Water Conditions Summary

South Florida Water Management District
Governing Board Meeting

April 12, 2012

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

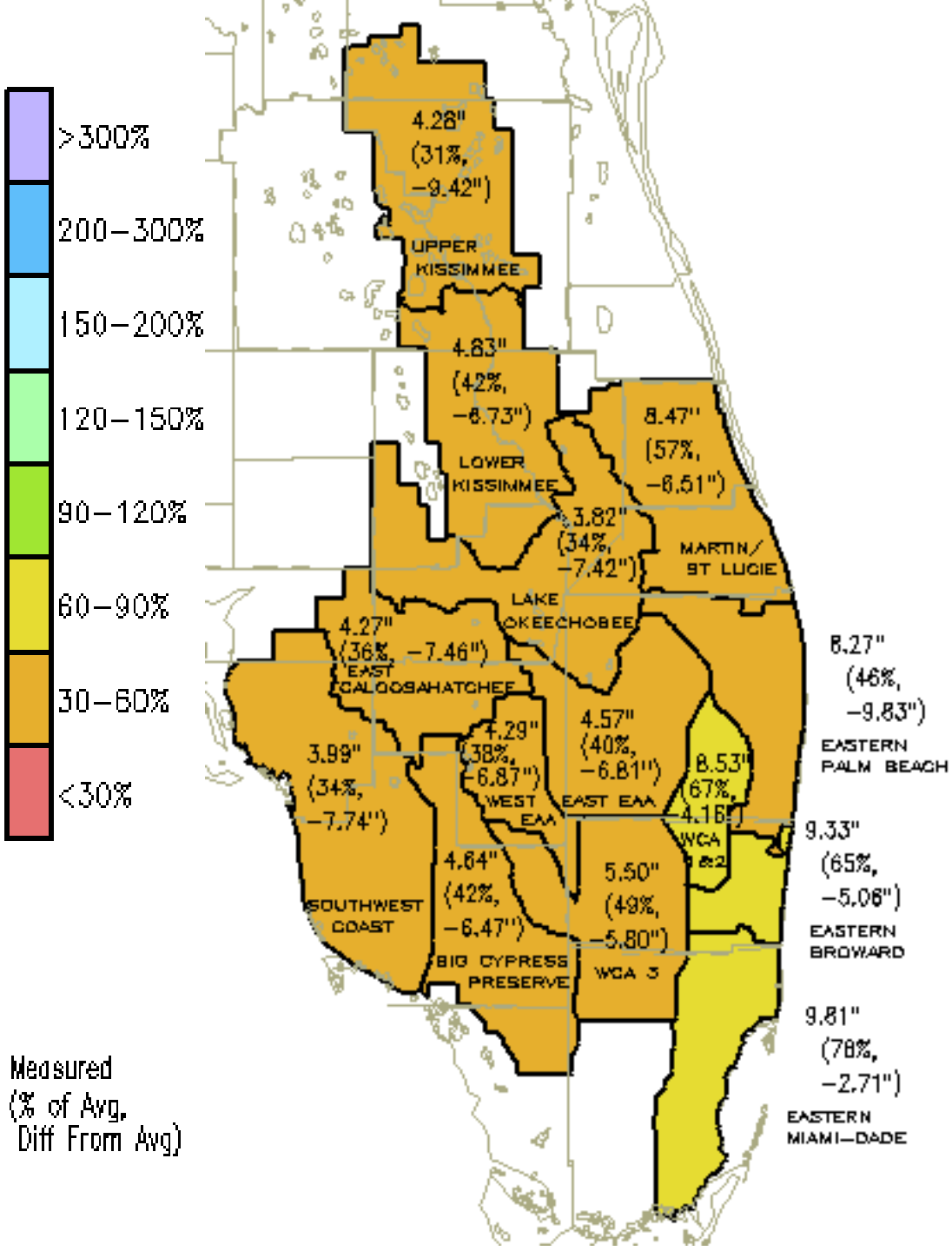
Contract 10A Reach 3 north river channel recarve is complete Reach 2 is well underway – Photo taken March 15, 2012 – Brent Anderson

SFWMD 2011-12

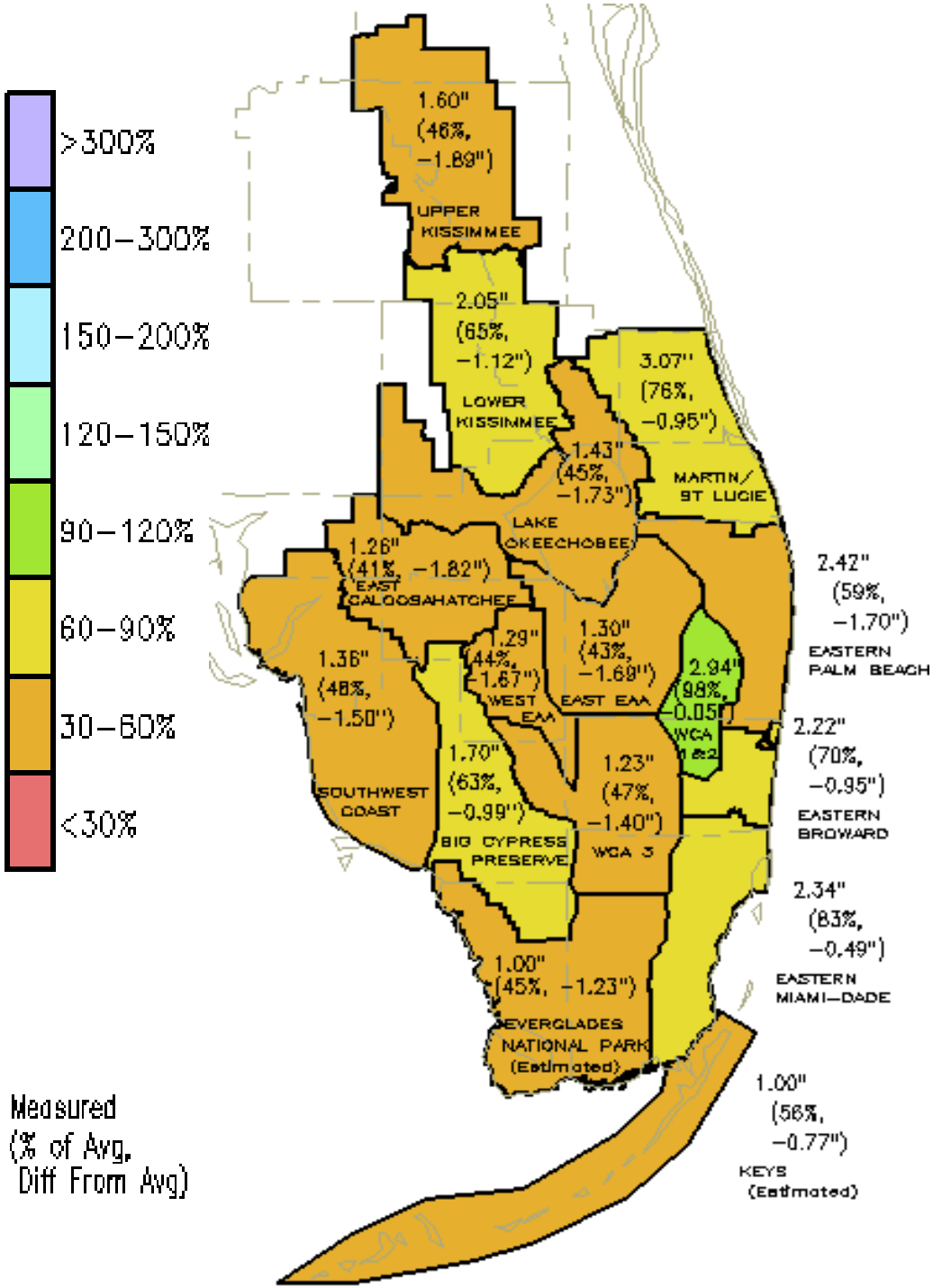
Dry Season Rainfall

02-Nov-2011 – 10-Apr-2012

DISTRICT-WIDE: 5.51” (44% of Avg, or –6.92”)



- **All Basins have received less than average rainfall**
- **Eastern Palm Beach County and the Upper Kissimmee have the largest deficiency at -9.83 and -9.42 inches**

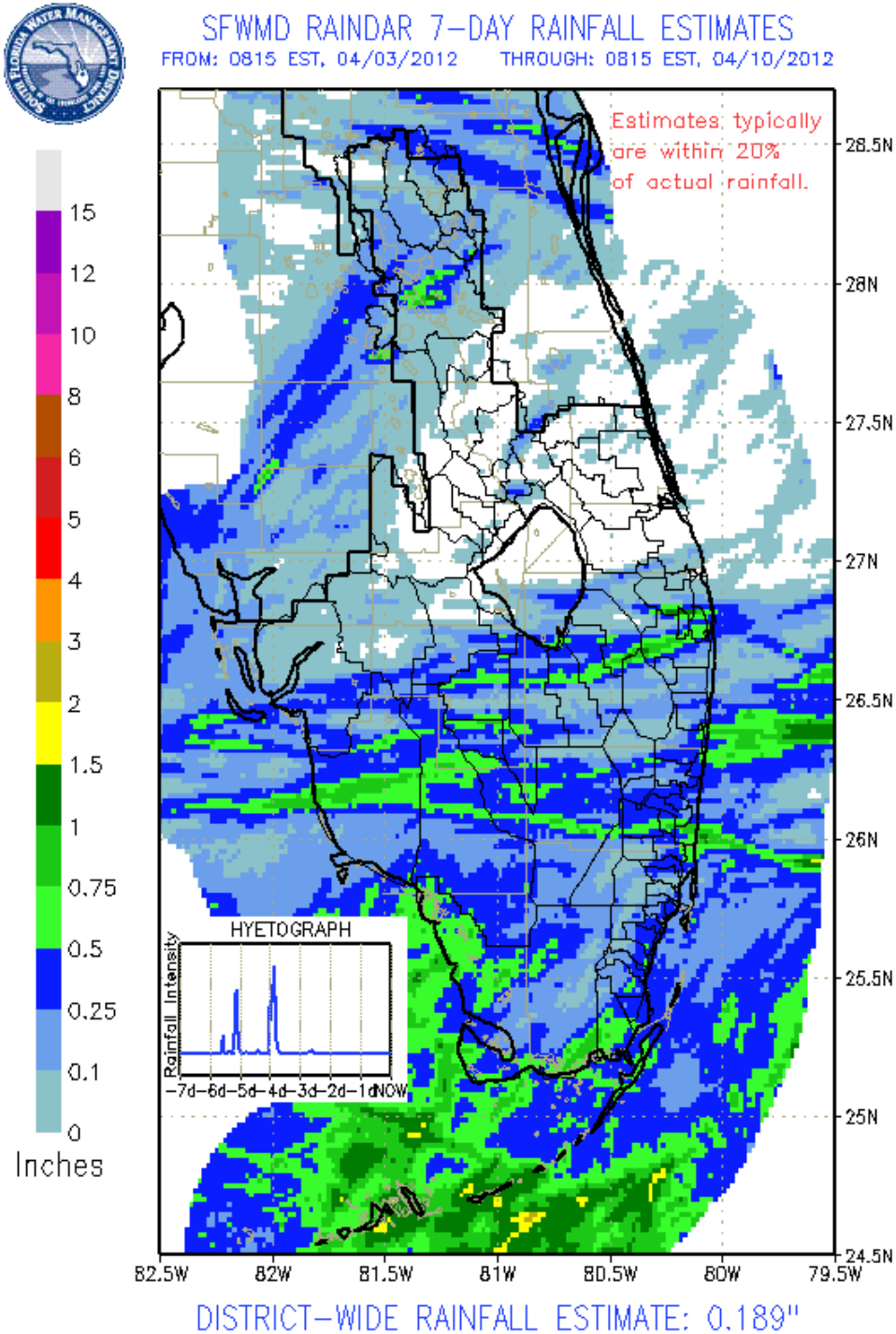


SFWMD 2012
March Rainfall

02-Mar-2012 – 01-Apr-2012

DISTRICT-WIDE: 1.77” (56% of Avg, or -1.37”)

- **All basins, with exception of WCA-1 and WCA-2, are below average**



SFWMD 2012

April Rainfall

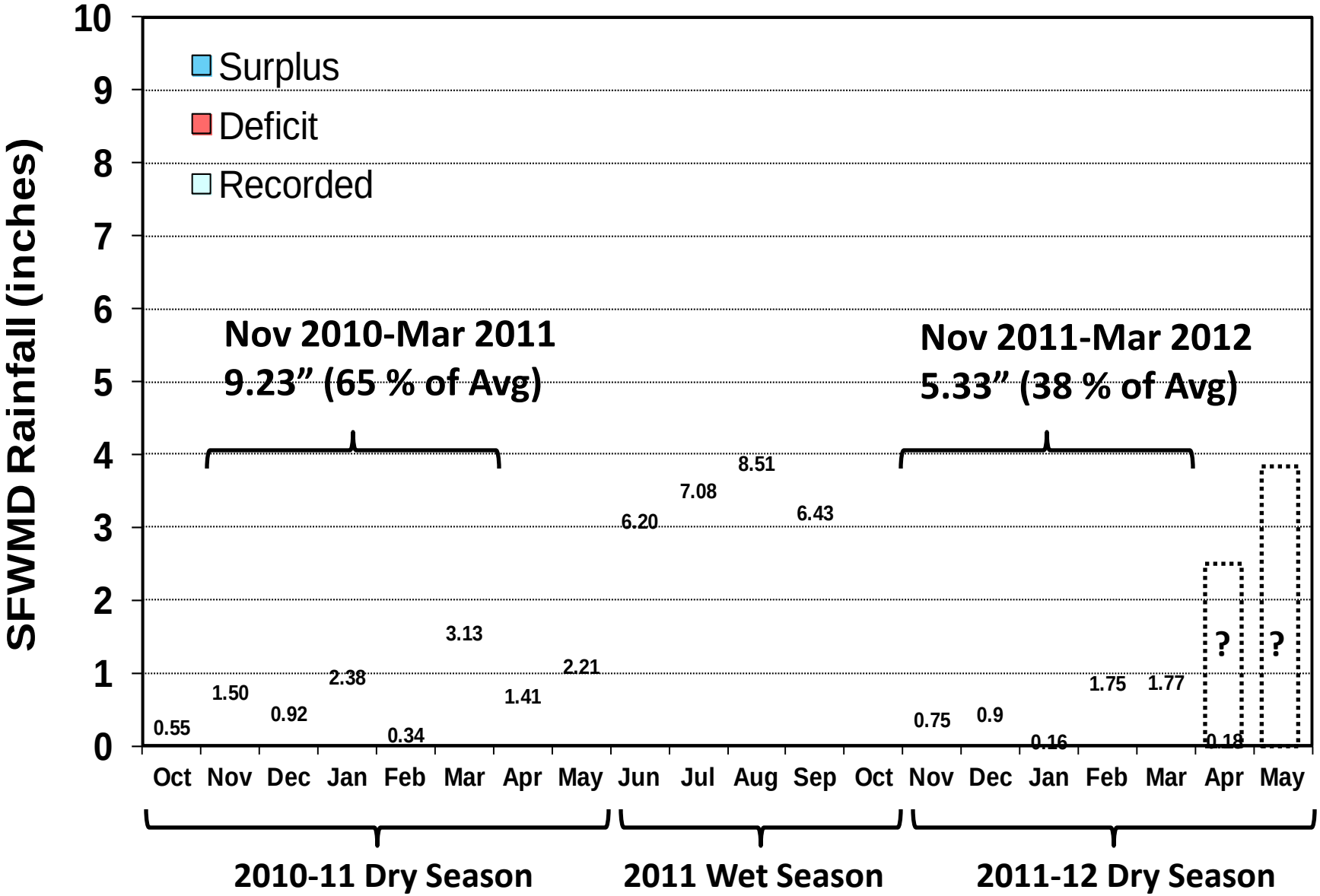
02-Apr-2012 – 09–Apr-2012

DISTRICT-WIDE: 0.18”

(27% of Avg, or -0.49”)

- **Below 0.2 inches during first week of April**

SFWMD Rainfall Distribution Comparison
(Oct 2010 - Apr 2012)



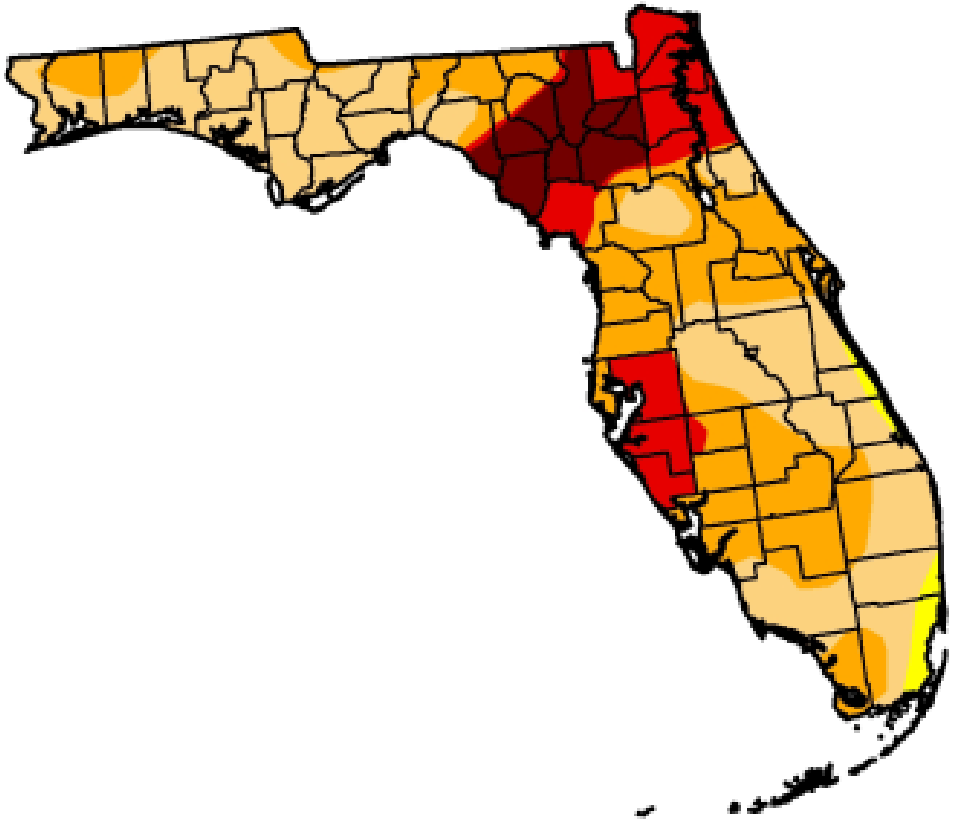
U.S. Drought Monitor

April 3, 2012
Valid 7 a.m. EST

Florida

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	97.81	56.44	20.31	7.42
Last Week (03/27/2012 map)	0.00	100.00	97.81	52.28	15.18	0.00
3 Months Ago (01/03/2012 map)	8.91	91.09	27.41	12.84	2.61	0.00
Start of Calendar Year (12/27/2011 map)	38.81	61.19	27.41	12.84	2.61	0.00
Start of Water Year (09/27/2011 map)	43.12	56.88	28.83	16.85	7.85	0.00
One Year Ago (03/29/2011 map)	0.04	99.96	82.72	54.43	20.42	0.00



Intensity:

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

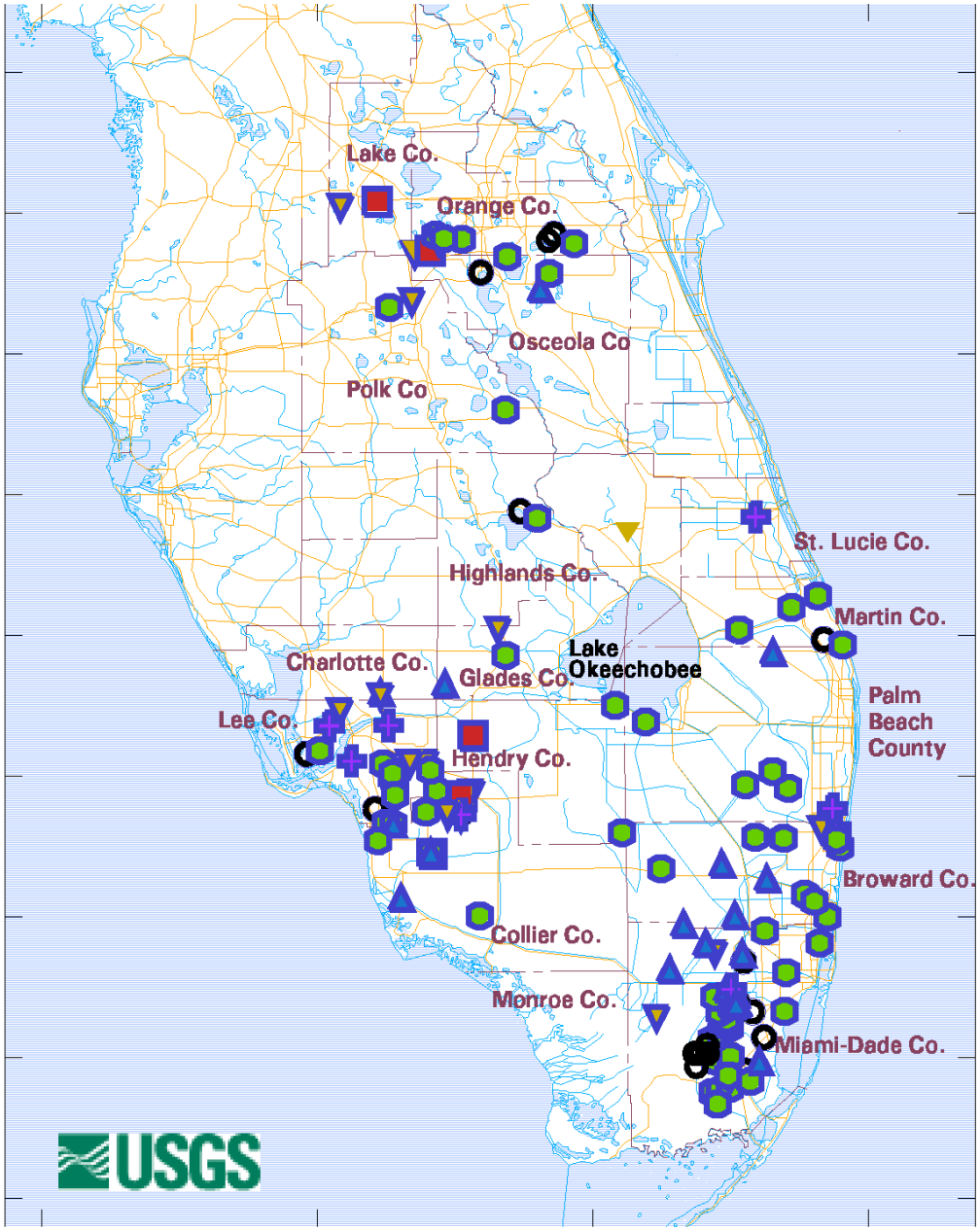
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://droughtmonitor.unl.edu

Released Thursday, April 5, 2012
Brian Fuchs, National Drought Mitigation Center

Groundwater Levels

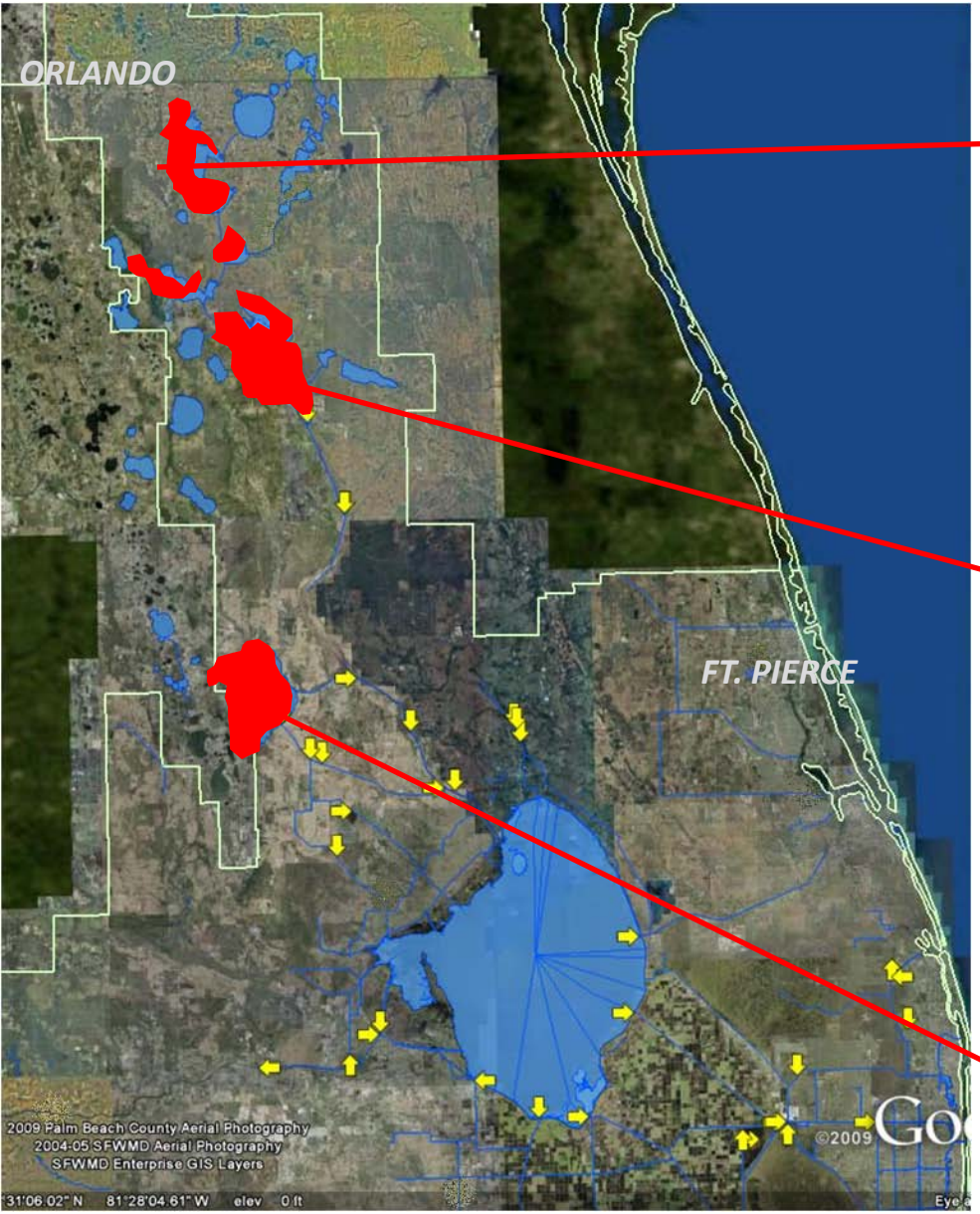
Water levels at selected sites in South Florida,
Based on PROVISIONAL DATA, as of April 9, 2012.

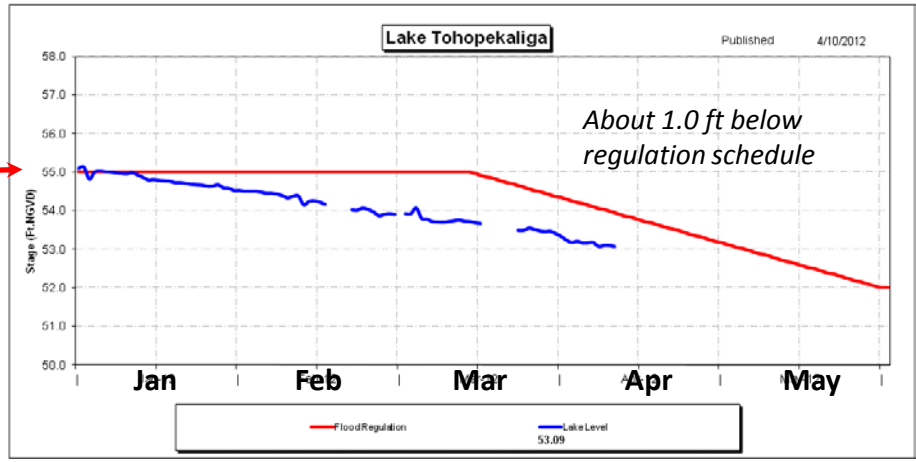


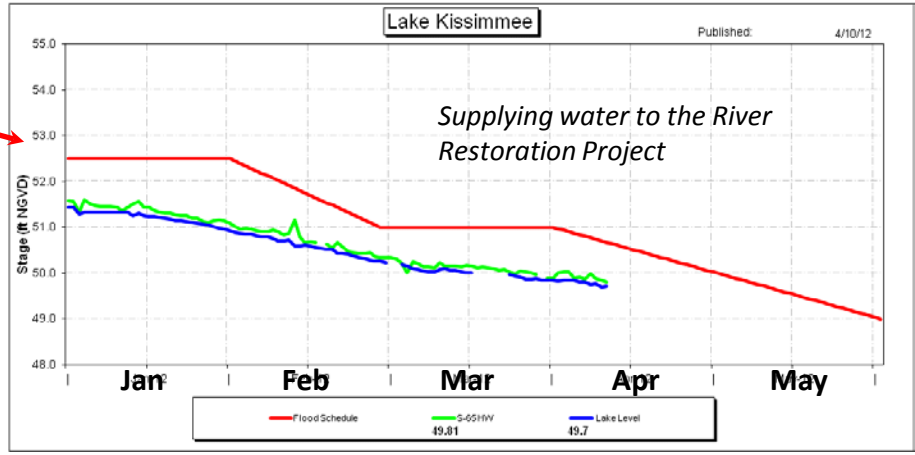
- **Triangles consistent with some rainfall in the Eastern Broward and Miami-Dade County area over the past 30-days**

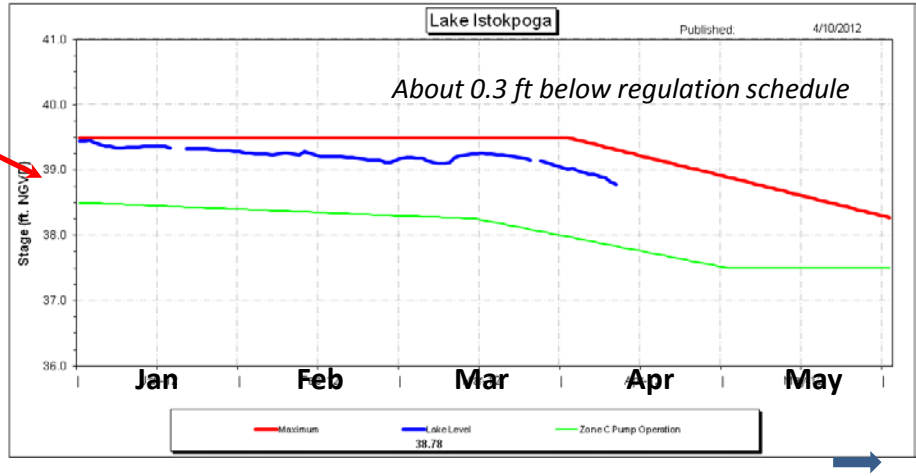
Water level compared to historical data, without trend analysis:

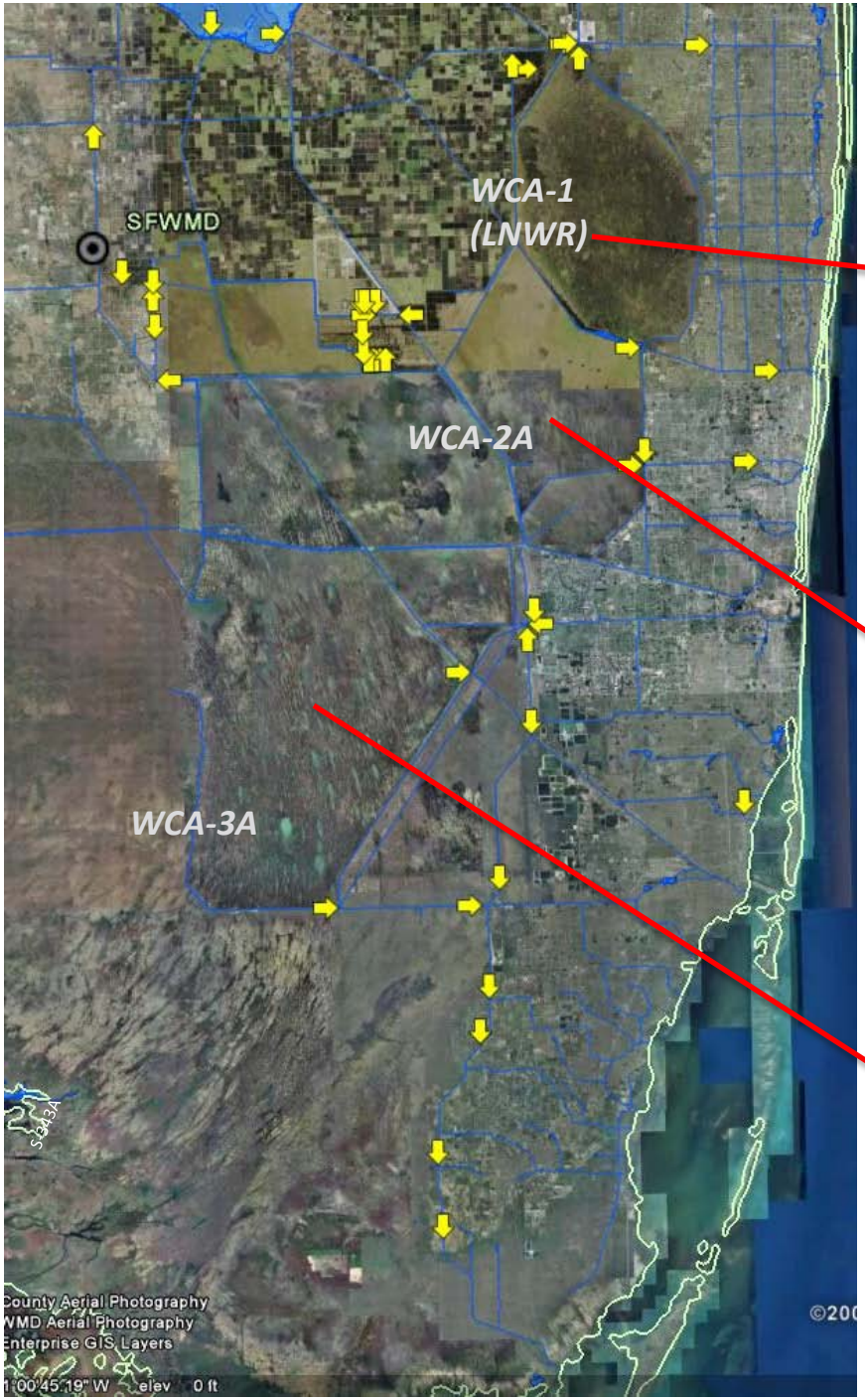
- Insufficient information available to compute water-level statistics
- In lowest 10 percent of past water elevations
- Within lowest 10 to 30 percent of past water elevations
- Within 20 percent of the median of past water elevations
- Within highest 10 to 30 percent of past water elevations
- In highest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

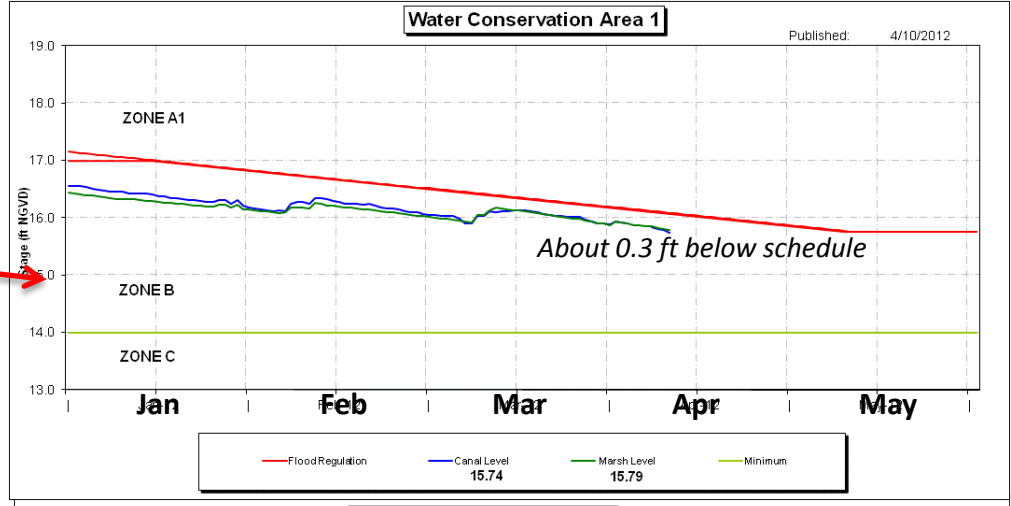

ORLANDO
FT. PIERCE
2009 Palm Beach County Aerial Photography
2004-05 SFWMD Aerial Photography
SFWMD Enterprise GIS Layers
©2009
31°06.02" N 81°28'04.61" W elev 0 ft

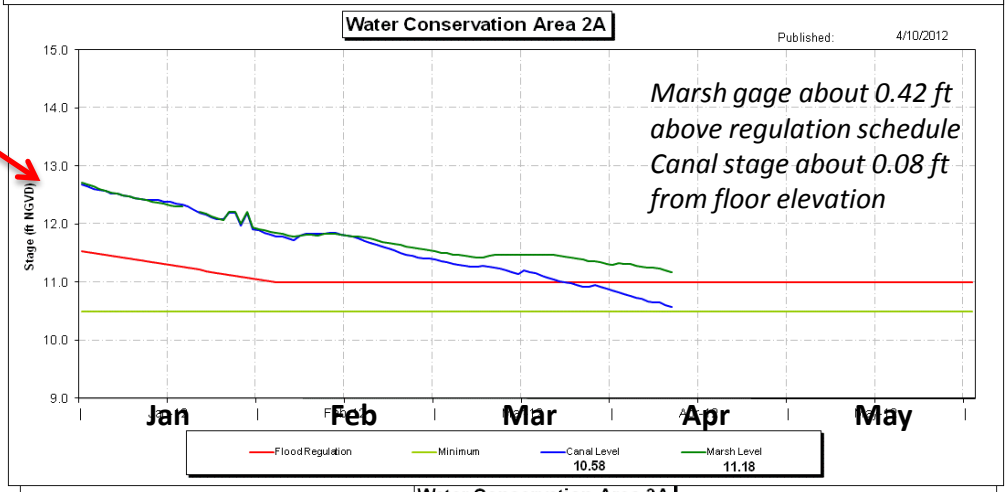

Lake Tohopekaliga
Published 4/10/2012
About 1.0 ft below regulation schedule
Stage (Ft.NGVD)
58.0
57.0
56.0
55.0
54.0
53.0
52.0
51.0
50.0
Jan
Feb
Mar
Apr
May
Flood Regulation
Lake Level
53.09

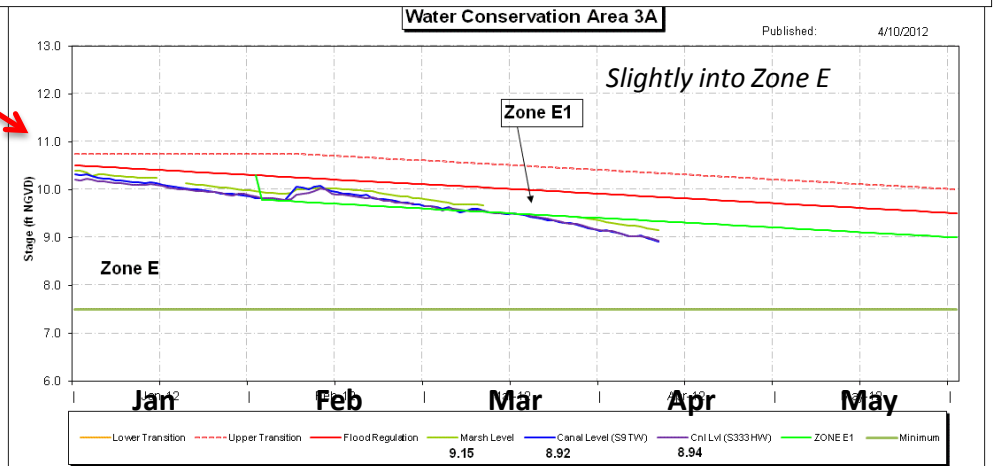

Lake Kissimmee
Published: 4/10/12
Supplying water to the River Restoration Project
Stage (ft NGVD)
55.0
54.0
53.0
52.0
51.0
50.0
49.0
48.0
Jan
Feb
Mar
Apr
May
Flood Schedule
S-65HW
49.81
Lake Level
49.7


Lake Istokpoga
Published: 4/10/2012
About 0.3 ft below regulation schedule
Stage (ft. NGVD)
41.0
40.0
39.0
38.0
37.0
36.0
Jan
Feb
Mar
Apr
May
Maximum
Lake Level
38.78
Zone C Pump Operation

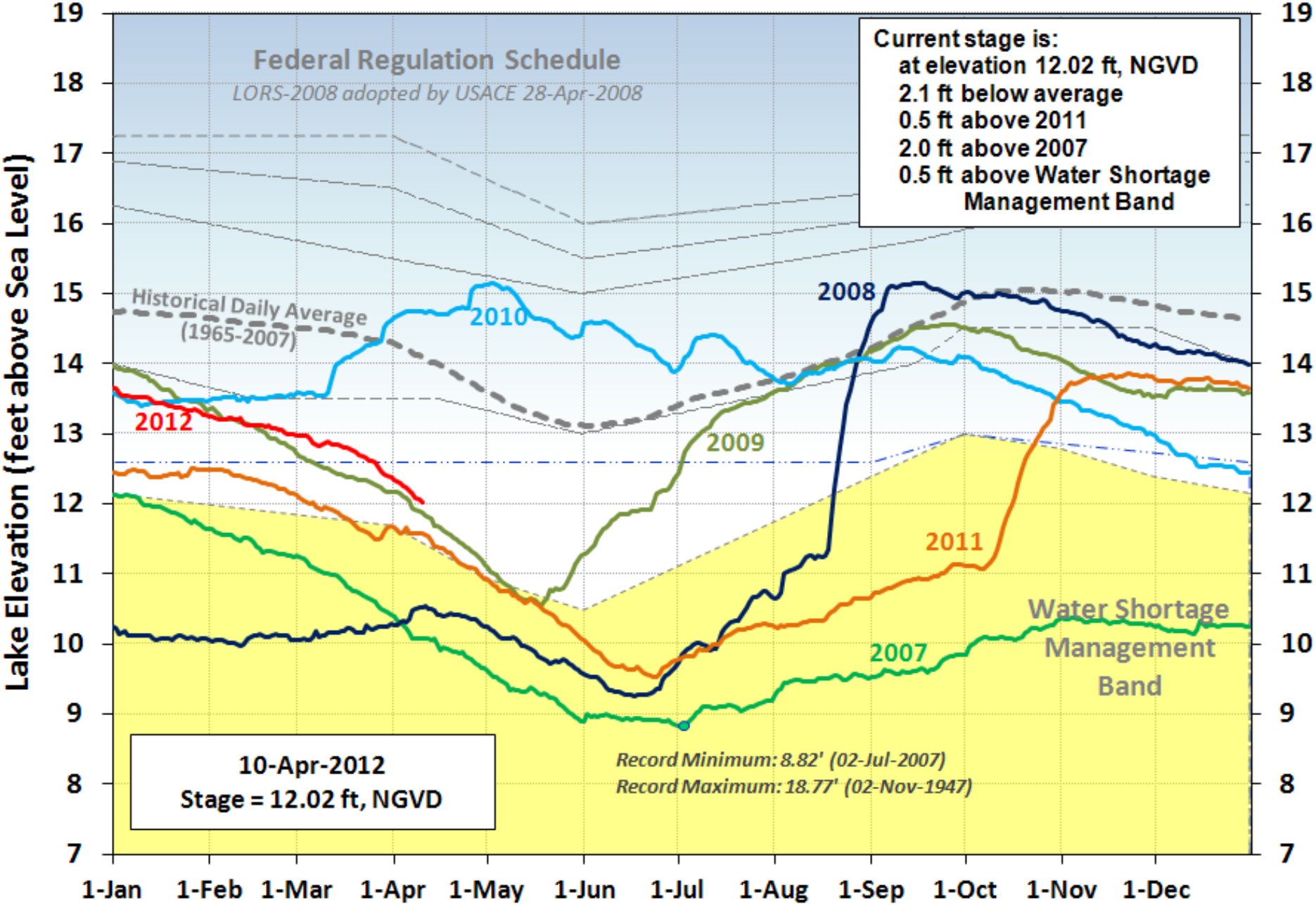

SFWMD
WCA-1
(LNWR)
WCA-2A
WCA-3A
County Aerial Photography
WMD Aerial Photography
Enterprise GIS Layers
1'00'45.19" W elev 0 ft


Water Conservation Area 1
Published: 4/10/2012
Stage (ft NGVD)
19.0
18.0
17.0
16.0
15.0
14.0
13.0
ZONE A1
ZONE B
ZONE C
About 0.3 ft below schedule
Jan
Feb
Mar
Apr
May
Flood Regulation
Canal Level
15.74
Marsh Level
15.79
Minimum


Water Conservation Area 2A
Published: 4/10/2012
Stage (ft NGVD)
15.0
14.0
13.0
12.0
11.0
10.0
9.0
Marsh gage about 0.42 ft
above regulation schedule
Canal stage about 0.08 ft
from floor elevation
Jan
Feb
Mar
Apr
May
Flood Regulation
Minimum
Canal Level
10.58
Marsh Level
11.18


Water Conservation Area 3A
Published: 4/10/2012
Stage (ft NGVD)
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
Slightly into Zone E
Zone E1
Zone E
Jan
Feb
Mar
Apr
May
Lower Transition
Upper Transition
Flood Regulation
Marsh Level
9.15
Canal Level (S9TW)
8.92
Cnl Lvl (S333HW)
8.94
ZONE E1
Minimum

Lake Okeechobee Water Level Comparison

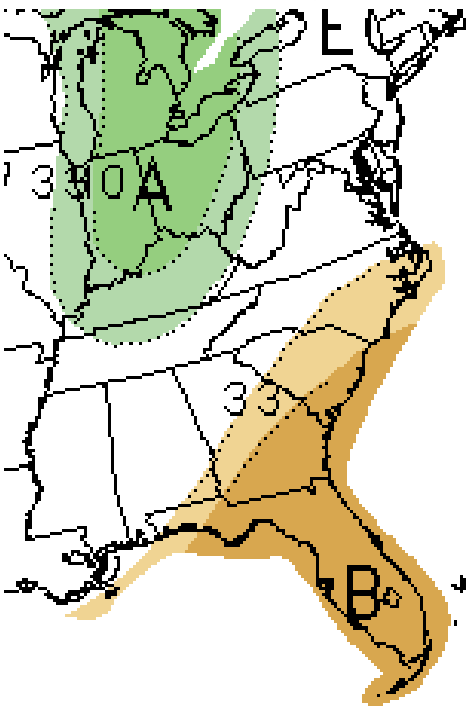


U. S. Seasonal Precipitation Outlook

National Climate Prediction Center (CPC)

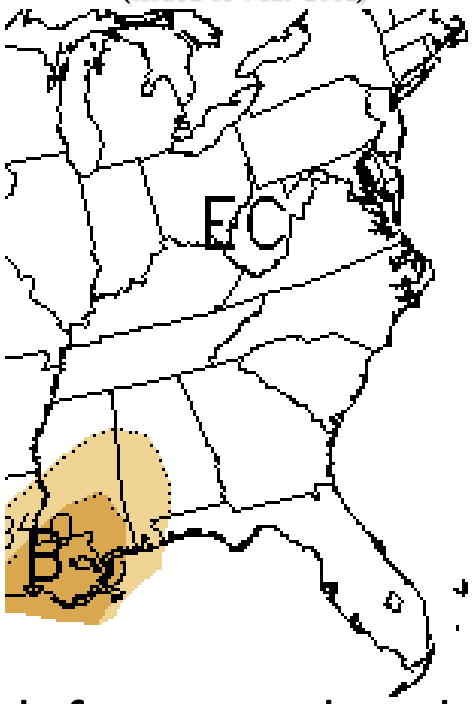
Apr 2012

(issued 31-Mar-2012)



Apr– May – Jun 2012

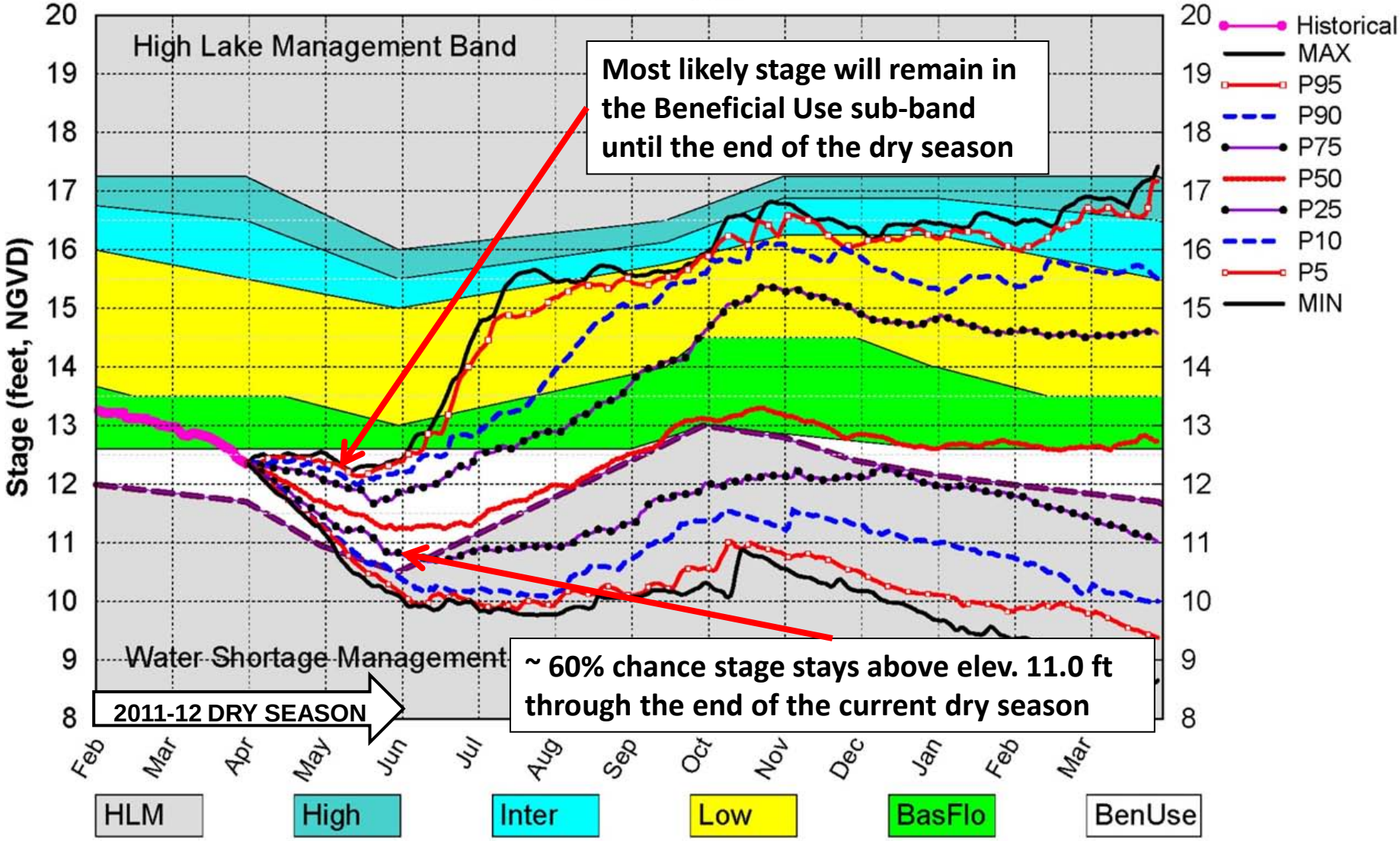
(issued 15-Mar-2012)



The current CPC precipitation outlook for central and southern Florida is for increased chances of below-normal (B) rainfall for April 2012. Equal changes of above-below-normal (EC) for the three month outlook, indicates climatology or no significant information to indicate above, normal or below.

Lake Okeechobee SFWMM April 2012 Position Analysis

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

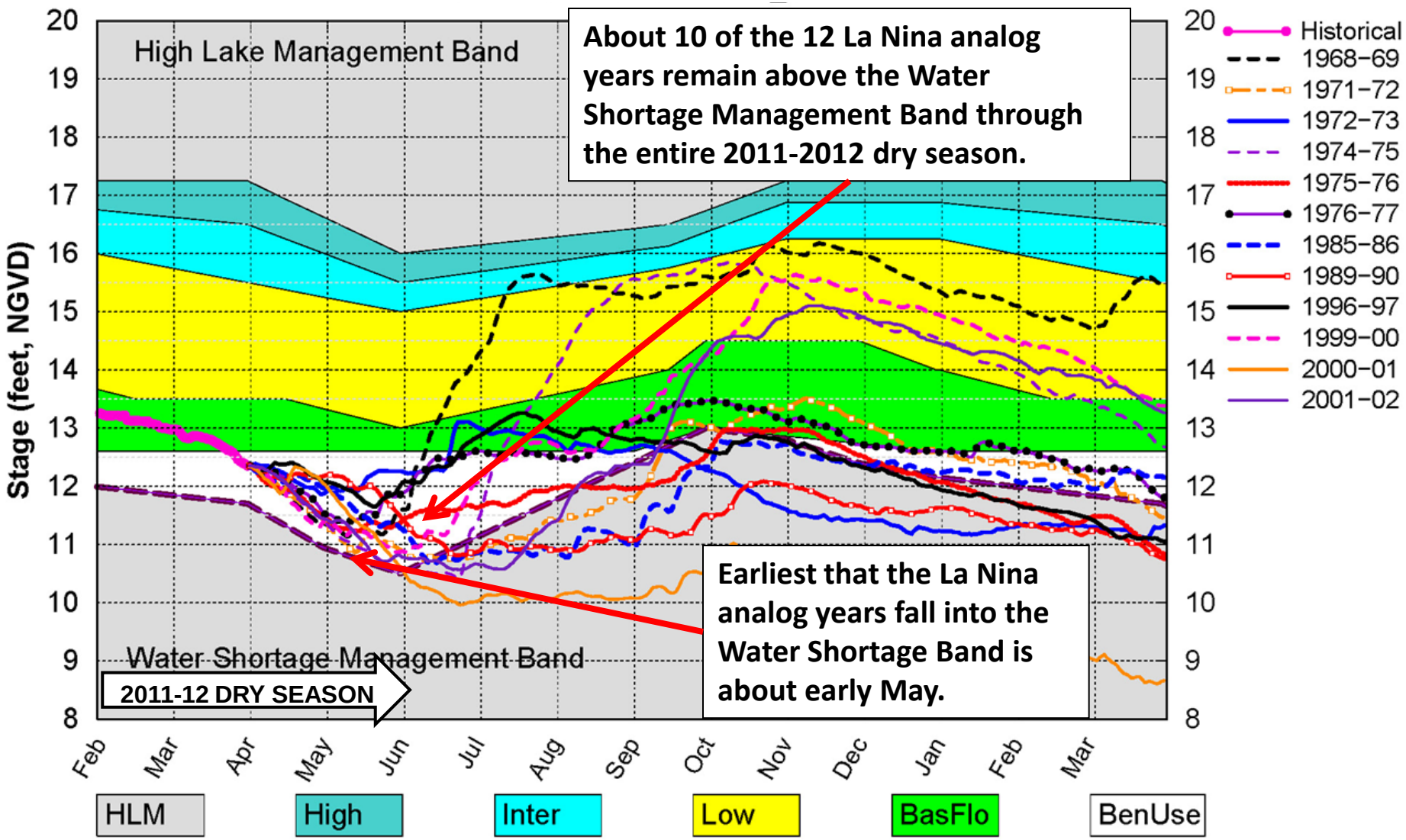


(See assumptions on the Position Analysis Results website)

Fri Apr 6 16:09:25 2012

Lake Okeechobee SFWMM April 2012 Position Analysis

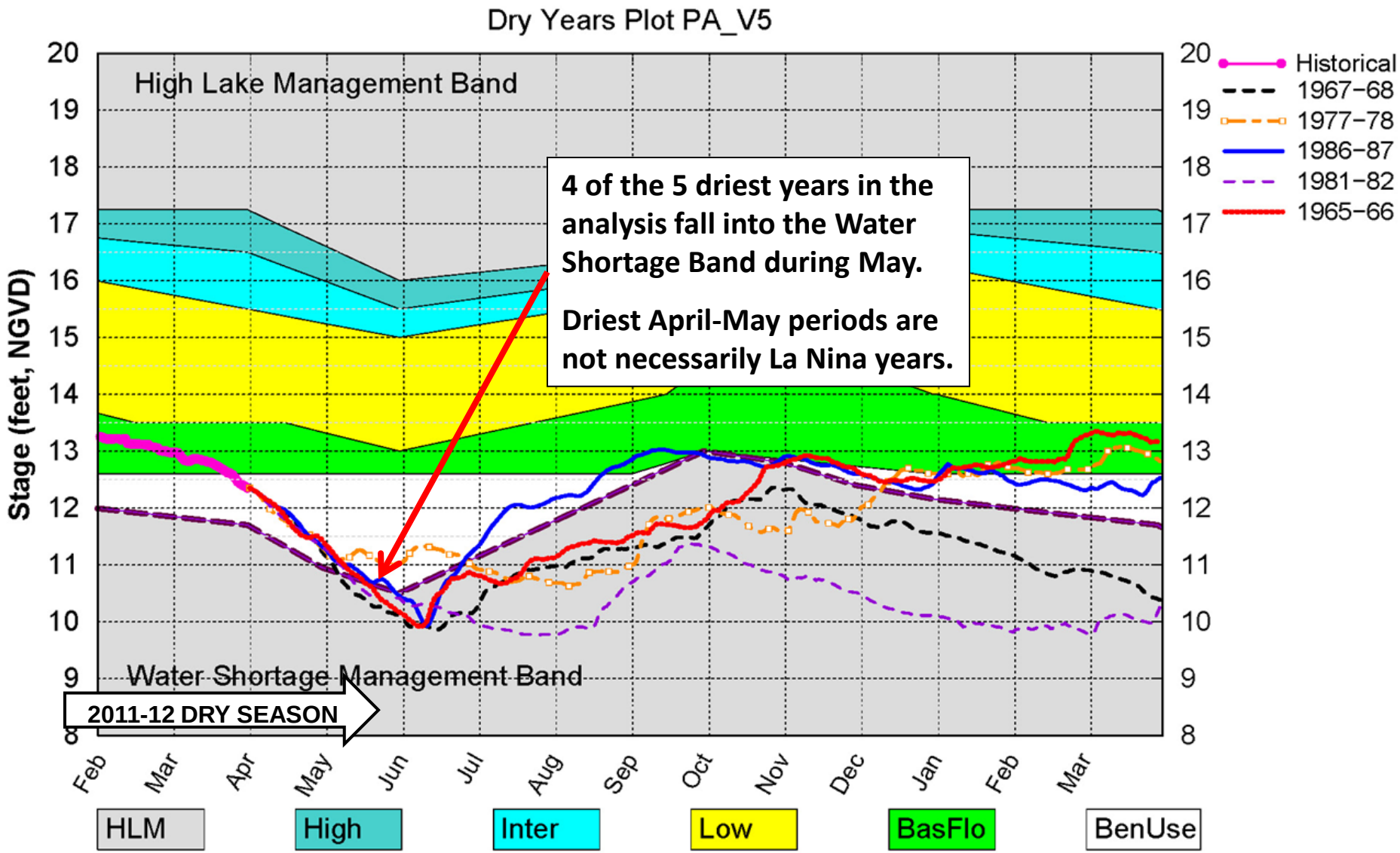
Hydrographs for 12 La Nina Analog Years



(See assumptions on the Position Analysis Results website)

Fri Apr 6 16:10:11 2012

Lake Okeechobee SFWMM April 2012 Position Analysis



(See assumptions on the Position Analysis Results website)

pr 6 16:10:07 2012

Lake Okeechobee: Current Operations

- **USACE's Lake O Regulation Schedule (2008 LORS)**
  - By March 26, stage receded from the Baseflow to the Beneficial Use Subband
  - In the Baseflow Subband, release guidance suggests:
    - up to baseflow releases at S-79 (450) and S-80 (200)
    - No releases to the WCAs (Dry Tributary Hydrologic Conditions)
  - No regulatory releases in the Beneficial Use Subband
- **SFWMD's Lake O Adaptive Protocol (2010)**
  - Release guidance currently suggests no releases due to Tributary Hydrologic Conditions dry (could be up to 300cfs baseflow releases to the Caloosahatchee Estuary)
    - Lake Stage is in the Beneficial use Subband
    - Val I75 Salinity forecast (30-day moving avg) > 5 psu within next two weeks
    - Less than 50% chance Lake stage will fall below elevation 11.0 ft during the dry season
  - Mar 15th: SFWMD requested the USACE to initiate 14th consecutive week of 450 cfs baseflow releases

North Shore Locks Closing

North Shore Lake Okeechobee Navigation Lock Operation Criteria			
Structures	Lake Level in Feet NGVD (1929)		
	Normal Operation (Locktender present)	**Weekend Only Operation** (Locktender present – Saturday and Sunday, 5:30 a.m. until 10:30 p.m.)	**Closed** (No Locktender)
S-135	>12.00	-	12.00
G-36	>12.00	-	12.00
S-193	>12.00	12.00-11.00	11.00
S-127	>12.00	-	12.00
S-131	>12.00	-	12.00

QUESTIONS?

BACK UP SLIDES

North Shore Lake Okeechobee Navigation Lock Operation Criteria			
Structures	Lake Level in Feet NGVD (1929)		
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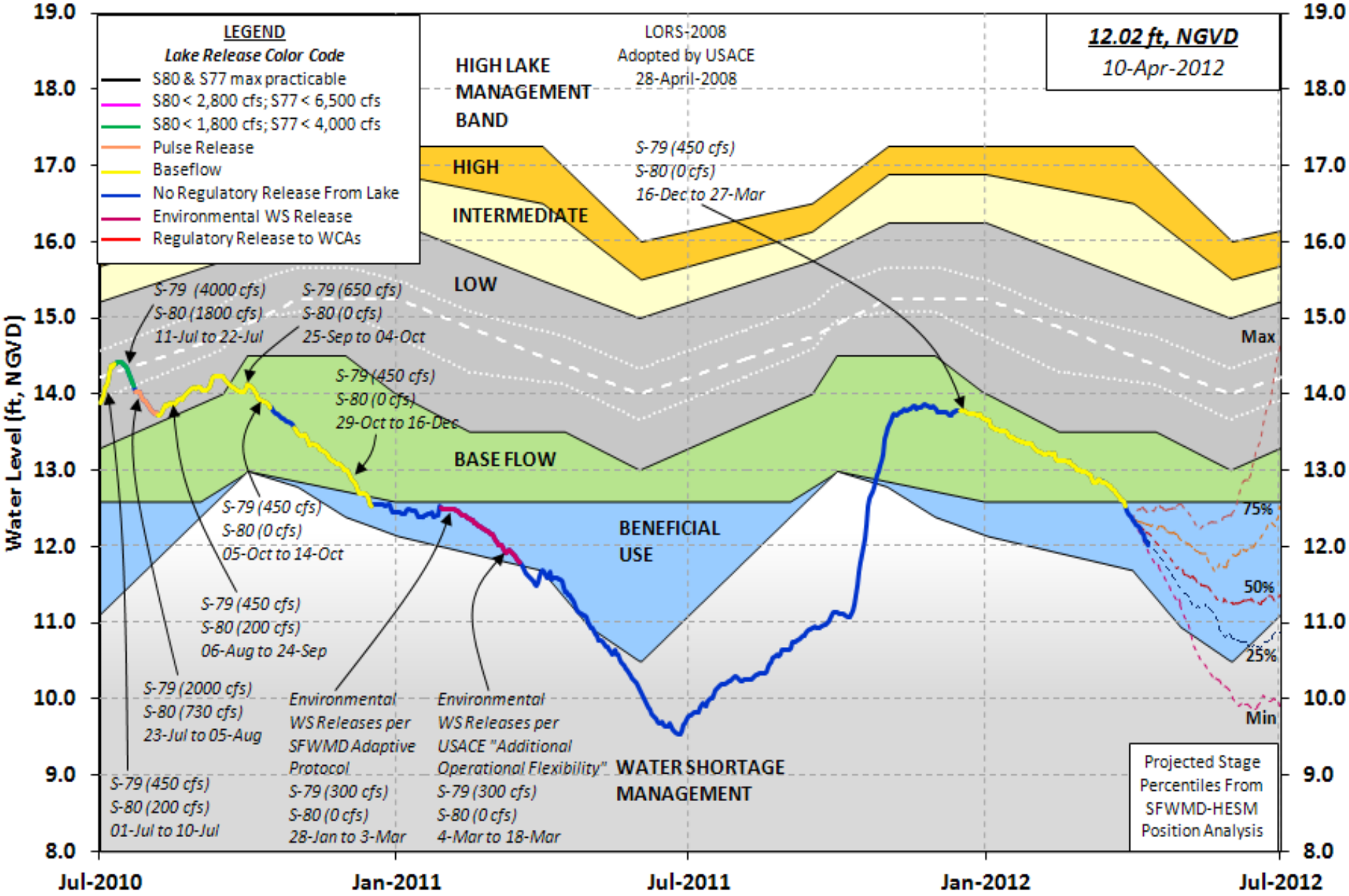
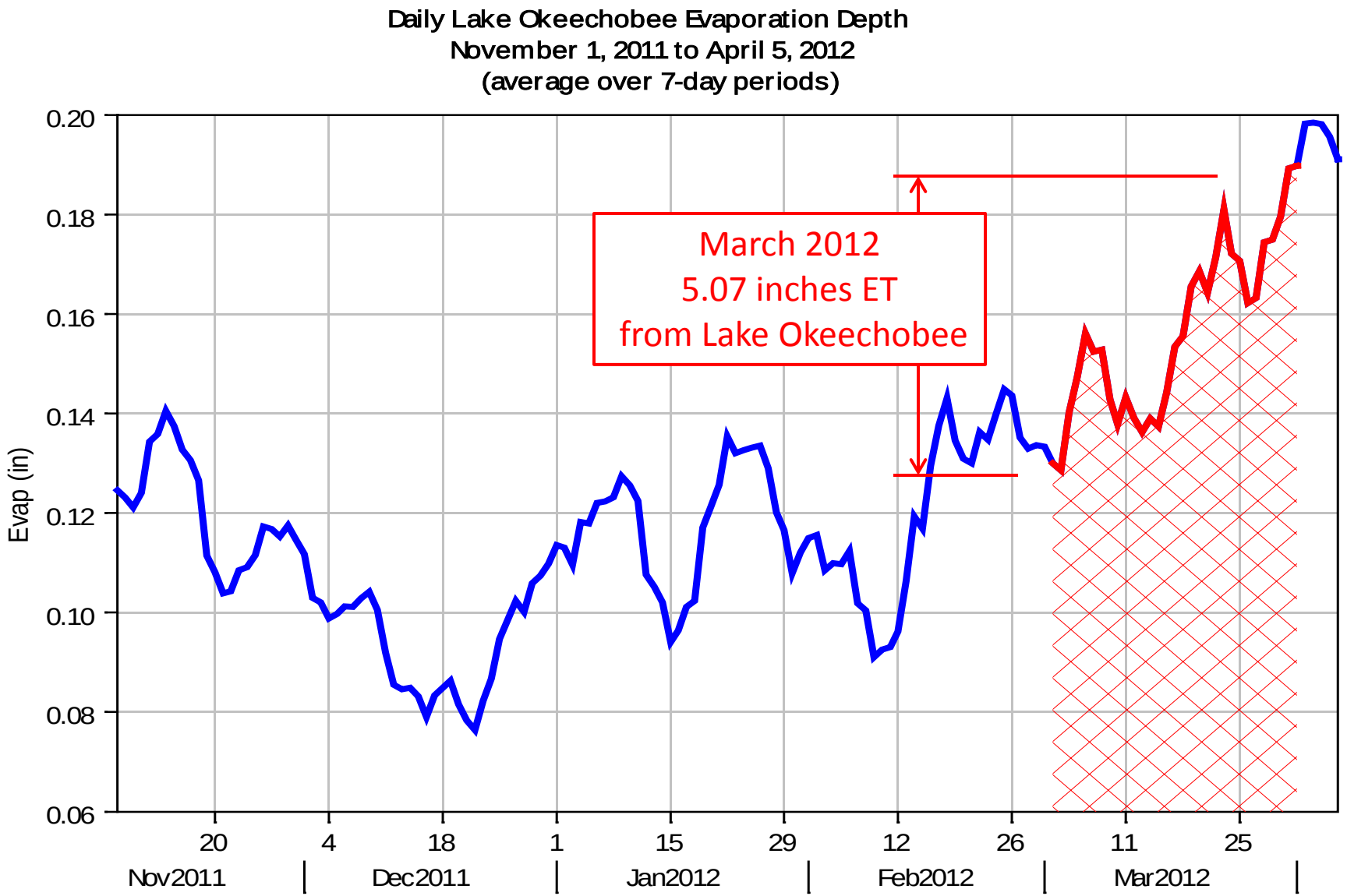
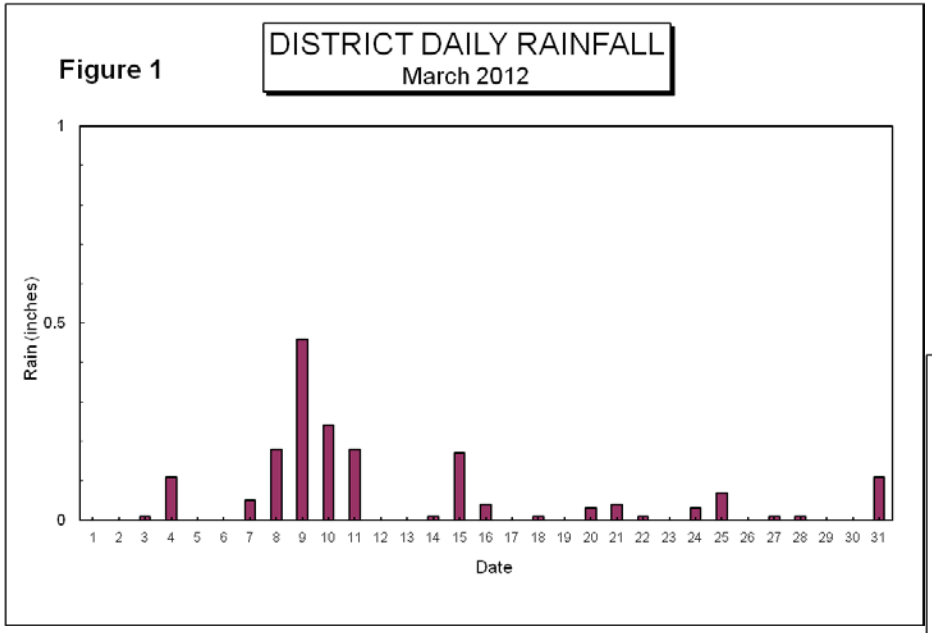
S-127	>12.00	-	12.00
S-131	>12.00	-	12.00

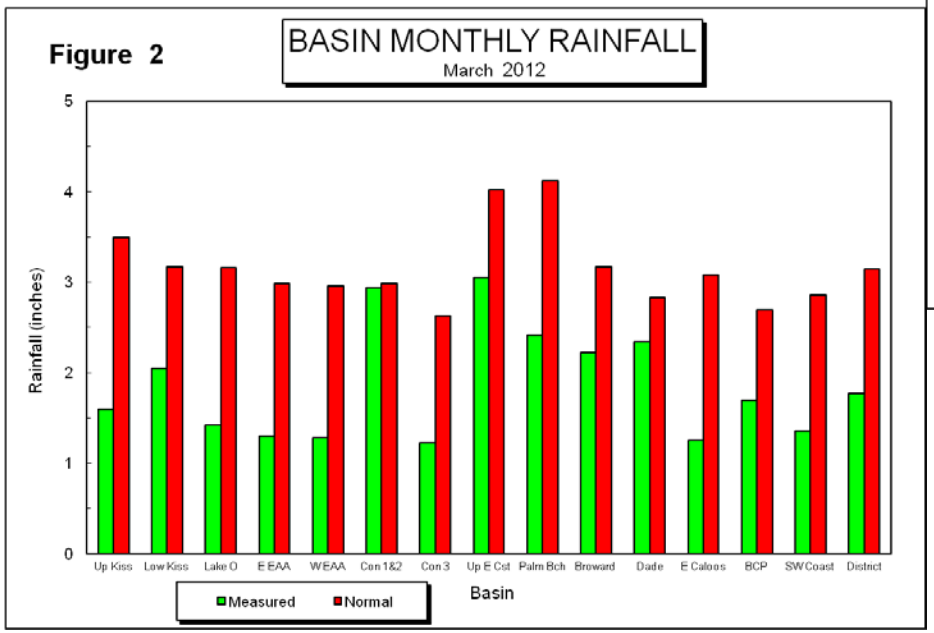
Lake Okeechobee Water Level History and Projected Stages

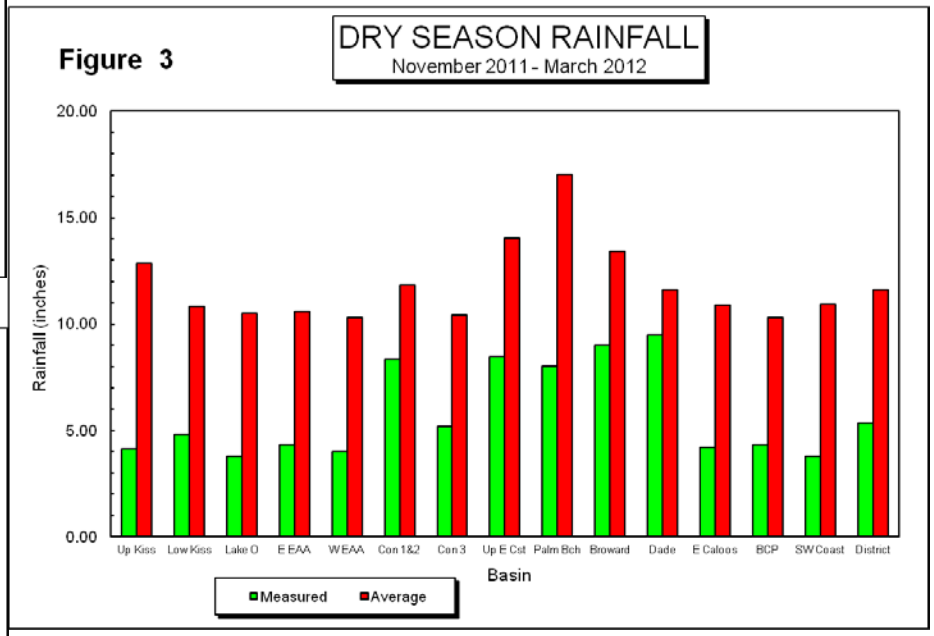



Daily Lake Okeechobee Evaporation Depth
November 1, 2011 to April 5, 2012
(average over 7-day periods)
Evap (in)
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
March 2012
5.07 inches ET
from Lake Okeechobee
20
4
18
1
15
29
12
26
11
25
Nov2011
Dec2011
Jan2012
Feb2012
Mar2012

Meteorological Summary March 2012





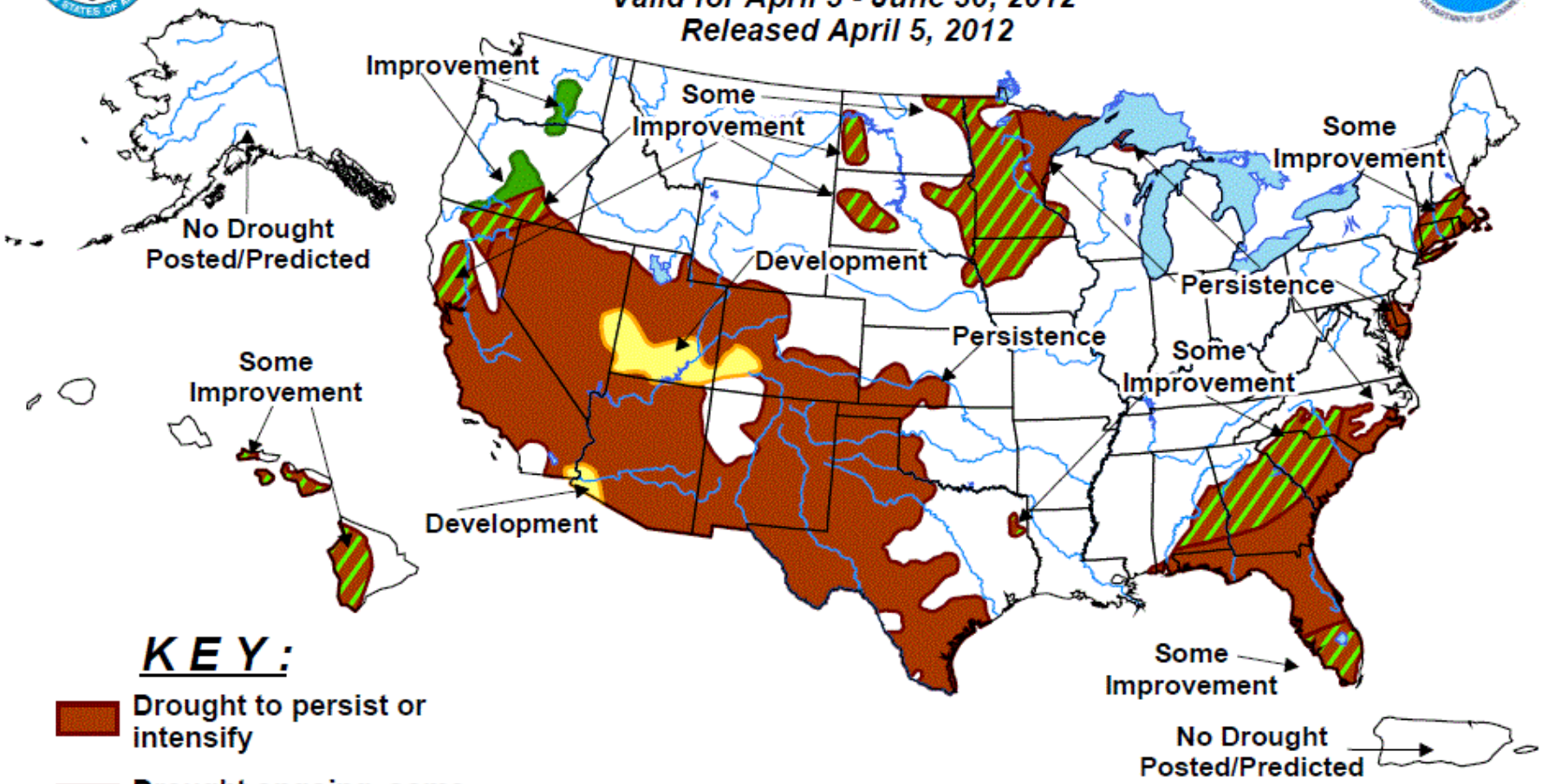


U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for April 5 - June 30, 2012

Released April 5, 2012



KEY:

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

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.

L-59 – Indian Prairie Basin– Photo taken March 30, 2012