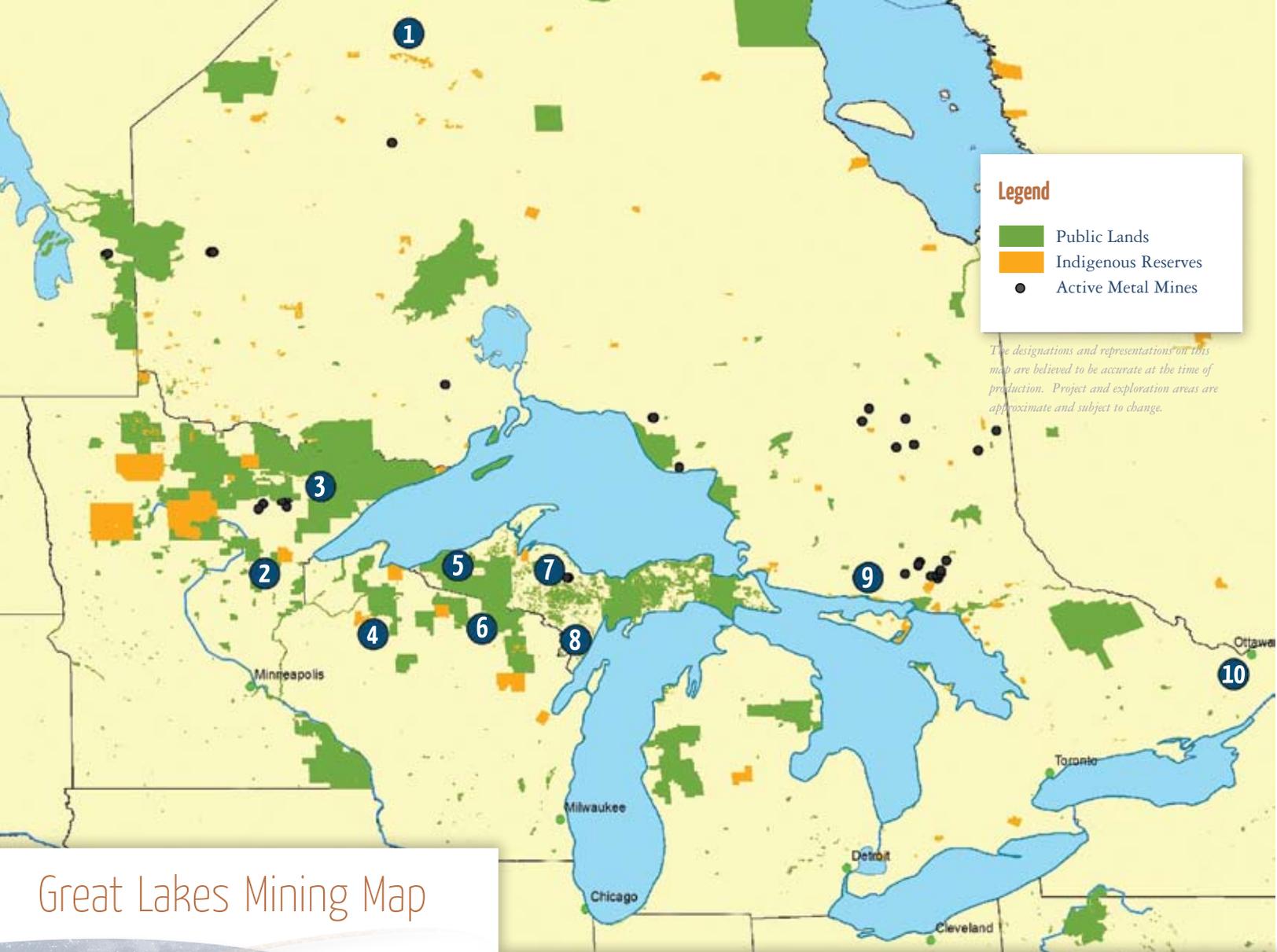
US Environmental Protection Agency recently gave that same review the lowest rating possible - "environmentally unsatisfactory-inadequate" - and said the mine would pollute ground and surface waters of national importance, fail to control acid mine drainage, destroy 1,000 acres of "high-quality" wetlands and dump mercury into Lake Superior.

Unfortunately, these are not isolated cases but evidence of a chronic lack of concern by regulators and politicians in the region. According to an expose by the *New York Times*, most violations of the federal Clean Water Act, which are dramatically rising, occur without penalty. Shockingly, while 60% of regulated facilities in Michigan have violated the Clean Water Act,

only 11.2% of these known violations are enforced with fines or "significant" penalties. In Minnesota, nearly 40% of regulated facilities violate that law, while only 12.4% of known violations are punished.

Although there are a number of honest and knowledgeable employees working in environmental state agencies, corruption and mediocrity appear to be the standard in Minnesota and Michigan for agencies and politicians charged with protecting wildlife, water quality, long-term economic sustainability and the public's health from potentially dangerous sulfide mining projects.

Gabriel Caplett is a freelance writer and lifelong resident of Michigan's Upper Peninsula.



## Great Lakes Mining Map

**1** Big Trout Lake, Ontario, is home to the Kitchenuhmaykoosib Inninuwug First Nation (KI). KI has used civil disobedience tactics to stop Platinox from exploring for platinum on their lands. In December of 2009 Platinox dropped lawsuits against KI and surrendered its mining claims.

**2** Kennecott's Tamarack nickel and copper project is located in Aitkin County, Minnesota. In 2006 Kennecott sued when the county's planning commission

denied Kennecott, a subsidiary of Rio Tinto, a permit to explore for metal deposits. In 2007 the Minnesota Court of Appeals ruled in the company's favor, reasoning that county officials were too "heavily influenced by public opposition" and that Kennecott's activities were "in the public interest and necessary to public welfare."

**3** Several Canadian companies are planning hardrock mining projects between the Boundary Waters Wilderness and Lake

Superior, including PolyMet, Duluth Metals and Franconia. PolyMet, the furthest along, can't legally open its planned open pit mine unless the federal government sells roughly 6,700 acres of the Superior National Forest to them.

**4** Kennecott's (Rio Tinto) controversial Flambeau Mine, an open pit copper and gold sulfide mine, opened in 1991, closing only six years later. Ongoing pollution that breaks federal and state water quality laws prompted citizens to pursue legal action

against the company and the Department of Natural Resources in 2009.

**5** Close to the Presque Isle River, the shoreline of Lake Superior and just west of Porcupine Mountain Wilderness State Park, Orvana has been drilling for copper and silver at its Copperwood project. Orvana plans to open the mine by 2013.

**6** (a) In 1975 Exxon discovered a large copper and zinc sulfide deposit near Crandon, Wisconsin. For

27 years several mining companies tried to open the mine, located on the ceded territorial lands of the Mole Lake Chippewa. By 2003 plans to open the mine were permanently defeated.

(b) Tamerlane Ventures is exploring the possibility of mining the "Lynne" zinc and lead deposit in Oneida County, Wisconsin. The project was previously dropped after intense citizen opposition and the passage of a state "moratorium" on hardrock mining in the 1990s.

## Mining Employment by the Numbers

### United States

"Employment in mining is projected to decrease. The growing U.S. and world economies will continue to demand larger quantities of the raw materials produced by mining, but the increased output will be able to be met by new technologies and new extraction techniques that increase productivity and require fewer workers." – US Department of Labor:

- In 2008 there were an estimated 717,000 mining industry jobs and 327,700 "support" jobs, comprising roughly 0.8% of the nation's workforce.
- 39,900, or roughly 1 out of every 3,300 workers, are metal miners.
- The mining industry is expected to lose roughly 104,000 jobs between 2008 and 2018.
- Mining industry workers make \$23.01/hour, compared to \$18.08/hour for the private industry average.
- In 2009 less than two-tenths of 1% of Michigan's economy directly employed workers in "Natural Resources and Mining" (mining, logging, fishing and some agriculture). The only listed sector providing fewer jobs was "Rail Transportation."
- 1 in roughly 540 Minnesota workers and 1 in roughly 920 Wisconsin workers is employed in the mining or logging industries.

Sources: Michigan Department of Labor and Economic Growth; United States Department of Labor

### Canada

- From 2000 to 2008 mining industry employment declined by 12.3% while output increased by 4.6%.
- Mining and mineral processing employment fell 2.3% in 2008 to 351,000 workers – 2.4% of Canada's labor force.
- Mining and quarrying employs 58,000 workers.
- From 1991 to 2008, the metal mining industry lost over 9,000 workers, or roughly 25% of the workforce.
- From March 2007 to March 2009 metal manufacturing employment fell by almost 25%; weekly earnings fell by 2.2% to \$1,181 – still higher than the national average of \$810.
- There are 8,212 metal miners in Ontario.

Source: Natural Resources Canada

**7** Kennecott's (Rio Tinto) nickel and copper sulfide Eagle project is located underneath the Salmon Trout River, a prized trout stream and tributary of Lake Superior. Kennecott plans to use Eagle Rock, sacred to area Native Americans, for the proposed mine's entrance.

**8** HudBay Minerals and Aquila Resources are trying to open the gold and zinc sulfide Back 40 project. The project is located on the banks of the Menominee River, a major tributary

of Lake Michigan, and is vigorously opposed by local citizens. Aquila plans to use cyanide, banned in many parts of the world, to extract the gold.

**9** The Serpent River, which drains into Lake Huron's Georgian Bay, was severely contaminated with radioactive wastes from over a dozen uranium mines operating in Elliot Lake from the 1950s until 1996. The pollution caused serious health problems at the Serpent River First Nation. More than 230

miners died from diseases acquired while working in the uranium mines.

**10** In 2008 members of the Ardoch and Shabot Obaadjiwan First Nations blocked Frontenac Ventures from exploring for uranium. Tribal leaders were fined and jailed, eventually creating an embarrassing situation for the Ontario government



Cartoon by Bill Krupinski

# Who's Green?

By Elanne Palcich

Move over environmentalists. Here comes PolyMet, your “next generation of environmentally responsible mining.” But let’s dig a little deeper.

PolyMet is a Canadian company seeking a permit to mine for copper, nickel, cobalt, platinum, palladium, and gold in a less than 1% metallic sulfide ore body in northeast Minnesota. PolyMet purchased the plant and tailings basin (where mined wastes are stored) of the bankrupt LTV Steel Mining Company from Cleveland Cliffs. The tailings are already leaching sulfates into the watershed. Sulfates are part of a biochemical process that converts elemental mercury into methylmercury, the form that contaminates fish. To make matters worse,

northeast Minnesota’s waters are high in mercury, which is released into the air as part of the taconite pelletizing process, and also from the coal burning electric plants that run the taconite operations. If state agencies permit PolyMet, they are permitting pollution on top of pollution.

PolyMet’s catch phrase is that its mine is on a “brownfield” site and it is “re-using” the LTV plant. But PolyMet’s strip mine would lie within 6,700 acres of the Superior National Forest, destroying or impacting 1,200 acres of wetlands. In the late 1990s the US Forest Service and the Minnesota Department of Natural Resources identified this same area as habitat worthy of protection. PolyMet’s “green mine” would be turning this ecologically significant land into an open pit mine.

Because the amount of metal in the ore body is so low grade, PolyMet would be using tremendous amounts

*Canoeing in the Boundary Waters; Photo courtesy Greg Seitz, Friends of the Boundary Waters Wilderness*

of energy to mine 99% waste rock. If we are truly in a time of decreasing supplies of oil and increasing energy costs, how green and sustainable is this?

PolyMet claims that its “autoclave/hydromet” metal processing method is “next generation” technology that will prevent pollution. This process was designed to extract low-grade ores, not to protect the environment. The separation of metals from their ores by heat, chemicals, and liquid leaching, while releasing fewer air contaminants than smelting, creates instead a toxic residue that is to be layered with other mine wastes, eventually leaking into the ground water.

Metals from this process would require further processing at some other facility. According to a PolyMet consultant, inquiries from China make it likely that the semi-processed metals could be shipped directly there. Dependent upon PolyMet’s metal purchasing agreement with the Swiss company Glencore, all metals would be sold on the global market. This refutes PolyMet’s claim that it would produce a domestic source of metals, eliminate overseas shipping and reduce America’s dependence on foreign metals.

Next, PolyMet claims that its metals are needed as part

of a renewable energy future. But PolyMet’s ore body is so low grade, what contribution would these metals have toward America’s renewable future? Does it even make sense to build a future that replaces oil and coal with a dependency on mining rare and low-grade metals?

Our highest quality ores have already been mined. Now we must learn to live within our global resource limits. Do our demands for metals take precedence over our need for clean water, clean air, and the balance of nature? What steps can we take within our own lives that would allow us to live more comfortably with fewer resource demands?

The United Nations defines sustainable development as that which “meets the needs of the present without compromising the ability of future generations to meet their own needs.” PolyMet fails this definition by compromising water quality and eliminating tourism, recreation, real estate, and timber as future sources of livelihood. How much would these low grade metals actually contribute to the world market?

What is our standard for who’s “green”?

*Elanne Palcich is a retired elementary school teacher who has spent her entire life on the Iron Range of Minnesota, and has been closely following the PolyMet copper-nickel mining process since June of 2005.*



*Franconia Minerals’ Drilling Barge on Birch Lake; Photo courtesy Bob Tammen*

The deceptively named “Superior National Forest Land Adjustment Act” would remove long-standing federal environmental protections and allow PolyMet to directly own and strip mine 6,700 acres of federal Superior National Forest public lands. (see sidebar)

More than a dozen other mining companies are in the advanced stages of exploration in areas across the state, including the very edges of the Boundary Waters. Mining giants, such as Rio Tinto (Kennecott Minerals) and Teck-Cominco, are joined by a number of Canadian “junior” miners hoping to strike it rich at the expense of Minnesota’s real natural resource wealth – clean water and healthy forests.

Alarmingly, Franconia Minerals has been drilling for metals directly underneath Birch Lake. Another company, Duluth Metals, is rapidly advancing their mining plans by drilling, leasing, and mapping ore bodies that run next to the Kawishiwi River, which also flows into the Boundary Waters. Duluth Metals has optioned the adjacent Dunka property from Cleveland Cliffs and hopes to use the site to dump their mining wastes, adding even more pollution to Birch Lake. These companies are following the PolyMet environmental review process carefully, expecting that if PolyMet moves forward their

## Weeks Act Protects Public Land

The Weeks Act of 1911, named after Massachusetts Rep. John Weeks, authorized the purchase of land by the federal government for the protection of watersheds. The land was to be held as National Forest land. Strip mining is not allowed on Weeks Act lands, therefore PolyMet would need special legislation removing current environmental protections in order to open a strip mine on this public land.

For nearly a hundred years, the courts have refined and reaffirmed the authority of the Weeks Act to protect watersheds and forests from strip mining.

National Forests were created for multiple uses, such as recreation, hunting and fishing, timber management and watershed and ecosystem protection.

Over half the mineral estate of the Superior National Forest, which includes the Boundary Waters, is privately held.

Congressman James Oberstar and U.S. Senator Amy Klobuchar introduced legislation in 2007, in a direct attack against the Weeks Act’s environmental protections. The precedent setting “Superior National Forest Land Adjustment Act” would force the sale of 6,700 acres of Superior National Forest land to the Canadian company PolyMet for a strip mine.

own chances of approval will be greatly increased. PolyMet optioned the shuttered LTV taconite processing plant from Cliffs Natural Resources for cash and 7% ownership by Cliffs, and is now seeking permits for one-third of the plant’s 100,000 tons-per-day capacity. It is expected that other mines would use PolyMet’s excess processing capacity for their own ore, greatly reducing project costs and expediting the permit process.

Minnesota agencies have allowed ongoing pollution, at both the Dunka site and the former LTV plant and

tailings basin, to continue for years in violation of federal water pollution law. If current environmental oversight is inadequate for enforcing the iron mining industry, we can reasonably expect potentially catastrophic outcomes from any future sulfide mining projects. Documented cases of severe long-term sulfide mining disasters, in other parts of the US and the world, should raise a red warning flag to all Minnesotans concerned about the environmental and economic future of this state.

*Lori Andresen is a public lands advocate, as well as a native Duluthian.*



Young Anishinabe Fancy Shawl Dancer; Photo courtesy Zachery Lubellier

## Native American Rights Amidst Rio Tinto's Proposed Eagle Mine

By Jessica Koski

Around the world, many indigenous communities are grappling with pressures from corporations wanting to develop resources within their homelands, with little regard for their aboriginal rights. Numerous case studies have highlighted indigenous resistance to mining and other developments in countries around the world.

Increasingly, local communities have positioned themselves to play a more prominent role in politics in order to assert their rights. However, despite a global movement for indigenous rights and a significant number of case studies on the impacts of mining and other extractive industries on indigenous communities, there is little mainstream media attention bringing awareness to the issues.

In Michigan's Upper Peninsula, proposed sulfide mining on the Yellow Dog Plains and increasing mineral exploration throughout the entire Lake Superior Basin is threatening Ojibwa treaty rights to their ceded homelands. Under the Treaty of 1854, leaders of the Keweenaw Bay Indian Community and other Ojibwa bands ensured permanent reservations along the shores of Lake Superior and throughout the northern regions of present-day Michigan, Wisconsin and Minnesota. They explicitly retained rights to hunt, fish and gather on ceded lands.

Although treaty rights may challenge state authority to manage and develop resources lying within their boundaries, the Ojibwa people continue to exercise their treaty rights and protect their homelands today. The Keweenaw Bay Indian Community is opposed to any mining activities on ceded ancestral lands until substantial evidence can satisfy their concerns regarding environmental risks. There has never been a sulfide mine in a water-rich area that has not polluted the water. This makes the proposed Eagle Project especially controversial due to

In a time of cultural revitalization for Native people, shouldn't we preserve the integrity of the last remaining sacred places?

its location within a delicate watershed, and underneath the Salmon Trout River which flows into Lake Superior.

In addition, a sacred place, *Migi zii wa sin* (Eagle Rock), also lies at the heart of resistance, as the proposed site of the Eagle Project's mine portal into the ore body. Despite a lack of recognition by corporate and state development interests, Ojibwa people have been using this sacred place for hundreds of years.

Unfortunately, the American Indian Religious Freedom Act of 1978 has not been strong enough to protect many sacred places in the United States and Native Americans are one of the only people whose religious freedom is not guaranteed under the Constitution's First Amendment. Yet, if further destruction and loss of Native American sacred places occurs, Native peoples stand to lose their heritage, religious beliefs and identity as a people. In a time of cultural revitalization for Native people, shouldn't we preserve the integrity of the last remaining sacred places?

There is an increasing recognition of culture as a basic human right. This is especially evident by the overwhelming ratification of the United Nations Declaration on the Rights of Indigenous Peoples (September 13, 2007).

However, the four nation-states that originally voted against the Declaration were the United States, Canada, Australia and New Zealand, although Australia recently signed in 2009.

Nevertheless, the Declaration is a landmark document addressing the rights and self-determination of indigenous peoples. It recognizes the rights of indigenous peoples to protect historical sites and ceremonies, to revitalize cultural traditions and customs, to participate in decision-making processes affecting their rights, and to maintain and strengthen a spiritual relationship with traditional territories and waters and to uphold obligations to future generations in this regard.

With increasing demand for minerals and other resources to supply a global economy, proposed developments will inevitably continue to encroach upon lands valued by indigenous and other local communities.

Let us stand strong together and proactively envision a sustainable future for our beloved homelands and children.

*Jessica Koski is a member of the Keweenaw Bay Indian Community and an alumna of Keweenaw Bay Ojibwa Community College and Michigan Technological University. Currently, she is a graduate student at Yale's School of Forestry & Environmental Studies.*



Sportsmen fishing on the Menominee River; Photo courtesy Teresa Bertossi

## A Letter to Hunters, Fishermen, and Landowners of the Upper Peninsula

By Rico Torreano

The sulfide mining controversy is being portrayed by mining interests as between themselves and "environmental activists." This is a distraction to keep the rest of us from noticing that we, too, have a stake in this.

We are being asked to make a big sacrifice. Asked to give up our largest blocks of publicly accessible lands to development. Give up the Escanaba, Yellow Dog, and Salmon Trout rivers to pollution. Give up real dollar value in our recreational properties, and pass down a diminished Upper Peninsula lifestyle to our children.

We shouldn't do it. Not for somebody in London who owns Rio Tinto stock. Not for their corporate executives. Not for the convenience of the politicians who want to solve their budget problems at our expense. And not for the very few of us who might get a job at the proposed Eagle Project, with its seven year lifespan. It's too little for too few.

All of our large tracts of public land are threatened. The block from Marquette to Skanee would be severed by the Woodland Road. The block from Humboldt to Iron River is under exploration. The Baraga Plains and Ottawa National Forest are being prospected for uranium.

Those of us who hunt, fish, or own camps or land in these tracts stand to lose the wild areas we love. Want to see sheriff's deputies in Wildcat Canyon? It's coming. Fish advisories in Little Bay De Noc due to sulfide tailings in the Escanaba River system are a real possibility.

The State of Michigan's government, charged with doing the will of its citizens and protecting our waters, has found a way to do neither. Much like an outgoing president granting pardons to his cronies on his last day in office, the State has granted approval to this project via an agency that no longer exists. They believe they have sidestepped responsibility. Pretty slick move.

Own a riverfront home on one of the affected rivers? How much value does it lose when effluent that meets state standards is dumped upstream? Still want to serve your kids brook trout and eggs for breakfast?

Do you hunt in an unaffected area? Those of us who get pushed out are moving there.

They can label us "environmental activists" if they wish. But the truth is I'm Upper Peninsula born and raised. I'm trying to protect the place where I live. Foreign mining companies want to exploit it, take almost all the money back to London, and leave me living in an Upper Peninsula that's been diminished forever. I'm selfish. I want to keep it. How about you?

Rico Torreano  
Negaunee, Michigan

*Rico Torreano is a lifelong Upper Peninsula resident. He fishes year round on the Great Lakes and on the inland lakes and streams. An owner of timber and recreational lands, he hunts on both public and private land. He and his wife, Hope, continue to enjoy their free time at the camp they built on the Salmon Trout headwaters.*

## Protecting the Menominee River

By Marla Tuinstra

The Front 40 citizens' group is remaining faithful to its mission to alert the public to the dangers of metallic sulfide mineral mining.

The group formed in response to exploration by Aquila Resources at its "Back 40" zinc-gold project along the Menominee River, in Menominee County. The proposed mine is very near the Shakey Lakes chain of lakes and many streams in the area that could be affected. Of great importance in the area are sports such as hunting, fishing, swimming, boating and camping - really, anything involved with the great outdoors stands to lose if a mine of this type becomes a reality.

Much of the property under exploration at Aquila's project is leased from the state. It was pointed out several months ago that the lease fee being paid by Aquila was one-third or less per-acre of what taxpayers right next to the project were paying on similar property. That fact alone is enough to make one's blood boil and develop a distinct

distrust of what the state will do for the local yokel, who has faithfully obeyed the law and paid their taxes, some for as long as 100 years in the area.

Aquila recently joined forces with HudBay, a Canadian mining company that, at best, has a tarnished environmental reputation. Of additional concern is the statement by Aquila's chairman that it is "likely" they would use cyanide in their operation.

Our citizen group has visited all the township boards in Menominee County that were open to hearing our concerns and have noticed that the mining interests often tend to intimidate and scare officials, citizens and especially project opponents. We have been called all sorts of things.

At this point, Front 40 is keeping the faith and appreciates any help that can come our way.

*Marla Tuinstra and her husband, Norm, are retired dairy farmers and have lived in the Daggett, Michigan area all their lives.*



Representatives from the Kitchenuhmaykoosib Innuuwug First Nation address a rally in Toronto; Photo courtesy Teresa Bertossi

The Act addresses concerns over the “Free Entry” system by requiring companies to submit exploration plans and requests for exploration permits. The requirement for exploration permits was one of MiningWatch’s core demands for the new bill and we are pleased to see this included. It is not, however, at all clear what the permitting process will involve. Some vague direction is provided but, as with Aboriginal consultation, all the details are being left to the development of regulations.

Concerns of private landowners whose property could be staked (a small percentage of private land in Ontario does not include the subsurface mineral rights) have been addressed by withdrawing lands in the southern part of the province and giving landowners in the north the opportunity to request withdrawal. This definitely gives landowners some protection but is not a permanent fix as the withdraw order could be easily reversed by this or a future government. It also doesn’t address the large areas of claims that have already been staked.

Other aspects of the Act where MiningWatch recommended changes have not been addressed at all. For example, there is nothing in the new Act to improve financial assurances or the “environmental assessment” process, or to prevent uranium exploration and mining.

*Ramsey Hart is Canada Program Coordinator with MiningWatch Canada where he works on a variety of mining policy issues and provides support to mining-affected communities. Ramsey has a background in aquatic ecology and conservation and studied at the University of Waterloo and Trent University.*

## Ontario Gets a New Mining Act

By Ramsey Hart

Extensive revisions to Ontario’s Mining Act were approved by the provincial legislature on October 21, 2009.

The new Act follows commitments made by Premier Dalton McGuinty to “modernize” the Act and strike a balance between the diverse interests that are affected by and involved in the mining industry. Increased pressure from high-profile conflicts with the Kitchenuhmaykoosib Innuuwug and Ardoch Algonquin First Nations and a surge in staking and exploration activities on public and private, citizen-owned land in Ontario sparked the “Mining Act Modernization process.” While the Act was passed, most of the detail necessary for its implementation has yet to be written into the regulations.

From initial appearances, the addition of wording around Aboriginal consultation represents an important change in the Act. Although touted as a major advancement by the government, several individual First Nations and regional First Nations’ organizations have commented that a vague requirement for “consultation” is not adequate and maintain that the province needs to institutionalize “Free, Prior, and Informed Consent” for affected First Nations. In other words, if consultation is to be meaningful then communities must have the right to say no to projects they determine are not in their interest. Unfortunately, there is nothing currently in the new Act that requires consent or recognizes First Nations’ right to say “no.” Another concern is that the Act passes responsibility for consultation on to mining companies when it is the legal duty of the government to engage in consultation.

### When Is a Lake No Longer a Lake?

A 2002 change to Canada’s oldest environmental protection law – the Fisheries Act – allows some natural water bodies to be reclassified as “tailings impoundment areas,” allowing the mining industry to dump waste into them.

The law was originally changed for four existing operations; six more have been added since then and another dozen are in various stages of approval.

A MiningWatch Canada review of projects in Newfoundland and British Columbia proposing to use lakes for waste disposal showed that all of the lakes “leak” – meaning water readily flows out of them into the surrounding groundwater.

There are currently no proposals for mine waste disposal in any Ontario lakes. The provinces of New Brunswick and Quebec have laws that can protect water bodies from this practice. The other eight provinces and three territories, including Ontario, do not.

## A Legacy of Waste: Uranium Mining in the Serpent River Watershed

By Lorraine Rekmans

Not many people realize that the north shore of Lake Huron should be an area of grave concern for those who rely on the fresh waters of the Great Lakes. In particular few pay attention to the Serpent River, which drains south into the North Channel of Lake Huron. The Serpent River watershed was home to sixteen uranium mines from the 1950s until 1996.

Many of these mines, which were located near Elliot Lake - in the traditional and treaty lands of the Serpent River First Nation - pre-date the Atomic Energy Control Board and the Canadian Nuclear Safety Commission and were not subjected to licensing requirements or regulations. For decades mine wastes were dumped untreated into the Serpent River.

In 1964, the Ontario Water Resources Commission conducted a study of radiological pollution in the Serpent River watershed near Elliot Lake. They indicated that the magnitude and distribution of pollution in the Serpent River watershed could not be fully evaluated but noted that sections of the watershed were contaminated.

It wasn’t uncommon for the dams that were eventually built to collapse and release more contamination. Within about twenty years of operation more than thirty dams built to contain uranium tailings failed, dumping nuclear waste and chemical toxins into the Serpent River watershed. By 1976, the entire Serpent River system, including more than a dozen lakes, was badly contaminated for eighty kilometres or so (fifty miles) downstream. The International Joint Commission identified the Serpent River system as the largest single contributor of radium contamination to the Great Lakes.

The Aboriginal people of Serpent River, descendants of people who had occupied this area for thousands of years, expressed concerns that the drinking water and wildlife were threatened. The Ontario water standards in 1976 allowed for only 3 picocuries per liter (3 pCi/L) of radiation — *a picocurie, one-trillionth of a curie, is a unit used to measure radiation levels.* Nonetheless, Health and Welfare Canada assured the Serpent River First Nation that the people who took water for domestic purposes from the Serpent River “do not face a health risk,” even though the radiation level was at 6.2 picocuries per liter. While the Ontario government installed water treatment facilities for the town of Serpent River, no such facility was built for the Aboriginal people of the Serpent River First Nation.



Elliot Lake uranium miners’ memorial; Photo courtesy Barbara Bradley

In 1955, the federal government, through the department of Indian and Northern Affairs, and in negotiations with Noranda Mines Limited, determined to open a sulphuric acid plant at the Aboriginal village of Serpent River. The plant was built on the shore of the North Channel of Lake Huron in order to take advantage of the fresh water supply and to supply acid used to mill uranium in mines around Elliot Lake and at Agnew Lake and Pronto.

A recent analysis of the contamination at the Cutler sulphuric acid plant revealed that the site is still contaminated. The various sources of contamination, leaching into Lake Huron since 1956, include the former tailings pond and the sulphur stockpiles.

The people of the Serpent River First Nation continue

to suffer considerably from the mining and milling of uranium. Decisions to develop uranium deposits and leave an inter-generational legacy of waste and contamination in their traditional lands were made without their informed consent. It is appalling when one considers the 10,000-year legacy of occupation by the original people of the Serpent River watershed.

In Elliot Lake a memorial now stands as a testament to the occupational death and disease that uranium mining leaves in its wake. More than 230 uranium miners who died from diseases acquired working in the mines around Elliot Lake have their names engraved on the memorial, with new names added as more die. There is no monument for the original people of this area who struggle daily with the perpetual legacy of radioactive

wastes and associated contaminants.

*Lorraine Rekmans is a citizen of the Algonquin Nation and an advocate for Aboriginal rights and social and environmental justice. A former Canadian Green Party candidate, she currently serves as the party’s Aboriginal Affairs critic.*

# Failed Promises at the Flambeau Mine

By Laura Furtman

Rio Tinto's Flambeau Mine, hailed by industry as an example of how mining can be done in the Great Lakes region without harming the environment, has recently been exposed as polluting Wisconsin's waters.

The information was brought to light as the result of a notice of intent to file a citizen suit initiated in 2009 by the Wisconsin Resources Protection Council (WRPC). The Council, founded in 1982 to address concerns over mining in northern Wisconsin, solicited the help of three respected scientists to review current and historic environmental monitoring data submitted by the Flambeau Mining Company (FMC) to the Wisconsin Department of Natural Resources (DNR). The scientific team, comprised of Dr. David Chambers and Dr. Kendra Zamzow (Center for Science in Public Participation; csp2.org) and Dr. Ken Parejko (Professor Emeritus), concluded the following:

1. Runoff from the southeast quadrant of the Flambeau Mine site significantly exceeds Wisconsin surface water quality standards and is polluting a nearby stream that flows into the Flambeau River.
2. Groundwater flowing from the mine site toward the Flambeau River does not meet Wisconsin groundwater quality standards, or even the more lenient mining permit standards.
3. Statistical analyses of Flambeau River walleye, crayfish and sediment data collected by FMC raise significant doubts about the company's claim of "no impact" of the Flambeau Mine on the Flambeau River.

WRPC Attorney Glenn Stoddard summed up his client's case by stating: "The notice of intent letter alleges that the DNR has failed to properly regulate FMC and has, instead, allowed the company to violate the law and portray the Flambeau Mine as an environmental success story when it is not."

*The Flambeau River; Photo courtesy Teresa Bertossi*

Of concern to WRPC is not only the health of Wisconsin's waters, but the fact that the DNR's lax approach to enforcement and FMC's claims of environmental success send the wrong message to citizens and tribes in the Great Lakes region that are faced with new mining proposals.

FMC is a subsidiary of Rio Tinto, the same company that is seeking permits to open two new nickel-copper mines in Marquette County, Michigan (Eagle Project) and Aitkin County, Minnesota (Tamarack Project).

The Flambeau Mine has repeatedly been held up by company officials as an example of how this type of mining can be done without harming the environment. For example, Rio Tinto's Jon Cherry was quoted in the August 4, 2008 issue of the *Mining Journal* (Marquette, MI) as stating, "The facts show that Flambeau continues to demonstrate the environment is protected."

Dr. Chambers and his team have demonstrated otherwise by citing FMC's own data. For example, Dr. Zamzow pointed out that manganese levels in a well within the backfilled pit have typically exceeded 25,000 parts per billion (ppb) ever since sampling first began in 1999, with some readings as high as 40,000 ppb. That's 45-70 times higher than what the company predicted and much higher than baseline levels, which averaged 90-360 ppb, depending on depth.

This is of no small concern to citizens. Consuming water with manganese levels of 14,000 ppb has been associated with causing nerve damage similar to that seen in Parkinson's disease. What's more, this contaminated groundwater is headed toward the Flambeau River, just 140 feet from the backfilled pit.

When confronted with their own data, FMC's response has been that the Flambeau Mine "has adhered to every regulation and Wisconsin's stringent mining laws" (FMC Press Release, June 18, 2009). What the company has failed to acknowledge, however, is that Wisconsin's mining laws allow pollution of groundwater within a backfilled mine pit and up to 1200 feet from the edge of where the waste is buried. The net result is that adhering to Wisconsin's allegedly "stringent" mining laws does not equate with clean water.

What's more, FMC removed only the richest ore from the Flambeau deposit and then closed shop, leaving local workers unemployed and the community with an environmental problem that neither the DNR nor FMC want to acknowledge publicly.

To follow developments and view legal documents, visit WRPC's website at [wrpc.net](http://wrpc.net).

*Laura Furtman and Roscoe Churchill co-authored The Buzzards Have Landed! - The Real Story of the Flambeau Mine (2007). She is a registered pharmacist.*

# The Crandon Mine Battle (1975-2003)

By Al Gedicks

Mural by Susan Bietila



One of the most significant mine battles in the history of modern mining began in 1975 when Exxon Minerals discovered one of the 10 largest zinc-copper sulfide deposits in North America, adjacent to the Mole Lake Sokaogon Chippewa Indian Reservation near Crandon, Wisconsin. Situated at the headwaters of the Wolf River, the proposed underground shaft mine was one mile upstream of the tribe's wild rice beds, five miles downwind of the Forest County Potawatomi Reservation, and 40 miles (via the Wolf River) upstream of the Menominee Nation. A quarter-century later, after a series of five mining companies were involved in the project, the proposed mine has been defeated and the mine site is now owned by two neighboring tribes.

The site lies on territory sold by the Chippewa (Ojibwe) Nation to the United States in 1842 and directly on a

12-square mile tract of land promised to the Mole Lake Chippewa in 1855. Treaties guaranteed Chippewa access to wild rice, fish and some wild game on ceded lands. But the economic, cultural and spiritual center of the Mole Lake Chippewa is their wild rice lake. The rice, called *manoomin*, or 'gift from the Creator,' is an essential part of the Chippewa diet, an important cash crop, and a sacred part of the band's religious rituals.

The Crandon/Mole Lake mine would have extracted approximately 55 million tons of sulfide ore during the thirty-year life of the project. Over its lifetime, the mine would have generated 44 million tons of wastes – the equivalent of eight Great Pyramids of Egypt. When metallic sulfide waste has contact with water and air, the potential result is sulfuric acid, plus high levels of poisonous heavy metals such as mercury, lead, zinc,

arsenic, copper and cadmium. The mine would also have used toxic chemicals in ore processing (including up to 20 tons of cyanide a month) and reduced groundwater tables in the area because of the constant dewatering of the proposed underground mine.

The construction of the largest toxic waste dump in state history at the headwaters of the pristine Wolf River posed an unacceptable economic and environmental risk to the downstream tourist industry on this Class I trout stream. As local opposition increased, Exxon withdrew from the project in 1986, citing low metal prices. But in 1993 Exxon returned, this time with a new partner, the Canadian-based Rio Algom.

To protect tribal resources and assert tribal sovereignty, the Mole Lake Chippewa developed a multifaceted strategy that included building alliances with environmental groups as well

as their non-Indian neighbors in the town of Nashville to oppose the mine and develop economic alternatives to mining jobs.

In 1995, the Mole Lake Chippewa became the first Wisconsin tribe granted independent authority by the US Environmental Protection Agency to regulate water quality on their reservation, including upstream discharges from the proposed mine.

The successful Indian-environmental alliance built public support for legislative passage of a sulfide mining moratorium bill in 1998 that would prohibit the opening of a new mine in a sulfide ore body until a similar mine had been operated for ten years elsewhere and closed for ten years without pollution from acid mine drainage.

The widespread opposition to the proposed mine and the strength of the Indian-

environmental alliance, combined with major technical problems with the mine plan, made it clear that the Crandon mine project had little likelihood of ever being developed. On October 28, 2003, Mole Lake and Forest County Potawatomi leaders announced that the two neighboring tribes had jointly purchased and divided the 2,939 acre Crandon mine property for \$16.5 million. The alliance had driven down the site price by tens of millions of dollars by driving away potential mining company partners. As he tacked up a giant 'SOLD' sign on the company, Potawatomi mine opponent Dennis Shepherd exclaimed, "We rocked the boat. Now we own the boat."

*Al Gedicks is an environmental and indigenous rights activist and scholar. He is the author of The New Resource Wars (1993), Resource Rebels (2001), and the forthcoming book, Dirty Gold (September, 2010).*

# Hard Facts On Hardrock and Uranium Mining



**Hardrock Mining** (also known as metallic sulfide mining) is the mining of metals that are embedded in an ore body containing sulfur.

**Metallic sulfide mining** generates large volumes of mining wastes because of the low percentage of metals in most ore bodies.

**Acid mine drainage** occurs when sulfide-containing rocks are exposed to water and air, forming sulfuric acid.

**Acid mine drainage** may occur in mine waste heaps and active or abandoned mine workings.

**According to the Government of Norway** acid mine drainage is “considered one of the most serious mining-related environmental problems across the world.”

**Environmental impacts from acid mine drainage** include destruction of aquatic life and contamination of drinking water that can last for centuries.

**Acid mine drainage** can introduce toxic heavy metals (such as arsenic, lead and mercury) into the water.

**High levels of exposure** to heavy metals can cause cancer, birth defects, neurological disorders, and other health problems.

**In Canada** the Mine Environmental Neutral Drainage program estimates total liability for acid mine drainage at \$2 - \$5 billion.

**In the United States** overall cleanup for acid mine drainage is estimated to be around \$30 billion, with up to 550,000 sites requiring cleanup.

**Uranium** is typically found at low concentrations. The mining of uranium creates large amounts of radioactive waste.

**Mining and exploration of uranium** can result in the spread of radioactive dust particles through the air, as well as water contamination.

*Acid mine drainage at the Buck Mine, in Iron County, Michigan; Photo courtesy Gabriel Caplett*

**Uranium is primarily used** to create high density penetrating weapons (the cause of “Gulf War Syndrome” in military veterans and civilians), nuclear bombs, as well as electricity.

**The first step in the fuel cycle** for nuclear energy is the energy intensive mining and milling process.

**Exposure to uranium** can cause lung cancer, bone cancer and reproductive problems.

**More than 230 miners died** from diseases acquired while working in uranium mines around Elliot Lake, Ontario.

**Canada is the world’s largest producer of uranium** with roughly 20% of the world’s supply. The United States ranks 8th in production.

**The world’s top-producing uranium mining** companies in 2008 were Rio Tinto (18.1% of the market), Cameco (15.1%) and Areva (14.3%).

**Rio Tinto owns the Rossing uranium mine** – one of the world’s largest – with the Government of Iran.

**According to financial documents** from Bitterroot Resources, the company (working with Cameco) spent more than \$700,000 on uranium exploration in Michigan during the first 9 months of 2009.

**Some of Canada’s provincial governments** have legislated outright bans on uranium mining, while other provinces have moratoria on uranium exploration and mining.

**Canada’s Elliot Lake** area, north of Lake Huron, hosted over a dozen uranium mines – eight of them owned by Rio Algom, a subsidiary of RTZ (now Rio Tinto).

**In 1975 a power failure** at one of the Elliot Lake uranium mines caused a 500,000-gallon spill. By 1990 at least 10 major lakes were permanently contaminated.

**Some 80 spills have been recorded** at a Cameco uranium mine near Douglas, Wyoming, as well as pond leaks, well-casing failures, and migration of radioactive water into drinking-water aquifers.

# Human Rights, Rio Tinto and the Integrity of Protest

By Reverend Jon Magnuson



*Photo courtesy Gabriel Caplett*

As a clergyman, my involvement in the collective protest against Rio Tinto is grounded in a personal history of advocacy for indigenous people’s legal rights and an increasingly troubled awareness that all of us, to some degree or another, remain entrapped in the iron cage of Western culture; as Hermann Hesse aptly observed, “asleep” from deeper dimensions of spiritual living.

Last April I traveled with a farmer and writer to London, England to attend the Annual General Meeting of Rio Tinto. We joined members of the London Mining Network to publicly express, during the company’s stockholder meeting, our dismay about what many of us believe are manipulative and unethical actions by Rio Tinto in the Upper Peninsula. I carried with me documents of protest from the Keweenaw Bay Indian Community and a petition signed by 100 leaders from faith communities bordering the area where the proposed mine would be located.

Shortly before we left London to return to the United States my colleague and I met with the Ethical Investment Advisory Group for the Church of England. The Church, we learned, holds over \$100 million (£62 million) in investments with the world’s three largest mining companies:

Rio Tinto, BHP-Billiton and Anglo American. Seven months earlier the country of Norway, one of Rio Tinto’s largest investors, announced a decision to divest from the company because of “severe environmental damage” at its mine in West Papua.

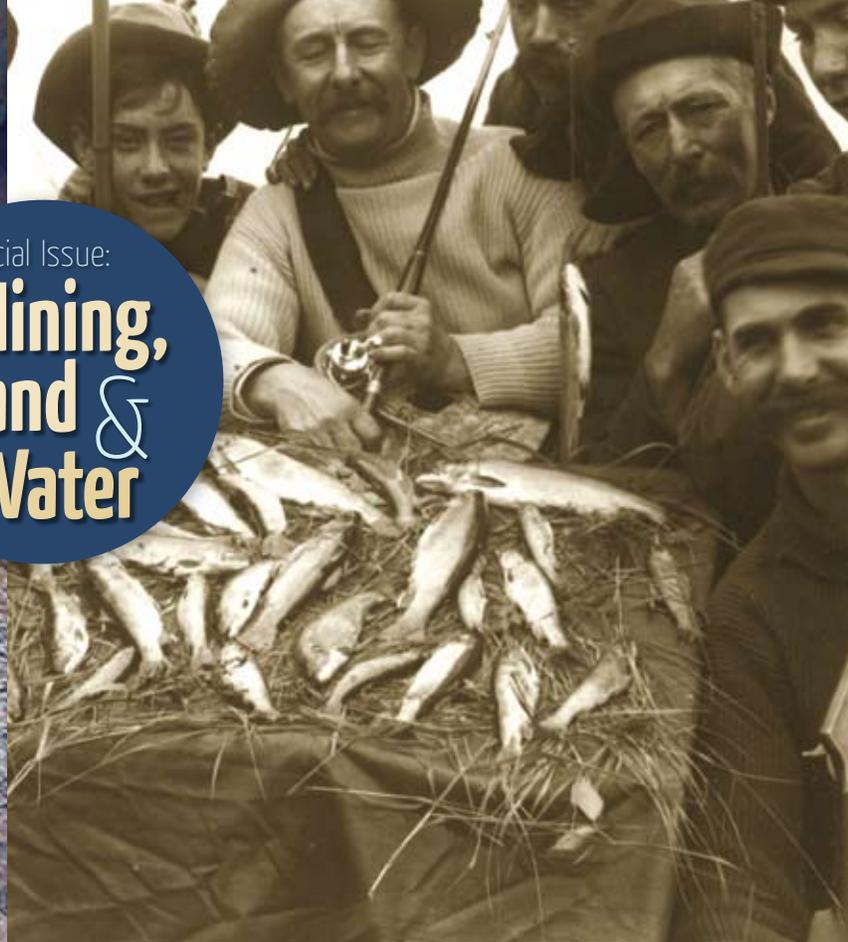
In the discussion that ensued, the Church representative, a former British diplomat to Scandinavia, tossed out one of his working principles: “It’s always good to talk with the enemy.” I thought about my own daughter, now living in Colorado, and her musings to me one evening on the telephone about a recent visit to Aspen, where high-end bars were filled with beautiful young women in their early twenties, dressed in black, on the arms of older, wealthy men.

I asked the former British diplomat, “Sir, do you have any children?” He nodded his affirmation. “If an old, overweight, well-dressed rich man with bad breath approached your 19-year-old daughter in Aspen,” I continued, “and with all good courtesy asked her for a date, suggesting he had a great financial deal for her while, at the same time, she knew he was a felon with a criminal record, would you encourage her to sit down and see what he had to offer? And, if in fact she initially refused his advances but he wanted to show her his expensive car and flashed a roll of \$100 bills

while whispering in her ear that this could be good for her family, would his argument be any more persuasive?”

That’s what’s facing us here in the Upper Peninsula of Michigan. We’re unabashedly being courted by a wealthy, irresponsible multinational mining company. We not only have the right to refuse their advances, we have, from a moral point of view, from a stance of integrity and alliance with the Keweenaw Bay Indian Community, an imperative to stand up and say, “No thank you, leave us alone.”

*Jon Magnuson is Lutheran (ELCA) Campus Pastor at Northern Michigan University and also Director of The Cedar Tree Institute, a nonprofit organization that initiates projects and provides services in the areas of mental health, religion, and the environment.*



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