Prepared in cooperation with the New York State Department of Environmental Conservation

Low-Flow Statistics for Selected Streams in New York, Excluding Long Island

Scientific Investigations Report 2024–5055

U.S. Department of the Interior
U.S. Geological Survey

Cover. Photograph of the confluence of the upper Esopus Creek and Birch Creek in the Catskill Mountains of New York, October 2022. Photograph by Don Bonville, U.S. Geological Survey.

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Contents

Figures

Conversion Factors

U.S. customary units to International System of Units

Multiply	By	To obtain
square mile (mi^2)	2.590	square kilometer (km^2)
cubic foot per second (ft^3/s)	0.02832	cubic meter per second (m^3/s)

Datum

Horizontal coordinate information is referenced to the North American Datum of 1983 (NAD 83).

Abbreviations

α	statistical significance level
30Q10	the lowest annual 30-day average streamflow that occurs (on average) once every 10 years
7Q10	the lowest annual 7-day average streamflow that occurs (on average) once every 10 years
NWIS	National Water Information System
NYSDEC	New York State Department of Environmental Conservation
USGS	U.S. Geological Survey

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Abstract

The U.S. Geological Survey, in cooperation with the New York State Department of Environmental Conservation, updated low-streamflow statistics for New York, excluding Long Island and including hydrologically connected watersheds in bordering States, for the first time since 1972. Historical daily streamflow data for active and inactive gages were considered for this study with periods of record as recent as March 31, 2022, adding 50 years of data to the last published low-streamflow statistics report for New York and including 119 new gages where low-streamflow statistics are calculated for the first time. Gages were evaluated across several criteria to identify gages that were not suitable for low-streamflow frequency analysis. In addition, gages were evaluated for the presence of alteration within the streamflow period of record based on previous studies and U.S. Geological Survey National Water Information System site metadata including peak flow codes.

A trend analysis was performed using the Wilcoxon rank-sum hypothesis test comparing data from the most recent 30 years of record to data from 30 years and earlier for each long-record gage (30 years or more of available data). Results from the trend analysis indicated that 45 unaltered and 32 altered long-record sites had a statistically significant trend for the annual minimum *n*-day time series; most gages showed increasing trends in the annual minimum *n*-day time series. Low-streamflow statistics were calculated using the most recent 30 years of record for gages with a statistically significant trend. Before and after 1972, the lowest annual 7-day and 30-day average streamflow that occurs (on average) once every 10 years (7Q10 and 30Q10 statistics respectively) increased significantly at 41 unaltered gages and decreased significantly at 3 unaltered gages where data were available.

Introduction

Reliable information about the magnitude, frequency, and duration of low streamflow is critical for water-supply management; reservoir design; waste-load allocation; and the preservation of water quality and quantity for irrigation, recreation, and ecological conservation purposes. Low-streamflow frequency and duration information are particularly important in regions and States that are periodically affected by drought, including New York. As part of their mission to protect public health and aquatic ecosystems, State agencies such as the New York State Department of Environmental Conservation (NYSDEC) need accurate and representative low-streamflow statistics to establish realistic and applicable criteria for both water quality and water quantity (NYSDEC, [1998]). For example, low-streamflow statistics, such as the lowest annual 7-day or 30-day average streamflow that occurs (on average) once every 10 years (7Q10 or 30Q10, respectively), have been used by NYSDEC water-resource managers and planners as a threshold criterion for applying for regulatory measures affecting chronic aquatic life (for which 7Q10 data are used) or chronic human health (for which 30Q10 data are used). These statistics are further used by NYSDEC to regulate waste-load allocations for point sources and total maximum daily loads for streams (NYSDEC, [1998]). To that end, the U.S. Geological Survey calculated low-streamflow statistics of New York with the NYSDEC.

Given the importance of these applications, it is critical to effectively measure and document low-streamflow data for characterizing low-streamflow frequency relations on a regular basis, preferably every 10 years, and especially after periods of extremely low streamflow (Feaster and Lee, 2017; Farmer and others, 2019). Recent droughts (2016, 2020, and 2022) in New York (U.S. Drought Monitor, 2023) have heightened the need for pertinent low-streamflow information for State and local agencies to make critical water-resources decisions. Low-streamflow statistics in New York have not been updated statewide since 1972 (Eissler, 1978), and low-streamflow characteristics in New York may have been changing since that time (Suro and Gazoorian, 2011; Dudley and others, 2020). The objective of this study was to compute new 7Q10 and 30Q10 low-streamflow statistics for New York (excluding Long Island) and hydrologically connected watersheds in bordering States.

Study Area and Gage Selection

The study area consists of the State of New York and hydrologically connected streams from bordering States of Pennsylvania, New Jersey, Connecticut, Massachusetts, and Vermont (fig. 1). Site-specific metadata and daily average streamflow data were accessed using the R package dataRetrieval (R Core Team, 2020; De Cicco and others, [2014]) from the U.S. Geological Survey (USGS) National Water Information System (NWIS) database (USGS, 2016) for 684 active or discontinued gages across New York, and an additional 79 gages from bordering States. A total of 763 gages with daily average streamflow data were available in the study area. Based on the gage-selection criteria described throughout this section, 394 gages met all gage-selection criteria.

First, 29 Long Island gages were removed from this study because Long Island has unique hydrologic characteristics and those gages are affected by varying degrees of urbanization and regulation (Glas and others, 2023). Accurate low-streamflow statistics for Long Island would require additional analysis beyond the scope of this study.

Second, 270 gages with less than 10 years, or 3,652 days, of available daily streamflow records were removed from the study. Typically, low-streamflow statistics are computed for streams when at least 10 years of continuous daily record are available (Lukasz, 2021; Williams-Sether, 2021; Hammond and others, 2022a). However, statistics computed from longer-term records (typically 30 years or more of available data) are preferred because they are likely to be more representative of a broader range of hydrologic conditions. Thus, long-term streamflow data are better suited for trend assessments, but to be more inclusive of available data, gages with at least 10 years of data were included in this study.

Third, 29 gages had more than 20 percent of the period of record missing. Missing data is a common problem in hydrologic data analysis and there are several existing methods and guidance frameworks established for filling in or developing procedures to remove missing data (Gustard and Demuth, 2008). However, this study took a conservative approach in not estimating missing daily streamflow records. Based on Gustard and Demuth (2008), a threshold of 20 percent of missing days in the streamflow record was used to consider the record incomplete and exclude gages from the study.

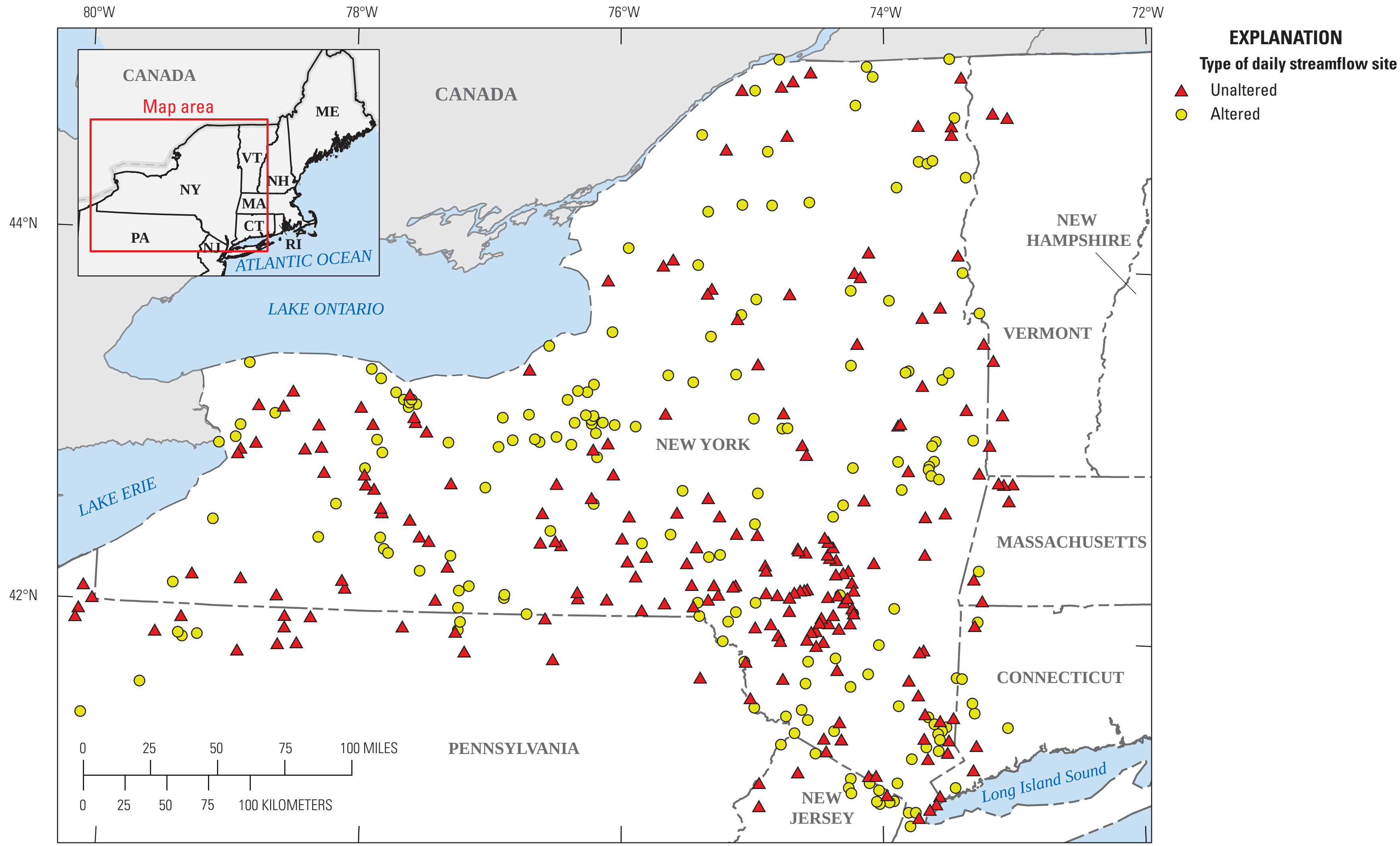
Fourth, 94 gages had records with days of zero streamflow and would therefore not be suitable to calculate low-streamflow statistics because log transformations are required to calculate 7Q10 and 30Q10. An exception was made for the Housatonic River at Stevenson, Conn. (station 01205500) gage which has a long period of record that includes one day with a recorded zero streamflow near the beginning of the period of record. The zero-streamflow observation for this gage was considered an outlier in magnitude when compared with the entire period of record, so to avoid disqualifying this record entirely, the time series was truncated to remove the zero-streamflow observation. Although including gages with observed zero-streamflow measurements is outside the scope of this study, an avenue for potential further study would include performing a logistic regression to better understand the probability of zero-streamflow observations occurring within these basins.

Fifth, nine gages were discontinued, where all recorded data were transferred to a nearby new gage. Novak (1985) indicated that two discharge records could be considered equivalent if they are on the same stream and there is less than a 5 percent difference in drainage area between the gages or differences in monthly discharge between the two gages could be expected to be less than 5 percent. These nine gages were not included in the study to avoid double counting their record.

Sixth, 16 gages were removed due to having less than 10 recorded climatic years. Low-streamflow metrics were computed on a climatic-year basis. A climatic year is a continuous 12-month period selected for the presentation of data relative to a hydrological or meteorological phenomenon of interest and is usually designated by the year of the first month in the 12-month period (Langbein and Iseri, 1960). In the Northeast, streamflow is typically lowest during the late summer months and highest during the earlier spring months, thus the climatic year from April 1 to March 31 was used for low-streamflow frequency analysis to increase the likelihood that the lowest streamflow values were captured within each climatic year.

In total, 369 gages were removed from this study given the gage-selection criteria (numerous gages met multiple removal criteria), and 394 gages remain for further analysis; this reflects an additional 119 gages analyzed since low-streamflow statistics were last calculated in 1972 (Eissler, 1978).

Developing models to estimate low-streamflow statistics for ungaged locations is difficult where streamflow has been altered by human influence and not reflected by natural basin characteristics, which are the primary predictors used to create a model. Therefore, the gages meeting selection criteria for this study were classified into two groups: 181 altered and 213 unaltered gages (fig. 1), where all historical data available were obtained up to March 31, 2022. Altered gages have documented alterations of observed daily streamflow due to human-related water use and management such as reservoir operations, surface water or groundwater withdrawals, diversions, engineered drainage systems, and impervious areas from urban development. For this analysis, altered gages were determined from previous work by Suro and Gazoorian (2011), and analysis of remark comments in the water-year summaries of individual gages on the USGS Water Data for the Nation website (U.S. Geological Survey, 2016) by flagging words associated with alteration (for example, “regulation,” “pumping,” and “diversion”). All gages classified as unaltered were compared with gage lists and regulation designations from statewide flood-frequency studies (Wall and others, 2014; Lumia and others, 2006) to determine whether peak streamflow values at the gage have been affected by some degree of regulation or diversion (specifically, peak streamflow



Base map from U.S Geological Survey, scale 1:3,000,000
Universal Transverse Mercator, zone 18 north
North American Datum of 1983

Figure 1. Map showing the 213 unaltered and 181 altered gages with daily streamflow evaluated for this study in New York and adjacent States.

codes 5 and 6; https://nwis.waterdata.usgs.gov/nwis/peak?help). In addition, all gages were evaluated for alteration by analyzing satellite imagery for the presence of upstream dams or other visible signs of alteration (for example, power plants or wastewater facilities) and by considering site information provided in databases including the Geospatial Attributes of Gages for Evaluating Streamflow, version II (GAGES-II; Falcone, 2011).

Methods for Calculating At-Site Low-Streamflow Statistics

The most common low-streamflow statistics used by organizations across the United States to inform decisions during low-streamflow periods are calculated using a moving average across a standard interval (typically a 7-day or 30-day period) of the daily average streamflow values (U.S. Environmental Protection Agency, 1986; Smakhtin, 2001). Low-streamflow statistics calculated using the moving average *n*-day values are representative of persistent low-streamflow periods within the daily streamflow record. The moving average 7-day and 30-day streamflow time series were calculated using daily average streamflow data available across all gages for this study, and the annual minimum 7-day and 30-day values were determined for each climatic year across the period of record.

Data Handling for Missing and Irregular Streamflow Values

Missing data within a daily streamflow time series are a persistent problem for hydrologic frequency analysis (Gustard and Demuth, 2008). Missing data can be present within a USGS daily streamflow time series for multiple reasons. For example, the gage may have only operated on a seasonal basis, the intention of the gage may have only been to measure a limited range of streamflow, or the gage may have been temporarily discontinued due to equipment failure, lost funding, or other related issues (Novak, 1985). For this study, missing daily streamflow data were classified as not available directly within the raw data time series obtained from NWIS. In addition, a streamflow value was classified as not available if a date or multiple dates were missing from the raw data time series obtained from NWIS, and the missing dates were added to the time series to create a set of continuous dates for all gages. Missing daily data and irregular timing of low streamflow (for example, lowest streamflow values occur during typical high-streamflow months) were flagged to determine if an individual climatic year should be removed if the data met any of the following criteria:

- The low-streamflow months of July, August, September, and October included any missing daily values.
- The annual minimum *n*-day value included missing daily values within the moving average *n*-day period.
- The annual minimum *n*-day value was within the first 7 or 30 days of April (the beginning of the climatic year), and the moving average window included daily data from the previous climatic year.

The annual minimum 7-day and 30-day time series for unaltered gages did not include any gages with missing daily data within any annual minimum *n*-day moving average values across all climatic years. The altered gages included 12 gages where at least one annual minimum 7-day (5 gages) or 30-day (7 gages) value for a climatic year includes at least one missing value within the moving average window; a climatic year meeting this criterion was removed from the period of record.

Figure 2 is a histogram of the month that the annual minimum 7-day values occurred for each climatic year across the period of record for all unaltered gages. The unaltered gages were used to determine the low-streamflow months because they are the most representative of natural climatic conditions within the study area. As expected, the annual minimum 7-day values occurred most often during July, August, September, and October. At least 1 climatic year was removed for 13 unaltered and 22 altered gages that had missing daily data during the low-streamflow months.

Any annual minimum *n*-day time series that spanned the end of one climatic year and the start of the next (March 31 to April 1) were not included in the annual minimum time series for a gage. The unaltered gages included 12 where at least 1 climatic year was removed for annual minimum 7-day (3 gages) or 30-day (9 gages) values near the start of a climatic year. Unaltered gages typically would not have annual minimum *n*-day values during the high-streamflow months. These gages were further evaluated, and it was determined that these values were high outliers when compared with the annual minimum values across the period of record.

The altered gages included 82 where at least 1 climatic year was removed for annual minimum 7-day (31 gages) and 30-day (51 gages) values near the start of a climatic year. Altered or minimally altered gages are more likely to include annual minimum streamflow values near the start of the climatic year during typically high-streamflow months because the observed streamflow may be consistent with the alteration patterns of a specific gage where the lowest streamflow values occur during the high-streamflow months (for example, station 01357499 is a diversion channel for the Erie Canal, where the locks are closed during the winter; the streamflow of station 01325000 is regulated by the Conklingville Dam, where the lowest streamflow values typically occur during the winter months).

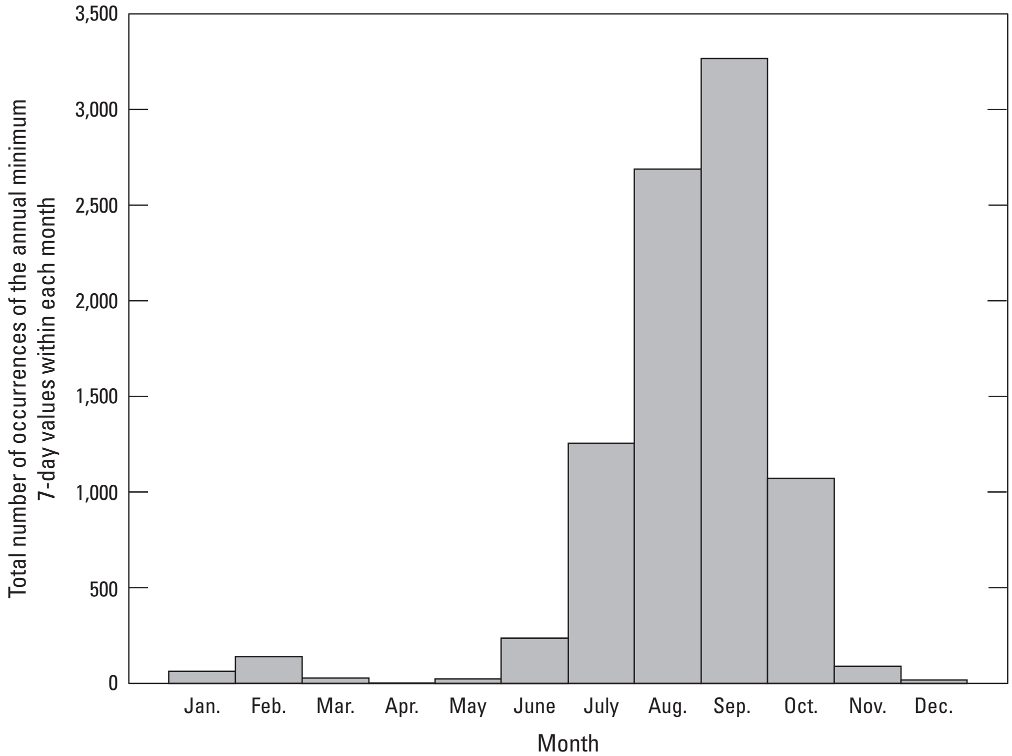


Figure 2. Graph showing the total number of occurrences of the annual minimum 7-day values within each month for all available data across unaltered gages in New York, excluding Long Island, that were included in this study.

The same climatic years were removed for the annual minimum 7-day and 30-day time series to ensure that the same years were used to calculate the 7Q10 and 30Q10 statistics for any gage to avoid a mismatch in the climatic years used to calculate each low-streamflow statistic. In total, 20 unaltered and 69 altered gages have at least 1 climatic year removed from the annual minimum 7-day and 30-day time series because of missing data during the low-streamflow months, missing daily data within the annual minimum *n*-day moving average window, or annual minimum *n*-day values near the start of the climatic year. Across all 213 unaltered and 181 altered gages, a total of 32 and 363 climatic years, respectively, were removed given the criteria listed in this section.

Trend Analysis

Recent studies have documented changes in precipitation patterns across the Northeast, and the need to account for trends in hydrologic frequency analysis to calculate accurate low-streamflow statistics (Dethier and others, 2020; Dudley and others, 2020; Hammond and others, 2022b). McCabe and Wolock (2021) investigated drought and pluvial periods using a simple water balance model across the conterminous United States from 1900 through 2014. Across most of the conterminous United States and in the Northeast, most severe drought events occurred before 1970 and the region has been in a sustained pluvial period for the last 50 years (McCabe and Wolock, 2021). In addition, Seager and others (2012) study precipitation patterns in the Catskill Mountains region and determined that a severe drought occurred during the mid-1960s, followed by a wet period that continues through the end of their study period (2007). Affecting most of the Northeast, the severe 1960s drought created long-lasting water supply issues and shaped future water policy across the region (Barksdale, 1968).

Blum and others (2019) and Vogel and Kroll (2020) find that using a recent subset of the period of record for frequency analysis improves the accuracy of low-streamflow frequency statistics when nonstationary conditions are observed. Blum and others (2019) use Monte Carlo simulation experiments with monotonic trends observed at gages in the Chesapeake Bay watershed and observe that, when a statistically significant trend in low streamflow was present, the best estimate of the 7Q10 statistic was more accurately computed using the most recent 30 years of historical record. Blum and others (2019) suggest a simple adaptive framework for computing 7Q10: use the most recent 30 years of the record when a statistically significant (α) trend was detected (at $\alpha \leq 0.1$) or use the full historical record.

Similar to the adaptive method developed by Blum and others (2019), this study used the Wilcoxon rank-sum hypothesis test to determine whether data from the most recent

30 years of record are statistically different from data from 30 years ago and earlier. The Mann-Kendall trend test was explored for this study but was ultimately not used because data gaps are included within the annual minimum *n*-day (7-day or 30-day values) datasets and this trend test requires little to no missing data to provide an accurate test result (Helsel and others, 2020). In addition, the two-sample *t*-test was explored for this study, but the log-transformed annual minimum *n*-day time series for each group appeared abnormal for most gages. The nonparametric two-sample Wilcoxon rank-sum hypothesis test compares two groups without any prior knowledge that either group would be higher or lower than one another (Helsel and others, 2020). The null hypothesis for this study states that the annual minimum *n*-day streamflow values from the most recent 30 years of available data come from the same distributions as data from 30 years and earlier within the period of record. A less stringent α=0.1 was used for this study to determine statistical significance of the hypothesis test.

Low-Streamflow Frequency Analysis

The low-streamflow statistics for 7Q10 and 30Q10 were calculated using the annual minimum 7-day and 30-day moving average of the daily average values for each climatic year across the available period of record for each gage. The Wilcoxon rank-sum hypothesis test results were used to determine which set of years were used to calculate the statistics, and then the annual minimum 7-day and 30-day time series were fit to a probability distribution to calculate the streamflow value associated with a specific probability of nonexceedance. The log-Pearson type III probability distribution was used to fit the *n*-day low-streamflow values for the low-streamflow frequency analysis (Bhatti and others, 2019). The log-Pearson type III distribution has been widely used to model low- and peak-streamflow statistics throughout the country (England and others, 2019; Helsel and others, 2020). The log-Pearson type III distribution of the *n*-day time series to determine the streamflow of the 10-year recurrence interval (Q_{10}) is defined as:

$$\ln(Q_{10}) = \mu_y + K_{10}\sigma_y, \quad (1)$$

where

μ_y is the log-space mean, and

σ_y is the log-space standard deviation of the *n*-day time series.

K_{10} is a frequency factor approximated by the Wilson-Hilferty transformation, which is a function of the nominal skew *G* (Kirby, 1972) defined as:

$$G = \frac{n\sum_{i=1}^{n}(Y_i - \mu_y)^3}{(n-1)(n-2)\sigma_y^{\,3}}, \quad (2)$$

and

$$K_{10}(G) = \frac{2}{G}\left(1 + \frac{G Z_{10}}{6} - \frac{G^2}{36}\right)^3 - \frac{2}{G} \quad , \quad (3)$$

where

n is the number of climatic years,

Y_i is the log-transformed annual minimum *n*-day value for a specific climatic year (*i*), and

Z_{10} is the 10th percentile from the standard normal distribution.

Low-Streamflow Nonexceedance Frequency Analysis

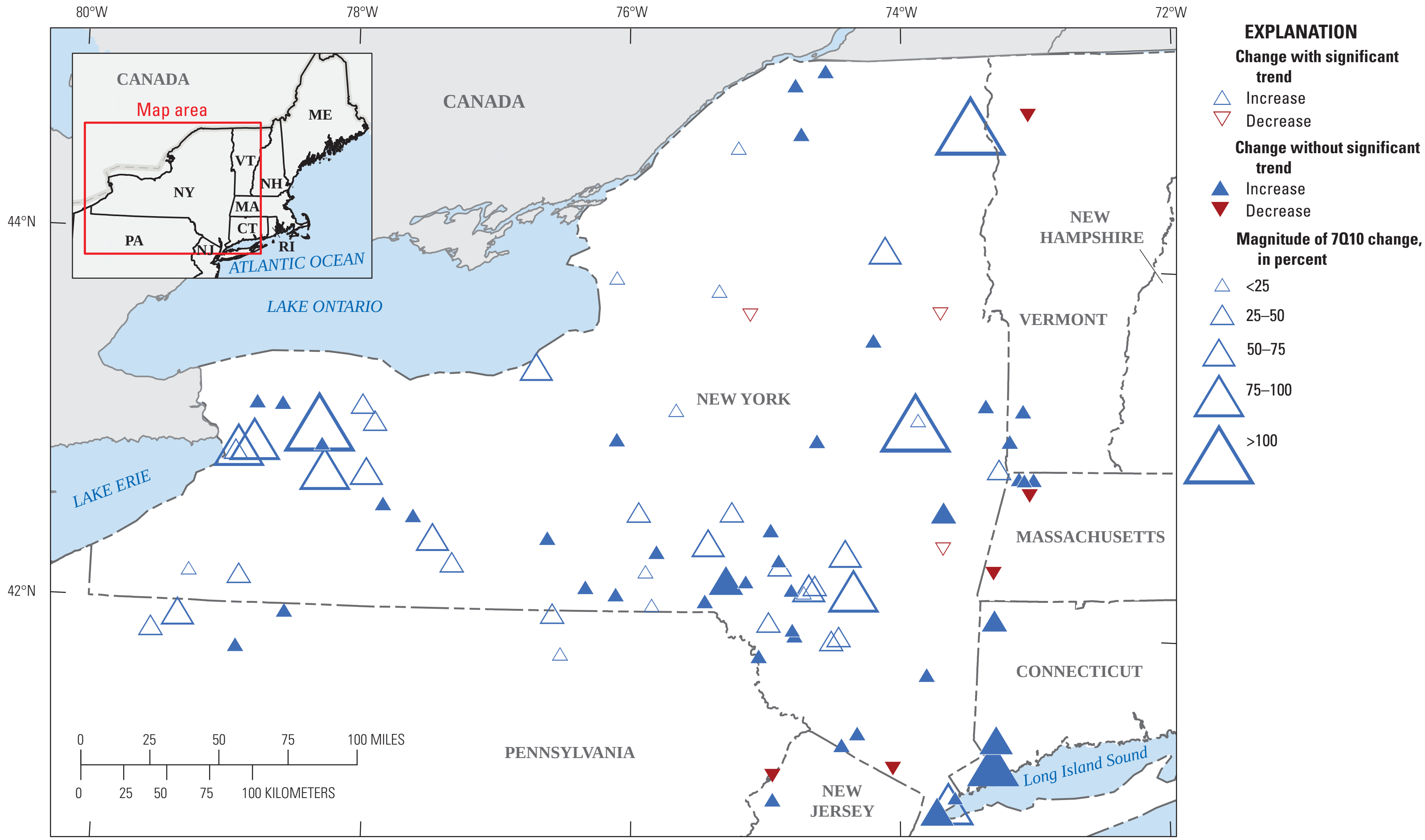
The nonexceedance probability tables were determined for the daily moving average 7-day and 30-day values for the 102 altered gages determined not to be suitable for low-streamflow frequency analysis (Stagnitta and others, 2024). The nonexceedance probabilities of the *n*-day average time series were determined using Weibull's plotting position to rank the daily *n*-day average streamflow values constructing an empirical cumulative distribution (Langbein and Iseri, 1960). These nonexceedance percentiles should not be construed to be a representation of a low-streamflow frequency, but as an empirical representation of recorded *n*-day average streamflow values.

Results

Low-streamflow frequency analysis requires detailed methods to account for missing data or trends to ensure that low-streamflow statistics are accurately calculated to represent current conditions. Results from the trend analysis are detailed in the following section, including a comparison of 7Q10 values calculated pre- and post-1972.

Trend Analysis

Low-streamflow statistics for New York State were last calculated using data from 1972 and earlier (Eissler, 1978). The comparison of the 7Q10 values for 91 long-record (30 years or more of available data) unaltered gages where data were available pre- and post-1972 is shown in figure 3. Across 83 of the 91 gages, 7Q10 values have increased since 1972, with the largest changes occurring in the western, Catskill, and Adirondack regions of the State. Of the 83 unaltered sites with an increase, 41 of the increases were statistically significant ($\alpha \leq 0.1$) and averaged 46 and 48 percent for



Base map from U.S Geological Survey, scale 1:3,000,000
Universal Transverse Mercator, zone 18 north
North American Datum of 1983

Figure 3. Map showing a comparison of the lowest annual 7-day average streamflow that occurs (on average) once every 10 years (7Q10) values for 91 long-record (30 years or more of available data) unaltered gages with data available pre- and post-1972. 7Q10 values were calculated with data from before 1972 and data available from the entirety or a subset of the period of record depending on results from Wilcoxon rank-sum hypothesis test. Gages where 7Q10 increased from pre-1972 data are marked with an upward blue triangle. Gages where 7Q10 decreased from pre-1972 data are marked with a downward red triangle. The size of the triangle corresponds to the positive or negative percent change from pre-1972 7Q10 versus 7Q10 calculated for this study. Gages marked with a filled triangle indicate that no significant trend (α=0.1) was found at the gage. >, Greater than; <, less than.

the 7Q10 and 30Q10 values, respectively. Of the 8 unaltered sites with a decrease, 3 of the decreases were statistically significant ($\alpha \leq 0.1$) and averaged 9 and 8 percent for the 7Q10 and 30Q10 values, respectively.

Of the 213 unaltered gages, 121 gages had at least 30 years of available data and were evaluated for nonstationarity. The null hypothesis was rejected for 45 unaltered gages at α=0.1 significance level and the most recent 30 years of available data were used to calculate low-streamflow statistics for these gages. The remaining 76 unaltered gages failed to reject the null hypothesis, and the entire period of record was used to calculate low-streamflow statistics. In addition, for the remaining 92 unaltered gages where no hypothesis testing was performed, the entire period of record was used to calculate low-streamflow statistics because these gages had less than 30 years of available data.

The annual minimum 7-day time series for all altered gages were visually inspected to determine whether there was an irregular change in the annual minimum values and whether the overall trend displayed was inconsistent with the underlying natural condition of increasing low-streamflow values in the study area (fig. 3; for example, the annual minimum values showed an irregular pattern due to inconsistent surface water withdrawals near the gage). Of the 181 altered gages inspected, 79 displayed consistent trends of the annual minimum 7-day time series and were suitable for low-streamflow frequency analysis. Of the 79, 73 had at least 30 years of available data and were evaluated for nonstationarity. The null hypothesis was rejected for 32 altered gages at α=0.1 and the most recent 30 years of available data were used to calculate low-streamflow statistics. The remaining 41 altered gages failed to reject the null hypothesis, and the entire period of record was used to calculate low-streamflow statistics. In addition, for the remaining six altered gages where no trend analysis was performed, the entire period of record was used to calculate low-streamflow statistics because these gages had fewer than 30 years of available data.

For gages that exhibited different hypothesis test results for trends in the annual minimum 7-day and 30-day time series, the entire period of record was used to calculate low-streamflow statistics and the same set of years were used for each *n*-day time series.

Low-Streamflow Frequency Analysis

Stagnitta and others (2024) and table 1.1, located in appendix 1, include the 7Q10 and 30Q10 values calculated for all 213 unaltered and 79 altered gages.

Discussion

Methods for handling missing and irregular data ensure accurate and consistent streamflow values are included to calculate low-streamflow statistics that best represent low-streamflow conditions observed within the study area. This analysis provides methods to flag and remove outlier annual minimum *n*-day values from the low-streamflow time series. Most climatic years were included across all gages for this study, where only 20 unaltered and 69 altered gages were flagged to remove at least 1 climatic year from the period of record.

A trend analysis of the annual minimum *n*-day values ensures that the low-streamflow frequency analysis using historical annual values represents current conditions observed within the stream. Performing a low-streamflow frequency analysis may not yield the most accurate and least biased estimate of current *n*-day low streamflow when there are statistically significant trends in the data. More than half of the gages had long records (30 years or more of available data), where 45 unaltered and 32 altered gages had a statistically significant trend in the data, and the most recent 30 years of available data were used to calculate low-streamflow statistics.

The rise in values of low-streamflow statistics statewide is consistent with findings from other studies across the Northeast and may be attributed to increased precipitation across the region for much of the last 50 years (McCabe and Wolock, 2021; Seager and others, 2012). Further analysis is needed to understand the drivers and covariates of trends in low streamflow across New York. A trend analysis of low-streamflow statistics along with precipitation, groundwater storage, anthropogenic variables, and other variables of interest is needed to better understand the causes of changes to low streamflow at both unaltered and altered gages across the State and is beyond the scope of this study. Such work would help better define the selection of period of record for computing low-streamflow statistics. For example, selecting a period of record that begins with the advent of a dam, diversion, or step change in precipitation may present different results. Record extension for unaltered gages was initially explored for this study but was not pursued to permit the potential for further research using the low-streamflow statistics.

Summary

The U.S. Geological Survey updated low-streamflow statistics in New York with the cooperation of the New York Department of Environmental Conservation. Low-streamflow statistics are used for several applications including wastewater permitting, withdrawal permitting, determining total maximum daily loads, setting in-stream flow criteria to protect aquatic life, and drought monitoring. Using streamflow data available through the U.S. Geological Survey National Water Information System, the low-streamflow statistics, such as the lowest annual 7-day average streamflow that occurs (on average) once every 10 years (7Q10 and 30Q10, respectively), were calculated for 213 unaltered and 79 altered gages. Nonexceedance probabilities for the daily moving average 7-day and 30-day values were calculated for the remaining 102 altered gages that were not suitable for low-streamflow frequency analysis.

Three categories of situations resulted in missing or irregular daily data and the removal of a climatic year from the period of record for selected gages: missing daily data within the low-streamflow months of July, August, September, and October; missing daily data within the moving average window for an annual minimum 7-day or 30-day value; and an annual minimum 7-day or 30-day value, where the moving average spans the end of one and start of the next climatic year. A trend analysis was performed to account for nonstationarity present within the period of record for long-record sites. A hypothesis test using the Wilcoxon rank-sum hypothesis test was used to compare data from the most recent 30 years of record to data from 30 years ago and earlier to determine whether there was a statistically significant trend. Statistically significant trends ($\alpha \leq 0.1$) were observed for 45 unaltered and 32 altered gages; data from the most recent 30 years of record were used to calculate low-streamflow statistics for these gages. The remaining unaltered and altered gages used the entire period of record to calculate low-streamflow statistics.

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Appendix 1. Low-Streamflow Statistics for 213 Unaltered and 79 Altered Gages

Table 1.1. Low-streamflow statistics for the lowest annual 7-day and 30-day average streamflow that occurs (on average) once every 10 years (7Q10 or 30Q10, respectively) for 213 unaltered and 79 altered gages.

[Data from Stagnitta and others (2024). The calculated nonexceedance probabilities column refers to altered sites where no low-streamflow statistics were calculated and the tables of daily nonexceedance probabilities are available in Stagnitta and others (2024). Station names appear as listed in the U.S. Geological Survey National Water Information System (U.S. Geological Survey, 2016). CT, Connecticut; MA, Massachusetts; NJ, New Jersey; NY, New York; PA, Pennsylvania; Ave., avenue; Bl, below; Blw, below; Blvd, boulevard; Bk, brook; Br, branch; Cr, creek; E, east; L, lake; Nr, near; R, river; Rd, road; St., street; St., Saint; Trib, tributary; W, West; @, at; mi², square mile; H_0, null hypothesis; α, significance level; ≤, less than or equal to; Q, discharge; ft³/s, cubic foot per second; —, not calculated]

Site number	Station name	Drainage area (mi²)	Altered gage	Calculated nonexceedance probabilities	Total length of available record (years)	Is the H_0 rejected with a $\alpha \leq 0.1$?	Length of record after trend analysis (years)	Climate years used to calculate low-streamflow statistics	7Q10 (ft³/s)	30Q10 (ft³/s)
01197500	Housatonic River Near Great Barrington, MA	282.00	Yes	No	108	No	108	1915–2022	67.357	87.401
01198000	Green River Near Great Barrington, MA	51.00	No	No	35	No	35	1953–1971, 1995–1996, 2009–2022	3.279	3.883
01198125	Housatonic River Near Ashley Falls, MA	465.00	No	No	16	Less than 30 years of data	16	1995–1996, 2009–2022	76.530	91.992
01199000	Housatonic River At Falls Village, CT	634.00	Yes	No	109	No	109	1914–2022	108.450	143.789
01199050	Salmon Creek At Lime Rock, CT	29.40	No	No	59	No	59	1963–2021	3.364	4.669
01200000	Tenmile River Near Gaylordsville, CT	203.00	Yes	No	85	No	85	1932–1989, 1993–1999, 2002–2021	12.645	16.761
01200500	Housatonic River At Gaylordsville, CT	996.00	Yes	No	81	No	81	1942–2022	153.718	195.817
01201487	Still River At Route 7 At Brookfield Center, CT	62.30	Yes	Yes	—	—	—	—	—	—
01201500	Still R Nr Lanesville, CT	67.50	Yes	No	34	Yes	30	1937–1966	15.073	18.775
01205500	Housatonic River At Stevenson, CT	1,544.00	Yes	No	91	No	91	1932–2022	138.899	267.236
01208990	Saugatuck River Near Redding, CT	21.00	No	No	57	No	57	1966–2022	0.314	0.552
01209700	Norwalk River At South Wilton, CT	30.00	No	No	59	No	59	1964–2022	1.681	2.401
01209901	Rippowam River At Stamford, CT	34.00	Yes	Yes	—	—	—	—	—	—
01212500	Byram River At Pemberwick, CT	25.60	No	No	10	Less than 30 years of data	10	2011–2020	0.305	0.846
01300000	Blind Brook At Rye NY	9.31	No	No	44	No	44	1946–1989	0.522	0.901

Table 1.1. Low-streamflow statistics for the lowest annual 7-day and 30-day average streamflow that occurs (on average) once every 10 years (7Q10 or 30Q10, respectively) for 213 unaltered and 79 altered gages.—Continued

[Data from Stagnitta and others (2024). The calculated nonexceedance probabilities column refers to altered sites where no low-streamflow statistics were calculated and the tables of daily nonexceedance probabilities are available in Stagnitta and others (2024). Station names appear as listed in the U.S. Geological Survey National Water Information System (U.S. Geological Survey, 2016). CT, Connecticut; MA, Massachusetts; NJ, New Jersey; NY, New York; PA, Pennsylvania; Ave., avenue; Bl, below; Blw, below; Blvd, boulevard; Bk, brook; Br, branch; Cr, creek; E, east; L, lake; Nr, near; R, river; Rd, road; St., street; St., Saint; Trib, tributary; W, West; @, at; mi², square mile; H_0, null hypothesis; α, significance level; ≤, less than or equal to; Q, discharge; ft³/s, cubic foot per second; —, not calculated]

Site number	Station name	Drainage area (mi²)	Altered gage	Calculated nonexceedance probabilities	Total length of available record (years)	Is the H_0 rejected with a $\alpha \leq 0.1$?	Length of record after trend analysis (years)	Climate years used to calculate low-streamflow statistics	7Q10 (ft³/s)	30Q10 (ft³/s)
01301000	Mamaroneck River At Mamaroneck NY	22.60	No	No	41	Yes	30	1960–1989	0.533	1.146
01301500	Hutchinson River At Pelham NY	5.78	No	No	47	No	47	1946–1989, 2011–2013	0.072	0.243
01302000	Bronx River At Bronxville NY	43.90	Yes	No	44	Yes	30	1960–1989	4.550	7.046
01302020	Bronx River At Ny Botanical Garden At Bronx NY	38.40	Yes	Yes	—	—	—	—	—	—
01312000	Hudson River Near Newcomb NY	192.00	No	No	78	Yes	30	1976–1982, 1984–1987, 2004–2022	34.064	52.099
01313500	Cedar R Below Chain Lakes Nr Indian Lake NY	160.00	No	No	28	Less than 30 years of data	28	1933–1940, 1942–1961	23.049	32.051
01314000	Hudson R At Gooley, Near Indian Lake NY	419.00	No	No	50	No	50	1918–1940, 1942–1968	56.064	71.874
01315000	Indian River Near Indian Lake NY	132.00	Yes	Yes	—	—	—	—	—	—
01315500	Hudson River At North Creek NY	792.00	Yes	No	112	No	112	1909–1940, 1942–2015, 2017–2022	215.082	279.016
01317000	Schroon River At Riverbank NY	527.00	No	No	42	Yes	30	1939–1940, 1942–1966, 1968–1970	48.871	65.714
01318500	Hudson River At Hadley NY	1,664.00	Yes	Yes	—	—	—	—	—	—
01319000	East Branch Sacandaga River At Griffin NY	114.00	No	No	44	No	44	1935–1978	4.032	6.567
01321000	Sacandaga River Near Hope NY	491.00	Yes	No	110	No	110	1913–2022	43.361	63.583
01325000	Sacandaga River At Stewarts Bridge Nr Hadley NY	1,055.00	Yes	Yes	—	—	—	—	—	—
01326500	Hudson River At Spier Falls NY	2,779.00	No	No	10	Less than 30 years of data	10	1914–1923	945.416	1,113.425

Table 1.1. Low-streamflow statistics for the lowest annual 7-day and 30-day average streamflow that occurs (on average) once every 10 years (7Q10 or 30Q10, respectively) for 213 unaltered and 79 altered gages.—Continued

[Data from Stagnitta and others (2024). The calculated nonexceedance probabilities column refers to altered sites where no low-streamflow statistics were calculated and the tables of daily nonexceedance probabilities are available in Stagnitta and others (2024). Station names appear as listed in the U.S. Geological Survey National Water Information System (U.S. Geological Survey, 2016). CT, Connecticut; MA, Massachusetts; NJ, New Jersey; NY, New York; PA, Pennsylvania; Ave., avenue; Bl, below; Blw, below; Blvd, boulevard; Bk, brook; Br, branch; Cr, creek; E, east; L, lake; Nr, near; R, river; Rd, road; St., street; St., Saint; Trib, tributary; W, West; @, at; mi², square mile; H_0, null hypothesis; α, significance level; ≤, less than or equal to; Q, discharge; ft³/s, cubic foot per second; —, not calculated]

Site number	Station name	Drainage area (mi²)	Altered gage	Calculated nonexceedance probabilities	Total length of available record (years)	Is the H_0 rejected with a $\alpha \leq 0.1$?	Length of record after trend analysis (years)	Climate years used to calculate low-streamflow statistics	7Q10 (ft³/s)	30Q10 (ft³/s)
01327750	Hudson River At Fort Edward NY	2,810.00	Yes	Yes	—	—	—	—	—	—
01328000	Bond Creek At Dunham Basin NY	14.10	Yes	No	34	No	34	1949–1982	0.451	0.732
01329000	Batten Kill At Arlington, VT	152.00	No	No	55	No	55	1930–1984	51.780	61.524
01329490	Batten Kill Below Mill At Battenville NY	396.00	No	No	69	No	69	1924–1968, 1999–2022	78.067	94.639
01330000	Glowegee Creek At West Milton NY	24.90	No	No	45	Yes	30	1993–2022	2.265	3.750
01330500	Kayaderosseras Creek Nr West Milton NY	84.20	No	No	67	Yes	30	1966–1995	18.739	24.215
01331095	Hudson River At Stillwater NY	3,773.00	Yes	Yes	—	—	—	—	—	—
01331500	Hoosic River At Adams, MA	46.70	No	No	90	No	90	1933–2022	12.582	15.500
01332000	North Branch Hoosic River At North Adams, MA	40.90	No	No	58	No	58	1933–1990	5.227	6.978
01332500	Hoosic River Near Williamstown, MA	126.00	No	No	81	No	81	1942–2022	39.003	48.068
01333000	Green River At Williamstown, MA	42.60	No	No	72	No	72	1951–2022	4.800	6.265
01333500	Little Hoosic River At Petersburg NY	56.10	No	No	44	Yes	30	1967–1996	4.364	5.307
01334000	Walloomsac River Near North Bennington, VT	111.00	No	No	90	No	90	1933–2022	32.629	40.565
01334500	Hoosic River Near Eagle Bridge NY	510.00	Yes	Yes	—	—	—	—	—	—
01335500	Hudson River At Mechanicville NY	4,500.00	Yes	Yes	—	—	—	—	—	—
01335754	Hudson River Above Lock 1 Near Waterford NY	4,605.00	Yes	Yes	—	—	—	—	—	—
01336000	Mohawk River Below Delta Dam Near Rome NY	152.00	Yes	Yes	—	—	—	—	—	—

Table 1.1. Low-streamflow statistics for the lowest annual 7-day and 30-day average streamflow that occurs (on average) once every 10 years (7Q10 or 30Q10, respectively) for 213 unaltered and 79 altered gages.—Continued

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Site number	Station name	Drainage area (mi²)	Altered gage	Calculated nonexceedance probabilities	Total length of available record (years)	Is the H_0 rejected with a $\alpha \leq 0.1$?	Length of record after trend analysis (years)	Climate years used to calculate low-streamflow statistics	7Q10 (ft³/s)	30Q10 (ft³/s)
01343060	West Canada Creek Near Wilmurt NY	238.00	No	No	20	Less than 30 years of data	20	2003–2022	48.049	68.881
01344000	West Canada Creek At Hinckley NY	375.00	Yes	Yes	—	—	—	—	—	—
01346000	West Canada Creek At Kast Bridge NY	560.00	Yes	No	103	Yes	30	1993–2022	300.439	367.303
01347000	Mohawk River Near Little Falls NY	1,342.00	Yes	No	94	Yes	30	1993–2022	632.447	740.510
01347500	East Canada Creek At Dolgeville NY	258.00	No	No	31	No	31	1900–1912, 1929–1946	53.898	72.375
01348000	East Canada Creek At East Creek NY	289.00	Yes	No	56	No	56	1947–1995, 2016–2022	14.798	58.279
01349000	Otsquago Creek At Fort Plain NY	61.00	No	No	46	No	46	1951–1989, 2016–2022	2.694	3.536
01349150	Canajoharie Creek Near Canajoharie NY	59.70	No	No	29	Less than 30 years of data	29	1994–2022	0.976	1.758
01349700	East Kill Near Jewett Center NY	35.60	No	No	25	Less than 30 years of data	25	1998–2022	1.496	2.105
01349705	Schoharie Creek Near Lexington NY	96.80	No	No	22	Less than 30 years of data	22	2001–2022	7.967	11.150
01349711	West Kill Below Hunter Brook Near Spruceton NY	4.97	No	No	24	Less than 30 years of data	24	1999–2022	0.631	0.792
01349810	West Kill Near West Kill NY	27.00	No	No	24	Less than 30 years of data	24	1999–2022	2.104	2.761
01349840	Batavia Kill Near Maplecrest NY	2.03	No	No	11	Less than 30 years of data	11	1999–2009	0.210	0.299
01349950	Batavia Kill At Red Falls Near Prattsville NY	68.60	No	No	24	Less than 30 years of data	24	1999–2022	2.534	3.590
01350000	Schoharie Creek At Prattsville NY	237.00	No	No	117	Yes	30	1993–2022	12.919	16.031

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Site number	Station name	Drainage area (mi²)	Altered gage	Calculated nonexceedance probabilities	Total length of available record (years)	Is the H_0 rejected with a $\alpha \leq 0.1$?	Length of record after trend analysis (years)	Climate years used to calculate low-streamflow statistics	7Q10 (ft³/s)	30Q10 (ft³/s)
01350035	Bear Kill Near Prattsville NY	25.70	No	No	23	Less than 30 years of data	23	2000–2022	0.314	0.602
01350080	Manor Kill At West Conesville Near Gilboa NY	32.40	No	No	35	No	35	1988–2022	1.690	1.967
01350120	Platter Kill At Gilboa NY	10.90	No	No	47	No	47	1976–2022	1.098	1.292
01350140	Mine Kill Near North Blenheim NY	16.20	No	No	47	Yes	30	1993–2022	0.292	0.509
01350355	Schoharie Creek At Breakabeen NY	444.00	Yes	Yes	—	—	—	—	—	—
01350500	Schoharie Creek At Middleburgh NY	534.00	Yes	Yes	—	—	—	—	—	—
01351000	Fox Creek At West Berne NY	67.20	No	No	12	Less than 30 years of data	12	1926–1932, 1964–1968	0.192	0.374
01351500	Schoharie Creek At Burtonsville NY	886.00	Yes	No	82	Yes	30	1993–2022	14.725	19.185
01354500	Mohawk River At Freeman's Bridge At Schenectady NY	3,310.00	Yes	Yes	—	—	—	—	—	—
01356190	Lisha Kill Northwest Of Niskayuna NY	16.20	No	No	14	Less than 30 years of data	14	1995–1997, 2002–2012	0.258	0.867
01357499	Mohawk River Diversion To Power Plant At Crescent Dam NY	—	Yes	Yes	—	—	—	—	—	—
01357500	Mohawk River At Cohoes NY	3,450.00	Yes	No	104	No	104	1919–2022	612.572	784.144
01358000	Hudson River At Green Island NY	8,090.00	Yes	No	72	No	72	1947–1997, 2002–2022	2,828.804	3,325.255
01358500	Poesten Kill Near Troy NY	89.40	Yes	No	44	No	44	1925–1968	2.787	4.984
01359519	Normans Kill Near Westmere NY	136.00	Yes	Yes	—	—	—	—	—	—
01359750	Moordener Kill At Castleton–On–Hudson NY	31.60	No	No	37	No	37	1959–1995	2.366	2.863

Table 1.1. Low-streamflow statistics for the lowest annual 7-day and 30-day average streamflow that occurs (on average) once every 10 years (7Q10 or 30Q10, respectively) for 213 unaltered and 79 altered gages.—Continued

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Site number	Station name	Drainage area (mi²)	Altered gage	Calculated nonexceedance probabilities	Total length of available record (years)	Is the H_0 rejected with a $\alpha \leq 0.1$?	Length of record after trend analysis (years)	Climate years used to calculate low-streamflow statistics	7Q10 (ft³/s)	30Q10 (ft³/s)
01360640	Valatie Kill Near Nassau NY	9.48	No	No	31	No	31	1992–2022	0.165	0.309
01361000	Kinderhook Creek At Rossman NY	329.00	No	No	52	Yes	30	1949–1968, 2013–2022	13.944	20.310
013621955	Birch Creek At Big Indian NY	12.50	No	No	23	Less than 30 years of data	23	2000–2022	2.281	2.729
01362200	Esopus Creek At Allaben NY	63.70	No	No	58	Yes	30	1993–2022	7.089	8.918
01362230	Diversion From Schoharie Reservoir NY	—	Yes	Yes	—	—	—	—	—	—
0136230002	Woodland Creek Above Mouth At Phoenicia NY	20.60	No	No	18	Less than 30 years of data	18	2005–2022	2.985	4.149
01362342	Hollow Tree Brook At Lanesville NY	1.95	No	No	24	Less than 30 years of data	24	1999–2022	0.349	0.461
01362370	Stony Clove Creek Blw Ox Clove At Chichester NY	30.90	No	No	25	Less than 30 years of data	25	1998–2022	4.948	5.756
01362487	Beaver Kill At Mount Tremper NY	25.00	No	No	11	Less than 30 years of data	11	2012–2022	1.376	2.011
01362497	Little Beaver Kill At Beechford Near Mt Tremper NY	16.50	No	No	24	Less than 30 years of data	24	1999–2022	0.496	0.885
01362500	Esopus Creek At Coldbrook NY	192.00	Yes	Yes	—	—	—	—	—	—
01363382	Bush Kill Blw Maltby Hollow Bk At West Shokan NY	17.00	No	No	21	Less than 30 years of data	21	2002–2022	2.867	3.543
01364500	Esopus Creek At Mount Marion NY	419.00	Yes	Yes	—	—	—	—	—	—
01364959	Rondout Cr Above Red Brook At Peekamoose NY	5.36	No	No	13	Less than 30 years of data	13	1998–2010	1.482	1.722
01365000	Rondout Creek Near Lowes Corners NY	38.30	No	No	85	Yes	30	1993–2022	7.397	9.446
01365500	Chestnut Creek At Grahamsville NY	20.90	No	No	71	Yes	30	1981–1987, 2000–2022	3.590	4.221

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Site number	Station name	Drainage area (mi²)	Altered gage	Calculated nonexceedance probabilities	Total length of available record (years)	Is the H_0 rejected with a $\alpha \leq 0.1$?	Length of record after trend analysis (years)	Climate years used to calculate low-streamflow statistics	7Q10 (ft³/s)	30Q10 (ft³/s)
01366500	Rondout Creek Near Lackawack NY	100.00	Yes	Yes	—	—	—	—	—	—
01366650	Sandburg Creek At Ellenville NY	52.80	No	No	19	Less than 30 years of data	19	1959–1977	7.003	8.474
01367500	Rondout Creek At Rosendale NY	383.00	Yes	No	101	Yes	30	1993–2022	47.489	54.060
01367800	Papakating Creek At Pellettown NJ	15.80	No	No	10	Less than 30 years of data	10	2005–2014	0.969	1.466
01368000	Wallkill River Near Unionville NY	140.00	Yes	No	43	No	43	1939–1981	8.803	11.926
01368500	Rutgers Creek At Gardnerville NY	59.70	No	No	22	Less than 30 years of data	22	1945–1954, 1957–1968	0.481	0.690
01369000	Pochuck Creek Near Pine Island NY	98.00	No	No	39	No	39	1939–1977	3.672	5.101
01369500	Quaker Creek At Florida NY	9.74	No	No	41	No	41	1939–1979	0.199	0.273
01370000	Wallkill River At Pellets Island NY	380.00	Yes	No	48	No	48	1921–1968	13.337	18.656
01370500	Wallkill River Near Phillipsburg NY	415.00	No	No	22	Less than 30 years of data	22	1938–1959	22.105	29.732
01371000	Shawangunk Kill At Pine Bush NY	104.00	Yes	Yes	—	—	—	—	—	—
01371500	Wallkill River At Gardiner NY	695.00	Yes	No	97	No	97	1926–2022	31.801	44.524
01372200	Wappinger Creek Near Clinton Corners NY	92.40	No	No	19	Less than 30 years of data	19	1957–1975	3.390	4.891
01372300	Little Wappinger Creek At Salt Point NY	32.90	No	No	19	Less than 30 years of data	19	1957–1975	0.366	0.549
01372500	Wappinger Creek Near Wappingers Falls NY	181.00	No	No	93	No	93	1930–2022	6.581	9.245
01372800	Fishkill Creek At Hopewell Junction NY	57.30	No	No	17	Less than 30 years of data	17	1959–1975	1.909	2.515
01373500	Fishkill Creek At Beacon NY	190.00	Yes	Yes	—	—	—	—	—	—

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0137449480	East Branch Croton River Near Putnam Lake NY	62.10	No	No	26	Less than 30 years of data	26	1997–2022	0.314	0.933
01374505	East Branch Croton River At Brewster NY	81.20	Yes	Yes	—	—	—	—	—	—
01374531	East Branch Croton River Near Croton Falls NY	86.40	Yes	Yes	—	—	—	—	—	—
01374559	West Branch Croton River At Richardsville NY	11.00	No	No	26	Less than 30 years of data	26	1997–2022	0.027	0.072
01374581	W Br Croton River Below Dam Near Kent Cliffs NY	22.40	Yes	Yes	—	—	—	—	—	—
0137462010	West Branch Croton River Near Carmel NY	42.90	Yes	Yes	—	—	—	—	—	—
01374654	Middle Branch Croton River Near Carmel NY	13.70	No	No	17	Less than 30 years of data	17	1997–2013	0.450	0.869
01374701	West Branch Croton River Near Croton Falls NY	80.40	Yes	Yes	—	—	—	—	—	—
01374781	Titicus River Below June Road At Salem Center NY	12.90	No	No	15	Less than 30 years of data	15	2008–2022	0.387	0.723
01374821	Titicus River At Purdys Station NY	23.80	Yes	No	27	Less than 30 years of data	27	1995–2002, 2004–2022	4.817	6.006
01374890	Cross River Near Cross River NY	17.10	No	No	26	Less than 30 years of data	26	1997–2022	0.375	0.742
01374901	Cross River At Katonah NY	29.90	Yes	Yes	—	—	—	—	—	—
01374930	Muscoot River At Baldwin Place NY	13.50	No	No	26	Less than 30 years of data	26	1997–2022	0.215	0.515
01374941	Muscoot River Below Dam At Amawalk NY	19.70	Yes	Yes	—	—	—	—	—	—
01374987	Kisco River Below Mount Kisco NY	17.60	No	No	13	Less than 30 years of data	13	1997–2009	0.573	1.482

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01375000	Croton R At New Croton Dam Nr Croton–On–Hudson NY	378.00	Yes	Yes	—	—	—	—	—	—
01376500	Saw Mill River At Yonkers NY	25.60	Yes	Yes	—	—	—	—	—	—
01376800	Hackensack River At West Nyack NY	30.70	Yes	Yes	—	—	—	—	—	—
01377000	Hackensack River At Rivervale NJ	58.00	Yes	Yes	—	—	—	—	—	—
01377370	Pascack Brook At Park Ridge NJ	13.40	No	No	15	Less than 30 years of data	15	2005–2009, 2011–2020	2.896	3.917
01377500	Pascack Brook At Westwood NJ	29.60	Yes	No	84	No	84	1936–1986, 1988–2020	9.586	12.802
01384000	Wanaque River At Monks NJ	40.40	Yes	Yes	—	—	—	—	—	—
01386000	West Brook Near Wanaque NJ	11.80	Yes	No	62	No	62	1936–1978, 2004–2022	0.635	0.948
01387000	Wanaque River At Wanaque NJ	90.40	Yes	Yes	—	—	—	—	—	—
01387400	Ramapo River At Ramapo NY	86.90	No	No	42	No	42	1981–2022	9.747	11.519
01387420	Ramapo River At Suffern NY	93.00	Yes	Yes	—	—	—	—	—	—
01387450	Mahwah River Near Suffern NY	12.30	No	No	52	No	52	1960–1995, 2007–2022	0.714	1.040
01387500	Ramapo River Near Mahwah NJ	120.00	Yes	No	102	No	102	1904–1906, 1924–2022	11.134	15.116
01390450	Saddle River At Upper Saddle River NJ	10.90	Yes	No	16	Less than 30 years of data	16	2005–2020	0.589	0.966
01390500	Saddle River At Ridgewood NJ	21.60	Yes	No	63	No	63	1956–1974, 1979–2022	2.101	3.208
01391000	Hohokus Brook At Ho–Ho–Kus NJ	16.40	Yes	Yes	—	—	—	—	—	—
01413398	Bush Kill Near Arkville NY	46.70	No	No	24	Less than 30 years of data	24	1999–2022	5.125	6.473

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01413408	Dry Brook At Arkville NY	82.20	No	No	25	Less than 30 years of data	25	1998–2022	9.492	11.969
01413500	East Branch Delaware River At Margaretville NY	163.00	No	No	85	Yes	30	1993–2022	13.491	17.346
01414000	Platte Kill At Dunraven NY	34.90	No	No	45	Yes	30	1958–1962, 1998–2022	2.312	3.135
01414500	Mill Brook Near Dunraven NY	25.20	No	No	85	Yes	30	1993–2022	2.435	3.124
01415000	Tremper Kill Near Andes NY	33.20	No	No	85	No	85	1938–2022	1.597	2.434
01415500	Terry Clove Kill Near Pepacton NY	13.60	No	No	25	Less than 30 years of data	25	1938–1962	0.341	0.636
01417000	East Branch Delaware River At Downsville NY	372.00	Yes	Yes	—	—	—	—	—	—
01417500	East Branch Delaware River At Harvard NY	458.00	Yes	Yes	—	—	—	—	—	—
01418000	Beaver Kill Near Turnwood NY	40.80	No	No	10	Less than 30 years of data	10	1950–1959	5.996	8.561
01418500	Beaver Kill At Craigie Clair NY	81.90	No	No	32	No	32	1939–1970	9.727	12.255
01419500	Willowemoc Creek Nr Livingston Manor NY	62.60	No	No	35	No	35	1939–1970, 2020–2022	9.971	12.210
01420000	Little Beaver Kill Nr Livingston Manor NY	20.10	No	No	56	No	56	1926–1981	1.947	2.629
01420500	Beaver Kill At Cooks Falls NY	241.00	No	No	108	Yes	30	1993–2022	44.578	55.786
01421000	East Branch Delaware River At Fishs Eddy NY	784.00	Yes	Yes	—	—	—	—	—	—
01421610	West Branch Delaware River At Hobart NY	16.00	No	No	21	Less than 30 years of data	21	2002–2022	1.000	1.693
01421614	Town Brook Tributary Southeast Of Hobart NY	0.76	No	No	10	Less than 30 years of data	10	2000–2009	0.044	0.067

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01421618	Town Brook Southeast Of Hobart NY	14.30	No	No	24	Less than 30 years of data	24	1999–2022	0.551	0.864
01421900	West Branch Delaware River Upstream From Delhi NY	134.00	No	No	58	No	58	1938–1970, 1998–2022	7.581	9.737
01422500	Little Delaware River Near Delhi NY	49.80	No	No	57	Yes	30	1966–1970, 1998–2022	2.597	4.110
01422747	East Brook East Of Walton NY	24.70	No	No	18	Less than 30 years of data	18	2000–2013, 2019–2022	1.651	2.262
01423000	West Branch Delaware River At Walton NY	332.00	No	No	71	No	71	1952–2022	23.749	29.473
01423500	Dryden Brook Near Granton NY	8.10	No	No	14	Less than 30 years of data	14	1954–1967	0.362	0.544
0142400103	Trout Creek Near Trout Creek NY	20.20	No	No	39	No	39	1954–1967, 1998–2022	0.396	0.585
01424500	Trout Creek At Cannonsville NY	49.50	No	No	22	Less than 30 years of data	22	1942–1963	2.956	3.728
01425000	West Branch Delaware River At Stilesville NY	456.00	Yes	Yes	—	—	—	—	—	—
01425675	Oquaga Creek Near North Sanford NY	4.69	No	No	11	Less than 30 years of data	11	1971–1981	0.290	0.437
01426000	Oquaga Creek At Deposit NY	67.60	No	No	32	No	32	1942–1973	1.611	2.479
01426500	West Branch Delaware River At Hale Eddy NY	595.00	Yes	Yes	—	—	—	—	—	—
01427207	Delaware River At Lordville NY	1,590.00	Yes	Yes	—	—	—	—	—	—
01427500	Callicoon Creek At Callicoon NY	110.00	No	No	43	No	43	1942–1982, 2020–2021	6.528	8.653
01427510	Delaware River At Callicoon NY	1,820.00	Yes	No	46	Yes	30	1993–2022	583.426	751.390
01428000	Tenmile River At Tusten NY	45.60	No	No	29	Less than 30 years of data	29	1948–1973, 2020–2022	1.795	2.488

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01428500	Delaware R Above Lackawaxen R Near Barryville NY	2,020.00	Yes	No	81	Yes	30	1993–2022	687.612	890.065
01428750	West Branch Lackawaxen River Near Aldenville, PA	40.60	No	No	35	No	35	1988–2022	5.661	6.981
01432900	Mongaup River At Mongaup Valley NY	76.60	No	No	19	Less than 30 years of data	19	2004–2022	13.092	16.225
01433500	Mongaup River Near Mongaup NY	200.00	Yes	Yes	—	—	—	—	—	—
01434000	Delaware River At Port Jervis NY	3,076.00	Yes	Yes	—	—	—	—	—	—
0143400680	E Br Neversink R Northeast Of Denning NY	8.93	No	No	24	Less than 30 years of data	24	1992–2013, 2021–2022	2.787	3.645
01434017	East Branch Neversink River Near Claryville NY	22.90	No	No	30	No	30	1993–2022	7.067	9.129
01434021	W Br Neversink R At Winnisook L Nr Frost Valley NY	0.83	No	No	24	Less than 30 years of data	24	1992–2013, 2021–2022	0.095	0.139
01434025	Biscuit Bk Above Pigeon Bk At Frost Valley NY	3.72	No	No	38	No	38	1985–2022	0.457	0.691
01434092	Shelter Creek Below Dry Creek Nr Frost Valley NY	0.59	No	No	14	Less than 30 years of data	14	1994–2007	0.056	0.092
01434498	West Branch Neversink River At Claryville NY	33.80	No	No	29	Less than 30 years of data	29	1993–2021	8.517	10.893
01435500	Neversink River At Halls Mills Near Curry NY	68.70	No	No	11	Less than 30 years of data	11	1939–1949	17.580	22.715
01436500	Neversink River At Woodbourne NY	113.00	Yes	Yes	—	—	—	—	—	—
01436690	Neversink River At Bridgeville NY	171.00	Yes	Yes	—	—	—	—	—	—
01437000	Neversink River At Oakland Valley NY	223.00	Yes	Yes	—	—	—	—	—	—

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Site number	Station name	Drainage area (mi²)	Altered gage	Calculated nonexceedance probabilities	Total length of available record (years)	Is the H_0 rejected with a $\alpha \leq 0.1$?	Length of record after trend analysis (years)	Climate years used to calculate low-streamflow statistics	7Q10 (ft³/s)	30Q10 (ft³/s)
01437500	Neversink River At Godeffroy NY	307.00	Yes	Yes	—	—	—	—	—	—
01438500	Delaware River At Montague NJ	3,480.00	Yes	Yes	—	—	—	—	—	—
01440000	Flat Brook Near Flatbrookville NJ	64.00	No	No	97	No	97	1925–2021	7.540	9.442
01443500	Paulins Kill At Blairstown NJ	126.00	No	No	99	No	99	1923–1977, 1979–2022	16.343	21.060
01496500	Oaks Creek At Index NY	102.00	Yes	No	59	No	59	1931–1932, 1939–1995	3.732	4.887
01497500	Susquehanna R At Colliersville NY	349.00	Yes	No	43	No	43	1926–1968	13.317	27.683
01498500	Charlotte Creek At West Davenport NY	167.00	No	No	36	No	36	1940–1975	8.554	10.890
01499000	Otego Creek Near Oneonta NY	108.00	No	No	27	Less than 30 years of data	27	1942–1968	6.885	8.549
01500000	Ouleout Creek At East Sidney NY	103.00	Yes	No	81	Yes	30	1993–2022	7.229	8.401
01500500	Susquehanna River At Unadilla NY	982.00	Yes	Yes	—	—	—	—	—	—
01501000	Unadilla River Near New Berlin NY	199.00	No	No	43	No	43	1926–1968	14.588	18.185
01502000	Butternut Creek At Morris NY	59.70	No	No	56	Yes	30	1966–1995	5.207	6.412
01502500	Unadilla River At Rockdale NY	520.00	No	No	82	Yes	30	1987–1995, 2002–2022	64.261	79.476
01502632	Susquehanna River At Bainbridge NY	1,610.00	No	No	12	Less than 30 years of data	12	2011–2022	253.877	309.436
01502731	Susquehanna River At Windsor NY	1,820.00	No	No	12	Less than 30 years of data	12	2011–2022	295.366	351.082
01503000	Susquehanna River At Conklin NY	2,232.00	No	No	109	Yes	30	1993–2022	210.092	253.168
01505000	Chenango River At Sherburne NY	263.00	Yes	No	74	Yes	30	1984–1995, 2005–2022	29.062	35.161

Table 1.1. Low-streamflow statistics for the lowest annual 7-day and 30-day average streamflow that occurs (on average) once every 10 years (7Q10 or 30Q10, respectively) for 213 unaltered and 79 altered gages.—Continued

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Site number	Station name	Drainage area (mi²)	Altered gage	Calculated nonexceedance probabilities	Total length of available record (years)	Is the H_0 rejected with a $\alpha \leq 0.1$?	Length of record after trend analysis (years)	Climate years used to calculate low-streamflow statistics	7Q10 (ft³/s)	30Q10 (ft³/s)
01505500	Canasawacta Creek Near South Plymouth NY	57.90	No	No	29	Less than 30 years of data	29	1947–1975	0.881	1.702
01505810	Chenango River At Oxford NY	458.00	Yes	Yes	—	—	—	—	—	—
01507000	Chenango River At Greene NY	593.00	No	No	45	No	45	1938–1970, 2011–2022	54.878	63.609
01507500	Genegantslet Cr At Smithville Flats NY	82.30	Yes	No	31	No	31	1940–1970	1.847	2.405
01508000	Shackham Brook Near Truxton NY	3.16	No	No	35	No	35	1934–1968	0.051	0.079
01508803	West Br Tioughnioga River At Homer NY	71.50	No	No	14	Less than 30 years of data	14	1968–1968, 1974–1986	13.853	17.506
01509000	Tioughnioga River At Cortland NY	292.00	Yes	No	83	Yes	30	1993–2022	43.386	49.876
01510000	Otselic River At Cincinnatus NY	147.00	No	No	77	Yes	30	1993–2022	11.127	13.773
01510500	Otselic River Near Upper Lisle NY	217.00	No	No	31	No	31	1939–1969	13.428	16.299
01511500	Tioughnioga River At Itaska NY	730.00	No	No	37	No	37	1931–1967	57.595	73.398
01512500	Chenango River Near Chenango Forks NY	1,483.00	No	No	109	Yes	30	1993–2022	143.387	174.897
01513500	Susquehanna River At Vestal NY	3,941.00	No	No	40	No	40	1940–1967, 2011–2022	340.914	401.221
01513831	Susquehanna River At Owego NY	4,216.00	No	No	12	Less than 30 years of data	12	2011–2022	560.713	742.825
01514000	Owego Creek Near Owego NY	185.00	No	No	51	No	51	1932–1978, 2019–2022	10.462	11.535
01515000	Susquehanna River Near Waverly NY	4,773.00	No	No	79	Yes	30	1987–1995, 2002–2022	491.840	633.581
01516350	Tioga River Near Mansfield, PA	153.00	No	No	45	No	45	1978–2022	9.747	11.714
01518000	Tioga River At Tioga, PA	282.00	Yes	No	83	Yes	30	1993–2022	24.728	25.377

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Site number	Station name	Drainage area (mi²)	Altered gage	Calculated nonexceedance probabilities	Total length of available record (years)	Is the H_0 rejected with a $\alpha \leq 0.1$?	Length of record after trend analysis (years)	Climate years used to calculate low-streamflow statistics	7Q10 (ft³/s)	30Q10 (ft³/s)
01518500	Crooked Creek At Tioga, PA	122.00	No	No	20	Less than 30 years of data	20	1955–1974	2.342	2.839
01518700	Tioga River At Tioga Junction, PA	446.00	Yes	No	45	No	45	1978–2022	30.031	33.704
01518862	Cowanesque River At Westfield, PA	90.60	No	No	38	No	38	1985–2022	1.458	2.318
01520500	Tioga River At Lindley NY	771.00	Yes	Yes	—	—	—	—	—	—
01521500	Canisteo River At Arkport NY	30.60	Yes	No	85	Yes	30	1993–2022	0.838	1.056
01523500	Canacadea Creek Near Hornell NY	57.90	Yes	No	78	No	78	1942–1942, 1946–2022	3.262	5.934
01524500	Canisteo River Below Canacadea Creek At Hornell NY	158.00	Yes	No	79	Yes	30	1993–2022	15.892	18.503
01525500	Canisteo River At West Cameron NY	340.00	Yes	Yes	—	—	—	—	—	—
01525981	Tuscarora Creek Above South Addison NY	102.00	No	No	21	Less than 30 years of data	21	2002–2022	0.163	0.411
01526500	Tioga River Near Erwins NY	1,377.00	Yes	No	103	Yes	30	1993–2022	83.402	94.798
01527000	Cohocton River At Cohocton NY	52.20	No	No	30	No	30	1952–1981	3.076	4.313
01527500	Cohocton River At Avoca NY	152.00	No	No	26	Less than 30 years of data	26	1940–1945, 2003–2022	16.057	18.244
01528000	Fivemile Creek Near Kanona NY	66.80	No	No	58	Yes	30	1966–1995	0.902	1.385
01529000	Mud Creek Near Savona NY	76.60	Yes	No	45	No	45	1938–1982	0.727	1.098
01529500	Cohocton River Near Campbell NY	470.00	No	No	103	Yes	30	1993–2022	28.631	36.629
01529950	Chemung River At Corning NY	2,006.00	Yes	No	47	No	47	1976–2022	128.542	152.796
01530332	Chemung River At Elmira NY	2,162.00	Yes	Yes	—	—	—	—	—	—
01530500	Newtown Creek At Elmira NY	77.50	Yes	No	69	No	69	1940–2008	6.100	7.622
01531000	Chemung River At Chemung NY	2,506.00	Yes	No	118	Yes	30	1993–2022	161.212	186.809

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Site number	Station name	Drainage area (mi²)	Altered gage	Calculated nonexceedance probabilities	Total length of available record (years)	Is the H_0 rejected with a $\alpha \leq 0.1$?	Length of record after trend analysis (years)	Climate years used to calculate low-streamflow statistics	7Q10 (ft³/s)	30Q10 (ft³/s)
01531500	Susquehanna River At Towanda, PA	7,797.00	No	No	108	Yes	30	1993–2022	676.552	810.977
03007800	Allegheny River At Port Allegany, PA	248.00	No	No	47	No	47	1976–2022	14.023	20.420
03009680	Potato Creek At Smethport, PA	160.00	No	No	20	Less than 30 years of data	20	1976–1995	14.162	17.622
03010000	Allegheny River At Larabee, PA	530.00	No	No	13	Less than 30 years of data	13	1927–1939	13.733	25.247
03010500	Allegheny River At Eldred, PA	550.00	No	No	82	No	82	1941–2022	31.965	44.540
03010655	Oswayo Creek At Shinglehouse, PA	98.70	No	No	47	No	47	1976–2022	5.754	7.312
03010820	Allegheny River At Olean NY	1,168.00	No	No	11	Less than 30 years of data	11	2012–2022	103.997	129.381
03011020	Allegheny River At Salamanca NY	1,608.00	No	No	118	Yes	30	1993–2022	151.297	193.224
03011800	Kinzua Creek Near Guffey, PA	38.80	No	No	56	No	56	1967–2022	5.211	6.561
03012550	Allegheny River At Kinzua Dam, PA	2,180.00	Yes	Yes	—	—	—	—	—	—
03012600	Allegheny River At Warren, PA	2,223.00	Yes	Yes	—	—	—	—	—	—
03013000	Conewango Creek At Waterboro NY	290.00	No	No	54	Yes	30	1964–1993	34.859	39.968
03014500	Chadakoin River At Falconer NY	194.00	Yes	Yes	—	—	—	—	—	—
03015000	Conewango Creek At Russell, PA	816.00	No	No	82	Yes	30	1993–2022	105.940	122.171
03015310	Allegheny River Bl Conewango Creek At Warren, PA	3,131.00	Yes	Yes	—	—	—	—	—	—
03015500	Brokenstraw Creek At Youngsville, PA	321.00	No	No	112	Yes	30	1993–2022	43.869	50.737
03016000	Allegheny River At West Hickory, PA	3,660.00	Yes	Yes	—	—	—	—	—	—

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Site number	Station name	Drainage area (mi²)	Altered gage	Calculated nonexceedance probabilities	Total length of available record (years)	Is the H_0 rejected with a $\alpha \leq 0.1$?	Length of record after trend analysis (years)	Climate years used to calculate low-streamflow statistics	7Q10 (ft³/s)	30Q10 (ft³/s)
03021350	French Creek Near Wattsburg, PA	92.00	No	No	47	No	47	1976–2022	5.110	8.360
03021410	West Branch French Creek Near Lowville, PA	52.30	No	No	18	Less than 30 years of data	18	1976–1993	2.825	4.716
03021500	French Creek At Carters Corners, PA	208.00	No	No	61	No	61	1911–1971	9.652	13.005
03021520	French Creek Near Union City, PA	221.00	No	No	31	No	31	1973–1991, 2011–2022	19.516	28.688
03025500	Allegheny River At Franklin, PA	5,982.00	Yes	Yes	—	—	—	—	—	—
04213500	Cattaraugus Creek At Gowanda NY	436.00	Yes	Yes	—	—	—	—	—	—
04214500	Buffalo Creek At Gardenville NY	142.00	No	No	77	Yes	30	1987–2007, 2014–2022	7.395	11.692
04215000	Cayuga Creek Near Lancaster NY	96.40	No	No	76	Yes	30	1993–2022	0.756	2.444
04215500	Cazenovia Creek At Ebenezer NY	135.00	No	No	81	Yes	30	1993–2022	7.084	12.288
04216000	Niagara River At Buffalo NY	263,700.00	Yes	Yes	—	—	—	—	—	—
04216200	Scajaquada Creek At Buffalo NY	15.80	Yes	Yes	—	—	—	—	—	—
04216418	Tonawanda Creek At Attica NY	76.90	No	No	44	No	44	1979–2022	5.873	7.880
04216500	Little Tonawanda Creek At Linden NY	22.10	No	No	69	No	69	1914–1968, 1979–1992	0.284	0.378
04217000	Tonawanda Creek At Batavia NY	171.00	No	No	75	Yes	30	1991–1998, 2001–2022	7.104	10.933
04217500	Tonawanda Creek Near Alabama NY	231.00	No	No	33	No	33	1957–1989	11.070	13.577
04217750	Murder Creek Near Akron NY	57.50	Yes	Yes	—	—	—	—	—	—
04218000	Tonawanda Creek At Rapids NY	349.00	No	No	51	No	51	1957–1965, 1981–2022	13.065	17.821
04218518	Ellicott Creek Below Williamsville NY	79.70	Yes	Yes	—	—	—	—	—	—

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Site number	Station name	Drainage area (mi²)	Altered gage	Calculated nonexceedance probabilities	Total length of available record (years)	Is the H_0 rejected with a $\alpha \leq 0.1$?	Length of record after trend analysis (years)	Climate years used to calculate low-streamflow statistics	7Q10 (ft³/s)	30Q10 (ft³/s)
04219768	Eighteenmile Creek At Burt NY	84.80	Yes	Yes	—	—	—	—	—	—
04220045	Oak Orchard Creek Near Shelby NY	146.00	No	No	13	Less than 30 years of data	13	2010–2022	0.513	2.041
04220250	West Creek Near Hilton NY	31.00	Yes	Yes	—	—	—	—	—	—
0422026250	Northrup Creek At North Greece NY	10.10	Yes	Yes	—	—	—	—	—	—
04221000	Genesee River At Wellsville NY	288.00	No	No	51	No	51	1957–1958, 1974–2022	18.040	22.824
04221500	Genesee River At Scio NY	308.00	No	No	55	No	55	1918–1972	13.583	17.599
04222000	Caneadea Creek At Caneadea NY	62.00	Yes	Yes	—	—	—	—	—	—
04223000	Genesee River At Portageville NY	984.00	Yes	No	113	Yes	30	1993–2022	72.242	92.659
04224775	Canaseraga Creek Above Dansville NY	88.90	No	No	47	No	47	1976–2022	7.818	8.778
04225000	Canaseraga Creek Near Dansville NY	157.00	No	No	53	No	53	1912–1912, 1922–1968, 1972–1976	14.366	17.379
04225500	Canaseraga Creek At Groveland NY	185.00	No	No	11	Less than 30 years of data	11	1917–1919, 1957–1964	18.017	20.448
04226000	Keshequa Cr At Craig Colony At Sonyea NY	68.30	No	No	21	Less than 30 years of data	21	1919–1932, 1976–1977, 2018–2022	0.834	1.456
04227000	Canaseraga Creek At Shakers Crossing NY	335.00	No	No	58	Yes	30	1993–2022	27.952	34.252
04227500	Genesee River Near Mount Morris NY	1,424.00	Yes	No	111	Yes	30	1993–2022	103.165	131.183
04227995	Conesus Creek Near Lakeville NY	72.00	Yes	Yes	—	—	—	—	—	—
04228500	Genesee River At Avon NY	1,680.00	Yes	No	66	Yes	30	1993–2022	132.949	159.731
04230380	Oatka Creek At Warsaw NY	39.50	No	No	58	Yes	30	1993–2022	2.680	3.651

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Site number	Station name	Drainage area (mi²)	Altered gage	Calculated nonexceedance probabilities	Total length of available record (years)	Is the H_0 rejected with a $\alpha \leq 0.1$?	Length of record after trend analysis (years)	Climate years used to calculate low-streamflow statistics	7Q10 (ft³/s)	30Q10 (ft³/s)
04230500	Oatka Creek At Garbutt NY	205.00	No	No	76	Yes	30	1993–2022	24.674	25.887
04231000	Black Creek At Churchville NY	130.00	No	No	76	Yes	30	1993–2022	1.300	3.032
04231600	Genesee River At Ford Street Bridge, Rochester NY	2,474.00	Yes	Yes	—	—	—	—	—	—
04232000	Genesee River At Rochester NY	2,482.00	Yes	Yes	—	—	—	—	—	—
04232034	Irondequoit Cr At Railroad Mills Near Fishers NY	39.20	No	No	24	Less than 30 years of data	24	1993–2010, 2017–2022	9.027	10.414
04232040	Irondequoit Creek Near Pittsford NY	44.40	No	No	11	Less than 30 years of data	11	1981–1991	9.807	11.824
04232047	Irondequoit Cr @ Linden Ave., E Rochester NY	101.00	Yes	Yes	—	—	—	—	—	—
0423204920	East Branch Allen Creek At Pittsford NY	9.50	Yes	No	11	Less than 30 years of data	11	1992–2002	0.801	1.247
04232050	Allen Creek Near Rochester NY	28.90	Yes	No	62	Yes	30	1993–2022	3.151	5.407
0423205010	Irondequoit Cr Above Blossom Rd Near Rochester NY	142.00	Yes	Yes	—	—	—	—	—	—
0423205025	Irondequoit Creek At Empire Blvd, Rochester NY	151.00	No	No	11	Less than 30 years of data	11	1992–2002	29.581	38.391
04232100	Sterling Creek At Sterling NY	45.90	No	No	38	Yes	30	1967–1995, 2019–2019	1.165	1.825
04232482	Keuka Lake Outlet At Dresden NY	207.00	Yes	No	55	No	55	1966–2012, 2014–2021	9.121	12.184
04232650	Seneca River At Lock 4, Waterloo, NY	742.00	Yes	Yes	—	—	—	—	—	—
04232730	Seneca River Near Seneca Falls NY	785.00	Yes	Yes	—	—	—	—	—	—
04233000	Cayuga Inlet Near Ithaca NY	35.20	No	No	75	No	75	1938–2012	2.827	3.513
04233286	Sixmile Creek At Brooktondale NY	27.00	No	No	19	Less than 30 years of data	19	2004–2022	3.527	4.332

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Site number	Station name	Drainage area (mi²)	Altered gage	Calculated nonexceedance probabilities	Total length of available record (years)	Is the H_0 rejected with a $\alpha \leq 0.1$?	Length of record after trend analysis (years)	Climate years used to calculate low-streamflow statistics	7Q10 (ft³/s)	30Q10 (ft³/s)
04233300	Sixmile Creek At Bethel Grove NY	39.00	No	No	27	Less than 30 years of data	27	1996–2022	3.435	4.458
04234000	Fall Creek Near Ithaca NY	126.00	Yes	No	97	Yes	30	1993–2022	9.795	14.428
0423401815	Salmon Creek Near Ludlowville NY	87.70	No	No	11	Less than 30 years of data	11	2008–2009, 2014–2022	0.803	1.383
04234232	Great Brook Below Victor NY	16.80	No	No	10	Less than 30 years of data	10	1995–2004	0.904	1.111
04235000	Canandaigua Outlet At Chapin NY	195.00	Yes	Yes	—	—	—	—	—	—
04235150	Flint Creek At Potter NY	31.00	No	No	11	Less than 30 years of data	11	1965–1968, 1972–1978	0.049	0.154
04235271	Clyde River At Lock 26 Nr Clyde NY	845.00	Yes	No	31	No	31	1936–1966	31.472	67.358
04235299	Owasco Inlet Below Aurora Street At Moravia NY	106.00	No	No	20	Less than 30 years of data	20	1961–1968, 2011–2022	5.790	7.287
04235440	Owasco Outlet At Genesee St., Auburn NY	204.00	Yes	Yes	—	—	—	—	—	—
04235500	Owasco Outlet Near Auburn NY	206.00	Yes	Yes	—	—	—	—	—	—
04235600	Seneca River (Erie Canal) Near Port Byron NY	2,815.00	Yes	Yes	—	—	—	—	—	—
04236500	Skaneateles Creek At Willow Glen NY	75.80	Yes	Yes	—	—	—	—	—	—
04237496	Seneca River Near Baldwinsville NY	3,130.00	Yes	Yes	—	—	—	—	—	—
04237946	Onondaga Cr Trib 6 Blw Mudboil Area At Tully NY	0.32	Yes	No	19	Less than 30 years of data	19	1993–2011	0.148	0.220
04237962	Onondaga Creek Near Cardiff NY	35.30	No	No	15	Less than 30 years of data	15	2003–2017	5.146	6.353
04239000	Onondaga Creek At Dorwin Avenue, Syracuse NY	88.50	Yes	No	68	Yes	30	1991–2020	15.603	19.258

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Site number	Station name	Drainage area (mi²)	Altered gage	Calculated nonexceedance probabilities	Total length of available record (years)	Is the H_0 rejected with a $\alpha \leq 0.1$?	Length of record after trend analysis (years)	Climate years used to calculate low-streamflow statistics	7Q10 (ft³/s)	30Q10 (ft³/s)
04240010	Onondaga Creek At Spencer Street, Syracuse NY	110.00	Yes	No	51	No	51	1972–2022	30.944	36.114
04240100	Harbor Brook At Syracuse NY	10.00	Yes	Yes	—	—	—	—	—	—
04240105	Harbor Brook At Hiawatha Boulevard, Syracuse NY	12.10	Yes	Yes	—	—	—	—	—	—
04240120	Ley Creek At Park Street, Syracuse NY	29.90	Yes	No	47	No	47	1974–2020	4.835	7.637
04240180	Ninemile Creek Near Marietta NY	45.10	Yes	No	48	Yes	30	1984–2013	1.718	2.588
04240200	Ninemile Creek At Camillus NY	84.30	Yes	Yes	—	—	—	—	—	—
04240300	Ninemile Creek At Lakeland NY	115.00	Yes	Yes	—	—	—	—	—	—
04242500	East Branch Fish Creek At Taberg NY	188.00	Yes	No	85	Yes	30	1979–1995, 2010–2022	35.382	46.872
04243500	Oneida Creek At Oneida NY	113.00	No	No	72	Yes	30	1993–2022	17.745	22.220
04244000	Chittenango Creek Near Chittenango NY	66.30	Yes	No	24	Less than 30 years of data	24	1952–1968, 2016–2022	12.433	14.873
04245000	Limestone Creek At Fayetteville NY	85.50	Yes	No	46	No	46	1941–1986	17.210	19.874
04245200	Butternut Creek Near Jamesville NY	32.20	No	No	40	No	40	1960–1999	4.131	4.939
04245236	Meadow Brook At Hurlburt Rd, Syracuse NY	2.94	Yes	Yes	—	—	—	—	—	—
04246500	Oneida River At Caughdenoy NY	1,382.00	Yes	Yes	—	—	—	—	—	—
04247000	Oneida River Near Euclid NY	1,439.00	Yes	Yes	—	—	—	—	—	—
04247055	Oswego River Near Phoenix NY	4,953.00	Yes	Yes	—	—	—	—	—	—
04249000	Oswego River At Lock 7, Oswego NY	5,100.00	Yes	Yes	—	—	—	—	—	—
04250200	Salmon River At Pineville NY	238.00	Yes	Yes	—	—	—	—	—	—

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Site number	Station name	Drainage area (mi^2)	Altered gage	Calculated nonexceedance probabilities	Total length of available record (years)	Is the H_0 rejected with a $\alpha \leq 0.1$?	Length of record after trend analysis (years)	Climate years used to calculate low-streamflow statistics	7Q10 (ft^3/s)	30Q10 (ft^3/s)
04250750	Sandy Creek Near Adams NY	137.00	No	No	56	Yes	30	1985–1995, 2004–2022	4.333	6.574
04252500	Black River Near Boonville NY	284.00	Yes	No	111	Yes	30	1993–2022	101.409	142.394
04253296	Buck Creek Near Inlet NY	1.16	No	No	22	Less than 30 years of data	22	1990–1990, 2002–2022	0.039	0.112
04253500	Middle Branch Moose River At Old Forge NY	55.00	Yes	Yes	—	—	—	—	—	—
04254000	Middle Branch Moose River Near Mckeever NY	151.00	Yes	No	42	Yes	30	1939–1968	41.048	50.771
04254500	Moose River At Mckeever NY	363.00	No	No	60	Yes	30	1941–1970	97.272	119.089
04255500	Independence River At Sperryville NY	81.80	No	No	12	Less than 30 years of data	12	1930–1941	15.087	17.776
04256000	Independence River At Donnattsburg NY	88.70	No	No	79	Yes	30	1993–2022	22.431	30.976
04258000	Beaver River At Croghan NY	291.00	Yes	No	86	No	86	1932–1946, 1948–1981, 1983–1992, 1994–1995, 1997–2012, 2014–2022	163.256	227.654
04258500	Deer River At Copenhagen NY	89.00	No	No	26	Less than 30 years of data	26	1931–1956	2.042	4.046
04258700	Deer River At Deer River NY	97.20	No	No	11	Less than 30 years of data	11	1958–1968	2.740	7.266
04260500	Black River At Watertown NY	1,864.00	Yes	No	101	Yes	30	1993–2022	847.982	1,049.977
04261000	Oswegatchie River At Cranberry Lake NY	140.00	Yes	Yes	—	—	—	—	—	—
04262000	Oswegatchie River Near Oswegatchie NY	259.00	Yes	No	77	Yes	30	1993–2022	92.542	124.340

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Site number	Station name	Drainage area (mi²)	Altered gage	Calculated nonexceedance probabilities	Total length of available record (years)	Is the H_0 rejected with a $\alpha \leq 0.1$?	Length of record after trend analysis (years)	Climate years used to calculate low-streamflow statistics	7Q10 (ft³/s)	30Q10 (ft³/s)
04262500	West Branch Oswegatchie River Near Harrisville NY	258.00	Yes	No	105	Yes	30	1993–2022	47.884	60.894
04263000	Oswegatchie River Near Heuvelton NY	986.00	Yes	No	105	No	105	1918–2022	220.078	278.091
04264331	Saint Lawrence R At Cornwall Ont Nr Massena NY	298,800.00	Yes	Yes	—	—	—	—	—	—
04265000	Grass River At Pyrites NY	333.00	No	No	52	Yes	30	1948–1977	77.546	102.912
04265432	Grass River At Chase Mills NY	598.00	No	No	18	Less than 30 years of data	18	2005–2022	88.213	118.736
04266500	Raquette River At Piercefield NY	721.00	Yes	No	111	No	111	1910–1940, 1942–1958, 1960–2022	84.876	163.451
04267500	Raquette River At South Colton NY	937.00	Yes	Yes	—	—	—	—	—	—
04268000	Raquette River At Raymondville NY	1,125.00	Yes	No	76	No	76	1945–2005, 2008–2022	325.378	468.665
04268800	West Branch St. Regis River Near Parishville NY	171.00	No	No	38	No	38	1960–1968, 1993–2015, 2017–2022	52.811	65.477
04269000	St. Regis River At Brasher Center NY	612.00	No	No	106	No	106	1912–1917, 1921–1996, 1999–2022	157.522	193.129
04269500	Deer River At Brasher Iron Works NY	191.00	No	No	12	Less than 30 years of data	12	1914–1916, 1960–1968	30.986	35.725
04270000	Salmon River At Chasm Falls NY	132.00	Yes	No	82	Yes	30	1979–1982, 1988–2013	82.979	100.504
04270200	Little Salmon River At Bombay NY	89.70	No	No	56	No	56	1959–1995, 2004–2022	14.102	18.757

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04270500	Chateaugay River Near Chateaugay NY	112.00	Yes	No	36	No	36	1928–1931, 1933–1940, 1942–1965	45.361	54.029
04270510	Chateaugay River Below Chateaugay NY	151.00	Yes	No	29	Less than 30 years of data	29	1967–1995	56.881	64.014
04271500	Great Chazy River At Perry Mills NY	243.00	Yes	No	70	No	70	1930–1968, 1991–2015, 2017–2022	18.049	25.137
04271815	Little Chazy River Near Chazy NY	50.30	No	No	30	No	30	1991–2014, 2017–2022	0.996	1.460
04273000	Saranac River At Saranac NY	521.00	No	No	12	Less than 30 years of data	12	1932–1943	147.731	168.782
04273500	Saranac River At Plattsburgh NY	608.00	Yes	Yes	—	—	—	—	—	—
04273700	Salmon River At South Plattsburgh NY	63.30	No	No	39	Yes	30	1992–2014, 2016–2022	9.956	12.170
04273800	Little Ausable River Near Valcour NY	67.80	No	No	30	No	30	1993–2022	3.755	6.256
04274000	W Br Ausable R Nr Lake Placid NY	116.00	Yes	Yes	—	—	—	—	—	—
04274500	Black Brook At Black Brook NY	49.40	Yes	No	36	Yes	30	1932–1961	4.423	7.381
04275000	East Branch Ausable River At Au Sable Forks NY	198.00	Yes	No	76	Yes	30	1972–1995, 2017–2022	39.754	53.524
04275500	Ausable River Near Au Sable Forks NY	446.00	Yes	No	87	No	87	1912–1917, 1919–1968, 1991–2015, 2017–2022	104.403	126.144
04276500	Boquet River At Willsboro NY	270.00	Yes	No	75	No	75	1925–1968, 1991–2014, 2016–2022	31.260	38.643

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04276842	Putnam Creek East Of Crown Point Center NY	51.60	No	No	25	Less than 30 years of data	25	1991–2014, 2019–2019	1.036	1.809
04278300	Northwest Bay Brook Near Bolton Landing NY	22.00	No	No	27	Less than 30 years of data	27	1967–1968, 1973–1997	0.655	1.007
04279000	La Chute At Ticonderoga NY	234.00	Yes	Yes	—	—	—	—	—	—
04280000	Poultney River Below Fair Haven, VT	187.00	Yes	No	93	No	93	1930–2022	8.545	12.200
04280350	Mettawee River Near Pawlet, VT	70.20	No	No	24	Less than 30 years of data	24	1986–2009	8.612	11.456
04280450	Mettawee River Near Middle Granville NY	167.00	No	No	32	No	32	1991–2022	12.594	16.946
04292500	Lamoille River At East Georgia, VT	686.00	No	No	92	No	92	1931–2022	154.865	201.542
04292700	Stone Bridge Brook Near Georgia Plains, VT	8.45	No	No	21	Less than 30 years of data	21	1964–1974, 1991–2000	0.338	0.674

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