

<b>NWS Form E-5</b> (04-2006) (PRES. BY NWS Instruction 10-924)	<b>U.S. DEPARTMENT OF COMMERCE</b> <b>NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION</b> <b>NATIONAL WEATHER SERVICE</b>	HYDROLOGIC SERVICE AREA (HSA) Burlington VT	
<b>MONTHLY REPORT OF HYDROLOGIC CONDITIONS</b>		REPORT FOR: MONTH October	YEAR 2023
		SIGNATURE /s/ John Goff, Senior Service Hydrologist DATE November 21, 2023	
TO: Hydrologic Information Center, W/OS31 NOAA's National Weather Service 1325 East West Highway Silver Spring, MD 20910-3283			

*When no flooding occurs, include miscellaneous river conditions below the small box, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924).*

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An X inside this box indicates that no flooding occurred within this hydrologic service area.

## Overview

October 2023 was an interesting month from a hydrological perspective across the NWS Burlington HSA. A trend toward generally drier weather began during the period, with substantial multi-day periods with no precipitation. However, one very heavy precipitation event during the 7<sup>th</sup> and 8<sup>th</sup> skewed overall monthly precipitation totals and resultant departures. This event mainly affected the Champlain Valley and the eastern Adirondack Mountains of New York. By months end, positive precipitation departures between two and four inches were observed in this area. Elsewhere, departures averaged generally within one inch of normal October values in the Connecticut River Valley, while values were more consistently below average in the St. Lawrence River Valley of New York (figs. 1 and 2). In the St. Lawrence Valley, dryness noted in September continued throughout most of the month, and led the U.S. Drought Monitor to place portions of the area into abnormally dry, or D0 conditions across a portion of the valley (fig. 3).

## Notable Hydrology

As mentioned above, the most notable event of the month occurred during the 7<sup>th</sup> and 8<sup>th</sup> when a very slow moving frontal boundary crossed the region. Deep subtropical moisture streamed northward along and ahead of the boundary, which stalled for a brief period of time across the Champlain Valley and the eastern Adirondack Mountains. This led to periods of persistent moderate to occasionally heavy rainfall in this region, with many areas receiving between three and four and a half inches of rainfall (fig. 4). Several reports of minor flooding were received, with the East Branch of the Ausable River cresting just below moderate flood stage during the early morning hours on the 8<sup>th</sup> (fig. 5). For a detailed, technical discussion of this event, please see: <https://www.weather.gov/btv/Heavy-Rain-From-A-Slow-Moving-Front-October7>.

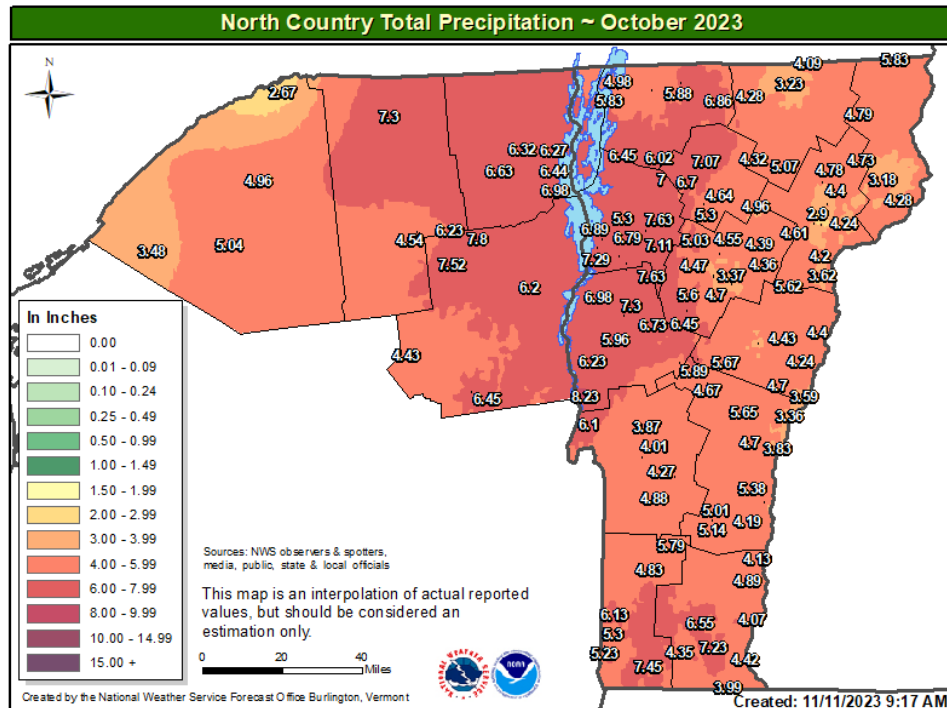


Figure 1: October 2023 monthly precipitation totals across the NWS Burlington, HSA. Amounts were varied, ranging from 3 to 5 inches in the Connecticut and St. Lawrence River Valleys, to between 6 and 8 inches in the Champlain Valley and adjacent portions of the Northern Adirondack Mountains.

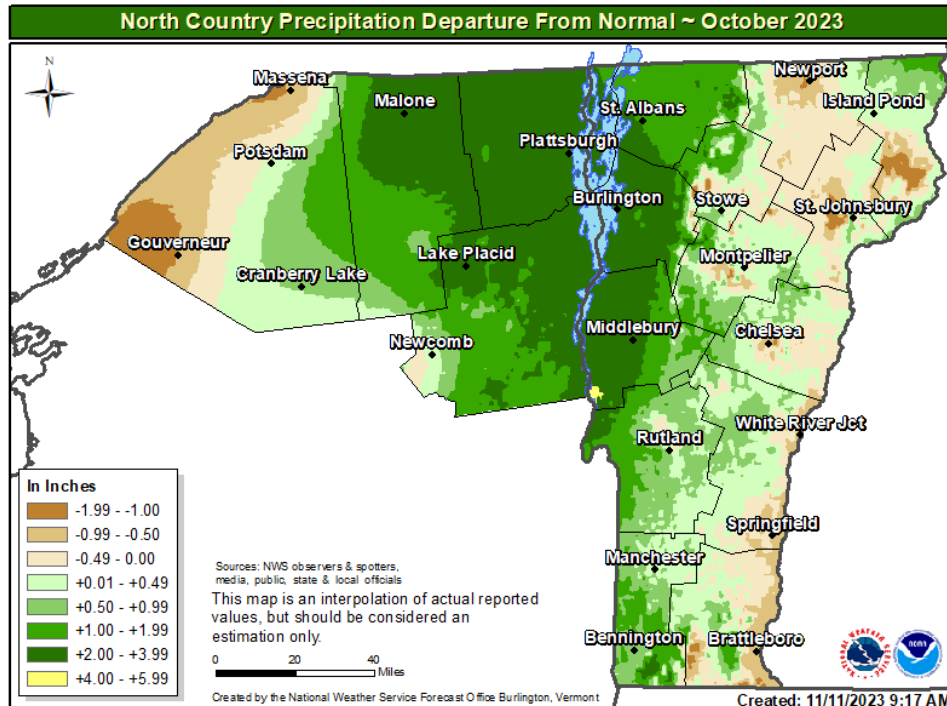


Figure 2: Monthly precipitation departures for October 2023 across the NWS Burlington, VT HSA. While eastern Vermont saw totals generally within an inch of normal, the Champlain Valley and adjacent Northern Adirondack Mountains saw significant positive departures. In the St. Lawrence Valley of New York, modest negative departures were observed.

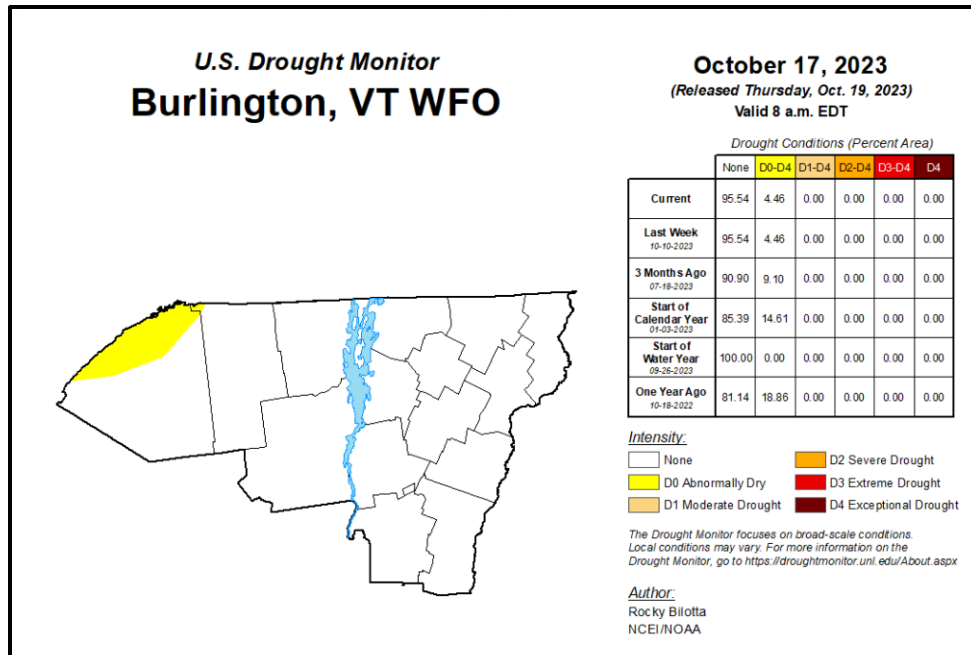


Figure 3: U.S. Drought Monitor map for the week of October 17, 2023. Persistent dryness in September and October led to abnormally dry conditions in the St. Lawrence Valley of New York, which persisted throughout the month.

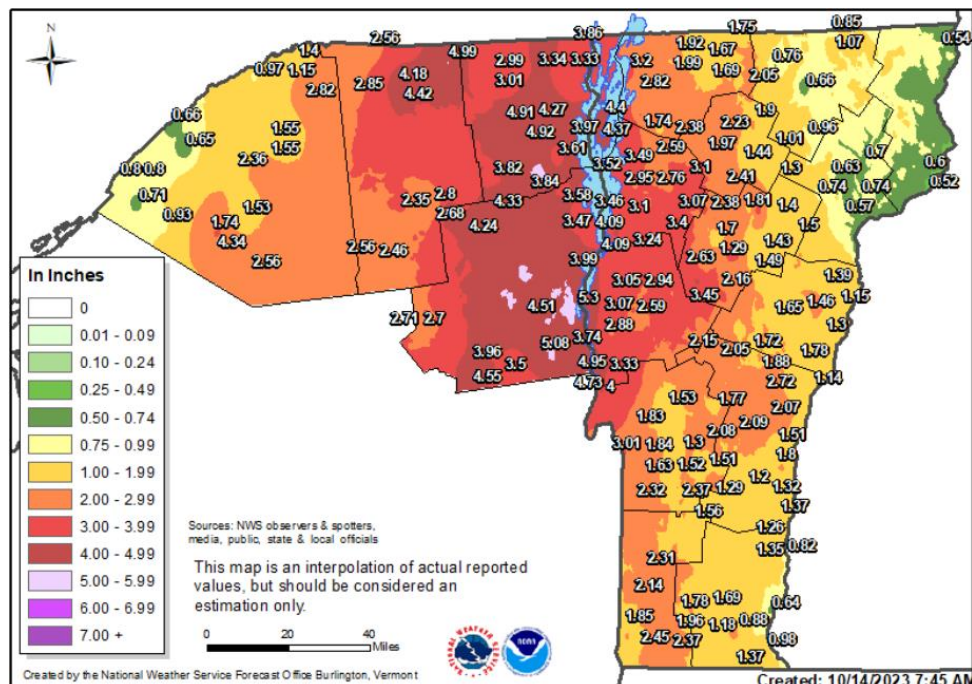
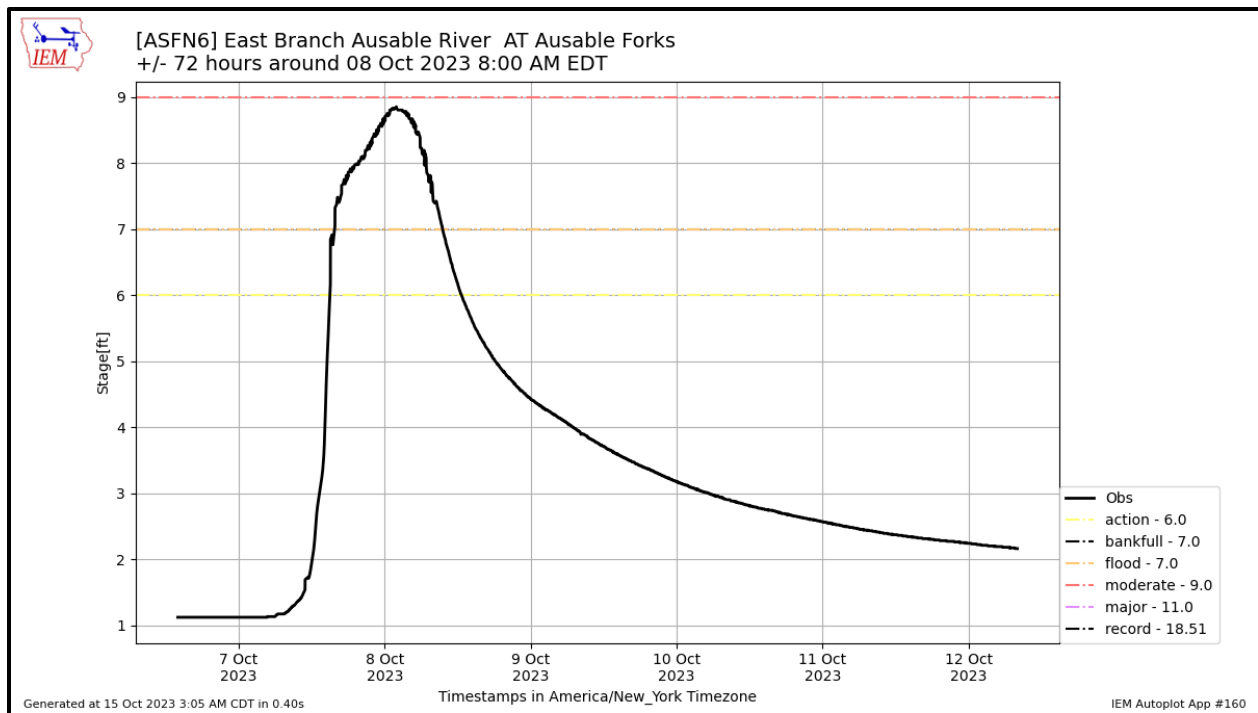


Figure 4: Observed storm total rainfall across the NWS Burlington HSA from October 7-9, 2023. The majority of the heaviest precipitation fell on the 7<sup>th</sup>, leading to areas of minor flooding in the Champlain Valley and Northern Adirondack Mountains where three to as much as five inches of rain were observed.



**Figure 5: Hydrograph on the East Branch of the Ausable River at Au Sable Forks, NY from October 7-12, 2023. The river crested at 8.85 feet during the early morning hours of the 8<sup>th</sup>, or just below moderate flood stage.**