

Water Conditions Summary

South Florida Water Management District Governing Board Meeting

June 13, 2013

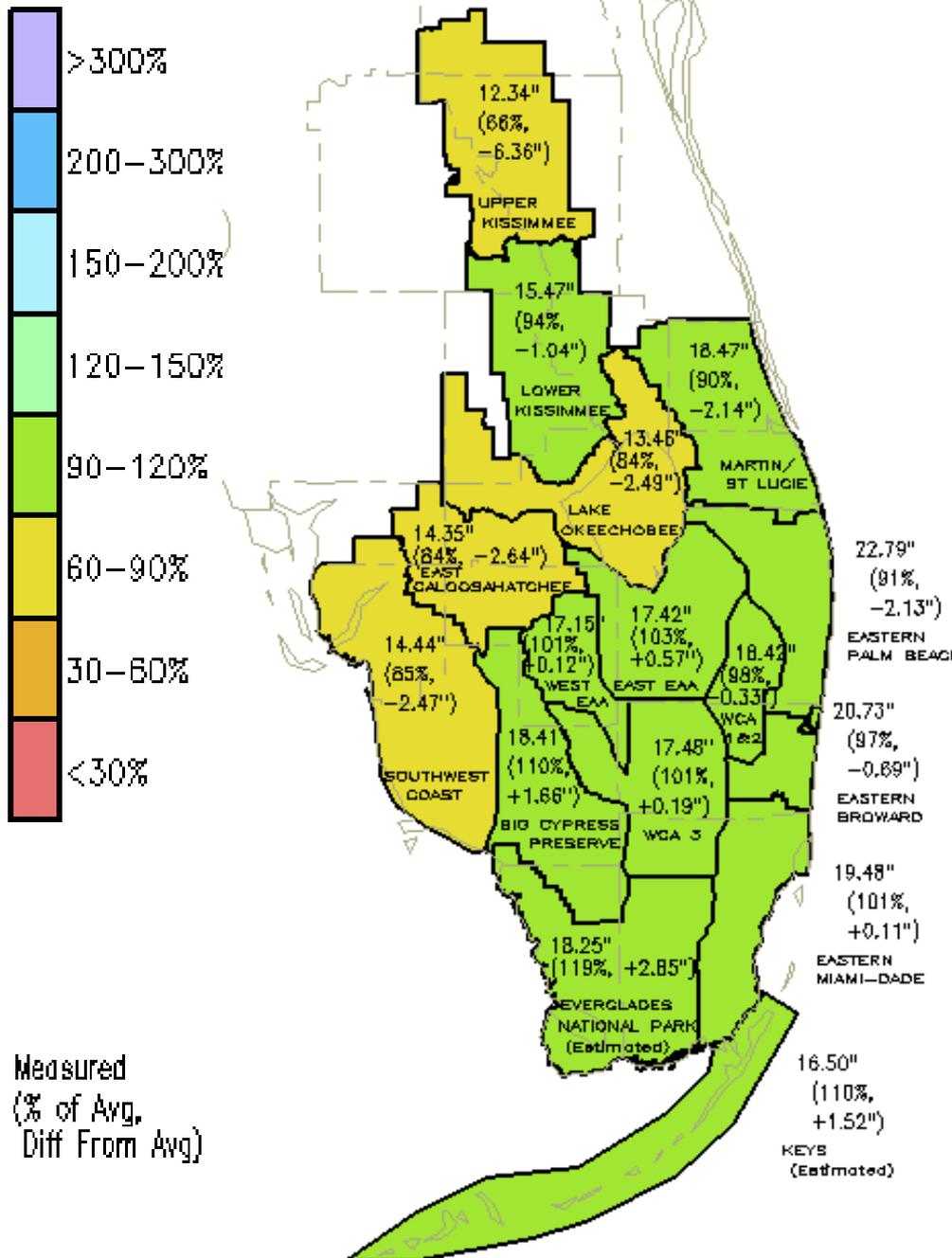
Tommy B. Strowd, P.E., Assistant Executive Director
Operations, Maintenance & Construction Division

SFWMD

Dry Season Rainfall

Nov 1 2012 – 01 Jun 2013

DISTRICT-WIDE: 16.48"
(92% of Avg, or -1.48")

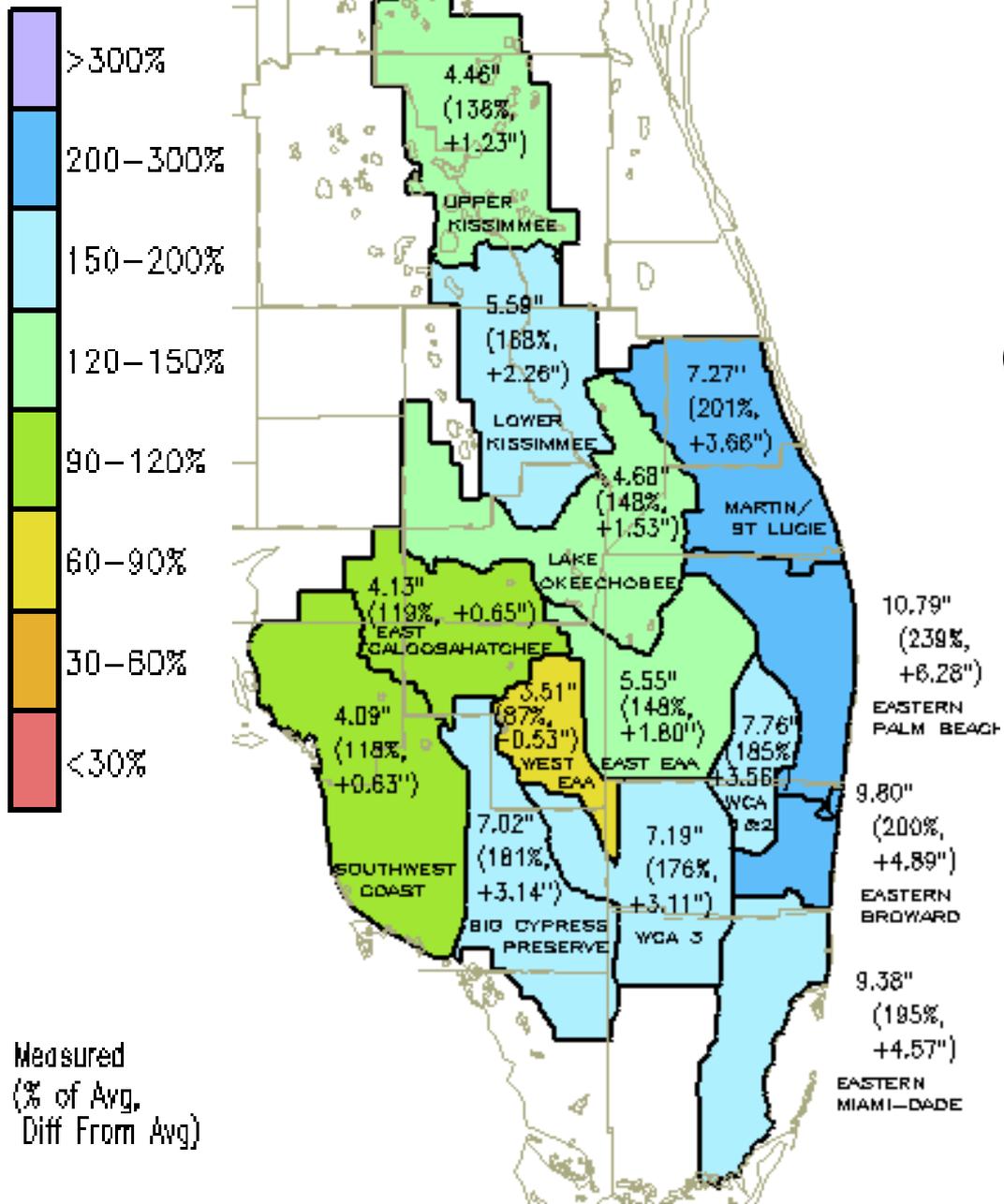


- Overall, below average
- Basins in the south-central portion of the District are slightly above average
- East Coast is predominantly slightly below average
- Upper Kissimmee, Lake Okeechobee and basins west are below average

SFWMD 2013 May Rainfall

(May 2 - 31, 2013)

**DISTRICT-WIDE: 6.08"
(163% of Avg, or +2.35")**



- All basins but one recorded above average rainfall
- Highest is Eastern Palm Beach County, 239% of average (+6.28")
- Lowest is Western EAA, 87% of average -0.53")
- Wettest May since 1996
- **Wet Season Started around May 18th**

Measured
(% of Avg,
Diff From Avg)

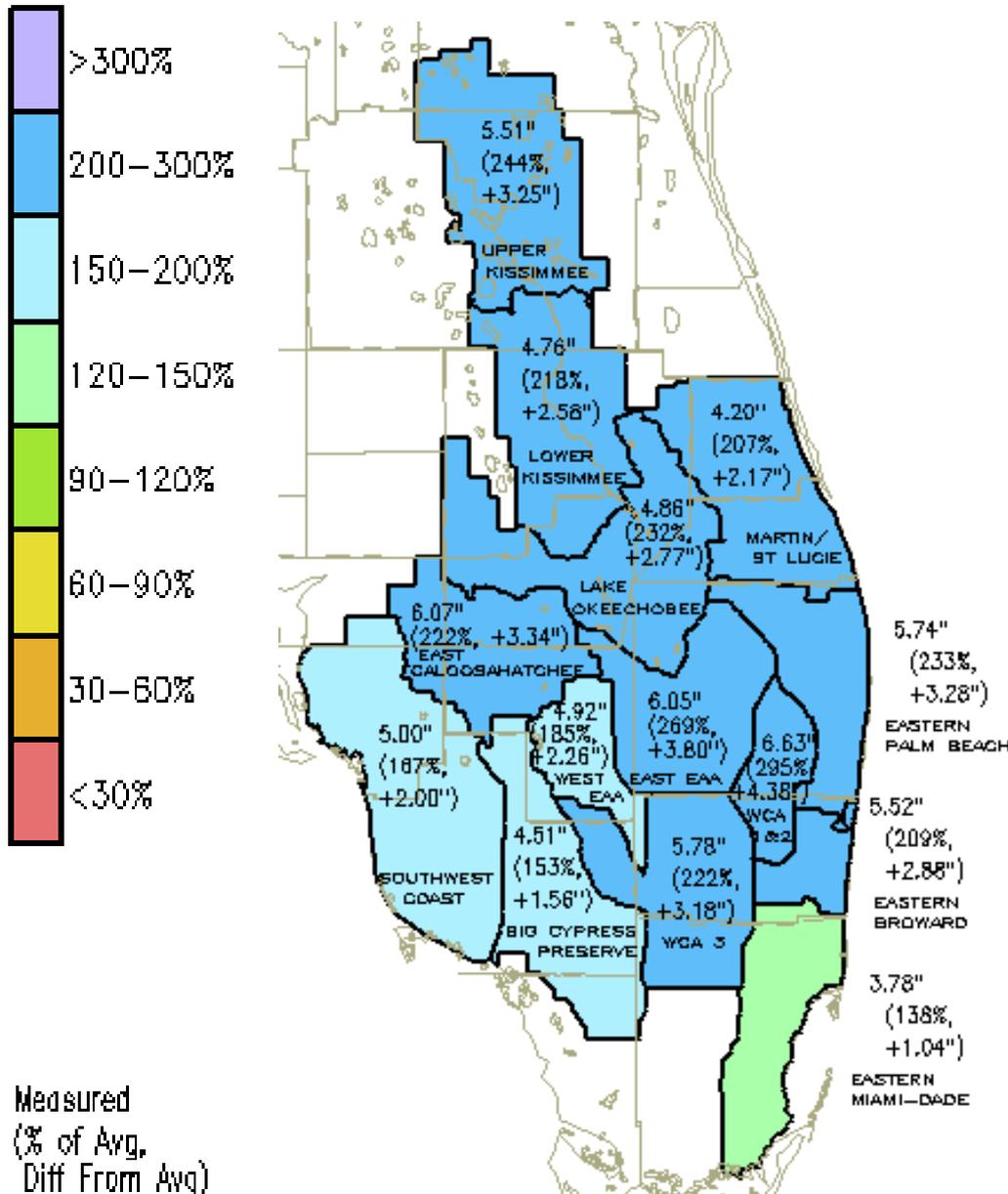
SFWMD

June 2013 Rainfall

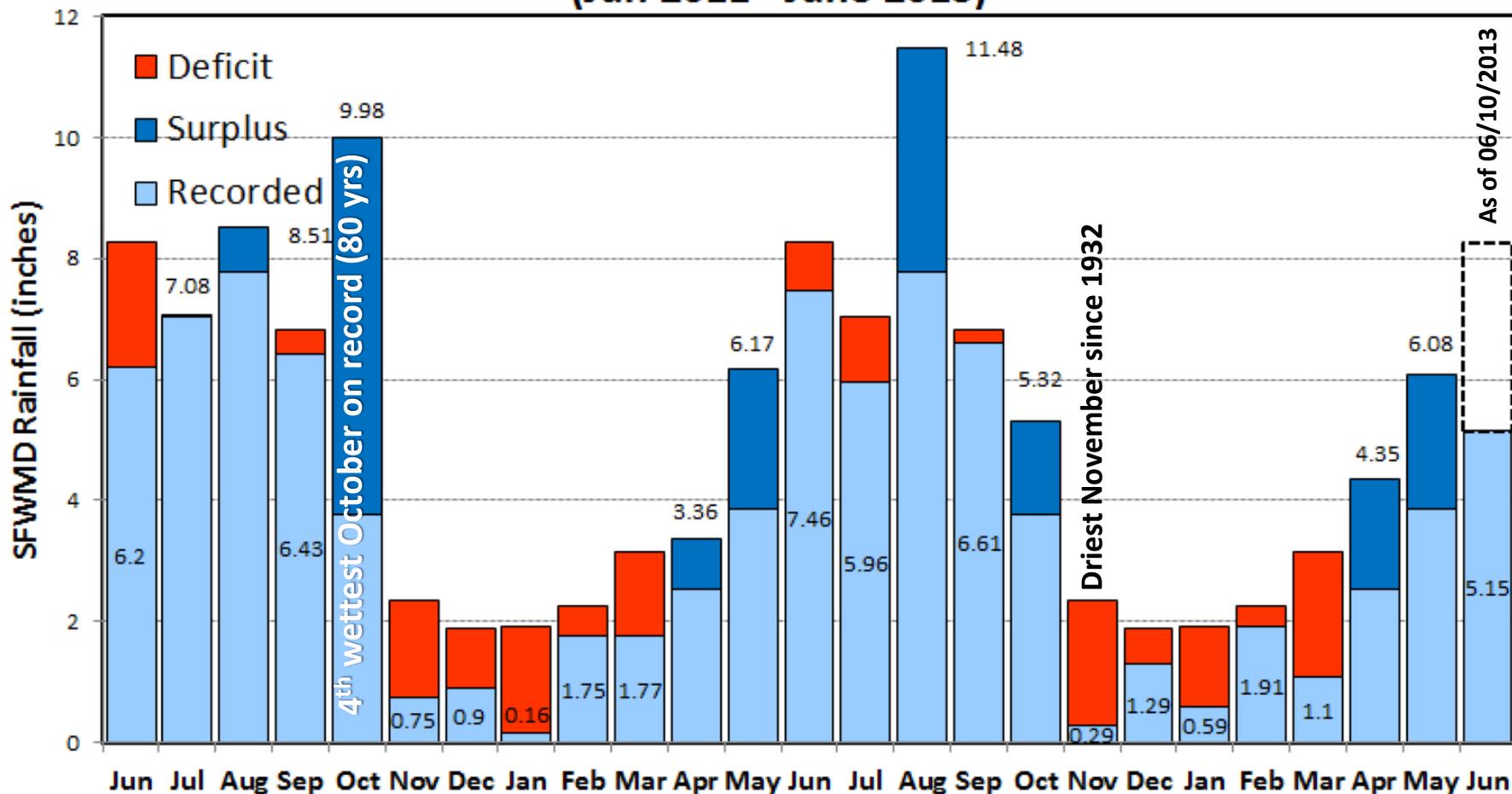
(June 2 - 10, 2013)

DISTRICT-WIDE: 5.15"
(208% of Avg, or 2.67")

- June 2013 had a very wet start.
- In addition to the last 5 consecutive days of May, the District experienced record rainfall for the first 9 days of June
- TS Andrea produced about 3.1" District wide



SFWMD Rainfall Distribution Comparison (Jun 2011 - June 2013)



2011 WET SEASON:

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

2011-12 DRY SEASON:

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

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.

2012-13 DRY SEASON:

- Driest November since 1932
- Below average despite April/May being above

2013 WET SEASON:

- May 18th Start
- T.S. Andrea produced 3.1 inches District wide



Estimates typically are within 20% of actual rainfall.

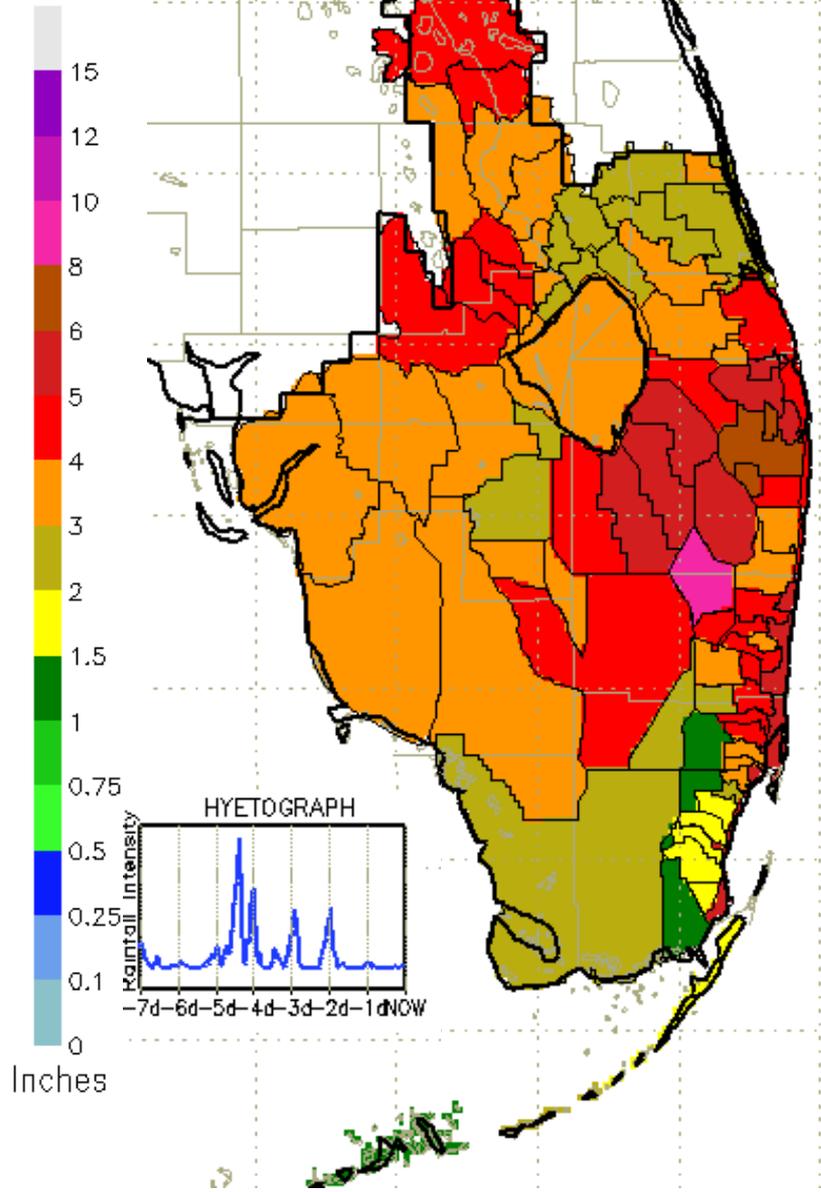
SFWMD

Tropical Storm Andrea

(June 5 - 8, 2013)

DISTRICT-WIDE: 3.1"

- TS Andrea produced about 3.1" District wide
- Which is about what the District receives in an average year due to tropical activity
- Several basin wide averages were 4 to 8 inches
- Many of these same areas were already saturated from earlier rainfall



Flood Control Operations

C-51 Discharges to Tide (Lake Worth Lagoon)

- Maximum discharges were being made out the C-51 canal via the S-155A structure and to tide via S155 for the water levels experienced during the event

STA-1E and STA-1W – Diversion to WCA-1 (via G300 & G301)

- Diversion started June 7, 2013, at approximately 4:30 pm and was terminated June 11, 2013 at approximately 2:30 pm
- STA-1E hydraulic capacity was limited given ongoing status of USACE construction / rehabilitation efforts
- Diversion intended to avoid substantial damage to the STA treatment works and avoid conditions that would threaten the survival of STA vegetation and treatment efficiency

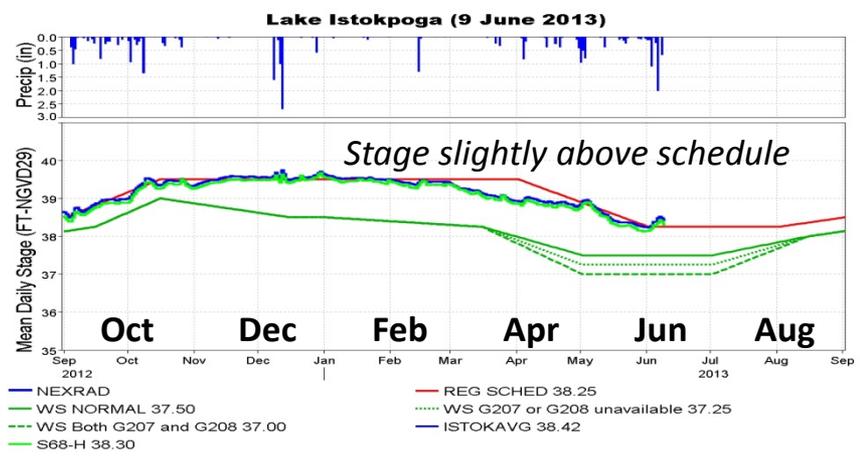
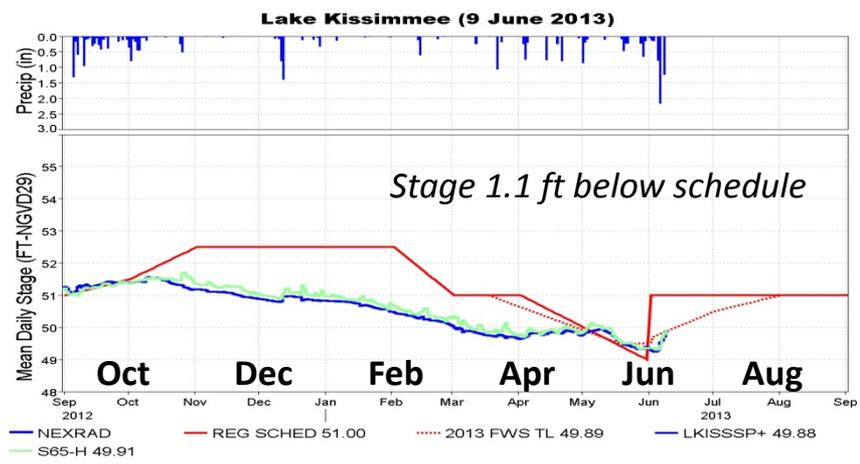
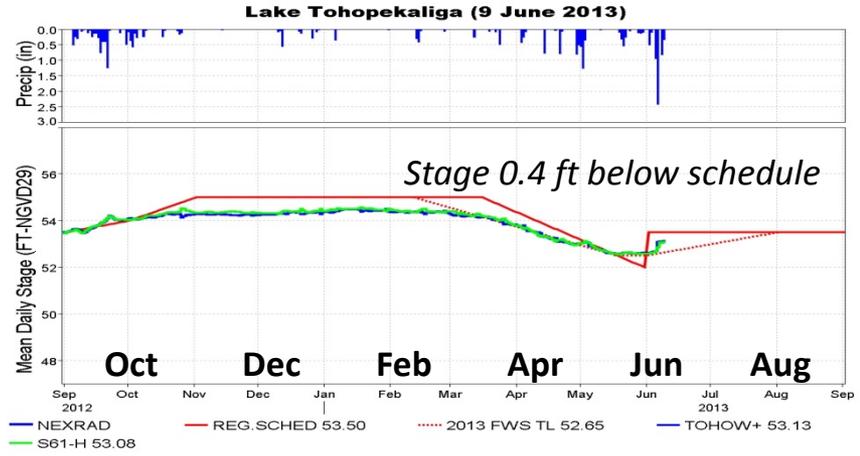
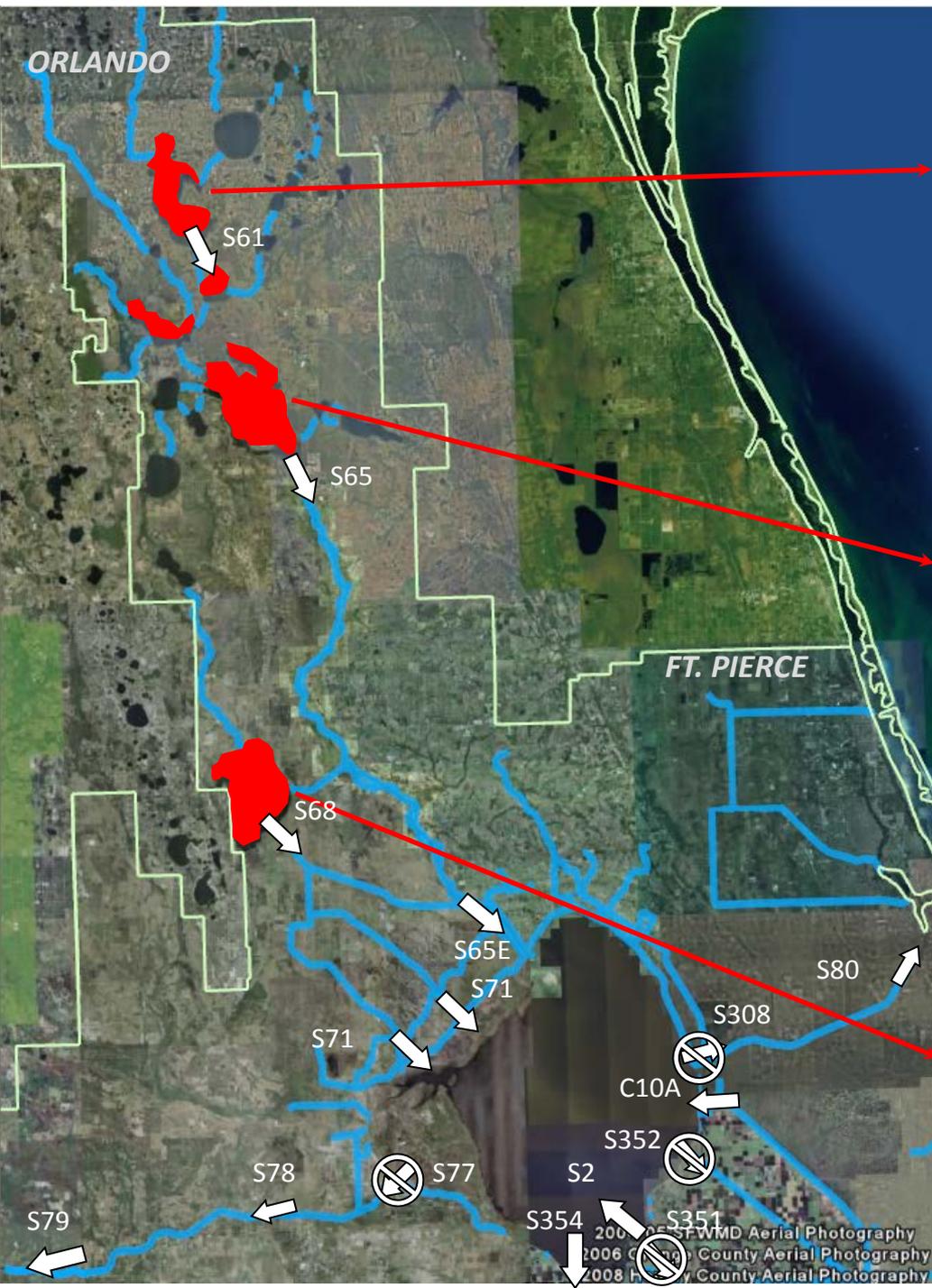
Flood Control Operations

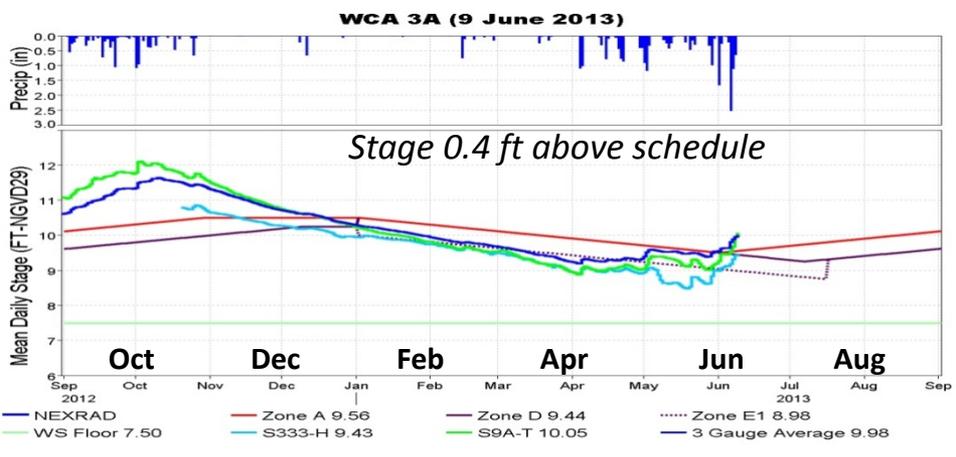
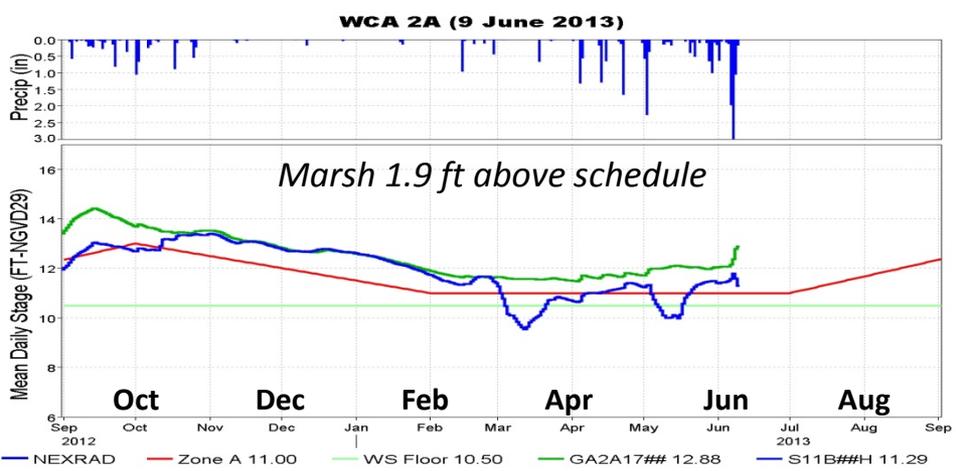
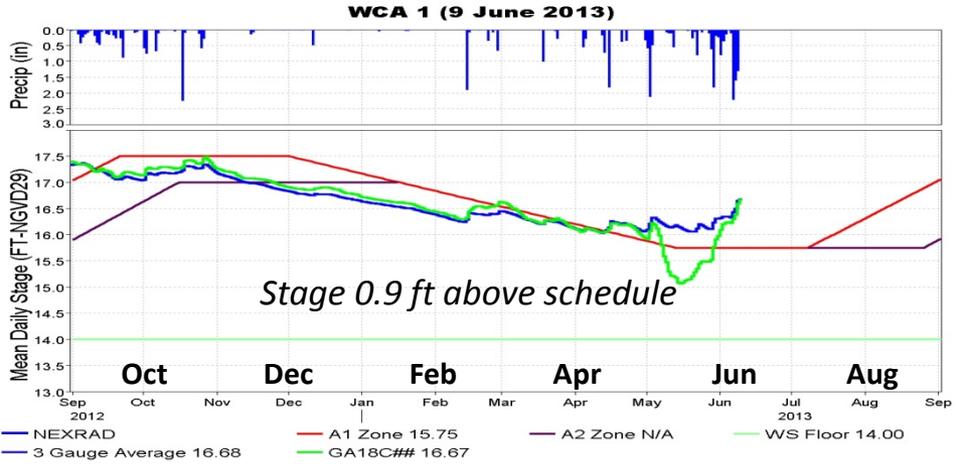
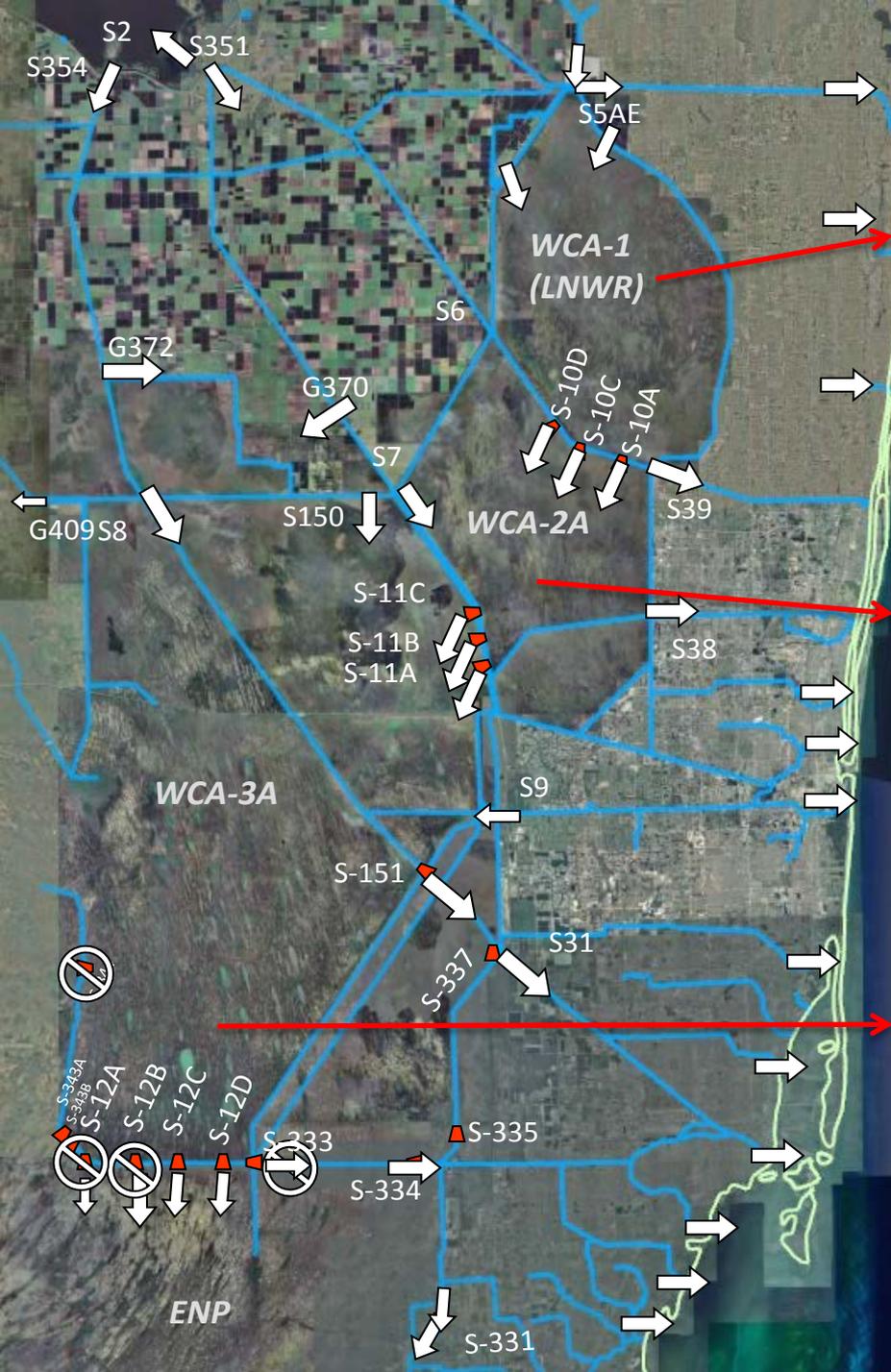
Discharges to Lake Okeechobee

- Flood control pumping to the Lake at S-2 began June 6, 2013 at 4:30 pm, and was secured at 6:00am June 12, 2013
- The southern pump stations were pumping to the fullest extent possible without negatively impacting the central flowway in STA 3/4.

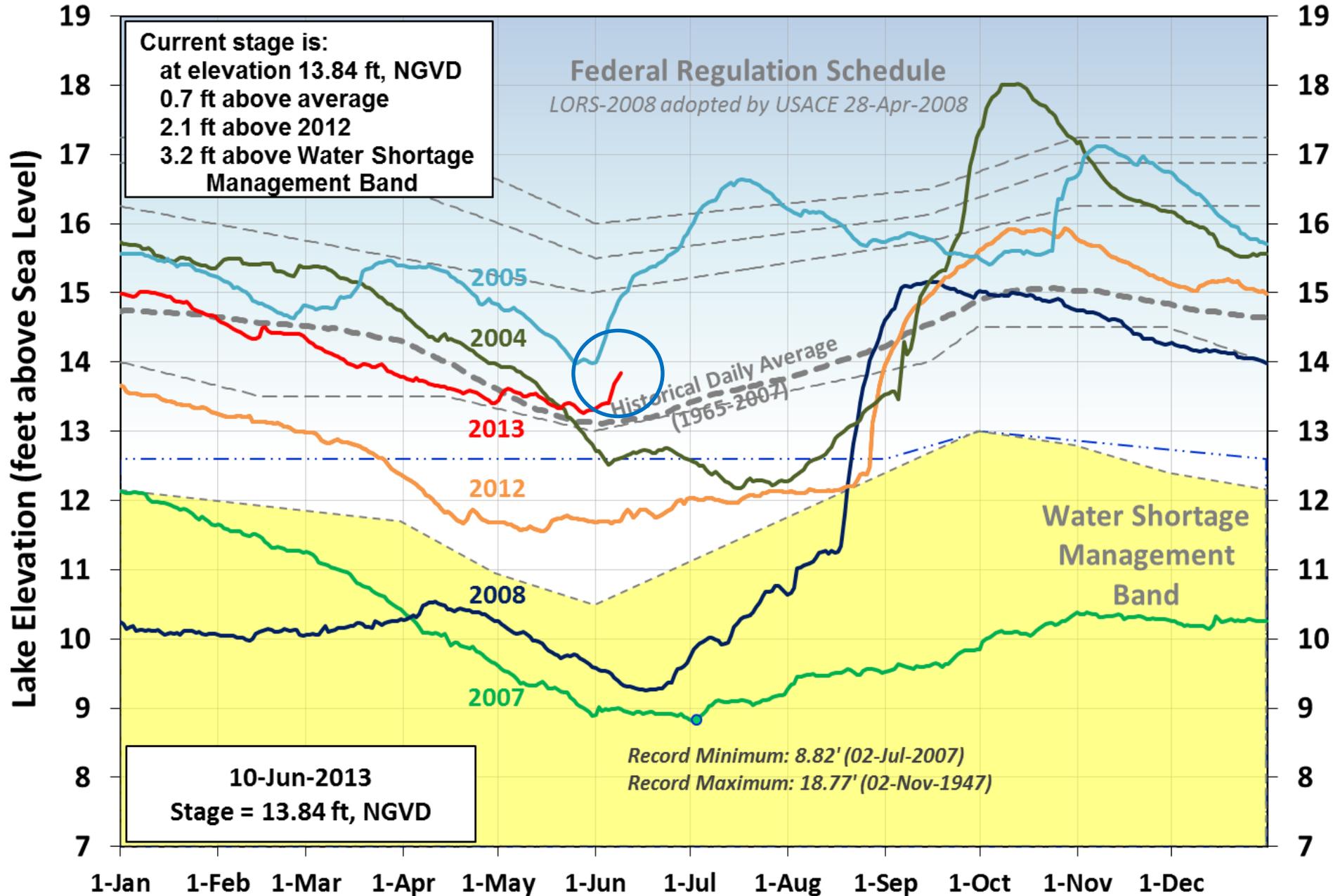
STA 3/4 – Diversion to WCA-3A (via G373)

- Diversion of STA-3/4 inflows began on June 7, 2013, at approximately 12:00 pm at the Miami Canal (G-373), terminated diversion at midnight on June 11, 2013
- Limited capacity exists within the Central Flow-way of STA-3/4 due to essential vegetation rejuvenation and rehabilitation activities as well as ground nesting black-necked stilts, a migratory bird listed under the Migratory Bird Treaty Act (MBTA).
- Diversion intended to avoid substantial damage to the STA treatment works and avoid conditions that would threaten the survival of STA vegetation and treatment efficiency





Lake Okeechobee Water Level Comparison



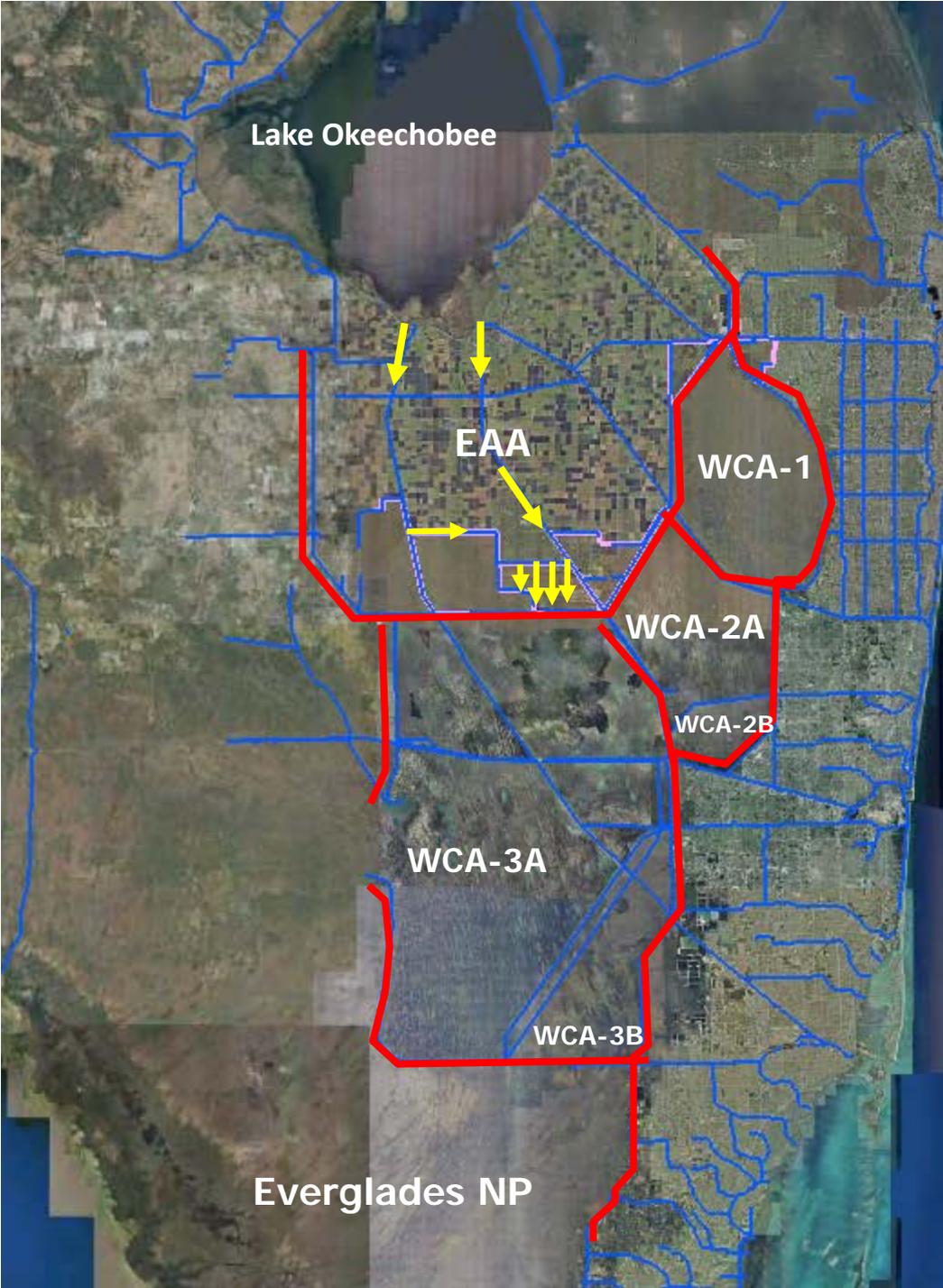
Lake Okeechobee: Current Operations

- **USACE's Lake O Regulation Schedule (2008 LORS)**
 - Stage (~13.92 ft, NGVD) is within the bottom 1/3 of the Low Subband
 - Tributary Hydrologic Condition (THC) in the normal classification this week
 - 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
 - 6-Jun-2013: USACE continues S-79 discharges averaging 1500 cfs, and S-80 discharges averaging 250 cfs .
 - Note that S-308 has been closed since May 20th, so S-80 releases have been basin runoff only.
- **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

STA Operations and Lake Okeechobee Regulatory Releases

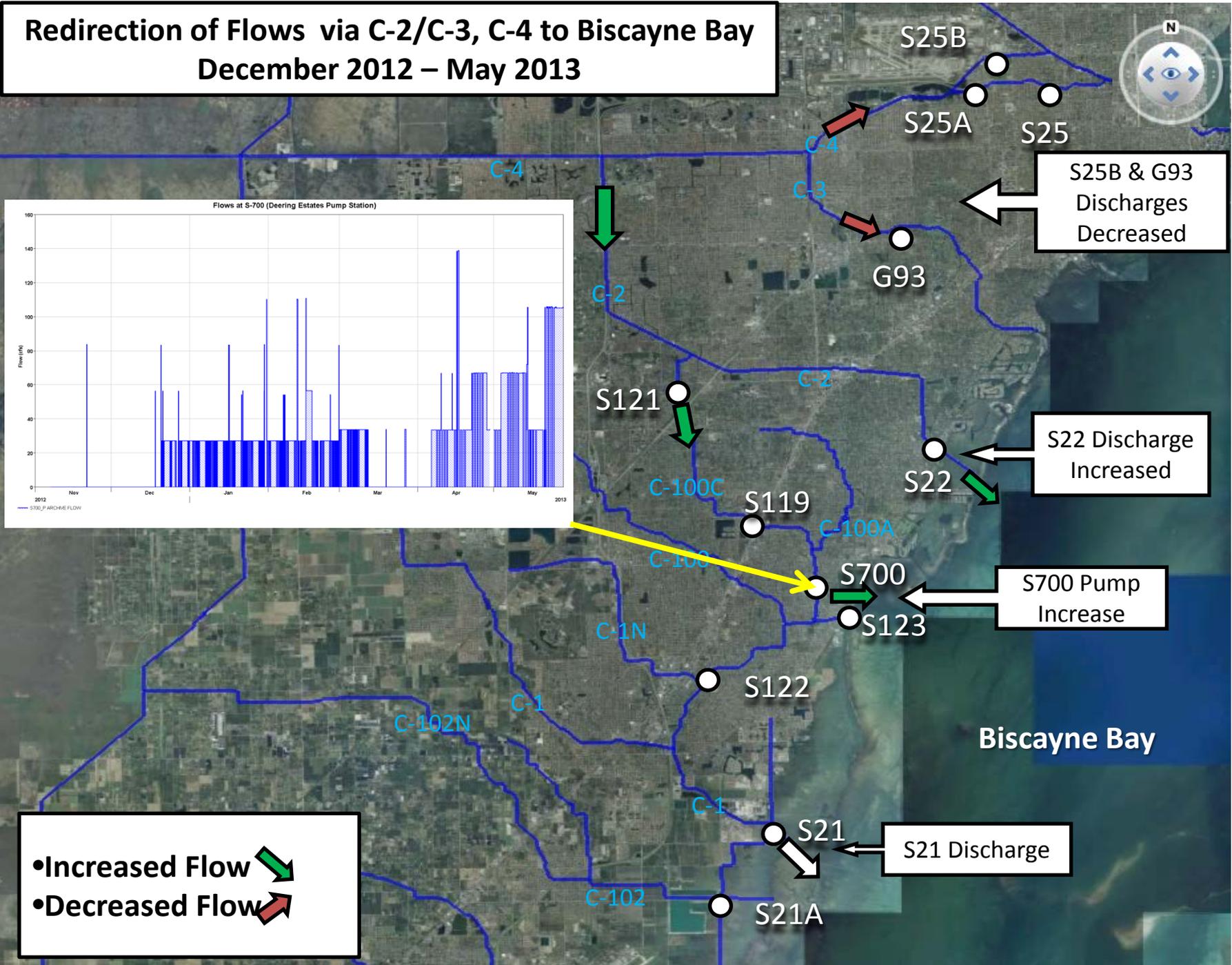
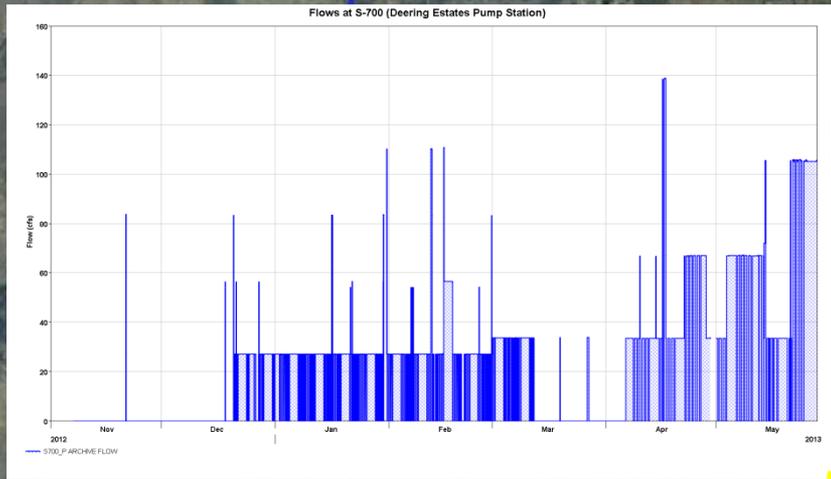
- STA-3/4 was sized with the consideration to accept some regulatory discharge from Lake Okeechobee
 - Based on the historic period-of-record flow data
- A number of issues can constrain or limit the ability to move excess water south from Lake Okeechobee
 - LORS Schedule must call for the release
 - EAA flood control operations
 - Limitations on stage and flow due to ongoing construction, or maintenance projects— *including vegetation management*
 - Limitations on flows and stages to protect nesting avian species
 - Avian Protection Treaty (Black Neck Stilts)
 - Endangered Species Act (Everglades Snail Kite)
 - SFWMD has developed and follows an approved 'Avian Protection Plan'

LORS 2008 Releases to WCA-3A



- 22 weeks so far in 2013
- 14 weeks - releases recommended by LORS
- 10 weeks - releases were made (200-250 cfs)
 - 4 weeks – No release due to either to EAA conveyance capacity limitations or high WCA-3A stages
- Given these constraints, approximately 85,000 ac-ft of Lake water was moved south to the STAs this Water Year... the largest quantity since 2006

Redirection of Flows via C-2/C-3, C-4 to Biscayne Bay December 2012 – May 2013



S25B & G93
Discharges
Decreased

S22 Discharge
Increased

S700 Pump
Increase

S21 Discharge

• Increased Flow 
 • Decreased Flow 

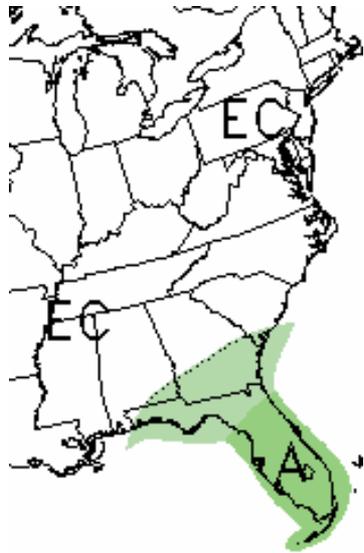
Biscayne Bay

OUTLOOK

U. S. Seasonal Precipitation Outlook

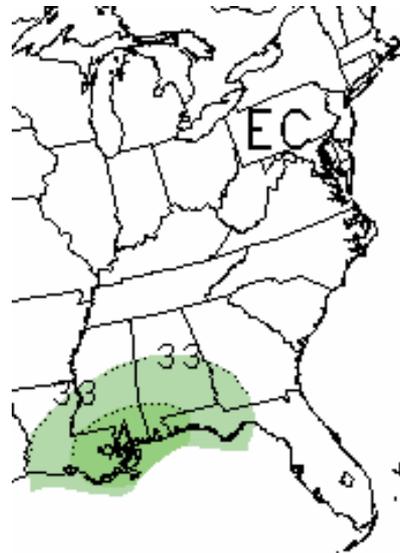
National Climate Prediction Center (CPC)

Jun 2013



Made 31-May-2013

Jun – Aug 2013



Made 16-May-2013

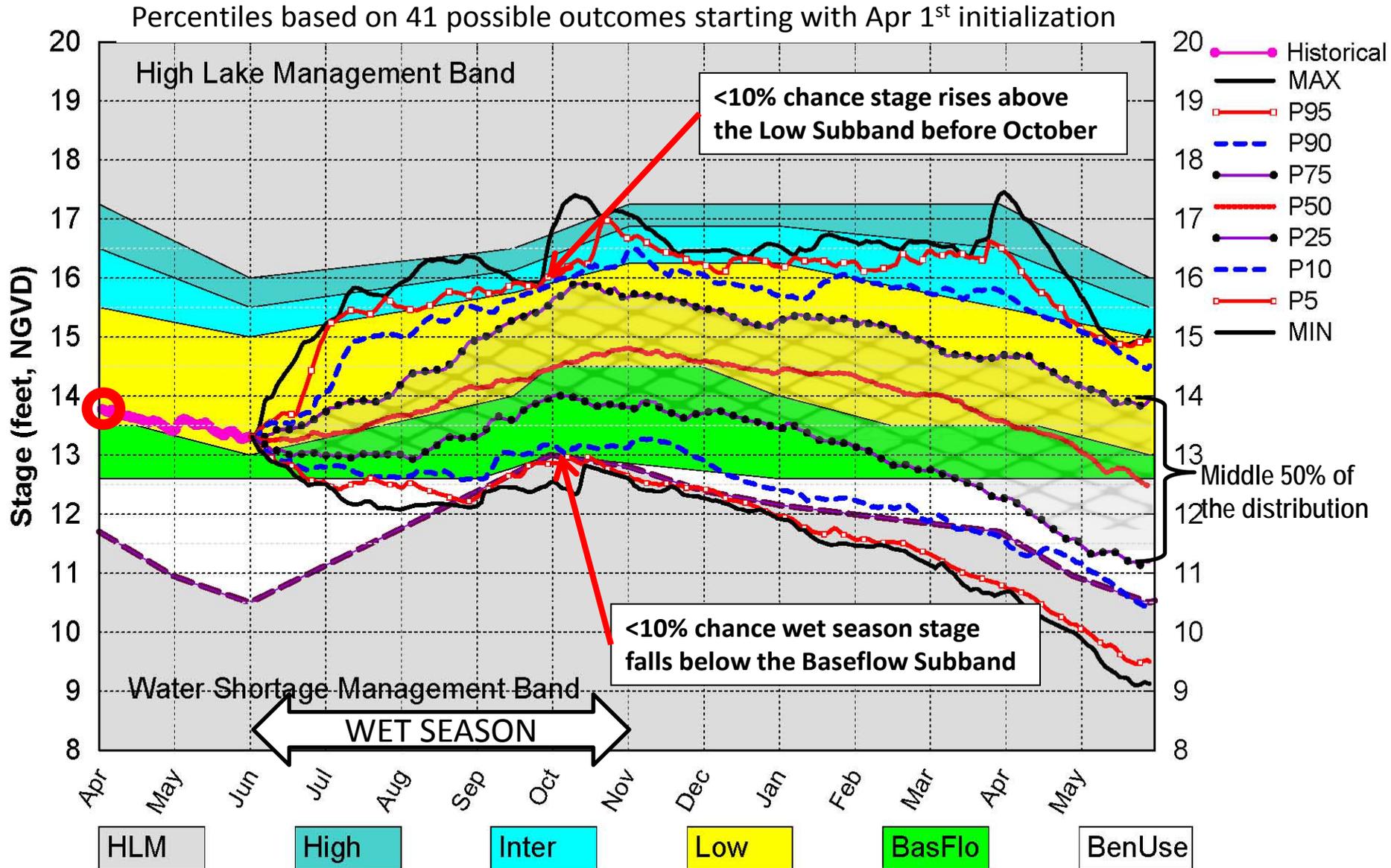
Sep-Nov 2013



Made 16-May-2013

The recent CPC precipitation outlooks indicate Above-Normal rainfall conditions for June 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.

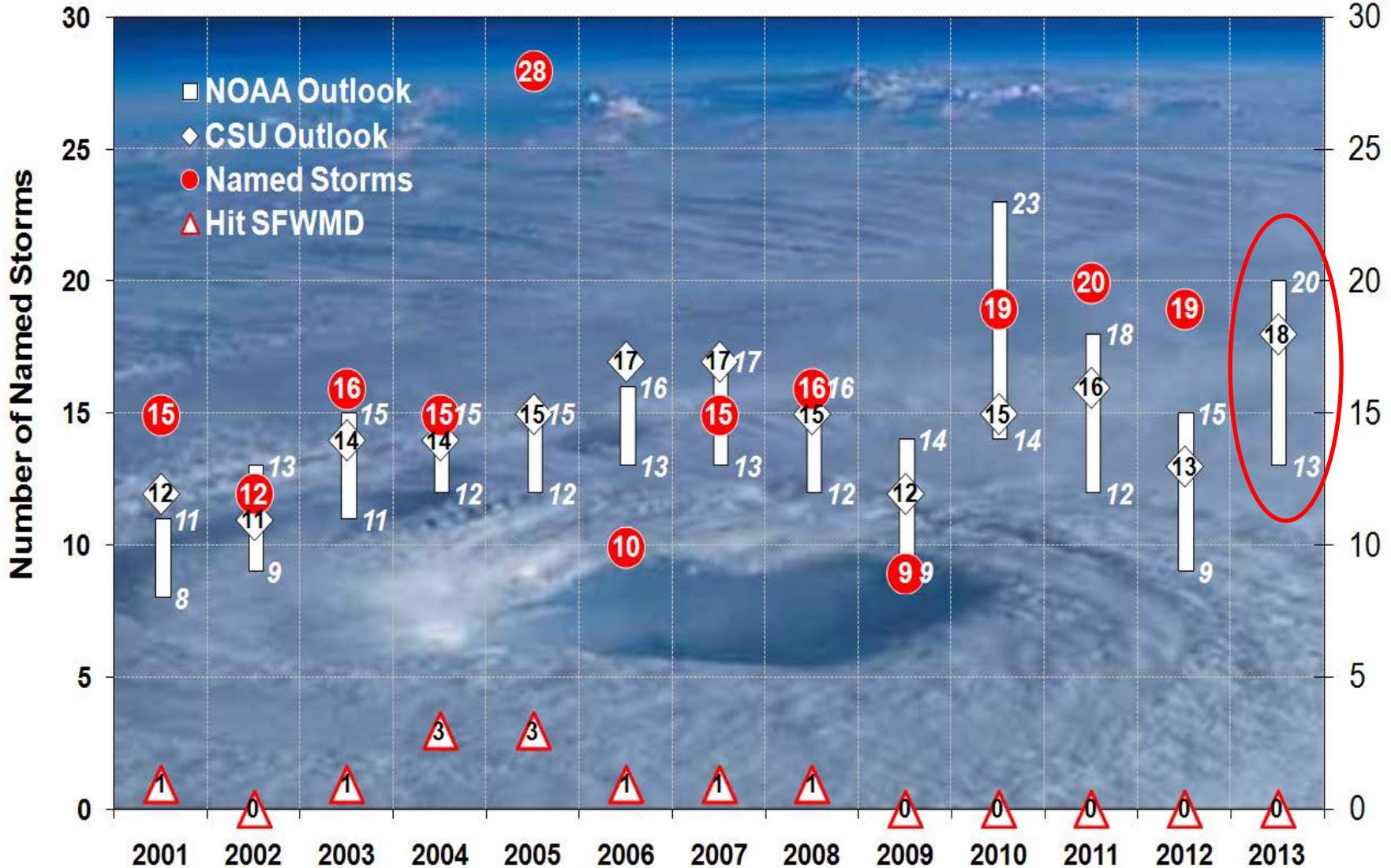
Lake Okeechobee SFWMM June 2013 Position Analysis



(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)

QUESTIONS?

