

# Water Conditions Summary

## South Florida Water Management District Governing Board Meeting

March 14, 2013

Tommy B. Strowd, P.E., Director  
Operations, Maintenance & Construction Division

# SFWMD

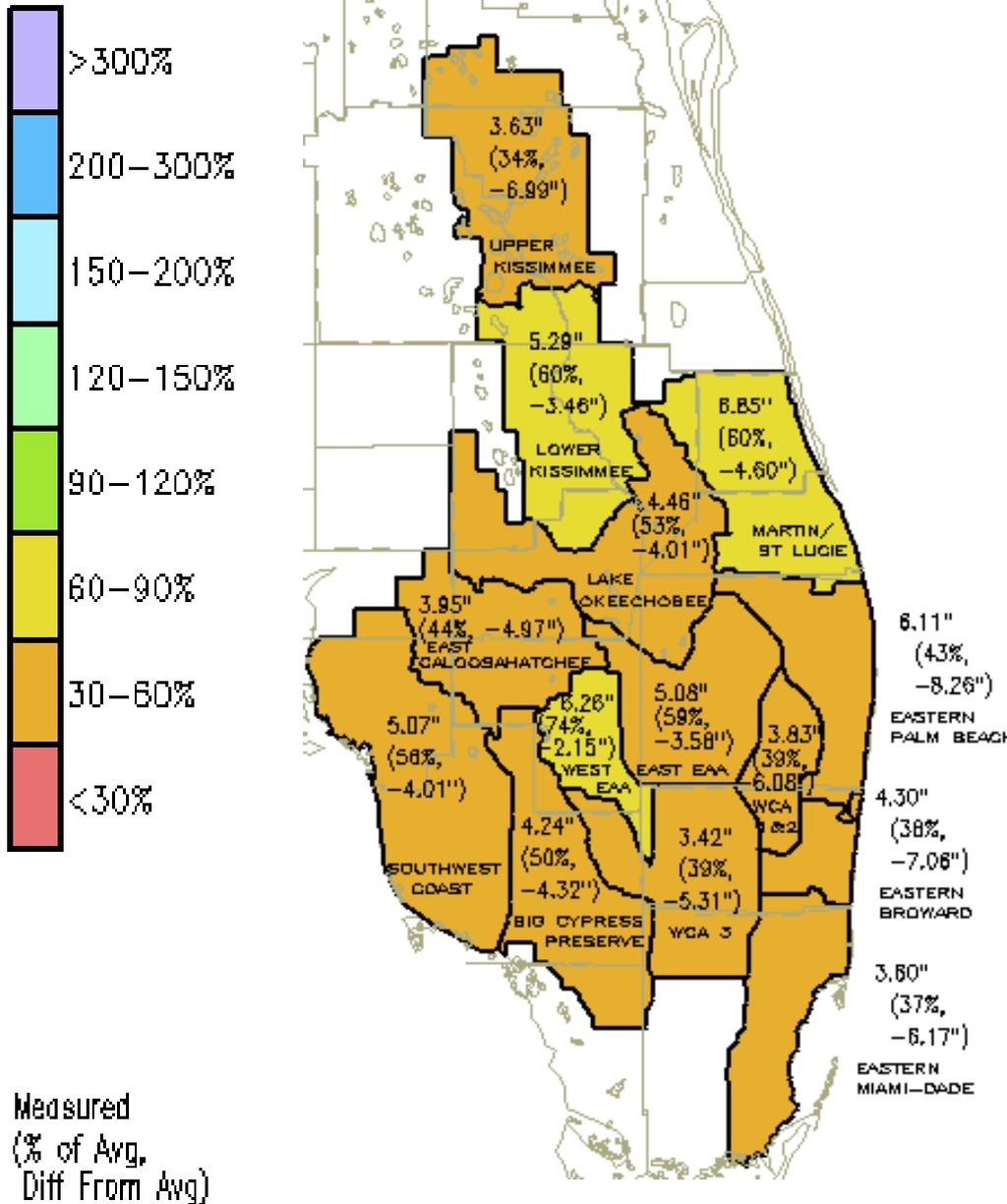
## Dry Season Rainfall

2 Nov 2012 – 8 Mar 2013

**DISTRICT-WIDE: 4.76"  
(50% of Avg, or -4.80")**

**All basins below average:**

- **Lowest**
  - Upper Kissimmee with 34% of average
  - Eastern Miami-Dade with 37 % of average
- **Closest to average**
  - West EAA with 74% of average
  - Lower Kissimmee and Martin/St. Lucie with 60% of average

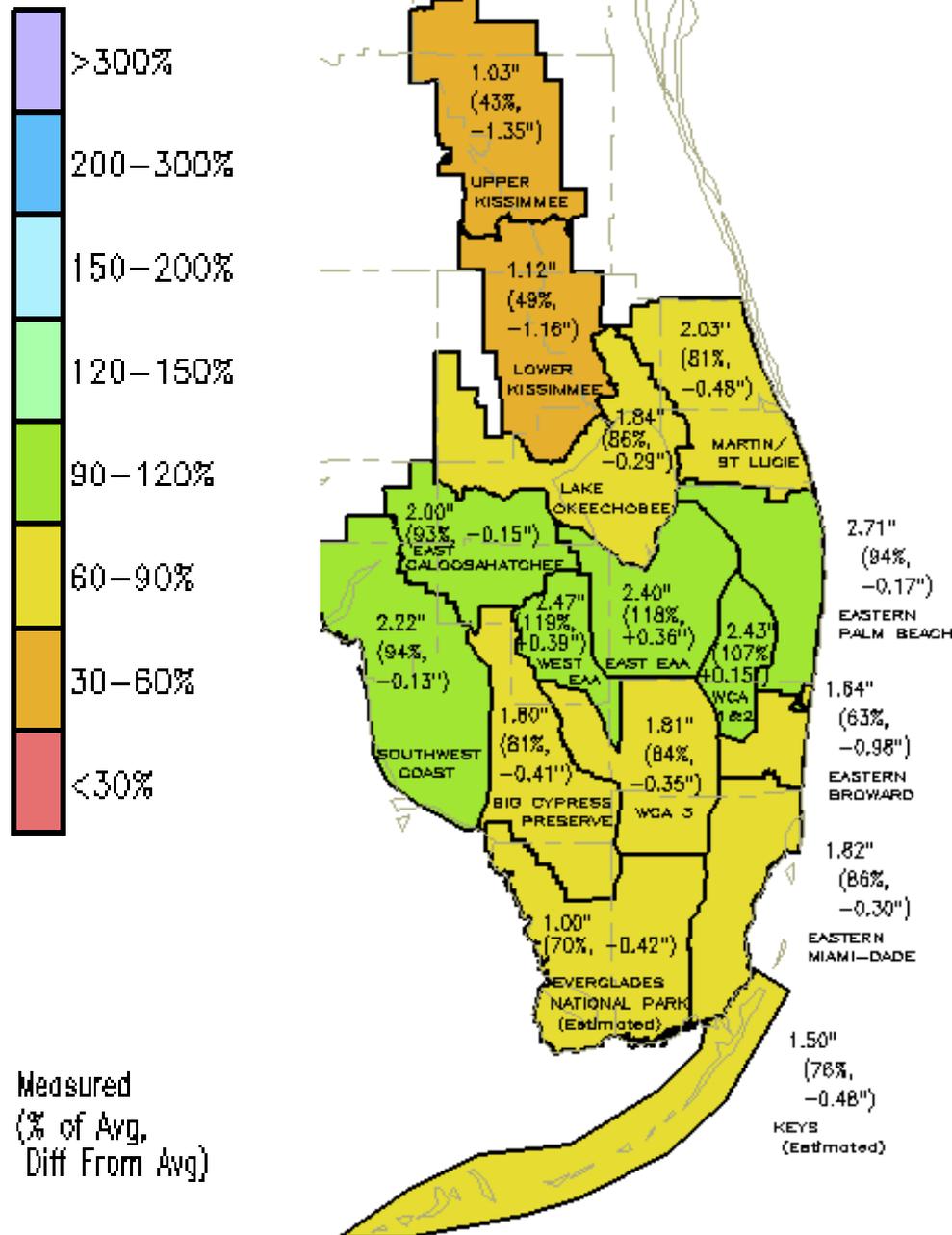


# SFWMD February 2013 Rainfall

(Feb 2 2013 – Mar 1 2013)

**DISTRICT-WIDE: 1.91”  
(84% of Avg or -0.36”)**

- 6 basins in the center of the District are close to average
- Rest of basins are below normal
- Upper and Lower Kissimmee show the largest deficit
- Feb. 14<sup>th</sup> the biggest single rain day since TS Isaac in August, and the second biggest day since October 2011 helped yield most rainfall



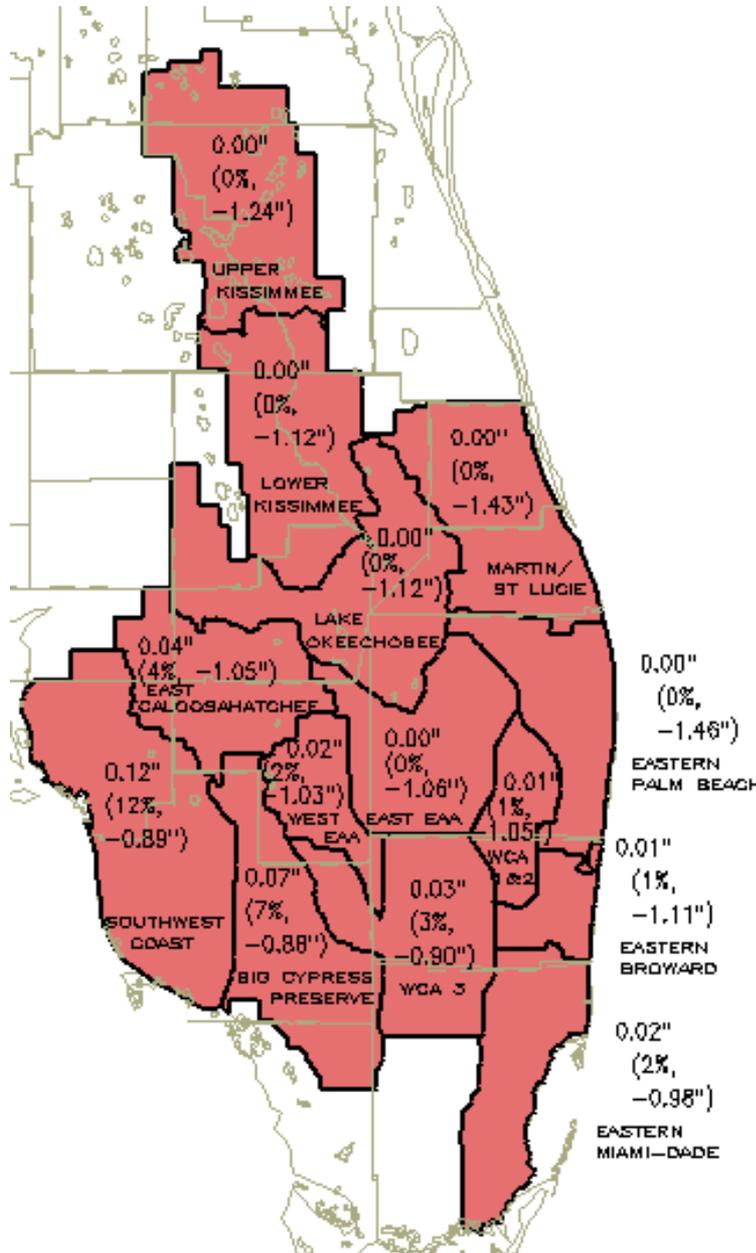
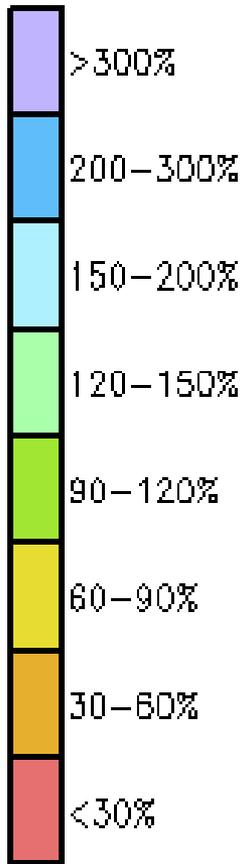
# SFWMD

## March 2013 Rainfall

(Mar 2 - 12, 2013)

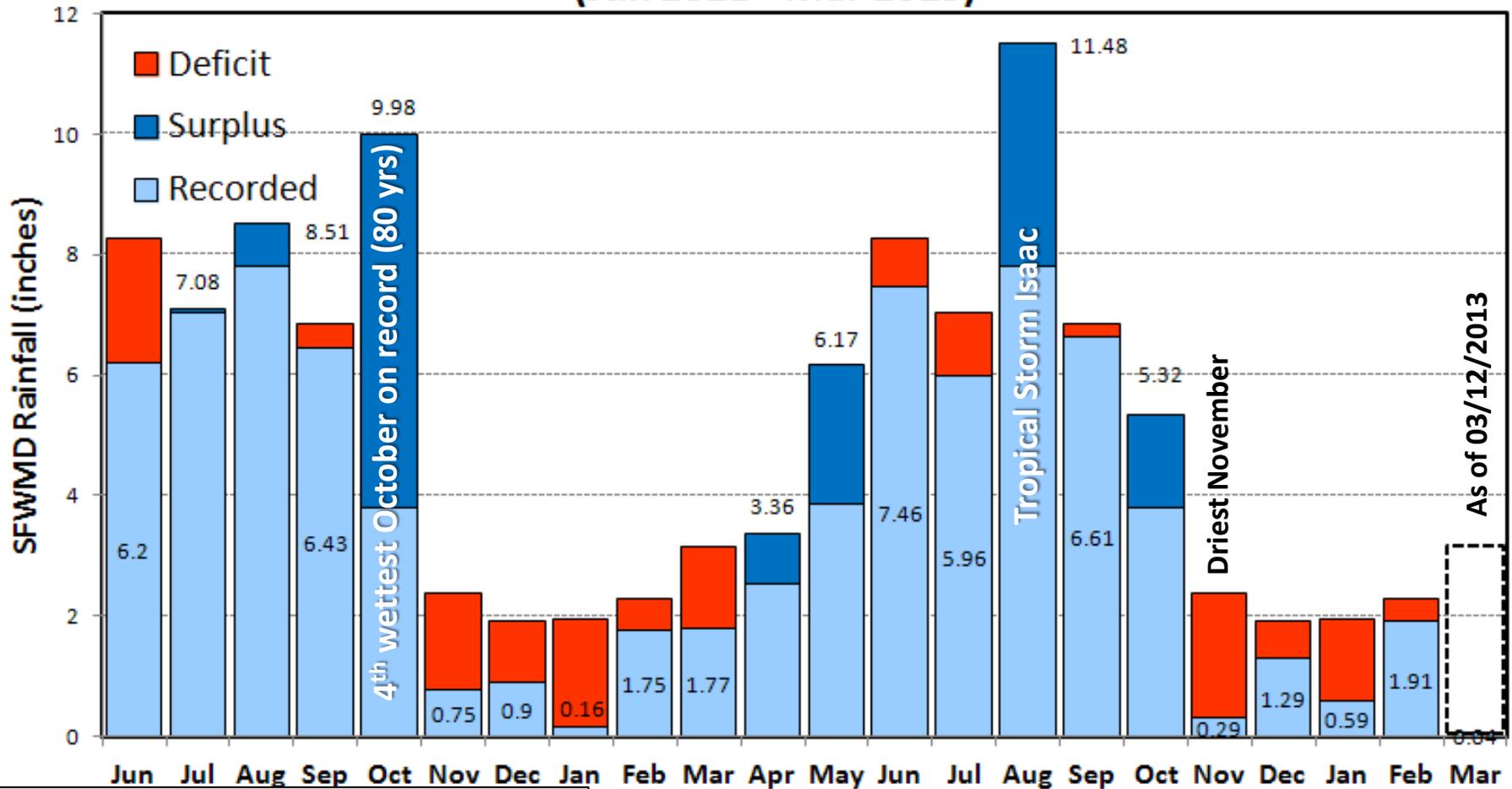
**DISTRICT-WIDE: 0.04"**  
**(4% of Avg, or 1.07")**

- All basins are below 30% of average
- Some basins show some traces of rainfall



Measured  
 (% of Avg,  
 Diff From Avg)

# SFWMD Rainfall Distribution Comparison (Jun 2011 - Mar 2013)



### 2011-12 DRY SEASON:

- Record dry in Upper Kissimmee (98 yrs)
- Ended up close to average

### 2012-13 DRY SEASON:

- Driest November since 1932
- Below average so far

### 2011 WET SEASON:

- Latest start (June 12) in at least 20 years
- 3 Big Rain Days in October (2.3", 2.3" & 1.7")

### 2012 WET SEASON:

- Started early with wet May, followed by dry June and July. TS Isaac brought August rainfall high above average.
- Ended up above average.

# U.S. Drought Monitor

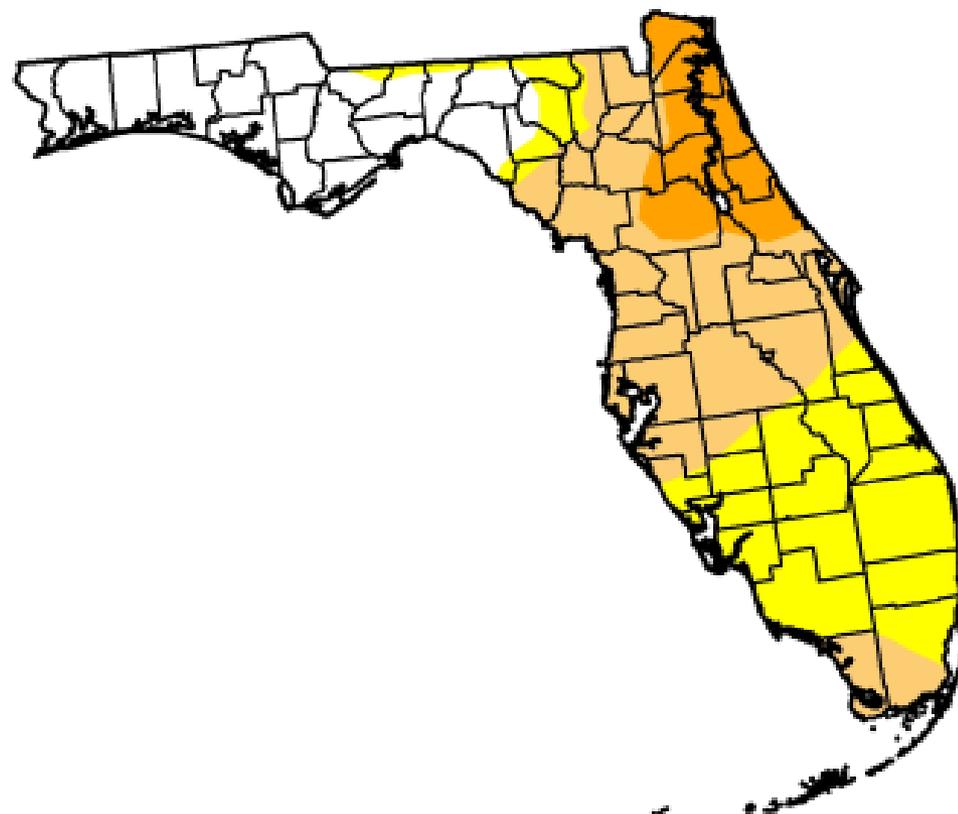
March 5, 2013

Valid 7 a.m. EST

## Florida

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	23.67	76.33	44.62	10.36	0.00	0.00
Last Week (02/26/2013 map)	26.18	73.82	46.61	7.51	0.00	0.00
3 Months Ago (12/04/2012 map)	52.72	47.28	3.13	0.00	0.00	0.00
Start of Calendar Year (01/01/2013 map)	56.86	43.14	3.13	0.00	0.00	0.00
Start of Water Year (09/25/2012 map)	100.00	0.00	0.00	0.00	0.00	0.00
One Year Ago (02/28/2012 map)	0.00	100.00	92.18	49.44	23.46	0.00



### Intensity:



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



<http://droughtmonitor.unl.edu>

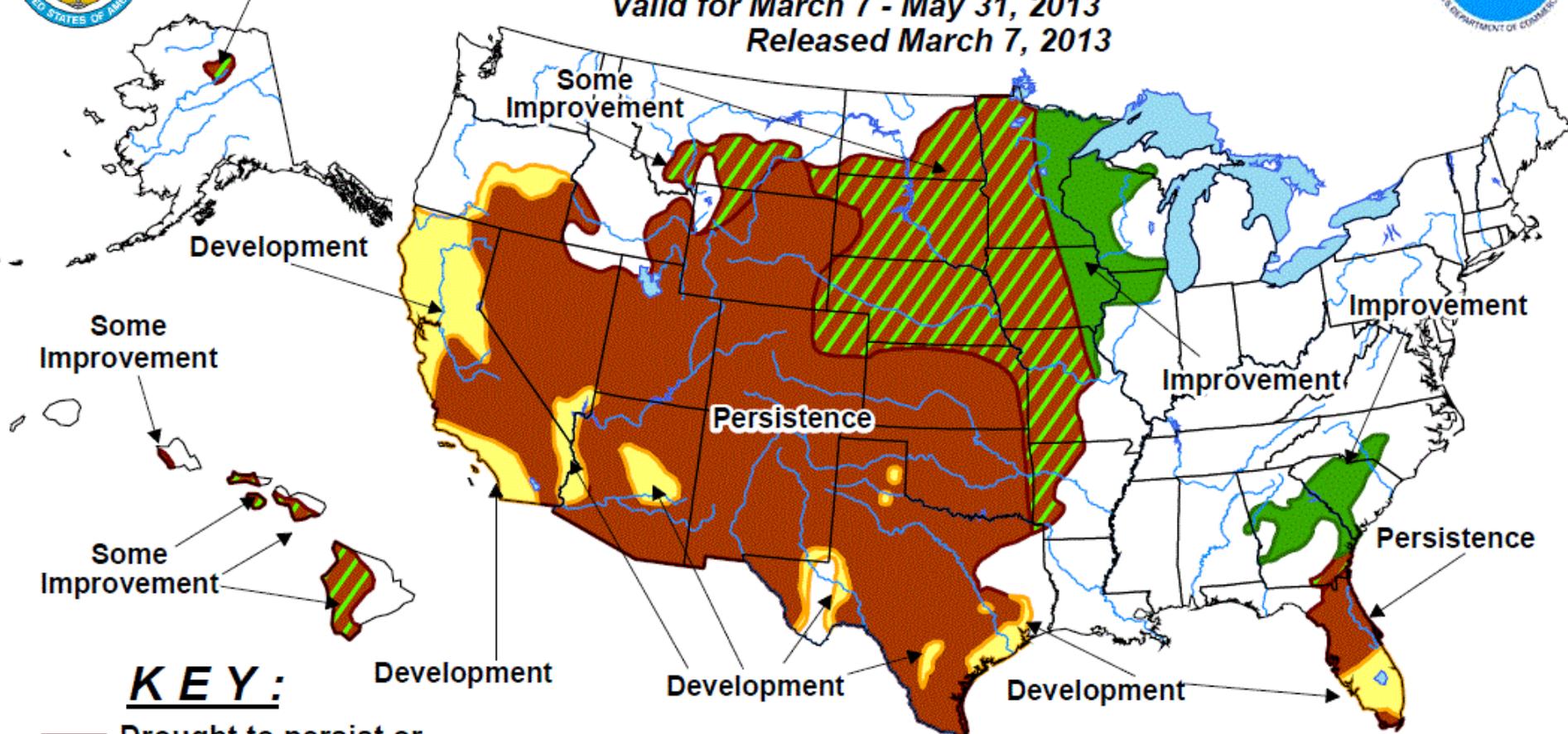
Released Thursday, March 7, 2013  
Matthew Rosencrans, NOAA/NWS/NCEP/Climate Prediction Center



# U.S. Seasonal Drought Outlook

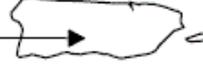
## Drought Tendency During the Valid Period

Valid for March 7 - May 31, 2013  
Released March 7, 2013

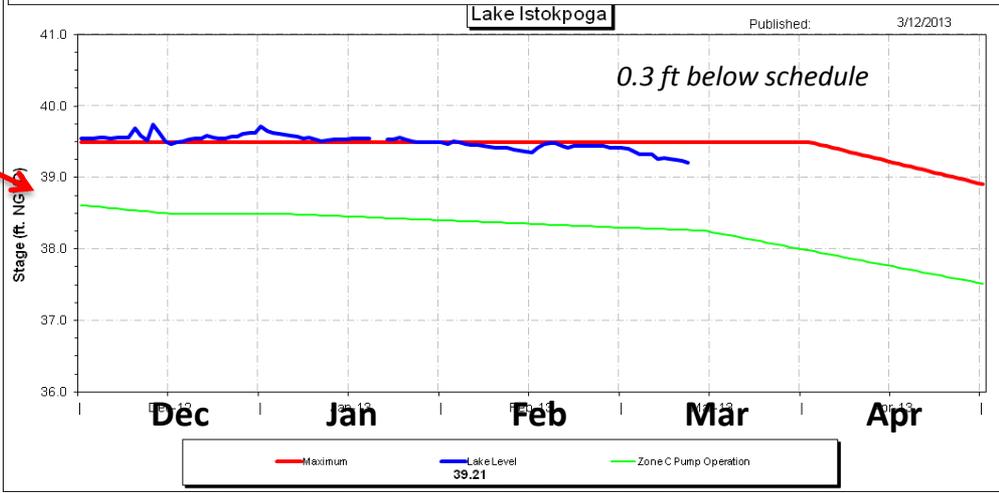
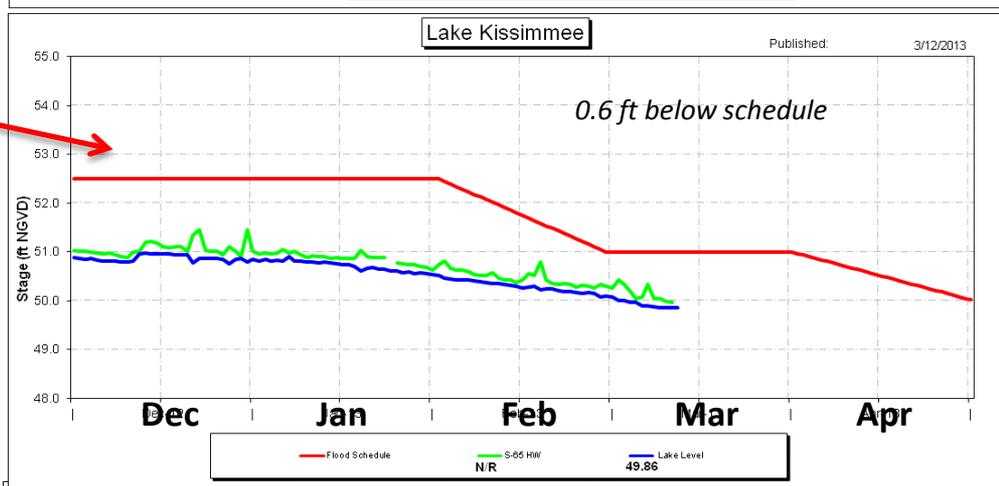
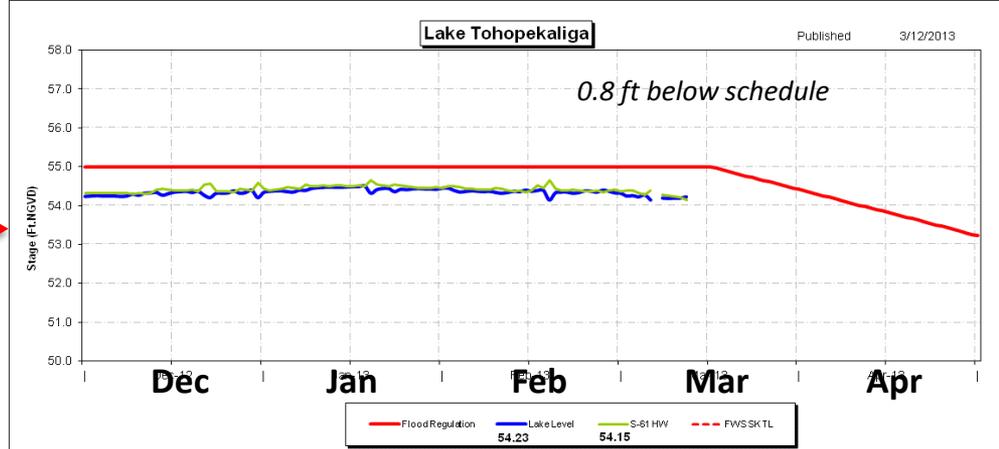
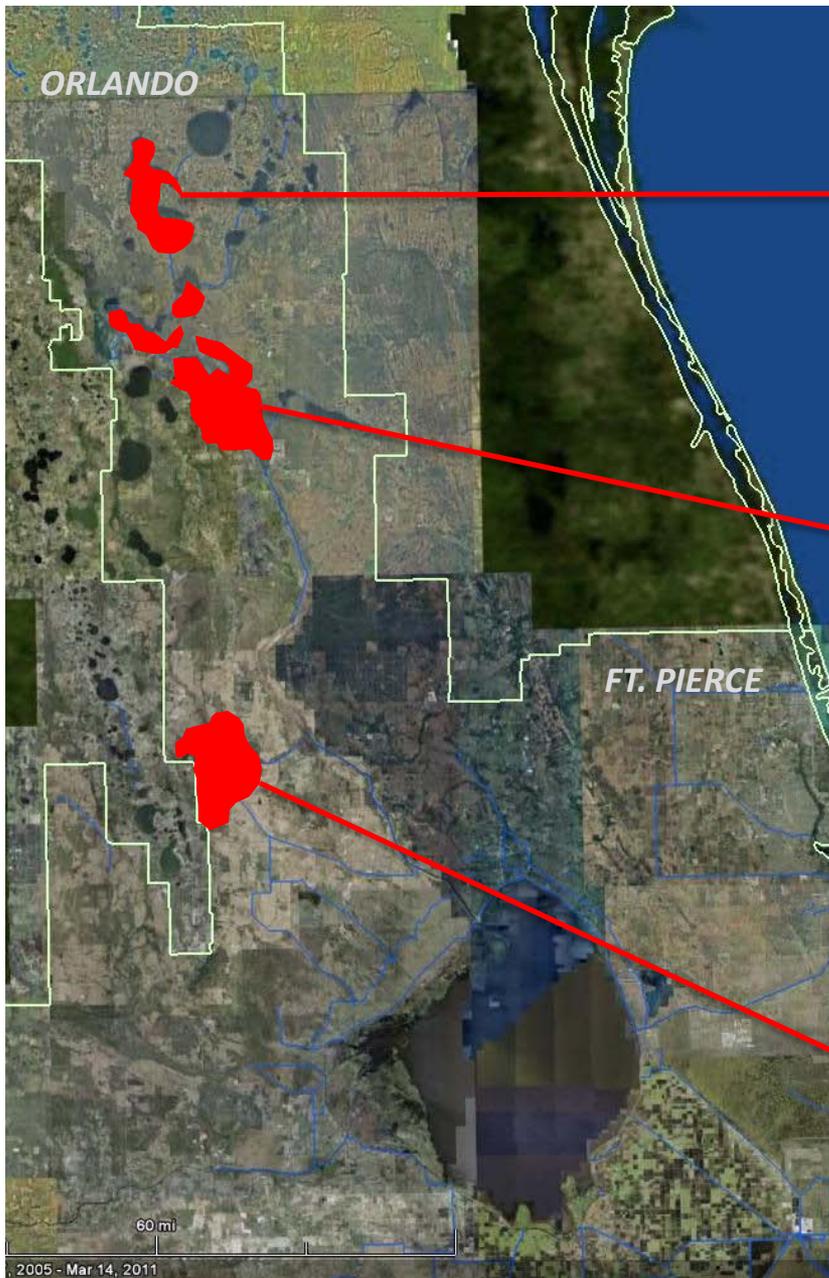


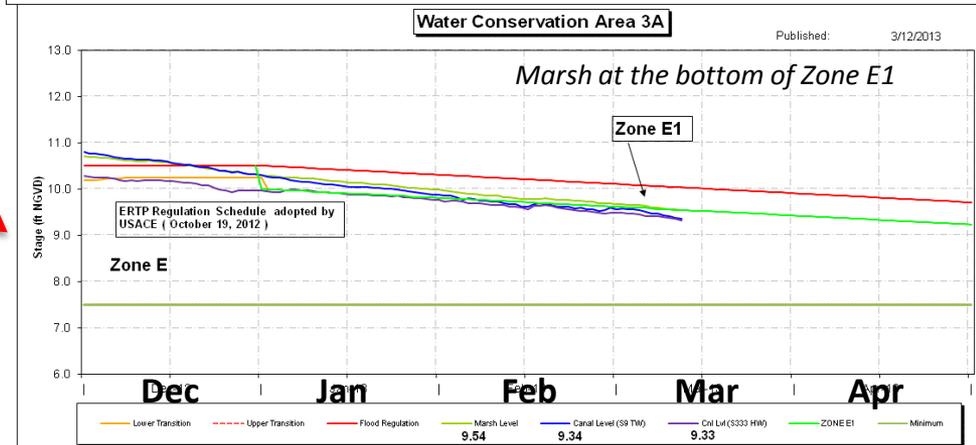
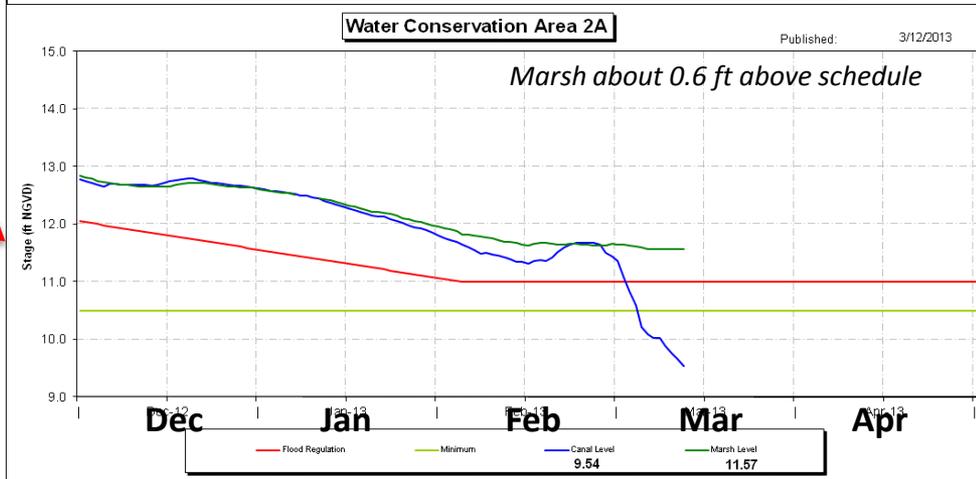
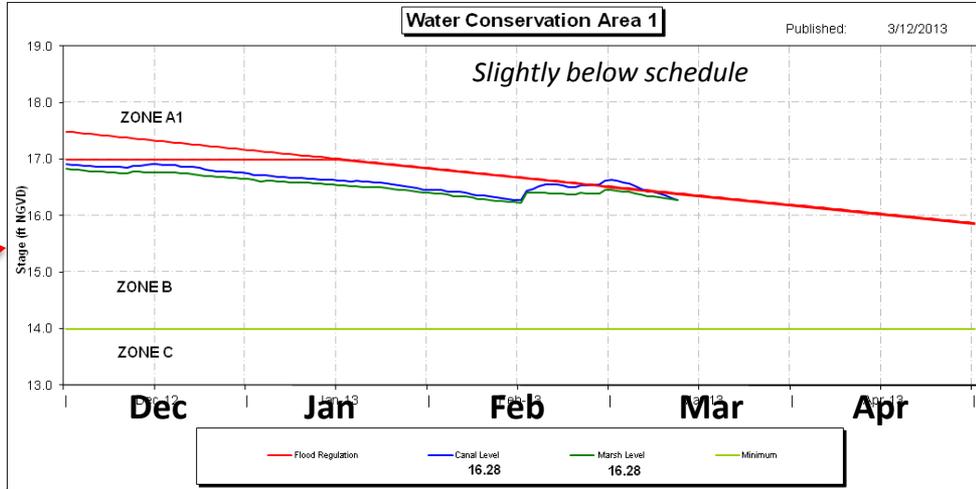
### KEY:

-  Drought to persist or intensify
-  Drought ongoing, some improvement
-  Drought likely to improve, impacts ease
-  Drought development likely

No Drought Posted/Predicted 

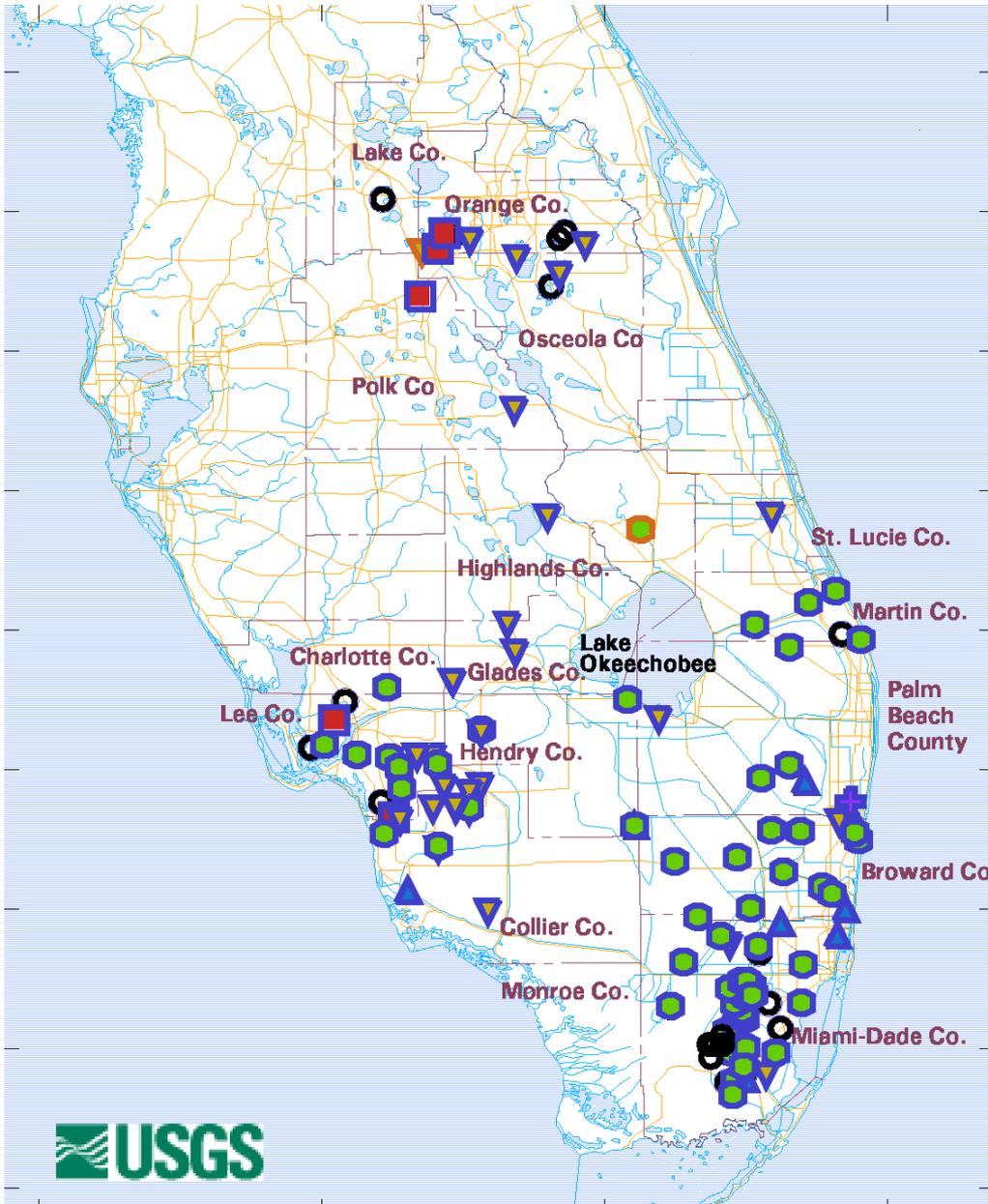
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.





# Groundwater Levels

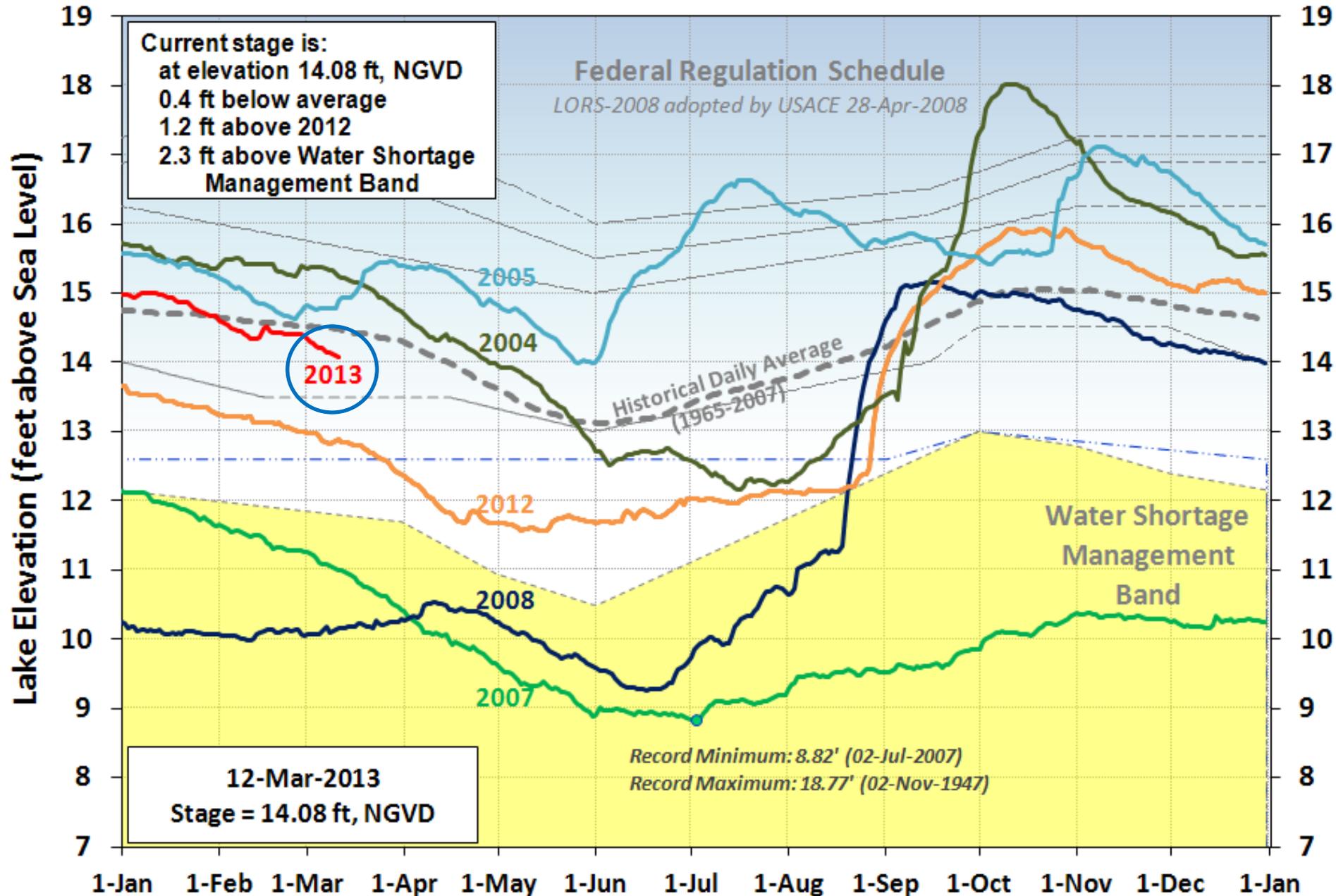
Water levels at selected sites in South Florida  
Based on PROVISIONAL DATA, as of March 12, 2013



Water level compared to historical data, without trend analysis:

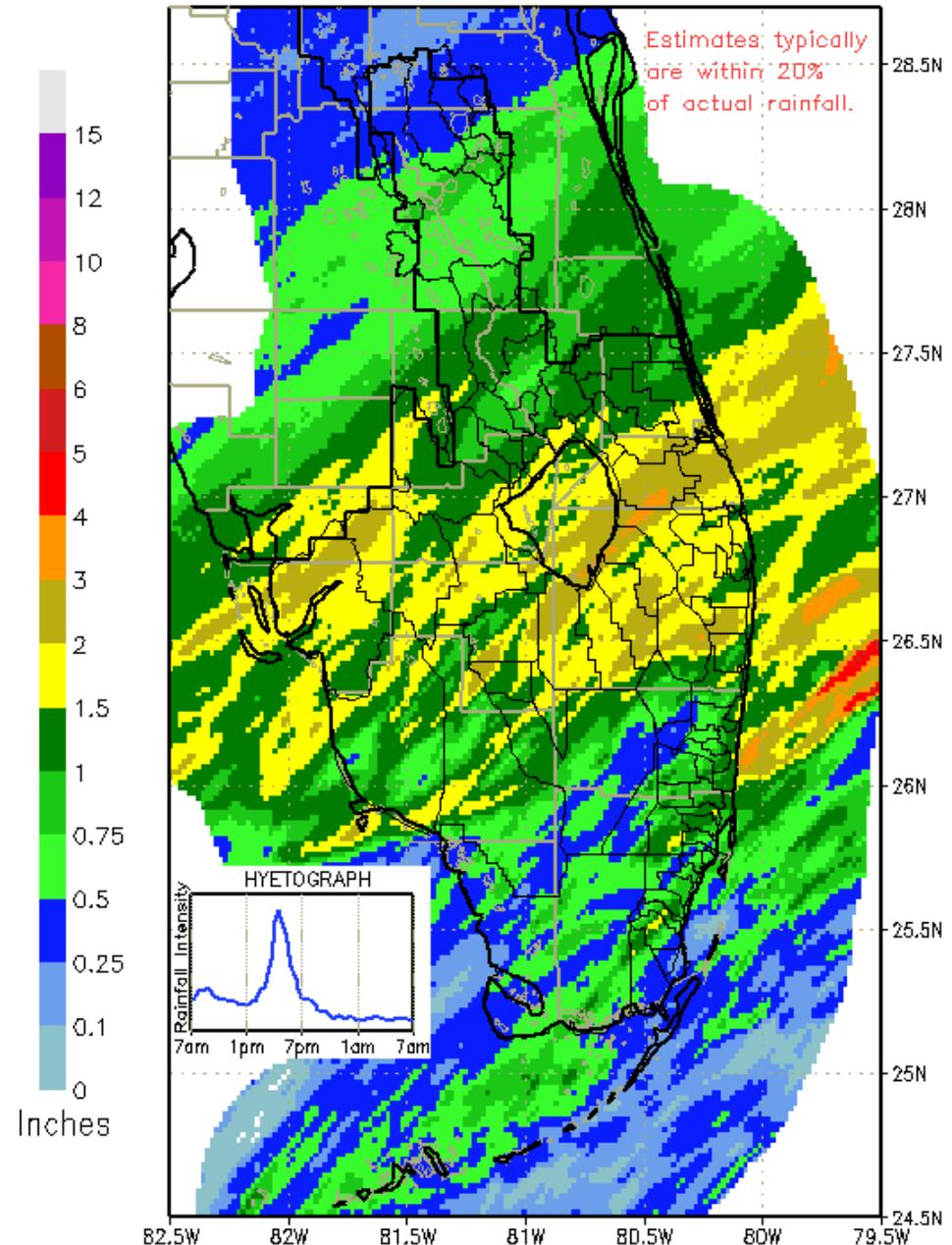
-  Insufficient information available to compute water-level statistics
-  In lowest 10 percent of past water elevations
-  Within lowest 10 to 30 percent of past water elevations
-  Within 20 percent of the median of past water elevations
-  Within highest 10 to 30 percent of past water elevations
-  In highest 10 percent of past water elevations

# Lake Okeechobee Water Level Comparison

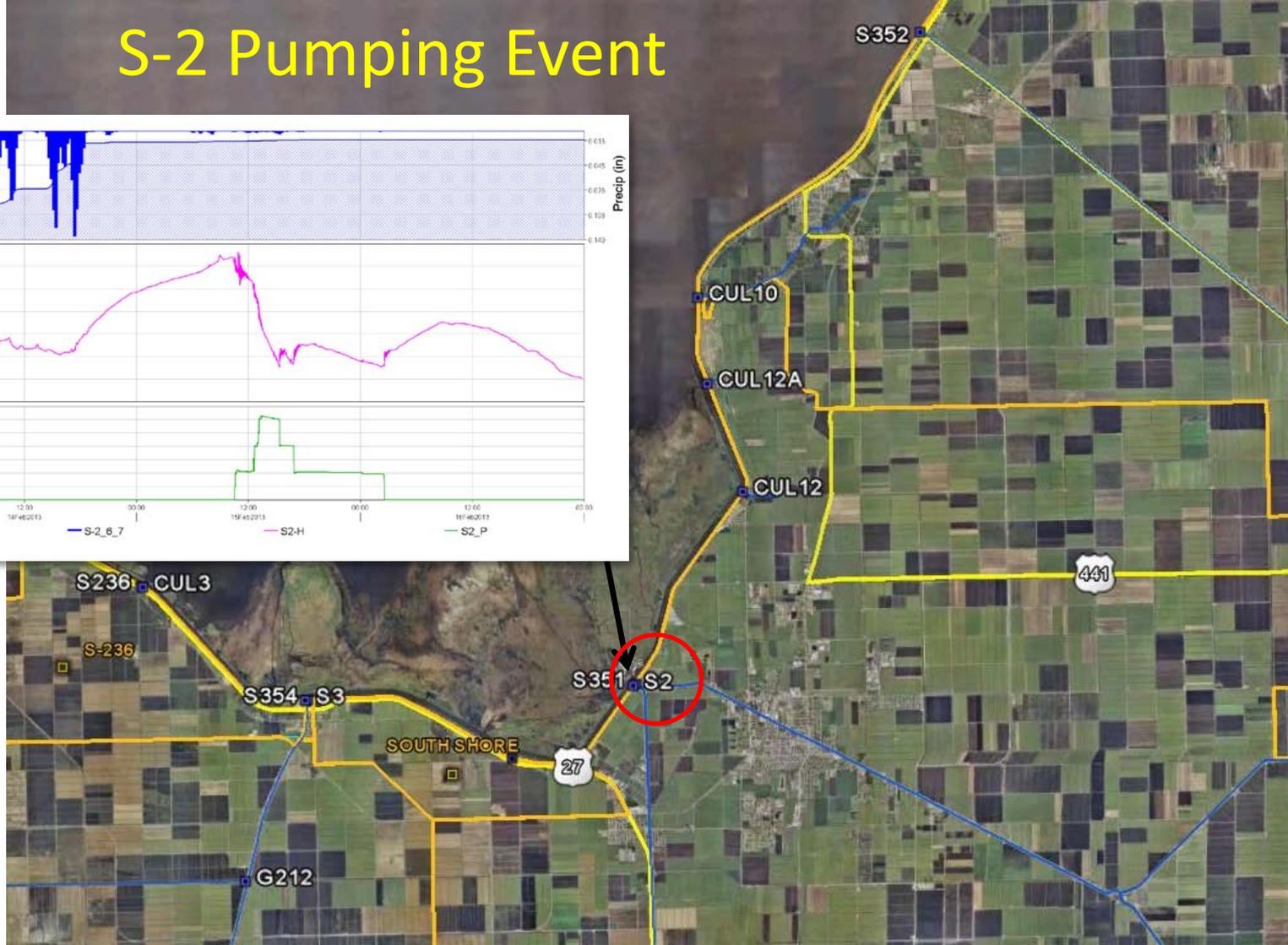
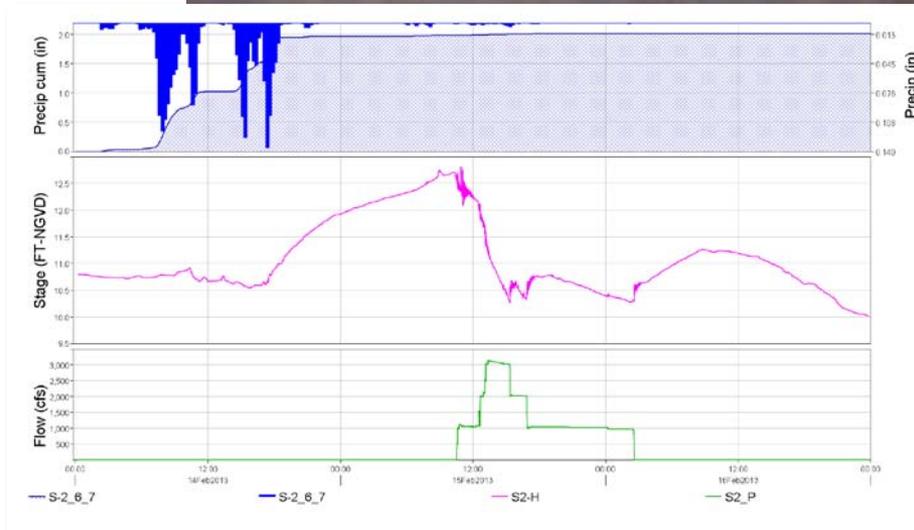


# S-2 Pumping Event

- On February 14<sup>th</sup> the northern portion of the EAA received approximately 2" of rainfall in a 24 hour period
- This caused canal stages to rise above the permitted threshold, which initiated flood control pumping.
- Operations continued for about 16 hrs, moving approximately 1900 ac-ft. into Lake Okeechobee

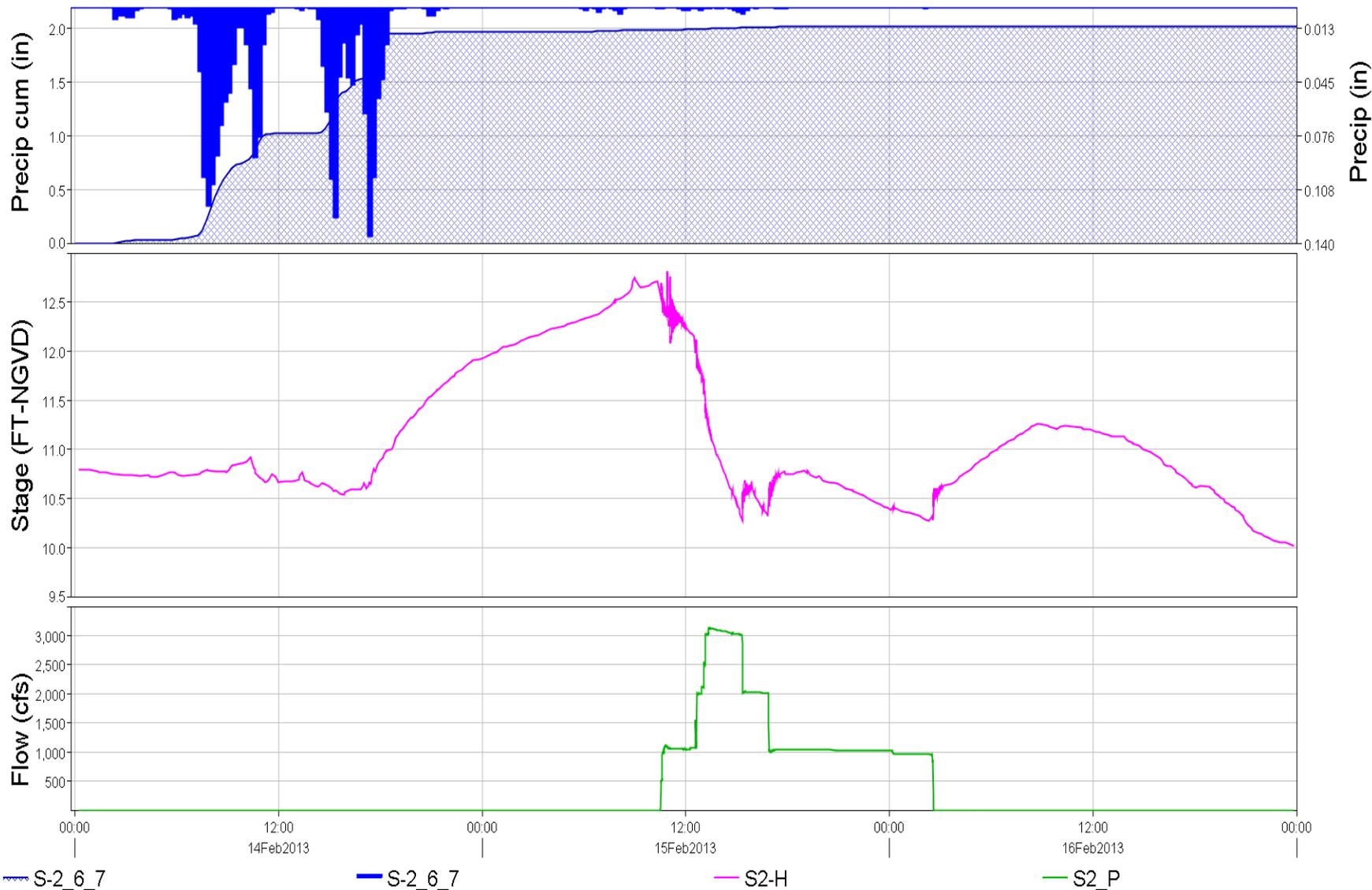


# S-2 Pumping Event



- As a result of the rainfall event on Feb. 14<sup>th</sup>, headwater elevations at S-2 rose above 12.5 ft NGVD. S-2 pumped approximately 1900 ac-ft into Lake Okeechobee (16 hrs). 1900 ac-ft is equal to about **0.004 feet** on Lake Okeechobee. *Other pump stations in the EAA , S-5A, S-6, G-370 and G-372 pumped during the same period.*

# S-2 Pumping Event



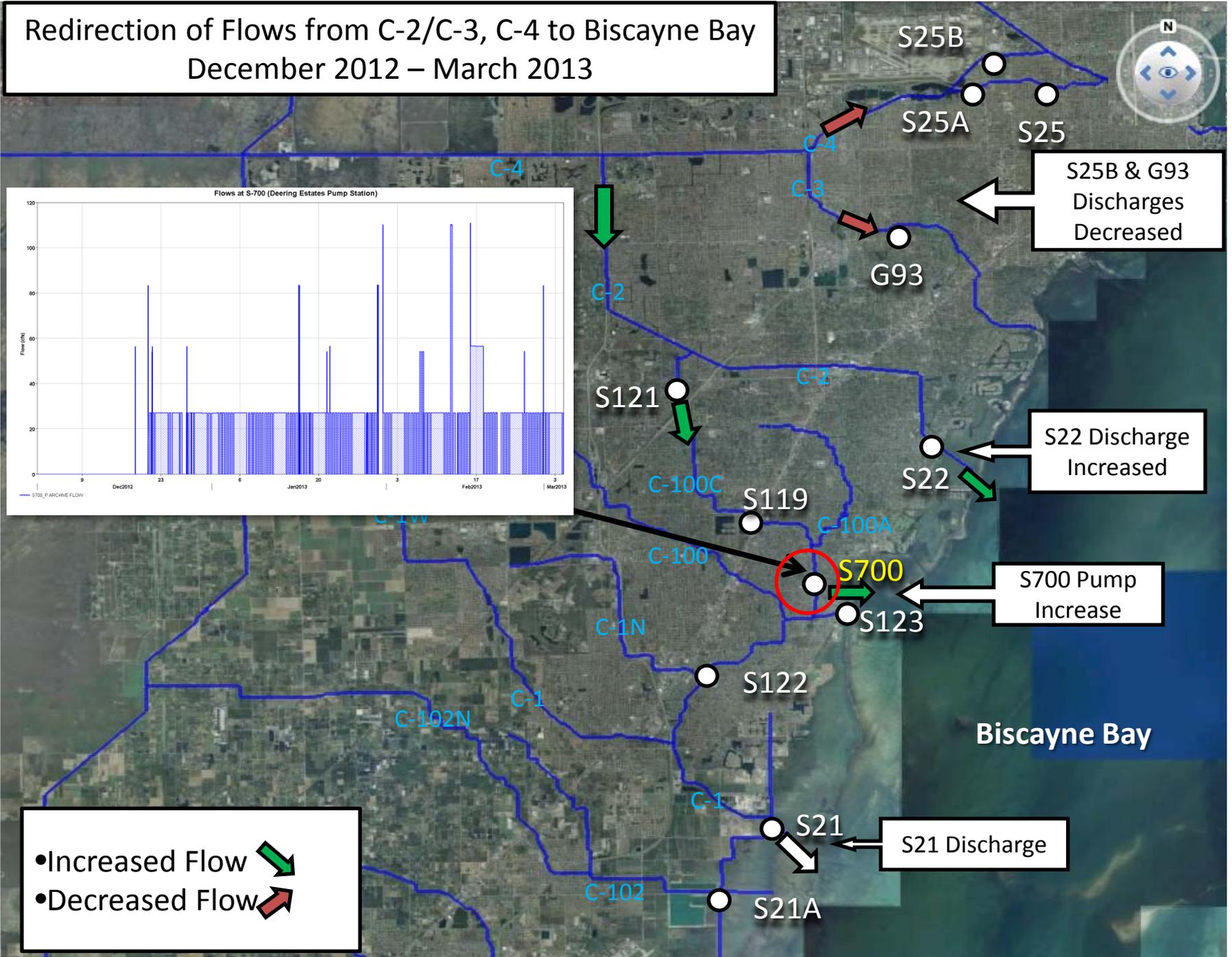
# ***Lake Okeechobee: Current Operations***

- **USACE's Lake O Regulation Schedule (2008 LORS)**
  - Stage (~14.0 ft, NGVD) is within the bottom 1/3 of the Low Subband
  - Tributary Hydrologic Condition is in the dry classification
  - Release Guidance currently suggests
    - up to 450 cfs at S-79, and up to 200 cfs at S-80 to manage the Lake stage
    - no releases to the WCAs are needed to manage the Lake stage
  - 9-Mar-2013: USACE initiated 650 cfs average 10-day baseflow pulse release through S-79, no releases planned for S-80
  - Lake regulatory discharge to northwest WCA-3A via STA-3/4 discontinued in mid-Feb due to rain. Will not resume per release guidance
- **SFWMD's Lake O Adaptive Protocol (2010)**
  - Will be the basis for SFWMD recommendations as the Lake stage recedes into the Baseflow Subband of the 2008 LORS

# ***South Miami-Dade: Current Operations***

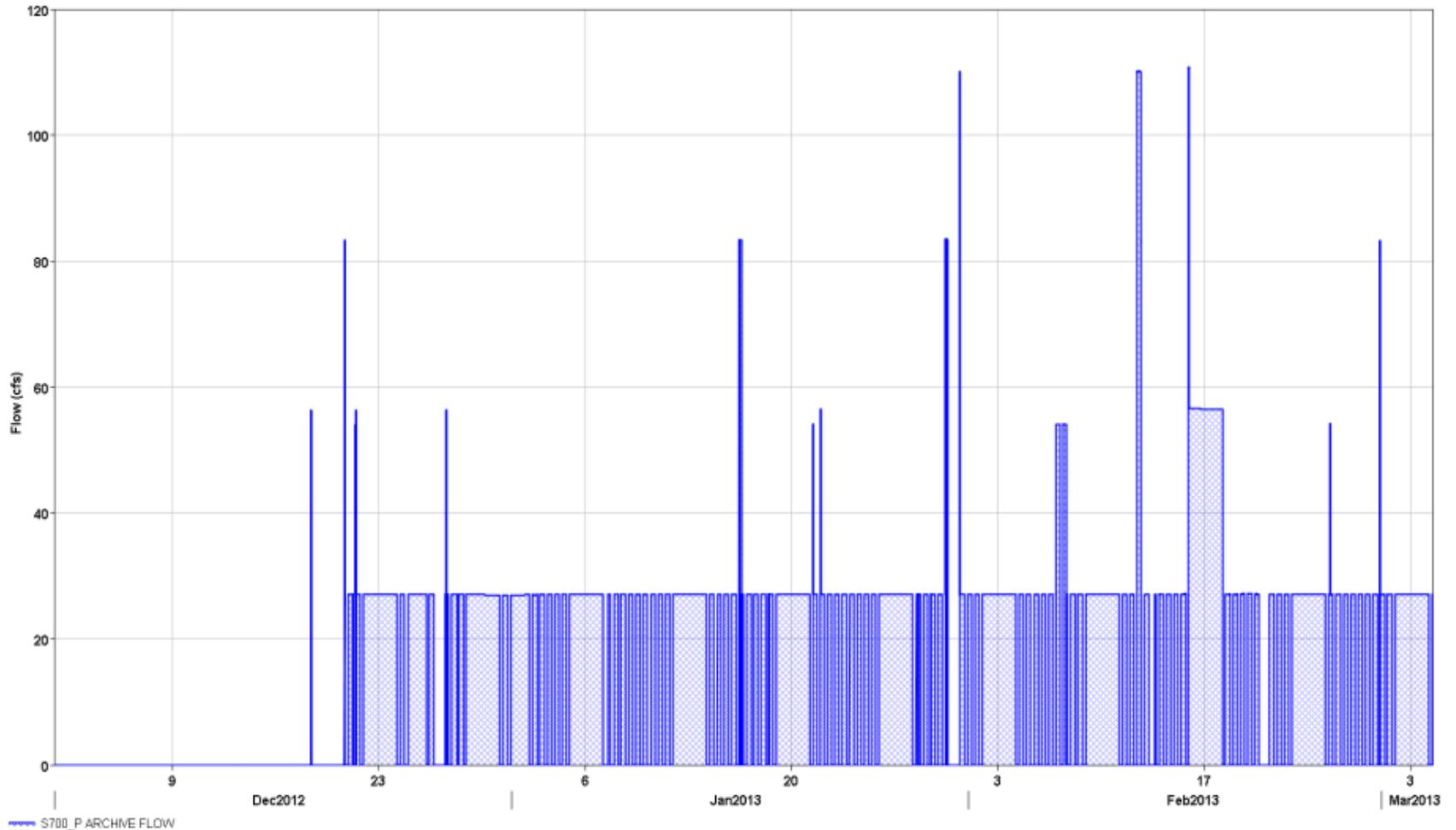
- Seasonal Agricultural Drawdown is proceeding normally
  - S-21A structure (C-102 Canal) was switched from low to intermediate operating range by the middle of January. Then by the middle of February, S-21A was adjusted to a customized higher setting to decrease releases to tide
  - S-20F and S-179 (C-103 Canal) remain in the low operating range
  - Currently expected to extend into April 2013
- The District continues to implement special operations to divert excess water from the C-2/C-3/C-4 canals to Biscayne Bay
- Providing water from C-102 to Military Canal via L31-E canal

# Redirection of Flows from C-2/C-3, C-4 to Biscayne Bay December 2012 – March 2013



# Flow Hydrograph at S-700

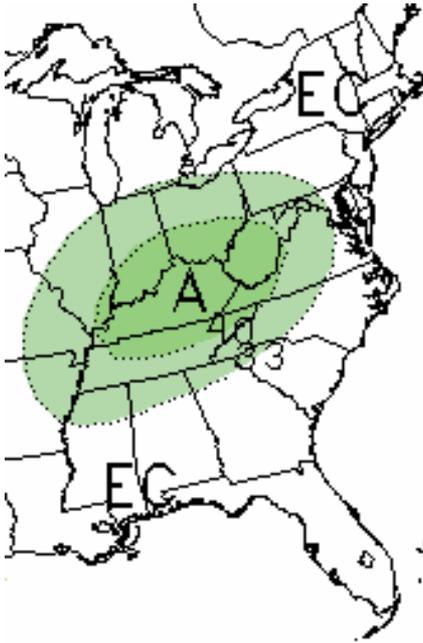
Flows at S-700 (Deering Estates Pump Station)



# U. S. Seasonal Precipitation Outlook

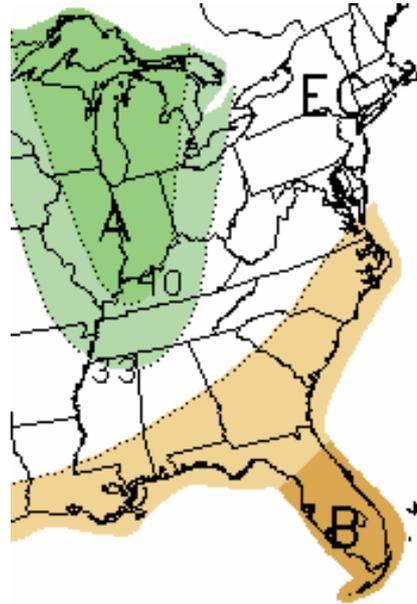
National Climate Prediction Center (CPC)

**Mar 2013**



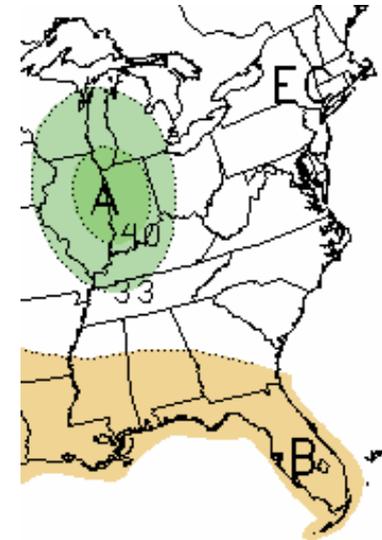
*Made 28-Feb 2013*

**Mar – May 2013**



*Made 21-Feb 2013*

**Apr - Jun 2013**

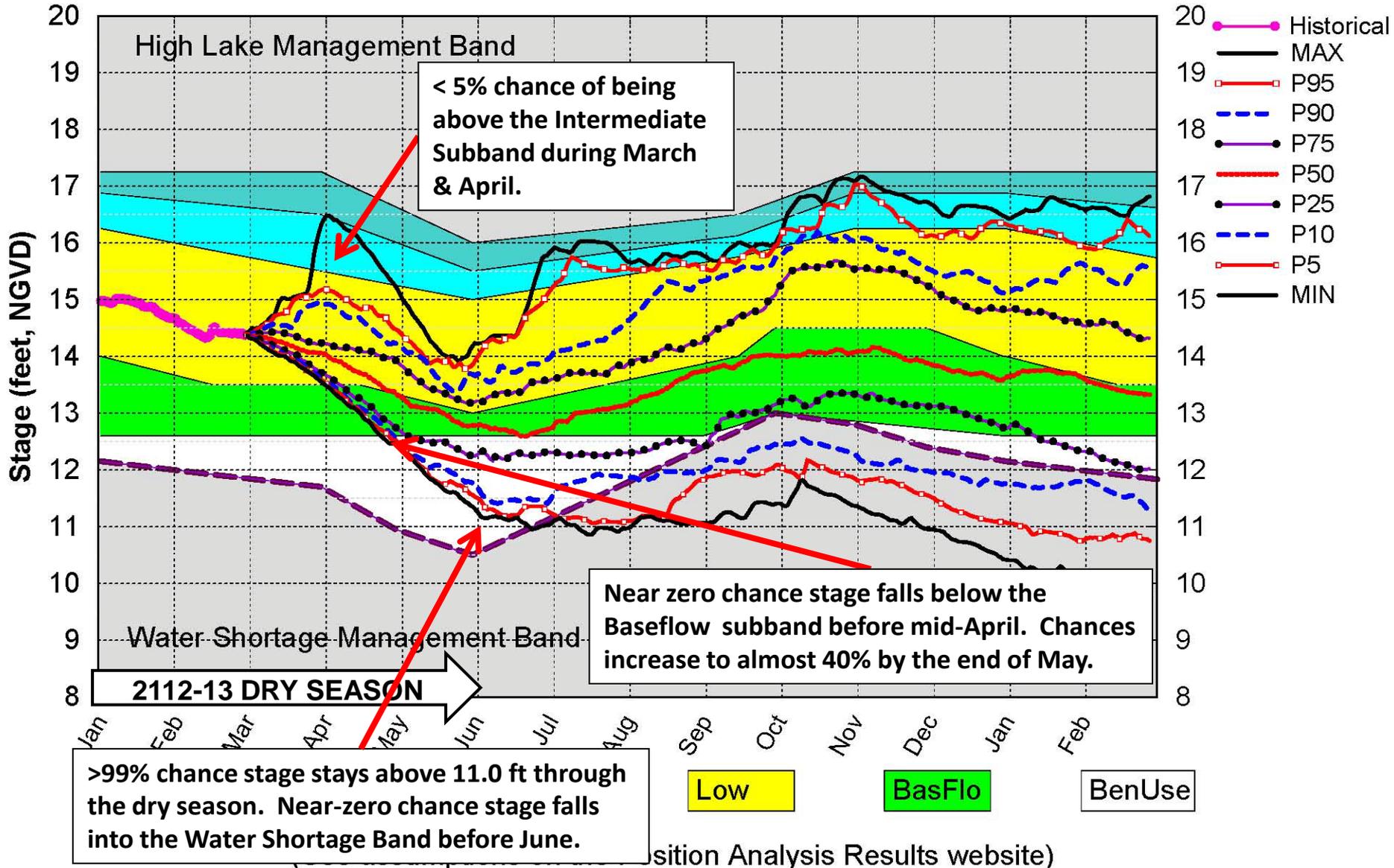


*Made 21-Feb 2013*

The recent CPC precipitation outlooks for the 2013 dry season indicate:  
For March: Equal chances of Above-Normal (A), Below-Normal (B), and Normal rainfall for central and southern Florida  
For April-June: Increased chances for Below-Normal (B) rainfall

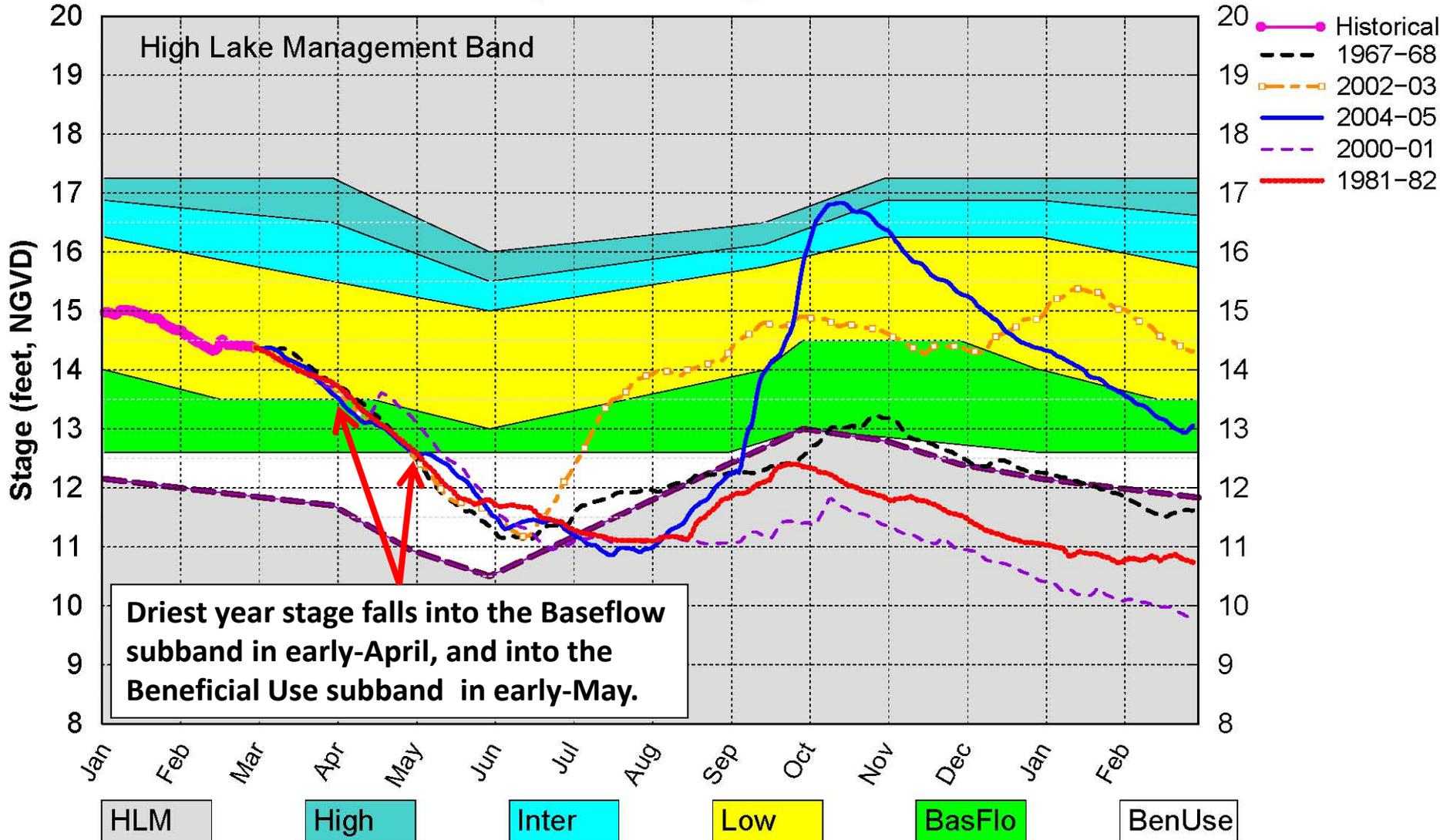
# Lake Okeechobee SFWMM March 2013 Position Analysis

Percentiles based on 41 possible outcomes starting with Feb 1<sup>st</sup> initialization



# Lake Okeechobee SFWMM March 2013 Position Analysis

Dry Years Plot PA\_V7



(See assumptions on the Position Analysis Results website)

# Questions ?



The S-193 Navigational Lock Refurbishment Project.  
Lock opened to the public on the morning of March 6<sup>th</sup>.