National Regional Sediment Management Program
Chicago District (LRC):

Continued Outreach as part of the Great Lakes Tributary Modeling Program

Description

This project is to continue outreach efforts for the Great Lakes Tributary (GLTM) Program. Since 2000, the GLTM Program has provided technical assistance to local and state agencies in the planning and implementation of measures for soil conservation, sedimentation, and non-point source pollution prevention.

To improve Great Lakes water quality, delist Great Lakes Areas of Concerns (AOCs), and reduce the need for navigation dredging, tools have been developed to help managers reduce watershed loadings of sediments and pollutants. Generally, tools have been developed on a tributary-by-tributary basis, with investigations ranging from site-level BMPs for agricultural and stormwater runoff to watershed analyses of sediment and pollutant transport. As more modeling is done, it increases the program's ability to help managers reduce watershed loadings of sediments and pollutants across the Great Lakes. Continued outreach will improve the success of the program by bridging the gap between tool developers and users. Training courses, tutorial webinars, and the annual Sedimentation Workshop are valuable opportunities for education and feedback that are critical to this cooperative initiative for sediment and pollutant management in the Great Lakes region.

Figure 1: Great Lakes Basin (dark gray) and location of Areas of Concern

Issue/Challenge To Address

There are 137 federal navigation projects within the 8 Great Lakes states (IL, IN, MI, MN, OH, PA, NY, and WI). Sedimentation within navigation channels requires periodic dredging of 2 to 5 million cubic yards of sediment annually in these states. The volumes of sediments to be dredged and the levels of pollutants in those sediments are determined by land-use and pollution prevention decisions made in the watersheds that drain into these navigation channels. The GLTM Program has developed sediment transport models and related tools for tributaries to the Great Lakes that discharge to federal navigation channels or AOCs. These models and tools are being used by state and local agencies to optimize soil conservation and nonpoint source pollution prevention measures. By enhancing the capabilities of non-federal agencies, this program helps reduce the loading of sediments and pollutants to navigation channels and AOCs, and reduces the costs of navigation maintenance and sediment remediation.

Outreach is vital in improving understanding and utilization of the tools developed under this program. USACE-provided training sessions throughout the Great Lakes Basin on existing models, field monitoring, and the use of web-based tools developed under this program to enable less technical users to examine the impacts of land use changes and best management practices (BMPs) for soil conservation and nonpoint pollution prevention. Increasing awareness and application of these technical outputs increases the navigation and ecosystem restoration benefits GLTM Program.

Successes Lessons Learned

- The annual Sedimentation Workshop has been a valuable opportunity for the diverse stakeholder group to share progress, successes, hurdles, and lessons learned
- The website and online tools increase interest, accessibility, and use of GLTM Program outputs among group stakeholders and the public

Expected Products

- GLTM Program Summary Report
- Sedimentation Workshop, with summary and presentations posted to website
- In-person tributary modeling training
- Instructional webinars for GLTM web-based tools

Stakeholders/Users

USGS, NRCS, EPA, USFWS, GLC, TNC, Great Lakes states, and local planning agencies

Projected Benefits Value Added

Efforts to increase application of the tools developed under the GLTM Program will support greater utilization of land management BMPs to reduce sedimentation and non-point source pollution in the Great Lakes and their tributaries. While the implementation of some BMPs will provide more short term savings than others, the overall goal of continued outreach efforts is to realize long term savings from planning and implementation decisions that utilize sediment and pollutant transport models for Great Lakes tributaries.

Long and short term savings to USACE's navigation business line will be realized in terms of decreased channel maintenance costs and avoided losses in revenue from industries such as shipping, commercial fishing, and recreation. There will also be long and short term benefits to the USACE ecosystem business line as the occurrence of harmful algal blooms, hypoxia, and dead zones are reduced as a result of decreased nutrient inputs.

Leveraging Opportunities

Collaboration with universities, other federal partners (USGS, USFWS, EPA), and state and local agencies enables the GLTM Program to build upon existing models and research to guide its development of new models and web-based tools for managing sediment and pollutants in Great Lakes tributaries. Since 2010, the program has leveraged over $1M in Great Lakes Restoration Initiative (GLRI) funds to develop tools to better estimate non-point source nutrients from agricultural and urban landscapes across the basin.

Points of Contact

David Bucaro, CELRC-PMD-EP
Chief, Economic Formulation & Analysis Section
312-846-5583
David.F.Bucaro@usace.army.mil

Participating Partners

Michigan State University, Purdue University, USDA Forest Service, USGS, NRCS, EPA,USFWS, GLC, TNC