Halifax Harbour: the sedimentary record of a century of contamination

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Halifax Harbour has received untreated sewage, solid waste, and industrial byproducts for more than 100 years. Recent research has shown that the sediments in the harbour have retained an imprint of deteriorating environmental quality over the past century. Metals such as Cu, Zn, Pb and Hg increased in concentration from 1890 to 1970 to reach levels as high, or higher than several other polluted marine harbours around the world. Since 1970 the concentration of these metals in Halifax Harbour sediments has decreased, indicating the effect of decreasing industrial, domestic and institutional use of these toxic metals. Similar trends in the time-stratigraphic record of organic contaminants in a single core from the Northwest Arm of Halifax Harbour have also been found. Aromatic hydrocarbon combustion products, including PAH's, reached maximum concentrations in the 1950's and have declined in the last 35 years, probably as a result of a shift away from coal and wood fuels in the Halifax urban area. Other pollutant hydrocarbons, such as aliphatic compounds characteristically derived from sewage and urban runoff, have steadily and exponentially increased in concentration over the past 100 years. These sedimentary records of contaminant accumulation clearly demonstrate the impact of past waste disposal practices and point the way toward improved environmental management in Halifax Harbour.

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