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: March YEAR: 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: April 28, 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).

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

Overview

March 2023 was a rather quiet from a hydrological perspective across NWS Burlington's HSA with no open water or ice jam related flooding noted. The 31 day period as a whole was on the milder side of normal with minimal ice cover completely vanishing from mid-month onward (Fig. 1). Precipitation was variable across the region, with frequent frontal passages and two notable winter storms whose precipitation fell largely as snow (Fig. 2). Greater precipitation totals were generally observed in Vermont and somewhat drier conditions in northern New York (Figs. 3 and 4). The heaviest totals, in some cases in excess of three inches, occurred in the higher terrain of the central and southern Green Mountains. Despite the variability in precipitation, overall snowfall was quite healthy with many areas showing significant positive departures (Fig. 5). By month's end, the continuation of milder temperatures heralded the arrival of the spring snowmelt, with river and soil moisture levels reaching normal to above normal levels (Fig. 6).

Notable Hydrology

The most notable hydrological feature this month, and through the winter as a whole was the considerable lack of river ice. This was due in large part to persistent mild temperatures through the 90-day period, with only one brief severe cold snap observed during the middle of February. As such, overall river ice thickness, where present, was quite thin compared to normal with some rivers such as the Winooski retaining a generally open channel all winter. This led to a near absence of any ice jams, so the overall threat of break-up jam flooding through the month was almost non-existent, something this author has not observed in 23 years of working at NWS Burlington.

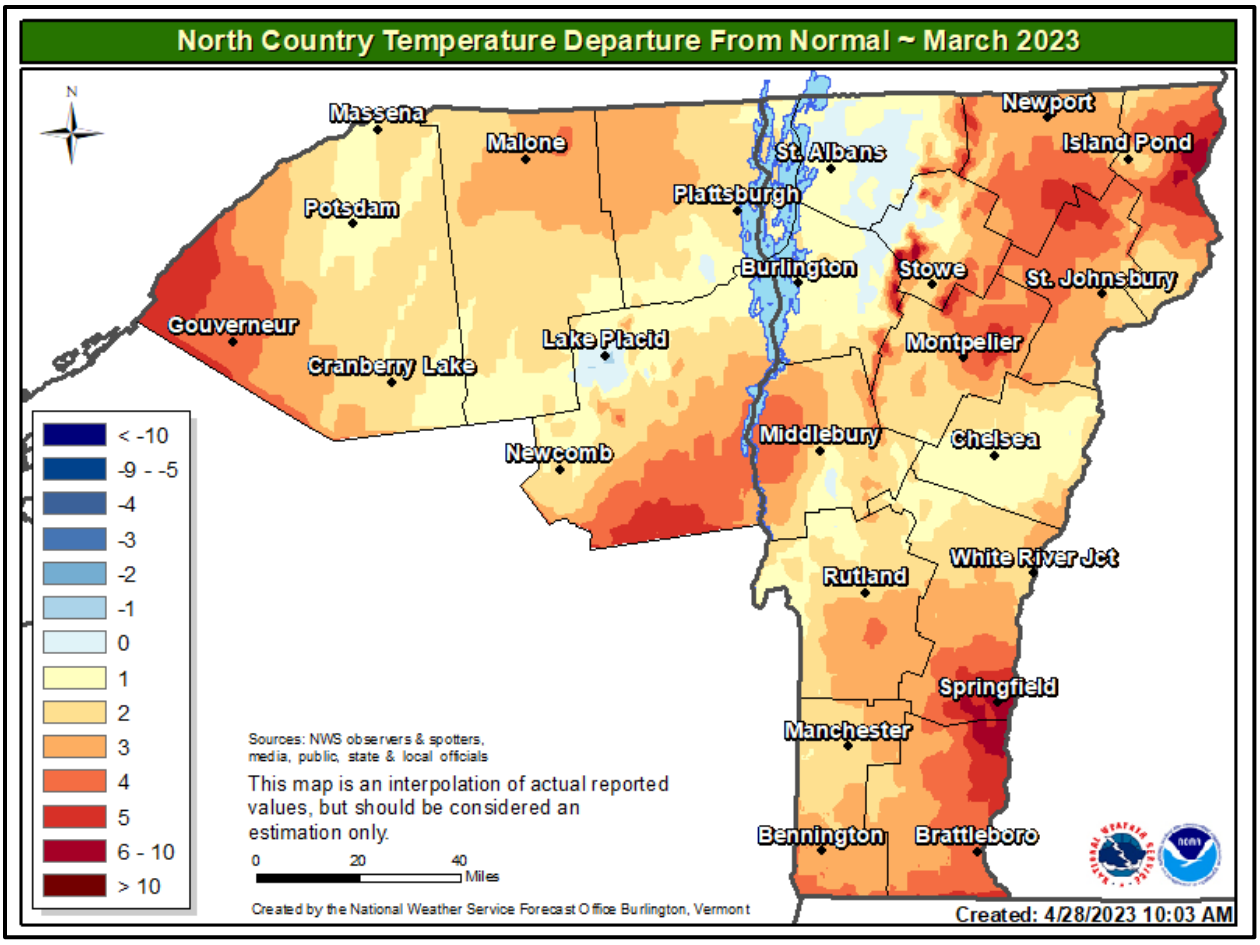

Figure 1: Mean temperature departure from normal for the month of March 2023 in the NWS Burlington, VT HSA. Values generally averaged from 1 to 4 degrees above the 30 year climatological mean.

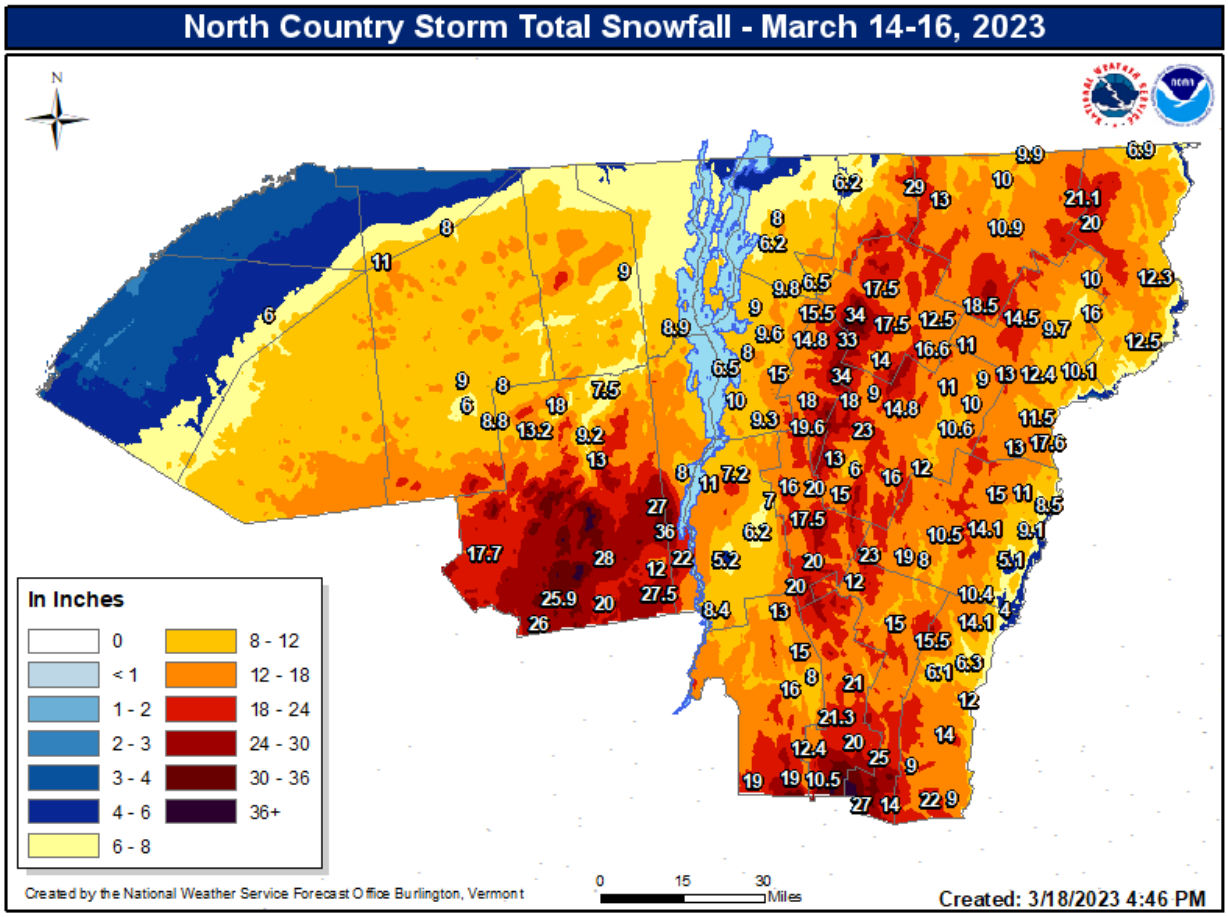

Figure 2: Total snowfall observed during the March 14-16, 2023 Nor'easter. Totals were quite heavy from the Adirondack Mountains east into Vermont where valley totals averaged 6-12 inches, and higher terrain averaged 1 to 2 feet with locally higher amounts.

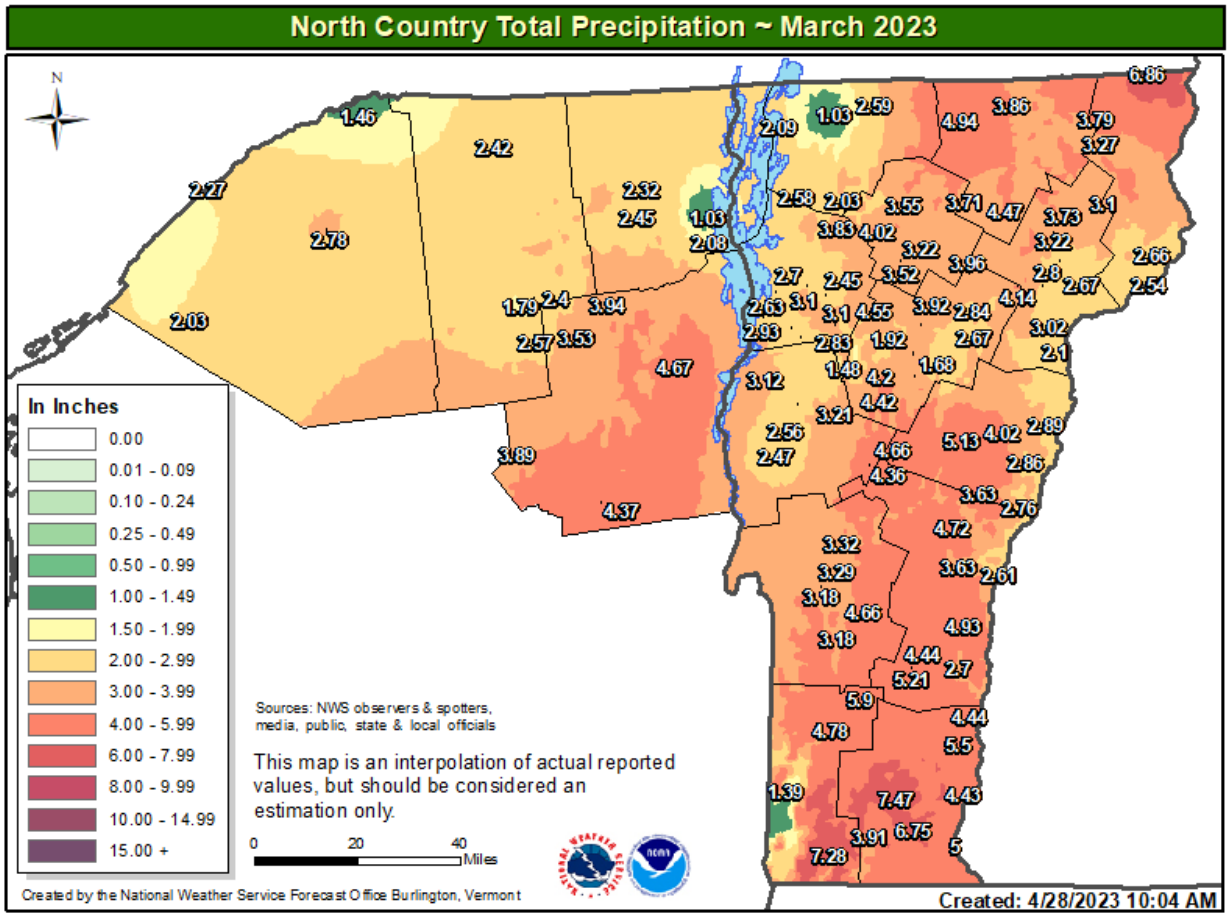

Figure 3: Monthly precipitation totals for March 2023 for the NWS Burlington, VT HSA. Values in general averaged from 2 to 5 inches across the HSA with some local variability.

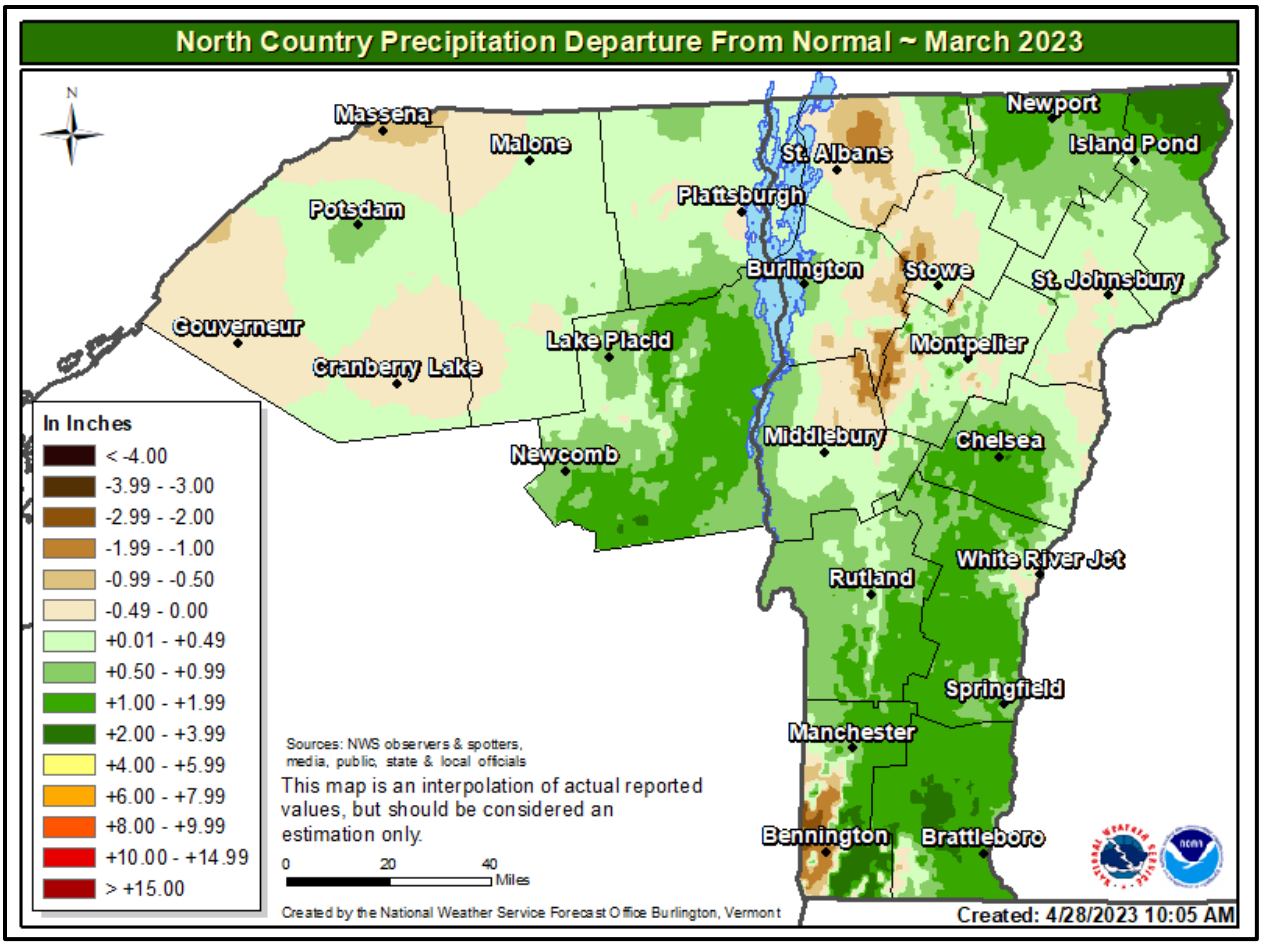

Figure 4: Monthly precipitation departures from normal for March 2023 for the NWS Burlington, VT HSA. Departures generally ran above normal, though with some variability.

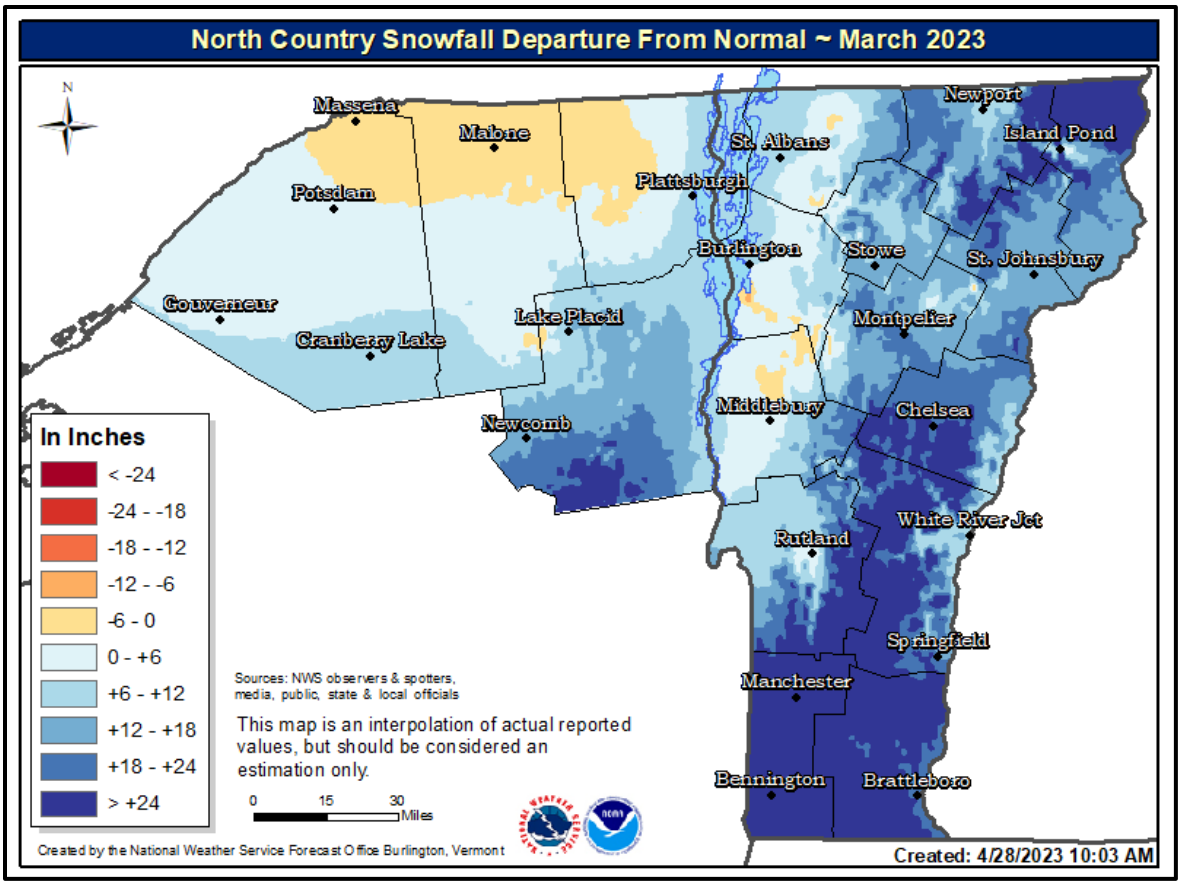

Figure 5: Snowfall departure from normal for the month of March 2023 for the NWS Burlington, VT HSA. Most areas observed positive departures in the 31 day period, with only portions of far northern New York seeing slightly below normal snowfall.

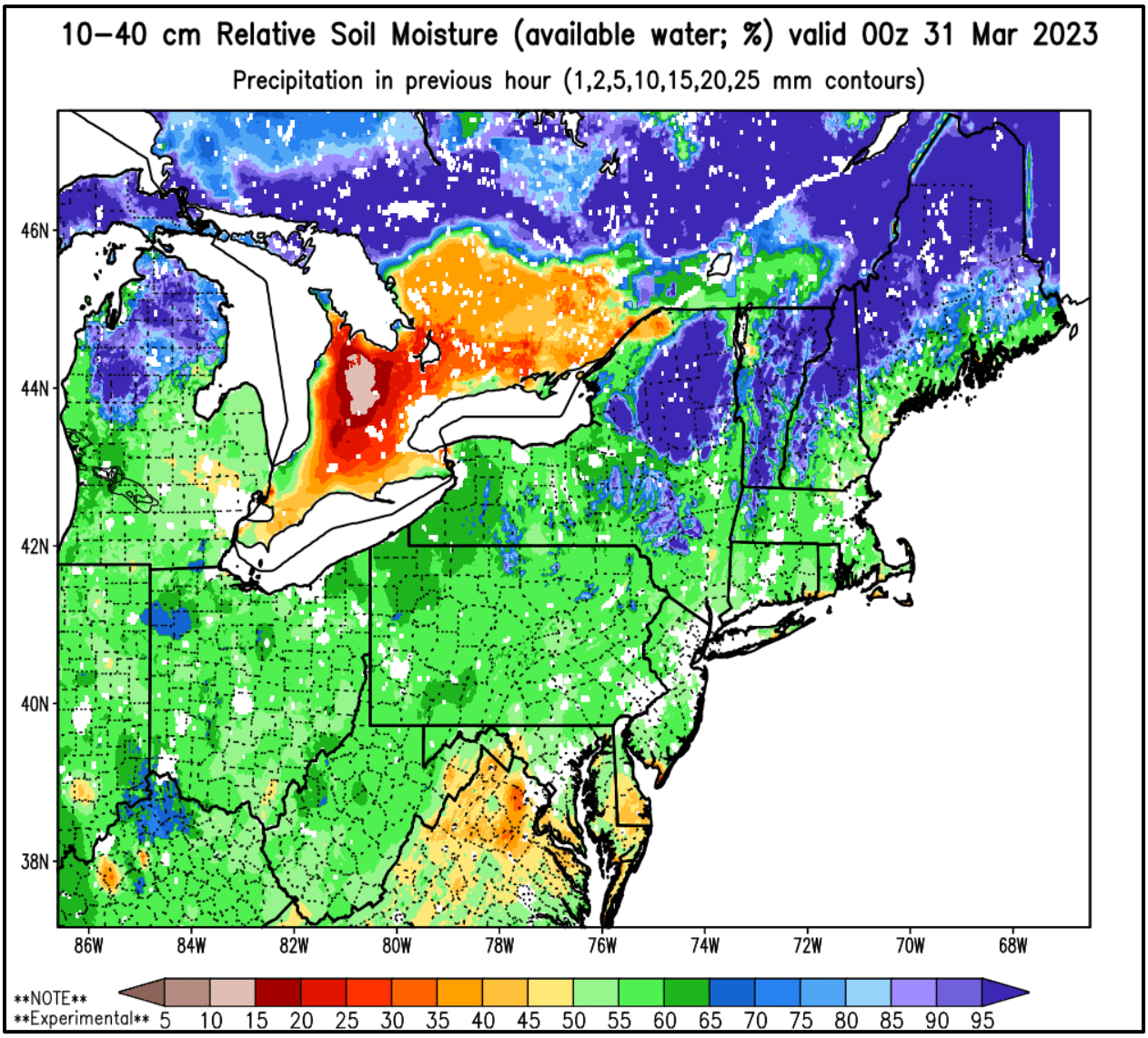

Figure 6: Relative soil moisture in the 10-40 cm layer, valid 00Z on 31 March 2023. Observed values across the NWS Burlington, VT HSA were largely at or above normal due to regular precipitation through the month and ongoing snowmelt.