Causes and Effects of Water Pollution in Lake Huron

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Introduction

Lake Huron is one of the lakes in Great Lakes region. In fact, it is the third largest by volume as it contains 850 cubic miles of water. Broad Straits of Mackinac join Lake Huron to Lake Michigan, and its waters are indivisible. Its lakeshore lengthens 3, 827 miles and is typified by low, sandy beaches and the stony shores of Georgina Bay (Mahler, Metre & Callender, 2006). Lake Huron gauges 206 miles crosswise and 183 miles north to south, with a mean depth of 195 feet to 750 feet maximum. Its drainage region is large in comparison to other Great Lakes since it covers parts of Ontario and Michigan lakes. Its waters are useful to several people who bound it especially the farmers. However, the Lake has been facing some water pollution challenges that make its waters disastrous. The ultimate aim of this context is to examine the sources that lead to pollution of Lake Huron and the Great lakes. It then looks at the effects of this pollution and winds up by providing recommendations on what can be done to save Lake Huron (Buchsbaum, 2009).

Causes of Water Pollution on Lake Huron

Chemical contamination

Lake Huron is fed by contaminants, which initiate from several sources among them being spills, municipal discharges, industrial discharges, landfills, agricultural runoff and storm sewers (Krantz & Kifferstein, 2010). These contaminants get into Lake Huron through several trails including atmospheric deposition, direct liberation and river discharge. In comparison to Lakes Ontario, Michigan and Erie, pollutant concentrations are comparatively low in Lake Huron. However, public health consultative exists concerning utilization of trout and all Areas of Concern (AOCs).

Atmospheric deposition

Besides, its massive surface area, like the other Great Lakes, has made it susceptible to atmospheric deposition of pollutants. It has a large surface area and comparatively few regional pollutant point sources (Mahler, Metre & Callender, 2006). Loading to Lake Huron from water basis are stumpy of all the Great Lakes, but air basis are highest.

Bio-accumulative Substances

From the late 1970s to around 1990s, the concentrations of bio-accumulative matters like DDT, PCBs, dioxins, dieldrin, and furans turned down considerably in Lake Huron lake trout. Nevertheless, whereas the concentrations of DDT have persistently deteriorated, PCB concentrations have not fallen off considerably since the mid-1980s. DDE inclinations in Lake Huron herring gull eggs display a marked reduction in concentration since 1970s. According to other inclinations, concentrations decreased considerably in the late 1970s but continued to be comparatively stable (Mahler, Metre & Callender, 2006). Continuing basis of pollutants is mainly from sediments polluted by historic liberation, airborne deposition industrial and municipal librations and land runoff. Initially, there were six main Great Lakes regions of considerable environmental pollution or Areas of Concern (AOCs) on Lake Huron.

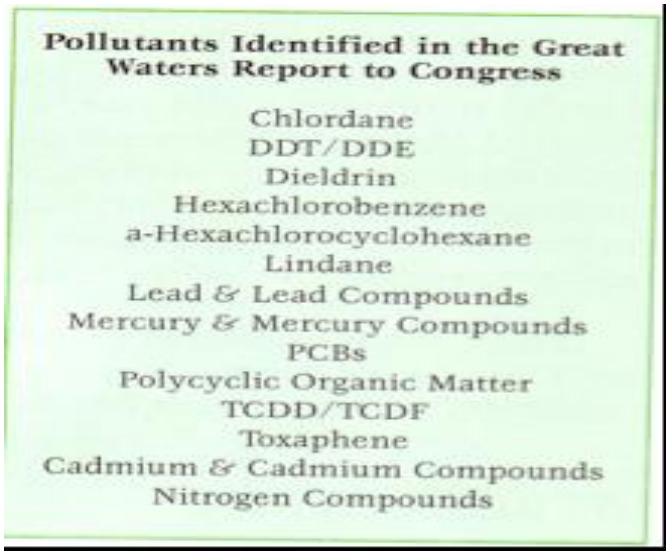
The St. Mary River is named as an Area of Concern since it contains pollutants from municipal discharges and non-point source contamination sources (Buchsbaum, 2009). Management of industrial point sources is developing, and pollution consignments are being minimized. The St. Clair River is named as an AOC because of the contamination difficulties on the eastern side of the river. Severn Sound and Spanish are the two other Canadian Areas of Concern that are reacting positively to the remedial activities and displaying recovery (Mahler, Metre & Callender, 2006). The only Area of Concern exclusively in Michigan, Saginaw Bay or

river, is modeled as an AOC mainly because of polluted deposits and non point contamination sources.

Phosphorous Deposition

Despite the fact that phosphorous has been considerably problematic in the Great Lakes, it has not spread extensively in Lake Huron. This is because the Saginaw Bay and the southern Ontario coast have not been contaminated with phosphorous pollutants. However, since Lake Huron is joined to Lake Michigan, phosphorous contaminants get into Lake Huron because the phosphorus sediments are present there (Krantz & Kifferstein, 2010). Fortunately, the phosphorous sediments that get into Lake Huron are minimal because according to United States/Canada Great Lakes Water Quality Agreement (GLWQA), Lake Huron has kept loading below the target loads. Apart from 1982 and 1985, the loadings of Lake Huron have remained below the targets since 1981.

The causes of water pollution in Lake Huron and other Great Lakes are summarized in the figure below.



(Mahler, Metre & Callender, 2006)

Effects of water Pollution in Lake Huron

Water pollution has several effects both to the environment, animals and to human beings. Water pollution in Lake Huron affects the health of organisms living in it and around the waterway. It also has massive effects on humans. These impacts vary from aquatic malformations to polluted fish to "deceased" lake (Buchsbaum, 2009).

Aquatic diseases and malformations

As practical "canaries in a gold mine," the declining health of fish and wild animals talks volumes concerning the call to clean up Lake Huron. Heavy metals like lead and mercury, and man-made organic chemicals like pesticides, bio amplify as they increase the food chain leading to growth cancers and death for predatory animals like herring gulls, trout and even people. Toxic contaminants can also modify the hereditary structure of organisms causing either death or tremendous malformations (Mahler, Metre & Callender, 2006). Research has proven that cormorants having a medical condition from the cross-billed condition at charges that at 42 percent times the natural incidence, while terns undergo birth complications from PCBs, dioxin and furan exposure at 31 times the ordinary levels. Other examples of malformations encompass three-legged frogs and large fish tumors as observed in the figure below.

Natural tumor in fish (Buchsbaum, 2009)

Human Health Problems

POPs such as DDT and PCBs are chemical substances that persevere in the surrounding and bio-accumulate through the food mesh; thus, POPs can also lead to sickness and ailments in people, who are at the final component of the food chain. Individuals who frequently eat a lot of fish would have high intensities of poisonous substances in their systems than those who seldom consume it (Krantz & Kifferstein, 2010). Whereas scientists are still undertaking research on the influences of high chemical intensity in humans, studies have proposed that toxic chemicals can cause reproductive difficulties, neurological disorders and cancer. Individuals who are at the highest degree of developing health complications caused by polluted fish consumption are people with weak immune system, including pregnant women, children and elderly people. Moreover, those in "high-risk' group need either avoid eating Great Lakes fish, or merely consume one meal consisting of fish every week or even month, depending on the fish type. Every province in the Lake Huron area publishes an annual fish consultative; of the 1, 400 fish consumption consultative in the US, more than 1000 are acquired in the Great Lakes states (Mahler, Metre & Callender, 2006). Other human health problems associated with water pollution in Lake Huron area include skin infection, brought by bacterial pollution and pollution of drinking water.

Recommendations and Conclusion

The Environmental Protection Agency of United States needs to enforce water quality laws that will protect the Lake Huron and Great Lakes from being polluted. In the present years, the EPA has dedicated billions of dollars to eliminate the dangerous pollutants and persistent species from Lake Huron and other lakes. This process encompasses scrubbing the little toxic regions that have been contaminated for more than 20 years, reducing phosphorous intensity,

which causes eutrophication. However, once the Agency lays down the laws, it should be able to defend them properly to ensure Lake Huron is not polluted further.

References

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