

Summary

- Currently La Nina conditions continue to weaken. [slides 4 & 6].
- The subsurface equatorial Pacific has been warming rather quickly. Consistent with the surface weakening .[slide 7].
- If La Nina conditions persist into the April-June climate window chances for below normal rainfall increase for this climate window (slide 13).
- PDO is still in a moderate to strong conditions. This could impede El Nino development. (10)
- North Atlantic and the Hurricane Main Development region sea surface temperatures are lower than last tropical season although still above normal. Upcoming tropical season should be closer to normal compared to last years very active season . As always tropical storm outlooks depend on the evolution of ENSO. If El Nino develops this may also help suppress tropical activity.
- September-November rainfall has sharply decreased since 2005 (Slide 11).

U.S. Drought Monitor

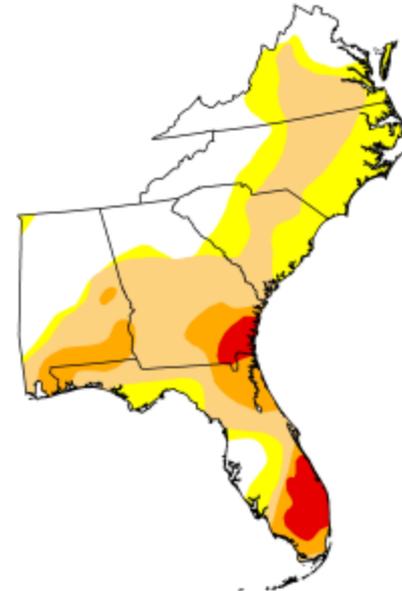
April 5, 2011

Valid 7 a.m. EST

Southeast

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	28.48	71.52	49.77	14.63	4.44	0.00
Last Week (03/29/2011 map)	22.51	77.49	53.24	22.40	6.25	0.00
3 Months Ago (01/04/2011 map)	24.87	75.13	52.19	24.10	5.91	0.00
Start of Calendar Year (12/28/2010 map)	23.01	76.99	51.84	23.55	5.63	0.00
Start of Water Year (09/28/2010 map)	18.18	81.82	38.04	10.32	0.90	0.00
One Year Ago (03/30/2010 map)	100.00	0.00	0.00	0.00	0.00	0.00



Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

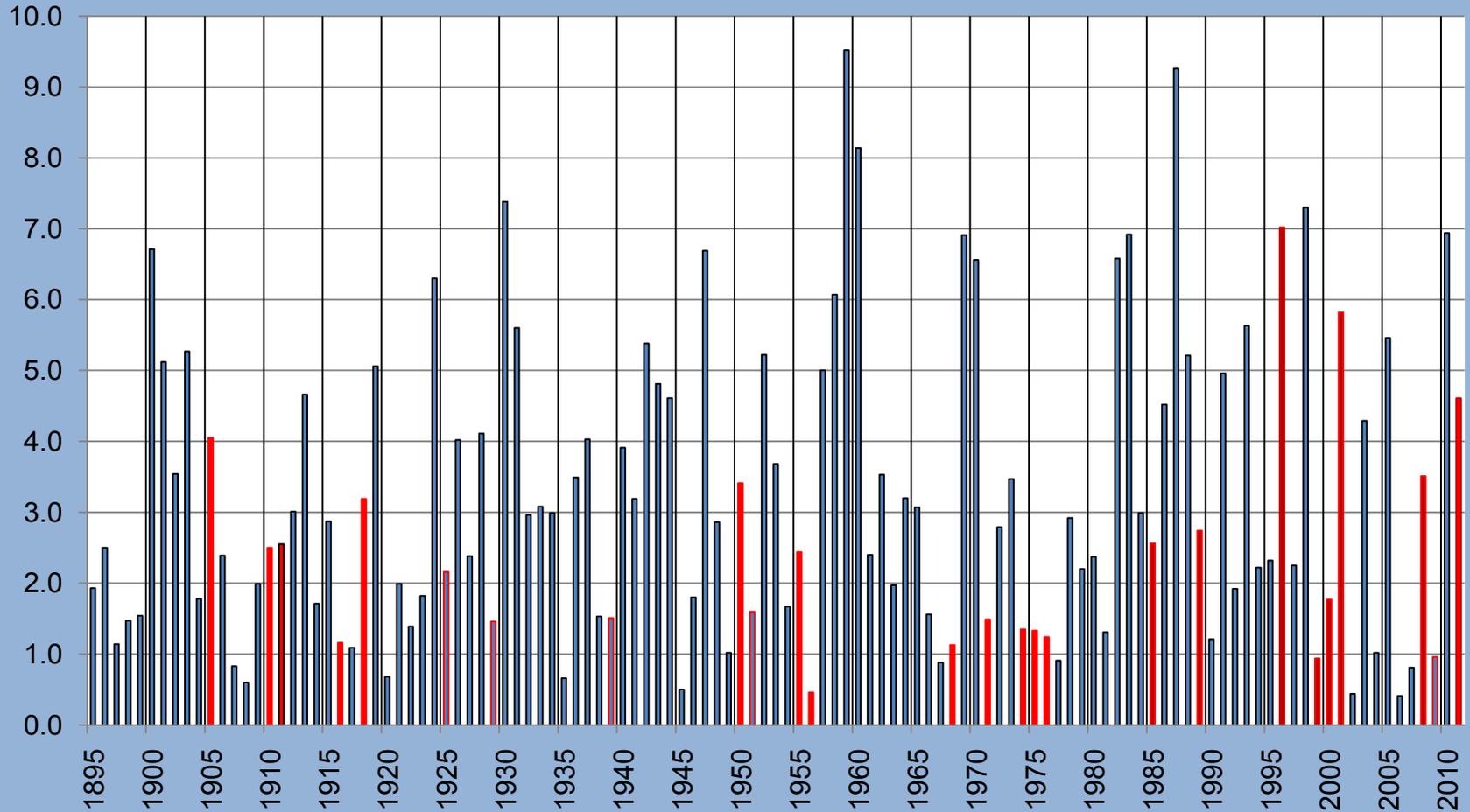
<http://drought.unl.edu/dm>



Released Thursday, April 7, 2011
National Drought Mitigation Center,

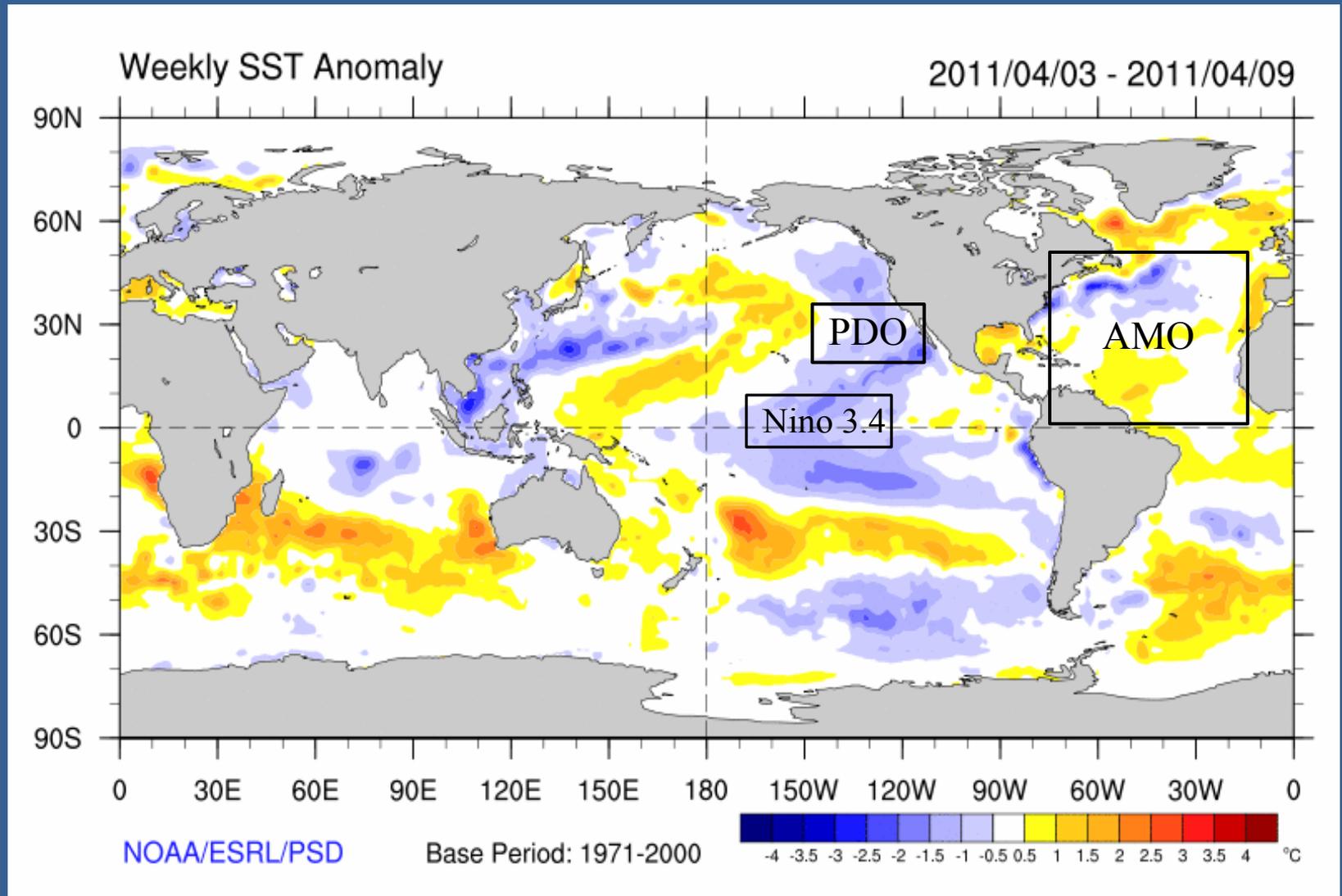
Central Florida has received a reprieve from drought with recent rains.

March Rainfall Climate Division 4



Red Bars indicate the La Nina events. Since 1995 there has been an increase in above normal rainfall in March during La Nina Events. The possible causes for this increased March rainfall is under investigation.

Weekly Sea Surface Temperature Anomaly



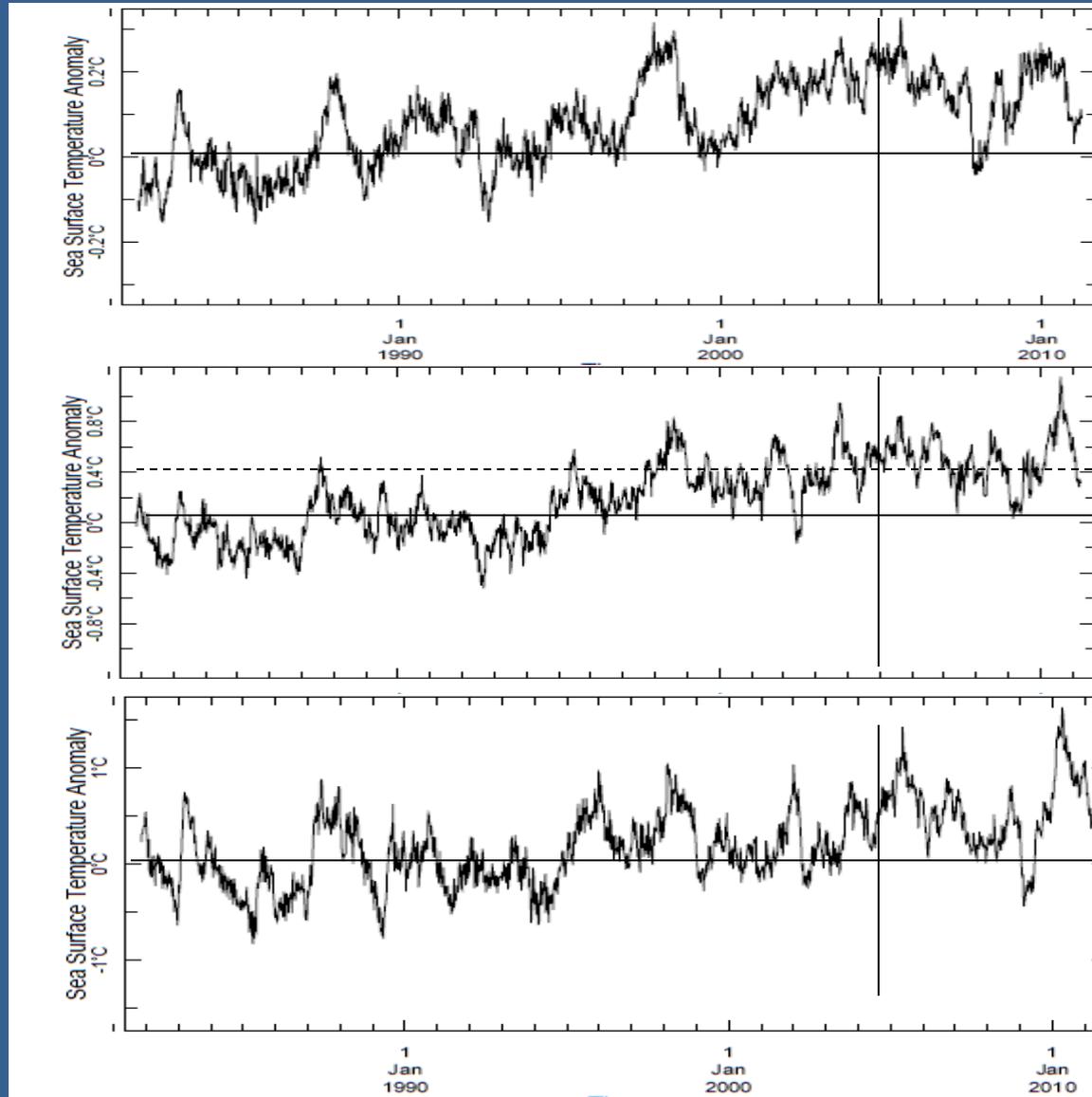
PDO is in cold Phase. ENSO cold but warming. AMO warm but cooling

Weekly Sea Surface Temperature Anomaly (SSTA)

Smith and Reynolds (1998)

1981-2000 Climatology

Global
Sea Surface
Temperature
Anomaly
(SSTA)



North Atlantic
SSTA

North
Tropical Atlantic
SSTA

Niño Region SST Departures (° C) Recent Evolution

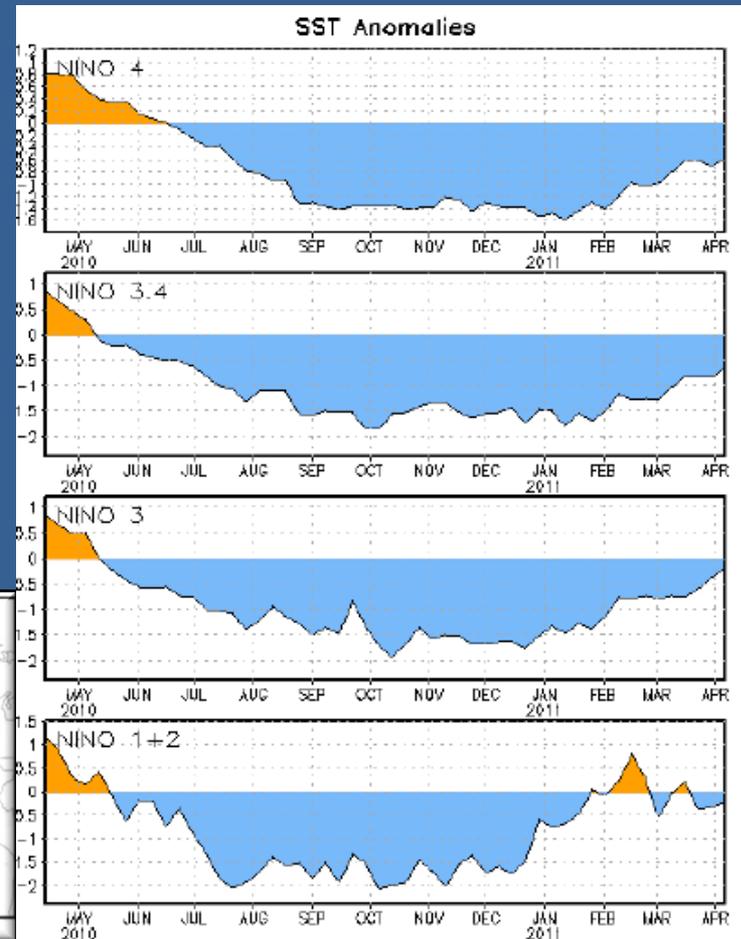
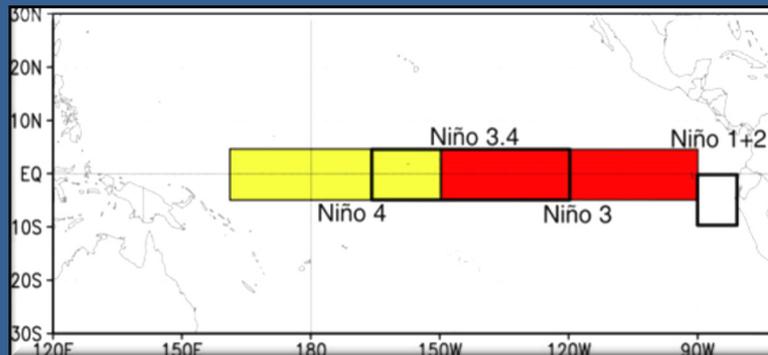
The latest weekly SST departures are:

Niño 4 -0.5°C

Niño 3.4 -0.6°C

Niño 3 -0.2°C

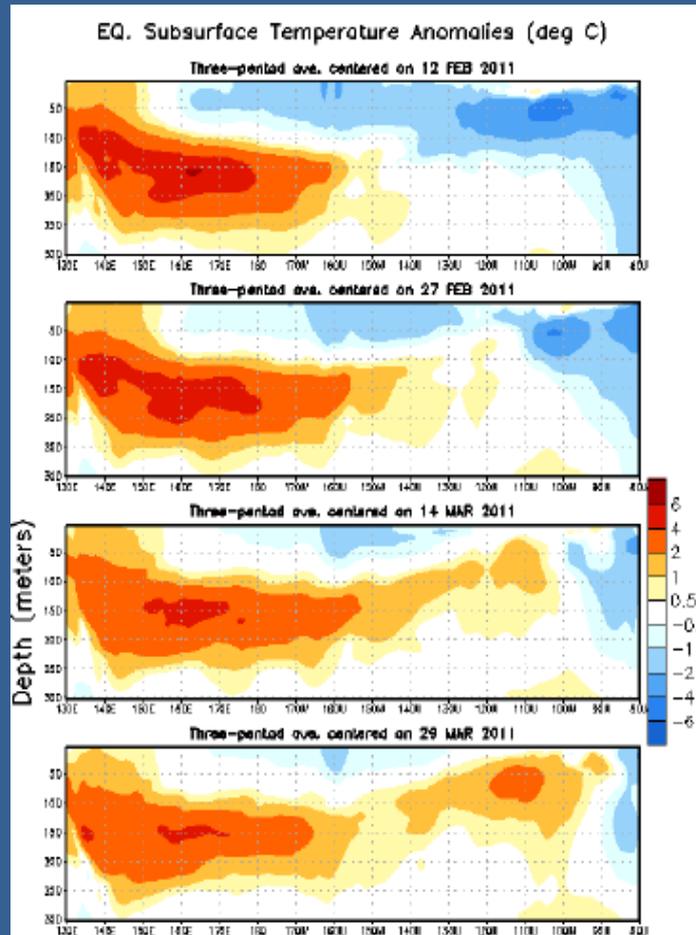
Niño 1+2 -0.2°C



Niño 3.4 is used to compute the official index.

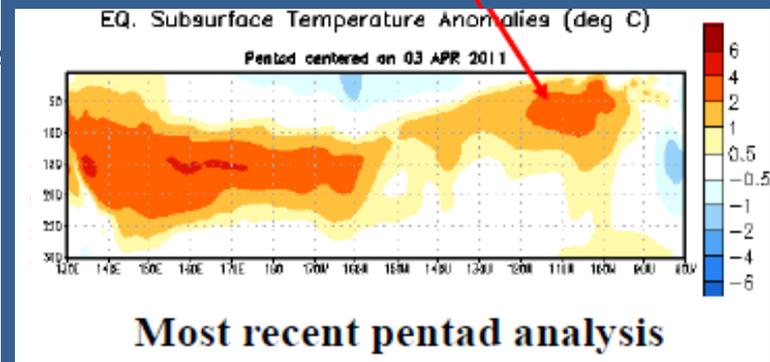
Equatorial Pacific Sub Surface Temperature Anomaly

Time



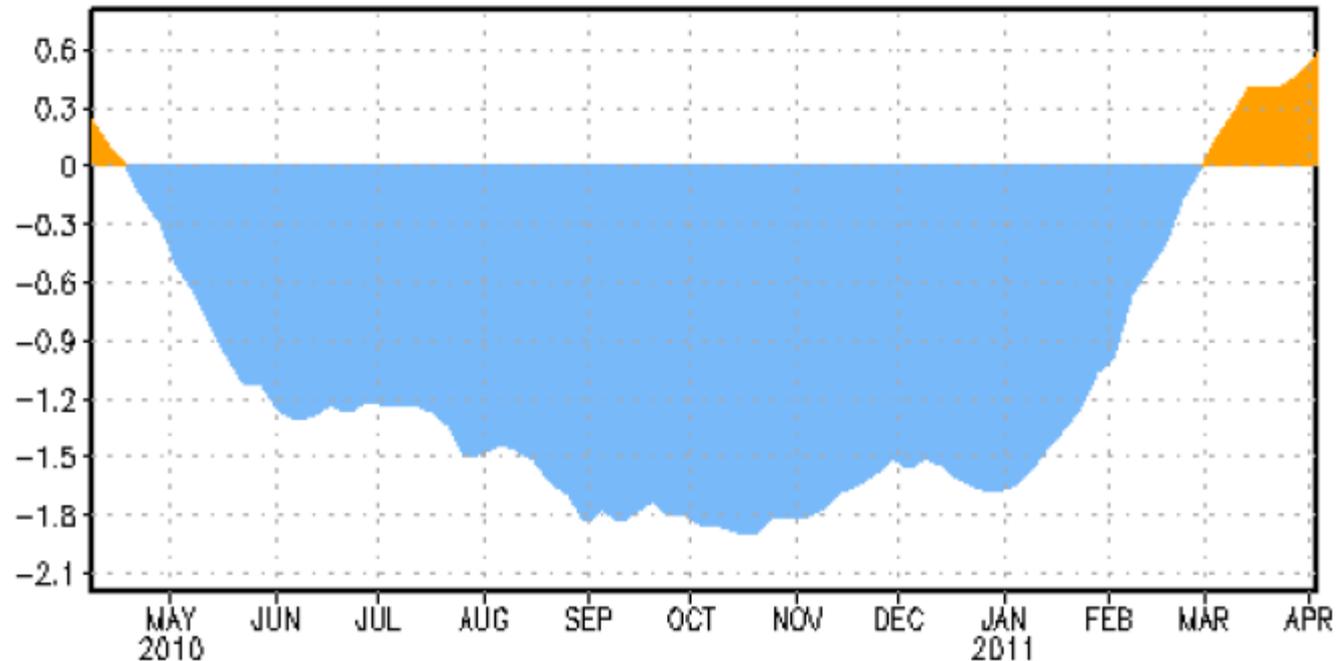
Longitude

- Since late December 2010, positive subsurface temperature anomalies have expanded eastward at depth (100-300m), with anomalies in the central and eastern Pacific switching to positive.
- Positive anomalies in the eastern Pacific have continued to increase in the most recent period.



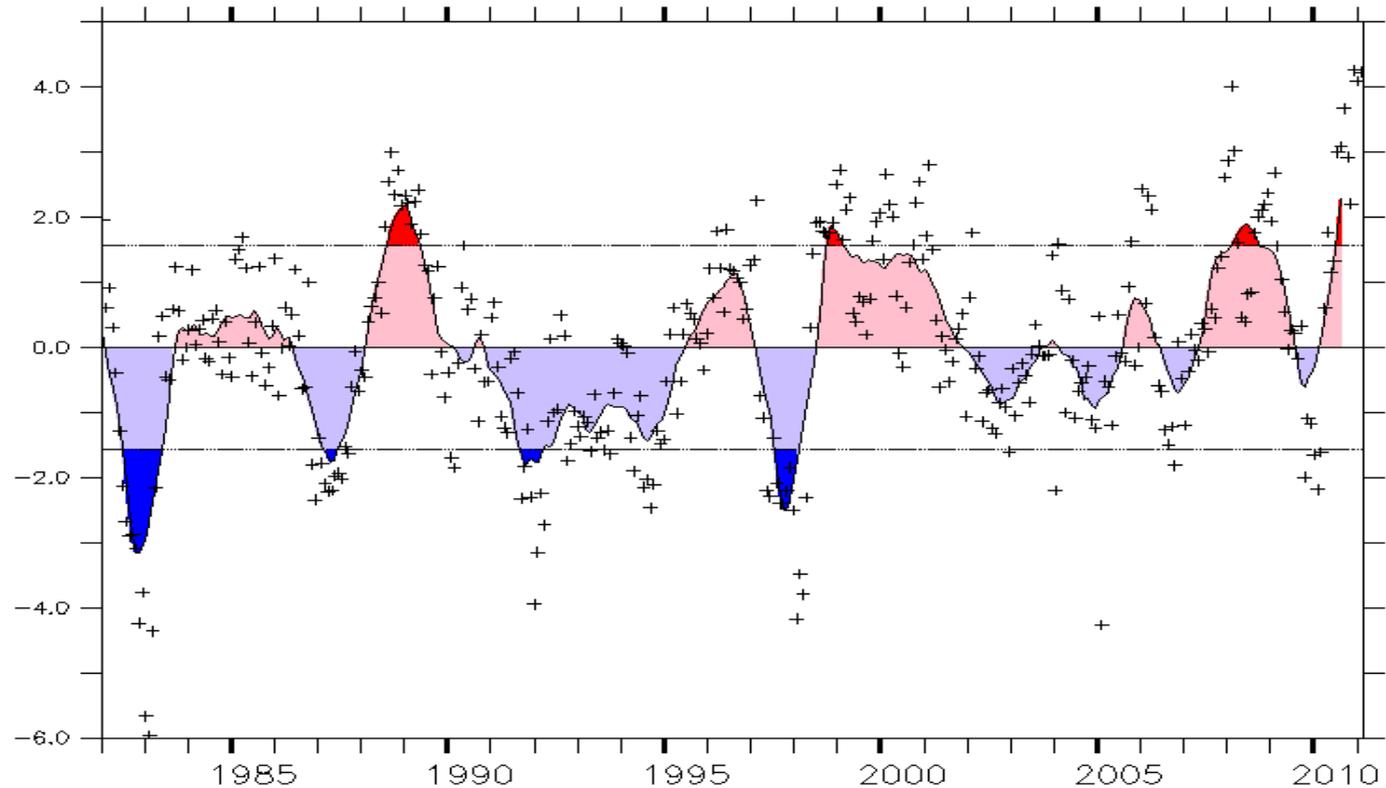
Weekly Equatorial Pacific Upper Ocean (0-300 m) Average Temperature Anomaly

Equatorial upper-ocean temperature anomalies (°C) 180-100°W



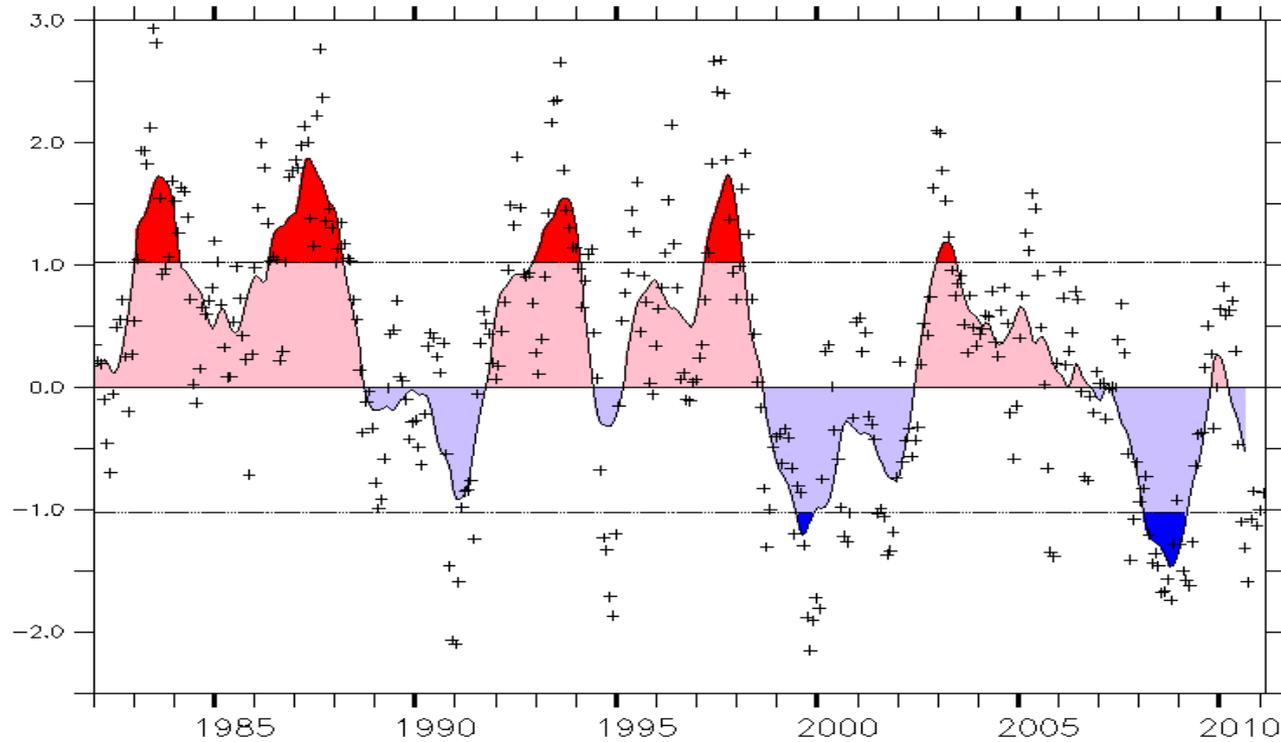
Large positive anomalies associated with El Niño decreased beginning in late February 2010, becoming negative in late April. The negative anomalies since June 2010 are consistent with La Niña. In January 2011 negative anomalies began to decrease in magnitude, with anomalies becoming positive in March.

Southern Oscillation Index was at record levels



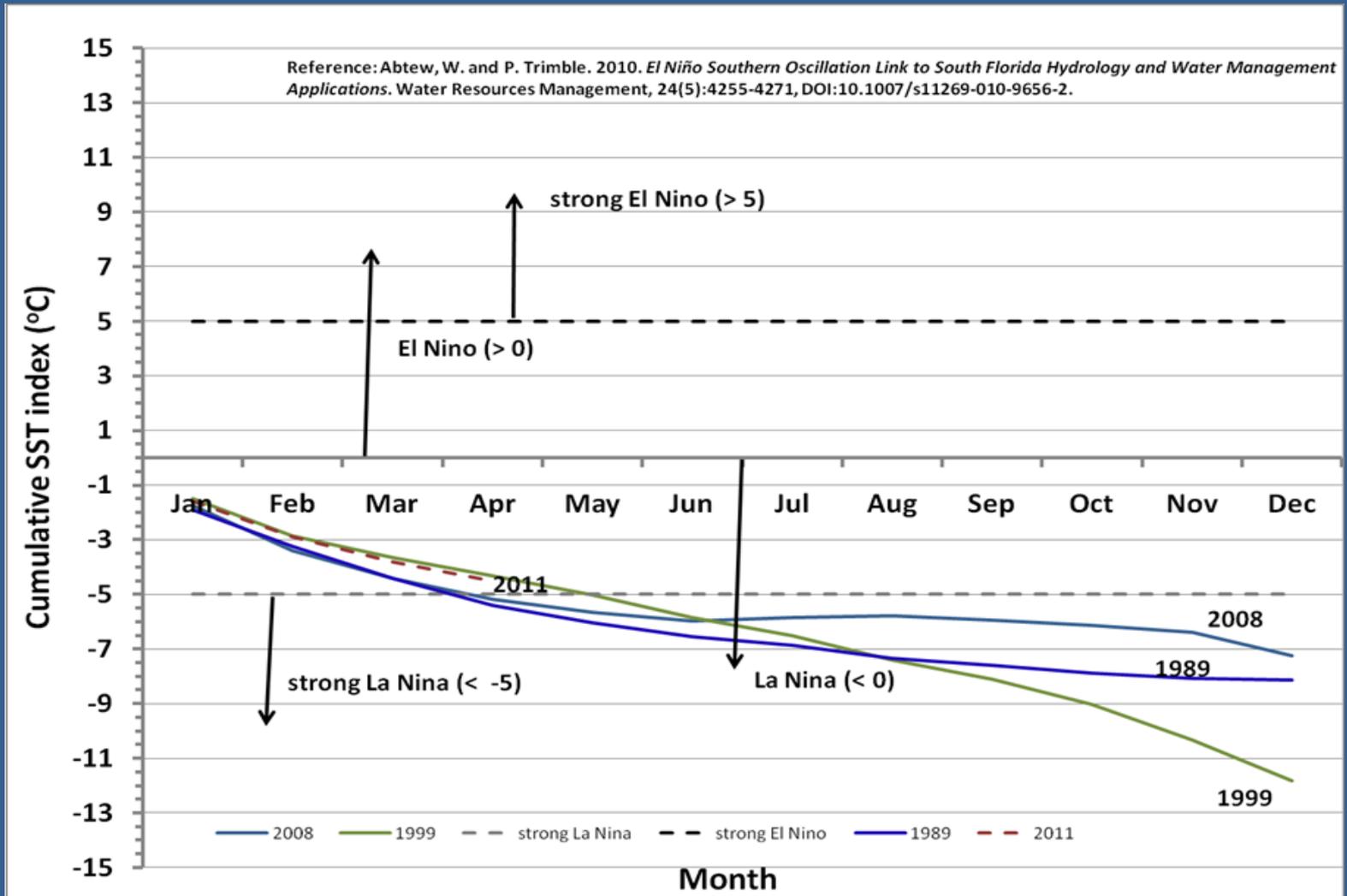
Southern Oscillation index have been at record high levels in 2011.
Positive SOI are associated with La Nina conditions.

Pacific Decadal Oscillation is currently moderate to strong



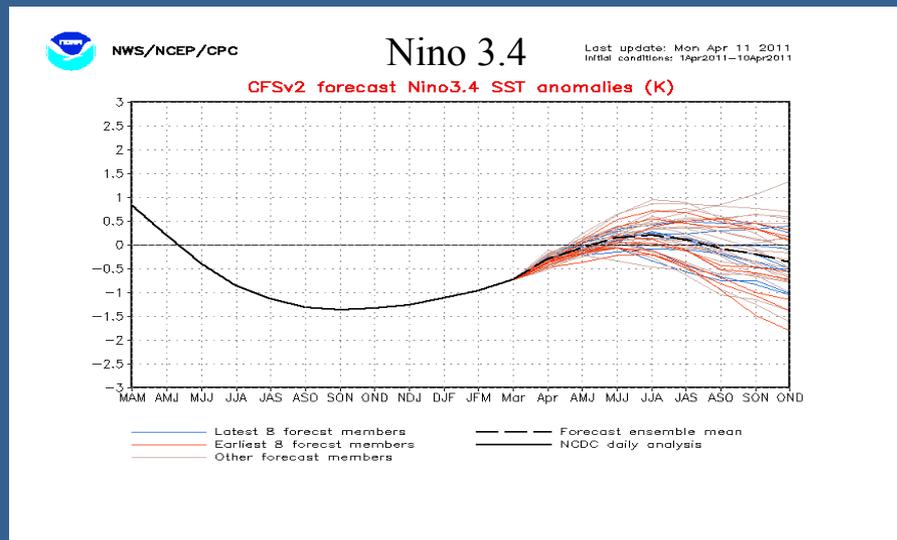
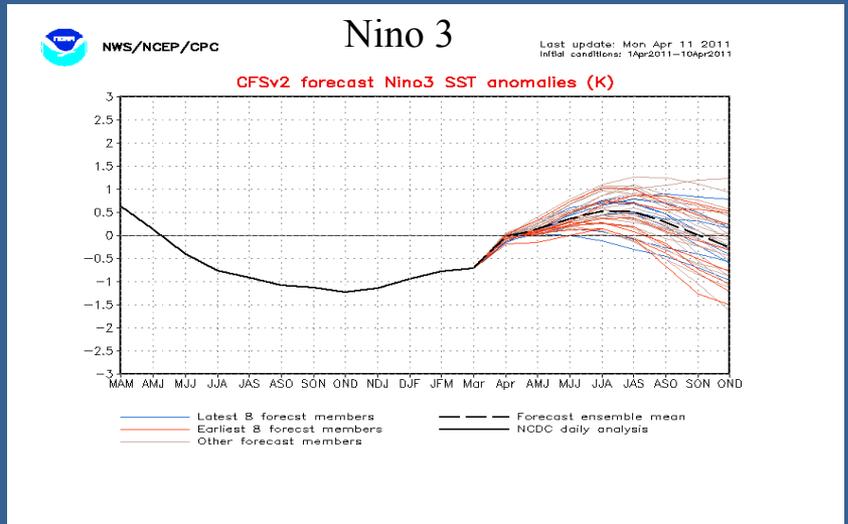
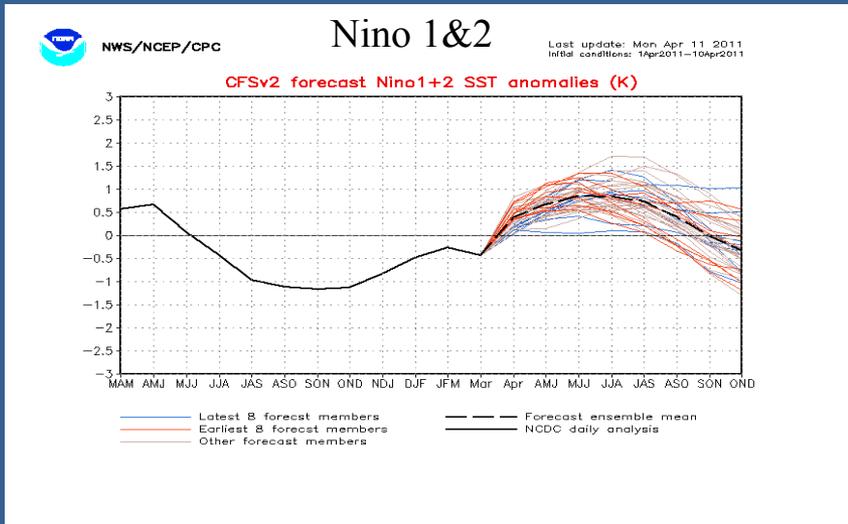
The PDO has been trending downward 2007

Cumulative Nino Index (CNI)



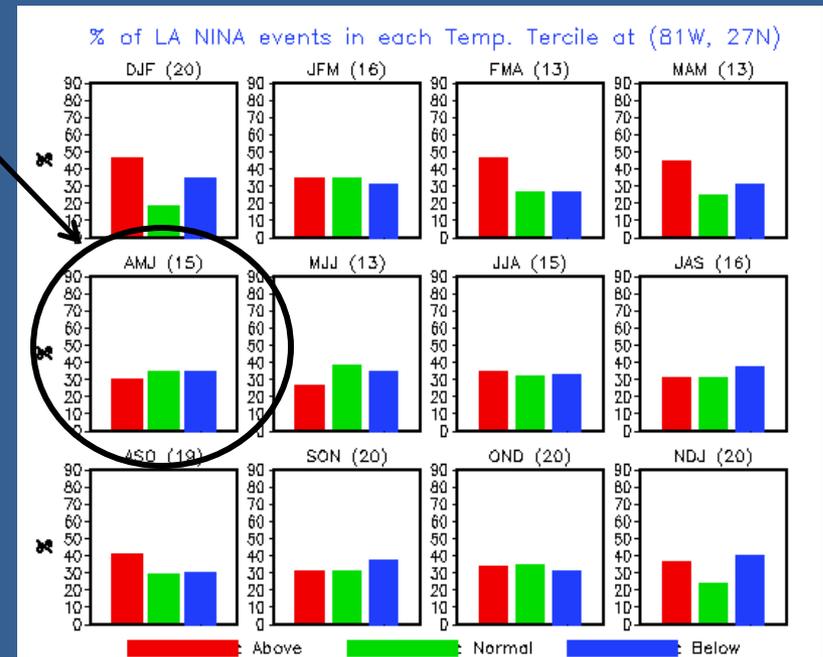
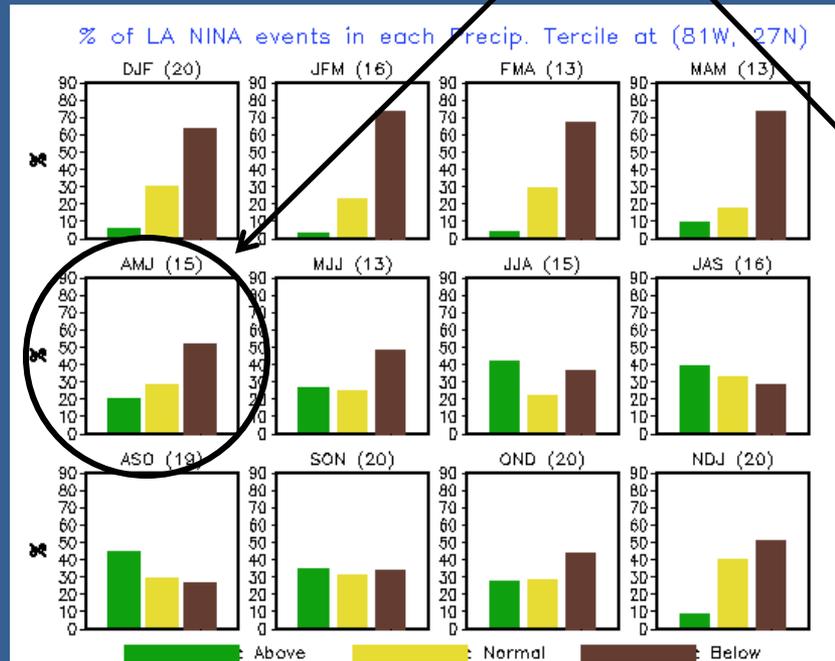
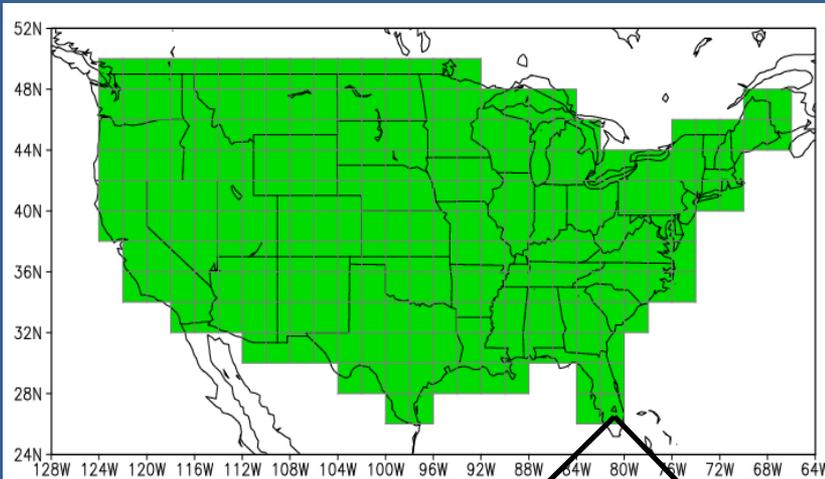
CNI has been decreasing. This is expected to slow during the summer.

Climate Forecasts continues to trend nino3.4 toward neutral. However, this does not rule out a return to La Nina next year.



Rainfall and Temperature Probability Shifts in south Florida during La Nina Events (CPC) (Probability of events in upper middle and lower tercile)

http://www.cpc.ncep.noaa.gov/products/precip/CWlink/ENSO/ens_o_page_text.htm



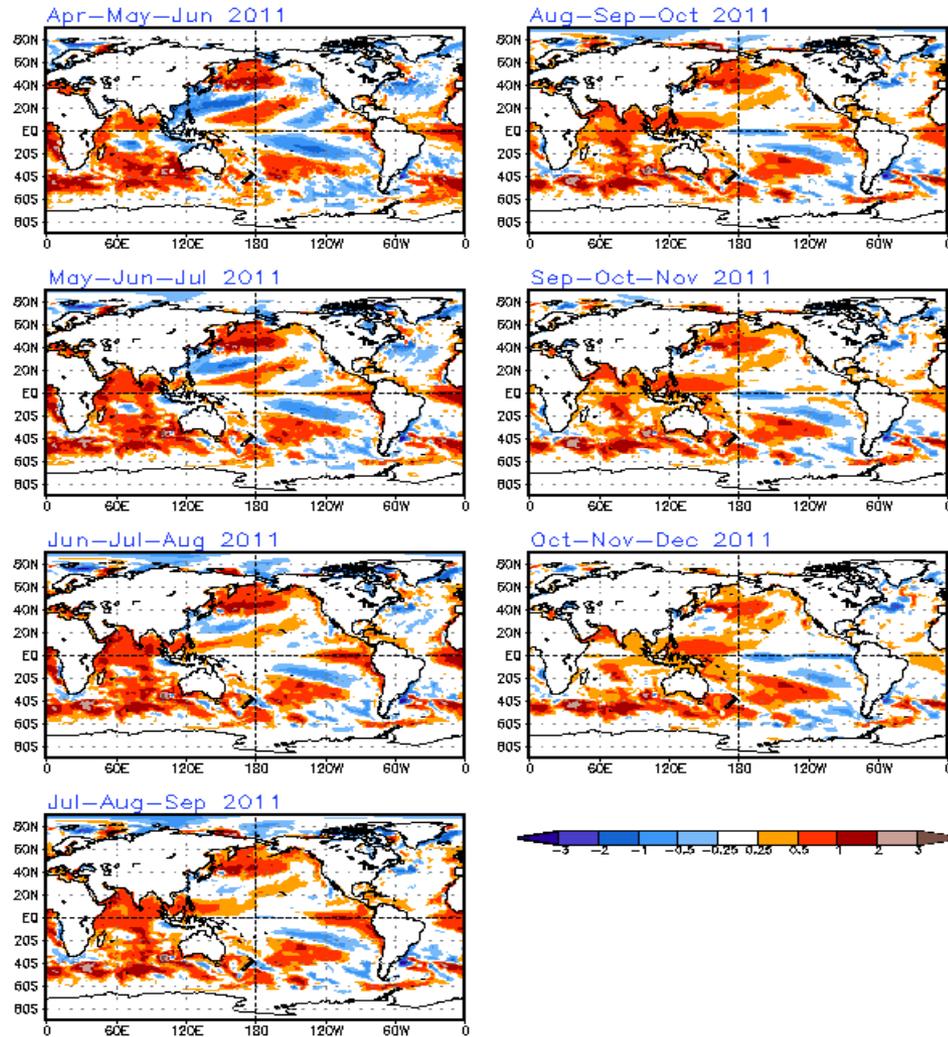


NWS/NCEP/CPC

Initial conditions: 1Apr2011–10Apr2011

Last update: Mon Apr 11 2011

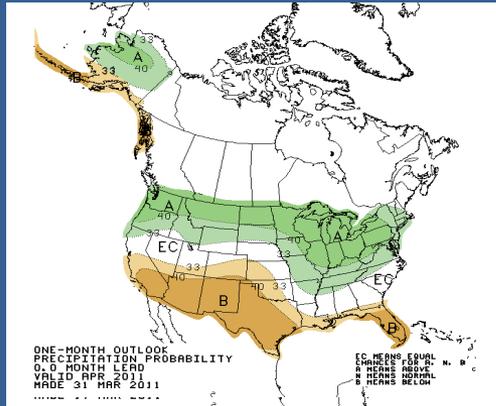
CFSv2 seasonal SST (K)



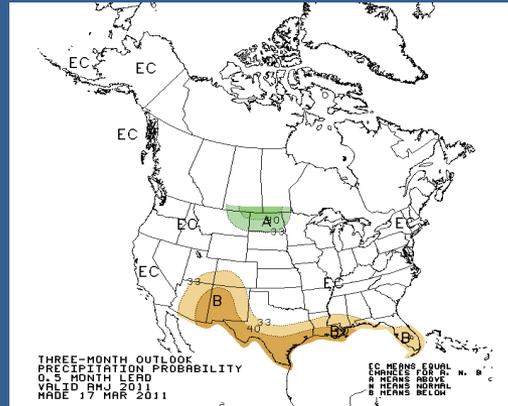
Official Three Month Overlapping Seasonal Outlooks

Climate Prediction Center

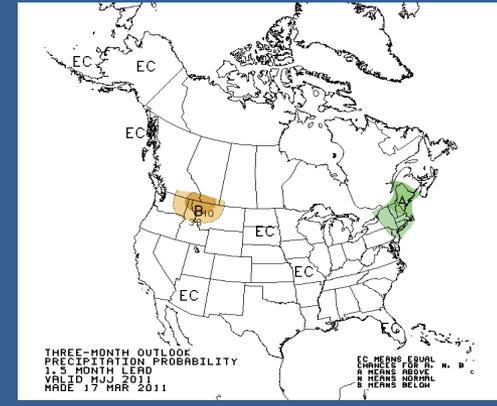
April



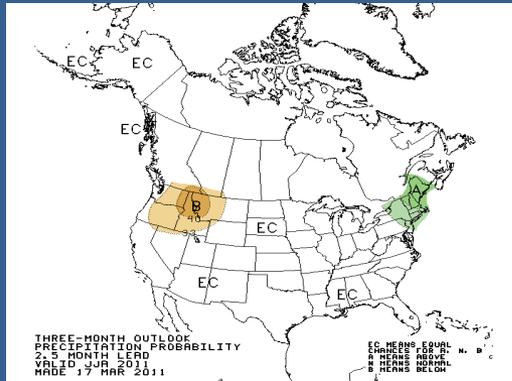
AMJ



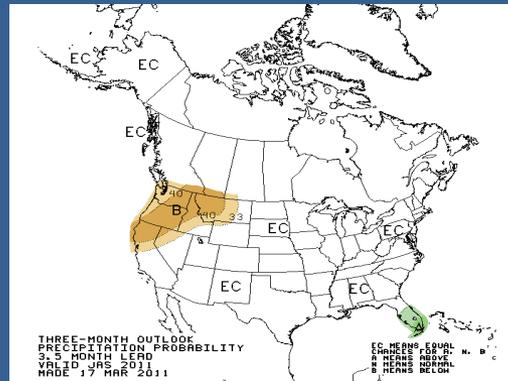
MJJ



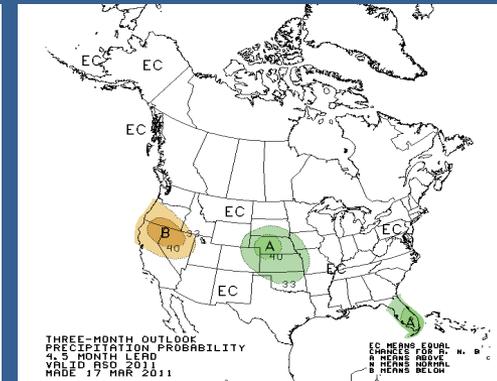
JJA



JAS



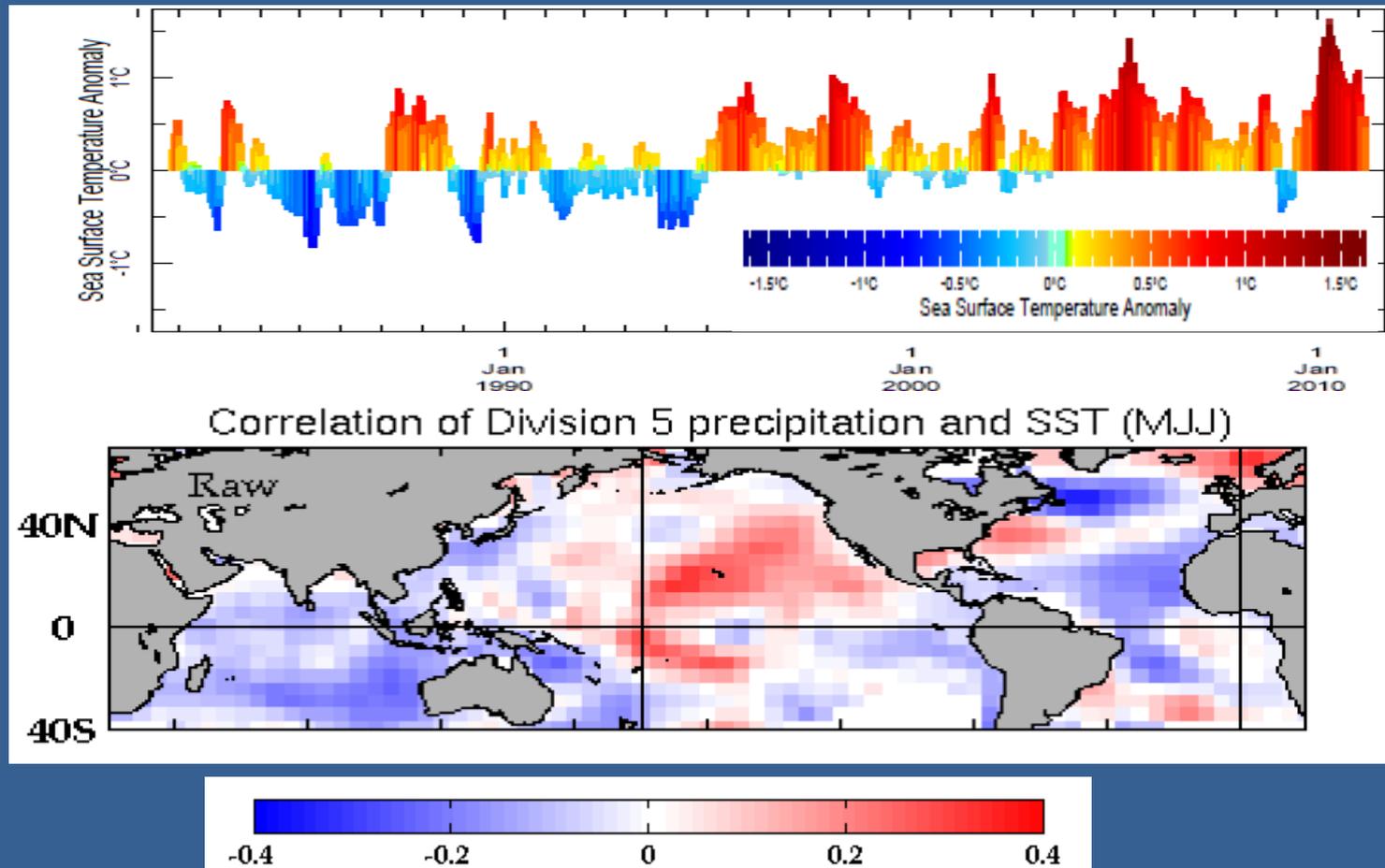
ASO



The warm tropical Atlantic and La Nina conditions may be indicators of a possible late start of the wet season in south Florida not indicated in the CPC outlook.

Backup Slides

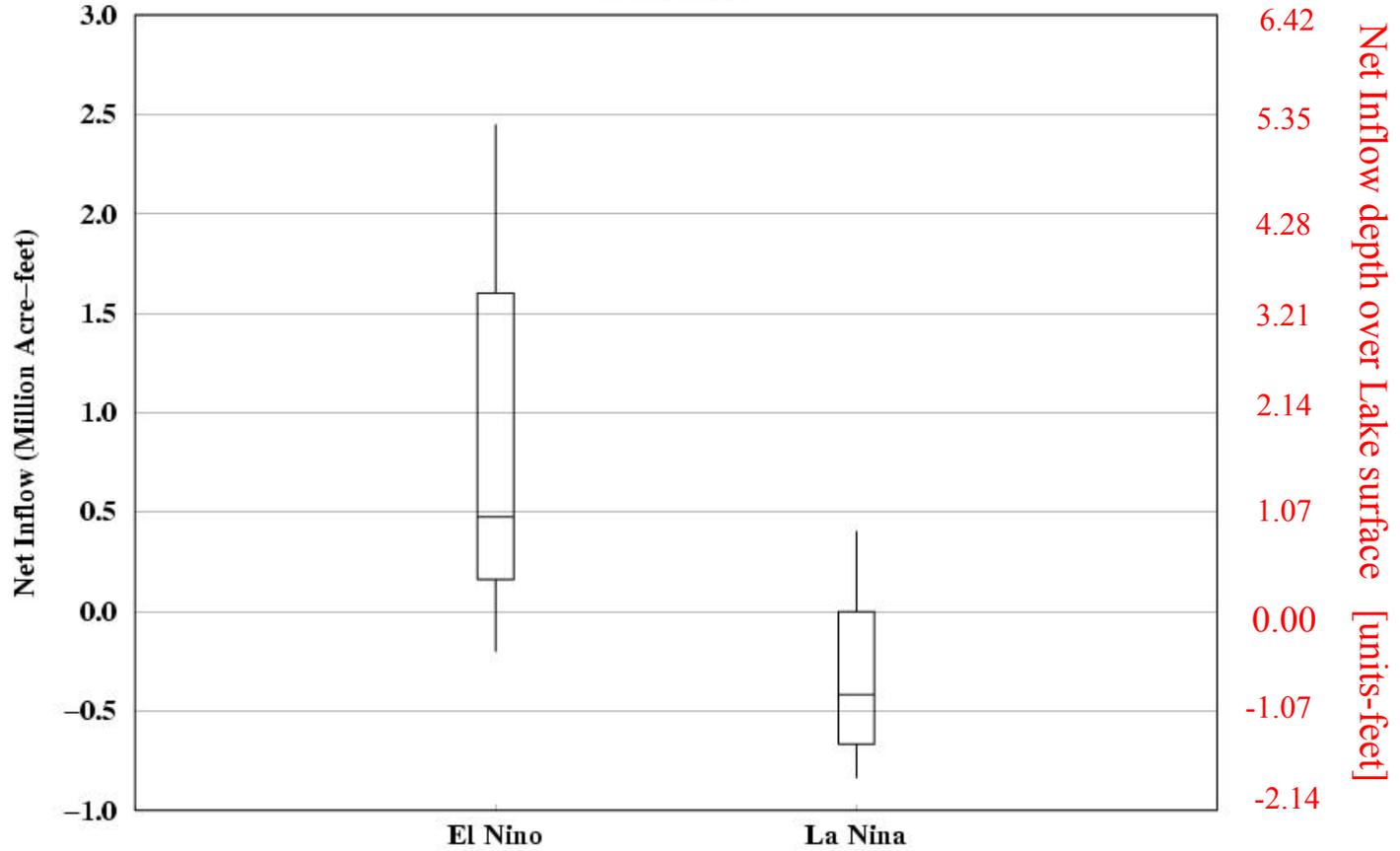
North Tropical Atlantic Sea Surface Temperature Anomalies favor less rainfall for the May-June-July Climate Window



Map of correlation coefficient of sea surface temperature Everglades rainfall. The North tropical Atlantic and eastern equatorial Pacific STTA is negatively correlated to Everglades rainfall. Thus the warm SSTA in the Atlantic favor a below average rainfall.

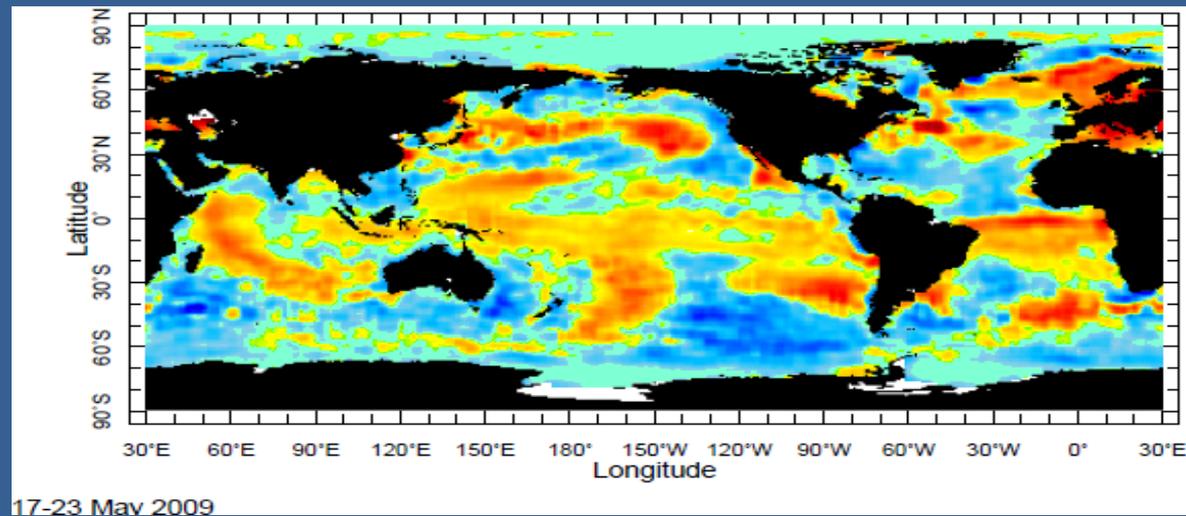
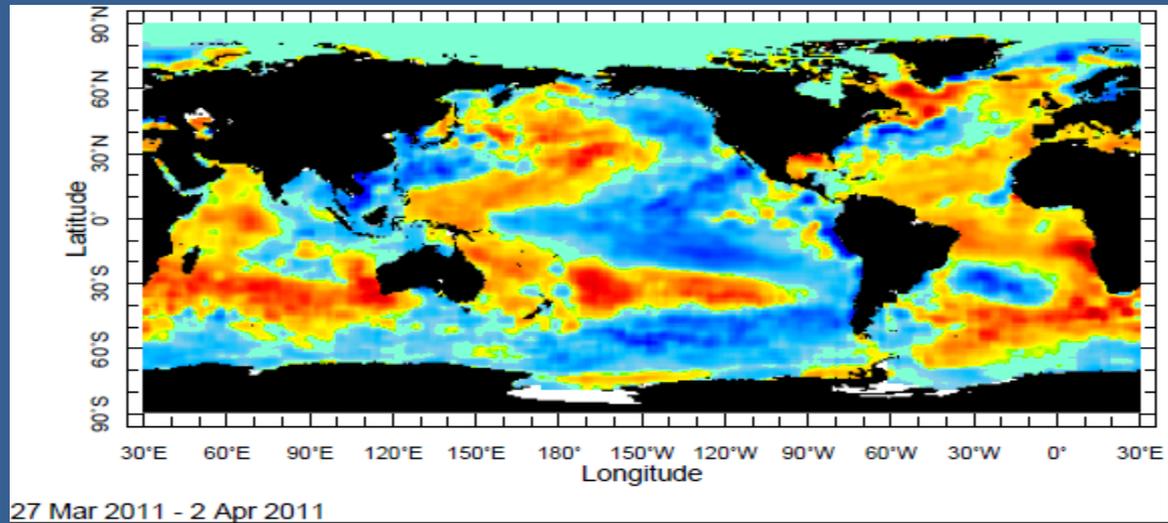
Lake Okeechobee Inflow

Dry Season

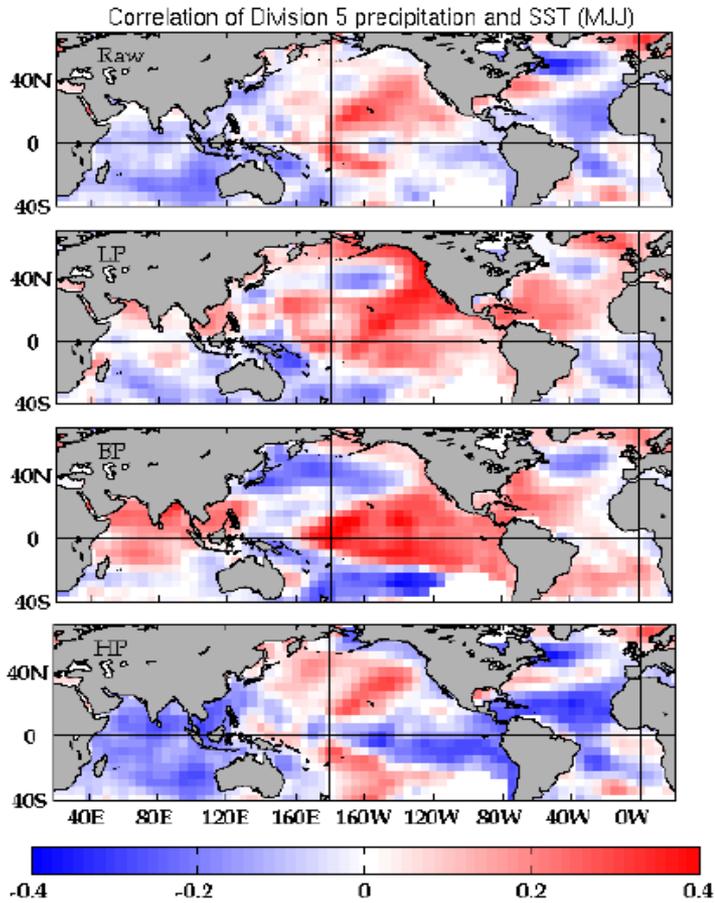


ENSO as defined by Center for Ocean-Atmospheric Prediction.

Below average ssta in the tropical north Atlantic Ocean
were associated with a very wet conditions in Florida in 2009

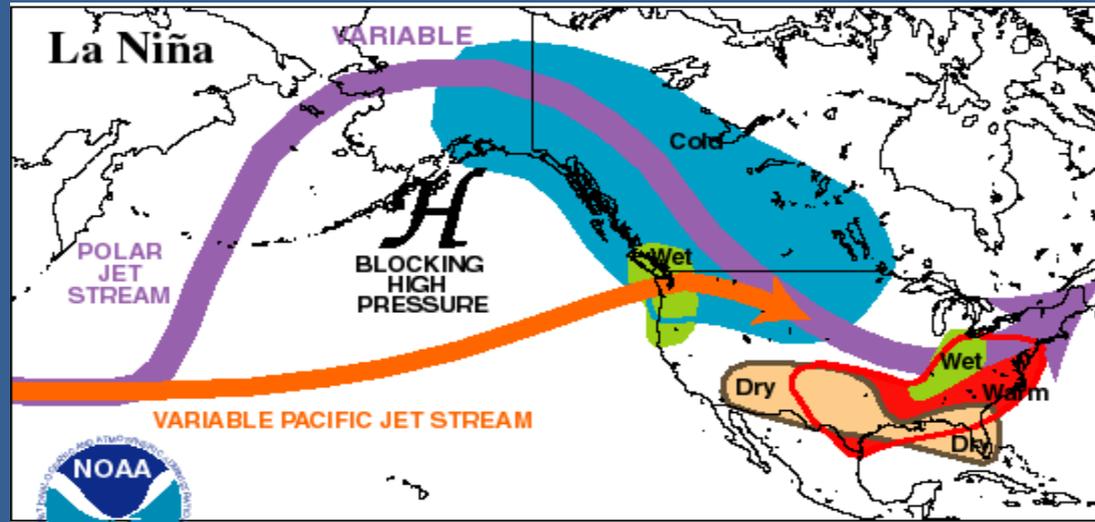


Everglades Rainfall correlated to sea surface temperature anomalies

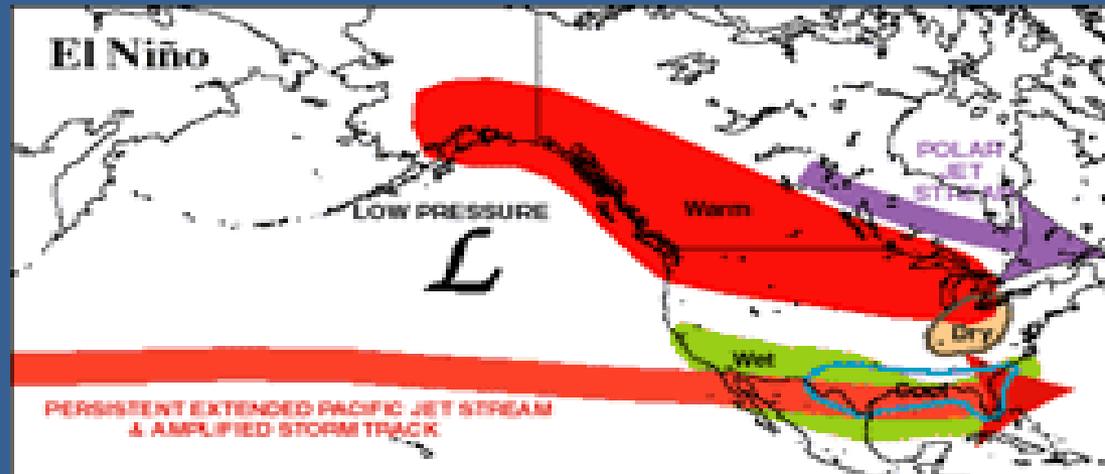


Florida Normally has drier conditions during La Niña

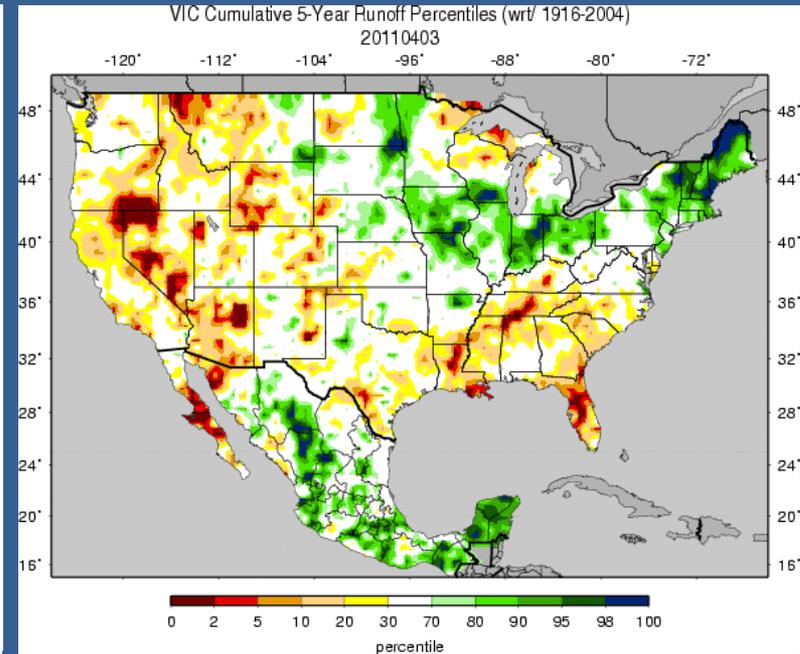
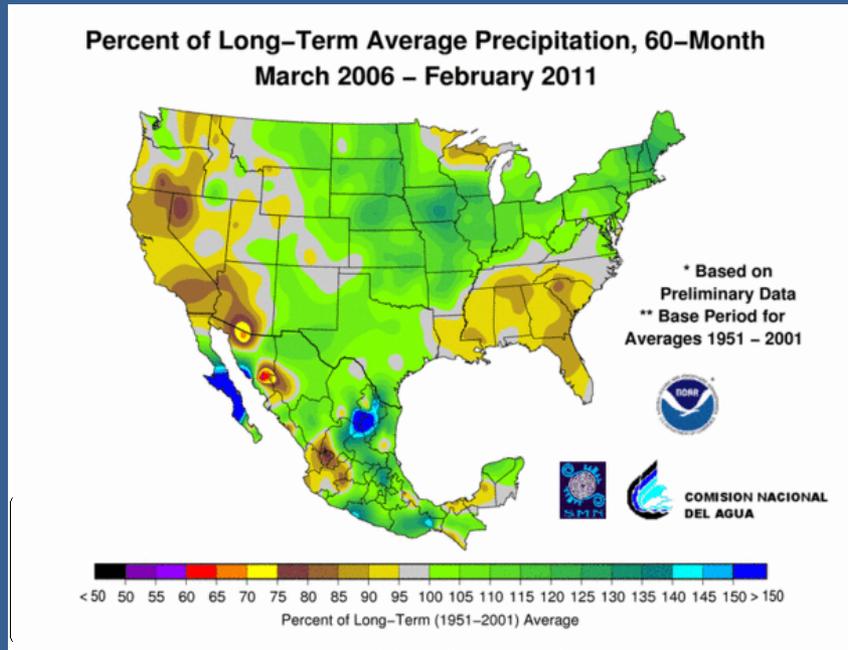
During La Niña conditions the Pacific jet stream and storm track tend to flow north of Florida producing drier conditions within south Florida.



During El Niño conditions the Pacific jet stream and storm track tend to flow across Florida producing wetter conditions within the state.



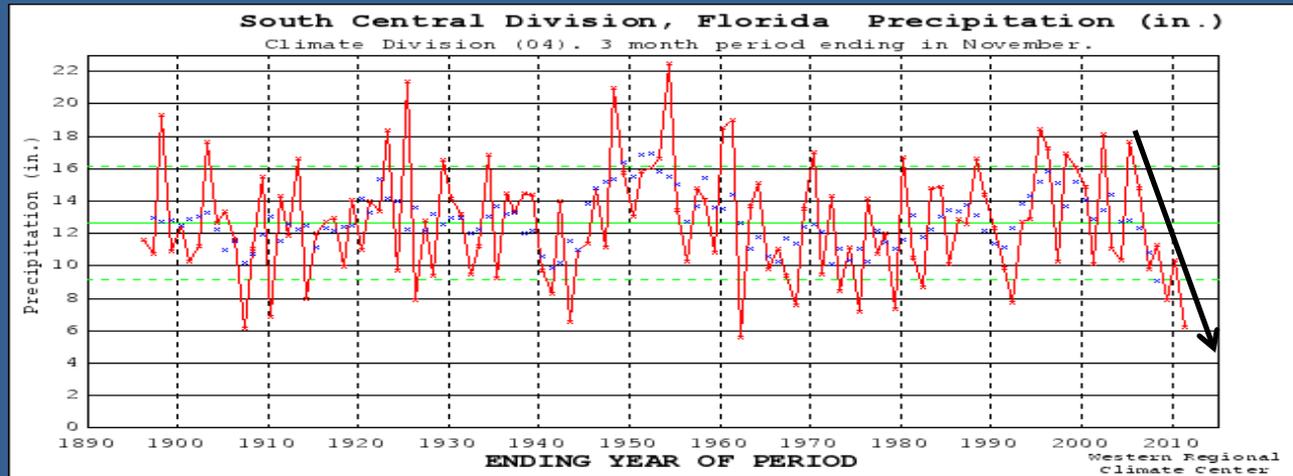
Rainfall the last 60- months over a large portion of the District has been at 5 to 10% less of normal



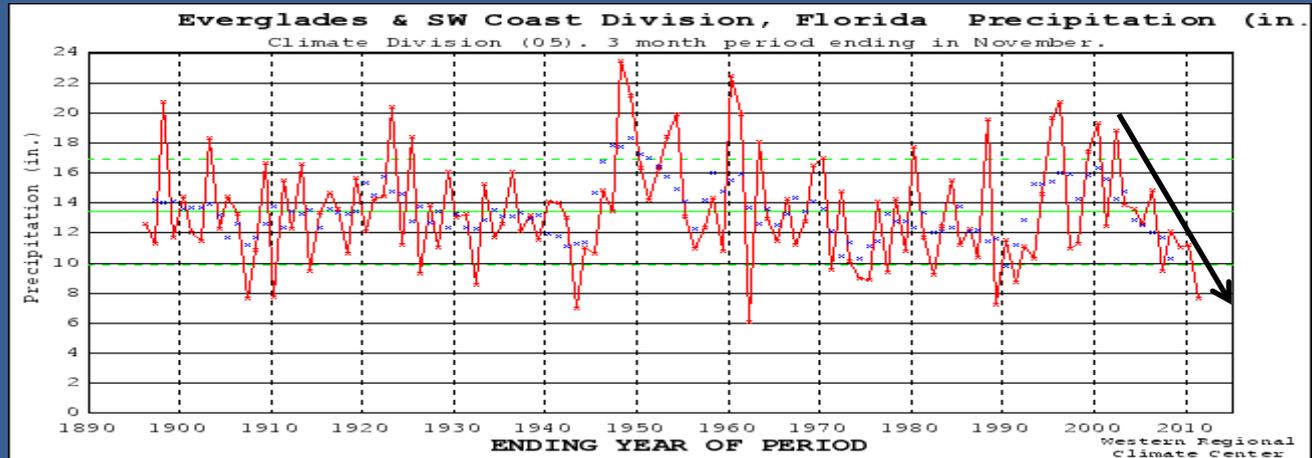
Areal view of the 5- year decline in rainfall and runoff.

Late tropical season rainfall declines since 2005

Climate Division 4



Climate Division 5



In recent years there has been a marked declines in the late tropical season rainfall has been present.