Challenges in Documenting Nonpoint Nutrient Load Reductions at the Watershed Scale: The Sandusky Experience

David Baker, Heidelberg College

The Sandusky River is one of several tributaries to Lake Erie that has been the object of detailed nutrient and sediment runoff studies at USGS stream gages dating back to the 1970s. Sampling frequency ranges from 3 samples per day during storm runoff periods to one sample per day during non-storm periods yielding a data base now containing more than 15,000 samples. The resulting data on total watershed export of nutrients and sediments have been used to (1) quantify changes in nonpoint source phosphorus contributions to Lake Erie, (2) document the effectiveness of BMPs in reducing sediment and phosphorus loads to the Lake, (3) re-evaluate phosphorus loading in terms of bioavailable phosphorus, and (4) illustrate many characteristics of agricultural runoff from large watersheds, including annual variability and the uniqueness of individual storms. Responses of Lake Erie to changing tributary inputs will also be illustrated.

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