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Modeling the Response of Nutrient Concentrations and Primary Productivity in Lake Michigan to Nutrient Loading Scenarios.

A water quality model, LM3 Eutro, will be used to estimate the response of nutrient concentrations and primary productivity in Lake Michigan to nutrient loading scenarios. This work is part of a larger effort, the Future Midwestern Landscapes study, that will estimate the production of ecosystem services associated with land use scenarios that include increased biofuel production and enhanced conservation practices. Previous calibration of LM3 Eutro focused on phytoplankton (chlorophyll-a) and phosphorus. The current effort will include calibration of the nitrogen cycle, which is an overarching theme of the ecosystem services research program. The ability of the model to simulate observed phosphorus and nitrogen concentrations as well as phytoplankton production will be evaluated over the period 1994 to 2008. Recent estimates of nitrogen and phosphorus loads for the period 1996 to 2008 will be used along with loads from the 1994 to 1995 Lake Michigan Mass Balance study. The presentation will include discussion of the nitrogen cycle in Lake Michigan and its representation in LM3 Eutro. This abstract does not necessarily represent the official position of U.S. EPA.