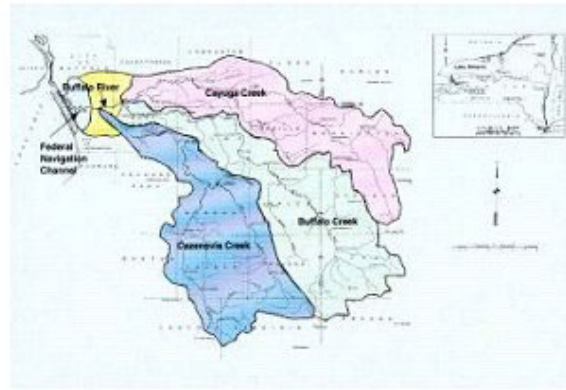


Buffalo River (New York)



Buffalo River Watershed

Watershed location and features:

- tributary to Lake Erie in City of Buffalo, New York
- total watershed area is 1,150 km²
- drains portions of Buffalo and Wyoming Counties
- three major sub-watersheds: Cayuga, Buffalo, and Cazenovia Creeks
- discharges to Federal navigation channel at Buffalo River and Harbor

Watershed characteristics:

- land use is primarily agriculture and woodland in the upper basin, and primarily developed and industrial in the lower basin
- gently rolling dissected glacial plateau along the Lake Erie shoreline

Soil erosion and sedimentation issues:

- ice scour during winter months is the primary source of streambank erosion in the watershed

Contamination issues:

- Buffalo River is a designated Area of Concern
- degradation of benthos, loss of fish and wildlife habitat, health advisory for the consumption of carp, and severely impacted macro invertebrate community in the water column
- pollution from abandoned industrial users along lower river (grain mills, chemical companies, coke and steel making operations, and an oil refinery)
- other sources of pollutants include wastewater facility discharges, inactive hazardous waste sites (32), combined sewer overflows, and various point and non-point sources
- river sediments are contaminated with mercury, chromium, nickel, cadmium, PCBs and PAHs; many are EPA priority pollutants
- dredged material from the navigation channel exceeds the criteria for open water disposal

Partners on tributary modeling:

- Buffalo River Partnership
- The Friends of the Buffalo & Niagara Rivers
- Erie County Department of Planning
- State University of New York, Great Lakes Center and Program
- Great Lakes United
- Remedial Action Plan Advisory Committee
- New York State Department of Environmental Conservation
- USDA Natural Resource Conservation Service

Modeling approach:

- BASINS modeling to develop a GIS database and update land use/land cover
- SWAT and BASINS modeling to evaluate sub-watershed sediment transport and yield
- SWAT modeling to predict ice scouring damage, spring storm event sediment generation, and sediment yields at the inlet of the Federal navigable channel
- ECOMSED modeling to track cohesive sediments contributed at the channel inlet and those already in the navigation channel

Status:

- modeling to be completed by August 2004 and training workshop for state and local partners scheduled for September 2004

Applications:

- Natural Resource Conservation Service and the Erie County Department of Environment and Planning will use models to advise on the implementation of best management practices in throughout the Buffalo River watershed
- State and Federal agencies to use models to analyze watershed-scale sedimentation impacts on the Federal navigation channel