

## Hydrologic Conditions – December 2017

The Hydrologic Conditions Mapper for New York State has been updated for the month of December 2017 and can be accessed at:

<http://ny.water.usgs.gov/projects/eom/>

During December monthly precipitation totals averaged 2.3 inches and 0.9 inches below normal quantities across most of the State. However, precipitation quantities ranged from 5.9 inches (1.5 inches above normal quantities) in Lewis County in the Tug Hill Plateau region of northern New York to 0.8 inch (1.7 inches below normal quantities) in Chemung County in south-central New York. Although the lowest precipitation totals were recorded in this part of NY, the largest monthly deficits were in the southeastern corner of the State where the precipitation total in Rockland County was 2.6 inches below normal quantities.

Whereas normal flow conditions generally existed in western and northern New York, below-normal conditions existed in the central and southeastern parts of the State and at almost two-thirds of the index streamflow sites. December is the first month since April 2017 that below-normal flow conditions dominated the State. This outcome might be partly due to cold temperatures that tied up some of the precipitation in a snowpack, but it is also due to the below-normal precipitation quantities as discussed above. Below-normal flows existed at the index streamflow site on Long Island where, except for January 2016, monthly streamflows have been below-normal levels since July 2015. A Drought Watch designation, as issued by NYS Department of Environmental Conservation (DEC), has continued in effect for Nassau and Suffolk Counties since July 2016. Ice formation affected flows on many streams, but this effect ranged from no ice-days in the southeastern part of the State to several days during the middle and again at the end of the month in the central part of the State to over half the month at northern sites. No flooding was reported during the month.

Water levels along the Lake Ontario shoreline dropped only 0.3 ft from the monthly average level recorded during November and appear to be approaching winter-time low levels. Average lake levels during December were about 0.8 ft above long-term monthly average water levels (<https://www.glerl.noaa.gov/data/dashboard/GLWLD.html>).

New York City reservoirs were collectively at about 74 percent of capacity at the end of the month; less than the normal storage capacity of about 87 percent ([http://www.nyc.gov/html/dep/html/drinking\\_water/maplevels\\_wide.shtml](http://www.nyc.gov/html/dep/html/drinking_water/maplevels_wide.shtml)). This discrepancy reflects the below-normal precipitation quantities that were recorded in the Catskill Mountains region during December.

Forty-six percent of the index groundwater wells reported normal water levels for the month. Ten percent reported above-normal water levels and 44 percent reported low-to-very-low water levels. Although wells in each classification could be found across the State, it appeared that wells with normal and above-normal levels were clustered in west-central and northern NY; whereas wells with below-normal levels were found in the east-central and southeastern parts of the State. Water-table wells (14 percent) recorded a higher percentage of wells with water levels in their respective above-normal ranges compared to bedrock wells (3 percent). However, higher percentages of bedrock wells had water levels in their respective normal and below-normal ranges than did water-table wells. Of the 91 reporting wells, 5 wells reported new record high monthly median levels and 15 reported new record low monthly median levels for December; most of these wells (17) have periods of record less than 16 years. Although the Hydrologic Conditions Mapper showed only four reporting wells on Long Island—two of which reported below-normal water levels—the USGS Groundwater Watch (at <https://groundwaterwatch.usgs.gov/>) showed that the majority of wells in central and western Suffolk County reported below-normal water levels at the end of December.

Exceedance percentages shown on the Hydrologic Conditions Mapper are calculated for individual USGS sites. This information along with additional information from other Federal, State, and local agencies assist the NYSDEC and the State Drought Management Task Force to evaluate regional conditions for determination of drought classifications.

William F. Coon, Surface-Water Specialist, New York Water Science Center  
Phone: 607-266-0217, ext. 3019

Email: [wcoon@usgs.gov](mailto:wcoon@usgs.gov)