

Torch Lake Abandoned Mining Wastes Project, Houghton County

Beneficial Use Impairments

Background

Torch Lake in Houghton County, Michigan is listed as a Great Lakes Area of Concern (AOC) by Canada and the United States due to the occurrence of beneficial use impairments or “BUIs” because of environmental degradation within the lake. Torch Lake and its western shoreline is also designated as a Superfund site by the United States Environmental Protection Agency (EPA). This fact sheet is intended to help Abandoned Mining Wastes (AMW) Project stakeholders to understand what BUIs are, what caused them, and what measures are being taken to address the BUIs in the restoration of Torch Lake.

What are BUIs?

An impairment of beneficial use means a change in the chemical, physical or biological integrity of the Great Lakes system sufficient to degrade quality and/or lead to restrictions on use of local areas of the lake. There are 14 specific problems that can lead to a BUI. In the case of Torch Lake, two BUIs have been identified, including:

- Restrictions on Fish and Wildlife Consumption
- Degradation of Benthos

What Causes BUIs in Torch Lake?

Restrictions on Fish and Wildlife Consumption



Elevated concentrations of polychlorinated biphenyls or “PCBs” in Torch Lake fish led the Michigan Department of Health and Human Services (MDHHS) to issue a fish consumption advisory recommending restrictions on consumption of northern pike, smallmouth bass, walleye, and white sucker. The PCB contamination is the result of past waste disposal practices that occurred along the western shoreline and within Torch Lake. See the AMW Project PCB Fact Sheet for additional information on what PCBs are, how they came to be in the environment, and how their presence in the environment can potentially impact human health.

Degradation of Benthos



Due to the metals-contaminated sediments, the benthic macroinvertebrate community structure in Torch Lake is limited and significantly less than similar lakes with uncontaminated sediment. The benthic community is made up of organisms that live in and on the bottom of Torch Lake and include snails, clams, worms, insects, and others. These organisms are good indicators of local environmental conditions over extended time periods.

Restoring Torch Lake

The EPA Superfund remedy required that stamp sands, tailings and slag piles be covered with soil and vegetation, and that use restrictions are put in place to protect the covered materials' long-term integrity to reduce or minimize potential future risks to human health associated with the inhalation of airborne contaminants or direct contact with the tailings and/or slag; the release of contaminants in tailings to the groundwater through leaching; and, the release of contaminants in tailings to the surface water and sediment by soil erosion and/or air deposition.

The EPA Superfund remedy did not directly address Torch Lake surface water and sediment contamination, instead relying on the reduction of stamp sand loading to surface water bodies expected as a result of capping, and natural sedimentation to reduce PCB concentrations in fish and allow for the recovery of the benthic macroinvertebrate community structure over time.

Therefore, the AOC listed BUIs will remain in place until restoration criteria are met in accordance with *Guidance for Delisting Michigan's Areas of Concern*.

More Information

[EGLE Torch Lake Abandoned Mining Wastes](#)

[EPA Superfund Site](#)

[EPA Torch Lake AOC site](#)

[EGLE Torch Lake AOC site](#)

[Michigan Department of Natural Resources Guidance for Delisting Michigan's AOCs](#)

Michigan Department of Health & Human Services – [Eat Safe Fish Guidance](#)

[Great Lakes AOC - U.S./Canada Great Lakes Water Quality Agreement](#)

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