2013 Flood Outlook

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Meteorologist

USACE, Omaha District

15 February 2013

US Army Corps of Engineers

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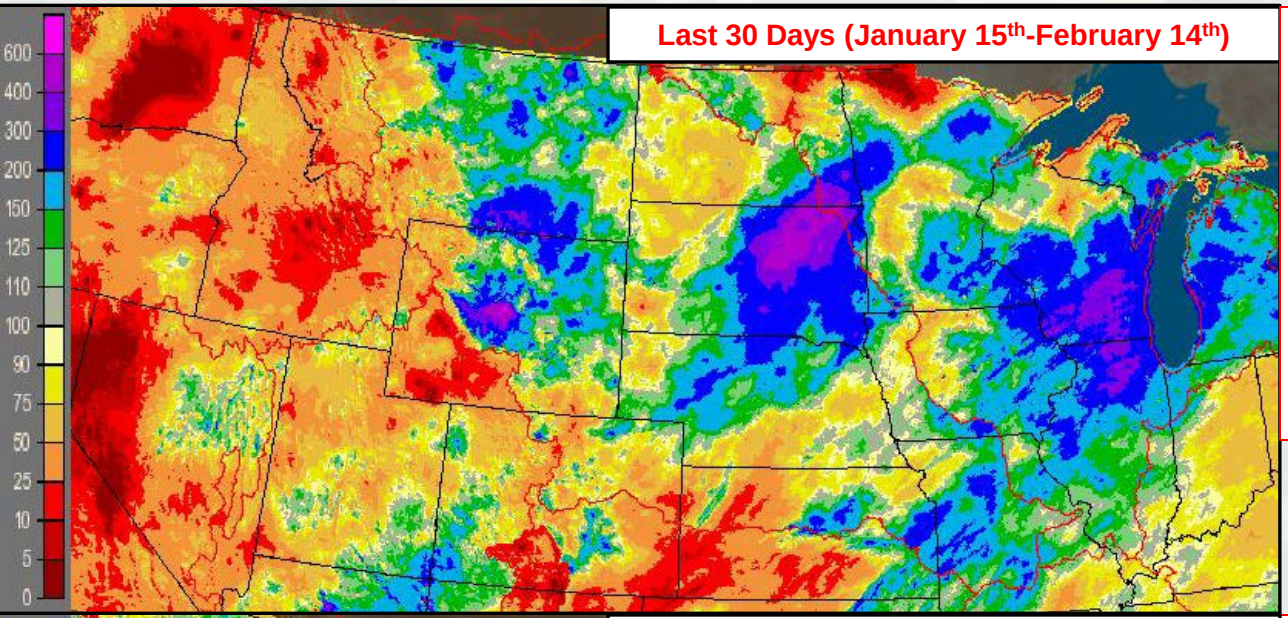
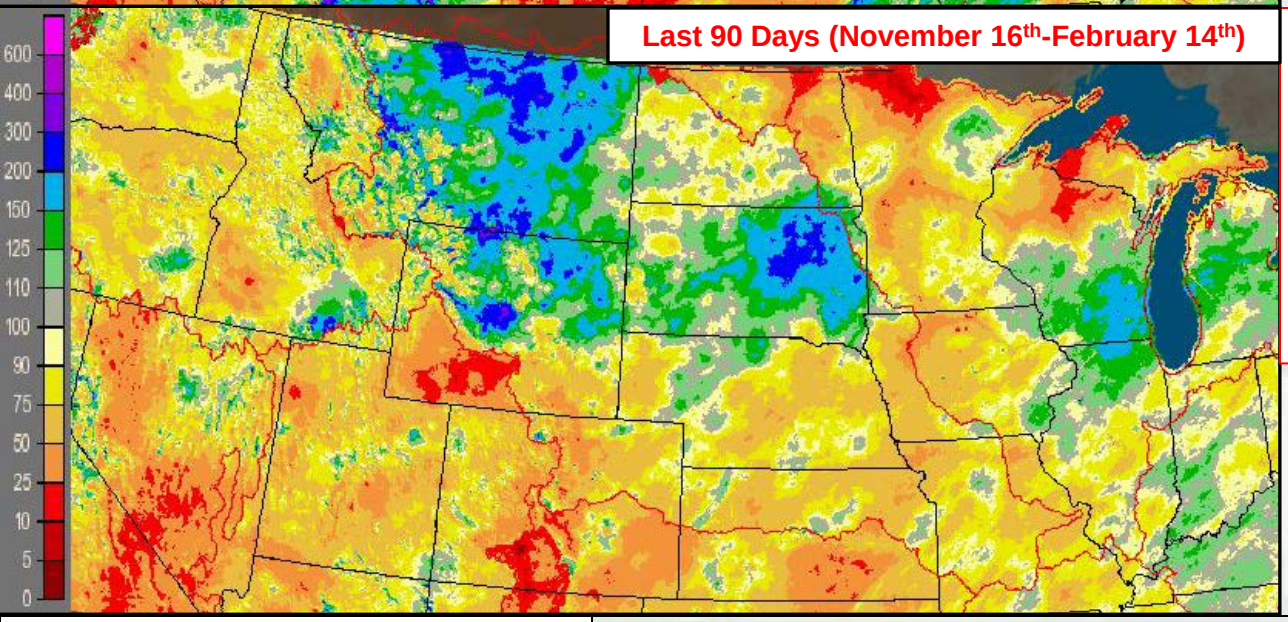
Recent Precipitation (Percent of Normal)



200%-400% of normal
- Pockets of eastern Montana
- Central Wyoming
- Northeastern South Dakota

< 50% of normal
- Western Montana
- Most of North Dakota
- Central Rockies
- Western Kansas/Nebraska

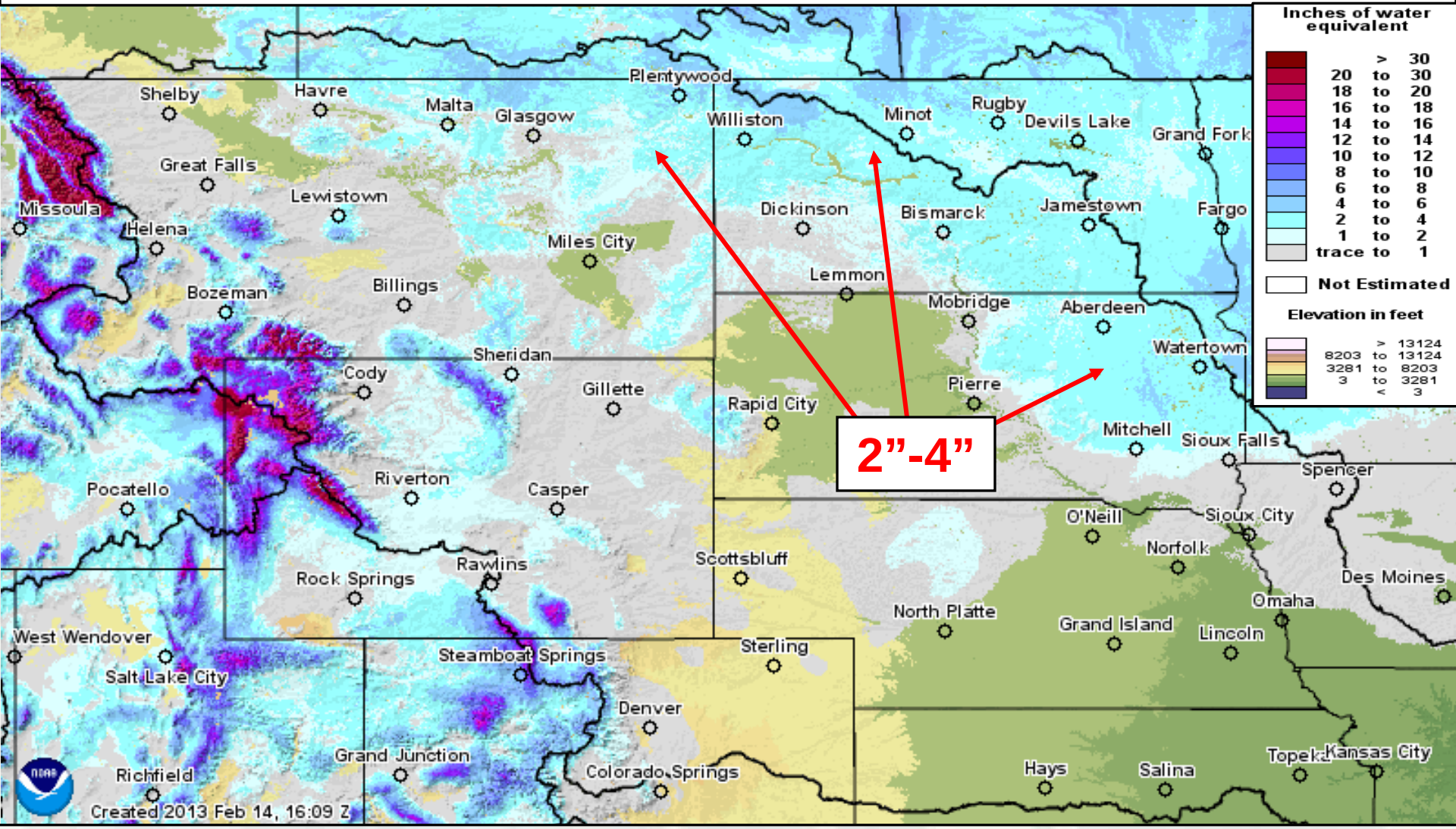


> 150% of normal
- Eastern Montana
- Central Wyoming
- Northeastern South Dakota

< 50% of normal
- Central Rockies
- Nebraska/Iowa/Kansas/Missouri

Graphics courtesy of National Weather Service Advance Hydrologic Prediction Service (AHPS)

Plains Snowpack (Snow Water Equivalent)-15 February 2013



- Extensive coverage (within the upper Missouri River Basin)
- Greatest depth in Montana, North Dakota, eastern South Dakota)

Graphics courtesy of National Weather Service NOHRSC
(National Operational Hydrologic Remote Sensing Center)

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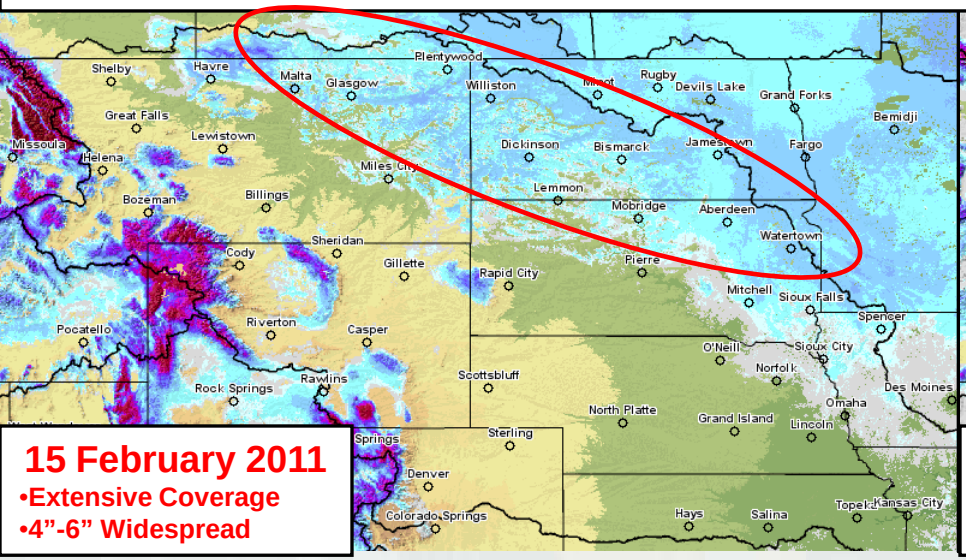
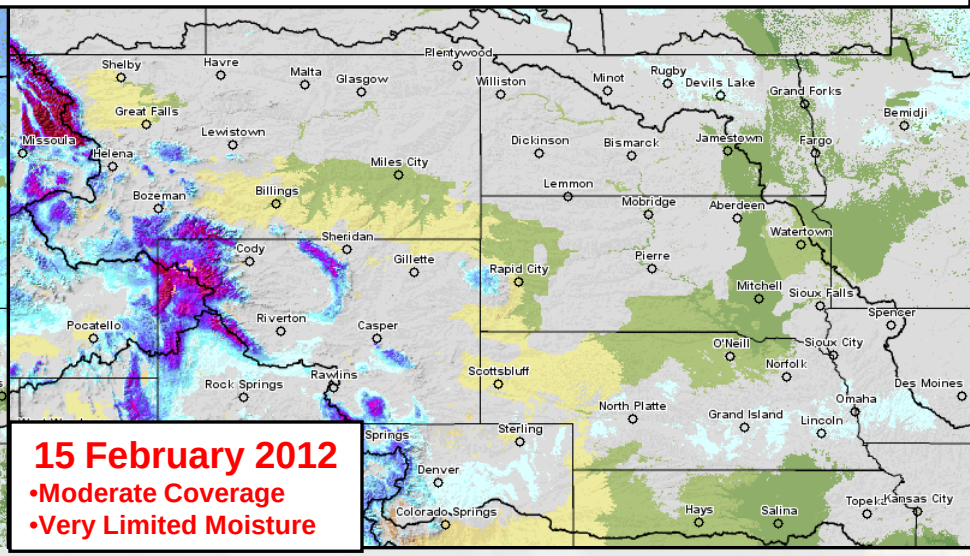
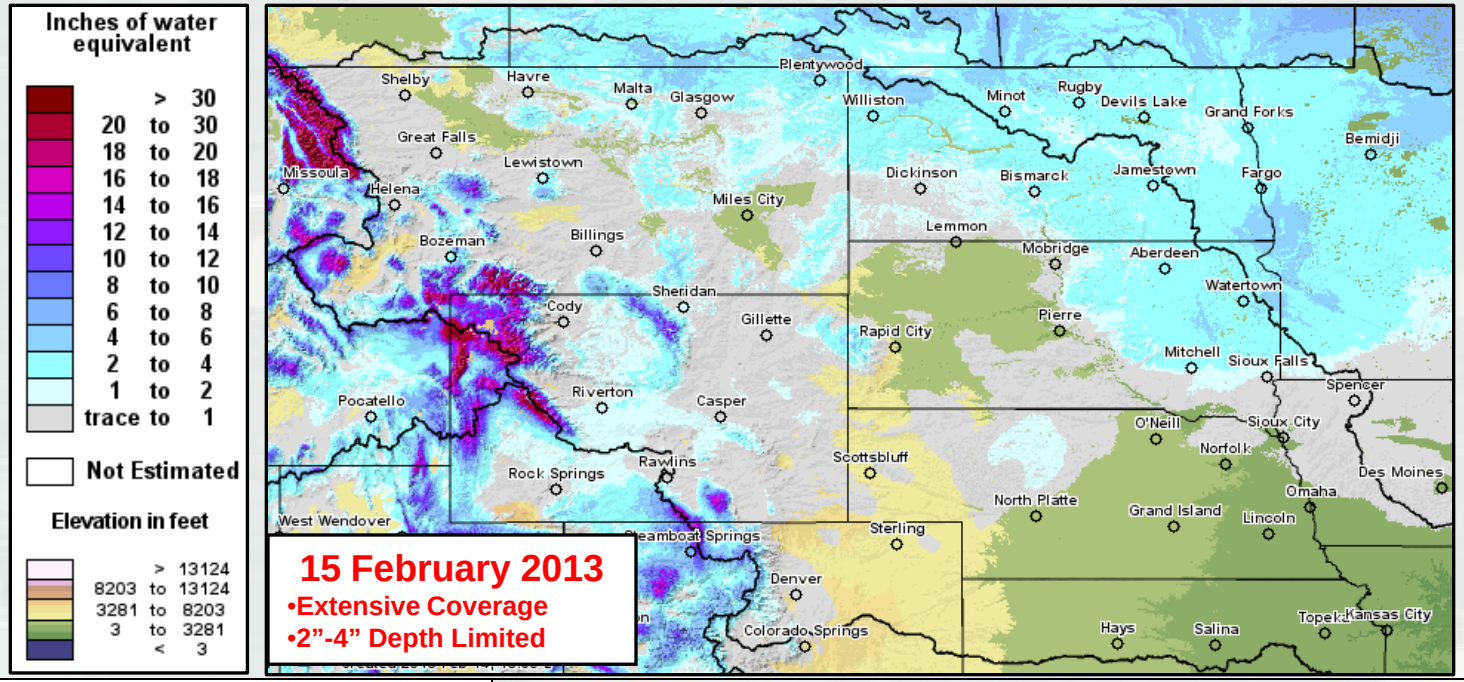
Plains Snowpack (comparison)



15 February 2011
- Extensive Coverage
- 4”-6” Widespread



15 February 2012
- Moderate Coverage
- Very Limited Moisture



15 February 2013
- Extensive Coverage
- 2”-4” Depth Limited

Graphics courtesy of National Weather Service NOHRSC
(National Operational Hydrologic Remote Sensing Center)

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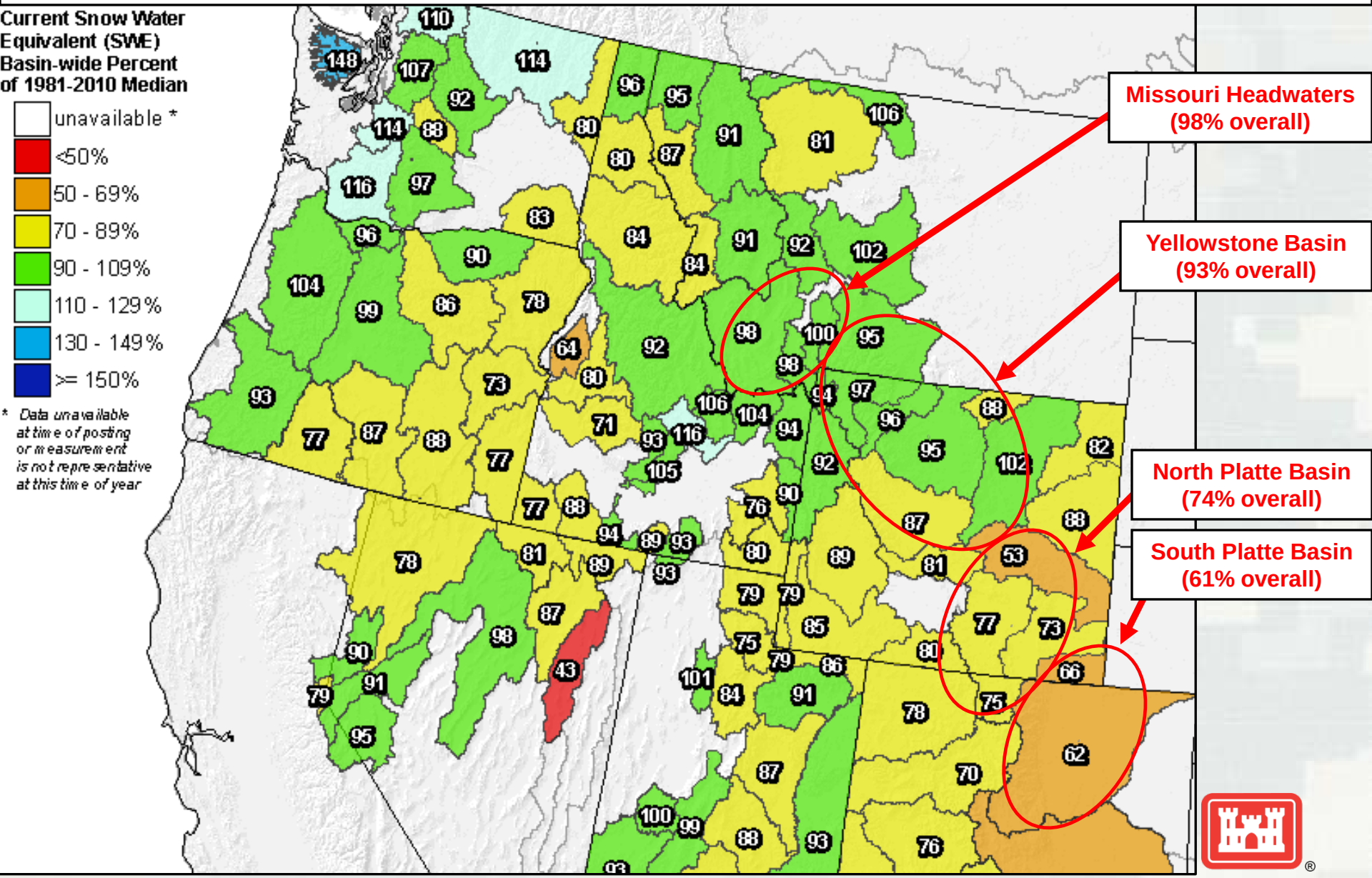
Mountain Snowpack (Estimated)-15 February 2013



Graphics courtesy of USDA NRCS
(Natural Resources Conservation Service)

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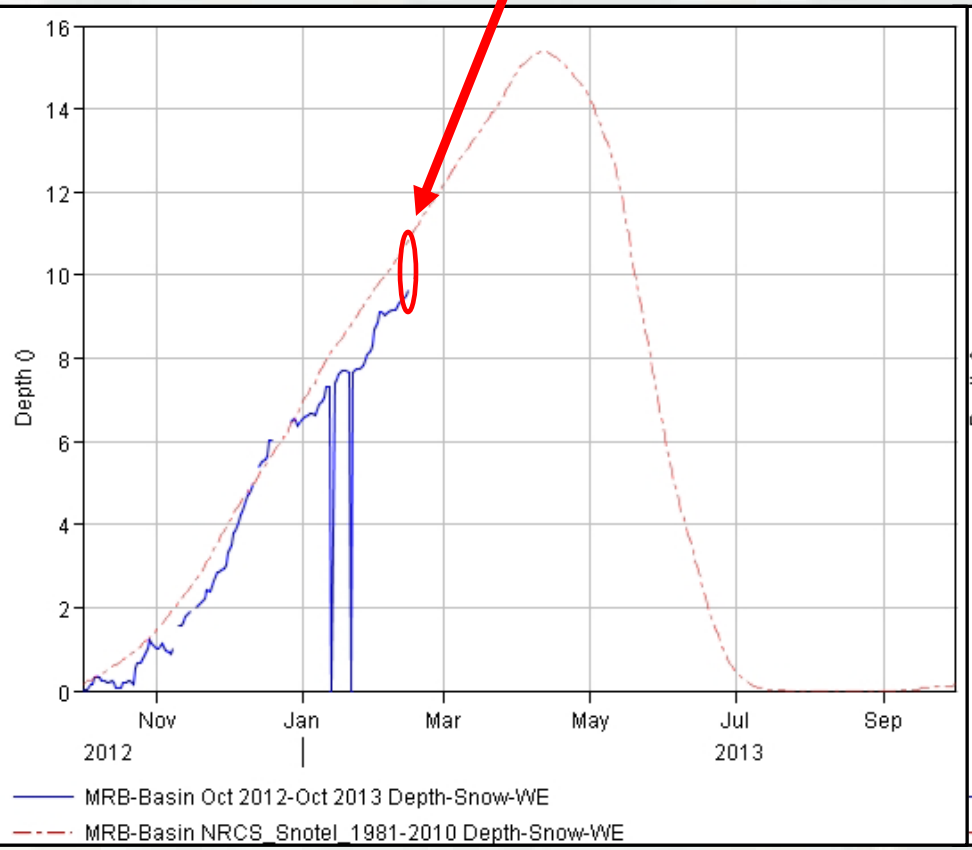
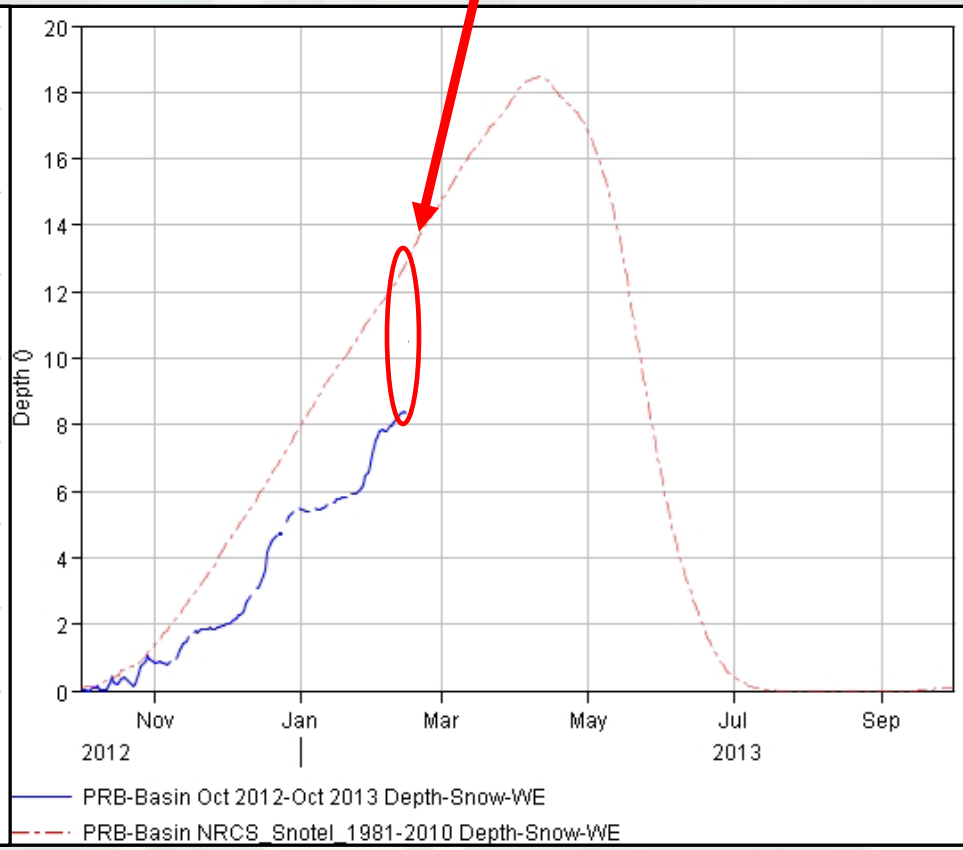
Mountain Snowpack (Estimated)-15 February 2013

1981-2010 Average = 10.8”
2013 = 9.6”



Missouri River Basin
(Above Gavins Point Dam)

1981-2010 Average = 12.9”
2013 = 8.4”



Platte River Basin

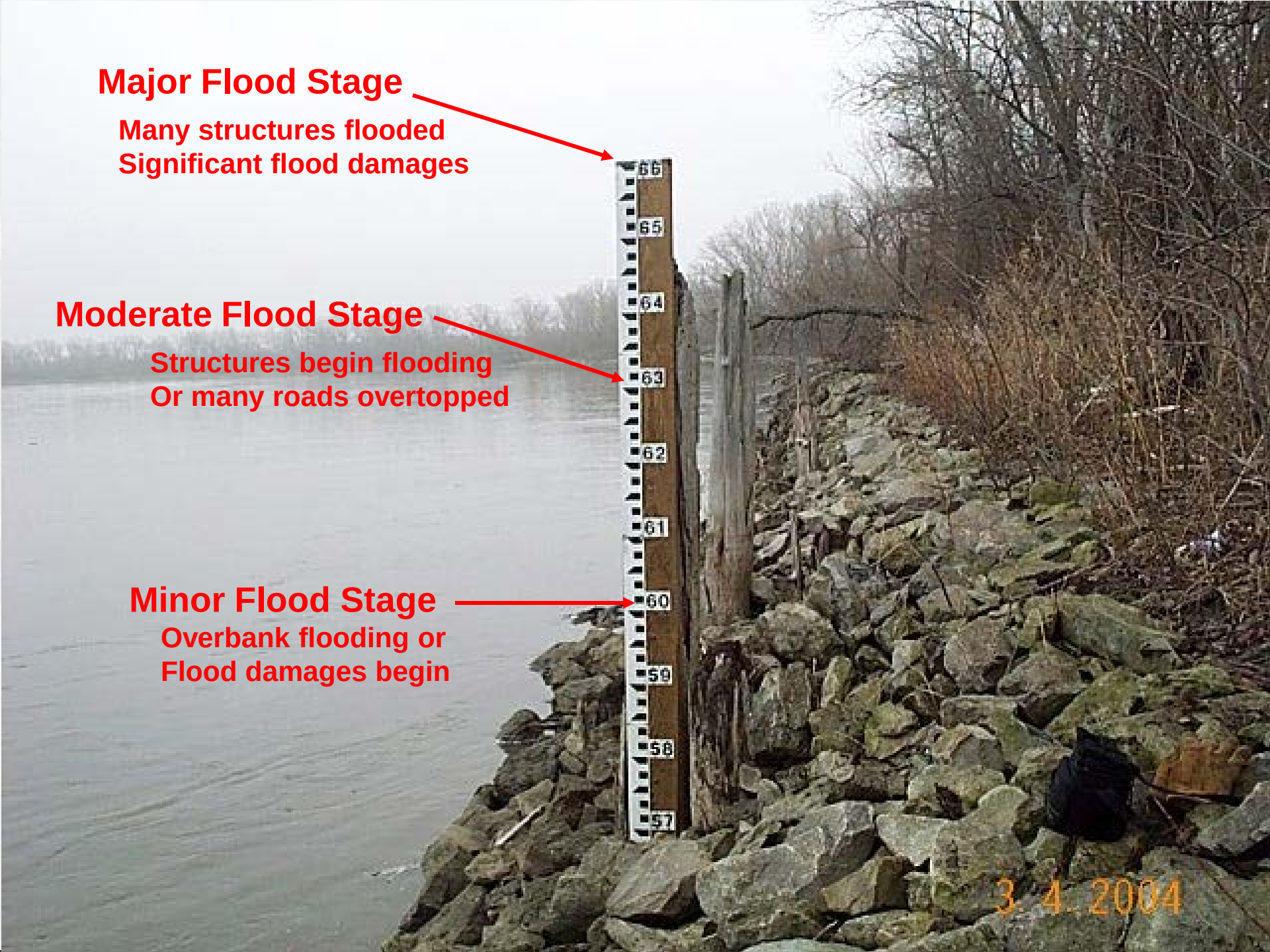
Data courtesy of USDA NRCS
(Natural Resources Conservation Service)

Northeastern South Dakota Lakes

Lake	Fall 2012 Elevation (NGVD29)	Fall 2011 Elevation (NGVD29)	Record Elevation (NGVD29)
Waubay Lake	1802.58	1804.62	1805.4 (July 2011)
Blue Dog Lake	1802.83	1804.60	1805.8 (June 2011)
Rush Lake	1802.44	1804.69	1805.8 (June 2011)
Bitter Lake	1801.55	1802.33	1803.0 (July 2011)
Lake Poinsett	1650.12	1652.96	1657.4 (April 2011)
Lake Thompson	1688.82	1691.65	1694.07 (April 2011)

- **Below 2011's Record Elevations**
- **Still Elevated… Susceptible to Heavy Rain Events**

Data courtesy of South Dakota Department of Environment and Natural Resources


Major Flood Stage
Many structures flooded
Significant flood damages
Moderate Flood Stage
Structures begin flooding
Or many roads overtopped
Minor Flood Stage
Overbank flooding or
Flood damages begin
66
65
64
63
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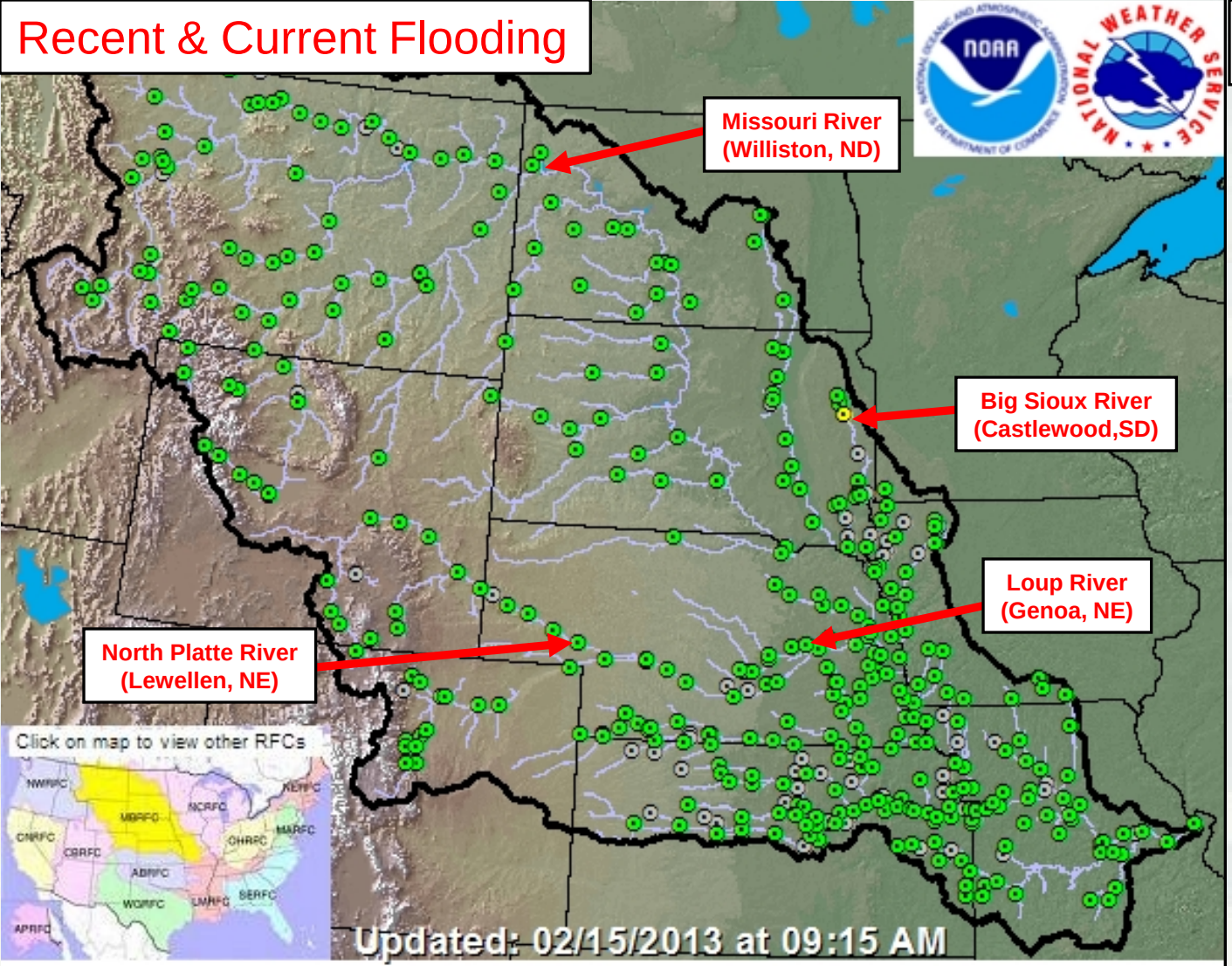
3 4 2004

Recent & Current Flooding

Only isolated reports of minor ice-jam flooding so far…



MBRFC Observed River Conditions

- No Data
- No Flooding
- Near Flood Stage
- Minor Flooding
- Moderate Flooding
- Major Flooding

Graphics courtesy of National Weather Service
Missouri Basin River Forecast Center (Pleasant Hill, MO)

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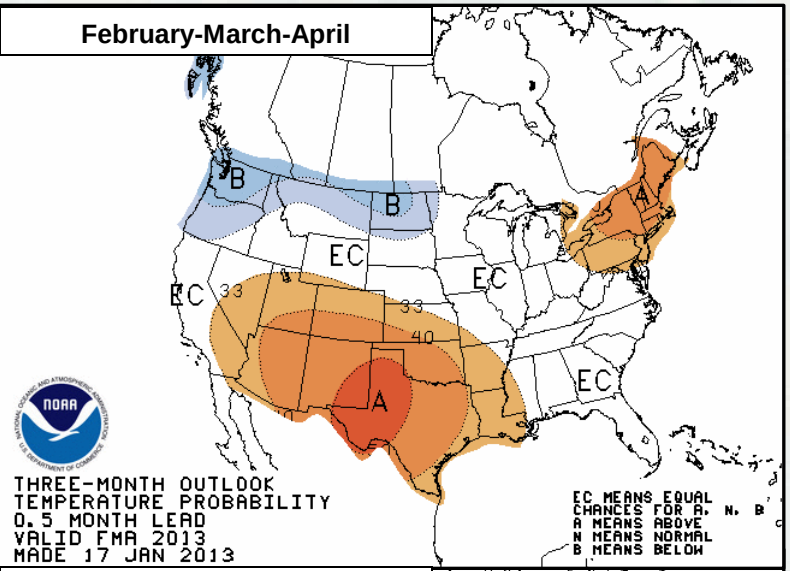
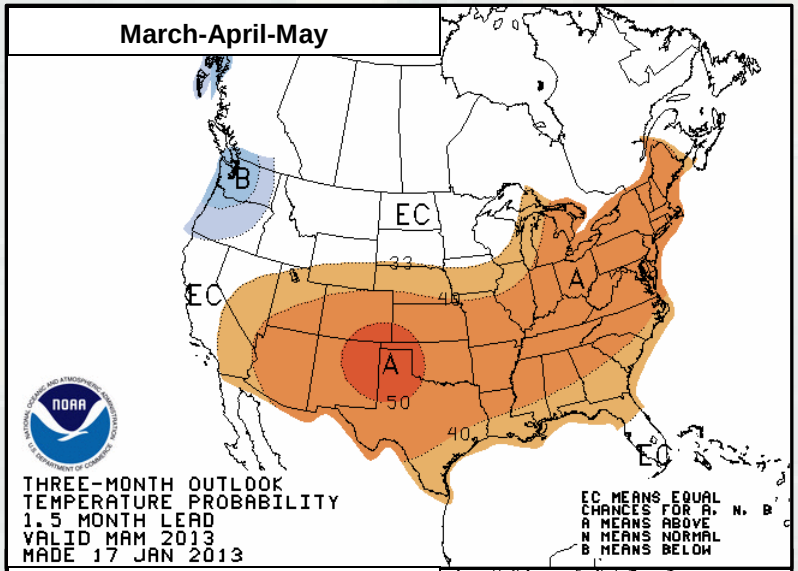
CPC 3-Month Temperature Outlooks (17 January 2013 update)

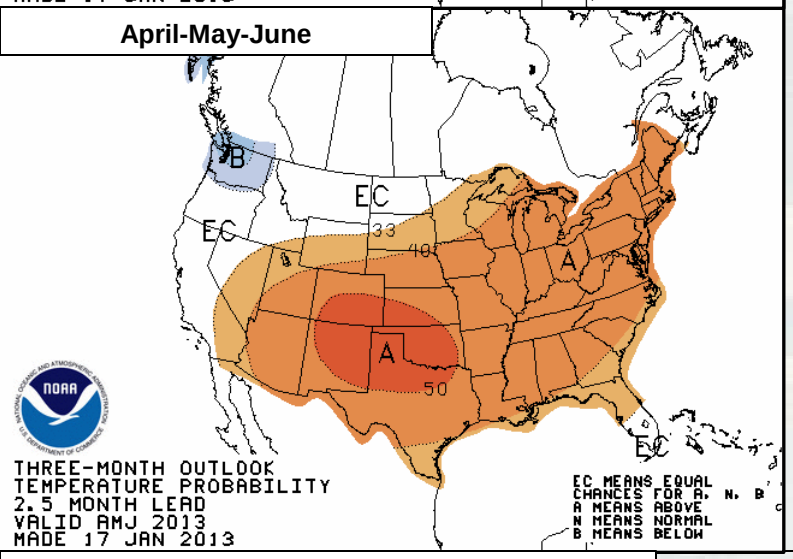
February-March-April



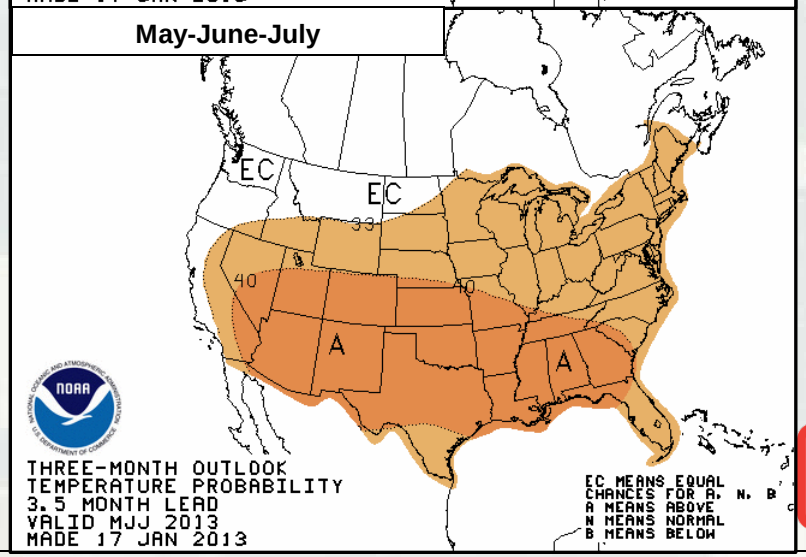
March-April-May



April-May-June



May-June-July



Graphics courtesy of NOAA Climate Prediction Center

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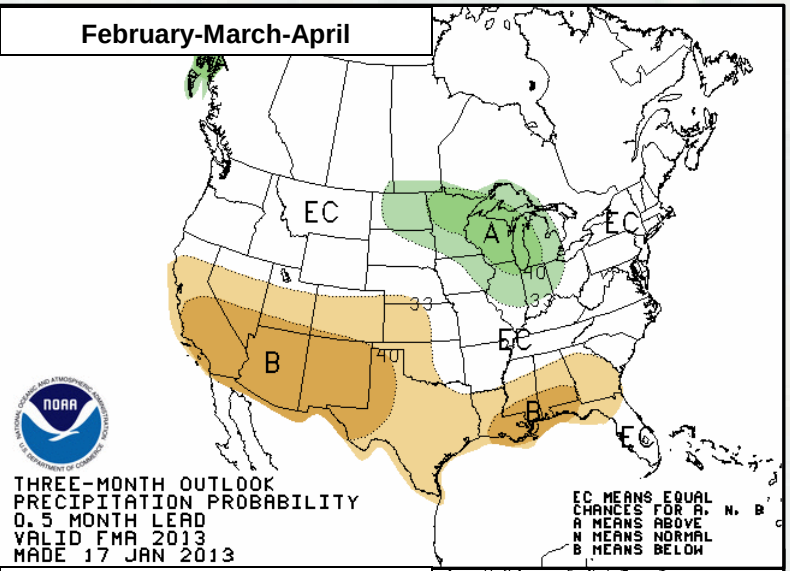
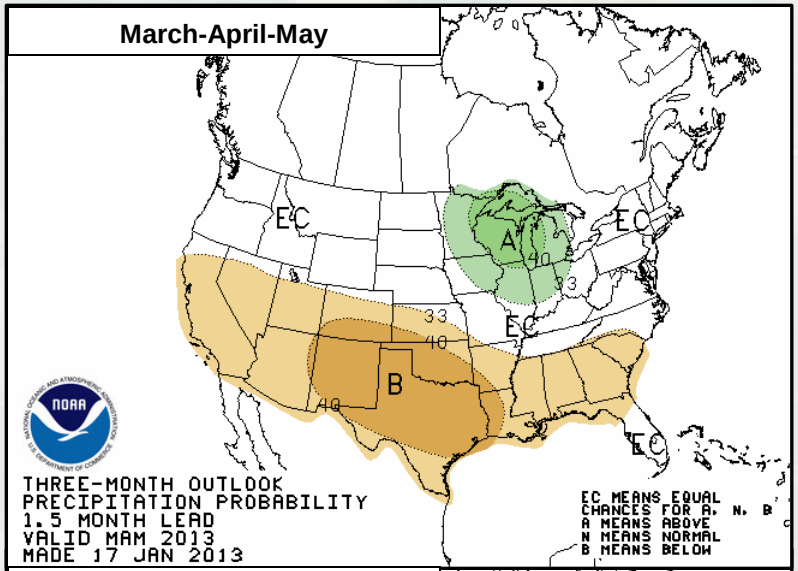
CPC 3-Month Precipitation Outlooks (17 January 2013 update)

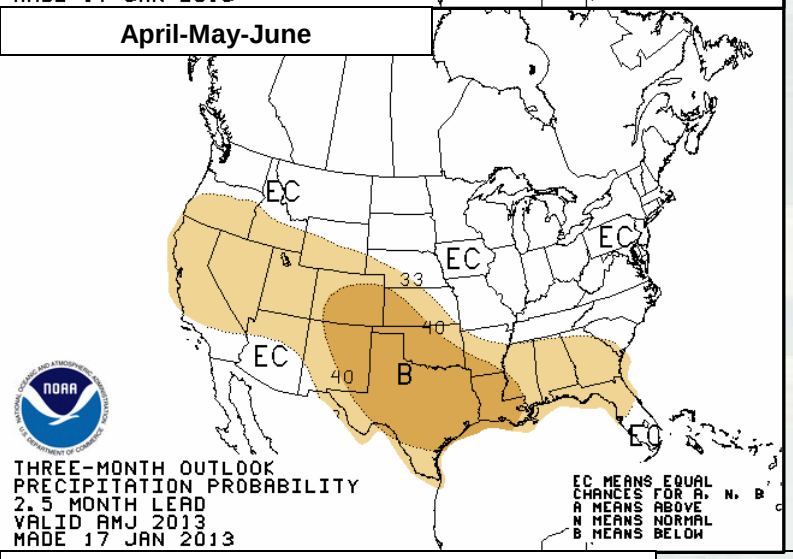
February-March-April



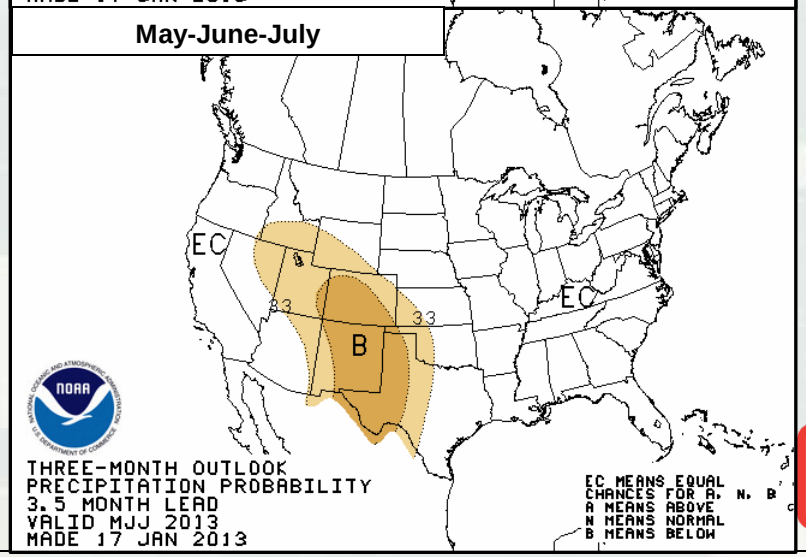
March-April-May



April-May-June



May-June-July



Graphics courtesy of NOAA Climate Prediction Center

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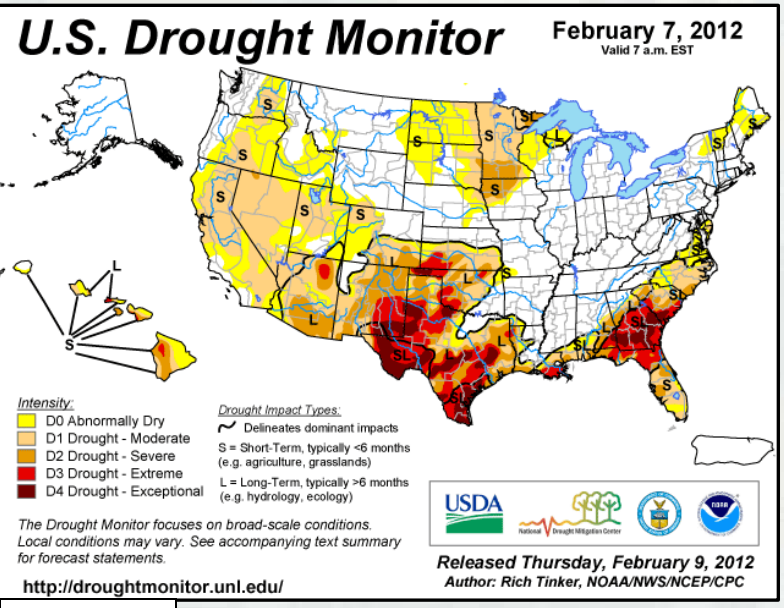
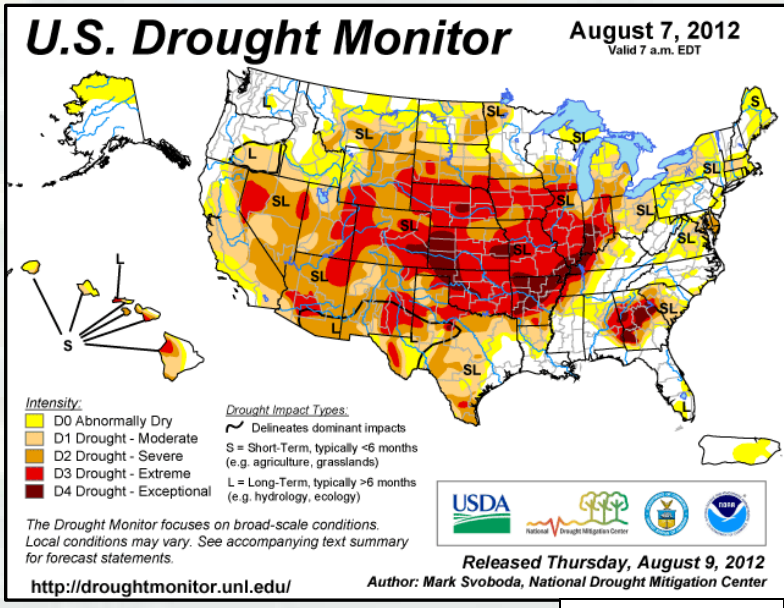
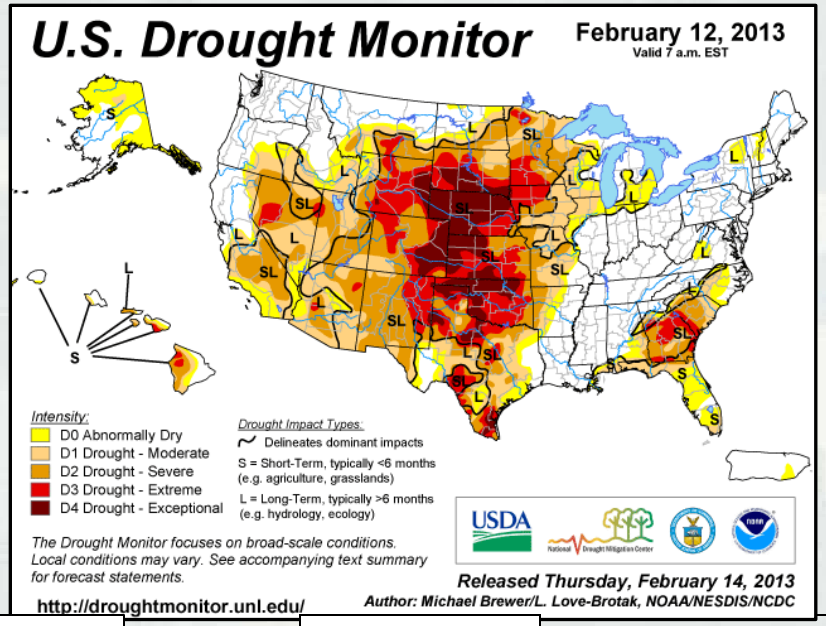
U.S. Drought Monitor (comparison)



1 Year ago



6 Months ago



Most recent…

Drought conditions have developed or expanded dramatically throughout the Missouri River Basin over the past 12 months.

Graphics courtesy of National Drought Mitigation Center

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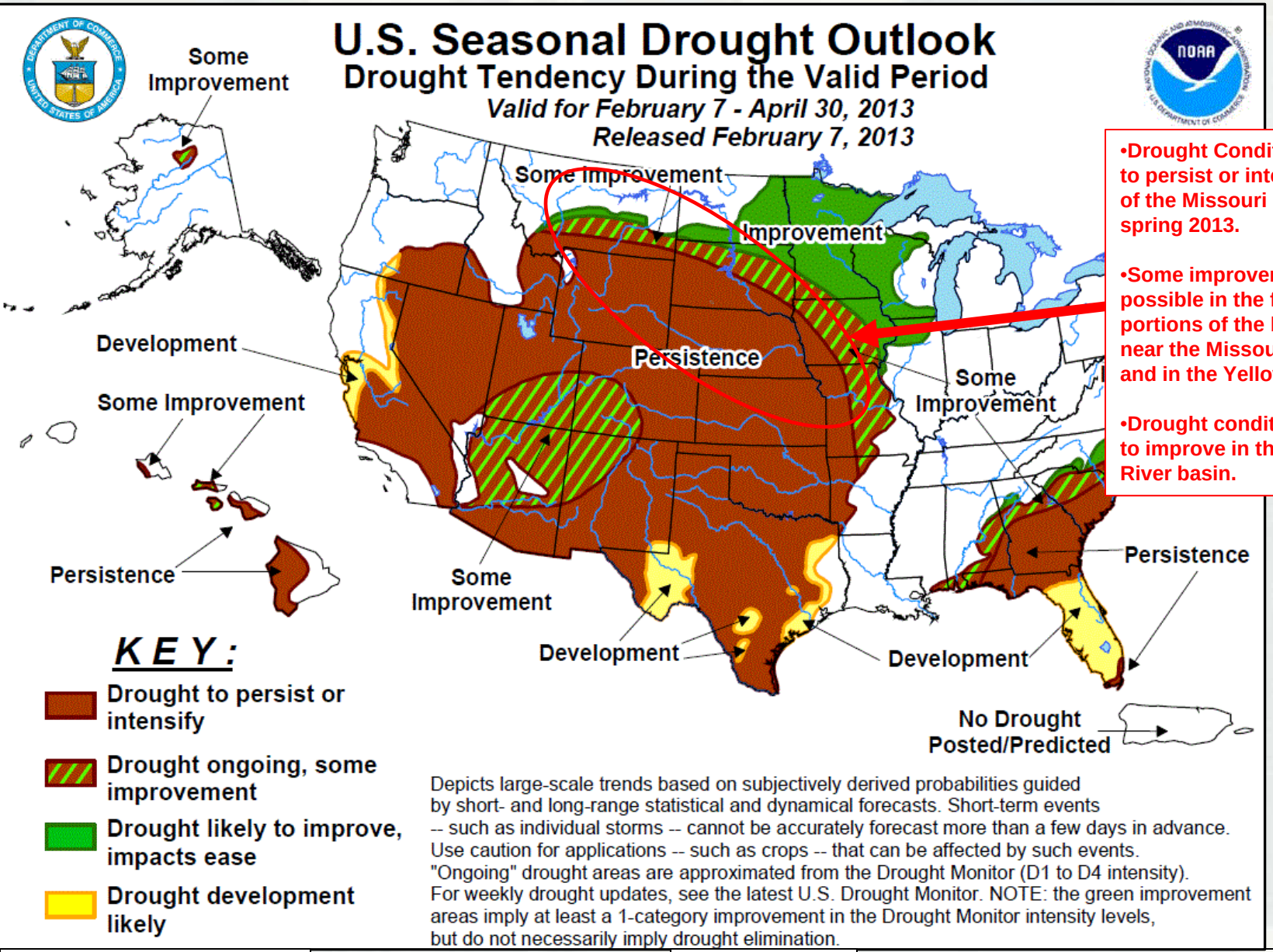
Drought Forecast



- **Drought Conditions are forecasted to persist or intensify across most of the Missouri River Basin into spring 2013.**
- **Some improvement will be possible in the far lower and upper portions of the basin, particularly near the Missouri River Headwaters and in the Yellowstone River basin.**
- **Drought conditions are also likely to improve in the upper James River basin.**

Graphics courtesy of NOAA

Most recent…