EVALUATING THE EFFECTIVENESS OF PCB CONTROL MEASURES IN THE DETROIT RIVER-WESTERN LAKE ERIE WATERSHED BASED ON MEASURING ECOSYSTEM RESULTS

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Loadings of PCBs to the Detroit River and Lake Erie have substantially decreased since the 1970s. However, the atmosphere and certain other sources continue to contribute loadings. In addition, all Areas of Concern have contaminated sediment. Contaminated sediment is viewed as a universal obstacle in restoring uses in Areas of Concern and Lake Erie. In general, PCB levels in Lake Erie biota declined during the 1970s and 1980s in direct response to reduced loadings. However, PCB levels in Lake Erie biota remained fairly stable during the early 1990s.

During the 1980s and 1990s considerable emphasis was placed on minimizing inputs of PCBs from active sources. In addition, between 1993 and 2000 there will have been approximately $100 million in sediment remediation within the western Lake Erie/Detroit River basin (Rouge River - Evans Products Ditch Site and Newburgh Lake; Detroit River - Carter Industrial Site, Elizabeth Park Marina, Monguagon Creek, Black Lagoon; Huron River - Willow Run Creek; River Raisin - Ford Motor Company Site; Ottawa River - Fraleigh Creek). The primary purpose of this project is to evaluate whether or not recent source loading reductions of PCBs and recent sediment remediation (for PCBs) at the above sites have had an impact on ecosystem results (bioaccumulation of PCBs in fish, herring gull eggs, adult mayflies, etc.).

This project will bring together available research and monitoring databases to evaluate program effectiveness based on measuring ecosystem results. First, the project will compile summaries of available research and monitoring programs (sources, pathways, and compartments) relative to PCBs. Next this project will quantitatively estimate the mass of PCBs removed, treated, and/or contained as a result of the above sediment remediation projects. A binational forum will be held to integrate research, monitoring, and management in an effort that synthesizes databases, collectively interprets results (relative to ecosystem outcomes), and collectively develops advice (recommendations) for research institutions, monitoring agencies, and management organizations. It is suggested that the results of this binational forum will be will be presented at LaMP and RAP meetings, and further distributed in a report.

It is proposed that research results and monitoring data (relative to PCBs) will be provided by the following institutions: Lake Erie LaMP Sources and Loadings Committee (point and nonpoint source loadings of PCBs), Canada Dept. of Fisheries and Oceans (W. Lake Erie fish contaminant data); University of Windsor's GLIER (modeling results and predictions); U.S. Geological Survey (forage fish data base); Canadian Wildlife Service (herring gull monitoring data base); University of Windsor's GLIER (adult insect bioaccumulation data); Michigan Dept. of Environmental Quality (Detroit River fish contaminant monitoring data and sediment data); Ohio EPA (fish contaminant monitoring data); National Water Research Institute (sediment research data); U.S. EPA's

LLRS (sediment and fish data sets); U.S. EPA's GLNPO (fish contaminant monitoring); and others. Management institutions involved include: Lake Erie LaMP, Detroit River RAP, the Four Party Agreement for the Detroit River, the Maumee River RAP; River Raisin RAP, Rouge River RAP, and the Greater Detroit American Heritage River Initiative. Again, the intent is to integrate research, monitoring, and management in an effort that synthesizes databases, collectively interpret results (ecosystem outcomes), and collectively develop advice recommendations) for research institutions, monitoring agencies, and management organizations. A final report from this project will be distributed to all interested stakeholders of the above initiatives and will be placed on selected homepages (e.g., Greater Detroit American Heritage River Initiative, International Association for Great Lakes Research, Environment Canada, U.S. EPA-GLNPO) to increase outreach. This proposed project is unique in that it cannot be accomplished without considerable collaboration. It is hoped that this project will be a collaborative effort among all the research and management institutions in the Detroit River/Western Lake Erie Basin.

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