

Protecting Minnesota Waters: Science, Law and Community Action

January 28, 2024

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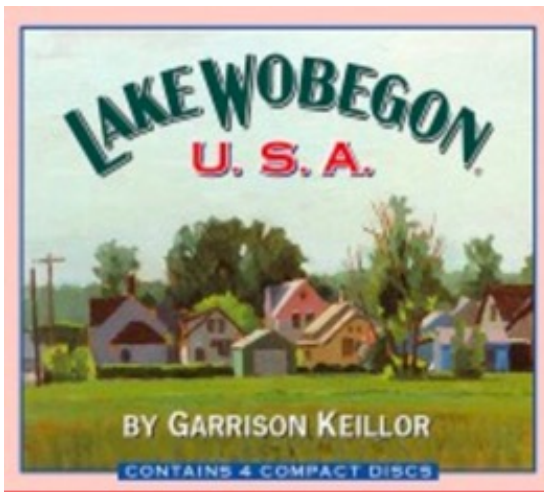


Lake Superior. Photo by Bryan Hansel



Kettle River Slough/J. Walters/Wild Rivers Conservancy

Myth



Facts



- Minnesota is NOT the "best place" to experiment with sulfide ore mining.
- Existing taconite mines have weak & unenforced permits.
- Laws are changed to fit polluters.
- Legislative pressure, polluters are agency "customers."
- Water protected in courts, federal oversight, not due to Minnesota agencies.

WATER LEGACY

- Stop copper-nickel mine pollution & harm.
- Preserve & enforce water quality standards.
- Defend clean water, nature, health, justice.
- Hold regulatory agencies accountable.





**Mining Threats to Water,
Ecosystems, Health, Climate**

What is Sulfide Mine Pollution?

- Some areas, like Northern Minnesota, Aitkin County are naturally low in sulfate. Wild rice thrives there.
- Nickel, copper, cobalt sulfide ore mining would discharge massive quantities of sulfate.
- Taconite mines and coal plants are the largest dischargers of sulfate today in Minnesota.
- Mining is source of sulfate pollution when rock containing sulfur is exposed to air and water.



Sulfide Mine Threats to Water, Wild Rice, Health



Geology: Copper, nickel, and cobalt are bound up with sulfur in the ore. **Massive sulphide mineralization = high sulfate.**

Sulfate exposed to air and water: acid mine drainage, leaching of toxic metals, such as arsenic, lead.

Sulfate in wetlands, sediments: 300 mg/L sulfate doubles mercury & nutrient release, increases methylmercury by **600%**.

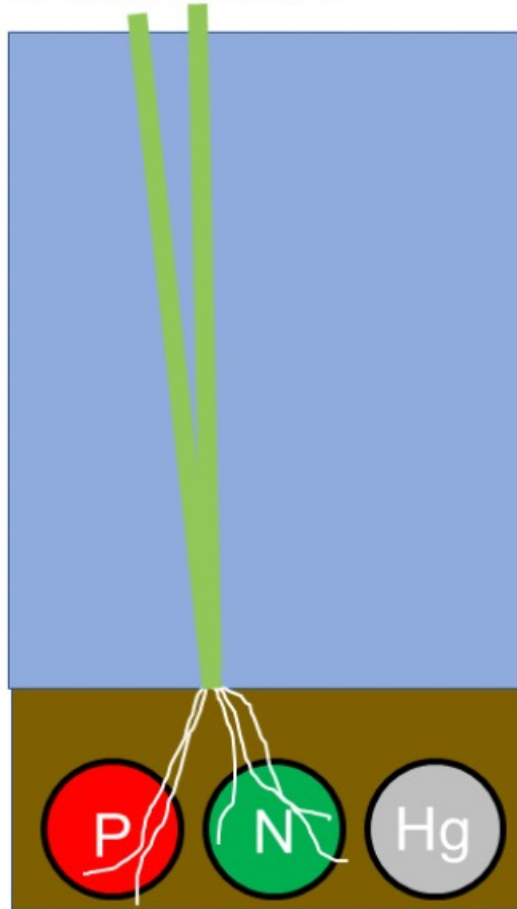
Methylmercury in fish: bioaccumulates, concentrates up to **1,000,000 times** in fish at top of food chain. **Toxic** to developing brain: fetuses, infants, children.

Plaques on wild rice roots - impairs seeds as well as seedlings.

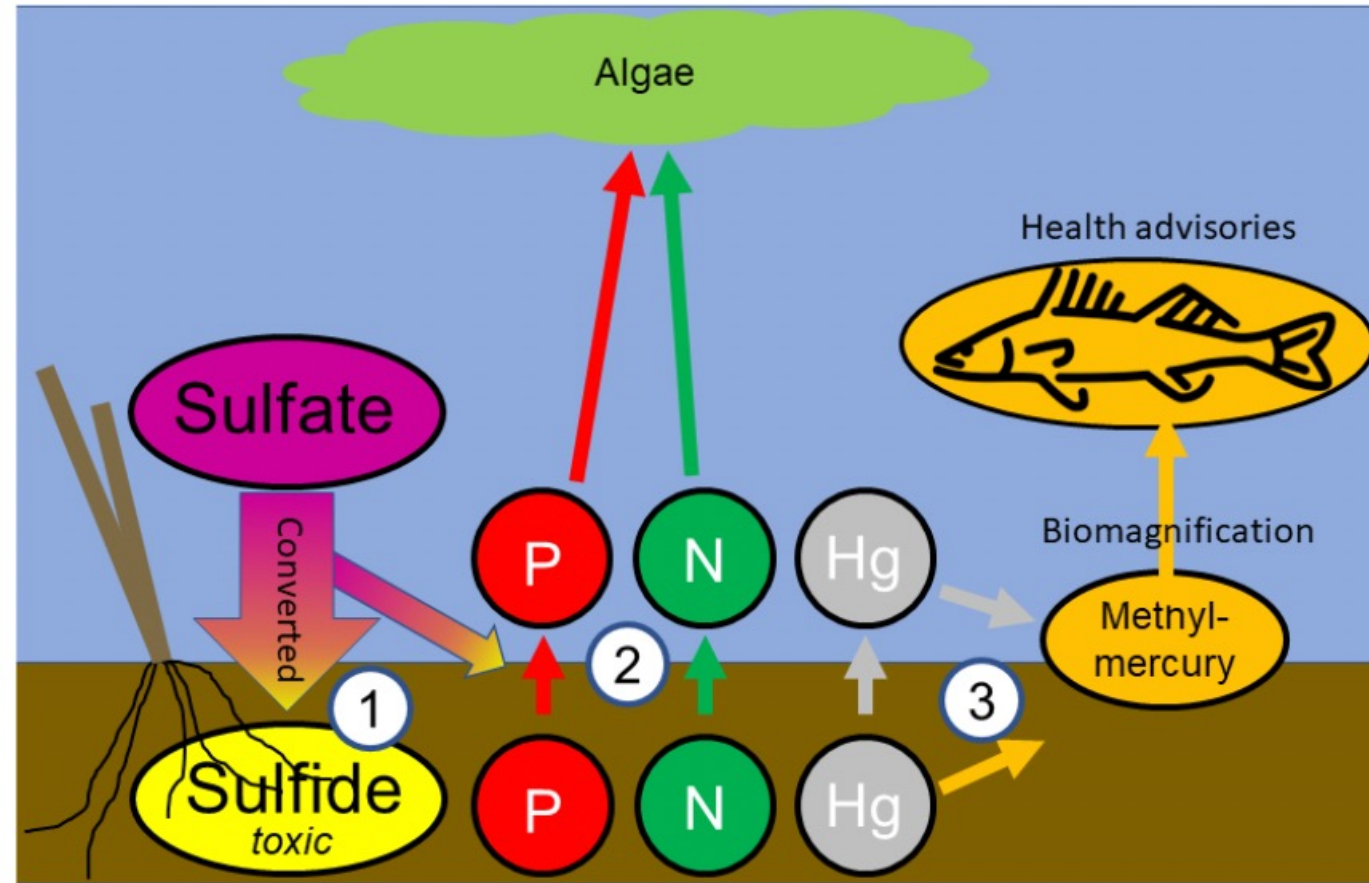
Every sulfide mine (100%) in a water-rich environment has polluted surface and/or groundwater with acid mine drainage and/or toxic metals.

How Does Sulfate Pollution Affect Water Quality, Habitat, Health

Natural Condition



Polluted with Sulfate



Source: Amy Myrbo, 2023

Healthy Waterbody: low oxygen and low sulfide in sediments. Phosphorus (P), Nitrogen (N), and Mercury (Hg), along with organic matter remain in sediments.

Sulfate Polluted Waterbody: Sulfate used by sediment bacteria to convert sulfate to toxic sulfide. In the process, organic matter decomposed, P and N released (algae), Hg released and methylated to MeHg (biomagnification).

Myth of the “Model” Sulfide Mine: None Have Been Proved

“Prove It First” Wisconsin Law 1997-2017.

Show mine has operated and closed for 10 years without environmental contamination.

Repealed Because No mine met the test

Eagle Mine: nickel-copper (2014-2027).

Underground mine. Processing at Humboldt Mill (32 miles away)

Violated EPA drinking water standards for nitrate and arsenic at mine. Sulfate and manganese at processing plant.

NOW TALON METALS EXPLORING 400,000 acres

Flambeau Mine: copper, gold, silver (1993-1997).

Open-pit. **Copper concentrations in Stream C so high stream devoid of aquatic life**, now listed as impaired.

Manganese and sulfate in groundwater and Flambeau River

Arsenic: Carcinogen

Nitrate: Blue baby illness and death (oxygen impairment)

Manganese: Brain damage to infants, children, elderly.

**PROVE IT
FIRST!**



Climate Change, Recycling, and Copper-Nickel Mining



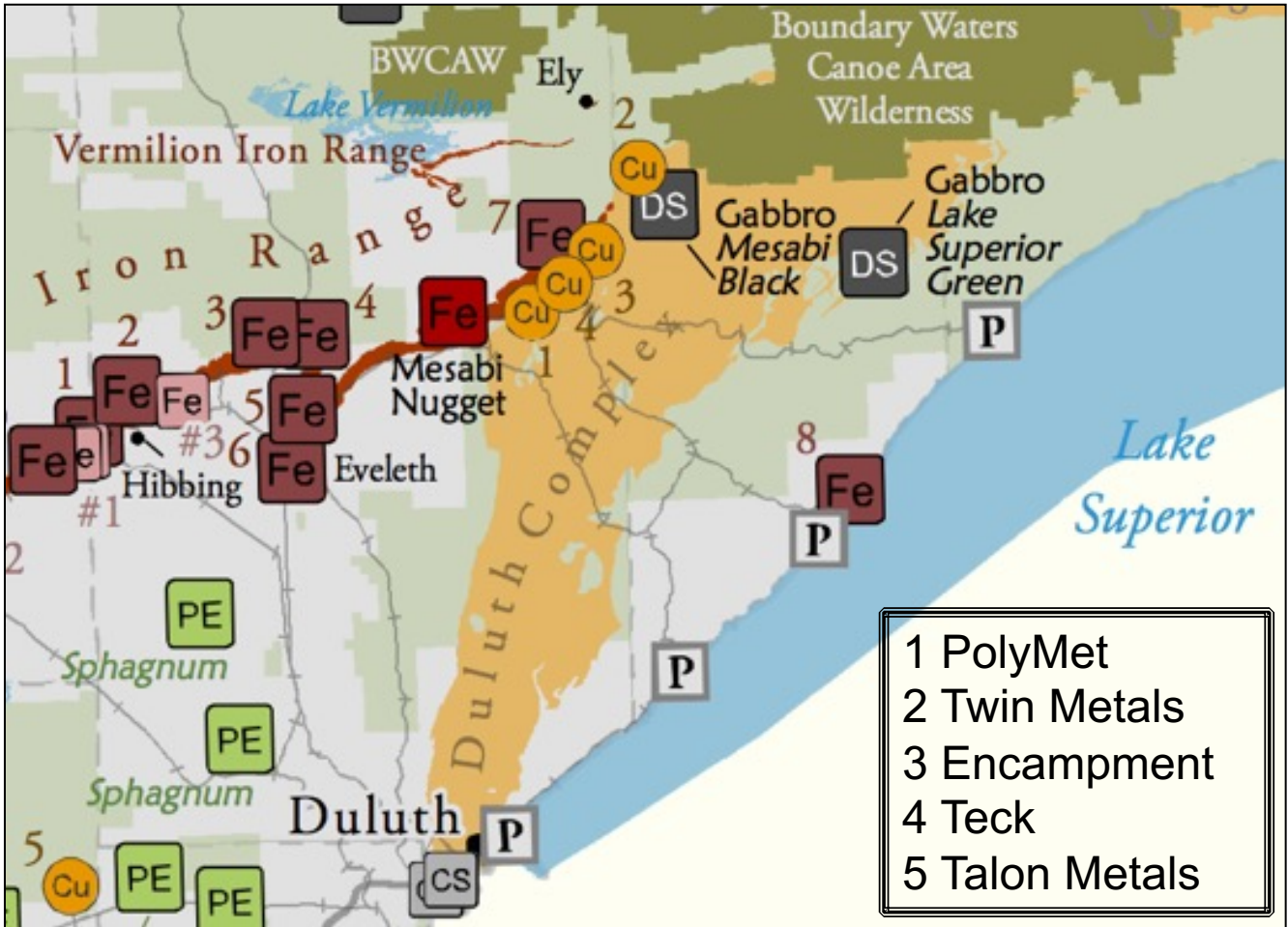
- Minnesota DNR concluded in 2008 destroying 1,000 acres of peatlands would increase Minnesota's annual carbon footprint by 2%.
- Copper and nickel can be recycled over and over and retain its value.
- It is cheaper to recycle copper than to mine for more.
- **Recycling copper would save 90% of the fossil-fuel energy used by mining.**

- **Future of EV Batteries May Not be Nickel.**
- Lithium, iron, phosphorus (LFP) batteries have lower cost, less likely to catch fire, use more domestic metals.
- Permitting would not control use of ore for any specific "green" purpose.
- Mine ownership and control by foreign companies.



Tesla Model 3 (LFP)

Minnesota Studied Regional Effects of **Duluth Complex** Mining



Duluth Complex Regional Study
1974 – proposed Duluth Complex Regional EIS.
1976 – amended to require “comprehensive regional study” & moratorium until completed.

“A ‘regional study’ was commissioned because it was believed that **conventional site-specific environmental impact statements (EISs) and the corresponding regulatory process were inadequate** to deal with the broader issues involving this unexploited resource.” EQB, 1979, Vol. 1 at i.

The Minnesota Copper-Nickel Regional Study covered only the Duluth Complex – not the Tamarack Intrusive Complex

Catastrophic Mine Tailings Dam Failures



Mount Polley Dam (Canada 2014)

Copper-nickel tailings. 6.3 billion gallons of polluted water & slurry released.

Córrego do Feijão (Brumadinho, Brazil 2019)

270 dead/missing.

Minnesota approves wet slurry and upstream tailings basins. Most risky technology.



Fundão Dam (Samarco, Brazil 2015)

Contamination flowed 385 miles downstream, until it reached Atlantic Ocean.



PolyMet Mine Water Pollution Permit REVERSED!

We were told:

PolyMet site is “industrial area.”

PolyMet mine is “inevitable.”

No EPA comments is a “nothing burger.”

Irregular Process – Weak Permit

- Data Practices Act, Freedom of Information Act (FOIA) requests, lawsuits.
- Whistleblowers, testimony, special court hearing.
- MPCA convinced EPA to suppress comments.
- MPCA destroyed its emails with EPA.
- PolyMet permit lacked limits on pollution.
- **Minnesota Supreme Court: reversed MPCA permit decision as “arbitrary and capricious” Aug. 2, 2023.**

**Irregular process led to “stay” of permits.
No construction and no pollution.**



Federal PolyMet Permit REVOKED by Army Corps!

Clean Water Act Section 401(a)(2) authority to object to federal permit.

First Legal Publication asserting tribal right to object (2015).

Tribal “Treatment as a State” for adoption of water quality standards. (Fond du Lac 1998).

EPA obligation to notify downstream tribe. Fond du Lac lawsuit.

First EPA “may affect” notice.

Fond du Lac First objection.

First EPA conclusion “will affect.” Mercury and specific conductance.

U.S. Army Corps REVOKED PolyMet wetlands destruction permit, based on Band and EPA.

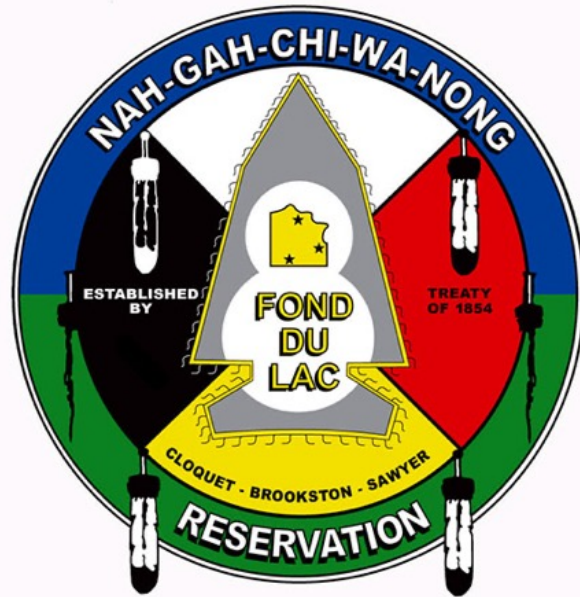
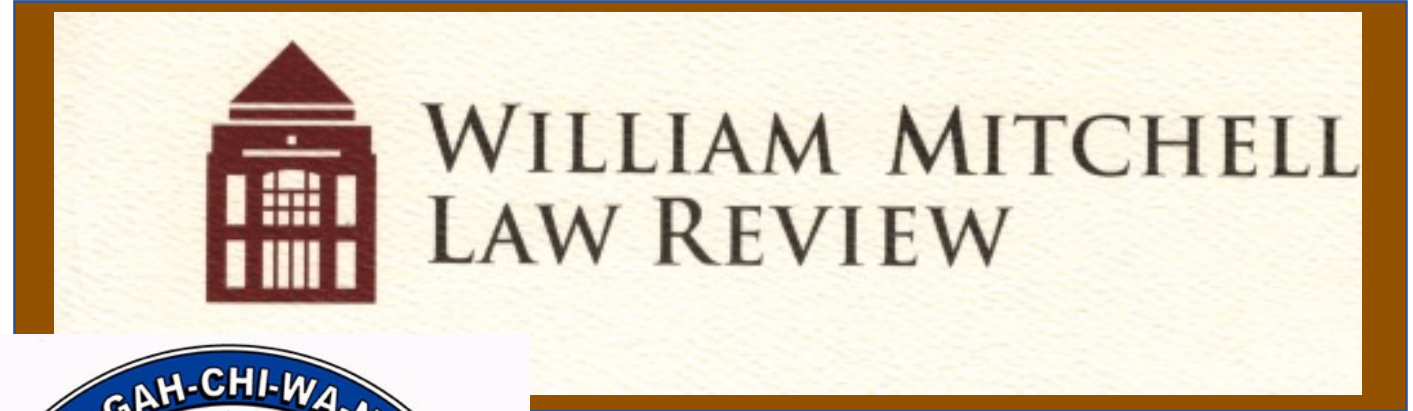


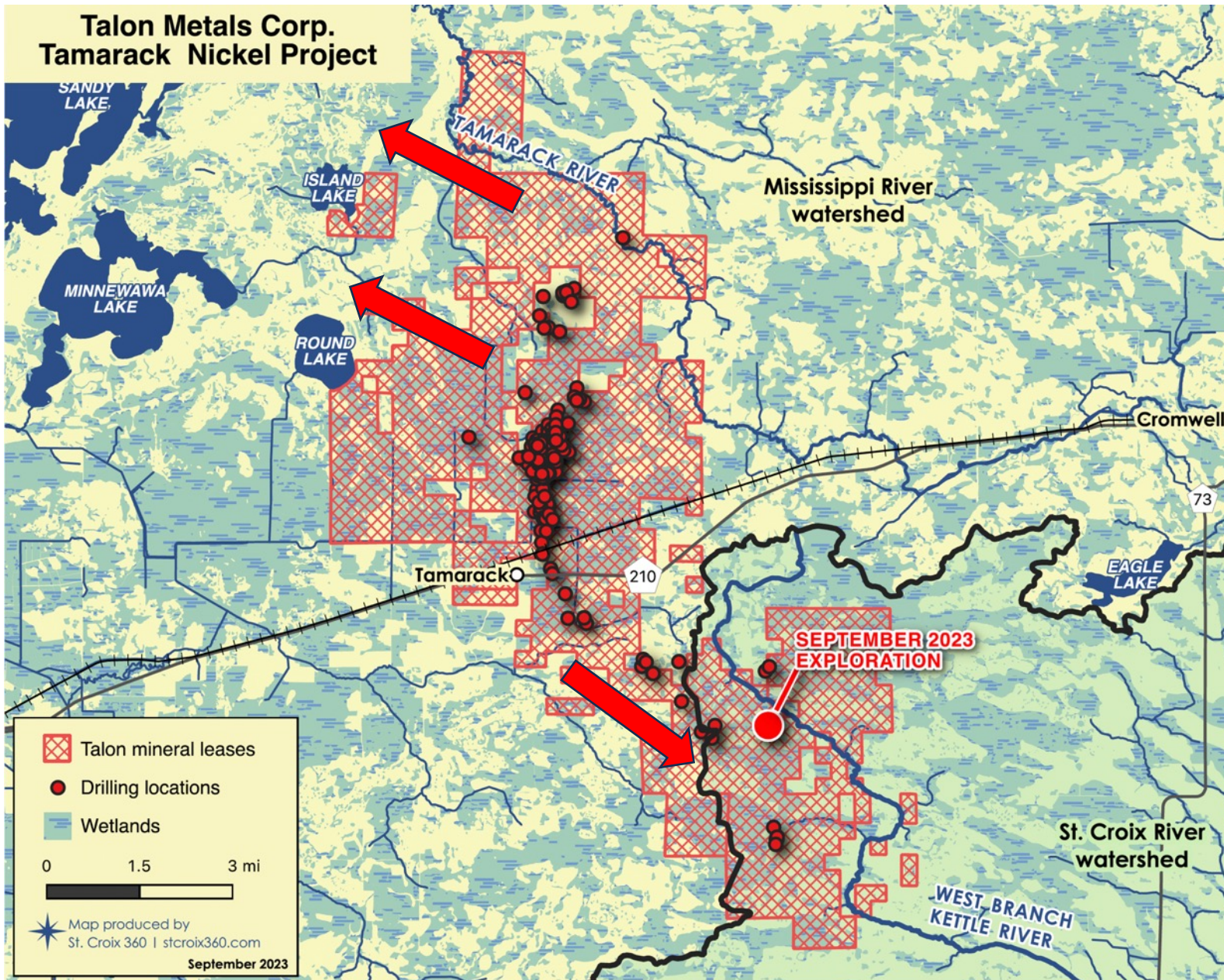


Photo St. Croix River: NPS, WolfeT



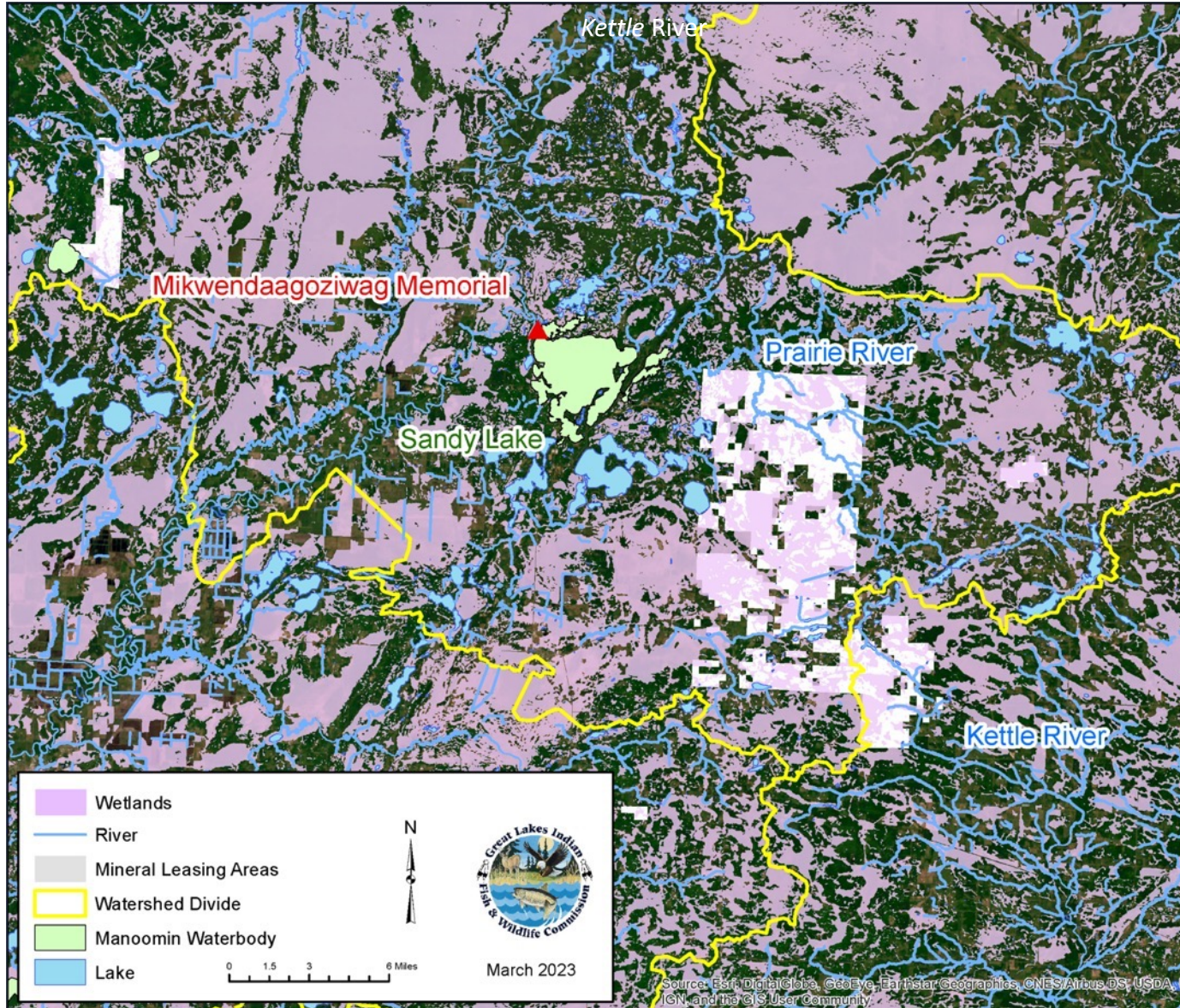
Waters & Wetlands Affected by Proposed Sulfide Mining

Tamarack Intrusive Complex Affected Waters



- **Impaired - Nutrients:** Lake Minnewawa and Big Sandy Lake.
- **Impaired - Mercury in Fish:** Round, Minnewawa, and Big Sandy Lakes, Kettle & St. Croix Rivers, Mississippi River segments.
- **Tamarack River:** exceptional class 2Be water impaired for *E. coli*.
- **Wild & Scenic Rivers:** Kettle River, Upper St. Croix River.
- **State Wildlife Management Areas:** Salo Marsh & Grayling Marsh.
- **Mille Lacs Band of Ojibwe Reservation Lands & Waters:** Sandy Lake, Lake Minnewawa, East Lake.

Tamarack Intrusive Complex- Wetlands & Shallow Lakes



EAW: “The Project Area is primarily classified as wetlands.”

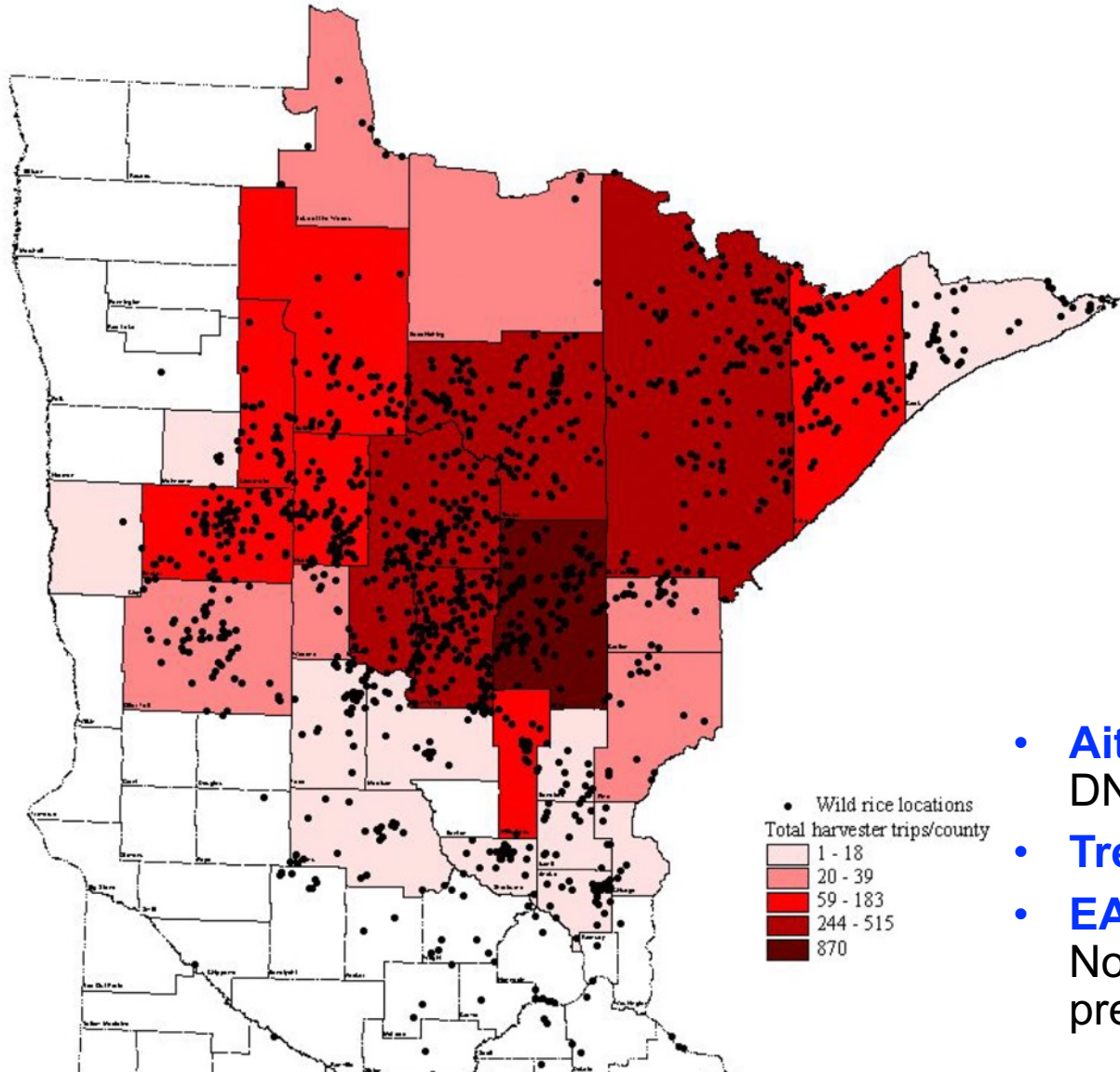
EAW: DNR data shows 77% of “project” area depth to water is less than 1 foot.

EAW: Dewatering predicted from “project” almost twice as much as modeled from all three PolyMet open mine pits.



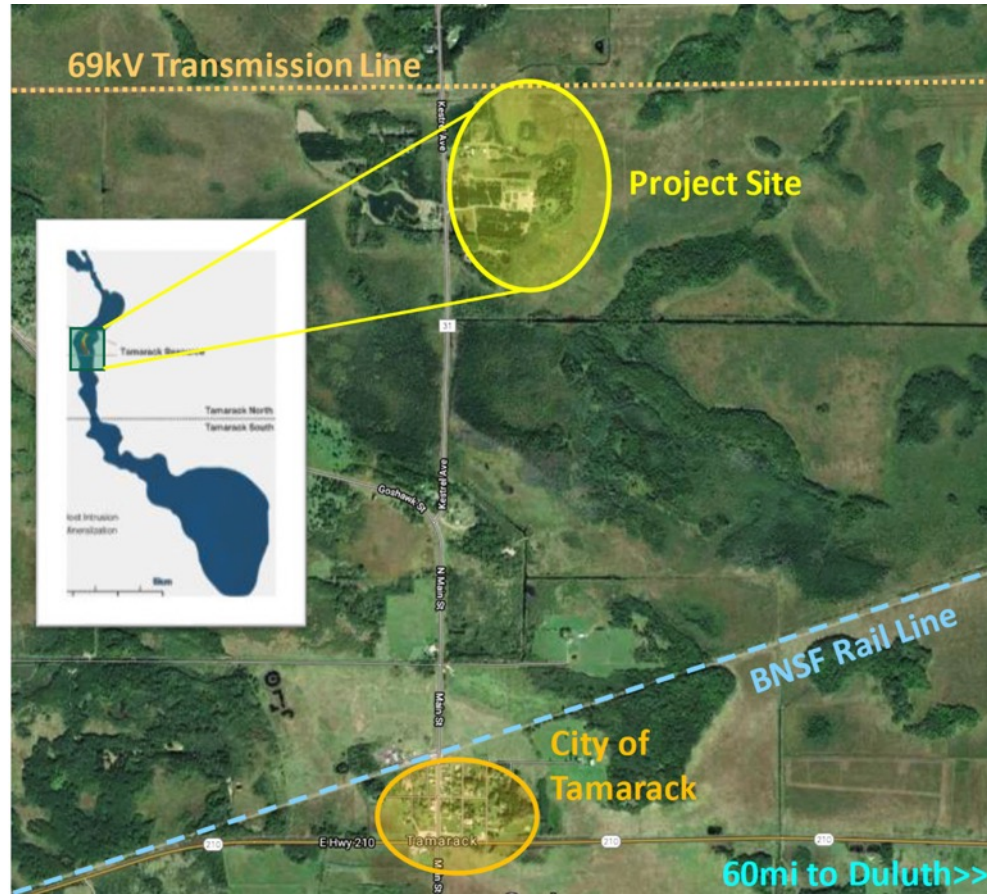
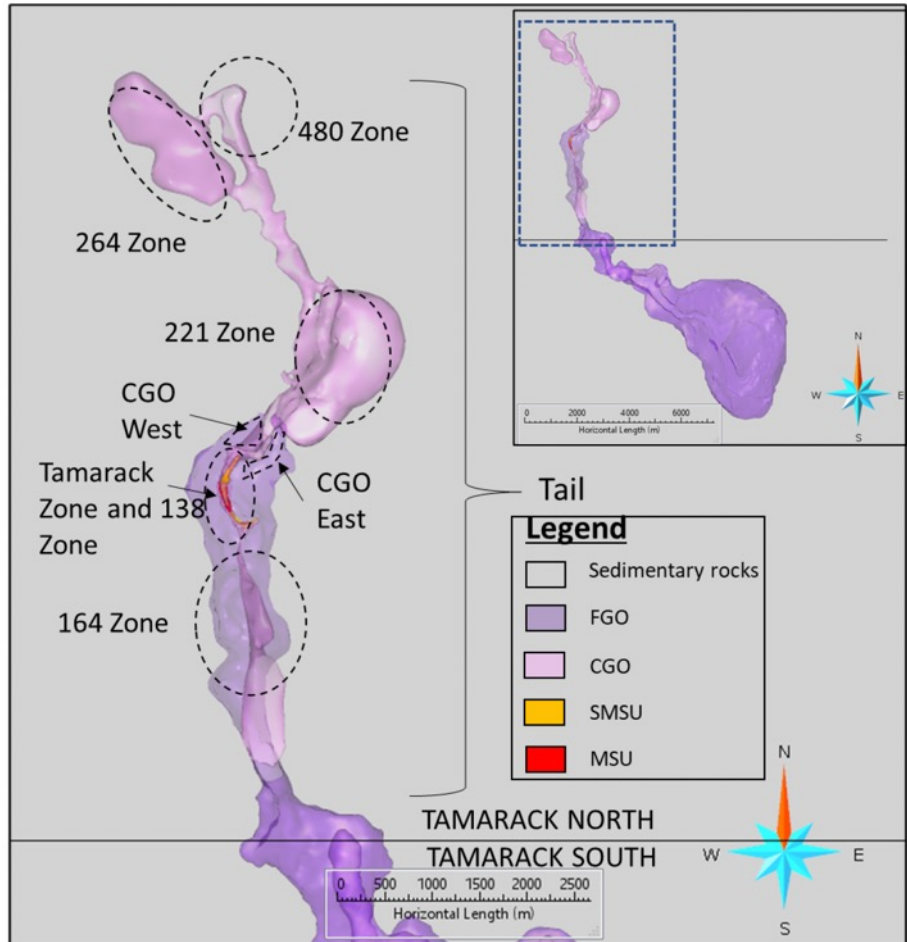
Photo: Tamarack area wetlands.

Tamarack Intrusive Complex Region Wild Rice



- **Aitkin County:** Minnesota wild rice abundance, Minnesota DNR found most harvest trips.
- **Treaty-reserved rights:** 1854, 1855 and 1837 treaties.
- **EAW:** Fails to identify all wild rice waters near proposed site. No consultation with tribes as to how to evaluate wild rice prevalence or health.

Tamarack Intrusive Complex & Talon Metals “Project”

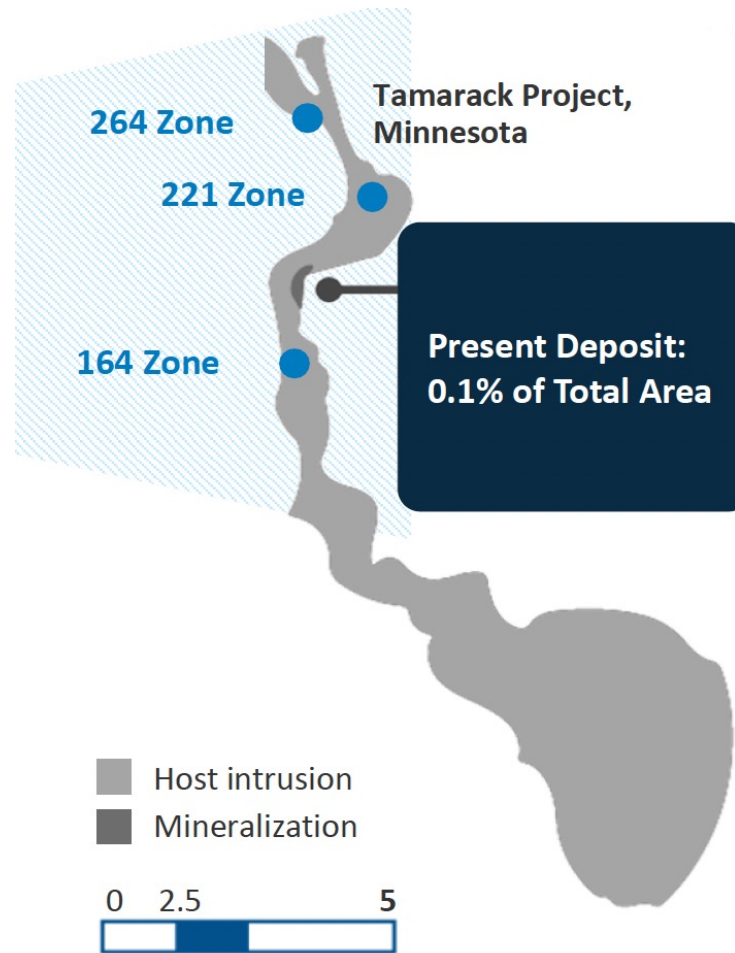


“[W]e can push forward this mine in the permitting process and hopefully get a permit while we're also exploring for additional nickel resources in Minnesota.” Talon chief external affairs officer Todd Malan (June 2023)

“[T]he Tamarack Intrusive Complex has district-scale potential.” Talon chief exploration and operations officer Brian Goldner (Jan. 2023)

Talon/Rio Tinto EAW for Proposed Mine Project Inadequate

- Talon/Rio Tinto EAW proposed mine “project” 447 total acres, 225 acres of mining.
- Less than 1% of the 31,000 acres they control.
- Subsidy @\$115 million for North Dakota processing. No plan or study.
- No engineering or economic feasibility shown for current plan.



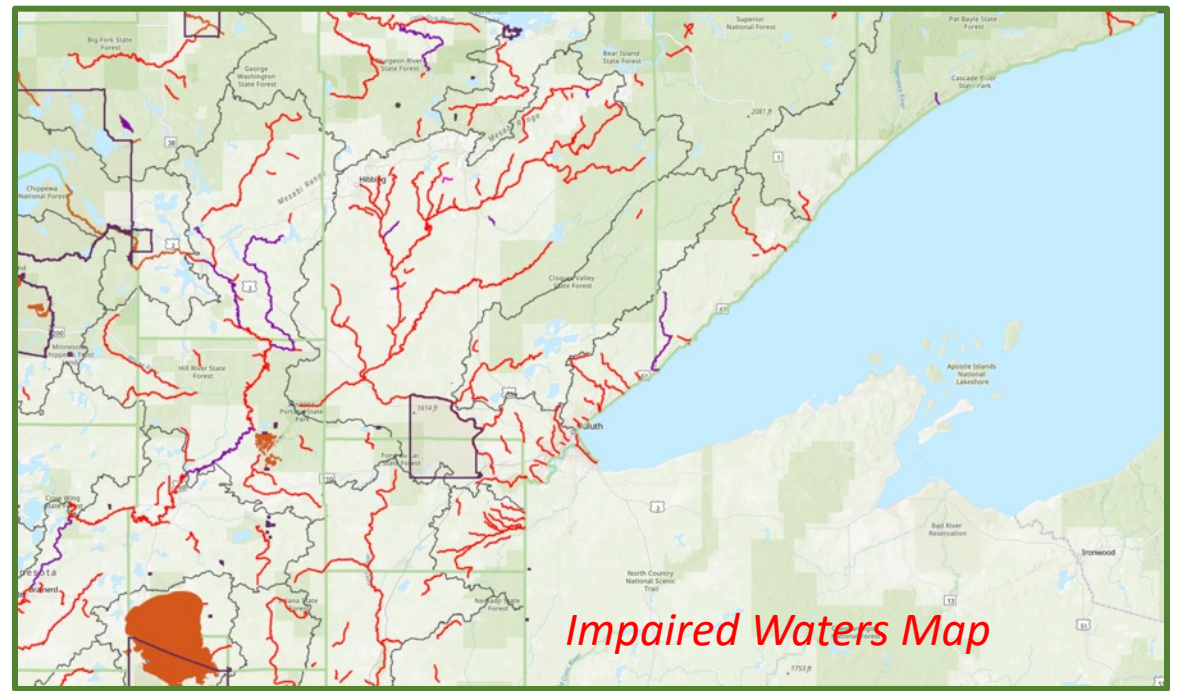
Source: Talon Metals, Moving Forward (Sept. 2022)

Tamarack Intrusive Complex Regional Study Needed:

- Evaluate regional environmental, public health, social, cultural impacts.
- Evaluate downstream effects of district-scale mining.
- Address areas of new science and protect tribal treaty-reserved rights.
- Ensure regulatory capacity to address issues posed by mining Tamarack Intrusive Complex.



G. Stubbe, StarTribune (Minntac)



Len Anderson

Regulatory Failure, Rollback of Standards and Impaired Waters

Wild Rice, Sulfate, and Rollback of Standards



- 2009: U.S. Army Corps sulfate advice.
- 2010: U.S. EPA said must enforce.
- 2011-2017: Wild Rice Task Force. MPCA tried to repeal sulfate standard.
- 2012: Mining polluters lawsuit denied.
- 2018: Administrative Law Judge disapproved MPCA's repeal proposal.
- 2018: Gov. Mark Dayton twice vetoed repeal bills.
- 2021: Court ruled sulfate standard must be enforced (U.S. Steel case).
- BUT in 2021 MPCA repealed water quality standards limiting salts and ionic pollution. This repeal will harm fish & wild rice.

- Tribes
- Lawyers/Advocates
- Scientists
- Community



'The Sacred Harvest' Dale Kakkak

2024 Impaired Waters & Total Maximum Daily Load (TMDL) Studies Required under the Clean Water Act

- 2021 EPA overturned MPCA impaired waters list for failure to list any wild rice waters impaired due to sulfate.
 - 2024 MPCA identified **2,395** wild rice producing waters.
 - 2024 MPCA agrees to list **55** wild rice waters impaired due to sulfate
-
- 2024 MPCA has no commitment to restore **any** wild rice water impaired due to sulfate (required under Clean Water Act).
 - 2024 Minnesota has **1,699** waterbodies impaired due to excessive mercury.
 - 2024 MPCA denies science that sulfate exacerbates mercury contamination. St. Louis River mercury TMDL example.



Report Card

Minnesota Pollution Control Agency

Describing impaired Waters problems	B+
Solving impaired Waters problems	D-

The graphic is a 'Report Card' for the Minnesota Pollution Control Agency. It features a blue header with the word 'Report' in red, and a yellow background with the word 'Card' in black. To the right of 'Card' are several yellow stars. Below the title, the agency name is written in red. A table with two rows and two columns shows performance metrics: 'Describing impaired Waters problems' with a grade of 'B+' and 'Solving impaired Waters problems' with a grade of 'D-'. The text in the table is in a handwritten style.



**SIGN the PETITION for the
“Whole Truth” in Talon Metals
Environmental Review.**

**ASK GOVERNOR WALZ to “Just
Say No” to PolyMet Permits.**

**SIGN UP AT WaterLegacy.org
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