Vermont State Climate Office
Climate Impacts Summary
June 2011

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…June weather returned to more average conditions…

In June, precipitation totals returned to more average values, in stark contrast to the observed totals of April and May 2011. As Figure 1 highlights, this was particularly true in the northern half of the state, with the exception of montane stations such as Mt. Mansfield as well as Bethel and Cavendish in central Vermont on the eastern side of the Green Mountains., precipitation in June returned to more normal levels, especially in the northern half of Vermont. Much of this excess in precipitation was related to the rainy periods observed on 8-9th, 11-13th, 18th and 22-25th. Rainfall was heaviest on the 12th and 22-23 in southern Vermont.

In the midst of it all, Vermonters continued the cleanup from the historic flooding along Lake Champlain. The Vermont Emergency Management (VEM) posted a series of health and other resources to assist homeowners in this process. On 15 June, 2011 President Obama signed a disaster declaration for the relief effort in the Vermont counties of Addison, Chittenden, Essex, Franklin, Grand Isle, Lamoille, Orleans, Washington, Caledonia and Windham.

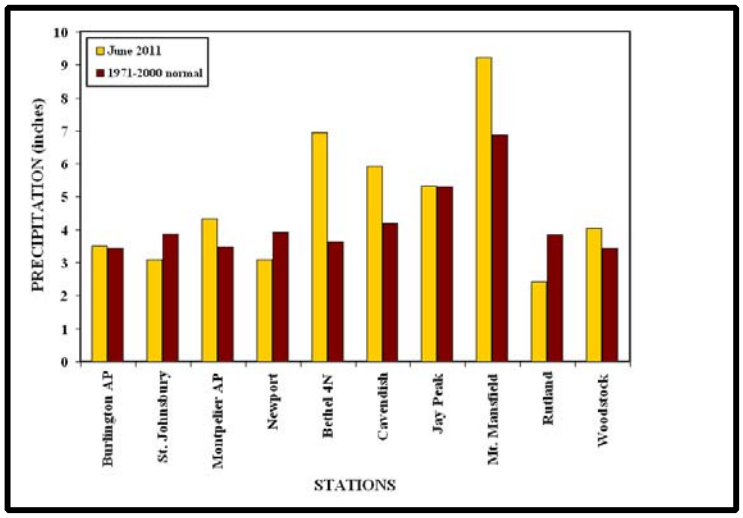

Figure 1: June 2011 precipitation totals at selected Vermont stations relative to their 1971-2000 averaging period.

The average to below average precipitation received in much of western Vermont was clearly reflected in the drop in Lake Champlain levels during June. By mid-month, the USGS gauging station (Figure 2) indicated that the lake had dropped below the 100 foot flood stage. Water had receded from shoreline roads by June 11. The King Street Ferry was able to commence operations between Burlington, Vermont and Port Kent, New York (Figure 3b).

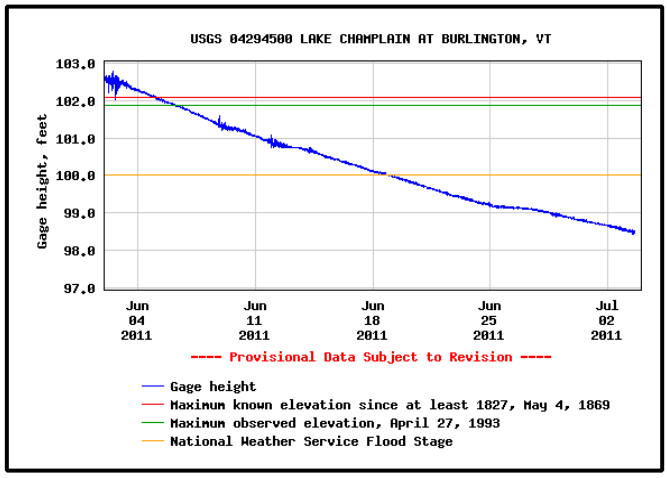

Figure 2: USGS gauging station at Lake Champlain in Burlington for 1June - 3 July, 2011.]

(A) (B)

Figure 3: **King Street Ferry Dock entrance in Burlington, VT on Friday 29 April, 2011 (A) and 30 June, 2011. The ticket booth and 10mph speed limit sign are the reference markers in both figures. [Photo credit: S. Hogan]**

Severe Thunderstorms

Apart from the above, June 2011 was also characterized by typical summer weather in the form of severe thunderstorms and record-setting heat conditions.

On the first of June, thunderstorms occurred in the morning across northern Vermont with small hail (less than 1" diameter) and heavy rain. There was one report of large hail

(1.25" diameter hail stones) in Ryegate (Caledonia County). More significant thunderstorms redeveloped that afternoon across southern Vermont. These storms resulted in large hail (hail stones 1" diameter or larger) in Bennington and Windham counties. The largest hail stones from this event were reported in southern Vermont with 3.25" diameter hail in Shaftsbury (Bennington county) and 2" diameter hail in West Dover (Windham county).

During the evening of June 8th, wind damage from a swath of thunderstorms blew down trees and power lines from west-central towns of Rutland and Pittsford (Rutland county) to Rochester and Woodstock (Windsor county). Associated winds were 70 mph at Rutland State Airport at 742 PM EDT on June 8th. More thunderstorms occurred on June 9th. During the early morning, they resulted in small hail and heavy rain in central and northern Vermont. Flash flooding was reported in the town of Shoreham (Addison county) with road and culvert washouts. There was one report of large hail (1" diameter) in the town of Killington in Rutland county. On the afternoon of that same day, thunderstorms developed and were more organized in clusters between 1:30-4:00pm, and again in the evening from 6:30-8:30pm. Most of the impacts were due to damaging thunderstorm winds (blowing down trees and power lines), hail generally smaller than 1" diameter and heavy rain resulting in the loss of electricity for up to 23,000 customers in Addison, Chittenden, Rutland (along with 1 inch diameter hail), Bennington, Orange and Windham counties. Some localized ponding of water on roads typical in the wake of thunderstorms was also observed (Figure 3).. Photograph 2 highlights this urban impact of localized road flooding from convective precipitation during the afternoon of June 9th.

Figure 4: Urban flooding from a thunderstorm on Riverside Ave in Burlington Vt during June 9th. [Photo credit: The Burlington FreePress]

Thunderstorms on the afternoon of June 18th resulted in large hail (1" diameter or greater) in Franklin, Chittenden, Rutland, Lamoille counties. Most reports occurred between 1:30-4:00pm. The largest hail reported with this event was a stone of 1.75 inch diameter in the northern town Enosburg Center (Franklin county) at 1:50pm EDT.

Finally, record maximum and minimum temperatures were set or tied at several CCOP stations around the state throughout the months as summarized on Table 1.

TABLE 1:Record temperatures set in June 2011. Previous records are shown in parentheses. These data are preliminary and have yet to be quality checked.

STATION	NEW Tmax (F)	NEW Tmin (F)	DATE
Burlington airport	90.0 (88.0)		1 June
South Hero		67.0 (66.0)	1 June
South Hero	89.0 (86.0)		2 June
Mt. Mansfield	76.0 (75.0)		8 June
St. Johnsbury	57.0 (58.0)		12 June
Corinth		47.0 (49.0)	19 June
Ball Mountain Lake	61.0 (62.0) 55.0 (58.0)		23 June 25 June

ADDITIONAL RESOURCES

http://www.whitehouse.gov/the-press-office/2011/06/15/president-obama-signs-vermont-disaster-declaration

http://www.disasterassistance.gov/

http://www.healthvermont.gov

http://www.vtfpr.org/protection/documents/2011ForestHealthJuneObservations.pdf