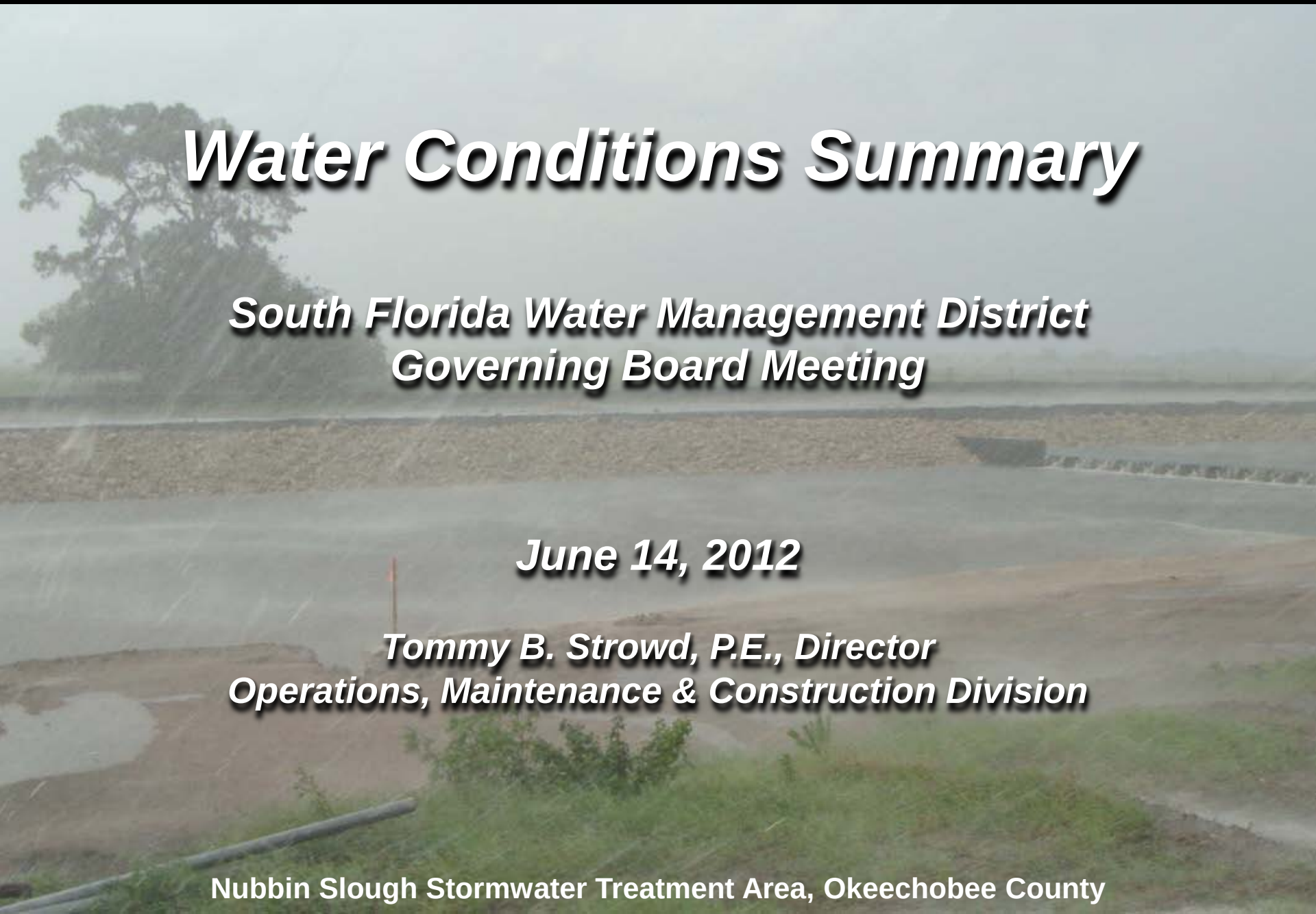
Water Conditions Summary

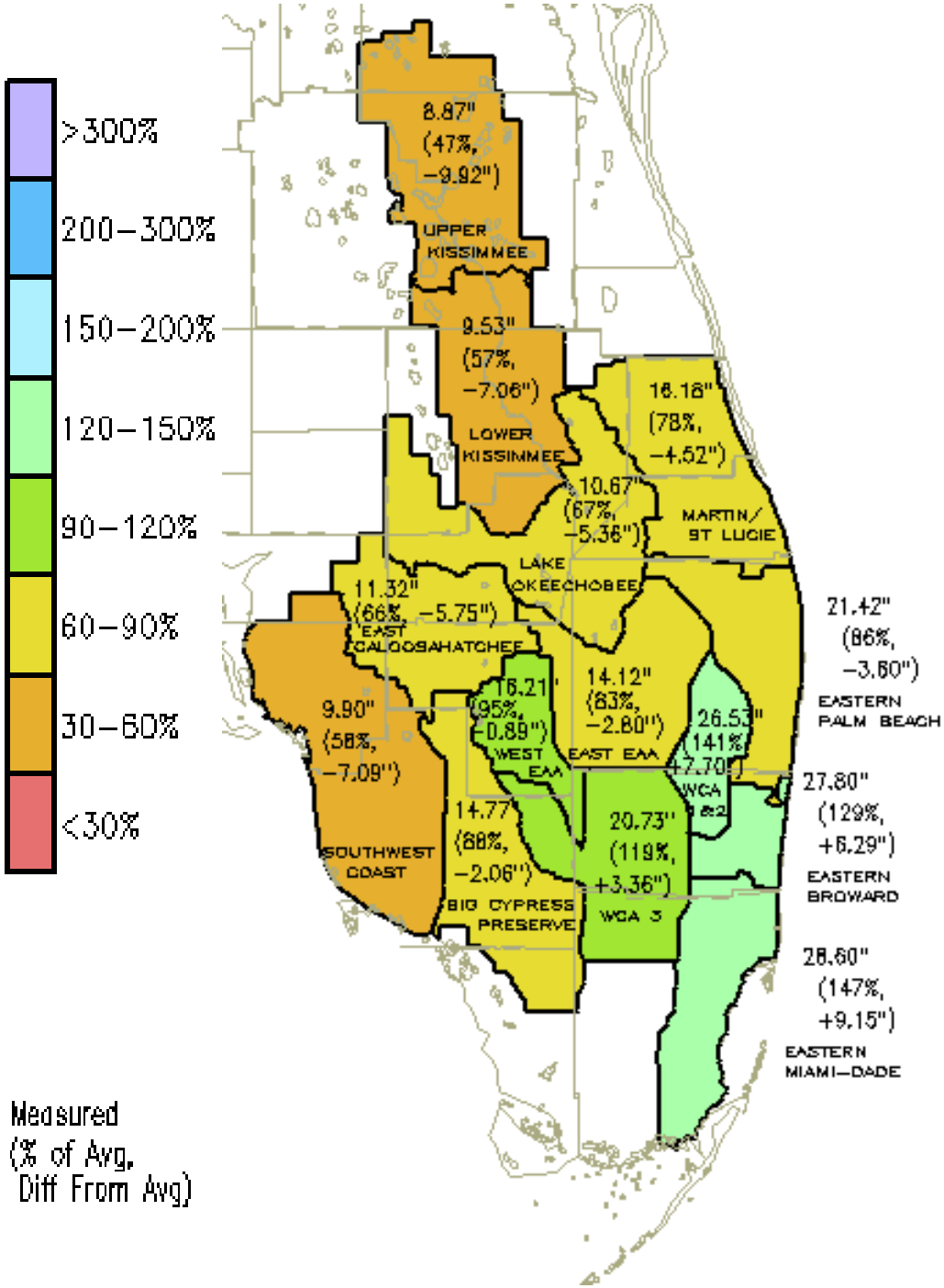
South Florida Water Management District
Governing Board Meeting

June 14, 2012

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



Nubbin Slough Stormwater Treatment Area, Okeechobee County



SFWMD

Dry Season Rainfall

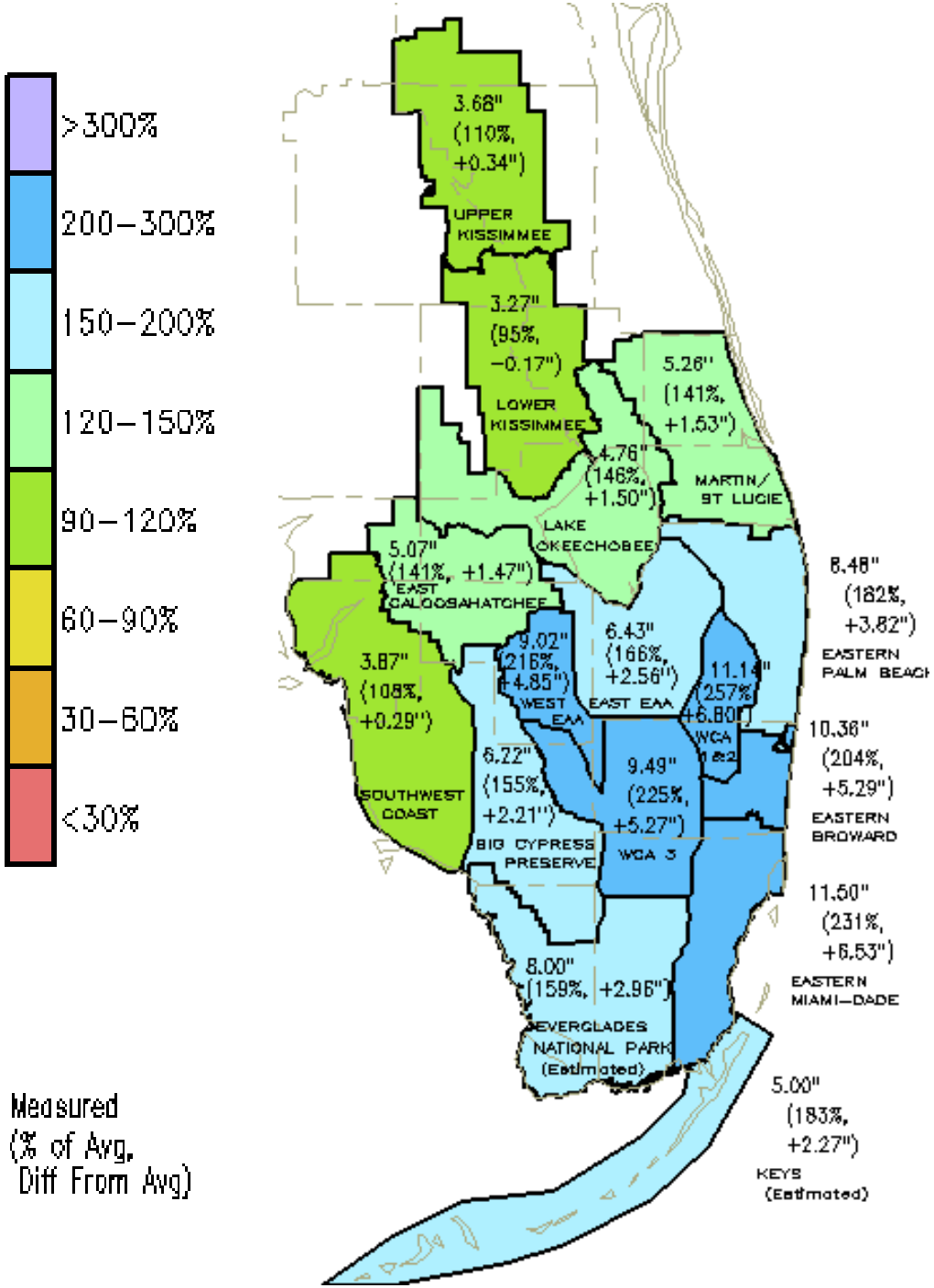
02-Nov-2011 – 01 June 2012

DISTRICT-WIDE: 14.86” (82% of Avg, or –3.18”)

- **Due to early start of wet season - WCAs, E Broward and E Miami-Dade were above average**
- **All other basins experienced a rainfall deficit**
- **Upper Kissimmee had the largest deficit at -9.92 inches – this is the driest in SFWMD record going back to 1915.**

SFWMD 2012
<u>May Rainfall</u>

DISTRICT-WIDE:6.17” (160% of Avg, or +2.32”)



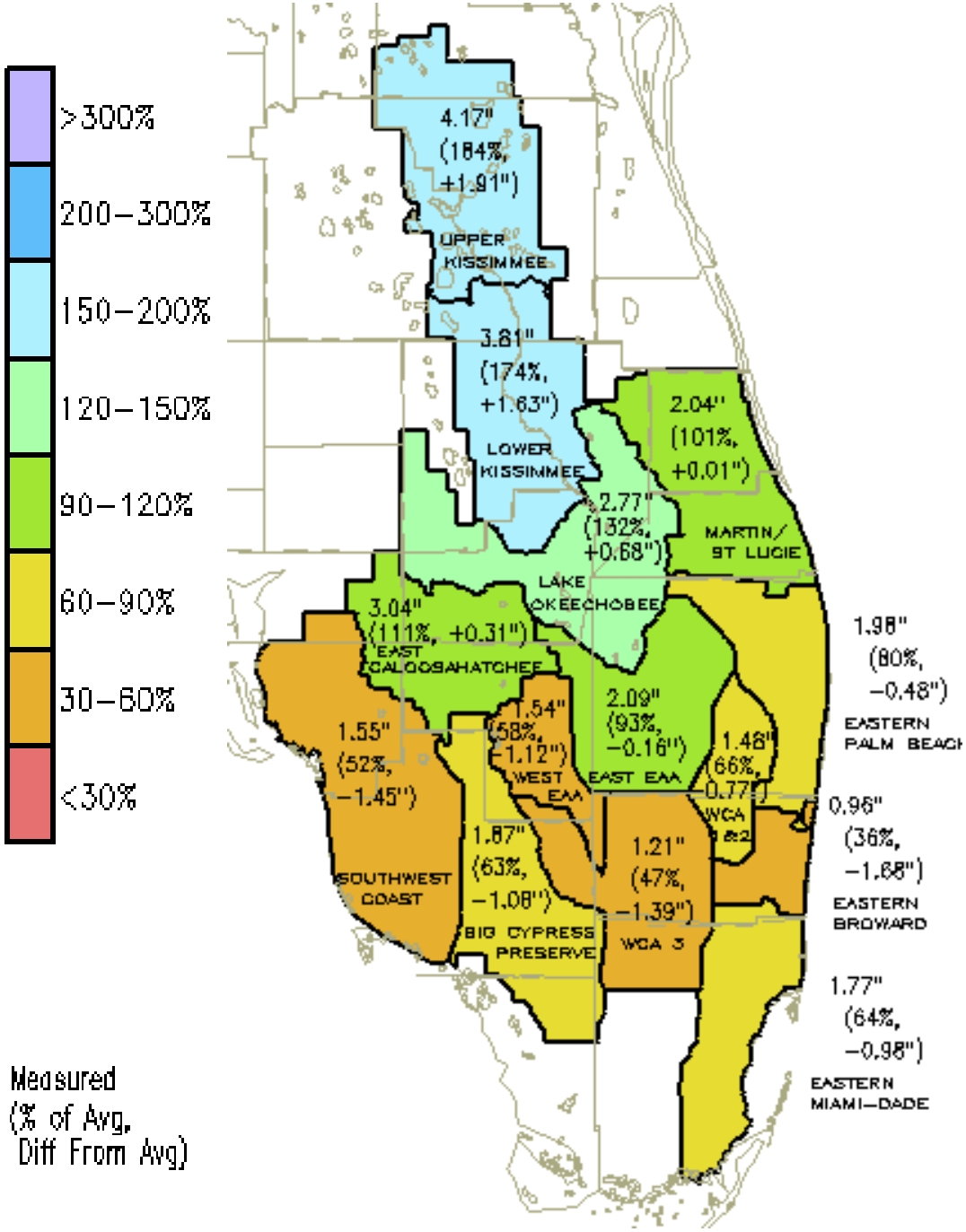
- Early start of the wet season
- South and East of Lake Okeechobee Basins received above normal rainfall.
- Other basins were very close to average rainfall
- Eastern Miami-Dade was 231% of average (+6.53”)

SFWMD 2012

June Rainfall

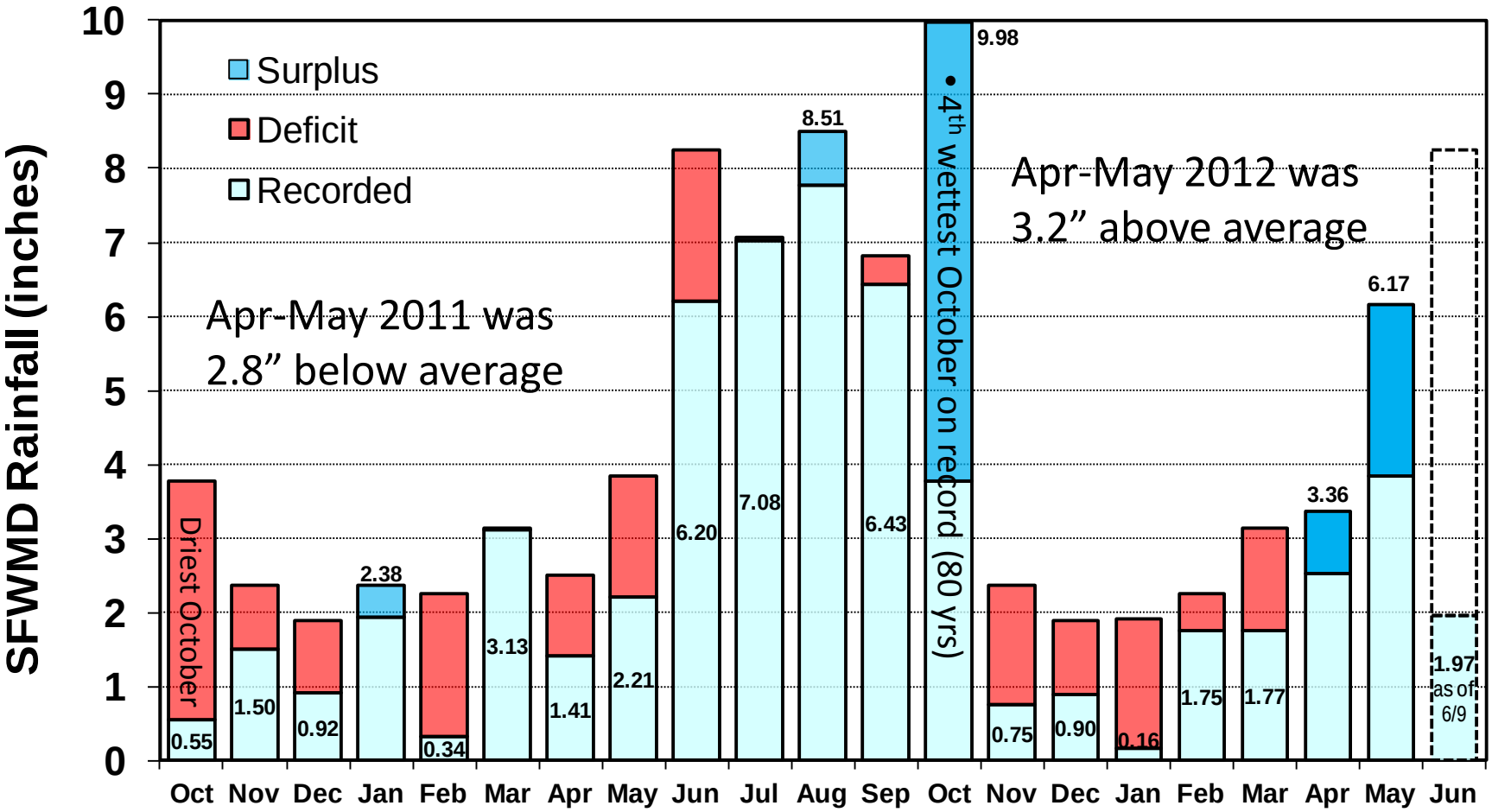
02 June – 10 June 2012

DISTRICT-WIDE: 2.35” (95% of Avg, or -0.13”)



- **Above average rainfall for the Kissimmee-Okeechobee system during the first days of June**

SFWMD Rainfall Distribution Comparison
(Oct 2010 - Jun 2012)



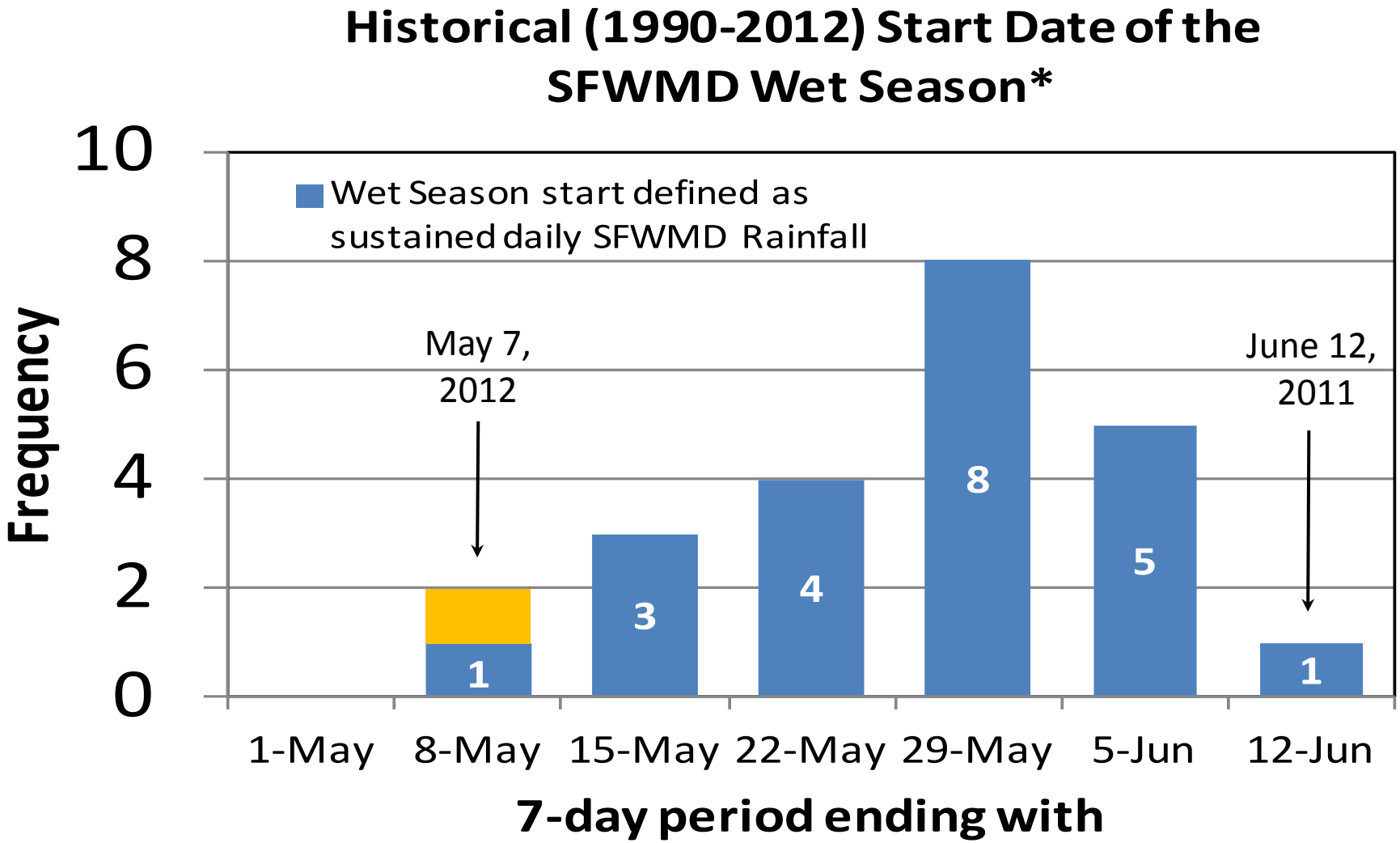
2010-11 DRY SEASON:
- started early with driest October on record
- 2nd largest deficit on record (80yrs)

2011 WET SEASON:
- latest start (June 12) in at least 20 years
- 3 Big Rain Days in October (2.3", 2.3" & 1.7")

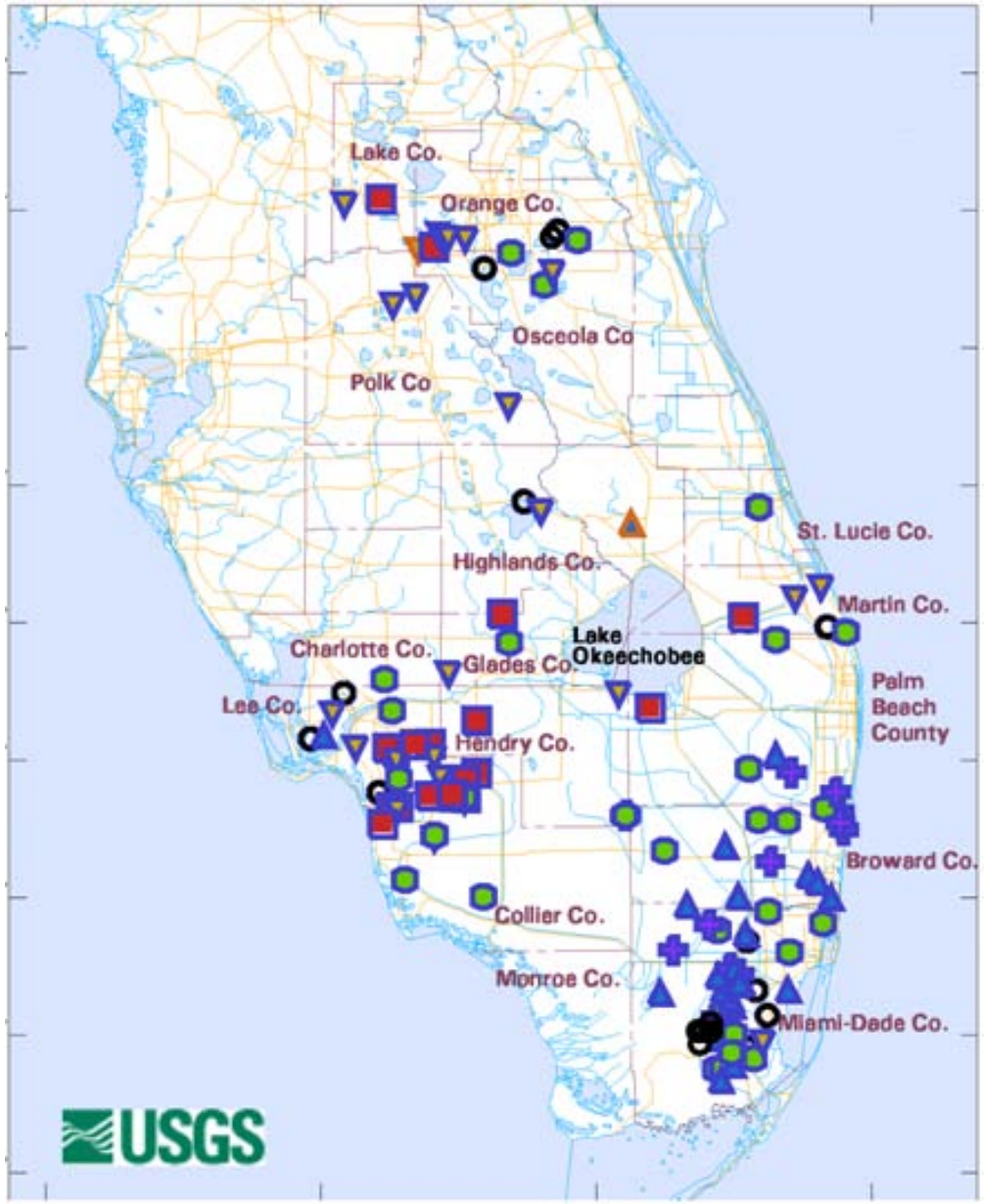
2011-12 DRY SEASON:
- Most months below average.
- Ended up close to average

2012 WET SEASON:
- Early wet season start with above normal rainfall in May.

2012 Wet Season Started Early



Groundwater Levels

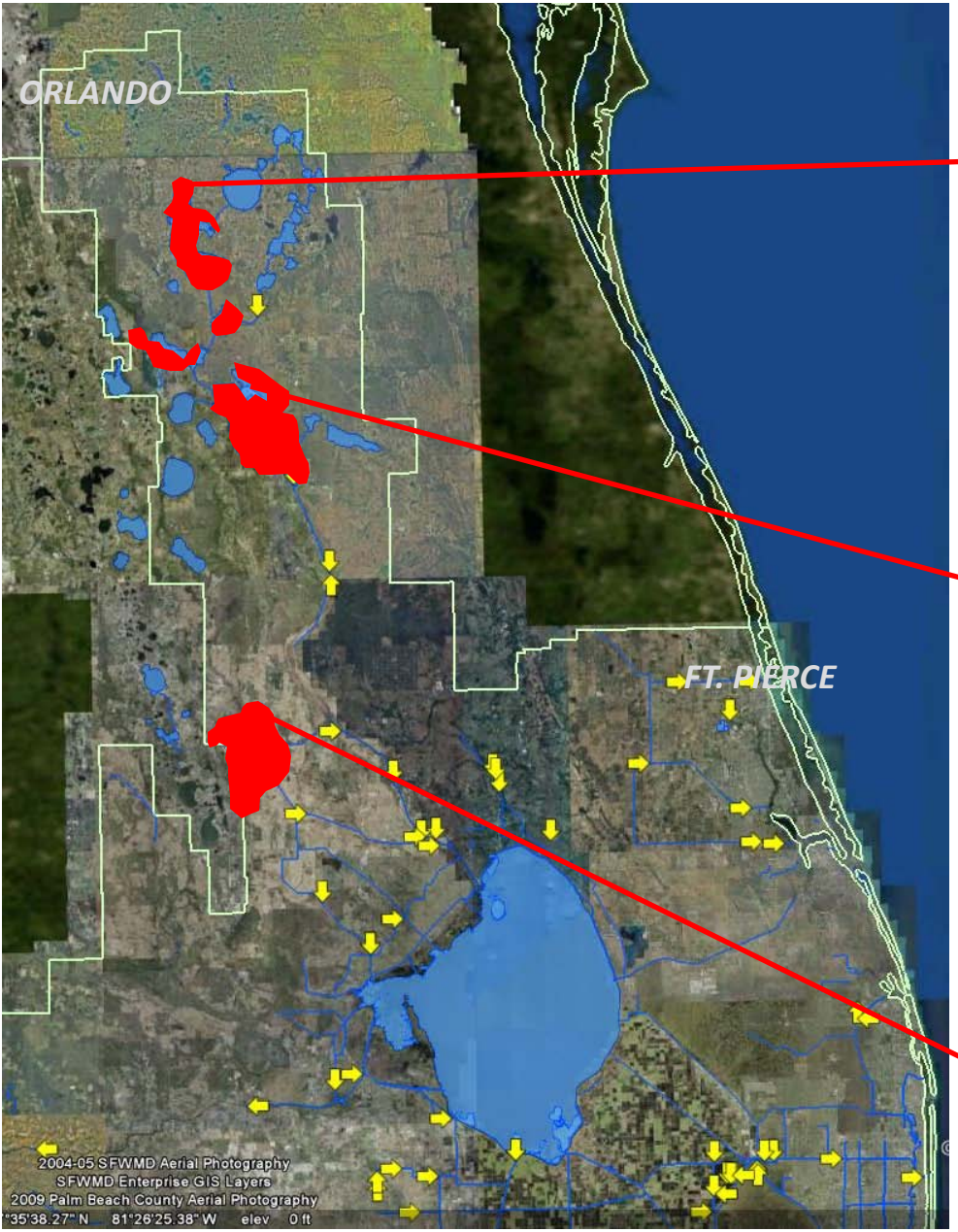


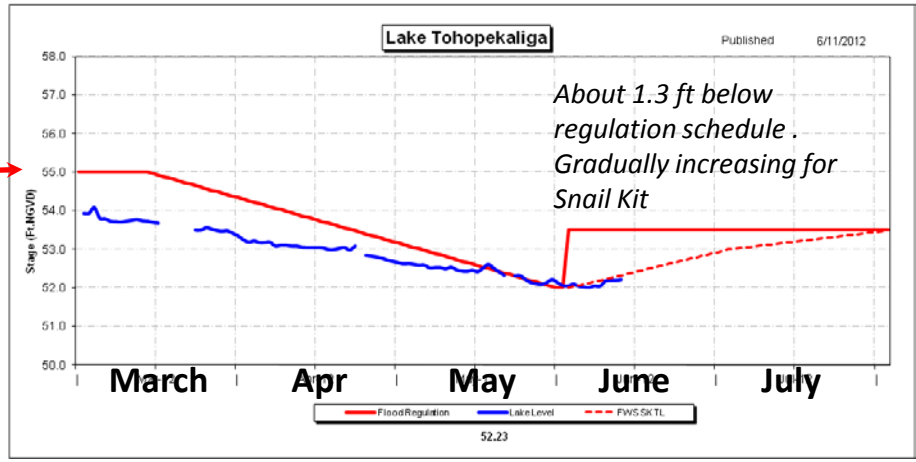
Water levels at selected sites in South Florida
Based on PROVISIONAL DATA, as of June 11, 2012

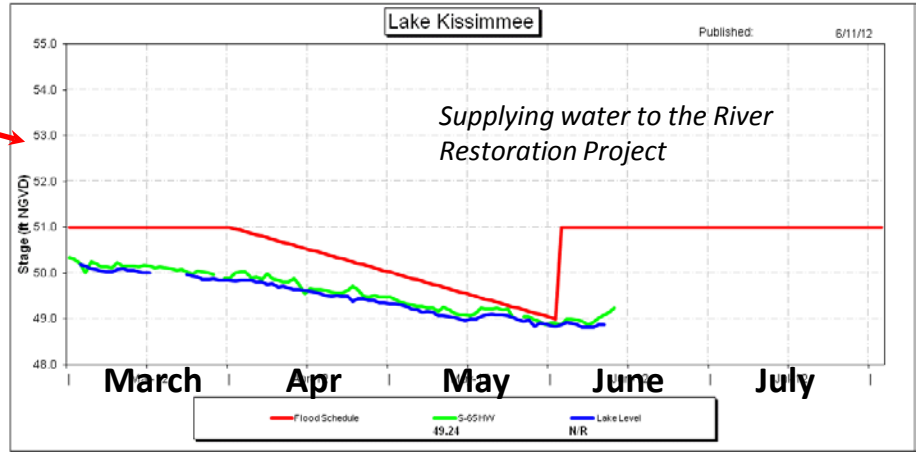
- **Triangles consistent with rainfall in the Eastern Broward and Miami-Dade Counties area over the past 30-days**

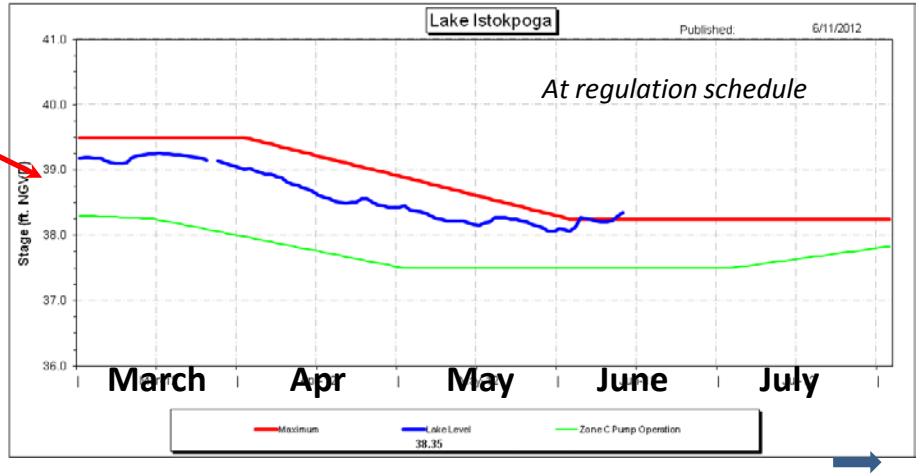
Water level compared to historical data, without trend analysis:

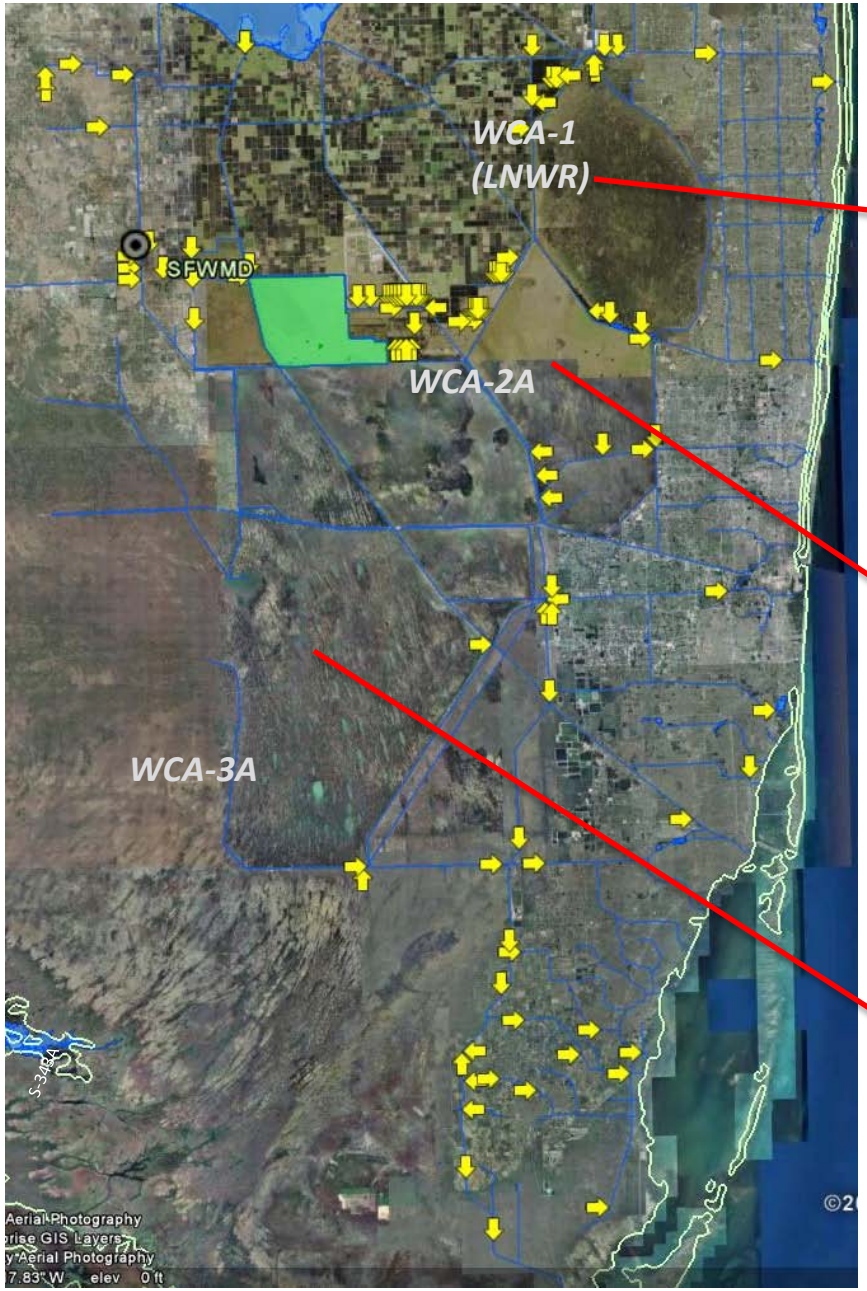
- Insufficient information available to compute water-level statistics
- In lowest 10 percent of past water elevations
- Within lowest 10 to 30 percent of past water elevations
- Within 20 percent of the median of past water elevations
- Within highest 10 to 30 percent of past water elevations
- In highest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

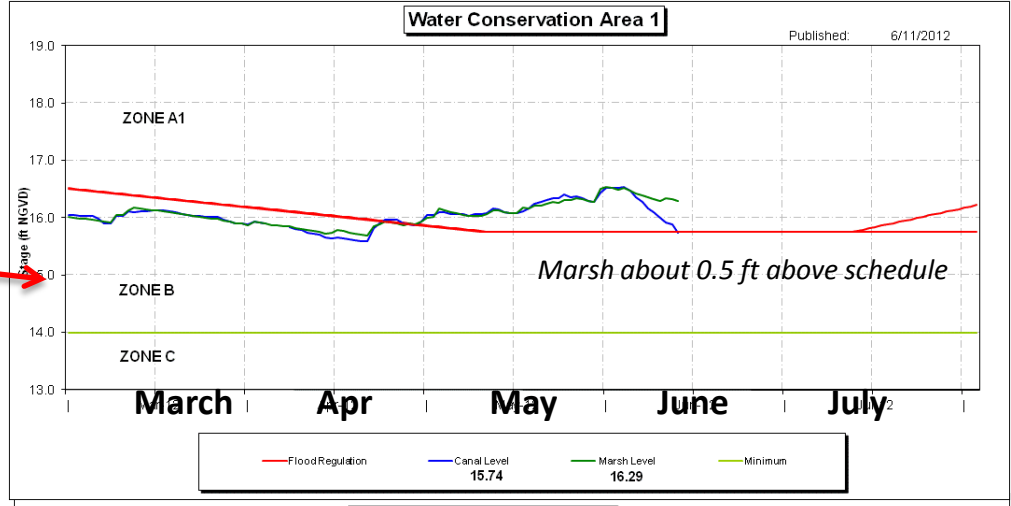

ORLANDO
FT. PIERCE
2004-05 SFWMD Aerial Photography
SFWMD Enterprise GIS Layers
2009 Palm Beach County Aerial Photography
"35'38.27" N 81°26'25.38" W elev 0 ft

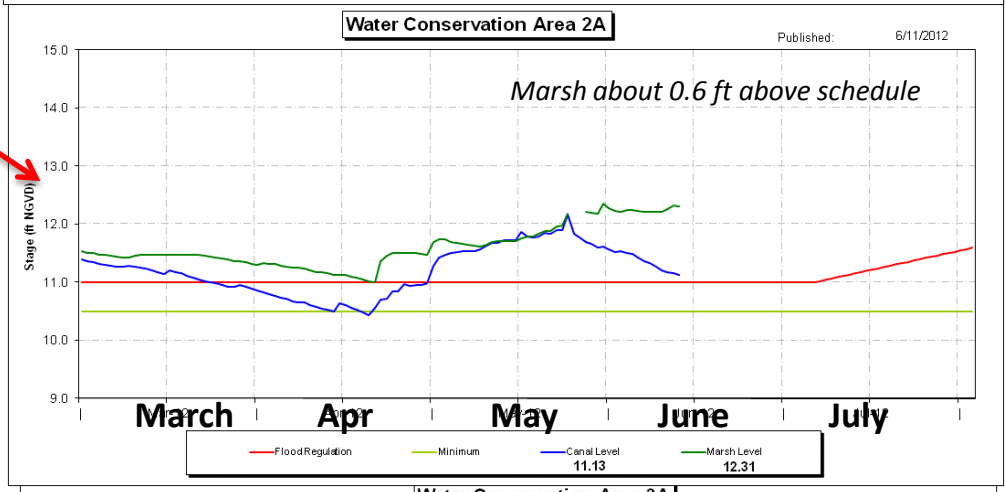

Lake Tohopekaliga
Published 6/11/2012
About 1.3 ft below regulation schedule . Gradually increasing for Snail Kit
Stage (Ft.NGVD)
58.0
57.0
56.0
55.0
54.0
53.0
52.0
51.0
50.0
March
Apr
May
June
July
Flood Regulation
Lake Level
FWS SKTL
52.23

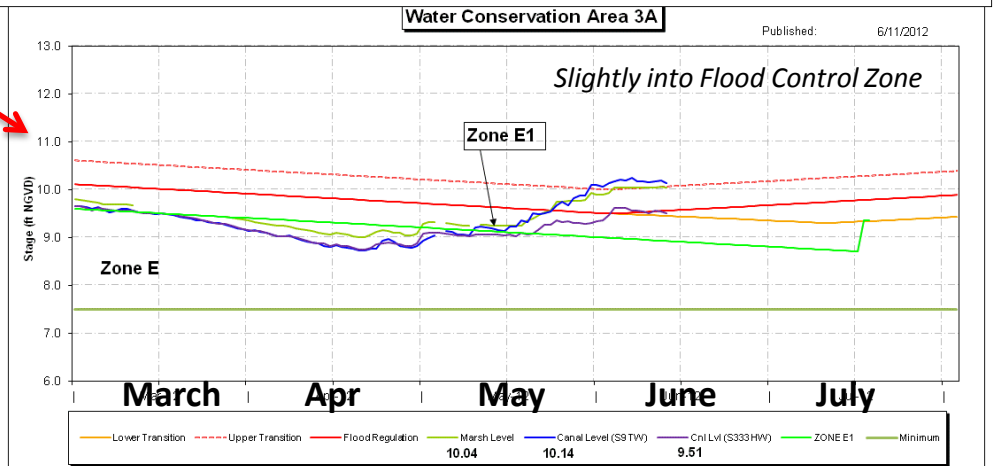

Lake Kissimmee
Published: 6/11/12
Supplying water to the River Restoration Project
Stage (ft NGVD)
55.0
54.0
53.0
52.0
51.0
50.0
49.0
48.0
March
Apr
May
June
July
Flood Schedule
S-65HW
Lake Level
49.24
N/R


Lake Istokpoga
Published: 6/11/2012
At regulation schedule
Stage (ft. NGVD)
41.0
40.0
39.0
38.0
37.0
36.0
March
Apr
May
June
July
Maximum
Lake Level
Zone C Pump Operation
38.35

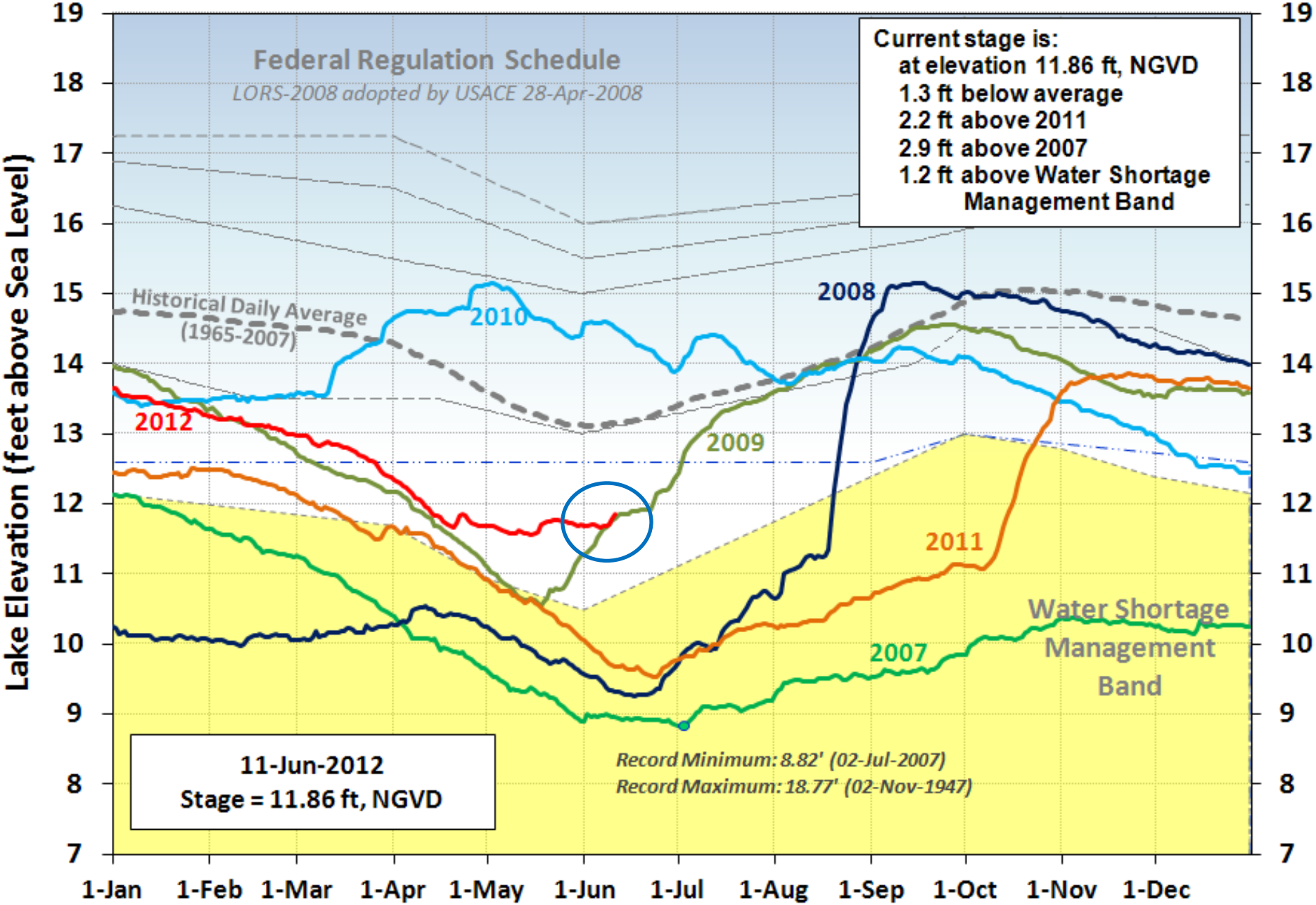

WCA-1
(LNWR)
SFWMD
WCA-2A
WCA-3A
Aerial Photography
rise GIS Layers
Aerial Photography
7.83° W elev 0 ft


Water Conservation Area 1
Published: 6/11/2012
Stage (ft NGVD)
ZONE A1
ZONE B
ZONE C
Marsh about 0.5 ft above schedule
March
Apr
May
June
July
Flood Regulation
Canal Level
15.74
Marsh Level
16.29
Minimum


Water Conservation Area 2A
Published: 6/11/2012
Stage (ft NGVD)
Marsh about 0.6 ft above schedule
March
Apr
May
June
July
Flood Regulation
Minimum
Canal Level
11.13
Marsh Level
12.31

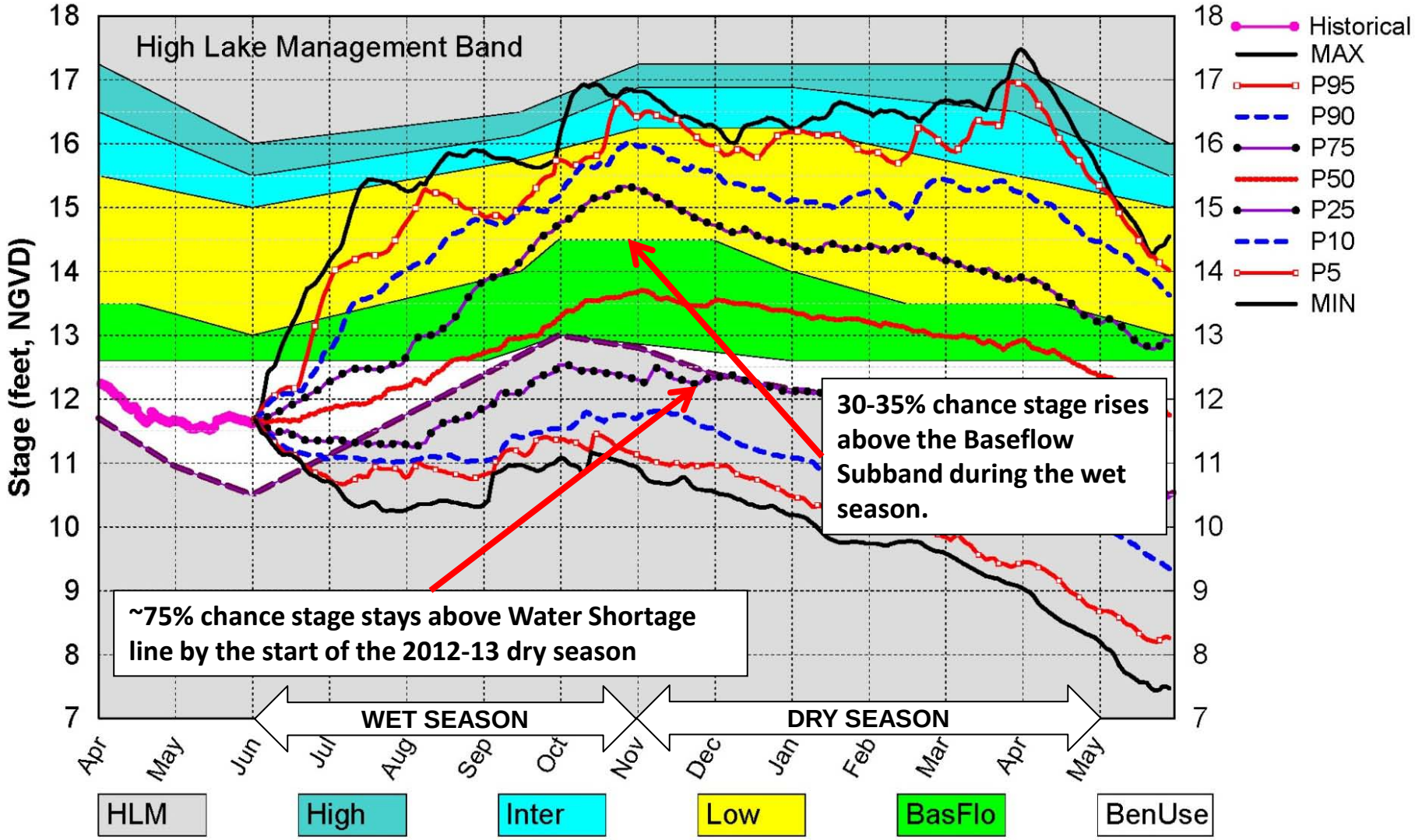

Water Conservation Area 3A
Published: 6/11/2012
Stage (ft NGVD)
Slightly into Flood Control Zone
Zone E1
Zone E
March
Apr
May
June
July
Lower Transition
Upper Transition
Flood Regulation
Marsh Level
10.04
Canal Level (S9TW)
10.14
Cnl Lvl (S333HW)
9.51
ZONE E1
Minimum

Lake Okeechobee Water Level Comparison



Lake Okeechobee SFWMM June 2012 Position Analysis

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



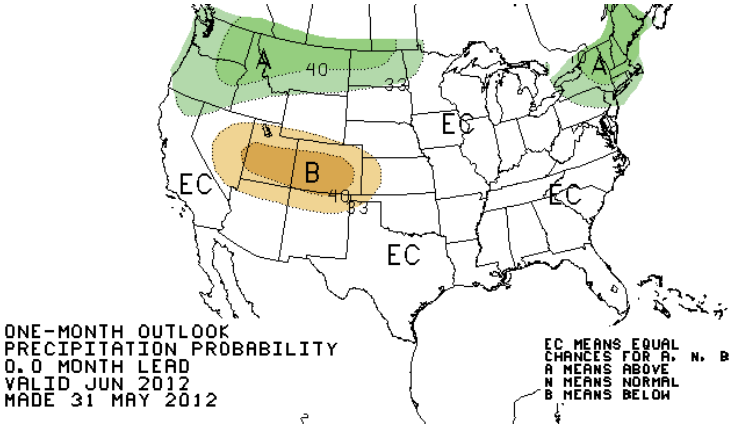
(See assumptions on the Position Analysis Results website)

Thu Jun 7 13:09:49 2012

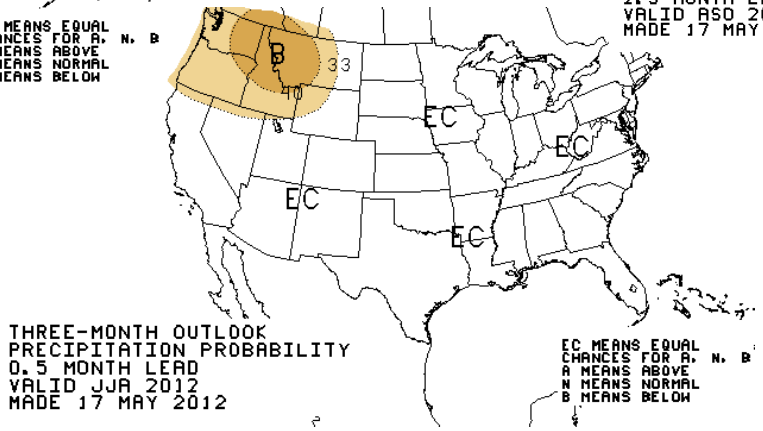
U. S. Seasonal Precipitation Outlook

National Climate Prediction Center (CPC)

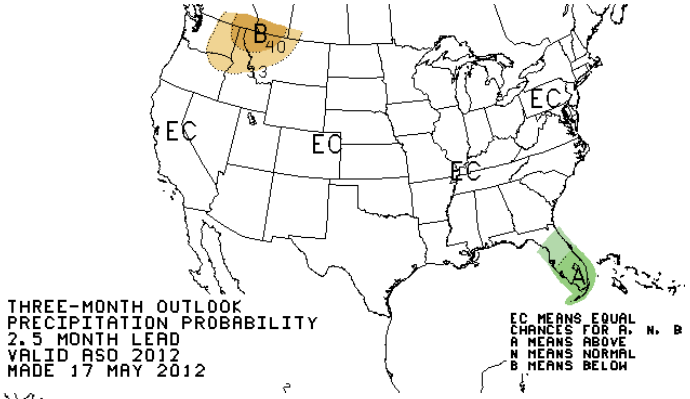
June 2012



Jun-Aug 2012



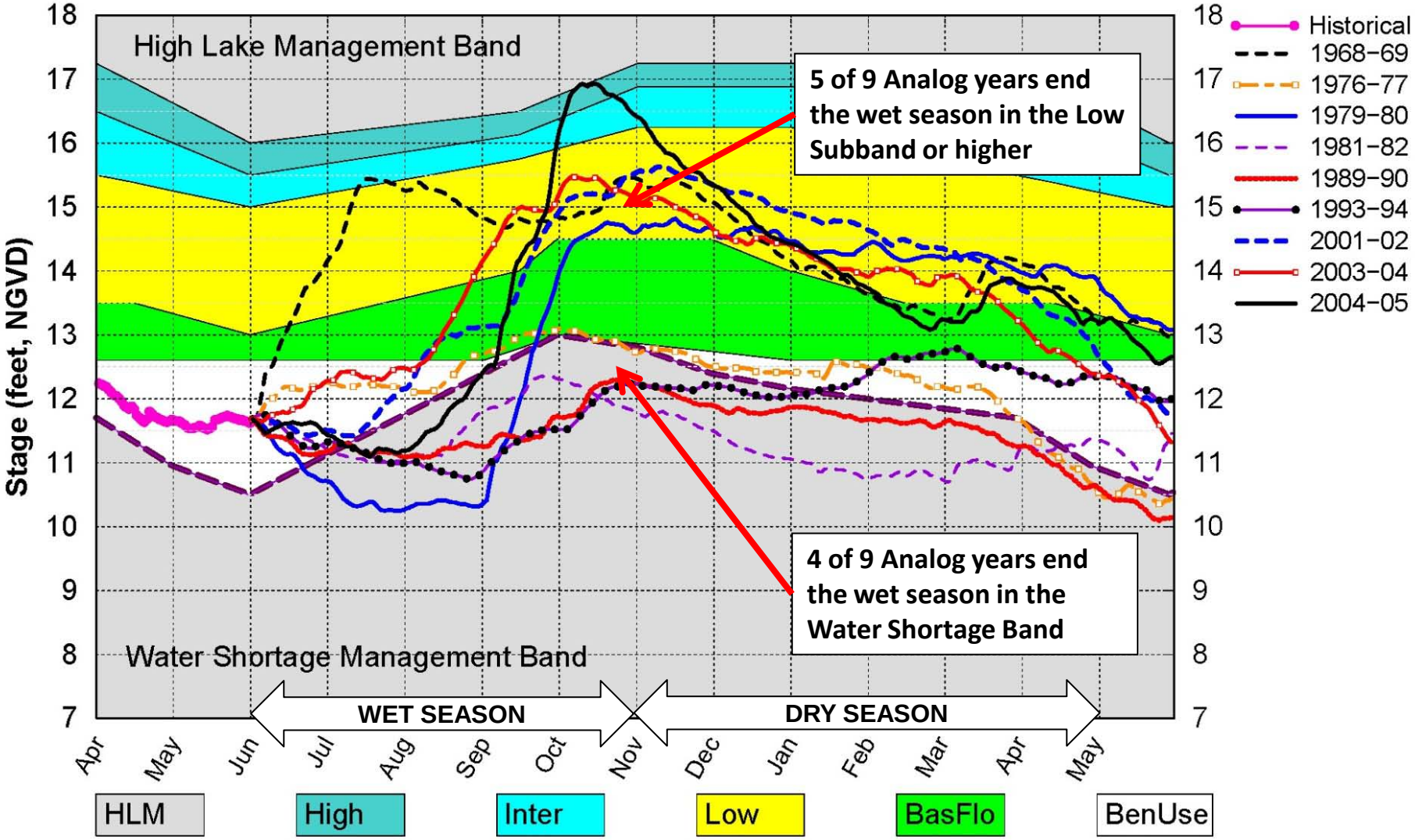
Jul-Sep 2012



The current CPC precipitation outlook for central and southern Florida is for equal chance (EC) for all windows, with the exception of above normal for Jul-Sep and Aug-Oct

Lake Okeechobee SFWMM June 2012 Position Analysis

9 Neutral ENSO analog years starting with June 1st initialization



(See assumptions on the Position Analysis Results website)

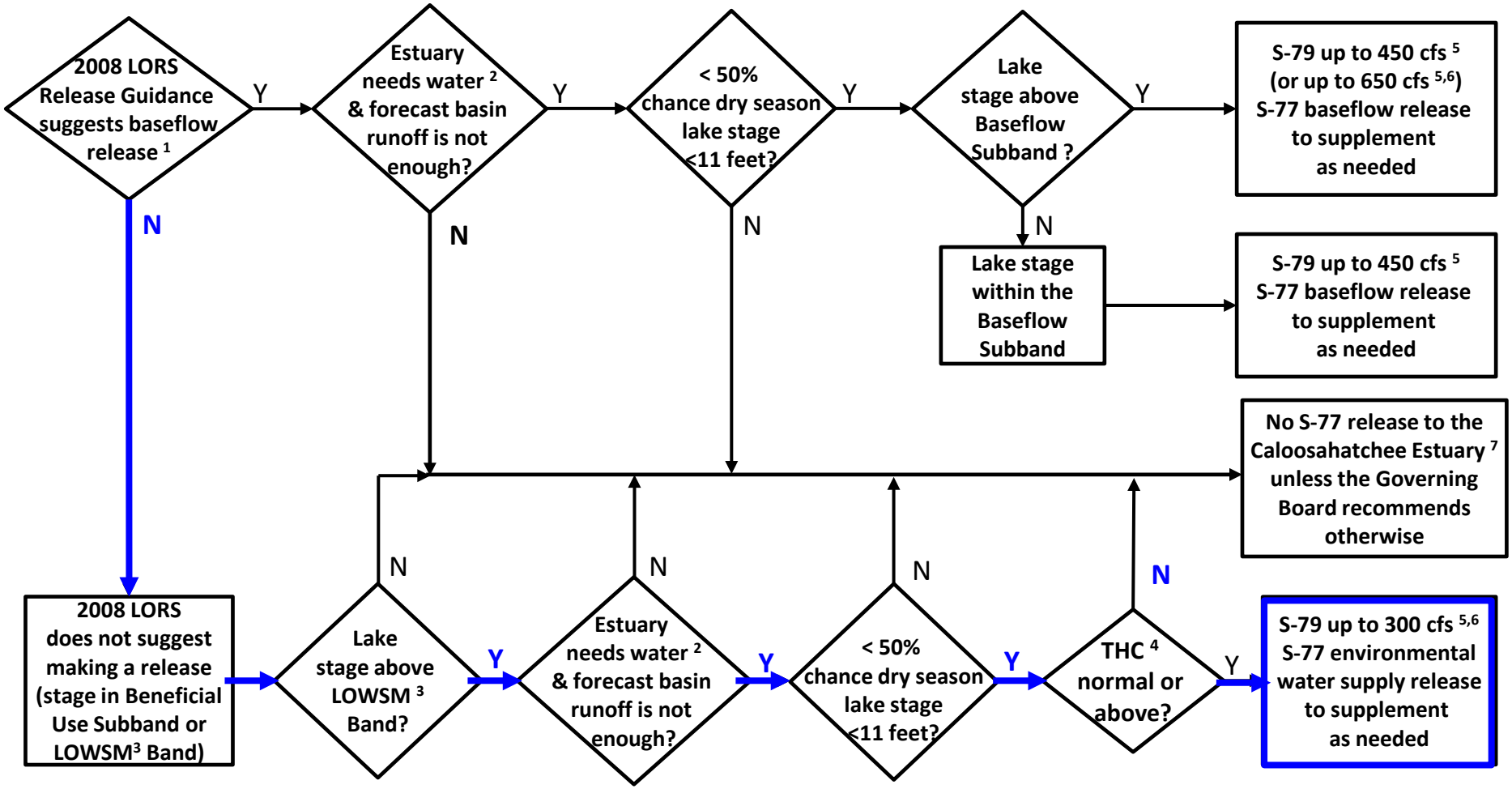
Thu Jun 7 13:10:43 2012

Lake Okeechobee: Current Operations

- **USACE's Lake O Regulation Schedule (2008 LORS)**
  - Stage is rising and within the Beneficial Use Subband
  - No Lake O releases needed to regulate lake stages at this time according to 2008 LORS

- **SFWMD's Lake O Adaptive Protocol (2010)**
  - Release guidance currently suggests 300 cfs environmental water supply releases to the Caloosahatchee Estuary:
    - Lake Stage is in the Beneficial Use Subband
    - Val I75 Salinity forecast > 5 psu for next two weeks
    - Tributary Hydrologic Condition is in the "Normal" class
    - Chance of Lake stage falling below 11.0 ft is < 50%

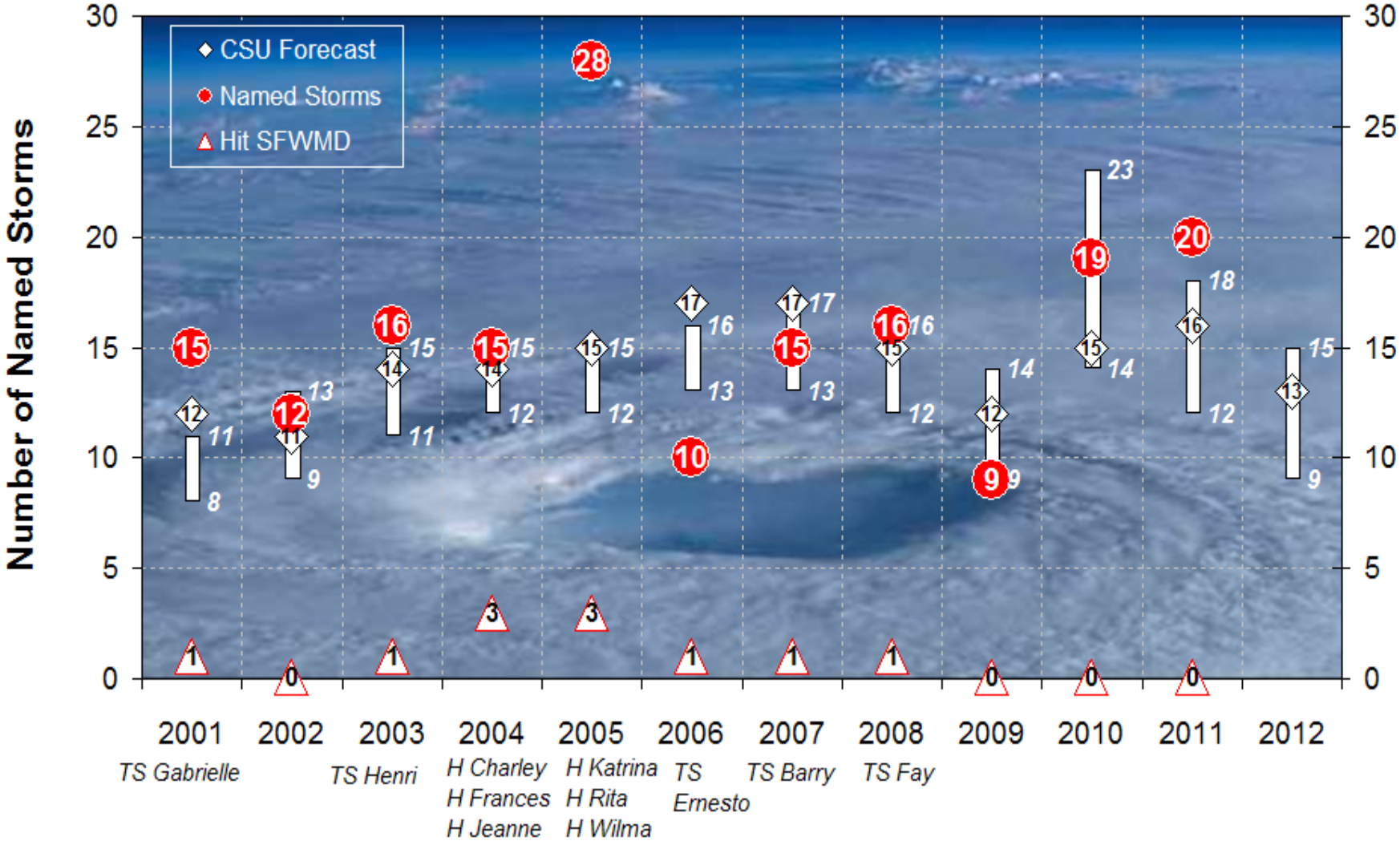
Flowchart to Guide Recommendations for Lake Okeechobee Releases to the Caloosahatchee Estuary for 2008 LORS Baseflow & for Environmental Water Supply



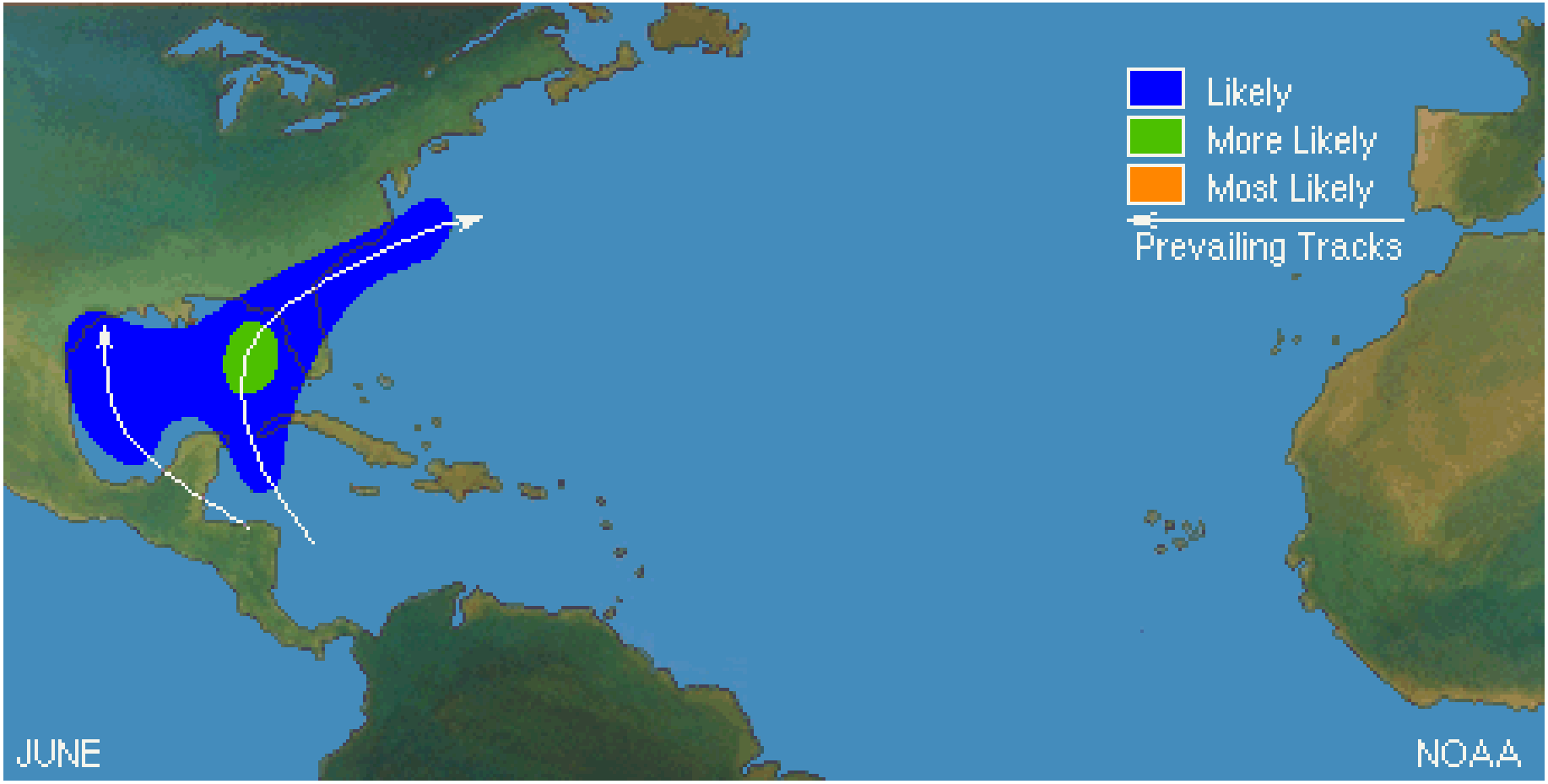
[1]The 2008 LORS Release Guidance (Part D) can suggest baseflow releases in the Intermediate, Low, or Baseflow Subbands.
[2]Estuary "needs" water when the 30-day moving average salinity at I-75 bridge is projected to exceed 5 practical salinity units (psu) within 2 weeks.
[3]LOWSM = Lake Okeechobee Water Shortage Management.
[4]Tributary Hydrologic Condition (THC) is based on classification of Lake Okeechobee Net Inflow and Palmer Index.
[5]Can release less than the "up to" limit if lower release is sufficient to reach or sustain desired estuary salinity; cfs = cubic feet per second.
[6]After reviewing conditions in Water Conservation Areas (WCAs), Stormwater Treatment Areas (STAs), ENP, St. Lucie Estuary and Lake Okeechobee.
[7]Should this condition be reached, the Governing Board will be briefed at their next regularly scheduled meeting as part of the State of the Water Resources agenda item.

Atlantic Hurricane Season

Named Storms - Observed vs Pre-Season Outlooks



June Hurricane Areas of Origin



QUESTIONS?

Nubbin Slough Stormwater Treatment Area, Pump Intake Basin Repairs – Completed.