

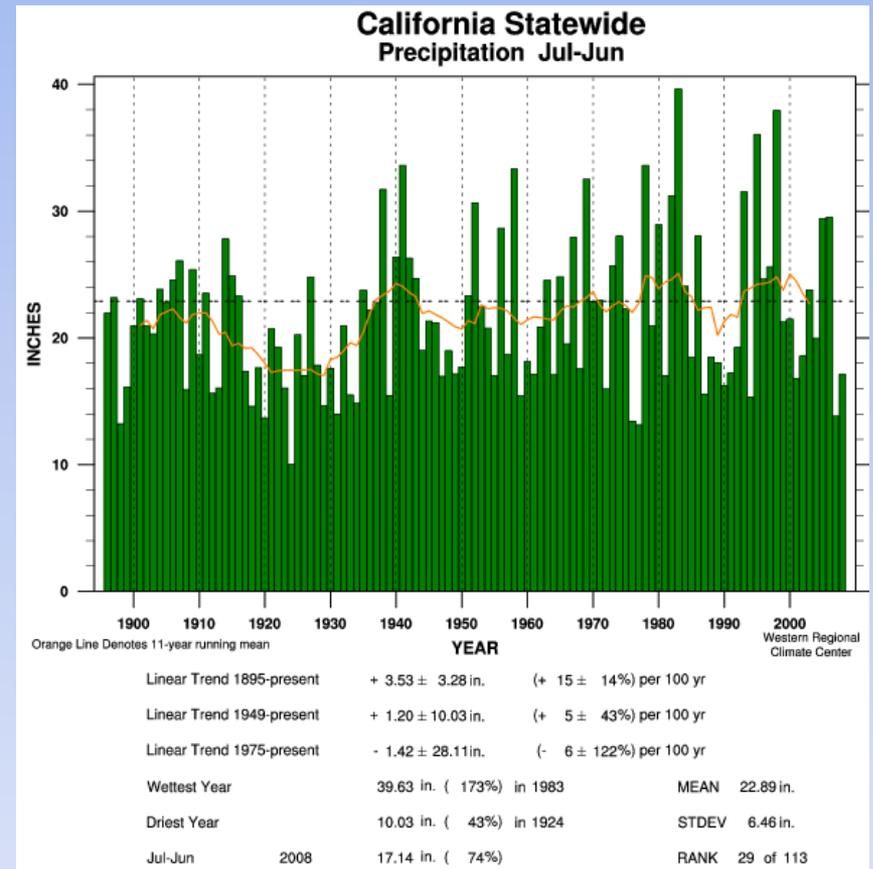
# An Overview of Current Meteorological and Hydrologic Conditions in California and What's in Store

Cynthia Palmer – Forecaster  
National Weather Service – Sacramento



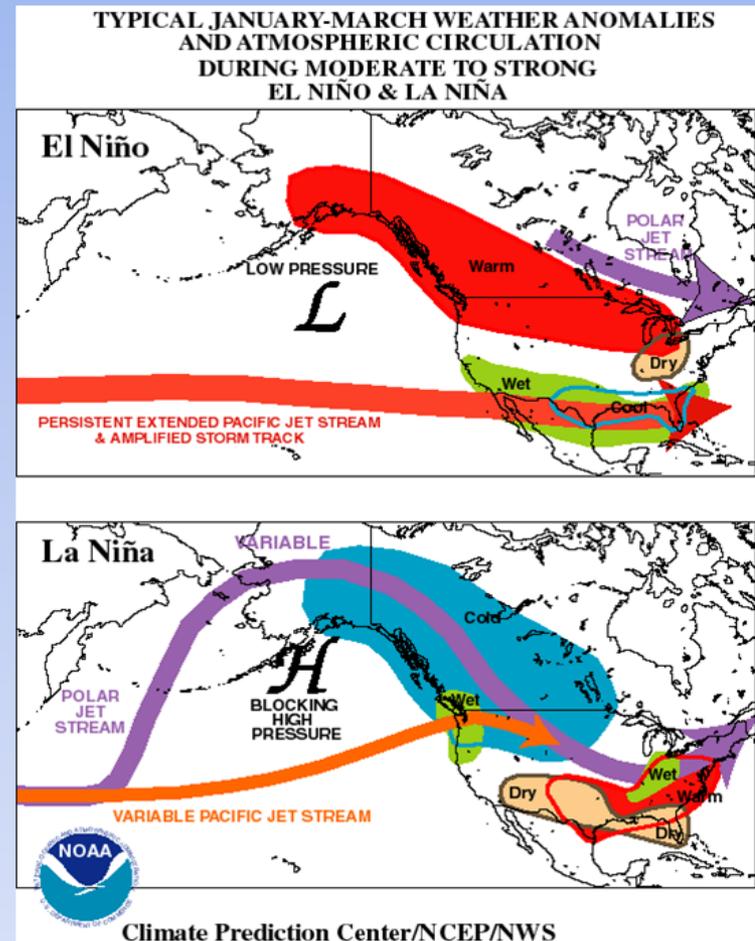
# Where have we been?

- Looking to the state wide average:
  - 2004 – 2005 and 2005 – 2006 were quite wet and above normal
  - 2006 – 2007 and 2007 – 2008, California experienced two dry years.



# Looking to the first dry year: 2006 – 2007

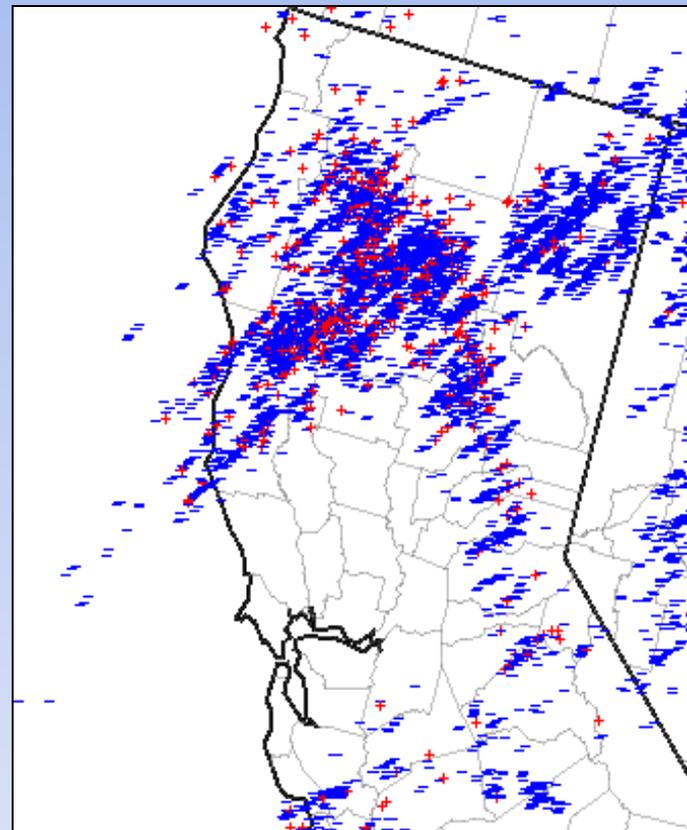
- 2006 – 2007: A weak to moderate el nino developed during the late summer and peaked in OND and NDJ then transitioned to neutral during the JFM time frame.
- 2006 – 2007 had a very dry January across the northern portion of the state.
- 2006 – 2007 is classified as a dry year across the entire state of California.
- No problem with the reservoir storage following the wet years.



# Looking to the second dry year: 2007 – 2008

- 2007 – 2008: Transitions from a neutral year to a moderate to strong la nina that peaked in during DJF and reverted to neutral during the MJJ timeframe.
- 2007 – 2008 water year started out running around normal, and then the precipitation shut off by the end of February.
- Driest 6 month period on record (spring into summer).
- 2007 – 2008 ended up being classified as an abnormally dry year across California.
- Extraordinary lightning event in June.

June 20 – 22, 2008 Lightning outbreak (total strikes – 5956)



# Looking to the second dry year: 2007 – 2008 Precipitation

- Northwest Coast: 63-110% of normal
- Central Coast: 71-95% of normal
- Northern Interior: 62-76% of normal
- Southern Interior: 37-75% of normal
- Southern California: 64-113% of normal
- However, the Northern Sierra 8 Station Index was only 34.9% of normal, and had the driest spring on record.



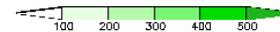
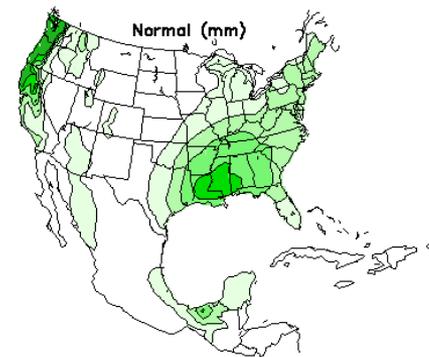
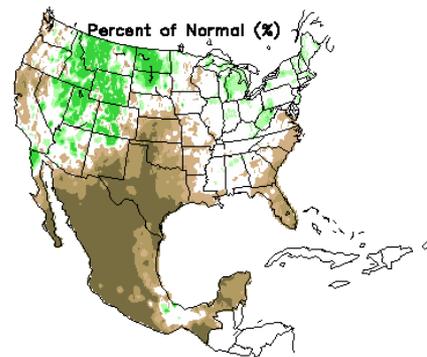
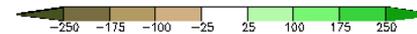
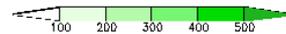
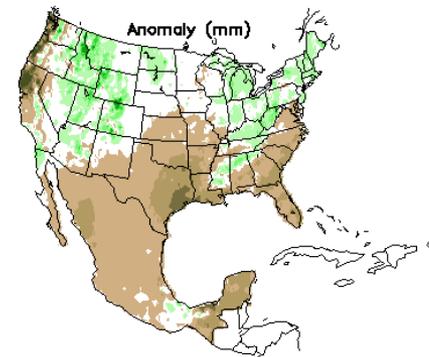
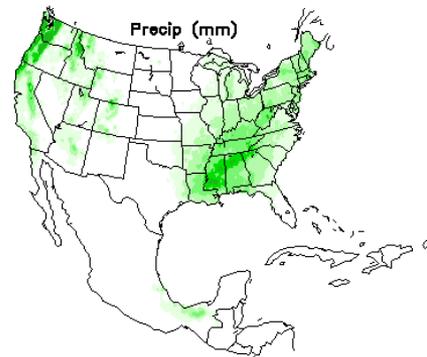
# Where are we this year?

- Southern CA is doing better than Northern CA.
- The reservoirs are down significantly, especially across the northern state.
- Conversation is being called for with voluntary and mandatory restrictions, including agriculture, industry, and normal usage.
- Dams are being asked to hold water longer.

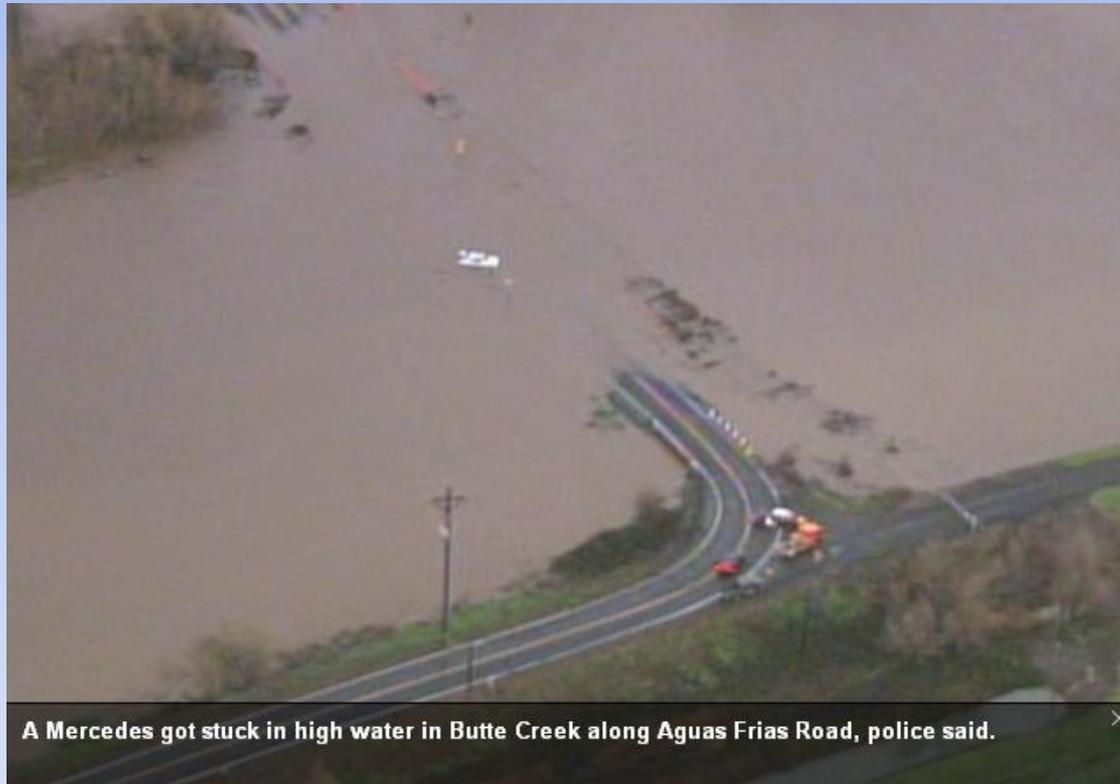


# Where are we this year?

90-day accumulation ending 20090215



# What about the most recent rains?



Butte Creek on February 23<sup>rd</sup>, courtesy KCRA

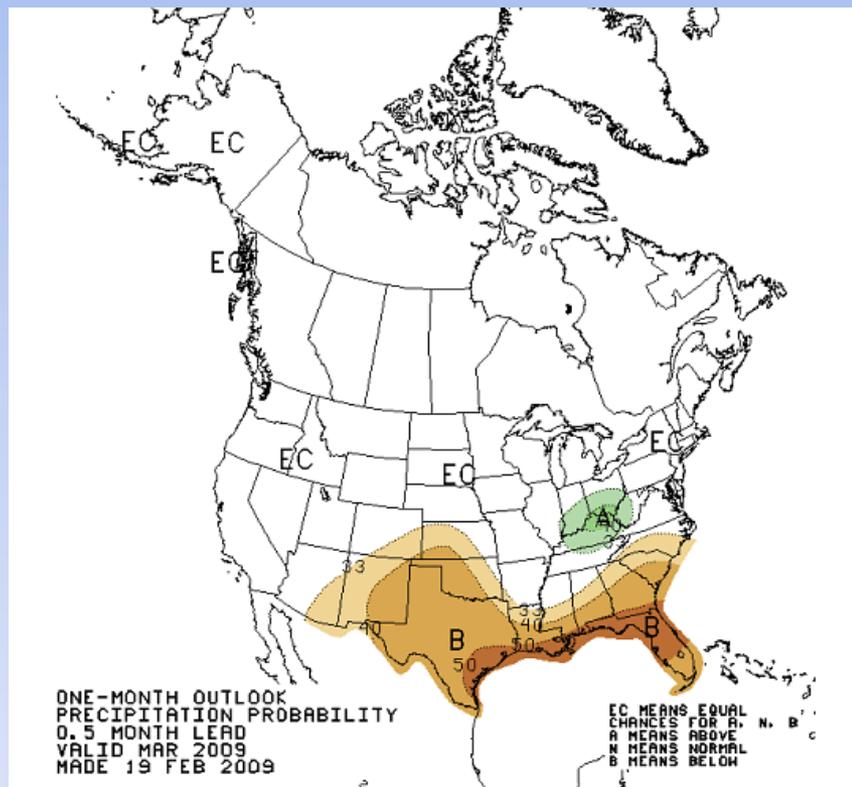
# Where are we this year following the most recent rains and snows as of February 24th?

- Northwest Coast: 59-77% of normal
- Central Coast: 75-79% of normal
- Northern Interior: 69-86% of normal
- Southern Interior: 84-93% of normal
- Southern California: 83-123% of normal
- State snow pack has improved to 76% of normal (N=73%, C=76%, S=81%).
- The Northern Sierra 8 Station Index is 86% of normal.

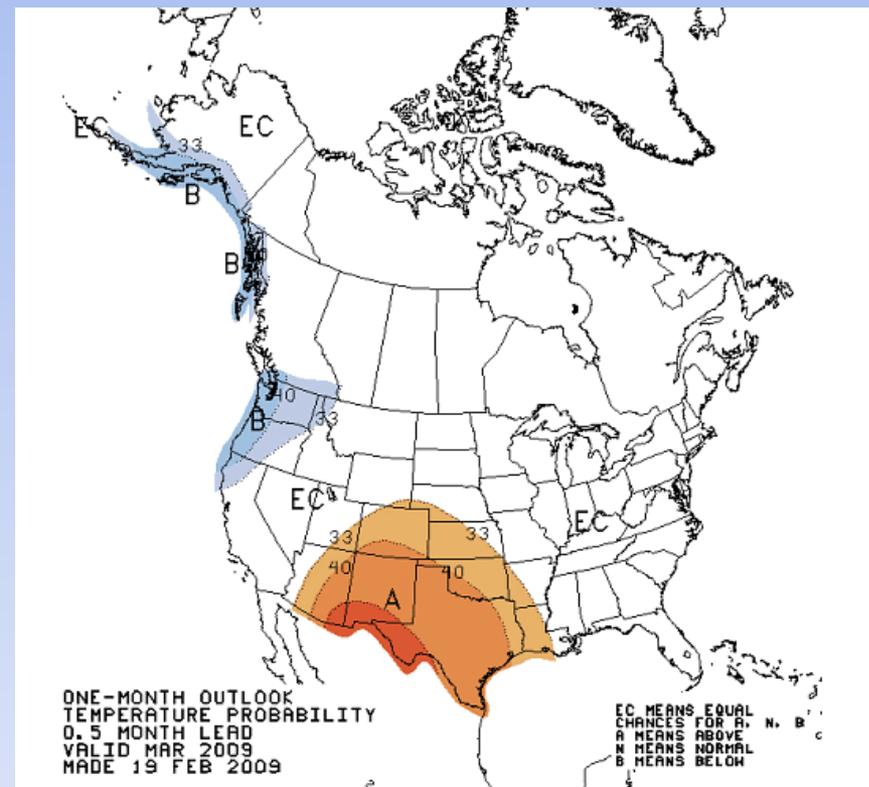


# CPC One Month Outlooks for March

## Precipitation

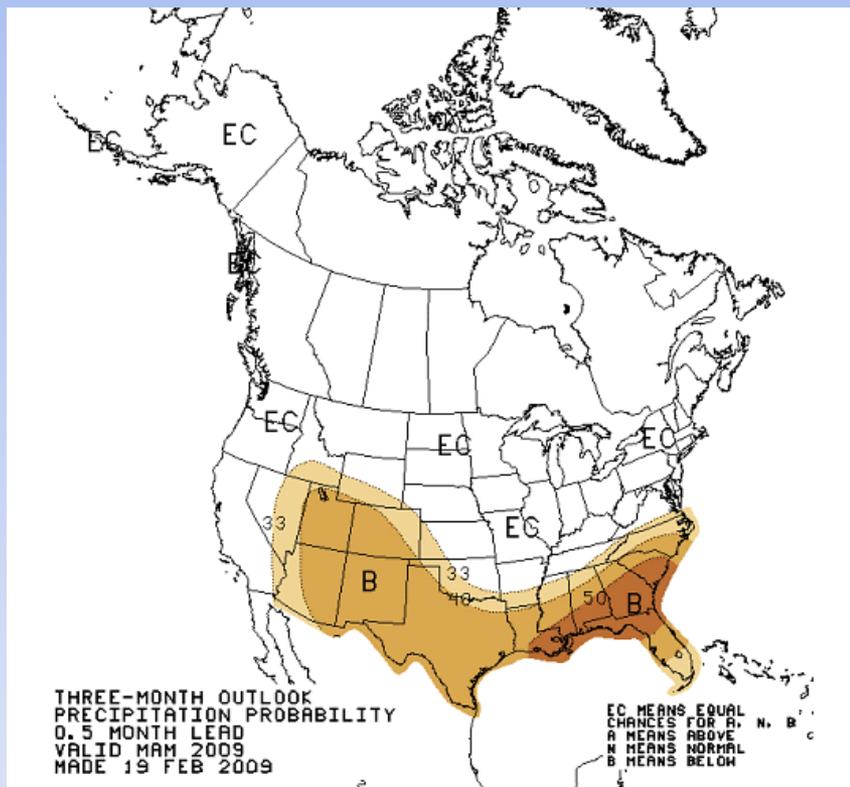


## Temperature

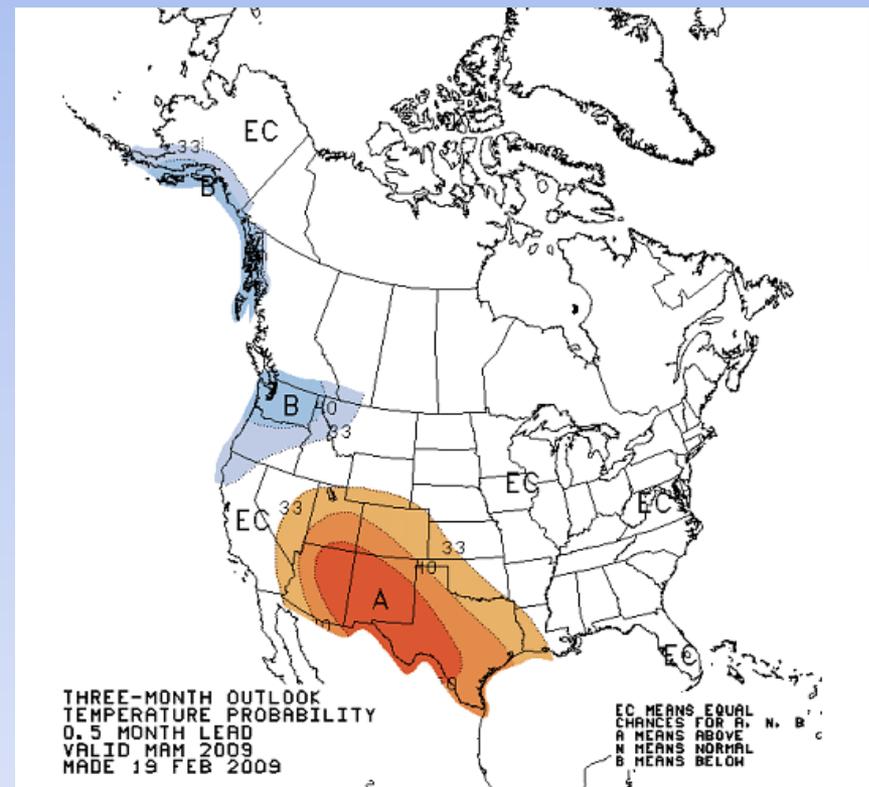


# CPC Three Month Outlooks for March – April – May

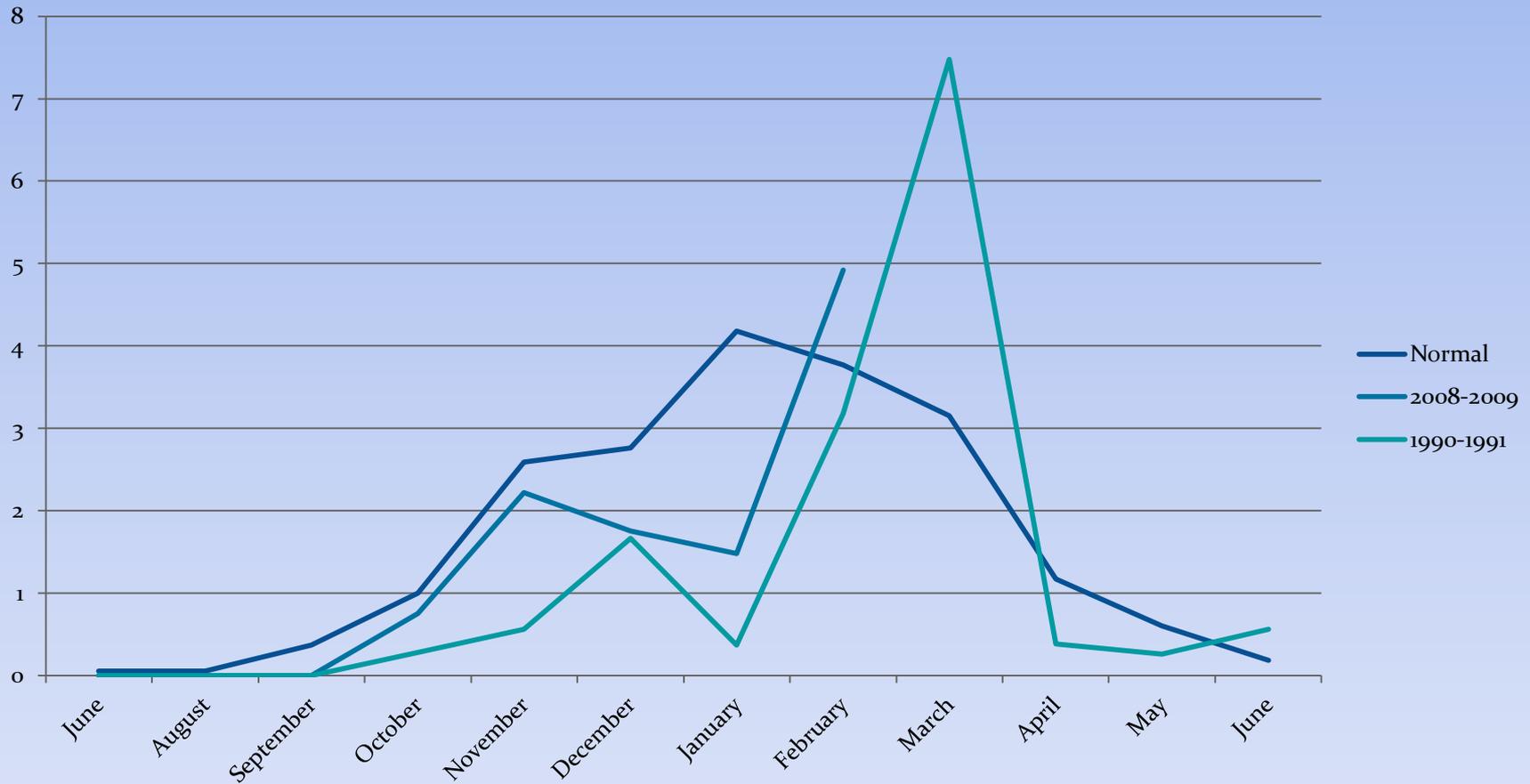
## Precipitation



## Temperature



# Just a curious comparison for Downtown Sacramento



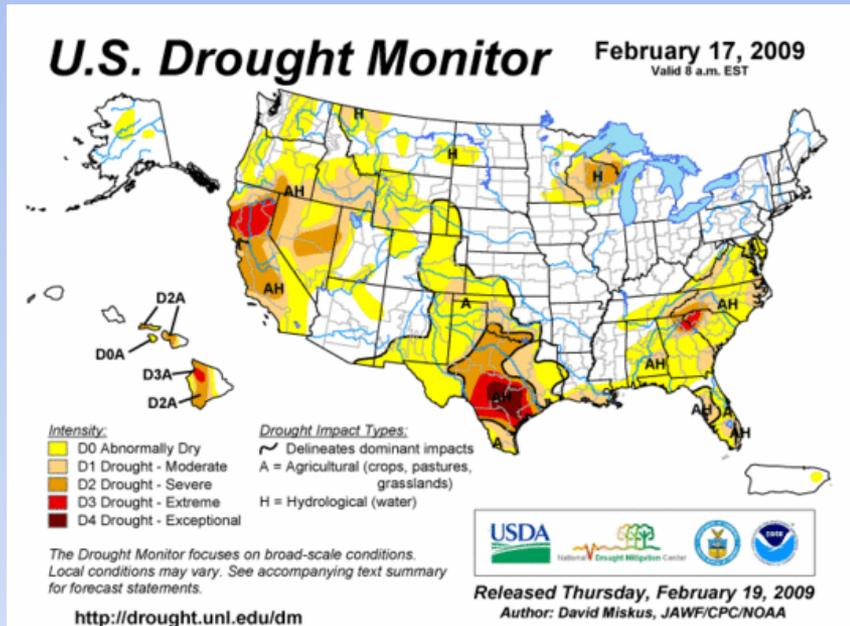
# Summary

- More wet weather in forecast.
- Winter is not over!
- We may catch up to normal precipitation before the water year is up, but still need to conserve because of hydrological situation.



# What's New with the NWS

# Drought Information Statements



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Sacramento, CA

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### Drought Information Statement

AXUS76 RSTO 191918  
 DGISTO  
 CAC003-005-007-009-011-017-021-033-057-061-063-067-077-089-091-095-099-101-103-113-115-

DROUGHT INFORMATION STATEMENT  
 NATIONAL WEATHER SERVICE SACRAMENTO CA  
 1120 AM EDT THU FEB 19 2009

...WET AND UNSETTLED WEATHER TO RETURN FOR THE LATTER PART OF FEBRUARY...  
 ...PLEASE NOTE...ANY DROUGHT DECLARATIONS ARE DECIDED BY INDIVIDUAL STATES...THE NATIONAL WEATHER SERVICE DOES NOT MAKE DROUGHT DECLARATIONS...

SYNOPSIS...THE STATE OF CALIFORNIA DECLARED DROUGHT ON JUNE 4, 2008. THE US DROUGHT MONITOR IS NOW INDICATING AN EXTREME DROUGHT (CLASSIFICATION D3) FOR THE ENTIRE SACRAMENTO RIVER BASIN...WITH A SEVERE DROUGHT (CLASSIFICATION D2) ELSEWHERE ACROSS THE NORTHERN INTERIOR.

SUMMARY OF IMPACTS...AS OF JANUARY 29TH...FIFTY SIX OF CALIFORNIA/S FIFTY EIGHT COUNTIES HAD BEEN GIVEN DISASTER DECLARATIONS AS DROUGHT HAD DEWASTATED AGRICULTURAL ACTIVITIES...INCLUDING ALL THE COUNTIES

Current Hazards  
 Watches/Warnings  
 Local Outlook  
 National Outlooks  
 Current Conditions  
 Observations  
 Radar Imagery  
 Satellite Imagery  
 Soundings/Profilers  
 Rivers & Lakes  
 AHPS  
 River Levels  
 Precipitation  
 Buoy Reports  
 Road Conditions  
 Forecasts  
 Activity Planner  
 Local Forecasts  
 AFD-Discussion  
 Forecast Weather Tables  
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 Fire Weather  
 Hydrology  
 Marine  
 Computer Models  
 Climate  
 Local  
 National

<http://www.wrh.noaa.gov/sto>

# Sacramento River Drought Status

[http://www.cnrfc.noaa.gov/products/Drought\\_8si\\_product.pdf](http://www.cnrfc.noaa.gov/products/Drought_8si_product.pdf)

- Current 8SI for WY2009: 27.5 inches
- Median 8SI to date: 30.83 inches
- Current WY Percentile: 0.397



<u>8SI Percentiles</u>	<u>As of Feb 1</u>	<u>Projected for Feb 28</u>
Past 24 months (weighted) *	0.032	0.046
Past 12 months	0.030	0.064
Past 24 months	0.081	0.097

<u>Percentile</u>	<u>Drought Monitor Category</u>	
0.00 - 0.02	D4	Drought - Exceptional
0.02 - 0.05	D3	Drought - Extreme
0.05 - 0.10	D2	Drought - Severe
0.10 - 0.20	D1	Drought - Moderate
0.20 - 0.30	D0	Abnormally Dry
0.30 +		Normal

# San Joaquin Drought Status

[http://www.cnrfc.noaa.gov/products/Drought\\_SJI\\_product.pdf](http://www.cnrfc.noaa.gov/products/Drought_SJI_product.pdf)



- Current 5SI for WY2009: 24.96 inches
- Median 5SI to date: 23.13 inches
- Current WY Percentile: 0.571

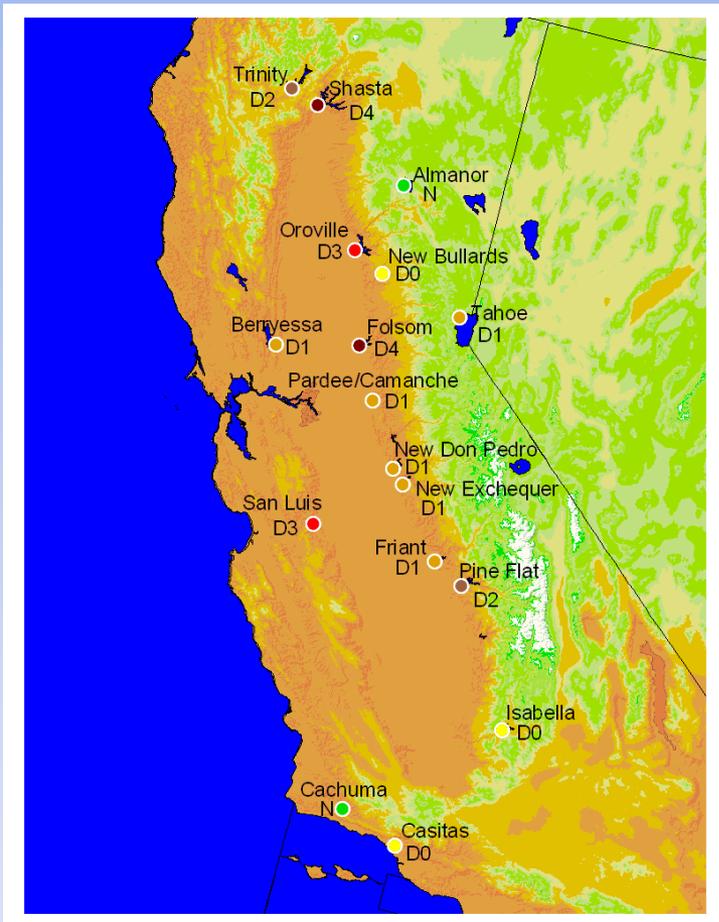
<u>5SI Percentiles</u>	<u>As of Feb 1</u>	<u>Projected for Feb 28</u>
Past 24 months (weighted) *	0.167	0.18
Past 12 months	0.208	0.219
Past 24 months	0.205	0.187

<u>Percentile</u>	<u>Drought Monitor Category</u>	
0.00 - 0.02	D4	Drought - Exceptional
0.02 - 0.05	D3	Drought - Extreme
0.05 - 0.10	D2	Drought - Severe
0.10 - 0.20	D1	Drought - Moderate
0.20 - 0.30	D0	Abnormally Dry
0.30 +		Normal

# Looking at the Reservoirs at the end of January

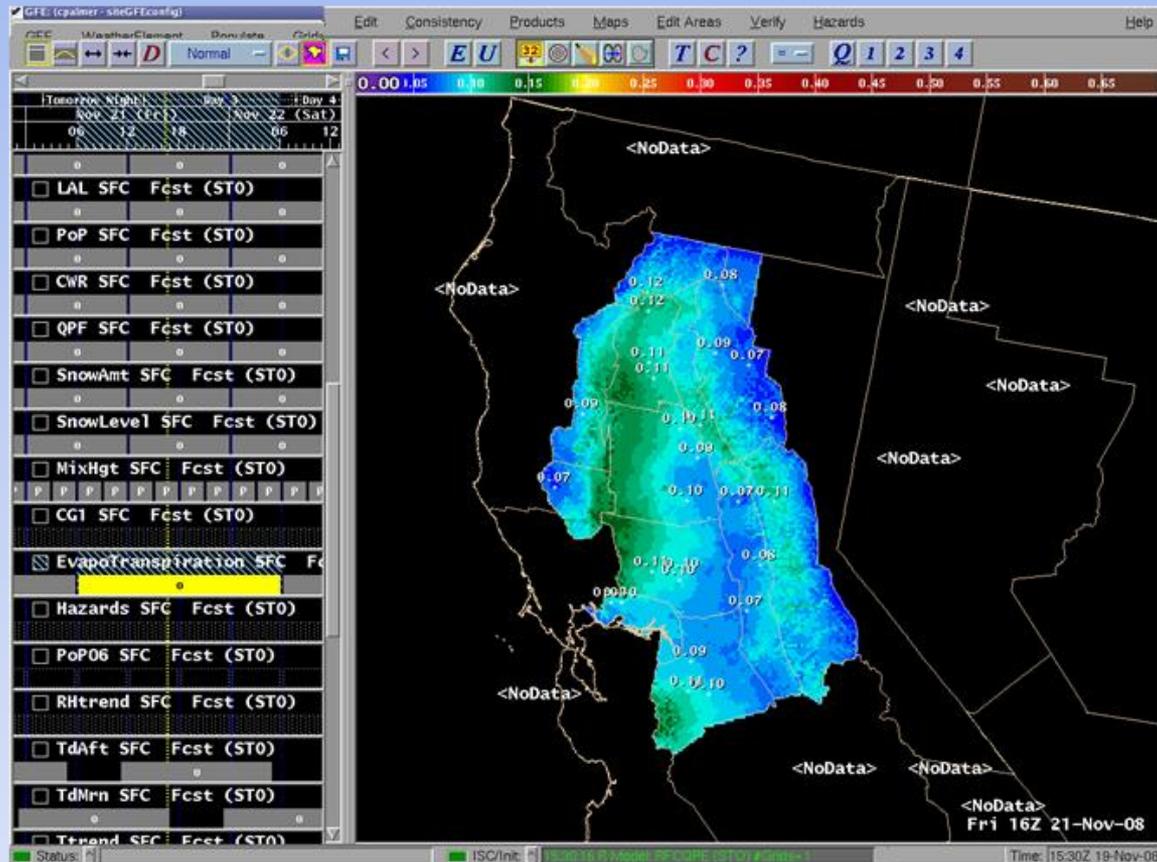
[http://www.cnrfc.noaa.gov/products/Drought\\_Reservoir\\_product.pdf](http://www.cnrfc.noaa.gov/products/Drought_Reservoir_product.pdf)



As of Jan 31, 2009		Reservoir	End of Month Storage Percentiles			
Total Capacity (ac-ft)	Storage (ac-ft)		Oct	Nov	Dec	Jan
2477700	981,678	Trinity	0.088	0.088	0.088	0.086
4552000	1,416,145	Shasta	0.018	0.037	0.037	0.018
1143000	731,000	Almanor	0.325	0.325	0.441	0.545
3537600	1,020,262	Oroville	0.025	0.025	0.000	0.025
966103	476,856	New Bullards Bar	0.236	0.236	0.289	0.230
732000	32,770	Tahoe**	0.224	0.224	0.183	0.180
977000	245,599	Folsom	0.096	0.096	0.019	0.018
1600000	1,123,009	Berryessa	0.266	0.266	0.244	0.195
614070	316,852	Camanche/Pardee	0.121	0.146	0.121	0.142
2030000	1,098,972	New Don Pedro	0.205	0.205	0.205	0.200
1024600	283,900	New Exchequer	0.195	0.195	0.195	0.166
520000	228,577	Friant	0.481	0.277	0.148	0.145
1000000	227,437	Pine Flat	0.134	0.134	0.134	0.094
568000	124,967	Isabella	0.300	0.275	0.300	0.268
2039000	701,877	San Luis	0.051	0.128	0.076	0.050
190500	162,558	Cachuma	0.625	0.625	0.562	0.428
254000	206,396	Casitas	0.447	0.421	0.394	0.282
24225573	9378855	Statewide	0.117	0.117	0.117	0.057

# Evapotranspiration Grids

<http://www.wrh.noaa.gov/sto/et/et.php?cwa=sto&day=1>



# Any Questions?

- You can email me at:
  - [Cynthia.Palmer@noaa.gov](mailto:Cynthia.Palmer@noaa.gov)