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 December YEAR 2013
TO: Hydrologic Information Center, W/OS31 NOAA's National Weather Service 1325 East West Highway Silver Spring, MD 20910-3283		SIGNATURE /s/ Gregory A. Hanson, SH WFO BTV DATE January 7 2014

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).

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

December saw typical early winter weather and hydrologic conditions, with a cooling trend through the month, the development and breakup of river ice, and a wintry mix of precipitation.

The first few days of December were mainly under the influence of high pressure with steady river levels. Late on December 5 a warm front lifted north across the region…with rainfall over the region late on the 5th into the morning of the 6th. A quarter to three quarters inch of rain fell over the North Country before turning to snow and ending when a cold front moved through the region. Little snowmelt accompanied the brief warm-up, and rivers rose two feet or less.

River flows remained near their base levels until later in the month as only light amounts of precipitation fell, mainly in the form of snow.

An arctic cold front the afternoon of December 11 sent temperatures well below freezing, with highs through mid-month in the teens and lows below zero. River ice cover began to develop, with most river gages showing ice effects over the following week to 10 days.

The most significant hydrologic activity in the month was over the December 20 to 23 timeframe as a complex storm system brought warmer temperatures and snowmelt, rain, and a wintry mix to Vermont and Northern New York.

On December 20 low pressure and a cold front moved through the region, bring one to three inches of snow. The cold front became stationary, with below freezing temperatures near the Canadian border, and highs into the 40s and low 50s in the central Adirondacks and southern Vermont. An area of low pressure moved along the stationary front, and produced freezing rain and sleet in the northern half of the hydrologic service area, and rain in the south. Some areas received one to over two inches of liquid, freezing, and frozen precipitation from December 20 to 23.

Rivers responded with moderate rises, sufficient to break up the newly formed river ice. Ice jams were evident in river gage data on all area rivers, and flooding resulted in a few locations on December 22 into the 23rd:

- The East Branch Ausable at Ausable Forks NY, an ice jam caused the river to jump to 9.61 feet early on the 22nd (figure 1). Flood stage is 7 feet. People were evacuated in the Jersey area, and a low lying parking lot was flooded. A flash flood warning was issued.
- The Passumpsic River at Lyndonville, an ice jam caused flooding along the East Branch of the Passumpsic near Lyndonville early on the 22nd, as well as on the main stem Passumpsic at the

confluence of the East and West Branches and downstream. Residents of the Northeast Kingdom Mobile Home Park were evacuated along the East Branch, and the junction of Route 122 and 5 in Lyndonville was closed. A flash flood warning was issued.

- The Winooski river experienced ice jam flooding later in the day on the 22nd, first in Middlesex along Route 2, and then early in the morning on the 23rd closing North Williston Road in Essex Vermont. Flood advisories were issued.

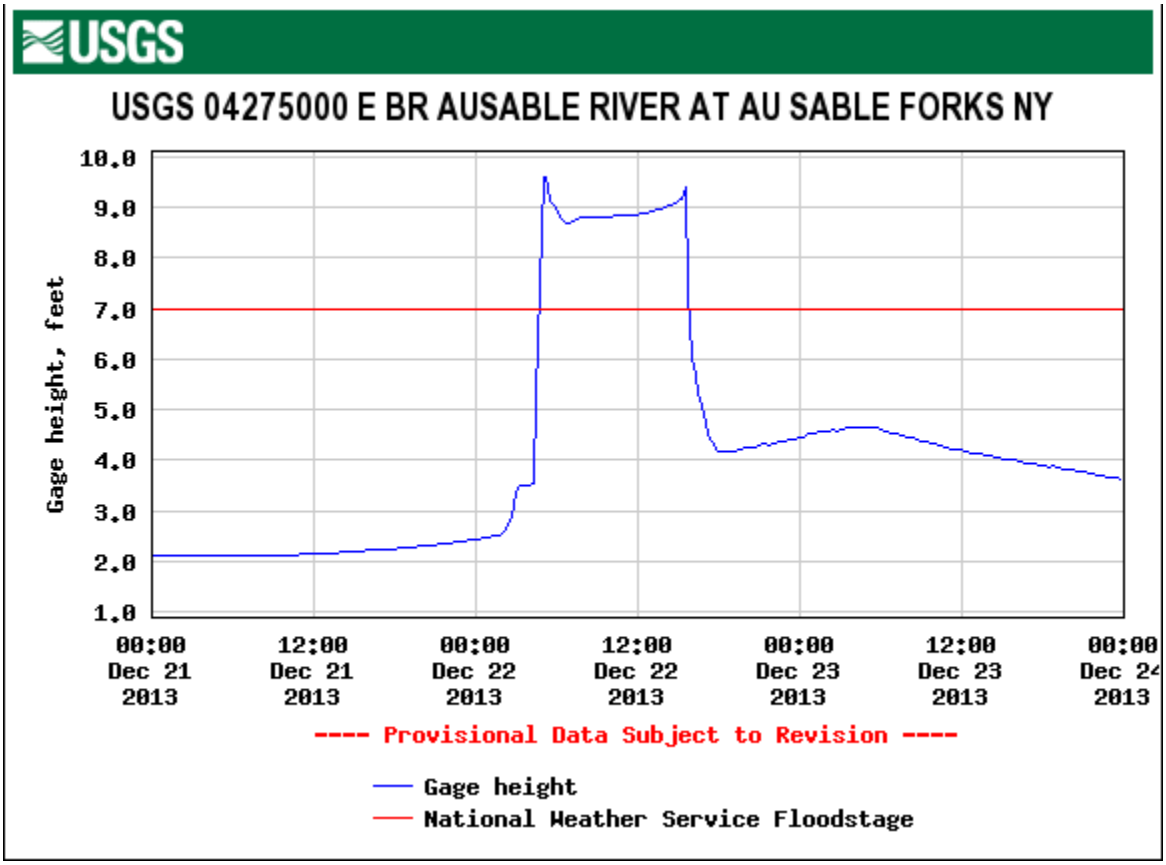

Figure 1, Hydrograph for ASFN6 ice jam

The rest of the month was characterized by near to below normal temperatures and little precipitation. The exception was late on Dec 29, when a winter storm moving up the New England coast brushed southeast Vermont, producing 6 to 10 inches of snow. A return of Arctic temperatures at the end of the month helped to re-form river ice. Snow pack conditions the end of January were below normal, with just a few inches of snow cover on the valley floors, and about a foot over the higher terrain.

Lake Champlain spent the first three weeks of December near 95.1 feet, then rose to near 95.5 feet following the December 22-23 rainfall and snowmelt runoff event.

Significant River Crests
December 2013
WFO Burlington VT

Location	ID	Date	Time (UTC)	Crest Stage (ft)	Flood Stage (ft)
E. Br. Ausable R. at Ausable NY	ASFN6	12/22/13	1015	9.61 (ice)	7.0
Ausable R near Ausable Forks NY	AUSN6	12/22/13	2100	6.78 (ice)	7.0
Missisquoi R. at E. Berkshire VT	EBKV1	12/24/13	0145	9.41 (ice)	13.0
Missisquoi R. at North Troy VT	NTYV1	12/23/13	1948	5.84	9.0
Barton R. at Coventry VT	COVV1	12/24/13	1545-1830	7.55	8.0
Lamoille R. at Johnson VT	JONV1	12/22/13	2145	8.10 (ice)	13.0
Lamoille R. at Jeffersonville VT	JVLV1	12/24/13	0030	447.48 (ice)	450.0
Lamoille R. near East Georgia VT	GEOV1	12/24/13	0445	10.26 (ice)	n/a
Winooski R. at Montpelier VT	MONV1	12/22/13	1515	9.20 (ice)	15
Winooski R. at Waterbury VT	WATV1	12/23/13	0430	411.86	419
Winooski R. at Essex Jct. VT	ESSV1	12/23/13	1530-1630	7.97	12.0
East Br. Passumpsic R. at E. Haven VT	EHVV1	12/22/13	1230	6.42 (ice)	6.5
Passumpsic R near Passumpsic VT	PASV1	12/23/13	1645-1700	9.62 (ice)	14
White R at West Hartford VT	WEHV1	12/23/13	0215	8.81	18