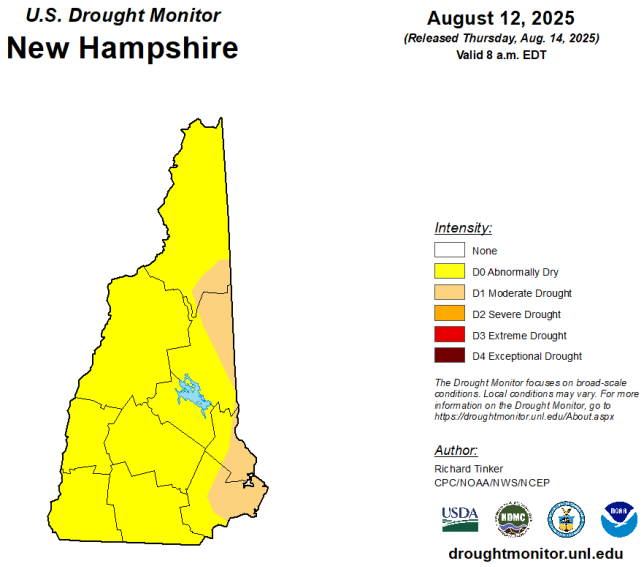
City of Portsmouth

Department of Public Works

August 14, 2025
Portsmouth Water Supply Status Report



https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?NH

MODERATE DROUGHT IN THE SEACOAST AREA

The Seacoast area is currently in a **Moderate Drought** according to the US Drought Monitor program. There has only been 2.6 inches of precipitation in the area since May 2025. This is about 6.4 inches below normal for this period. The recent dry and hot weather has also caused a spike in water demand up to 5.7 million gallons per day (MGD) on average, which exceeds the 10-year average for August of 5.0 MGD.

City water operations staff continue to assess reservoir and groundwater impacts and adjust operations to best manage water resources. As more households are watering lawns, and flower and vegetable gardens, the Water/Stormwater Division encourages residents to “Think Blue” and consider some of these water-saving measures you can practice at home: https://www.portsmouthnh.gov/publicworks/water/water-efficiency

Water Use Restrictions

Customer Water Restrictions
N/A
None
Odd/Even Watering
Two-Days per Week Watering
No Lawn Watering
Essential Water Use Only

The Portsmouth and Pease Tradeport drinking water systems are able to meet the current water supply demands. City staff are continually monitoring the weather and our water supplies and will revise projections as needed. Water use restrictions are currently not in effect. As the accompanying information shows, the dry weather conditions are impacting streamflow, reservoir and groundwater levels. If dry conditions persist, mandatory restrictions on non-essential water use may be required. They could include odd/even or two-days/week watering schedules.

We continue to ask our water customers to please use water wisely, minimize waste, irrigate only when necessary and incorporate water efficient fixtures and appliances whenever possible. If hot and dry conditions persist, we may need to ask our customers to start limiting non-essential water usage such as irrigating lawns.

Precipitation and Water Demand

Precipitation	Current Water Demand
Above Average	Below Normal
Average	Normal
Below Average	Above Normal
Dry	**High**
Very Dry	Very High
Drought	Historic High

As of July 31, 2025, the 12-month total amount of precipitation is only 69% of the historical 25-year normal amount of 41.7 inches at the Pease Tradeport weather station. The following chart illustrates the monthly precipitation variations from the historic monthly average amounts (Figure 1). Note the months of April and May when above average precipitation occurred, followed by June and July with extremely low precipitation. The April and May precipitation effectively recharged the Bellamy Reservoir and the water supply aquifers. Over the months of May, June and July, precipitation averaged 63% of normal amount.

Hot and dry conditions have persisted from June through mid-August, and as a result water use has increased to meet associated irrigation and cooling system demands. Water demand is currently higher than the 10-year average by 5%, or 261,000 gallons per day greater than the July average. Above average demands have also occurred over much of the year (Figure 2).

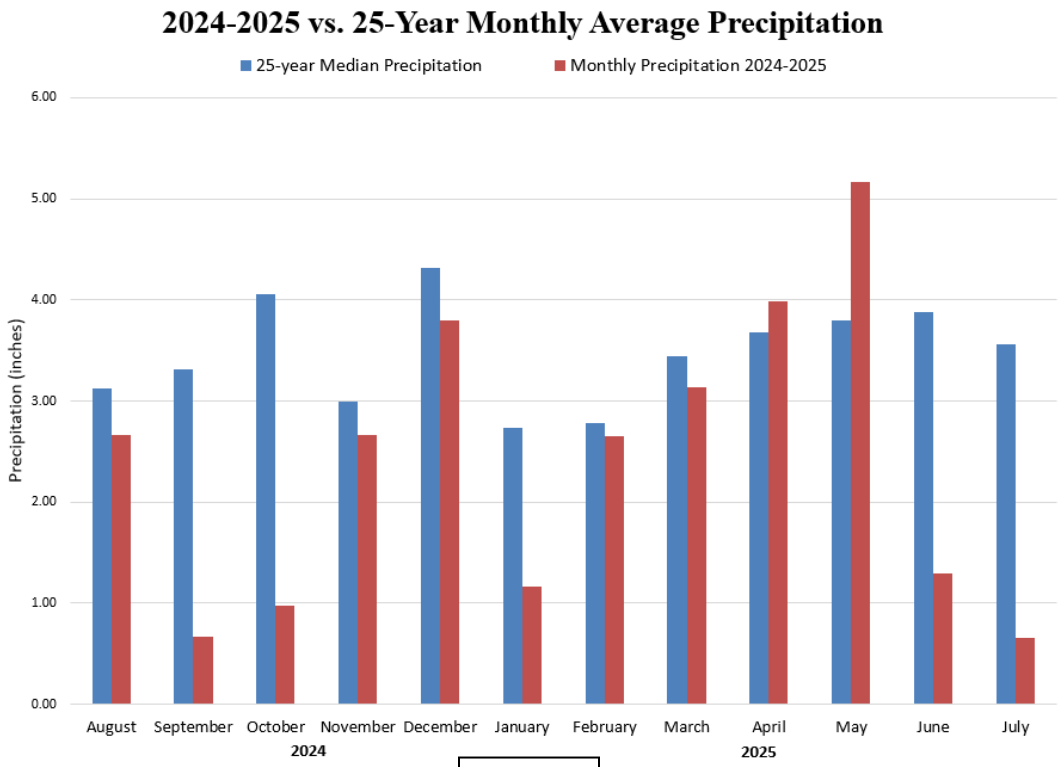


Figure 1

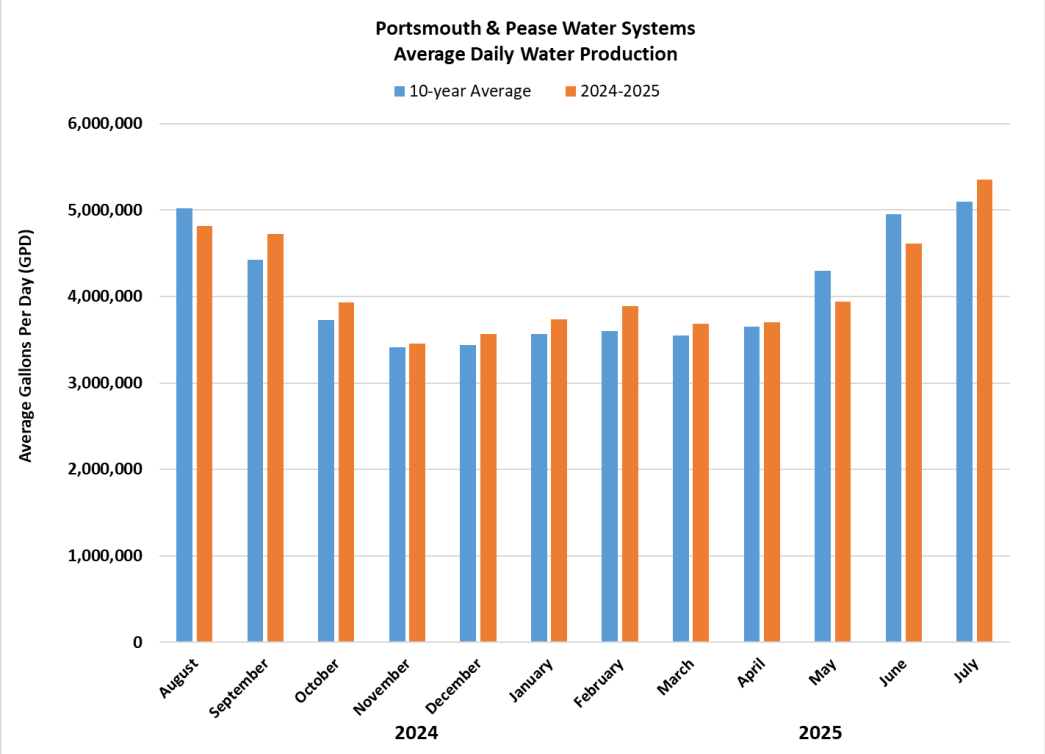


Figure 2

Groundwater Levels

Groundwater Levels
Above Average
Average
Below Average
Low
Very Low
Drought

Currently the groundwater levels are considered **Below Average.** Groundwater levels in the Portsmouth, Collins, and Greenland aquifers are at levels that are ordinary for this time of year, but the groundwater levels in the Madbury wells are below average. Due to the current drought conditions, recharge to the aquifer associated with the Madbury wells has not been able to match the high demands.

Although a greater proportion of surface water from the Bellamy Reservoir has been utilized during the spring and summer months, groundwater sources have had to supplement the system beyond what is typical.

Groundwater from wells in Madbury, Portsmouth and Greenland typically provide between 23% and 42% of the water supply to Portsmouth customers, with the remaining 58% to 77% from the Bellamy Reservoir. In 2025, 28% of the supply came from wells, and 72% from the reservoir.

River Flow

River Flow
Above Average
Average
Below Average
Low
Very Low
Drought

Portsmouth Water System operators track the USGS stream flow gauge in the Oyster River to assess flow conditions. This gauged watershed is used to assess the relative recharge to the Bellamy Reservoir through its tributaries, the Bellamy River and Mallego Brook.

The stream flow in the Oyster River at the USGS gauge reached a record low flow at approximately 0.11 cfs (49 gallons per minute (gpm)) on August 13th (Figure 3). The intermittent precipitation events in July caused some short-term flow events that each peaked around 0.9 cfs (400 gpm). Flow in the Bellamy Reservoir tributaries likewise had some intermittent flow events in July, but overall, they provided very little recharge to the reservoir.

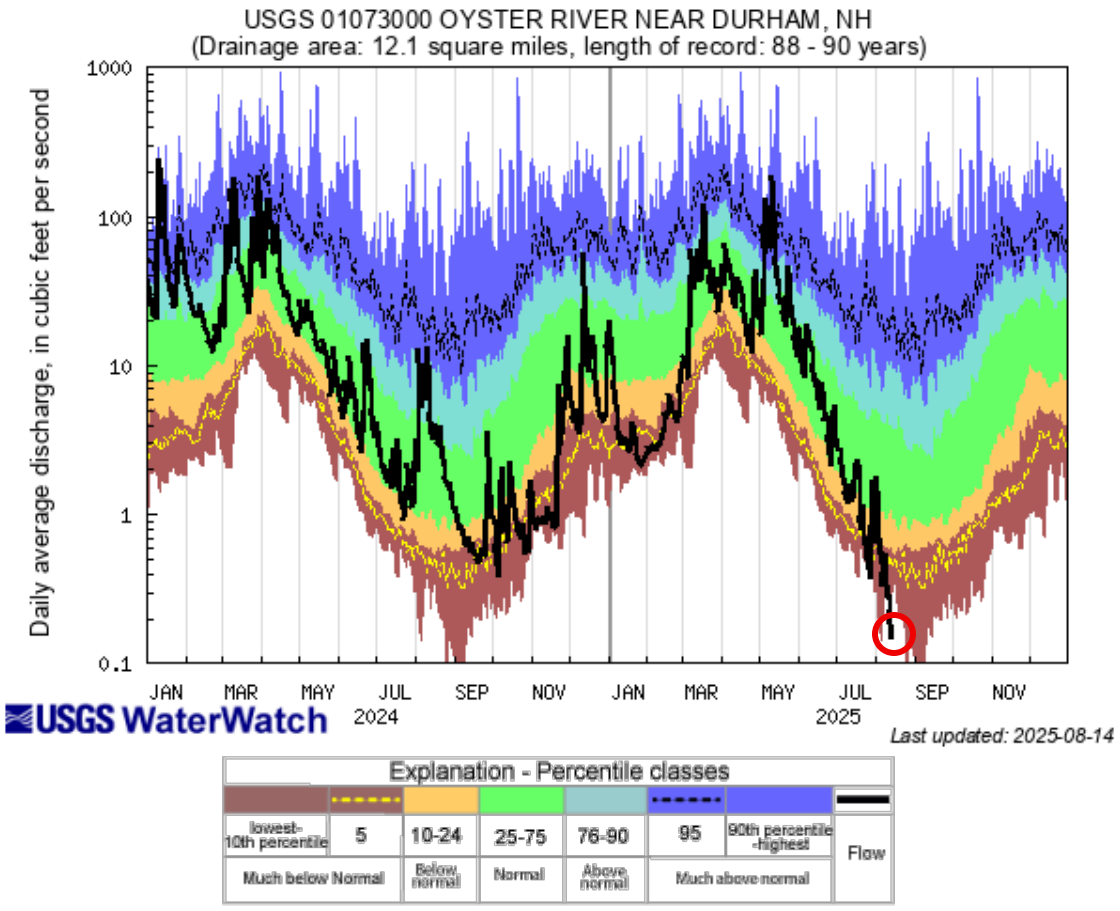


Figure 3

Reservoir Level

Reservoir Level
Above Average
Average
Below Average
Low
Very Low
Drought

As the surface water source for the Madbury Water Treatment Facility, the Bellamy Reservoir is monitored to assess and predict the overall amount of water available for the Treatment Facility. Reservoir water levels are compared to typical monthly levels to assess the reservoir conditions.

The current stage of the reservoir is considered to be **Low** for this time of year. The reservoir water level is 0.7 feet higher than it was at this time in 2016 and nearly the same as it was during the 2020 and 2022 droughts (Figure 4).

Water flow past the dam is controlled by an outlet valve. The flow into the Bellamy River is adjusted to rates that correlate with the Oyster River flow rate. The reservoir currently has approximately 527 million gallons of water above the lower surface water intake.

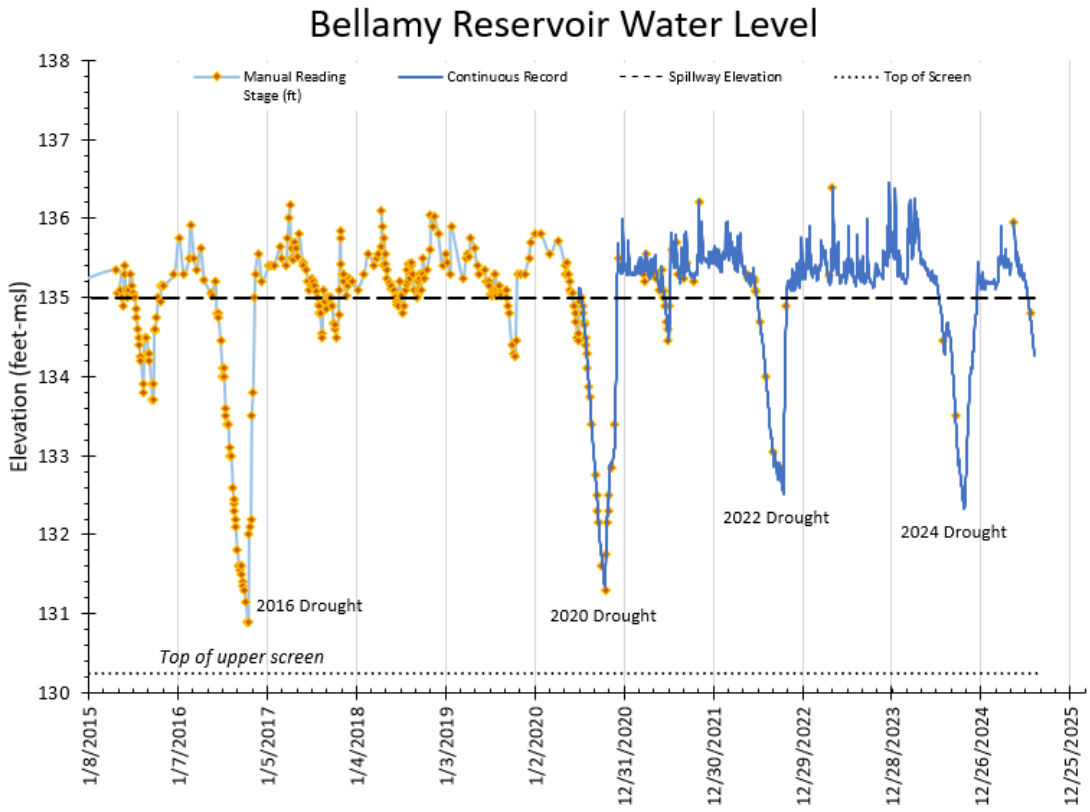


Figure 4

Water Supply Capability

Water Supply Capability
Above Normal
Normal
Below Normal
Restrictions Necessary
Additional Restrictions Necessary
Emergency

Water Supply Capability is a measure used to identify any issues with the Portsmouth Water Supply System that would result in a limitation to the amount of water that could be supplied. These could be lack of supply, issues with source water quality, or mechanical failures of system components.

All of the supply wells and the surface water treatment facility are in good condition and are able to run at their design capacities if needed. The current demand for water is being met; however, if hot and dry conditions persist we may need to implement restrictions on non-essential water usage such as lawn irrigation.

Further Updates and Information

This information will be distributed electronically on the City of Portsmouth's website at:

https://www.portsmouthnh.gov/publicworks/water

If you would like additional information or have questions, please contact Al Pratt, Water Resource Manager, at (603) 520-0622 or Mason Caceres, Assistant Water Resource Manager, at (603) 312-3804.