

## The Real-Life Issue of Methylmercury

Methylmercury poisoning is a real and harmful side effect of building dams. The effects of this problem on First Nations groups is not being taken seriously, and is being overlooked in favour of increased profit for large companies and countries.

**Quick Disclaimer:** The following short essay was written by Eli Allan. They are not a scientist or expert on this subject, and have not witnessed firsthand or experienced the effects of methylmercury. The following information is a representation of their research on the subject (sources are listed at the bottom of this document) but is still potentially subject to errors.

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Episode 3 of Station Arcadia touched on the issue of methylmercury buildup in dam reservoirs, and its effects on nearby populations. Unfortunately, this problem was not invented for a fictional episode. Mercury occurs naturally in soil and vegetation. When a dam is built, land is flooded. Especially if the vegetation is not cleared ahead of the flooding, the vegetation will decay over time. The mercury from the plants and soil can transform in methylmercury, a highly poisonous compound. This methylmercury will pollute the reservoir, and when the water is release it will cause mercury poisoning in fish, and therefore anyone who eats the fish.

So, why does this matter? Well, these dams are continually being built, even in areas where the companies KNOW there will be issues with methylmercury poisoning. One of the most notable perpetrators is Hydro-Quebec, a Canadian electric utilities company. They know there is this methylmercury issue in their reservoirs, and are doing absolutely nothing to mitigate the damage.

The most vulnerable populations to the mercury poisoning are First Nation groups, who (in many cases) live further upstream, and eat more fish as part of their every-day diet. They also have very little to no say in these dams being built in the first place. Many individuals in these groups do not have the means to move elsewhere (not to mention that they absolutely shouldn't have to) or to eliminate fish in their diet. The plain truth is that Hydro-Quebec doesn't care about the communities affected by their dams. If this methylmercury problem affected big cities to the same extent, you can bet there wouldn't be the same level of "oh well, nothing we can do about it" complacency.

Hydro-Quebec claims that the methylmercury buildup in fish is “temporary”, stating that it will last “only” 10-35 years. Other scientists speculate that it may take over 100 years for certain fish species to return to normal. Hydro-Quebec claims that it is “well known” and “well managed”. In truth, there is so much more research that needs to be done. We do not know the long-term effects of low-dose methylmercury. We cannot be certain how long the methylmercury will last in fish. We do not know the exact extent of the damage

As for “well-managed”, the only way Hydro-Quebec is managing the situation is by advising affected First Nations to eat fewer fish and avoid certain species that are known to bioaccumulate more methylmercury. I was not able to find any evidence that Hydro-Quebec or the Canadian government offered any financial support to the First Nations Peoples to aid in following these guidelines. “Simply don’t eat as much fish” is not a simple solution, as explained in the following quote.

“Losing the ability to fish freely threatens a central aspect of Innu daily life. In addition, fishing has obvious economic and health benefits because nutritious food is often not available at the local market, or is too expensive.”

(Receveur, O., & Kuhulein, H. (1998). Benefits of Traditional Food in Dene/ Metis Communities)

What we do know about methylmercury poisoning, is that it can lead to a whole host of neurological and physical problems, such as increased anxiety, memory problems, poor coordination, and muscle weakness. Fetuses, infants and young children are particularly vulnerable, and early or pre-natal poisoning can result in problems with their development (including impaired motor skills, difficulties with language, and intelligence disorders).

Hydro-Quebec is not the only company building dams with this issue; it is simply the most obvious and visible. There is a proposed project to build a dam in the Amazon basin that would have similar safety issues, and that violates the rights of the nearby indigenous people. There is Site C, a dam being constructed in Northern British Columbia, that was heavily protested against. Dams like Site C and the dams that Hydro-Quebec *continues to build* are not only harmful, they are quite literally not necessary. Unlike in the fictional case of the Gannon Islands, these dams won’t even help anyone. These places do not need the extra energy. There is no motive for building these dams except profit and a vague talk of “future use”.

I hope that both this and episode 3 help educate you on this issue. If you’re interested in learning more, I encourage you to do some reading on your own. (If you’re interested in Canadian history with methylmercury in particular, I suggest reading up on the Grassy Narrows situation.) I ask that you protest and oppose unnecessary dams, and recognize systemic (and non-systemic!) racism against First Nation Peoples. If you can, research if there are similar issues local to your corner of the world, and help when possible.

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