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## **Watershed-Scale Evaluation of BMP Effectiveness and Acceptability: Eagle Creek Watershed, Indiana**

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### Abstract Text:

Over the last 30 years, the implementation of best management practices (BMPs) have been the mainstay of conservation programs to improve water quality while maintaining agricultural productivity. While the value of BMPs can be demonstrated at local levels, the aggregated effects across a watershed are unclear and largely undocumented. This CEAP project integrates a watershed investigation with a social and economic benefits analysis and education program. We have brought together experts in modeling, social sciences, and economics with a research group managing both historical data and ongoing watershed sample collections. Our target watershed is the 77,000 acre Eagle Creek Watershed north of Indianapolis, which feeds into Eagle Creek and the city's major drinking water reservoir. In spite of the use of BMPs, water quality in the watershed has continued to decline in the face of rapid urbanization. Our effort has two purposes: the first is to analyze and model an extensive water quality database for the watershed so that we can correlate trends in water quality with current BMPs and then using modeling, compare the trends in water quality to what would be achieved if different BMP management approaches were used. The model is constructed to allow us to explore different scenarios and management intensities. The second purpose of the project is to develop an understanding of the social and economic limitations to the adoption of BMPs and, by analyzing the current social limitations to acceptance of water quality management alternatives devise strategies to accelerate positive change.

### Impact Statement:

We are implementing an integrated approach, using historical datasets to drive scenario modeling, which will inform our educational program, and which will, in turn, influence decision making processes about management practices in the Eagle Creek Watershed.