



Tataskweyak Cree Nation

Split Lake, Manitoba R0B 1P0

Telephone: (204) 342-2045 Fax: (204) 342-2270

Brief on amendment to the Canadian Environmental Protection Act

Tataskweyak Cree Nation (TCN) supports the proposed “right to a healthy environment” amendment to the Canadian Environmental Protection Act. An important aspect of this is including algae toxins in your amendment.

There are currently many factors standing in the way of a healthy environment for our Nation. We are particularly concerned about the presence of blue-green algae toxins in our Lake and drinking water supply which is why we are asking for this amendment. Tataskweyak Cree Nation is located on Split Lake in northern Manitoba at the confluence of the Churchill-Burntwood and Nelson Rivers. Our lake receives the wash loads from watersheds as far away as the Rocky Mountains in Alberta, southern Minnesota, and North Dakota, as well as, the wash from Winnipeg and English Rivers in Northern Ontario.

Algae blooms result from an oversupply of nutrients – plant available nitrogen and phosphorus compounds. Some of these nutrients are naturally occurring. But they mainly come from agricultural runoff, municipal and livestock waste waters, and industrial effluents washed into rivers. Blue-green algae blooms result from an imbalance in the plant available nitrogen and phosphorus in water. This imbalance is caused by low amounts of plant available nitrogen versus phosphorus, which allows blue-green algae to thrive. Blue-green algae blooms are now becoming more widespread and found throughout Manitoba’s southern Lakes and now Split Lake.

In the last few years, TCN has investigated the reason for sickness in our community, which lies on the northern shore of Split Lake in Manitoba. Our investigation concentrated on the water quality in Split Lake as it is not only the source of our drinking water, but an integral part of our environment and socioeconomic well-being. So far, our investigation eliminated the usual suspect chemicals as the cause of the symptoms being experienced by our people. Many of these are toxins that will be enshrined in the proposed amendment.

Our investigation is pointing toward blue-green algae toxins, also known as cyanobacteria toxins, as the cause of the symptoms being experienced by our community. Last year, we found the blue-green algae toxin Cylindrospermopsin in the water of the Lake. This was unexpected and we believe it is the first reported presence of this toxin in northern Canadian waters. Canada does not have drinking water or recreational water quality standards for the

protection of human or aquatic life for many of the blue-green algae toxins including cyanotoxin.

Blue-green algae toxins include microcystins, nodularins, anatoxins, cylindrospermopsins, saxitoxins, and dermatotoxins. These toxins can result in serious illness. The predominant health effects encountered from accidental ingestion of cyanobacteria may be gastrointestinal or flu-like in nature and may often go unreported or are attributed to other causes. In 2020, Health Canada confirmed that more severe symptoms include liver and kidney, nerve, and muscle damage.

People in our community have health complaints ranging from gastrointestinal upsets and skin rashes to disease of the liver, kidneys and nervous system, symptoms that parallel effects of exposure to blue-green algae toxins. Ours is not the only northern reserve that is experiencing these health symptoms. Evidence suggests that blue-green algae toxins are responsible for the range of symptoms experienced by our community and others.

We urge you to include algae toxins in the amendment to CEPA. This recognition will pave the way for solutions and meaningful action to reduce the amount of phosphorus and nitrogen that runs into lakes and rivers, and in our case makes it way northward to Split Lake. Especially in the case of blue-green algae, prevention is a more critical intervention than remediation. We expect that without action, there will be drastic consequences to our environment and to our well-being as a northern people.

The physical, mental, cultural, and environmental health of First Nations people has always been closely linked to the land and the water. Many people in this country are talking about reconciliation, and we hope and believe that there are good intentions behind these deliberations. But for it to be real, for change to occur, reconciliation must be part of every policy and action. Listening to, respecting, and acting on the knowledge and advice of Indigenous people is key. Our people are suffering, and you can help – by including blue-green algae in the list of toxins and pushing for change to help clean up our environment and restore the health of residents in our community. It is our right.

Sincerely,



Chief Doreen Spence

Cc: TCN Council

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Amendment to Canadian Environmental Protection Act

Because of the speed at which the study of S-5 took place at Committee, Tataskweyak Cree Nation was not aware until after the fact that our brief could have been submitted as official testimony while the study was taking place. So, in discussion with Senator McCallum last week, we touched upon the possibility that blue-green algae toxins could be considered under the Activities section of the Act. We like this idea, as high levels of blue-green algae toxins are mainly the result of human activities that release excess phosphorus to the aquatic environment and thereby upset the natural balance of nutrients that governs algae productivity, resulting in dominance of blue-green algae and release of toxins. Therefore, activities that result in additional growth of blue-green algae should be considered under the "ACTIVITIES" section of the Act.

Green plants lie at the bottom of the food chain and convert sunlight into edible food. Their rate of production is the primary determinant of productivity at all higher levels in a food chain. In Canada's lakes much of the production is done by algae (phytoplankton), suspended in the water. There are several types of algae with many species making up each type. As with agriculture, the amount and variety of algae in a lake depend on nutrients supplied to the lake, mainly phosphorus and nitrogen, from the upstream watershed. The natural balance of plant-available nitrogen to phosphorus is normally 10-20 parts nitrogen to 1 part phosphorus. When that balance gets out of hand (low nitrogen and high phosphorus levels), blue-green algae start to dominate the algae community in the lake. Blue-green algae release toxins, some of which are the most toxic substances we encounter in the environment, even if you include industrial pollutants. With the advent of big agriculture, wastewater treatment plants and industrial and mining releases of effluents, the natural balance of plant-available nitrogen to phosphorus is being altered, swinging it towards the thresholds that encourage the growth of blue-green algae and increasing concentrations of cyanotoxins in lake water.

This is what we are experiencing in Split Lake, Manitoba. Our Lake sits at the bottom of watersheds that drain the prairies from the Rockies, great plains of northern USA and shield terrain of northern Ontario. By the time these waters reach our Lake, the plant-available nitrogen has been used up and blue-green algae dominate the algae community. We are investigating the water quality of the water in Split Lake, and so far, our investigation as outlined in the attached brief "Amendment Canadian Environmental Protection Act" is pointing at blue-green algae toxins as the cause of the sicknesses our people are experiencing when using the water.

Brief on amendment to the Canadian Environmental Protection Act

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Activities that introduce nutrients, especially excessive amounts of phosphorus, into waters must be covered by the Act if the Act is to enshrine protections that “recognize that every individual in Canada has a right to a healthy environment.” These activities that release phosphorus range from industrial, agricultural, and municipal wastewater effluents that may be regulated at the end of pipe, but their cumulative effect in the downstream act to upset the natural balance of nutrients. This is what is happening to Split Lake.

As John Moffat, Assistant Deputy Minister, Environmental Protection Branch, Environment and Climate Change Canada, explained to the Committee “What we are trying to do by adding (k.1) is to go beyond information on substances and gather information about activities themselves that may, when the activity is carried out, create pollution. Then we can have better information to devise risk management approaches focused on preventing pollution as opposed to just identifying it and managing it once it occurs.”

In summary, blue-green algae toxins must be recognized in the Act as substances that can cause tremendous harm to humans and all other life forms. Their production is now being affected by human activities, as effluents rich in phosphorus are being released into Canada’s waters by industry, agriculture, and municipal wastewaters. The combined effect of these activities is altering the natural balance of nutrients that determine healthy algae community and swinging the balance to dominance by one type of algae, blue-green algae.