

## **Geographic Information Systems: New Possibilities for Land Use Ventures**

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**Geographic Information Systems (GIS) coupled with models of the Lake Erie ecosystem provide tools to explore the effects of land use change on the health of the Lake Erie ecosystem. To illustrate this application, some of the findings of our EPA STAR funded project, *Development of a regional-scale model for the management of multiple stressors in the Lake Erie ecosystem* will be reviewed.**

**The objective of this research is to develop a regional-scale, stressor-response model for the management of the Lake Erie ecosystem. Stressors addressed include effects of land use changes and Total Maximum Daily Load (TMDL) targets for nutrients, habitat alteration, and natural flow regime modification at the scale of individual watersheds coupled with whole lake ecosystem effects of invasion of exotic species and fisheries exploitation. Our approach to the use of GIS map modeling to link land-cover changes on to changes in essential fish habitat (spawning and larval habit) in Lake Erie tributaries will be demonstrated and the ways that these tools can be used in making decisions about land use changes in the Lake Erie watershed.**