



Top Ten Water Quality Issues in New York State

Habitat and/or Hydrologic Modification

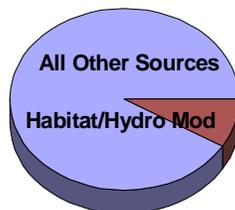
The Problem...

Habitat and hydrologic modifications include physical alterations to a stream channel and its associated corridor. Increased impervious surfaces in the stream watershed can also contribute to modification. Such modifications can interfere with the water cycle, disrupt the natural flow of water, cause increased erosion and sediment loadings, and result in a loss of suitable habitat for fish and wildlife. Common examples of such modifications to habitat or hydrology include the widening, deepening and channelization of streams, hardening of streambanks, dam and reservoir operations, poorly designed stream barriers (e.g., bridges, dams, culverts) and construction in and along stream riparian buffers and wetlands.

Despite ongoing programs aimed at restoring rivers and streams that have suffered impacts, recognition of thoughtful land use practices is only just beginning. Typically, habitat and hydrologic modification impacts—including increased erosion, higher temperatures, lower dissolved oxygen, excessive nutrient and sediment loads, degraded habitats, and the loss of property due to flooding and erosion—are the result of poor design and/or channel maintenance. However more recent emphasis on low-impact development and green infrastructure represents significant progress toward land use and development policies that may mitigate impacts of habitat and hydrologic modification on the waters of the state.

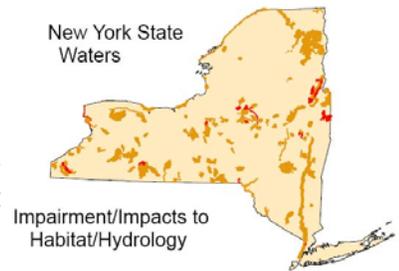
The Significance...

Habitat and hydrologic modification, including streambank erosion, is identified as a major source in 12% of all waterbodies assessed as impaired in New York State. In addition, for 29% of the waters with less severe minor impacts or threats, habitat/hydrologic modification is noted as a major contributing source.



Specific Waters...

Impaired waters (shown in red) or impacted/threatened waters (shown in orange) due to habitat and hydrologic modifications are scattered across different regions of New York State. Not surprisingly, such impacts are more likely to occur in developed or developing areas where human influences cause increased runoff and result in alterations to habitat and hydrology. In less populated areas nonpoint sources of silt and sediment from agricultural activity, road sanding during the winter or other practices can contribute to increased sediment loadings in streams and lakes, altering the water flow and aquatic habitat.



What is Being Done...

During the past decade, NYSDEC worked with a number of other state and local agencies and organizations to promote low-impact design, smart growth development and green infrastructure concepts for urban planning projects. These efforts are largely driven through implementation of the NYSDEC Phase II Stormwater Program, which requires urban municipalities to develop Stormwater Management Plans (SWMPs), implement best management practices and promote public education (see also *Urban Stormwater Runoff*). Similar programs are also in place to address runoff and sediment from construction and agricultural activity.

Efforts to coordinate other inter-agency and local activities to protect streams and habitat are led by the Hydrologic and Habitat Modifications Workgroup of the New York State Nonpoint Source Coordinating Committee. This workgroup continues to develop and promote strategies to protect the functions and natural resources of rivers and streams, minimize flooding and erosion, reduce stream barriers and advocate for the “day-lighting” of urban streams to enhance economic, recreational, and ecological benefits.

More Information

NYSDEC Stormwater Control Program

<http://www.dec.ny.gov/chemical/8468.html>

USEPA - Control of NPS Pollution from Hydromodification

<http://www.epa.gov/owow/nps/hydromod/index.htm>