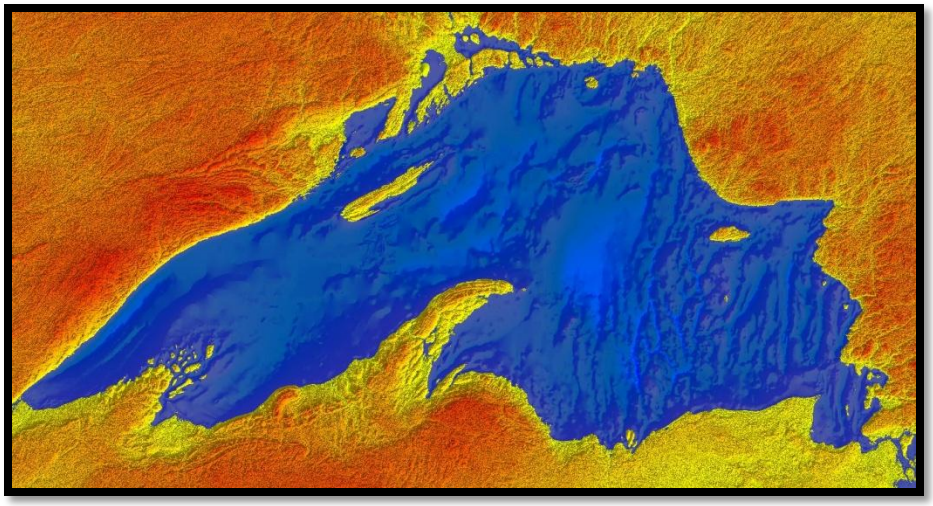
Save Lake Superior Association – Winter 2013

Dedicated to the restoration and preservation of this Great Lake www.savelakesuperior.org

LAKE SUPERIOR'S FUTURE IS A GLOBAL MATTER

A recent conversation on the environmental effect of mining in Lake Superior's watershed shifted to a discussion of global resource management and consumption as part of human activity. I had just listened to a program on climate change and how levels of carbon dioxide in the atmosphere is well over the 350 parts per million (ppm) advocated by 350.org. We are now at about 390 ppm and climbing. The carbon dioxide and fine particulate matter right now in our atmosphere are enough to cause the continuing and destructive rise in global atmospheric temperature well into the future.

The hope is that we can change the trajectory of this temperature rise from increasing to eventually decreasing. This is entirely possible with cooperation on resource management on a global scale even with increasing population. As an example, the entire Lake Superior watershed is under tremendous development pressure. The mining of sulfide and iron ores as projected would consume terawatts of electric power, mostly coal and gas fired. This type of planned development is mirrored worldwide. If this occurs without drastic reductions in the release of carbon dioxide into the atmosphere from power sources, the 350 ppm target will be but a spec in our rear view mirrors and a fantasy fallback target. Carbon emissions must be coordinated regionally and globally. Short term financial gains are never discounted for future cleanup costs. Environmental debt would dwarf financial debt. Do we really care about our children and grandchildren?



LeRoger Lind

Wild Rice a Major Factor in the Future of Sulfide Mining Decisions

Permits granted to mining interests eager to begin operations in northeastern Minnesota may well hinge on finding whether rice plants could tolerate levels of sulfuric acid above the long established standard of 10 milligrams per liter of water. Industry has been pulling out all the stops to increase the standard to 50.

The halfway point in the two year evaluation of this scientifically based project has just now been reached but no results have been reported to date. Representatives of environmental groups hold firmly to the findings of the Conservation Department (as it was called in the 1940s and 50s) that a greater concentration would likely impair the function of the plant's roots.

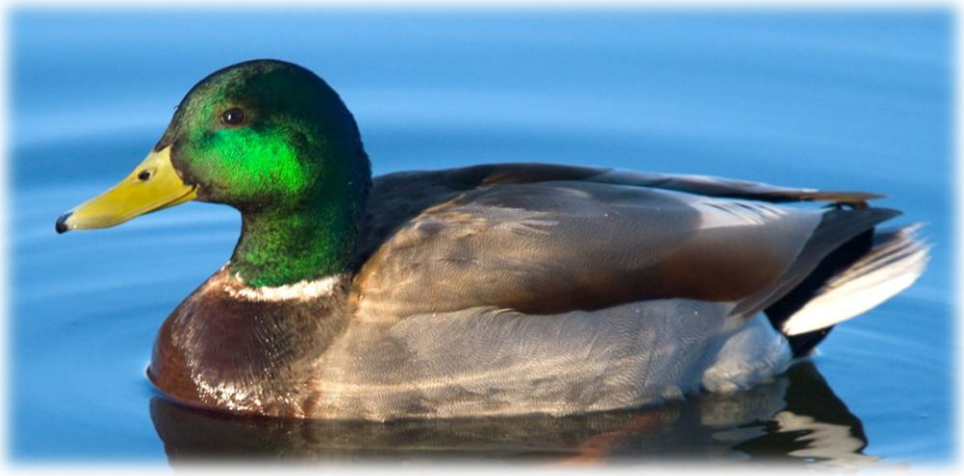
It should be noted that, at the time of the state sponsored research, sulfide mining in Minnesota was not even under consideration and would not be a factor for decades. The motivation was only one of seeking basic scientific knowledge. There was no political involvement. That aspect didn't appear until legislators, led largely by members from the Iron Range, worked to get a law circumventing the existing standard. This would have revised the standard to allow 50 milligrams per liter to accommodate mining interests, never mind the environmental impact. That arbitrary figure, without a shred of scientific legitimacy to support it, was rejected.

To its credit the MPCA has been objective says Len Anderson, an expert on wild rice technology. The retired science teacher also expressed his approval of UMD professor John Pastor as head of research in this 1.5 million dollar state-funded project.

Anderson told us sulfuric acid in the St. Louis, Partridge and other rivers is not the only toxic chemical that would impact the water from proposed mining operations but that it is the one that should have primary consideration. He

also noted that humans are not the only consumers of wild rice. Wood ducks, teal, mallards and other waterfowl thrive on it and the plants serve as nurseries for the young of some fish species

A fascinating in depth research study titled Restoring Wild Rice in Nett Lake Minnesota and Waterfowl Survey and Assessment of Wild Rice Predation in 2007 focused on the average daily intake of wild rice by one mallard duck. A complex scientific formula was employed---we will spare you the details---included work by Barr Engineering for PolyMet. The Barr report, for example, was based on the assumption each seed head on a wild rice stem produces 33 seeds.



The application of the formula, based on the consumption rate for a duck feeding on one acre of wild rice with a density of one wild rice stem per 0.5 square meter, could provide “11.5 days-worth of feed for one Mallard duck.”

Glenn Maxham

Another Global Air Pollution Index Shattered

BEIJING (AP) — People refused to venture outdoors and buildings disappeared into Beijing's murky skyline on Sunday as the air quality in China's notoriously polluted capital went off the index.

The Beijing Municipal Environmental Monitoring Center said on its website that the density of PM2.5 particulates had surpassed 700 micrograms per cubic meter in many parts of the city. The World Health Organization considers a safe daily level to be 25 micrograms per cubic meter.

PM2.5 are tiny particulate matter less than 2.5 micrometers in size, or about 1/30th the average width of a human hair. They can penetrate deep into the lungs, so measuring them is considered a more accurate reflection of air quality than other methods. (They are similar to particles released from mining and power generation operations on Minnesota’s Iron Range.)

In the 24-hour period up to 10 a.m. Sunday Jan 12th, the U.S. Embassy using more stringent standards said 18 of the hourly readings were "beyond index." The highest number was 755, which corresponded to a PM2.5 density of 886 micrograms per cubic meter. The U.S. Environmental Protection Agency's air quality index goes up to only 500, and the agency advises that anything greater than 300 would trigger a health warning of "emergency conditions," with the entire population likely affected.

PM2.5 can result from the burning of fuels in vehicles and power plants.

Weather conditions are a factor in the recent poor air quality, as a lack of wind means pollutants can easily accumulate and fail to dissipate, said Pan Xiao Chuan, a professor at Peking University's public health department.

"Recent pollution doesn't mean there is an increase in the discharge of pollutants," he said.

Experts say they thought the PM2.5 readings were the highest since Beijing started publishing that data early last year. Public pressure forced the publication of the more detailed air quality data, as a growing Chinese middle class is increasingly vocal about the quality of the environment in which it lives. Hourly air quality updates are now available online for more than 70 cities.

Air pollution is a major problem in China due to the country's rapid pace of industrialization, reliance on coal power, explosive growth in car ownership and disregard to environmental laws. It typically gets worse in the winter because of heating needs.

From the perspective of SLSA, metals mined and processed in the U.S. are used and goods sent to us are produced in places like Beijing. Considering these consequences, conservation and recycling of metals in the U.S. to reduce global metal consumption and export would not be such “foreign ideas”. Carbon dioxide levels in the same areas far exceed 350 parts per million. This is a potent one-two punch to public health and safety globally.

SLSA Takes a Position on Sulfide Mining in Minnesota's Arrowhead Region

Minnesota should enact a "prove-it-first" law similar to Wisconsin's. This would prohibit the permitting of metallic sulfide mines until they have been proven safe through long-term operation and closure of similar mines elsewhere. This policy makes sure Minnesotans are not the recipients of untested mining practices, insurmountable clean-up costs, and human health issues, including the loss of clean drinking water. Additionally, Minnesota should prohibit mines that would require long-term treatment of surface runoff or groundwater after the mine's closure. There is no way to predict closure/clean-up costs for mines requiring 'perpetual treatment'. For example, PolyMet has never operated a mine and has no financial reserves. The burden becomes that of the taxpayer. Lastly, metallic sulfide mines should be prohibited in watersheds of special concern, such as those of the BWCAW and Lake Superior. Pristine or sensitive waters should not be subjected to acid mine drainage or toxic leaching. The Minnesota Regional Copper-Nickel Study, conducted by the Minnesota Environmental Quality Board, reached a similar conclusion in 1979, but adequate protections have never been adopted.

Metallic sulfide mining generates sulfuric acid and the leaching of toxic heavy metal into ground and surface water. At even a few parts per billion, this discharge of mercury adversely impacts the aquatic food chain, eventually affecting fish, wildlife, and children. Sulfates released into the watershed increase methyl mercury levels in fish thereby entering children's blood streams and brains.

The first sulfide mining proposal for Minnesota is currently going through environmental review. The proposed PolyMet mine near Hoyt Lakes would destroy nearly 1,000 acres of wetlands and create a persistent toxic legacy cost for future generations. The Department of Natural Resources has conflicting responsibilities to regulate mine pollution and maximize revenues from state-owned minerals. The State of Minnesota has partnered with Duluth Metals by receiving common shares as part of a loan agreement. Duluth Metals and Antofagasta have formed the Twin Metals joint venture, and are planning a massive mine near the BWCAW. Minnesota's mining rules for these mines are weak and leave compliance decisions up to political appointees. Exploration for copper/nickel/precious metals is advancing throughout the Birch Lake-Ely-Lake Vermilion corridor near the Boundary Waters Canoe Area Wilderness. Pollution from proposed mining could greatly impact the watersheds of Lake Superior and the BWCAW. Exploratory leasing is also taking place near Duluth, into Carlton and Aitkin counties and south along the Mississippi River. Most Minnesotans do not own the mineral rights on their property and can lose their land through a process similar to eminent domain. This will become an increasing problem if any mine gets permitted. The State and public must reject these unproven mining technologies and demand responsible action from their state and federal legislators.

LeRoger Lind

Pollution of the North Shore of Lake Superior, past, present and future; a short summary for decision makers

Save Lake Superior Association was formed in 1969 to resist the continuing pollution of the lake from 67000 tons per day of taconite tailings waste from the Reserve Mining processing plant in Silver Bay, Minnesota. The original membership successfully assisted in ending the 20 years of massive pollution. Legal and federal actions lasted over ten years and continue today in resisting the current owner's attempts to remove air pollution standards from their permits. The billions of tons of tailings remain legacy pollution on the lake bottom, stirred up with each storm.

Direct pollution of the lake from a growing number of sources continues after Reserve Mining

Our organization has steadfastly resisted attempts to pollute the lake from industry, mining, energy, shipping and other sources. Threats from invasive species, the discharge of persistent toxic contaminants, harbor dredging, wastewater discharge, dumping of toxic pollutants and harmful shoreline development continue to this day. During the shipping months, ore freighters and foreign freighters dump billions of gallons of untreated ballast water into harbors along the North Shore. Legal efforts to force the US Coast Guard and the Department of Agriculture to perform their statutory duties to prevent this action have failed. These departments cannot be sued by citizens and citizens also are not deemed to have standing unless they have been personally affected by the pollution. This was the case with our VHS fish virus lawsuit. Since then the virus has been found in Lake Superior fish. Zebra mussels have

also been found in lakes as far away as Aiken County. A new industry has been spawned to control the effects by forcing recreational boaters to hot spray their boats leaving Lake Superior. Many of the MNDNR control locations are within a stone's throw of the ships discharging the mussels, gobies, sea fleas and 90 or so other species transported in untreated ballast water. A simple precautionary measure of treating this water would save millions of state and federal dollars as well as all the private monies being spent to rid their lakes of these invaders.

Pollution sources on the Iron Range are a continuing and growing problem for the lake and watershed

The pressure from more pollutant sources is increasing. Legacy pollution from taconite tailings pond leakage and other industrial sources has turned the St. Louis River into highway for sulfates, mercury, toxic metals and sediment into the lake. The lake is downwind and downstream from the many sources on the Iron Range. Mercury levels in children along the North Shore are increasing. There is no financial assurance from the sources of the pollution for their future health care and special developmental training needs. Current profits and wages are not discounted for future damages due to these activities. The public pays.

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Corporate claims notwithstanding, the future for water quality in Lake Superior and its watershed is not bright. There is roughly 4 billion tons of hard rock with highly dispersed specs of copper, nickel and precious metals in a huge deposit of sulfide ores from Duluth to the Boundary Waters and along the North Shore of Lake Superior. One percent of this material could be processed into useful metal and sold on the commodity market. The 99% remaining would contain reactive waste. Blasting, crushing and grinding the hard rock expose an infinite amount of sulfide ore surface area. Water and air would eventually react with the sulfur compounds and generate millions of gallons of sulfuric acid and sulfates. These compounds would eventually find their way into ground and surface water flowing into the watershed and Lake Superior. Those who eat the fish, drink the water, breathe the air, recreate and live in the entire Arrowhead of Minnesota and beyond would be adversely affected. The acid mine drainage threat would be similar to the threat from nuclear waste radiation, another disaster waiting to happen.

The near shores of Lake Superior are lined with legacy pollutants from past and present sources. It takes about 200 years for an average drop of water entering the lake to exit the lake. Hence much of the pollution from the past two centuries is still in the lake. We cannot continue to pump polluted water into the lake and expect to withdraw clean water from it. Our heirs will bear the burden of cleanup if they can afford it. If not? *LeRoger Lind*

Please send us your change of address when applicable.

GENEROUS MEMORIAL FROM JAMES NEWLAND, HIS FAMILY AND FRIENDS

James Newland and Save Lake Superior were close friends for many years. He was a Charter Member of our Association. He made many contributions and donations throughout the years and always included a note of praise for the organization. He will long be remembered for his stewardship of beautiful Lake Superior. We also wish to thank his family and friends for their part in the memorial in his memory.
Alice Pierce

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