INTRODUCTION  This poster illustrates summaries of four projects currently underway within the Maumee River Basin in Ohio. All the projects are examining various elements of watershed planning and related water quality issues and involve the application of various Geographic Information Science, remote sensing and web based technologies.

Although each project is a separate entity they share common characteristics, the involvement of various local, regional, state, and federal public agencies and non-government organizations, and efforts by faculty and students from the Department of Geography and Planning and GISAG Center at the University of Toledo, Ohio

Maumee Watershed Geographic Information System (GIS) and Remote Sensing Project. Dr. Kevin Czajkowski, Dr. Patrick Lawrence, Jim Coss, Phil Haney, Katie Swartz, Rumia Hayase, Suvendip Sudini Department of Geography and Planning, University of Toledo (funded by USDA NRCs and the University of Toledo)

As of October 2005 the USDA Natural Resources Conservation Service (NRCS) has entered into a five year Memorandum of Understanding with the Geographic Information Science & Applied Geography (GISAG) Research Center of the Department of Geography and Planning at the University of Toledo, Ohio.

Work performed will assist NRCS in implementing the Maumee Watershed project, including sub watershed rapid resource assessments, watershed and area planning, on farm conservation planning and delivery of conservation technical assistance and conservation cost-share programs authorized by the 2002 Farm Bill that are of mutual interest to University of Toledo and NRCS.

The tasks will generally consist of: 1) Annually determining land cover and crop rotations via remote sensing techniques; 2) Combining Ohio, Indiana, and Michigan data layers to establish Maumee Watershed Project Area GIS data layers for the project; 3) Establish and maintain a Maumee Watershed Project GIS Website to provide educational and informational outreach to share the data and information with other project partners, resource managers, and the general public.

GIS Data Layers to include (but not limited to): DEM (Digital Elevation Model); SSURGO Soils; Stream Network; Land Use Cover; Watersheds (HUC units); Quaternary and Bedrock Geology; Wetlands; Source Water Protection Areas; Groundwater data; FEMA Flood mapping; Climatic Zones and others

Watershed Restoration Plan and Stage II report for the Maumee Area of Concern, Maumee Remedial Action Plan Committee, Ohio EPA, Toledo Metropolitan Area Council of Governments (TMACOG) and community partners

The Maumee RAP is developing a Maumee Area of Concern Stage 2 Watershed Restoration Plan (Stage 2 Watershed Plan) for submission to US EPA and the International Joint Commission. The plan has been created to meet the requirements, needs and/or use of five water quality programs including: ODNR Watershed Coordinator Program; Ohio EPA RAP Program; ODNR Coastal Nonpoint Source Pollution Control Program; Ohio EPA Total Maximum Daily Load Program; and US FWS Natural Resources Damage Program.

The Stage 2 Watershed Plan is a comprehensive regional water quality improvement plan intended to be a resource for all agencies, organizations, and individuals who are working to restore the area’s watersways. Volume 1 includes information and maps on the establishment of the Area of Concern (AOC) in 1987, environmental background on the (i.e. hydrology, geology, eco-regions, land use, etc.), and descriptions of the six 11-digit hydrologic units and one large river unit within the AOC.

Volume 2 contains Watershed Projects Tables (WPTs); which provide detailed project lists for each major watershed unit within the AOC, including Causes and Sources, Projects, Potential Project Partners, Funding Sources, Timeline, Status, Performance/Environmental Measures, HUC/Stream Segment Addressed, and the Beneficial Use Impairment (BUI) affected.

The Stage 2 Watershed Plan will be submitted in January 2006 to Ohio EPA as an official Stage 2 Report for the Maumee AOC and to ODNR for State Endorsement consideration. For more information on this project and to review the completed plan please refer to the website http://www.maumeerap.org/stage2.html

Maumee Area of Concern Water Quality Database Development for Assessing Beneficial Use Impairments in the Lake Erie Tributaries. Dr. Patrick Lawrence and Kari Gerwin, Department of Geography and Planning, University of Toledo (funded by USEPA Great Lakes National Program Office) The goal of this project is to compile an extensive water quality and biological data set for the Maumee Area of Concern in NW Ohio. These data can then be used for assessment of the Beneficial Use Impairments relating to water quality concerns and issues. In addition to serving raw data online, a web-based Geographic Information System (GIS) is utilized so that the spatial trends of biological, habitat and water quality conditions can be visualized across the AOC.

This project utilizes secondary datasets acquired from the Ohio Environmental Protection Agency’s (OEPA) Lake Erie Biological Criteria and Habitat Evaluation Project that was conducted from 1993-1997. The data sets include macroinvertebrate and fish sampling data, fish anomalies as well as Index of Biotic Integrity (IBI), Invertebrate Community Index (ICI), and Qualitative Habitat Evaluation Index (QHEI) scores.

In addition, the databases provide a platform upon which comprehensive water quality data can be compiled by a range of organizations. The data can be accessed in both a database format and a GIS format by general public and research and monitoring organizations. To date a sample project data base has been compiled and structured within an online format using water quality parameters for the Lake Erie Tributaries – several streams that consist of one watershed HUC unit with the Maumee AOC.

For more information on this project please refer to the website at http://www.geography.utoledo.edu/MaumeeAOC/homepage.htm

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