WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: OH2821

Title: Sediment Loads and Conservation Tillage in the Maumee River Watershed

Focus Categories: Sediments, Models

Keywords: geographic information systems, drainage, agriculture, hydrologic models, sedimentation, nonpoint source, watershed management, soil erosion

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End Date: 03/31/2002

Federal Funds: $12,219

Non-Federal Matching Funds: $24,981

Congressional District: Ohio 11

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Abstract

Sediment loading in the Maumee River watershed is a serious environmental and economic problem, destroying fish habitat in rivers and in Lake Erie, and necessitating millions of dollars per year in dredging costs. The Ohio Lake Erie Commission set a goal of 67% sediment reduction from Lake Erie tributaries, of which the Maumee is the largest, while the U.S. Army Corps of Engineers seeks to reduce the amount dredged from the Maumee River and Bay by 15%. The USGS NAWQA program issued a report on suspended sediment discharges in the Maumee basin, finding that sediment delivery and yield tended to decrease as conservation tillage increased. The proposed project seeks to analyze and, if appropriate, bolster the NAWQA findings by use of a distributed, process-based model which has been developed for this watershed. The funds will permit calibration of the model for sediment transport in the Maumee basin, and subsequent analysis of NAWQA findings. One inquiry will be to test whether conservation tillage could reasonably account for the observed sediment load decreases, and whether alternative variables, such as weather, might have contributed. Another thrust will be the analysis of interactions among soil, drainage, erosion, and tillage speculated upon by the study's authors. The result will be parametric relationships which should be useful for the entire watershed, permitting creation of a watershed map indicating those regions of the watershed most likely to benefit from conservation tillage - as well as a map of estimated sources of Maumee River sediment.