

Wild Rice and Sulfate - SCIENCE

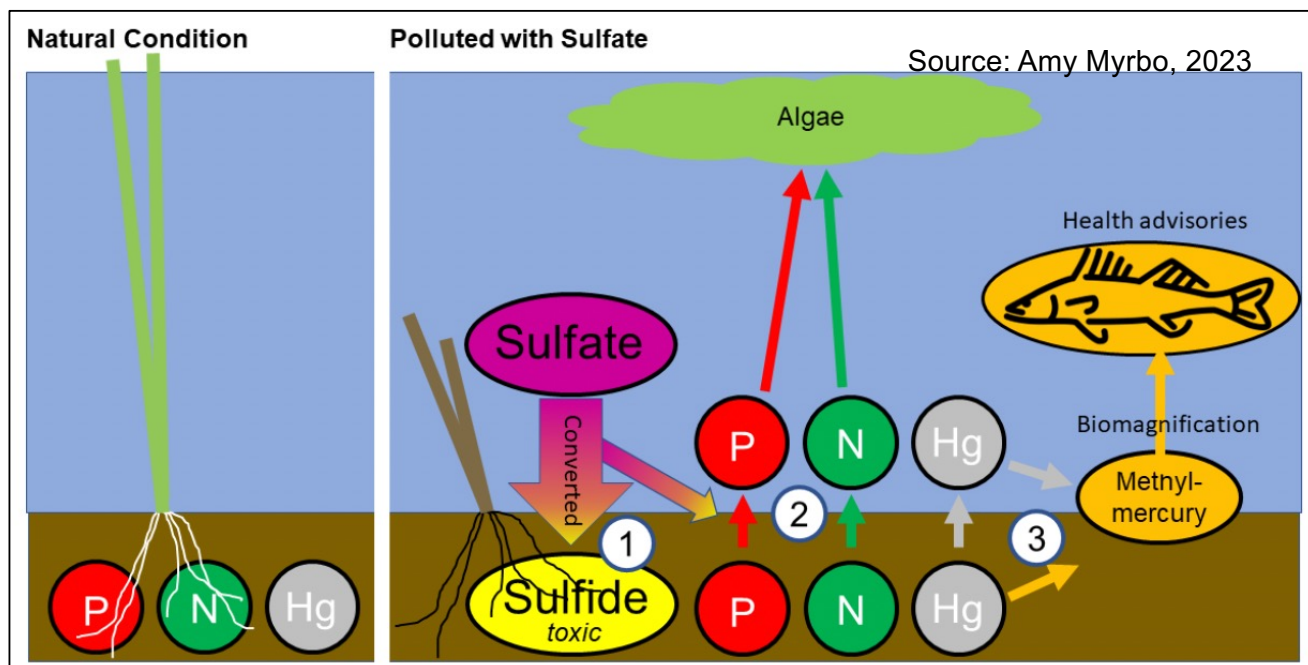
What Is Wild Rice (Manoomin/Psínj)?

- An annual plant that grows in lake and stream sediments; an indicator for clean water; and food and habitat for waterfowl, wildlife, and fish.
- High protein, sustainable food. Vital for the Ojibwe/Chippewa and Lakota, who have treaty-reserved rights to gather wild rice.
- Minnesota still has more abundant wild rice than any other state.



How Does Sulfate Affect Wild Rice & Water

- Over time, sulfate in sediments is converted to toxic sulfide in a biochemical process.
- Science since 2018: Iron does not protect wild rice; it forms plaques on roots, harms seeds (right side).
- Sulfate/sulfide reaction also doubles release of phosphorus (P), nitrogen (N) and mercury (Hg) from sediments.
- Sulfate/sulfide increases toxic methylmercury in water six-fold, can biomagnify 1 million times in fish.



Wild Rice and Sulfate – LAW AND ADVOCACY

History and WaterLegacy Struggle to Protect Wild Rice from Sulfate Pollution in Alliance with Tribes and Communities

- 1973:** Minnesota Pollution Control Agency (MPCA) adopted US EPA approved 10 parts per million (mg/L) sulfate standard based on extensive field studies.
- 2010:** US EPA told MPCA must enforce standard under Clean Water Act.
- 2012:** Court dismissed lawsuit brought by mining industry to prevent MPCA from applying wild rice sulfate standard.
- 2018:** Administrative Law Judge (ALJ) and Chief ALJ rejected MPCA proposal to repeal wild rice sulfate standard. Gov. Dayton twice vetoed repeal legislation.
- 2021:** Minnesota Supreme Court ruled sulfate standard must be enforced for discharge to surface water. (US Steel Minntac case).
- 2021:** US EPA overruled MPCA, required listing of sulfate-impaired wild rice waters for the first time.
- 2022:** US EPA letter to MPCA stating sulfate standard must be enforced under Clean Water Act.
- 2024:** MPCA listed 55 wild rice waters impaired due to excessive sulfate. MPCA website identified more than 2,900 Minnesota wild rice waters.
- 2025:** Minnesota Court of Appeals upheld MPCA denial of lax sulfate “site-specific” standard for US Steel discharge to Hay Lake wild rice waters.
- 2025:** MPCA draft Keetac permits require compliance with wild rice sulfate standard.

Current Advocacy and Action

Permitting: Comments for Keetac permits ended Sept. 22. Potential actions: 1) Tribal consultation; 2) Petition to Governor.

Legislation: Mining industry will push bills to repeal wild rice sulfate standard. Action: organize and educate to preserve standard.

Communication: Standard is based on current science; sulfate impairs wild rice; corporations should clean up their mess; sulfate pollution results in toxic mercury contamination of fish and algae blooms.

Alliances: Who is not at the table? Health professionals, organic consumers, youth, unions, faith groups, hunters, anglers.



Learn More: www.waterlegacy.org