Managing the Waters of the Delaware River Basin

by Peter Freehafer

The Delaware River Basin in New York is a major component of the Catskill watershed, encompassing most of Sullivan County, a large part of Delaware County and smaller parts of Broome, Chenango, Greene, Orange, Schoharie, and Ulster counties. The Delaware River is also an important water source for the states of New Jersey and Delaware, the Commonwealth of Pennsylvania and the Delaware Bay estuary. Its normally plentiful water resources support diverse and bountiful ecosystems, a wide variety of recreational opportunities, many municipal water supplies and other beneficial public uses. While such water resource richness is generally beneficial, this area also suffers from repeated catastrophic flooding.

Of the nearly 12,800-square-mile watershed, approximately 2,390 square miles fall within New York State. The upper Delaware River in New York includes 4,062 miles of rivers and streams and 188 significant (greater than 6.4 acres) lakes, ponds and reservoirs, covering nearly 25,000 acres. Principal features include numerous high quality trout fishery waters and three New York City Water Supply System reservoirs: Cannonsville, Neversink and Pepacton. Releases and diversions from these reservoirs, which provide 50 percent of New York City's water, are an integral part of water resource management in the Delaware River basin.

Map courtesy of USGS Office of the Delaware River Master

Map showing regional scope of the Delaware River Basin

Regulating Releases

New York City's Delaware River Basin releases from the Cannonsville, Neversink and Pepacton reservoirs are governed by a 1954 United States Supreme Court Decree (Decree). New York State was a participant in the lawsuit that led to the Decree, along with New York City, New Jersey, Pennsylvania, and Delaware (Decree Parties). The Supreme Court designated a Special Master to study and resolve the lawsuit in an equitable manner. The resulting Decree was a continuation of and replacement to an earlier 1931 Decree that originated when the Neversink and Pepacton reservoirs were constructed. The 1954 Decree defined the rights and obligations of each Decree Party with respect to water use in the Delaware River Basin. The most important components of the Decree are:

1. New York City is authorized to divert 800 mgd (million gallons per day) out of the basin, but must make compensating releases so that the flow of the river at Montague, New Jersey is not less than 1,750 cubic feet per second.
2. New Jersey is authorized to divert 100 mgd out of the basin, without any requirement for compensating releases.
3. A portion of water stored in the reservoirs is annually allotted to downstream uses as the Excess Release Quantity (ERQ).

NYSDEC, Jim Clayton

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Any alteration of the operating policies or procedures of the Decree requires unanimous approval of the Decree Parties.

A Flexible Flow Management Program (FFMP) was implemented by the Decree Parties on October 1, 2007, and will be effective through May 2011. It was the result of over three years of negotiations and included input from community groups and interested individuals, primarily through the Delaware River Basin Commission (DRBC) Regulated Flow Advisory Committee and its Subcommittee on Ecological Flows. The FFMP generally uses higher base releases to promote wildlife habitat rather than rely on fixed storage banks for temporary relief from adverse conditions. It also attempts to reduce the frequency and duration of spills, which could help to reduce the severity of floods.

New York State, in consultation with New York City, also participates with Delaware, New Jersey, Pennsylvania and the federal government in the DRBC. The members of the DRBC comprise the four state governors and a presidential appointed federal government representative. The DRBC strives to conserve and protect water resources and improve water use in the Basin for the benefit of the Basin as a whole. The DRBC is essentially the only means whereby surface and groundwater water withdrawals and consumptive uses are regulated. (Also see DRBC article on page 62.)

Its 2007 Delaware River Basin Interstate Flood Mitigation Task Force includes 45 consensus recommendations for mitigating flooding throughout the Delaware Basin.

Balancing what can be competing needs and making the best use of available water is a challenge for the region's water resource managers. Thankfully, many dedicated entities, including private citizens, local interest groups, national organizations such as Trout Unlimited, the Nature Conservancy, Delaware Riverkeeper Network and others, contribute to the work state and local agencies and multi-state river commissions must face. Conserving and protecting water resources have become even more important with climate changes and the potential for large scale natural gas extraction activity. Working together, continued improvement to water resources management in the Delaware River Basin will be achieved.

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