IGNORANCE IS NOT BLISS:
Talon Mine Proposed “Project” and the Need for a Regional Tamarack Intrusive Complex Study

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WaterLegacy’s Mission: Protect Minnesota’s fresh waters and the communities that rely on them.

WaterLegacy’s Story:
• Formed in 2009 by rural Minnesotans concerned about PolyMet mine.
• Science, legal advocacy, organizing.
• Tribal partnership and collaboration.
• Hold agencies accountable to protect nature and human health.

Kettle River Slough/ J. Walters/ Wild Rivers Conservancy
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.

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

Plaques on wild rice roots - impairs seeds as well as seedlings.
How Does Sulfate Pollution Affect Water Quality, Habitat, Health

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

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**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.

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The Minnesota Copper-Nickel Regional Study covered only the Duluth Complex – not the Tamarack Intrusive Complex.
“[T]he Tamarack Intrusive Complex has district-scale potential.” Talon chief exploration and operations officer Brian Goldner (Jan. 2023)

“[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)
Talon Metals “Tamarack Nickel Project” EAW

- Talon/Rio Tinto EAW proposed mine “project” 447 total acres, 225 acres of mining. Less than 1% of the 31,000 acres they control.
- EAW: (2020) data prediction of Talon peak dewatering from “project” almost twice as much as modeled from all 3 PolyMet pits.
- EAW: not include impacts of spills or CO2 from @500 miles of rail transport.
- Subsidy @$115 million for North Dakota processing. EAW proposes no plan for tailings storage and no study of impacts of ore processing or tailings waste.
• **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 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 even all wild rice waters near proposed site. No consultation with tribes as to how to evaluate wild rice prevalence or health.
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: “[M]ine workings are expected to intersect local discrete zones and area of enhanced permeability.” Fractures. No estimate of indirect effects on wetlands.

Photo: Tamarack area wetlands.
Talon/Rio Tinto EAW for Proposed Mine Project: More Gaps

- **No engineering feasibility**: tunnel boring machine, mine backfill, ore transport.
- **No economic feasibility**: PEA Jan. 2021 included onsite processing, capital costs of $316 million.
- **No disclosure until EIS**: wetlands hydrology or water quality; surface water or groundwater chemistry or flow; chemicals in intrusive deposit or mining.
- **No clear plan** for crushing rock, cement, backfill.
- **No commitment** on type or scale of treatment, plan to start mine before build treatment plant.
- **No liners** for “overburden,” claim “non-contact” water.
- **No “waste rock” in EAW**: calls waste “development” rock or “backfill material.”

*Tunnel boring machine (TBM)* shown in EAW not for mine. Talon would bore through 220 feet of bedrock.
Tamarack Intrusive Complex
Regional Study Needed to:

• Evaluate regional characteristics: e.g., hydrology; ecosystems; chemistry; climate sustainability.

• Evaluate downstream effects of district-scale mining: wild rice, mercury, nutrients, aquatic life, wildlife, wild & scenic waters, public health.

• Address areas of new science: asbestiform fibers; sulfate/sulfide cycle, methylmercury, nutrients; wild rice; nitrate; chloride; specific conductance.

• Address areas of increased accountability: tribal reservations & exercise of treaty-reserved rights; boom-and-bust economics; pollution liability.

• Ensure regulatory capacity to address issues posed by mining Tamarack Intrusive Complex.

Please sign up today: WaterLegacy.org