St. Marys River Remedial Action Plan Newsletter

Fish Tumours Edition

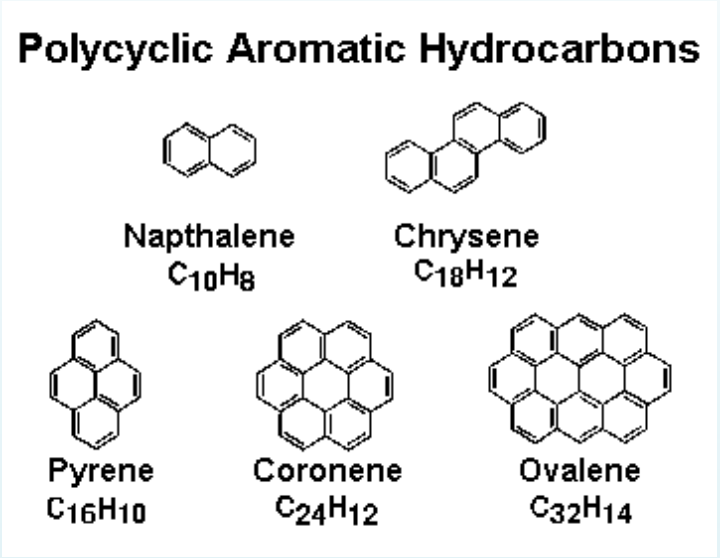
Marked improvement in fish tumour rates

Liver tumours within White Suckers have declined to 6%, down from over 10% in 2009, according to a 2015 survey by Environment and Climate Change Canada. Since its designation as an Area of Concern in 1987, the St. Marys River has been impaired with certain members of the fish community suffering from tumours and other deformities. This designation was initially created due to the high numbers of White Suckers and Brown Bullheads suffering from liver cancer. The 6% tumour rate is closer to the Canadian delisting criteria for the beneficial use impairment (i.e. a liver tumour prevalence rate of less than 5%). Experts believe there is a state of impairment when it is greater than 5%.

White Sucker (Photo by Brian Gratwicke)

What causes fish tumours?

Liver tumours in fish are associated with exposure to chemical contaminants, with the elevated levels of polycyclic aromatic hydrocarbons (PAHs) the likely cause in the St. Marys River. These compounds occur naturally in oil, coal, tar and petroleum, and are released into the environment as a by-product of burning fossil fuels. In the past, industry has contributed most of the PAHs in the St. Marys River, but with new regulations and technology, and with local industry on board, the amount of PAHs discharged into the river has significantly declined.



Polycyclic aromatic hydrocarbons (PAHs) generally consist of several hexagonal rings.

Assessment

Fish tumours was deemed an environmental impairment for the St. Marys River after 185 White Suckers sampled from 1985-90 exhibited a tumour prevalence rate of 9.2%. In 2012, Fisheries and Oceans Canada completed tumour diagnoses for White Suckers collected in 2009, and found the tumour prevalence rate remained elevated with 15 of the 141 fish exhibiting tumours, or 10.6%. In 2015, 100 White Suckers were collected along the Ontario shoreline and liver tumour analysis revealed 6 had tumours; equating to a 6% tumour rate. This is a marked improvement from the higher rates detected in the past, but this lower rate does not meet the Remedial Action Plan's delisting criteria established for the beneficial use impairment, and it remains above the 5% threshold the Great Lakes Commission established as an indicator of environmental degradation.

Clean-up at Algoma Boat Slip

In September 2017, Algoma Steel completed a maintenance dredge of its boat slip to remove 10,906 m^3 of PAH-contaminated sediments. The boat slip has undergone partial dredging in the past, removing 11,500 m^3 of contaminated sediments in 1995 and an additional 2,630 m^3 in 2006. A post dredging survey on sediment quantity and chemistry is being completed and results are expected in 2018.

Dredging Algoma Boat Slip (Photo by Algoma)

MGP Site Clean-up

In 2011, the final phase of sediment dredging, stabilization and disposal of Michigan's Manufactured Gasification Plant (MGP) site was completed, with funding provided in part under the Great Lakes Legacy Act. A total of 26,000 cubic yards of PAH-contaminated sediment was removed.

Sediment Removal at MGP site (Photo by KDI Group)

Contaminated Sediment Management Strategy

In response to the likely cause of fish tumours in the St. Marys River being exposure to PAHs in the river sediment, ECCC and the Ministry of Environment, Conservation and Parks (MECP) will further the development of a multi-agency contaminated sediment management strategy for the Canadian side of the Area of Concern.

For more information about the initiatives being undertaken to restore the St. Marys River, visit: bpac.algomau.ca

Facebook: St. Marys River Remedial Action Plan

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