

# Update 2011 Water Shortage



**Peter J. Kwiatkowski, P.G.**  
**Director, Resource Evaluation Division**  
**South Florida Water Management District**  
**May 12, 2011**

# Outline



- **Current and Projected Conditions**
- **Existing Orders - Status**
- **Temporary Forward Pumps - Status**
- **Proposed Order**

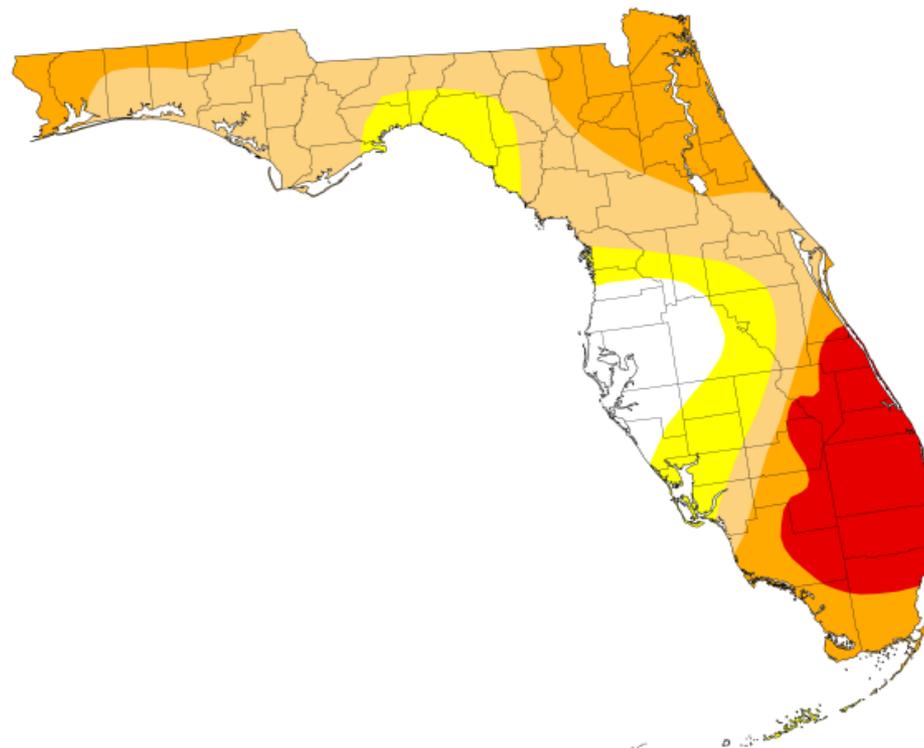
# U.S. Drought Monitor

## Florida

May 3, 2011  
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	8.72	91.28	76.21	41.19	15.63	0.00
Last Week (04/26/2011 map)	8.72	91.28	76.21	41.19	15.63	0.00
3 Months Ago (02/01/2011 map)	0.87	99.13	84.98	50.76	13.71	0.00
Start of Calendar Year (12/28/2010 map)	0.18	99.82	86.04	50.84	20.21	0.00
Start of Water Year (09/28/2010 map)	54.97	45.03	18.02	4.22	0.00	0.00
One Year Ago (04/27/2010 map)	94.58	5.42	0.00	0.00	0.00	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.



Released Thursday, May 5, 2011  
Rich Tinker, NOAA/NWS/NCEP/CPC



# U.S. Seasonal Drought Outlook

## Drought Tendency During the Valid Period

Valid May 5, 2011 - July 31, 2011  
Released May 5, 2011



**KEY:**

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

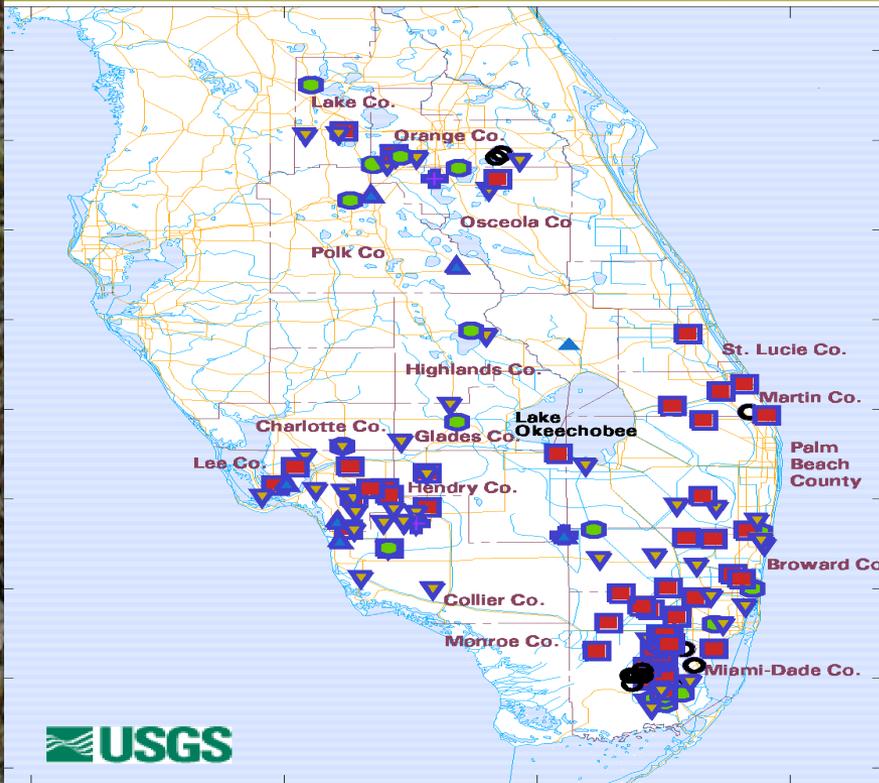
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops --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

Although areas of extreme drought persist across southern Florida, longer term improvement is expected across most of the state, as the sea breeze-driven rainy season typically begins in late May across southern Florida and lifts northward quickly through June. *Forecast confidence for Florida is moderate to high*

# Groundwater Levels

Apr. 5, 2011

May 8, 2011

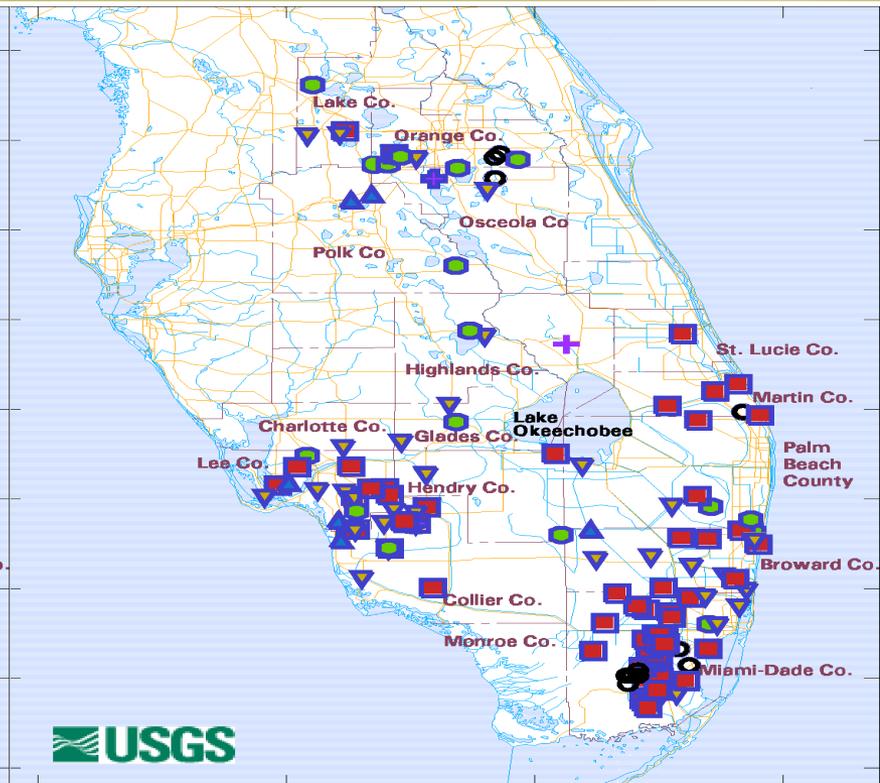


0 15 30 45 60 75 90 MILES  
0 15 30 45 60 75 90 KILOMETERS

Rivers and canals  
Roads and highways  
County boundaries  
Telemetry site

- 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

**Water levels at selected sites in South Florida,  
Based on PROVISIONAL DATA, as of April 5, 2011.**



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**Water levels at selected sites in South Florida,  
Based on PROVISIONAL DATA, as of May 8, 2011.**

# Water Supply Status and Outlook



## WCAs – Floor Elevation

## Low groundwater elevations in Lower East Coast

## Tributary Conditions – Dry

Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Water Shortage Management Band	H
	Palmer Index for LOK Tributary Conditions	-1.95	M
		(Dry)	
	CPC Precipitation Outlook	1 month: Normal	L
		3 months: Normal	
	LOK Seasonal Net Inflow Forecast	2.70 ft (Normal to Extremely Wet)	L
	AMO warm/ENSO La Niña		
LOK Multi-Seasonal Net Inflow Forecast	2.22 ft (Normal)	M	
AMO warm/ENSO La Niña			
WCAs	WCA 1: Site 1-8C	Below Line 2 (14.04 ft)	H
	WCA 2A: Site S-11B HW	Below Line 2 (10.30 ft)	H
	WCA-3A: S333 HW	Below Line 2 (7.51 ft)	H
LEC	Service Area 1	Modified Phase II restrictions in effect	H
	Service Area 2	Modified Phase II restrictions in effect	H
	Service Area 3	Modified Phase II restrictions in effect	H

# Existing Orders



- **Phase I – Lake Okeechobee Service Area**
- **Bypass Order – Indian Prairie Basin**
- **Phase I – Palm Beach & Broward Counties – Diversion & Impoundments, Agriculture, Nurseries**
- **Phase I – South Miami-Dade – Agriculture, Nurseries**
- **Phase I/Modified Phase II – Golf Courses and Residential Landscape Irrigation**

# Compliance and Variances

<u>Type</u>	<u>Warnings</u>	<u>Citations</u>
● Local Gov't	2,519	116
● SFWMD	242	2

## Variances

- Received - 61
- Approved - 37
- Denied - 3
- Withdrawn - 10
- Under Review – 11
- Examples – change watering days, Floridan aquifer source, no increase in use.

# Low Canal/Lake Levels

- **Complaints from local governments, HOAs**
- **Water levels below WCA floor elevations  
– no releases to urban areas except if  
from another source**
- **SFWMD Response**
  - **Fact sheets transmitted to 2,299 HOAs**
  - **Meetings with City managers in Northwest Broward, especially C-14 Basin**
  - **Emphasis on warnings to reinforce conservation ethic**

# Temporary Forward Pumps

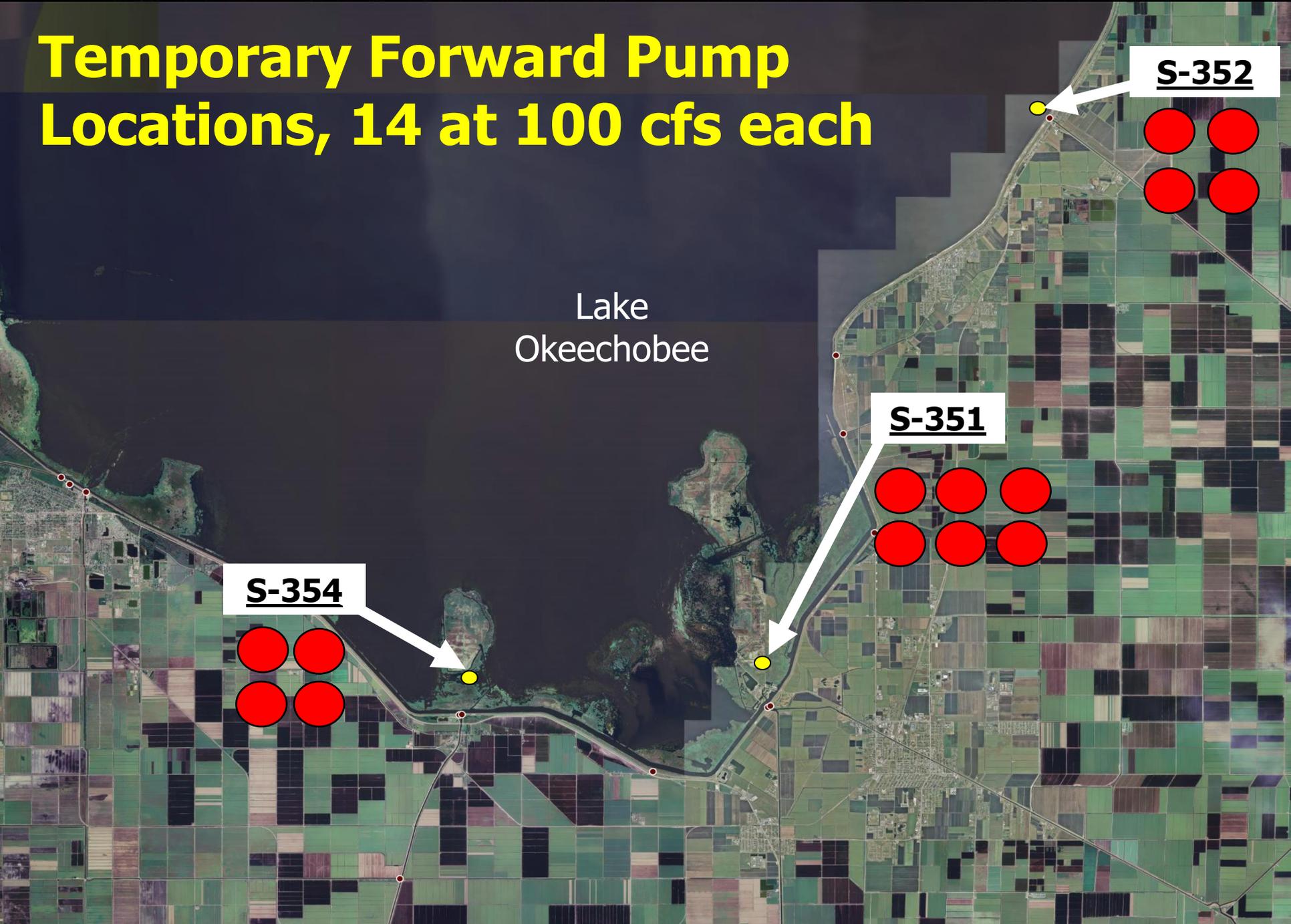


- Engineering activities complete
- 1,400 cfs capacity



- Contractor awaiting notification from SFWMD
- Coordinate installation with growers

# Temporary Forward Pump Locations, 14 at 100 cfs each



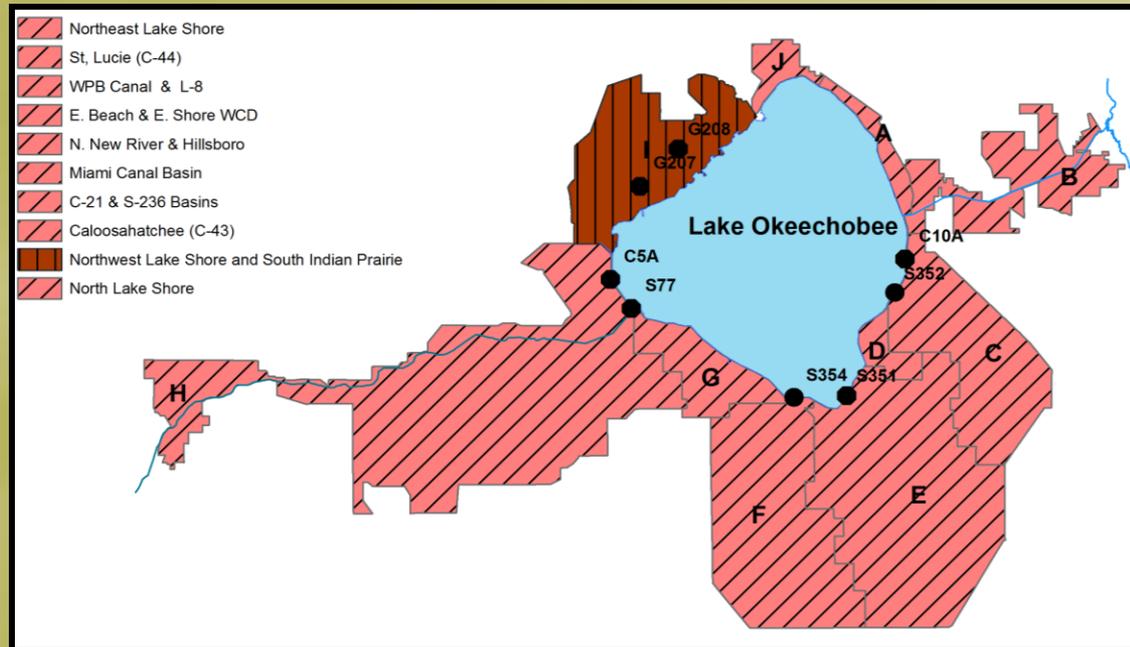
Lake Okeechobee

**S-352**

**S-351**

**S-354**

# Lake Okeechobee Service Area (LOSA) - Chronology



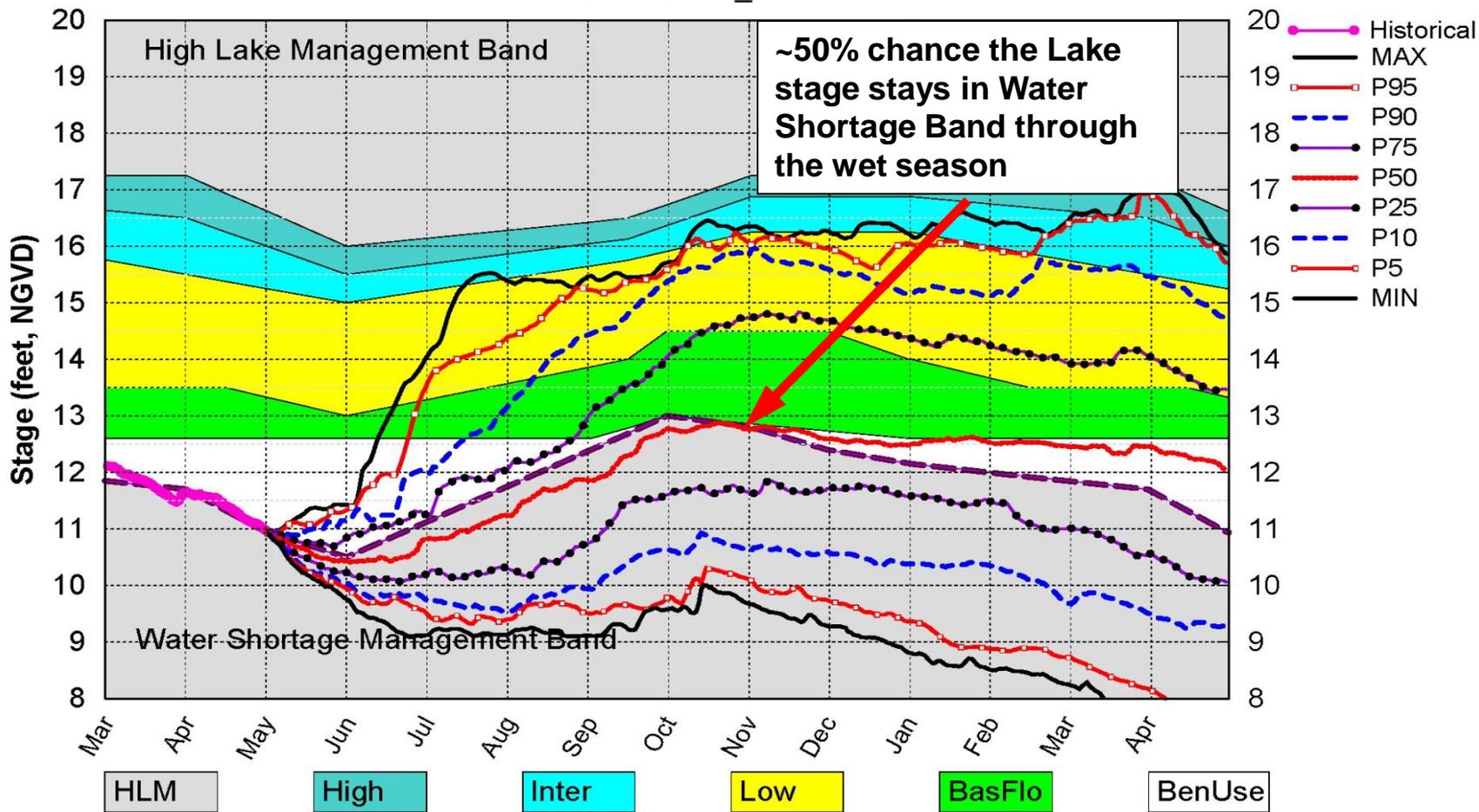
- March 18, 2011 – Lake level below trigger line
- March 21, 2011 – Phase I Order executed
- March 26, 2011 – Phase I Order effective
- April 4, 2011 – Lake level above trigger line
- April 29, 2011 – Lake level below trigger line

# Lake Okeechobee Water Shortage Plan (Chapter 40E-22, F.A.C.)

- **Phase III cutbacks may be imposed when water levels fall below, or can be expected to fall below, 10.5 ft NGVD by June 1<sup>st</sup>**
- **Additional factors to consider (Ch. 40E-21, F.A.C.)**
  - **Water inflows from Kissimmee River (900 cfs and declining)**
  - **Time of Year / Start of Wet Season ??**
  - **Position Analysis**

# Lake Okeechobee SFWMM May 2011 Position Analysis

Percentiles PA\_V3



(See assumptions on the Position Analysis Results website)

# Staff Recommendation:

**Governing Board declaration of Modified Phase III Extreme Water Shortage Restrictions for the Lake Okeechobee Service Area, with implementation of 45% cutbacks when the lake elevation falls below 10.5 ft NGVD.**

# Questions?



# Item 29

## Water Shortage Order



**Peter J. Kwiatkowski, P.G.**  
**Director, Resource Evaluation Division**  
**South Florida Water Management District**  
**May 12, 2011**

# Staff Recommendation

**Enter an Order Imposing Modified Phase III Extreme Water Shortage Restrictions for Specified Use Classes using Surface Waters within the Lake Okeechobee Service Area, including Lake Okeechobee and Surface Waters Hydraulically Connected to Lake Okeechobee within the Everglades Agricultural Area Water Use Basin, Lakeshore Perimeter Water Use Basin, Caloosahatchee River Water Use Basin, and the St. Lucie River Water Use Basin within Okeechobee, Glades, Palm Beach, Lee, Hendry, Martin, and St. Lucie Counties.**