



# Great Lakes Tributary Model

U.S. ARMY CORPS OF ENGINEERS

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**Issue:** Soil erosion and nonpoint source pollution have adverse environmental and economic impacts, including algal blooms and dead zones within the Great Lakes and reduced water depths in harbors and shipping channels due to sediment loading causing groundings and unsafe conditions. These issues are a focus area and a priority of the Administration's Great Lakes Restoration Initiative (GLRI).

**Authority:** The Great Lakes Tributary Model (GLTM) program was established through Section 516(e) of the Water Resources Development Act of 1996. This authority enables the U.S. Army Corps of Engineers (USACE) to develop tools to assist state and local agencies with the planning and implementation of measures for soil conservation, sedimentation and nonpoint source pollution prevention. Models can be developed at all tributaries to the Great Lakes that discharge to federal navigation channels or Areas of Concern (AOCs). The ultimate goal of this program is to reduce watershed loadings of sediments and pollutants from tributaries in order to enhance Great Lakes water quality, delist Great Lakes AOCs, and reduce the need for navigation dredging.

**Funding:** The USACE' base funding for the GLTM program is through annual Energy & Water Appropriations. FY 2016 base funding is \$600,000 for this program and the President's FY 2017 Budget includes level funding. The optimal funding for this program in FY 2016 and FY 2017 would be \$1.5 million.

**Coordination:** This program is being implemented in close coordination with the Great Lakes states and in partnership with the Great Lakes Commission. Several site-specific models have been developed in partnership with representatives of agencies and organizations from the watershed, including Soil and Water Conservation Districts, Remedial Action Plans committees, municipal and regional planning agencies, navigation interests, state and federal resource agencies. In addition to tributary-specific models, a set of web-based tools have been developed in partnership with Michigan State University, Purdue University, and the U.S. Forest Service.

**Accomplishments:** Models developed at more than 30 tributaries are being used by local, state and federal agencies for watershed and ecosystem planning, forestry management, navigation maintenance planning, and water quality compliance evaluations. A partial list of these models is provided on the attached table. The USACE is providing training sessions throughout the Great Lakes Basin on existing models, field monitoring, and the use of web-based tools developed under this program. These web-based tools enable less technical users the ability to examine the impacts of land use changes and best management practices (BMPs) for soil conservation and nonpoint pollution prevention.

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**For More Information:** Information on models, web tools, and reports are available online at:

<http://greatlake tributary modeling.net>

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### Partial List of Projects under the Great Lakes Tributary Model Program

State	Tributary	Status	Uses of Model
Illinois	Waukegan River	Completed	Reduce bank erosion and plan options for restoration of urban river
	Calumet River	Under development	Evaluate options for reducing urban nonpoint loadings
Indiana	Burns Ditch/Trail Creek	Completed	Land-use planning and conservation to reduce nonpoint pollution
Michigan	Clinton River	Completed	Urban stormwater management and bank erosion options in AOC
	Ontonagon River	Completed	Sediment budget to evaluate impacts of forestry BMPs
	Munuscong River	Under development	Determine source of excessive sediment loading to St. Mary's River
	Jordan River	Under development	Sediment budget to evaluate impacts of agricultural BMPs/water withdrawals
Minnesota	Saginaw River	Under development	Estimate sedimentation rates in navigation channel under various scenarios
	Knife River	Completed	Guide reforestation efforts to reduce hydrologic response
	Nemadji River	Under development	Evaluate impacts of bank erosion on sediment delivery
New York	Knowlton Creek	Completed	Evaluate sources of sediments to AOC
	Buffalo River	Completed	Planning pollution prevention and sediment cleanup options in AOC
	Cattaraugus Creek	Completed	Reduce impacts of urban development on erosion/nonpoint pollution
	Canaseraga Creek	Completed	Evaluate sources of sediments and effectiveness of BMPs
Ohio	Brandy and Sucker Brooks	Under development	Evaluate impacts of agricultural BMPs
	Auglaize River	Completed	Prioritizing sites for buffer strips and other conservation measures
	Blanchard River	Completed	Prioritize agricultural BMPs and wetlands restoration options
	Tiffin River	Completed	Evaluate agricultural BMPs
	Maumee River	Completed	Estimate sedimentation rates in navigation channel under various scenarios
Pennsylvania	Mill and Cascade Creeks	Completed	Reducing nonpoint loadings to a former AOC
Wisconsin	Fox River	Completed	Evaluate effectiveness of agricultural BMPs in AOC
	Manitowoc River	Completed	Compare and prioritize agricultural BMPs