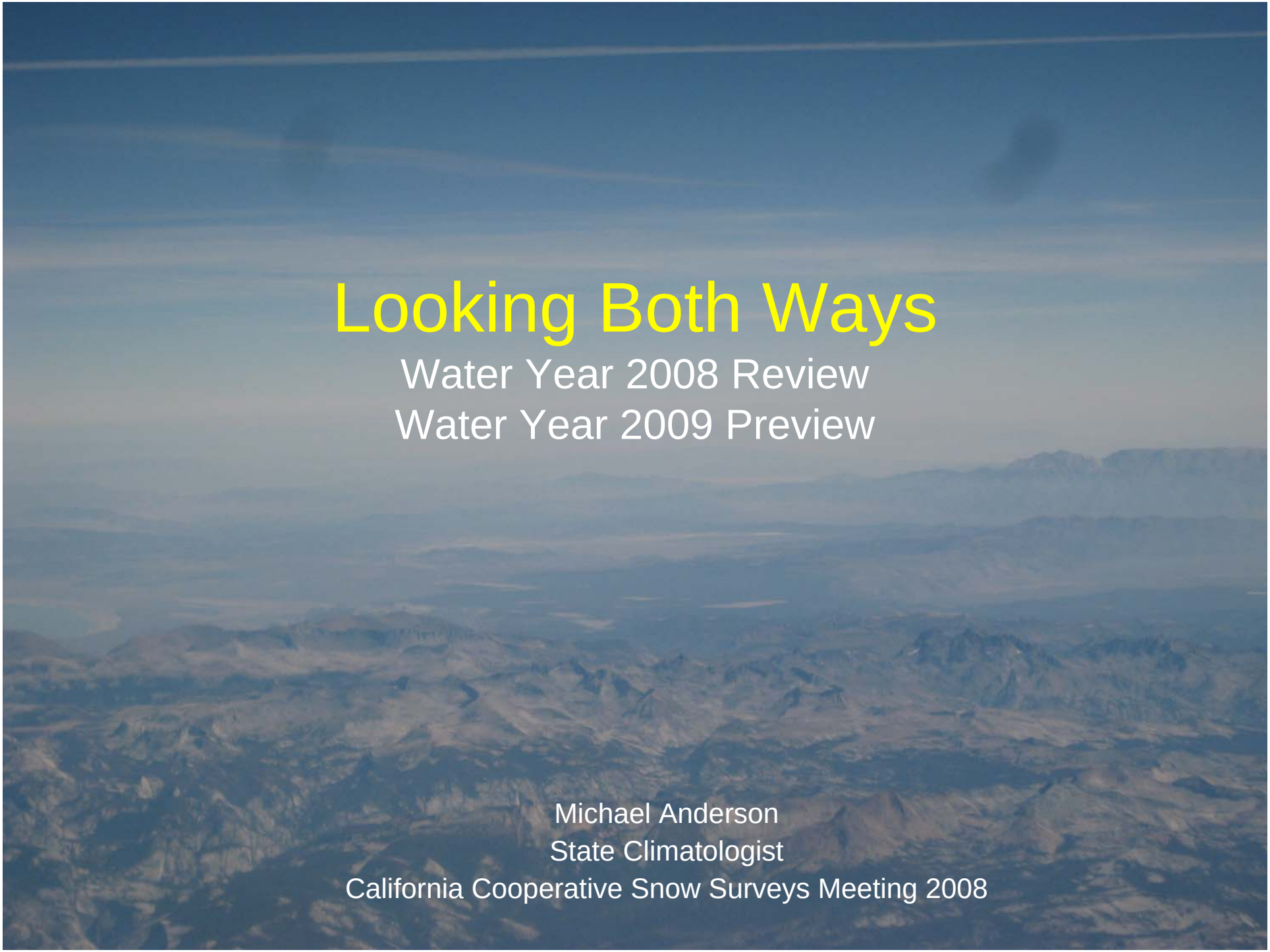


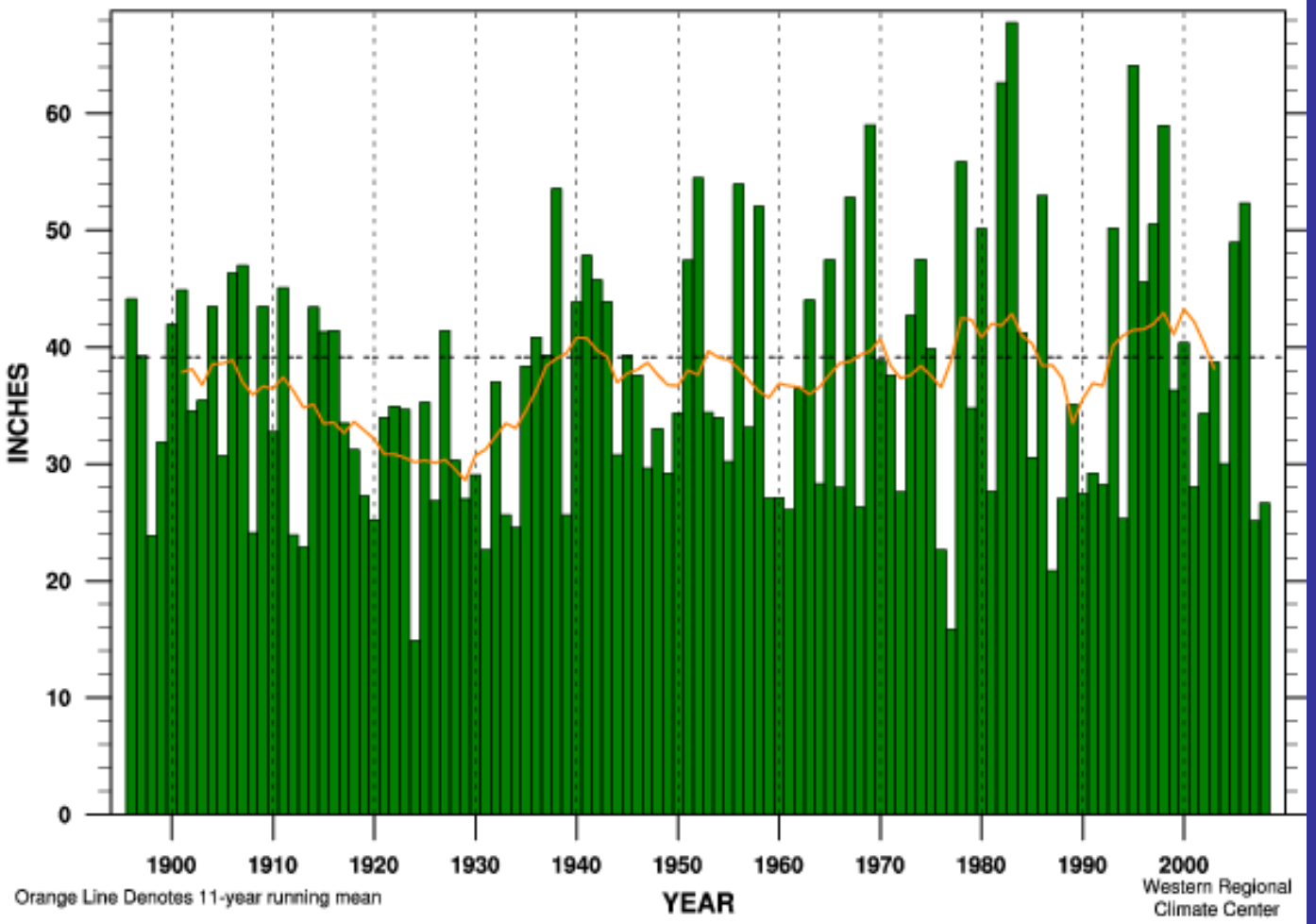
Looking Both Ways

Water Year 2008 Review
Water Year 2009 Preview

Michael Anderson
State Climatologist
California Cooperative Snow Surveys Meeting 2008


Looking Back:
WY2008

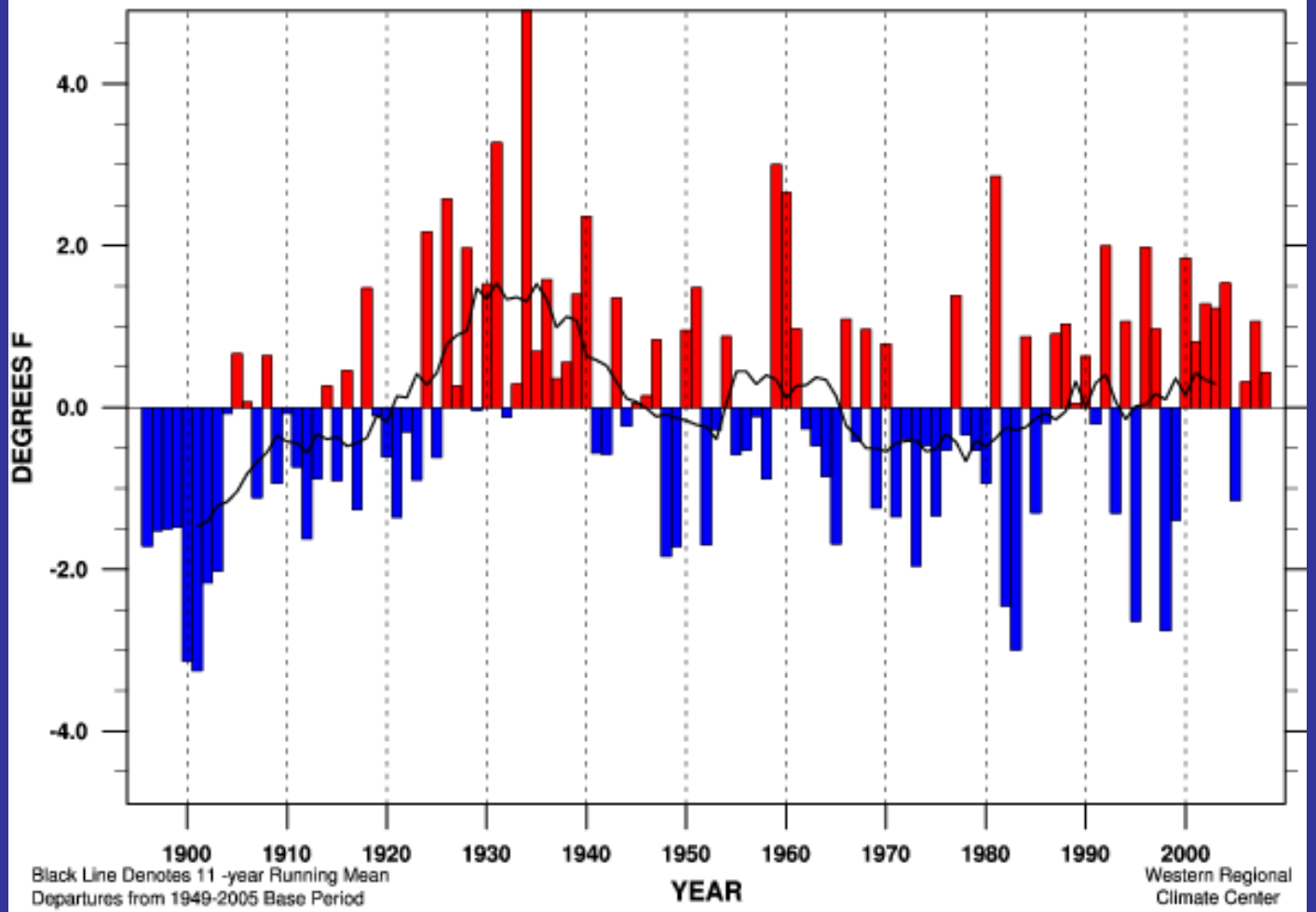
Sierra Region
Precipitation Oct-Sep



Linear Trend 1895-present	+ 4.79 ± 6.10 in.	(+ 12 ± 15%) per 100 yr	
Linear Trend 1949-present	+ 0.25 ± 19.07 in.	(+ 0 ± 48%) per 100 yr	
Linear Trend 1975-present	- 0.92 ± 52.68 in.	(- 2 ± 134%) per 100 yr	
Wettest Year	67.79 in. (173%)	in 1983	MEAN 39.15 in.
Driest Year	14.89 in. (38%)	in 1924	STDEV 12.33 in.
Oct-Sep 2008	26.66 in. (68%)		RANK 18 of 113

Sierra Region

Maximum Temperature Departure Oct-Sep



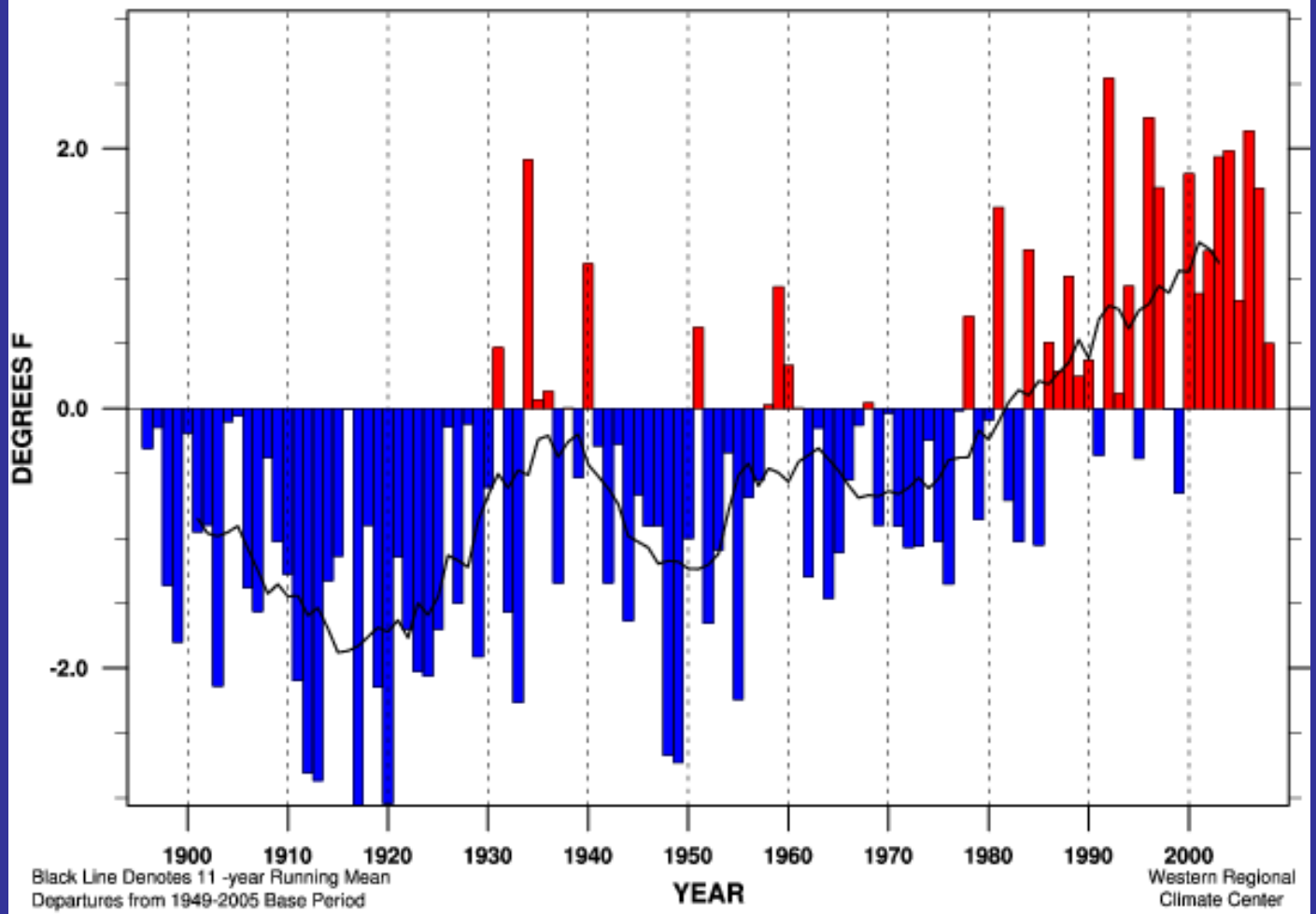
Black Line Denotes 11 -year Running Mean
Departures from 1949-2005 Base Period

Western Regional
Climate Center

Linear Trend 1895-present		+ 0.68 ± 0.83 °F/100yr	
Linear Trend 1949-present		+ 0.44 ± 2.15 °F/100yr	
Linear Trend 1975-present		+ 2.76 ± 5.56 °F/100yr	
Warmest Year		66.4 °F (+ 4.9 °F) in 1934	MEAN 61.5 °F
Coldest Year		58.2 °F (- 3.3 °F) in 1901	STDEV 1.41 °F
Oct-Sep	2008	61.9 °F (+ 0.4 °F)	RANK 71 of 113

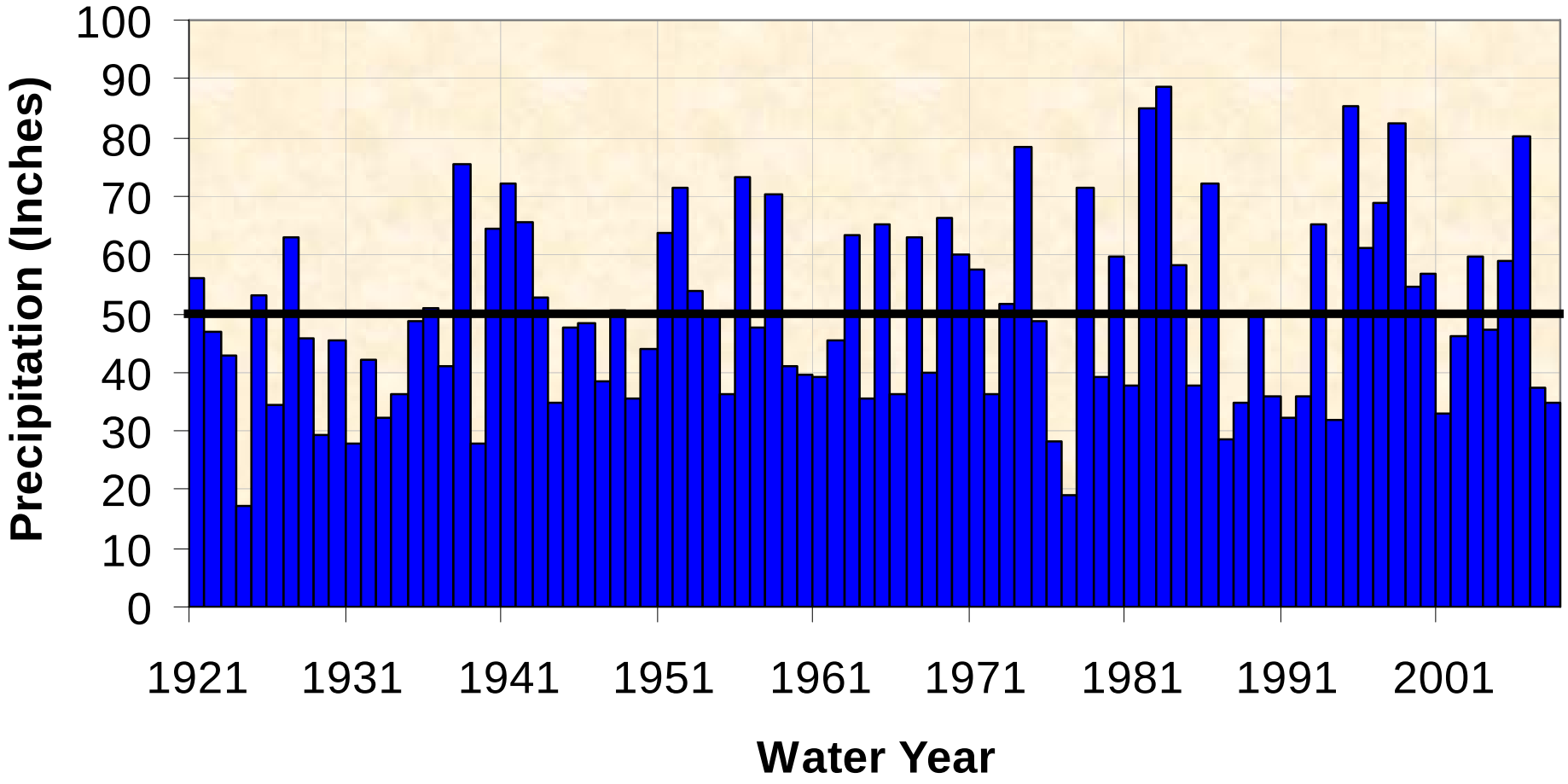
Sierra Region

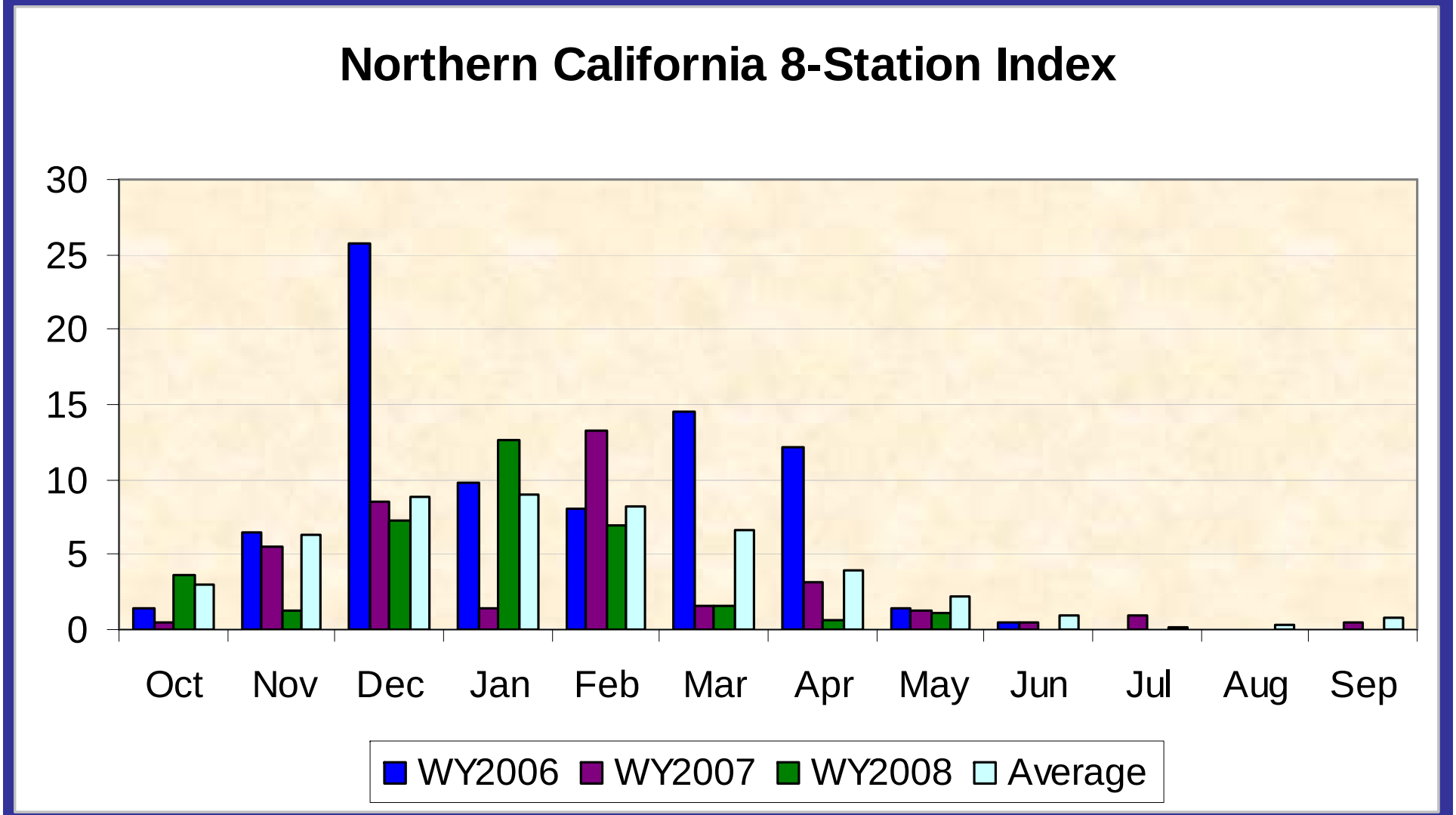
Miniumum Temperature Departure Oct-Sep

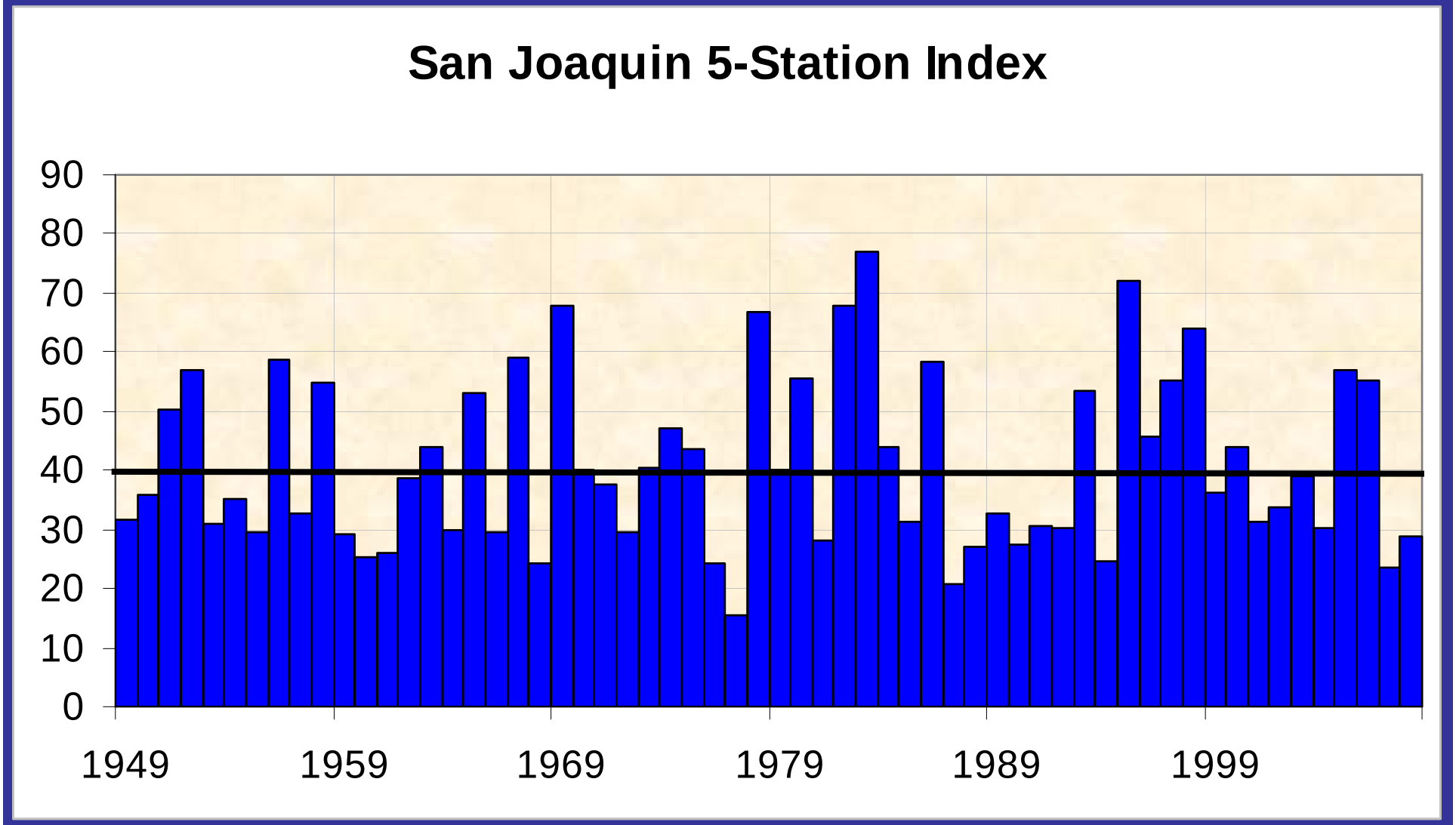


Linear Trend 1895-present	+ 2.19 ± 0.57 °F/100yr		
Linear Trend 1949-present	+ 4.05 ± 1.32 °F/100yr		
Linear Trend 1975-present	+ 5.98 ± 3.41 °F/100yr		
Warmest Year	39.1 °F (+ 2.5 °F) in 1992	MEAN	36.6 °F
Coldest Year	33.5 °F (- 3.1 °F) in 1917	STDEV	1.12 °F
Oct-Sep 2008	37.1 °F (+ 0.5 °F)	RANK	92 of 113

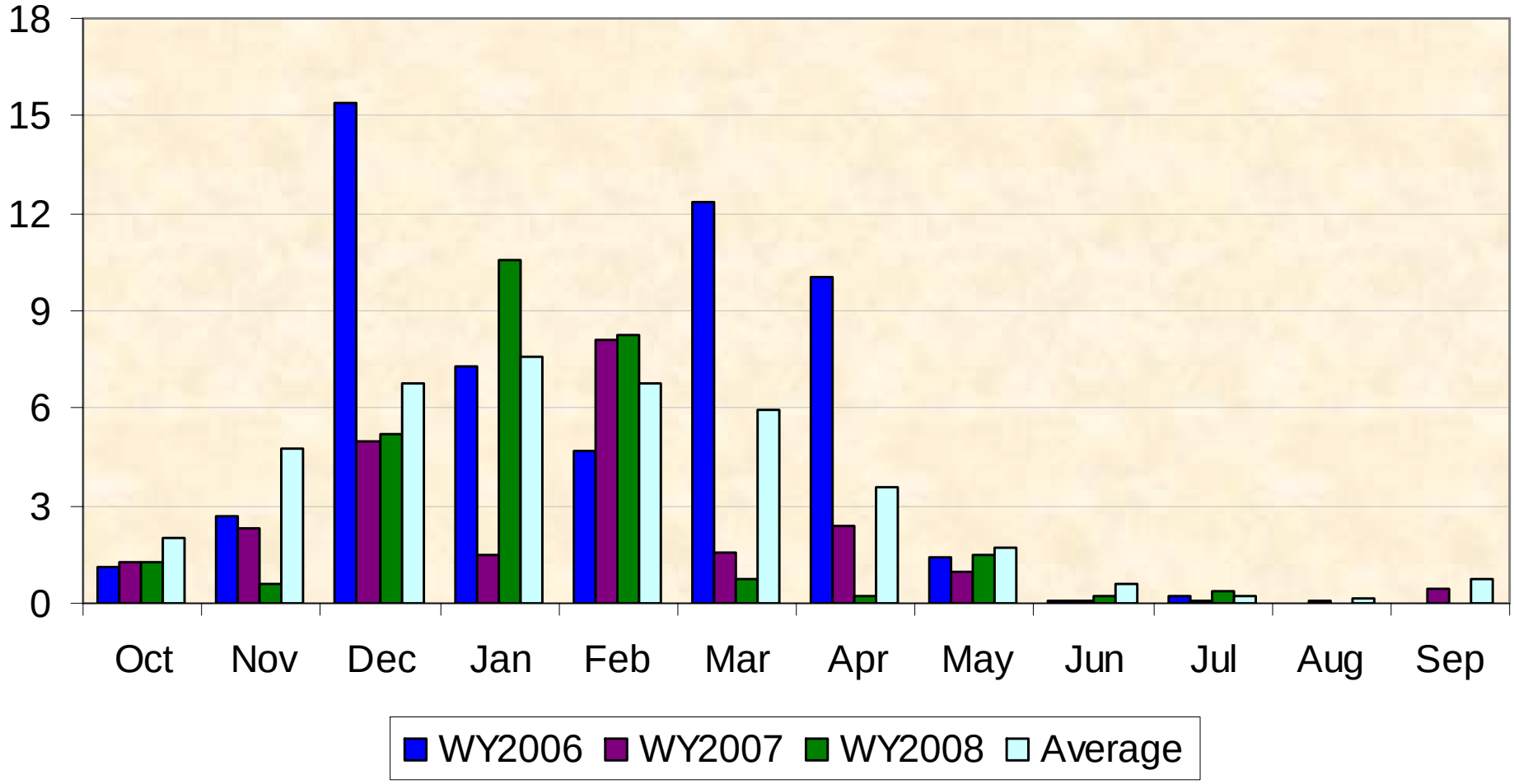
Northern California 8-Station Precipitation Index




Northern California 8-Station Index
30
25
20
15
10
5
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
WY2006
WY2007
WY2008
Average


San Joaquin 5-Station Index
90
80
70
60
50
40
30
20
10
0
1949
1959
1969
1979
1989
1999

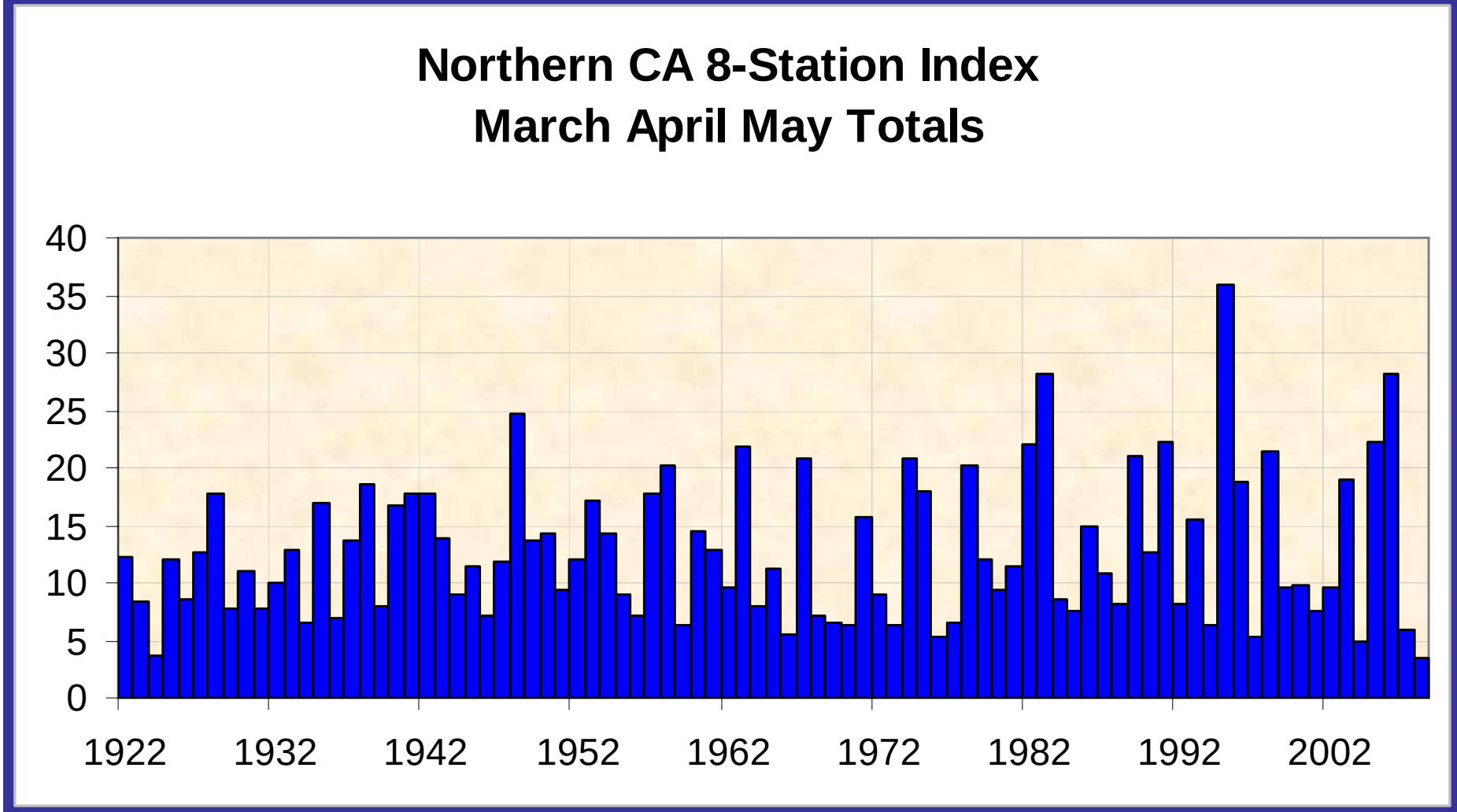
San Joaquin Five Station Index



Some Fun Statistics

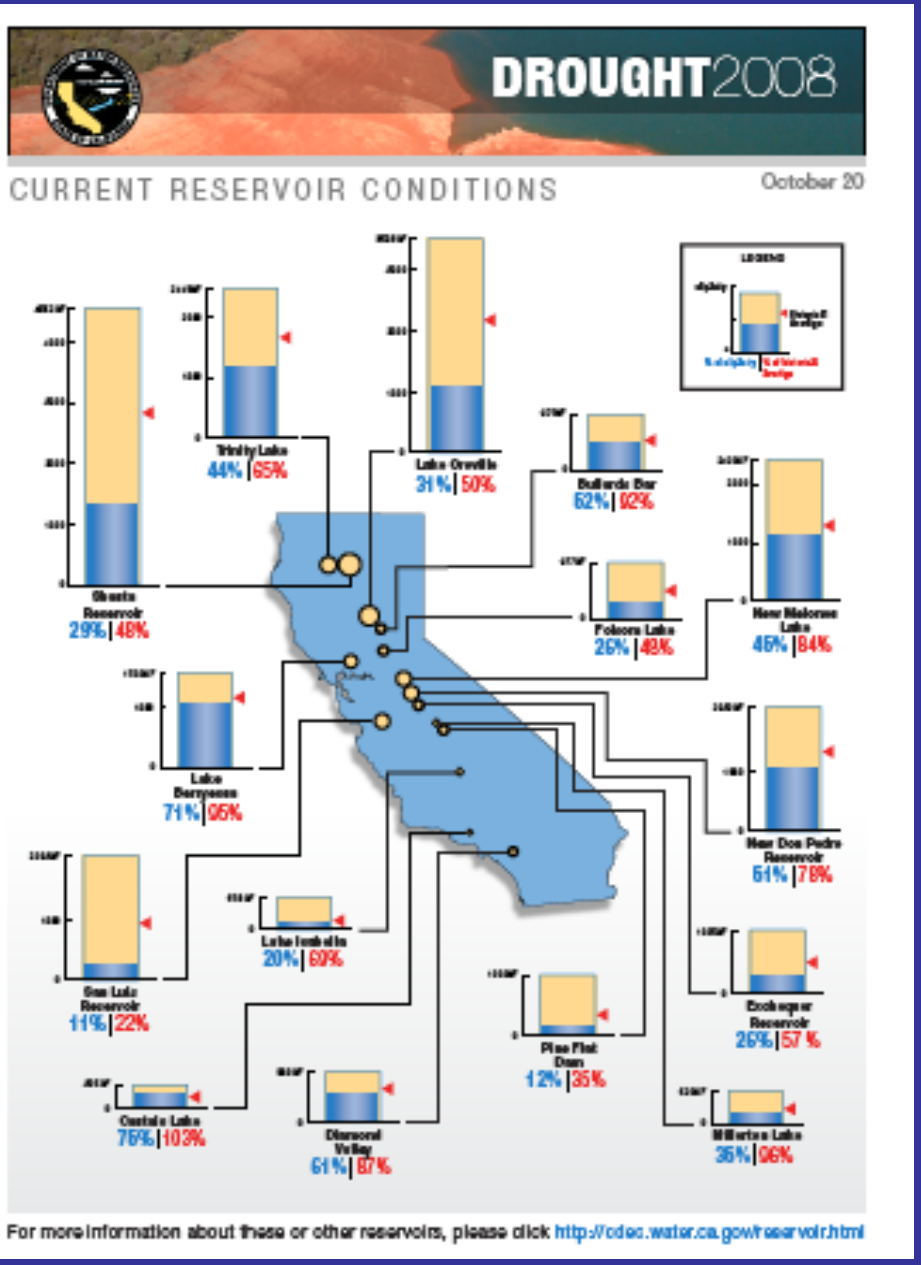
- WY2007:
  - 8 Station 24th driest year with 37.2 inches
  - April 1 Snowpack 39% of Average
  - Runoff 53% of Average
  - WSI Sac: Dry SJ: Critical
- WY2008:
  - 8 Station 15th driest year with ~35 inches
  - April 1 Snowpack 100% of Average
  - Runoff: 60% of Average
  - WSI Sac: Critical SJ: Critical

The Driest Spring on Record!



1924 – 3.6 inches

2008 – 3.4 inches



Reservoir Conditions: (End of Month Oct. 2008)

151 Reservoirs Sampled

Capacity of 37.59 MAF

Historic Average: 21.11 MAF

Current Storage: 14.84 MAF

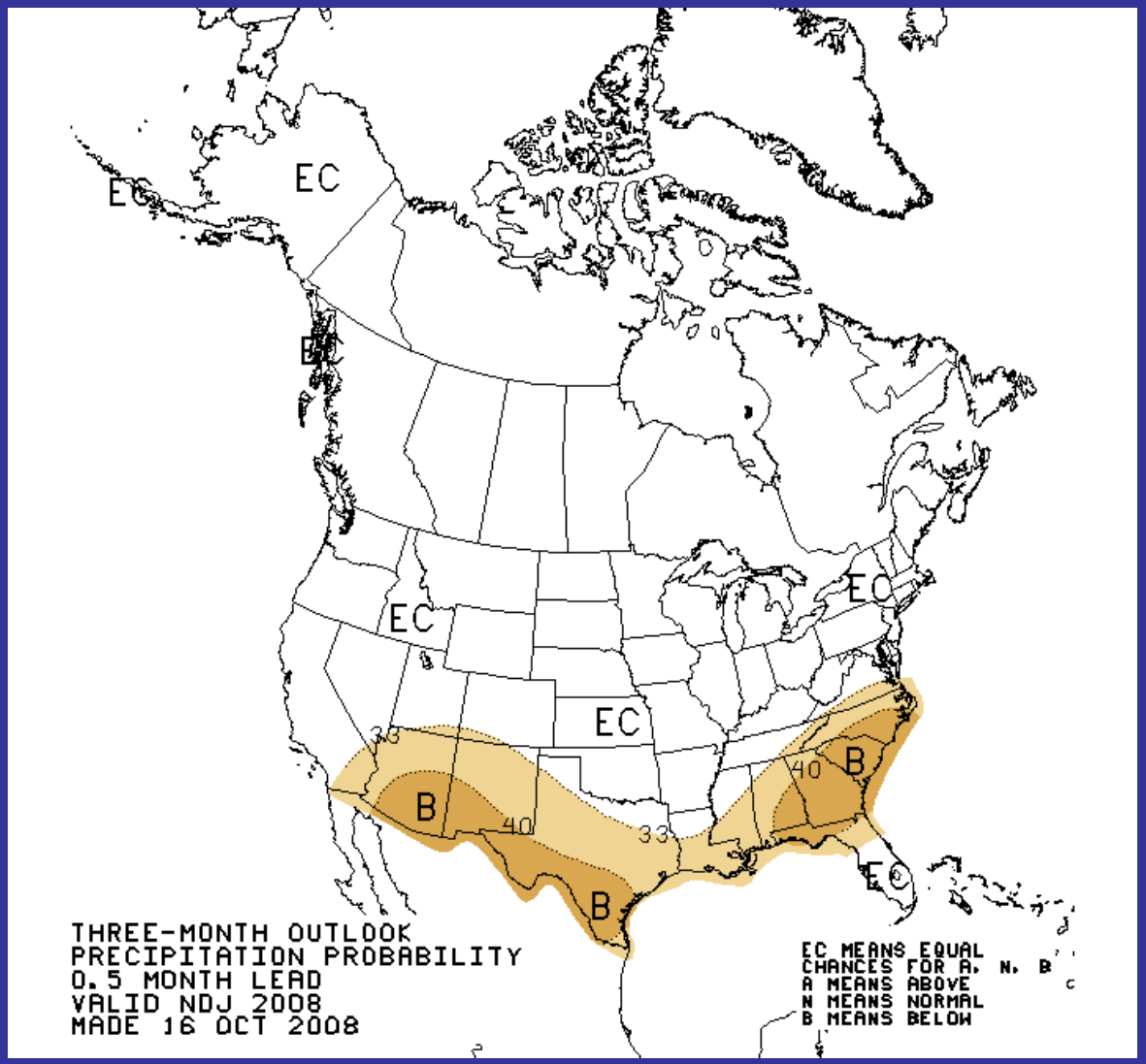
Statewide Average: 70%

Events of Note

- January storm – strongest winds since 1995
- Driest Spring on Record for many sites in Northern California
- Late June Dry Convective Event
  ~ 8000 strikes in 19 hrs; 1500 fires result

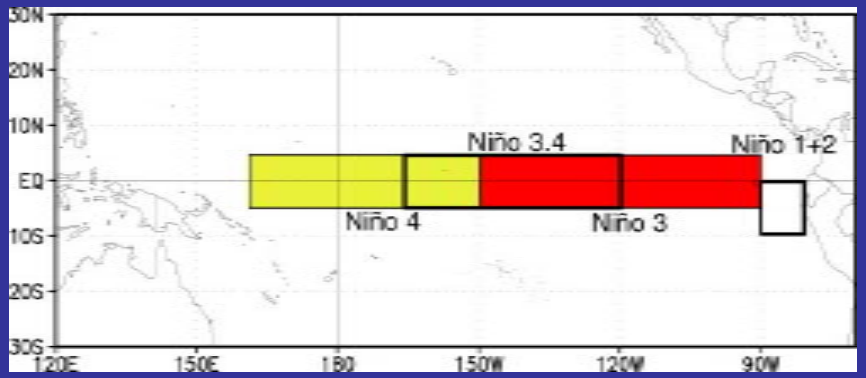

Looking Ahead:
WY2009

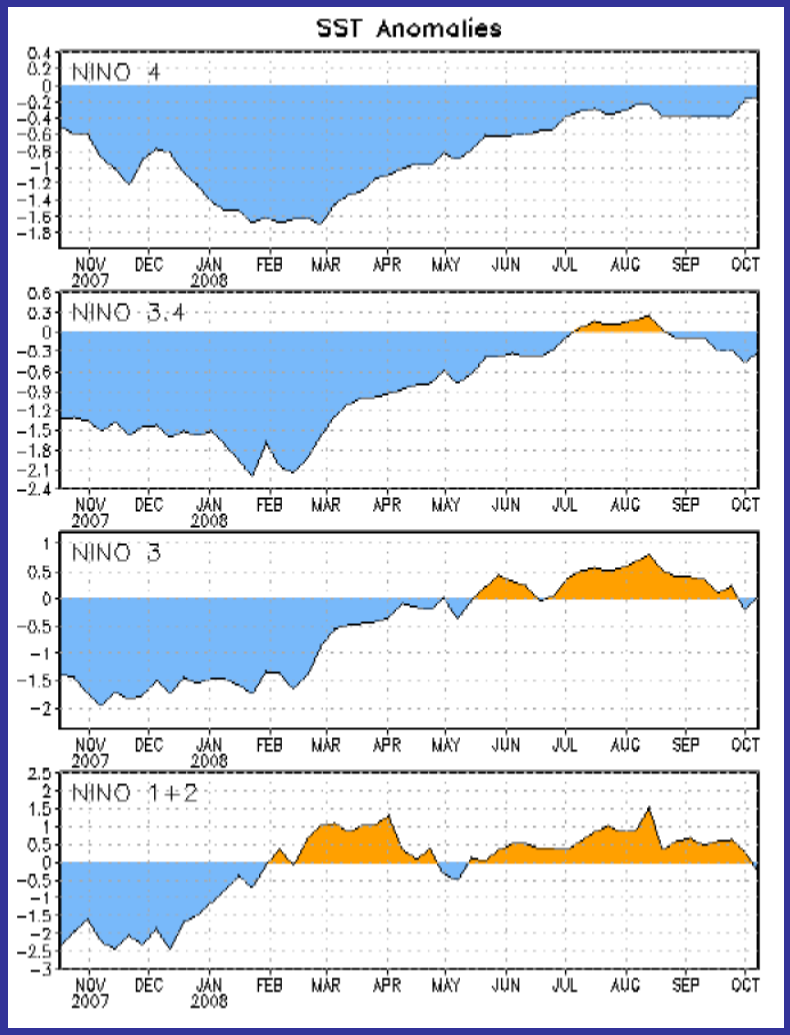
CPC: Equal Chances



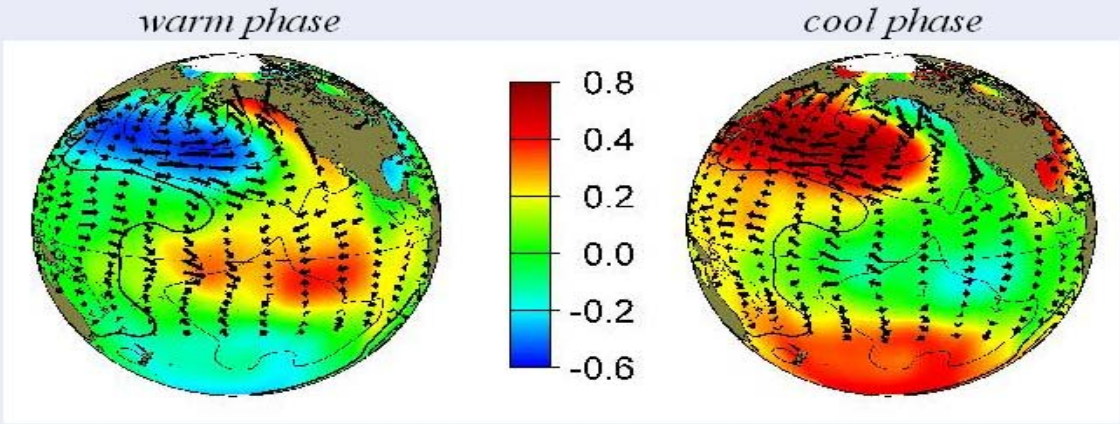
Current state of ENSO

- Last year was a moderate La Niña
- Neutral conditions in the tropics at present

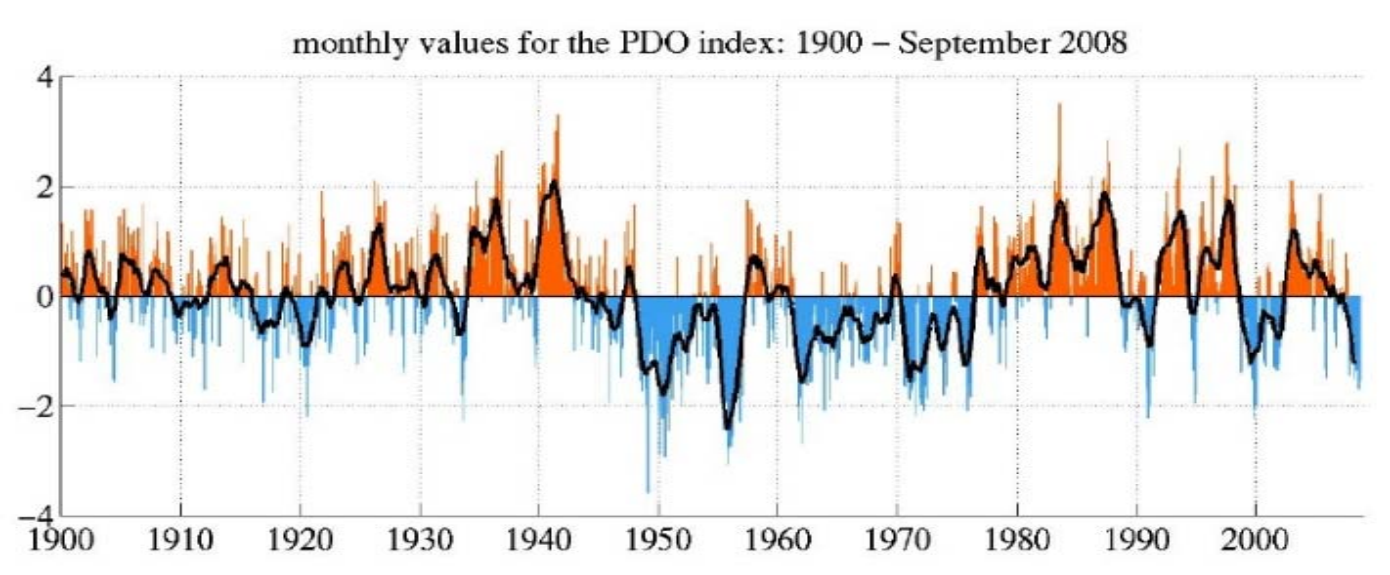




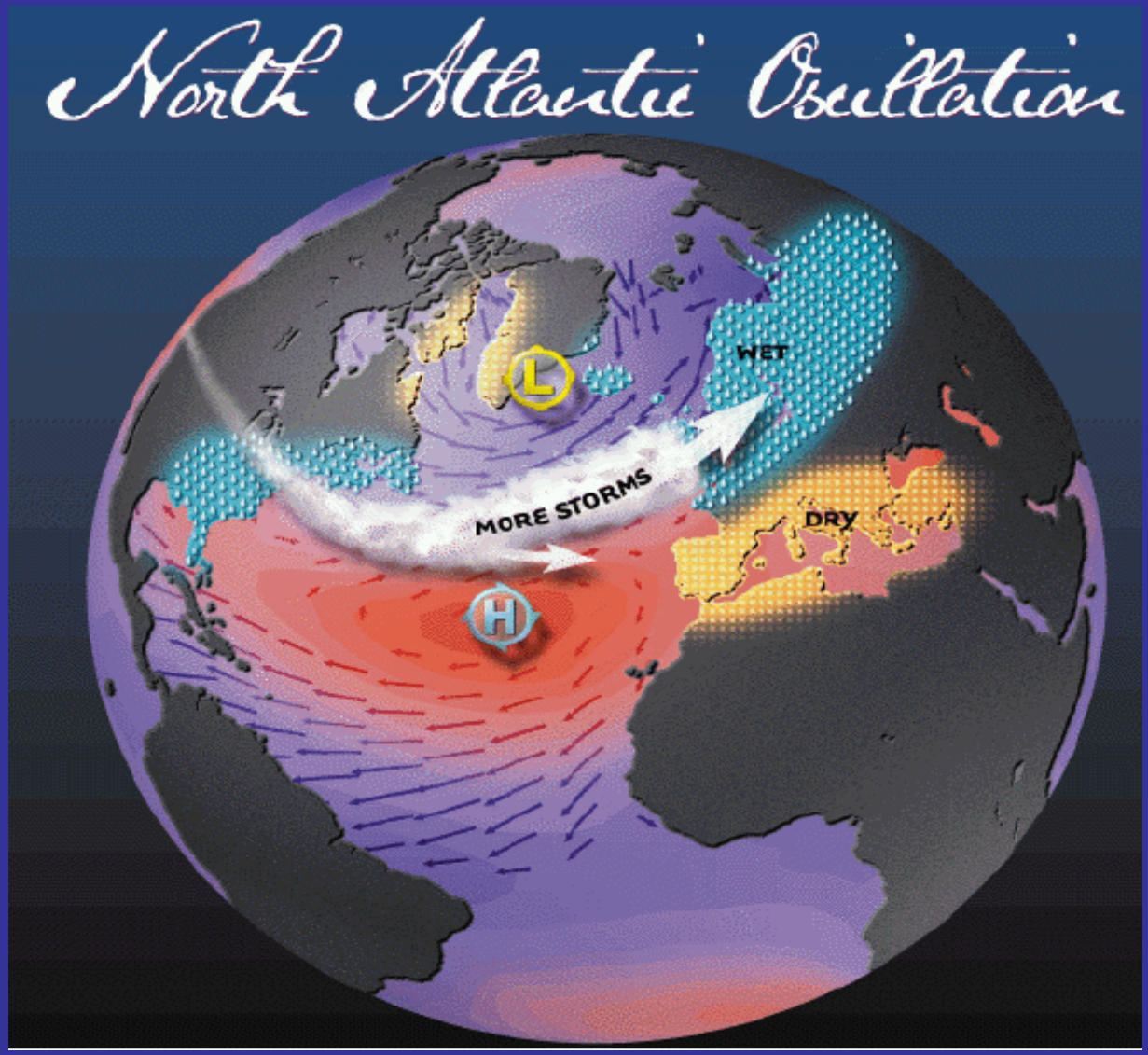
PDO – Pacific Decadal Oscillation



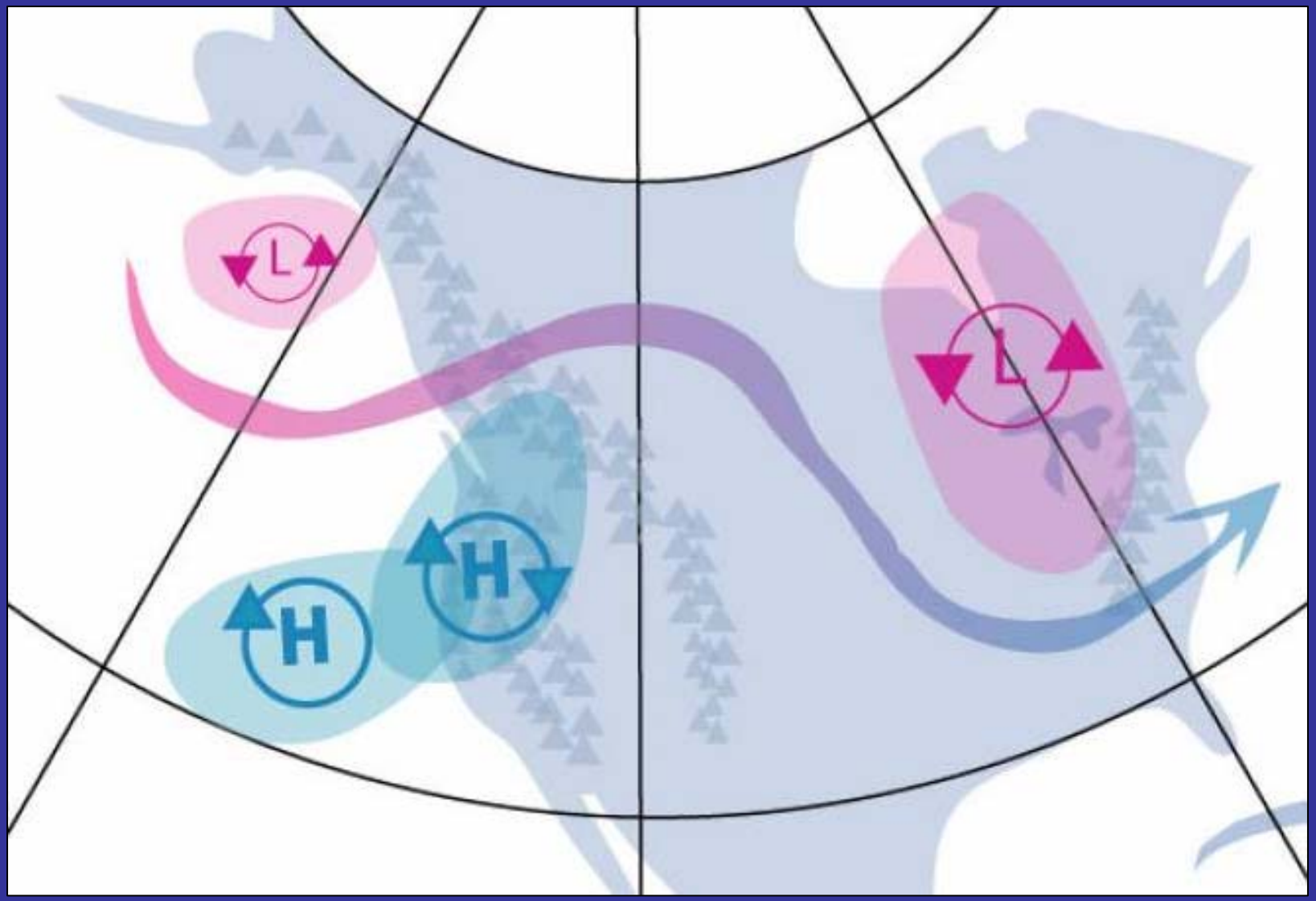
•PDO is stronger this year (-1.55 for Sept.)



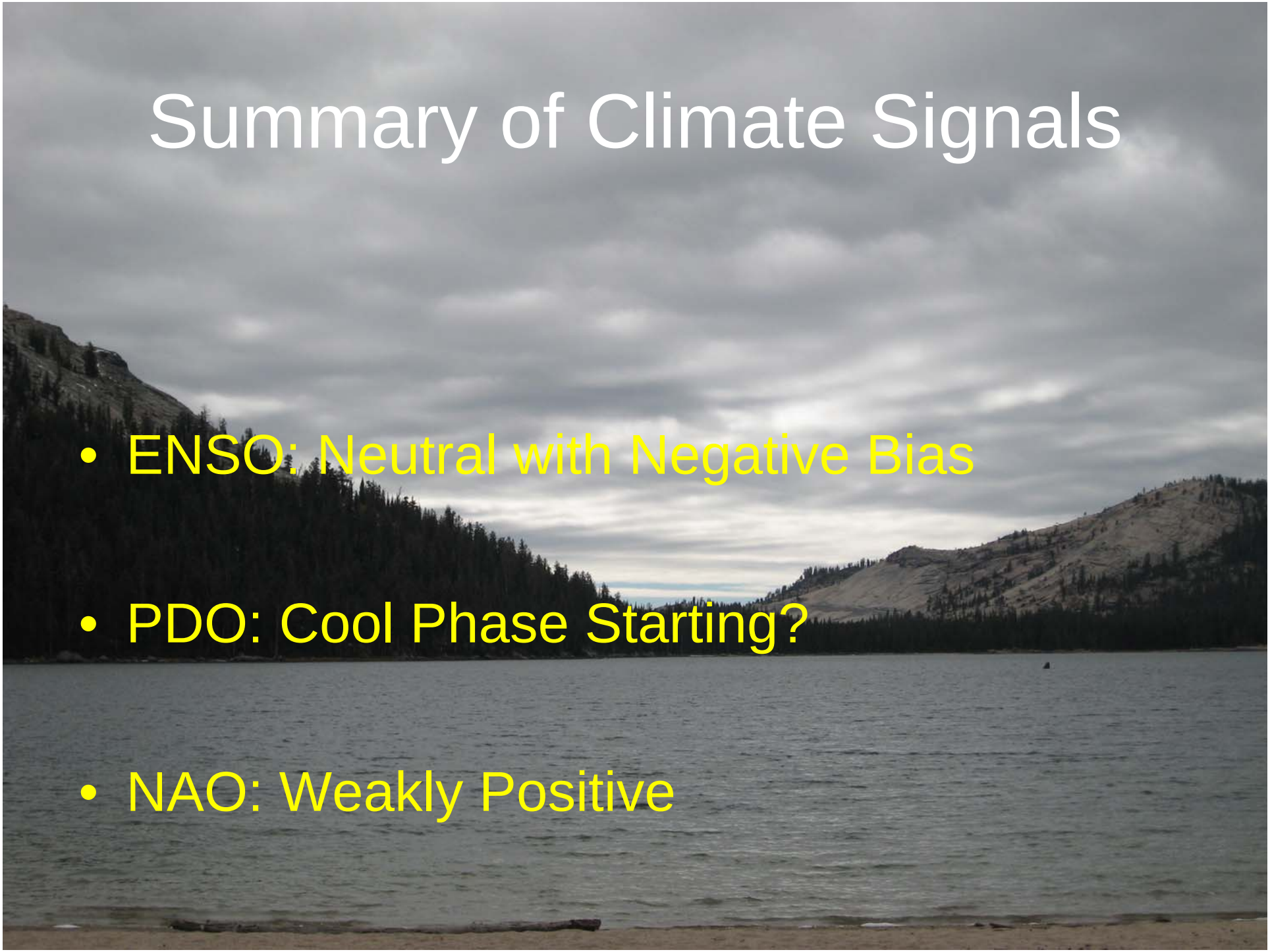
NAO positive phase



Why care about the NAO?



Summary of Climate Signals

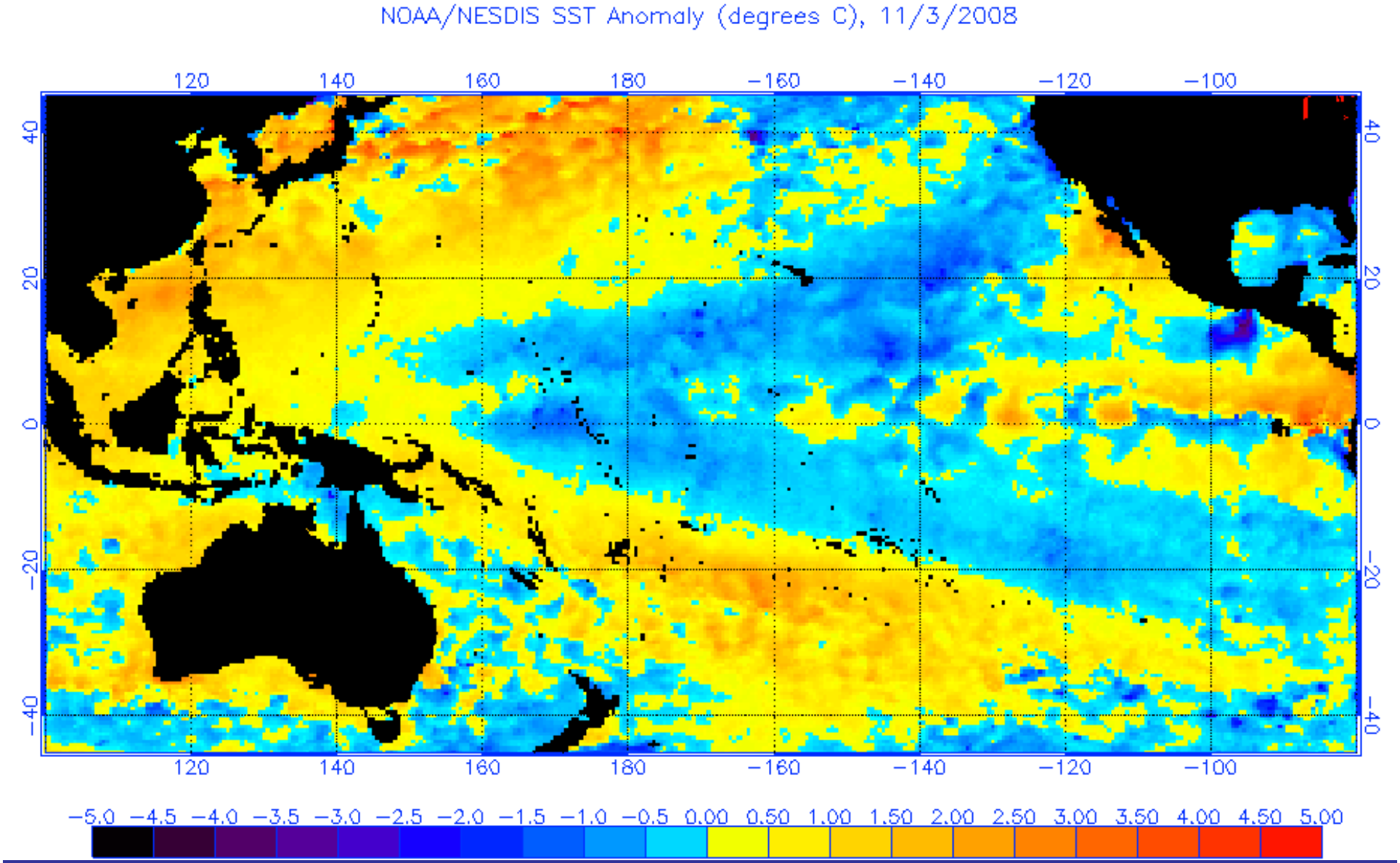


- ENSO: Neutral with Negative Bias
- PDO: Cool Phase Starting?
- NAO: Weakly Positive

What to Watch For

- Breakdown of 4-Corners High
- Warm Anomaly in Northern Pacific SSTs
- Madden Julian Oscillation Events

Current Pacific Sea Surface Temperature Anomaly Map



Expectations

- Northern California possible for average to above average in precipitation
- Decreasing precipitation totals with decreasing latitude (drier further south)
- Mountain/Valley precipitation differences still possible this year (strong last year)
- MJO Event can lead to big precip. event

CoCoRaHS – CA Edition

- Launch Date October 1, 2008
- Management Team from DWR and NWS
- Participation from UC campuses
- http://www.cocorahs.org


Questions?
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weather@water.ca.gov