

# WATER DATA FOR THE NATION (WDFN)

Northeast Regional Climate Center  
May 28, 2026 Webinar

Gardner Bent  
U.S. Geological Survey  
New England Water Science Center  
gbent@usgs.gov

## Water Data for the Nation

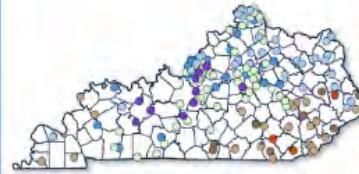
High-quality and discoverable water data for everyone  
Over 135 years of water data from more than one million monitoring locations

The United States Geological Survey (USGS) collects water data at monitoring locations across the United States using automated sensors and manual data collection. Each monitoring location has location information that details the location name and identifier, the agency responsible for data collection, and geographic information about the location. Most monitoring locations have data available in one or more of the following categories of water data: continuous data, daily data, field measurements, and discrete sample data.

Learn more about the [categories of water data](#) available in Water Data for the Nation.

### Find the water information you need

#### Discover real-time data in your state



State pages provide a summary of the latest continuous data being collected in your state. Quickly filter the map and list to show a data type of interest to you, or customize the filters to further refine the map and list to your needs.

Select a State or Territory Page

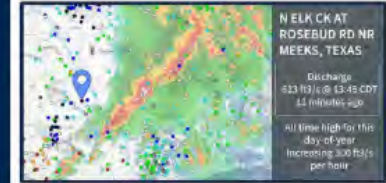
#### Create a list of your favorite monitoring locations



Make and share a list of USGS monitoring locations that you are interested in. Access the latest continuous water data at those locations all in one place. Create combined location graphs or a custom list of data graphs from your favorites list.

[Go to My Favorites](#)

#### View latest conditions and weather events



USGS has over 13,500 real-time stream, lake, reservoir, precipitation, water quality, and groundwater monitoring locations. View the latest continuous data in your area together with weather-related data to understand rapidly changing water conditions.

[Go to the National Water Dashboard](#)

#### Create a water alert



USGS monitors water conditions nationwide. Get notified with WaterAlert, a near-real time hydrologic alerting system that notifies you of stream, lake, and coastal conditions across the nation. Subscribe to text or email alerts when water conditions change.

[Go to WaterAlert](#)

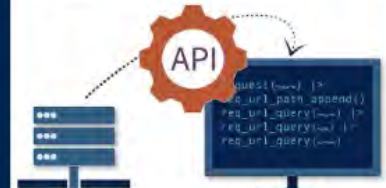
#### Explore historical water data



USGS has collected water data throughout US states and territories for more than 135 years. Find historical and currently operational monitoring locations collecting continuous and discrete sample data that interests you. Filter using locations of interest, type of water data, and recency of data that meet your needs.

[Go to Explore USGS Water Data](#)

#### Access water data



USGS has several options to support access to all water data available in Water Data for the Nation. Water Data APIs provide USGS water data in machine-readable formats via REST APIs, a common framework applications use to search and download data. The dataRetrieval package simplifies the process of loading USGS water data into R or Python environments.

[Go to Water Data APIs](#)

[Go to dataRetrieval](#)

# WATER DATA FOR THE NATION - WDFN

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[Go to Water Data APIs]  
[Go to dataRetrieval]

[Questions or Comments]

<https://waterdata.usgs.gov/>

- USGS WDFN replaced USGS WaterWatch and Water Quality Watch on Feb. 26, 2026
- Groundwater Watch was previously discontinued


# WATER DATA BLOG

An official website of the United States government [Here's how you know](#)

**USGS**  
science for a changing world

Water Data Blog About Categories Tags

### Water Data for the Nation

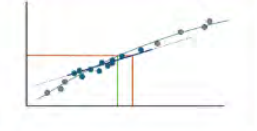


New Feature:  
WaterAlert Expiration

[New Feature - Expiration of alerts on WaterAlert](#)

Wed, May 20, 2026  
Leah Leno

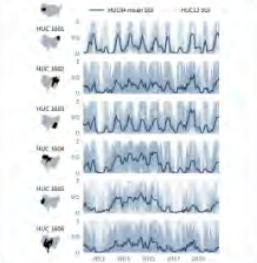
### Water Data for the Nation



USGS Rating Curves

[Modernized access for USGS rating curves is now available](#)

Tue, Apr 28, 2026  
Mike Mahoney

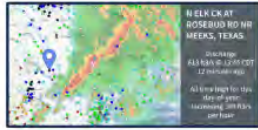


Purrrfect mini-maps - Visualizing water availability across the U.S.

[Purrrfect mini-maps - Visualizing water availability across the U.S.](#)


Mon, Apr 20, 2026  
Elmera Azadpour, Althea Archer

### Water Data for the Nation



Updates to National Water Dashboard


[Updates and improvements to the National Water Dashboard](#)



National Water Availability Assessment Data Companion

[National Water Availability Assessment Data Companion](#)

### WHAT'S IN A NAME?



Water just visiting  
Water lingers

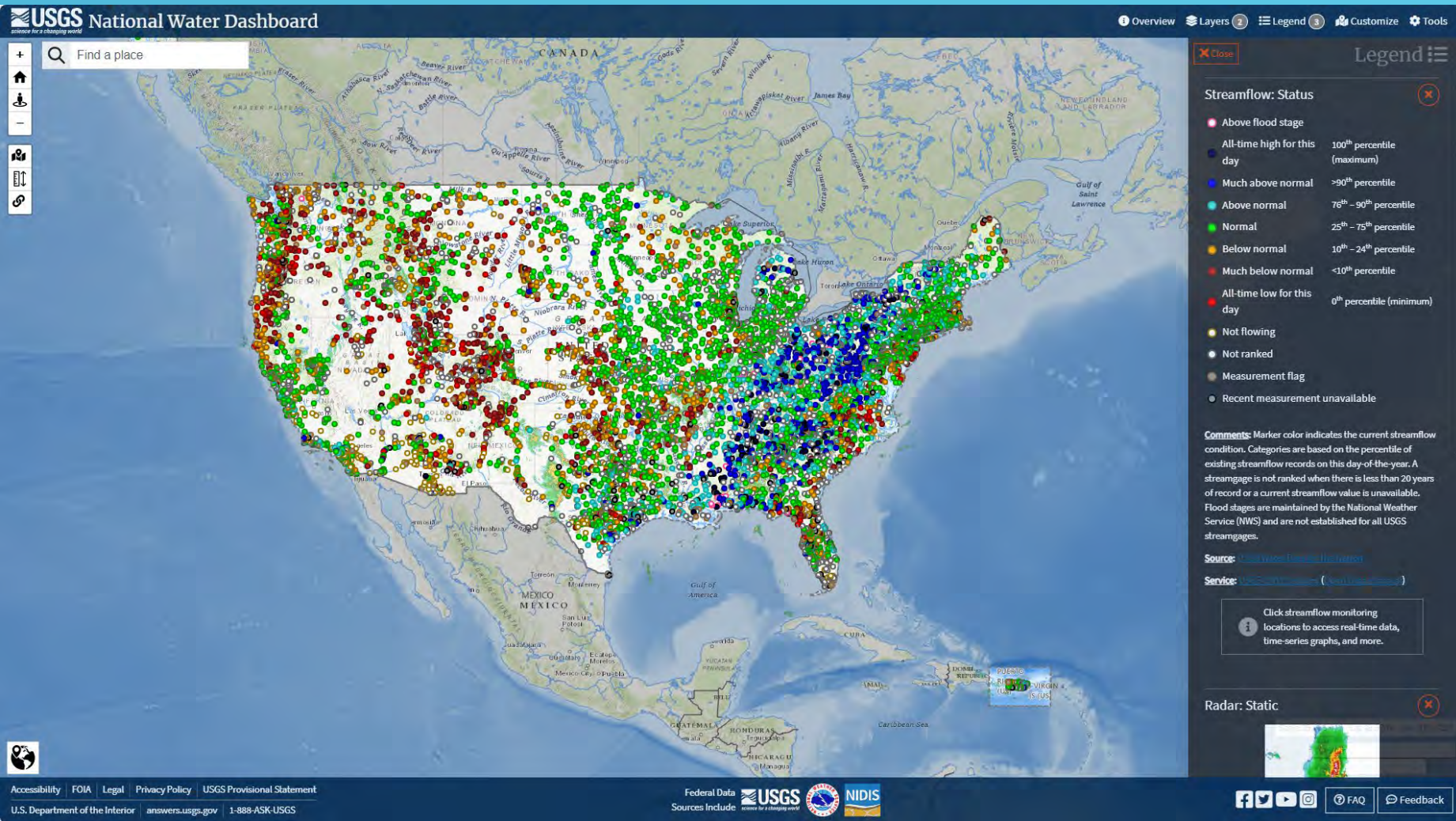
A map that glows with the vocabulary of water

[A map that glows with the vocabulary of water](#)

<https://waterdata.usgs.gov/blog/>

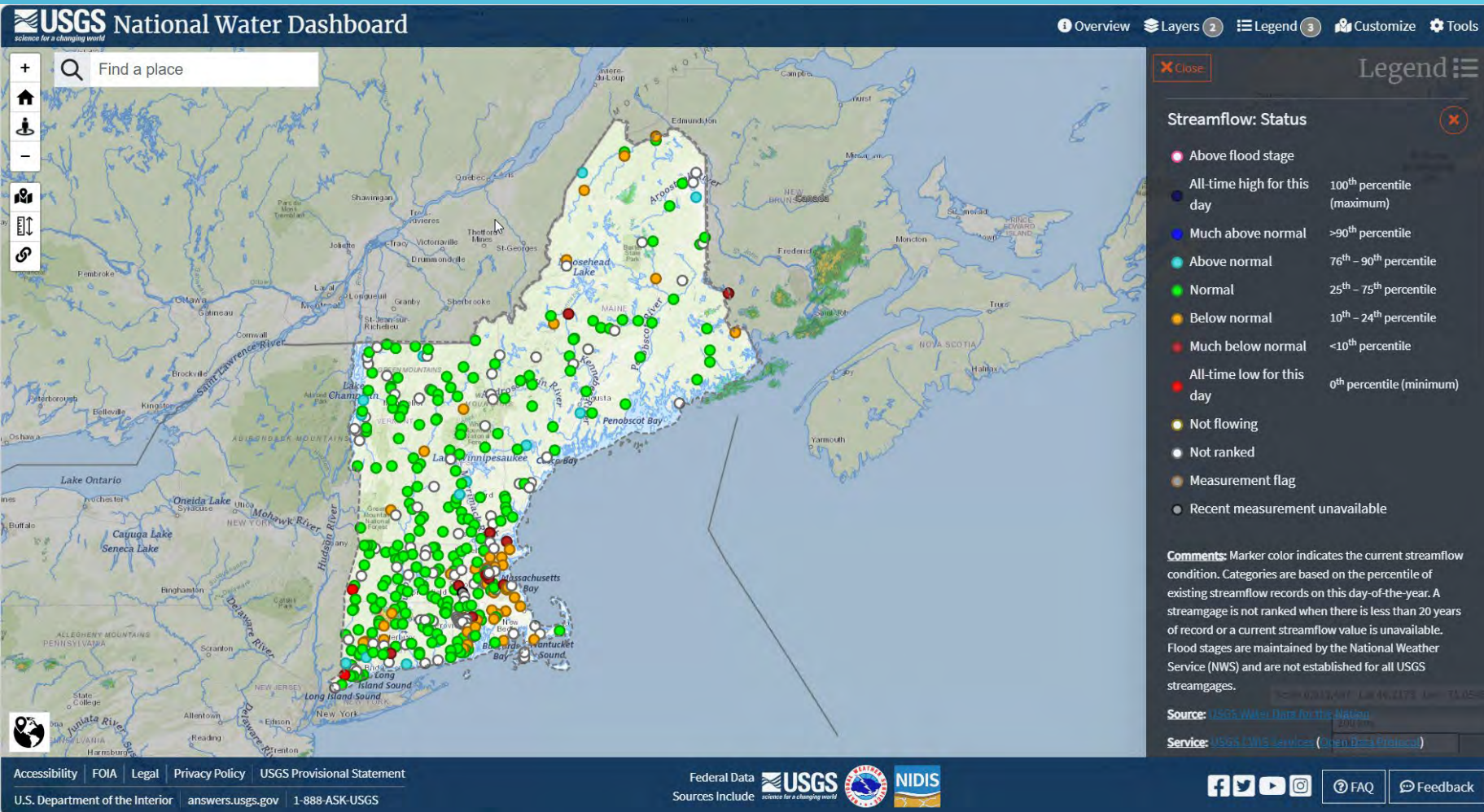


# NATIONAL WATER DASHBOARD



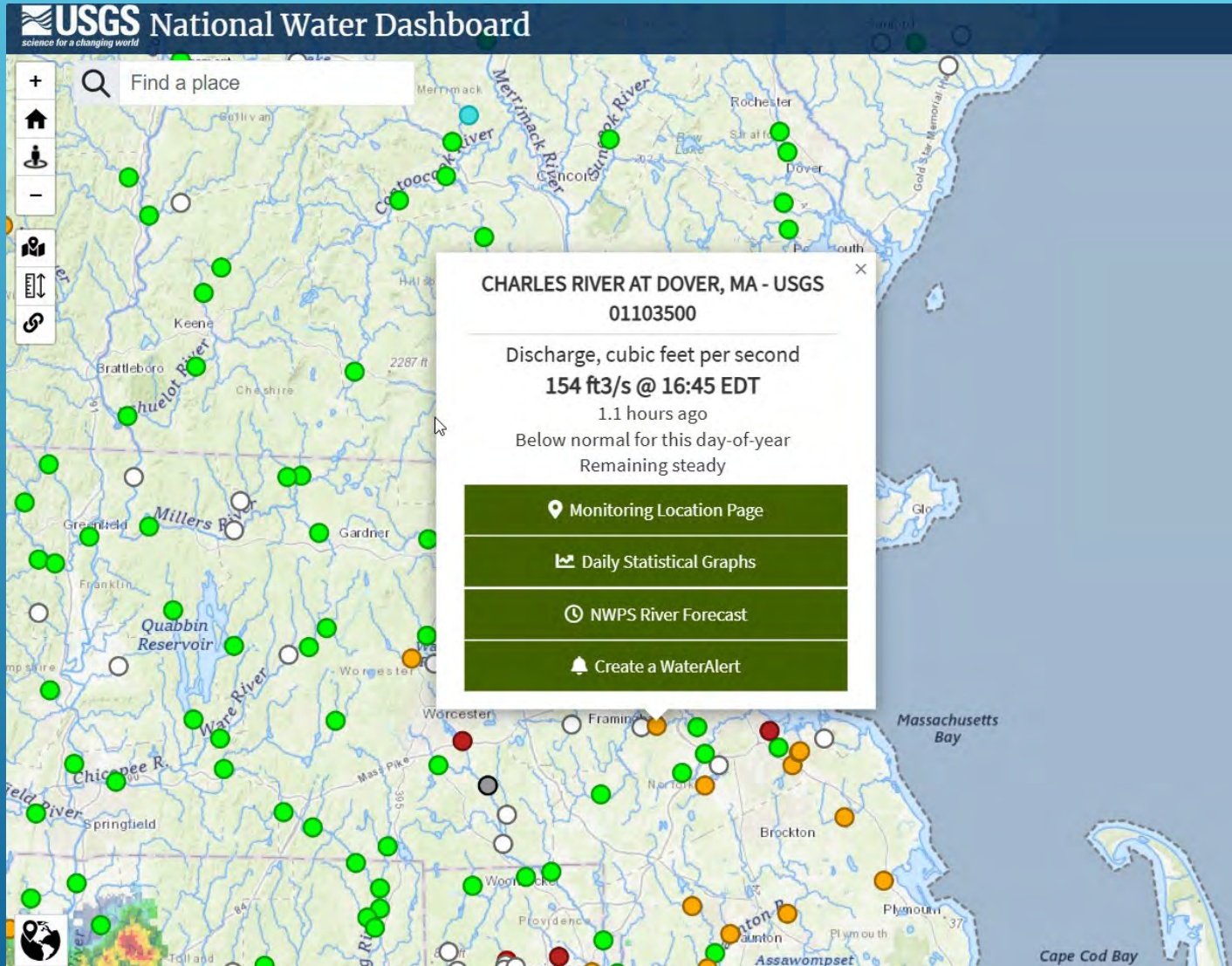
<https://dashboard.waterdata.usgs.gov/app/nwd/en/>

# NATIONAL WATER DASHBOARD



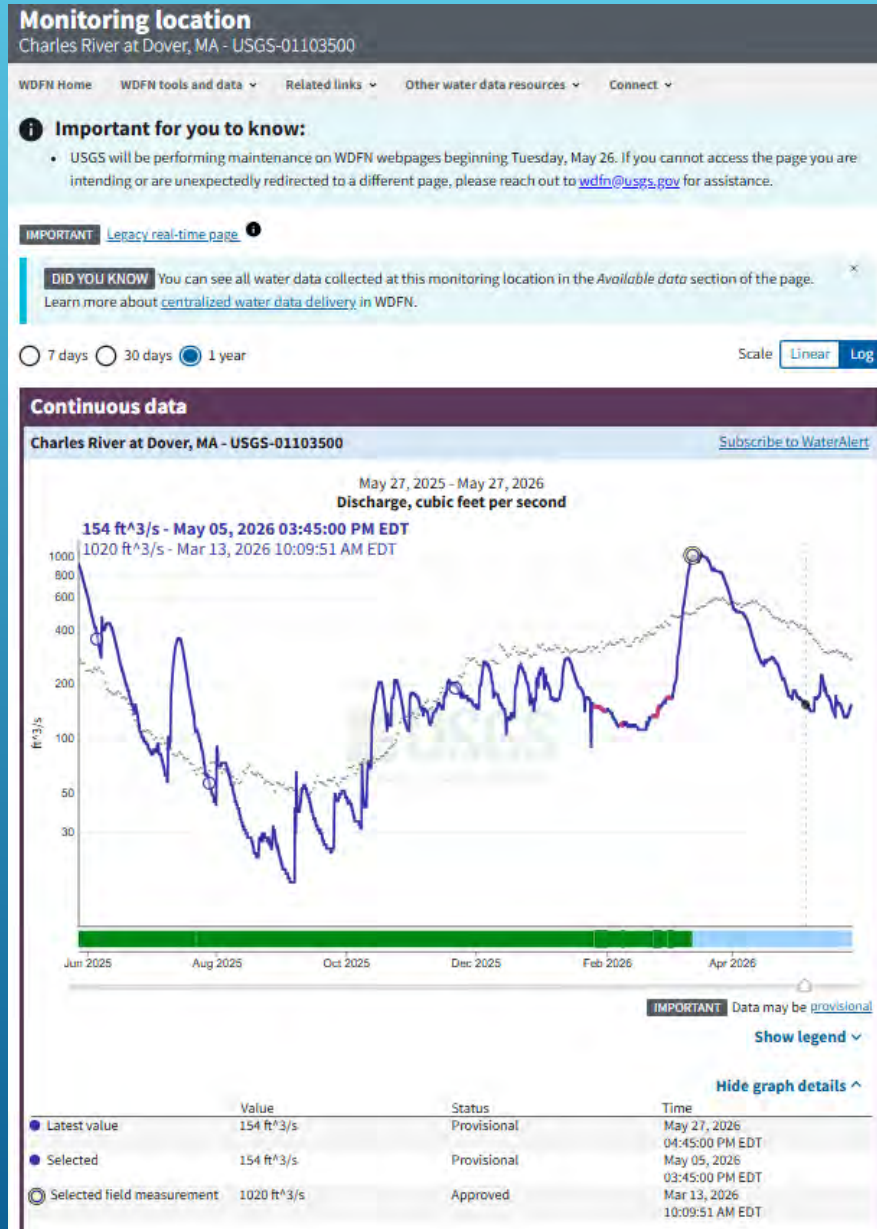
<https://dashboard.waterdata.usgs.gov/app/nwd/en/?doi=wsc-newengland>

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<https://dashboard.waterdata.usgs.gov/app/nwd/en/?aoi=wsc-newengland>

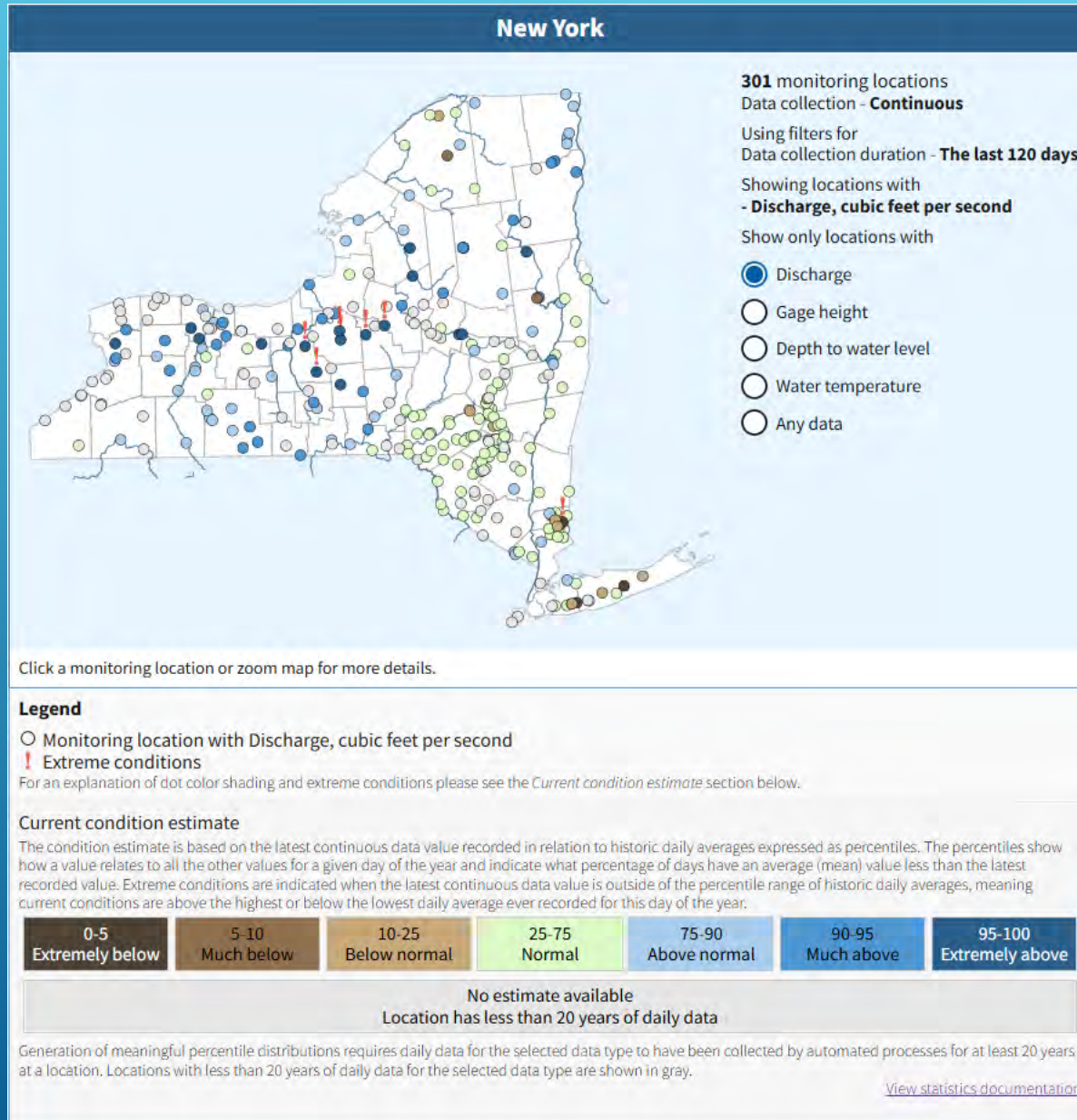
# NATIONAL WATER DASHBOARD



<https://waterdata.usgs.gov/monitoring-location/USGS-01103500/#period=P365D&dataTypeId=continuous-00060-0&showMedian=true&showFieldMeasurements=true>

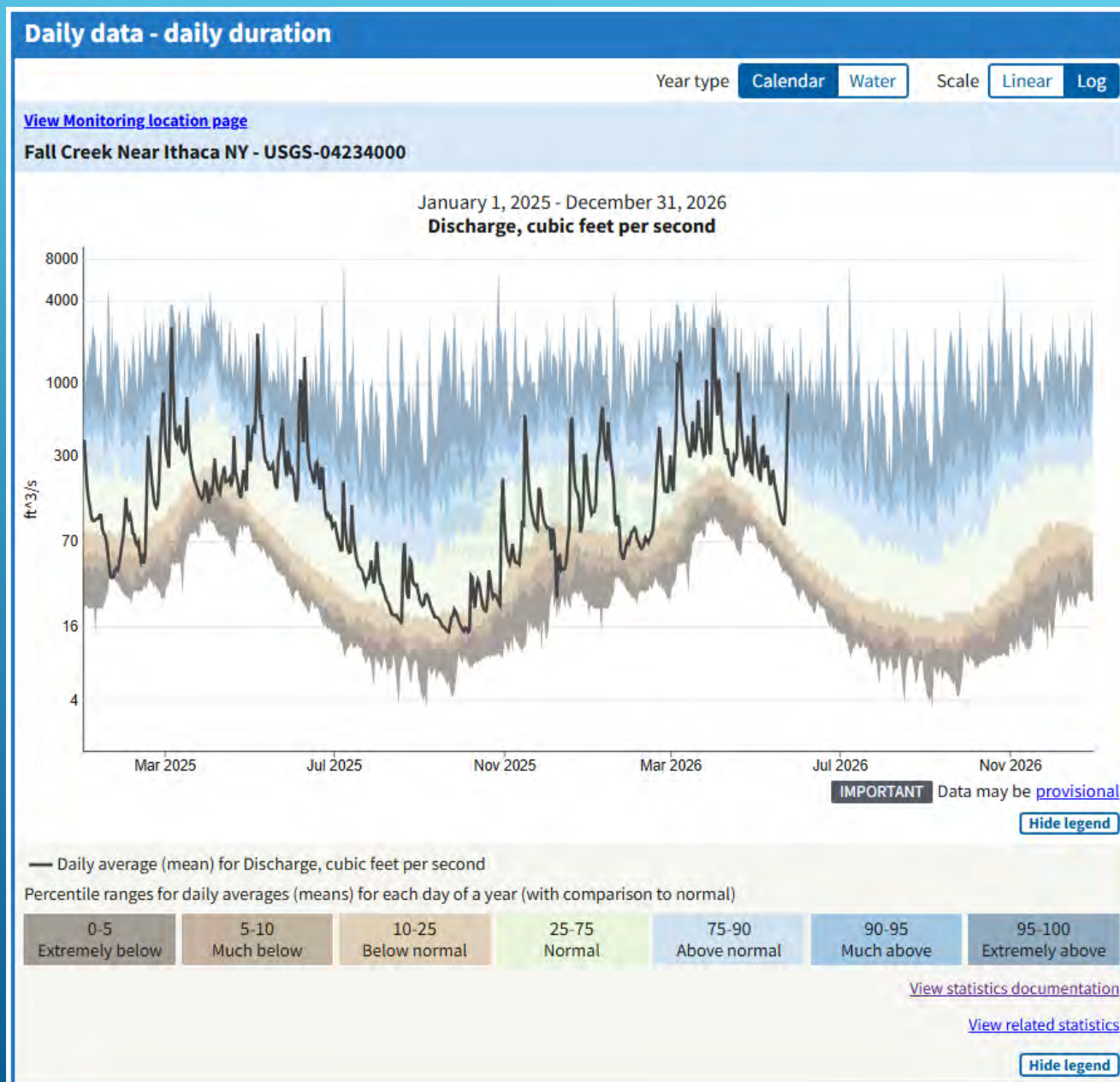
Instantaneous data plots can not exceed 3 years where as daily data can be plotted for the entire period of record

# WATER DATA FOR A STATE



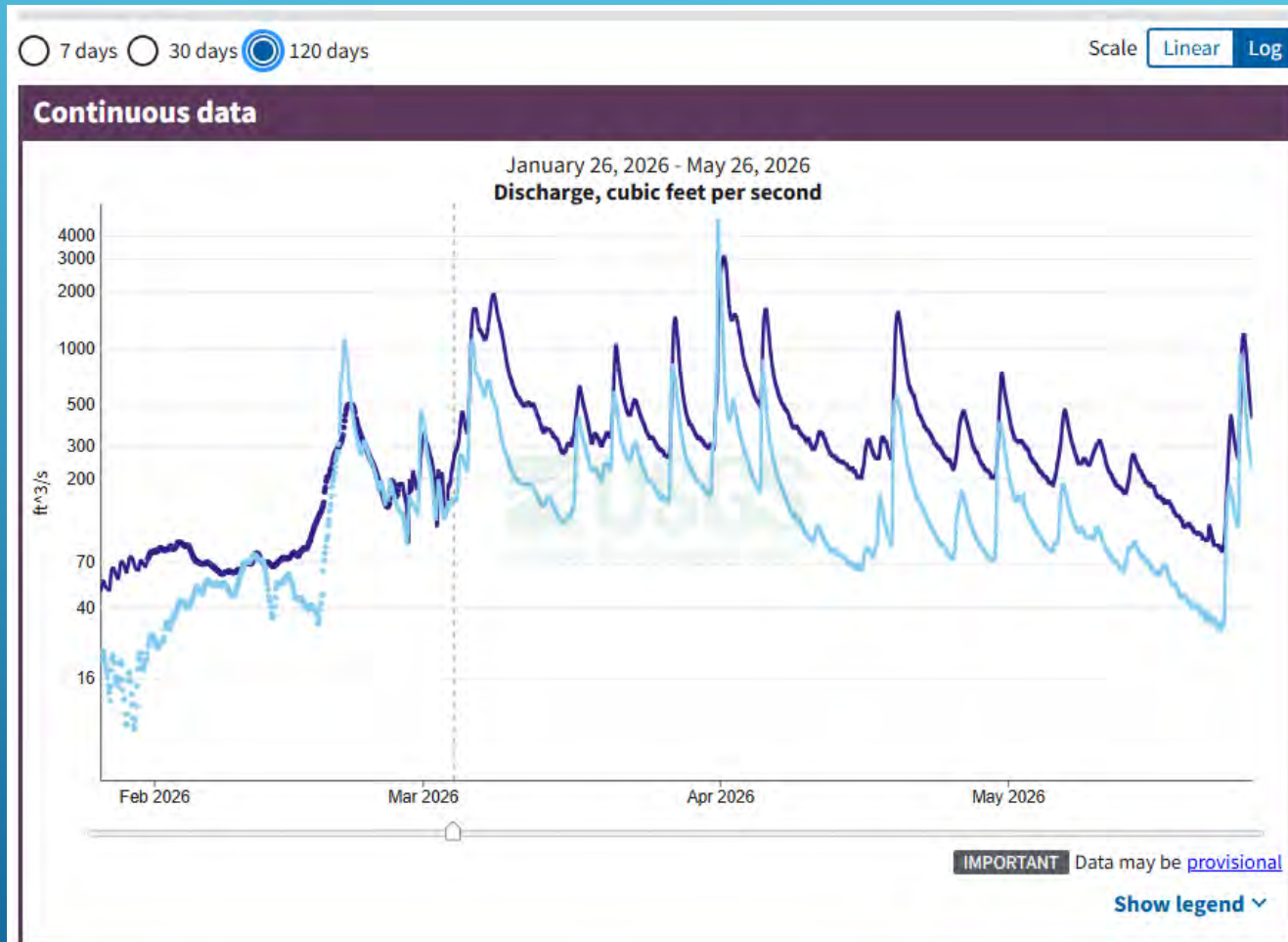
[https://waterdata.usgs.gov/  
state/New%20York/](https://waterdata.usgs.gov/state/New%20York/)

# WATER DATA FOR A STREAMGAGE



<https://waterdata.usgs.gov/monitoring-location/USGS-04234000/statistical-graphs/>

# WATER DATA FOR MORE THAN ONE STREAMGAGE



[https://waterdata.usgs.gov/  
combined-location-  
graph/#locationId=USGS-  
04234000&locationId=USGS-  
0423401815&parameterCod  
e=00060&period=P120D](https://waterdata.usgs.gov/combined-location-graph/#locationId=USGS-04234000&locationId=USGS-0423401815&parameterCode=00060&period=P120D)



## Selected values

Location	Value	Status	Time
Fall Creek Near Ithaca NY - <a href="#">USGS-04234000</a>	251 ft <sup>3</sup> /s	Approved	Mar 04 06:00 AM EST
Salmon Creek Near Ludlowville NY - <a href="#">USGS-0423401815</a>	156 ft <sup>3</sup> /s	Approved	Mar 04 06:00 AM EST

# USGS WATER DATA OGC API'S

## USGS Water Data OGC APIs

These APIs provide OGC-compliant interfaces to USGS water data, letting you download continuous sensor measurements, discrete field measurements, metadata about monitoring locations, and more.

[geospatial](#) [data](#) [api](#) [hydrology](#) [USGS](#)

## Available endpoints

[View all the endpoints available on this website.](#)

### Latest continuous

This endpoint provides the most recent observation for each time series of continuous data. Continuous data are collected via automated sensors installed at a monitoring location. They are collected at a high frequency and often at a fixed 15-minute interval.

[Latest continuous endpoint](#)

### Continuous values

Continuous data are collected via automated sensors installed at a monitoring location. They are collected at a high frequency and often at a fixed 15-minute interval. Depending on the specific monitoring location, the data may be transmitted automatically via telemetry and be available on WDFN within minutes of collection, while other times the delivery of data may be delayed if the monitoring location does not have the capacity to automatically transmit data.

[Continuous values endpoint](#)

### Daily values

 Daily data provide one data value to represent water conditions for the day. Throughout much of the history of the USGS, the primary water data available was daily data collected manually at the

### Latest daily values

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#### APIs provided by:

**US Geological Survey - Water Data for the Nation**  
<https://waterdata.usgs.gov>

#### Documentation

[API reference - Swagger UI.](#)  
[Long form documentation and tutorials.](#)

#### Questions? Comments?

[Contact us at this link](#) with any questions or feedback about these APIs.

#### Citation information

Data provided by this service is [US Government work in the public domain](#).

If you use our data in a publication, please cite your usage following the [citation templates at this link](#).

<https://api.waterdata.usgs.gov/ogcapi/v0/>

# USGS STATISTICAL SOFTWARE PACKAGES

## Statistical software packages

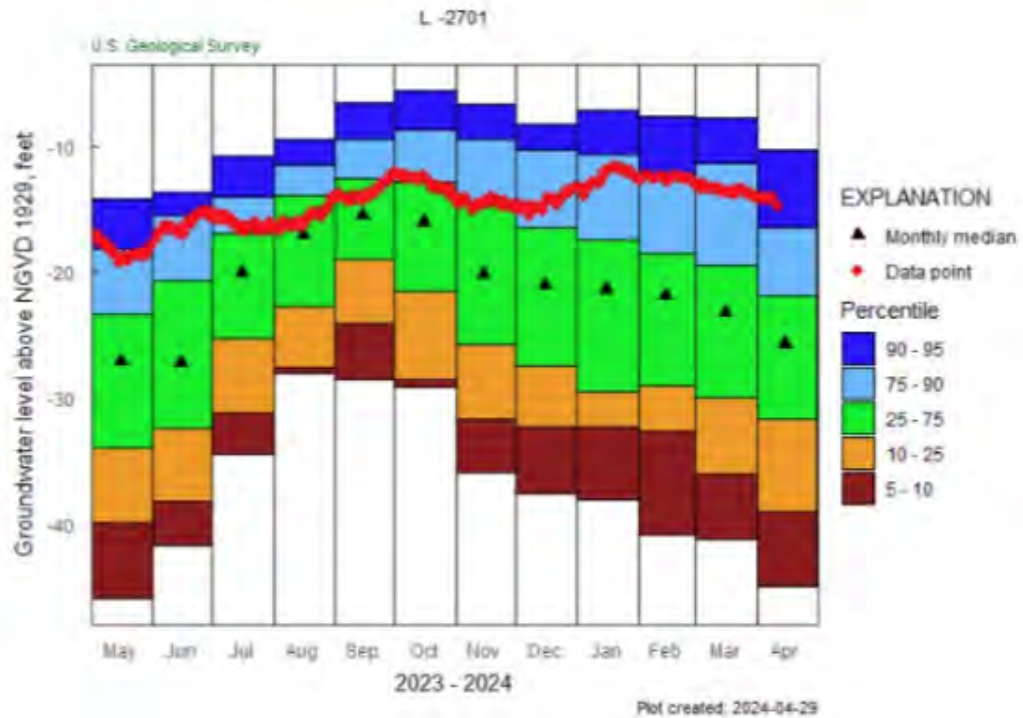
WDFN computational tools are utilized by code developers performing analyses or building simple dashboards (e.g. “shiny apps” in R or “dash apps” in Python). All software packages are hosted in [USGS GitHub repositories](#) and are available for download from source or using package managers. We’ve got three main tools that can be used on the client side to access and analyze water information in similar patterns to WaterWatch.

[dataRetrieval](#) provides general USGS water data access including daily values data. It’s available in three languages: python, R, and Julia.

- <https://waterdata.usgs.gov/blog/wdfn-stats-delivery/>
- <https://github.com/usgs><https://github.com/>
- <https://github.com/DOI-USGS/dataRetrieval>

# USGS STATISTICAL SOFTWARE PACKAGES

The [Hydrologic Analysis Package](#) ( HASP ) enables you to retrieve groundwater level and groundwater quality data, aggregate these data, plot them, and generate basic statistics. For example, the monthly frequency plot pairs the daily groundwater level with monthly statistics. Functions are available to customize the plots or to access the underlying statistics which can be used to power custom groundwater analysis.

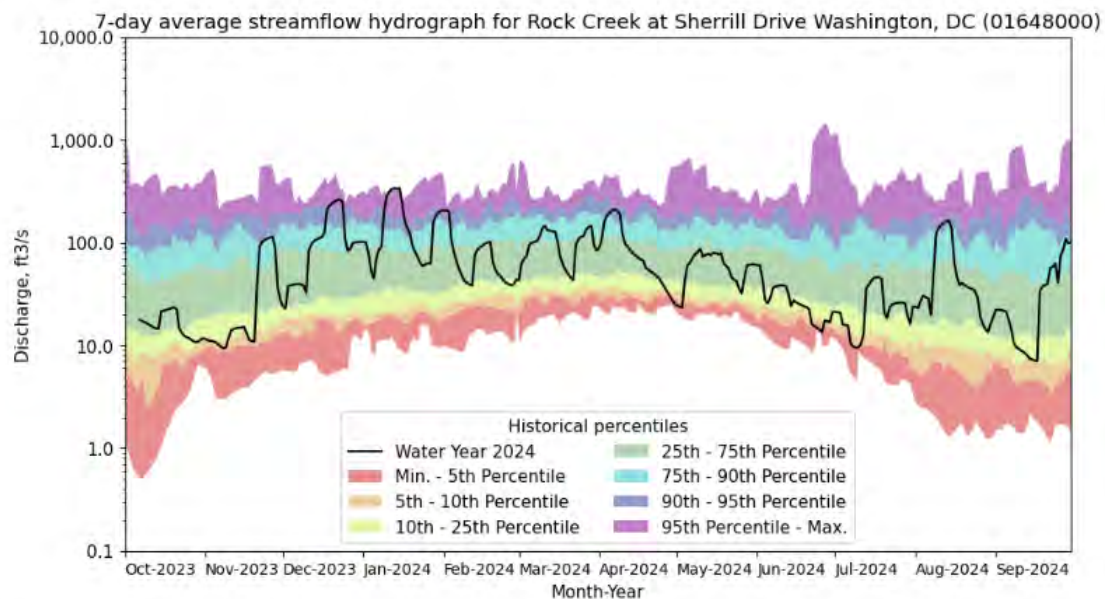


A monthly frequency plot created using HASP

<https://github.com/DOI-USGS/HASP>

# USGS STATISTICAL SOFTWARE PACKAGES

The [Hydrologic Surface Water Analysis Package](#) ( `hyswap` ) is a new library that performs common statistical calculations on surface water data, such as rolling n-day averages, percentiles, and exceedance probabilities. It also contains basic plotting functions that produce flow duration curves, cumulative hydrographs, raster hydrographs, and streamflow hydrographs. For example, the image below depicts a streamflow duration hydrograph for water year 2024 at a single monitoring location using rolling 7-day averages. The colorful envelopes surrounding the hydrograph represent the different percentile ranges using the built-in "Rainbow" palette: you can choose from a couple built-in palettes or use your own.



A streamflow duration hydrograph created with `hyswap`

Similar to `HASP`, `hyswap` documentation includes a suite of tutorials including [simple examples](#) for each graph or function. There are also more complicated example workflows showing how to do things like estimate the runoff for one or more HUC8s. You can read [this blog post](#) to learn more about using `hyswap`.

- <https://doi-usgs.github.io/hyswap/#>
- <https://doi-usgs.github.io/hyswap/examples/index.html#>
- <https://waterdata.usgs.gov/blog/introducing-hyswap/>

# USGS VIZLAB

An official website of the United States government [Here's how you know](#)



## USGS VizLab

data + design studio

Visualization portfolio +

About +

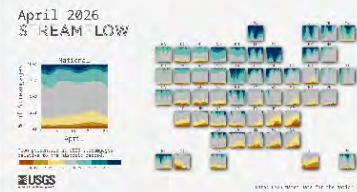
Access USGS Water Data +

### Series

Recurring visualizations of current conditions and events.

#### Flow tiles

Monthly



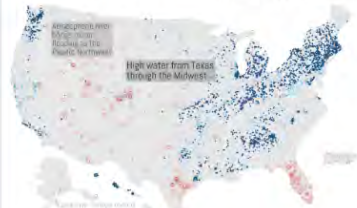
April 2026

Monthly tile maps summarizing streamflow conditions by state.

[View latest release](#)

#### River conditions

Quarterly Annual



January 1, 2026 - March 31, 2026

Animations of streamflow conditions at USGS monitoring locations.

[View latest release](#)

#### Groundwater conditions

Annual



January 1 - December 31, 2024

Animations of groundwater conditions at USGS monitoring locations.

[View latest release](#)



<https://water.usgs.gov/vizlab/index.html>

# R-SHINNY APPS – MONTHLY STREAMFLOWS

An official website of the United States government [Here's how you know](#)

**USGS**  
science for a changing world

Monthly Streamflow Conditions in New England Map of Monthly Streamflow Table of Selected Data

Select State(s):  
All (New England)  
Maine  
New Hampshire  
Massachusetts

Select Month: April 2026

Select Statistic: Median

**Map of Conditions**

Map showing streamflow conditions in New England for April 2026, categorized by median streamflow relative to normal. The map includes a legend for map styles (Stadia Alidade Smooth, USGS Topo, OpenStreetMap) and checkboxes for 'Sites With Incomplete Data for Month' and 'Sites With No Data or Unranked for Month'. An 'EXPLANATION Classes (Median)' legend is also present.

Class	Description
Maximum	Maximum
>90 Much above normal	>90 Much above normal
76 - 90 Above normal	76 - 90 Above normal
25 - 75 Normal	25 - 75 Normal
10 - 24 Below normal	10 - 24 Below normal
<10 Much below normal	<10 Much below normal
Minimum	Minimum
Not ranked	Not ranked
No data	No data
Incomplete data	Incomplete data

**About this Web Application**

This web application shows the status of monthly streamflow data at streamgages in New England relative to monthly site statistics for each gage. Streamflow data for New England are shown as either the median or mean flows for all months during the past year based on data that may be provisional and subject to review and revision.

Sites with incomplete data for the month can be highlighted by turning on the "Sites With Incomplete Data for the Month" checkbox. The calculations of median and mean streamflows for the highlighted sites are based on incomplete data for the selected month. Data may be incomplete or unavailable due to the effects of ice during winter months, equipment malfunctions, or interruptions in data transmission.

The data on long-term monthly statistics for streamflow are provided through query of the U.S. Geological Survey Water Data Statistics API (U.S. Geological Survey, 2026a) through the R dataRetrieval Interface (U.S. Geological Survey, 2026b). Data from this source are based on approved streamflow data. Data on site streamflow statistics are refreshed monthly in this application. Sites are considered not ranked if there were fewer than 20 years of data available for the selected month.

Data on streamflow for the last year are provided through query of the USGS Water Data APIs (U.S. Geological Survey, 2026c) through the R dataRetrieval interface (De Cicco and others, 2026). Data are retrieved during the first day of the month. These data are used to compute the monthly means and medians for the months during the past year. For sites with missing record, data from previous months may be updated monthly as new estimates of flow become available once the data are processed.

Streamflow data are characterized for the selected month by comparison of the median or mean with percentile categories. A percentile is a value on a scale of 100 that indicates the percentage of a distribution that is equal to or below that value. Minimum indicates that the median or mean streamflow is the lowest value ever determined for the selected month. Similarly, the flow class Maximum indicates that the median or mean streamflow is the highest value ever determined for the selected month.

**Description of Web Page Content**

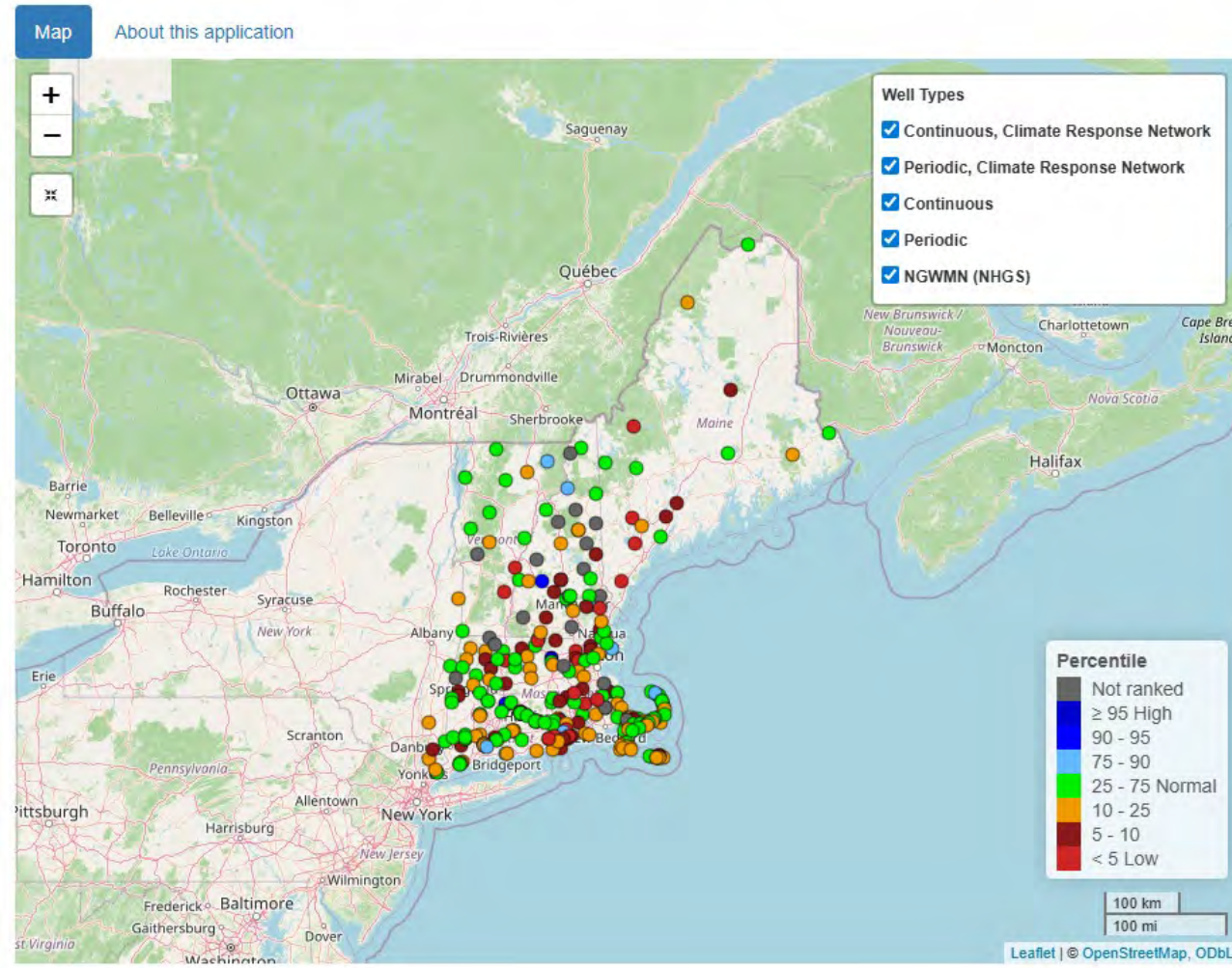
The web application contains three selectors at the top of the page, a "Map of Conditions" panel and an "About" panel on the main page. There are two tabs, one for the "Map of Monthly Streamflow," which will be shown by default, and a "Table of Selected Data" tab.

[https://rconnect.usgs.gov/NEWENG\\_monthly/](https://rconnect.usgs.gov/NEWENG_monthly/)

# R-SHINNY APPS – GROUNDWATER LEVELS

## Groundwater Levels in New England

Recent conditions relative to historical monthly statistics



[https://newengland.water.usgs.gov/web\\_app/GWW/GWW.html](https://newengland.water.usgs.gov/web_app/GWW/GWW.html)

# R-SHINNY APPS – GROUNDWATER LEVELS

An official website of the United States government [Here's how you know](#)



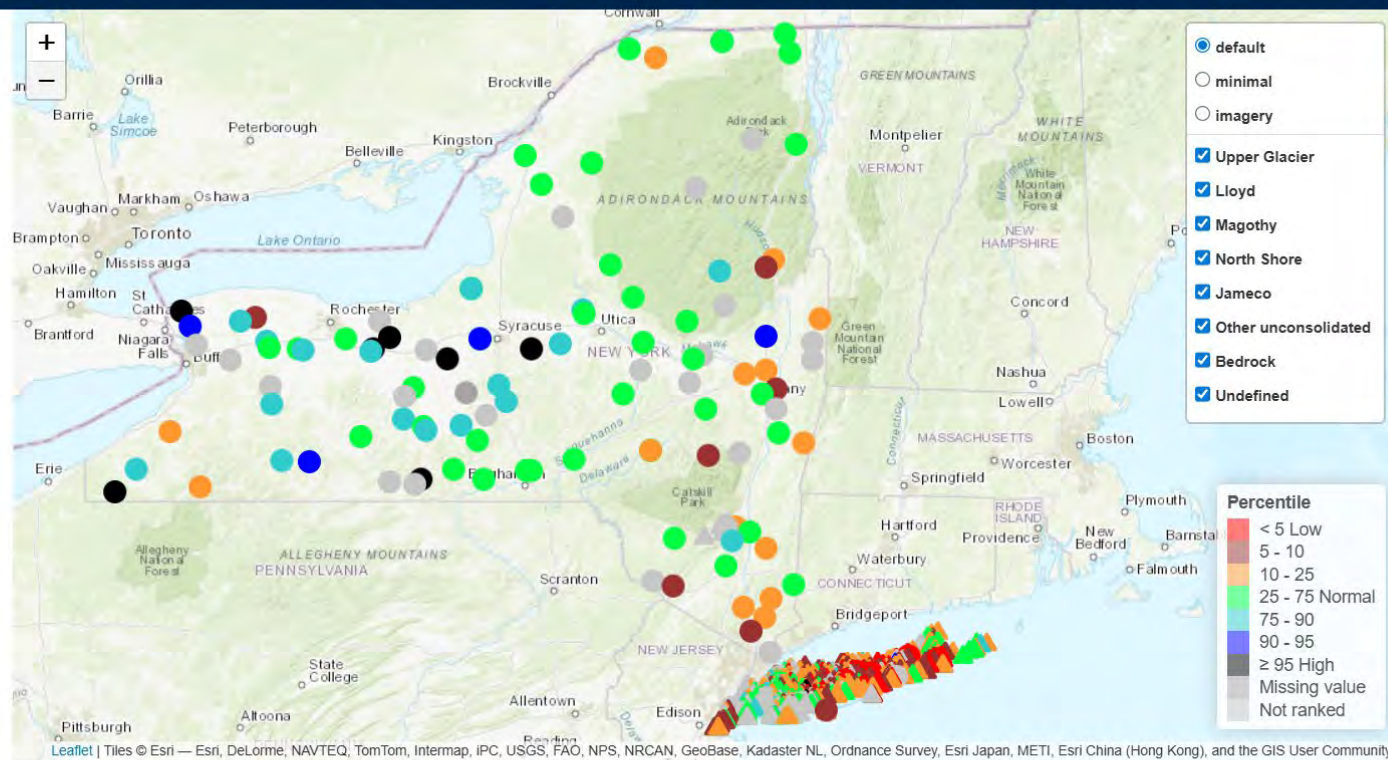
## New York Groundwater Watch

Map and Data About

The U.S. Geological Survey New York Water Science Center maintains a network of monitoring wells across New York State in cooperation with federal, state, and local partners. The map at right displays color-coded percentiles from either the most recent depth-to-water data or the previous month of data based on the selection criteria below. Sites with less than 10 years of data are shown on the map as 'Not ranked'. Monitoring sites with continuous data are displayed with a ● and those with discrete data have a ▲. Click a site on the map to display detailed site information, a plot of monthly conditions for the past year, and links to the site data. In addition, the checkbox in the top right allows a user to turn on and off wells based on the aquifer the well is monitoring. The monthly conditions plot may take a few seconds to load after clicking a site depending on the amount of data available.

### Select data to display on map:

Most recent data available

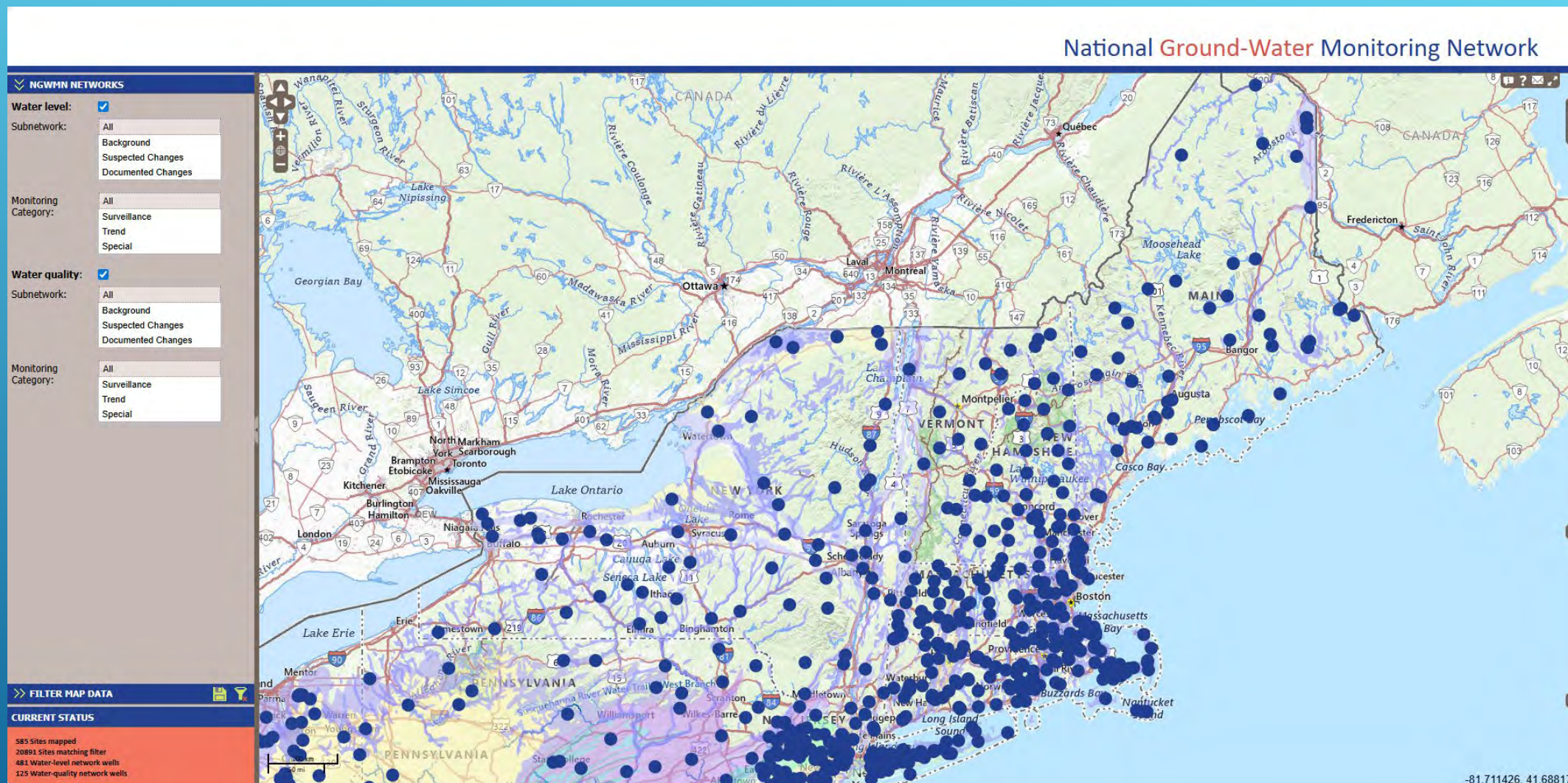


Disclaimer: <https://waterdata.usgs.gov/provisional-data-statement/>

<https://rconnect.usgs.gov/content/99cc8726-7baa-45af-a5bd-bced25ff82db/>




# NATIONAL GROUND-WATER MONITORING NETWORK




<https://www.usgs.gov/apps/ngwmn/index.jsp>

# RIVER DROUGHTCAST

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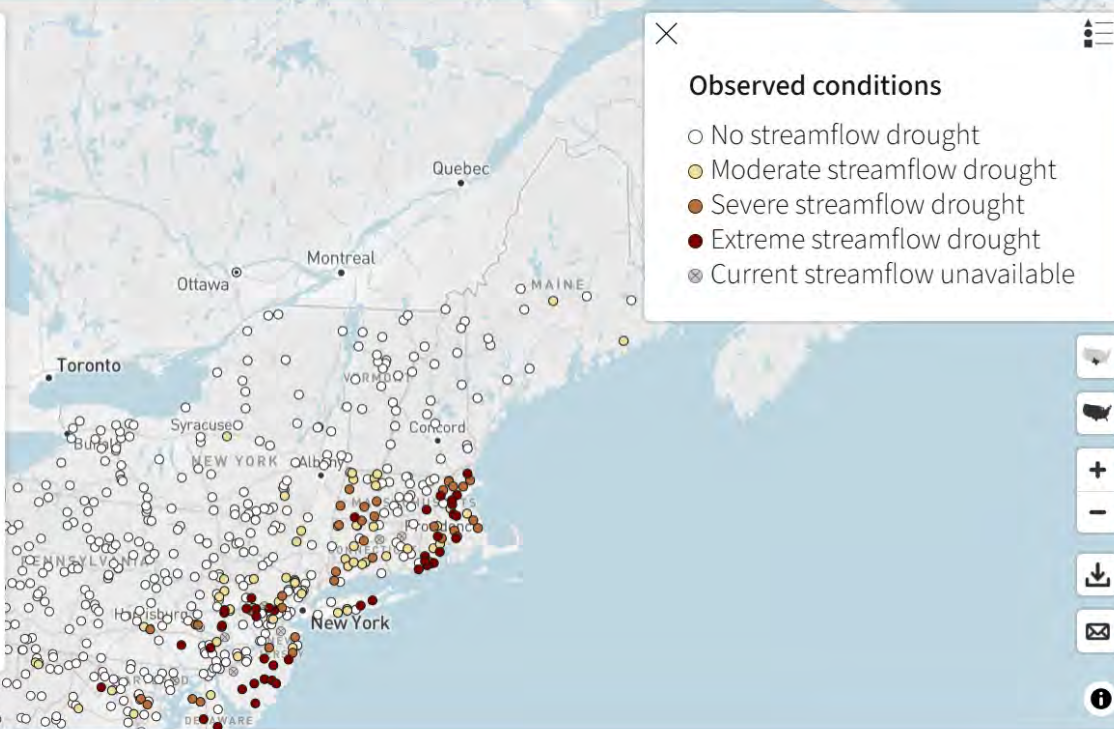
Click here  to learn about this tool.

## River DroughtCast

Streamflow drought status and forecasts


Showing **observed** conditions for **05/24/26**  
2 days ago

Of 2,930 sites in CONUS, 2,845 have current streamflow data. Of these, 38% are in streamflow drought, with 13% in moderate streamflow drought, 10% in severe streamflow drought, and 15% in extreme streamflow drought.



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Follow 


<https://water.usgs.gov/vizlab/streamflow-drought-forecasts/>



# RIVER DROUGHTCAST – BY STATE

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**USGS**  
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Click here  to learn about this tool.


## River DroughtCast

Streamflow drought status and forecasts

Showing **forecast** conditions for


**08/24/26**  
13 weeks out

Of 97 sites in **New York**, the forecast is for  
6% to be in streamflow drought, with  
6% in **moderate** streamflow drought  
None in **severe** streamflow drought  
None in **extreme** streamflow drought



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Follow 

<https://water.usgs.gov/vizlab/streamflow-drought-forecasts/?extent=New+York#5.63/42.797/-75.809>