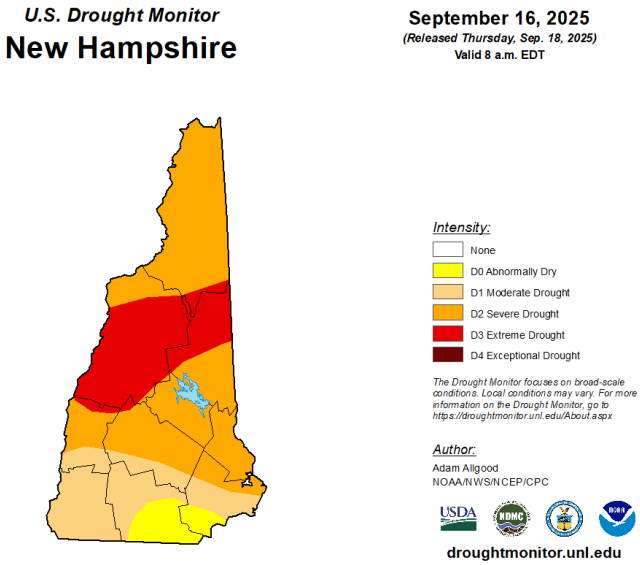
City of Portsmouth

Department of Public Works

September 23, 2025
Portsmouth Water Supply Status Report



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

SEVERE DROUGHT IN THE SEACOAST AREA

The Seacoast area is currently in a **Severe Drought** according to the US Drought Monitor program. The area has received only 5.5 inches of precipitation since May 2025. This is about 8.4 inches below normal for this period. However, water supply sources are currently meeting system demands and though surface water levels and groundwater levels are below normal, they remain within an acceptable range for this time of year. The demand for water is dropping due to the cooler weather and reduction in irrigation use.

The City is not implementing water use restrictions at this time. As the system experiences the typical seasonal reductions in water use, restrictions would not produce additional substantial changes in the system demand. City water operations staff continue to assess reservoir and groundwater impacts and adjust operations to best manage water resources. 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	Current Water Demand
N/A	Below Normal
None	**Normal**
Odd/Even Watering	Above Normal
Two-Days per Week Watering	High
No Lawn Watering	Very High
Essential Water Use Only	Historic High

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 supply sources 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.

The City continues 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 dry conditions persist, the City may need to ask our customers to start limiting non-essential water use.

Precipitation and Water Demand

Precipitation
Above Average
Average
Below Average
Dry
Very Dry
Drought

As of August 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, July, and August with extremely low precipitation. The April and May precipitation effectively recharged the Bellamy Reservoir and the water supply aquifers. Over the months of June, July, and August, precipitation averaged 44% of the normal amount for this period.

Hot and dry conditions persisted from June through mid-August, and as a result, water use has increased to meet associated irrigation and cooling system demands. Since the end of August, irrigation demands have dropped by approximately 70% based on metered records. Above average demands have also occurred over much of the year (Figure 2).

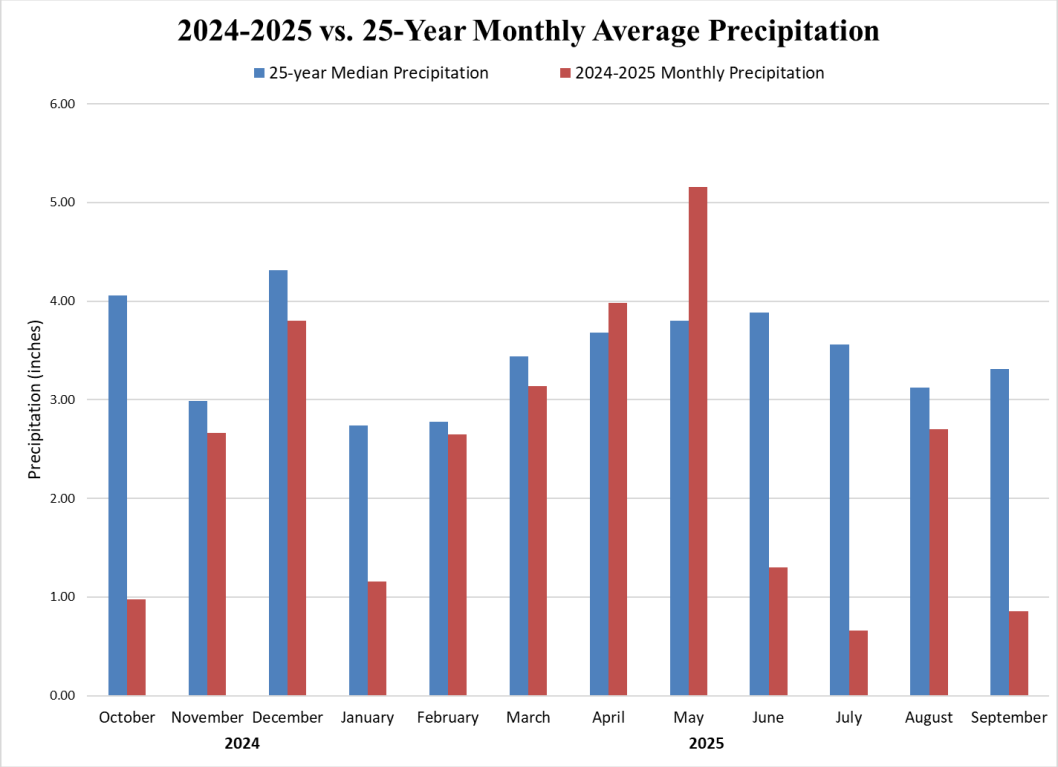


Figure 1

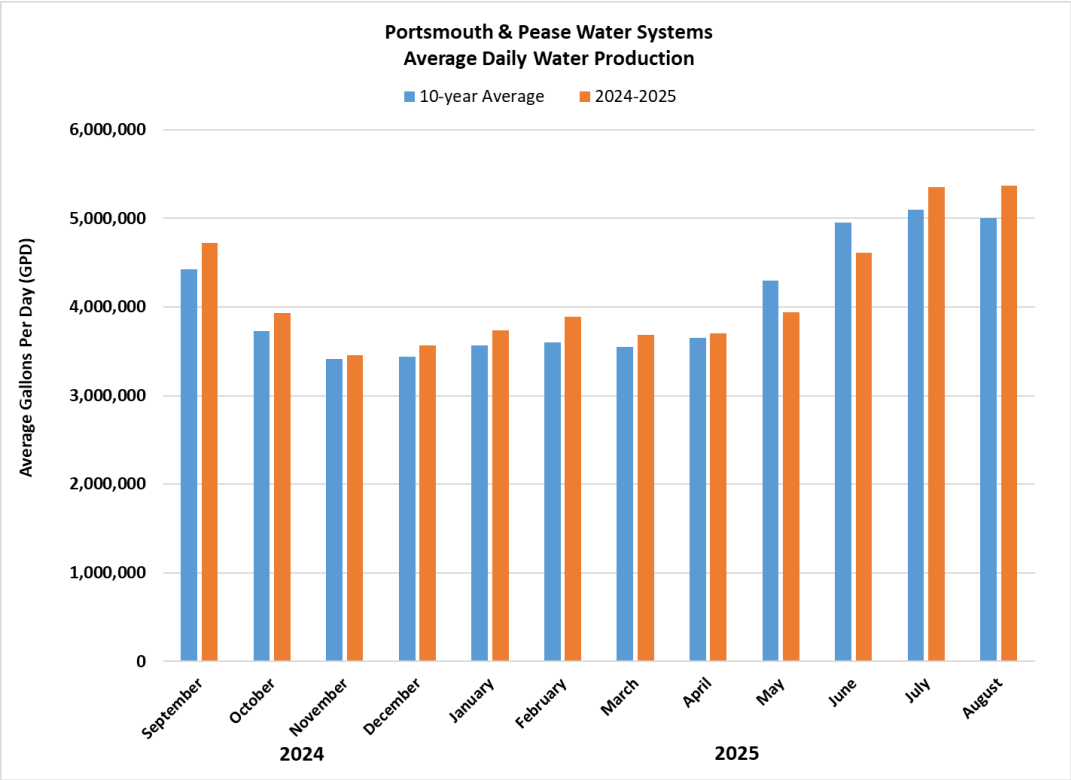


Figure 2

Groundwater Levels

Groundwater Levels
Above Average
Average
Below Average
Low
Very Low
Drought

Current groundwater levels are considered **Below Average.** Groundwater levels in the Portsmouth, Collins, and Greenland aquifers are at levels that are typical 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 catch up from the high summer 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 normal.

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, 30% of the supply came from wells, and 70% from the reservoir.

River Flow & Reservoir Recharge

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 August and early September provided a slight increase in flow that has been averaging around 0.26 cfs (117 gpm) since mid-September. Flow in the Bellamy Reservoir tributaries likewise had some intermittent flow events in August, but overall, they provided very little recharge to the reservoir.

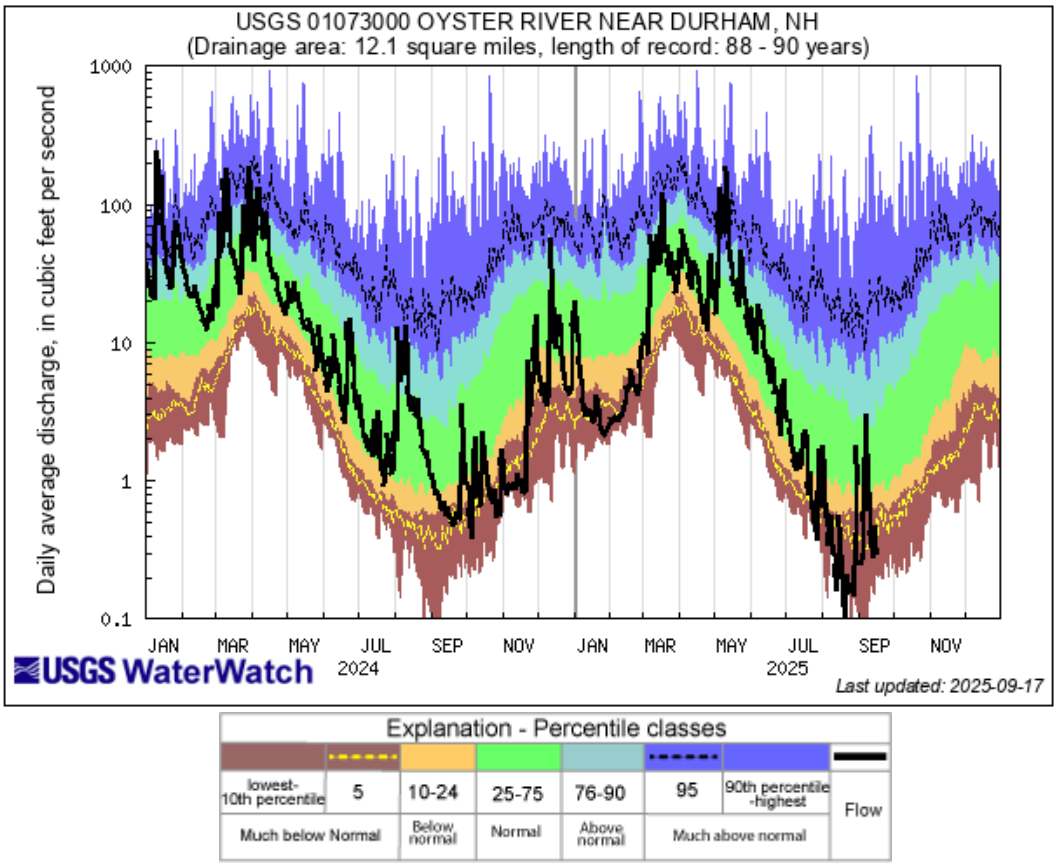


Figure 3

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 1.0 feet higher than it was at this time in 2016 and about 0.4 feet lower than it was at this time during the 2022 and 2024 droughts (Figure 4).

Water flow past the dam to the Bellamy River is controlled by an outlet valve. The flow into the Bellamy River is adjusted to rates that correlate with the Oyster River flow rate, which has been reduced since the start of this year's drought. The reservoir currently has approximately 372 million gallons of water above the lower surface water intake.

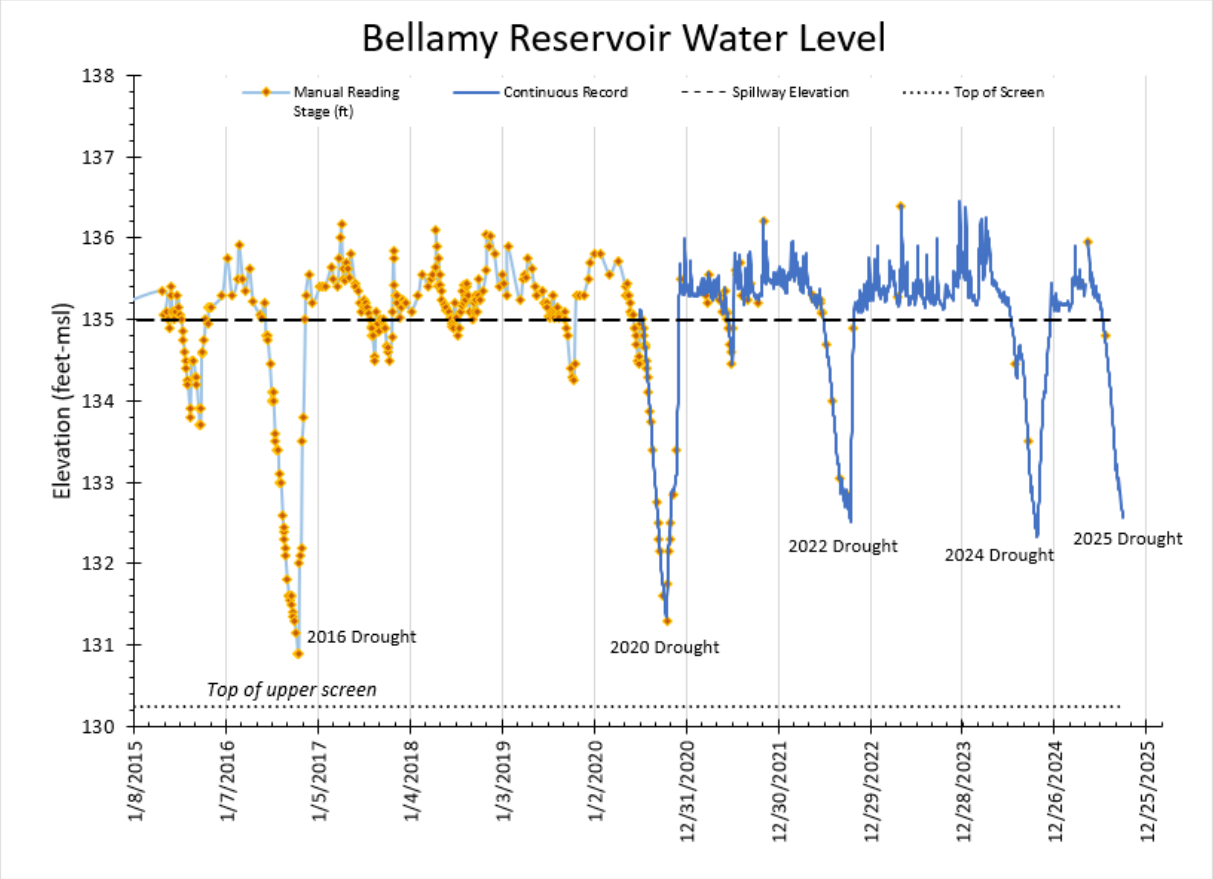


Figure 4

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 factors could stem from lack of supply, issues with source water quality, or mechanical failures of system components.

All 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 dry conditions persist the City may need to implement restrictions on non-essential water use.

Further Updates and Information

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

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

For additional information or to ask questions, please contact Al Pratt, Water Resource Director, at (603) 520-0622 or Mason Caceres, Assistant Water Resource Manager, at (603) 312-3804.