

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 05/16/2011 (ENSO La Niña Condition)

Lake Okeechobee Net Inflow Outlook:

The Lake Okeechobee Net Inflow Outlook has been computed using 4 methods: Croley's method¹, the SFWMD empirical method², a sub-sampling of Neutral warm years³ and a sub-sampling of warm years of the Atlantic Multidecadal Oscillation (AMO) in combination with Neutral ENSO years⁴. The results for Croley's method and the SFWMD empirical method are based on the [CPC Outlook](#).

Table of the Lake Okeechobee Net Inflow Outlooks in feet of equivalent depth. All methods are updated on a weekly basis with observed net inflow for the current month.

Season	Croley's Method ¹		SFWMD Empirical Method ²		Sub-sampling of La Niña ENSO Years ³		Sub-sampling of AMO Warm + La Niña ENSO Years ⁴	
	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition
Current (May-Oct)	3.42	Very Wet	2.45	Very Wet	1.73	Wet	2.70	Very Wet
Multi Seasonal (May-Apr)	3.95	Wet	2.87	Wet	1.22	Normal	2.22	Normal

See [Seasonal](#) and [Multi-Seasonal](#) tables for the classification of Lake Okeechobee Outlooks.

The recommended methods and values for estimating the Lake Okeechobee Net Inflow Outlook are shaded and should be used in the LORS2008 Release Guidance Flow Charts.

[Tributary Hydrologic Conditions Graph:](#)

-431 cfs 14 day running average for Lake Okeechobee Net Inflow through 05/15/2011. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Dry.

-1.94 for Palmer Index on 05/14/2011.

According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Dry

The wetter of the two conditions above is **Dry**.

[LORS2008 Classification Tables:](#)

Lake Okeechobee Stage on 05/16/2011

Lake Okeechobee Stage: **10.64 feet**

[USACE Report for Lake Okeechobee](#)

[Lake Okeechobee Stage Hydrograph](#)

Lake Okeechobee Management Zone/Band		Bottom Elevation (feet, NGVD)	Current Lake Stage
High Lake Management Band		16.33	
Operational Band	High sub-band	15.76	
	Intermediate sub-band	15.13	
	Low sub-band	13.17	
Base Flow sub-band		12.60	
Beneficial Use sub-band		10.73	
Water Shortage Management Band			← 10.64

[Part C of LORS2008: Discharge to WCA's](#)

Release Guidance Flow Chart Outcome: No releases to WCAs.

[Part D of LORS2008: Discharge to Tidewater](#)

Release Guidance Flow Chart Outcome: No base flow releases

Technical Input Summaries from:

- **[Lake Okeechobee Division](#)**
- **[Coastal Ecosystems](#)**
- **[Everglades Ecosystems Division](#)**
- **[Water Supply Department](#)**
- **[Water Resource Management Release Recommendation](#)**
- **[Kissimmee Watershed Environmental Conditions](#)**
- **[Operations Department](#)**

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LORS2008 Implementation on 05/16/2011 (ENSO La Niña Condition):

Water Supply Department Technical Input

Water Supply Outlook:

District wide, Raindar rainfall 1.08” for the week ending 05/17/2011. Lake stage on 05/16/2011 is 10.64 ft, down 0.11 ft from last week.

The updated May 2011 SFWMM Position Analysis [percentile graph](#) and [tracking chart](#) for Lake Okeechobee show that the lake stage is in the Water Shortage Management Band.

The LORS2008 tributary [indices](#) are classified as **Dry**. The PDSI indicates dry condition and the LONIN is dry. The classification is based on the wetter of the two.

Water Supply Risk Evaluation

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	-1.94	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 (14.00 ft)	H
	WCA 2A: Site S-11C HW	Below Line 2 (10.35 ft)	H
	WCA-3A: S333 HW	Below Line 2 (7.54 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

Note: the LORS2008 tributary indices are different from the indices from the latest Adaptive Protocol for Lake Okeechobee presented in the table.

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Disclaimer: Information contained in the report addresses environmental conditions only and is not the official South Florida Water Management District operations recommendation or decision.

M E M O R A N D U M

TO: Susan Sylvester, Director, Operations and Hydrologic
Data Management Department

FROM: SFWMD Staff Environmental Advisory Team

DATE: May 17, 2011

SUBJECT: Weekly Environmental Conditions for Systems Operations

Summary

Discharge from Lake Kissimmee averaged 843 cubic feet per second (cfs) at S65 over the week. Lake Okeechobee stage is 10.59 feet NGVD, which is 0.13 feet lower than a week ago, 0.97 feet lower than a month ago, and 4.05 feet lower than it was a year ago. The current stage is 2.70 feet lower than the historical average for this date and 1.51 feet lower than the simulated average using the current regulation schedule (LORS 2008). Average salinity levels in the St. Lucie estuary are fair for the oyster, *Crassostrea virginica*, considering the location in the estuary and time of year. In the Caloosahatchee Estuary, the 30-day average salinity at the Ft. Myers station is 19.0 practical salinity units; as such, conditions are poor in the upper estuary for tape grass, *Vallisneria americana*. Salinities at Shell Point and the Sanibel Causeway indicate that conditions are good for seagrass in San Carlos Bay, but poor considering the salinity preference of the oyster, *Crassostrea virginica*.

Water levels that are below ground dominate all the conservation areas; between 69% and 96% are exposed. Surface water has disappeared in most of WCAs 1, 2A, 2B, and 3B, though stage data indicate a slight rise in water depths in WCA-2A above ground. Holeyland and Rotenberger Wildlife Management Areas and northwestern WCA-3A remain extremely dry. Conditions in Big Cypress Preserve and Everglades National Park (ENP) continue to be dry nearly everywhere. Note: Of special concern is that central western WCA-3A, the location of some of the best Ridge and Slough patterns and habitat, is now experiencing water levels over -1.5 feet underground, further degrading the remaining patterns. This subtropical patterned peatland is extremely rare globally.

Water depths dropped again last week in much of the Greater Everglades (see Water Depths Difference map) but rose locally where high rainfall counteracted the high evaporation rates. Stages rose in southern WCA-1, WCA-2B, northeastern and central WCA-3A, and large areas of ENP. Water depth changes have been highly variable from a month ago, with some areas up to -1.5 feet lower and others up to 1 foot higher. Depths remain much lower (1.5 to over 2.5 feet) than a year ago. Salinity continues to climb across Florida Bay. Most areas are still less than 5 psu (practical salinity units) above their seasonal average concentrations.

Weather Conditions and Forecast

Below average shower activity this week. A surface low has developed around South Carolina and it is forecast to linger around the eastern U.S. for a few days. This low is bringing a trough through the District today with scattered fast-moving showers and isolated thunderstorms mainly south and east. Drier and a little cooler conditions will spread over the District behind the front tonight and Wednesday.

Moisture will then begin returning to the area Thursday and into the weekend and allow isolated to scattered shower activity each afternoon. The next ten days precipitation outlook is below average with low confidence.

KISSIMMEE BASIN

Kissimmee Basin Rainfall

The Upper Kissimmee Basin received 0.95 inches of rainfall in the past week and the Lower Basin 1.01 inches (SFWMD Daily Rainfall Report 5/17/2011).

Upper Kissimmee Basin

Lakes in the Kissimmee Chain of Lakes (KCOL) are at, slightly above, or within 0.9 feet below regulation schedule (Table 1). The USACE interim operating schedule and the most recent SFWMD position analysis for S65 are shown in Figures 8-9.

Table 1. Departures from KCOL flood regulation or temporary deviation schedules (feet NGVD). Data are provisional real-time data from SFWMD DualTrend; reported discharge values are averages for the week ending on the report date unless otherwise specified.

5/17/2011

Water Body	Structure	Schedule	Discharge (cfs), week's average	Today's Regulation Stage (SFWMD Operations Control)	Today's Stage (SFWMD Operations Control)	This week's departure from schedule	Last week	Two weeks ago	Three weeks ago	Four weeks ago
Lakes Hart and Mary Jane	S62	F	0	59.8	59.4	-0.4	-0.6	-0.5	-0.5	-0.5
Lakes Myrtle, Preston, and Joel	S57	F	0	60.2	59.4	-0.7	-0.7	-0.7	-0.7	-0.7
Alligator Chain	S60	F	0	62.4	61.5	-0.9	-1.0	-1.1	-1.2	-1.3
Lake Gentry	S63	F	0	59.9	59.6	-0.3	-0.4	-0.5	-0.4	-0.4
East Lake Toho	S59	F	91	55.6	55.8	0.3	0.1	0.0	-0.1	-0.2
Lake Toho	S61	F	176	52.6	52.8	0.2	0.1	0.1	0.1	0.1
Lakes Kissimmee, Cypress, and Hatchineha	S65	F	843	49.5	49.5	0.0	0.1	0.2	0.2	0.2

T = temporary schedule, F = USACE flood control schedule

Lower Kissimmee Basin

Discharges, stages, and dissolved oxygen concentrations are shown in Table 2. Estimated Phase I area floodplain water depths are mapped in Figure 10; estimated Kissimmee River floodplain stages are shown in Figure 11.

Table 2. Mean discharge at S-65x structures and Phase I area river channel dissolved oxygen and floodplain mean water depth. Discharge and stage data are provisional real-time data from SFWMD OASyS DualTrend; reported values are averages for the week ending on the report date unless otherwise specified.

5/17/2011

Metric	Location	This week's average	Last week	Two weeks ago	Three weeks ago	Four weeks ago
Discharge (cfs)	S-65	843	1091	1205	1376	1143
Discharge (cfs)	S-65A	834	1056	1207	1371	1127
Discharge (cfs)	S-65C	803	961	1167	1114	1083
Headwater stage (feet NGVD)		33.5	33.7	33.7	33.7	33.7
Discharge (cfs)	S-65D	850	1012	1185	0	1130
Discharge (cfs)	S-65E	648	778	991	365	913
DO concentration (mg/L)	Phase I river channel	**	**	**	**	**
Mean depth (feet NGVD) *	Phase I floodplain	0.13	0.16	0.22	0.21	0.23

* Data from South Florida Water Depth Assessment Tool (SFWDAT); data are for two days previous to report date shown.
 ** Stations not functioning.



Rabbit Island on Lake Kissimmee in the Kissimmee Chain of Lakes, which supports a large wading bird colony each year. Photo by Brent Anderson.

Water Management Recommendation

No new recommendations at this time.

Guidelines for water management for S-65 through May 31:

- 1) Adjust discharge at S-65 so Lake level reaches 49.5 feet on May 31. This will reserve water in Lake Kissimmee to extend releases for the Kissimmee River into the wet season if wet season rainfall starts slowly. This should also benefit snail kite nesting by maintaining a higher Lake level and slowing Lake recession.
- 2) Make all adjustments to discharge (both increases and decreases) gradually to minimize the potential for impacts to the Kissimmee River.
- 3) Transition from the current discharge at S-65 (approximately 1100 cfs) to lower discharge using the regulation schedule below for guidance. For example, at today's Lake stage of approximately 50 feet, the schedule indicates a discharge of approximately 500 cfs, which would be transitioned to gradually.
- 4) Maintain a minimum discharge of 250 cfs.
- 5) Reduce discharge at S-65 without causing significant (>0.5 feet) stage reversals in Lake Kissimmee to reduce the potential for impacts to nesting snail kites and apple snail eggs.

KCOL Hydrographs

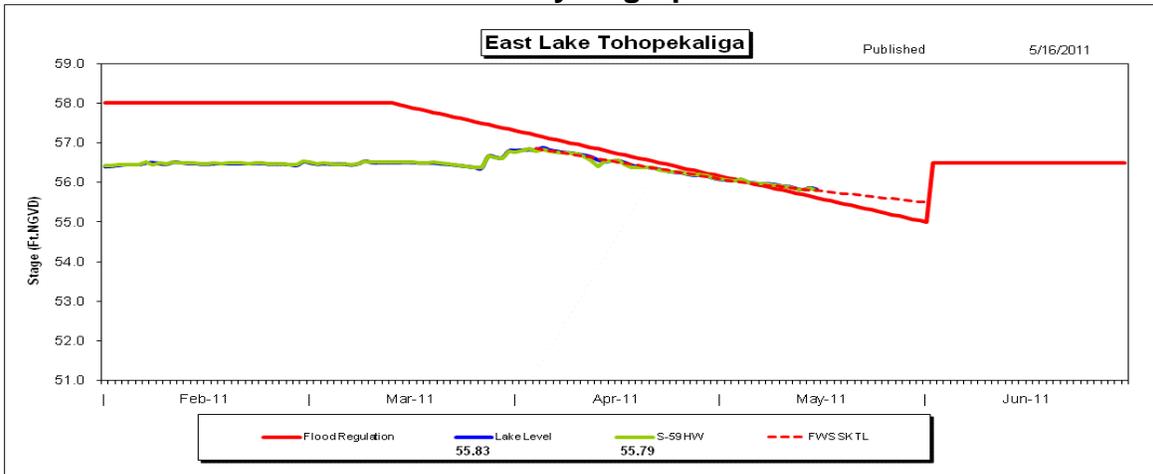


Figure 1.

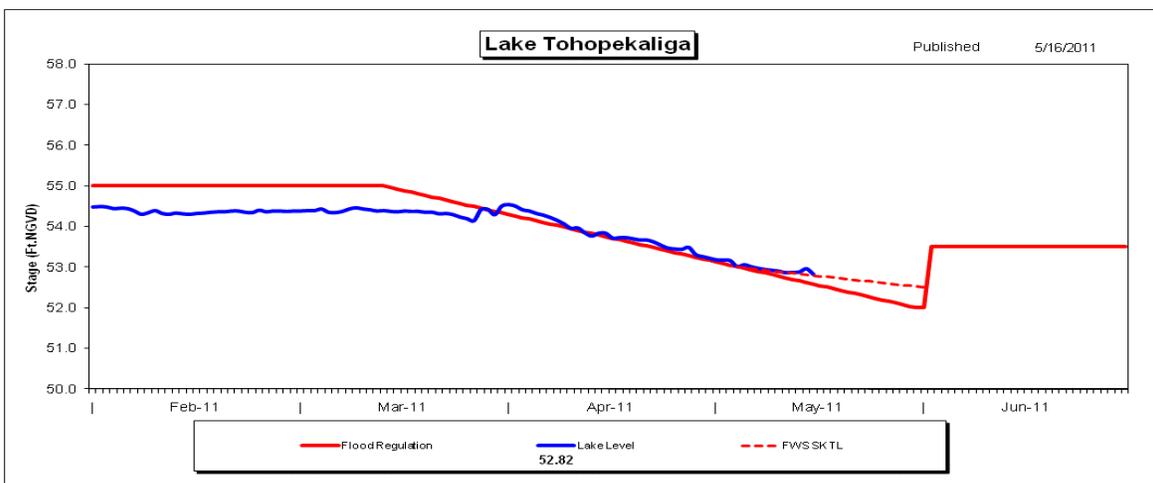


Figure 2.

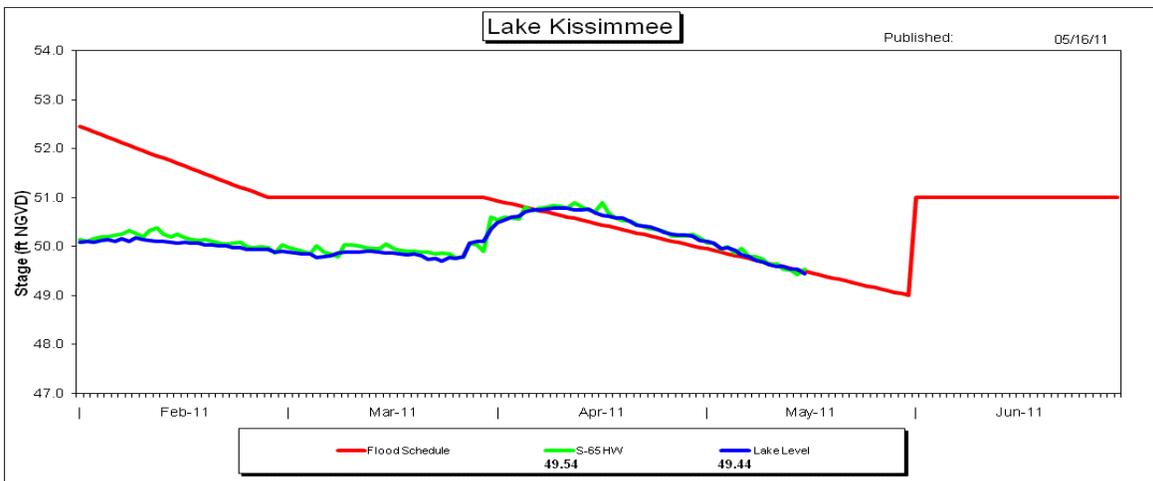


Figure 3.

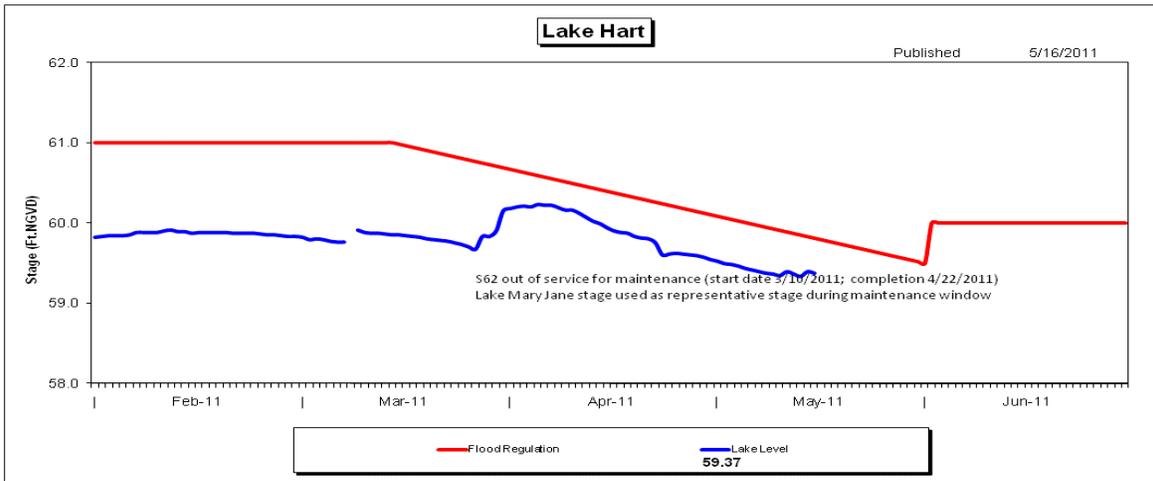


Figure 4.

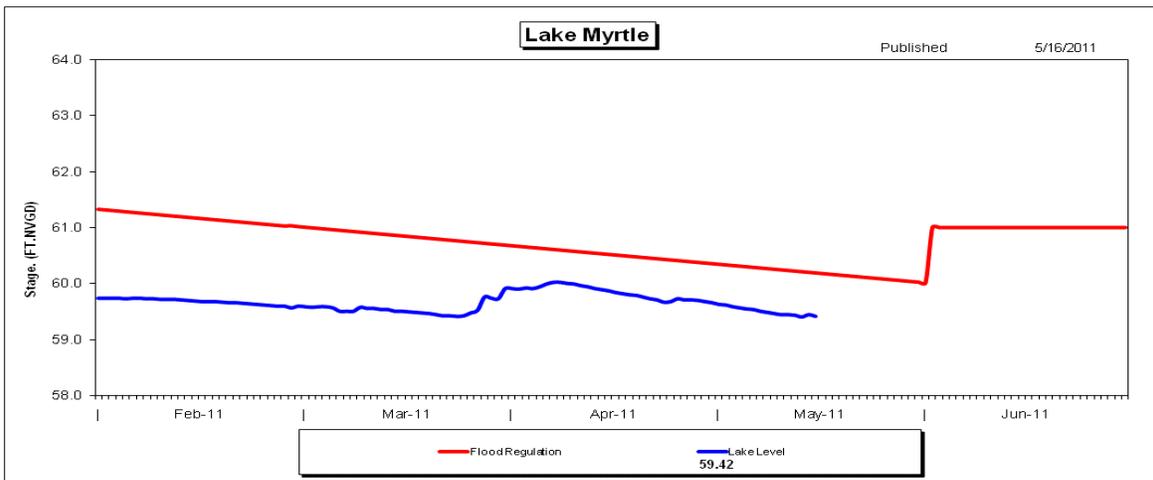


Figure 5.

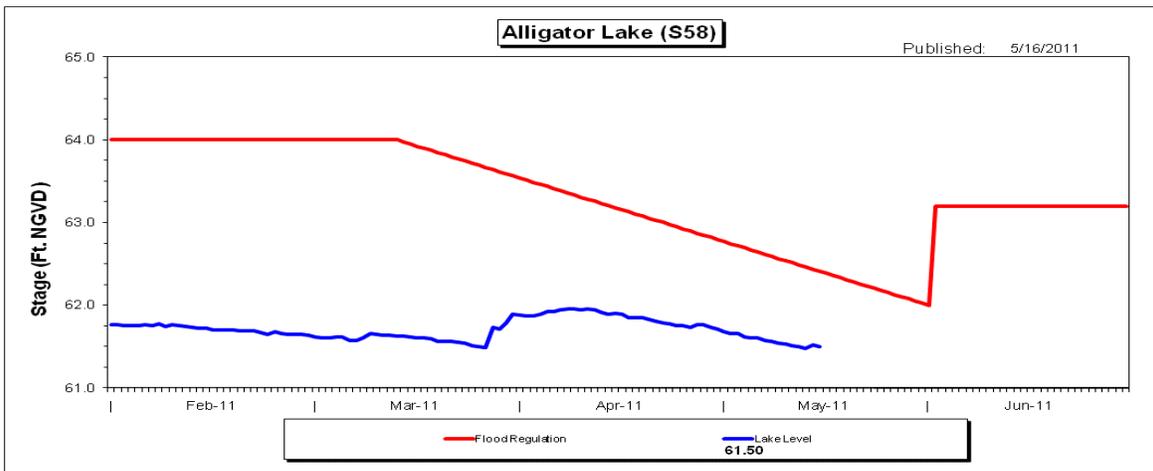


Figure 6.

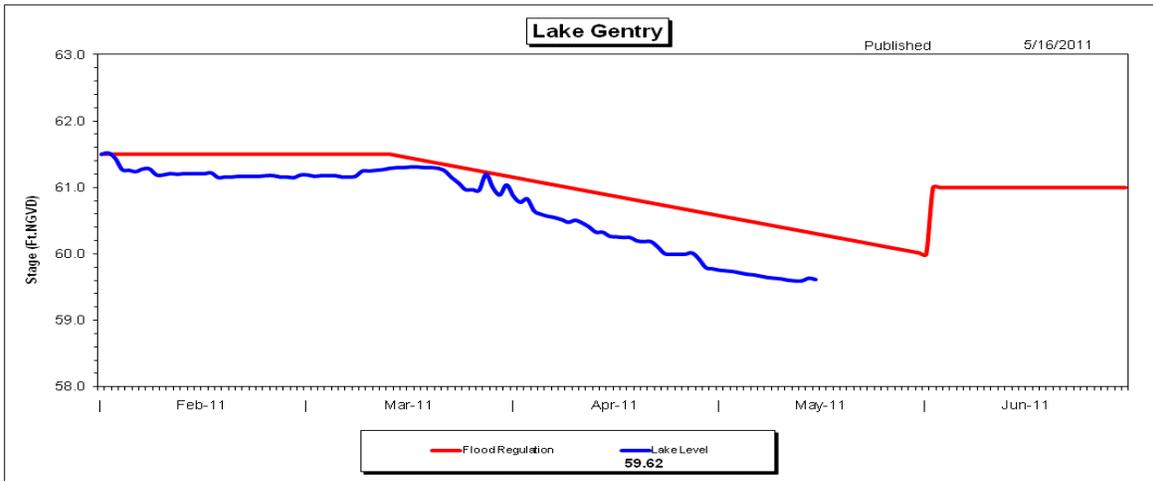


Figure 7.

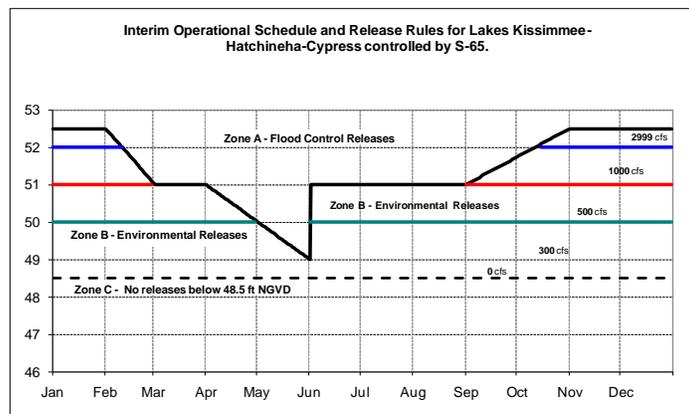


Figure 8. Interim operations schedule for S-65.

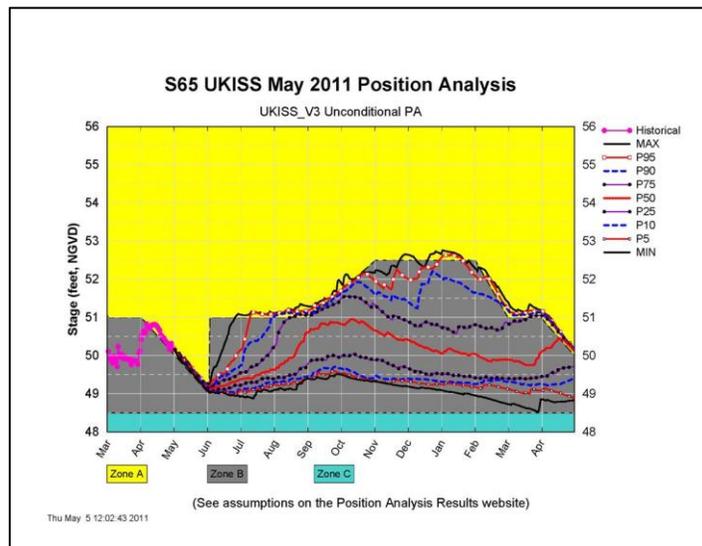
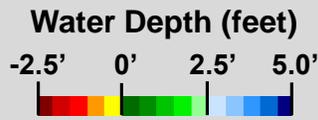
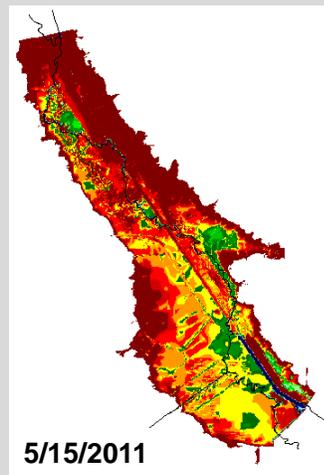
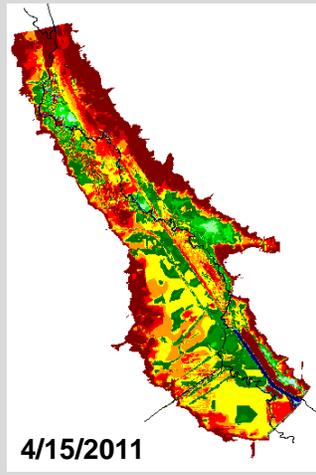
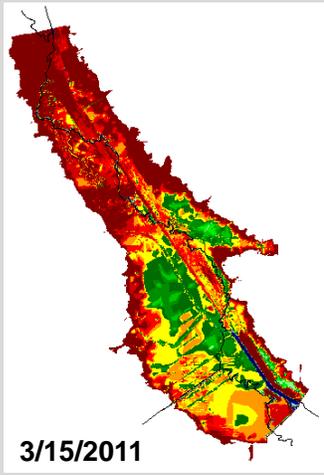


Figure 9. Most recent Position Analysis for S-65 headwater stage (Lake Kissimmee).



SFWDAT Kissimmee River (Pool C) Monthly Depth Maps



South Florida Water Depth Assessment Tool (SFWDAT)

Figure 10.

Kissimmee River Phase I Restoration Area Floodplain Hydrographs

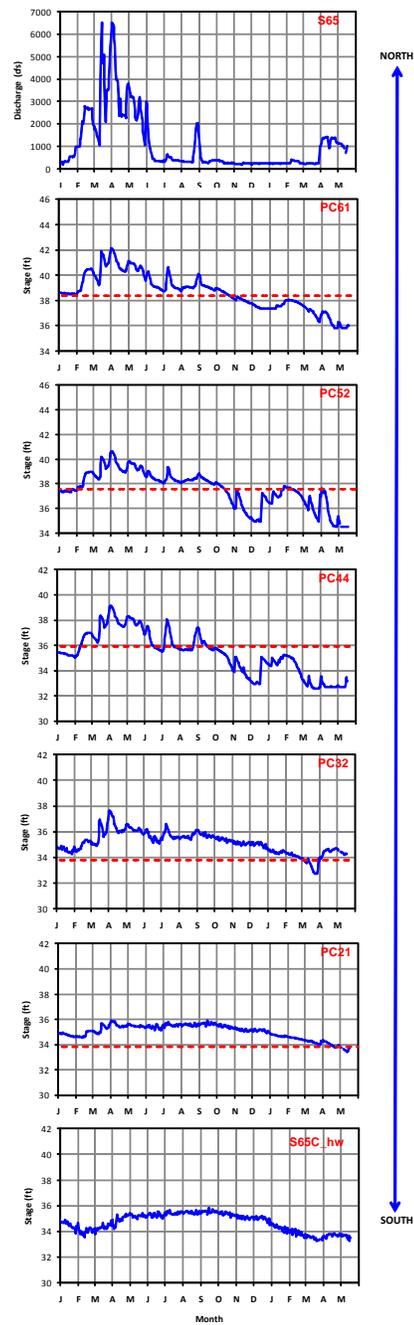


Figure 11. Discharge at S65, stages at five monitoring stations in the Phase I area of the Kissimmee River floodplain, and headwater stage at S65-C in the past 12 months. The most recent data (~2 weeks) are provisional real-time data from SFWMD DualTrend; previous data are from SFWMD DB-HYDRO (validated). Dashed lines are ground elevations.

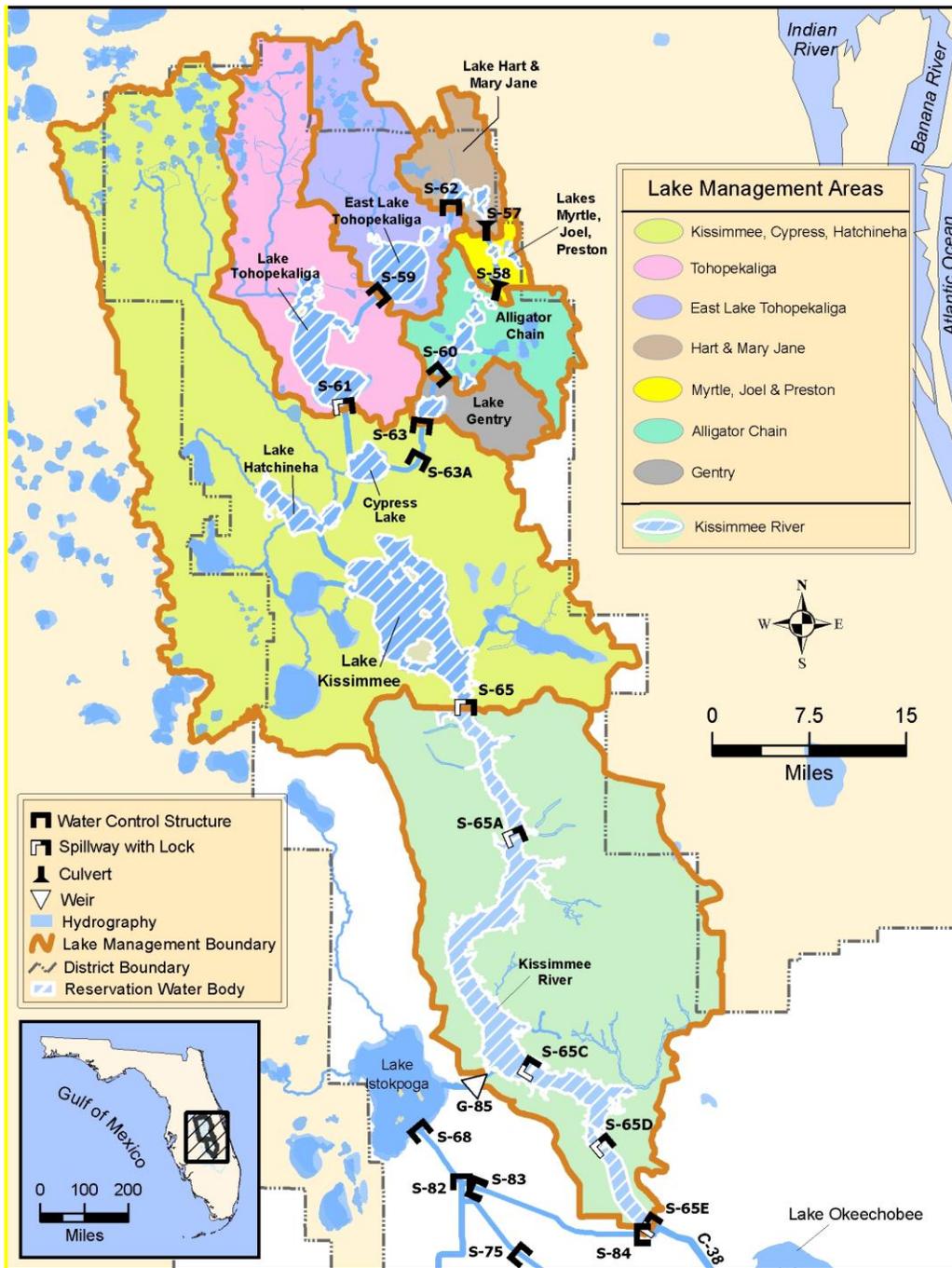


Figure 12. The Kissimmee Basin.

LAKE OKEECHOBEE

According to the USACE web site Lake Okeechobee stage is 10.59 feet NGVD for the period ending at midnight on May 16, 2011. This value is based on the use of four interior Lake stations (L001, L005, L006, and LZ40) and the following five perimeter stations (S4, S352, S308, S133, and S135). The Lake level has declined by 0.13 feet since last week, equivalent to the loss of approximately 1,500 inundated acres, and is 0.97 feet lower than a month ago and 4.05 feet lower than a year ago (Figure 1). The Lake has fallen back into the Water Supply Management Sub-band and is now below its MFL. The current stage is 2.70 feet lower than the historical average for this date and 1.51 feet lower than the simulated average using the current regulation schedule (LORS 2008). Lake inflow is reported as 572 cfs, consisting of 569 cfs through S65E (weekly average 649 cfs) and 3 cfs through Fisheating Creek.

Total Lake outflow is estimated at 1426 cfs consisting of flows through the following structures:

Structure	Flow cfs
S354	734
S351	615
S352	166
L8	31
S77	-120
S308	0

According to Raindar 0.8 inches of rain fell directly over the Lake during the past seven days.

Lake stage continues to decline which is impacting areas colonized by submerged aquatic vegetation (SAV) and emergent vegetation. This loss of SAV puts additional stress on any remnant native apple snail populations and increases the probability that a multi-year recovery period will be necessary to restore apple snail populations to their pre-drought condition.

Lake Okeechobee field staff reported an algal bloom near structure L001 last week.

A recent snail kite survey of Lake Okeechobee indicated the presence of 93 kites. Water levels under snail kite nests reported as active during the last nesting survey based on WDAT stage elevations now range from dry (five nests) to 1.4 feet. Most of the nests (26 of 33 active nests) now have water levels of less than one half foot under them.

Water Management Recommendations

Although there are indications that the wet season has begun, it is probable that Lake levels may continue to fall for some time. Consequently, operational activities that limit the release of Lake water should be practiced wherever possible. At current Lake stage, another one half foot of fall will completely desiccate the marsh and littoral zone and leave little to no habitat to support snail kite foraging, remnant native apple snail populations, and sport fish spawning and nursery activities. The longer the duration of low Lake stages, the more severe impacts become and the more time it will take for the ecosystem to recover.

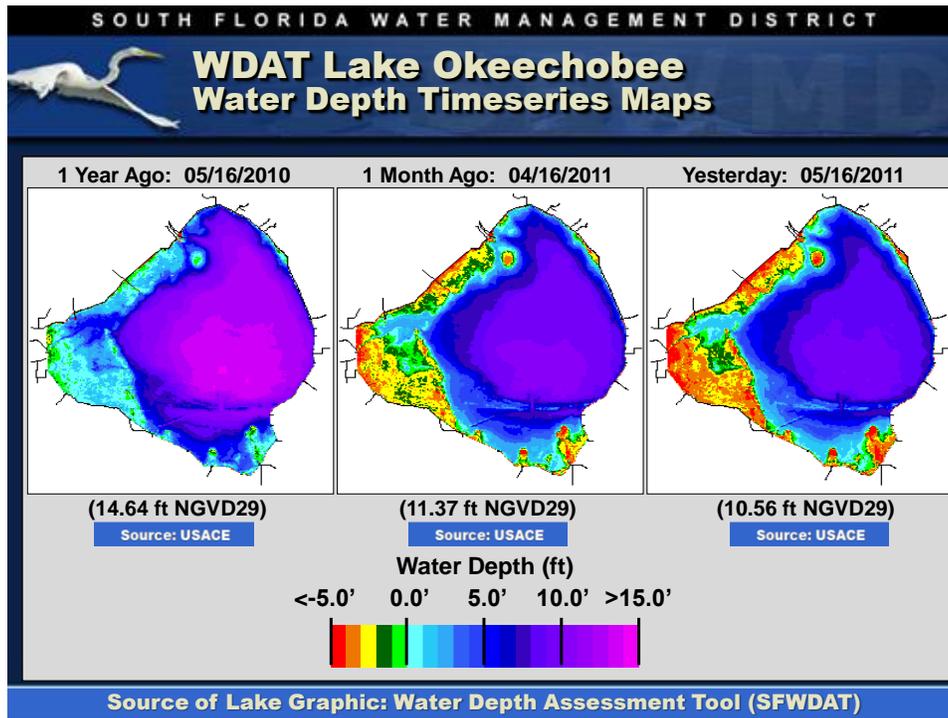


Figure 1

Lake Istokpoga:

According to the USACE web site Lake Istokpoga stage on May 16, 2011 was 38.37 feet NGVD which is 0.04 feet higher than last week. The Lake is 0.21 feet below schedule and 1.37 feet above the zone C line (Figure 2). According to Raindar, 1.5 inches of rain fell in the Lake Istokpoga watershed during the past seven days.

University of Florida snail kite researchers report that there are currently 10 kites utilizing Lake Istokpoga as habitat. Because of the limited vertical range of the Lake Istokpoga regulation schedule, fluctuations in Lake level have minimal impacts on Lake ecology.

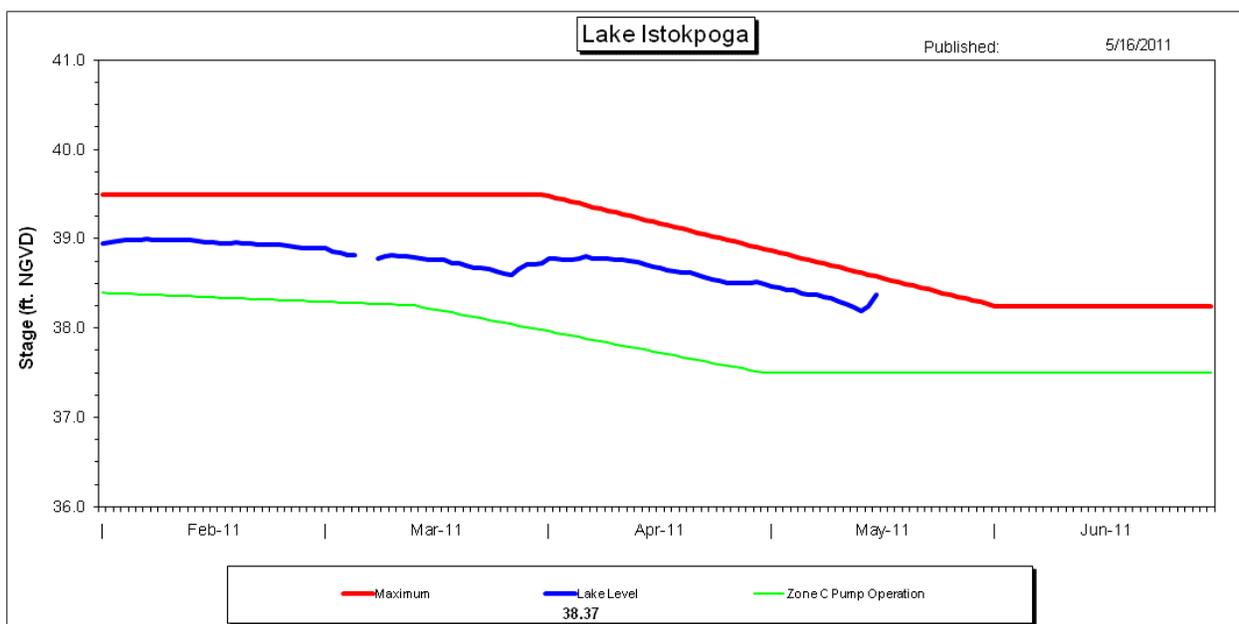


Figure 2

ESTUARIES

St. Lucie Estuary:

Over the past week, flow averaged 0 cubic feet per second (cfs) at S-80 (Figure 2) and was 487 cfs at S-308. Provisional data indicate that discharge averaged 0 cfs at S-49 on C-24 and 7.6 cfs at S-97 on C-23. The current weekly average salinity (in bold) at the three monitoring sites in the St. Lucie Estuary are given below in practical salinity units (psu), along with the previous week's (in parenthesis).

Weekly Average Salinity (psu)			
Sampling Site	Surface	Bottom	Envelope
HR1 (N. Fork)	24.8 (23.5)	26.9 (25.9)	NA ¹
US1 Bridge	28.6 (27.9)	28.8 (28.1)	8.0 – 25.0
A1A Bridge	33.0 (32.5)	33.4 (33.1)	20.0 – 31.0

¹Envelope not applicable.

Over the past week, average salinity increased throughout the estuary (Figures 3 and 4). The 30-day moving average of surface salinity at the US1 Bridge is above the preferred range. Salinity conditions in the estuary are fair considering the time of year, the location in the estuary, and salinity preference of the oyster, *Crassostrea virginica*.

Caloosahatchee Estuary:

During the past week, flow averaged about 158 cfs at S-77, 104 cfs at S-78, 100 cfs at S-79 (estimated) (Figure 6). The concentration of chlorides at the Olga Plant was 222 parts per million yesterday. The current weekly average salinity (in bold) at the seven monitoring sites in the Caloosahatchee estuary are given below in practical salinity units (psu), along with the previous week's (in parenthesis).

Weekly Average Salinity (psu)		
Sampling Site	Surface	Bottom
S-79 (Franklin Locks)	8.7 (9.6)	12.6 (13.9)
BR31	14.0 (NR ¹)	14.9 (NR)
Val I75	14.5 (13.4)	15.9 (15.3)
Ft. Myers Yacht Basin	20.7 (19.6)	21.6 (20.7)
Cape Coral	28.2 (NR)	28.4 (26.9)
Shell Point	34.8 (34.9)	36.4 (36.5)
Sanibel	34.9 (35.5)	36.2 (36.5)

¹Results not reliable or not reported. Average not calculated.

Over the past week, average salinity in the estuary decreased at S79, increased at Cape Coral Bridge, and remained the same downstream of Shell Point (Figure 7 and Figure 8). The 30-day moving average salinity is 12 psu at Val I-75 (Figure 9) and 19 psu at Ft. Myers. Therefore, conditions are poor in the upper estuary for tape grass, *Vallisneria americana*. Salinities at Shell Point and the Sanibel Causeway indicate that conditions are good for seagrass in San Carlos Bay, but poor considering the salinity preference of the oyster, *Crassostrea virginica*.

Monitoring data collected by the River, Estuary and Coastal Observing Network of Sanibel-Captiva Conservation Foundation indicated that dissolved oxygen concentrations at Ft. Myers ranged between 4.45 and 6.4 mg/L, and at Shell Point between 4.4 and 6.4 mg/L. Chlorophyll a

concentration at Ft. Myers ranged between 1.7 and 5.1 µg/L with two spikes of 7.5 µg/L and 10.9 µg/L. At Shell Point, chlorophyll *a* concentrations generally ranged between 0.62 and 1.8 µg/L.

The Florida Fish and Wildlife Research Institute reported that *Karenia brevis*, the Florida red tide organism, was not detected in water samples collected this week alongshore of Pinellas, Hillsborough, Manatee, Lee and Collier counties or offshore of Pinellas, Manatee and Lee counties or the Florida Keys (Monroe County). One sample collected in the Sarasota Bay System (Sarasota County) and one sample collected in Gasparilla Sound (Charlotte County) contained background concentrations of *K. brevis*. A large patch of discolored water has been reported ranging from about five to 15 miles offshore of Egmont Key (Manatee County). Water samples and satellite imagery confirm a bloom of the cyanobacterium, *Trichodesmium erythraeum*. No impacts have been reported.

Water Management Recommendations

St. Lucie Estuary Performance Measure (PM) update:

The 30-day moving average (mean) of surface salinity at the US1 Bridge is being utilized as an indicator of estuarine health. Salinity at this location should range from eight to about 25 psu based on the most favorable salinity conditions for the eastern oyster. Salinity greater than about 25 psu increases the potential for predation on the oysters. The 30-day mean salinity is above this range at about 29 psu, but should not cause significant impacts to eastern oyster populations.

Recommendation: Conditions in the SLE are acceptable environmentally. It is recommended that the estuary should not receive inflows from the Lake or from C-44 basin runoff.

Caloosahatchee Estuary Performance Measure (PM) update:

The salinity PM being utilized for the Caloosahatchee Estuary is in accordance with the “Final Adaptive Protocols for Lake Okeechobee Operations (September 16, 2010)”. The 30-day moving average (mean) salinity at Station VALI75 (I-75 bridge) is being utilized as an indicator of estuarine health. Salinity at this location should be maintained below five psu based on the most favorable conditions for tape grass. The District predicts freshwater inflows in order to forecast salinity two weeks into the future at the I-75 Bridge. If predicted salinity is greater than five psu at any time within the next two weeks, the estuary needs inflow from S-79 to lower the salinity in the upper estuary where tape grass is present. The need for inflow is defined as: “Estuary needs water when the 30-day moving average salinity at the I-75 bridge is projected to exceed 5 psu within 2 weeks”. The 30-day mean is forecasted to be greater than five psu within two weeks (Figure 10). Therefore, the salinity criterion indicates the estuary needs additional flow this coming week (Figure 11); however, the current Lake Okeechobee water level is within the water shortage band, which precludes a recommendation for water releases.

Recommendation: Although the Caloosahatchee estuary needs freshwater to reduce salinity, it is recommended that no water releases be made from Lake Okeechobee according to water shortage rules unless otherwise authorized by the District’s Governing Board.

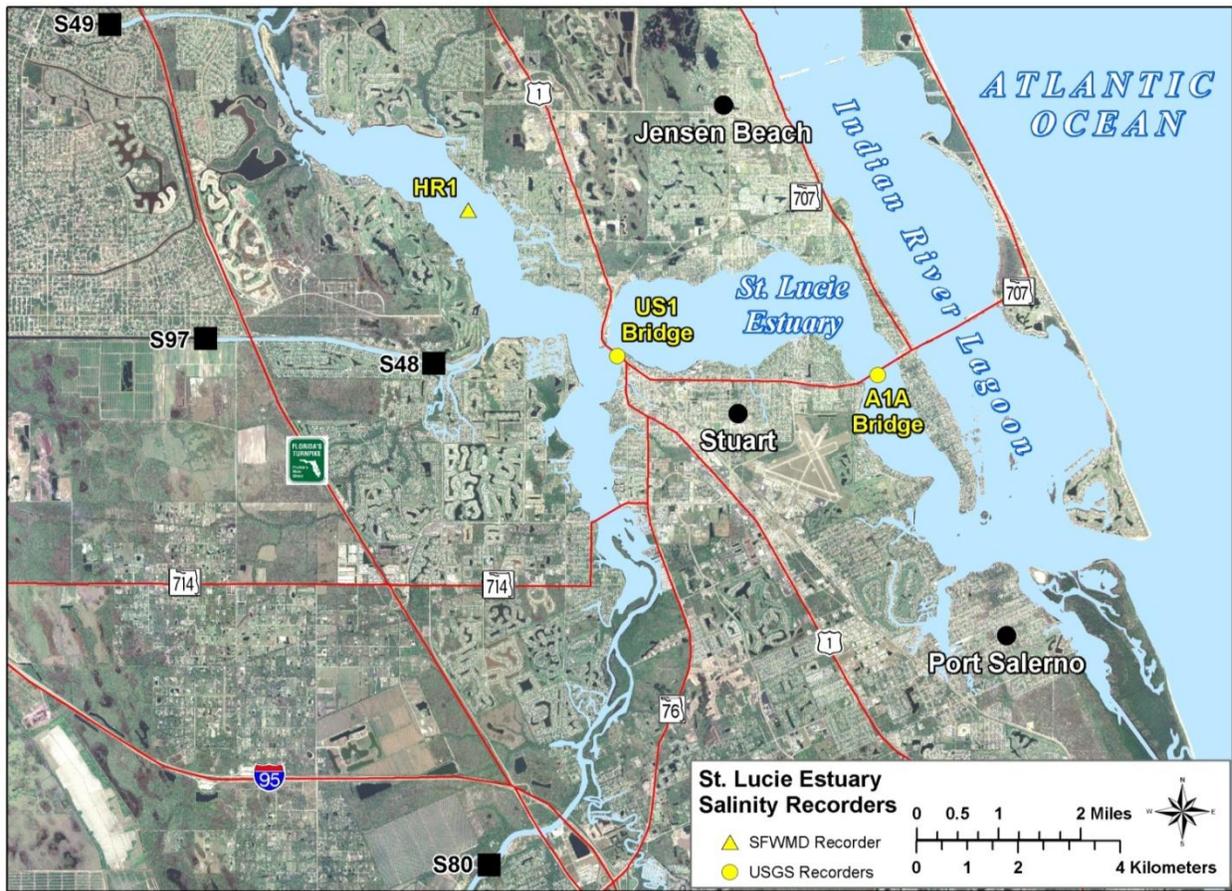


Figure 1. Salinity stations in the St. Lucie Estuary.

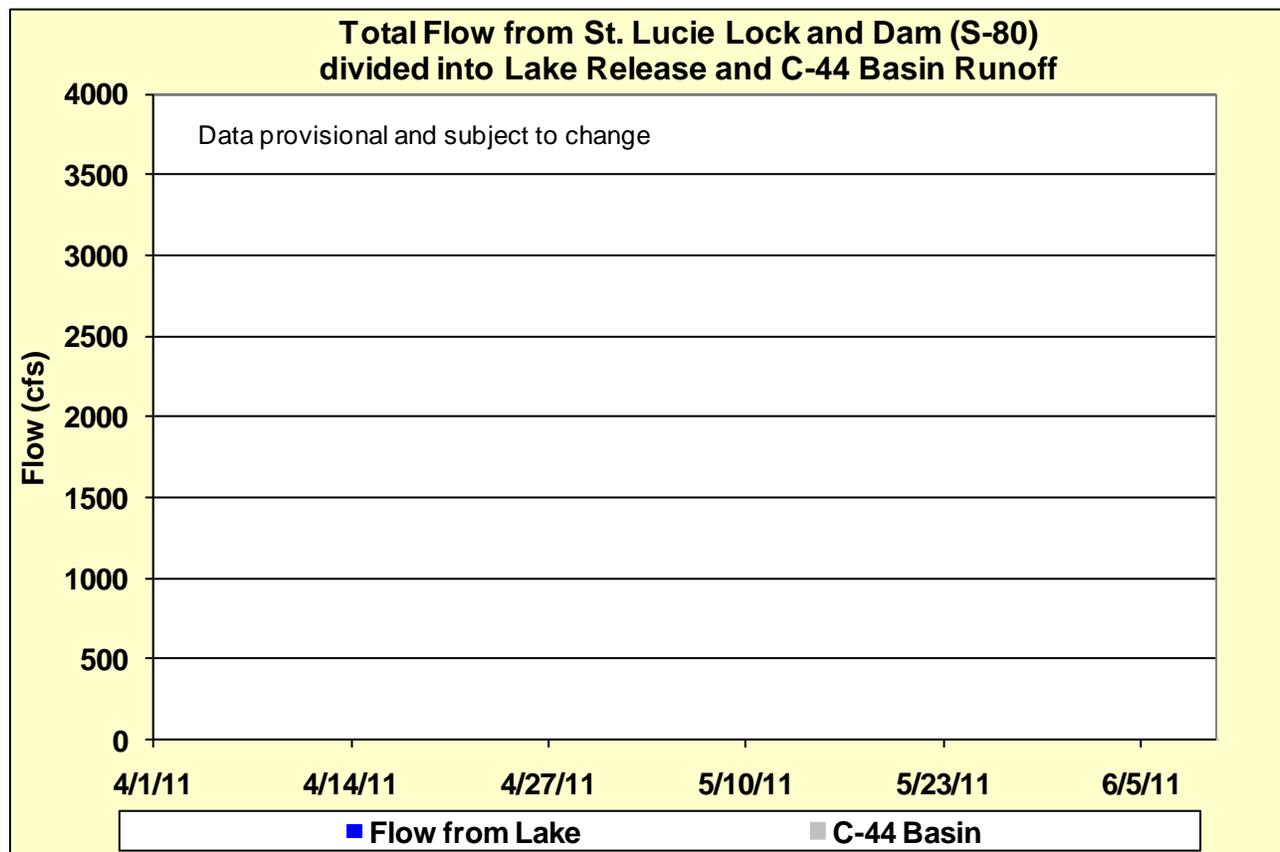


Figure 2. Estimated freshwater discharges from Structure 80 into the St. Lucie Estuary.

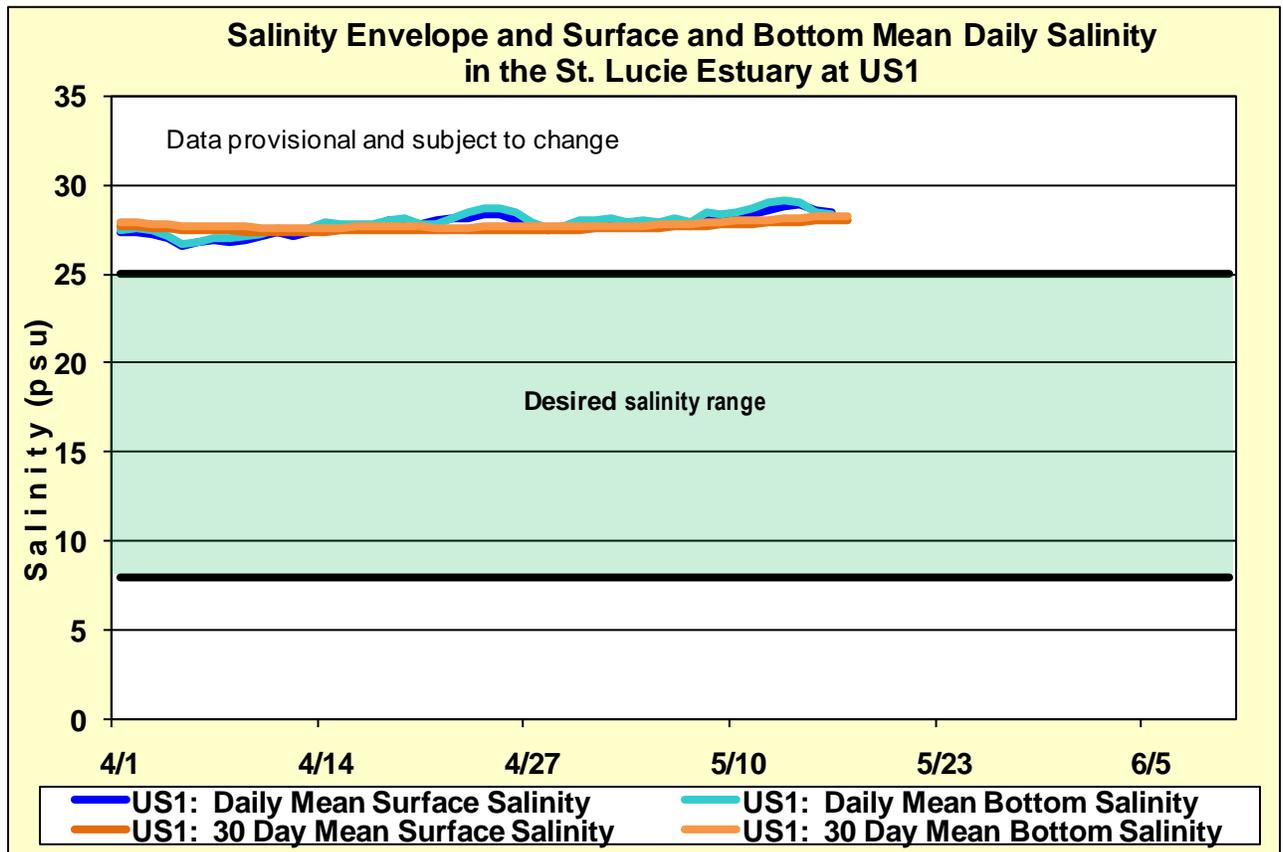


Figure 3. Daily mean and 30-day mean salinity at the U.S. Highway 1 Bridge.

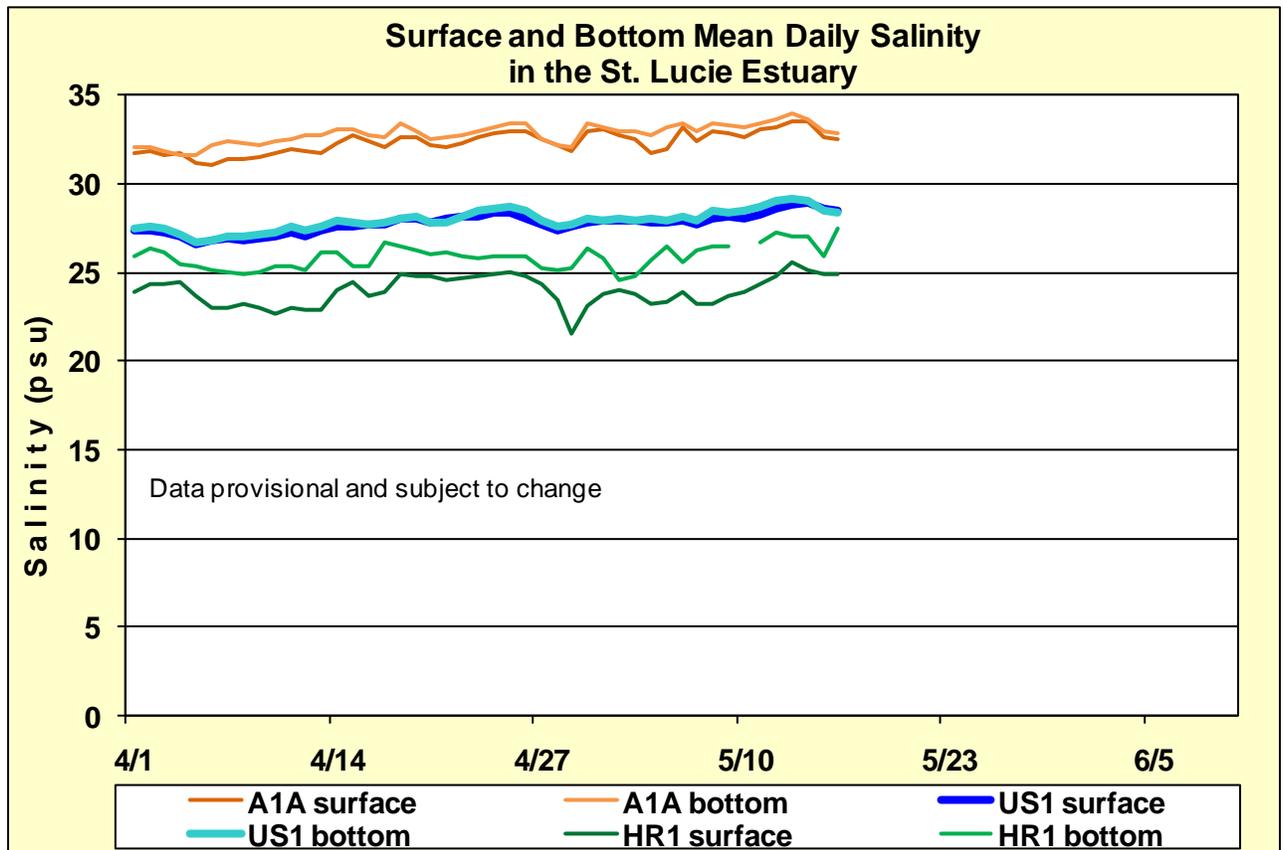


Figure 4. Mean daily salinity at the A1A and HR1 stations.

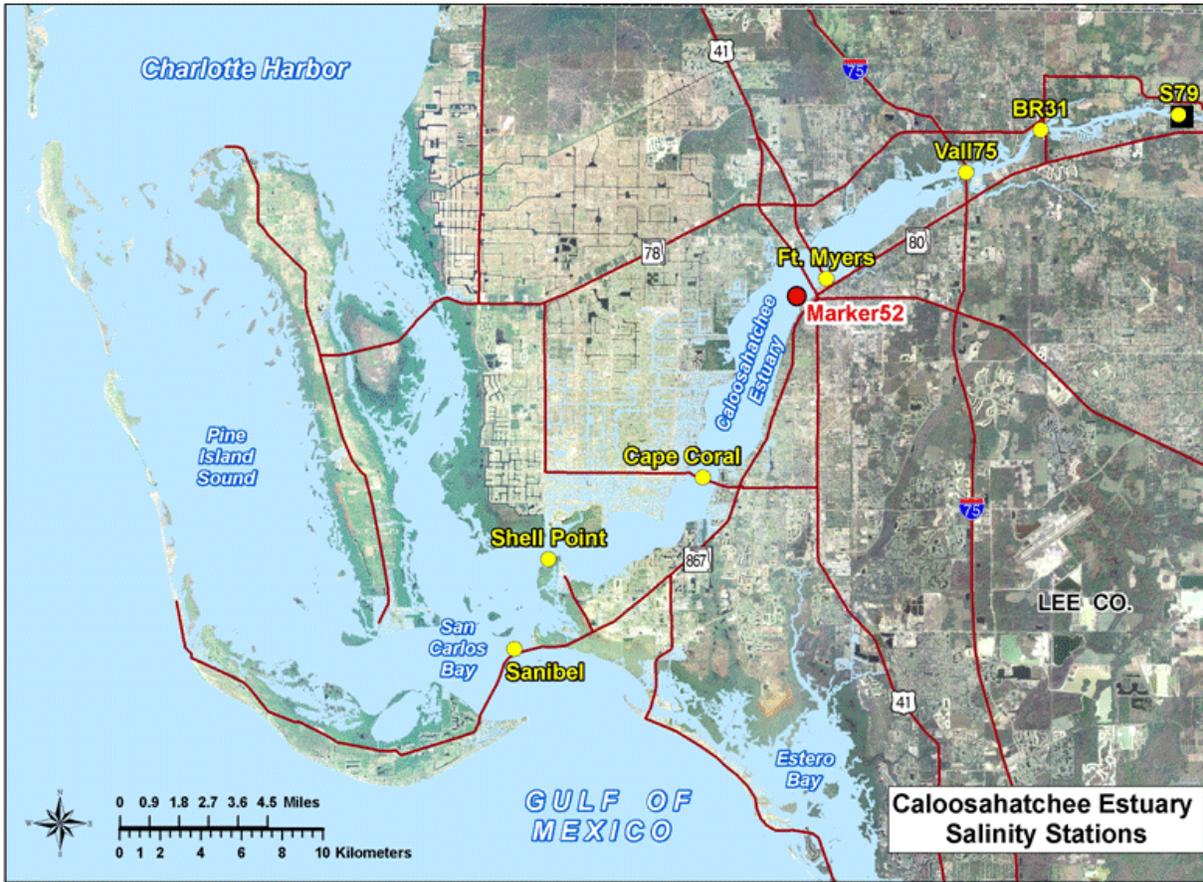


Figure 5. Salinity stations in the Caloosahatchee River Estuary.

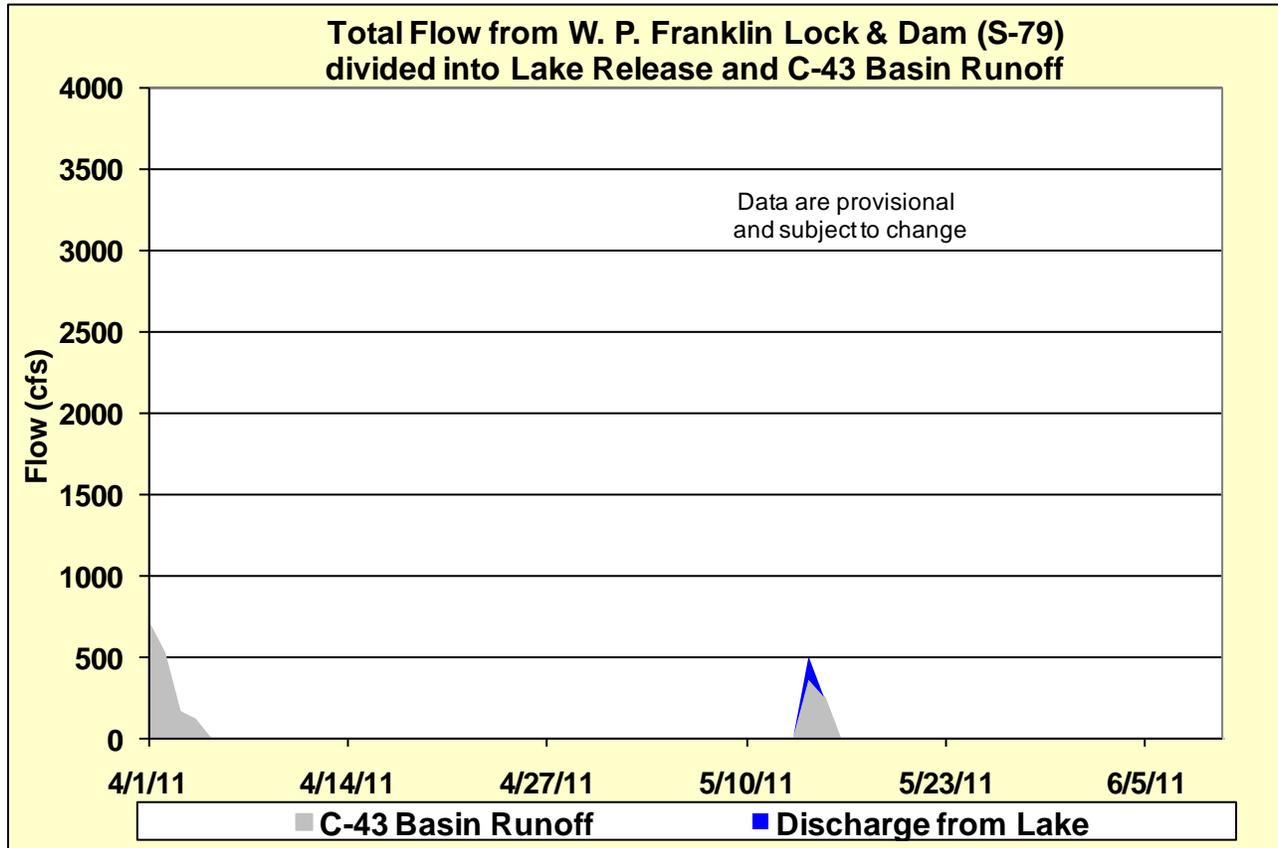


Figure 6. Freshwater flows from Structure 79 into the Caloosahatchee River Estuary.

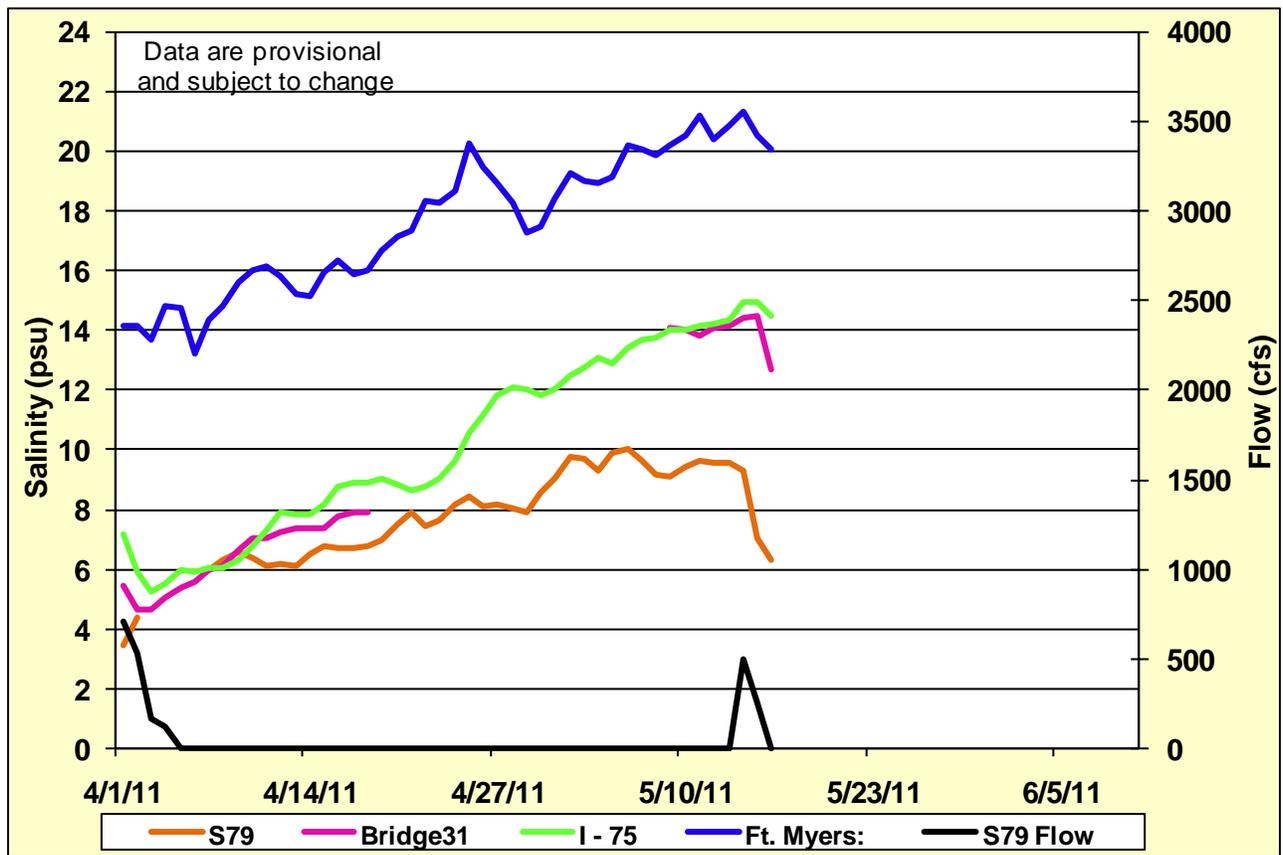


Figure 7. Mean daily flows at S-79 and salinity at upper estuary monitoring stations.

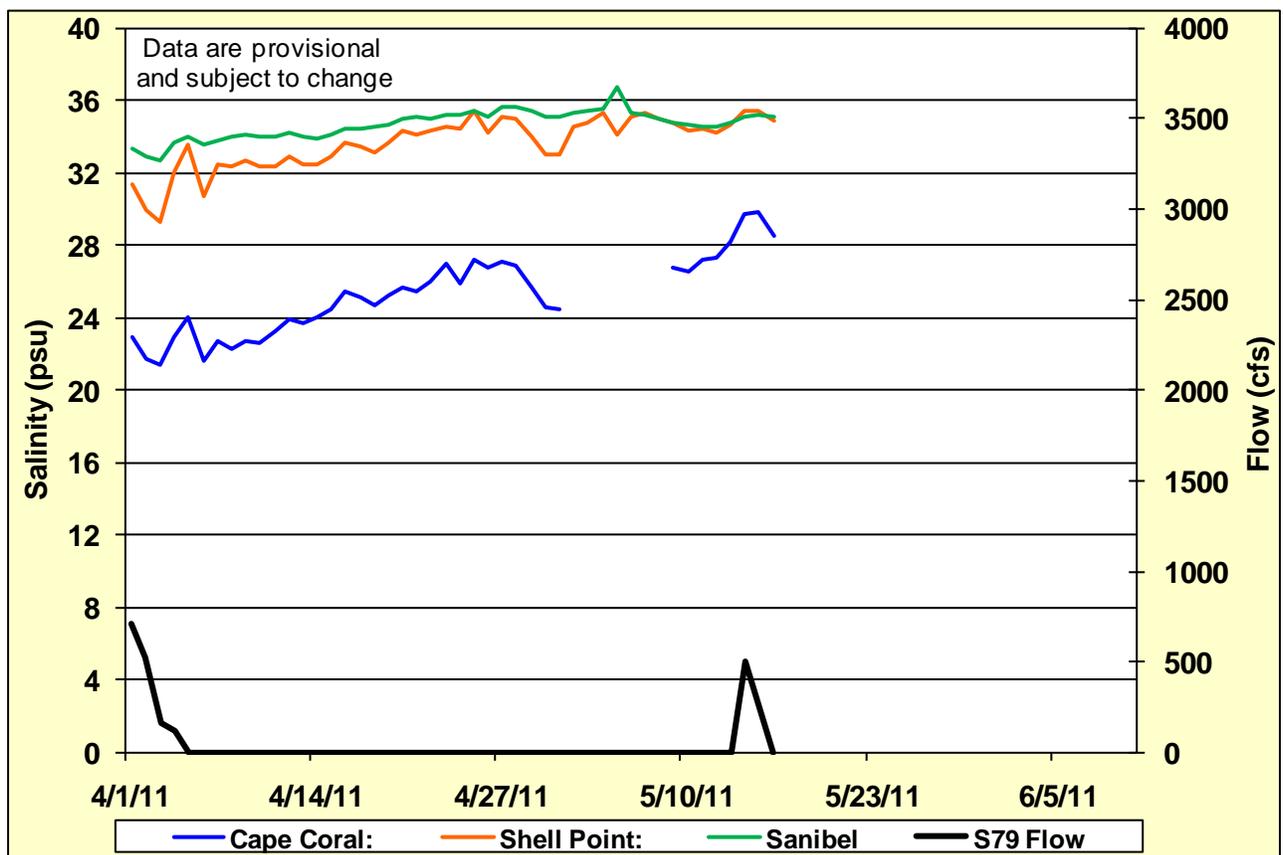


Figure 8. Mean daily flows at S-79 and salinity at lower estuary stations.

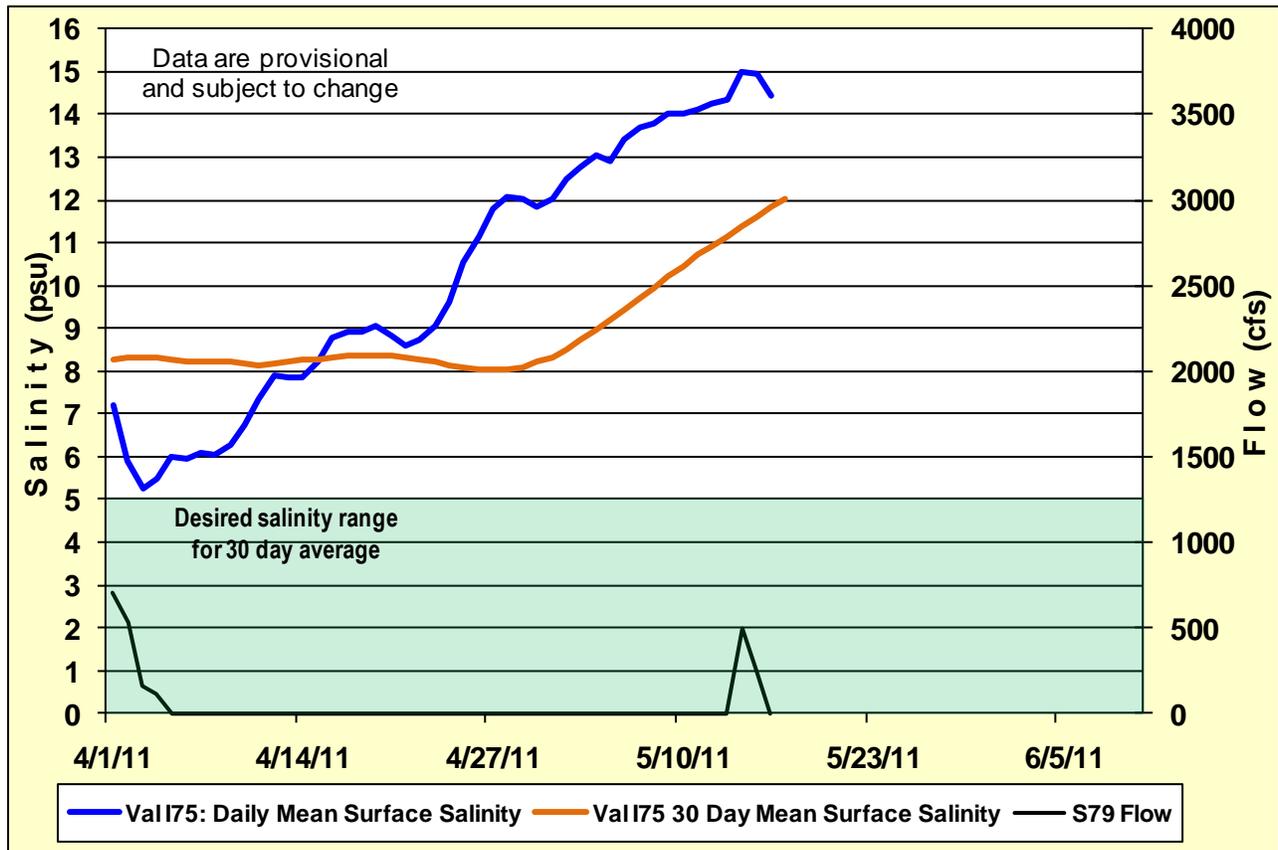


Figure 9. Daily mean surface and 30-day mean surface salinity at Station Vall75.

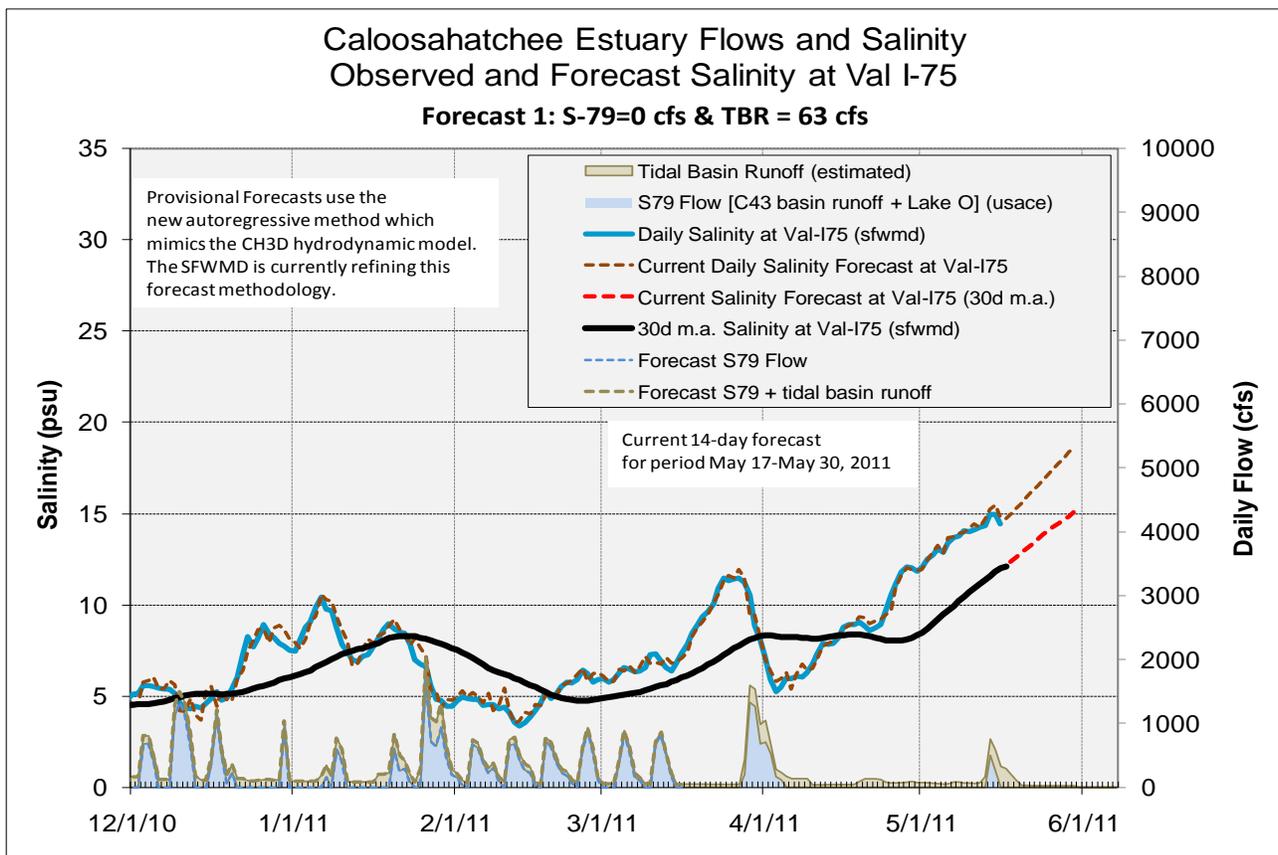
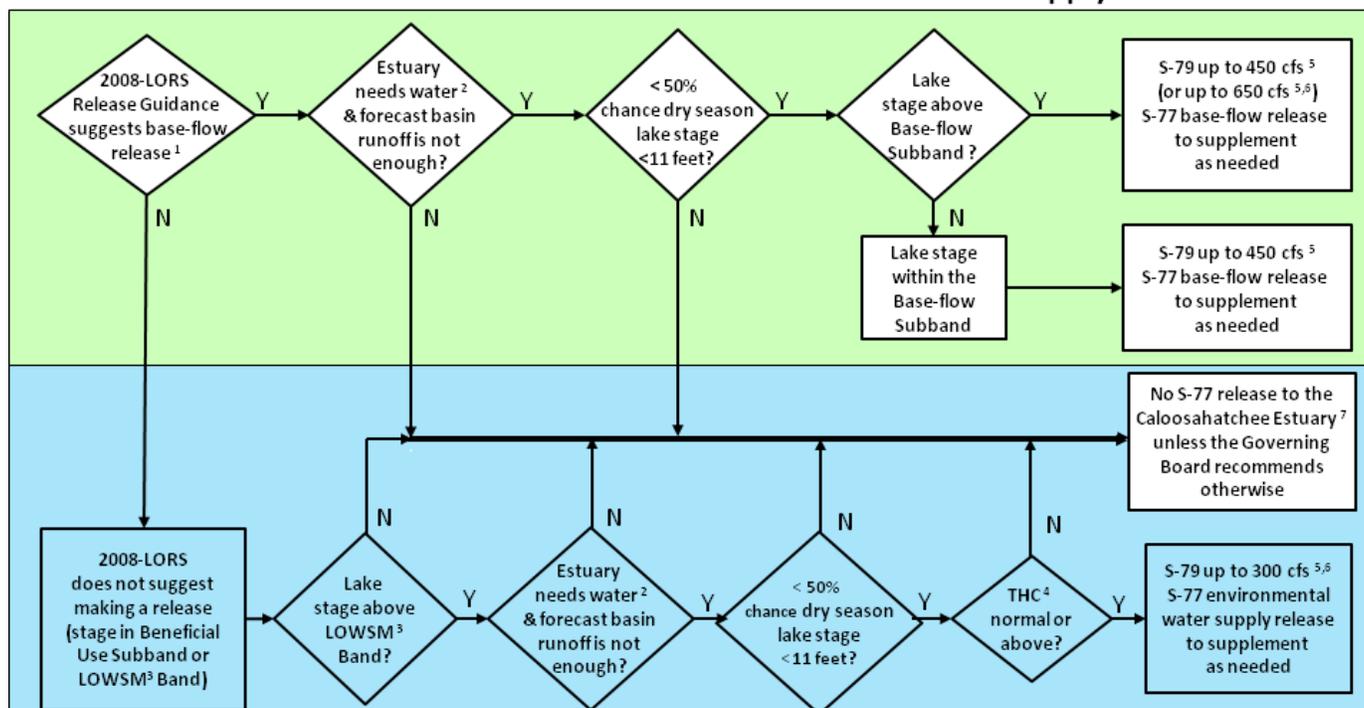


Figure 10. Provisional Val I-75 salinity forecast for May 17 – May 30, 2011. Created on May 17, 2011.

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



¹The 2008-LORS Release Guidance (Part D) can suggest base-flow releases in the Intermediate, Low, or Base-flow Subbands.

²Estuary "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.

³LOWSM = Lake Okeechobee Water Shortage Management.

⁴Tributary Hydrologic Condition (THC) is based on classification of Lake Okeechobee Net Inflow and Palmer Index.

⁵Can release less than the "up to" limit if lower release is sufficient to reach or sustain desired estuary salinity; cfs = cubic feet per second.

⁶After reviewing conditions in Water Conservation Areas (WCAs), Stormwater Treatment Areas (STAs), ENP, St. Lucie Estuary and Lake Okeechobee.

⁷Should 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.

Figure 11. Adaptive Protocols flowchart for the Caloosahatchee Estuary.

GREATER EVERGLADES

Rainfall:

The Greater Everglades basins received 0.8 to 4.0 inches of rain last week. The local maximum was 5.1 inches in WCA-2B and over 2.8 inches in the other areas (see Rainfall map and below). The week's pan evaporation was 2.04 inches, 27% above the weekly average of 1.61 inches (WCA-3A Rainfall-based Management Plan).

<u>Average Rain:</u>	WCA-1:	1.12 inches	WCA-3A:	0.80 inches
	WCA-2A:	1.83 inches	WCA-3B:	0.88 inches
	WCA-2B:	3.97 inches	ENP:	1.15 inches

Water Conservation Areas:

Stages and Depths: Ten of the 14 gauges we monitor are still dry (see WCA Stages spreadsheet) and Gauge 99 in WCA-2B is experiencing equipment problems. All gauges report under 0.6 feet depths and those in WCA-2B are unavailable. However, gauge 17 in WCA-2A rose over a half foot to slightly above ground again. Below are the week's average recession rates of the three gauges that retain surface water (BG=all gauges below ground, Eq=equipment problems).

<u>Stage Change:</u>	WCA-1:	-0.06 feet	WCA-3A:	0.04 feet
	WCA-2A:	0.55 feet	WCA-3B:	BG
	WCA-2B:	Eq	NESRS:	BG

Regulation Schedules: All the stages for the regulation schedules are up from last week, reflecting the effects of the weekend rainfall (see Regulation schedules). They show a pattern of a sharp rise, then a slight decline since yesterday. WCA-1 wetland stages are now about -1.1 feet below regulation, and the canal stage is up to its floor. The WCA-2A stage is about 0.1 foot above regulation and the canal stage is rising towards its floor elevation. In WCA-3A, stages are now about -1.6 feet below regulation and the canal is slightly above its floor.

Water Depths and Changes: The WDAT maps show conditions as of Sunday, so they do not reflect all the rainfall over the weekend. The water depths maps show the continued progression of this year's drought (see Water Depths map). Water levels that are below ground dominate all the conservation areas; between 69% and 96% are exposed. Surface water has disappeared in most of WCAs 1, 2A, 2B, and 3B, though stage data indicate a slight rise in water depths in WCA-2A above ground. Holeyland and Rotenberger Wildlife Management Areas and northwestern WCA-3A remain extremely dry. Conditions in Big Cypress Preserve and Everglades National Park (ENP) continue to be dry nearly everywhere. Note: Of special concern is that central western WCA-3A, the location of some of the best Ridge and Slough patterns and habitat, is now experiencing water levels over -1.5 feet underground, further degrading the remaining patterns. This subtropical patterned peatland is extremely rare globally.

Water depths dropped again last week in much of the Greater Everglades (see Water Depths Difference map) but rose locally where high rainfall counteracted the high evaporation rates. Stages rose in southern WCA-1, WCA-2B, northeastern and central WCA-3A, and large areas of ENP. Water depth changes have been highly variable from a month ago, with some areas up to -1.5 feet lower and others up to 1 foot higher. Depths remain much lower (1.5 to over 2.5 feet) than a year ago.

Muck Fire Index: As expected from the continued drought, high muck fire risk regions expanded again last week (see Muck Fire Hazard). Most of the rest of the region is now in the moderate risk category (yellow). Only areas in green are considered to remain at low risk of peat fires.

Fires: The "Jarhead" Fire in Big Cypress has burned over 38,130 acres as of Sunday (see Fire in Big Cypress maps). Lightning started the fire on April 26. It is considered to be 95% contained and is expected to be fully contained by Wednesday. Severe to extreme fire danger remains in South Florida, according to the National Weather Service.

Minimum Flows and Levels (MFLs): As of May 10, eight sites in the Greater Everglades exceeded their MFL rules (see the Minimum Flows and Levels Status map and table; red dots on the MFL May 10 status map). These sites include Rotenberger WMA (Rotts) (new), Holeyland Wildlife Management Area (HoleyG), WCA-3A North (3A-2) (new), WCA-3A North (3A-NW), Northeast Shark Slough (NESRS-2), Central Shark Slough (NP-36) (new), the Marl wetlands west of Shark Slough (G-620), and Rocklands Marl Marsh (G-1502). Note: These eight sites are considered to be in Violation because they were in exceedance within their return frequency period. Additional sites in the Seasonal Outlook are identified as headed into Violation status if they go into Exceedance this dry season.

Six sites are near exceedance and violation (yellow dots on the MFL 5/10 Status map): WCA-3A Northeast (3A-NE), WCA-3A North (3A-3), WCA-3A Central (3A-4), WCA-3B (3BS1W1), Central Shark Slough (NP-33) and Taylor Slough (NP-67). Two others, Marl wetlands west (NP-201) and east (NP-38) of Shark Slough, are expected to be near Exceedance within thirty days (see the MFL Status table).

Everglades National Park (ENP) and Florida Bay

Rainfall: Rainfall was patchy last week across Everglades National Park (ENP) and Florida Bay, with all areas receiving some precipitation (see Raindar). Rainfall was heaviest in northern parts of the Park near Shark Slough and west towards Everglades City, and just upstream from Whitewater Bay.

- ENP station weekly cumulative precipitation range: 0.2 - 2.3 inches.
- 7 day spatially-averaged Raindar totals: 1.06 inches for ENP and 0.40 inches for the C-111 basin.

ENP Wetland Stage: Water levels dropped across most ENP wetlands except in the panhandle in southeastern ENP, where water levels increased. Rates of recession in other areas were dampened by rainfall (see ENP Water Levels). Water levels across ENP are between 0.2 – 0.8 feet below where they were a month ago. Below are the water levels for each station we monitor, including the change over the past week and 30 days. Note: District and Park staffs are in the process of verifying ground surface elevations. The water levels described below differ from those used for the SFWDAT.

Station	May 15 water level (feet)	Weekly change (feet)	30 day change (feet)
Shark River Slough (P33)	-0.41	-0.03	-0.55
ENP Panhandle (EVER6)	-0.49	+0.07	-0.17
Northern Taylor Slough (TSB)	-3.07	-0.21	-0.77
Southern Taylor Slough(CP)	+0.32	-0.02	-0.50

Florida Bay Salinity: Salinity continues to climb across Florida Bay. Most areas are still less than 5 psu (practical salinity units) above their seasonal average concentrations. The 30 day moving average salinity at the Taylor River platform, used for tracking the Florida Bay Minimum Flows and Levels Rule, measured 26.9 psu as of Sunday May 15, up from 24.4 psu on May 8. Conditions over the next two to three weeks will determine whether an MFL exceedance and violation will occur (30 day moving average concentration over 30 psu at Taylor River) this year. On average, salinity peaks in late May in these near-shore ecotone areas, coinciding with the average start to the rainy season. Daily mean concentrations at this gauge and from the Bay water currently moving up into the ponds is still running near average, around 30 psu, so if the rains arrive soon in sufficient quantity, salinity should decline thereafter. Compared to other areas of Florida Bay, Tarpon Bay East, downstream from Shark River Slough, continues to deviate the most from its average concentration, typically between 15 to 18 psu in mid-May. Figures are attached for three indicator stations (see ENP Salinity LM/WB and ENP Salinity MFL/TR). Data are also provided in the table below.

Area of Florida Bay	May 15 Salinity (psu)	Weekly Change (psu)
C-111 basin near-shore embayments (Long Sound)	34.5	+0.2
Taylor Slough near-shore embayments (Little Madeira Bay)	31.0	+0.5
Taylor Slough transition zones ponds (Taylor River)	30.2	+1.2
Northeastern Bay (Duck Key)	34.8	+0.6
Central near-shore embayments (McCormick Creek and Terrapin Bay)	42.4	+0.2
Central Bay (Whipray Basin)	42.3	+0.2
Shark River Slough transition zones ponds (Tarpon Bay East)	24.2	+4.2

Wildlife

The District conducted a survey of foraging wading birds last Friday (see Wading Bird Depth map). It is clear from the depths map that conditions are now extremely dry throughout the Everglades with pockets of water remaining only at the southern boundaries of each WCA. Birds continue to forage in these limited areas but flock sizes are now much reduced relative to a few weeks ago, suggesting that prey resources are diminishing.

Water Management Recommendations

The seasonal outlook remains for very dry conditions. Conditions by late May could be too dry to support successful foraging for nesting Snail Kites, Wood Storks, and other wading birds and their fledglings.

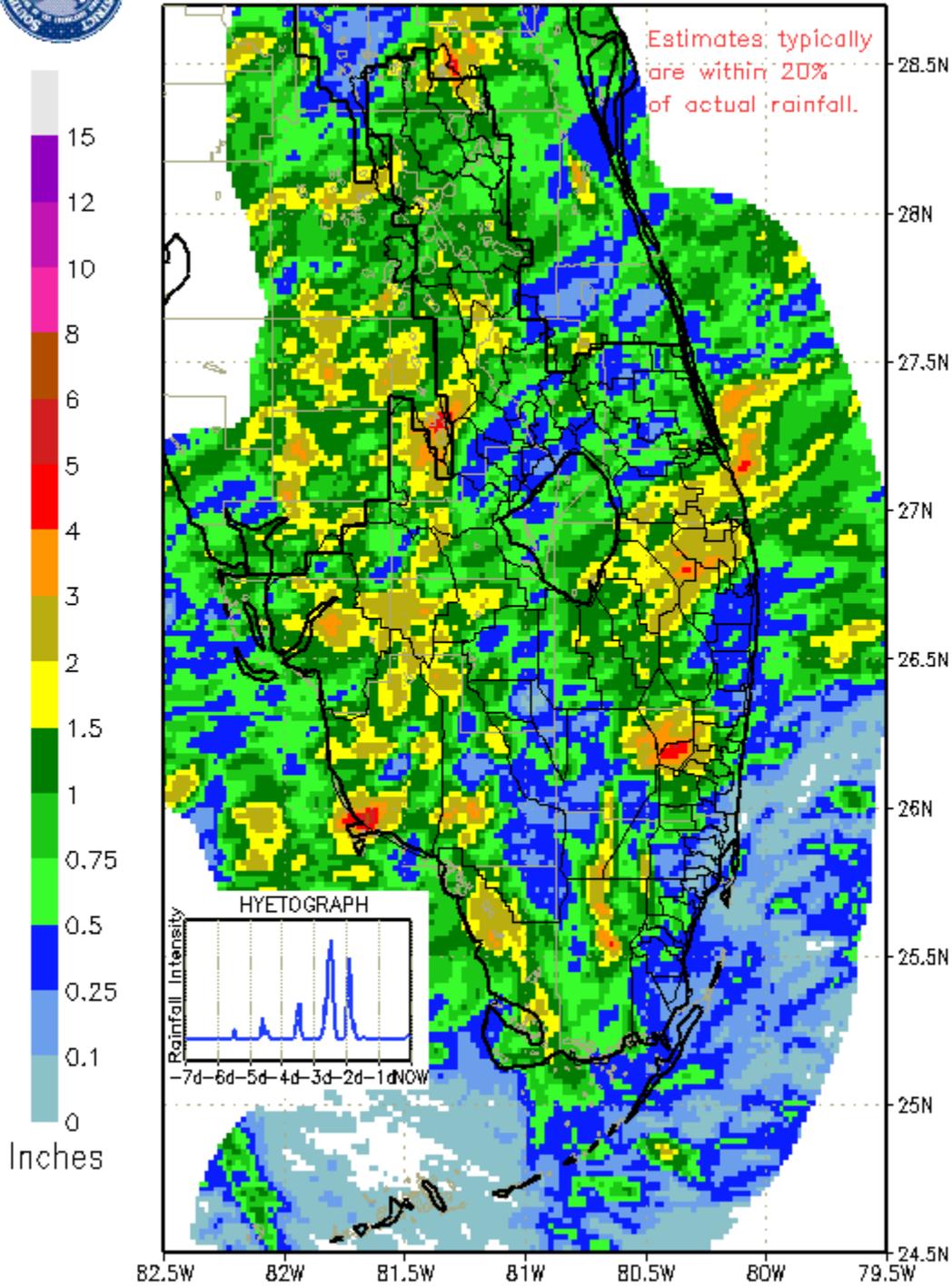
If there are further opportunities to move clean water into the conservation areas, particularly WCA-3A, such rehydration would be very welcome ecologically.

Raindar:



SFWMD RAINDAR 7-DAY RAINFALL ESTIMATES

FROM: 0515 EST, 05/10/2011 THROUGH: 0515 EST, 05/17/2011

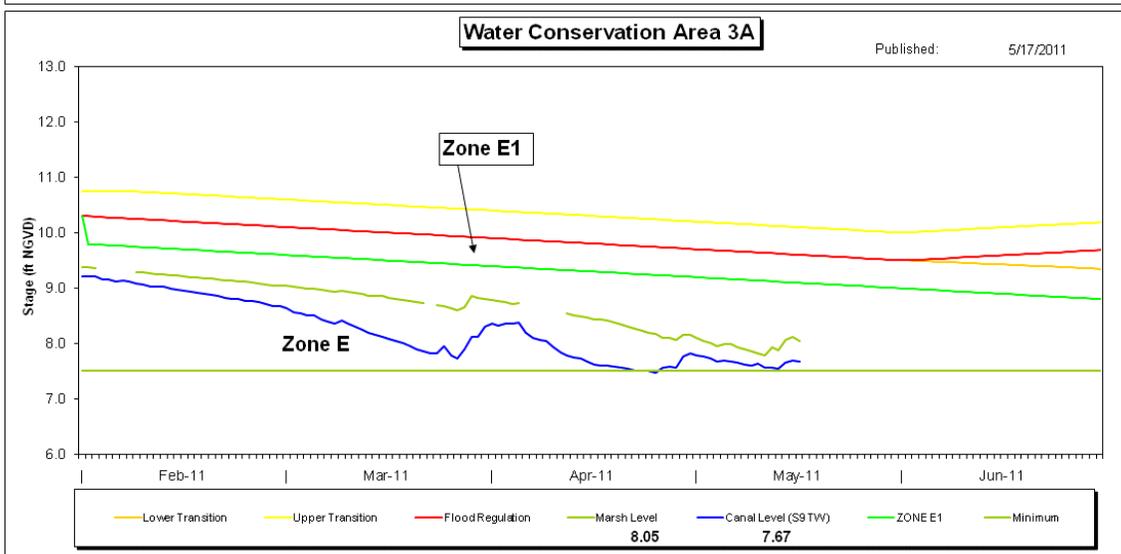
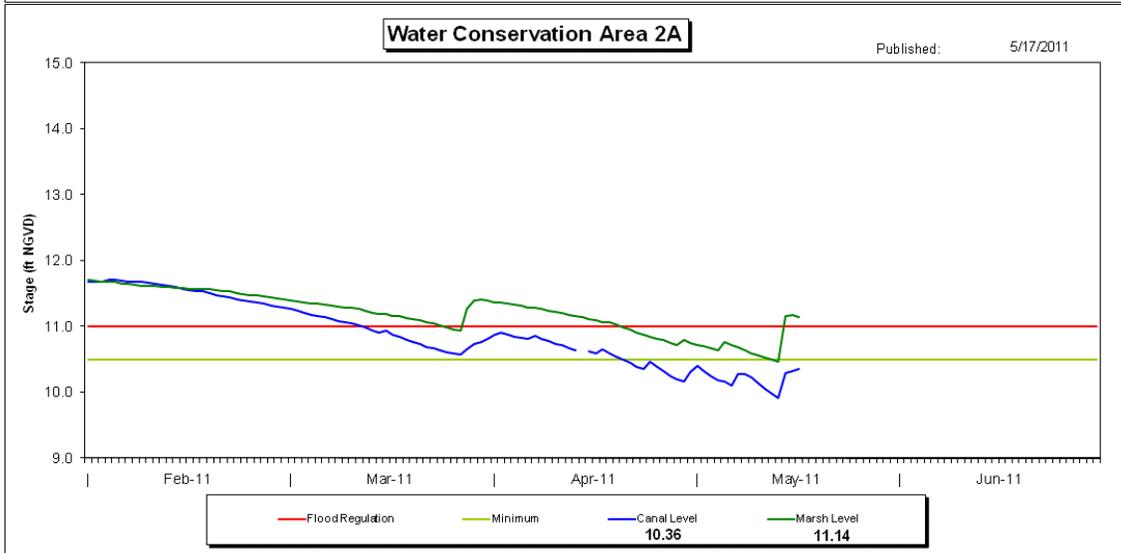
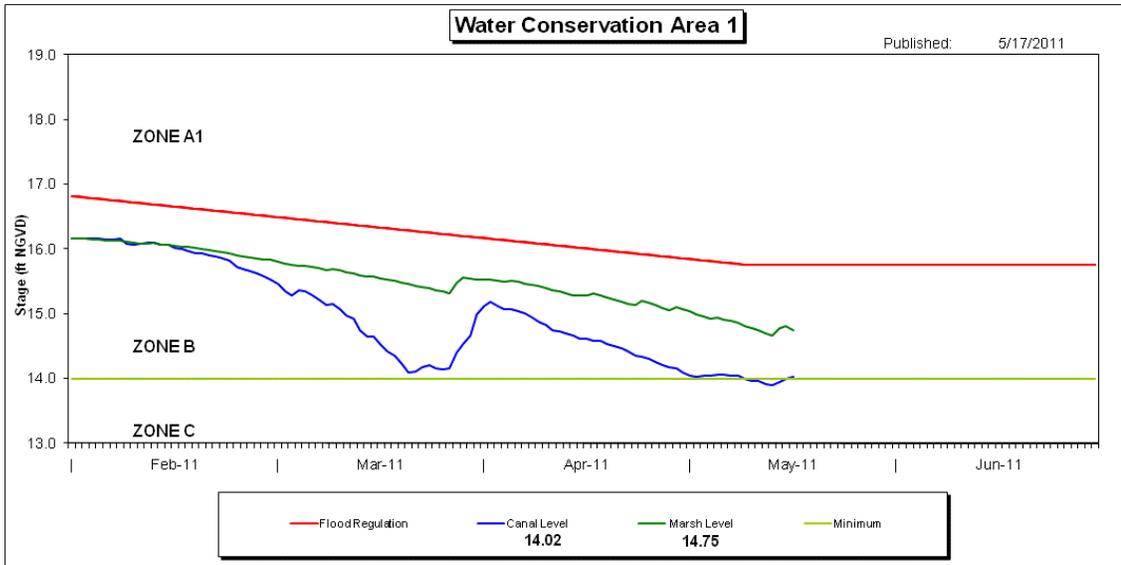


DISTRICT-WIDE RAINFALL ESTIMATE: 1.072"

WCA Stages (BG=below ground, Dry=gauge has bottomed out):

WCA and ENP Hydrology Data with Environmental Ratings																											
Area	Gage	Ground Elevation	Stage 12/7/10	Stage 12/14/10	Stage 12/21/10	Stage 12/28/10	Stage 1/4/11	Stage 1/11/11	Stage 1/18/11	Stage 1/25/11	Stage 2/1/11	Stage 2/8/11	Stage 2/15/11	Stage 2/22/11	Stage 3/1/11	Stage 3/8/11	Stage 3/15/11	Stage 3/22/11	Stage 3/29/11	Stage 4/5/11	Stage 4/12/11	Stage 4/19/11	Stage 4/26/11	Stage 5/3/11	Stage 5/10/11	Stage 5/17/11	Stage Change
WCA-1	1-7	15.4	16.53	16.48	16.47	16.43	16.39	16.38	16.34	16.29	16.30	16.25	16.18	16.12	16.04	15.97	15.91	15.80	15.87	15.80	15.68	15.58	15.44	15.24	15.04	14.98	-0.06
	1-9	14.7	16.48	16.41	16.38	16.32	16.27	16.23	16.18	16.14	16.13	16.07	16.04	15.97	15.89	15.86	15.78	15.68	15.67	15.72	15.63	15.55	15.48	15.39	15.27	15.19	-0.08
	1-8T		16.45	16.38	16.33	16.25	16.16	16.14	16.06	15.99	16.08	16.03	15.95	15.80	15.55	15.32	15.11	14.89	14.91	14.94	14.79	14.72	14.56	14.35	14.12	14.08	-0.04
WCA-2A	2-17	11.1	12.25	12.14	12.08	12.03	11.97	11.89	11.78	11.75	11.71	11.62	11.58	11.52	11.43	11.33	11.22	11.08	11.27	11.32	11.20	11.06	10.81	10.70	10.59	11.14	0.55
WCA-2B	99	6.8	10.31	10.18	10.13	10.01	9.88	9.77	9.71	9.63	9.63	9.51	9.40	9.26	9.10	8.93	8.73	8.49	8.43	8.17	7.91	7.58	7.14	6.98	6.65	Eqp	Eqp
	EDEN-13	6.7	8.84	8.64	8.59	8.47	8.35	8.27	8.23	8.15	8.13	8.02	7.91	7.80	7.66	7.51	7.39	7.27	7.28	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
WCA-3A	62	10.1	10.82	10.74	10.72	10.69	10.64	10.59	10.56	10.53	10.59	10.52	10.46	10.39	10.28	10.15	10.06	9.81	9.77	10.14	9.89	9.53	9.19	8.96	8.91	8.81	0.00
	63	9.08	9.86	9.77	9.74	9.68	9.61	9.53	9.49	9.45	9.45	9.39	9.33	9.24	9.16	9.08	8.99	8.84	8.83	9.13	9.07	8.83	8.55	8.41	8.41	8.41	0.00
	64	8.49	9.86	9.78	9.80	9.72	9.65	9.58	9.55	9.50	9.47	9.40	9.33	9.25	9.17	9.07	8.99	8.85	8.72	8.59	Eqp	8.20	7.93	7.92	7.72	7.86	0.14
	65	7.3	9.55	9.47	9.51	9.43	9.35	9.26	9.25	9.20	9.18	9.10	9.01	8.92	8.82	8.73	8.65	8.52	8.40	8.42	8.29	8.19	8.01	7.92	7.87	7.90	0.03
WCA-3B	76	6.32	7.52	7.48	7.52	7.48	7.45	7.41	7.42	7.39	7.38	7.34	7.31	7.27	7.23	7.18	7.14	7.08	7.07	7.00	6.84	6.61	6.33	6.61	6.31	6.02	-0.29
	71	6.52	7.78	7.73	7.80	7.74	7.69	7.69	7.66	7.65	7.63	7.56	7.51	7.45	7.39	7.32	7.30	7.21	7.13	7.08	6.94	6.78	6.44	6.20	5.96	5.81	-0.15
	SRS1	6.23	7.40	7.35	7.36	7.32	7.28	7.24	7.25	7.24	7.23	7.18	7.12	7.06	6.98	6.86	6.71	6.43	6.22	6.15	5.96	5.75	5.51	5.35	5.13	5.08	-0.05
ENP	NESRS2	5.62	6.69	6.61	6.59	6.52	6.44	6.37	6.38	6.36	6.33	6.24	6.17	6.06	5.88	5.69	5.38	5.06	4.82	5.33	4.78	Dry	Dry	Dry	Dry	Dry	Dry
			1 week stage change 12/7/10	1 week stage change 12/14/10	1 week stage change 12/21/10	1 week stage change 12/28/10	1 week stage change 1/4/11	1 week stage change 1/11/11	1 week stage change 1/18/11	1 week stage change 1/25/11	1 week stage change 2/1/11	1 week stage change 2/8/11	1 week stage change 2/15/11	1 week stage change 2/22/11	1 week stage change 3/1/11	1 week stage change 3/8/11	1 week stage change 3/15/11	1 week stage change 3/22/11	1 week stage change 3/29/11	1 week stage change 4/5/11	1 week stage change 4/12/11	1 week stage change 4/19/11	1 week stage change 4/26/11	1 week stage change 5/3/11	1 week stage change 5/10/11	1 week stage change 5/17/11	Reces-sion rate
WCA-1	1-7	-0.08	-0.05	-0.01	-0.04	-0.04	-0.01	-0.04	-0.05	-0.04	-0.01	-0.05	-0.07	-0.06	-0.08	-0.07	-0.06	-0.11	0.07	-0.07	-0.10	-0.10	-0.14	BG	BG	-0.06	na
	1-9	-0.09	-0.07	-0.03	-0.06	-0.05	-0.04	-0.04	-0.05	-0.04	0.00	-0.06	-0.03	-0.07	-0.08	-0.03	-0.08	-0.10	-0.01	0.05	-0.09	-0.08	-0.10	-0.09	-0.12	-0.08	Good
	1-8T	-0.10	-0.07	-0.05	-0.08	-0.09	-0.02	-0.08	-0.07	0.09	-0.05	-0.08	-0.15	-0.25	-0.23	-0.21	-0.22	-0.22	0.02	0.03	-0.15	-0.07	-0.16	-0.21	-0.23	-0.04	Good
WCA-2A	2-17	-0.18	-0.11	-0.06	-0.05	-0.06	-0.08	-0.11	-0.03	-0.04	-0.09	-0.04	-0.06	-0.09	-0.10	-0.11	-0.14	0.19	0.05	-0.12	BG	BG	BG	BG	-0.11	0.55	Poor
WCA-2B	99	-0.16	-0.13	-0.05	-0.12	-0.13	-0.11	-0.06	-0.08	0.00	-0.12	-0.11	-0.14	-0.16	-0.17	-0.20	-0.24	-0.06	-0.26	-0.26	-0.33	-0.44	-0.16	-0.33	Eqp	na	
	EDEN-13	-0.10	-0.20	-0.05	-0.12	-0.12	-0.08	-0.04	-0.08	-0.02	-0.11	-0.11	-0.14	-0.15	-0.12	-0.12	0.01	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	na
WCA-3A	62	-0.10	-0.08	-0.02	-0.03	-0.05	-0.05	-0.03	-0.03	0.06	-0.07	-0.06	-0.07	-0.11	-0.13	-0.09	-0.25	-0.04	0.37	-0.25	BG	BG	BG	BG	BG	0.00	na
	63	-0.10	-0.09	-0.03	-0.06	-0.07	-0.08	-0.04	-0.04	0.00	-0.06	-0.06	-0.09	-0.08	-0.08	-0.09	-0.15	-0.01	0.30	-0.06	BG	BG	BG	BG	BG	0.00	na
	64	-0.10	-0.08	0.02	-0.08	-0.07	-0.07	-0.03	-0.05	-0.03	-0.07	-0.07	-0.08	-0.08	-0.10	-0.08	-0.14	-0.13	-0.13	na	BG	BG	BG	BG	BG	0.14	na
	65	-0.08	-0.08	0.04	-0.08	-0.08	-0.09	-0.01	-0.05	-0.02	-0.08	-0.09	-0.09	-0.10	-0.09	-0.08	-0.13	-0.12	0.02	-0.13	-0.10	-0.18	-0.09	-0.05	0.03	0.03	Fair
WCA-3B	76	-0.07	-0.04	0.04	-0.04	-0.03	-0.04	0.01	-0.03	-0.01	-0.04	-0.03	-0.04	-0.04	-0.05	-0.04	-0.06	-0.01	-0.07	-0.16	-0.23	-0.28	0.28	BG	BG	-0.29	na
	71	-0.06	-0.05	0.07	-0.06	-0.05	0.00	-0.03	-0.01	-0.02	-0.07	-0.05	-0.06	-0.06	-0.07	-0.02	-0.02	-0.08	-0.05	-0.14	-0.16	BG	BG	BG	BG	-0.15	na
	SRS1	-0.08	-0.05	0.01	-0.04	-0.04	-0.04	0.01	-0.01	-0.01	-0.05	-0.06	-0.06	-0.08	-0.12	-0.15	-0.28	-0.21	-0.07	-0.19	BG	BG	BG	BG	BG	-0.05	na
ENP	NESRS2	-0.11	-0.08	-0.02	-0.07	-0.08	-0.07	0.01	-0.02	-0.03	-0.09	-0.07	-0.11	-0.18	-0.19	-0.31	-0.32	-0.24	0.51	-0.55	Dry	Dry	Dry	Dry	Dry	Dry	na
			Depth 12/7/10	Depth 12/14/10	Depth 12/21/10	Depth 12/28/10	Depth 1/4/11	Depth 1/11/11	Depth 1/18/11	Depth 1/25/11	Depth 2/1/11	Depth 2/8/11	Depth 2/15/11	Depth 2/22/11	Depth 3/1/11	Depth 3/8/11	Depth 3/15/11	Depth 3/22/11	Depth 3/29/11	Depth 4/5/11	Depth 4/12/11	Depth 4/19/11	Depth 4/26/11	Depth 5/3/11	Depth 5/10/11	Depth 5/17/11	Forag-ing water depths
WCA-1	1-7	1.13	1.08	1.07	1.03	0.99	0.98	0.94	0.89	0.90	0.85	0.78	0.72	0.64	0.57	0.51	0.40	0.47	0.40	0.28	0.18	0.04	-0.16	-0.36	-0.42	Poor	
	1-9	1.78	1.71	1.68	1.62	1.57	1.53	1.48	1.44	1.43	1.37	1.34	1.27	1.19	1.16	1.08	0.98	0.97	1.02	0.93	0.85	0.78	0.69	0.57	0.49	Good	
	1-8T																										
WCA-2A	2-17	1.15	1.04	0.98	0.93	0.87	0.79	0.68	0.65	0.61	0.52	0.48	0.42	0.33	0.23	0.12	-0.02	0.17	0.22	0.10	-0.04	-0.29	-0.40	-0.51	0.04	Good	
WCA-2B	99	3.51	3.38	3.33	3.21	3.08	2.97	2.91	2.83	2.83	2.71	2.60	2.46	2.30	2.13	1.93	1.69	1.63	1.37	1.11	0.78	0.34	0.18	-0.15	Eqp	na	
	EDEN-13	2.14	1.94	1.89	1.77	1.65	1.57	1.53	1.45	1.43	1.32	1.21	1.10	0.96	0.81	0.69	0.57	0.58	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Poor
WCA-3A	62	0.72	0.64	0.62	0.59	0.54	0.49	0.46	0.43	0.49	0.42	0.36	0.29	0.18	0.05	-0.04	-0.29	-0.33	0.04	-0.21	-0.57	-0.91	-1.15	-1.19	-1.19	Poor	
	63	0.78	0.69	0.66	0.60	0.53	0.45	0.41	0.37	0.37	0.31	0.25	0.16	0.08	0.00	-0.09	-0.24	-0.25	0.05	-0.01	-0.25	-0.53	-0.67	-0.67	-0.67	Poor	
	64	1.37	1.29	1.31	1.23	1.16	1.09	1.06	1.01	0.98	0.91	0.84	0.76	0.68	0.58	0.50	0.36	0.23	0.10	na	-0.29	-0.56	-0.57	-0.77	-0.63	Poor	
	65	2.25	2.17	2.21	2.13	2.05	1.96	1.95	1.90	1.88	1.80	1.71	1.62	1.52	1.43	1.35	1.22	1.10	1.12	0.99	0.89	0.71	0.62	0.57	0.60	Good	
WCA-3B	76	1.20	1.16	1.20	1.16	1.13	1.09	1.10	1.07	1.06	1.02	0.99	0.95	0.91	0.86	0.82	0.76	0.75	0.68	0.52	0.29	0.01	0.29	-0.01	-0.30	Poor	
	71	1.26	1.21	1.28	1.22	1.17	1.17	1.14	1.13	1.11	1.04	0.99	0.93	0.87	0.80	0.78	0.69	0.61	0.56	0.42	0.26	-0.08	-0.32	-0.56	-0.71	Poor	
SRS1	1.17	1.12	1.13	1.09	1.05	1.01	1.02	1.01	1.00	0.95	0.89	0.83	0.75	0.63	0.48	0.20	-0.01	-0.08	-0.27	-0.48							

WCA Regulation Schedules:

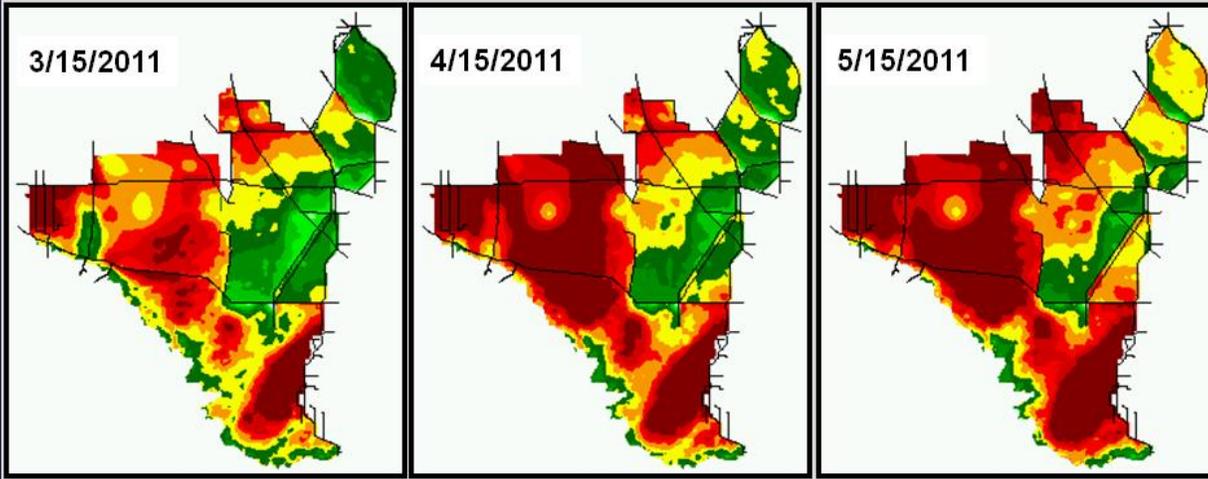


Water Depths:

SOUTH FLORIDA WATER MANAGEMENT DISTRICT



SFWDAT Water Depth Monthly Snapshots

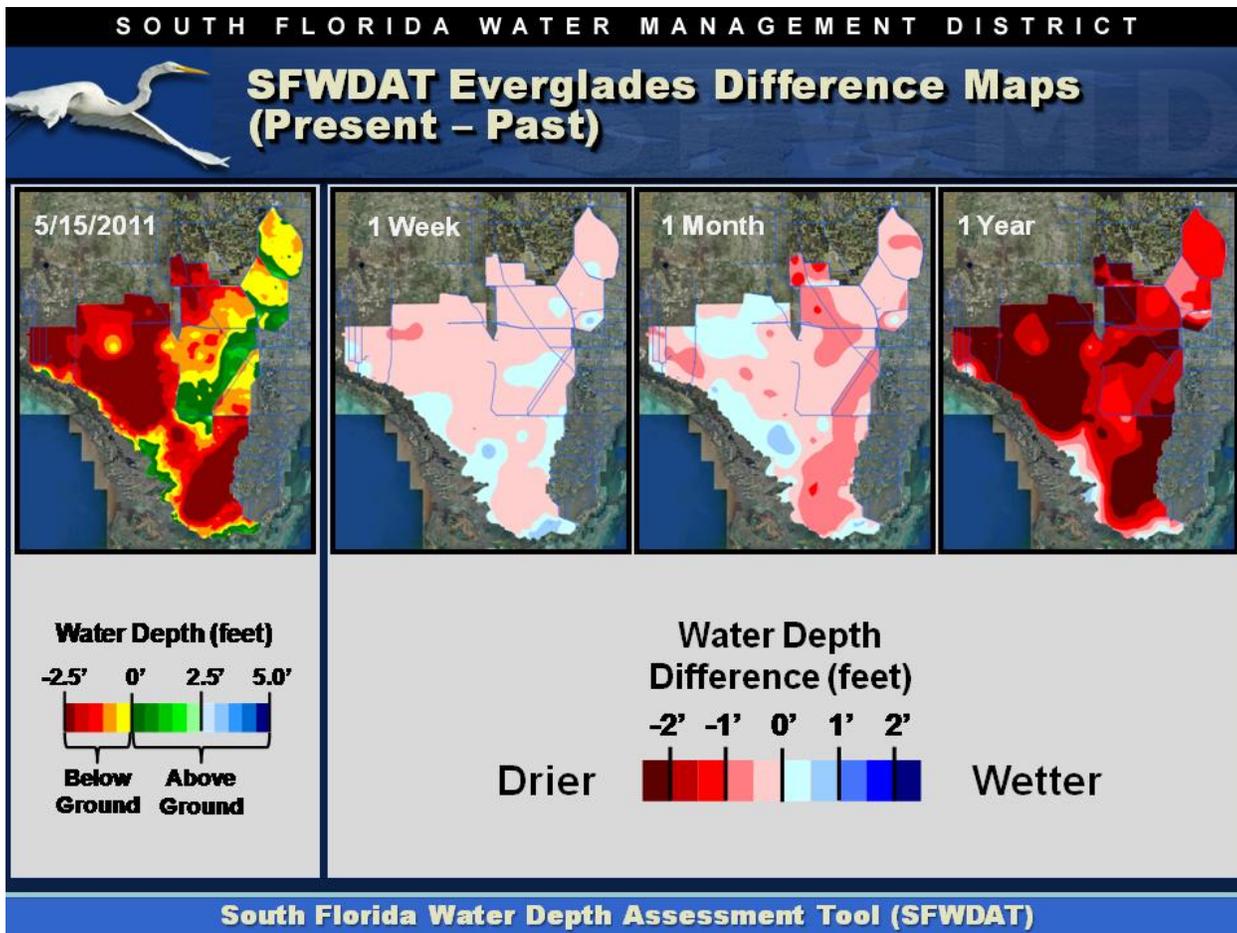


Water Depth (feet)



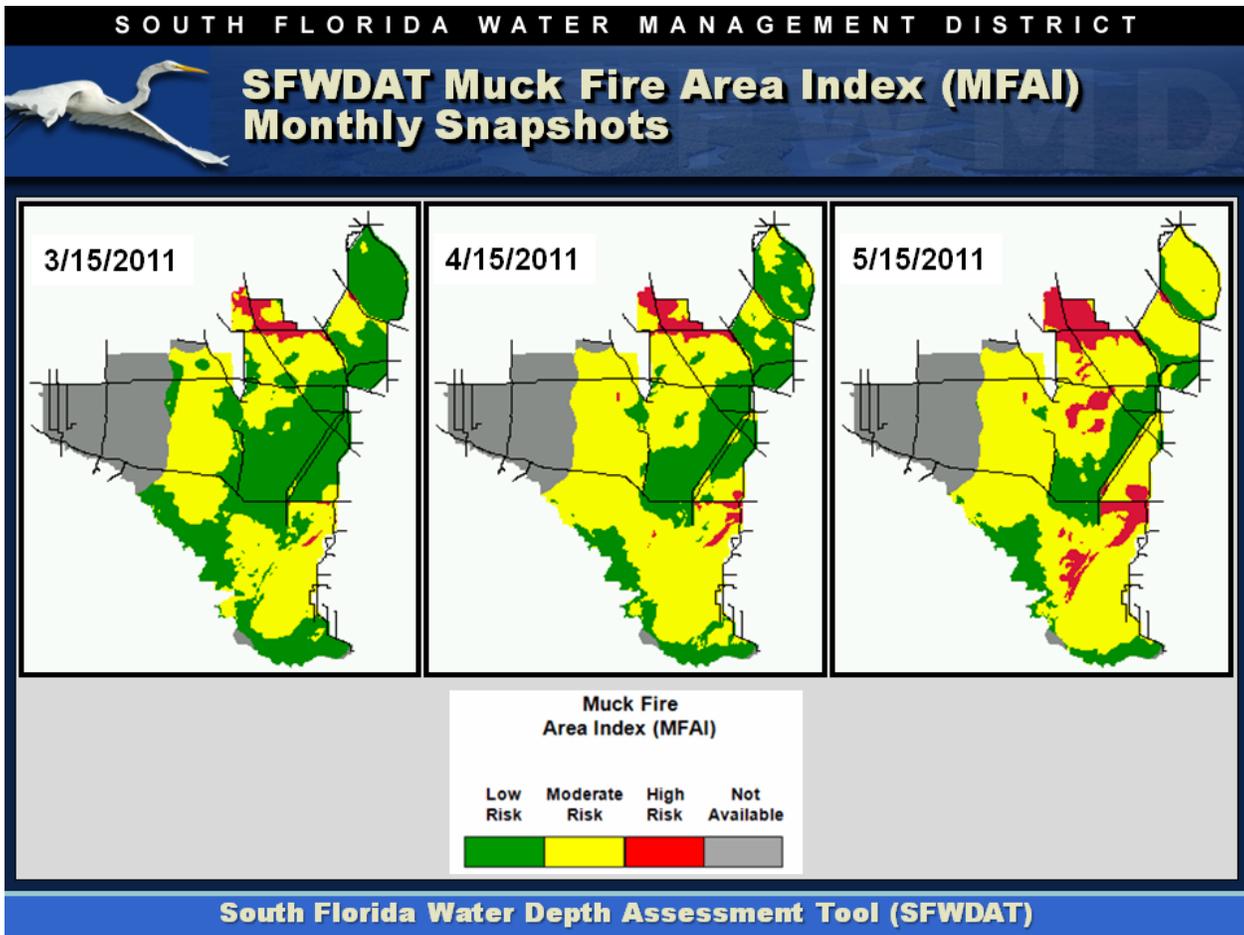
South Florida Water Depth Assessment Tool (SFWDAT)

Depth Differences:



South Florida Water Depth Assessment Tool (SFWDAT)

Muck Fire Hazard:

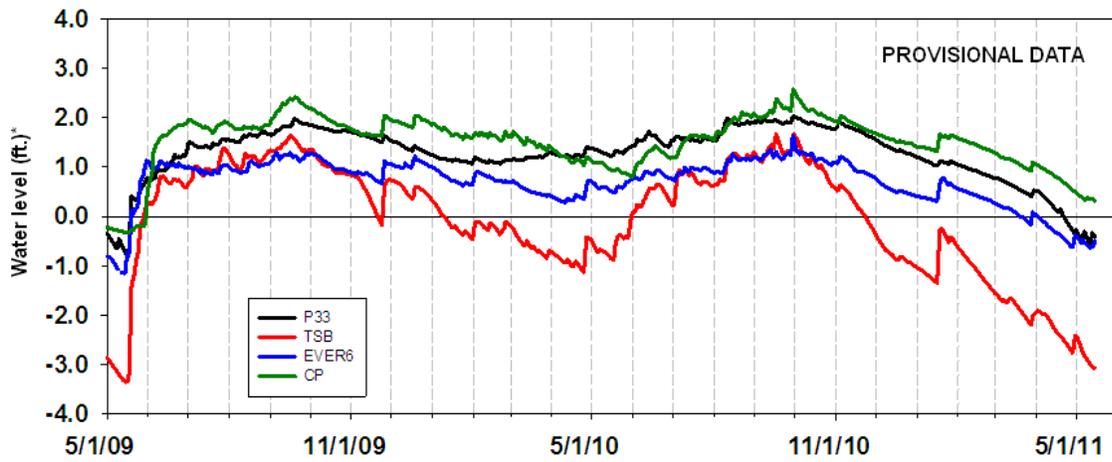


Jarhead Fire in Big Cypress:



ENP Water Levels:

Water Levels at ENP Wetland Monitoring Stations

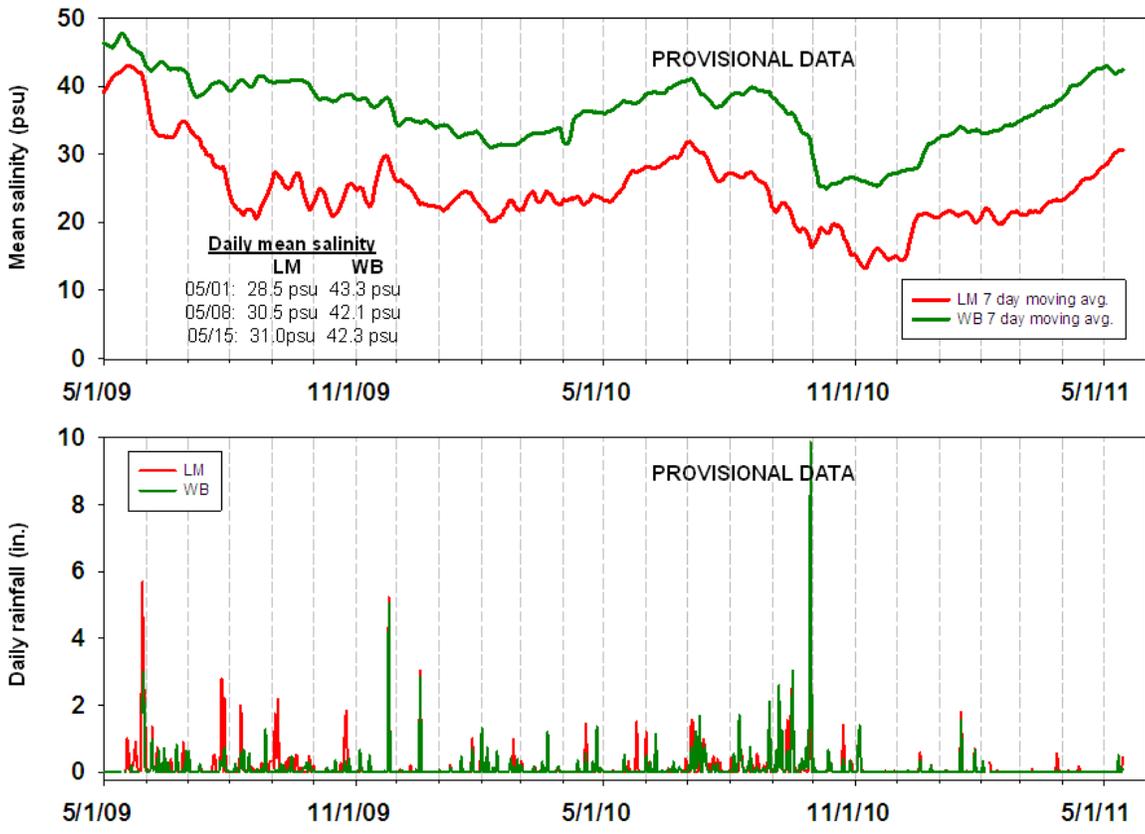


DAILY MEAN WATER LEVEL (ft)				
Date	P33	TSB	EVER6	CP
5/01	-0.27	-2.43	-0.40	0.49
5/08	-0.37	-2.85	-0.55	0.33
5/15	-0.41	-3.07	-0.49	0.32

*note: calculated using ground surface elevation values (NAVD29) from ENP

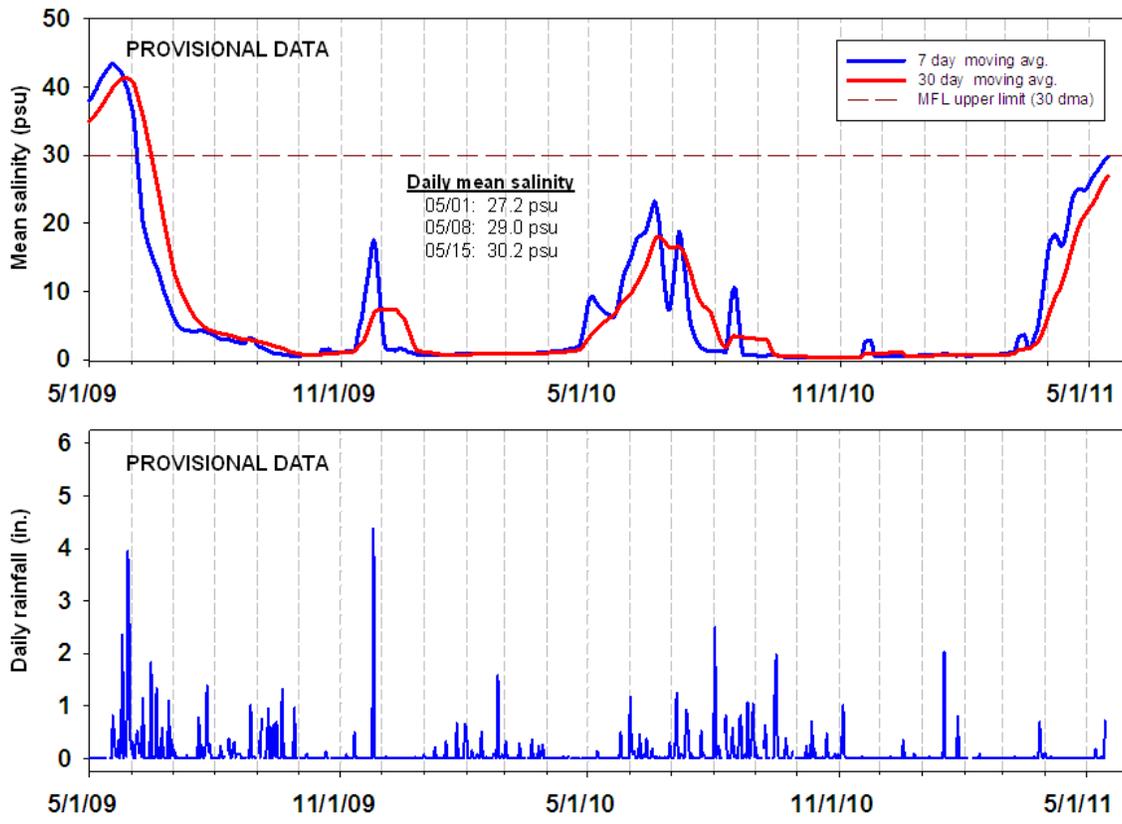
ENP LM/WB Salinity:

Salinity and Rainfall in Little Madeira Bay (station LM) and Whipray Basin (station WB)

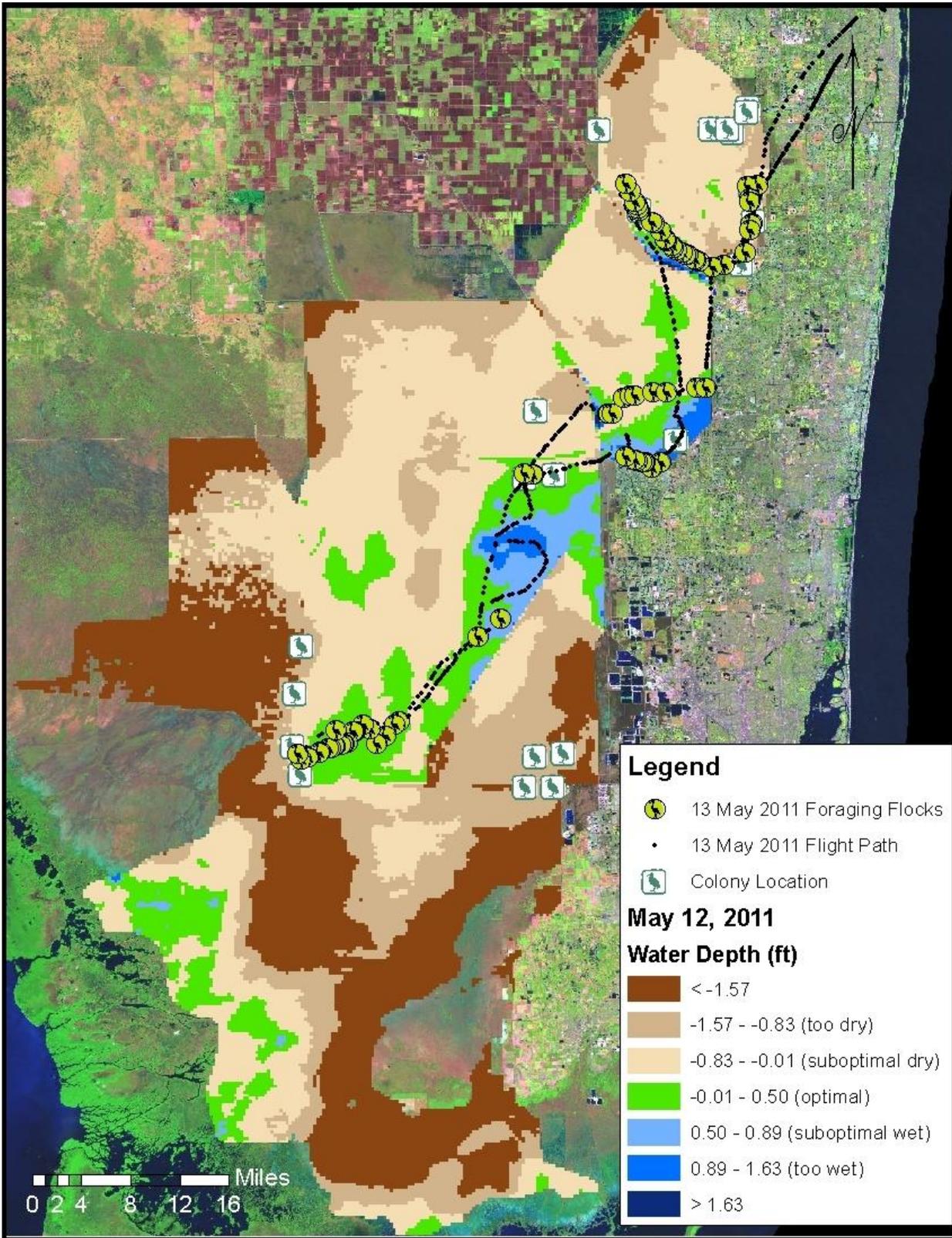


ENP MFL/TR Salinity:

Salinity, Florida Bay MFL Tracking, and Rainfall in Taylor River Ponds (station TR)



Wading Bird Depths Map:



STATUS OF MINIMUM FLOWS AND LEVELS

The SFWMD has established many Minimum Flows and Levels throughout the South Florida ecosystem. The table below, updated every two weeks, provides the status of a portion of the MFLs across the regions. MFLs within the Everglades, Lake Okeechobee, and the Caloosahatchee River that are part of or served by the C&SF Project were not achieved immediately upon adoption of the MFL rule. This is largely because of the lack of adequate regional storage, including U.S. Army Corps of Engineer's regulation schedule effects, or ineffective water drainage and distribution infrastructure. This means meeting the MFL is dependent upon implementation of a recovery strategy, which is specific to each water body and can include future construction of storage and distribution infrastructure and associated operational changes.

The categories shown on the table are defined as follows:

Status (May 10, 2011)

Provides a present status of the MFL exceedance criteria using the best available information. There are three status designations that are shaded accordingly.

Compliant (Green): None of the MFL criteria are exceeded

Near Exceedance (Yellow): one of the mfl criteria are exceeded; e.g. duration but not depth, concentration but not duration

Exceedance (Red): the mfl criteria are presently exceeded

30-day Outlook

Provides a forecasted outlook of MFL exceedances for the next 30 days based on simple trend projections (e.g. graph trend extension over the next 30 days). There are three status designations that are shaded accordingly.

Compliant (Green): None of the MFL criteria would likely be exceeded within the next 30 days

Near Exceedance (Yellow): one of the mfl criteria are likely to be exceeded within the next 30 days; e.g. duration but not depth, concentration but not duration

Exceedance (Red): the mfl criteria are likely to be exceeded within the next 30 days.

Seasonal Outlook

Provides a forecasted outlook of MFL exceedances and violations relative to the present water year. There are four status designations that are shaded accordingly.

Compliance Probable (Green): No exceedance is likely due to the current trend and position relative to historical long-term trends

Exceedance Probable (Yellow): *A exceedance is likely due to the current trend and position relative to historical long-term trends, but the last exceedance date is beyond the return frequency date window (aligns with date of last exceedance column).*

Violation Probable (Orange): A violation is likely based on the current trend and position relative to historical long-term trends, and the last exceedance date is within the return frequency date window (aligns with date of last exceedance column).

Violation (Red): A violation is presently occurring or has occurred within the present water year

Date of Last Exceedance

Provides the last exceedance date if there has been an exceedance since inception of the MFL or if the MFL is presently in exceedance. The shading denotes the proximity of the exceedance date with respect to the return frequency of the MFL violation criteria such that:

Green: either there are no exceedances since inception or the last exceedance date is beyond the return frequency window for a violation with the present date; should an exceedance occur there would not be a violation.

Yellow: the last exceedance date is within the return frequency window for a violation with the present date; should an exceedance occur there would be a violation

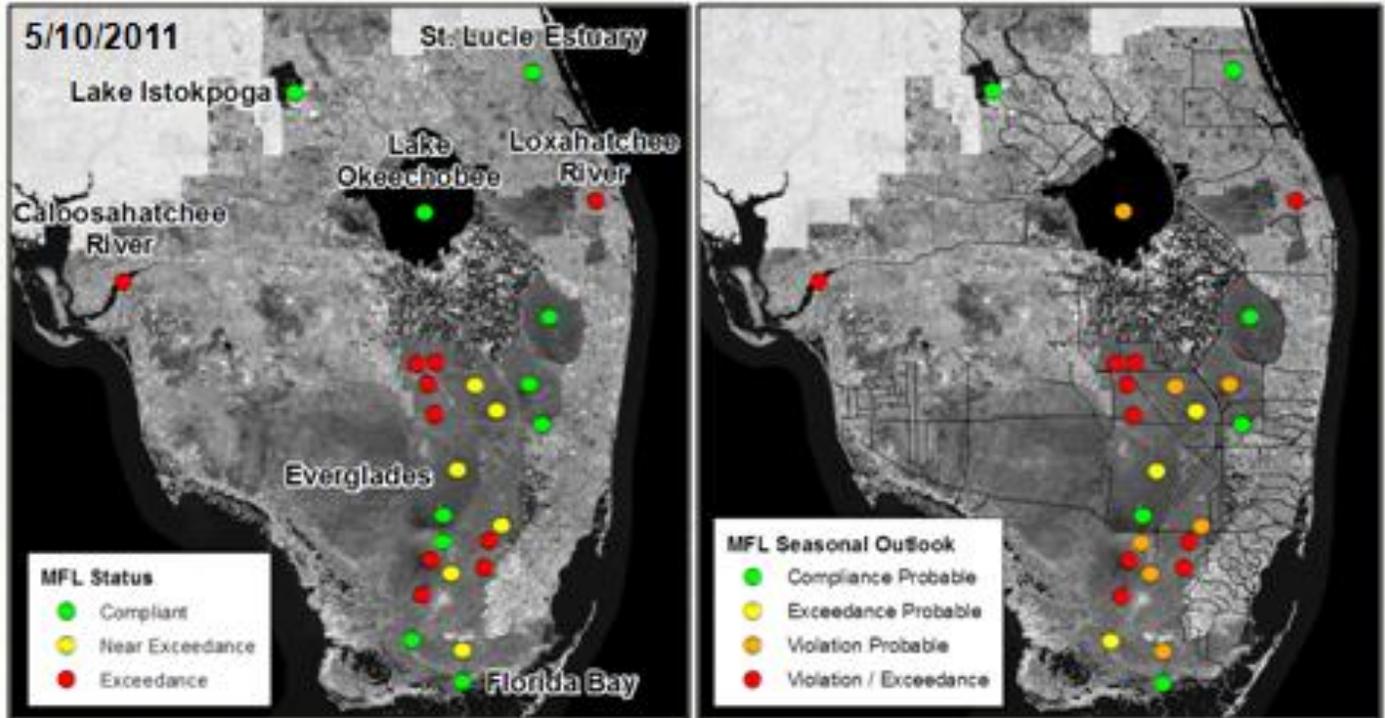
Red: Presently in exceedance

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

MFL Status and Seasonal Outlook

	Status (5/10/2011)	30-day Outlook	Seasonal Outlook	Date of Last Exceedance
Lake Istokpoga	Compliant	Compliant	Compliance Probable	None
St. Lucie Estuary	Compliant	Compliant	Compliance Probable	None
Lake Okeechobee	Compliant	Compliant	Violation Probable	8/3/2008
Caloosahatchee River	Exceedance	Exceedance	Violation	Present Exceedance
Northwest Fork of the Loxahatchee River	Exceedance	Exceedance	Violation	Present Exceedance
Everglades: WCA-1 (1-7)	Compliant	Compliant	Compliance Probable	None
Everglades: WCA-2A (2A-17)	Compliant	Exceedance	Violation Probable	5/18/2009
Everglades: WCA-2B (SITE_99)	Compliant	Compliant	Compliance Probable	7/1/2007
Everglades: WCA-3A North (3A-NE)	Near Exceedance	Exceedance	Violation Probable	5/25/2009
Everglades: WCA-3A North (3A-NW)	Exceedance	Exceedance	Violation	Present Exceedance
Everglades: WCA-3A North (3A-2)	Exceedance	Exceedance	Violation	Present Exceedance
Everglades: WCA-3A North (3A-3)	Near Exceedance	Exceedance	Exceedance Probable	6/1/2007
Everglades: WCA-3A Central (3A-4)	Near Exceedance	Exceedance	Exceedance Probable	None
Everglades: WCA-3A South (3A-28)	Compliant	Compliant	Compliance Probable	None
Everglades: WCA-3B (3BS1W1)	Near Exceedance	Exceedance	Violation Probable	5/18/2009
Everglades: Rotenberger WMA (Rotts)	Exceedance	Exceedance	Violation	Present Exceedance
Everglades: Holeyland WMA (HoleyG)	Exceedance	Exceedance	Violation	Present Exceedance
Everglades: NE Shark Slough (NESRS-2)	Exceedance	Exceedance	Violation	Present Exceedance
Everglades: Central Shark Slough (NP-33)	Near Exceedance	Exceedance	Violation Probable	5/17/2009
Everglades: Central Shark Slough (NP-36)	Exceedance	Exceedance	Exceedance	Present Exceedance
Everglades: Marl wetlands east of Shark Slough (NP-38)	Compliant	Near Exceedance	Exceedance Probable	None
Everglades: Marl wetlands west of Shark Slough (NP-201)	Compliant	Near Exceedance	Violation Probable	5/29/2009
Everglades: Marl wetlands west of Shark Slough (G-620)	Exceedance	Exceedance	Violation	Present Exceedance
Everglades: Rockland marl marsh (G-1502)	Exceedance	Exceedance	Violation	Present Exceedance
Everglades: Taylor Slough (NP-67)	Near Exceedance	Exceedance	Violation Probable	5/18/2009
Florida Bay	Compliant	Compliant	Compliance Probable	6/15/2009

MFL Status and Seasonal Outlook



MEMORANDUM

TO: Susan Sylvester, Director, Operations Control and Hydro Data Management Department

THROUGH: Dean Powell, Deputy Director, Intergovernmental Programs Department

FROM: SFWMD Staff Water Supply Advisory Team

DATE: May 17, 2011

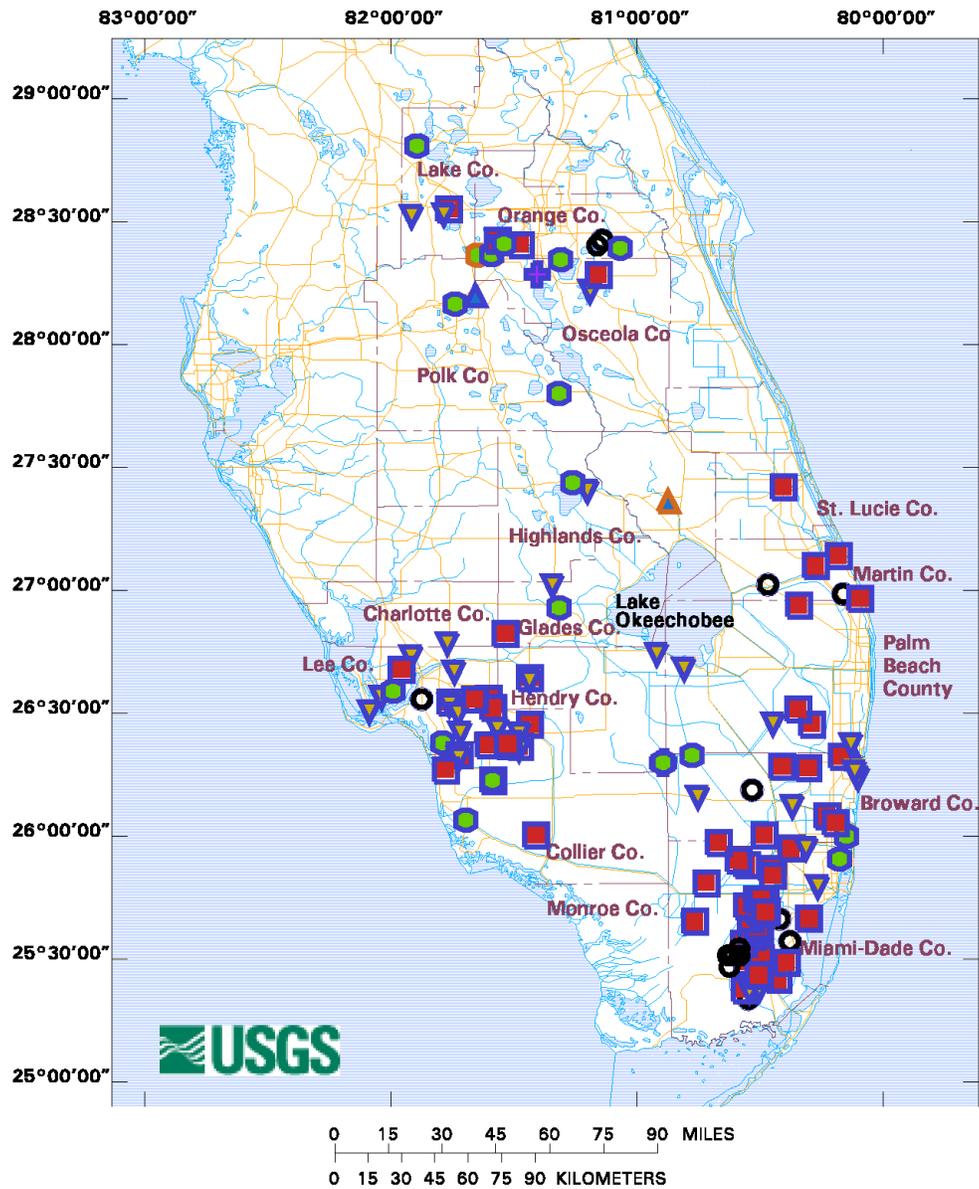
SUBJECT: Water Supply Report

District-wide Conditions

Groundwater level changes were varied across the District relative to last week's levels. United States Geological Survey (USGS) real-time wells in the Kissimmee Basin have the highest water levels in the District, with about half of the stations at their median water levels and the rest between the lowest 10th and the lowest 30th percentile. Stages in the Upper East Coast (UEC) canals C-23, C-24 and C-25 are at 17.23, 17.68, and 15.79 ft NGVD, respectively. Groundwater levels in the UEC remain in the lowest 10th percentile for their periods of record despite rises in water levels in some USGS wells. Biscayne aquifer water levels rose over the week in wells in the northern part of Lower East Coast (LEC) and dropped in the south. LEC groundwater elevations are well below average (about three-quarters in the lowest 10th percentile and the rest varying from the lowest 10th to 30th percentile to median) for this time of year. Groundwater level changes were varied in the LWC. About two-thirds of the LWC Surficial aquifer wells are in the lowest 10th to 30th percentile. Most of the Lower Tamiami aquifer wells are in the lowest 10th percentile, with most of the rest at median levels. Despite gains in water levels this week, about two-thirds of Sandstone aquifer wells remain in the lowest 10th percentile for this time of year. Most of the Mid-Hawthorn aquifer wells in the LWC are at the lowest 10th to the lowest 30th percentile levels.

Figure 1 is a USGS map showing current conditions developed from a 7-day running average of daily recorded water levels compared to the statistical distribution of daily water levels for the period of record for selected sites in southern Florida.

PROVISIONAL DRAFT -- Subject to Revision



- | | |
|--|--|
| <ul style="list-style-type: none">  Rivers and canals  Roads and highways  County boundaries  Telemetry site | <p>Water level compared to historical data, without trend analysis:</p> <ul style="list-style-type: none">  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 May 17, 2011.**

Figure 1. Current Water-level Conditions in South Florida (source: USGS, http://www.sflorida.er.usgs.gov/ddn_data/index.html)

Water Supply Technical Input to LORS2008

The Palmer Index for Lake Okeechobee (LOK) Tributary Conditions is -1.94, in the “dry” classification this week, leaving it in the “medium” risk category. The LOK Stage for the next two months is projected to be in the Water Shortage Management Band; therefore the risk category to water supply remains “high.” The LOK Seasonal Net Inflow Forecast is projected as “normal to extremely wet” with “low” risk to water supply. The LOK Multi-Seasonal Net Inflow Forecast is projected as “normal” and is in the “medium” risk category (yellow) due to lake stage predictions. The Climate Prediction Center’s Precipitation Outlook is projected as “normal” for both 1 month and 3 months, and is in the “low” risk category. Stages in Water Conservation Areas 1, 2A, and 3A have dropped below line 2, remaining in the “high” risk category. LEC Service Areas 1, 2, and 3 remain in the “high” risk category because of regionally low groundwater levels. **Figure 2** summarizes the water supply risk indicators.

LORS2008 Implementation on 05/16/2011 (ENSO La Niña Condition):

Water Supply Department Technical Input

Water Supply Outlook:

District wide, Raindar rainfall 1.08” for the week ending 05/17/2011. Lake stage on 05/16/2011 is 10.64 ft, down 0.11 ft from last week.

The updated May 2011 SFWMM Position Analysis [percentile graph](#) and [tracking chart](#) for Lake Okeechobee show that the lake stage is in the Water Shortage Management Band.

The LORS2008 tributary [indices](#) are classified as **Dry**. The PDSI indicates dry condition and the LONIN is dry. The classification is based on the wetter of the two.

Water Supply Risk Evaluation

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	-1.94 (Dry)	M
	CPC Precipitation Outlook	1 month: Normal	L
		3 months: Normal	L
	LOK Seasonal Net Inflow Forecast	2.70 ft (Normal to Extremely Wet)	L
	LOK Multi-Seasonal Net Inflow Forecast	2.22 ft (Normal)	M
WCAs	WCA 1: Site 1-8C	Below Line 2 (14.00 ft)	H
	WCA 2A: Site S-11C HW	Below Line 2 (10.35 ft)	H
	WCA-3A: S333 HW	Below Line 2 (7.54 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

Note: the LORS2008 tributary indices are different from the indices from the latest Adaptive Protocol for Lake Okeechobee presented in the table

Figure 2. Water Supply Risk Indicators

MEMORANDUM

TO: Tommy Strowd, Interim Executive Director
Ken Ammon, Deputy Executive Director
Deena Reppen, Deputy Executive Director

FROM: Susan Sylvester, Director, Operations and Hydro Data Management Dept.
Linda Lindstrom, Director, Restoration Sciences Dept.
Dean Powell, Deputy Director, Water Supply Management Dept.

DATE: May 19, 2011

SUBJECT: Operational Position Statement for the Week of May 17 – May 23, 2011

The U.S. Army Corps of Engineers (USACE) is responsible for managing Lake Okeechobee water levels and makes operational decisions about whether to retain water or release water based on their regulation schedule release guidance. The USACE makes this decision taking into account the best available science and data provided by its staff and a variety of partners, which includes the South Florida Water Management District (SFWMD).

The SFWMD team has discussed the system wide environmental conditions, the water supply conditions, and have evaluated the overall status of the water management system. Detailed reports are available at the SFWMD's [Operational Planning](#) internet page.

Weather and Climate

Rainfall during the past week totaled 1.08 inches district wide. Rainfall during the past 30 days totaled 2.44 inches (77% of average). Water supply releases continue due to lack of sufficient rainfall. The SFWMD precipitation outlook for the next ten days is below-average with low confidence. The CPC precipitation outlook for May and for the May-June-July period shows equal chances of normal, above-normal, and below-normal rainfall.

Lake Okeechobee Stage and Regulation Schedule

The May 17, 2011 Lake Okeechobee stage reported by the USACE was 10.59 feet NGVD. The lake stage decreased about 0.1 feet during the past week; the stage is about one foot lower than it was a month ago and about 4 feet lower than a year ago. The current stage is about 2.7 feet lower than the historical average for this date.

The Lake Okeechobee stage fell into the Water Shortage Band of the 2008-LORS on Friday, March 18th. Due to late March rainfall, the stage rose above the Water Shortage Band on April 4th. The stage fell back into the Water Shortage band on April 29th. The current stage is about 0.1 feet below the top of the Water Shortage Band and is falling at a faster rate than that of the Water Shortage Band. Water shortage restrictions remain in effect. The USACE's Water Control Plan for Lake Okeechobee and the EAA defers to the SFWMD's Water Shortage Plan for operations in the Water Shortage Band. "Operations in this band are governed by the SFWMD's Lake Okeechobee Water Shortage Management (LOWSM) Plan. The goal of this band is to manage existing water supplies contained within Lake Okeechobee in accordance with SFWMD rules and guidance." (p7-24, sec 7-08.a.).

Water Supply Risk Indicators

The risk status for the Lake Okeechobee Area remains similar to last week's status. Only one of the five LOSA water supply risk indicators is in the "high risk" category: the 2-month projection of Lake O stage. The Palmer Index, which changed only slightly from -1.95 to -1.94, and the Lake O Multi-Seasonal Net Inflow Forecast risk indicators are both in the "medium risk" category. The CPC precipitation outlook, and the Lake Okeechobee Seasonal Net Inflow Forecast are both in the "low risk" category.

For the WCAs the risk status is the same as last week: All WCAs are in the "high" risk category. For the Lower East Coast areas, all of the water supply risk indicators remain in the "high risk" category. Water use restrictions are in effect (refer to chronology below).

Water Shortage History

On November 10, 2010, the District Governing Board issued a "Water Shortage Warning" for the Lake Okeechobee, Lake Istokpoga and the Indian Prairie Water Use Basins. The Water Shortage Warning calls for voluntary water conservation among all users and will provide for increased communication and outreach to water users, local governments and elected officials on the potential for water shortage conditions to intensify during the upcoming dry season.

On December 9, 2010, the District Governing Board delegated authority to the Executive Director to issue a Water Shortage Order implementing water restrictions in the Lake Okeechobee Service Area (LOSA) when the Lake stage recedes into the Water Shortage Management (WSM) Band of the 2008 LORS. Considering the La Niña analog years of the 1-February Position Analysis stage forecast and the current recession rate, the stage could fall into the WSM Band in late February 2011, potentially leading to 3 or more months of water shortage in the LOSA.

On March 10, 2011, the District Governing Board approved a "Water Shortage Warning" for all the residents and businesses throughout the District's 16-county region to voluntarily reduce water use. Under a separate water shortage order, specific permitted water users in the L-8 Basin of Palm Beach County are required to reduce withdrawals by 15 percent. The SFWMD intends to issue water restriction orders for the Lake Okeechobee Service Area when the Lake stage falls into the Water Shortage Management Band.

On March 21, 2011, the SFWMD issued water shortage orders and declared water use restrictions for the entire district. Of relevance to Lake Okeechobee is a 15-percent cutback for all agricultural, nursery and diversion and impoundment surface water users within the Lake Okeechobee Service Area (LOSA). Further information is available at www.sfwmd.gov.

On Thursday, May 12, 2011 the District Governing Board declared a Modified Phase III Extreme Water Shortage in the Lake Okeechobee Service Area (LOSA) and will impose 45 percent cutbacks on surface water users if and when the Lake stage goes below an elevation of 10.5 ft NGVD.

Groundwater Levels

Groundwater level changes were varied across the District relative to last week's levels. United States Geological Survey (USGS) real-time wells in the Kissimmee Basin have the highest water levels in the District, with about half of the stations at their median water levels and the rest between the lowest 10th and the lowest 30th percentile. Stages in the Upper East Coast (UEC) canals C-23, C-24 and C-25 are at 17.23, 17.68, and 15.79 ft NGVD, respectively. Groundwater levels in the UEC remain in the lowest 10th percentile for their periods of record despite rises in water levels in some USGS wells. Biscayne aquifer water levels rose over the week in wells in the northern part of Lower East Coast (LEC) and dropped in the south. LEC

groundwater elevations are well below average (about three-quarters in the lowest 10th percentile and the rest varying from the lowest 10th to 30th percentile to median) for this time of year.

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Everglades WCAs and STAs

Water levels in the WCAs and STAs continue to recede due to high evapotranspiration typical during this time of year. All areas received some limited rainfall, however all WCA stages remain well-below desirable levels as well as below their respective regulation schedules. The WCA-1 stage is just above its environmental floor elevation (14.0 ft, NGVD). WCA-2A stage is slightly below its floor elevation (10.5 ft, NGVD) and WCA-3A stage is slightly above its floor (7.5 ft, NGVD). Limited water supply releases from the WCAs are being made, and supplemented with Lake Okeechobee releases as required. Environmental water deliveries from Lake Okeechobee to the STAs are expected to be little to none for the remainder of the dry season. No environmental deliveries from Lake Okeechobee to the WCAs or to Everglades National Park are anticipated. There are currently no environmental water deliveries from WCA-3A to ENP per the Shark Slough Rainfall Plan since the target flows continue to be zero.

St. Lucie Estuary

Salinity continues to rise, but conditions in the SLE are environmentally acceptable. It is recommended that the estuary should not receive inflows from the Lake. To conserve water supplies, if C-44 basin runoff occurs, it is recommended that the USACE adjust their operations, as necessary, to direct C-44 basin runoff westward to Lake Okeechobee, and not eastward through S-80 to tide.

Caloosahatchee Estuary

The Adaptive Protocols for Lake Okeechobee Operations is being used to make the flow recommendation for the Caloosahatchee Estuary. This week the Adaptive Protocol release guidance suggests no releases from Lake Okeechobee at S-77.

The detailed information regarding the Adaptive Protocol release guidance follows:

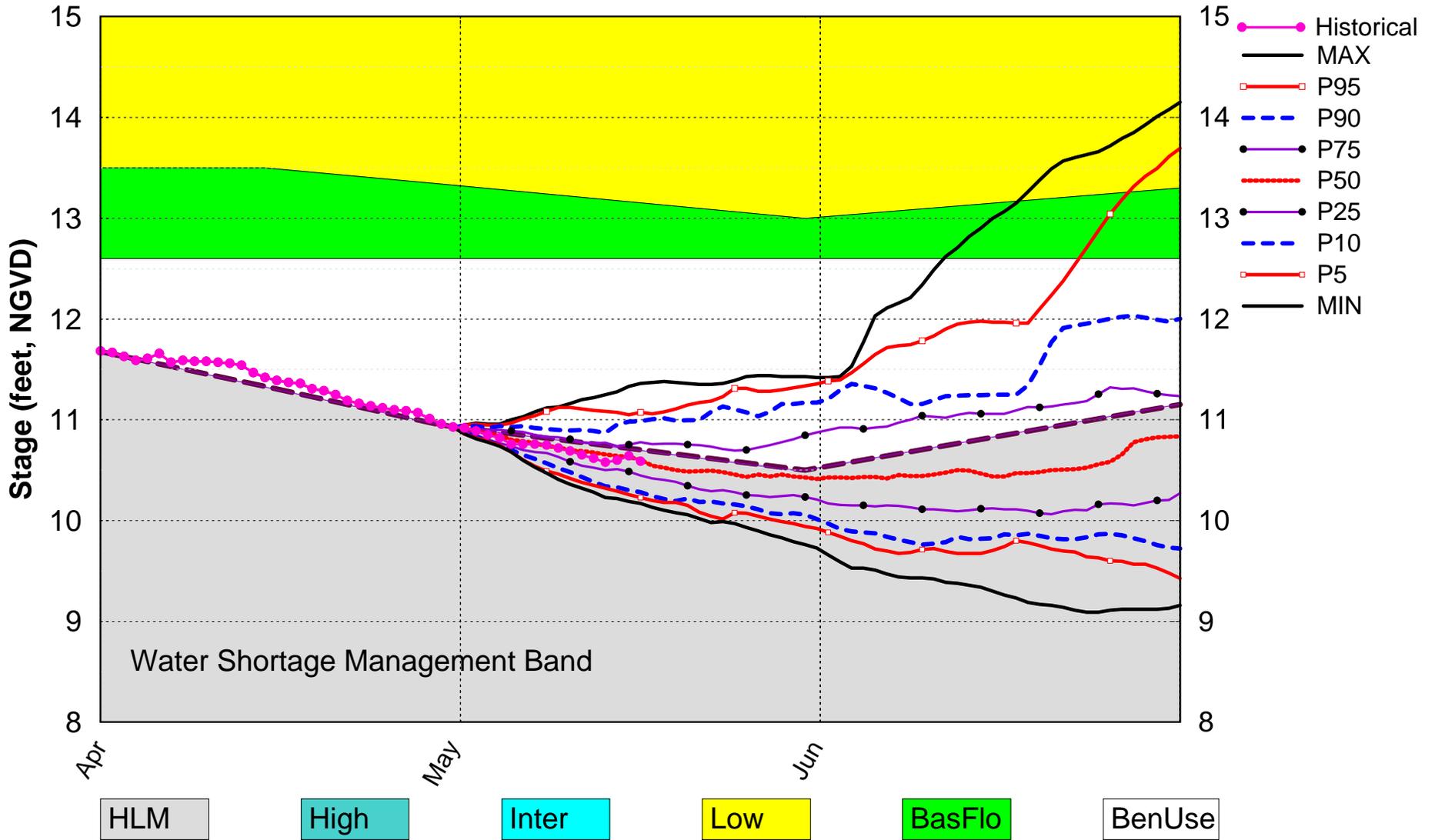
Each Tuesday the Coastal Ecosystem Division reviews the salinity conditions in the Caloosahatchee estuary and the predicted salinity for 14 days into the future at I-75 is evaluated. The criterion for when the estuary needs water depends on the two week predicted salinity at I-75 Bridge being at least 5 psu. This week the 30-day moving average salinity at the I-75 Bridge is forecast to exceed 5 psu during part of the next two weeks. Therefore according to the salinity criterion, the estuary needs additional flow.

The lower branch of the Adaptive Protocol release guidance flowchart applies since the stage is in or below the Beneficial Use Subband of the regulation schedule. With the current Lake stage falling within the Water Shortage Band, the guidance suggests no releases.

Therefore, in accordance with the SFWMD's [Final Adaptive Protocols for Lake Okeechobee Operations](#), the SFWMD recommends that the USACE make no Lake Okeechobee releases to the Caloosahatchee Estuary for the week beginning May 13th.

Lake Okeechobee SFWMM May 2011 Position Analysis

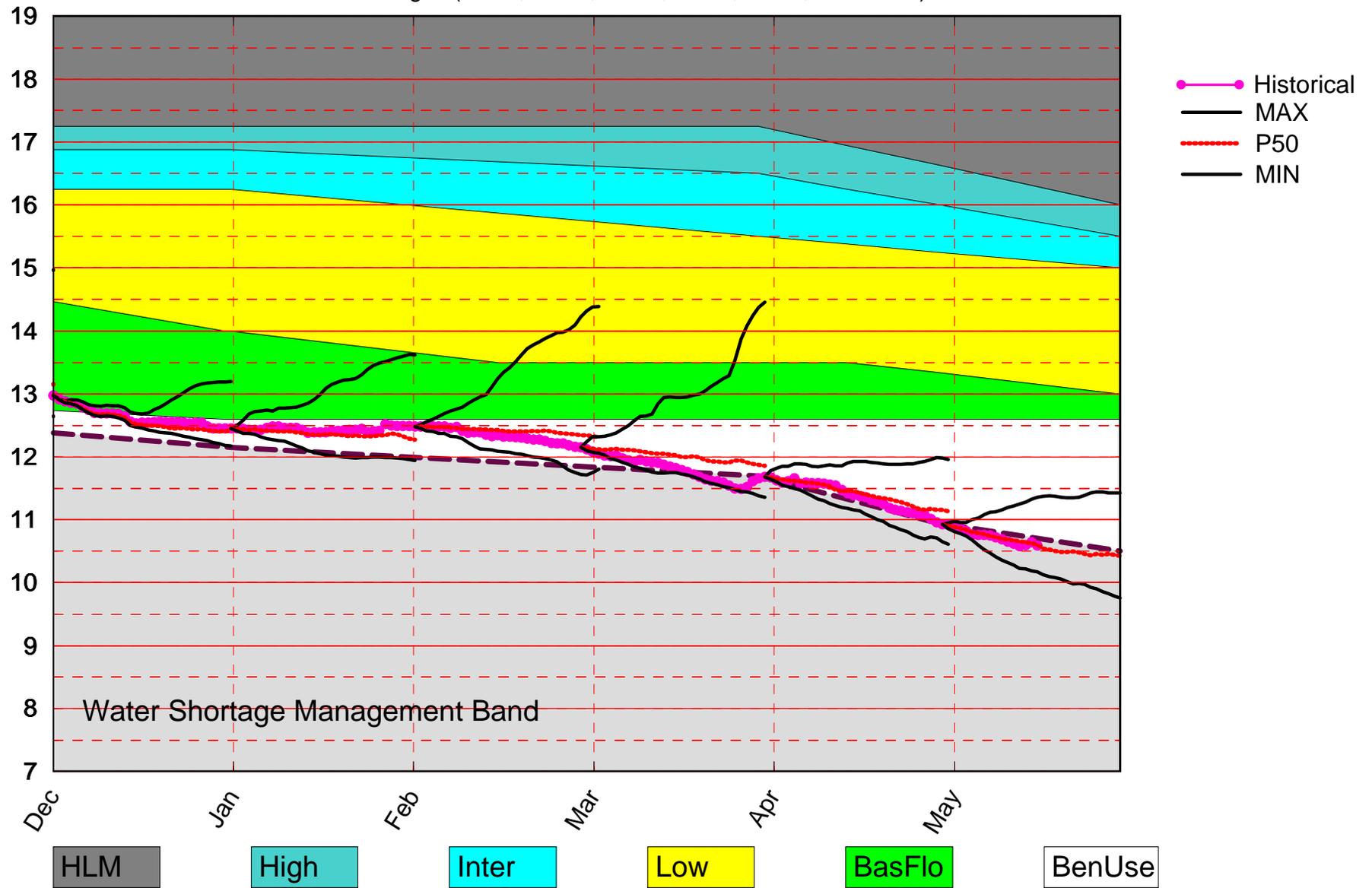
Percentiles PA_V3



(See assumptions on the Position Analysis Results website)

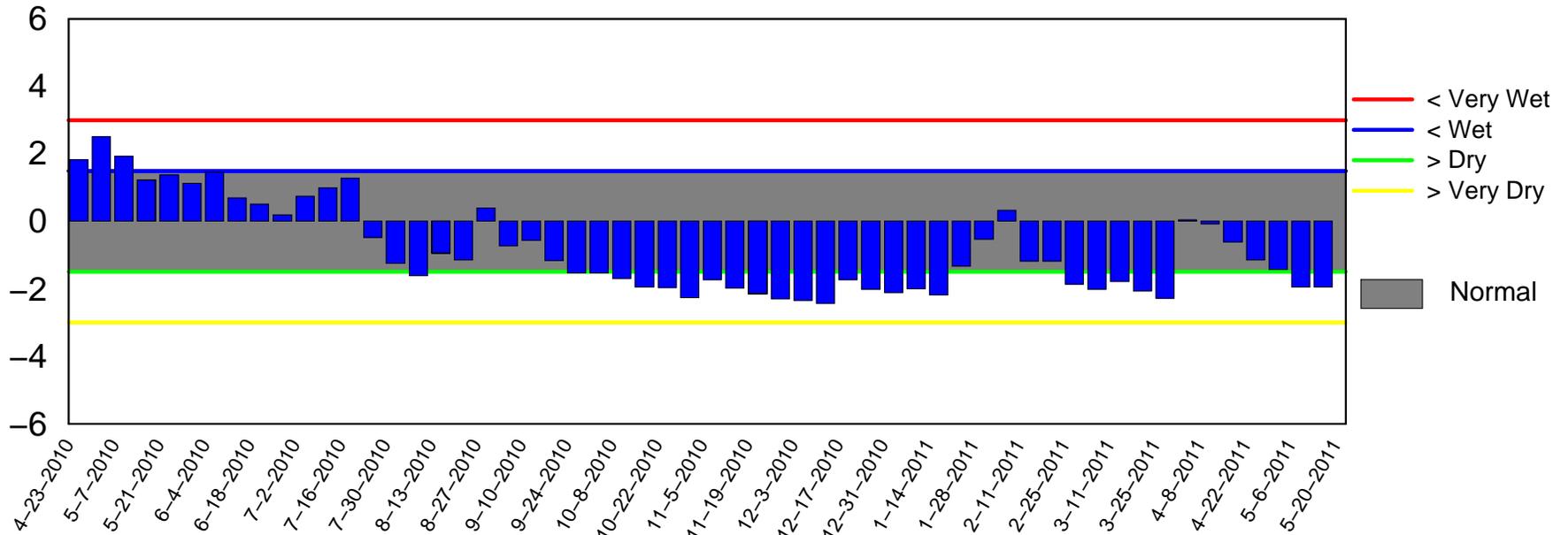
Lake Okeechobee Position Analysis Comparisons Dec 2010 – May 2011

Initialization Stages (13.01; 12.45; 12.48; 12.15; 11.68; 10.93 feet)

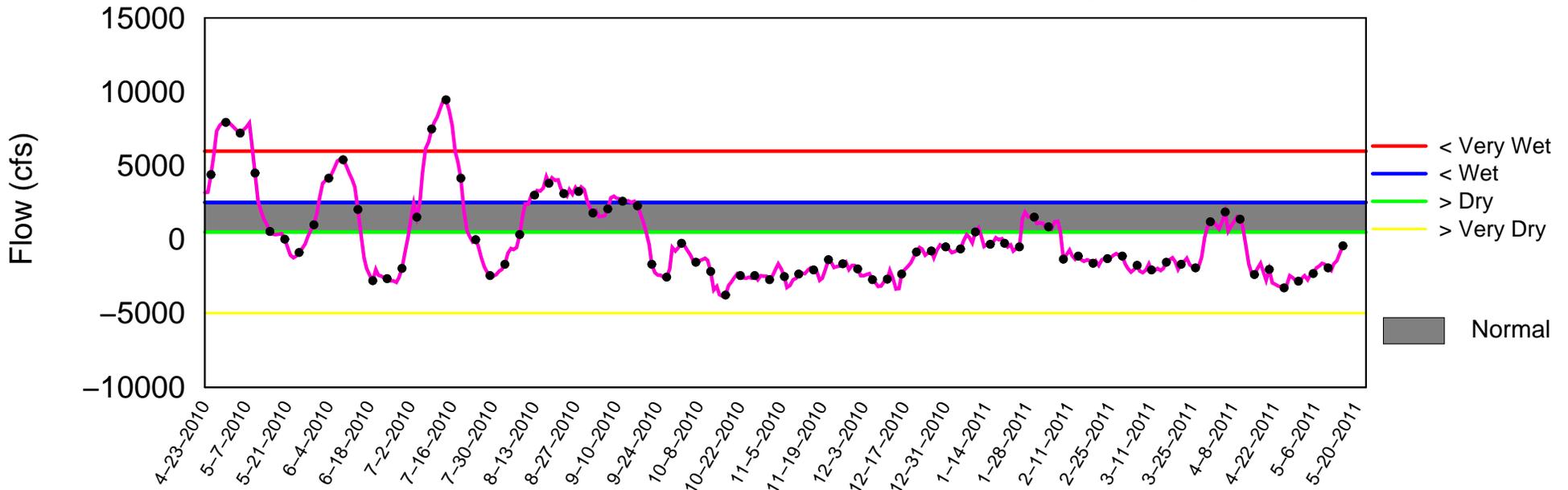


Tributary Basin Condition Indicators as of May 16 2011

Palmer Index



Lake Okeechobee Net Inflow (LONIN) 14-day Running Average



Mon May 16 17:39:42 EDT 2011

2008 LORS

Part C: Establish Allowable Lake Okeechobee Releases to the Water Conservation Areas

*Apply Multi-Seasonal
Climate/Hydrologic Outlooks
on a Monthly Basis*

*Apply Tributary
Condition
Criteria Daily*

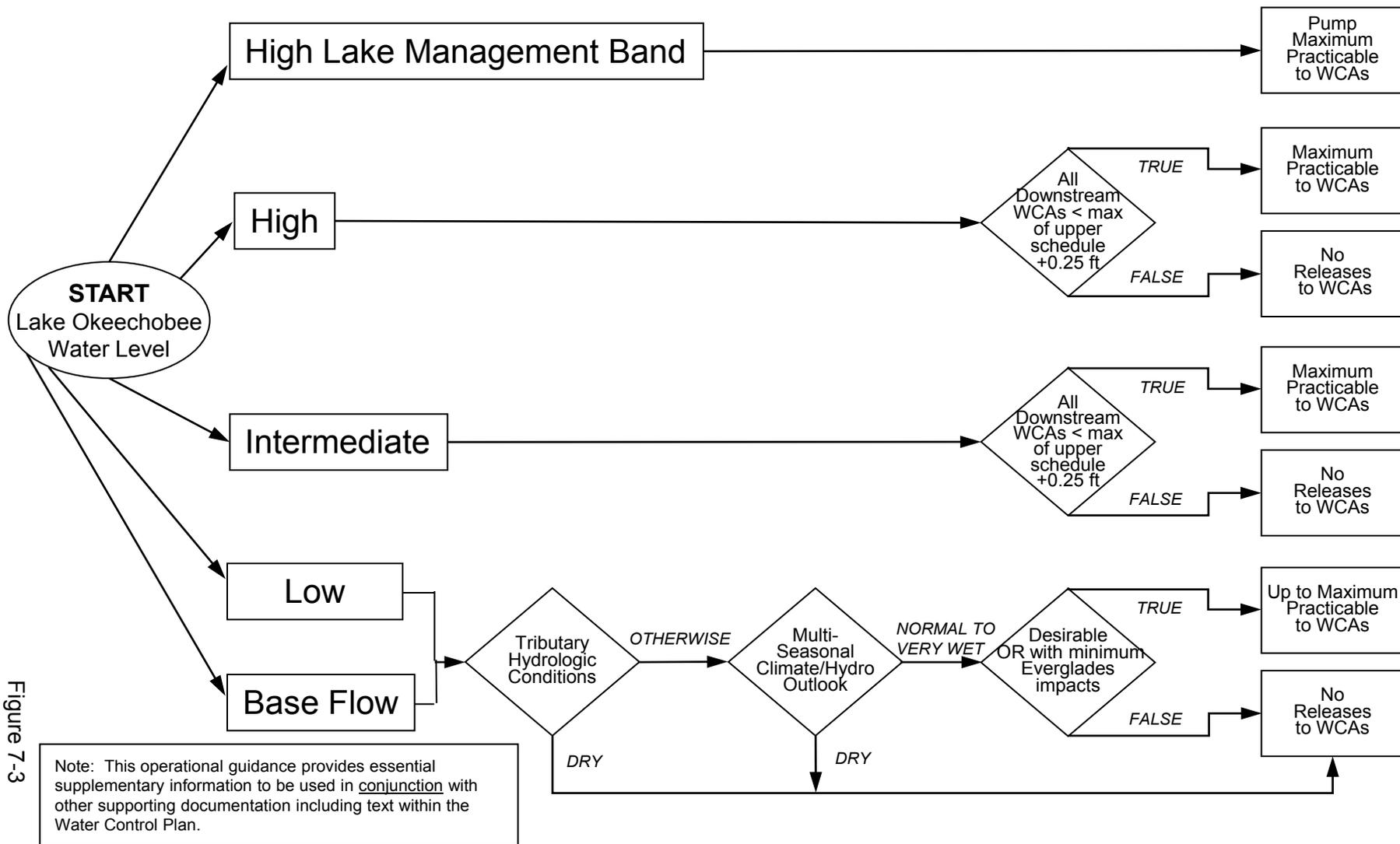


Figure 7-3

2008 LORS

Part D: Establish Allowable Lake Okeechobee Releases to Tide (Estuaries)

Note: This operational guidance provides essential supplementary information to be used in conjunction with other supporting documentation including text within the Water Control Plan.

When conducting Base Flow releases, flows can be distributed East and West up to 650 cfs as needed to minimize impacts or provide benefits through S-80 and S-79

Apply Meteorological Forecasts on a Weekly Basis; apply Seasonal and Multi-Seasonal Climate/Hydrologic Outlooks on a Monthly Basis

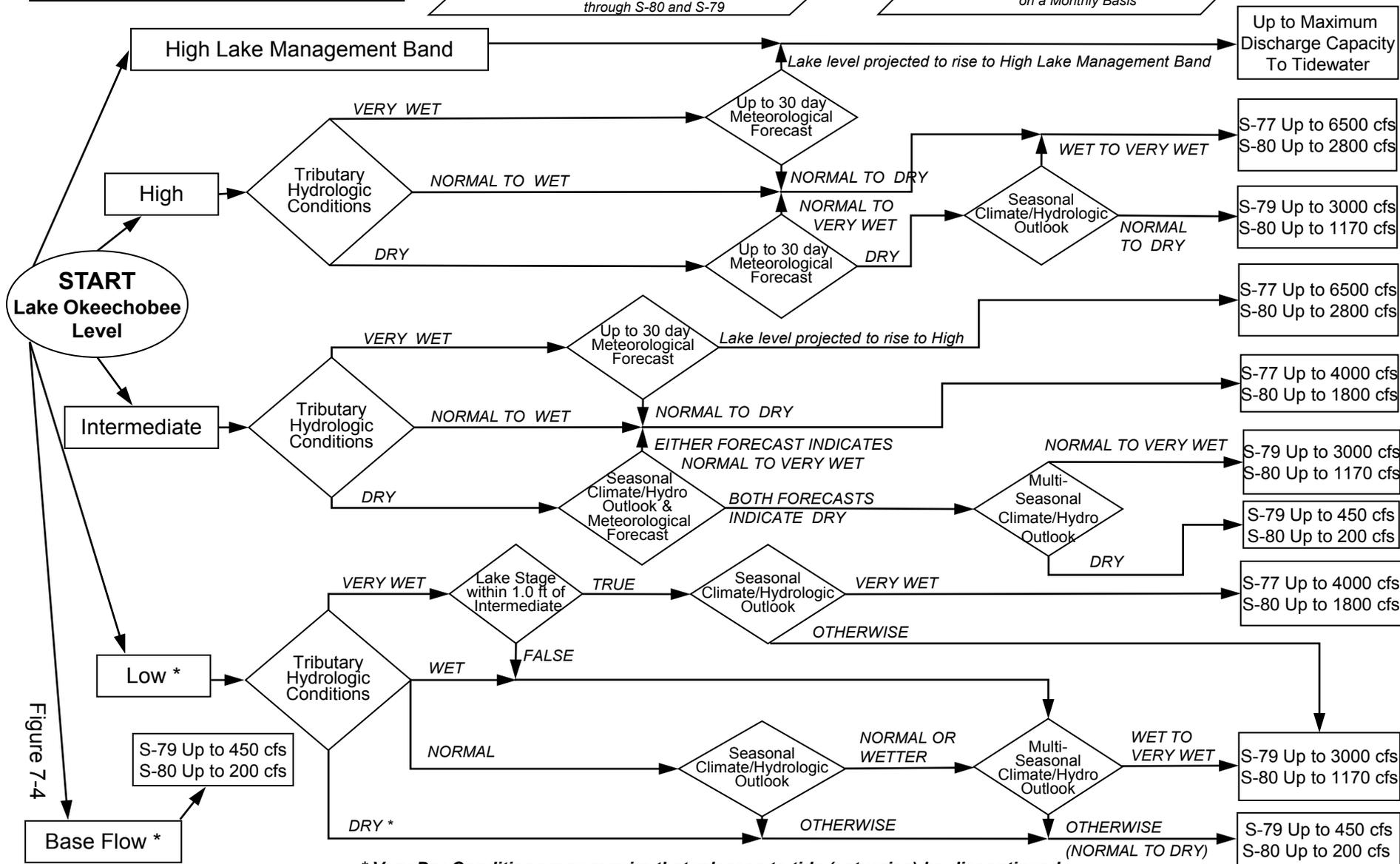
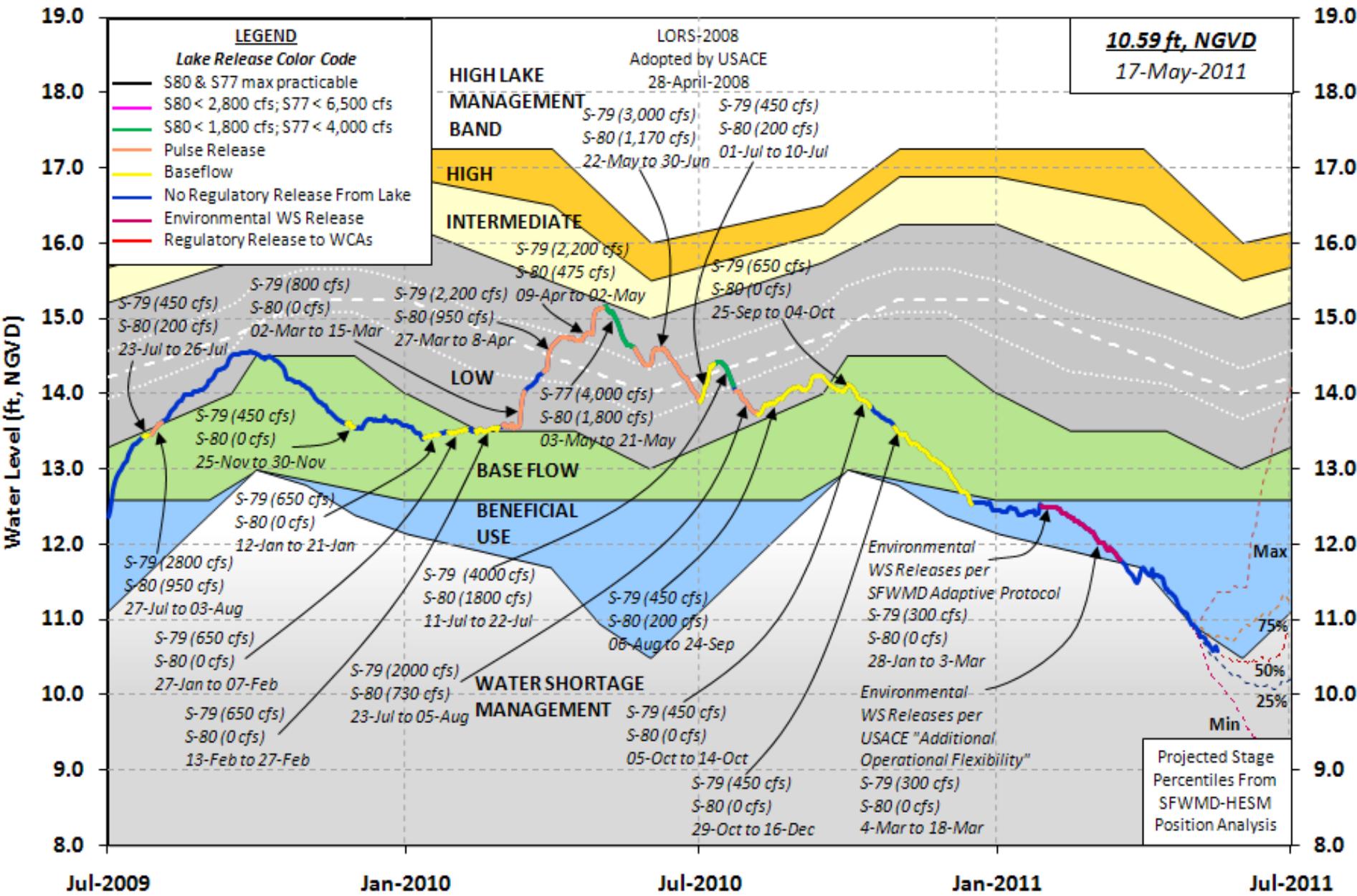


Figure 7-4

Lake Okeechobee Water Level History and Projected Stages



U. S. Army Corps of Engineers, Jacksonville District
Lake Okeechobee and Vicinity Report

Data Ending 2400 hours 15 MAY 2011

Okeechobee Lake Regulation	Elevation	Last Year	2YRS Ago
	(ft-NGVD)	(ft-NGVD)	(ft-NGVD)
*Okeechobee Lake Elevation	10.64	14.68	10.64 (Official Elv)
Bottom of High Lake Mngmt=	16.35	Top of Water Short Mngmt=	10.73
Currently in Water Shortage Management Band			

15MAY (1965-2007) Period of Record Average 13.30
Difference from POR Average -2.66

Simulated Average LORS2008 [1965-2000] 12.11
Difference from Average LORS2008 -1.47

Today Lake Okeechobee elevation is determined from the 4 Int & 4 Edge stations

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ÷ 4.58'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷ 2.78'
Bridge Clearance = 52.87'

4 Interior and 5 Edge Okeechobee Lake Average (Avg-Daily values):

L001	L005	L006	LZ40	S4	S352	S308	S133	S135
10.67	10.41	10.49	10.83	10.35	10.73	10.80	10.83	10.79

*Combination Okeechobee Avg-Daily Lake Average = 10.66
(*See Note)

Okeechobee Inflows (cfs):

S65E	862	S191	0	Fisheating Cr	3
S154	0	S133 Pumps	0	S135 Pumps	0
S84	-NR-	S127 Pumps	0	S2 Pumps	0
S71	-NR-	S129 Pumps	0	S3 Pumps	0
S72	-NR-	S131 Pumps	0	S4 Pumps	0
Total Inflows:	865				

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	279	S77	-324
S127 Culverts	0	S351	422	S308	0
S129 Culverts	0	S352	248		
S131 Culverts		L8 Canal Pt	46		
C5	-NR-				
Total Outflows:	671				

Okeechobee Pan Evaporation (inches):

S77	0.37	S308	0.42
Average Pan Evap x 0.75 Pan Coefficient = 0.30" = 0.02'			

Lake Average Precipitation using NEXRAD: = -NR-" = -NR-'

Evaporation - Precipitation: = -NR-" = -NR-'
Evaporation - Precipitation using Lake Area of 730 square miles
is equal to -NR-'
Lake Okeechobee (Change in Storage) Flow is 6655 cfs or 13200 AC-FT

Note: Headwater, tailwater, and stage values below are instantaneous values unless otherwise specified.

	Headwater Elevation (ft-msl)	Tailwater Elevation (ft-msl)	Disch (cfs)	----- Gate Positions -----							
				#1 (ft)	#2 (ft)	#3 (ft)	#4 (ft)	#5 (ft)	#6 (ft)	#7 (ft)	#8 (ft)
(I) see note at bottom											
North East Shore											
S133 Pumps:	11.11	10.33	0	0	0	0	0	0	0	(cfs)	
S193:											
S191:	17.59	10.30	0	0.0	0.0	0.0					
S135 Pumps:	10.05	10.75	0	0	0	0	0			(cfs)	
S135 Culverts:			0	0.0	0.0						
North West Shore											
S65E:	20.85	10.23	862	0.0	0.2	0.2	0.2	0.3	0.3		
S127 Pumps:	12.04	10.51	0	0	0	0	0	0		(cfs)	
S127 Culvert:			0	0.0							
S129 Pumps:	11.84	10.40	0	0	0	0				(cfs)	
S129 Culvert:			0	0.0							
S131 Pumps:	11.84	11.13	0	0	0					(cfs)	
S131 Culvert:											
Fisheating Creek											
nr Palmdale		27.79	3								
nr Lakeport		10.99									
C5:		10.44	-NR-	-NR-	-NR-	-NR-					
South Shore											
S4 Pumps:	10.52	10.57	0	0	0	0				(cfs)	
S169:	10.63	10.73	-238	4.0	4.0	4.0					
S310:			-NR-								
S3 Pumps:	10.61	10.88	0	0	0	0				(cfs)	
S354:	10.88	10.61	279	7.3	7.3						
S2 Pumps:	10.59	10.78	0	0	0	0	0			(cfs)	
S351:	10.78	10.59	422	7.5	7.5	7.5					
S352:	10.87	10.82	248	3.6	3.7						
C10A:	-NR-	10.90		-NR-	-NR-	7.0	-NR-	-NR-			
L8 Canal PT		10.78	46								

Temporary Pumps

S351:	10.59	10.78	422	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-	
S352:	10.82	10.87	248	-NR-	-NR-	-NR-	-NR-			
S354:	10.61	10.88	279	-NR-	-NR-	-NR-	-NR-			

Caloosahatchee River (S77, S78, S79)

S47B:	10.13	11.28		0.0	0.0				
S47D:	11.29	10.06	0	0.0					
S77:									
Spillway and Sector Flow:									
	10.32	10.22	-324	3.0	3.0	3.0	3.0		
Flow Due to Lockages+:			-0						
S77 Below USGS Flow Gage			-156						

S78:

Spillway and Sector Flow:						
10.15	2.89	0	0.0	0.0	0.0	0.0
Flow Due to Lockages+:		12				

S79:

Spillway and Sector Flow:										
-NR-	1.03	-NR-	0.0	0.0	1.0	1.0	1.0	0.0	0.0	0.0
Flow Due to Lockages+:		-NR-								
Percent of flow from S77		-NR-%								
Chloride	(ppm)	202								

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Flow:						
10.72	10.63	0	0.0	0.0	0.0	0.0
Flow Due to Lockages+:		0				

S308 Below USGS Flow Gage -72

S153: 18.74 10.51 0 0.0 0.0

S80:

Spillway and Sector Flow:										
10.81	1.21	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Flow Due to Lockages+:		6								
Percent of flow from S308		-NR-%								

Steele Point Top Salinity (mg/ml) -N
 Steele Point Bottom Salinity (mg/ml) -N

Speedy Point Top Salinity (mg/ml) -N
 Speedy Point Bottom Salinity (mg/ml) -N

+ Flow Due to lockages is computed utilizing average daily headwater and tailwater along with total number of lockages for the day to calculate a volume which is then converted to an average discharge in cfs.

Daily Precipitation Totals	1-Day (inches)	3-Day (inches)	7-Day (inches)	----- Wind -----	
				Direction (Degø)	Speed (mph)
S133 Pump Station:	-NR-	0.07	0.07		
S193:	-NR-	0.00	0.00	-NR-	-NR-
Okeechobee Field Station:	-NR-	0.00	0.00		
S135 Pump Station:	-NR-	1.03	1.03		
S127 Pump Station:	-NR-	0.11	0.11		
S129 Pump Station:	-NR-	0.28	0.28		
S131 Pump Station:	-NR-	0.44	0.44		
S77:	0.00	0.00	0.00	63	1
S78:	0.29	0.37	0.37	207	1
S79:	0.20	0.70	0.70	249	0
S4 Pump Station:	-NR-	0.00	0.00		
Clewiston Field Station:	-NR-	0.28	0.28		
S3 Pump Station:	-NR-	0.60	0.60		
S2 Pump Station:	-NR-	1.21	1.21		
S308:	0.04	0.76	7.41	283	13
S80:	0.01	1.74	1.74	285	3
Okeechobee Average	0.02	0.37	0.88		
(Sites S78, S79 and S80 not included)					

Oke Nexrad Basin Avg	-NR-	0.00	0.00		

Okeechobee Lake Elevations	15 MAY 2011	10.64	Difference from 15MAY11
15MAY11 -1 Day =	14 MAY 2011	10.60	-0.04
15MAY11 -2 Days =	13 MAY 2011	10.58	-0.06
15MAY11 -3 Days =	12 MAY 2011	10.62	-0.02
15MAY11 -4 Days =	11 MAY 2011	10.65	0.01
15MAY11 -5 Days =	10 MAY 2011	10.69	0.05
15MAY11 -6 Days =	09 MAY 2011	10.72	0.08
15MAY11 -7 Days =	08 MAY 2011	10.75	0.11
15MAY11 -30 Days =	15 APR 2011	-NR-	-NR-
15MAY11 -1 Year =	15 MAY 2010	14.68	4.04
15MAY11 -2 Year =	15 MAY 2009	10.64	0.00

Long Term Mean 30day Avearge ET for Lake Alfred (Inches) = 4.92

Lake Okeechobee Net Inflow (LONIN)					
Average Flow over the previous 14 days					Avg-Daily Flow
15MAY11	Today =	15 MAY 2011	-389	MON	7326
15MAY11	-1 Day =	14 MAY 2011	-886	SUN	5479
15MAY11	-2 Days =	13 MAY 2011	-1417	SAT	-2184
15MAY11	-3 Days =	12 MAY 2011	-1626	FRI	-1710
15MAY11	-4 Days =	11 MAY 2011	-2068	THU	-3224
15MAY11	-5 Days =	10 MAY 2011	-1923	WED	-2231
15MAY11	-6 Days =	09 MAY 2011	-1654	TUE	-2577
15MAY11	-7 Days =	08 MAY 2011	-1594	MON	173
15MAY11	-8 Days =	07 MAY 2011	-1751	SUN	1842
15MAY11	-9 Days =	06 MAY 2011	-2028	SAT	3485
15MAY11	-10 Days =	05 MAY 2011	-2435	FRI	-6213
15MAY11	-11 Days =	04 MAY 2011	-2120	THU	-777
15MAY11	-12 Days =	03 MAY 2011	-2537	WED	-2670
15MAY11	-13 Days =	02 MAY 2011	-2201	TUE	-2170

S65E					
Average Flow over previous 14 days					Avg-Daily Flow
15MAY11	Today=	15 MAY 2011	890	MON	862
15MAY11	-1 Day =	14 MAY 2011	905	SUN	710
15MAY11	-2 Days =	13 MAY 2011	935	SAT	764
15MAY11	-3 Days =	12 MAY 2011	969	FRI	798
15MAY11	-4 Days =	11 MAY 2011	992	THU	778
15MAY11	-5 Days =	10 MAY 2011	1020	WED	905
15MAY11	-6 Days =	09 MAY 2011	1039	TUE	937
15MAY11	-7 Days =	08 MAY 2011	1059	MON	931
15MAY11	-8 Days =	07 MAY 2011	1074	SUN	907
15MAY11	-9 Days =	06 MAY 2011	1083	SAT	897
15MAY11	-10 Days =	05 MAY 2011	1097	FRI	977
15MAY11	-11 Days =	04 MAY 2011	1121	THU	938
15MAY11	-12 Days =	03 MAY 2011	1119	WED	956
15MAY11	-13 Days =	02 MAY 2011	1125	TUE	1094

Lake Okeechobee Outlets Last 14 Days

DATE	S-77	S-77	S-78	S-78	Below S308	S-308
	Discharge	Discharge	Discharge	Discharge	Discharge	Discharge
	(0700-2100)	(ALL DAY)	(0700-2100)	(ALL DAY)	(ALL DAY)	(ALL DAY)
15 MAY 2011	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)
15 MAY 2011	-571	-643	0	24	-143	0
14 MAY 2011	22	286	0	161	273	814
13 MAY 2011	766	1142	367	634	625	2759
12 MAY 2011	955	1262	374	549	180	453
11 MAY 2011	149	119	109	158	752	2148
10 MAY 2011	350	270	0	16	212	594
09 MAY 2011	121	87	0	29	237	814

08 MAY 2011	-289	-547	0	25	208	1885
07 MAY 2011	-94	-151	0	29	159	1205
06 MAY 2011	57	159	0	21	484	1812
05 MAY 2011	642	1143	0	21	140	520
04 MAY 2011	681	1150	0	14	438	1546
03 MAY 2011	136	22	22	47	564	2191
02 MAY 2011	-129	-127	0	107	371	979

	S-79	S-310	S-351	S-352	S-354	L8 Canal Pt
	Discharge	Discharge	Discharge	Discharge	Discharge	Discharge
	(ALL DAY)					
DATE	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)
15 MAY 2011	-NR-	-NR-	837	492	553	90
14 MAY 2011	-NR-	-NR-	1434	561	1142	31
13 MAY 2011	4	-NR-	2300	728	1840	96
12 MAY 2011	4	-NR-	2356	853	1477	107
11 MAY 2011	3	56	2479	876	1025	157
10 MAY 2011	3	-49	2590	867	821	134
09 MAY 2011	3	-53	2304	775	381	126
08 MAY 2011	6	-125	1507	607	0	91
07 MAY 2011	6	-56	1388	680	452	79
06 MAY 2011	5	32	2477	817	1539	108
05 MAY 2011	6	282	2707	855	1529	123
04 MAY 2011	4	355	2744	873	1602	143
03 MAY 2011	7	181	2742	902	1515	131
02 MAY 2011	5	151	2643	672	1229	99

Below S-77

	Discharge
	(ALL DAY)
DATE	(AC-FT)
15 MAY 2011	-309
14 MAY 2011	890
13 MAY 2011	1867
12 MAY 2011	-NR-
11 MAY 2011	-NR-
10 MAY 2011	1061
09 MAY 2011	1060
08 MAY 2011	-42
07 MAY 2011	211
06 MAY 2011	614
05 MAY 2011	1688
04 MAY 2011	1775
03 MAY 2011	935
02 MAY 2011	-NR-

- *** NOTE: 1) Discharge from (0700-2100) is computed using Spillway and Sector Gate Discharges from 0700 hrs to 2100 hrs.
 2) Discharge (ALL DAY) is computed using Spillway, Sector Gate and Lockages Discharges from 0015 hrs to 2400 hrs.

(I) - Flows preceded by "I" signify an instantaneous flow computed from the single value reported for the day

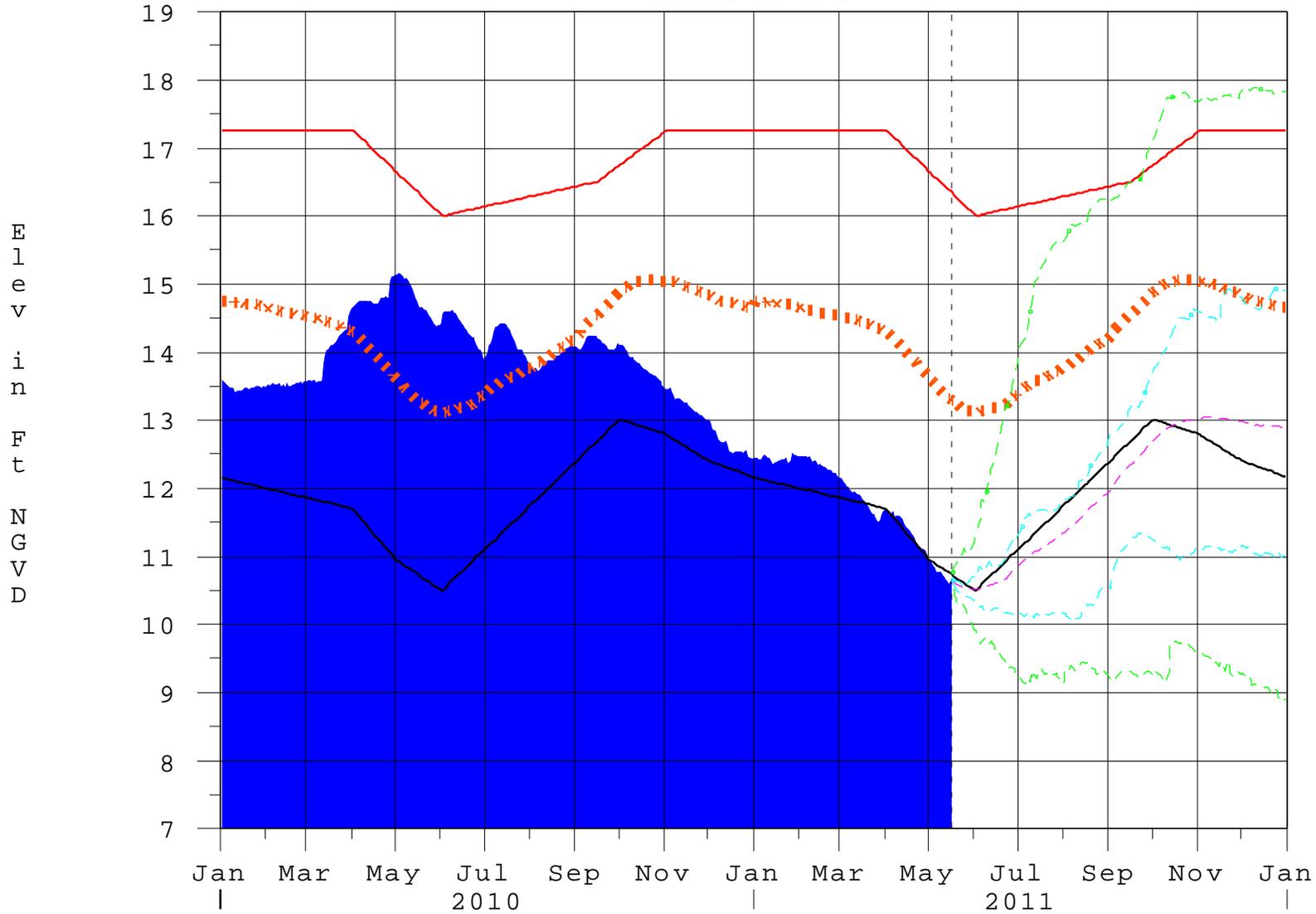
-
- * On 11 May 1999, Lake Okeechobee Elevation was switched from Instantaneous 2400 value to an average-daily lake average.
 On 14 Mar 2001, due to the isolation of various gages within the standard 10 stations, the average of the interior 4 station gages was used as the Lake Okeechobee Elevation.
 On 05 November 2010, Lake Okeechobee Elevation was switched to a 9 gage mix of interior and edge gages to obtain a more reliable representation of the lake level.

Today Lake Okechobee elevation is determined from the 4 Int & 4 Edge stations
++ For more information see the Jacksonville District Navigation website
at
<http://www.saj.usace.army.mil/Divisions/Operations/Branches/HydroSurvey/hydro.php>
\$ For information regarding Lake Okechobee Service Area water restrictions
please refer to www.sfwmd.gov

Report Generated 16MAY2011 @ 15:15 ** Preliminary Data - Subject to Revision **

Lake Okeechobee

16MAY11 15:18:18



- | | | | |
|--|-----------------------------|--|-----------------------------|
| | High Lake Management | | Min Prob(No Release[65-07]) |
| | Okeechobee Avg Elev | | Avg Prob(No Release[65-07]) |
| | Average Elev [1965-2007] | | 25% Prob(No Release[65-07]) |
| | Water Shortage Management | | 75% Prob(No Release[65-07]) |
| | Max Prob(No Release[65-07]) | | |

Classification Tables

Supplemental Tables used in conjunction with the LORS2008 Release

Guidance Flow Charts

- [Class Limits for Tributary Hydrologic Conditions](#)

Table K-2 in the Lake Okeechobee Water Control Plan

- [6-15 Day Precipitation Outlook Categories](#)

Table ?? in the Lake Okeechobee Water Control Plan

- [Classification of Lake Okeechobee Net Inflow for Seasonal Outlook](#)

Table K-3 in the Lake Okeechobee Water Control Plan

- [Classification of Lake Okeechobee Net Inflow for Multi-Seasonal Outlook](#)

Table K-4 in the Lake Okeechobee Water Control Plan

[Back to Lake Okeechobee Operations Main Page](#)

[Back to U.S. Army Corps of Engineers Lake Okeechobee Operations Homepage](#)

Tributary Hydrologic Classification*	Palmer Index Class Limits	2-wk Mean L.O. Net Inflow Class Limits
Very Wet	3.0 or greater	Greater \geq 6000 cfs
Wet	1.5 to 2.99	2500 - 5999 cfs
Near Normal	-1.49 to 1.49	500 - 2499 cfs
Dry	-2.99 to -1.5	-5000 – 500 cfs
Very Dry	-3.0 or less	Less than -5000 cfs

* use the wettest of the two indicators

Classification of Lake Okeechobee Net Inflow Seasonal Outlook*

Lake Net Inflow Prediction [million acre-feet]	Equivalent Depth** [feet]	Lake Okeechobee Net Inflow Seasonal Outlook
> 0.93	> 2.0	Very Wet
0.71 to 0.93	1.51 to 2.0	Wet
0.35 to 0.70	0.75 to 1.5	Normal
< 0.35	< 0.75	Dry

****Volume-depth conversion based on average lake surface area of 467,000 acres**

Classification of Lake Okeechobee Net Inflow Multi-Seasonal Outlook*

Lake Net Inflow Prediction [million acre-feet]	Equivalent Depth** [feet]	Lake Okeechobee Net Inflow Multi-Seasonal Outlook
> 2.0	> 4.3	Very Wet
1.18 to 2.0	2.51 to 4.3	Wet
0.5 to 1.17	1.1 to 2.5	Normal
< 0.5	< 1.1	Dry

****Volume-depth conversion based on average lake surface area of 467,000 acres**

6-15 Day Precipitation Outlook Categories*

6-15 Day Precipitation Outlook Categories	WSE Decision Tree Categories
Above Normal	Wet to Very Wet
Normal	Normal
Below Normal	Dry

* Corresponds to Table 7-6 in the Lake Okeechobee Water Control Plan

Under Construction