

The Freshwater Connection

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**Nature Based Solutions to
Flooding and Erosion**

**Protection of Provincially
Significant Wetlands**

Lead Toxicity in Loons



Nature-based Solutions to Flooding and Erosion

Source: Standards Research- Managing Flooding and Erosion at the Watershed Scale: Guidance to Support Governments Using Nature-Based Solutions- April 2023 - Canadian Standards Group - Author Joanna Eyquem Intact Centre on Climate Adaptation, University of Waterloo

The report is a wide-ranging, 50-page, document with recommendations about using Nature-based Solutions (NbS) in managing riverine flooding and erosion in Canada at all levels of government. There are sections that deal with local governments and community groups.

Nature-based Solutions are actions to protect, manage and restore natural or modified ecosystems while delivering a wide range of benefits (ecosystem services) such as reducing flooding and erosion risks; but also providing for human well-being, sequestering carbon, and enhancing biodiversity.

Natural capital is valued along with **human capital** and **produced capital**.

Look for nature-based solutions first and “grey infrastructure” last.



Photos SSM – downstream - “grey infrastructure” to prevent flooding.

In future planning the first question will be is there an upstream nature-based solution

SAVE - Preserve what you have.

SEED - Restore what you have lost.

STEWARD - Construct only what you need: use best practices.

Role of Local Governments and Watershed Organizations in NbS

The report identifies that local governments and watershed organizations should endeavor to:

- Work to include the use of NbS (nature-based solutions) for flood and erosion risk management as a watershed management objective.
- Ensure that the flood and erosion risk reduction benefits of NbS are documented, even when this is not the primary objective of the solution.
- Continue to use NbS for flood and erosion management as a default solution where appropriate.
- Work with local community groups, businesses, and governments to publicize the multiple benefits delivered.
- Work to inventory, value, and manage the services provided by natural assets within the watershed, including flood and erosion protection.
- Continue to protect existing natural assets and prioritize restoration efforts in areas with the highest potential benefit.
- Continue to provide technical support to local governments with flood and erosion risk management and planning / implementation of NbS projects.
- Communicate the value of natural assets and the role of NbS in flood and erosion protection to residents.

Ecosystem Services Provided by NbS.

- Flood and erosion risk management
- Groundwater recharge and drought amelioration
- Water quality improvement and greater freshwater availability
- Biodiversity enhancement and habitat improvement
- Improved aesthetics compared to conventional infrastructure.
- Human health, welfare, and recreational opportunities

Categories Where NbS Could be Applied.

- River and floodplain management
- Vegetation management
- Rural runoff management
- Urban runoff management
- Erosion management

In Central Algoma municipalities may not control entire watersheds. There are no Conservation Authorities and upstream areas may be Crown Lands managed under provincial forestry and mining legislation.

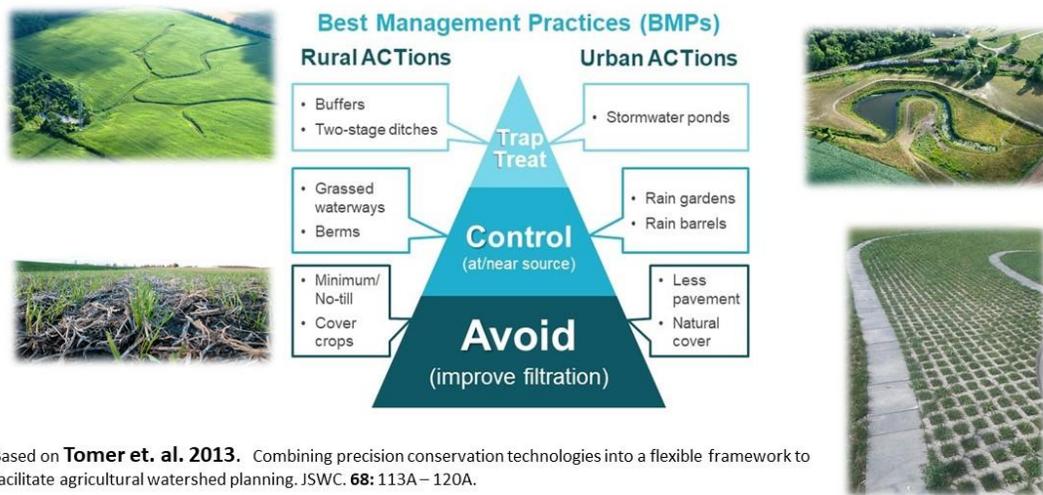
Private landowner action for the most part will be voluntary and need to have incentives to implement NbS - CAFC may be able to apply for funding for NbS projects on private lands.

Municipalities and private landowners can apply for funding to plant trees on their land under Forests Ontario - 50 Million Trees and Canada's - 2 Billion Trees Programs.

www.forestsontario.ca/en/program/50-million-tree-program

www.canada.ca/en/campaign/2-billion-trees/2-billion-trees-program.html

Nature Based ACTIONS



Example - Best Management Practices (BMP) - NbS in Action (Mari Veilz - Ausable Bayfield Conservation Authority)

It is best to **avoid** the problem - if not possible then **control** at the source or nearby - as a last resort and least frequently used - **trap and treat**.

Protection of Provincially Significant Wetlands and Provincially Significant Coastal Wetlands

Provincially Significant Wetlands and Provincially Significant Coastal Wetlands are protected in Ontario through Provincial Policy Statements (PPS), 2020 under the Planning Act.

www.ontario.ca/page/provincial-policy-statement-2020



Photo: Mississagi Delta

The rules vary from southern and northern Ontario - depending upon which Ecoregion you are in (refer to the PPS Document for a Map). Most of Central Algonia developed areas are in Ecoregion 5E except for St Joseph Island which is in Ecoregion 6E.

The protection flows from the PPS Natural Heritage section specifically section 2.1.4 “Development and site alteration shall not be permitted in: a) significant wetlands in Ecoregions 5E, 6E and 7E1; and b) significant coastal wetlands.”

What determines if a wetland is “Provincially Significant” is a point scoring system in the **Ontario Wetland Evaluation System (OWES)**. The OWES was changed in support of **Bill 23, the More Homes Built Faster Act**. There are different OWES manuals for northern (Ecoregion 5E and north) and southern (Ecoregion 6E and south) Ontario. www.ero.ontario.ca/notice/019-6160#original-proposal

Provincially significant wetlands are less protected under these changes.

www.nvca.on.ca/proposed-changes-to-the-ontario-wetland-evaluation-system-a-dramatic-shift-away-from-historic-wetland-protection/

Some local examples of PSWs are Lake George, Kensington, Hay Marsh and the Mississagi Delta. Provincially Significant Wetlands are not arbitrary - they have a long history of protecting fish habitat, critical migratory bird areas in addition to filtering water, and providing nature-based solutions to flooding and erosion. The water storage capacity of wetlands is becoming even more important in a changing climate.

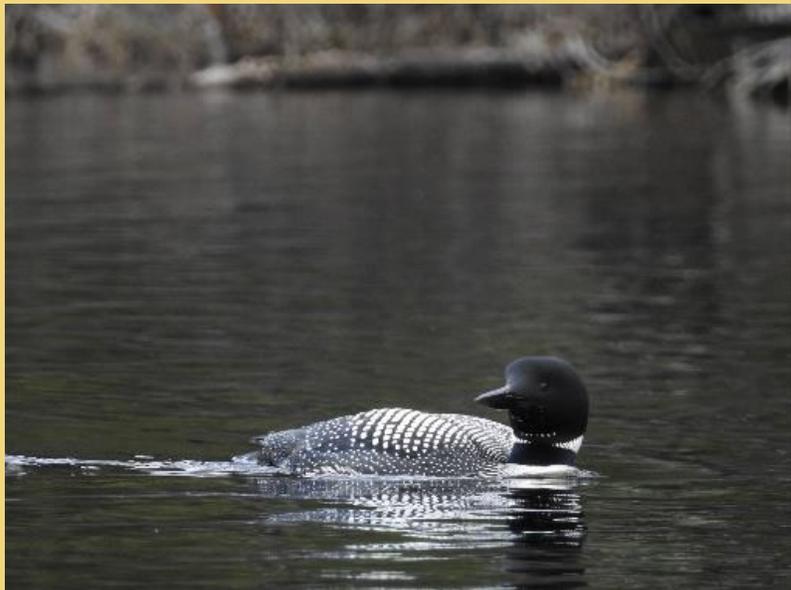
Don't underestimate how important these local wetlands are to your well-being.

Lead Toxicity in Loons

As we approach the peak of the fall salmon fishing season in the Algoma region, we want to reflect on a highly preventable issue that leaded sinkers and jigs have on our local predatory bird species. This post is by no means meant to discourage fishing in the region as we recognize the cultural, recreational, and economic impact fishing has on communities throughout our region. Rather, our goal is to highlight the issue and discuss viable alternatives to leaded sinkers and jigs. The haunting, eerie call of the common loon is an iconic sound of northern Ontario, evoking images of pristine lakes and tranquil summer evenings. These iconic birds, however, face a significant and largely preventable threat: lead poisoning. Lead poisoning in common loons is primarily caused by the ingestion of lead fishing tackle lost or left behind in their habitats. In this post, we will explore the devastating impact of lead poisoning on common loons and suggest alternative fishing gear options that are less toxic.

Understanding the Threat

Lead poisoning is a severe and often fatal threat to common loons which can often live for 20-30 years in the wild, as well as other wildlife that share their aquatic habitats. The primary source of lead exposure for these birds is fishing tackle, such as lead sinkers and lead-headed jigs, which are lost or discarded into the water. Loons and other aquatic birds consume small rocks and gravel to aid in digestion and are unable to differentiate from these stones and fishing gear. When loons ingest lead-containing fishing gear or feed on prey that has ingested lead, they can suffer severe health consequences often leading to their premature demise.



The Consequences of Lead Poisoning

Lead poisoning has a devastating impact on common loons and their populations. Some of the key consequences include **Mortality**: Lead poisoning is often fatal for loons. The ingestion of even a single lead sinker can result in death due to lead toxicity. **Reproductive Harm**: Lead poisoning can impair the reproductive success of loons, leading to fewer chicks surviving to adulthood.

Alternative Fishing Gear

To protect common loons and other wildlife from lead poisoning, anglers can switch to alternative, non-toxic fishing gear options. Some viable alternatives include:

Tungsten Sinkers: Tungsten sinkers are an excellent alternative to lead sinkers. They are denser than lead and offer similar casting and sinking properties without the toxic risk.

Bismuth Jigs: Bismuth jigs are non-toxic and make a great substitute for lead-headed jigs. They come in various shapes and sizes to suit different fishing styles.

Steel and Tin Alloys: Steel and tin alloys are non-toxic materials used in the production of fishing tackle. They are inexpensive however tend to be less dense than their lead counterparts.

Biodegradable Options: Some manufacturers now produce biodegradable fishing sinkers, reducing the risk of leaving permanent hazards in our waterways.

Conclusion

The plight of the common loon serves as a reminder of the impact human activities can have on our environment and wildlife. Lead poisoning is a preventable threat, and by switching to alternative, non-toxic fishing gear, we can help protect these majestic birds.

Become a member.

Your annual membership fee will provide a base budget for work of CAFC and demonstrate the commitment of local partners working towards a common goal. A strong diverse group is an essential component in meeting the goals of the Central Algoma Region. Support us at

<https://www.centralalgomafreshwatercoalition.ca/>

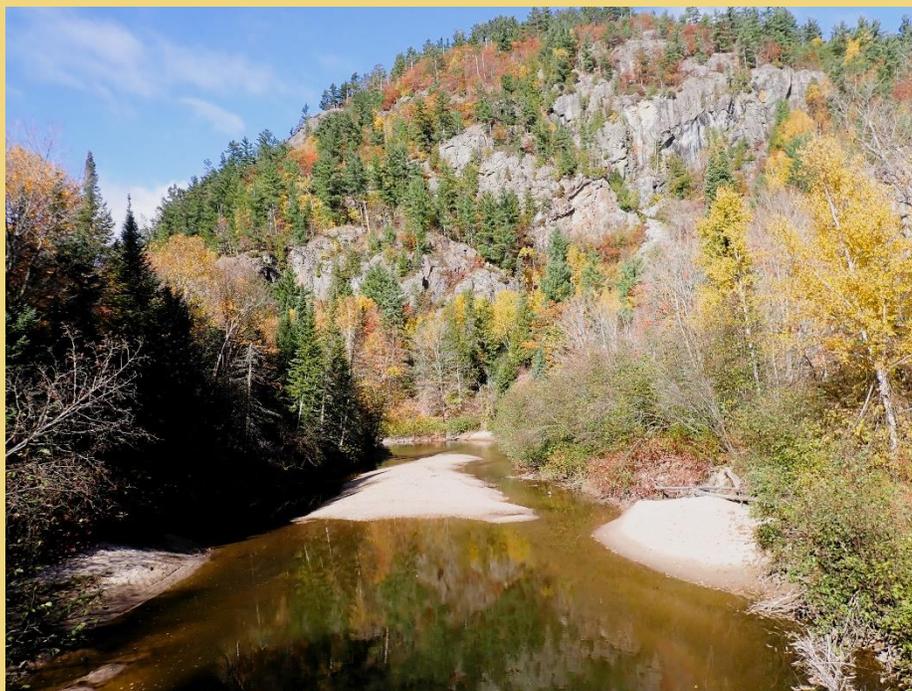


Photo - Upper Echo River