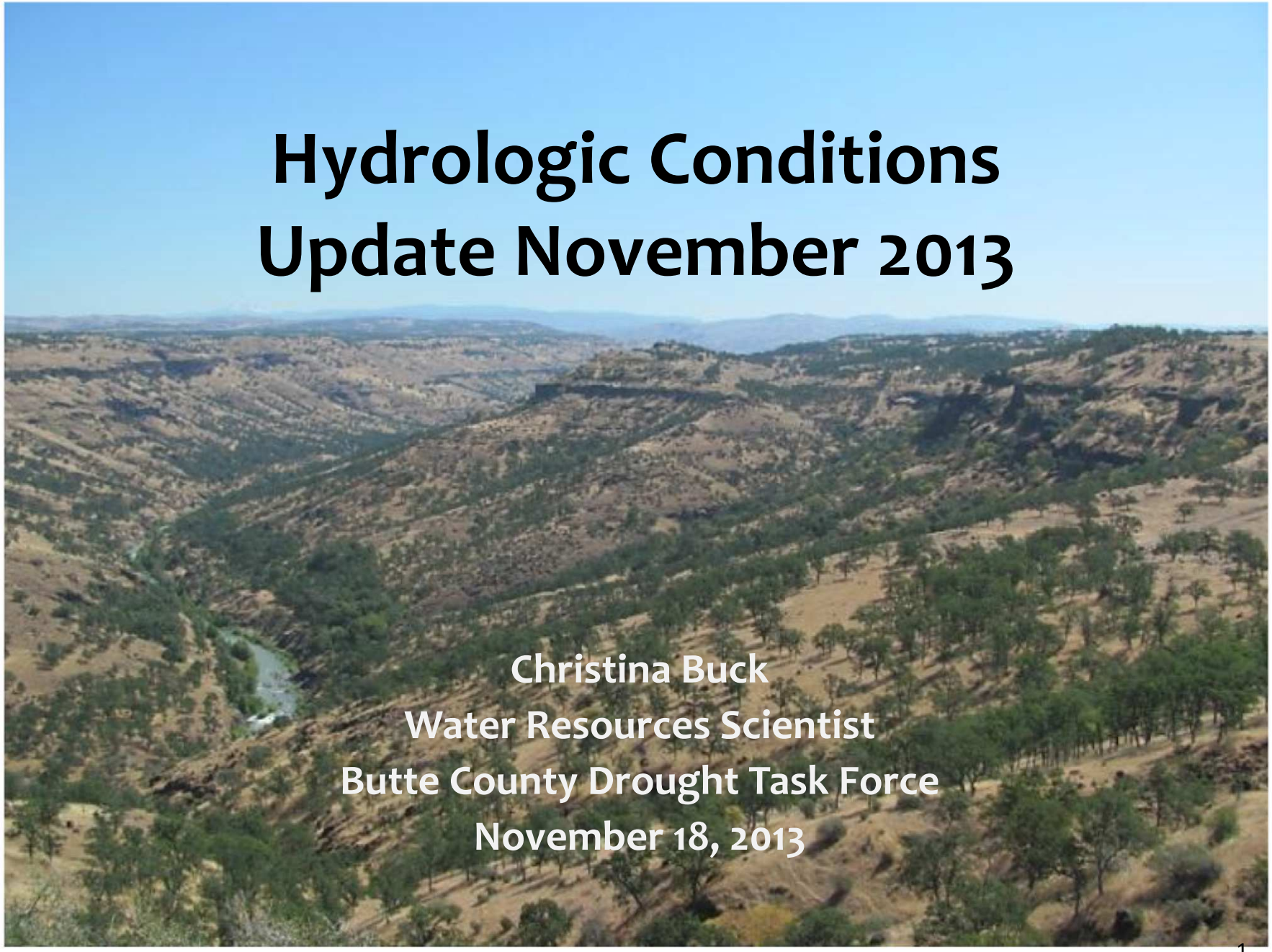
Hydrologic Conditions Update November 2013



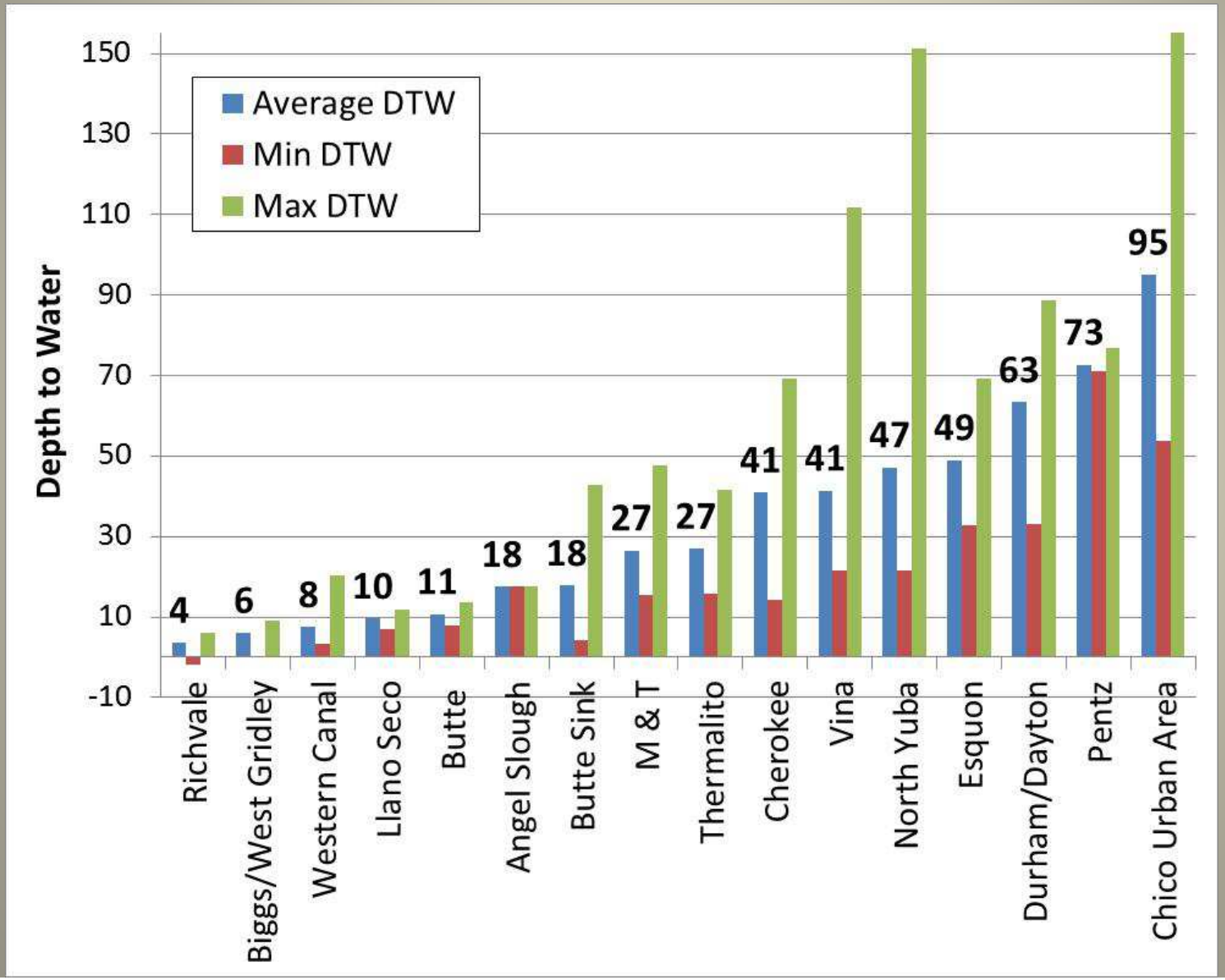
Christina Buck
Water Resources Scientist
Butte County Drought Task Force
November 18, 2013

Water Year 2013

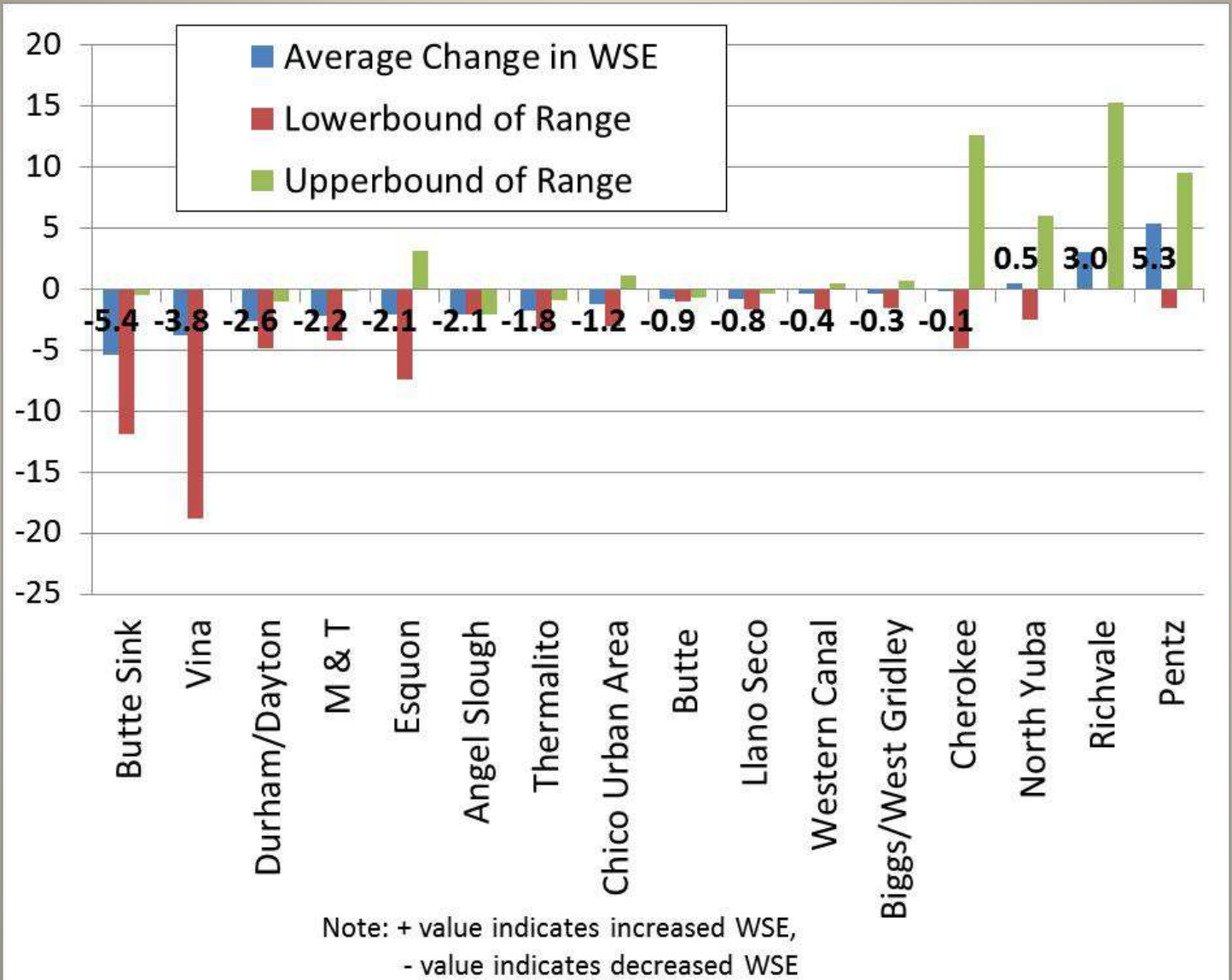
- Oct. 1, 2012 - Sept. 30, 2013
- Water year index: DRY
- Driest January thru May for Northern Sierra 8-Station Precipitation index
- Follows below normal conditions in Sac Valley & dry conditions in SJ Valley (WY 2012)

Driest January Thru May	
9.4	**2013**
11.1	1924
12.0	1976
12.9	1977
13.9	1985
14.2	1929

Groundwater: Depth to Water
Fall 2013 Measurements



Average Change: Fall 2012→2013



Note: + value indicates increased WSE,
- value indicates decreased WSE

GW Elevation Change: Fall 2012-->2013

		Change (feet)	SIU
Well Count	**Max Increase**	**15.3**	Richvale
17	Average Increase	10.7	
	Max Decrease	**-18.8**	Vina
85	Average Decrease	-2.6	
	Average GWL Change	**-1.4**	
	Number of Wells	102	

**Questionable Measurements not included

BMO Alert Stage Frequency

Spring: March 2013

	2008	2009	2010	2011	2012	2013
Alert 1	26	30	26	23	24	19
Alert 2	0	6	2	0	4	15

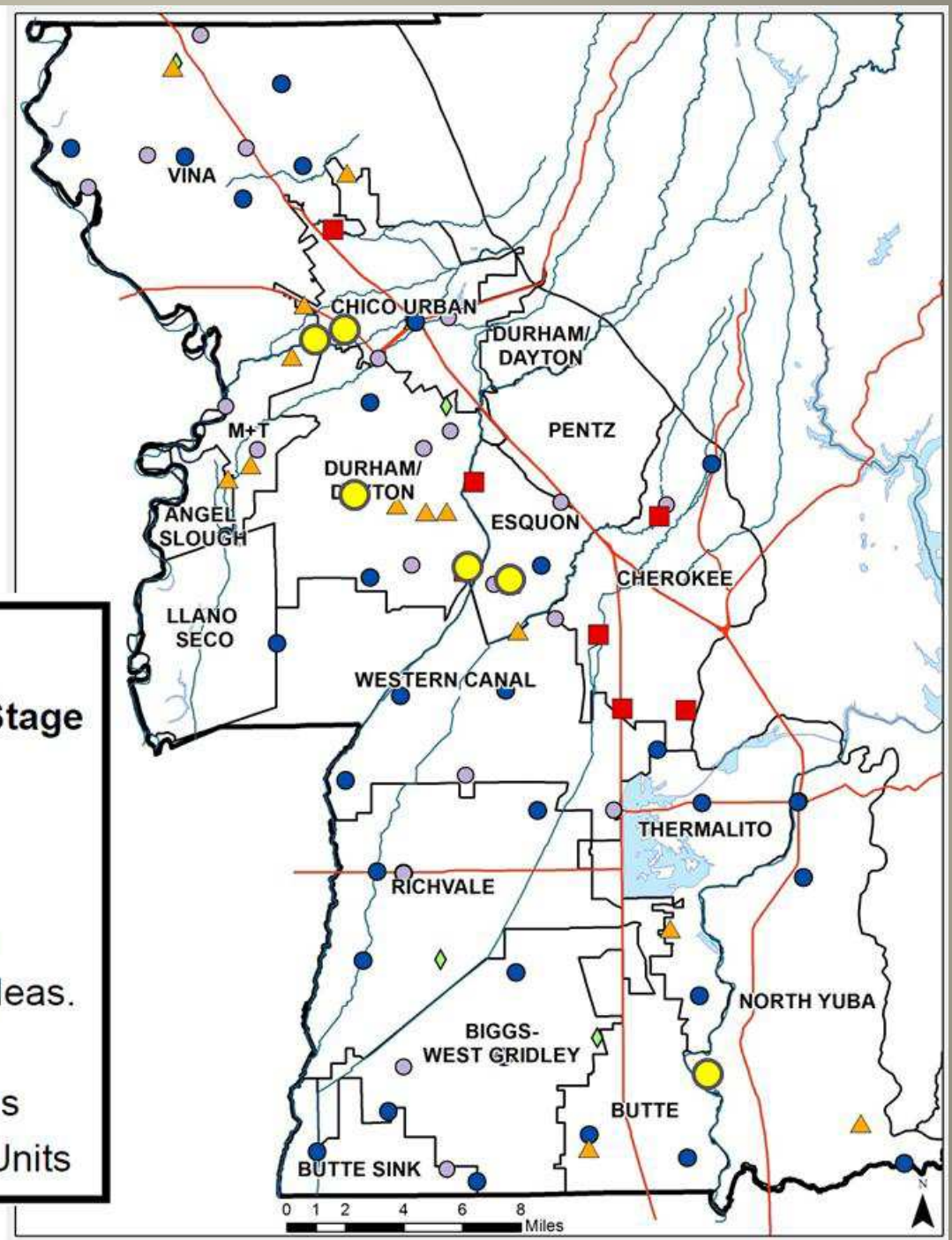
Fall: October 2013

	2008	2009	2010	2011	2012	2013
Alert 1	28	31	24	8	26	25
Alert 2	2	1	2	2	7	14

TAC/WAC will review data at upcoming meeting, November 21st

Spring 2013

- 6 wells- new historical Low
- Records back to1940s & 1950s



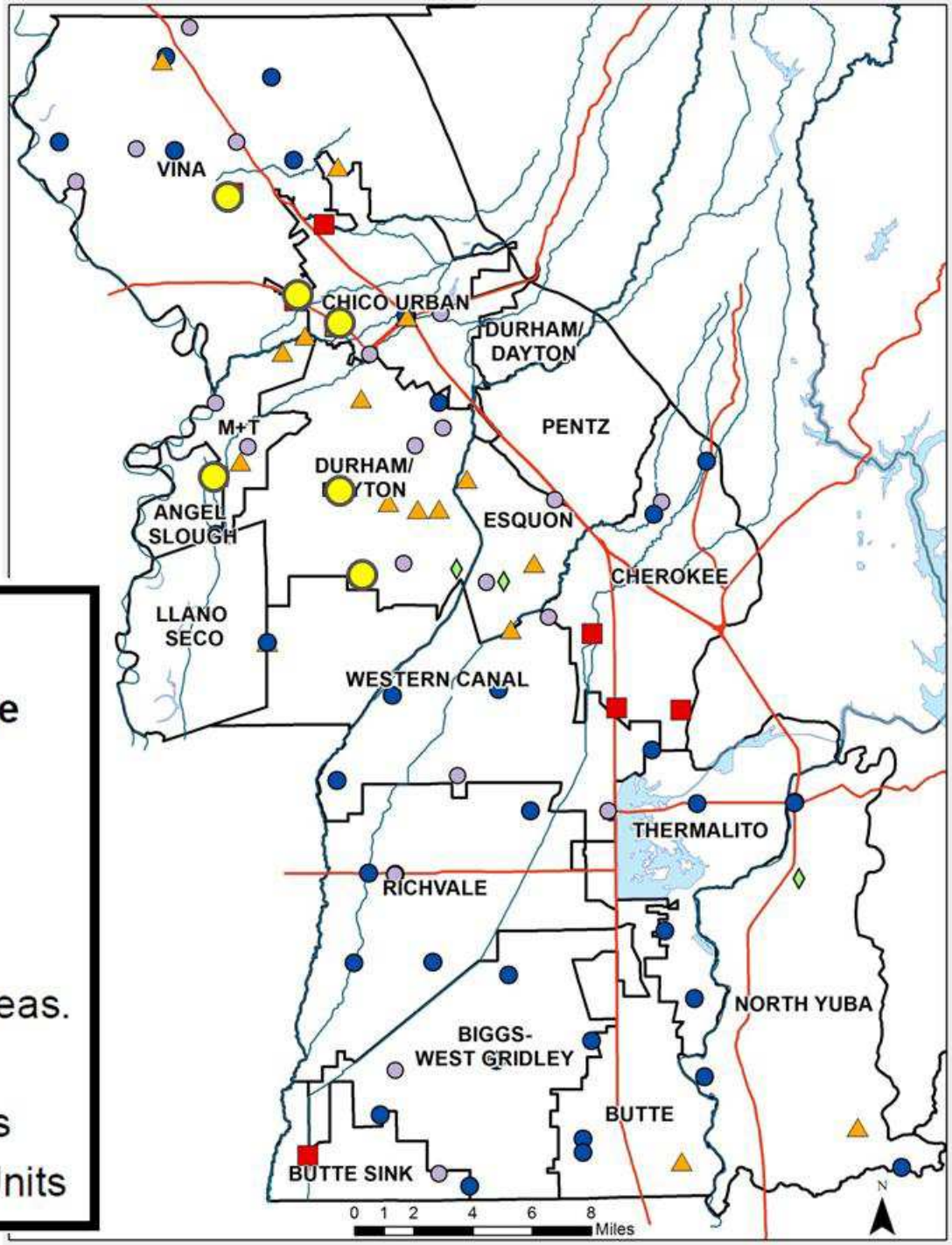
Legend

Spring 2013 Alert Stage

- BMO wells
- 1
- 2
- None Assigned
- Questionable Meas.
- Highway
- Primary Streams
- Sub-Inventory Units

Fall 2013

- 6 wells- new historical Low
- Records back to late1940s & 1950s

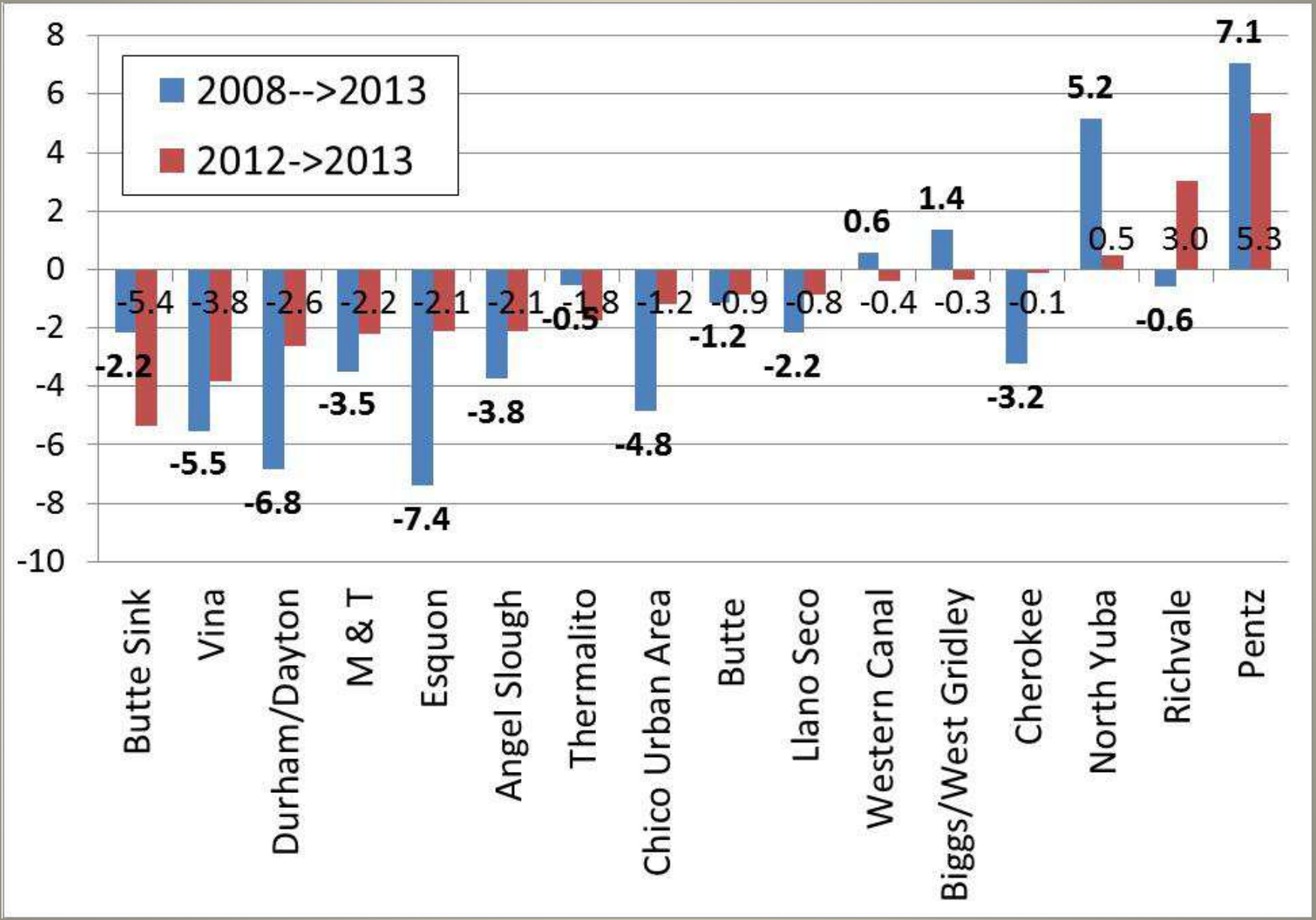


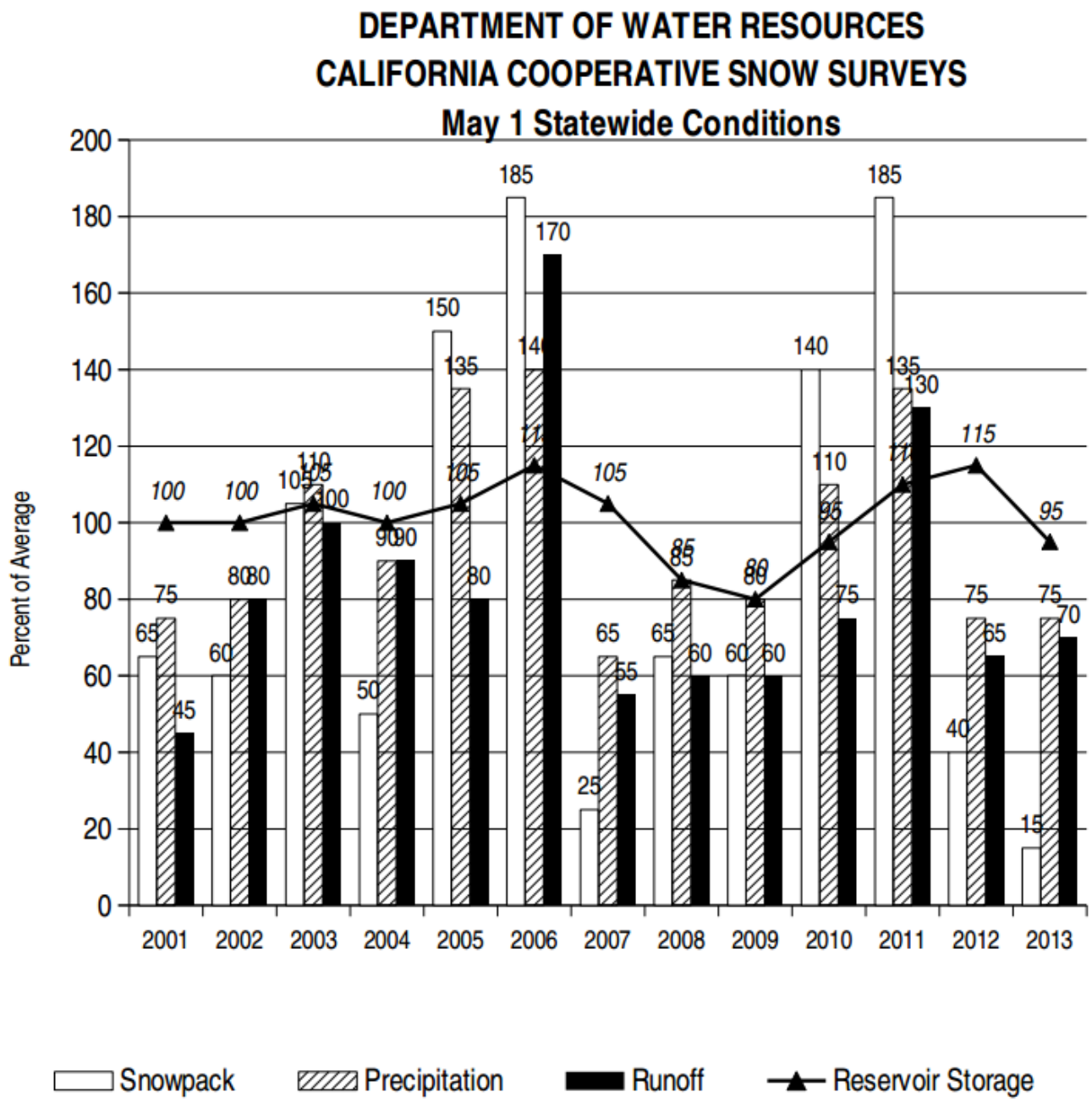
Legend

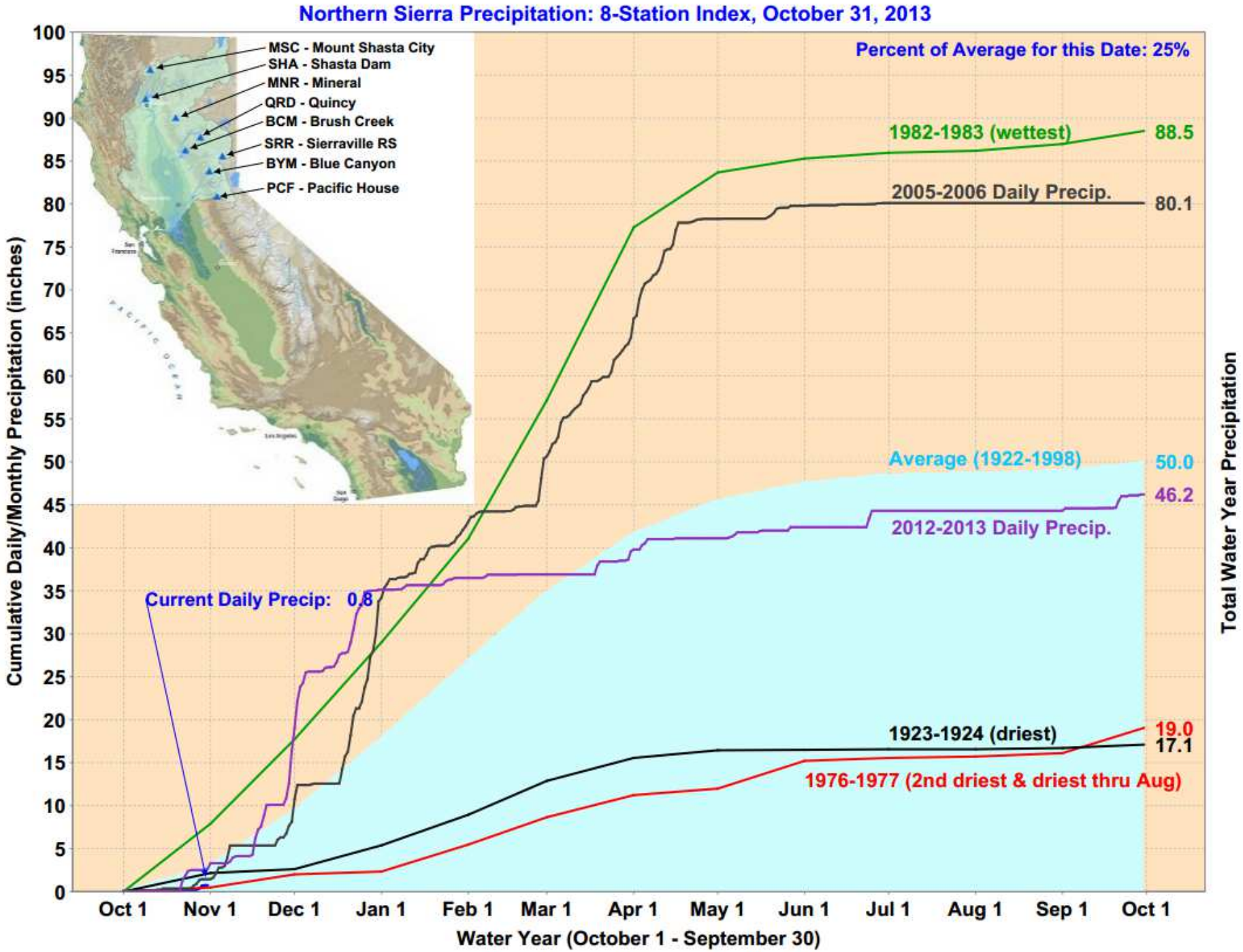
Fall 2013 Alert Stage

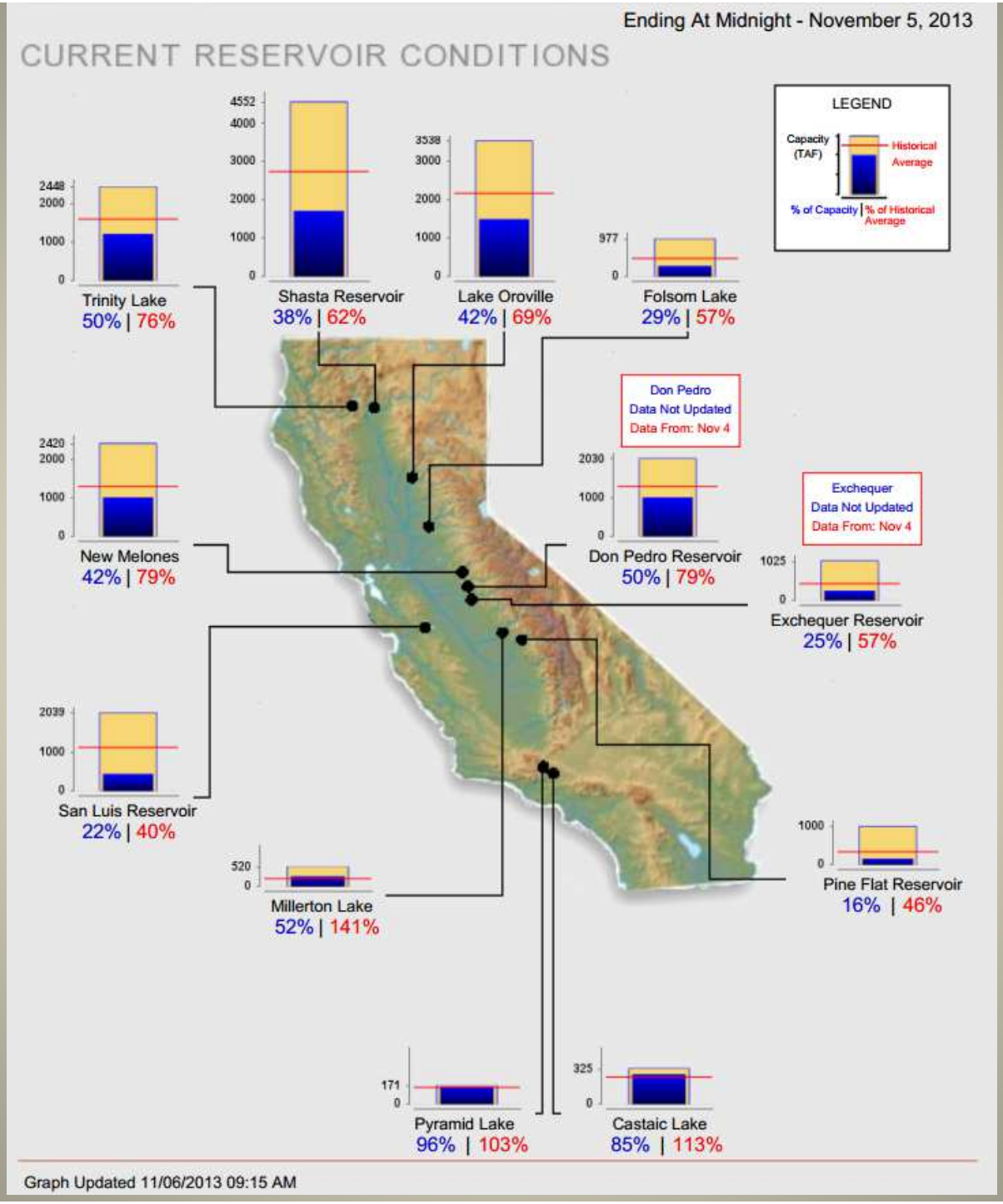
- BMO wells
- 1
- 2
- None Assigned
- Questionable Meas.
- Highway
- Primary Streams
- Sub-Inventory Units

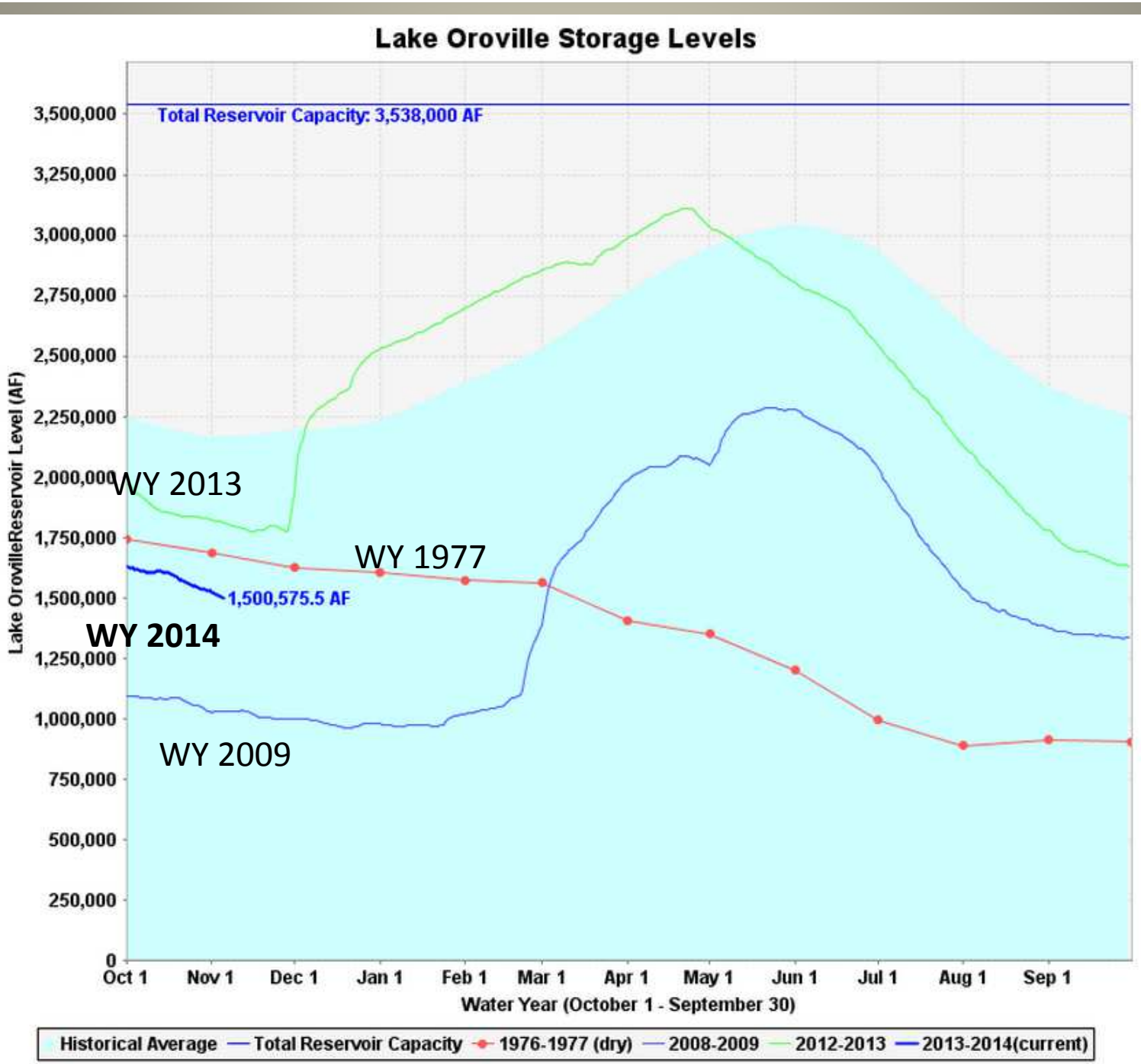
Average Change: Fall 2008 to 2013




DEPARTMENT OF WATER RESOURCES
CALIFORNIA COOPERATIVE SNOW SURVEYS
May 1 Statewide Conditions
Percent of Average
200
180
160
140
120
100
80
60
40
20
0
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
Snowpack
Precipitation
Runoff
Reservoir Storage

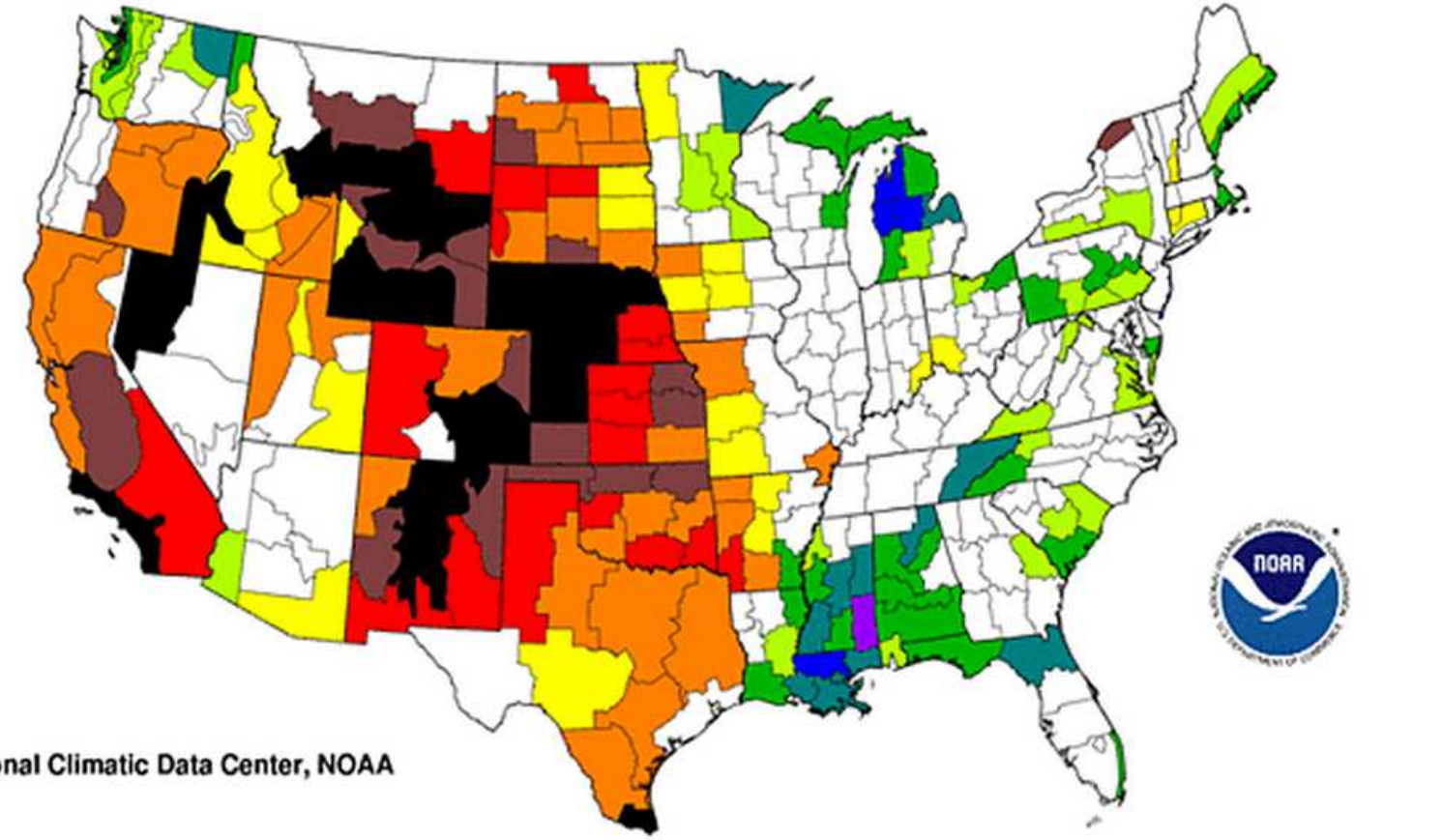

Northern Sierra Precipitation: 8-Station Index, October 31, 2013
MSC - Mount Shasta City
SHA - Shasta Dam
MNR - Mineral
QRD - Quincy
BCM - Brush Creek
SRR - Sierraville RS
BYM - Blue Canyon
PCF - Pacific House
Percent of Average for this Date: 25%
1982-1983 (wettest)
88.5
2005-2006 Daily Precip.
80.1
Average (1922-1998)
50.0
46.2
2012-2013 Daily Precip.
Current Daily Precip: 0.8
1923-1924 (driest)
19.0
17.1
1976-1977 (2nd driest & driest thru Aug)
Cumulative Daily/Monthly Precipitation (inches)
Total Water Year Precipitation
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1
Aug 1
Sep 1
Oct 1
Water Year (October 1 - September 30)


Ending At Midnight - November 5, 2013
CURRENT RESERVOIR CONDITIONS
LEGEND
Capacity (TAF)
Historical Average
% of Capacity | % of Historical Average
Trinity Lake
50% | 76%
Shasta Reservoir
38% | 62%
Lake Oroville
42% | 69%
Folsom Lake
29% | 57%
Don Pedro
Data Not Updated
Data From: Nov 4
Don Pedro Reservoir
50% | 79%
Exchequer
Data Not Updated
Data From: Nov 4
Exchequer Reservoir
25% | 57%
New Melones
42% | 79%
San Luis Reservoir
22% | 40%
Millerton Lake
52% | 141%
Pine Flat Reservoir
16% | 46%
Pyramid Lake
96% | 103%
Castaic Lake
85% | 113%
Graph Updated 11/06/2013 09:15 AM


Lake Oroville Storage Levels
Total Reservoir Capacity: 3,538,000 AF
3,500,000
3,250,000
3,000,000
2,750,000
2,500,000
2,250,000
2,000,000
1,750,000
1,500,000
1,250,000
1,000,000
750,000
500,000
250,000
0
Lake OrovilleReservoir Level (AF)
WY 2013
WY 1977
1,500,575.5 AF
WY 2014
WY 2009
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1
Aug 1
Sep 1
Water Year (October 1 - September 30)
Historical Average
Total Reservoir Capacity
1976-1977 (dry)
2008-2009
2012-2013
2013-2014(current)

Standardized Precipitation Index
Twelve Months

May 2012-April 2013



National Climatic Data Center, NOAA

exceptionally dry	extremely dry	severely dry	moderately dry	abnormally dry	near normal	abnormally moist	moderately moist	very moist	extremely moist	exceptionally moist
-2.00 and below	-1.99 to -1.60	-1.59 to -1.30	-1.29 to -0.80	-0.79 to -0.51	-0.50 to +0.50	+0.51 to +0.79	+0.80 to +1.29	+1.30 to +1.59	+1.60 to +1.99	+2.00 and above

Questions/Discussion