



Tamarack Water Alliance Community Zoom Meeting Wednesday, July 2, 2025 10am CT

TOPIC: The Use of Kaandoosh as a Biodegradable Disinfectant and Anticancer Agent
PRESENTER: Johanna Bernu, Student Researcher, Rising Yale Freshman.

Johanna, like many of her Indigenous ancestors, has built a relationship with plants. Commonly known as the yellow water lily root or kaandoosh in Ojibwe language, the rhizome of *Nuphar advena* is utilized by Indigenous communities for treating a wide variety of ailments, including bacterial overgrowth and gastrointestinal issues. Prior research supported these usages: showing *Nuphar advena*'s effectiveness against bacterial overgrowths without hazardous effects on water systems, yet questions remained on heavy metal interactions' affect on human health.

This study aims to investigate the impact of *Nuphar advena* rhizome on cancer cells (67NR, 4T1, MDA-ME-231, MiaPaCa-2) while emphasizing Ojibwe teachings around efficacy. Rhizome extractions were made with acidic, basic, and neutral water, acetone, ether, ethanol, ethyl acetate, and chloroform. The MTT assay produced EC50 values revealing that ether extractions were effective against all cancer cell lines in concentrations less than 500 mg/L. These results contribute to the ethnopharmacological knowledge and reappraisal of Ojibwe medicinal teachings.

Register for the meeting and receive the Zoom link [here](https://tamarackwateralliance.org/php/eventreg.php?eid=16)
(<https://tamarackwateralliance.org/php/eventreg.php?eid=16>).

NEW FACT SHEETS:

- **Minnesota Has Listed Round Lake as Impaired**
(<https://www.tamarackwateralliance.org/docs/RoundLakeImpaired.pdf>)
- **Talon Metals Dumping Toxic Drilling Waste**
(<https://www.tamarackwateralliance.org/docs/TalonToxicSumps.pdf>)

NEW Tamarack Water Alliance Presentation [Science of Sulfide Mining: Dangers of Sulfide Mining](https://www.tamarackwateralliance.org/docs/SulfideMining-details.pdf)

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DOWNLOAD Tamarack Water Alliance fact sheets/flyers [here](https://tamarackwateralliance.org/resources.html#flyers)
(<https://tamarackwateralliance.org/resources.html#flyers>).

DONATE to Tamarack Water Alliance: [here](https://tamarackwateralliance.org/donate.html)
(<https://tamarackwateralliance.org/donate.html>). Our current focus is on providing education about the risks of sulfide mining, narratives to counter the greenwashing and divisiveness that some mining companies promote, as well as forging connections to other communities concerned about sulfide mines in Minnesota, across the Midwest, and around the world.

Your donation goes to support our community educational activities which include tabling at community festivals and parades, participation in other community events, targeted speaking engagements with interested local organizations, monthly informational public zoom calls and an associated email newsletter, website and social media, letter writing campaigns and articles in local news outlets, interviews with media, and other community outreach and canvassing.

Sign-Up To Receive Updates from the DNR on Talon Metals Environmental Impact Statement here [here](https://www.dnr.state.mn.us/input/environmentalreview/tamarack-nickel-project.html) (<https://www.dnr.state.mn.us/input/environmentalreview/tamarack-nickel-project.html>).

If you believe nickel-sulfide mining is too risky in Aitkin County, Tamarack Water Alliance has yard signs with this messaging available. Your \$6 donation helps defray costs. Email waters@tamarackwateralliance.org to arrange pickup of your sign.

Volunteer with the Tamarack Water Alliance. Send us an email at waters@tamarackwateralliance.org.

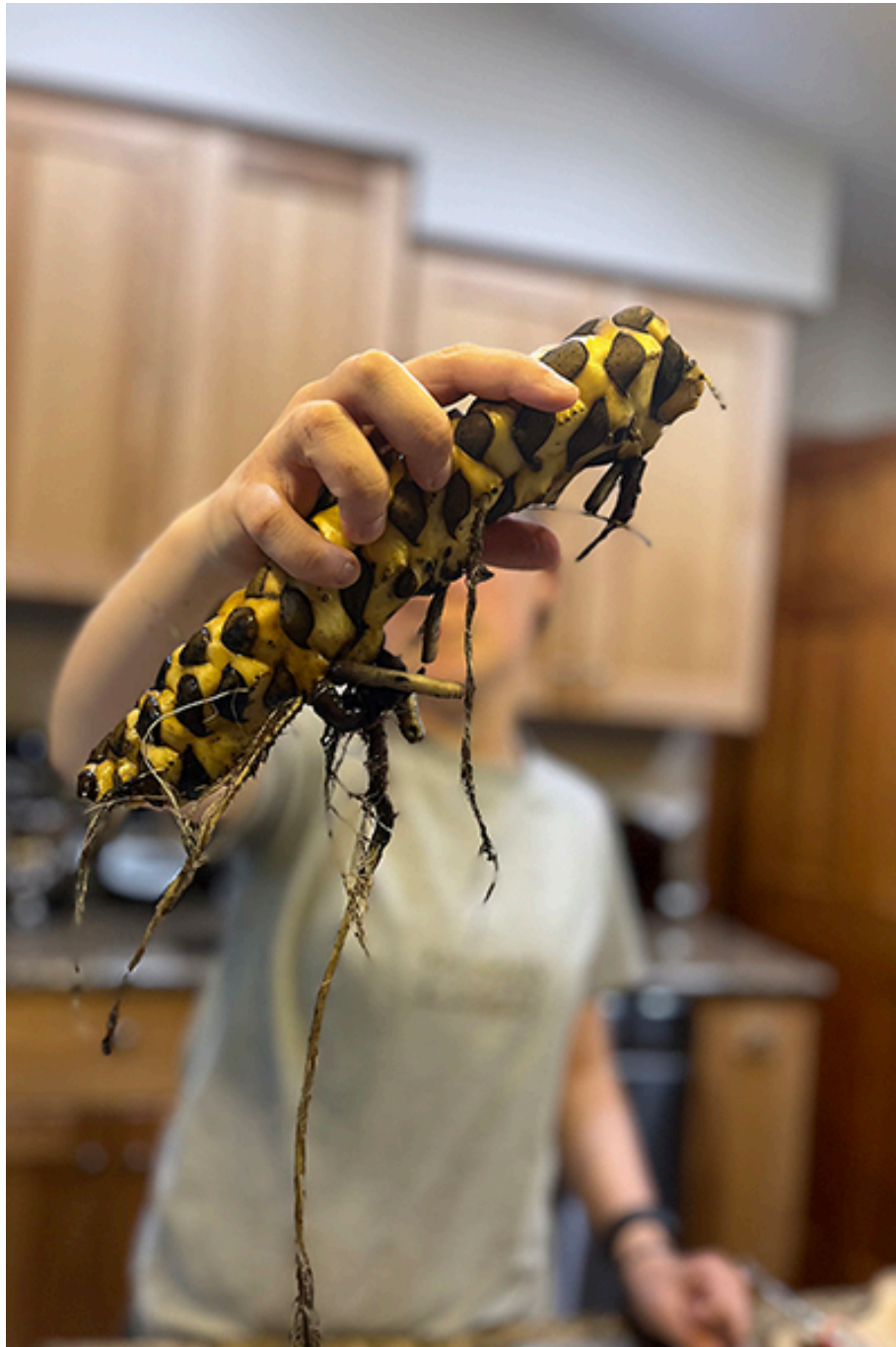
Encourage your friends, family and neighbors to sign up for the monthly Tamarack Water Alliance email newsletter at tamarackwateralliance.org/php/articlereg.php.

The Use of Kaandoosh as a Biodegradable Disinfectant and Anticancer Agent - Johanna Bernu



People have the ability to develop bonds with living things in many ways. Some people look to the forests for solace, some harvest serotonin from their houseplants, and others can't wait to have a pet greet them when they get home from work. I, like many of my Indigenous ancestors, built a relationship with plants. I became intertwined with one plant medicine in particular: kaandoosh.

I have been researching the traditional uses of Kaandoosh, or the root systems of yellow water lilies, in the treatment of pharmaceutical resistances since seventh grade. This past year, my senior year of high school, I researched how kaandoosh could be used as a treatment for pancreatic and breast cancer. My research is able to support Indigenous traditional ecological knowledge, while showing that our medicines hold immense power in tackling some of the world's largest crises.



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lakes in Northern Minnesota, including Tamarack lake. While it is currently safe and accessible for medicinal use, the proposed Talon Metals Sulfide Mine directly threatens the health of this plant through habitat loss and pollution. The loss of kaandoosh within this community eliminates a viable and sustainable treatment for bacterial overgrowths and cancer.

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However, kaandoosh is not the only organism we stand to lose. While this medicine may be my focus, there are others within this ecosystem that hold immense value. What may superficially seem like a small ecological loss, has the capability of snowballing into a substantial loss to society and the healthcare community as a whole.



The Minnesota Prove It First Bill and The Myth of Sulfide Ore Mining Without Environmental Contamination by Steven Emerman, PhD Presentation to Clean Water Commission - June 12, 2025 (excerpts)

" There is no “Society” that is weighing the risks and benefits of sulfide-ore mining...Risk analysts do not normally consider whether the risk is acceptable to those on whom the risk is imposed. Rather the question is whether the risk is acceptable to ‘society.’ This does not make much sense. Society is not in a position to accept risk; governments might, on behalf of society, but society is not an entity that can make these normative judgements ..."

"...The Flambeau Mine as a fake success story...Wisconsin DNR issued a Certificate of Completion (COC) of Reclamation for the Flambeau mine on December 20, 2022. The Certificate of Completion of Reclamation indicates only that the mining company (Rio Tinto)

has completed its reclamation plan. It in no way states that there has been no environmental contamination..."

"...**The Minnesota Prove It First Bill** is essentially a 20-year moratorium on nonferrous sulfide ore mining in Minnesota pending the demonstration of sulfide ore mining without environmental contamination in some other jurisdiction..."

"... **Minnesota has no obligation** to be the sacrifice zone for the testing of new technology.

Read full report:

https://www.friends-bwca.org/wp-content/uploads/Prove_It_First_Bill_Report_Emerman_Revised.pdf

Watch YouTube video: The Myth of Clean Mining - Dr. Steve Emerman

<https://www.youtube.com/watch?v=GcEv3f79LGw>.

Who We Are

Tamarack Water Alliance is a group of local residents and landowners working together with others from across Minnesota to protect water and community health from the dangers of sulfide mining near our beloved lakes and wild rice beds, at the headwaters of the Kettle River and in the Mississippi River watershed. Visit our website [here](https://tamarackwateralliance.org/index.html) (<https://tamarackwateralliance.org/index.html>).

A proposal by a foreign owned mining company, Talon Metals/Rio Tinto to mine nickel and other metals near Tamarack in Aitkin County threatens the health of our communities. This kind of sulfide mining, especially in water-rich environments, has never been done without severe impacts to water and the health of those downstream. Mining here is also a threat to environmental justice and the long-term economic security of nearby native and rural communities.

Review our [community slide presentation](https://tamarackwateralliance.org/docs/TamarackMineConcerns-Consolidated.pdf) (tamarackwateralliance.org/docs/TamarackMineConcerns-Consolidated.pdf) and download [informative flyers](https://tamarackwateralliance.org/resources.html) (tamarackwateralliance.org/resources.html):

- Talon Mine Risks,
- Geology of Aitkin County,
- Talon Dumping Toxic Drilling Waste,
- Minnesota Declares Round Lake Impaired
- High Sulfide Mines Create Acid Mine Drainage,
- Nickel Not Needed for Future EV Batteries,
- Minnesota's Prime Wild Rice Lakes Under Threat,
- Minnesota Regulators Poor Record In Protecting The Environment,
- Eagle Mine Environmental Report & Saving Our Meager Nickel Reserves
- Is There Really A Talon Tesla Supply Agreement? (no)
- Rio Tinto: A History of Corruption
- Green Bridge Metals -Canadian proposed sulfide mine near Duluth seeks to acquire battery rich mineral assets
- Copper and The Green Economy
- Prove It First!

We will be sending this monthly newsletter to keep you informed about this project, to share information and opportunities to act, and to invite you to gatherings where you can connect

with others who share a passion for clean water and community health.

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