

Water Conditions Summary

South Florida Water Management District Governing Board Meeting

May 9, 2013

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

SFWMD

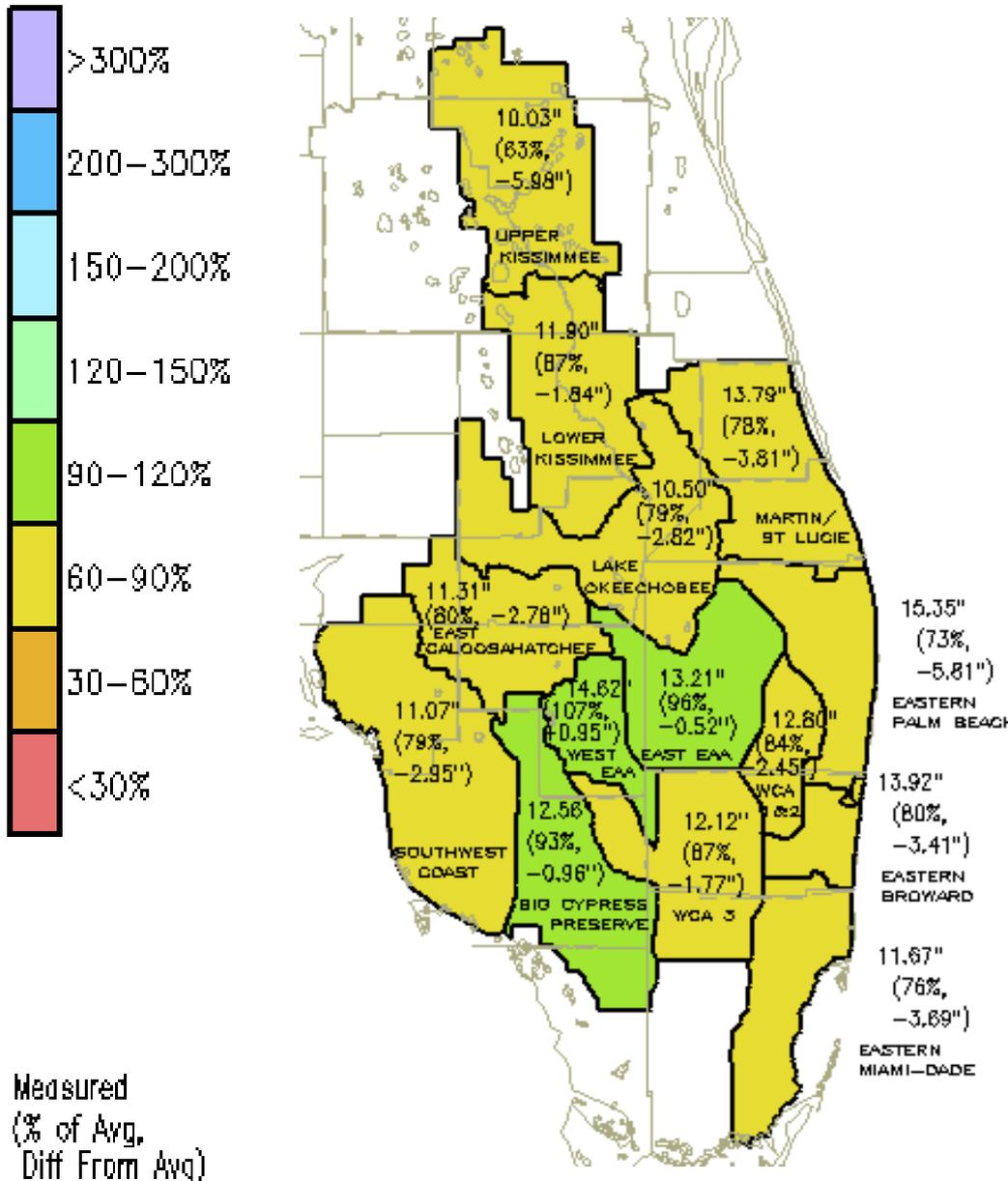
Dry Season Rainfall

2 Nov 2012 – 7 May 2013

**DISTRICT-WIDE: 12.12"
(82% of Avg, or -2.74")**

At most, all basins are close but below average:

- Basin south of the Lake in the center of SFWMD are closer to average
- All other basins in the range 60-90% of average
- West EAA above with 107% of average
- Worst basin is Upper Kissimmee with 63% of average



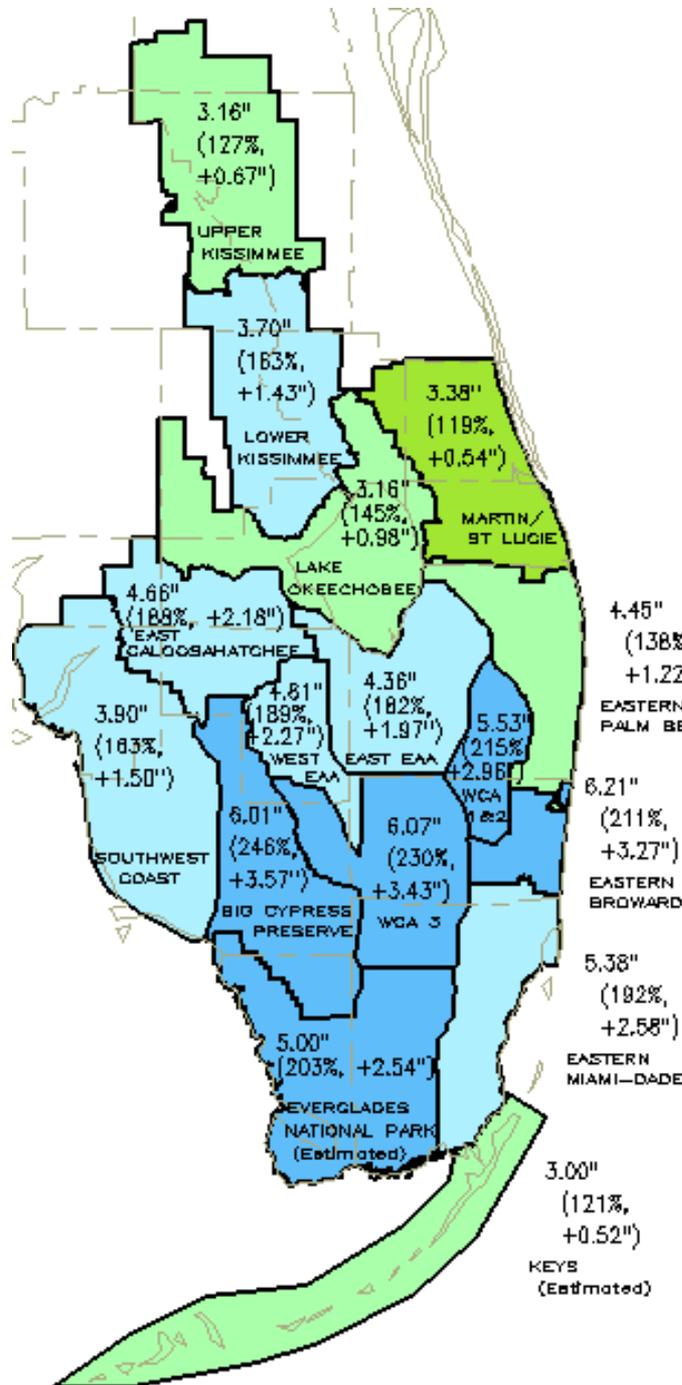
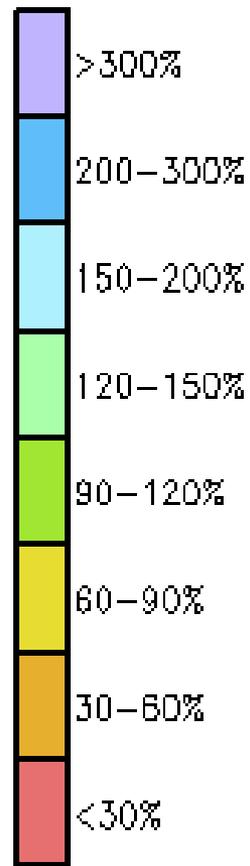
SFWMD

April 2013 Rainfall

(Apr 2 – May 1, 2013)

DISTRICT-WIDE: 4.35"
(173% of Avg, or 1.83")

- All basins are above average
- Highest average is for Big Cypress Preserve with 246%
- Lowest average is for Martin/St. Lucie with 119%



Measured
 (% of Avg,
 Diff From Avg)

KEYS
 (Estimated)

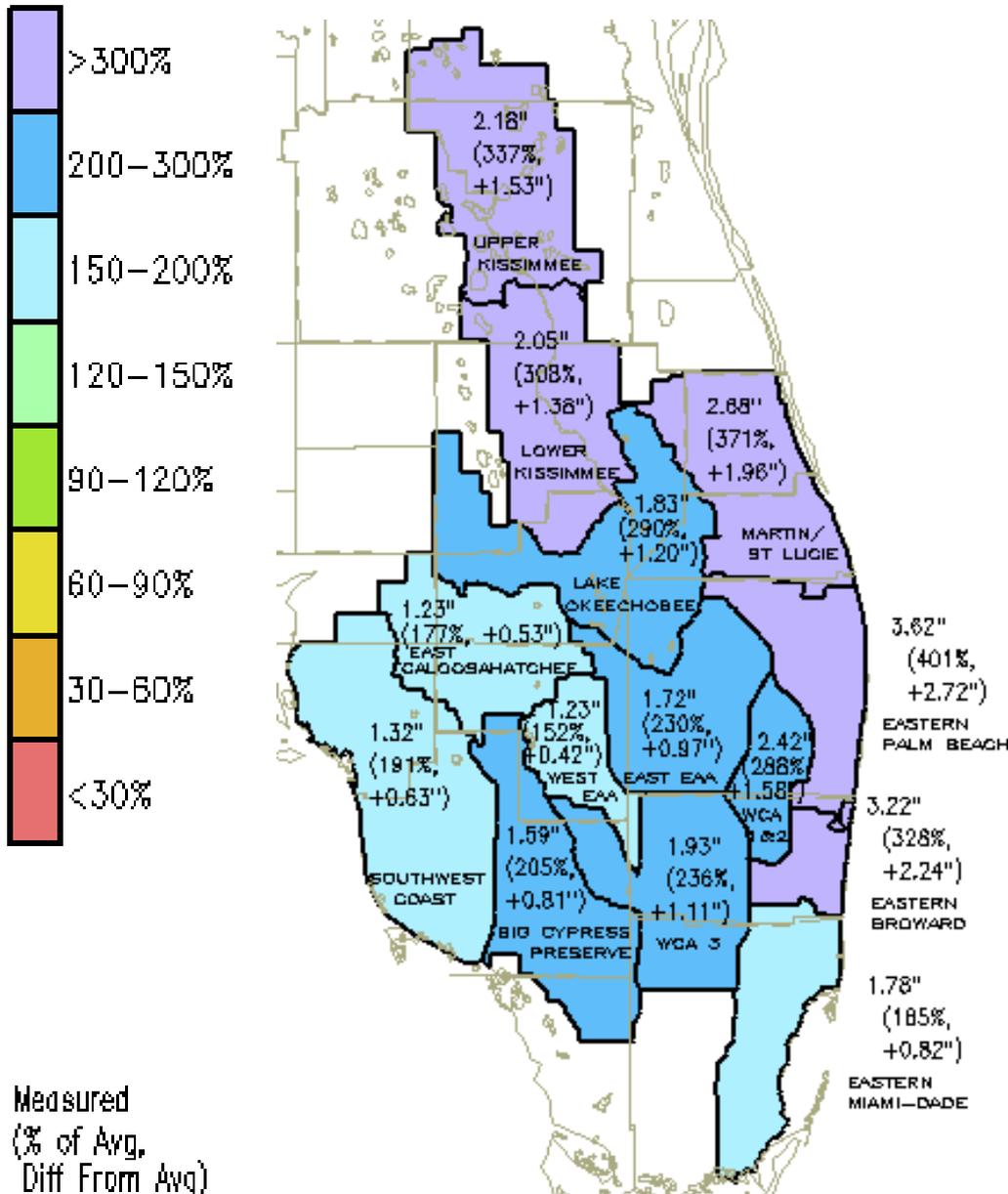
SFWMD

May 2013 Rainfall

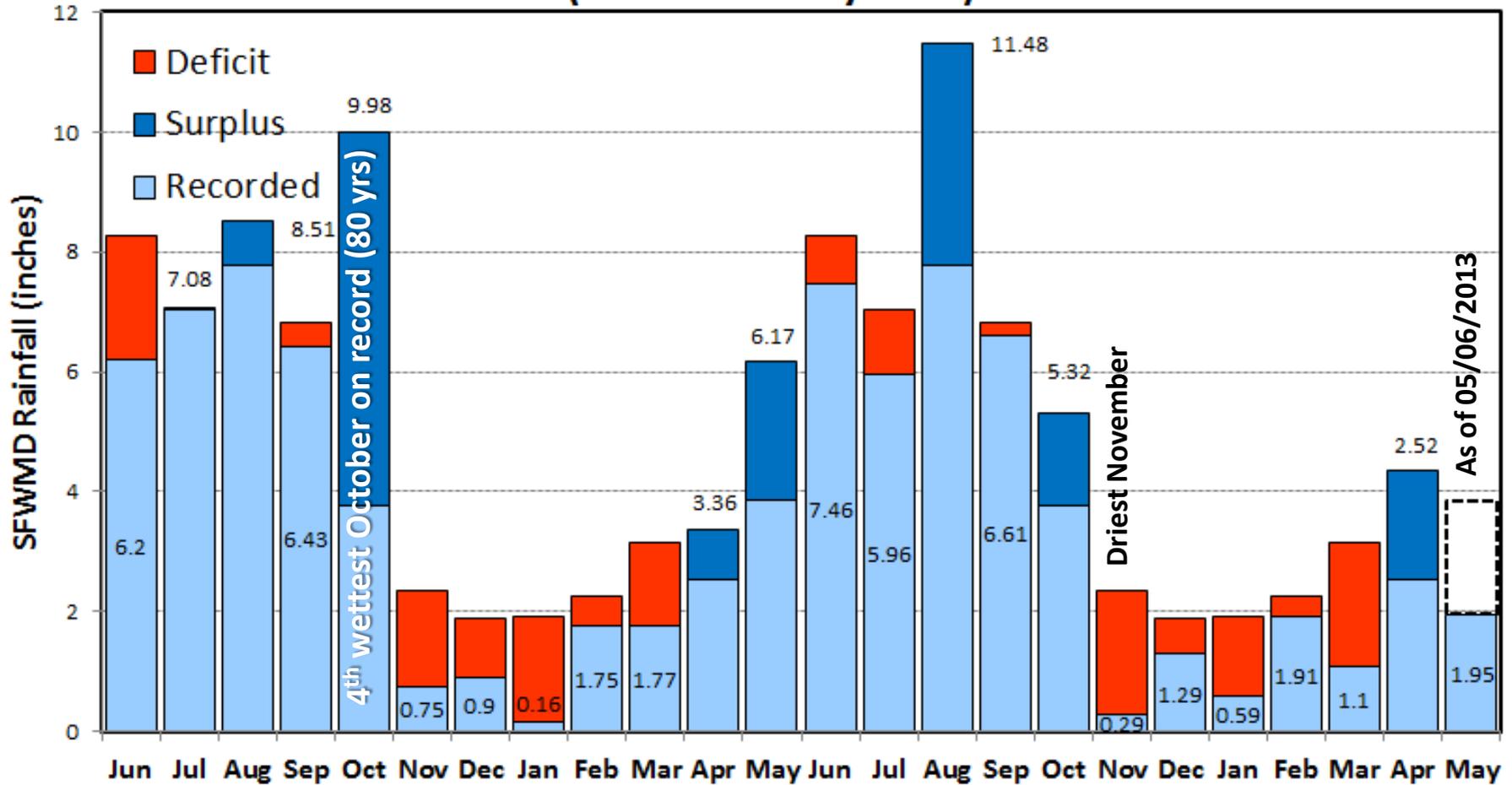
(May 2 - 5, 2013)

DISTRICT-WIDE: 1.95"
(262% of Avg, or 1.20")

- May 2013 had a very wet start with almost 1.77 inches District – wide for the first 2 days of the month of May.



SFWMD Rainfall Distribution Comparison (Jun 2011 - May 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, despite April being above

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

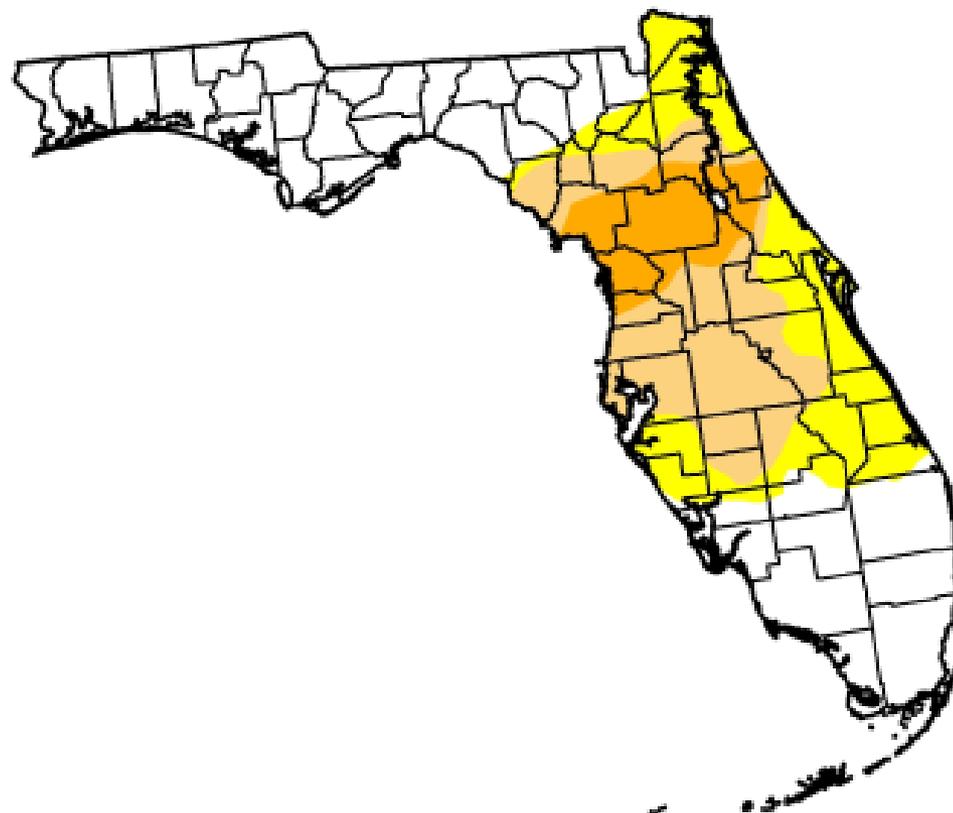
April 30, 2013

Valid 7 a.m. EST

Florida

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	49.80	50.20	29.41	9.11	0.00	0.00
Last Week (04/23/2013 map)	42.91	57.09	29.41	9.11	0.00	0.00
3 Months Ago (01/29/2013 map)	9.75	90.25	30.98	5.62	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 (04/24/2012 map)	0.00	100.00	97.42	72.90	34.86	11.79



Intensity:

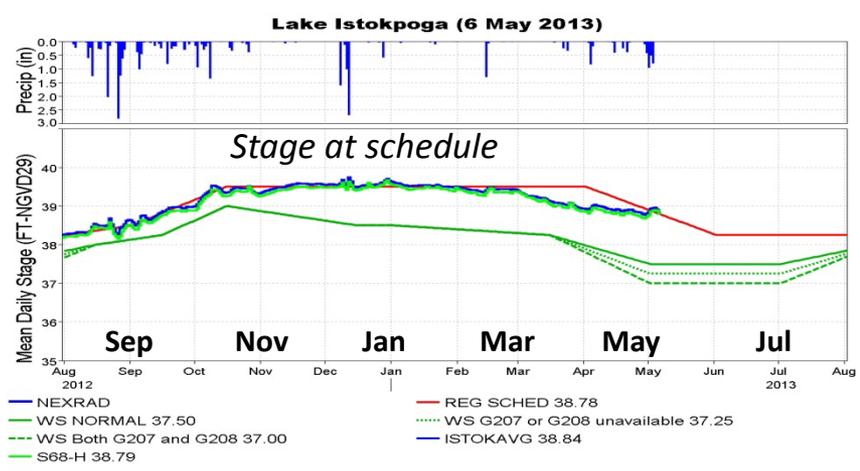
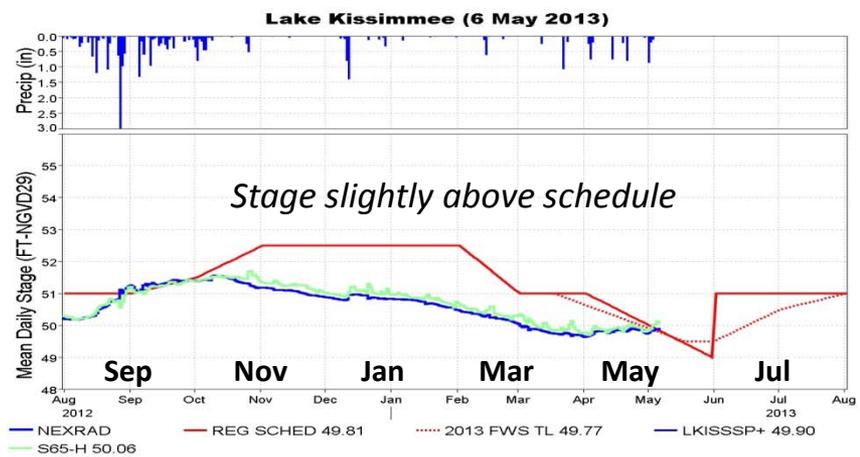
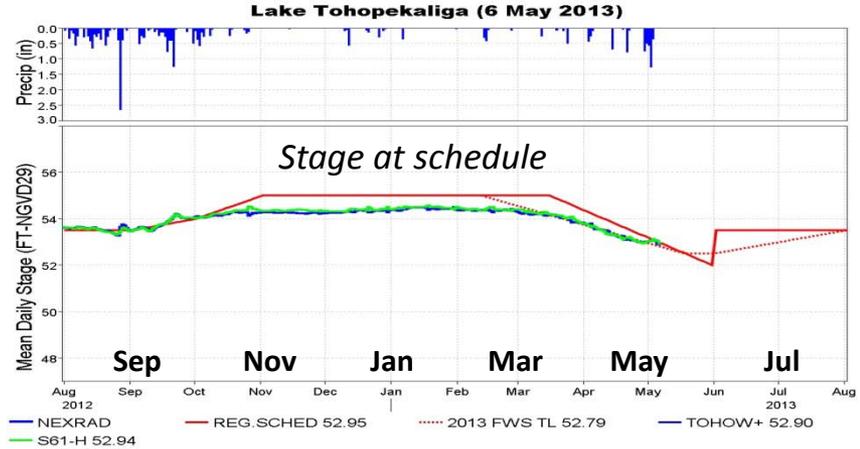
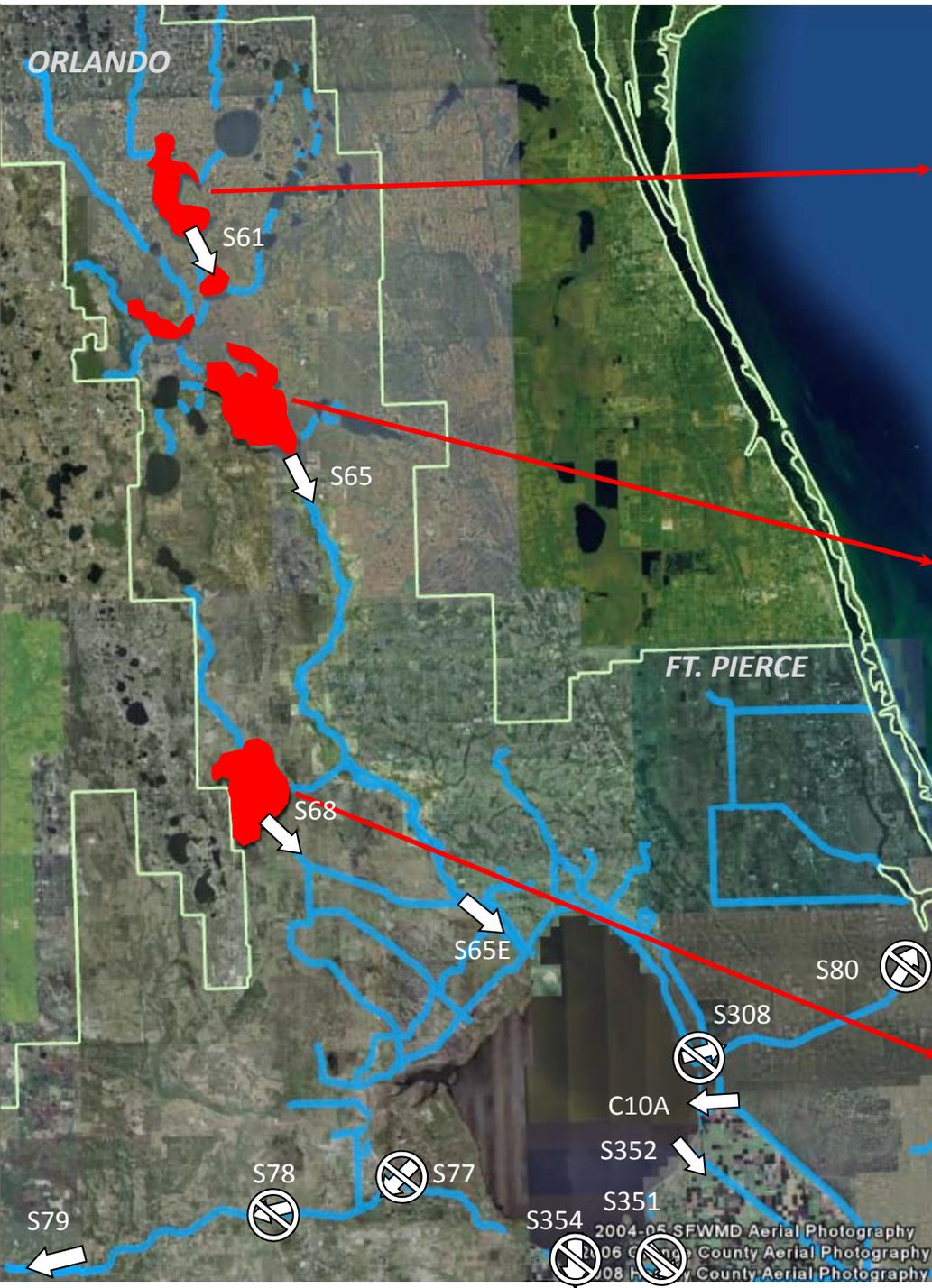
-  D0 Abnormally Dry
-  D1 Drought - Moderate
-  D2 Drought - Severe
-  D3 Drought - Extreme
-  D4 Drought - Exceptional

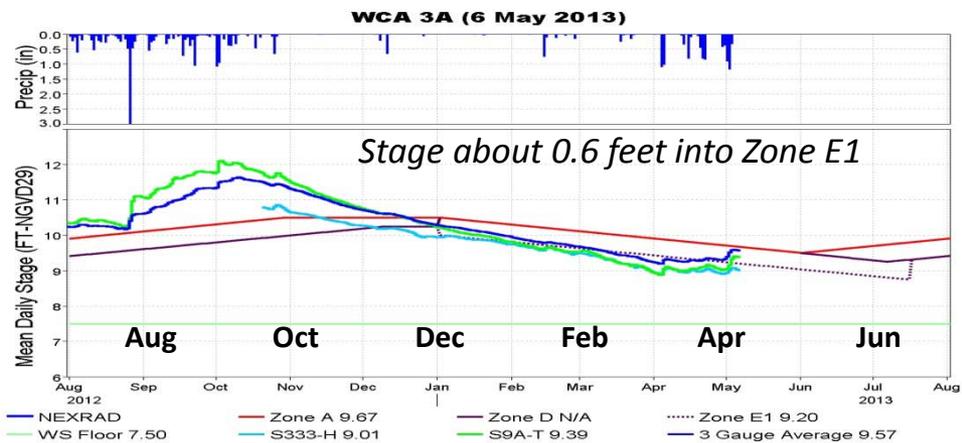
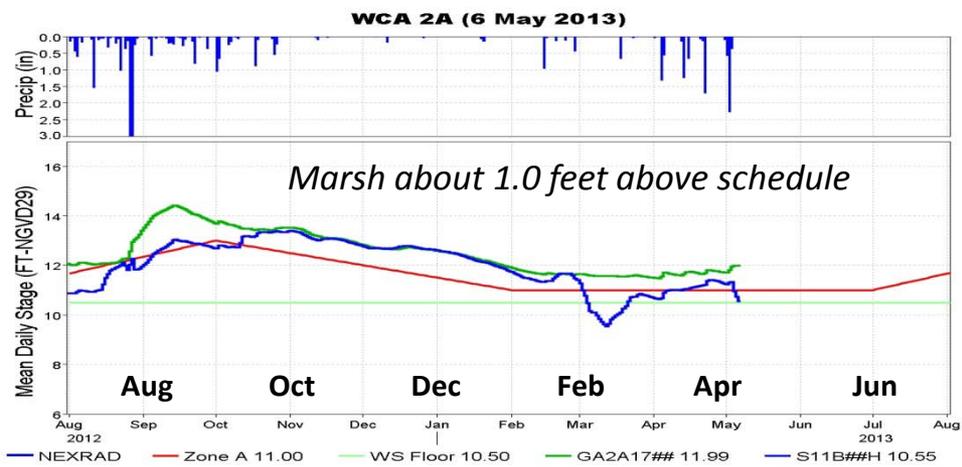
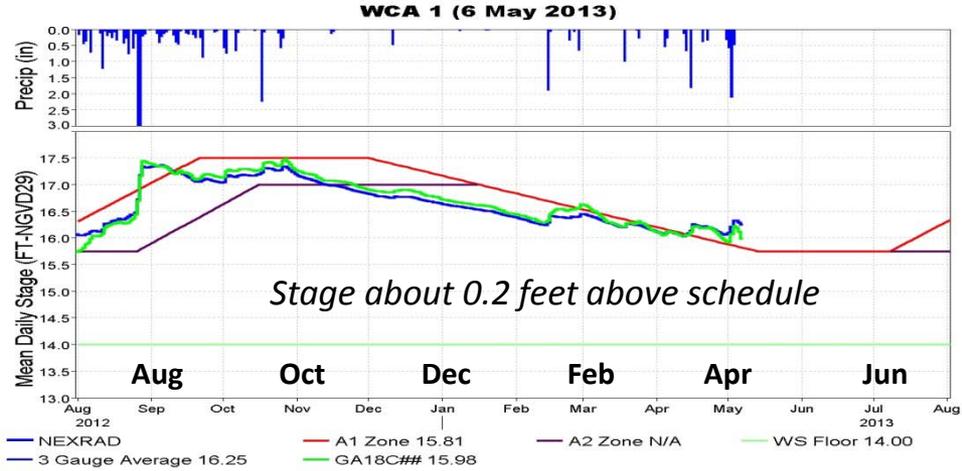
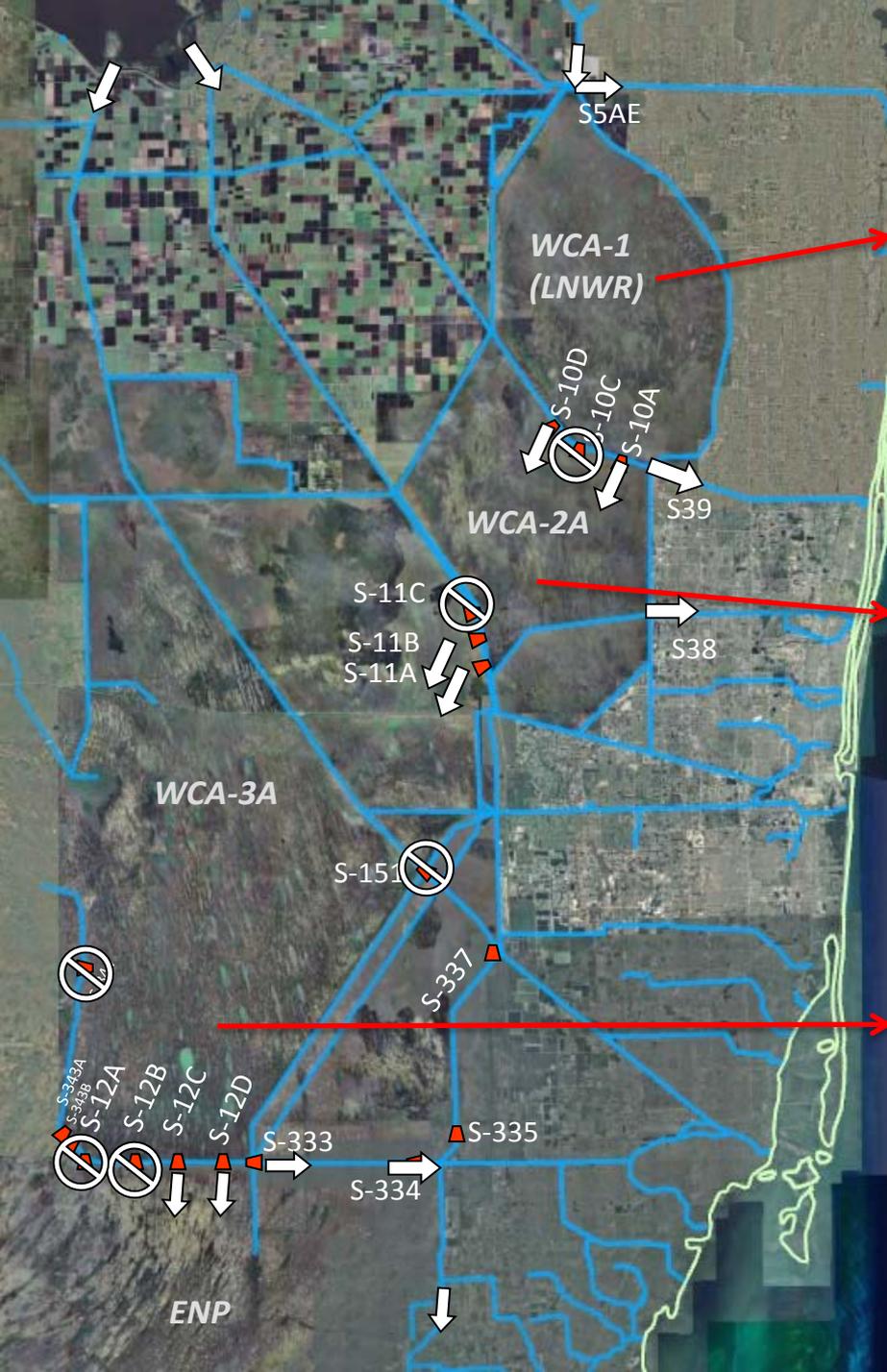
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://droughtmonitor.unl.edu>



Released Thursday, May 2, 2013
Eric Luebehusen, U.S. Department of Agriculture





Groundwater Levels

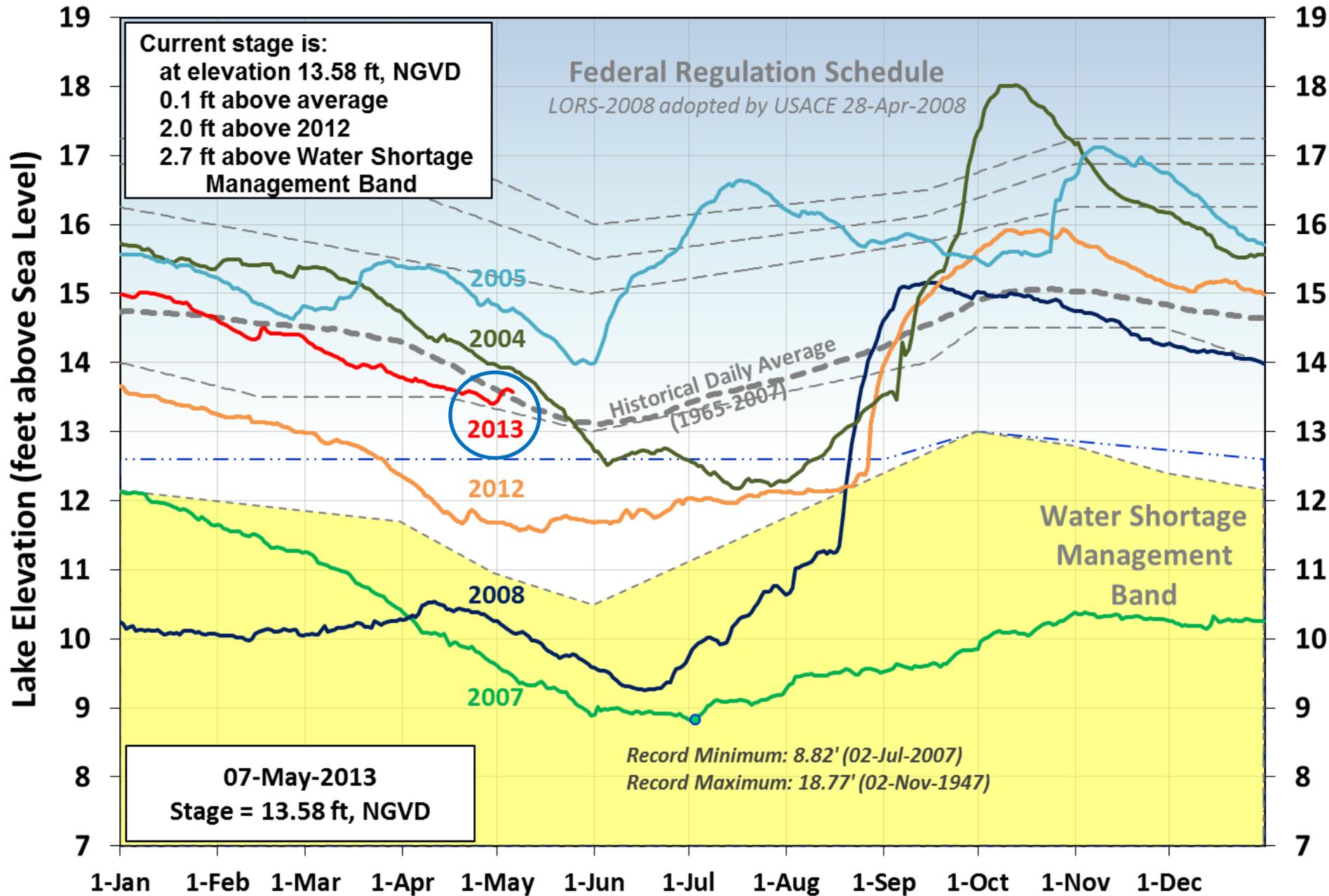
Water levels at selected sites in South Florida
Based on PROVISIONAL DATA, as Of May 6th, 2013



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

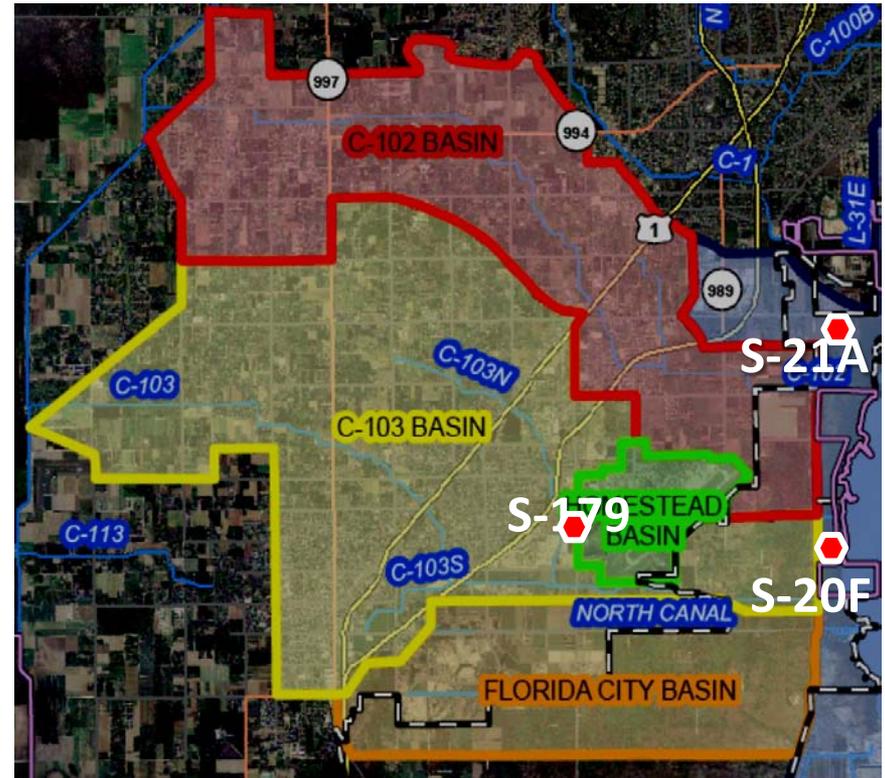


Miami-Dade Operations

2012-2013 Seasonal Agricultural Drawdown Proceeded normally:

Initiated on October 15, 2012 -
Farmers completed agricultural operations the last week of April.

This marks completion of the
Seasonal Agricultural Drawdown



Redirection of Flows via C-2/C-3, C-4 to benefit Biscayne Bay:

Excess water from WCA3 and the C-2/C-3/C-4 basins were moved to Biscayne Bay through March 12. The April rain events have allowed water manager to restart these operations.

(The next slide shows the map of these operations)

Lake Okeechobee: Current Operations

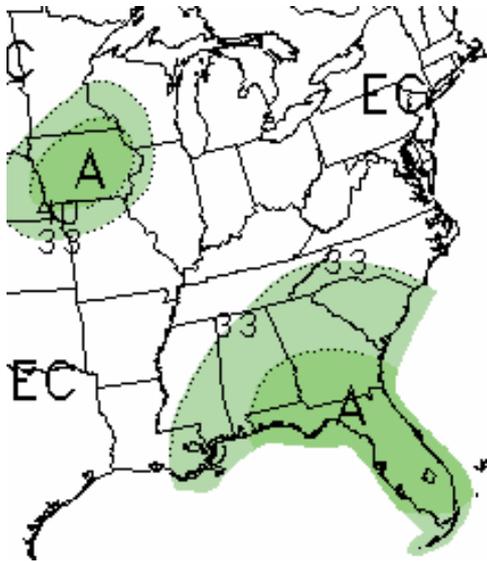
- **USACE's Lake O Regulation Schedule (2008 LORS)**
 - Stage (~13.5 ft, NGVD) is within the bottom 1/3 of the Low Subband
 - Tributary Hydrologic Condition (THC) moved to the normal classification this week (THC was in the dry classification for most of the dry season)
 - Release Guidance and Water Control Plan currently suggests
 - Up to 2000 cfs at S-79, and up to 730 cfs at S-80
 - No releases to the WCAs since stages are above regulation schedules
 - 8-May-2013: USACE increased S-79 discharges from 650 cfs to 1500 cfs, and S-80 discharges from zero to 250 cfs.

- **SFWMD's Lake O Adaptive Protocol (2010 LOAP)**
 - Will be the basis for SFWMD recommendations if/when the Lake stage recedes into the Baseflow Subband of the 2008 LORS
 - LOAP environmental water supply releases (if Lake stage falls into the Beneficial Use Subband of the LORS 2008) are not constrained by the THC in April or May (Aug '12 SFWMD Governing Board guidance)

U. S. Seasonal Precipitation Outlook

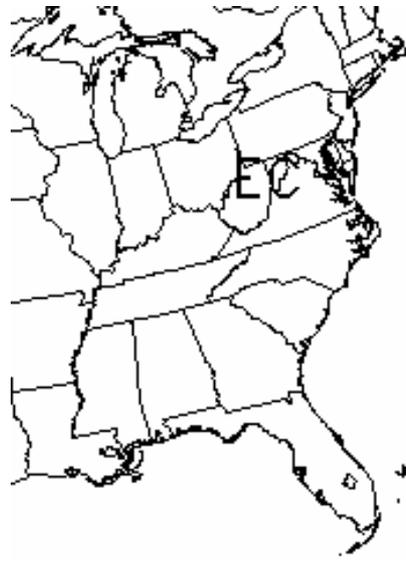
National Climate Prediction Center (CPC)

May 2013



Made 30-Apr-2013

May – Jul 2013



Made 18-Apr-2013

Sep-Nov 2013

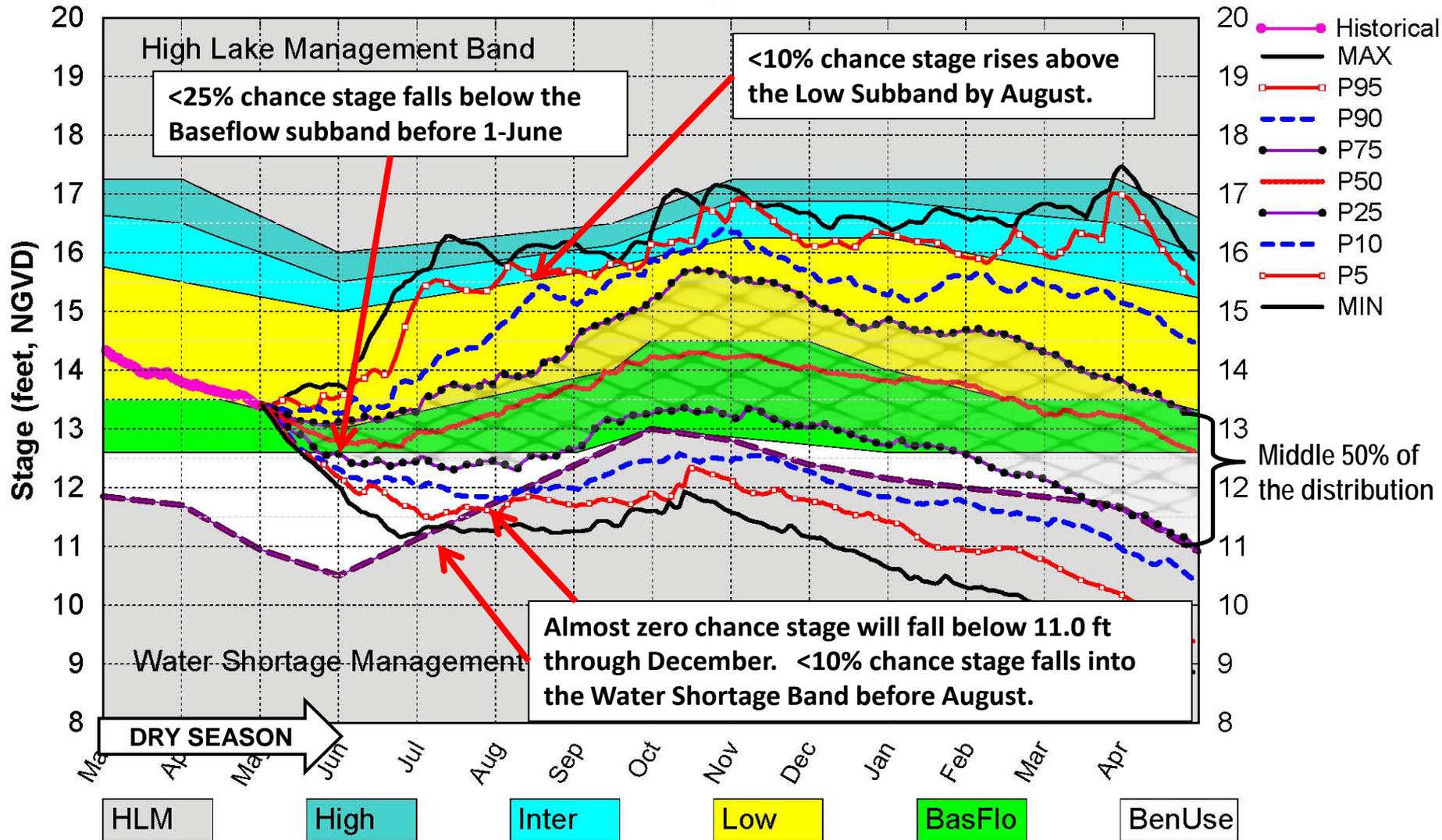


Made 18-Apr-2013

The recent CPC precipitation outlooks indicate Above-Normal rainfall conditions for May 2013, and equal chances of Above-Normal (A), Below-Normal (B), and Normal rainfall for central and southern Florida, for all the three-month windows within the 2013 wet season.

Lake Okeechobee SFWMM May 2013 Position Analysis

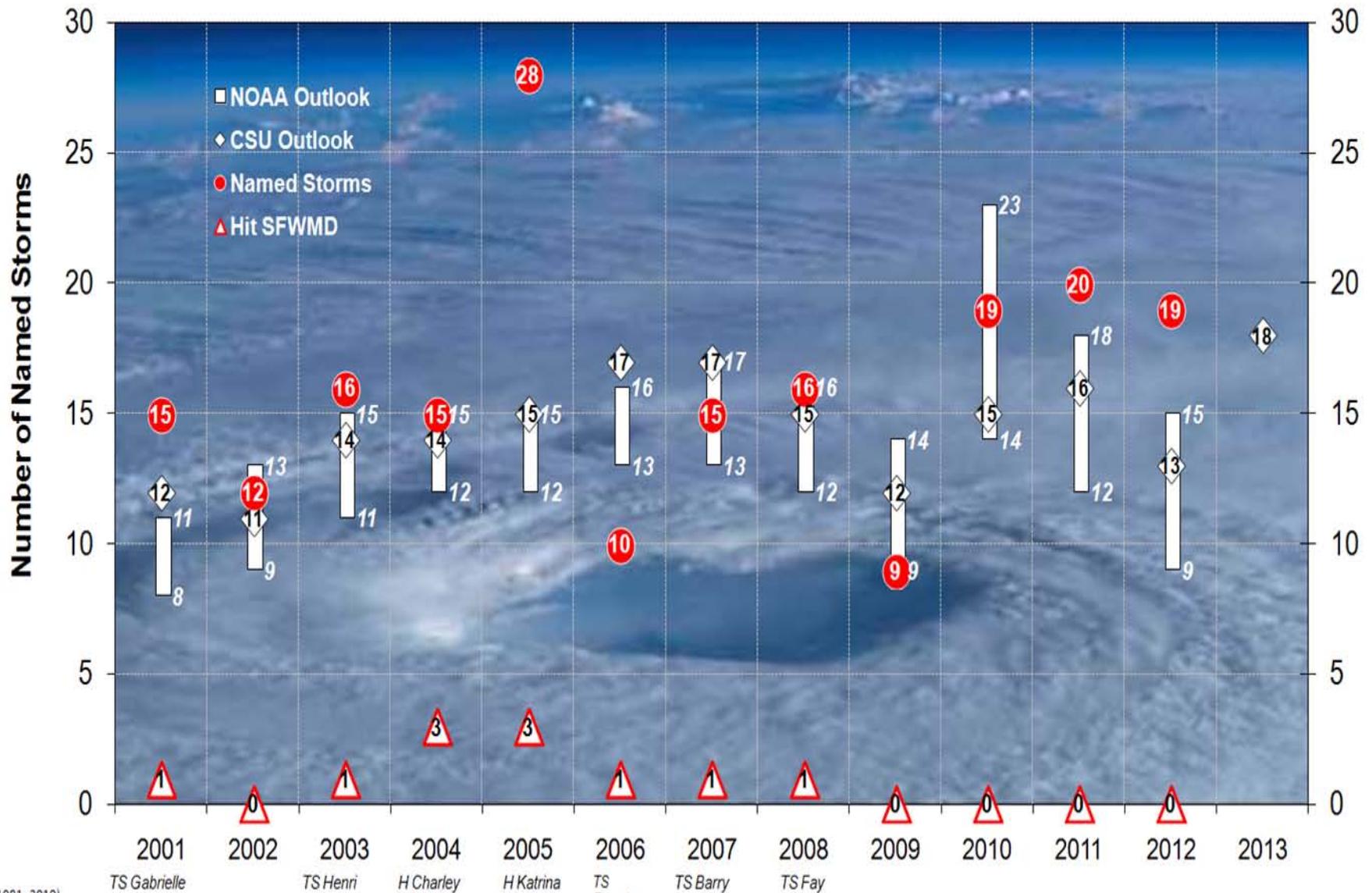
Percentiles based on 41 possible outcomes starting with Apr 1st initialization



(See assumptions on the Position Analysis Results website)

Atlantic Hurricane Season

Named Storms vs Pre-Season Outlooks



Average (1981–2010)
 12.1 Named Storms
 6.4 Hurricanes
 2.7 Major Hurricanes (Cat 3 or higher)

TS Gabrielle

TS Henri

H Charley
 H Frances
 H Jeanne

H Katrina
 H Rita
 H Wilma

TS Ernesto

TS Barry

TS Fay

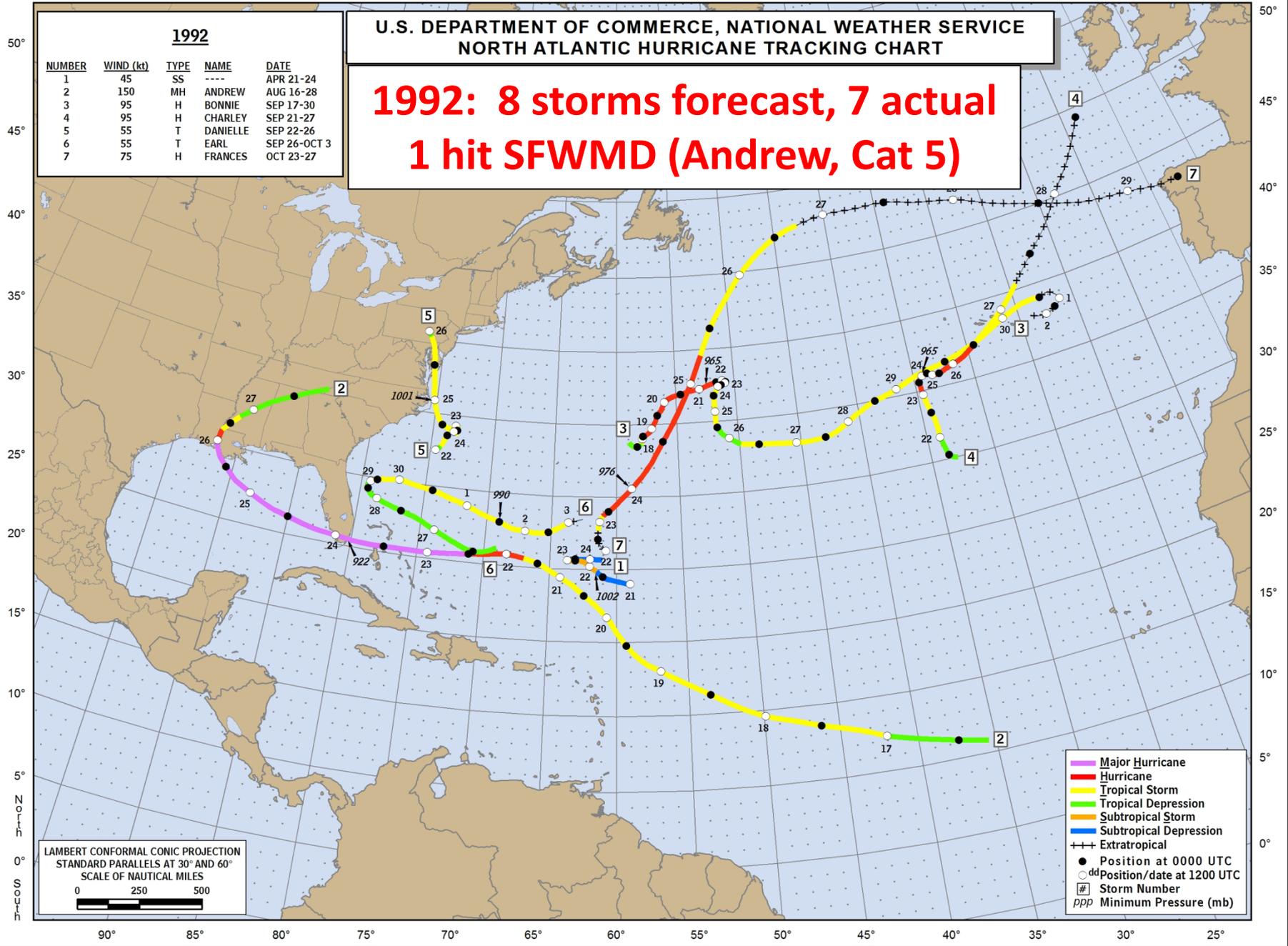
120° 115° 110° 105° 100° 95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25° 20° 15° 10° 5° West 0° East 5°

1992

NUMBER	WIND (kt)	TYPE	NAME	DATE
1	45	SS	----	APR 21-24
2	150	MH	ANDREW	AUG 16-28
3	95	H	BONNIE	SEP 17-30
4	95	H	CHARLEY	SEP 21-27
5	55	T	DANIELLE	SEP 22-26
6	55	T	EARL	SEP 26-OCT 3
7	75	H	FRANCES	OCT 23-27

**U.S. DEPARTMENT OF COMMERCE, NATIONAL WEATHER SERVICE
NORTH ATLANTIC HURRICANE TRACKING CHART**

**1992: 8 storms forecast, 7 actual
1 hit SFWMD (Andrew, Cat 5)**



LAMBERT CONFORMAL CONIC PROJECTION
STANDARD PARALLELS AT 30° AND 60°
SCALE OF NAUTICAL MILES
0 250 500

— Major Hurricane
— Hurricane
— Tropical Storm
— Tropical Depression
— Subtropical Storm
— Subtropical Depression
— Extratropical
● Position at 0000 UTC
○ Position/date at 1200 UTC
Storm Number
ppp Minimum Pressure (mb)

90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25°

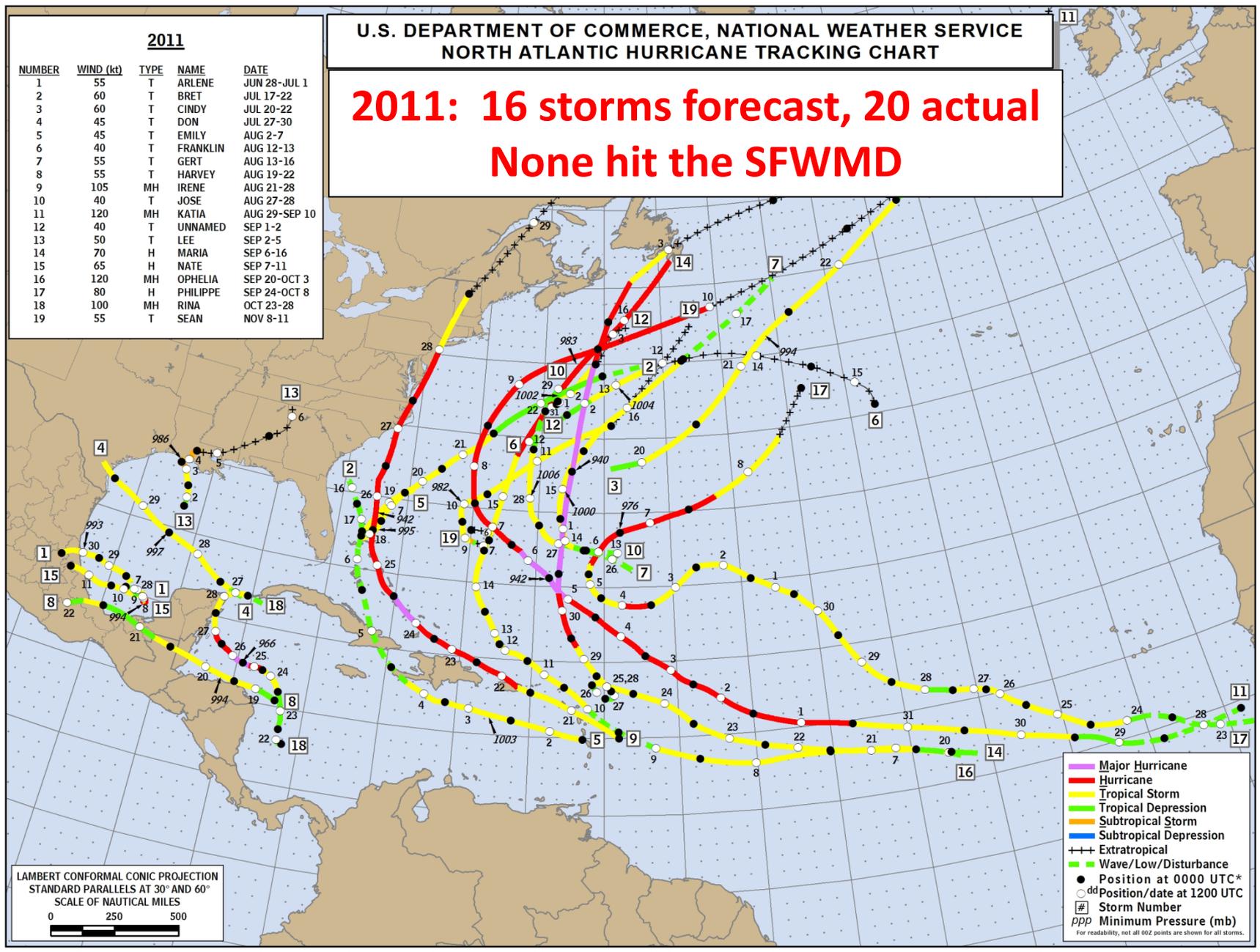
120° 115° 110° 105° 100° 95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45° 40° 35° 30° 25° 20° 15° 10° 5° West 0° East 5°

U.S. DEPARTMENT OF COMMERCE, NATIONAL WEATHER SERVICE
 NORTH ATLANTIC HURRICANE TRACKING CHART

2011: 16 storms forecast, 20 actual
None hit the SFWMD

2011

NUMBER	WIND (kt)	TYPE	NAME	DATE
1	55	T	ARLENE	JUN 28-JUL 1
2	60	T	BRET	JUL 17-22
3	60	T	CINDY	JUL 20-22
4	45	T	DON	JUL 27-30
5	45	T	EMILY	AUG 2-7
6	40	T	FRANKLIN	AUG 12-13
7	55	T	GERT	AUG 13-16
8	55	T	HARVEY	AUG 19-22
9	105	MH	IRENE	AUG 21-28
10	40	T	JOSE	AUG 27-28
11	120	MH	KATIA	AUG 29-SEP 10
12	40	T	UNNAMED	SEP 1-2
13	50	T	LEE	SEP 2-5
14	70	H	MARIA	SEP 6-16
15	65	H	NATE	SEP 7-11
16	120	MH	OPHELIA	SEP 20-OCT 3
17	80	H	PHILIPPE	SEP 24-OCT 8
18	100	MH	RINA	OCT 23-28
19	55	T	SEAN	NOV 8-11



LAMBERT CONFORMAL CONIC PROJECTION
 STANDARD PARALLELS AT 30° AND 60°
 SCALE OF NAUTICAL MILES
 0 250 500

Major Hurricane
 Hurricane
 Tropical Storm
 Tropical Depression
 Subtropical Storm
 Subtropical Depression
 ++ Extratropical
 --- Wave/Low/Disturbance
 ● Position at 0000 UTC*
 ○ Position/date at 1200 UTC
 # Storm Number
 ppp Minimum Pressure (mb)
For readability, not all 00Z points are shown for all storms.

Questions ?

