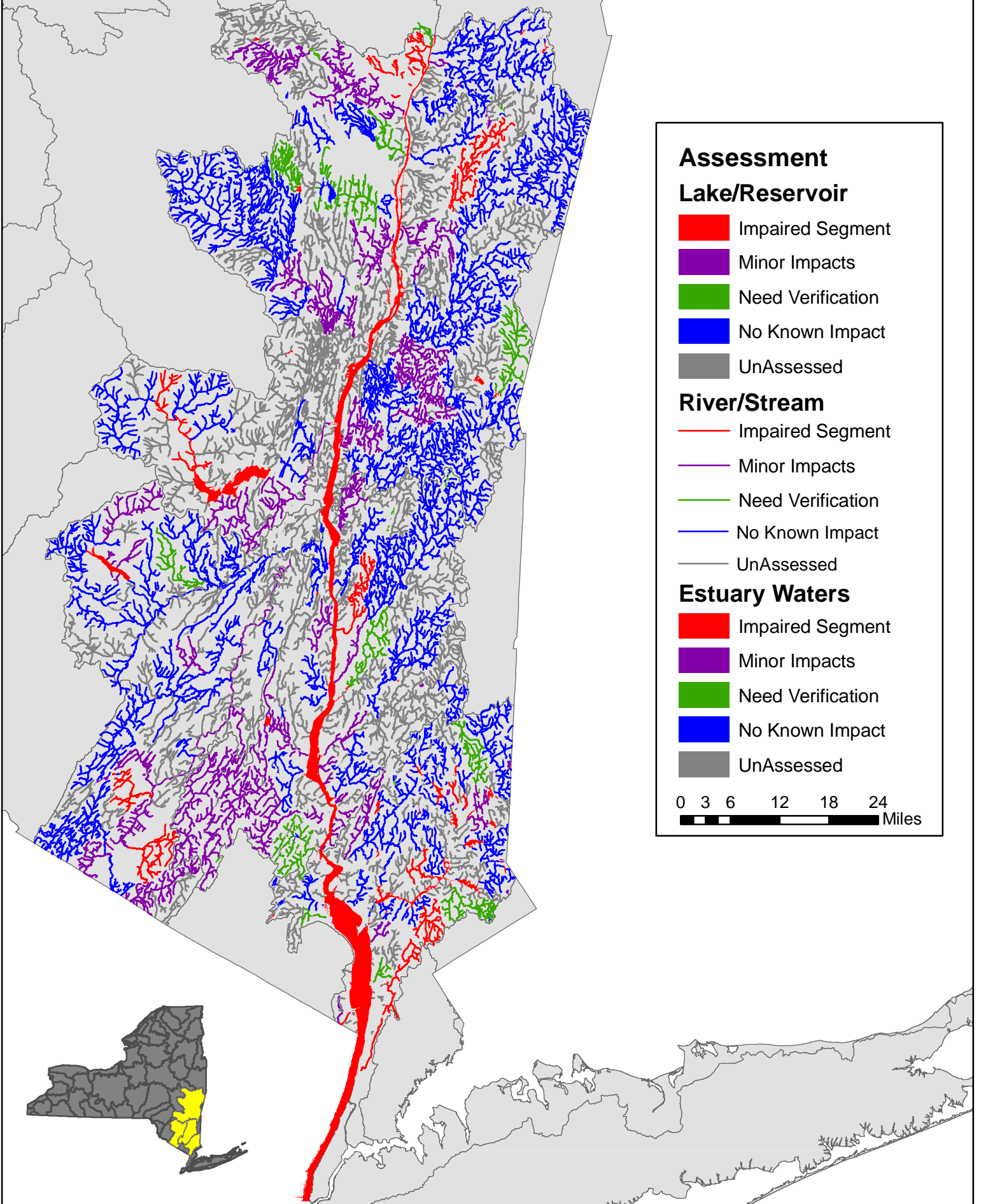


Lower Hudson River Basin WI/PWL Water Quality Assessment



Summary of Lower Hudson River Basin Water Quality and Issues

The Hudson River Basin -- which includes the Upper Hudson and Mohawk River watersheds as well as the Lower Hudson -- is one of the largest drainage basins on the eastern seaboard. Together, the three watersheds drain 13,300 square miles that includes much of the eastern 25% of New York State and small portions of Connecticut, Massachusetts, Vermont and New Jersey. The Lower Hudson Drainage Basin includes the waters of and tributary to the Hudson River between its mouth at the Battery in New York Harbor and Federal Dam in Troy. The drainage area of the Lower Hudson covers 5276 square miles in New York State including most of Westchester, Putnam, Dutchess, Orange, Ulster and Columbia Counties, large parts of Rockland, Greene, Albany and Rensselaer Counties and borders New York (Manhattan) and Bronx Counties in New York City.

The population of the Lower Hudson River Basin totals about 1,694,000⁴ (1990). It is a very diverse region with natural forests, lightly populated rural and agricultural areas, intensively developed suburban residential communities and a number of highly urbanized cities, including a portion of the New York City metropolitan area. The majority of the basin population is located in its southern (New York City) and northern (Capital District) regions, and in larger cities along the Hudson (Poughkeepsie, Kingston, Newburgh).

For its entire 150 mile length, the Lower Hudson River is a tidal estuary. The river, tidal shoreline areas and the lower tidal portions of some tributaries cover 73,720 acres. Approximately 3,200 miles of rivers and streams tributary to the Hudson lie within New York State. Lakes within the New York State portion of the basin number more than 750 with a total lake surface area exceeding 39,000 acres.

Hackensack-Ramapo Watershed

The Hackensack and Ramapo Rivers drain about 265 square miles of Rockland and Orange Counties before flowing south into New Jersey. The character of the region ranges from highly developed to fairly rural residential, with a New York State population of 223,400 (1990). Within New York State, this watershed includes an additional 230 miles of rivers/streams and 1,265 lake acres.

For logistical reasons, the smaller *Hackensack-Ramapo Rivers* and *Housatonic River* Watersheds are monitored and assessed in conjunction with the Lower Hudson River Basin. Water quality information for these drainage areas are incorporated in this report.

Housatonic River Watershed

The Housatonic River flows along the eastern New York State border draining about 165 square miles of rural Putnam, Dutchess and Columbia Counties. The New York State population within the watershed totals 19,960 (1990). This portion of the watershed includes about 230 miles of rivers/streams and approximately 65 lake acres.

Water Quality Issues/Problems

As noted previously, the Lower Hudson River Basin is quite diverse in character and land use. Undisturbed forests, thriving agricultural areas, busy and growing residential suburbs and some of the most densely populated areas of the country can all be found within the boundaries of the basin. Consequently, water quality issues and problems in the basin are also quite varied.

Hudson River PCBs

¹ Population estimate does not include populations of New York and Bronx Counties. The populations of these areas are included in the Atlantic Ocean/Long Island Sound Basin assessment.

One of the most notable water quality problems in the Lower Hudson Basin is the effect of toxic/contaminated sediment in the estuary of the Hudson River main stem. This contamination is primarily the result of historic PCB discharges in the Upper Hudson and has resulted in extensive fish consumption advisories including a prohibition on the commercial harvesting of striped bass. Restrictions on the consumption of blue crabs are also in place. The entire main stem of the Lower Hudson River – representing 100% of the estuary waters in the basin – are listed as have use (fish consumption) impairments due to toxic/contaminated sediment.

Urban/Suburban Development

The Hudson and tributary waters in the southern portion of the basin are significantly affected by runoff from urban and extensively developed suburban areas. One third of the rivers and lakes on the basin PWL cite urban runoff as the primary source of impairment. Rapid population growth in the Lower Hudson has also caused many wastewater treatment plants to reach their design capacities sooner than originally expected. This growth is reflected in the frequent listing of occurrence of streambank erosion, failing and/or inadequate on-site septic systems and municipal discharges as primary sources of water quality impairments. Continuing development and the resulting impact on water quality is likely to remain a concern into the future as well.

More than 60% of the lake and reservoir acres in the basin are listed as having a use impairment. Generally these impairments involve limitations on recreational uses, such as swimming, boating and fishing. However a number of drinking water supply reservoirs, including portions of the extensive New York City drinking water supply system are also restricted or threatened. The primary threat to these reservoirs is residential/commercial development and associated urban/suburban runoff of sediment and nutrient loads that promote eutrophication and silt/sediment attributed to streambank erosion.

Due to their primary use as a drinking water supply, all public water supply reservoirs (including New York City Watershed reservoirs) are considered *Priority Waterbodies*. In some instances these waterbodies are listed because of existing impairments to water quality. But even where current water quality is satisfactory drinking water reservoirs are designated as *Special Protection* waters, indicating a highly valued resource worthy of additional protection and consideration.

Agricultural Activities

In other primarily rural areas of the basin, various agricultural activities have been cited as a significant sources of pollutants (primary source for 25% of affected river miles). Although frequently cited, the severity of the water quality impacts from agriculture is somewhat less than other sources. These agricultural sources contribute silt, sediments, nutrients, oxygen demanding organic wastes and some pesticides to the waters.

Hudson River Estuary Program

In an effort to more effectively resolve water quality issues in the Lower Hudson Estuary, New York State initiated a comprehensive management planning process for the Hudson River Estuary in 1987. This initiative was a response to the passage of Section 11-0306 of the Environmental Conservation Law, the Hudson River Estuary Management Act. The Hudson River Estuary Management Plan, released in July 1996, combines the goals and objectives of the Department's Divisions of Water, Living Resources, Marine Resources and Lands and Forest into one ecosystem-oriented planning program. To guide the implementation of the program, an *Estuary Action Plan* is developed every two years which identifies specific actions to be undertaken by NYS DEC and others. The plan incorporates the many ongoing programs of the Division of Water and identifies specific target areas that need improvement in the Hudson estuary, including: sediment contamination remediation, municipal wastewater treatment and management