The Allegheny River Basin

Basin Description

Tha Allegheny River Basin is located in the southwestern corner of New York State. The portion of the basin within New York State represents the northern edge of the 204,000 square mile Ohio River Drainage Basin that covers much of the mid-eastern United States. The Allegheny River originates in north central Pennsylvania. After crossing into New York the river meanders westward for about 55 miles before returning to Pennsylvania. The western half of the basin in New York is drained by Conewango Creek and its tributaries (including Chautauqua Lake) before it also crosses the New York-Pennsylvania border and joins the Allegheny . All together the Allegheny River drains approximately 1,920 square miles of New York State, including large parts of Chautauqua and Cattaraugus Counties and the southwest corner of Allegany County.

The Allegheny River Basin is predominantly rural agricultural in character, with large tracts of forest and woodlands along the northern fringe of the Allegheny Mountain range. Though the basin is lightly populated, with an estimated 160,459 residents (2000), several population centers are located along the river valleys. The most significant of these – Jamestown (31,730), Olean (15,347) and Salamanca (6,097) – are home to a number of small industries and significant commercial development. Other economic activities in the basin include oil and gas production, silviculture, and recreation. The Allegany Indian Reservation is also located in the basin near Salamanca.

There are 4,086 miles of rivers and streams and 23 significant* lake, pond and reservoir waterbody segments (covering 26,335 acres) in the Allegheny River Basin Waterbody Inventory. About 57% of the basin river miles drain directly to the Allegheny River in New York State in the eastern half of the basin. Conewango Creek sub-basin captures about 37% of the river miles while the remain 6% flow into French Creek. The largest lakes/reservoirs in the basin are Chautauqua Lake (13,427 acres and the Allegheny Reservoir (10,987 acres). Together these waterbodies account for 93% of the total lake acres in the Allegheny River Basin.

Water Quality Issues and Problems

Water quality in much of the Allegheny River Basin can be characterized as satisfactory, although there are a few specific issues that are of concern. Most assessed river and stream miles in the basin fully support designated uses, but lesser impacts from nonpoint agricultural and other sources impact a number of waters. Any assessment of lake water quality in the basin is dominated by conditions in Chautauqua Lake, which represents over half the lake acres in the basin. Agricultural activity and other nonpoint sources are the primary concerns in this and other lake watersheds. These and other water quality issues and problems are discussed in further detail below.

Agricultural Activity

Considerable agricultural activity in the rural Allegheny River Basin has a significant impact on aquatic life use support and recreational uses of the waters. Agricultural runoff contributes nutrient and silt/sediment loads to the streams and lakes. Poor agricultural management practices, including permitting livestock unrestricted access to streams, improper manure application on fields, lack of silage leachate control, manure or milkhouse wastewater treatment facilities, intensively cultivated crop lands with little riparian buffer and fertilizer and pesticide application to fields in the absence of approved nutrient/pesticide management plans, have significant impacts on the water quality rivers and lakes in the basin. Just about half of the river miles

* *Significant Lakes* are lakes of 6.4 acres (0.01 square miles) or larger and are included the New York State Lakes Gazeteer.

and nearly all the lake acres listed on the PWL cite agricultural sources as a contributing source. Various state and local (county) agencies are working with the farming community to address these issues.

Chautauqua Lake

As noted previously, water quality issues in the basin are dominated by issues in Chautauqua Lake, which represents about half the lake acres in the basin. The primary concern in Chautauqua Lake is the impact that excessive aquatic weed growth – particularly the increasing threat of invasive species such as Eurasian water milfoil – has on recreational uses. Various weed harvesting programs and in-lake herbicide treatments have been used to try to address the issue. In addition to in-lake measures, watershed-wide initiatives to reduce loadings from nonpoint sources are being pursued. Agricultural sources have been identified as sources of nutrients and sediment in the past. But as urban and residential development increases in the watershed, these activities are seen as growing and perhaps greater contributors of nonpoint pollutants.

Chautauqua County prepared an extensive *State of the Lake Report* in May 2000 and followed it up with a *Lake Management Report* later that year. These reports outline a range of options and recommendations to address sources of water quality impacts to the lake. These include management of aquatic vegetation though both in-lake measures (harvesting, herbicide use), the need to maintain wastewater treatment (on-site septics and sewered areas) to protect the uses of the lake, and erosion controls to address wet-weather/stormwater runoff that contributes silt/sediment and nutrients to the lake. These reports also recognize the need to address development pressures in the basin that will also impact water quality in the lake.

Urban/Industrial/CSO Runoff

Various recreational uses, aquatic life use support, and aesthetics in the stretches of the urban waterways in and around the Jamestown/Falconer area are significantly restricted by pollutants from various industrial, municipal, and other urban sources. The most significantly affected of these waterbodies is the Chadakoin River. Direct discharges as well as urban storm runoff transports a variety of pollutants and debris into the waterway.

Threats to Olean Drinking Water

Drinking water use of Olean Creek water supply is thought to be threatened due to the susceptibility of the water supply to possible pathogen contamination and elevated nutrient loads. Drinking water for the City of Olean is taken from Olean Creek. The surface water and nearby groundwater sources serve a population of 15,500 people. Although there are currently no known water quality impacts to the drinking water use of Ischua/Olean Creeks, a Source Water Assessment by the NYSDOH found an elevated (very high) susceptibility to contamination from pathogens due to the number of point sources (permitted municipal wastewater discharges) and nonpoint agricultural activity and pastureland in the watershed. Olean Creek is one of only a handful of surface water supplies in the state that received NYSDOH source water assessments as high as "very high" susceptibility.

Groundwater Resources

Although groundwater resources are not specifically tracked through the WI/PWL, they are considered *Priority Waters* nonetheless. Groundwater provides drinking water for about one-third of the population of New York State and is the source of base flow for most rivers and streams in the state. Management and protection of both the quantity and quality of this resource is critical for protecting public health, and is also a key element of surface water quality and wetland management efforts. In the Allegheny River Basin, the

more significant threats to groundwater resources include abandoned or improperly plugged oil and gas wells; inactive hazardous waste sites; pesticide application; animal feeding operations; on-site wastewater treatment systems; and spills.

Allegheny River Basin Water Quality Assessment

The series of charts presented on the following pages provides an overall assessment of water quality conditions in the entire Allegheny River Basin. For each waterbody type (rivers/streams and lakes/reservoirs) the first chart shows the percentage of the miles/acres of waters in the basin that fall into the various *Water Quality Assessment Categories*. The red portion of the first pie indicates the percentage of waters characterized as *Impaired Segments* which do not support appropriate uses. The purple portion represents segments with *Minor Impacts* and *Threatened Waterbody Segments*. Taken together, waters in both of these categories (represented by the red and purple segments) comprise the ***Priority Waterbodies*** (for that waterbody type) within the basin. The percentage of miles/acres for the other Water Quality Assessment Categories – *Waterbodies Having No Known Impacts*, *UnAssessed Waterbodies*, and *Waterbodies with Impacts Needing Verification* – are shown in blue, light blue, and green respectively.

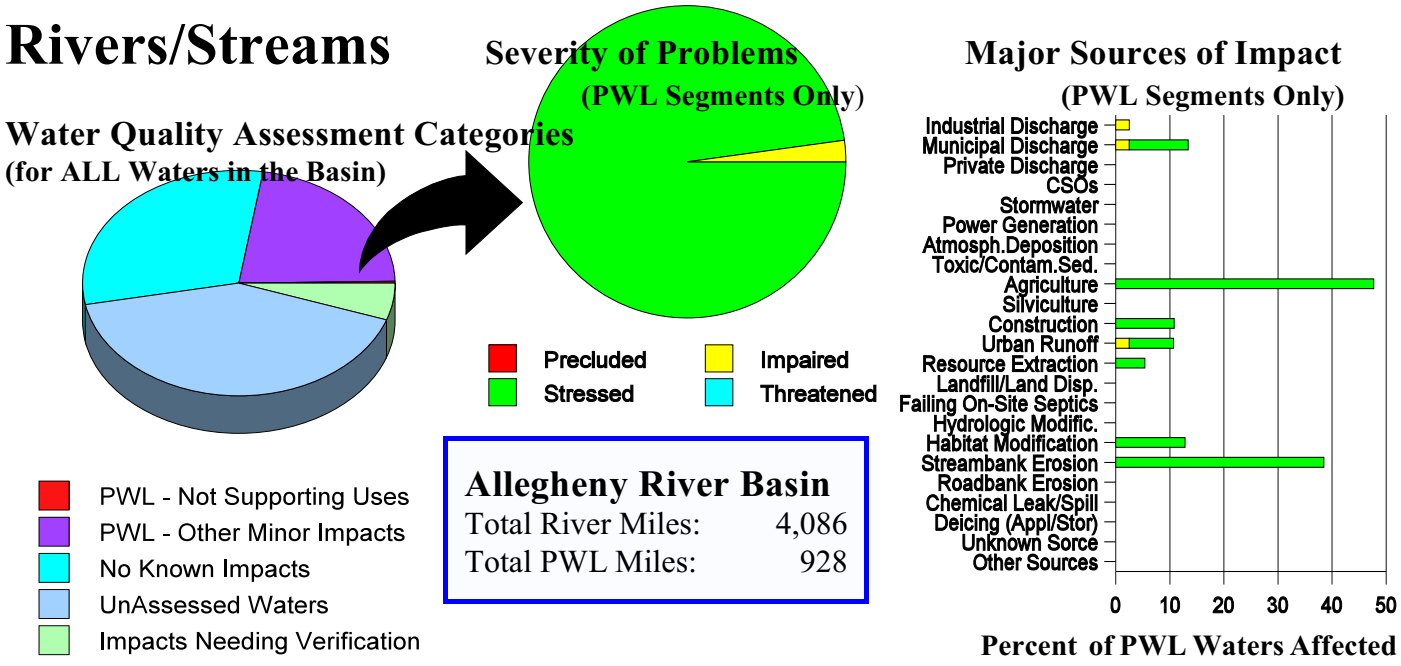
The second pie chart shows the severity of the most significant use impact or restriction for *Priority Waterbodies*. The levels of severity are:

Precluded:	waters do not support appropriate uses,
Impaired:	waters frequently do not support appropriate uses,
Stressed:	waters support appropriate uses, but other water quality impacts are apparent, and
Threatened:	waters support uses and have no impacts, but activities threaten future use support.

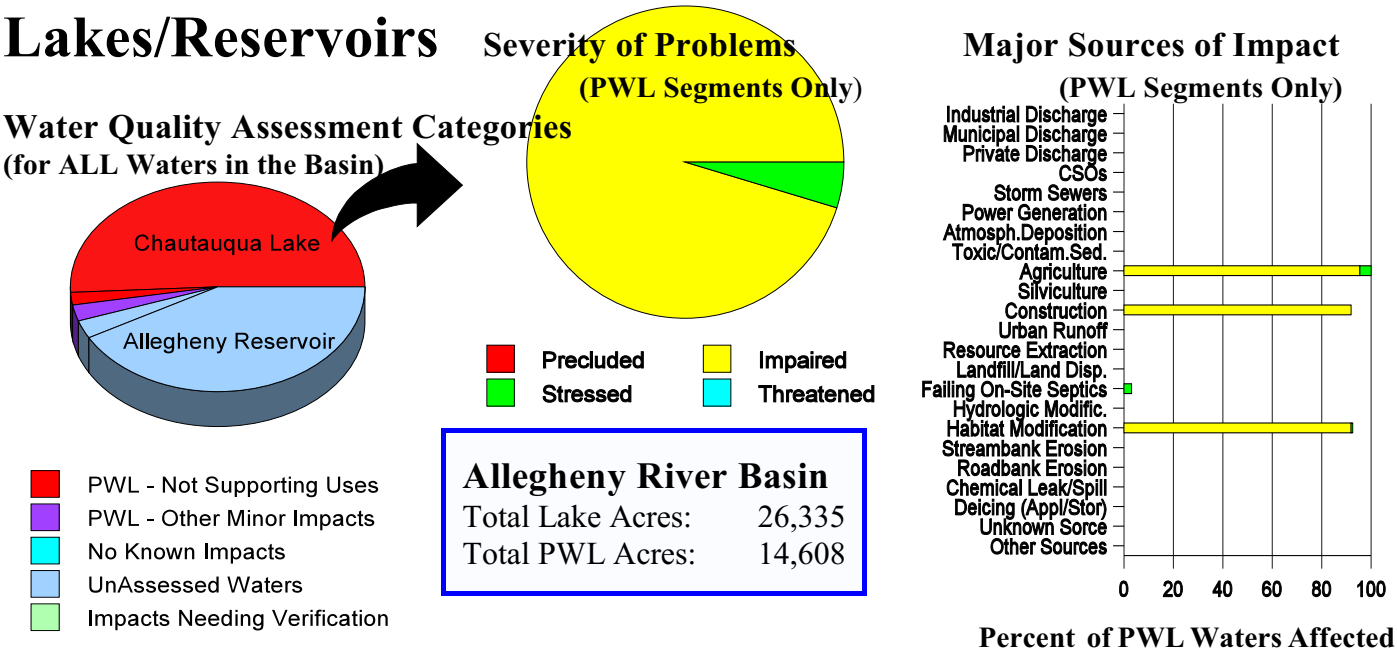
More detailed descriptions of these levels of severity are outlined in Appendix A - Assessment Methodology.

The bar charts indicate the pollutant sources that are most frequently cited as major contributors to the water quality impacts for *Priority Waterbodies* in the Allegheny River Basin. The charts reflect the percentage of miles/acres of the total waterbody area on the Priority Waterbodies List where the source is listed as a major contributor to the water quality impact. For each source, the color shading of the bar indicates the severity (*Precluded*, *Impaired*, *Stressed*, *Threatened*) of the most significant water use impact to the waterbody.

Rivers/Streams



Lakes/Reservoirs



Basin Water Quality Summary

A total of 928 or about twenty-two percent (23%) of the river miles in the Allegheny River Basin are listed on the Priority Waterbodies List as either not supporting uses or having minor impacts or threats to water quality. Virtually all (97%) of the impacted river miles are considered *Stressed* or *Threatened* waters that fully support appropriate uses, but that have minor impacts/threats. Less than three percent (3%) of basin river miles are *Impaired* and do not support appropriate uses.

Nine of the 23 separate lake segments in the basin are included on the PWL as having impaired uses or minor impacts/threats to uses. Altogether these impaired/impacted lakes represent 55% of the total lake acres in the basin. However, most (92%) of the PWL lake acres in the basin are represented by a single large lake - Chautauqua Lake. Chautauqua Lake is also represents 96% of the lake acres listed as *Impaired* where uses are not supported. The 10,987 acre Allegheny Reservoir is the largest lake/reservoir waterbody, representing 37% of the total lake acres in the basin. Although there are no apparent water quality issues in the reservoir, a full assessment of this waterbody has not been completed.

The most frequently cited source of impact to the waters of the basin is agriculture. Habitat modification (invasive species) and construction (lakeshore development) are associated with impacts to Chautauqua Lake, with dominates lake concerns in the basin. Streambank erosion is noted in about 40% of impacted river miles. Municipal/industrial sources and urban runoff in the Jamestown/Falconer area are the primary source of those river/stream waterbodies quality that are identified as not supporting uses.

Figure 2 - Allegheny River Basin Water Quality Assessment Map

The 2003 Allegheny River Basin Waterbody Inventory/Priority Waterbodies List

This inventory of water quality information includes individual waterbody *Data Sheets* describing the water quality conditions in the Allegheny River Basin of New York State. Causes (pollutants) and sources of water quality problems for those waterbodies with known or suspected impacts are also outlined.

The data sheets on the following pages are compiled in hydrological order and grouped by US Geological Survey Hydrologic Unit Code (HUC) basin and smaller watersheds in the Allegheny River Basin (see Figure 2). An outline of the specific waterbodies in each watershed is presented at the beginning of each Watershed Section. Data sheets are included for each waterbody that has been assessed; that is, waterbodies listed as ***Impaired Segments, Segments with Minor Impacts***, ***Threatened Waters,*** waters with water quality impacts ***Needing Verification***, or waterbodies with ***No Known Impact***. ***UnAssessed*** waterbodies are listed in the hydrologic outline of waterbodies at the front of each Watershed Section; however, separate data sheets for these segments are not included.

The information outlined on the data sheets includes *Waterbody Location Information*, *Water Quality Problem/Issue Information*, *Resolution/Management Information* and *Further Details*. More explicit explanations of these data fields are outlined in Appendix B - *Waterbody Inventory Data Sheet Background Information*.

Note also that the inventory reflects the best available water quality information at the time of publication. Water quality information may be added or modified subsequent to the preparation of this edition of the Waterbody Inventory and Priority Waterbodies List. When water quality information is updated, the corresponding waterbody segment data sheet is issued with an appropriate revision date. The information on more recently revised data sheets supercedes the information in this listing.

In addition to the more detailed data sheets, a *Summary Listing of Priority Waters* provides a brief overview of all ***Priority Waterbodies*** (i.e., *Impaired Segments, Segments with Minor Impacts* and/or *Threatened Waters*). This listing follows the Data Sheet Section of the report.

Cross-referenced lists of the waterbody data sheets are included at the end of the report as Appendix C - County Index of Data Sheet Segments and Appendix D - Alphabetic Index of Data Sheet Segments.

Figure 3

Allegheny River Drainage Basin Watersheds