

NWS Form E-5 (04-2006) (PRES. BY NWS Instruction 10-924)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE HYDROLOGIC SERVICE AREA (HSA) Burlington VT
MONTHLY REPORT OF HYDROLOGIC CONDITIONS	REPORT FOR: MONTH YEAR June 2023
TO: Hydrologic Information Center, W/OS31 NOAA's National Weather Service 1325 East West Highway Silver Spring, MD 20910-3283	SIGNATURE /s/ John Goff, Senior Service Hydrologist DATE July 26, 2023

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).

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

Overview

The month of June 2023 was relatively quiet across the NWS Burlington HSA from a hydrological perspective. However, a major change to a wetter synoptic scale weather pattern did occur from the second week of the month onward as semi-permanent upper low pressure became established off to the west and north. As a result, deeper southerly flow and subtropical moisture settled across the region leading to bouts of moderate, to occasionally heavier rainfall, especially from eastern New York into Vermont when in proximity of slow moving frontal boundaries. Given the region was antecedently dry initially, the overall hydrological threat of flooding remained on the lower side and only one report of flooding was received during the 30-day period. The periods of most persistent rainfall occurred from the 12th to the 18th, and again from the 24th through the 27th, with smaller rainfall footprints commonplace during other stretches of the month, especially from the 10th onward (Figs. 1 and 2). The only report of flooding occurred in northeastern Vermont on the 17th in the town of Stannard when high flows on a local creek partially damaged a bridge abutment on a secondary road. By month's end, overall rainfall departures averaged on the positive side across most of Vermont, while northern New York saw values at or slightly below normal (Fig. 3 and Table 1).

From a rainfall deficit perspective, the St. Lawrence Valley remained surprisingly dry, with D0, or abnormally dry conditions persisting through the end of the month. While Vermont was trending wetter through the middle and latter half of the month, D0 and D1 (moderate drought) conditions lingered across the state due to abnormally dry antecedent conditions through early and mid-spring keeping deeper groundwater flows on the lower side (Fig. 4). However, no large-scale water shortages or agricultural impacts occurred during the period.

Of note: While the initial trend to wet conditions during mid and late June resulted in no larger-scale hydrological concerns, this trend continued into most of July, eventually leading to widespread, and in some cases devastating flooding throughout the state. As such, some of June's rainfall could be considered a primer, so-to-speak, for future conditions across the state.

Notable Hydrology

The most notable hydrology occurred on June 17. During the afternoon, heavier showers and thunderstorms trained across portions of northeastern Vermont. Rainfall estimates and gage reports showed from two to three inches of rainfall occurred in this area during the early to mid-afternoon hours. As a result, the abutment of a bridge was damaged on a local secondary road due to high flows on Stannard Brook (Fig. 5).

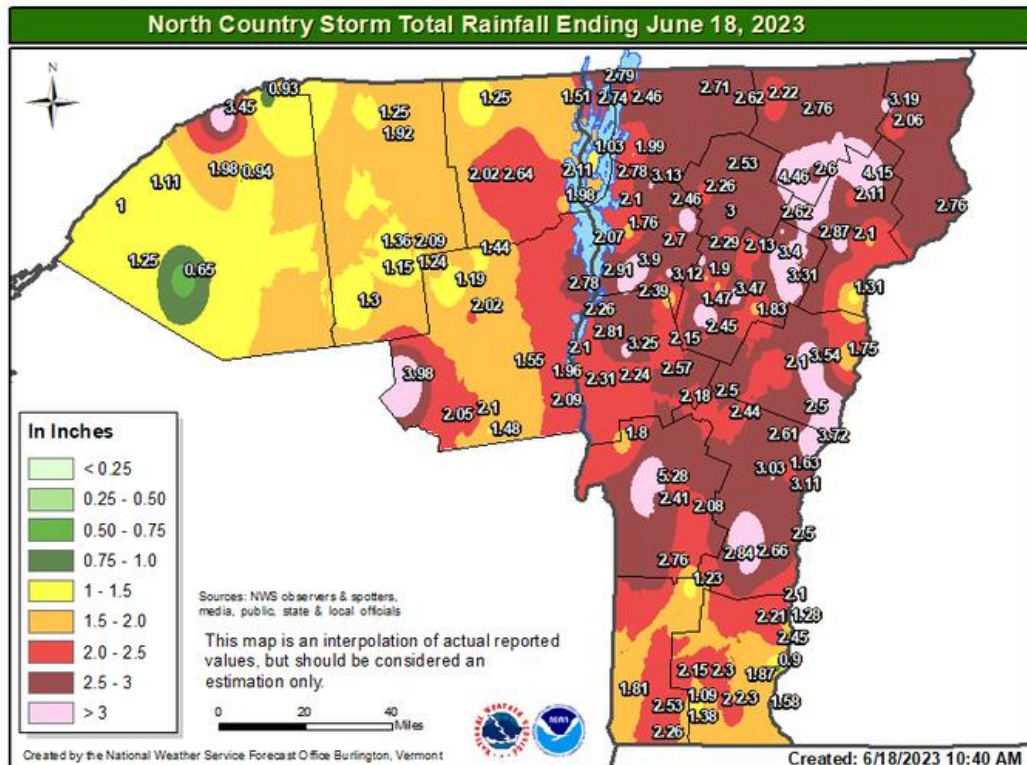


Figure 1: 6-day storm total rainfall ending 700 am, June 18, 2023. Widespread totals of 1 to 2.5 inches were observed in northern New York, while Vermont saw greater amounts from 2 to 4 inches with some variability.

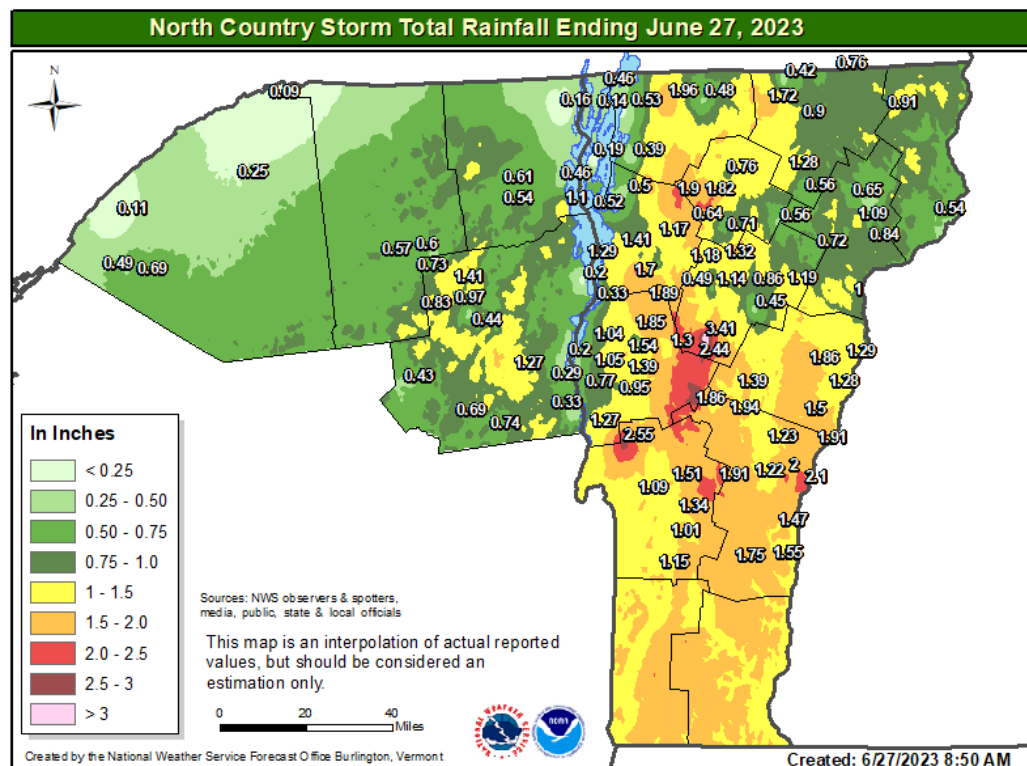


Figure 2: 3-day storm total rainfall ending 700 am, June 27, 2023. Widespread totals of 1 to 2 inches were observed across most of Vermont and Essex County, NY. The St Lawrence Valley once again observed lesser amounts.

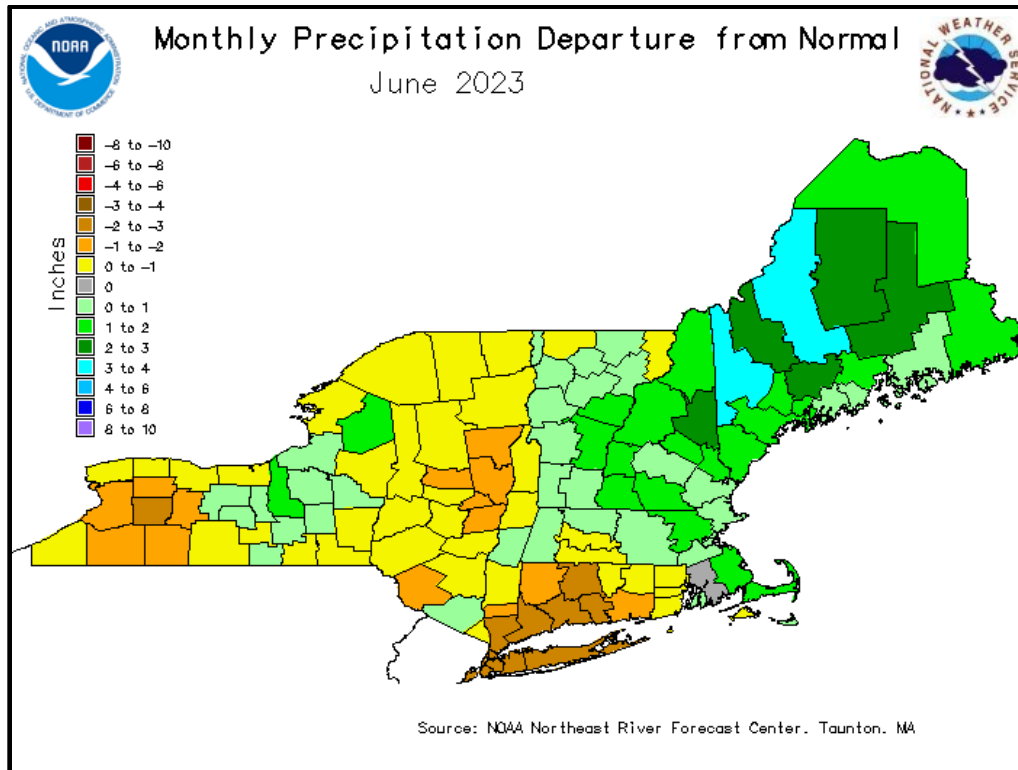


Figure 3: Monthly precipitation departures for June 2023, courtesy the Northeast River Forecast Center. Positive departures up to 2 inches were observed across most of Vermont, while northern New York saw normal to slightly below normal levels.

JUNE 2023 MONTHLY PRECIPITATION DEPARTURES FOR SELECTED ASOS PLATFORMS IN THE NWS BURLINGTON HSA		
SITE	OBSERVED AMOUNT (IN.)	DEPARTURE FROM NORMAL (IN.)
Burlington, VT (BTV)	3.93	-0.33
Montpelier, VT (MPV)	4.69	+0.48
Morrisville, VT (MVL)	5.37	+3.76
St. Johnsbury, VT (1V4)	4.13	+0.32
Springfield, VT (VSF)	6.20	+2.42
Rutland, VT (RUT)	4.58	NA
Plattsburgh, NY (PBG)	3.83	-0.24
Saranac Lake, NY (SLK)	4.43	+0.07
Massena, NY (MSS)	1.89	-1.82

Table 1: Observed precipitation totals for the month of June 2023 for selected NOAA/NWS ASOS platforms. Mostly positive departures were noted across Vermont, with generally normal to below normal values in northern New York.

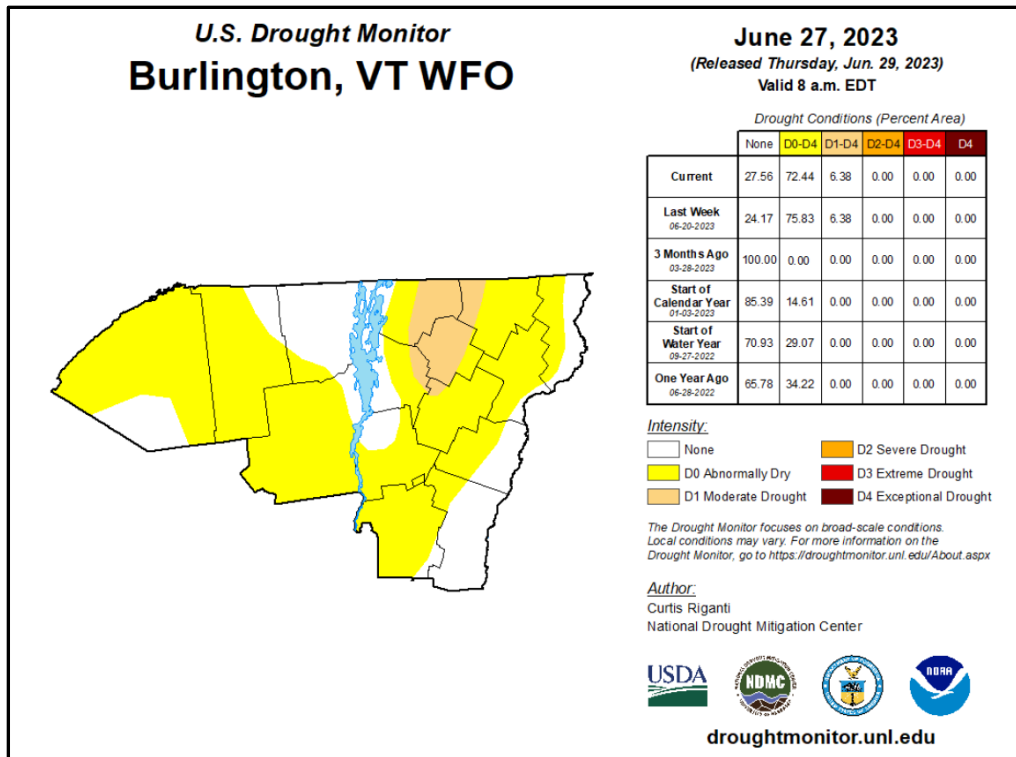


Figure 4: U.S. Drought Monitor Map, valid Jun 29, 2023 showing conditions across the NWS Burlington HSA. While conditions slowly improved through the month, lingering longer-term dryness allowed areas of D0 and D1 to persist.



Figure 5: Localized damage to Stannard Brook Road and bridge in the town of Stannard, VT due to heavy rainfall on June 17, 2023. This was the only report of flood damage in the NWS Burlington HSA during the month.