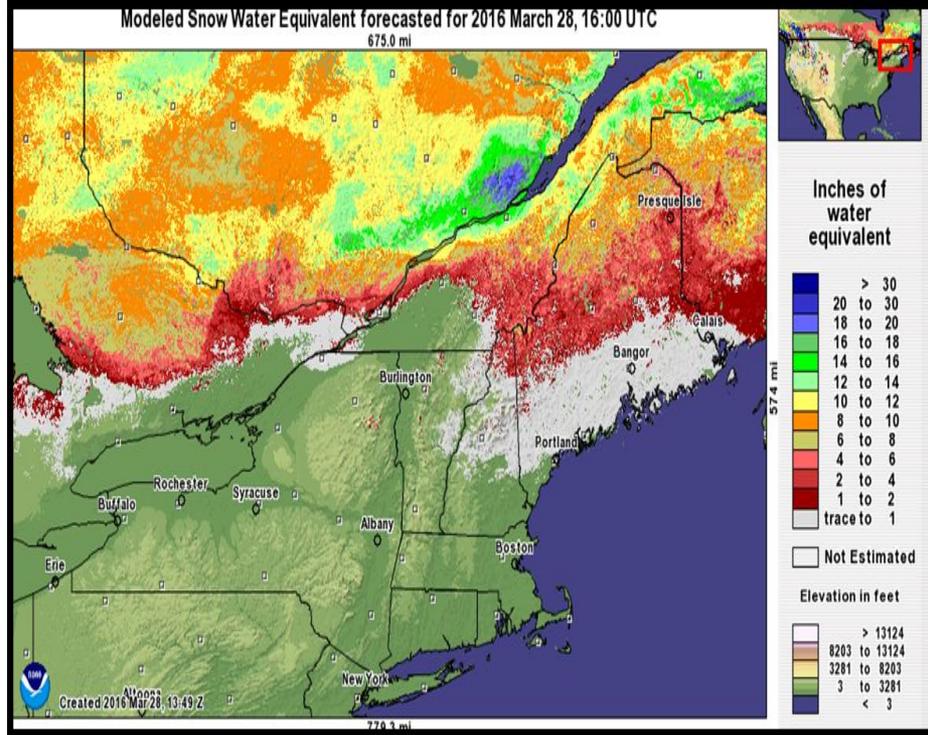
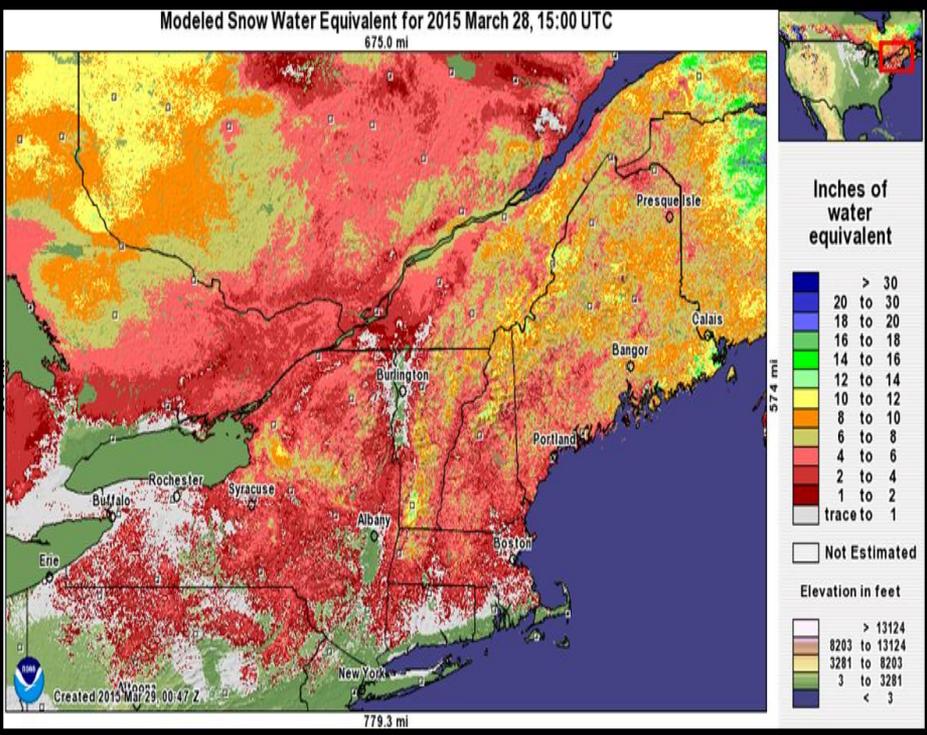




Northeast River Forecast Center's Spring Flood Outlook



A Tale of Two Distinctly Different Winters!



David R. Vallee
Hydrologist-in-Charge
NOAA/NWS/Northeast River Forecast Center



Building a Weather-Ready Nation



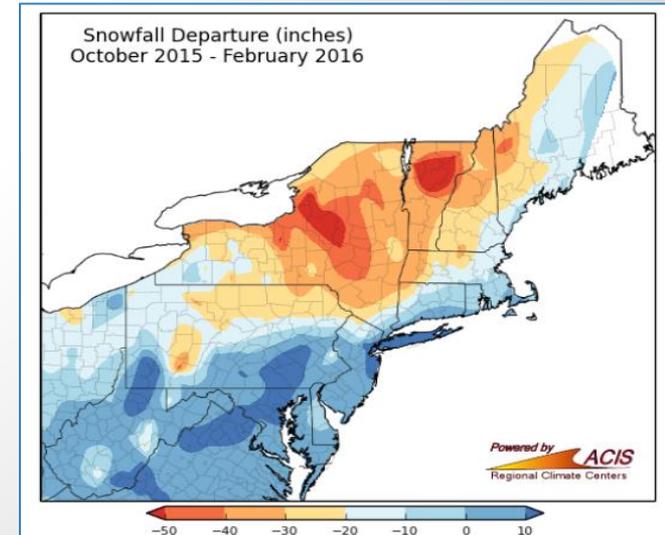
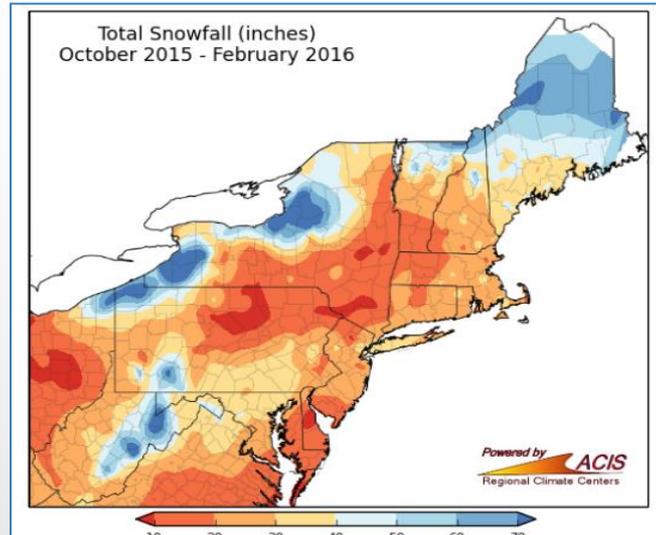
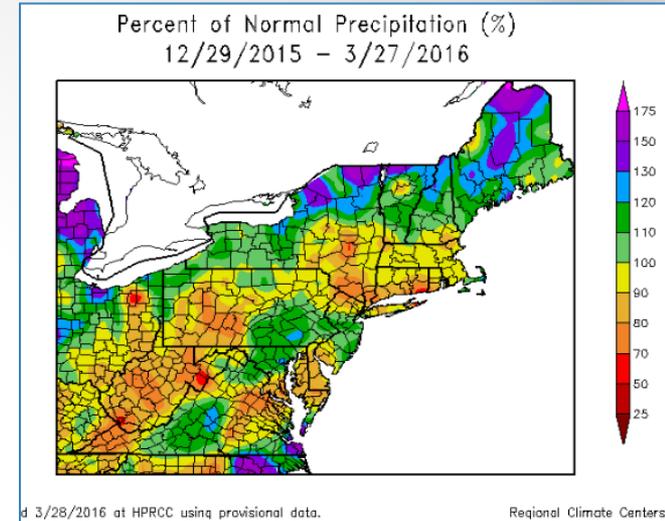
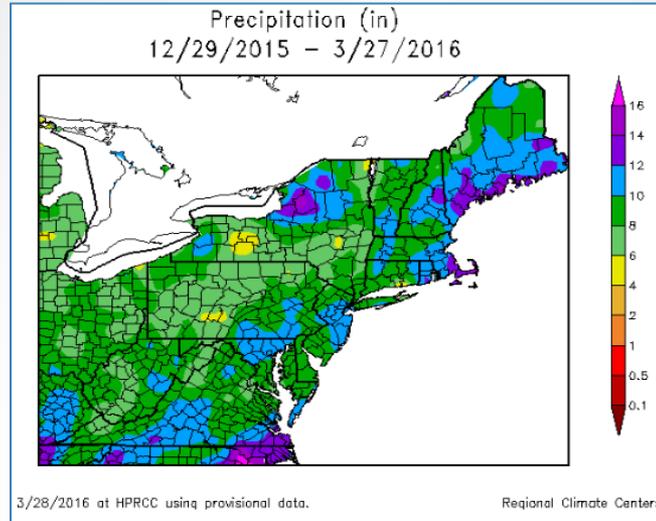
Winter Highlights



90-day Precipitation
Wetter North

Winter Precipitation
Much Wetter than Fall

Season Snowfall
*Mainly just below to
Much below normal*



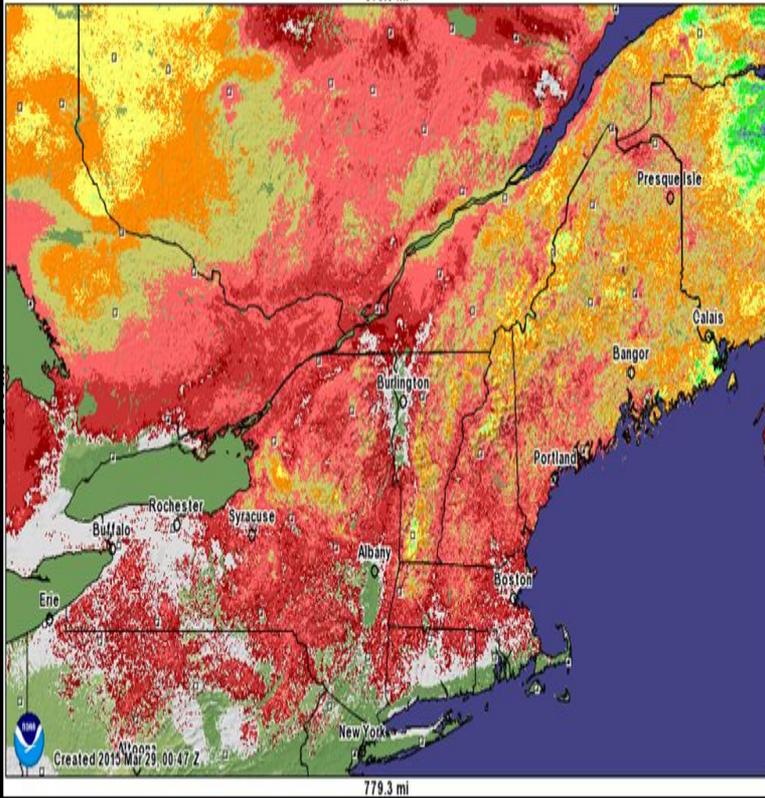


2015 vs. 2016 Snow Water

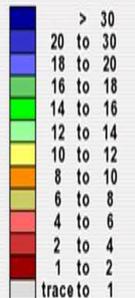
Snow limited to far northern NH & interior ME



Modeled Snow Water Equivalent for 2015 March 28, 15:00 UTC
675.0 mi

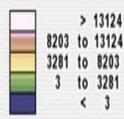


Inches of water equivalent

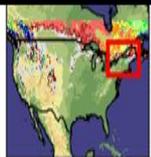
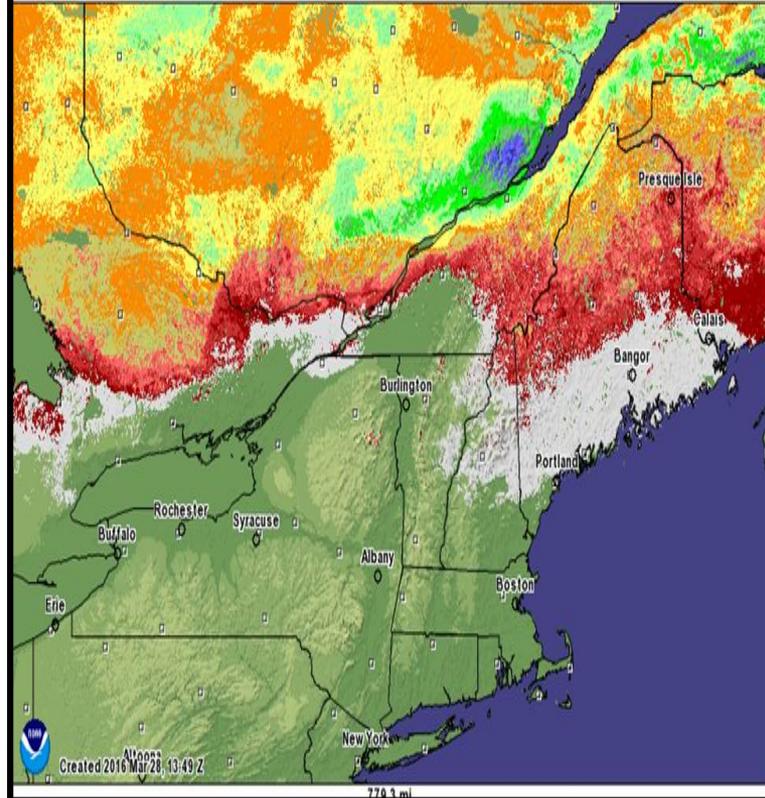


Not Estimated

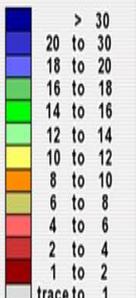
Elevation in feet



Modeled Snow Water Equivalent forecasted for 2016 March 28, 16:00 UTC
675.0 mi

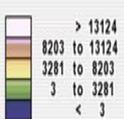


Inches of water equivalent



Not Estimated

Elevation in feet





One Widespread Flood Event

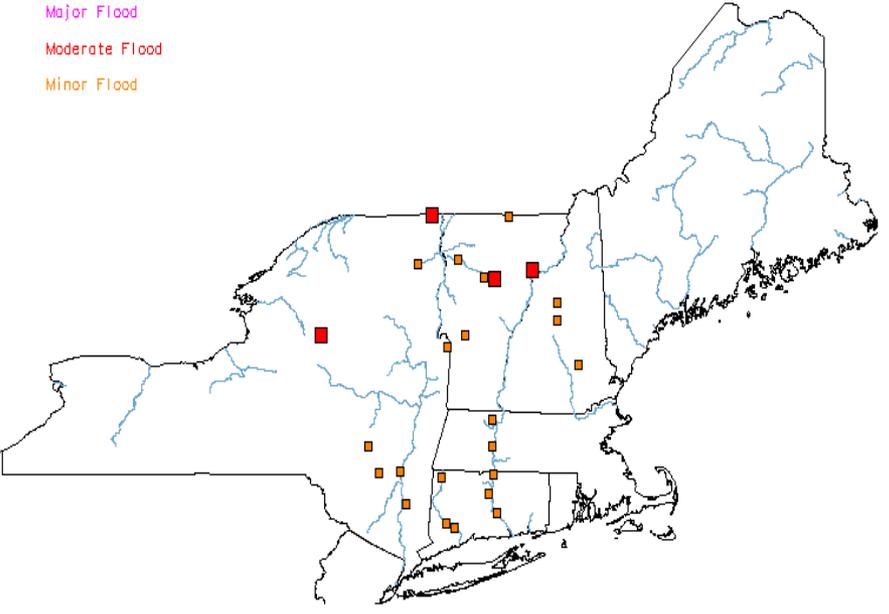
Feb 22-27 2016



Northeast Flooding

2016-02-22 to 2016-02-27

- Major Flood
- Moderate Flood
- Minor Flood

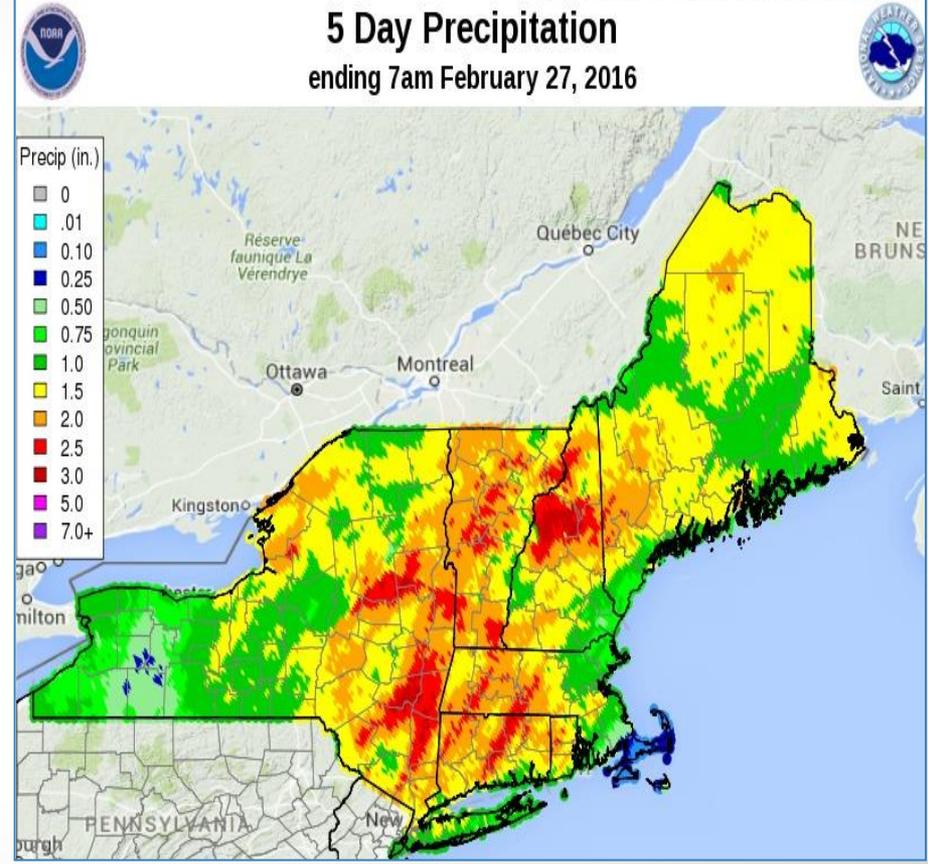


22 locations exceeded flood stage
 *4 locations experienced ice jams

Source: NOAA / NWS / Northeast River Forecast Center

5 Day Precipitation

ending 7am February 27, 2016



Widespread 2-3.5 inch rainfall
 Included a line of severe thunderstorms!



Building a Weather-Ready Nation



USGS Streamflow Conditions

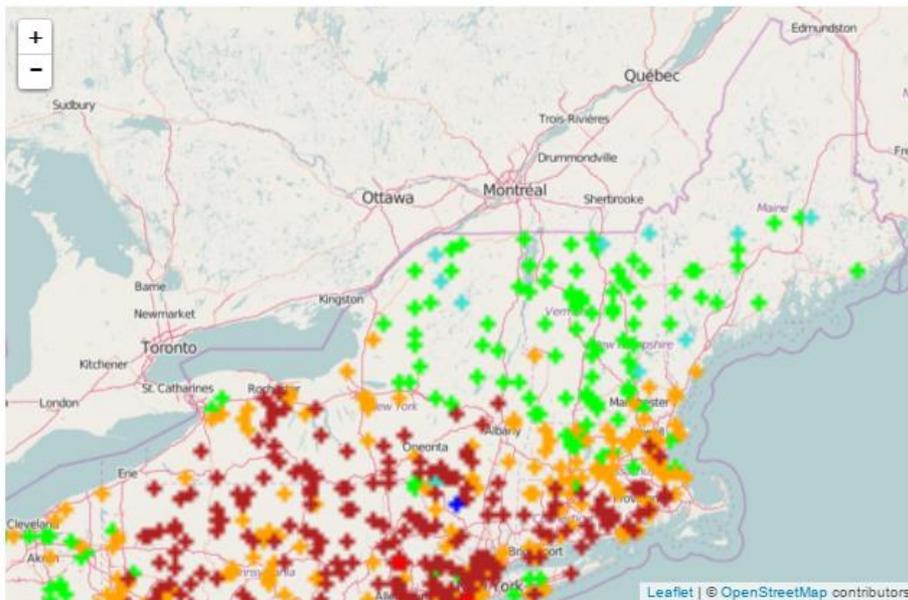
March 28th, 2016



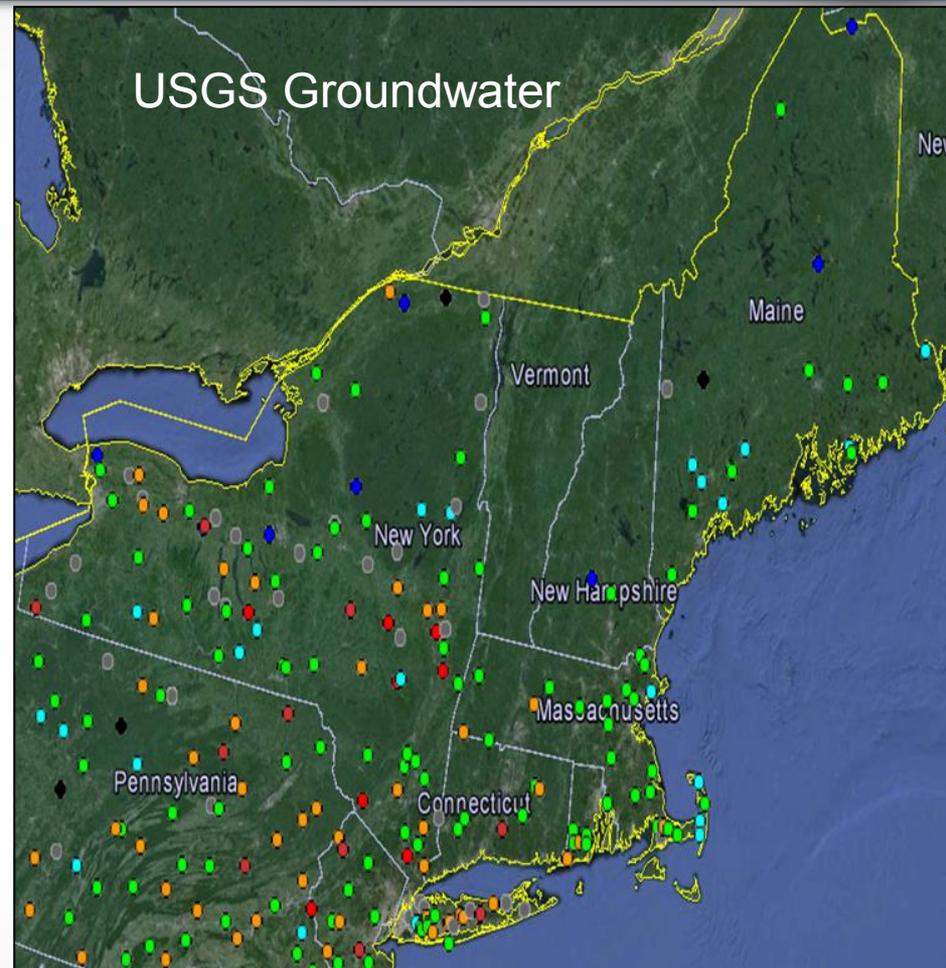
WaterWatch Streamflow Map

Choose a region and then click "GO" to view a regional map
(Warning: It may take several minutes to process)

Map type	United States	Water Res. Region	GO
7-day Flow			



Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

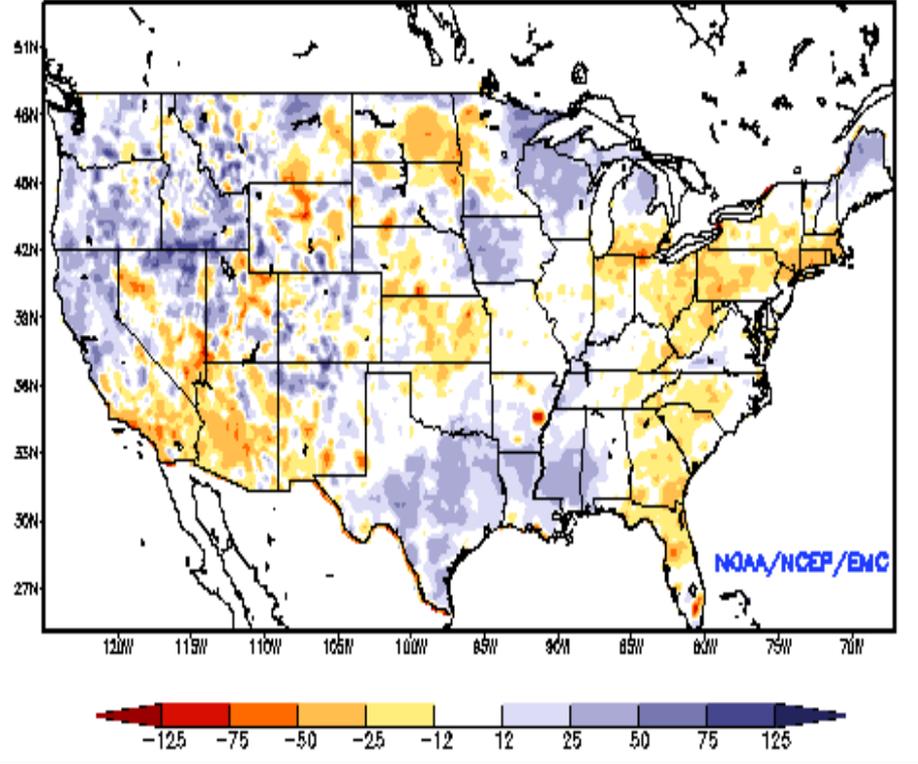




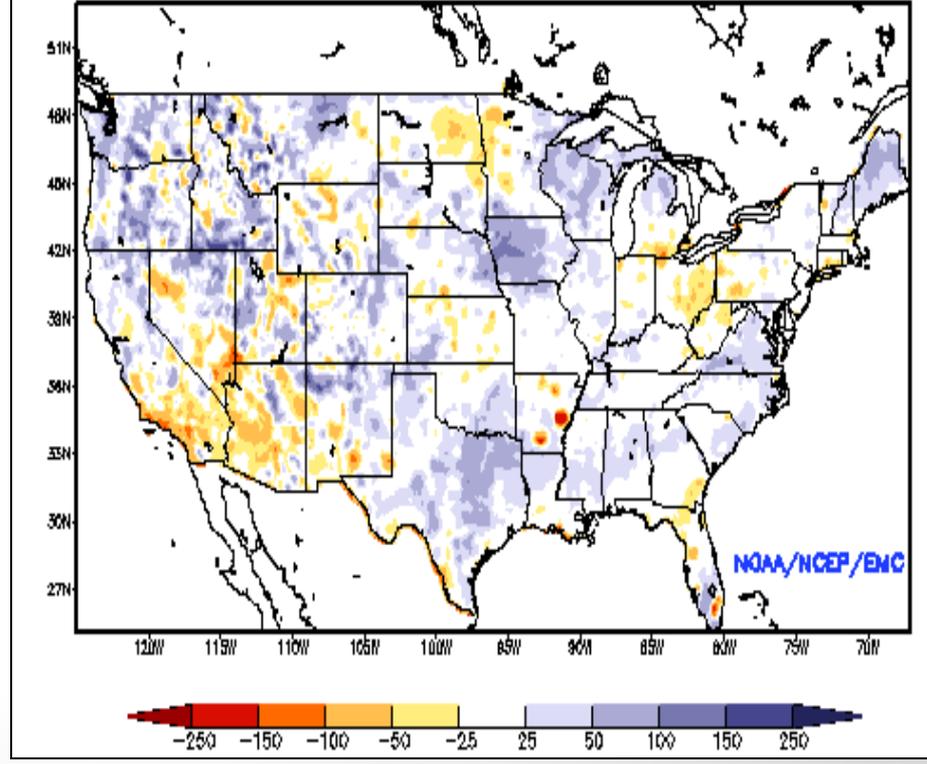
Soil Moisture Current Conditions/Outlooks



Ensemble-Mean - Past Week Top 1M Soil Moisture Anomaly (mm)
NCEP NLDAS Products Valid: MAR 23, 2016



Ensemble-Mean - Past Month Total Column Soil Moisture Anomaly (mm)
NCEP NLDAS Products Valid: MAR 23, 2016





Water Supply/Lake Levels



New York City's Water Supply System

March 25, 2016

Total Storage	(% of Capacity)	
Current:	93.3	
Normal:	93.0	
Consumption	(billion gallons)	
03/24/16	0.91	
Average Precipitation	(inches)	
	Actual	Historical
January:	1.75	3.11
February:	4.49	2.59
March:	0.70	2.73

Scituate Reservoir Elevation (feet)	281.46	(93.6 % of Capacity)
Plant Influent (mgd)	52,093,575	(80.6 CFS)
Cumulative Reservoir Evap. (gal)	-41,986	
Downstream Discharge (mgd)	9.98	(15.43 CFS)

March 1, 2016

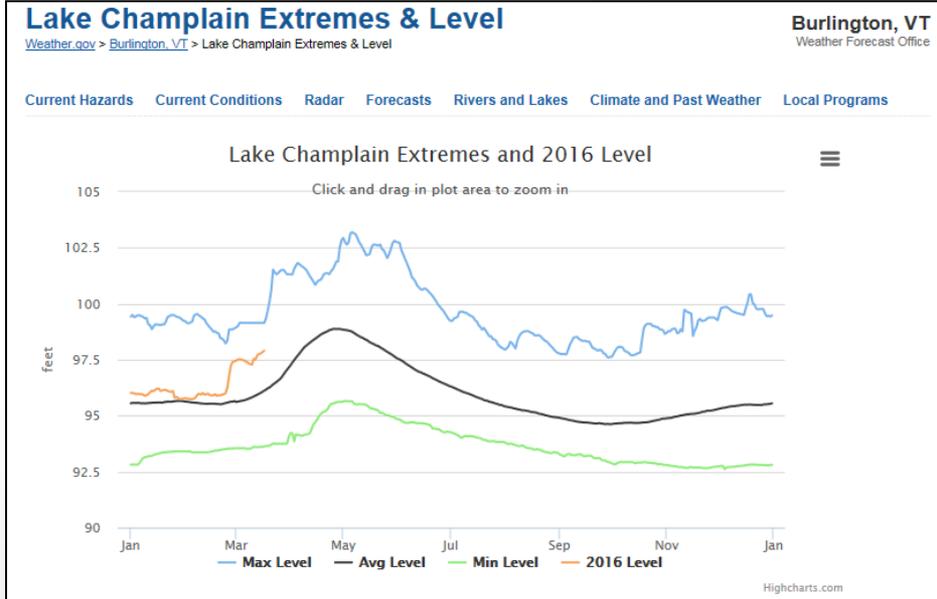
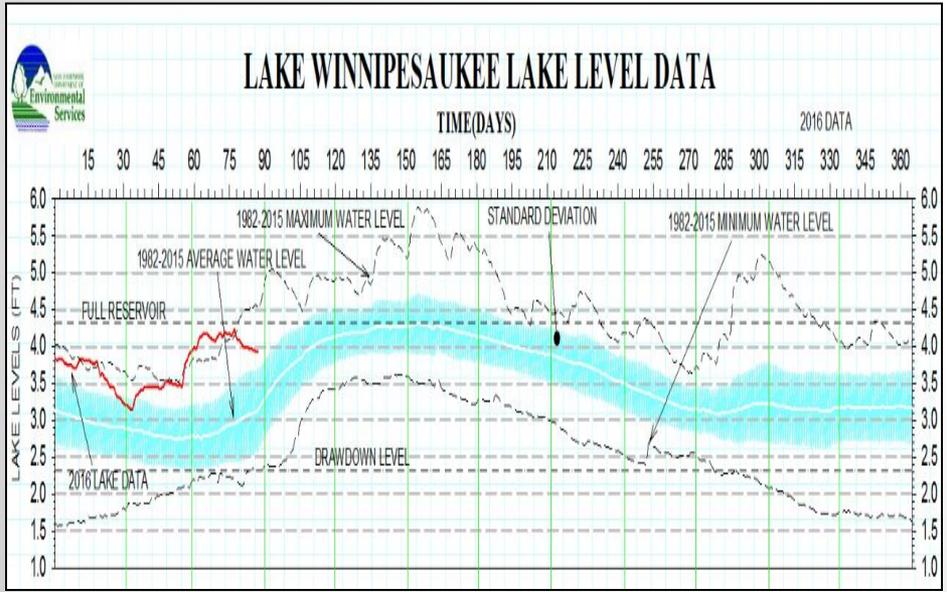
RESERVOIR LEVELS: The Quabbin Reservoir, the largest water supply source for 47 communities in the Metro Boston area, is currently at **89.9%** of its 412 billion-gallon maximum capacity. The 65 billion-gallon Wachusett Reservoir is **91.9%** full.

Detailed Data and Archives

CONDITIONS STATUS: According to the MWRA's Drought Management Plan, the water system is currently listed in a **Normal Operations Status** (see table below).

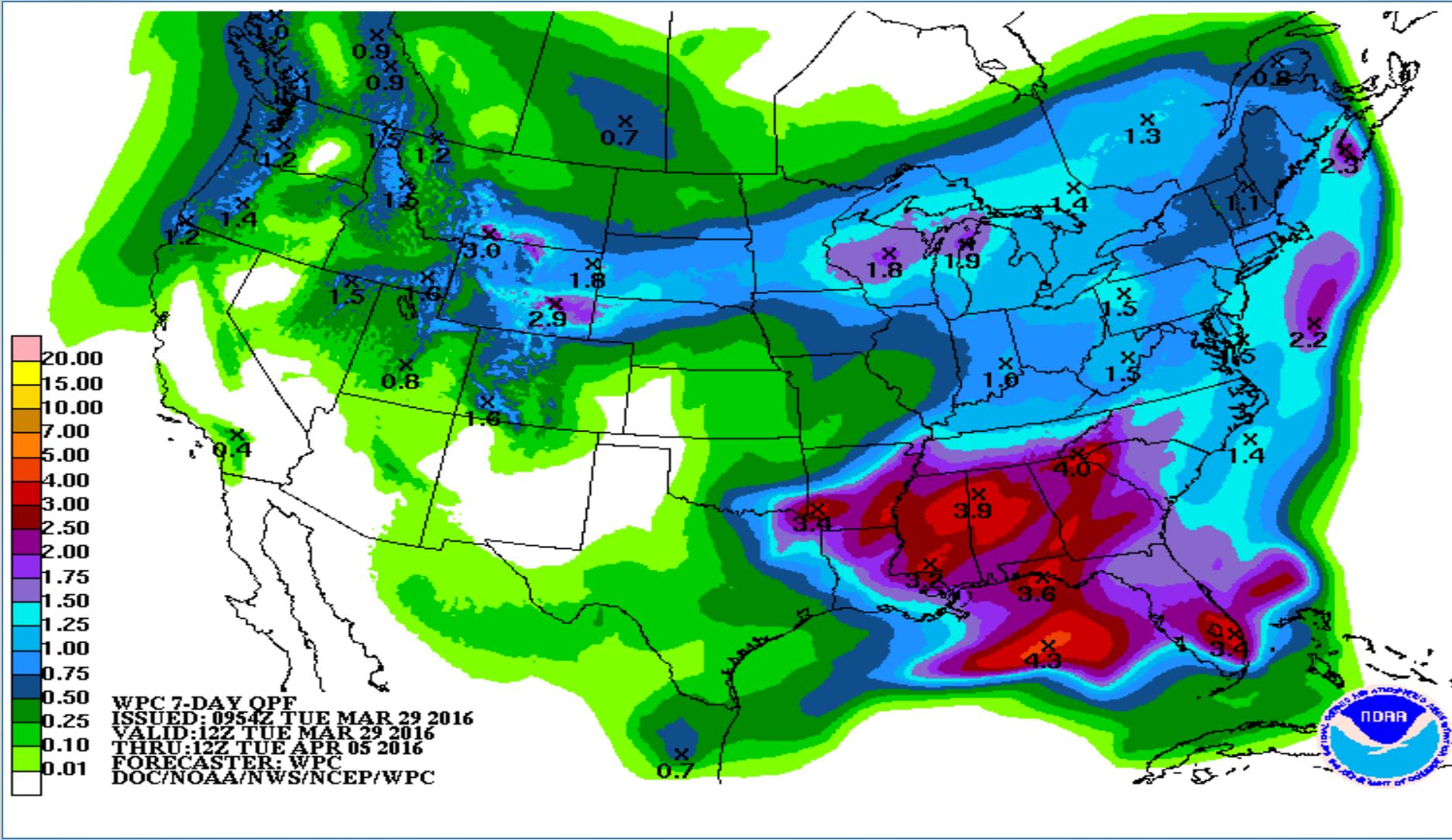
Current Conditions Status = Normal Operations

Quabbin Level	Normal Operations	Below Normal	Drought Warning	Drought Emergency 1	Drought Emergency 2	Drought Emergency 3
	100%- 80%	80%-65%	65%-50%	50% -30%	38% -25%	25% -0%



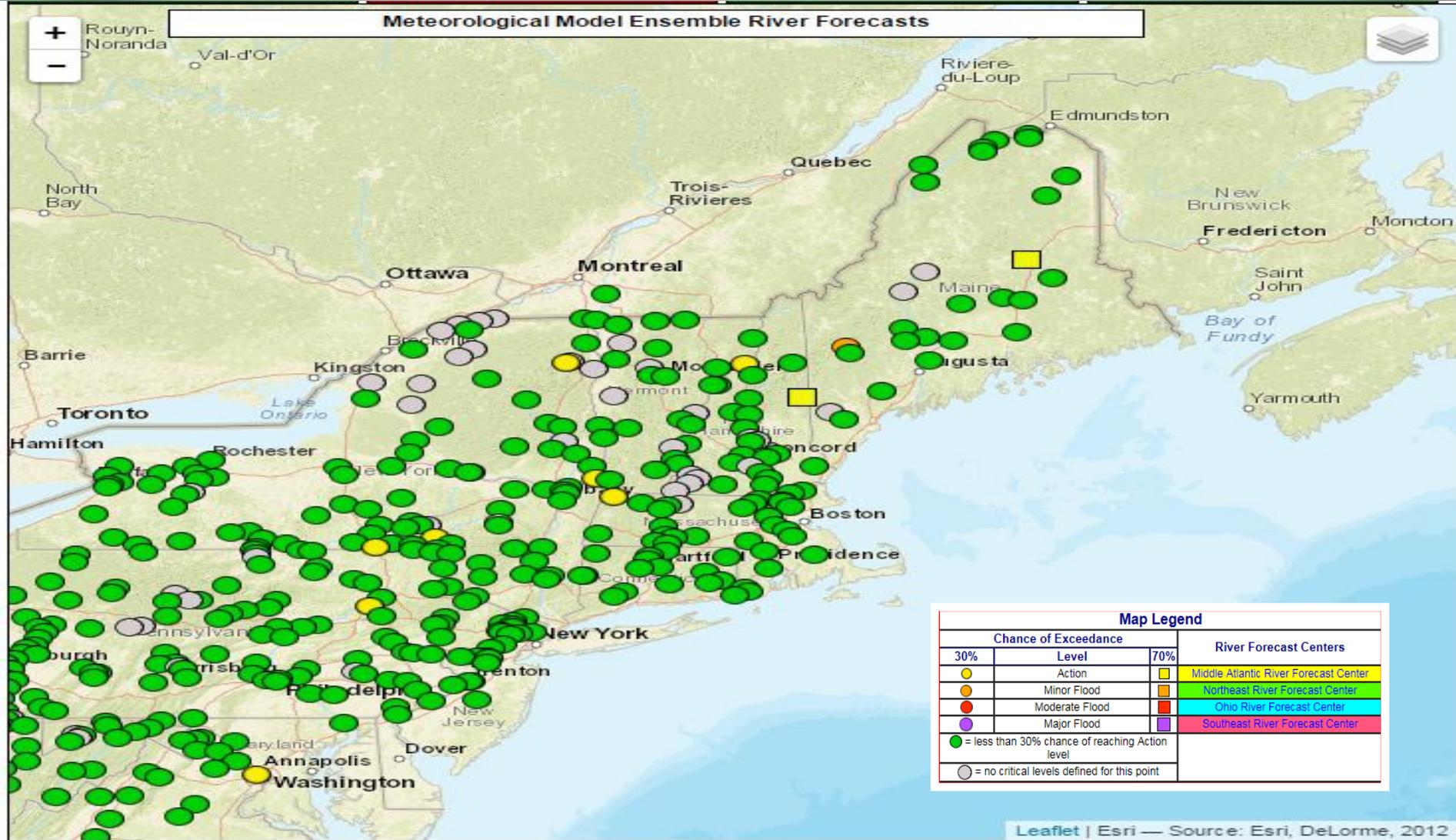


Precipitation For The Next 7 Days





Short-range Ensemble River Forecasts



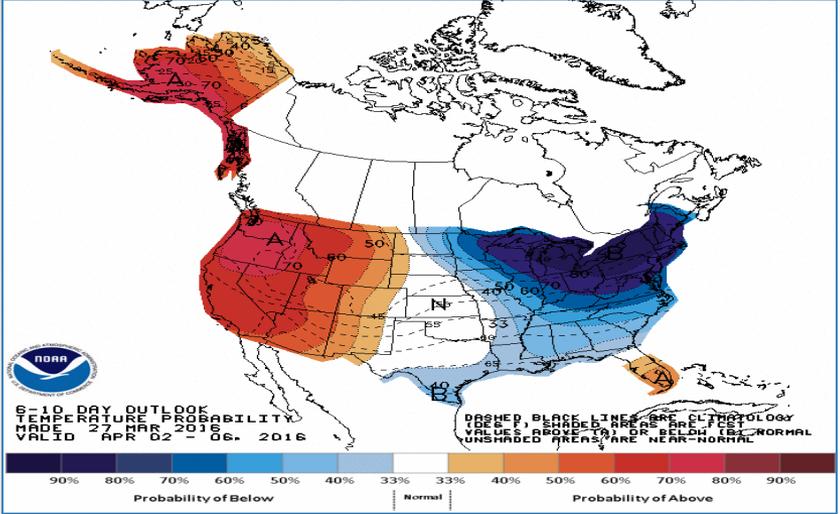
Leaflet | Esri — Source: Esri, DeLorme, 2012



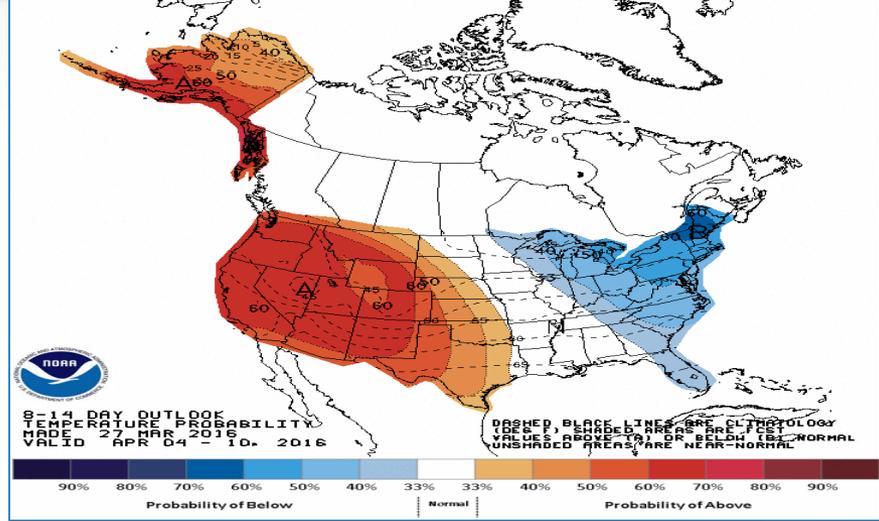
Building a Weather-Ready Nation



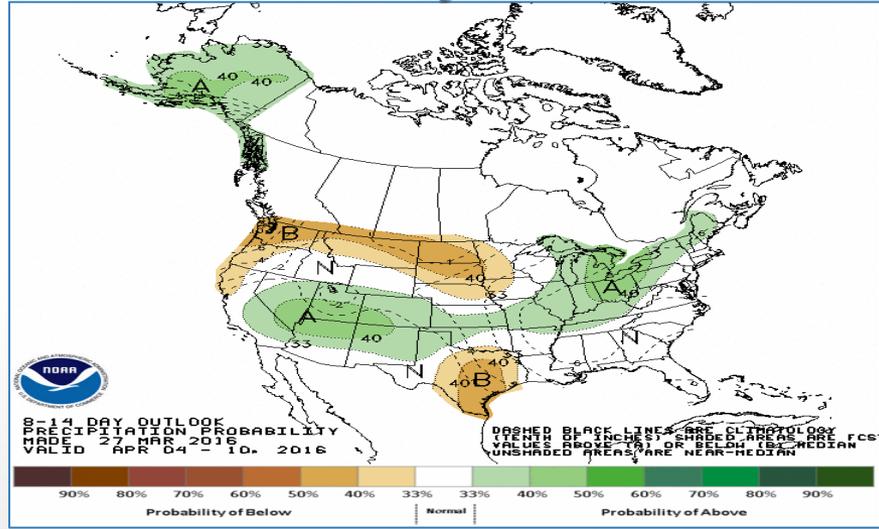
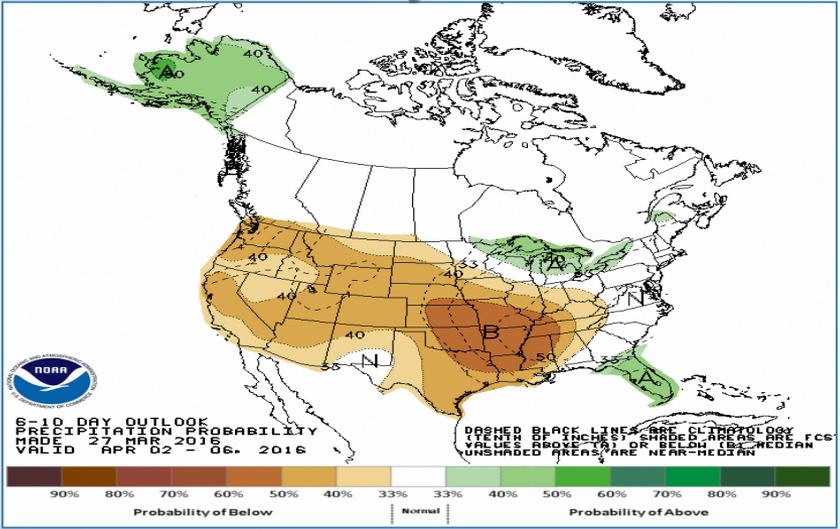
CPC Outlooks



6 to 10 day outlooks

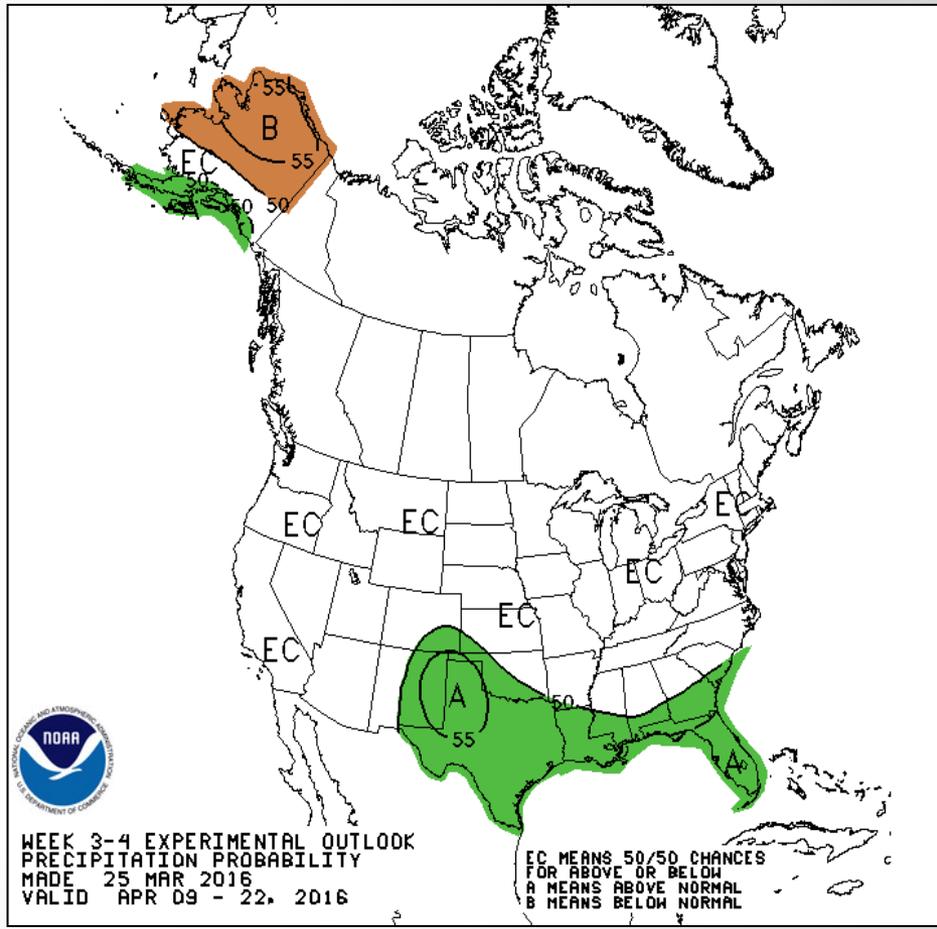
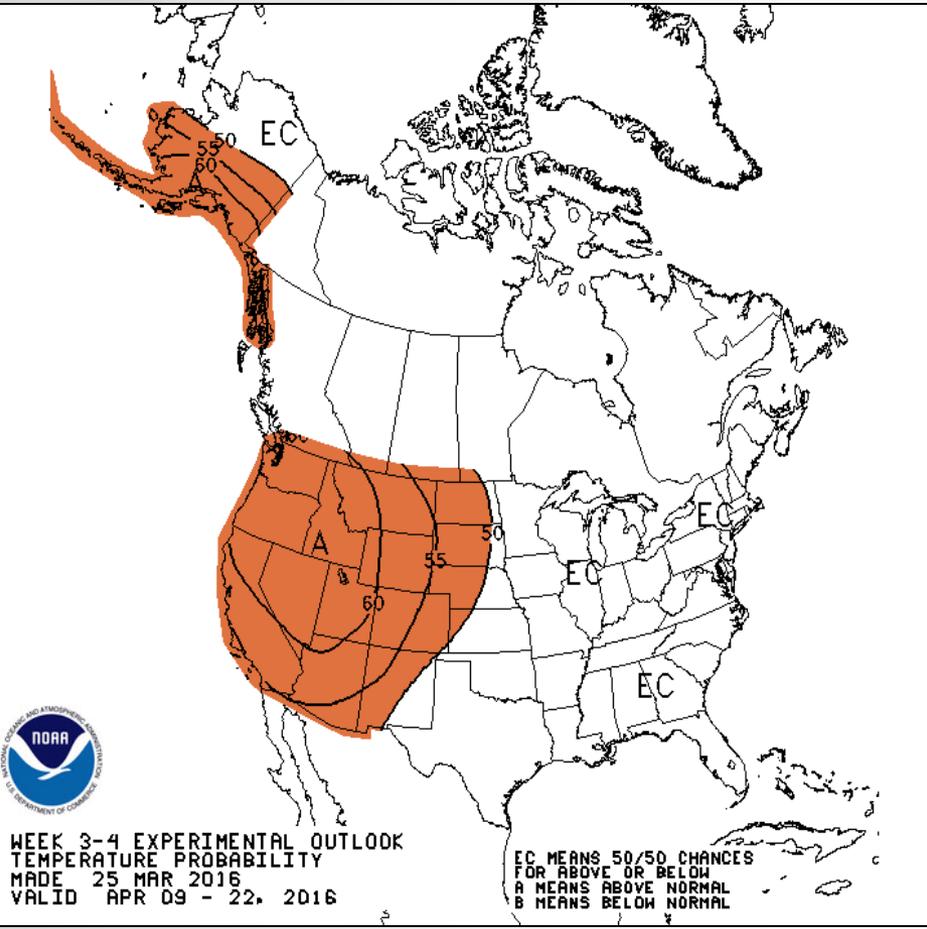


8 to 14 day outlooks





CPC Week 3-4 Outlooks





Flood Potential Outlook



Spring Flood Potential Outlook

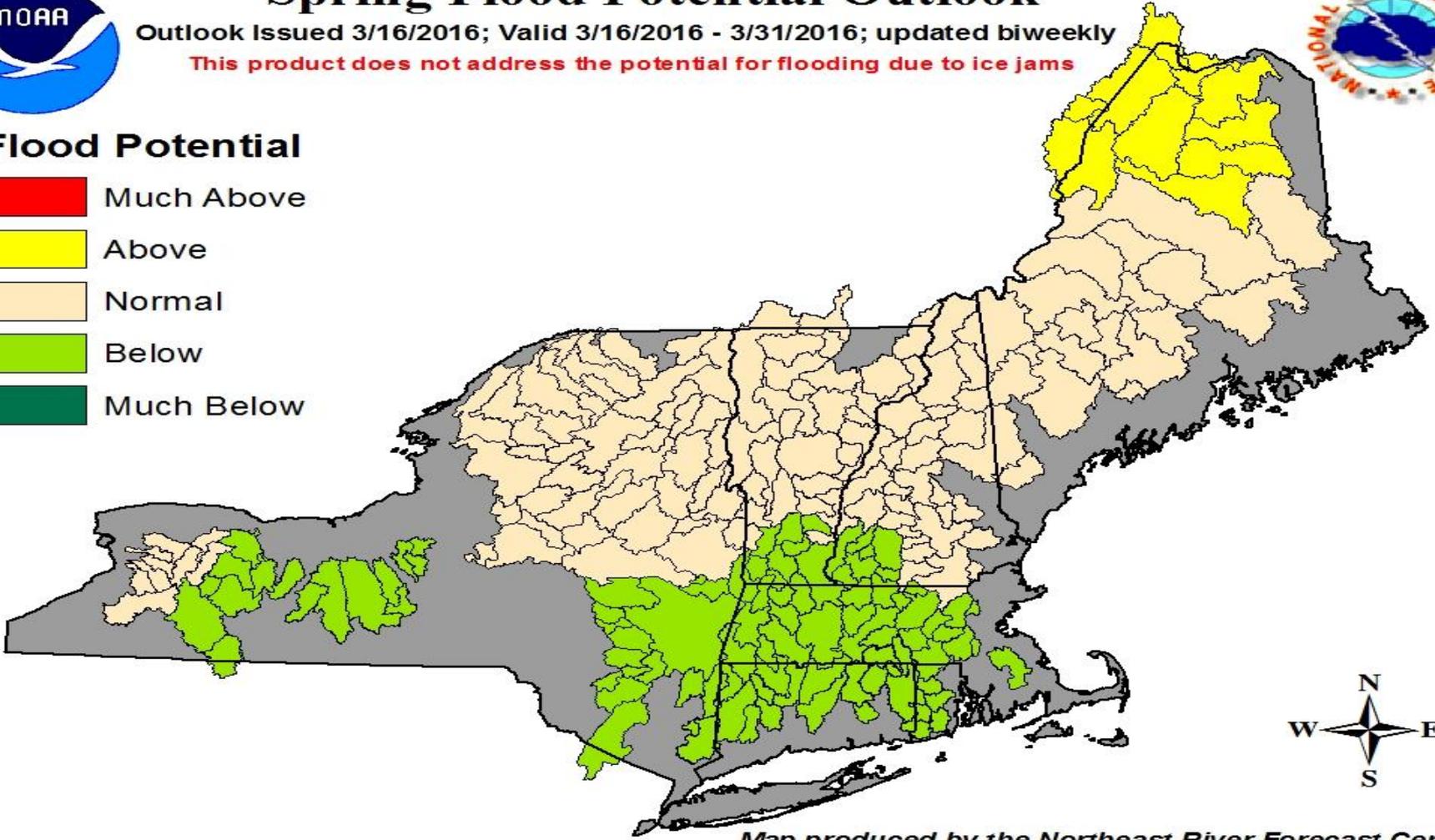
Outlook Issued 3/16/2016; Valid 3/16/2016 - 3/31/2016; updated biweekly

This product does not address the potential for flooding due to ice jams



Flood Potential

-  Much Above
-  Above
-  Normal
-  Below
-  Much Below



Map produced by the Northeast River Forecast Center



Building a Weather-Ready Nation



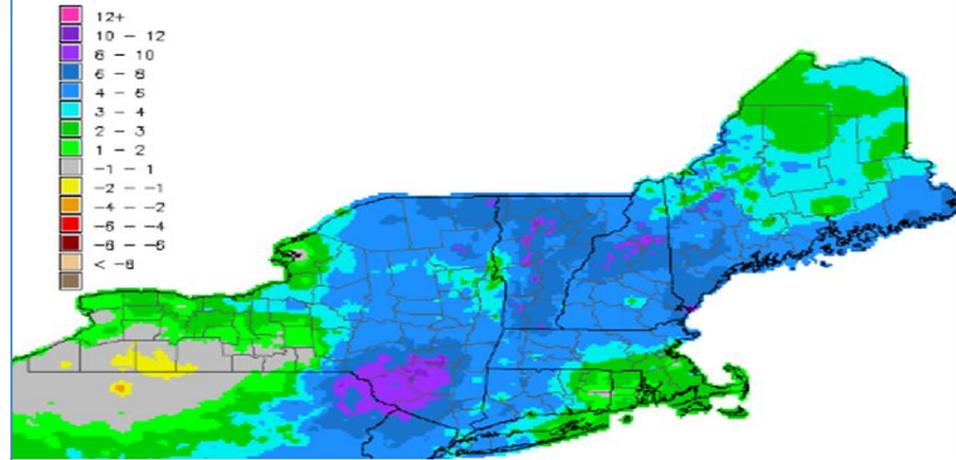
Concerning the Weakening of ENSO

Spring can be very wet in parts of the Northeast

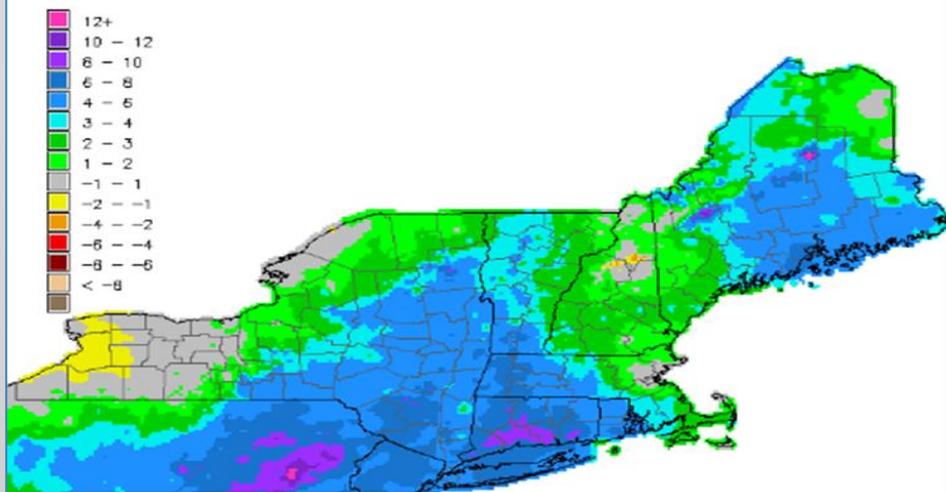


- Three most intense ENSO Events did produce a period of every wet weather
- Increased river flood potential
- 3-month rainfall departures of 5-10 inches above normal
- Small sample size – and certainly not the only forcing mechanism

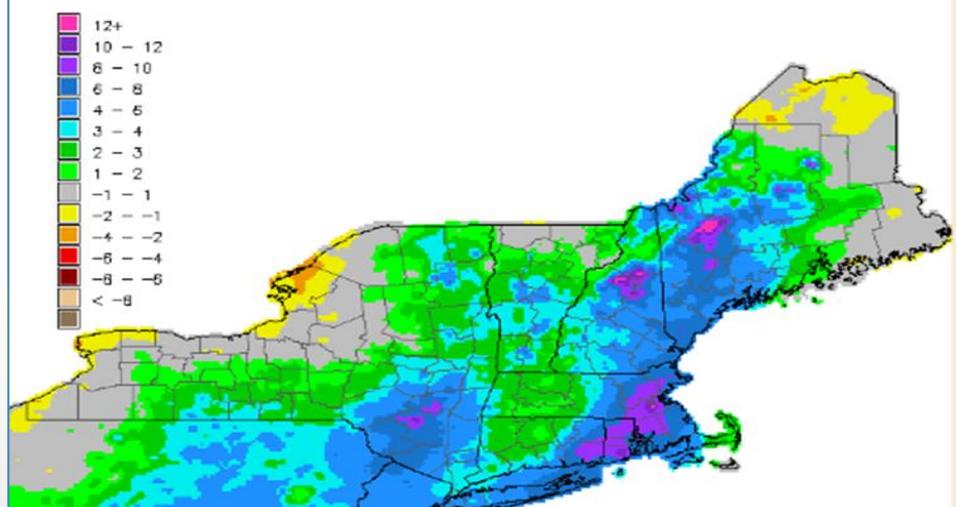
Apr-May-Jun 1973 Difference



Apr-May-Jun 1983 Difference



Apr-May-Jun 1998 Difference

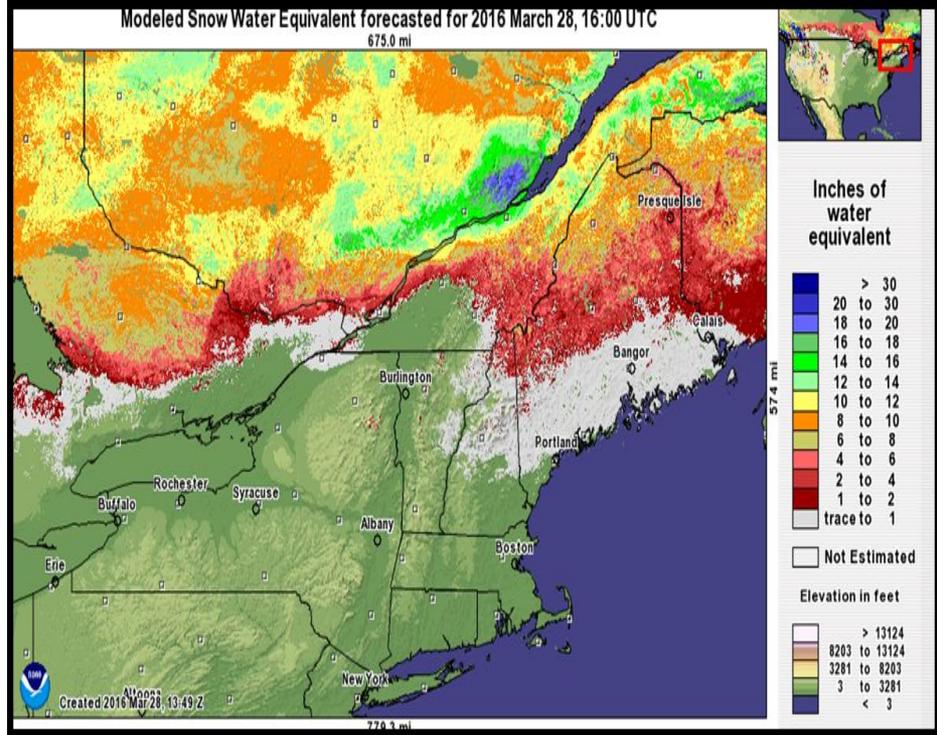
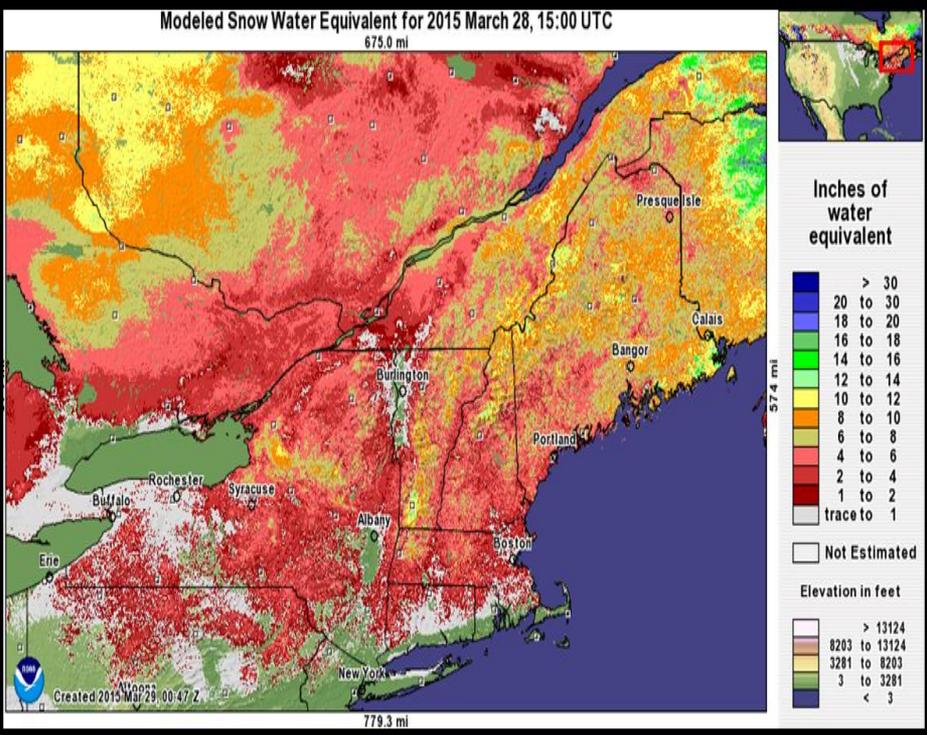




Northeast River Forecast Center's Spring Flood Outlook



A Tale of Two Distinctly Different Winters!



David R. Vallee
Hydrologist-in-Charge
NOAA/NWS/Northeast River Forecast Center



Building a Weather-Ready Nation