

Cumulative impacts of BMP implementation in the Maumee River basin

Indrajeet Chaubey¹, Bernard Engel¹, Jane Frankenberger¹, Venkatesh Merwade²

¹ Department of Agricultural & Biological Engineering, Purdue University

² Department of Civil Engineering, Purdue University

Funded by: EPA GLRI, \$497,486

Reducing soluble phosphorus and sediment transport from the Upper Maumee River, a focus of the 2008 Lakewide Management Plan for Lake Erie, will require BMP implementation by watershed groups. However, information needed to ensure that BMPs are targeted to critical areas and selected for maximum impact, and that their impact across the basin is documented. Working collaboratively with watershed groups in the Upper Maumee, we will develop a watershed-scale model that provides information to stakeholders to ensure that BMPs are implemented where they can have the greatest effect, that funds are spent in the most cost-effective way, and that the overall environmental impact of the restoration efforts is determined. Specifically, we will complete the following objectives: (1) Quantify water quality improvements at field, watershed and basin scales due to installation of various BMPs funded as a part of GLRI and other initiatives; (2) Optimize selection and placement of BMPs that will minimize both losses of nutrients and associated BMP implementation/maintenance cost; (3) Work with key watershed groups in the Upper Maumee basin to include BMP evaluation and optimization results in watershed management plans and BMP implementation projects to reduce soluble P transport to Lake Erie.