TRTFN Land Guardian Program

Traditional Foods Contaminant Monitoring Program

Update May 2020

Why are we doing this project?

Traditional foods are an important source of nutrition and have spiritual, social, and cultural significance for the Taku River Tlingit First Nation. This project was planned to determine contaminant levels in moose and two commonly harvested fish species within TRT Traditional Territory, to determine whether these species remain safe food choices and to provide baseline data to see if contaminant levels are changing over time.

What did we do?

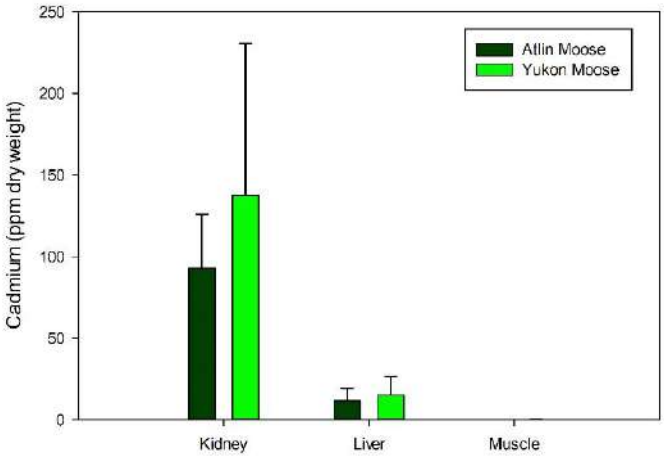
TRTFN Land Guardians worked with hunters to collect samples (kidney, liver and muscle) from 10 moose in the fall of 2018. Those samples were analyzed for a wide range of contaminants, including arsenic, cadmium, lead and mercury, as well as man-made fire retardants and stain guards.

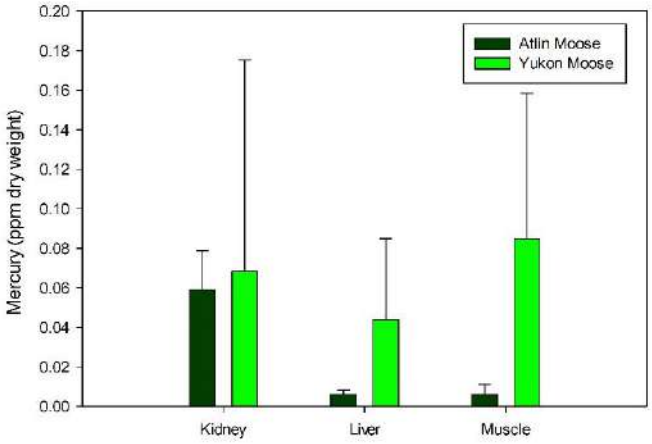
The Land Guardians also collected 38 fish (arctic grayling, lake trout and lake whitefish from McDonald, Surprise and Atlin Lakes) in the summer of 2019. A very keen high school student from Whitehorse (Bruce Porter) analyzed the fish stomachs for microplastics as part of a science fair project. We have those results now. Meanwhile, the fish samples (muscle and liver) are now being analyzed for an even wider range of contaminants, including PCBs and pesticides. We hope to have those results by the fall of 2020.

What did we find?

Moose

Most contaminant levels in moose from the Atlin area were low. Arsenic, mercury, lead, fire retardants and stain guards were found at very low levels and not considered to be of concern. Cadmium levels in moose kidneys were higher and were similar to levels seen in Yukon moose. Cadmium is a naturally occurring element that can accumulate in willows and then in moose feeding on the willows. This is common and has been documented widely in the Yukon and other parts of the world. Those concerned about cadmium intake are directed to the current health advice for the Yukon to limit intake of moose kidneys to one kidney/person/year.

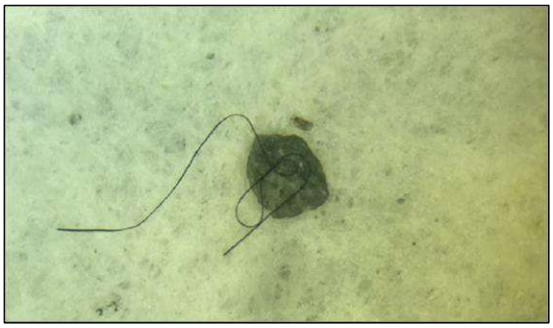


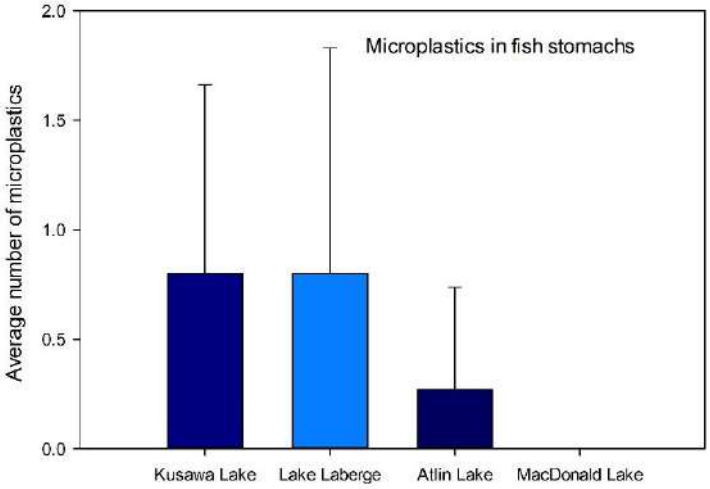


Fish

Microplastics were found at very low levels in fish from MacDonald and Atlin Lakes. We analyzed the stomachs of 14 fish and found one microplastic particle in each of three fish from Atlin Lake: two lake whitefish and one lake trout. These levels were lower than those found in similar fish in the Yukon. Microplastics are tiny particles of plastic that have been broken down from larger pieces of plastic. They can travel through the environment through air or water and can be taken in (eaten or drunk) by wildlife. We have just started doing research on microplastics and don't yet have a good idea how they can affect wildlife.

Filament microplastic from fish stomach





What is next?

The traditional foods contaminant monitoring program is a three year project. This (2020) is the final year. Additional lab work will be done on the fish samples to screen for other contaminants; the results will be reported to the community later this year.

For further information, please contact the Lands Department.