

St. Joseph River (Michigan/Indiana)



St. Joseph River Watershed

Watershed location and features:

- tributary to Lake Michigan at St. Joseph, Michigan
- the watershed is located in all or parts of St. Joseph, Elkhart, Lagrange, Steuben, DeKalb, Noble and Kosciusko Counties in Indiana and Berrien, Cass, St. Joseph, Branch, Hillsdale, Van Buren, Kalamazoo and Calhoun Counties in Michigan
- total watershed area is 4,685 square miles
- major tributaries include Prairie River, Coldwater River, Fawn River, Pigeon River, Little Elkhart River, Elkhart River, Dowagiac River and Paw Paw River
- there are 190 dams in the St. Joseph watershed

Watershed characteristics:

- 60% agricultural, 20% forested and less than 10% urban

Soil erosion and sedimentation issues:

- poor management practices by the agricultural industry has created bank erosion and sedimentation issues
- the basin contains permeable soils which allows groundwater into the River
- there are several impoundments in the system which contain sediment
- low permeable soils combined with agricultural land use causes stream instability

Contamination issues:

- atrazine, PCB's, nutrients, suspended solids, trans-nonachlor and mercury are known contaminants in the system
- the St. Joseph River is not an area of concern; however, there are 12 superfund sites within the watershed

Partners on tributary modeling:

- St. Joseph River Association, Inc.
- Lake Michigan College
- Western Michigan University
- Cities of South Bend and Elkhart, Indiana
- Indiana Department of Environmental Management
- Michigan Department of Environmental Quality
- Michigan Department of Natural Resources
- Michiana Area Council of Governments (MACOG)
- US Geological Survey
- US Environmental Protection Agency
- USDA – Natural Resource Conservation Service

Modeling approach:

- GSSHA model used to quantify hydrology of watershed and sediment delivery for various land-use scenarios
- CH3DSED to be used to quantify hydrodynamics and sediment transport in lower portion of River

Status:

- modeling to be completed by October 2004 with a training workshop for interested parties to be held shortly thereafter (Fall 2004)

Applications:

- State will use with TMDL studies
- counties will use with Phase II stormwater plans
- USGS interested in integrating our results with the groundwater modeling they are performing
- Corps will use in the development of the St. Joseph Dredge Material Management Plan (DMMP)