

The 2001 Drought

THE SUMMER 2001 FLASH DROUGHT IN VERMONT

13 August, 2001

Drought has again visited Vermont, bringing with it record maximum temperatures very much reminiscent of the 1998-1999 event. However, the face of drought across the state is somewhat different from the last episode both in terms of the spatial distribution of the precipitation shortfalls, as well as the timing of these shortfalls. The ongoing drought displayed a much more rapid onset than that of 1998-1999, becoming markedly evident as July 2001 drew to a close. The rapidity of this year's drought onset has led to climatologists exploring the concept of a flash drought, in a similar fashion to the speed with which flash floods develop. Another key difference between the 2001 drought and its predecessor is the area affected. This spans across northern New York state, northern Vermont and into parts of Maine.

Two of the more commonly used indices for determining the severity of a drought are the Palmer Drought Severity Index (PDSI) and the Standardized Precipitation Index. Together, these indices yield the following character of the ongoing drought:

- prior to the rainfall received on 10 August, 2001 there was no soil moisture present in the upper layers of the soil across the state. In the lower layers (i.e. below approximately 5 feet), moisture in the soil varied from 2.43" in the northeast to 3.8" in the southeast.
- dry conditions are most pronounced across the northern tier of the state in contrast to the 1998-1999 event when the western and southeastern regions bore the brunt of the drying.
- northeastern Vermont has been drying since December 2000, with April and May 2001 being particularly dry. On the other hand, the southeastern sections have experienced close to normal conditions, with April being one of the drier months of the year to date. Along the western third of the state, varied conditions have prevailed with a dry April being followed by a close to normal May and June. Burlington, located in the northern reaches of this western section experienced the driest April-July period on record. The 6.22" of precipitation received during these four month was only 48% of the normal expected. With only 0.77" of rain received at Burlington during the month of July, it was the driest experienced since 1933 when only 0.58" of rain fell.
- as observed during past droughts, a number of temperature records have been set recently including maximum temperatures of 91 degrees F at Montpelier on August 6 and 9, 99 degrees F at Burlington on August 8 and 9. At the same time, record minimum temperatures have also been recorded including 41 degrees F and 39 degrees F on July 27 and 28 respectively at Montpelier.
- as of August 8, moderate fire danger conditions were mapped for the northwestern-most part of Vermont, with the rest of the state being in a low fire danger category.

For more information on the recent drought and methods by which to track drought conditions, see the:

- [Vermont Department of Agriculture, Food & Markets Drought page](#)
- [Farm Service Agency Vermont](#)
- [Vermont Forage Report](#)
- [University of Vermont Extension Service](#)
- [NOAA Drought Information Centre](#)

- [National Climatic Data Center CLIMVIS Drought Display System for the Palmer Drought Severity Index](#)
- [National Drought Mitigation Center](#)
- [American Meteorological Society Policy Statement on Meteorological Drought](#)
- [June 1999 Initial drought statement](#)
- [July 1999 Drought update and severe weather](#)
- [August 1999 Impacts of the 1998-1999 drought](#)
- [Summary of the 1998-199 drought in Vermont](#)
- [USGS 1999 News Release on Drought Conditions in Vermont](#)