

Thunder Bay North Harbour FAQ

Where is this contaminated site located?

It is located northeast of the mouth of the Current River and inside the north part of the breakwall. The site is adjacent to the location formerly known as the Provincial Papers mill. Industries adjacent to the contaminated site include the former fine paper mill property a float plane service.

How would you describe this contaminated site?

I would describe the site as a large volume of mercury-contaminated sediment resulting from nearly 90 years of operation as a pulp and paper manufacturing facility. Sediment, in this case, means not just the soil on the lake bottom, but accumulated layers of fibre and material from the manufacturing process.

The specific area requiring a sediment management plan covers an approximate 22-hectare (Ha) free water space with an estimated 343,000 cubic metres (m³) of sediment impacted with organics and mercury located near the former mill effluent discharge location.

Who is dealing with this situation?

Current project activities are taking place under guidance from a Steering Committee comprised of EC, the MOE, Cascades Fine Papers Group and the Thunder Bay Port Authority. EcoSuperior is administering and managing contracts associated with development of a sediment management plan.

How large is the area in question, in acres?

The area of impact is approximately 60 acres.

What are the contaminants in question?

The primary contaminant of concern is Mercury.

The lake bottom is made-up of organic-rich sediments consisting of the wood fibre, wood wastes, and elevated concentrations of mercury.

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This contamination has been in place for decades. Why should we be concerned?

Local citizens should be interested in this project because Thunder Bay is one of 43 Great Lakes Areas of Concern (AOCs). These are areas identified where water quality and ecosystem health have been severely degraded by human activities at the local level. Development of a sediment management plan for this contamination is the most significant outstanding remedial action required under the Thunder Bay Remedial Action Plan (RAP) for improving water quality and ecosystem health in Thunder Bay.

What is the source of this contamination? Where did it come from?

The source of contamination was 90 years of pulp and paper mill operation at the fine paper mill. Effluent from the mill site has contributed to the contamination but it is difficult to pinpoint exactly what part of the process contributed to the elevated levels of mercury.

People will likely want to put this situation in perspective. How does this site compare with other contaminated Great Lakes sites? For example, some Northwestern Ontario residents will be aware of the successful 2012 cleanup project completed in the harbour at Marathon, Ontario, on Lake Superior. In the Thunder Bay situation, are we talking about a larger or smaller geographical area than the harbour area dealt with in Marathon? Are we talking about higher or lower levels of contamination?

The 2 Great Lakes sites with which you could draw the closest comparisons are Hamilton Harbour/Randle Reef (~60 acres & 500,000 m³ sediment) and Peninsula Harbour in Marathon (50 acres).

Mercury contamination levels in the Thunder bay North harbour sediment range from 0.21-41 ug/g this is on the same level of magnitude as the Peninsula Harbour mercury levels. The organic sediment conditions are significantly different from Peninsula Harbour.

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I understand a great deal of work has been carried out to quantify and characterize this contamination. Can you describe the key elements of this work?

The key elements completed on this project have been to document the chemical and geotechnical properties of the material and assess the level of risk to human health and to the local ecology. Studies were completed using a combination of different sampling protocols for, native soil, contaminated sediment, water sampling and measurement of the currents and wave patterns within the area.

Studies have been done as to the environmental and human health risks associated with this contamination. Can you summarize this risk in lay terms?

The risk assessment completed by Franz Environmental Inc. identified sediment management areas to ensure the protection of humans and ecological receptors. The human health risk assessment focused on total mercury and methylmercury, and identified potentially unacceptable risks from exposure to hypothetical future residents, construction workers, recreational users and fishermen. The risk to ecological receptors (not humans) in the area is greater than the risk to humans, particularly with predator species who regularly hunt in the area.

Is it safe to eat fish from Thunder Bay Harbour?

For a full reference please consult the MNR Guide to eating Ontario Sportfish. It is safe to eat fish from the Thunder Bay inner harbour in the amounts detailed within the table.

Is the contamination primarily on the bottom of the lake, mixed in with the sediment?

The contamination exists throughout the organic sediment which ranges from 4 m to less than 1 m thick within the area of impact.

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What are some of the methods which could potentially be used to deal with this contamination?

The technical review of options considered Capping (which is covering the sediment with a layer of fill) or dredging (which is scooping out the sediment and removing it from the water) as the two main methods which could be applied to remediate this area. The sediment management options report will be presented on March 19th and 20th by Cole Environmental, the firm contracted for the evaluation of options. They will provide more detail on different options which could be used to manage the contaminated sediment.

Is there any idea of costs or is it too early to quantify costs?

At this point it is too early to accurately discuss costs; however, it would be on the scale of tens of millions of dollars.

If a project moves ahead to address this situation, who will be paying for it? How will costs be split, or at least how have costs typically been shared in addressing other Great Lakes contaminated sites?

EcoSuperior is not involved in those discussions. Our project has been focussed on identifying sediment management options with the current project stakeholders.

What are the next steps in dealing with this situation?

The next step is to gather public input on March 19th and 20th 2014 into which options are preferred by community stakeholders. Additional presentations or information sessions will be scheduled and the comments will be gathered for use in determining a sediment management plan.