

7.10 This Land was Made for You and Me

Story Extension for This Lesson:

This lesson is linked to a question asked in the beginning of the intermediate story: "Why do we boil water before we use it?" This question implies why we should look after our water and our land. A good entry point to connect the lesson with the intermediate story is this passage:

Alex stands in the kitchen, leaning against the counter, watching as Sam fills a large metal pot with water from the sink.

"Why do we boil the water before we use it?" Alex asks Sam. Sam shrugs, "I don't know. I read some article that said it's undrinkable if we don't."

"Mom!" Alex yells to the other room. "Why do we have to boil the water?"

"The Bay of Quinte is polluted," their mom responds. "That's where we get our water from."

Sam's nose wrinkles, "It definitely smells bad sometimes."

Grade: 7

Strand: Interactions in the Environment

Big Ideas:

- Ecosystems are in a constant state of change. The changes may be caused by nature or by human intervention. (Overall expectations 1 and 2)
- Human activities have the potential to alter the environment. Humans must be aware of these impacts and try to control them. (Overall expectation 1)

Overall Expectations:

1. assess the impacts of human activities and technologies on the environment, and evaluate ways of controlling these impacts
2. investigate interactions within the environment, and identify factors that affect the balance between different components of an ecosystem

Specific Expectations:

1.1 assess the impact of selected technologies on the environment

1.2 analyze the costs and benefits of selected strategies for protecting the environment

2.4 use appropriate science and technology vocabulary, including sustainability, biotic, ecosystem, community, population, and producer, in oral and written communication

2.5 use a variety of forms (e.g., oral, written, graphic, multimedia) to communicate with different audiences and for a variety of purposes

3.8 describe ways in which human activities and technologies alter balances and interactions in the environment

3.9 describe Aboriginal perspectives on sustainability and describe ways in which they can be used in habitat and wildlife management

Inquiry Skills:

Searching, Inferring, Explaining

Instructions:

Part 1:

Show **Home to Me (Grassy Narrows First Nation)** by N'we Jinan Artists:

- YouTube video: <https://www.YouTube.com/watch?v=EgaYz8YWsO8>

Students will be introduced to a case study where they are required to research and apply what they know about maintaining healthy ecosystems and living in a sustainable manner.

Case Study: Grassy Narrows vs the Ontario Government

The Asubpeeschoseewagong First Nation *aka* Grassy Narrows First Nation is an Ojibway First Nation band located in northern Ontario. In 1871, Grassy Narrows First Nation made a treaty with the Canadian Government where a large tract of land was given up in northwestern Ontario and eastern Manitoba. In exchange for this large tract of land, Grassy Narrows moved to a location on the Wabigoon-English River system reserved for their use. Tribal members were allowed to hunt, fish and trap on the land.

The Issue:

In the 1950's Dryden Chemical Company and Dryden Pulp and Paper Company opened up their businesses near Grassy Narrows First Nation. As a by-product of the pulp and chemical industry, mercury was discharged as effluent into the Wabigoon-English River and clear-cut logging had lead to massive deforestation in the area.

Goal:

Decide whether there are serious concerns regarding the water and forest ecosystem at Grassy Narrows and assess whether a sustainable solution has been developed.

Gather Information:

Search media archives for articles and reports on Grassy Narrows First Nation. Refer to the science textbook on information about healthy ecosystems. Most importantly, contact Experts listed with this lesson as another source of information.

Identify the Solution:

Is there a sustainable plan to help Grassy Narrows with the issues of mercury contamination in the Wabigoon-English River systems and deforestation of their land? Provide a solution to update the current plan or propose a new solution to meet the needs of Grassy Narrows.

Communicate:

Prepare to communicate the solution by identifying the key points to support the plan. Communicate the plan with supporting information using presentation software (e.g., PowerPoint, Keynote), a five paragraph essay, a science fair-type poster board, or some other presentation format. Allow students the flexibility to showcase their solution.

NOTE: To help students with this task, three articles are provided in the resource section of this lesson.

Materials List:

- a projector and computer to project and play the video
- Video: HOME TO ME (Grassy Narrows First Nation) by N'we Jinan Artists: <https://www.YouTube.com/watch?v=EgaYz8YWsO8>
- "Grassy Narrows First Nation Demands Cleanup of Mercury Contamination in Northern Ontario", CBC News
- "Grassy Narrows First Nation to Get Results of Dryden, Ont. Mill Site Mercury Tests", CBC News
- "Grassy Narrows First Nation Demands Action After Mercury Dump Site Revelation", CBC News

Assessment Strategy:

It is recommended you focus your assessment on process skills. To help get you started on this path, a series of charts have been provided for you. I

Handouts/Assessments:

- Grassy Narrows First Nation Demand Cleanup 1
- Grassy Narrows First Nation Demands Action
- Grassy Narrows First Nation Get Results 1
- Process-Skill-Infering-7
- Process-Skill-Explaining-
- Process-Skill-Searching-7

Connections:

This lesson can be used in conjunction with the Language curriculum under the reading, writing, and communication strands. To complete this activity, students are required to produce a multimedia report of what they have learned.

Subject Area:

English

Connects to:

Grade 7

Grassy Narrows First Nation Demands Cleanup of Mercury Contamination in Northern Ontario

'Are our lives worth less?' Grassy Narrows First Nations Chief Simon Fobister says

By Jody Porter, [CBC News](#) Posted: May 31, 2016 9:38 AM ET Last Updated: May 31, 2016 11:43 AM ET

The chief of Grassy Narrows First Nation in northern Ontario says mercury dumped in the waterways near his community nearly 60 years ago must be cleaned up.

Simon Fobister made the statement Tuesday, one day after scientists released research showing it is possible to remediate at least some of the lakes and rivers near Grassy Narrows.

"We know that our river can be made safe," Fobister said. "Are our lives worth less than others to the government?"

On Monday, Premier Kathleen Wynne said she would look into the report that was funded by Ontario through a provincial working group on Grassy Narrows.

"I haven't seen this particular report," Wynne said during question period in the legislature. "If there is a way to clean up that river without disturbing the mercury and making the situation worse, then obviously we want to look at that."

Natural recovery stalled

Last week, a spokesperson for Ontario's Ministry of Environment and Climate Change said "there is no evidence to suggest that mercury levels in the river system are such that any remediation, beyond continuing natural recovery is warranted or advisable."

The new research shows the natural recovery of the river system stalled about 30 years ago, according to the John Rudd, the lead author of the report.

"Now the ball is in her court," Fobister said at a news conference on Tuesday. "We don't want words. We want action. We want Ontario to fund the cleanup and make it happen."

Ontario Regional Chief Isadore Day noted the call for a cleanup comes a day after Ontario apologized for its role in the residential school system and promised to improve its relationship with Indigenous people.

"In the spirit of reconciliation, the Ontario government should do the right thing," Day said at the news conference.

Amnesty International Canada and the David Suzuki Foundation are backing the First Nations' demands.

There's "a great hope that justice will finally come to this community as a result of research that's been done by three very renowned scientists," said Faisal Moola, a scientist with the David Suzuki Foundation.

"That report was released yesterday and makes it very, very clear that the potential to clean up, to remediate the river is very, very high but that will only happen if there is political will," he said.

The Liberal MP for the Kenora riding, which includes Grassy Narrows issued a statement on Tuesday saying he is in favour of remediation.

"Efforts to remediate the mercury have been postponed long enough," Bob Nault said. "These new findings indicate that it is feasible to begin removing the chemical and work towards a healthier waterway."

Reed Paper in Dryden, Ont., dumped the mercury in the English-Wabigoon River in the 1960s and early 1970s, resulting in mercury poisoning among First Nations people who ate fish caught in the area.

An out of court settlement with the federal government, Ontario and the paper companies in 1985 established the Mercury Disability Board, which oversees compensation payments for people suffering mercury poisoning in the First Nations communities of Grassy Narrows and nearby Wabaseemoong (formerly Whitedog).

Fobister said there is an ongoing lawsuit between the province and the new owners of the paper mill to sort out liability for the contamination.

Source: <http://www.cbc.ca/news/canada/thunder-bay/grassy-narrows- demands-clean-up-1.3608731>

'No more fancy talk, no more studies. We just want it cleaned up,' Chief Simon Fobister says

By Bryce Hoyer, [CBC News](#) Posted: Jun 21, 2016 11:57 AM CT Last Updated: Jun 21, 2016 5:03 PM CT

The chief of Grassy Narrows First Nation says the community is still reeling after a former worker at the Dryden, Ont., paper mill revealed he was involved with dumping drums of toxic chemicals into a plastic-lined pit decades ago.

"We're very, very concerned," Chief Simon Fobister said Tuesday morning. Reed Paper's chemical plant in Dryden was a source of mercury contamination in the 1960s and '70s. Chemical leaching from the plant has been well documented and continues to cause public and environmental health concerns.

In a report released in May, environmental scientists determined that current mercury levels in the waters around where people in Grassy Narrows catch and eat fish suggest there is an unknown source of mercury contributing to the problem.

The Ontario Ministry of Environment and Climate Change says it's known about and monitored the dump site all along, but Fobister doesn't believe that.

"This is a new site that no one was aware of until this man admitted that there is another site that has barrels of mercury, and we don't know if those barrels of mercury are leaking into the water table and again contaminating the waterway," he said.

Mercury 'pooling around my shovel'

In an email sent in the summer of 2015 that was obtained this week by CBC News, former Reed Paper employee Kas Glowacki said feelings of guilt moved him to share what went on in 1972 when he worked as a labourer at the [Grassy Narrows First Nation to get Results of Dryden, Ont. Mill Site Mercury Tests](#)

Pond sampling done after former mill worker says he dumped mercury in hidden pit

By Jody Porter, [CBC News](#) Posted: Jun 27, 2016 6:00 AM ET Last Updated: Jun 27, 2016 6:00 AM ET

A northern Ontario First Nation plagued by decades of mercury poisoning from a pulp and paper mill will get the results on Monday of a recent provincial government inspection of the mill site.

The testing was done on June 6 after a former worker at the mill described his work in the 1970s, dumping barrels of mercury into a plastic-lined pit. The pit did not fit the description of contaminated sites known to government.

The former worker's allegations came to light just weeks after a government-funded report by research scientists showed an on-going source of mercury contamination in the waterways between the mill and Grassy Narrows First Nation.

"Three samples were taken at the Dryden wood waste site — two leachate collection pond samples and another from the cooling water channel," a spokesperson for the Ministry of Environment and Climate Change told CBC News.

The results will be released to people in Grassy Narrows when the Minister of Environment and Climate Change and the Minister of Indigenous Relations and Reconciliation visit the community on Monday.

Their visit comes as Premier Kathleen Wynne pledges to "get to the bottom" of the mercury reports.

The First Nation is asking for its own access to the mill site to search for the hidden mercury dump and test for contamination in the river upstream and downstream of the mill.

They also want an immediate clean up of all the mercury, including the nine tonnes that are known to have been dumped in the English-Wabigoon River by Reed Paper in Dryden, between 1962 and 1970.

"It has been too many meetings, too much talking and not enough to actually do something concrete for our people," said Grassy Narrows environmental health coordinator Judy DaSilva.

Wynne said she needs further information about whether a clean up is advisable because, she said previous reports show that disturbing the mercury already in the river could increase the contamination levels.

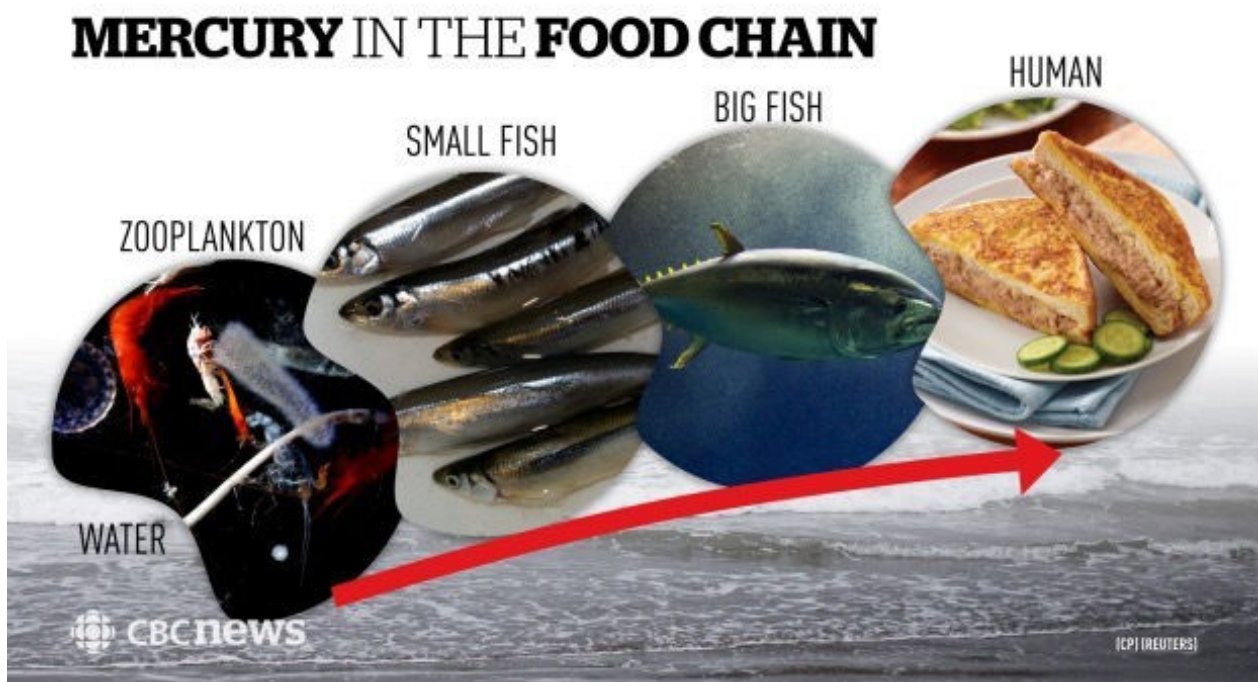
Source: <http://www.cbc.ca/news/canada/thunder-bay/mercury-test-results-grassy-narrows-1.3650059>

"I am writing this letter out of guilt and possibly to share some info you might not be aware of," Kas Glowacki wrote.

"I was amazed at the amount of mercury that was pooling around my shovel as I dumped it into the drums The drums were dropped, not placed, into the pit."

When a toxic chemical such as mercury leaks into a freshwater ecosystem, it is often absorbed by tiny aquatic invertebrates. Those little creatures are then consumed by minnows, which are devoured by larger fish that are then caught and eaten by humans.

As the mercury travels up through the food chain, mercury concentrations build up and magnify, "causing increasing levels of harm on higher order species such as predatory fish" and ultimately humans, **Environment and Climate Change Canada says.**



When mercury gets into the a water table, it's eventually absorbed by tiny primary consumers like zooplankton, which are then swallowed up by tiny minnows. The minnows are consumed by larger fish, "causing increasing levels of harm on higher order species such as predatory fish," birds and ultimately humans, Environment and Climate Change Canada says. (CBC News Graphics)

Fobister said to his knowledge, the site still hasn't been located, and he wants the Ontario government to step in and investigate.

He wrote to Ontario Environment Minister Glen Murray to explain how disconcerting Glowacki's letter has been to the community, where residents continue to suffer from mercury poisoning.

'No more fancy talk'

"No more fancy talk. No more studies. We just want it cleaned up," Fobister said.

Judy Da Silva from Grassy Narrows, who suffered from mercury poisoning at one time, said the letter points to a second dump site away "far from the place that the minister of environment said."

"All these years, we lived with this mercury poisoning, and we're always being minimized, always being told natural sedimentation will bury the mercury," Da Silva, who is also the environmental health co-ordinator at Grassy Narrows, said Tuesday.

"For us, for me, as a mother and grandmother, I feel it's a betrayal to my people, the Anishinabek, that this was not brought forward."

Ontario Premier Kathleen Wynne weighed in Monday, saying she is dispatching two government ministers and scientists to get to the bottom of the latest developments at Grassy Narrows.

"There's engagement right now to try to discern what this alleged source is," Wynne said. "I don't have all that information. I want to get to the bottom of it."

Fobister has asked for access to the mill site in hopes of tracking down the alleged dump site.

Mercury doesn't discriminate

Da Silva added that while Grassy Narrows and the surrounding area have been the hardest hit by toxic dumping from the old paper mill, if a second site exists and isn't uncovered, it could have far-reaching affects for other communities further downstream.



'It's a war zone. I can't say enough how we need that river to be cleaned up,' Judy DaSilva, the environmental health co-ordinator at Grassy Narrows First Nation, said at the end of May. 'Our relatives are dying.'

"Mercury doesn't stop in Grassy Narrows, it doesn't stop at Indigenous populations," Da Silva said.

"The mercury is not a racist mercury. It goes to other communities, and we're not the only ones in danger of this. Canadian society needs to really look at that and help us get the river cleaned up."

Grassy Narrows is about 55 kilometres northeast of Kenora, Ont., and about 225 km east of Winnipeg. It is also known as Asubpeeschoseewagong First Nation.

With files from Jody Porter and CBC Thunder Bay

Source: <http://www.cbc.ca/news/canada/manitoba/grassy-narrows-dryden-mercury-dump-site-1.3645474>

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Things to Look for When Assessing Explanation Skills in Grade 7

Process Skills	Students	Teachers	What This Skill Should Lead To
Explaining	☐ focusing on “why” and/or “how” ☐ choosing how to express ideas ☐ an opportunity to be creative and original ☐ creating suitable rubrics for the assessment of their explanation	☐ letting students choose the way in which they will explain their investigation, results, and conclusions (e.g., choice board) ☐ supporting students’ efforts to use precise vocabulary, and to express themselves effectively and succinctly ☐ an opportunity to assess student learning	Explanation leads to increased retention of the information explained, a deeper understanding of the ideas presented, improved communication skills, and a better use of scientific terminology.

Task Specific Descriptors:

Level 1 - Beginning/Exploring	Level 2 - Emerging	Level 3 - Competent	Level 4 - Proficient
unclear, many mistakes or misunderstandings, little to no supporting details	simplistic, omission of key information, some errors, some supporting details	few omission of key information, few errors, accurate, supporting details	no omission of key information, minor errors, explicit, clear, thorough, many supporting details

Teacher Note:

Process Skill - Inferring

Process Skill	Students	Teachers	What This Skill Should Lead To
Inferring	☐ deducing information from incomplete evidence using reasoning or logic. The information does not need to be factual or correct. (For example, “The grass is wet in the morning, so I infer that it rained overnight.” This is a valid inference, but not necessarily a correct one— the wet grass could be from morning dew or a sprinkler system.) ☐ clarifying observations as evidence ☐ making a connection between what is known and what is unknown ☐ creating a tentative understanding of the situation without knowing or being given the “answer”	☐ guiding students to make logical connections from available evidence ☐ encouraging students to consider alternative inferences ☐ scaffolded and deliberate ☐ using a modified K-W-L chart to show the process of making an inference: replace “What I know,” “What I want to learn,” and “What I learned” with “What I know,” “What I observed,” and “What I infer”	☐ improved observation and deduction skills ☐ the ability to identify and analyze available evidence ☐ improved literacy skills as inferencing skills are applied to make meaning of written texts

Teacher Notes:

Process Skill - Explaining

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Teacher Notes:

Process Skill - Searching

Process Skill	Students	Teachers	What This Skill Should Lead To
Searching	□ locating their own sources of information based on their own questions □ re-framing their current understanding in light of new evidence □ evaluating the reliability of sources of information □ identifying potential sources of error and/or bias □ developing and using criteria to establish relevance, accuracy, and reliability of information □ discussing research with peers and teachers to gain additional perspective and construct new meaning □ developing and using strategies to collect, organize, and communicate relevant research □ developing and using strategies to interpret scientific vocabulary	□ giving students sufficient time and resources for research □ giving students guidance and activities to develop research skills □ developing criteria for reliability □ giving students opportunities to discuss and question their research □ guiding the development of strategies to interpret scientific text	□ critical literacy skills that enable assessment of information for accuracy, reliability, and relevance □ strategies for interpreting and understanding scientific text □ cooperative learning (through discussion of research with peers)

Teacher Notes: