Vermont State Climate Office
Climate Impacts Summary
November 2010

Dr. Lesley-Ann Dupigny-Giroux
Stephen Hogan

Precipitation summary

November 2010 was marked by both liquid and freezing rain events across Vermont. On average, the total monthly precipitation ranged from near normal to 0.25 inch below average across northwest Vermont; 0.5 -1 inch below average across southwest Vermont; and 0.25-0.5 inches below normal across the northeast and southeast. Representative stations totals are shown on Figure 1.

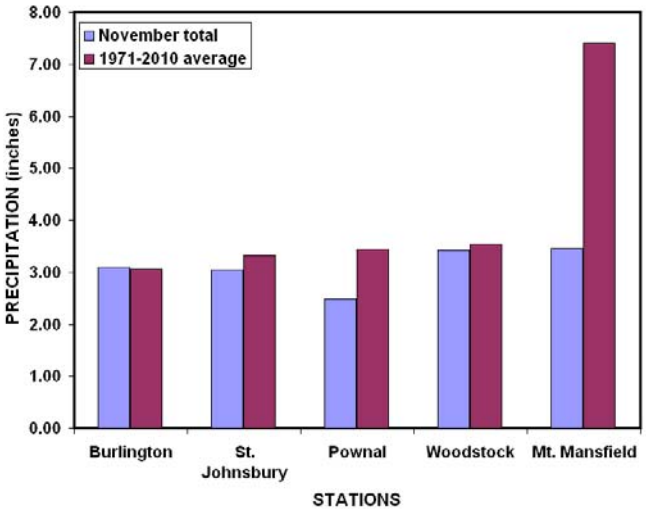

Figure 1: Comparison between November 2010 total precipitation with the 1971-2000 averages for four selected stations. Differing times of observations are of note. Precipitation at Burlington (western VT) and St. Johnsbury (northeast VT) are measured at midnight, those at Mt. Mansfield at 1600 (4:00 PM) and 0700 (7:00 AM) at Pownal.

Three periods of heavy precipitation were observed. The first occurred at times on November 4-5, due to a coastal storm system which moved through eastern New England. This was followed on the 8th and 9th by a storm system which retrograded westward from the Atlantic into coastal southern New England and then looped back out to sea. The third period of steady precipitation resulted from a storm system that moved northeastward from the Mississippi Valley through the eastern Great Lakes and into eastern Canada on November 16-18.

While rainfall was somewhat below average at most observing stations, Table 1 summarizes the daily rainfall records that were set.

Table 1: New daily rainfall records set in November 2010 at stations in Vermont

STATION	DAILY PRECIPITATION (in)	DATE
Chelsea 2 NW	0.90	5 November
North Hartland Lake	1.05	5 November
North Springfield Lake	1.15 1.28	5 November 17 November
Worcester 2 W	0.80	9 November

Snowfall was well below average across the entire state. Burlington only reported 0.3 inches of snow, which was 6.9 inches below normal. In the Northeast Kingdom, snowfall at St. Johnsbury was 6.8 inches below average. However, even with this below average snowfall, a daily snowfall record was tied at Chelsea 2 NW with 2 inches reported on November 19th.

The summit of Mt Mansfield only reported 8.2 inches of snow during the month, compared with the 34.1 inches that fell in October. At this site, the November liquid monthly precipitation (Figure 1) for this site was about 4 inches below average, suggesting the lack of orographic precipitation which usually leads to higher snowfall totals.

Other highlights

On 8 November, an offshore storm system spread moisture across Vermont. It was associated with cold air at the surface and mild, maritime air aloft. The latter was blocked by the north-south spine of the Green Mountains, which when combined with the northerly surface winds led to icing conditions in the Champlain Valley. The major societal impacts were from freezing/frozen precipitation and gusty winds. As the roads glazed over, numerous traffic accidents occurred in the northwest third of the state through the morning into early afternoon. In the Champlain Valley, ice accretion on trees and other vegetation (Figure 2) was reminiscent of the Ice Storm of January 1998, although the impacts were much less severe or prolonged.

Figure 2: Icing images from South Burlington, VT on 8 November 2010.

Temperatures turned sharply colder during the last week of the month, setting the stage for record low temperature records at both North Hartland Lake (15°F) and Sunderland (12°F) on 28 November.