

Commentary

Does History Repeat Itself? The Dumping of Sewage into Our Marine Environment

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In the 1950's and '60's, the deadly effects of freely using or disposing of dangerous chemicals was first exposed by Rachel Carson when she became concerned with the widespread use of pesticides (13). Her book, *Silent Spring*, created a worldwide awareness about ecology and our responsibility towards other forms of life (13). The general belief, prior to her book being published, was that the environment could absorb any amount of pollution and still remain pristine and safe for both animals and humans (11). Since then, there have been countless international meetings where numerous countries have agreed to 'clean-up' the environment, or at least minimize the amount of pollutants that get released into our environment. Countless governments have passed countless rules and regulations that are meant to 'protect' our environment and the species living within it. The end result of some of these international agreements and legislation have met with some success as seen with reductions of lead and mercury being produced, used, or disposed of (7). Overall, the various levels of government have reacted slowly or 'dragged their feet' when it



comes to reducing the effects of human impacts upon our environment. One such example is the acceptance of climate change itself where it required decades of arguing of its existence and discrediting scientific data before governments even acknowledged that it was occurring and that it would become a threat to the planet (8, 12).

Despite decades of research, governments continue to believe that our environment can be used to dump dangerous toxins into our environment and that it will somehow neutralize any harmful effects. One recent, well publicized example in Canada was the dumping of a huge amount of sewage by the city of Montreal (Quebec, Canada) into the St. Lawrence river. Work on the major pipeline carrying raw sewage was slated to dump up to 8 billion liters of raw sewage straight into the river without being treated (3). The city finished repairs ahead of time and it was reported that "no more" than 4.9 billion liters were dumped into the St Lawrence river (4). After some consultations with scientists, it was assumed by the city officials that the river would dilute the sewage substantially and therefore would not result in any danger to the wildlife or affect any



communities further down river (4). Without doing tests on the water quality down river, the assumption was that the river would dilute away any problems seems reminiscent of how contaminants were handled over 60 years ago.

Was this raw sewage dumping an isolated example or a 'one-time only' occurrence that had to be done to maintain infrastructure? Unfortunately, it would seem that this form of environmental contamination occurs constantly as shown by the following examples:

- from 2004 to 2010, hundreds of millions of liters of sewage was spilled into the Canadian environment yearly (5).
- the city of Victoria (British Columbia) pumps out 130 million liters of untreated waste PER DAY (1).
- in July 2013, over a billion liters of sewage and storm water overflowed into Lake Ontario from Toronto's streets following a flash flooding event in 2013 (10).
- between 2011-14 a waste water pipe continuously discharged raw waste water for up to 3 weeks on land that is near a river that is the major source of drinking water for the city of Calgary (Alberta) (6).

This constant amount of sewage pollution goes on world wide.

Could the dumping of raw sewage be a single isolated example of a pollutant being released into the environment? The answer is no! Are the various levels of government, who are the guardians of our environment and are responsible for controlling the release of these pollutants, turning a blind eye to these environmental events to save money? The answer is yes! An example of this is the U.S. government's ineptitude of the ongoing disaster of the polluted drinking water in the city of Flint (Michigan) and how the local authorities tried covering it up. The Flint river has a reputation for being one of the most polluted tributaries in the United States (9). It recently came to the attention of the world, after state officials switched the water supply of Flint, Michigan from Lake Huron, to the Flint river which is known locally "for its filth" (9).

Why the switch? For the simple reason of saving money. The water flowing in the Flint river is 19 times more corrosive than that of Lake Huron, is visibly brown due to its high iron content, and had lead leaching in as "half of the service lines to homes in Flint are made of lead and because the water wasn't properly treated" (9). The city officials including the Mayor denied any such occurrence and this ongoing incident was kept hidden from the worried residents of the area for 18 months. The levels of lead in the blood of toddlers doubled and in some instances, tripled over that time period (9). Toxic effects of lead poisoning in children can cause impaired mental and physical development such as learning difficulties, developmental delay, weight loss, hearing loss to name a few. In adults, it can cause high blood pressure, joint and muscle pain, and miscarriages and still births in women. The long term effects to the residents of this town is unknown and could possibly affect generations of people. This is eerily reminiscent of the mercury poisoning (Minamata disease) in Japan and Northern Ontario in the 1950's and 60's, due to mercury being dumped into the environment by companies, that caused thousands of people to die or suffer from horrifying diseases and is still continuing today (2). Apart from human health problems, what effects these pollutants can have in wildlife or our environment is largely unknown.

It would seem that our government officials are still thinking that our marine environment is a huge waste disposal system much like the attitude back in the 1950's and '60's. The failure to comprehend the consequences of this kind of thinking could result in the endangerment of many species of marine life, or worse still, long term illness and possibly death of people living in the communities that depend upon clean water. Clean water supposedly being protected by our government officials. History has shown that trying to dump toxins into our marine environment may be financially advantageous in the short term but it always results in serious consequences for future generations and our the future and our environment. Let us hope that old ways of mistreating our marine environment does not

continue and that more responsible ways of disposing of the toxins that humans produce will be instigated. Yes it would seem that history does repeat itself.

REFERENCES

- 1) Berman S. Victoria's secret: dumping raw sewage like it's 1915. <https://thetyee.ca/News/2015/01/26/Victoria-Raw-Sewage-Dumping/>. Accessed on January 25, 2017.
- 2) Brennan R J. 40 years on, reserve mercury poisonings return. https://www.thestar.com/life/health_wellness/2010/04/06/40_years_on_reserve_mercury_poisonings_return.html. Accessed on January 25, 2017.
- 3) CBC News (A). Montreal sewage dump is over three days ahead of schedule. <http://www.cbc.ca/news/canada/montreal/montreal-sewage-dump-river-interceptor-1.3319468>. Accessed on February 1, 2017.
- 4) CBC News (B). Montreal's sewage dump saga explained in 5 key points. <http://www.cbc.ca/news/canada/montreal/montreal-s-sewage-dump-saga-explained-in-5-key-points-1.3263739>. Accessed on January 25, 2017.
- 5) Canadian Press. Millions of litres of pollutants dumped in cities: analysis. https://www.thestar.com/news/canada/2010/06/13/millions_of_litres_of_pollutants_dumped_in_cities_analysis.html. Accessed on January 25, 2017.
- 6) DeCillia B. Raw sewage spill found on Tsuu T'ina reserve. <http://www.cbc.ca/news/canada/calgary/raw-sewage-spill-found-on-tsuu-t-ina-reserve-1.2697248>. Accessed on January 25, 2017.
- 7) Environment Canada, Health Canada. Risk Management Strategy for Mercury http://www.ec.gc.ca/doc/mercure-mercury/1241/index_e.htm. Accessed on January 25, 2017.
- 8) Goldenberg S. Climate Change "Already Affecting Food Supply"- UN. <http://www.globalissues.org/issue/178/climate-change-and-global-warming>. Accessed February 1, 2017.
- 9) Laylin T. How Michigan's Flint River came to poison a city. <https://www.theguardian.com/environment/2016/jan/18/michigan-flint-river-epa-lead-contamination-mdeq-pollutants-water-safety-health>. Accessed on January 25, 2017.
- 10) Leslie K. Toronto told to tell public when untreated sewage sent into Lake Ontario. Toronto told to tell public when untreated sewage sent into Lake Ontario. Accessed on January 25, 2017.
- 11) Monosson E. The salty dumping grounds: a brief history of ocean dumping. <http://theneighborhoodtoxicologist.blogspot.ca/2009/09/dumping-grounds-brief-history-of-ocean.html>. Accessed on February 15, 2017.
- 12) Shah A. Climate Change and Global Warming. <http://www.globalissues.org/issue/178/climate-change-and-global-warming>. Accessed on February 1, 2017.
- 13) Silent Spring <http://rachelcarson.org/SilentSpring.aspx>. Accessed on February 15, 2017.