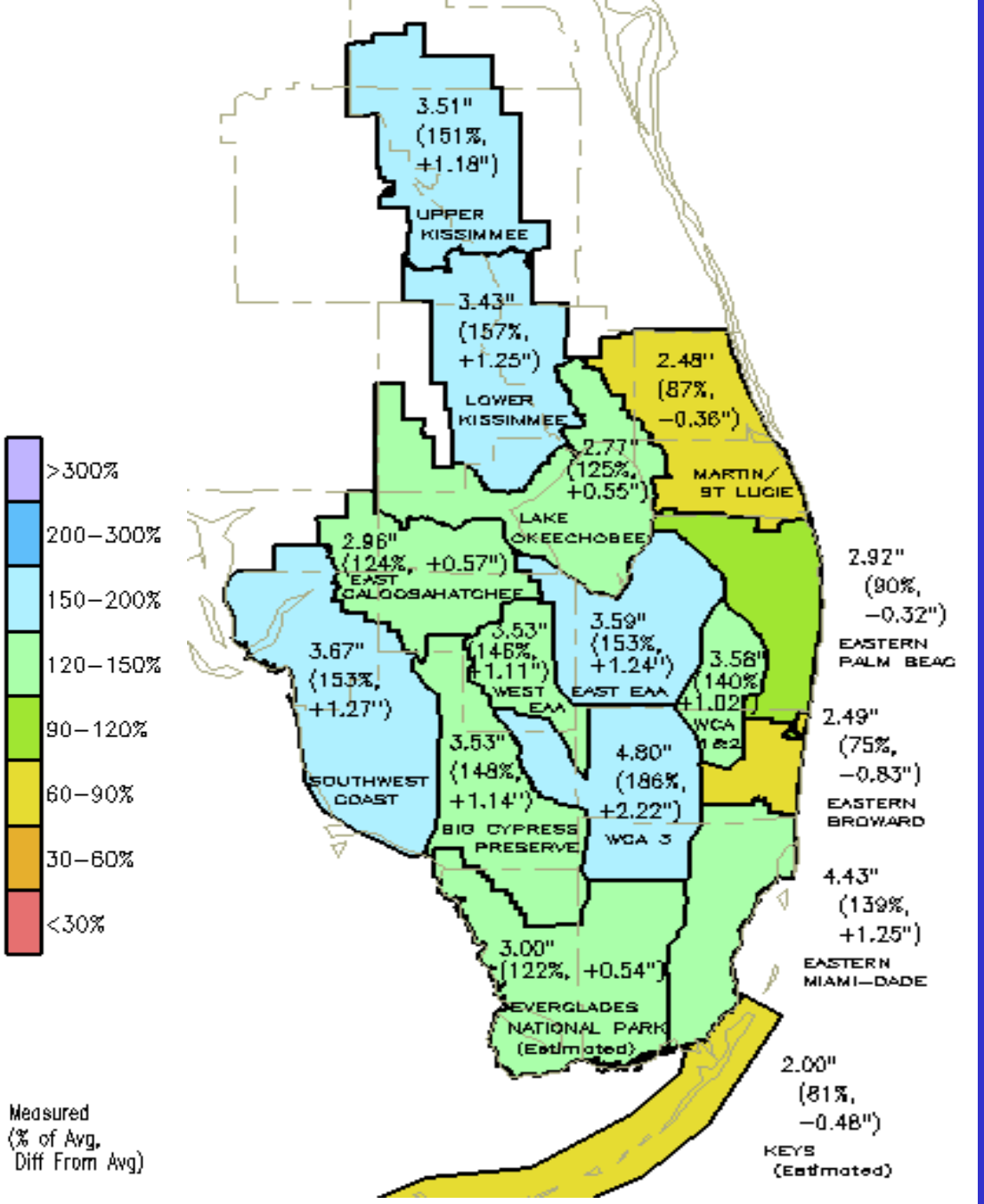
Water Conditions Summary

Governing Board Meeting
May 15, 2008

Susan Sylvester, Director
Operations Control and Vegetation Management Department



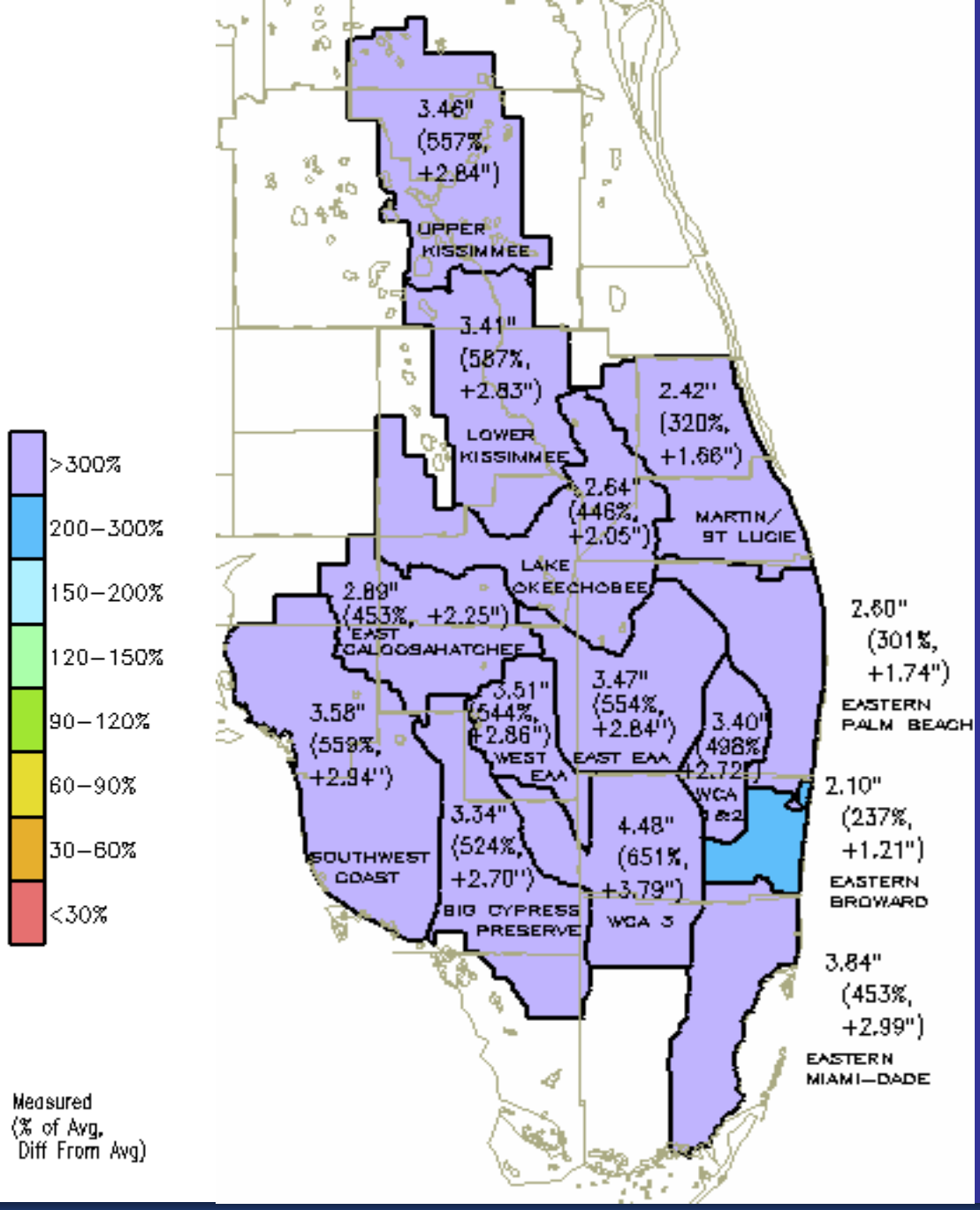
SFWMD 2008
April Rainfall
Apr 1-31

DISTRICT-WIDE:
3.44” (138%, +0.94”)

Average April
= 2.50”

Stats for April -2008:

- *Basins both north and south of L.Okee are 1”-2” > average*
- *Martin St. Lucie and Eastern Broward Co below average*

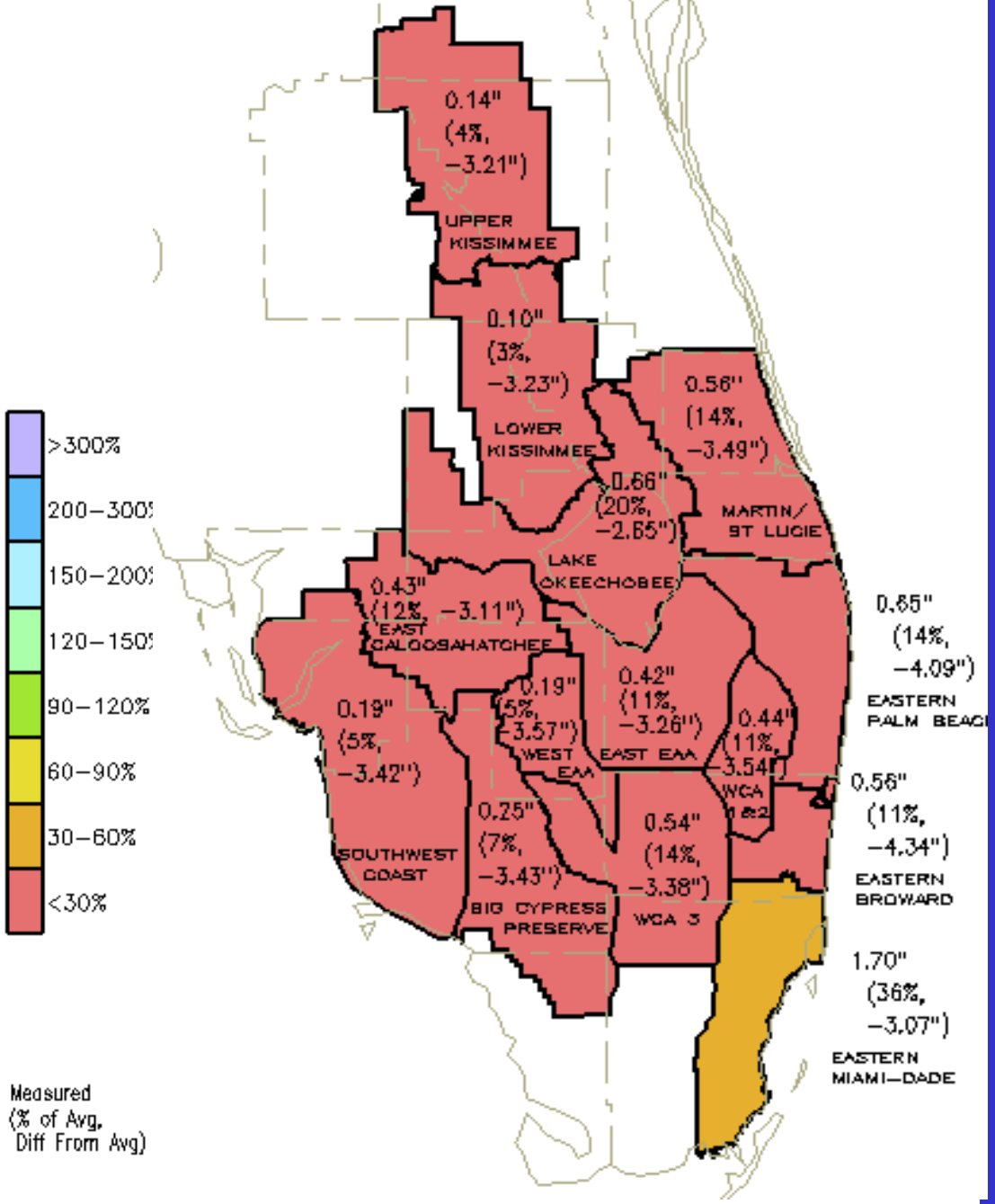


SFWMD 2008
April Rainfall
Apr 2nd – Apr 9th

DISTRICT-WIDE:
3.29" (493%, +2.62")

Average April
= 2.50"

- *All basins were near or above average except SW Coast & Big Cypress Preserve*
- *Three consecutive months with above-average rainfall*
  - *unprecedented during a La Nina year.*



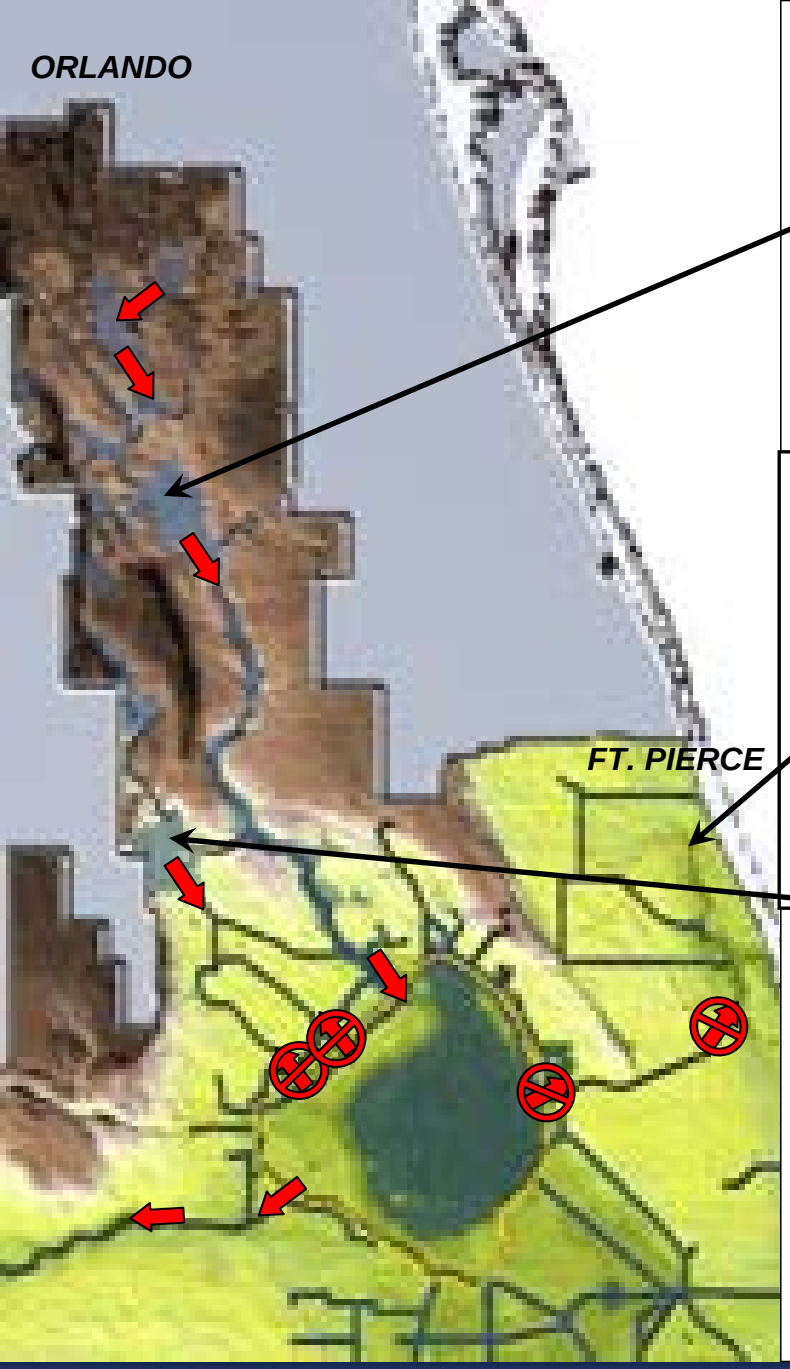
SFWMD

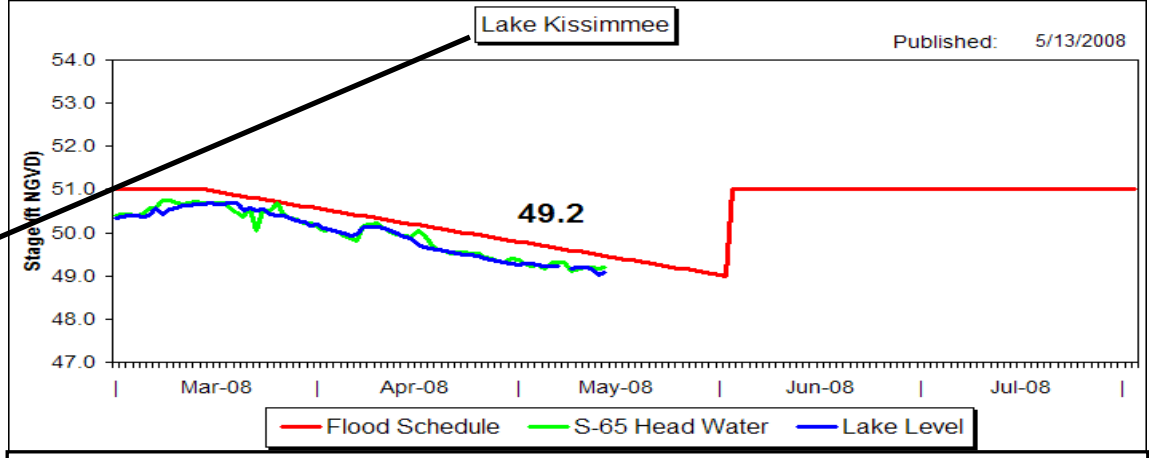
Past 36 Days Rainfall

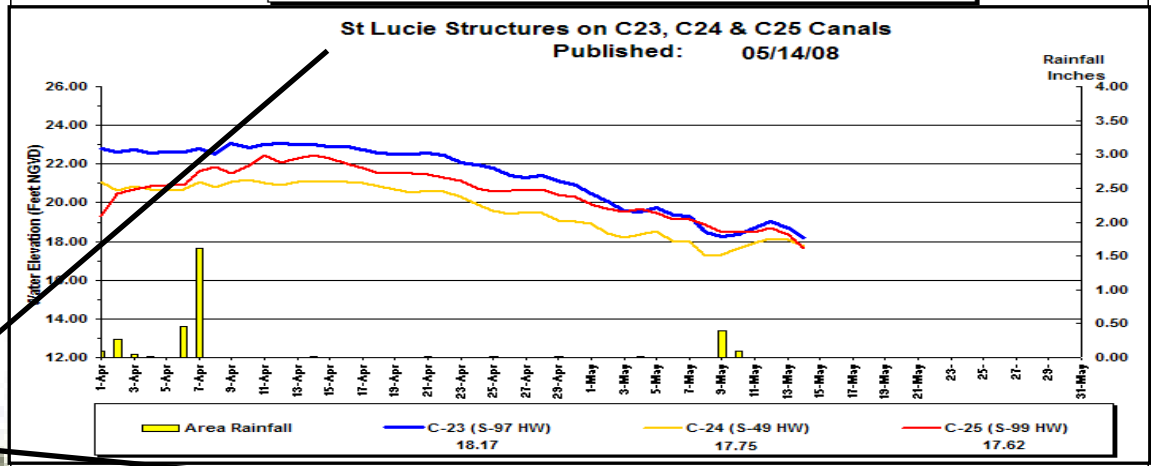
10-April-08 to 14-May-08

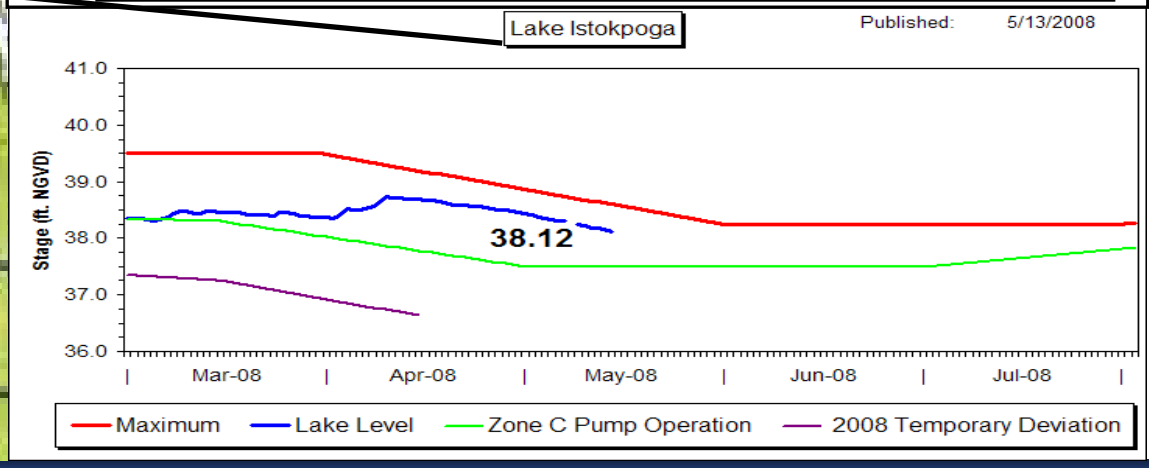
DISTRICT-WIDE:
0.45" (12%, -3.31")

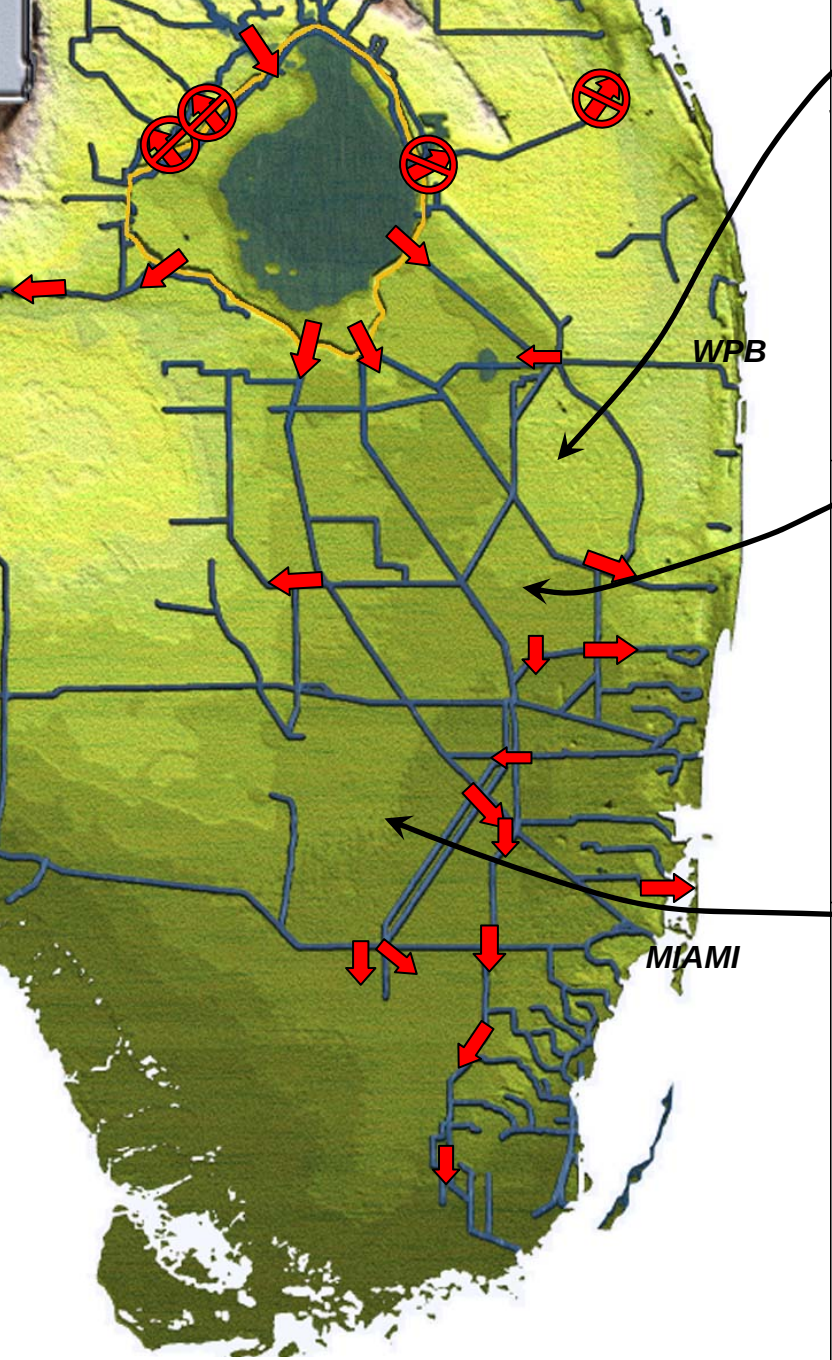
- *All basins are below average*
- *Most basins are +3" < avg*
- *Easter Palm Bch and Broward are +4" < avg.*
- *Lake O is ~ 2.5" < avg*

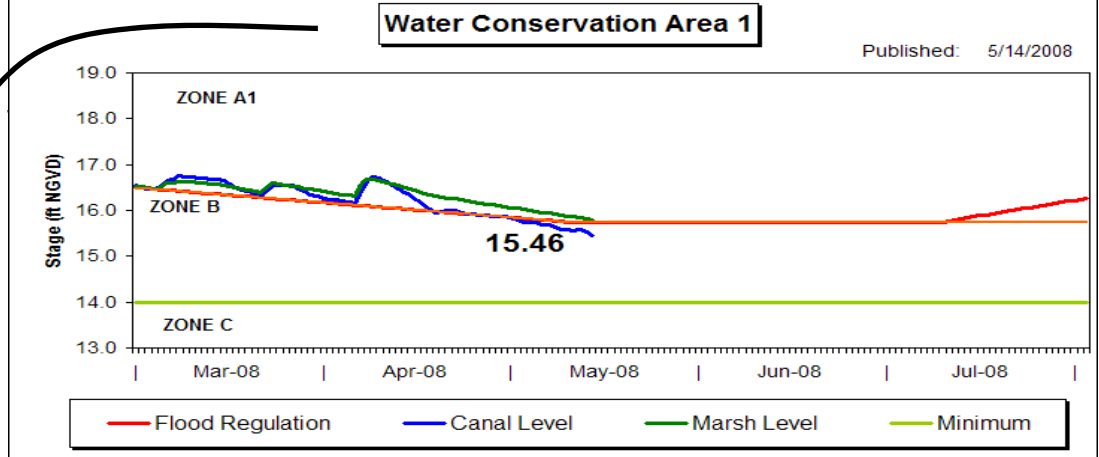

ORLANDO
FT. PIERCE

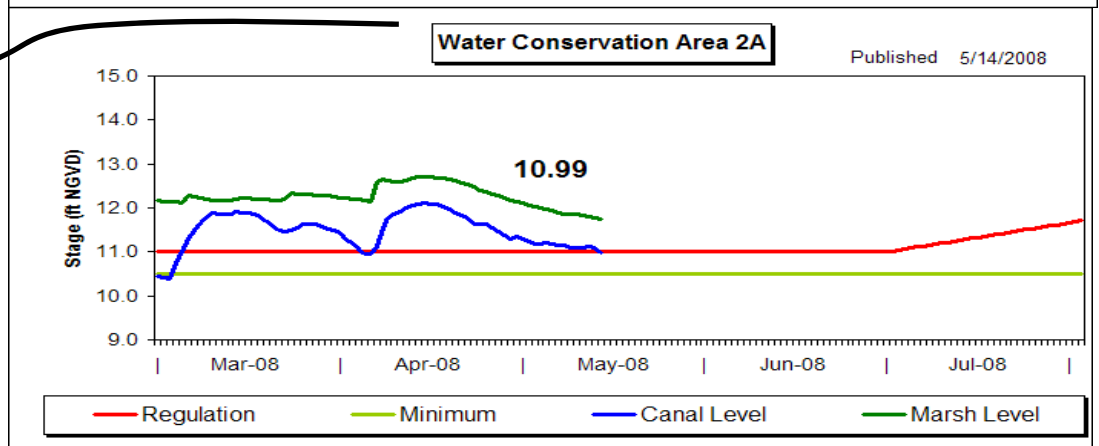

Lake Kissimmee
Published: 5/13/2008
Stage (ft NGVD)
54.0
53.0
52.0
51.0
50.0
49.0
48.0
47.0
49.2
Mar-08
Apr-08
May-08
Jun-08
Jul-08
Flood Schedule
S-65 Head Water
Lake Level

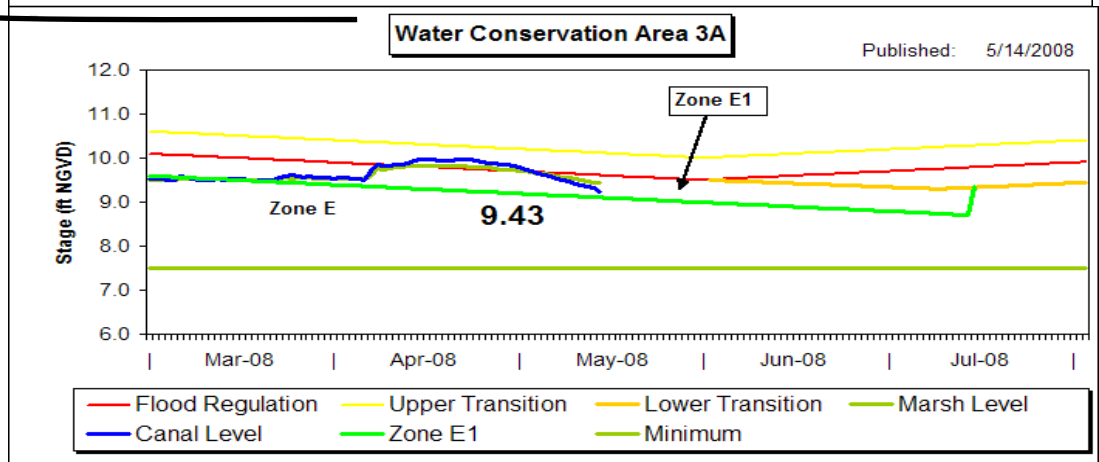

St Lucie Structures on C23, C24 & C25 Canals
Published: 05/14/08
Water Elevation (Feet NGVD)
Rainfall Inches
26.00
24.00
22.00
20.00
18.00
14.00
12.00
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
Area Rainfall
C-23 (S-97 HW)
18.17
C-24 (S-49 HW)
17.75
C-25 (S-99 HW)
17.62


Lake Istokpoga
Published: 5/13/2008
Stage (ft. NGVD)
41.0
40.0
39.0
38.0
37.0
36.0
38.12
Mar-08
Apr-08
May-08
Jun-08
Jul-08
Maximum
Lake Level
Zone C Pump Operation
2008 Temporary Deviation

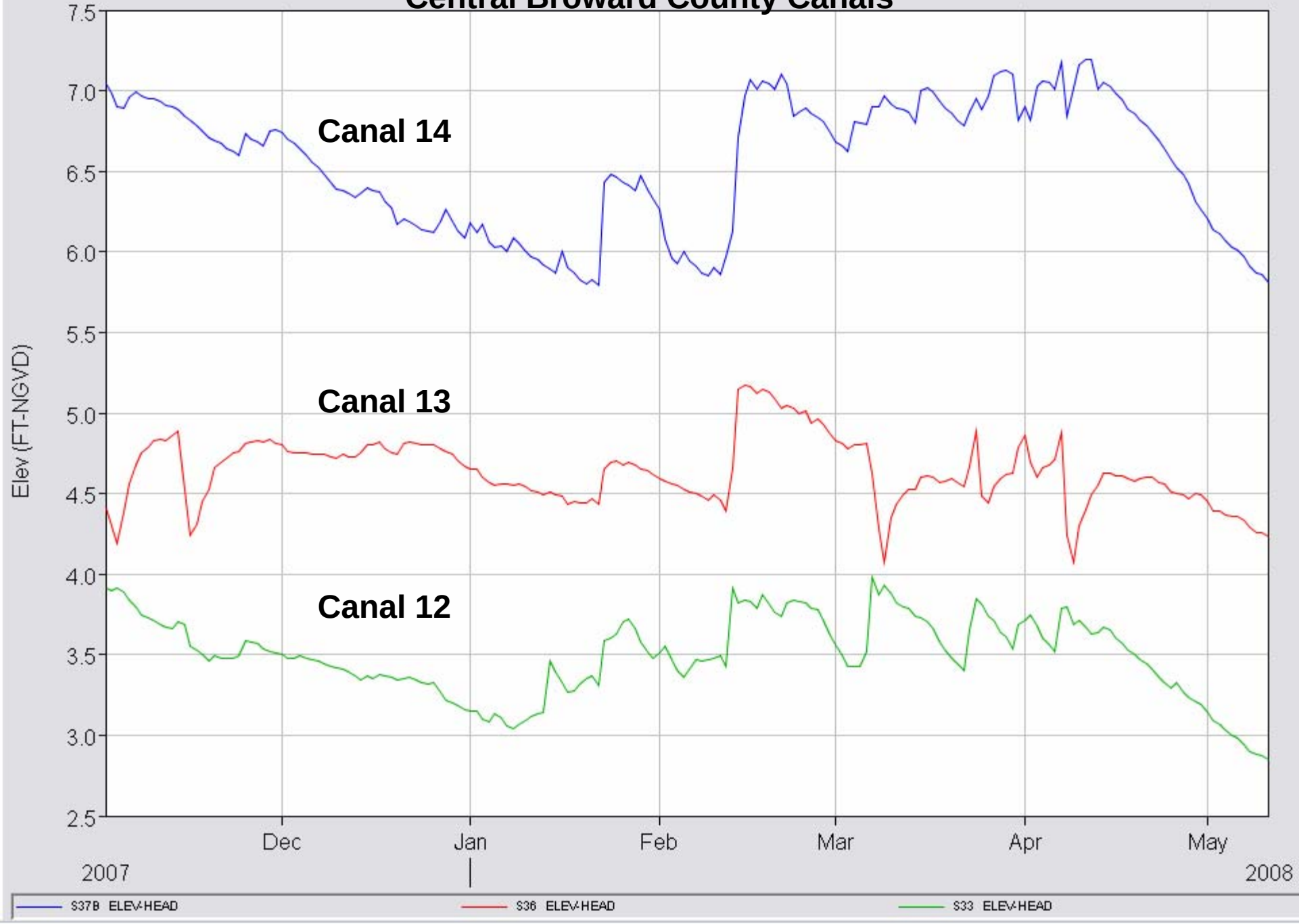

WPB
MIAMI


Water Conservation Area 1
Published: 5/14/2008
ZONE A1
ZONE B
ZONE C
15.46
Stage (ft NGVD)
19.0
18.0
17.0
16.0
15.0
14.0
13.0
Mar-08
Apr-08
May-08
Jun-08
Jul-08
Flood Regulation
Canal Level
Marsh Level
Minimum


Water Conservation Area 2A
Published 5/14/2008
10.99
Stage (ft NGVD)
15.0
14.0
13.0
12.0
11.0
10.0
9.0
Mar-08
Apr-08
May-08
Jun-08
Jul-08
Regulation
Minimum
Canal Level
Marsh Level


Water Conservation Area 3A
Published: 5/14/2008
Zone E1
Zone E
9.43
Stage (ft NGVD)
12.0
11.0
10.0
9.0
8.0
7.0
6.0
Mar-08
Apr-08
May-08
Jun-08
Jul-08
Flood Regulation
Upper Transition
Lower Transition
Marsh Level
Canal Level
Zone E1
Minimum

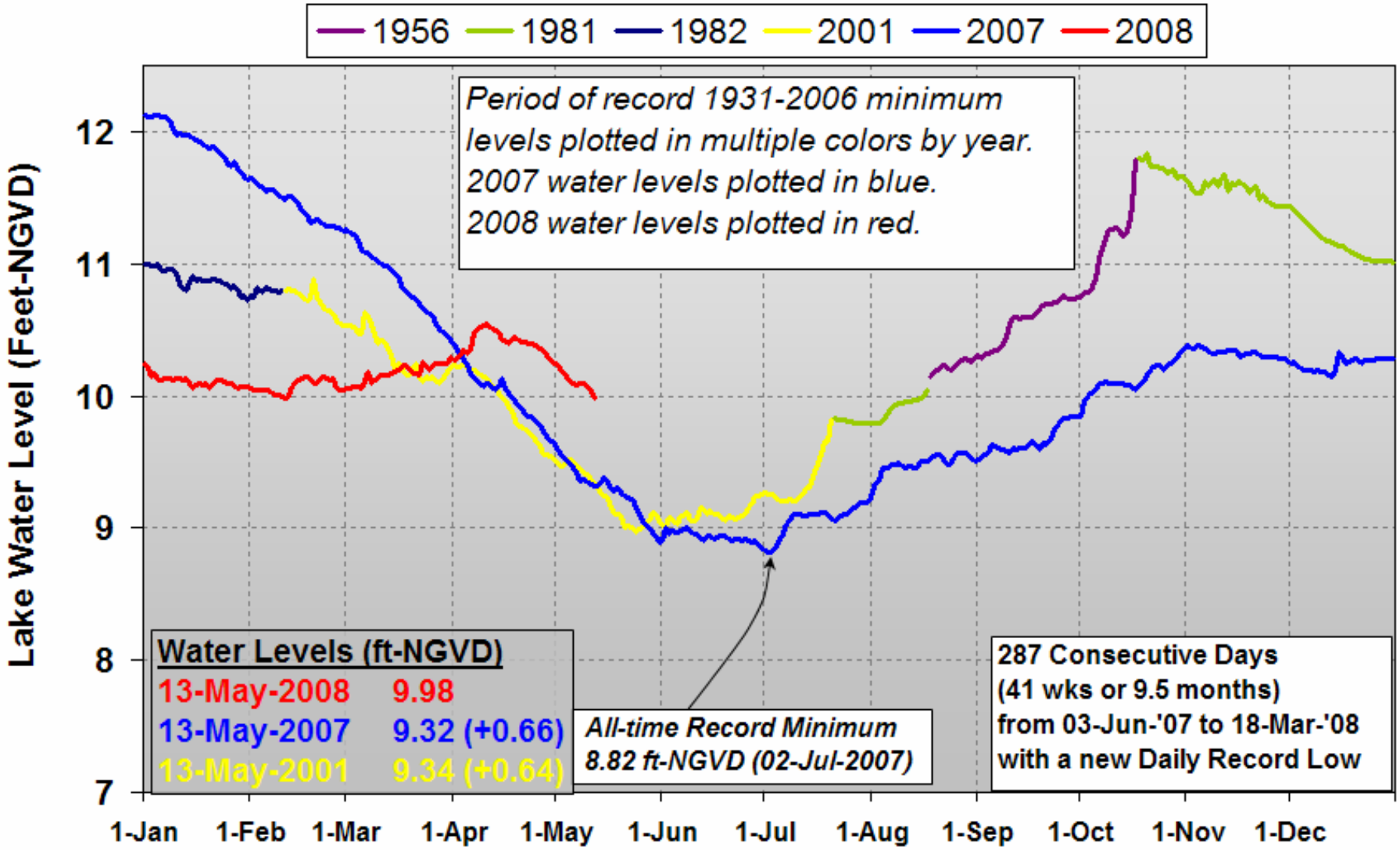
Central Broward County Canals



Example of Residential Retention Pond

Lake Okeechobee

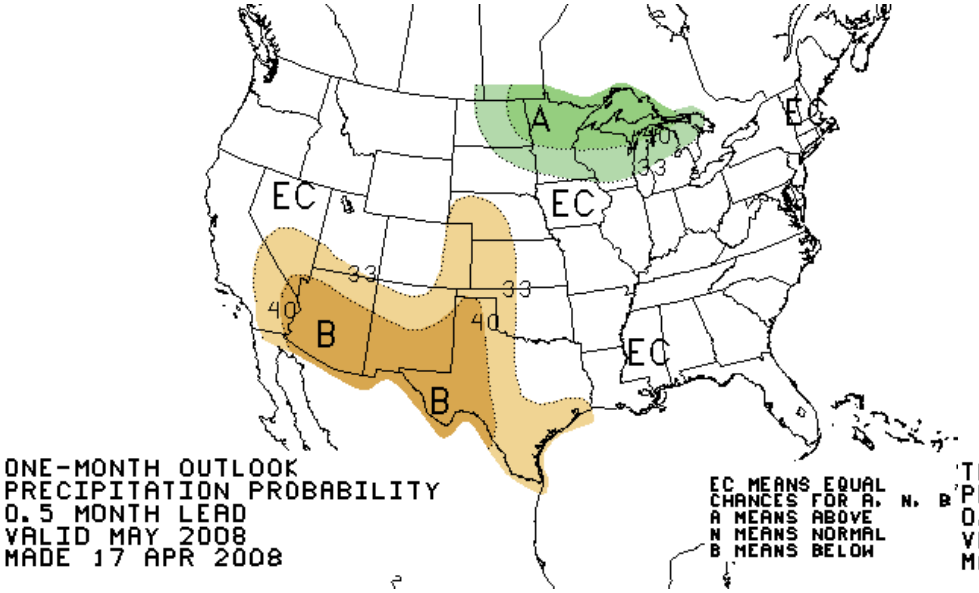
Period of Record 1931-2006 Minimum Water Levels



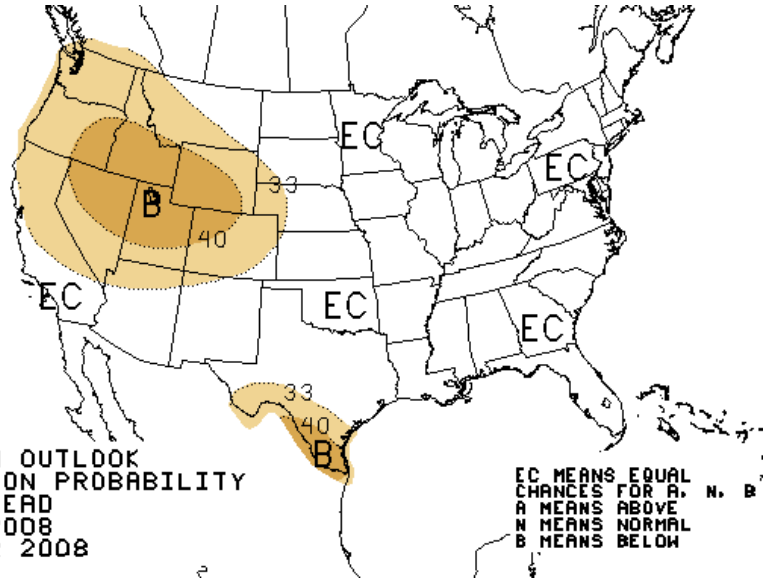
U. S. Seasonal Precipitation Outlook

National Climate Prediction Center (CPC)

May



May-Jul



- The CPC outlook for May shows equal chances of below-normal (B), normal (N), or above-normal (A) rainfall.
- The outlook for May-July also shows equal chances of B, N, A rainfall.
- La Niña conditions are fading.

I will not try to forecast the wet season rainfall total.
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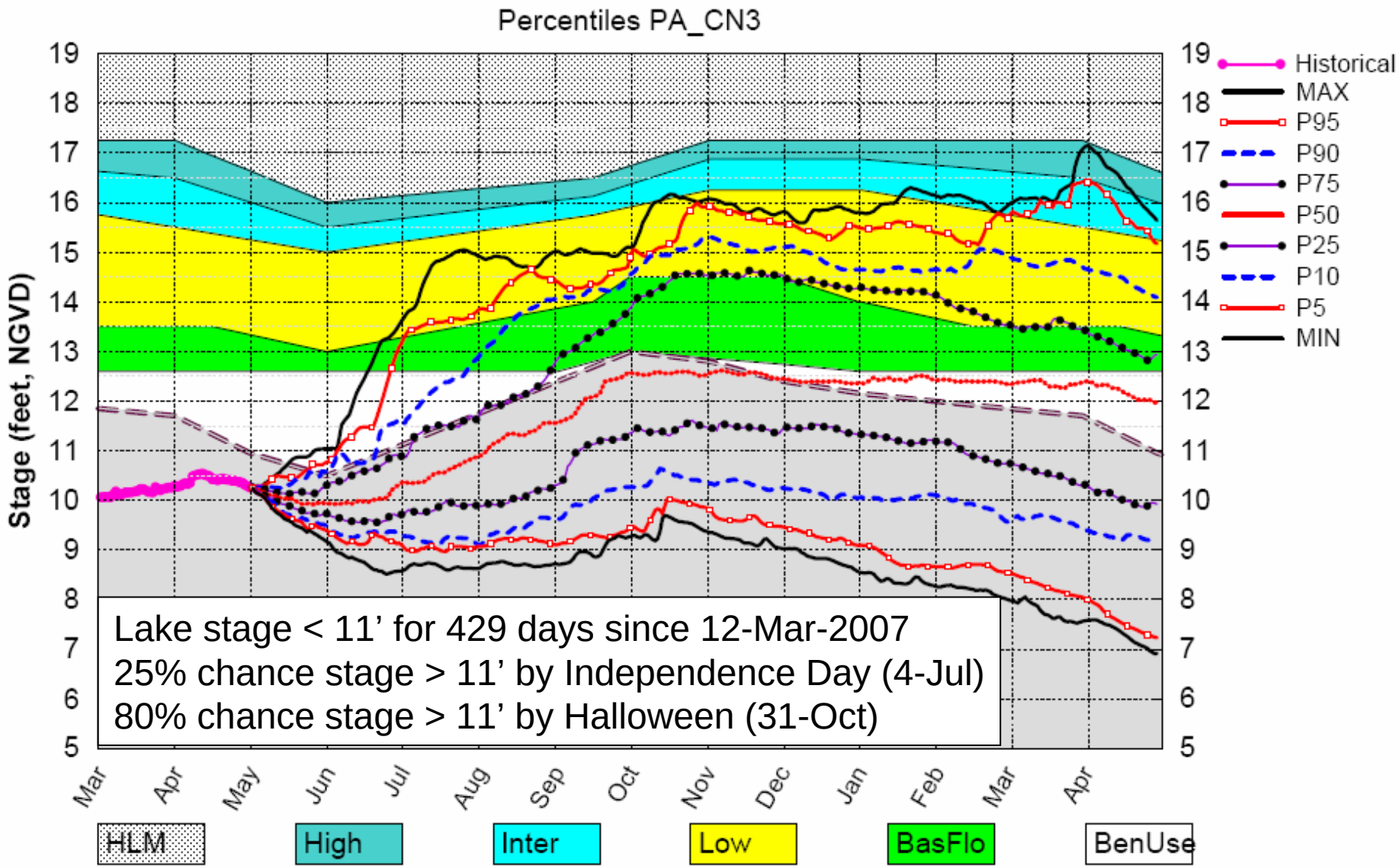
Lake Okeechobee SFWMM May 2008 Position Analysis

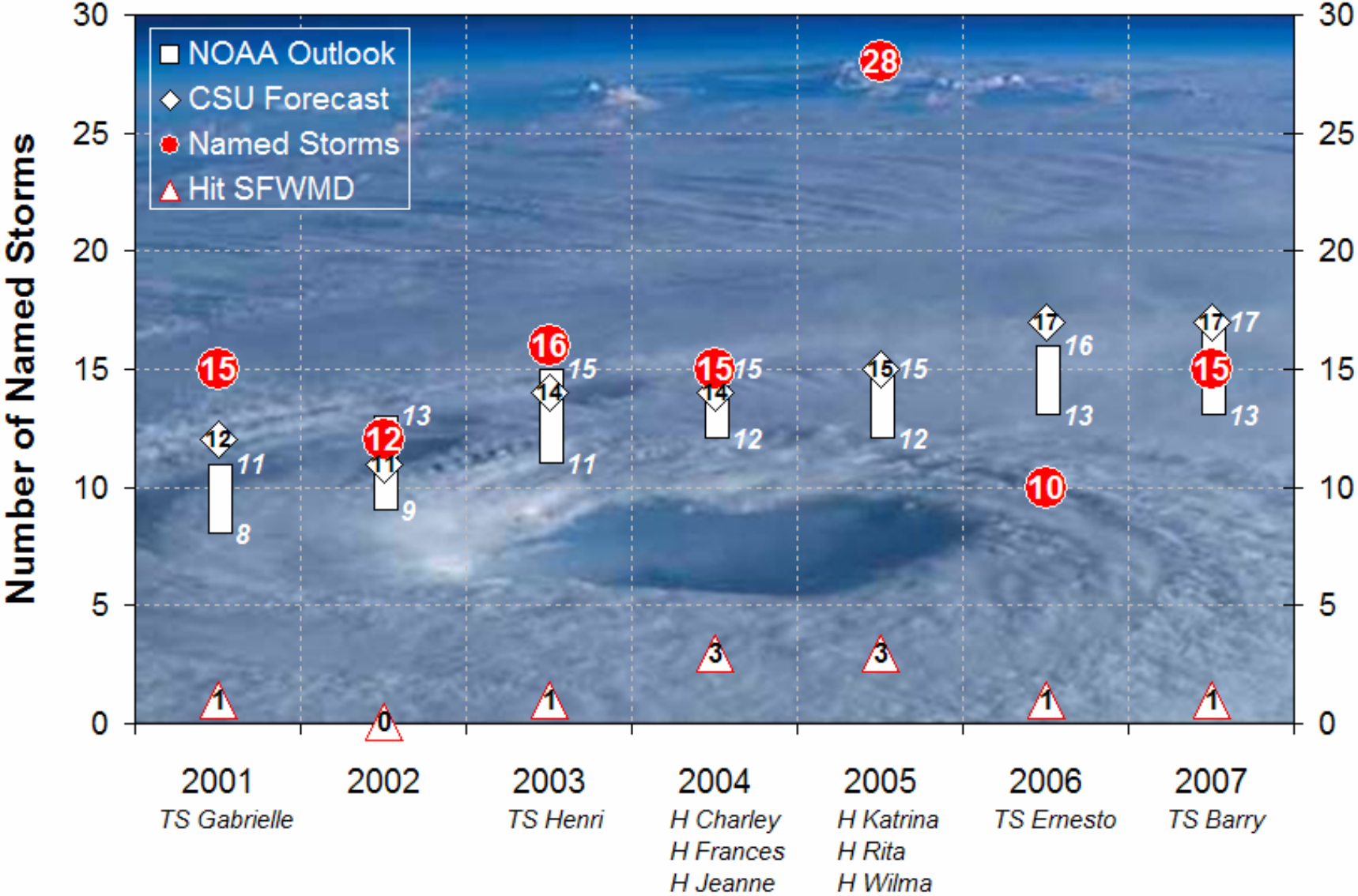


(See assumptions on the Position Analysis Results website)

Wed May 14 13:37:21 2008

Atlantic Hurricane Season

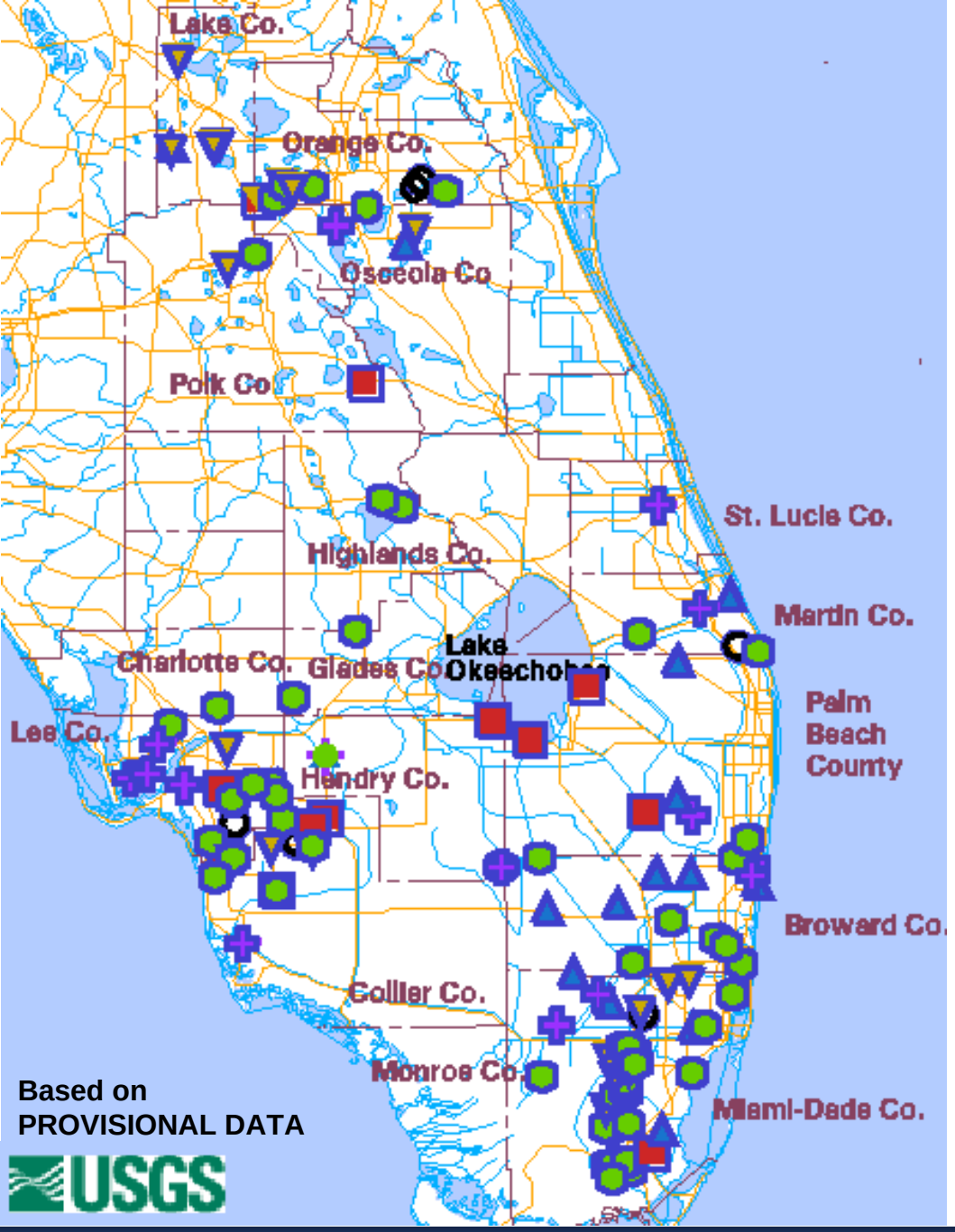
Named Storms - Observed vs Pre-Season Outlooks



Questions?

WATER LEVELS AT SELECTED MONITORING SITES

as of May 14, 2008

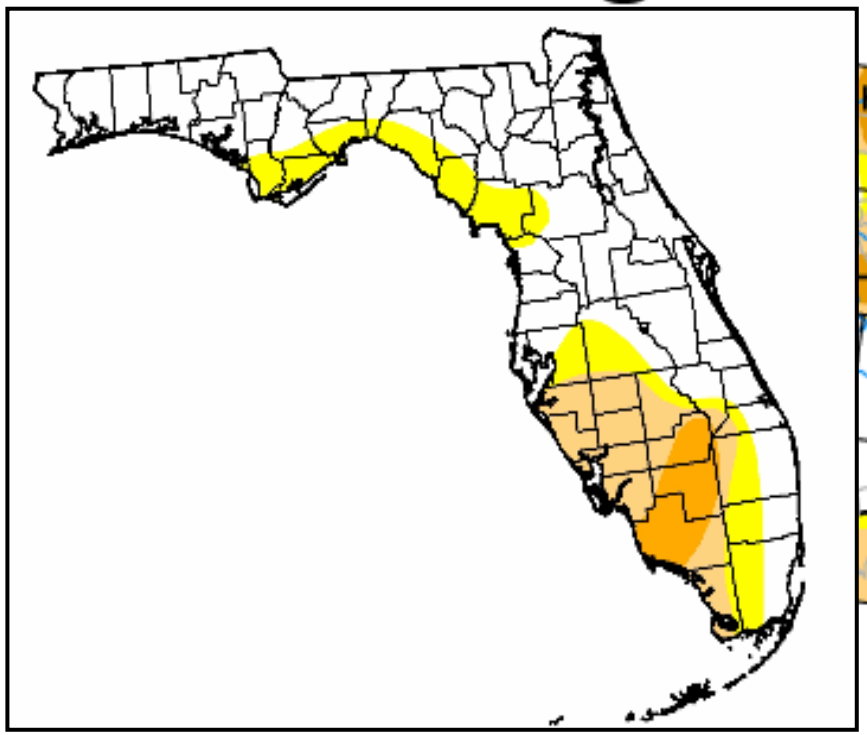


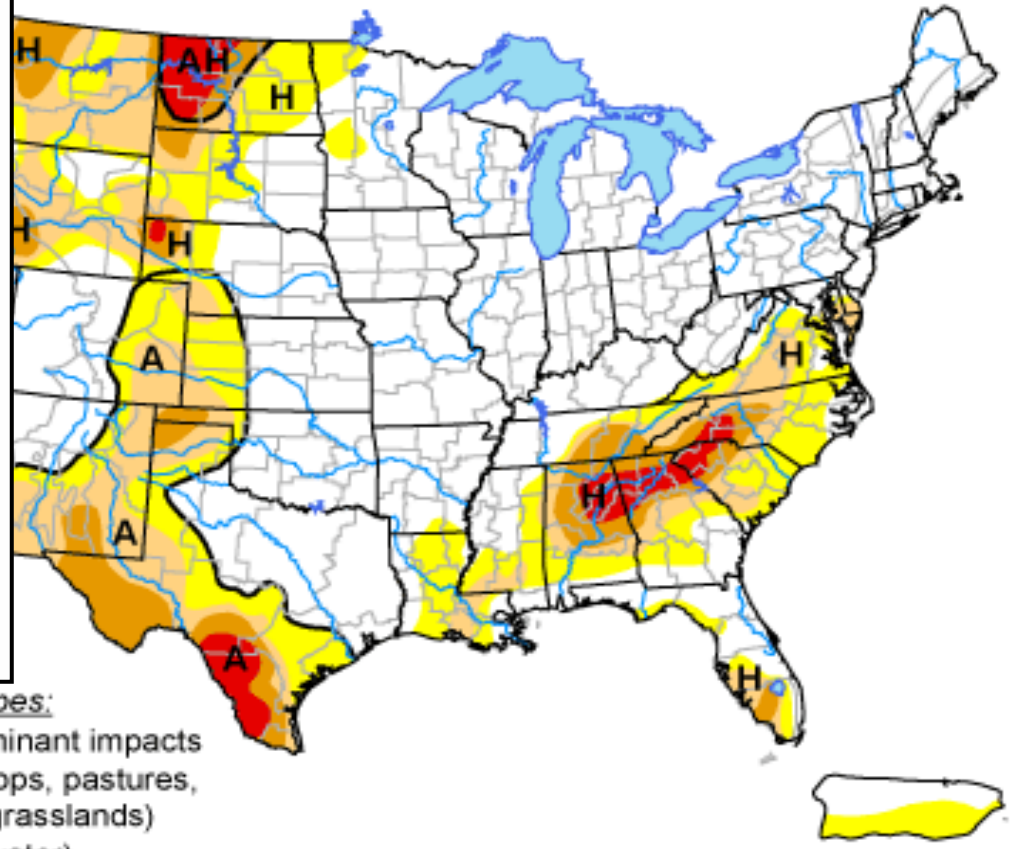
CLASS BASED ON PAST WATER ELEVATIONS FOR THIS TIME OF YR

- In highest 10%
- Within highest 10-30%
- Within 20% of the median
- Within lowest 10-30%
- In lowest 10%
- Insufficient information

U.S. Drought Monitor

May 6, 2008
Valid 8 a.m. EDT





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

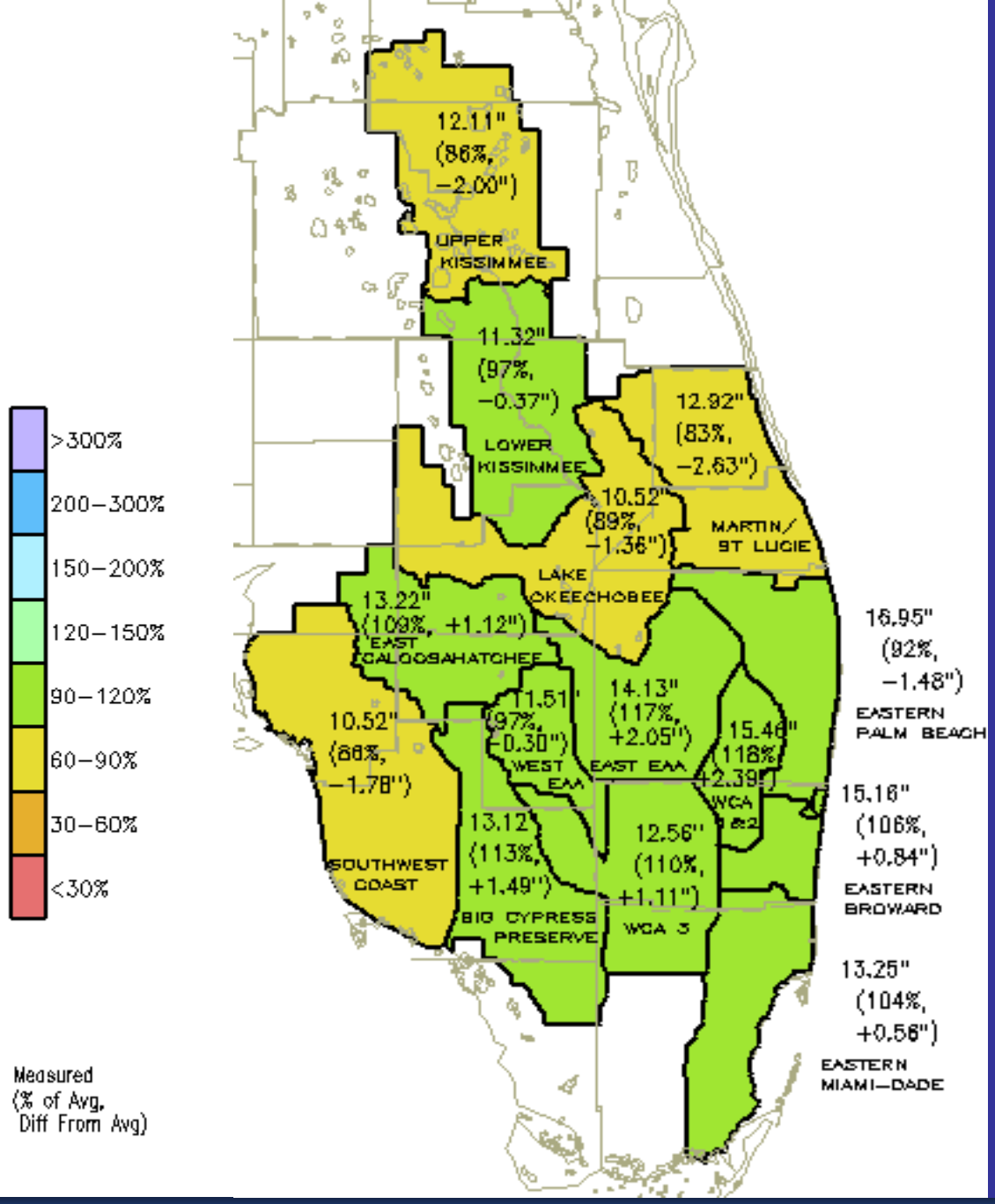
Drought Impact Types:
- Delineates dominant impacts
- A = Agricultural (crops, pastures, grasslands)
- H = Hydrological (water)

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

http://drought.unl.edu/dm

USDA National Drought Mitigation Center

Released Thursday, May 8, 2008
Author: Michael James, JAWF/CPC/NOAA



SFWMD 2007-08

Dry Season Rainfall

02-Nov-07 to 09-Apr-08

DISTRICT-WIDE:
12.58" (98%, -0.26")

Average (Nov-May) Dry Season = 18.8"

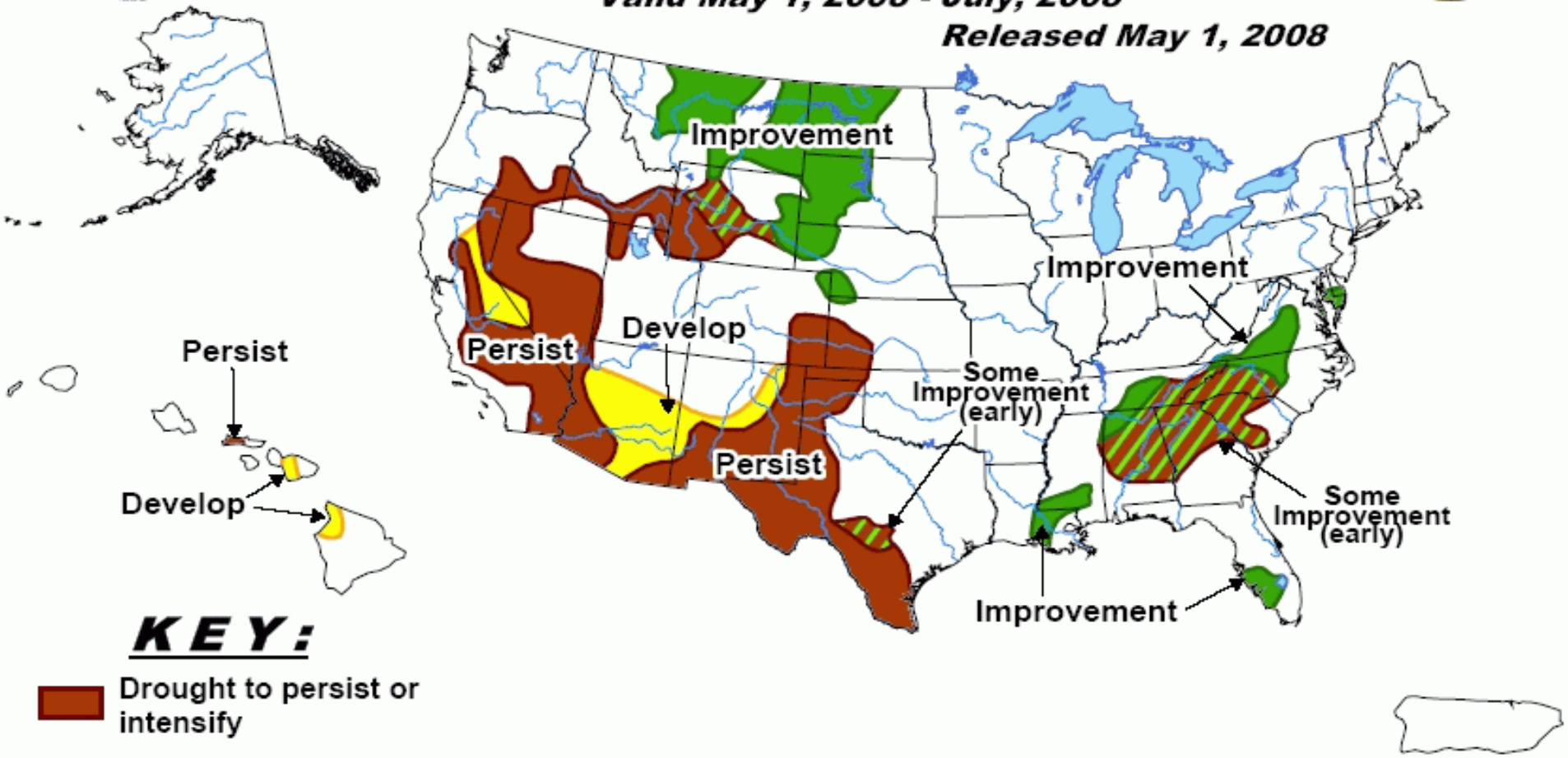
- *District-wide dry season rainfall is near average*
- *1.4"-2.6" below average rainfall for:*
  Upper Kissimmee, Lake Okeechobee, Martin/St.Lucie and Southwest Coast

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid May 1, 2008 - July, 2008

Released May 1, 2008



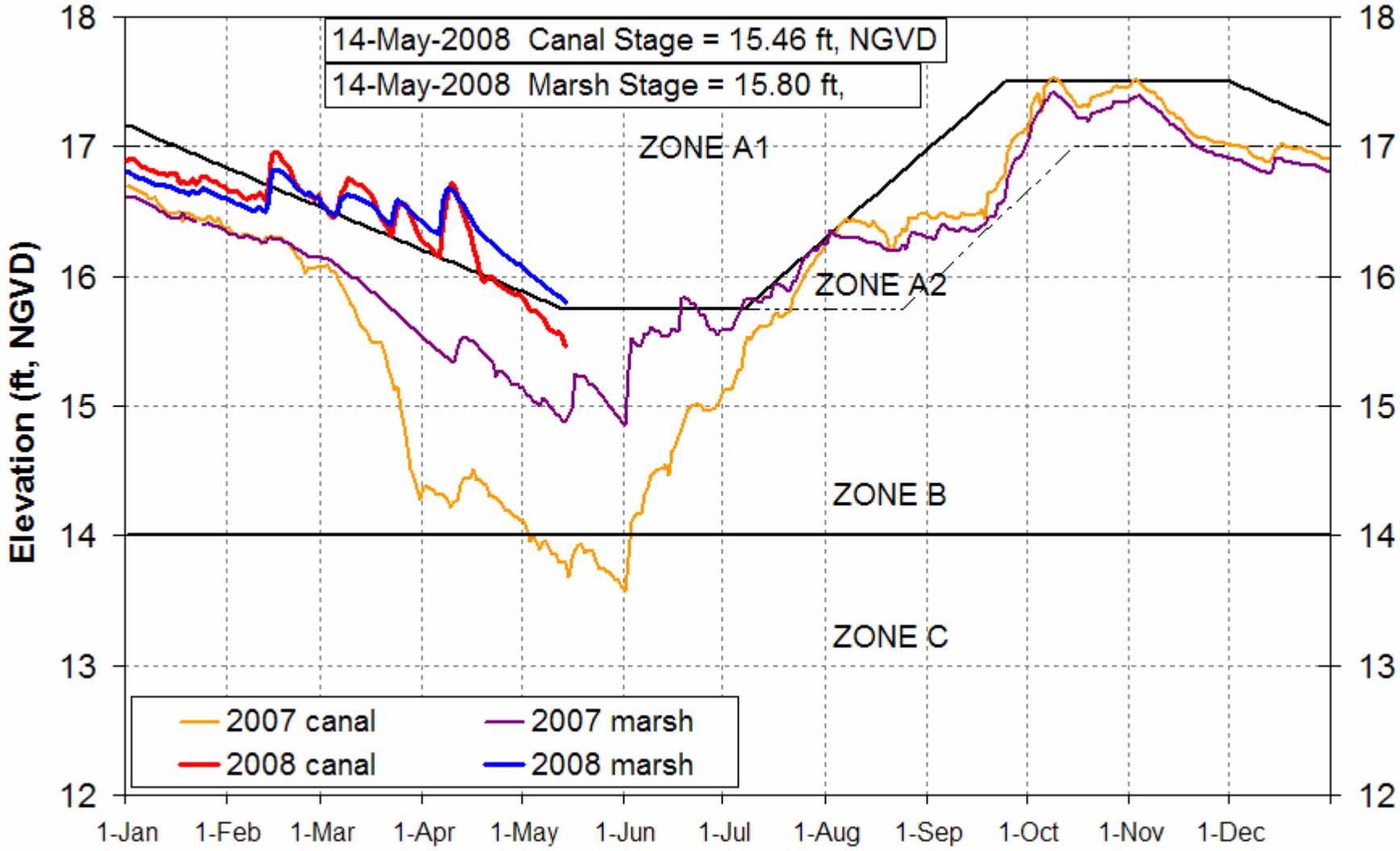
KEY:

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

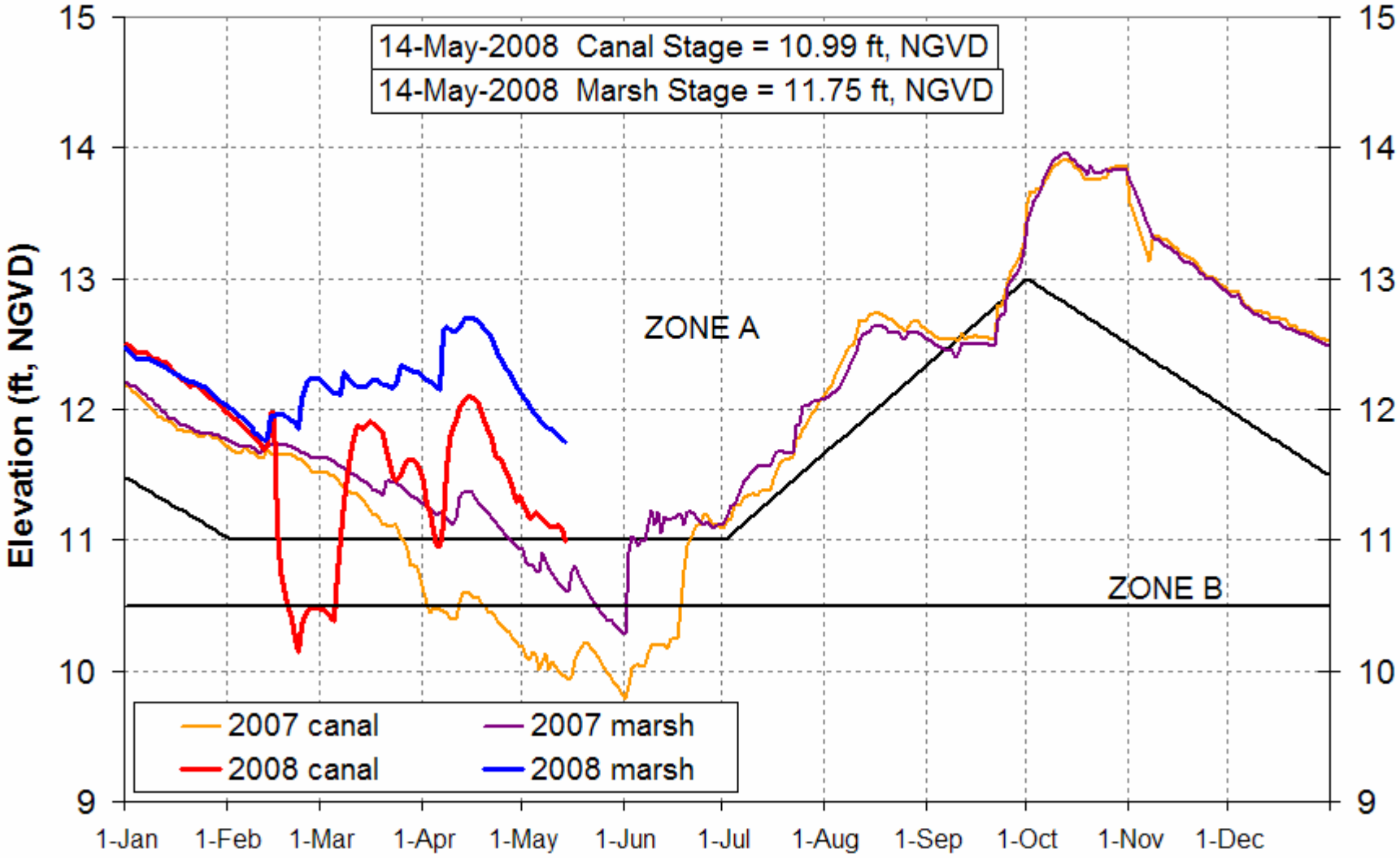
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- 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.

WCA hydrographs
Compared to this time last year

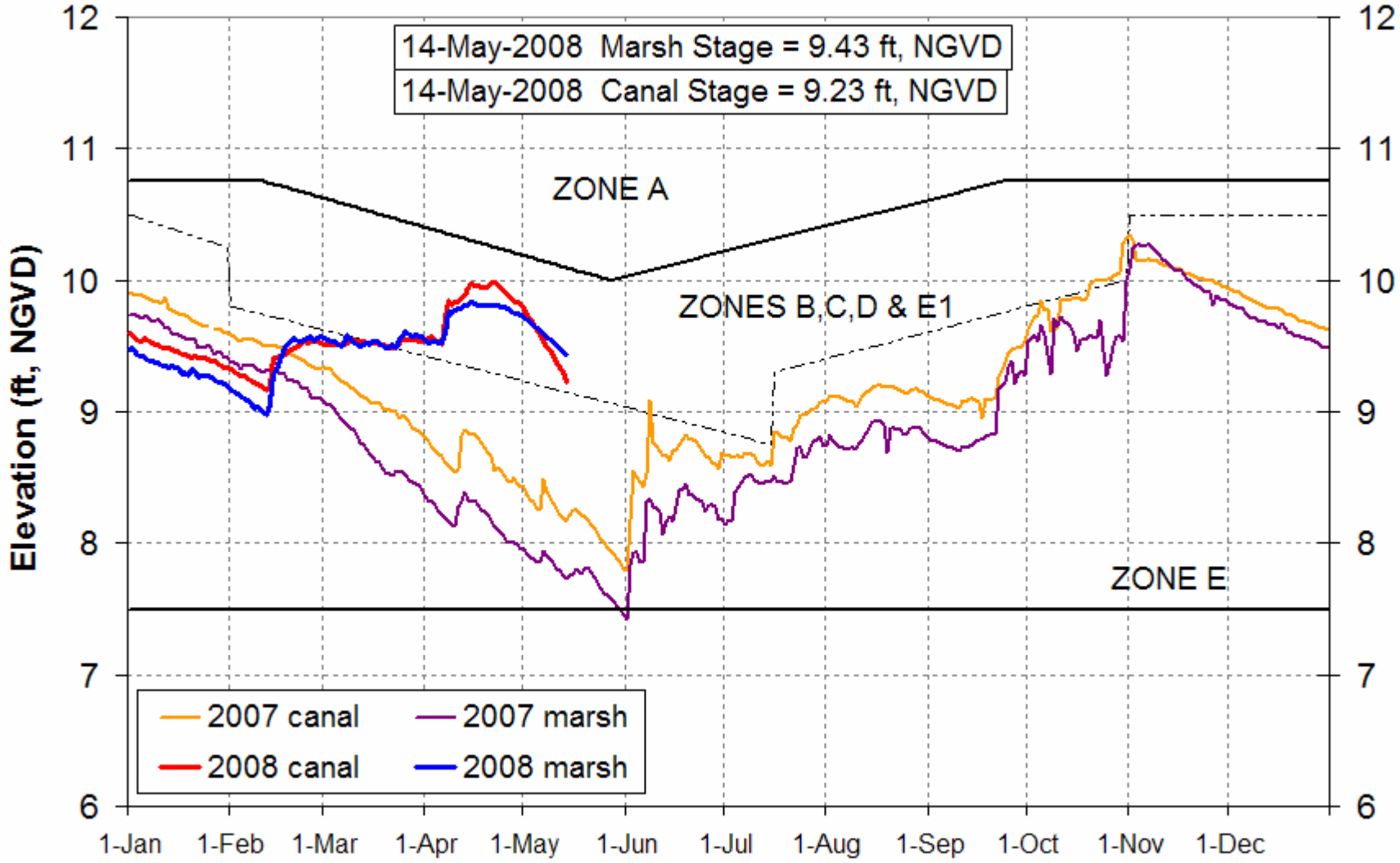
WCA-1 Stage and Regulation Schedule



WCA-2A Stage and Regulation Schedule



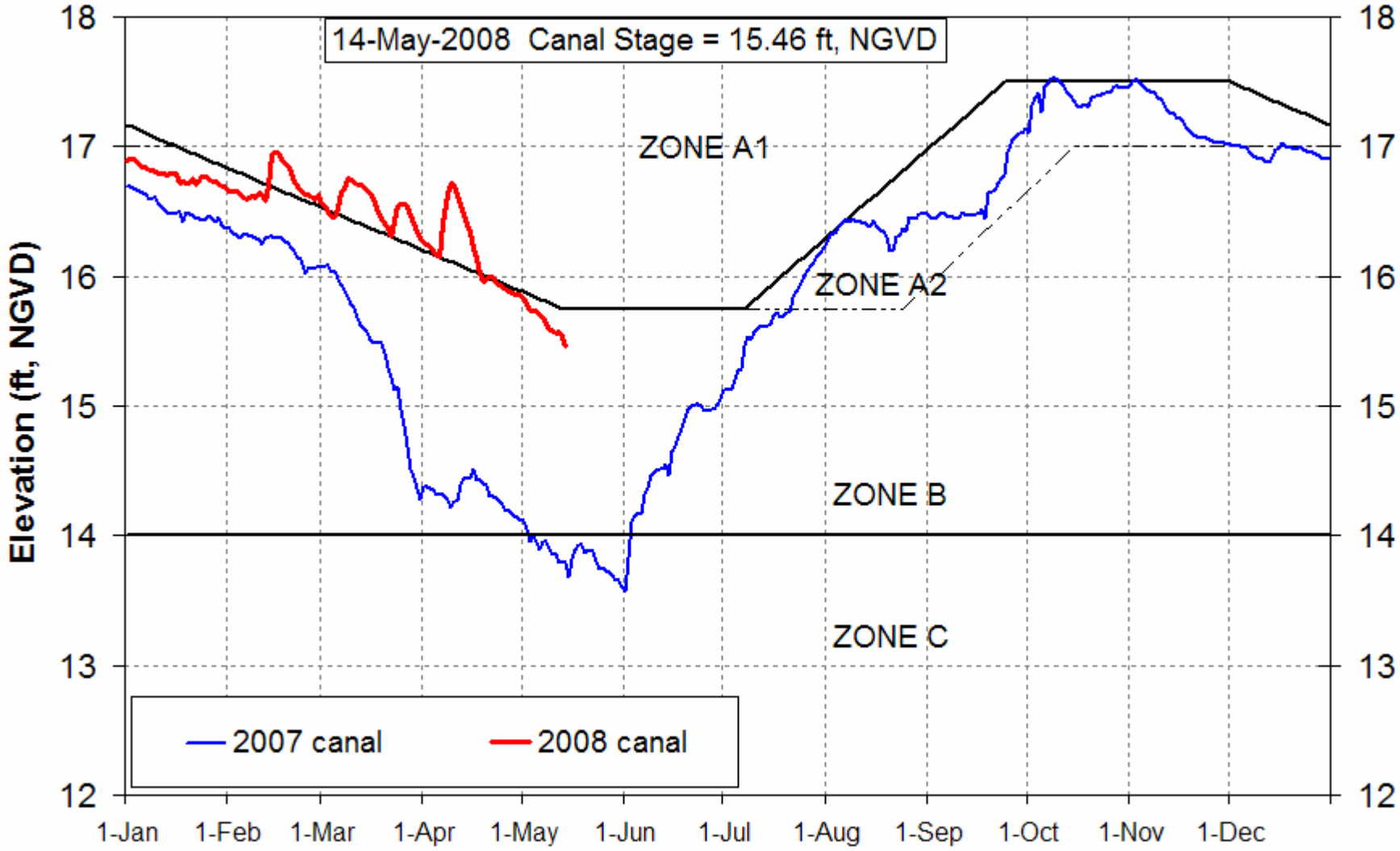
WCA-3A Stage and Regulation Schedule



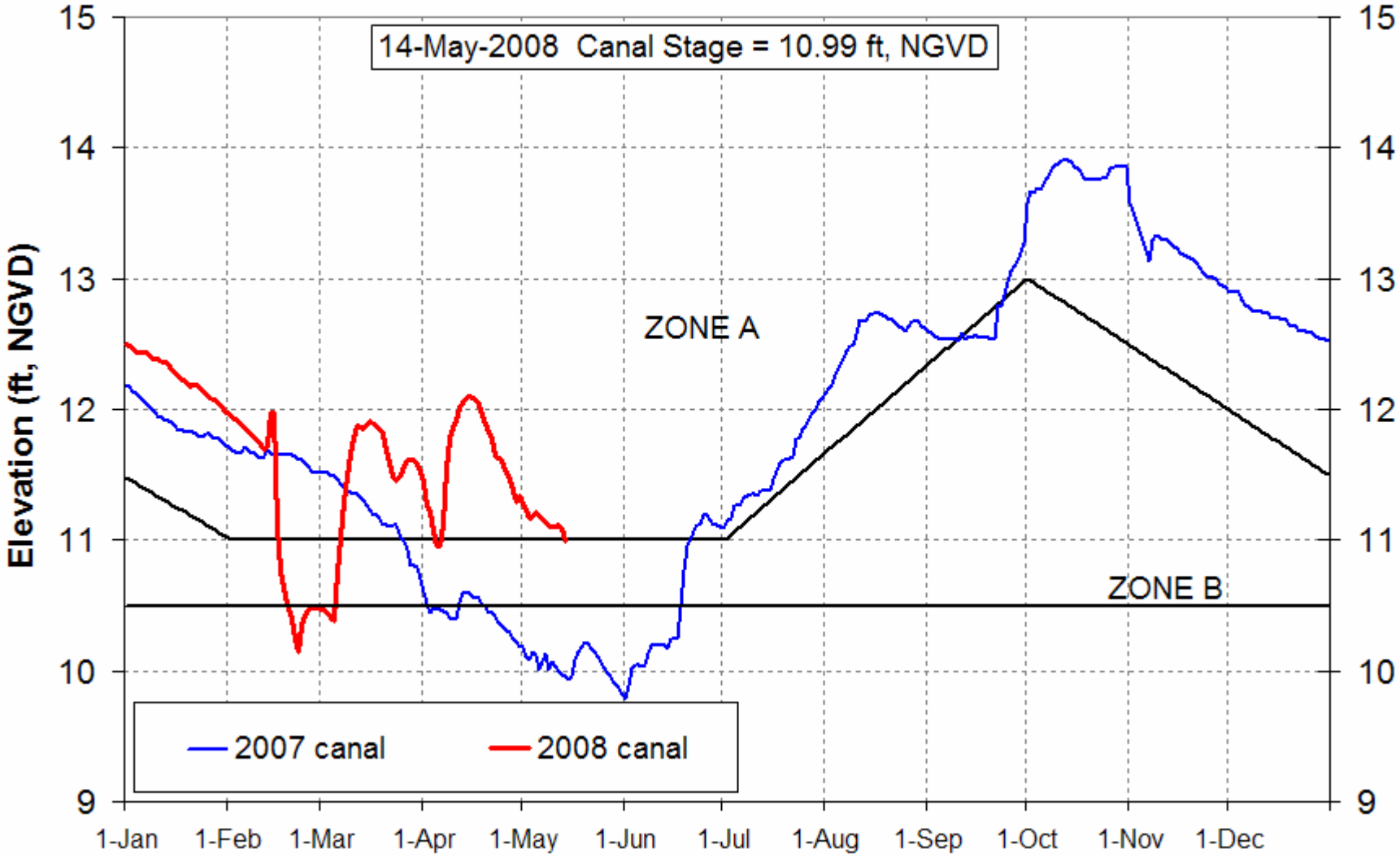
WCA stage hydrographs
Only showing canal or marsh traces for 2007 & 2008

(current ops based on canals for WCA-1 and WCA-2A; and marsh for WCA-3A)

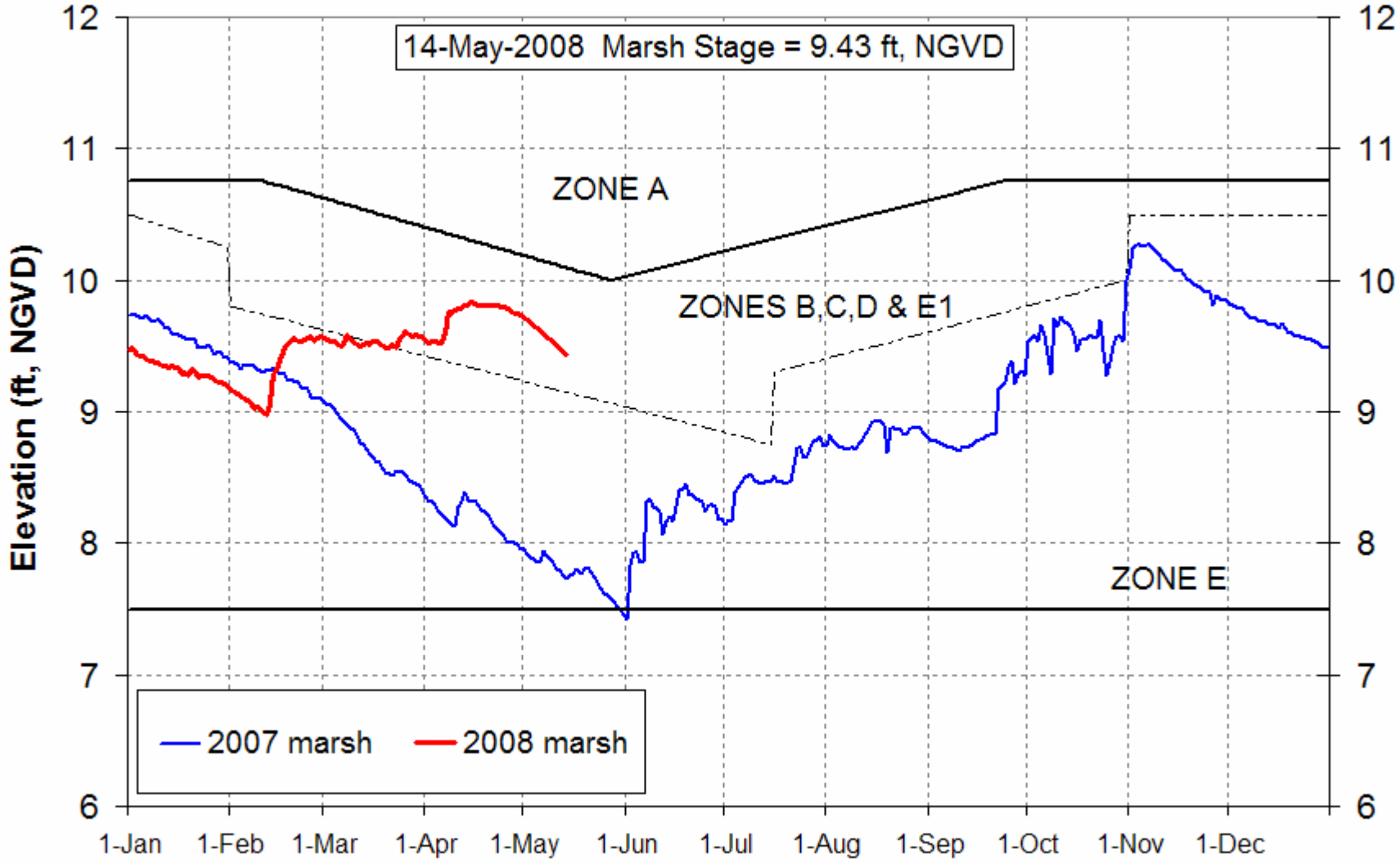
WCA-1 Stage and Regulation Schedule



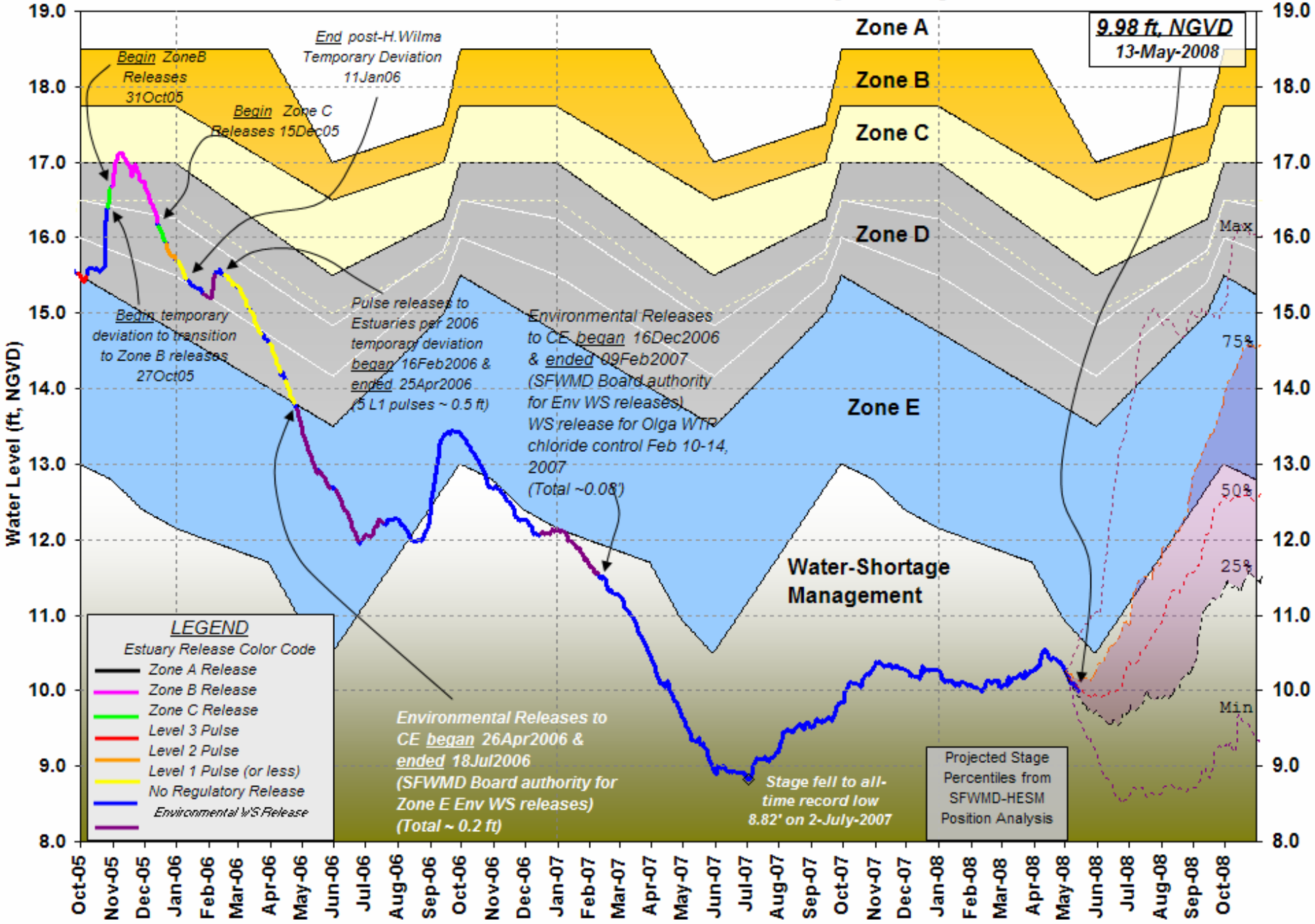
WCA-2A Stage and Regulation Schedule



WCA-3A Stage and Regulation Schedule



Lake Okeechobee Water Level History & Projection



SFWMD AVERAGE RAINFALL (30 YEAR: 1976-2005)

http://www.sfwmd.gov/org/omd/ops/weather/30yr_rain.html

NORMAL	Upper Kiss	Lower Kiss	Lake O	East EAA	West EAA	Conserv _1_2	Conserv Area_3	Martin/ St. Lucie	Palm Beach	Broward	Dade	East Caloos	BCP	SW Coast	District
JAN	2.38	1.86	2.12	2.19	2.17	2.20	1.91	2.48	3.29	2.34	1.97	2.20	2.21	2.43	2.23
FEB	2.44	2.18	2.06	1.92	1.97	2.34	1.98	2.51	2.82	2.47	2.04	2.04	2.04	2.28	2.19
MAR	3.35	2.98	2.93	2.80	2.85	2.68	2.56	3.80	3.79	2.78	2.66	2.97	2.68	2.86	3.01
APR	2.33	2.18	2.22	2.35	2.42	2.56	2.58	2.84	3.24	3.32	3.18	2.39	2.39	2.40	2.50
MAY	3.55	3.78	3.66	4.30	4.35	4.60	4.42	4.23	5.12	5.35	5.30	3.88	4.21	4.04	4.19
JUN	7.41	7.07	6.77	7.21	8.44	7.28	8.22	6.69	8.10	8.91	8.94	8.85	9.49	9.72	8.03
JUL	6.88	6.35	5.96	6.38	7.34	6.08	6.48	6.50	6.38	6.04	6.13	7.58	8.09	8.76	6.83
AUG	7.21	6.48	6.66	7.09	8.10	6.60	7.12	7.58	7.74	7.41	8.29	8.30	8.35	8.90	7.54
SEP	6.15	6.01	6.29	6.73	7.02	6.37	6.13	7.80	9.07	7.70	8.34	7.31	7.54	8.23	7.05
OCT	2.86	2.73	2.90	3.38	3.73	4.18	3.87	5.17	5.66	5.57	5.50	3.44	3.76	3.57	3.76
NOV	2.48	2.18	2.28	2.61	2.37	3.16	2.59	3.59	4.61	3.55	3.14	2.37	2.18	2.17	2.66
DEC	2.65	1.83	1.82	1.86	1.73	1.92	1.65	2.32	2.96	2.21	1.96	1.81	1.81	1.84	2.01
YEAR	49.69	45.63	45.67	48.82	52.49	49.97	49.51	55.51	62.78	57.65	57.45	53.14	54.75	57.20	52.00

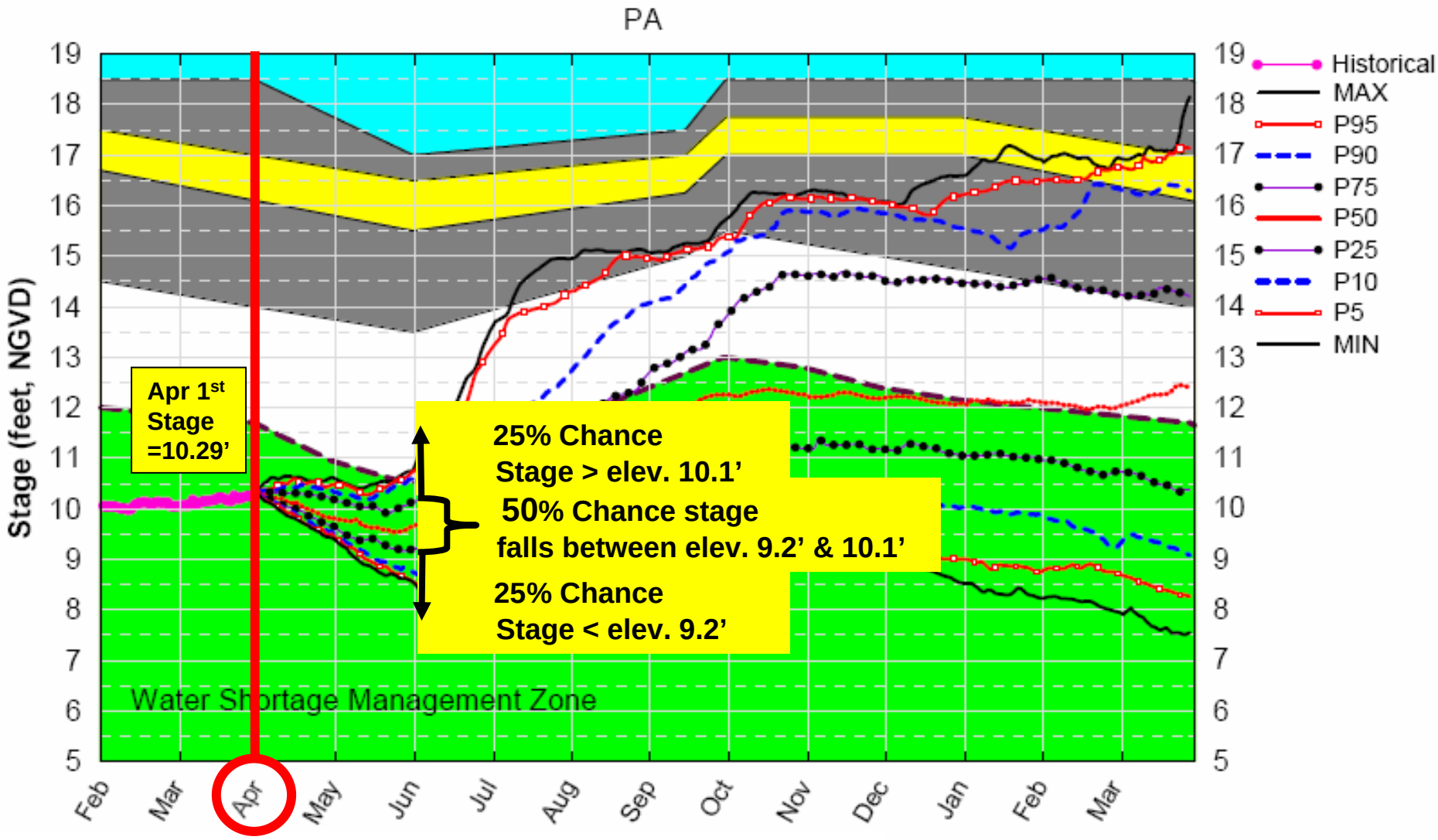
Comparison of 2007 & 2008 Hydrographs for the Upper Kissimmee Lakes, Lake Okeechobee, & the WCAs

03-April-2008

How will Lake Okeechobee stages behave during 2007-08?

- **Depends on rainfall**
- **Projections provided monthly by SFWMD Hydrologic and Environmental Systems Modeling (HESM) Department**
- **Position Analysis**
  - **Each year starts with current hydrologic conditions**
  - **41 1-yr simulations of system response to historical rainfall conditions**
  - **Statistical summaries used to provide projections**

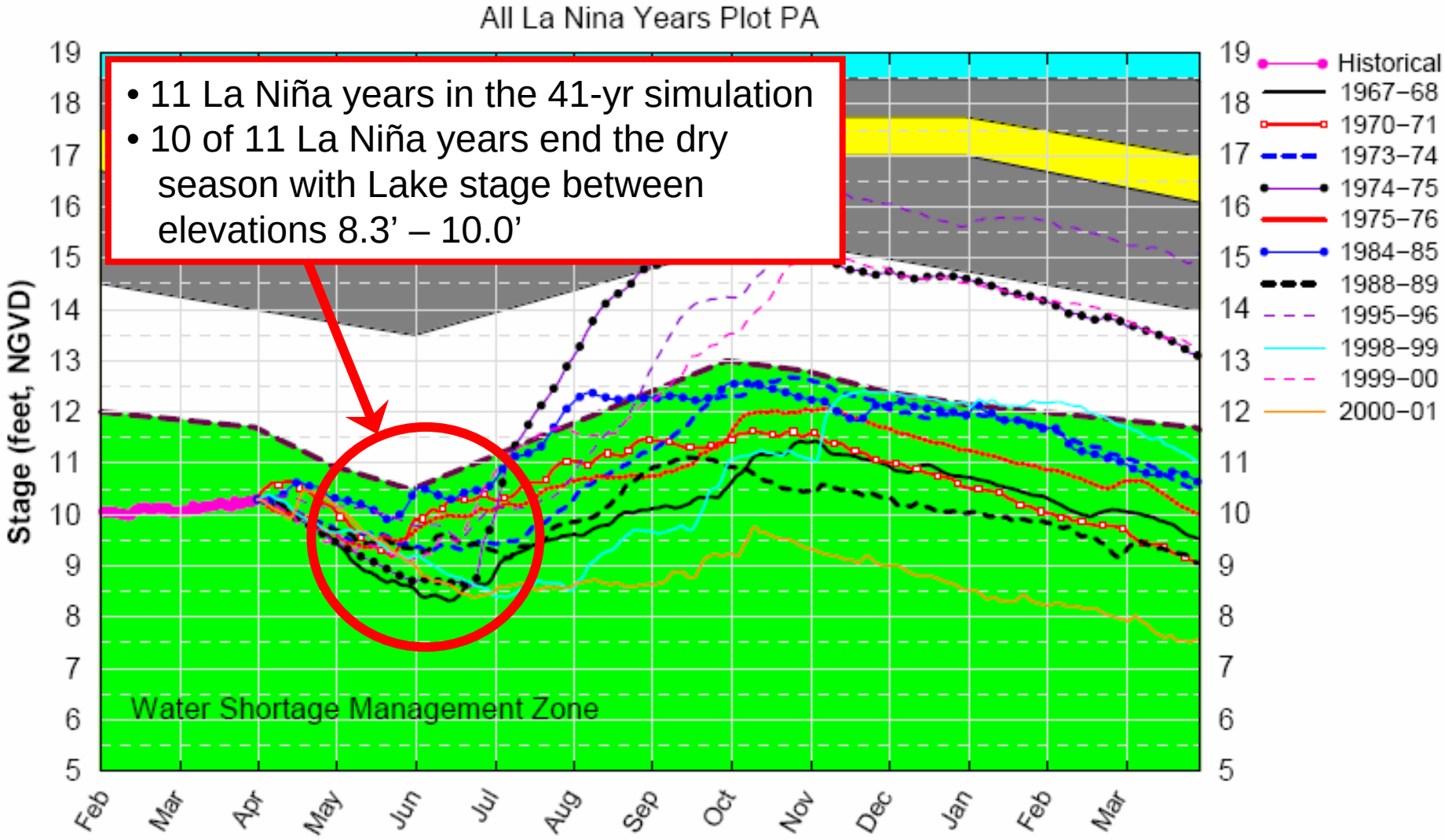
Lake Okeechobee SFWMM April 2008 Position Analysis



(See assumptions on the Position Analysis Results website)

Thu Apr 3 11:10:59 2008

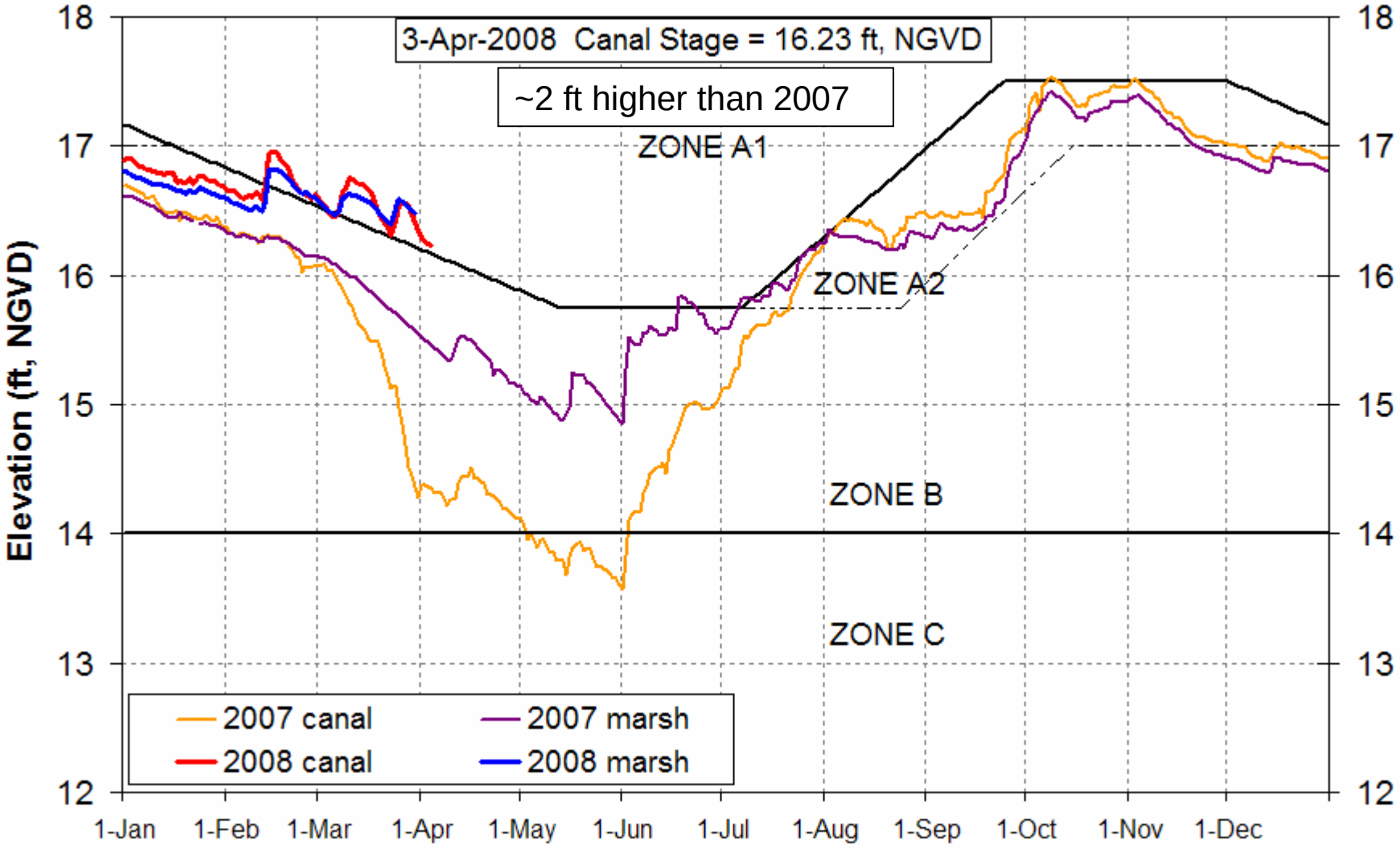
Lake Okeechobee SFWMM April 2008 Position Analysis



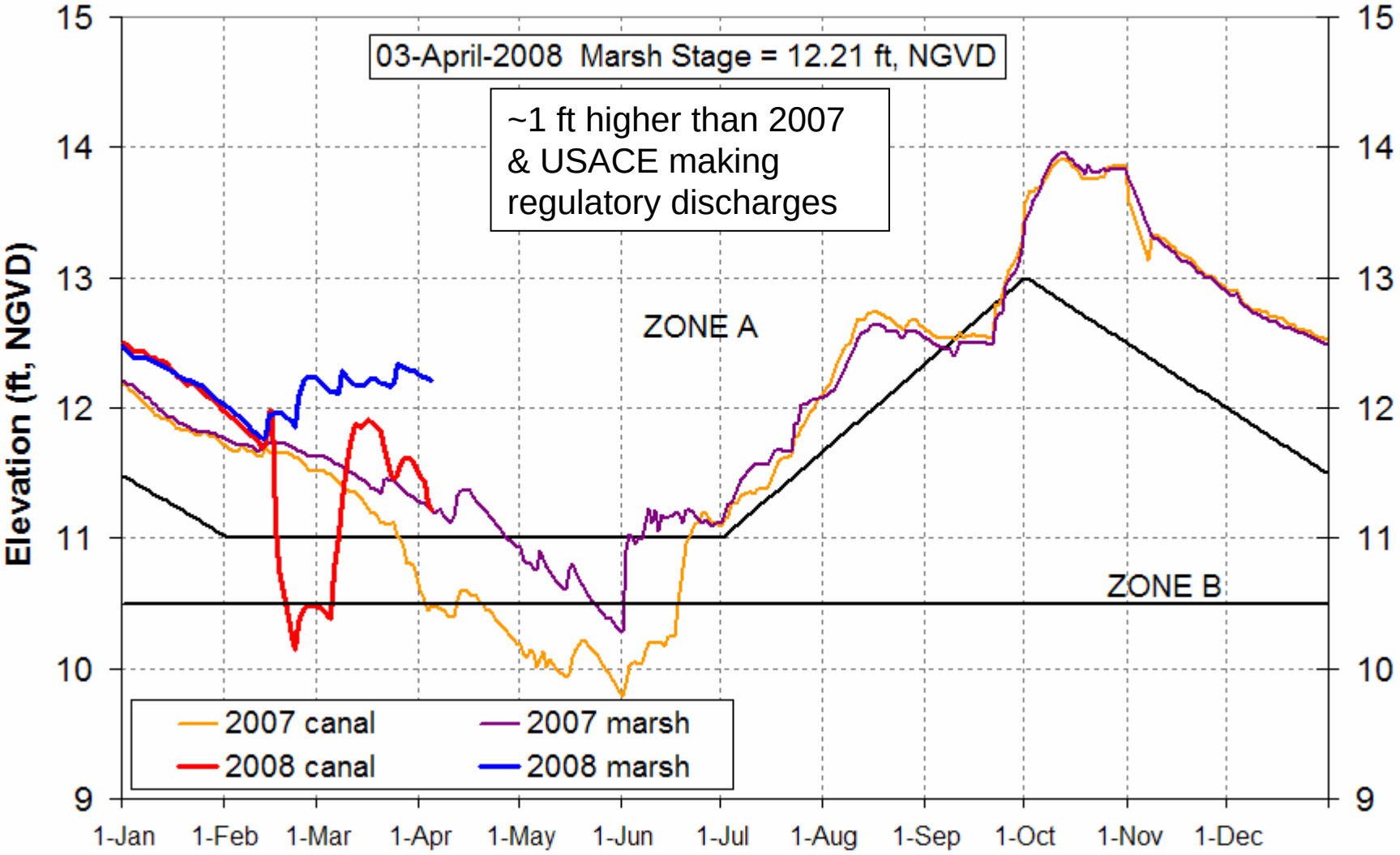
(See assumptions on the Position Analysis Results website)

Thu Apr 3 11:11:18 2008

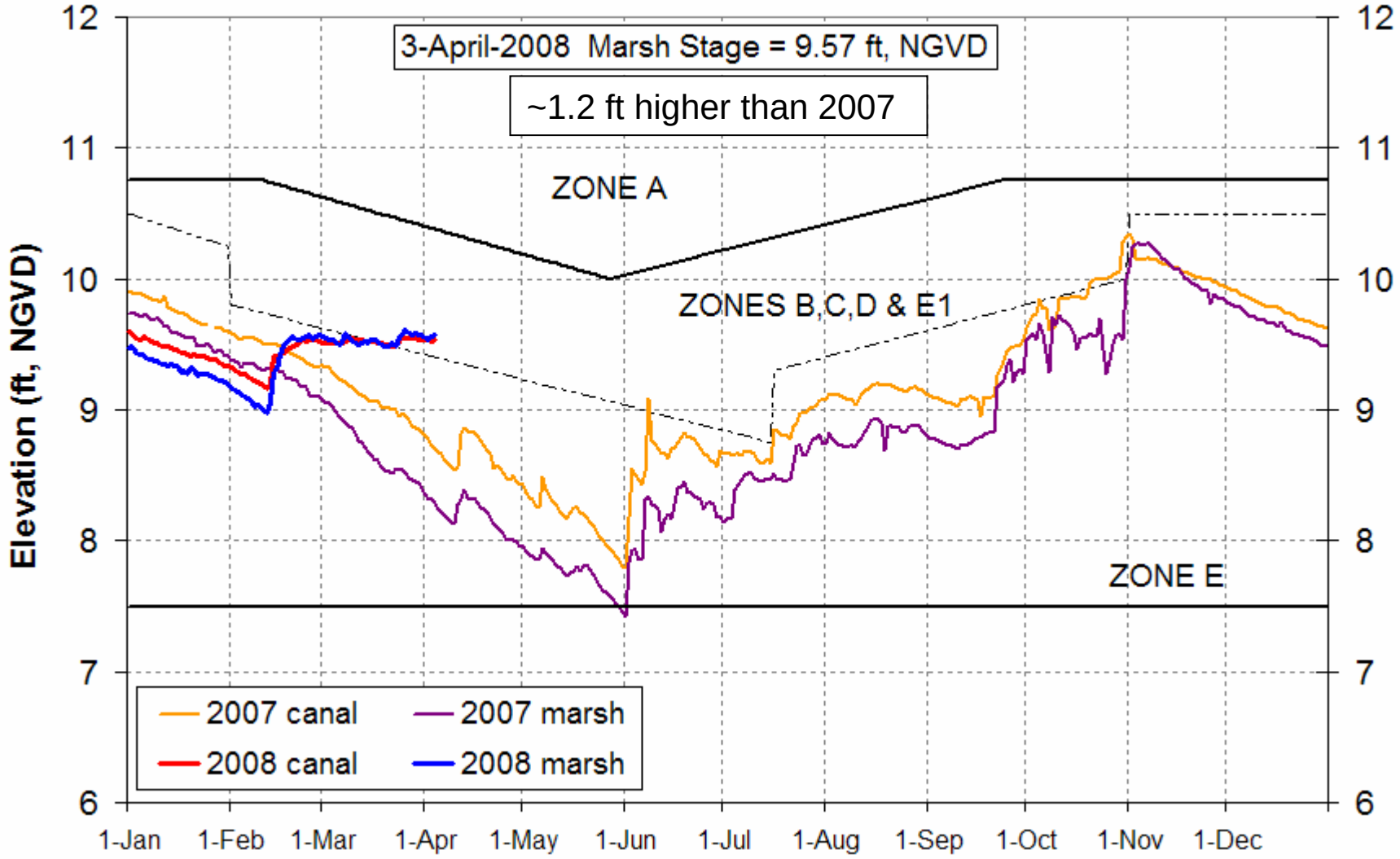
WCA-1 Stage and Regulation Schedule



WCA-2A Stage and Regulation Schedule

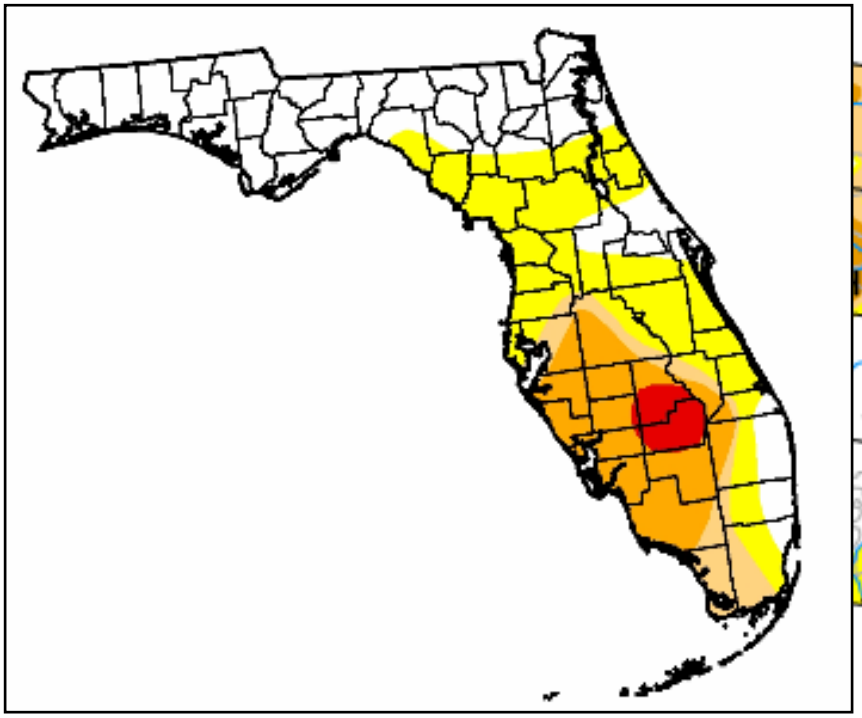


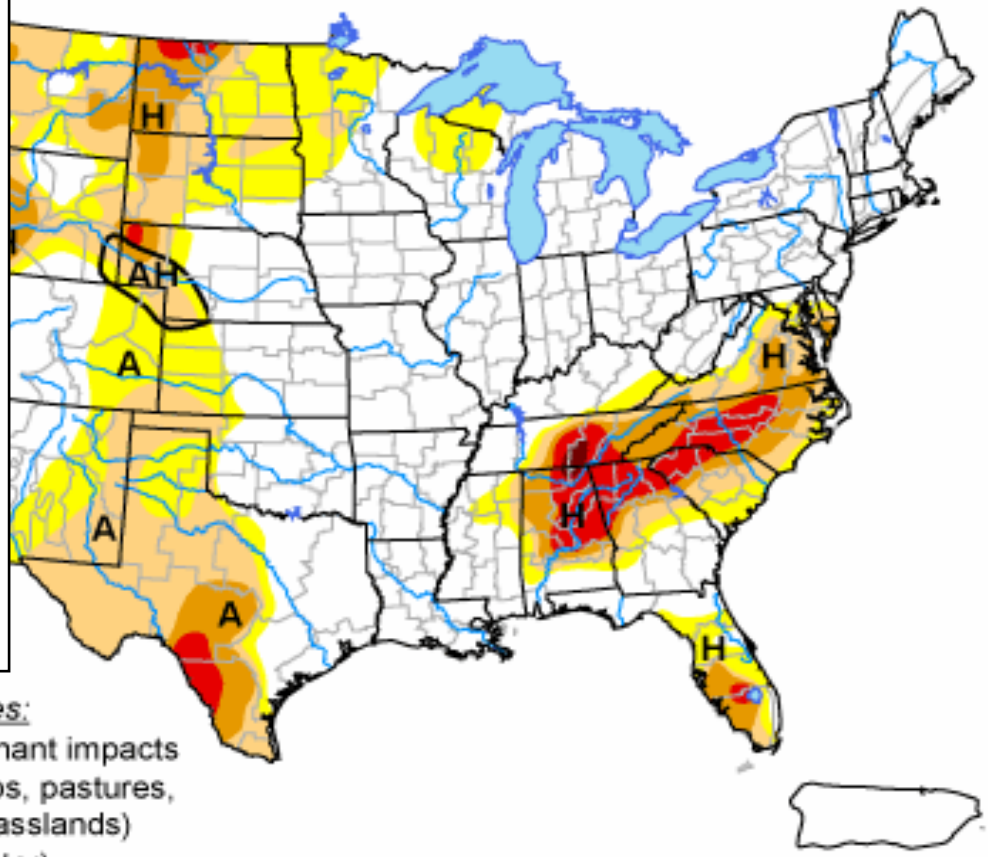
WCA-3A Stage and Regulation Schedule



U.S. Drought Monitor

March 18, 2008
Valid 8 a.m. EDT





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

Drought Impact Types:
- Delineates dominant impacts
- A = Agricultural (crops, pastures, grasslands)
- H = Hydrological (water)

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

USDA National Drought Mitigation Center

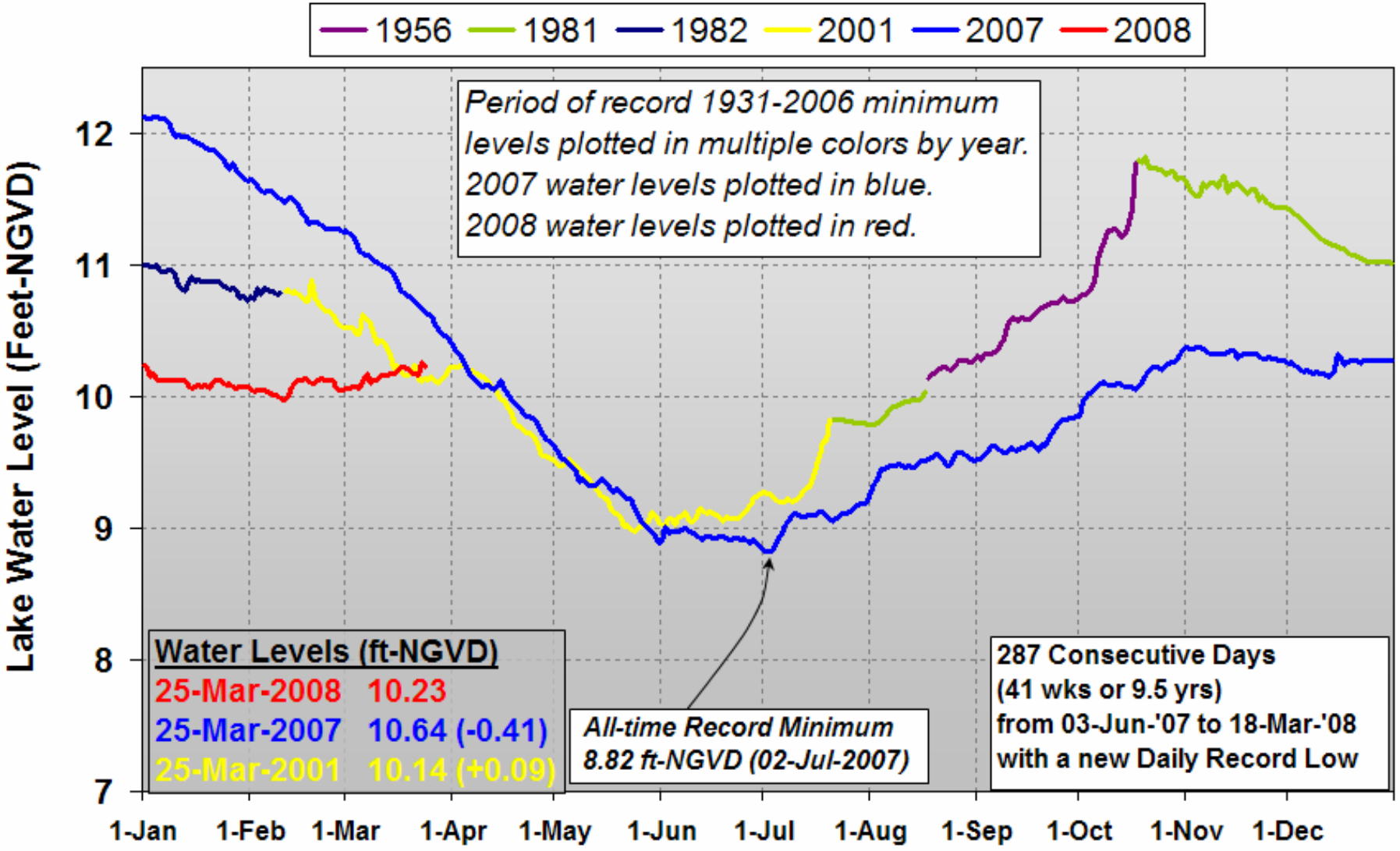
Released Thursday, March 20, 2008

Author: Mark Svoboda, National Drought Mitigation Center

http://drought.unl.edu/dm

Lake Okeechobee

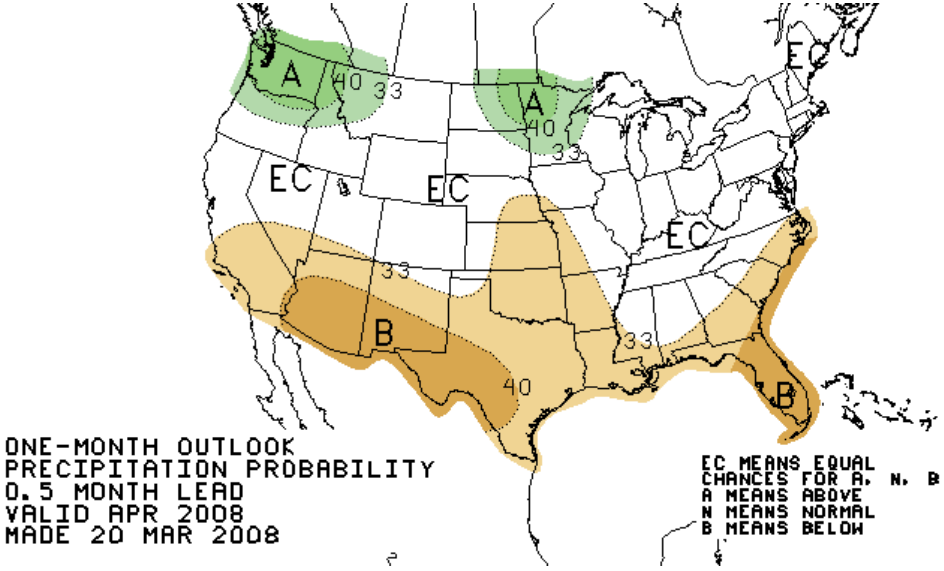
Period of Record 1931-2006 Minimum Water Levels



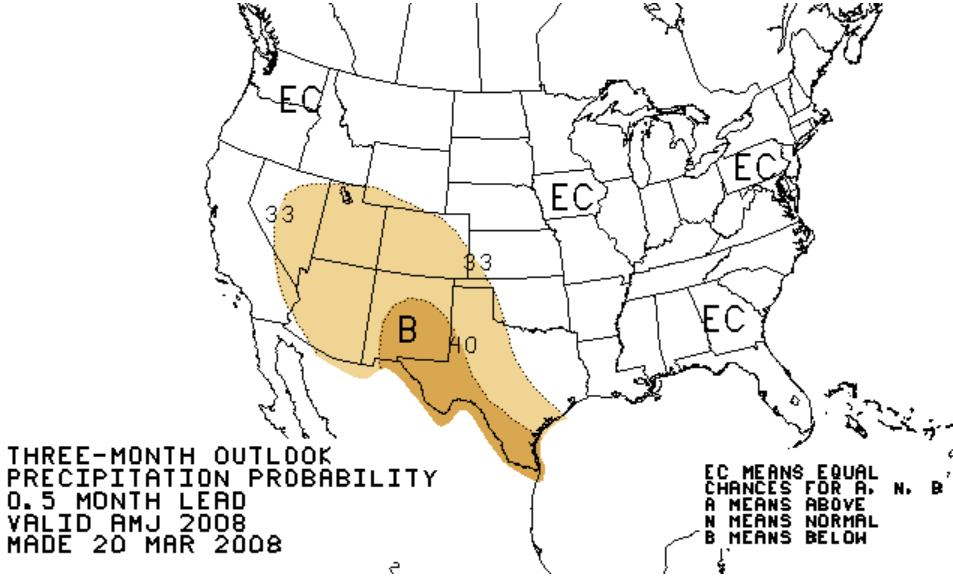
U. S. Seasonal Precipitation Outlook

National Climate Prediction Center (CPC)

April



Apr-Jun



The CPC outlook for April shows an increased chance of below-normal rainfall. The outlook for the remainder of the 2007-2008 dry season shows equal chances of below-normal, normal, or above-normal rainfall. La Niña conditions continue, but May-October rainfall in south Florida is not correlated with La Niña conditions.

SFWMD AVERAGE RAINFALL (30 YEAR: 1976-2005)

http://www.sfwmd.gov/org/omd/ops/weather/30yr_rain.html

NORMAL	Upper Kiss	Lower Kiss	Lake O	East EAA	West EAA	Conserv _1_2	Conserv Area_3	Martin/ St. Lucie	Palm Beach	Broward	Dade	East Caloos	BCP	SW Coast	District
JAN	2.38	1.86	2.12	2.19	2.17	2.20	1.91	2.48	3.29	2.34	1.97	2.20	2.21	2.43	2.23
FEB	2.44	2.18	2.06	1.92	1.97	2.34	1.98	2.51	2.82	2.47	2.04	2.04	2.04	2.28	2.19
MAR	3.35	2.98	2.93	2.80	2.85	2.68	2.56	3.80	3.79	2.78	2.66	2.97	2.68	2.86	3.01
APR	2.33	2.18	2.22	2.35	2.42	2.56	2.58	2.84	3.24	3.32	3.18	2.39	2.39	2.40	2.50
MAY	3.55	3.78	3.66	4.30	4.35	4.60	4.42	4.23	5.12	5.35	5.30	3.88	4.21	4.04	4.19
JUN	7.41	7.07	6.77	7.21	8.44	7.28	8.22	6.69	8.10	8.91	8.94	8.85	9.49	9.72	8.03
JUL	6.88	6.35	5.96	6.38	7.34	6.08	6.48	6.50	6.38	6.04	6.13	7.58	8.09	8.76	6.83
AUG	7.21	6.48	6.66	7.09	8.10	6.60	7.12	7.58	7.74	7.41	8.29	8.30	8.35	8.90	7.54
SEP	6.15	6.01	6.29	6.73	7.02	6.37	6.13	7.80	9.07	7.70	8.34	7.31	7.54	8.23	7.05
OCT	2.86	2.73	2.90	3.38	3.73	4.18	3.87	5.17	5.66	5.57	5.50	3.44	3.76	3.57	3.76
NOV	2.48	2.18	2.28	2.61	2.37	3.16	2.59	3.59	4.61	3.55	3.14	2.37	2.18	2.17	2.66
DEC	2.65	1.83	1.82	1.86	1.73	1.92	1.65	2.32	2.96	2.21	1.96	1.81	1.81	1.84	2.01
YEAR	49.69	45.63	45.67	48.82	52.49	49.97	49.51	55.51	62.78	57.65	57.45	53.14	54.75	57.20	52.00