NWS Form E-5 **U.S. DEPARTMENT OF COMMERCE** **(04-2006)** **NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION** **(PRES. BY NWS Instruction 10-924)** **NATIONAL WEATHER SERVICE**	HYDROLOGIC SERVICE AREA (HSA) Burlington VT
MONTHLY REPORT OF HYDROLOGIC CONDITIONS	REPORT FOR: MONTH: January YEAR: 2022
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 February 8, 2022

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).

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

From a hydrological perspective, January 2022 was similar to December 2021 across the NWS Burlington (BTV) Hydrologic Service Area (HSA). This included a continuation of the long-term dryness observed from autumn 2021 with only one significant precipitation event noted in the 31-day period. Temperatures began the month relatively mild. However, a change to significantly colder weather arrived for the latter half of the month with numerous overnight low temperatures falling below zero. This allowed for substantial river ice formation. Monthly percent of normal precipitation values generally averaged within the 25th to 75th percentile range, though considerably lower values (10th to 25th percentile) were evident across most of eastern Vermont (Figure 1). These negative departures are also illustrated in Table 1 showing month-end values running between 1 and 2 inches below normal at all ASOS platforms . The most impactful event occurred on January 17th when low pressure took a rather unusual inland track northeastward through the Mid-Atlantic and directly into northern New York/Vermont. This system produced a 12-18 hour period of moderate to heavy snows across the area and made for locally hazardous travel conditions. Average snowfall totals ranged from 4-10 inches with higher totals in excess of 1 foot observed along the spine of the Green Mountains. (Figure 2).

From a ground water and moisture supply standpoint, the below average precipitation observed in January continued prior trends from Fall 2021 and did little to alleviate the longer term dryness in place across the area, especially in Vermont. Monthly streamflow averages were difficult to assess given river ice coverage. However, by month's end increasing dryness was noted, particularly in eastern Vermont and portions of the St. Lawrence Valley in New York per experimental National Water Model output (Figure 3). Additionally, many USGS groundwater monitoring stations across northern New York and Vermont continued to show below normal values. This data, along with the longer-term precipitation departures discussed above fostered an expansion of abnormally dry conditions (D0) to include nearly all of the Vermont portion of the NWS Burlington HSA on the weekly U.S. Drought Monitor (Figure 4).

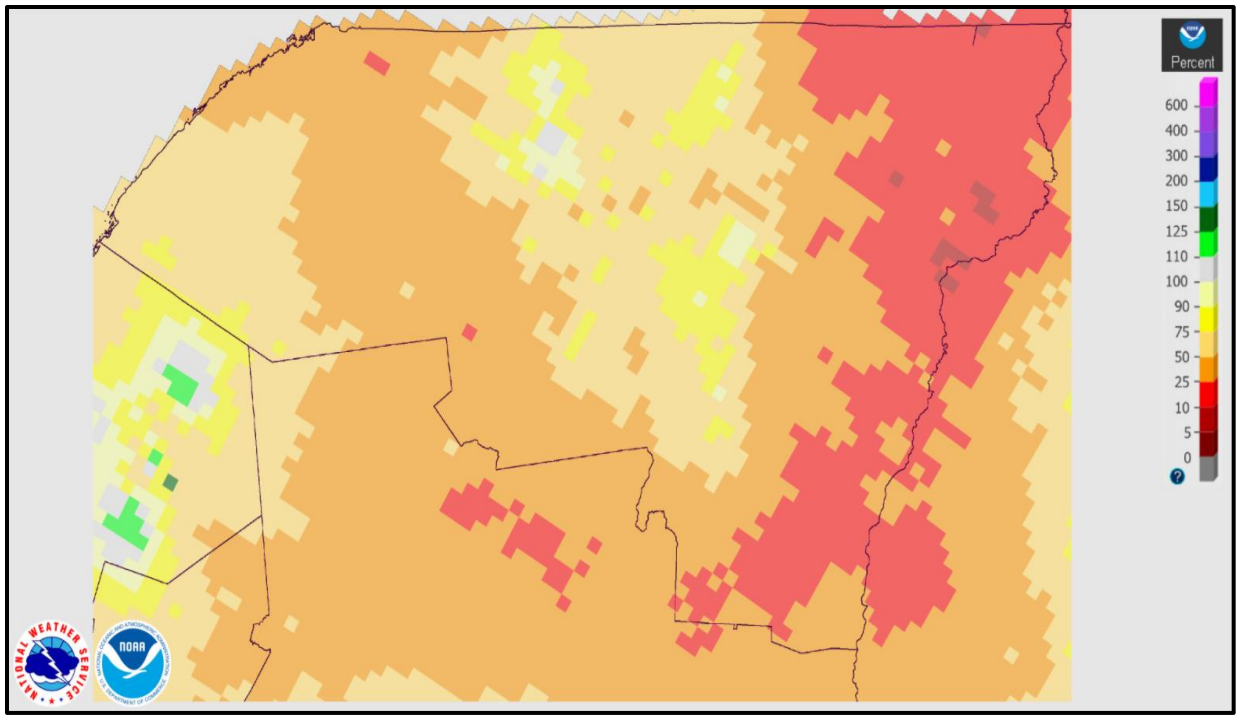

Figure 1: January 2022 percent of normal precipitation for NWS Burlington's Hydrologic Service Area. Values generally ran in the 25th to 75th percentile for most of the area except for eastern Vermont where values were considerably lower (10th to 25th percentile).

OBSERVING SITE (ASOS platforms)	PRECIPITATION DEPARTURE (inches, JAN 2022)
St. Johnsbury, VT	-1.80
Burlington, VT	-1.19
Montpelier, VT	-1.34
Morrisville, VT	-1.11
Springfield, VT	-1.70
Massena, NY	-1.44
Saranac Lake, NY	-1.31
Plattsburgh, NY	-1.02

Table 1: January 2022 precipitation departure (in inches) for selected NWS ASOS platforms in the NWS Burlington HSA. All sites showed significant negative departure of between 1 and 2 inches.

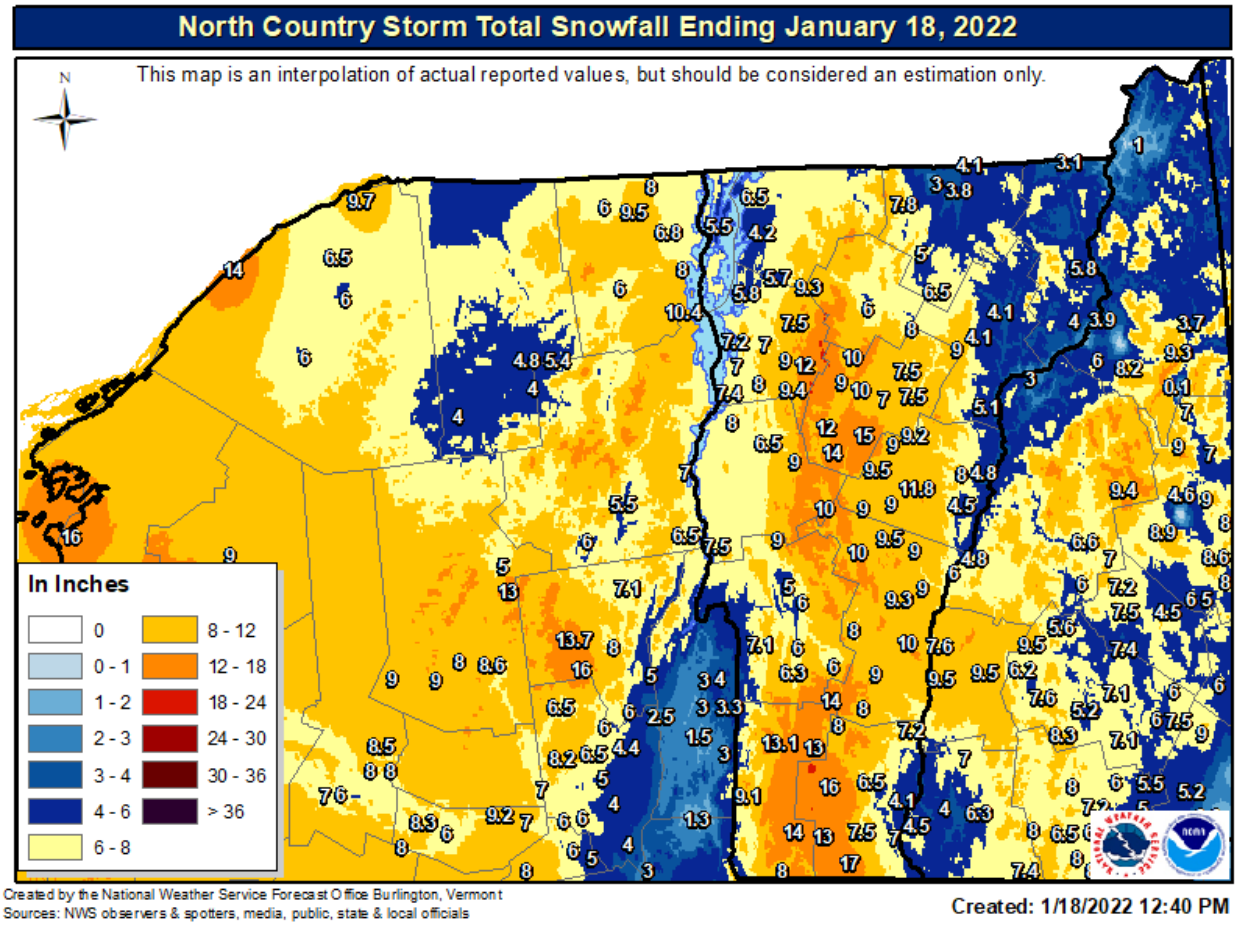

Figure 2: Total snowfall from the January 17, 2022, storm event. A widespread 4-10 inches was observed across the BTV HSA with higher totals in excess of 1 foot along the spine of the Green Mountains.

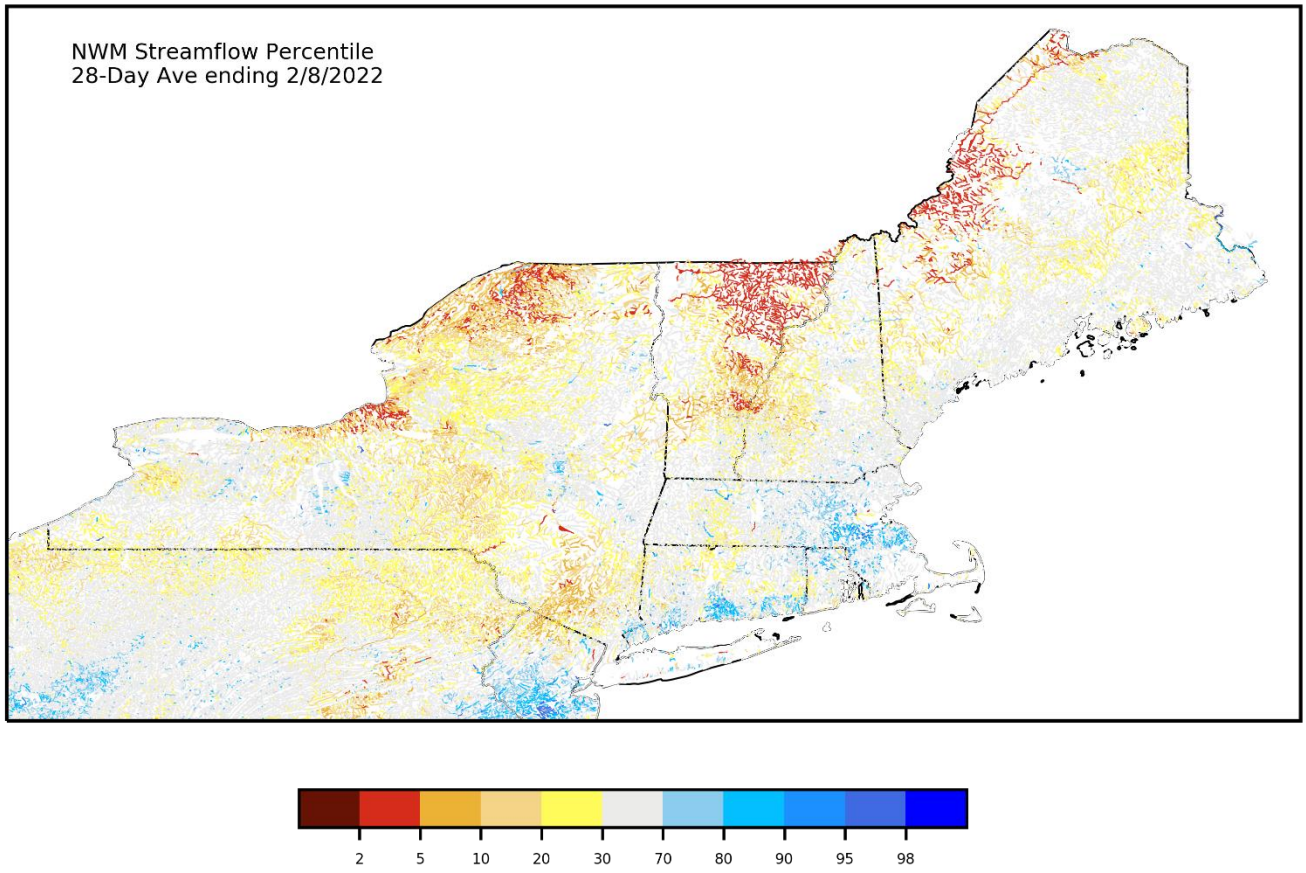

Figure 3: Experimental National Water Model (NWM) 28-day streamflow percentiles for February 8, 2022, showing lower flows for much of eastern Vermont and the St. Lawrence Valley of New York. Similar values were noted for the week prior at the end of January. For more on this and other NWM products, please visit: https://water.noaa.gov/about/nwm.

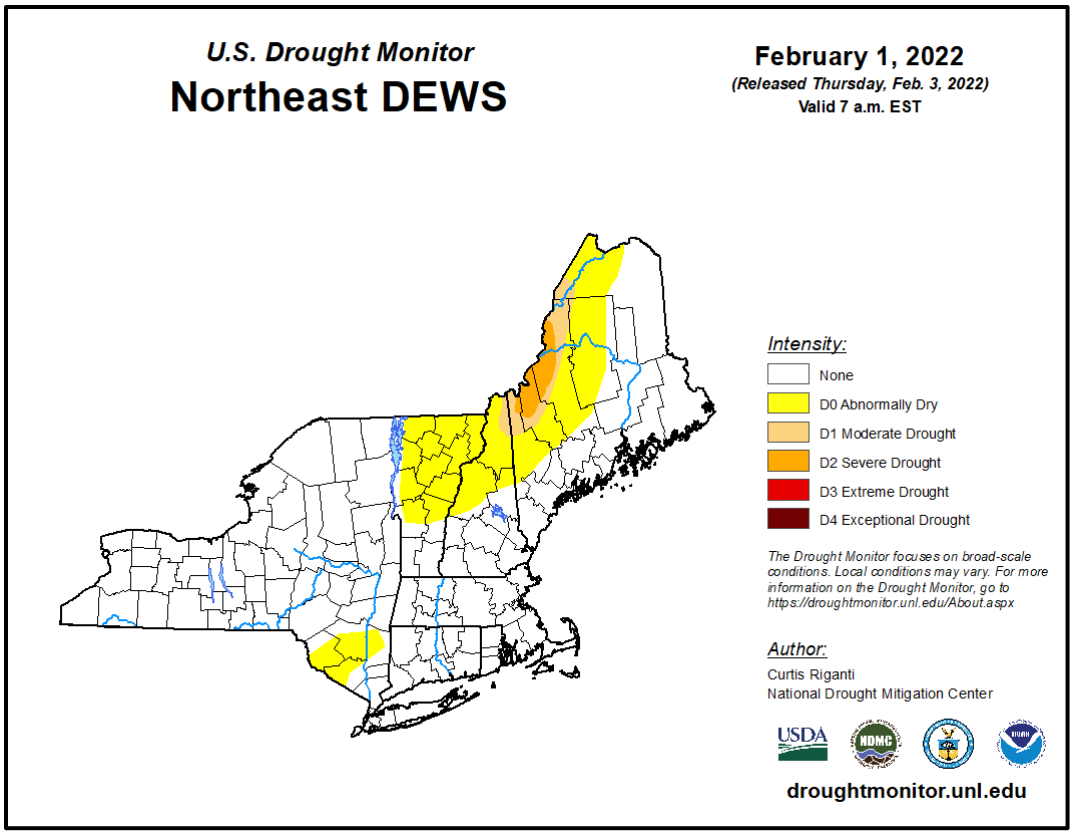

Figure 4: US Drought Monitor map for the last week of January/first week of February 2022. The areal coverage of D0 (abnormally dry conditions) was expanded to cover nearly all of Vermont's counties within the NWS Burlington HSA. Below average groundwater and streamflow levels along with longer-term negative precipitation departures largely drove this adjustment.