

Wayne County Embayments Resource Preservation & Watershed Enhancement Plan

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(WCSWCD)
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The Three Bays Project was a USEPA-funded project designed to investigate and then develop measures to control nutrient and sediment loading to three important embayments of Lake Ontario: East Bay, Port Bay, and Blind Sodus Bay. Working with the WCSWCD, Princeton Hydro formulated the scope of work, prepared the USEPA grant application, and implemented the project. Each of the three waterbodies have a long history of serving as a recreational outlet for the communities of northeastern Wayne County. The project consisted of two integrated elements, a Diagnostic Component and a Restoration Component. The purpose of the Diagnostic Component was to develop a dataset of key physical, biological and chemical parameters to be used in modeling the Bays' pollutant load and evaluate existing water quality problems. These data were then used to evaluate and select management options to control and reduce non-point source pollutant loading from the Bays' respective watersheds. The Restoration Component detailed management measures for each Bay, providing estimated costs, implementation schedules, and an overview of permit requirements.

East, Blind, and Port Bays are relatively shallow eutrophic waterbodies impacted by excessive growths of exotic invasive macrophytes and periodic dense algae blooms. Some weak thermal stratification occurs in the two deeper Bays: Port and Blind Sodus. As the summer progresses, water clarity declines but the concentrations of Chlorophyll *a* increase, indicating that much of the Bays' water quality impairments are the result of accelerated eutrophication. Weed growth problems were the worst in East Bay, which was also the most turbid of the Three Bays. A significant sediment plume was observed entering East Bay at the mouth of its main tributary with the sources of this sediment related to storm loading and stream bank scour.

Due to the extent and severity of weed related problems, immediate focus was placed on the control and reduction of exotic macrophytes using physical and chemical techniques. A variety of Best Management Practice measures were identified for the control of external sources of sediment and nutrient loading. Stabilization of streams and the implementation of cooperative efforts with the local agricultural community were prioritized action items for the WCSWCD. Stormwater control projects were also identified as part of the management solution. In addition, septic management programs for the shoreline neighborhoods were also prioritized. As documented through modeling and in-Bay sampling, nutrient loading from shoreline septic sources occurred mostly during the peak of the weed growing season. Control of septic related sources were shown to result in improved control of algae blooms and even plant growth.

