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: John Mitnik, Chief, Engineering and Construction Bureau
Paul Linton, Administrator, Water Control Operations Section

FROM: SFWMD Staff Environmental Advisory Team

DATE: August 25, 2015

SUBJECT: Weekly Environmental Conditions for Systems Operations

Summary

Stages in Lakes East Toho, Toho, and Kissimmee-Cypress-Hatchineha (KCH) are at or above their regulation schedule lines. With KCH at the summer high pool line and discharge at ~3700 cfs, discharge was increased following the wet season standing recommendation and is being adjusted to meet flood control requirements. On Sunday, discharge at S65 averaged 3618 cfs and at S65A 3889 cfs. Discharge at S65E averaged 2100 cfs over the past week. Tuesday morning discharges; S65 ~4050 cfs; S65A ~4250 cfs; S65C ~2650 cfs; S65E ~3700 cfs. With high and rising discharge, a Dissolved Oxygen (DO) sag is in progress in the Kissimmee River. DO concentration averaged 2.23 mg/L over the past week and 1.79 mg/L on Sunday. Kissimmee River mean floodplain depth is currently 1.29 ft.

Lake Okeechobee is at 12.63 feet NGVD, having risen 0.14 feet over the past week, and is back in the base flow sub-band. Satellite imagery indicates low to moderate bloom conditions in most of the Lake's nearshore zone. Annual Submerged Aquatic Vegetation (SAV) mapping indicates that this component of the Lake's vegetative community has remained relatively stable over the past three years.

Over the past week, total freshwater inflow to both estuaries was dominated by local basin runoff, averaging 932 cfs to the St. Lucie and 6166 cfs to the Caloosahatchee. In the St. Lucie Estuary, salinity was in the good range for adult oysters. In the Caloosahatchee Estuary, salinity continued to be in the good range for adult oysters at Shell Point and Sanibel, but dropped to the poor range at Cape Coral. Salinities were in the good range for tape grass in the upper-Caloosahatchee Estuary, and is forecast to remain so over the next two weeks, even with no flow through S-79.

Water levels remain well below average for the wet season. Ongoing low stages in the Everglades through the end of the wet season mean poor conditions for the wildlife and ecosystems (peat loss, fires, plant and animal community stress and possible major drought without above average rainfall) in the upcoming dry season, particularly in Everglades National Park (ENP) and Florida Bay. The 365-day sum of creek inflows to Florida Bay has continued to drop over the last five weeks to a record low of 77,329 acre feet.

Weather Conditions and Forecast

Increasing showers/storms through Thursday, and then decreasing again Friday/Saturday. Expect near average rainfall with a focus around the Lake today before moisture and upper level southwest winds increase tomorrow and Thursday to likely yield above average rains both days. Moisture and upper level support weaken by the end of the week as mid-level high pressure attempts to build in from the east with a resulting decrease in showers/storms Friday/Saturday.

KISSIMMEE BASIN

Kissimmee Basin Rainfall

The Upper Kissimmee Basin received 1.38 inches of rainfall in the past week and the Lower Basin received 1.30 inches (SFWMD Daily Rainfall Report 8/24/2015).

Upper Kissimmee Basin

Stages and departures in the Kissimmee Chain of Lakes (KCOL) are shown in Table1.

Table 1. Departures from KCOL flood regulation (F) or temporary schedules (T, A, or S) (feet NGVD). Discharge and stage data are provisional real-time data from SFWMD OASyS DualTrend; reported values are averages through midnight of the Sunday prior to the report date unless otherwise specified.

Report Date: 8/25/2015

Water Body	Structure/Site	Discharge (cfs), week's average**	Stage Monitoring Site***	Lake Stage (feet)	Schedule*	Regulation (R) or Target (S or T) Stage (feet)	Sunday Departure (feet)						
							8/23/15	8/16/15	8/9/15	8/2/15	7/26/15	7/19/15	7/12/15
Lakes Hart and Mary Jane	S62	272	LKMJ	59.9	R	60.0	**-0.1**	0.0	-0.2	0.2	-0.1	0.0	0.0
Lakes Myrtle, Preston, and Joel	S57	95	S57	60.9	R	61.0	**-0.1**	0.2	-0.2	0.0	-0.2	-0.2	0.0
Alligator Chain	S60	249	ALLI	63.0	R	63.3	**-0.3**	-0.1	-0.3	-0.1	-0.2	-0.1	-0.2
Lake Gentry	S63	360	LKGT	60.8	R	61.0	**-0.2**	-0.1	-0.2	0.0	-0.1	0.0	0.0
East Lake Toho	S59	768	TOHOE	56.7	R	56.5	**0.2**	0.1	0.0	-0.1	-0.3	-0.5	-0.5
Lake Toho	S61	1564	TOHOW	53.4	R	53.5	**-0.1**	-0.1	-0.1	0.1	-0.3	-0.3	-0.4
Lakes Kissimmee, Cypress, and Hatchineha	S65	2629	LKISSP, KUB011, LKIS5B	51.2	R	51.0	**0.2**	0.1	-0.2	-0.5	-0.7	-1.0	-1.2

* T = temporary schedule, R = USACE flood control schedule, S = temporary snail kite schedule, A = projected ascension line, N/A= not applicable or data not available.

** Seven-day average of weighted daily means through Sunday midnight.

*** Names of in-lake monitoring sites and structures used to determine lake stage; if more than one site is listed, an average is reported.

DATA ARE PROVISIONAL

Lower Kissimmee Basin

Discharges and stages at Lower Basin structures are shown in Table 2. SFWDAT depth maps for the Phase I restoration area are shown in Figure 11. Kissimmee River floodplain stages at selected stations are shown in Figure 12.

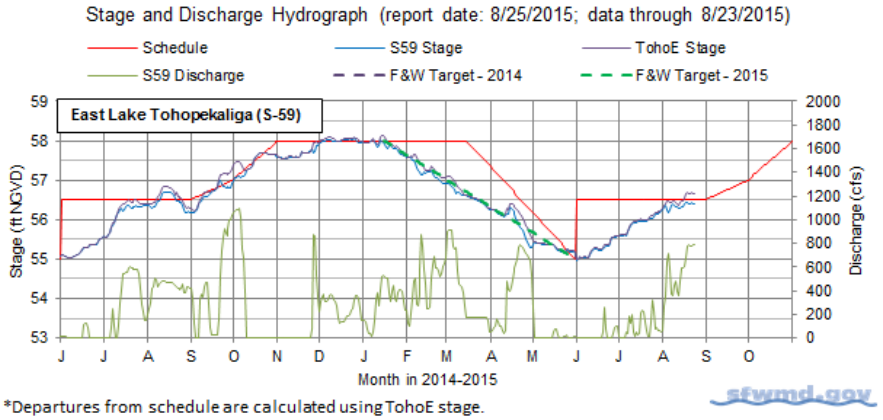
Table 2. Mean weekly discharge at S-65x structures, and mean weekly Phase I area river channel dissolved oxygen and floodplain mean water depth. Discharge and stage data are provisional real-time data from SFWMD OASyS DualTrend; reported values are averages through midnight of the Sunday prior to the report date unless otherwise specified.

Water Management Recommendations

Kissimmee Basin Recommendations and Operational Actions

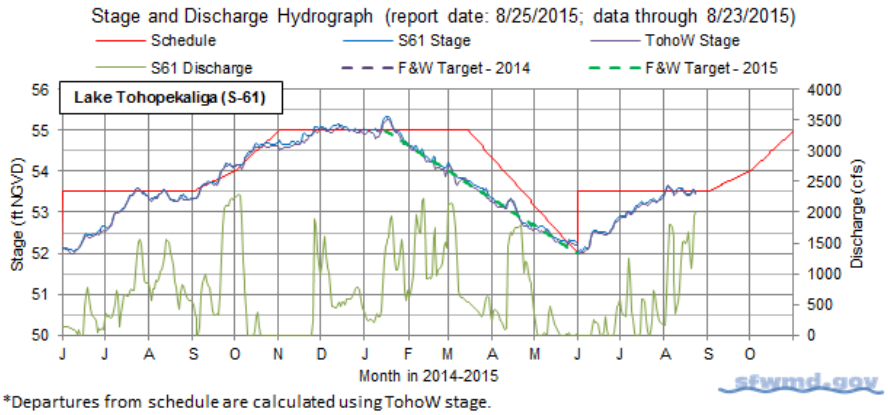
Date	Recommendation	Purpose	Outcome	Source
8/25/2015	No new recommendations.			
8/18/2015	No new recommendations.			
8/11/2015	No new recommendations.			
8/4/2015	No new recommendations.			
7/28/2015	No new recommendations.			
7/14/2015	No new recommendations.			
6/30/2015	No new recommendations.			
6/23/2015	No new recommendations.			
6/16/2015	No new recommendations.			
6/9/2015	No new recommendations.			
6/1/2015	For S65/65A maintain 300 cfs as long as stage is above 48.5 ft. When stage approaches 50.5 ft begin transitioning to 1400 cfs using the rampup/rampdown guidelines in standing recommendation.	Allow KCH lake stage to rise	Implemented	KB Operations
5/29/2015	2015 KB Wet Season Standing Recommendations provided to Operations Control	Comprehensive wet season guidance	Implemented	KB Operations
5/26/2015	No new recommendations.			
5/19/2015	No new recommendations.			
5/12/2015	No new recommendations.			
5/5/2015	No new recommendations.			
4/7/2015	No new recommendations.			
3/31/2015	No new recommendations.			
3/24/2015	No new recommendations.			
3/17/2015	No new recommendations.			
3/9/2015	No new recommendations.			
3/4/2015	No new recommendations.			
2/23/2015	No new recommendations.			
2/17/2015	No new recommendations.			
2/10/2015	No new recommendations.			
2/3/2015	No new recommendations.			
1/27/2015	Starting today, follow a new SK recession line for KCH, which will be drawn from today's stage to regulation stage on March 1.	Snail kite recession in KCH	Implemented	

KCOL Hydrographs (through Sunday midnight)



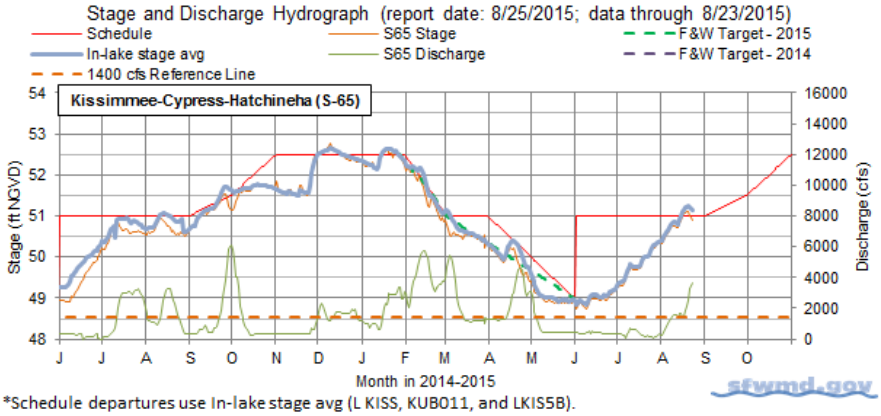
*Departures from schedule are calculated using TohoE stage.

Figure 1.



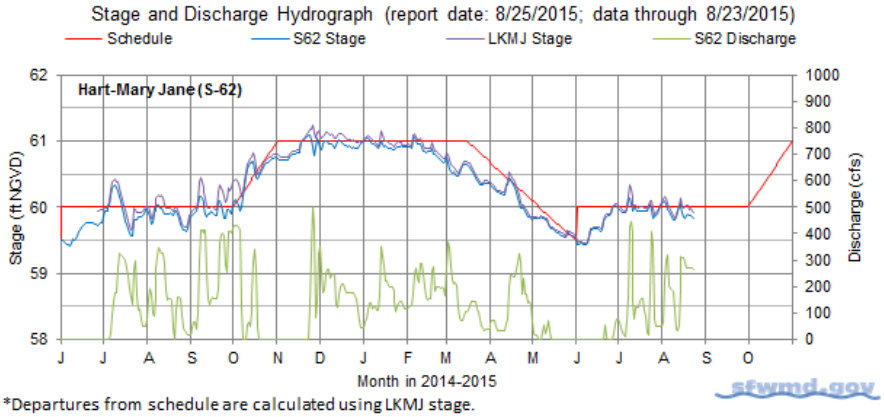
*Departures from schedule are calculated using TohoW stage.

Figure 2.



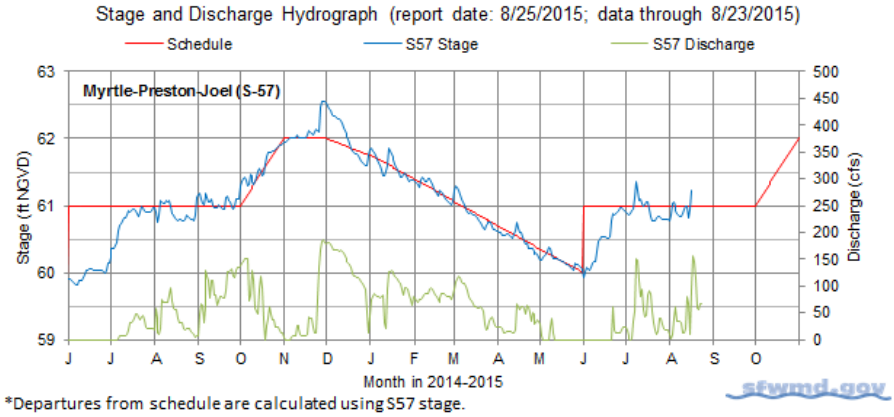
*Schedule departures use In-lake stage avg (L KISS, KUB011, and LKIS5B).

Figure 3.



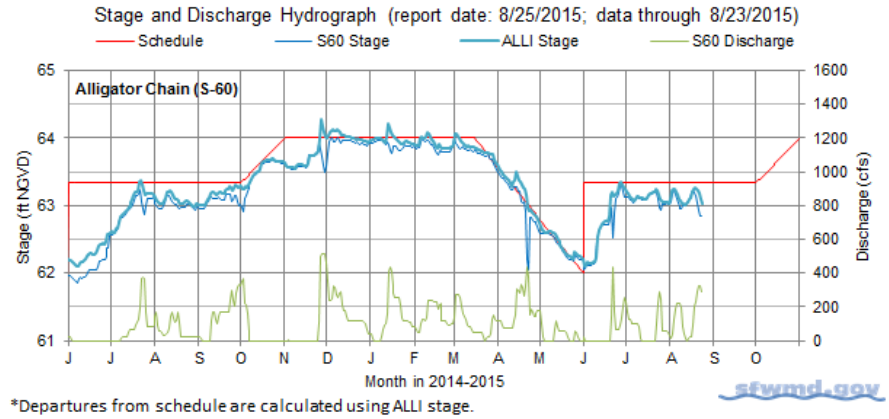
*Departures from schedule are calculated using LKMJ stage.

Figure 4.



*Departures from schedule are calculated using S57 stage.

Figure 5.



*Departures from schedule are calculated using ALLI stage.

Figure 6.

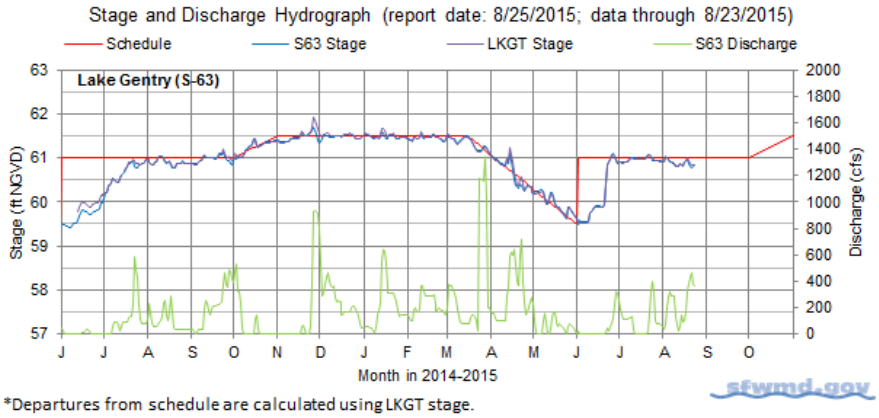


Figure 7.

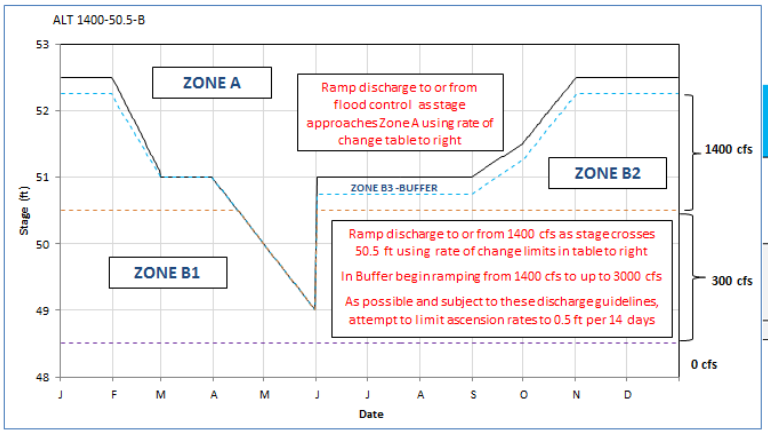


Table 1. Discharge Rate of Change Limits for S65/S65A
****Rate limits apply only in Zone B****

	Q (cfs)	Maximum rate of increase (cfs/day)	Maximum rate of decrease (cfs/day)
Zone B	0-300	50	-50
	300-1400	150	-75
	1400-2500	300	-300
	2500-3000	1000	-1000
Zone A	No limits		

Figure 8a. Final S65 operational plan for Wet Season 2015.

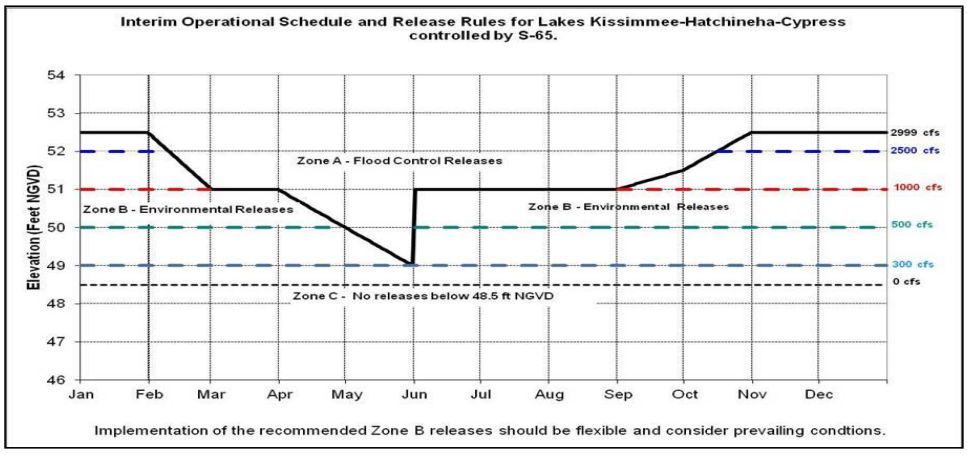


Figure 8b. Interim operations schedule for S-65. The discharge schedule shown to the right has not been used in recent years or in Wet Season 2015.

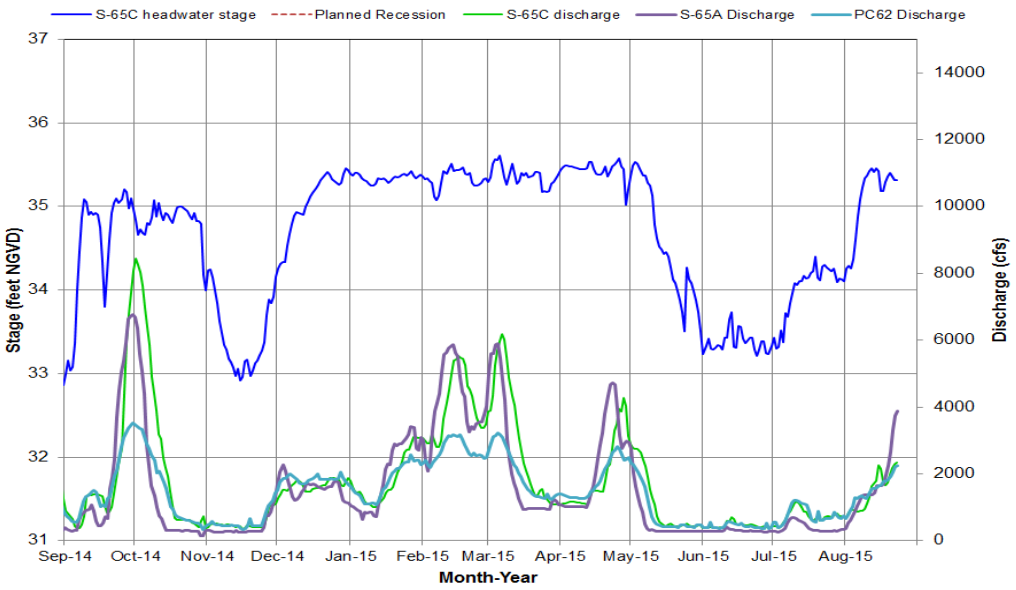


Figure 9. S-65C headwater stage in relation to discharge at S-65C, S-65A, and PC62.

Phase I Area –
DO, Temperature & Rainfall

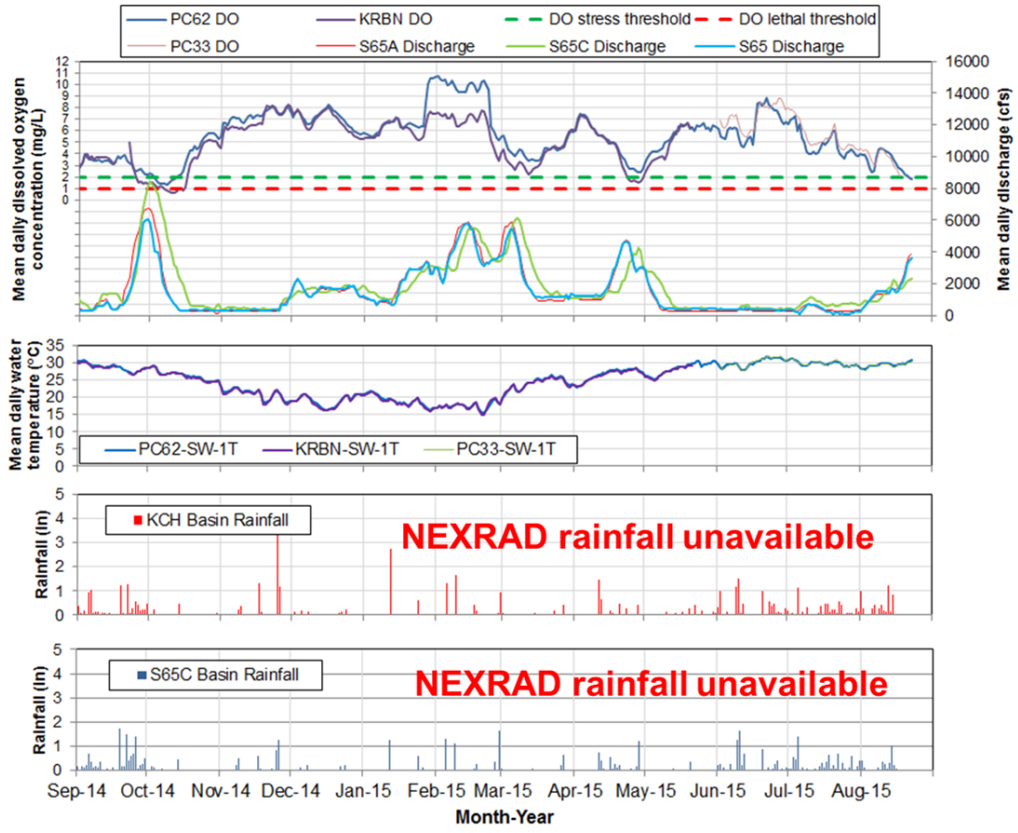
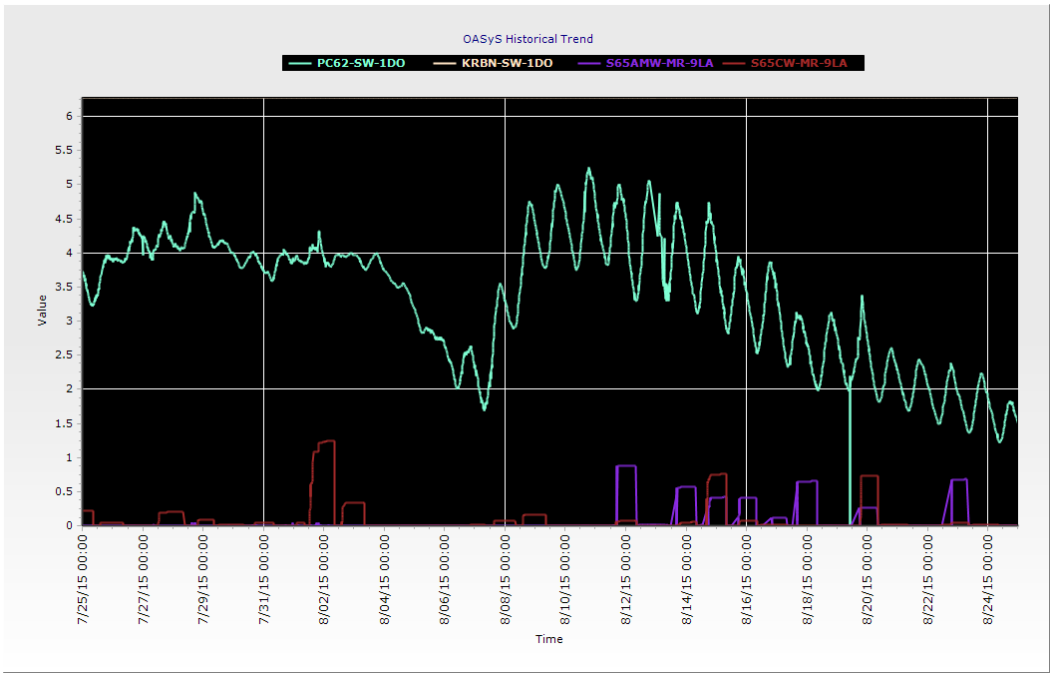


Figure 10. Mean daily DO, discharge, temperature and rainfall in the Phase I river channel.
*DO measured only at PC62 for this week



Insert A. Phase I river channel DO (measured at 15 minute intervals) and rainfall at S65A and S65C.

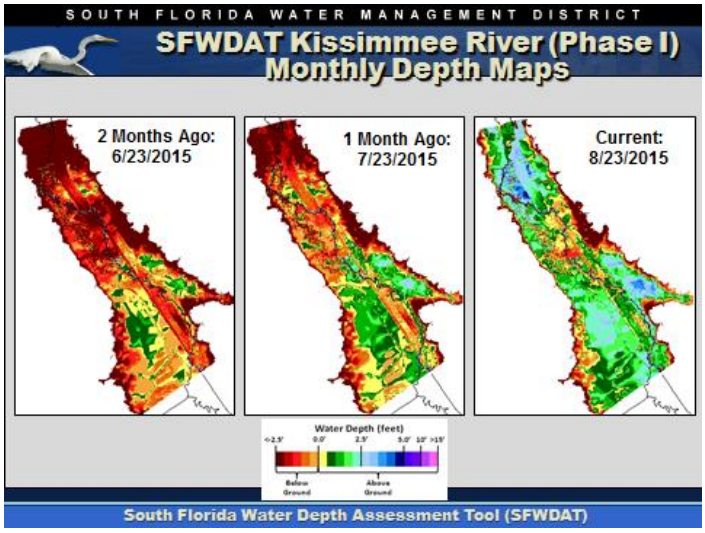


Figure 11. Phase I area floodplain water depths for this week, one month ago, and two months ago. Note that the WDAT color-coding has been modified to accommodate greater water depths; these maps are not directly comparable to Kissimmee Basin WDAT maps published prior to Jan. 16, 2012.

Kissimmee River Hydrographs

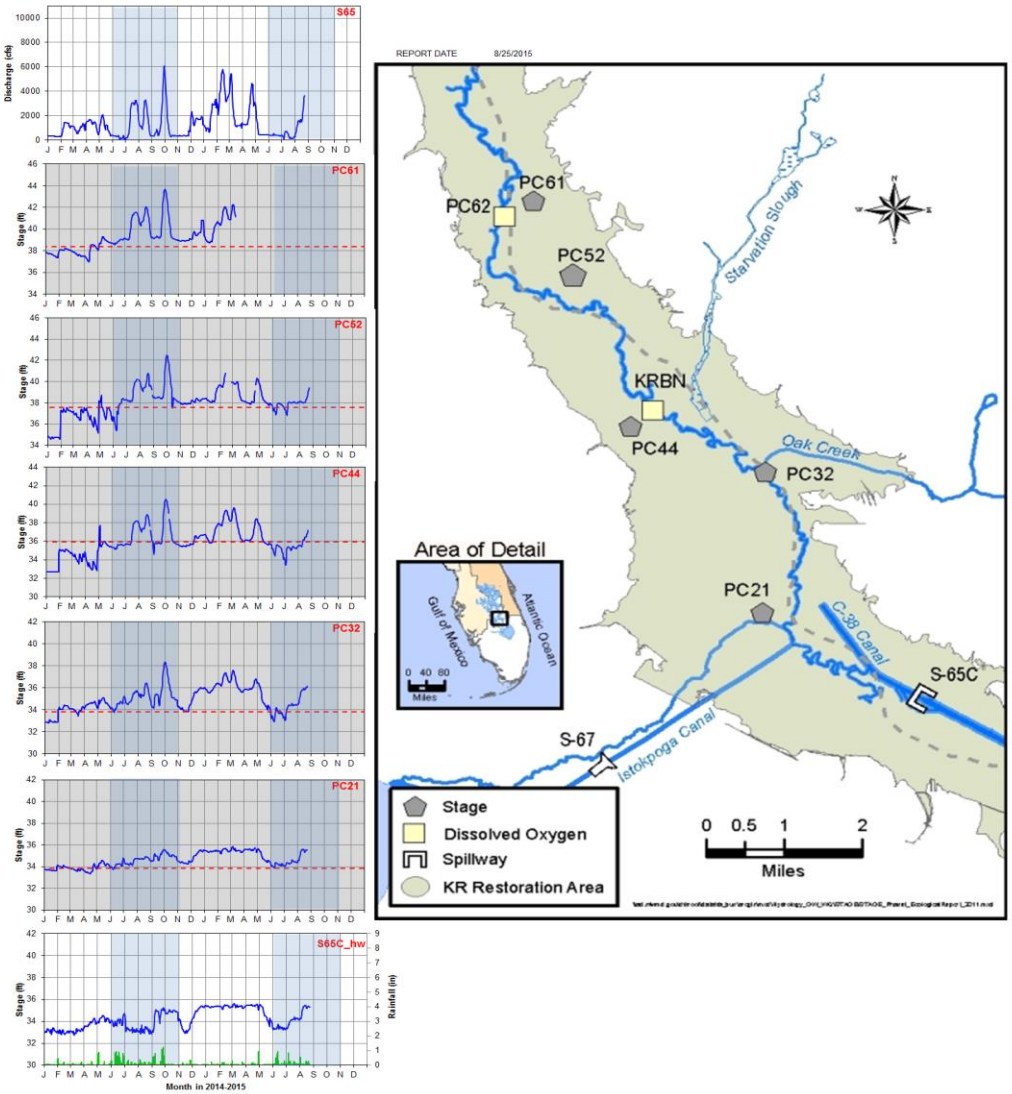


Figure 12. Discharge at S65, stages at five monitoring stations in the Phase I area of the Kissimmee River floodplain, and headwater stage at S65-C since January 1, 2013. The most recent data (~2 weeks) are provisional real-time data from SFWMD DualTrend; previous data are from SFWMD DB-HYDRO (validated). Dashed lines are ground elevations.

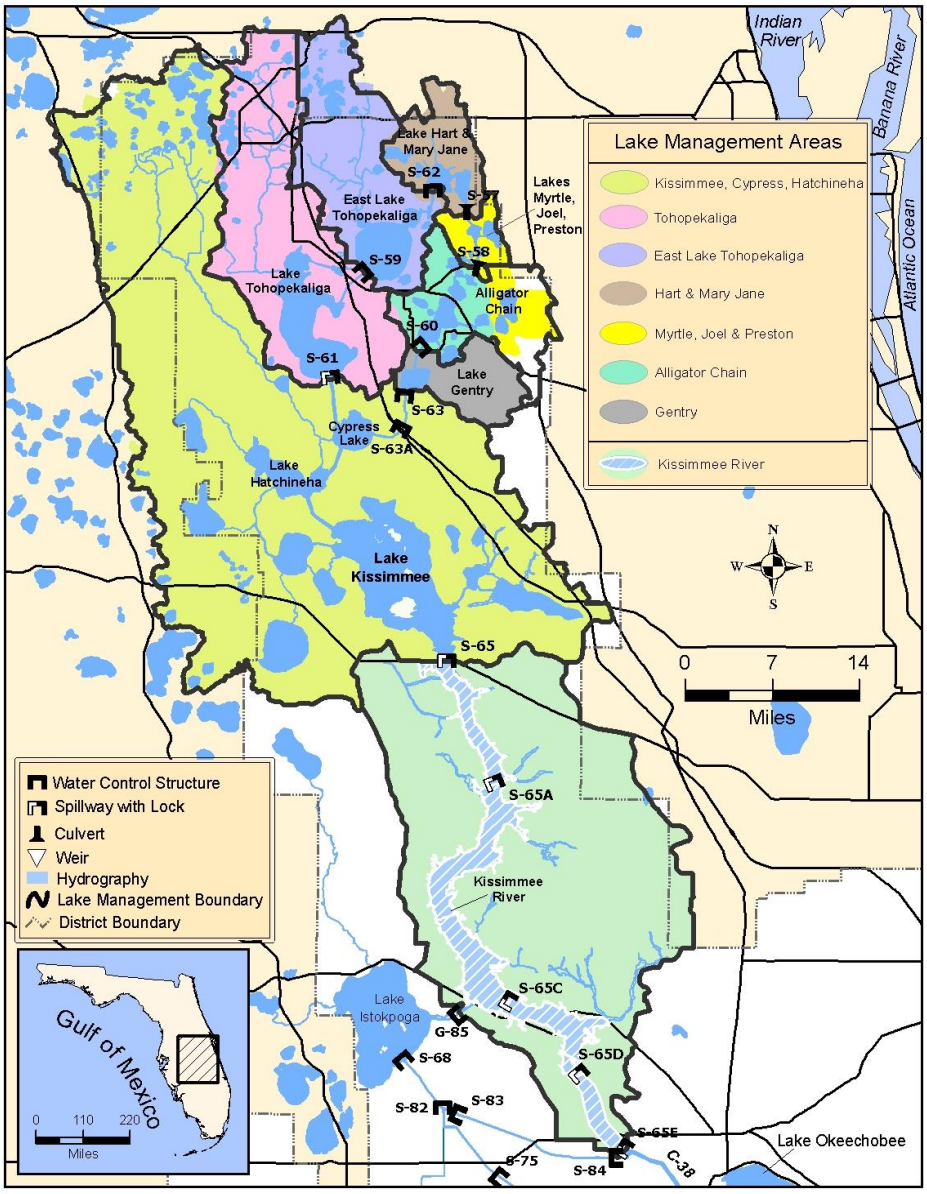


Figure 13. The Kissimmee Basin.

LAKE OKEECHOBEE

Lake Okeechobee is at 12.63 feet NGVD, having risen 0.14 feet over the past week, and is back in the base flow sub-band. Satellite imagery indicates low to moderate bloom conditions in most of the Lake's nearshore zone. Annual Submerged Aquatic Vegetation (SAV) mapping indicates that this component of the Lake's vegetative community has remained relatively stable over the past three years.

Hydrologic Conditions

According to the United States Army Corps of Engineers (USACOE) web site, Lake Okeechobee stage is at 12.63 feet NGVD for the period ending at midnight on August 24, 2015. Lake stage increased by 0.14feet over the past week. The Lake is now 0.55 feet higher than it was a month ago and 1.89 feet lower than it was a year ago (Figure 1). The Lake is in the base flow sub-band. (Figure 2). According to RAINDAR, 0.52 inches of rain fell directly over the Lake during the past seven days. Similar amounts fell in most of the surrounding watersheds (Figure 3).

Based on USACOE reported values, current Lake Inflow is approximately 5218 cfs consisting of flows as indicated below.

Structure	Flow cfs
S65E	2649
S154	0
S84 & 84X	552
S71	359
S72	0
C5	0.
S191	103
S133 PUMPS	0
S127 PUMPS	0
S129 PUMPS	0
S131 PUMPS	0
S135 PUMPS	0
Fisheating Creek	1556
S2 Pumps	0
S3 Pumps	0
S4 Pumps	0

There are no reported Lake outflows and the L8 structure is reporting a small flow (9 cfs) back into the Lake. Average corrected ET this past week was equivalent to an outflow of 3600 cfs.

Change in elevation equivalents and average weekly flows for major structures are presented in Figure 4.

The most recent MODIS satellite image (August 18) (Figure 5) indicates low to moderate chlorophyll values throughout much of the nearshore zone.

Results from annual SAV mapping yielded a total areal coverage of 32,861 acres (Figure 6). This coverage is comparable to results for 2013 and 2014 indicating that this component of the Lake Okeechobee vegetative community has remained stable over the past three years.

Water Management Recommendations

The summer increase in Lake levels is continuing. However, the Lake remains below the optimal stage for this time of year. Future recommendations for the short term will depend in large measure on wet season rainfall patterns and amounts. The operational goal is to maintain a steady increase in Lake Stage, not to exceed 0.5 feet per month (0.125 feet/week) throughout the wet season.

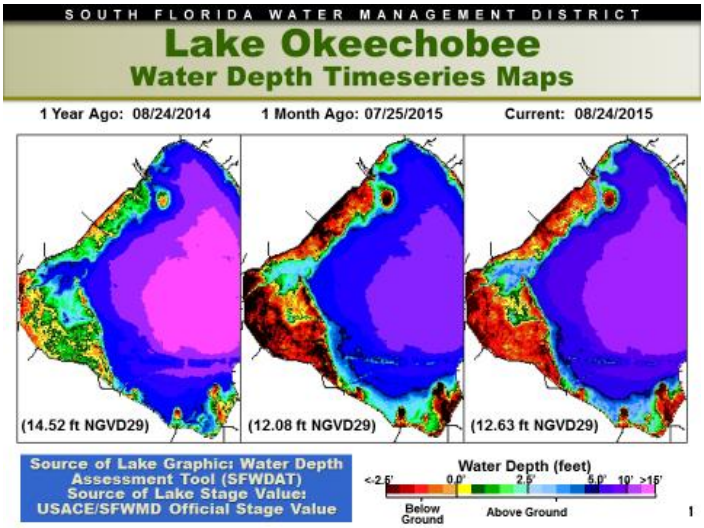

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
Lake Okeechobee
Water Depth Timeseries Maps
1 Year Ago: 08/24/2014
1 Month Ago: 07/25/2015
Current: 08/24/2015
(14.52 ft NGVD29)
(12.08 ft NGVD29)
(12.63 ft NGVD29)
Source of Lake Graphic: Water Depth Assessment Tool (SFWDAT)
Source of Lake Stage Value: USACE/SFWMD Official Stage Value
Water Depth (feet)
<-2.5'
0.0'
2.5'
5.0'
10'
>15'
Below Ground
Above Ground

Figure 1

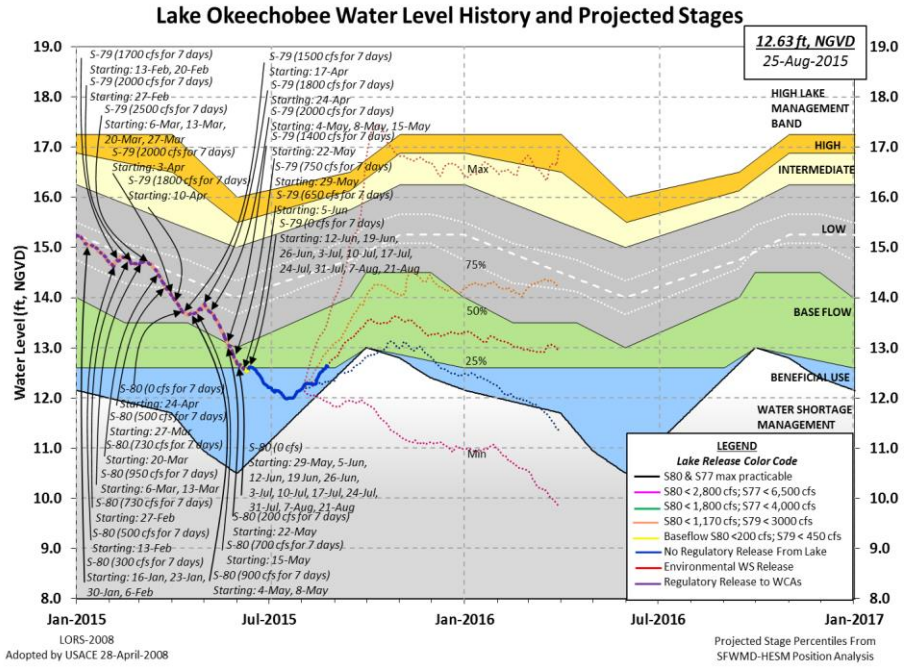

Lake Okeechobee Water Level History and Projected Stages
12.63 ft, NGVD
25-Aug-2015
Water Level (ft, NGVD)
HIGH LAKE MANAGEMENT BAND
HIGH
INTERMEDIATE
LOW
BASE FLOW
BENEFICIAL USE
WATER SHORTAGE MANAGEMENT
Max
75%
50%
25%
Min
S-79 (1700 cfs for 7 days) Starting: 13-Feb, 20-Feb
S-79 (2000 cfs for 7 days) Starting: 27-Feb
S-79 (2500 cfs for 7 days) Starting: 6-Mar, 13-Mar, 20-Mar, 27-Mar
S-79 (2000 cfs for 7 days) Starting: 3-Apr
S-79 (1800 cfs for 7 days) Starting: 10-Apr
S-79 (1500 cfs for 7 days) Starting: 17-Apr
S-79 (1800 cfs for 7 days) Starting: 24-Apr
S-79 (2000 cfs for 7 days) Starting: 4-May, 8-May, 15-May
S-79 (1400 cfs for 7 days) Starting: 22-May
S-79 (750 cfs for 7 days) Starting: 29-May
S-79 (650 cfs for 7 days) Starting: 5-Jun
S-79 (0 cfs for 7 days) Starting: 12-Jun, 19-Jun, 26-Jun, 3-Jul, 10-Jul, 17-Jul, 24-Jul, 31-Jul, 7-Aug, 21-Aug
S-80 (0 cfs for 7 days) Starting: 24-Apr
S-80 (500 cfs for 7 days) Starting: 27-Mar
S-80 (730 cfs for 7 days) Starting: 20-Mar
S-80 (950 cfs for 7 days) Starting: 6-Mar, 13-Mar
S-80 (730 cfs for 7 days) Starting: 27-Feb
S-80 (500 cfs for 7 days) Starting: 13-Feb
S-80 (300 cfs for 7 days) Starting: 16-Jan, 23-Jan, 30-Jan, 6-Feb
S-80 (0 cfs) Starting: 29-May, 5-Jun, 12-Jun, 19 Jun, 26-Jun, 3-Jul, 10-Jul, 17-Jul, 24-Jul, 31-Jul, 7-Aug, 21-Aug
S-80 (200 cfs for 7 days) Starting: 22-May
S-80 (700 cfs for 7 days) Starting: 15-May
S-80 (900 cfs for 7 days) Starting: 4-May, 8-May
LEGEND
Lake Release Color Code
S80 & S77 max practicable
S80 < 2,800 cfs; S77 < 6,500 cfs
S80 < 1,800 cfs; S77 < 4,000 cfs
S80 < 1,170 cfs; S79 < 3000 cfs
Baseflow S80 <200 cfs; S79 < 450 cfs
No Regulatory Release From Lake
Environmental WS Release
Regulatory Release to WCAs
Jan-2015
Jul-2015
Jan-2016
Jul-2016
Jan-2017
LORS-2008
Adopted by USACE 28-April-2008
Projected Stage Percentiles From SFWMD-HESM Position Analysis

Figure 2

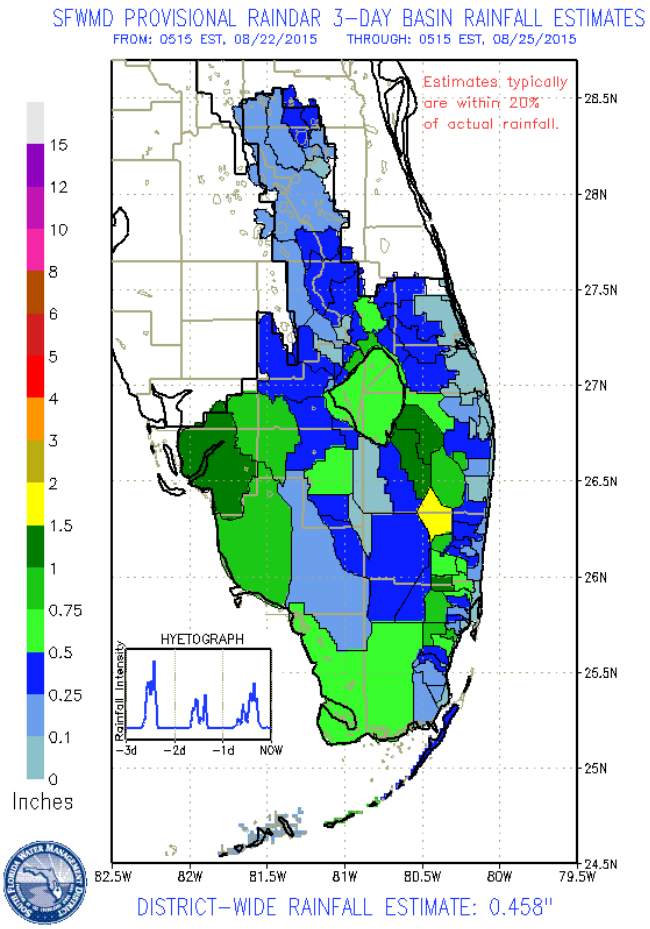

SFWMD PROVISIONAL RAINDAR 3-DAY BASIN RAINFALL ESTIMATES
FROM: 0515 EST, 08/22/2015 THROUGH: 0515 EST, 08/25/2015
Estimates typically are within 20% of actual rainfall.
15
12
10
8
6
5
4
3
2
1.5
1
0.75
0.5
0.25
0.1
0
Inches
HYETOGRAPH
Rainfall Intensity
-3d
-2d
-1d
NOW
28.5N
28N
27.5N
27N
26.5N
26N
25.5N
25N
24.5N
82.5W
82W
81.5W
81W
80.5W
80W
79.5W
DISTRICT-WIDE RAINFALL ESTIMATE: 0.458"

Figure 3

INFLOWS	Average Daily Flow Past Week cfs	Feet of Change Past Week
S65E	**2157**	**0.080**
S71 & 72	**0**	**0.011**
S84 & 84X	**2157**	**0.019**
Fisheating Creek	**945**	**0.035**
Rainfall	N.A.	**0.043**
OUTFLOWS	**Average Daily Flow Past Week cfs**	**Feet of Change Past Week**
S77	**0**	**0.000**
S308	**0**	**0.000**
S351	**0**	**0.000**
S352	**0**	**0.000**
S354	**0**	**0.000**
L8	**55**	**0.002**
ET	**3600**	**0.134**

Figure 4

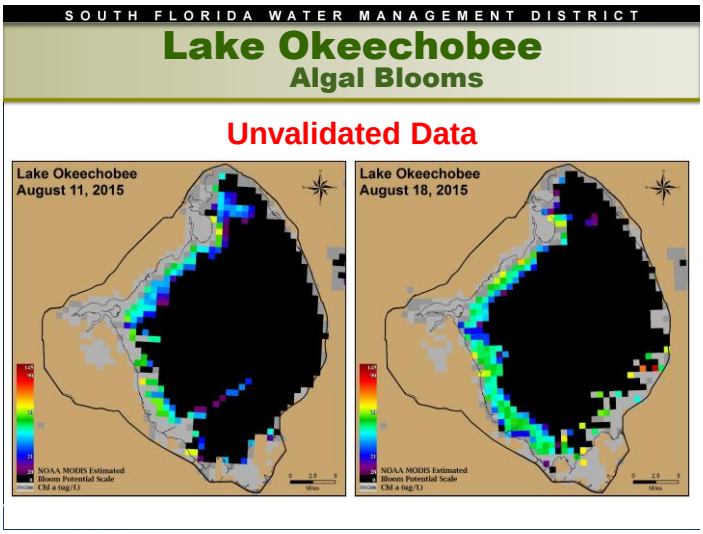

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
Lake Okeechobee
Algal Blooms
Unvalidated Data
Lake Okeechobee
August 11, 2015
NOAA MODIS Estimated
Bloom Potential Scale
Chl a (ug/L)
Lake Okeechobee
August 18, 2015
NOAA MODIS Estimated
Bloom Potential Scale
Chl a (ug/L)

Figure 5

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Lake Okeechobee
Submerged Aquatic Vegetation

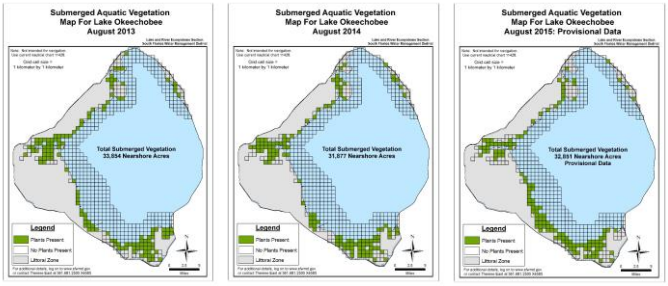


Figure 6

Lake Istokpoga:

Lake Istokpoga stage is 38.46 feet NGVD today and is currently 0.02 feet above its regulation schedule (38.34 ft. NGVD) which is now undergoing its annual rise to high pool stage (Figure 7). Average flows into the Lake from Arbuckle and Josephine creeks were 289 and 237 cfs respectively, a net increase from last week. Average discharge from S68 and S68X this past week was 526 cfs, roughly half the rate of the preceding week. According to RAINDAR 0.11 inches of rain fell in the Lake Istokpoga watershed during the past seven days.

August 18 satellite imagery for Lake Istokpoga (Figure 8) indicated moderate chlorophyll concentrations over much of the Lake.

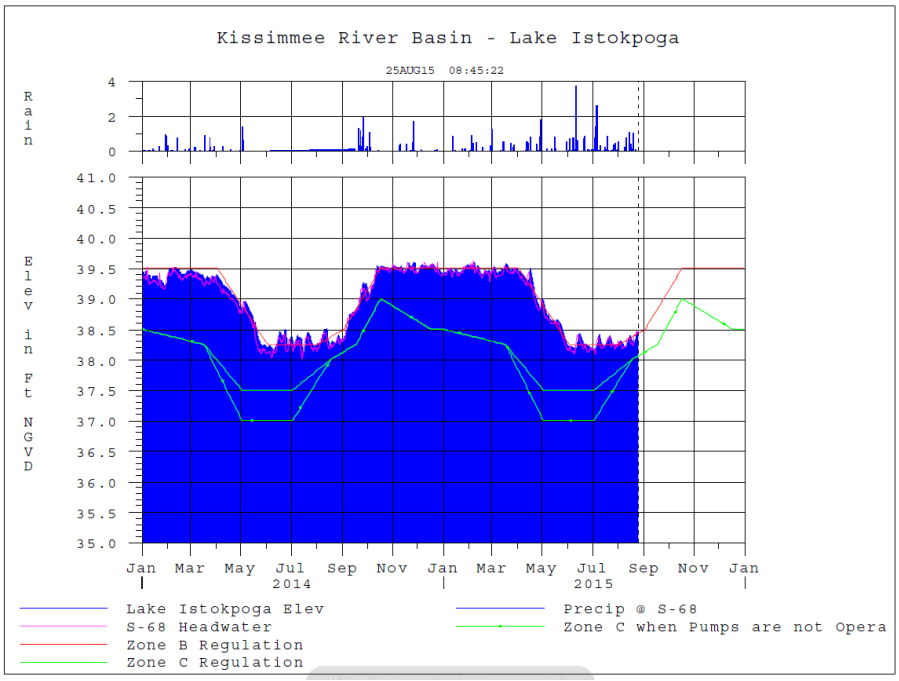


Figure 7

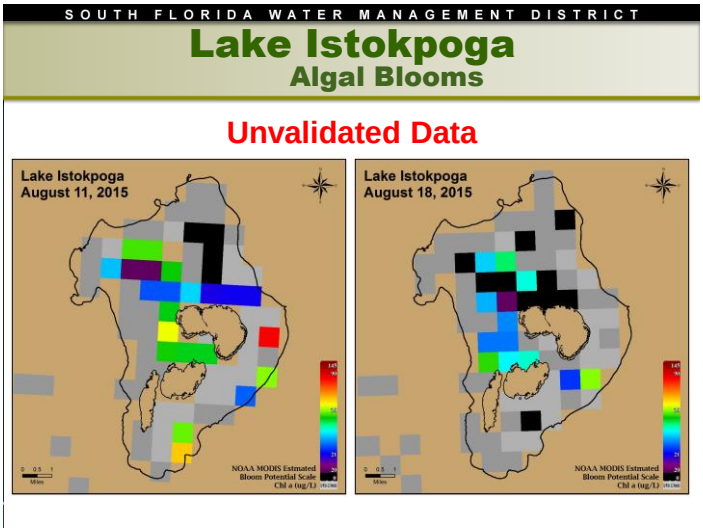


Figure 8

ESTUARIES

St. Lucie Estuary:
Over the past week, provisional flows averaged 0 cfs at S-80, 0 cfs at S-308, 291 cfs at S-49 on C-24, 90 cfs at S-97 on C-23, and 280 cfs from Ten Mile Creek at the Gordy Road Structure. Average inflow from tidal basin tributaries is estimated to be 271 cfs (Figures 1 and 2). Total inflow averaged 932 cfs last week and 845 cfs over last month.

Over the past week, salinity decreased throughout the estuary (Table 1, Figures 3 and 4). The seven-day moving average salinity of the water column at the US1 Bridge is 15.5. Salinity conditions in the middle estuary are in the good range for the adult eastern oyster.

Table 1. Seven-day average salinity at three monitoring stations in the St. Lucie Estuary. Current average is in bold face type, previous average in parentheses. The envelope reflects the preferred salinity range for adult eastern oysters (*Crassostrea virginica*) in the middle estuary.

Sampling Site	Surface	Bottom	Envelope
HR1 (N. Fork)	**6.8** (~11)	**13.7** (NR)	NA[1]
US1 Bridge	**14.1** (17.5)	**16.9** (18.9)	10.0-26.0
A1A Bridge	**22.9** (25.4)	**27.3** (28.2)	NA

[1]Envelope not applicable

Caloosahatchee Estuary:
During the past week, provisional flows averaged approximately 23 cfs at S-77, 591 cfs at S-78, and 4022 cfs at S-79. Average inflow from tidal basin tributaries is estimated to be 2144 cfs (Figures 5 and 6). Total inflow averaged 6166 cfs last week and 4267 cfs over last month.

Over the past week, salinity decreased throughout the estuary (Table 2, Figures 7 and 8). The seven-day average salinity values are within the good range for oysters at Shell Point and Sanibel, but within the poor range at Cape Coral (Figure 9). The 30-day moving average surface salinity is 0.3 at both Val I-75 and Ft. Myers. Salinity conditions at Val I-75 are in the good range for tape grass.

Table 2. Seven-day average salinity at six monitoring stations in the Caloosahatchee Estuary. Current average is in bold face type, previous average in parentheses. The envelope reflects the preferred salinity range for tape grass (*Vallisneria americana)* at Val I-75 and for adult eastern oysters (*Crassostrea virginica*) elsewhere.

Sampling Site	Surface	Bottom	Envelope
S-79 (Franklin Lock)	**0.2** (0.2)	**0.2** (0.2)	NA[1]
*Val I75	**0.2***(0.3*)	**0.2***(0.3*)	0.0-5.0[2]
Ft. Myers Yacht Basin	**0.2** (0.3)	**0.2** (0.3)	NA
Cape Coral	**1.5** (5.4)	**1.9** (6.6)	10.0-30.0
Shell Point	**12.5** (19.6)	**16.5** (20.7)	10.0-30.0
Sanibel	**25.4** (27.3)	**27.8** (28.3)	10.0-30.0

[1]Envelope not applicable, [2]Envelope is based on a 30-day average.
*Val I75 is temporarily offline due to bridge construction.
Salinity values are estimated using models developed for the site.

Salinity forecasts during the next two weeks were constructed for the following two scenarios of flow at S-79: a) no release (Figure 10), and b) 450 cfs pulse release. Due to high levels of flow from the watershed, the predicted daily salinity and the 30-day moving average at the Val I75 location would be 0.3 for both cases by September 8, 2015.

Monitoring data collected by the River, Estuary and Coastal Observing Network of Sanibel-Captiva Conservation Foundation using continuous sensors are summarized in Table 3 as concentration ranges of Chlorophyll *a* and dissolved oxygen at Beautiful Island, Ft. Myers, and Shell Point in the Caloosahatchee Estuary.

Table 3. Weekly ranges of Chlorophyll *a* (a measure of algal biomass) and dissolved oxygen concentrations at three monitoring stations maintained by the Sanibel-Captiva Conservation Foundation.

	RECON Monitoring Stations		
	Beautiful Island	**Ft. Myers**	**Shell Point**
Chlorophyll *a* (µg/l)	NA	NA	2.4 – 16.5
Dissolved Oxygen (mg/l)	NA	NA	2.6 – 7.6

The Florida Fish and Wildlife Research Institute reported on August 20, 2015, that *Karenia brevis*, the Florida red tide organism, was not detected in samples collected throughout southwest Florida this week.

Water Management Recommendations

Lake Okeechobee's water level is within the Base Flow Sub-band; the tributary hydrological conditions are Wet; and the seasonal and multi-seasonal forecasts are Very Wet and Wet, respectively. The current and forecasted 30-day average salinities at the Val-I75 site are below the five psu threshold within the next two weeks. The Lake Okeechobee Regulation Schedule (LORS) recommends up to 450 cfs at S-79 and up to 200 cfs at S-80. -The Lake Okeechobee Adaptive Protocols (LOAP) prescribe no lake releases at S-79.

Currently, the USACE is not releasing water from Lake Okeechobee to the Caloosahatchee and St. Lucie estuaries. Local basin runoff is more than sufficient to maintain salinity within the preferred ranges of oysters and submerged aquatic vegetation in both estuaries. There are no ecological benefits associated with additional releases from Lake Okeechobee.

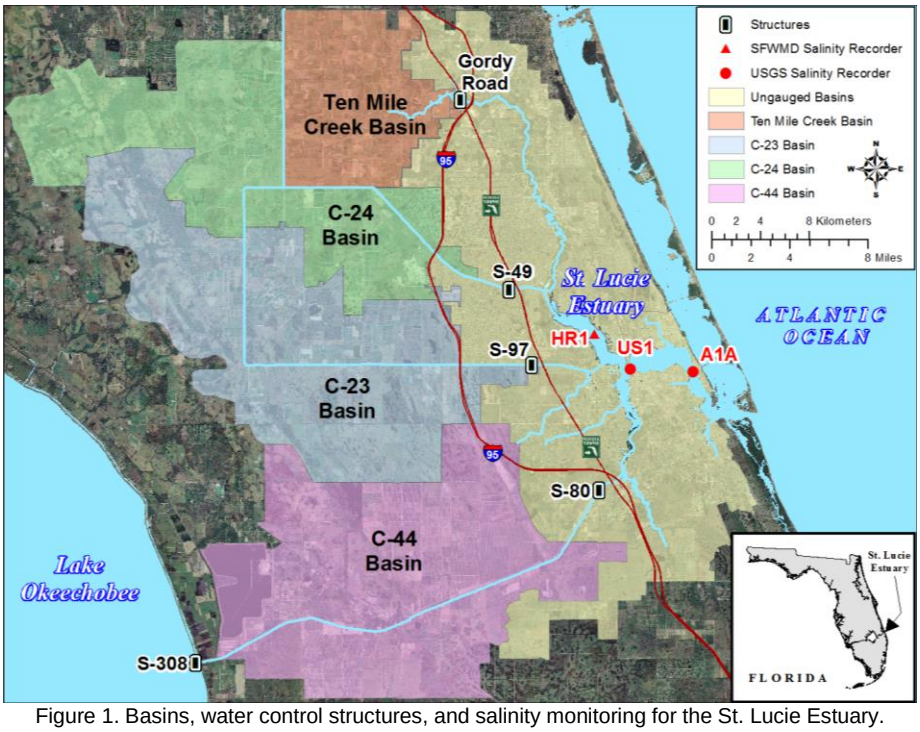


Figure 1. Basins, water control structures, and salinity monitoring for the St. Lucie Estuary.

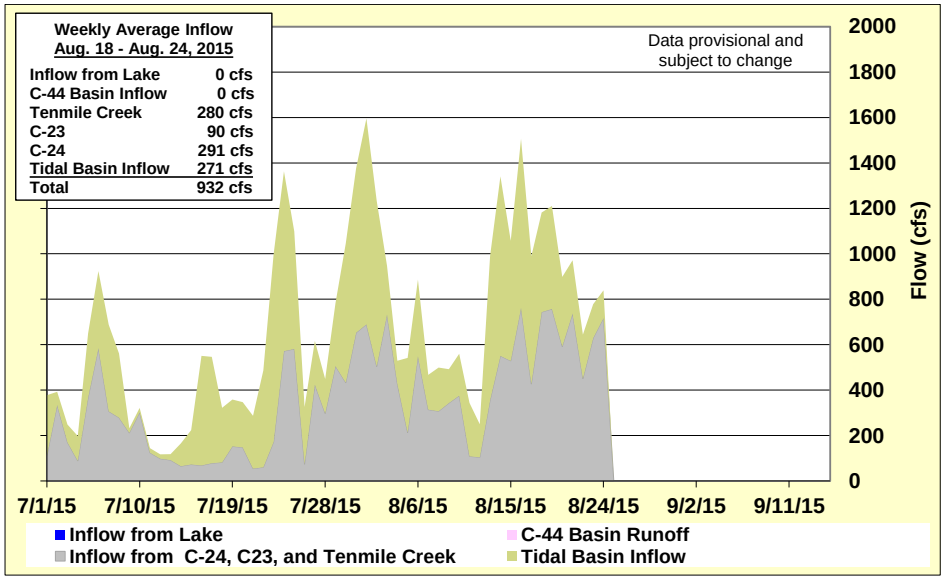


Figure 2. Estimated surface freshwater inflows from Lake Okeechobee and runoff from the C-44, C-23, C-24, Ten Mile Creek, and tidal basins into the St. Lucie Estuary.

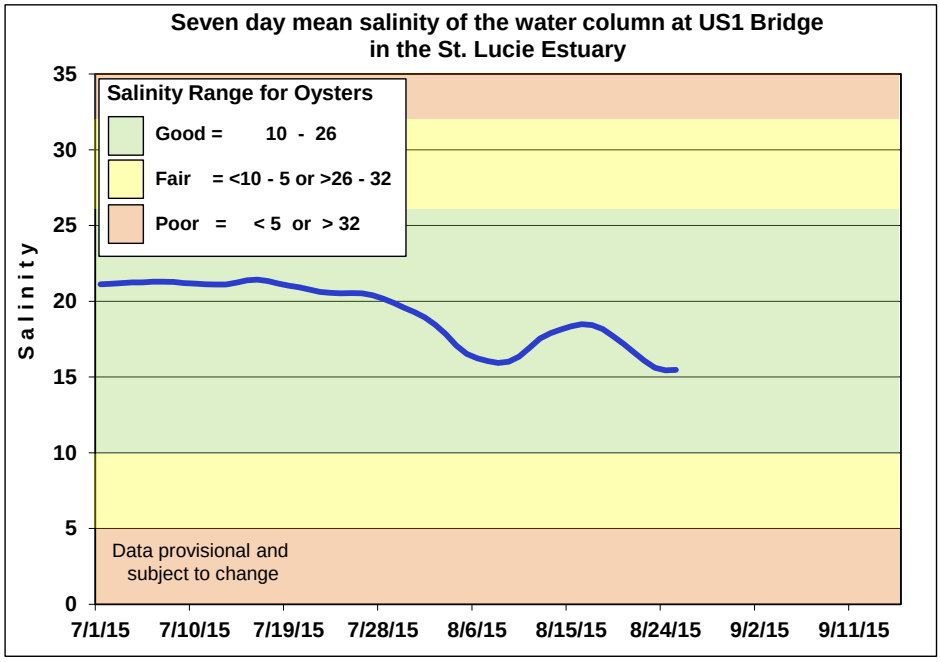


Figure 3. Seven-day mean salinity of the water column at the U.S. Highway 1 Bridge.

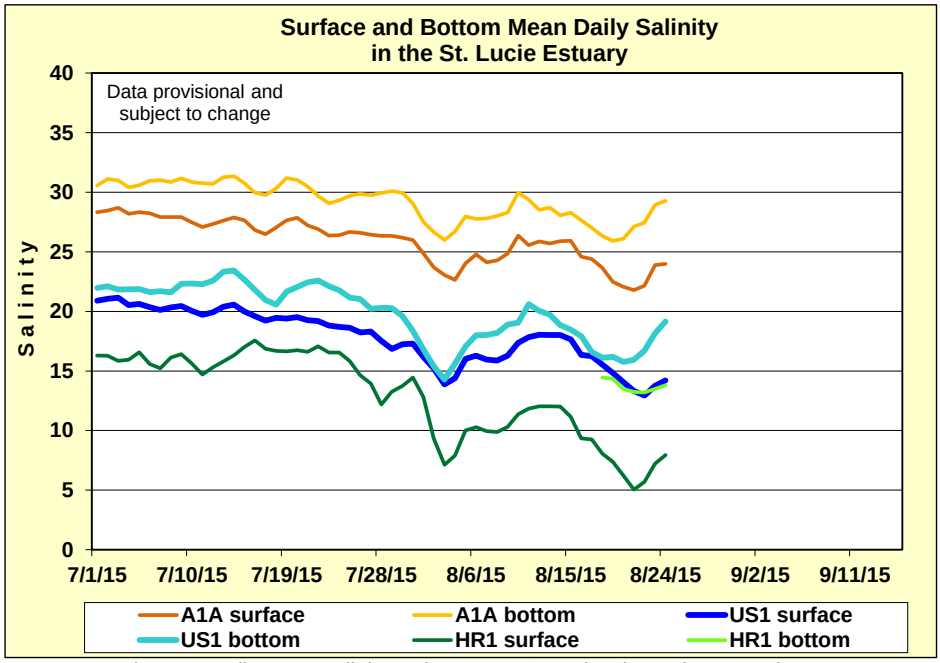


Figure 4. Daily mean salinity at the A1A, US1 and estimated HR1 stations.

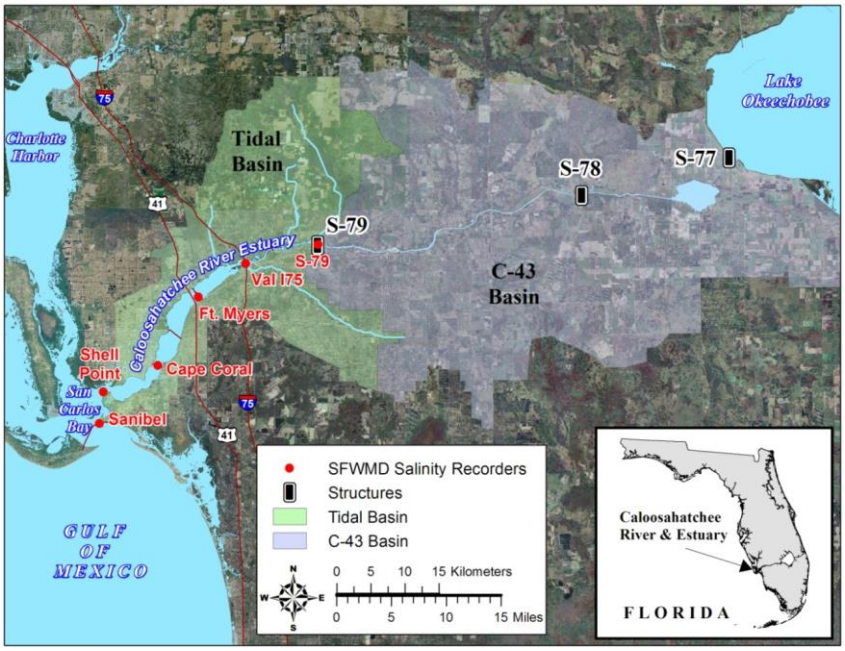


Figure 5. Basins, water control structures, and salinity monitoring for the Caloosahatchee Estuary.

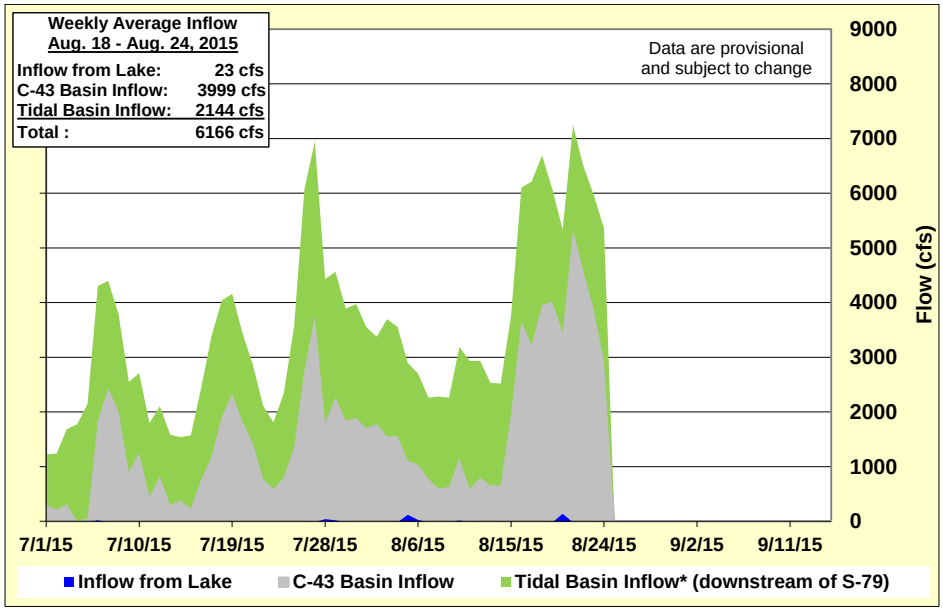
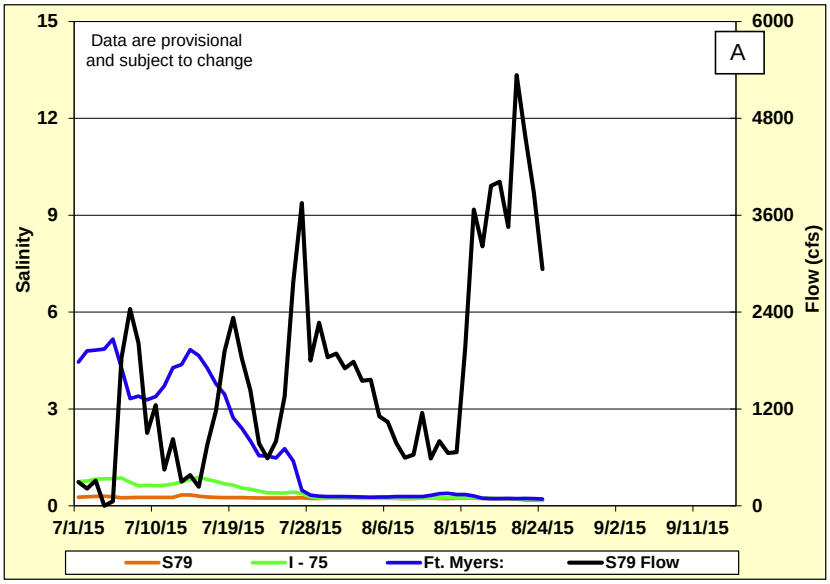


Figure 6. Surface freshwater inflows from Lake Okeechobee, runoff from the C-43 basin, and tributaries in the tidal basin into the Caloosahatchee River Estuary.



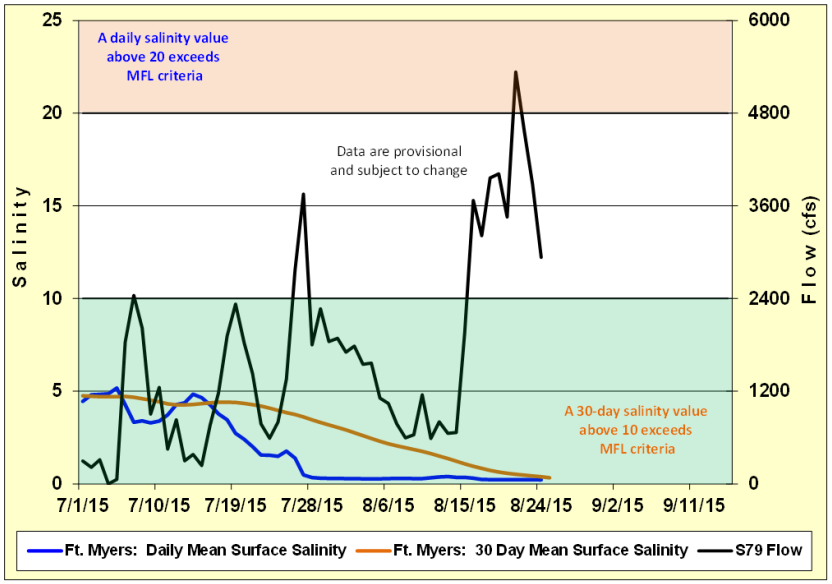


Figure 7. Daily mean flows at S-79 and salinity at upper estuary monitoring stations (A) and 30-day moving average salinity at Ft. Myers (B).

B

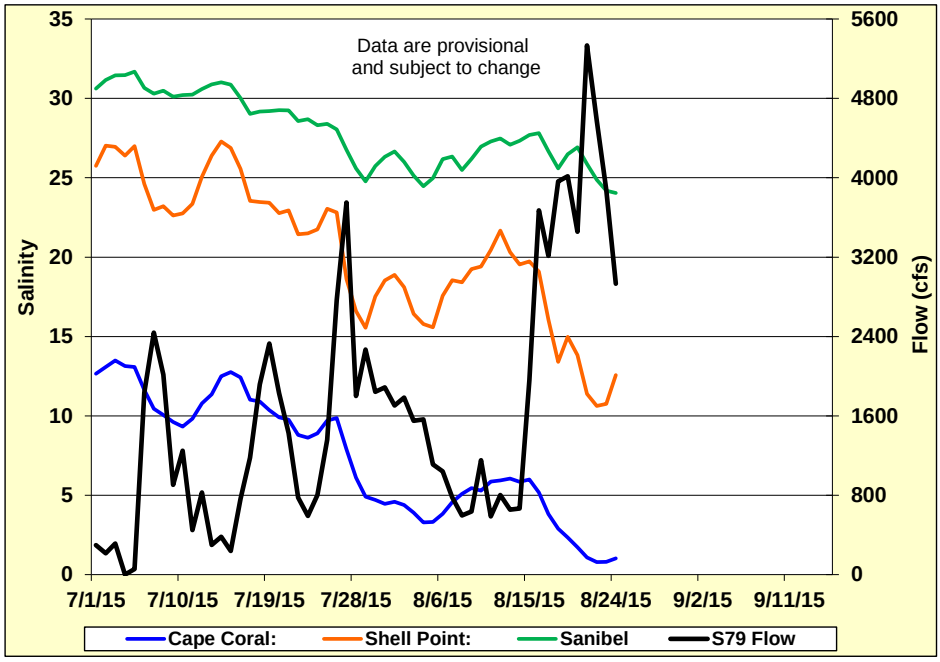


Figure 8. Daily mean flows at S-79 and salinity at lower estuary stations.

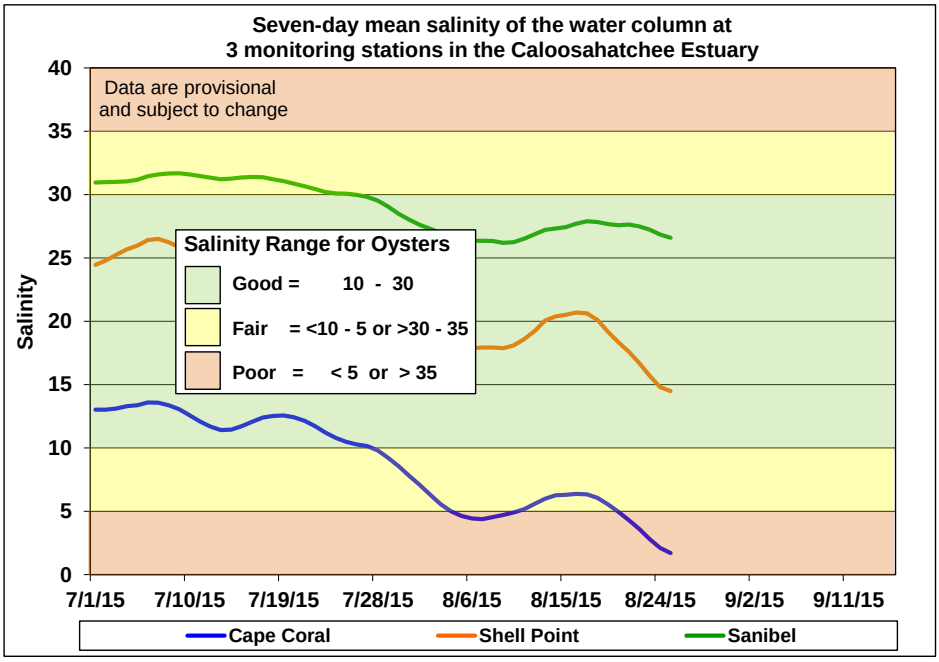


Figure 9. Seven-day mean salinity at Cape Coral Bridge, Shell Point and Sanibel Bridge monitoring stations.

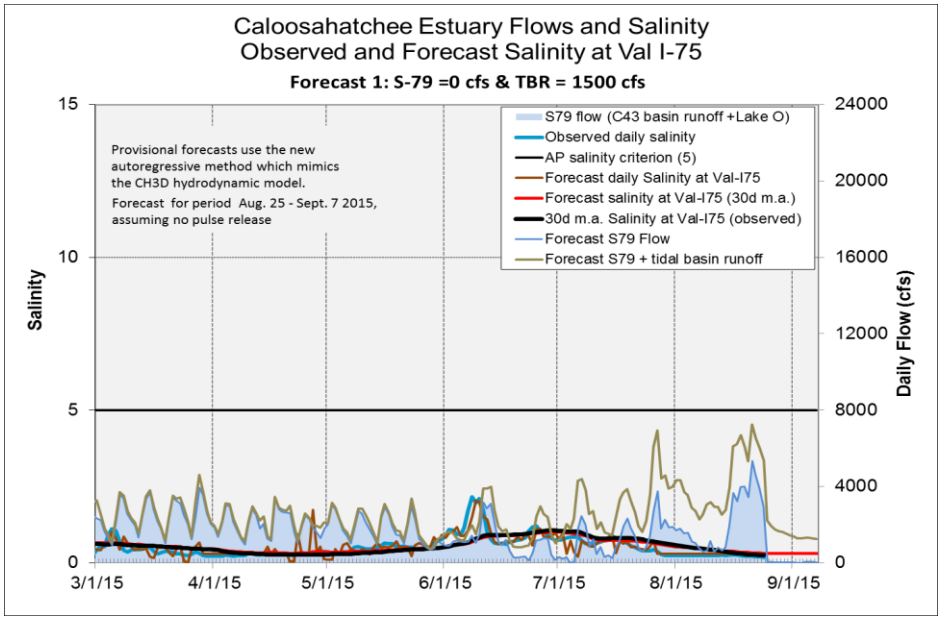
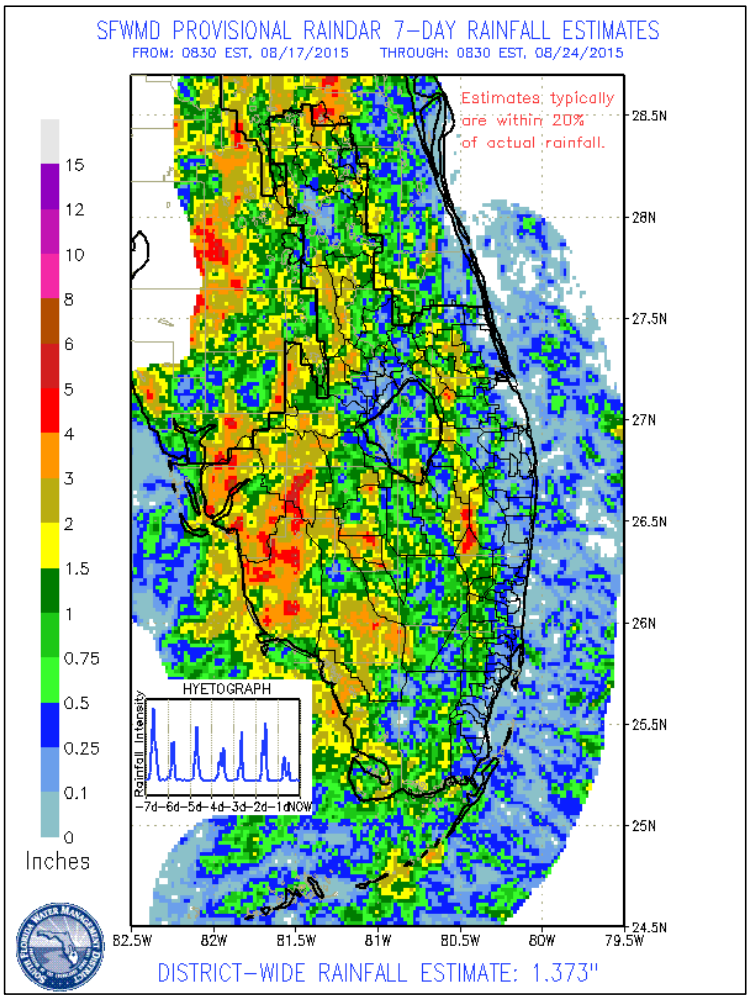


Figure 10. Two-Week Salinity Forecast for Caloosahatchee Val I-75 location assuming 0 cfs flow from S-79.

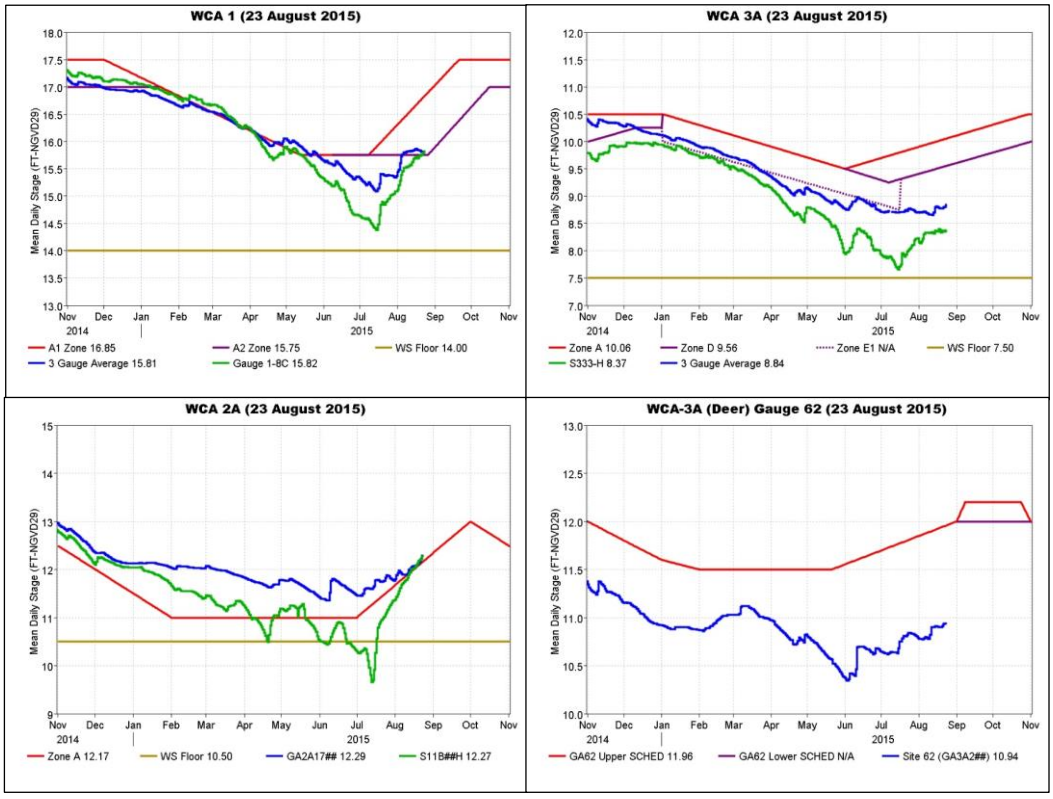
GREATER EVERGLADES

Rainfall was low to moderate with basin averages ranging from 0.68 inches to 2.09 inches. The maximum local basin rainfall was 5.87 inches in WCA-2A and the highest stage change was in WCA-2B with an increase of 1.62 feet in a week. Stage changes were mixed. Pan evaporation was 1.81 inches, 29 percent above the 1.40 inches pre-project average.

Everglades Region	Rainfall (Inches)	Stage Change (feet)
WCA-1	1.10	-0.05
WCA-2A	2.09	0.23
WCA-2B	1.35	0.87
WCA-3A	1.08	0.04
WCA-3B	0.68	-0.08
ENP	1.14	0.01

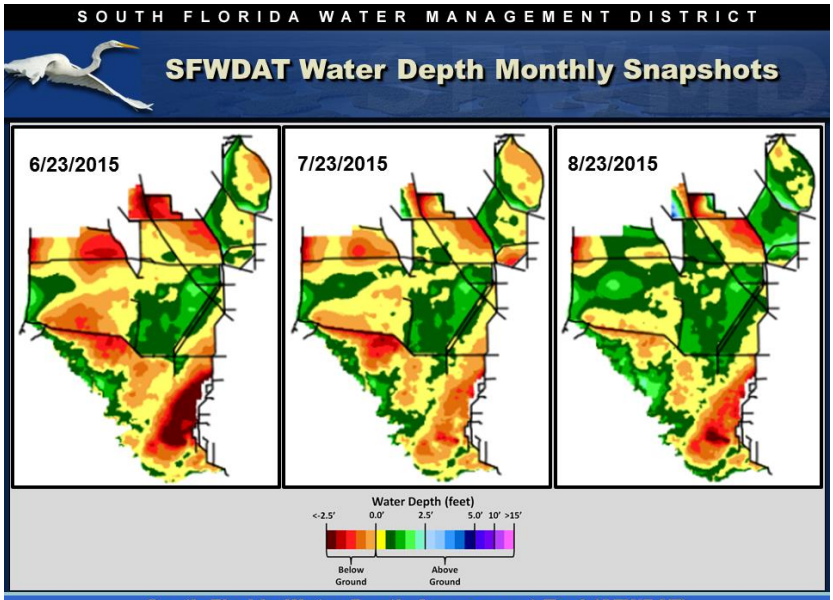


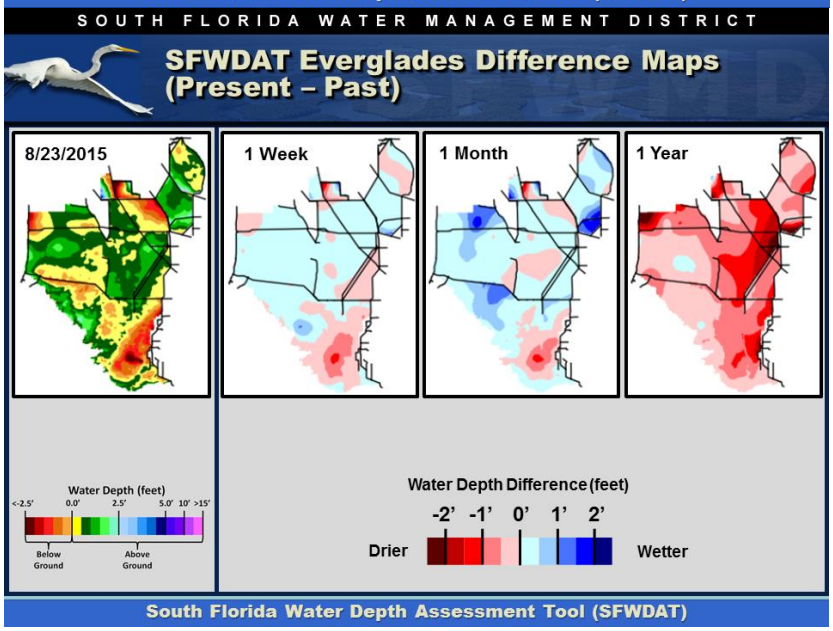
Regulation Schedules: Stages remain low for this time of the wet season. In WCA-1, the three gauge average in the wetlands is now 0.06 feet above the Zone A2 line and 1.04 feet below regulation. The WCA-2A stage is low at only 0.12 feet above regulation. In WCA-3A, stages remain low; the three gauge average is 0.72 feet below Zone D and 1.22 feet below regulation. The water level at the northwestern WCA-3A gauge stage (gauge 62) remains 1.02 feet below the upper regulation schedule.



Water Depths and Changes: Water levels are higher than a month ago and higher than two months ago, but are still much lower than usual at this time of the wet season. Water depths at the monitored gauges range from -0.17 feet (northeastern WCA-3A) to 1.22 feet (southern WCA-3A). Water remains two feet or more below ground in northeastern WCA-3A, greatly increasing the risk of peat loss and peat fire.

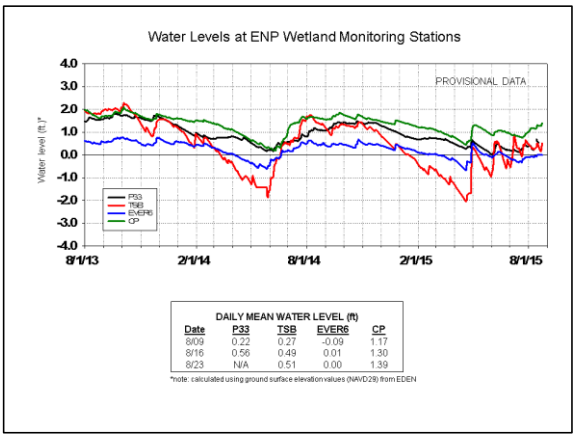
Stages are generally higher than a week ago and a month ago. Stages remain much lower than a year ago. Stage changes at the monitored gauges ranged from -0.14 feet in WCA-3B to 1.62 feet in WCA-2B.


SOUTH FLORIDA WATER MANAGEMENT DISTRICT
SFWDAT Water Depth Monthly Snapshots
6/23/2015
7/23/2015
8/23/2015
Water Depth (feet)
<-2.5' 0.0' 2.5' 5.0' 10' >15'
Below Ground
Above Ground
South Florida Water Depth Assessment Tool (SFWDAT)


SOUTH FLORIDA WATER MANAGEMENT DISTRICT
SFWDAT Everglades Difference Maps
(Present – Past)
8/23/2015
1 Week
1 Month
1 Year
Water Depth (feet)
<-2.5' 0.0' 2.5' 5.0' 10' >15'
Below Ground
Above Ground
Water Depth Difference (feet)
-2' -1' 0' 1' 2'
Drier
Wetter
South Florida Water Depth Assessment Tool (SFWDAT)

Cape Sable Seaside Sparrow: Nesting appears to be complete in the three monitored subpopulations.

Everglades National Park (ENP) and Florida Bay: Water level changes were mixed over the past week as a result of the rainfall and high evaporation. Compared to the long term average rising stages, water levels are still two to six inches below average in southern Taylor Slough and the ENP panhandle. The stage at Taylor Slough Bridge in northern Taylor Slough is 10.5 inches below average.



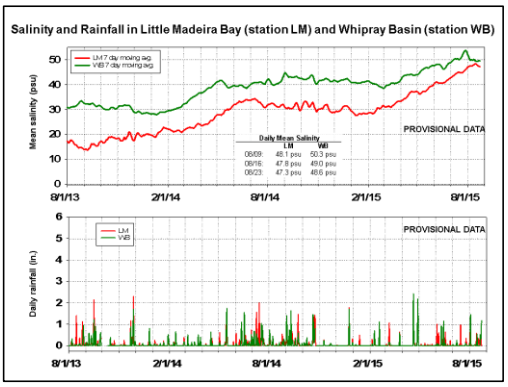
DAILY MEAN WATER LEVEL (ft)

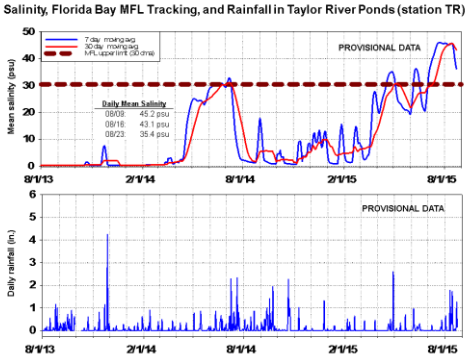
Date	P33	TSB	EVER6	CP
8/09	0.22	0.27	-0.09	1.17
8/16	0.56	0.49	0.01	1.30
8/23	N/A	0.51	0.00	1.39

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

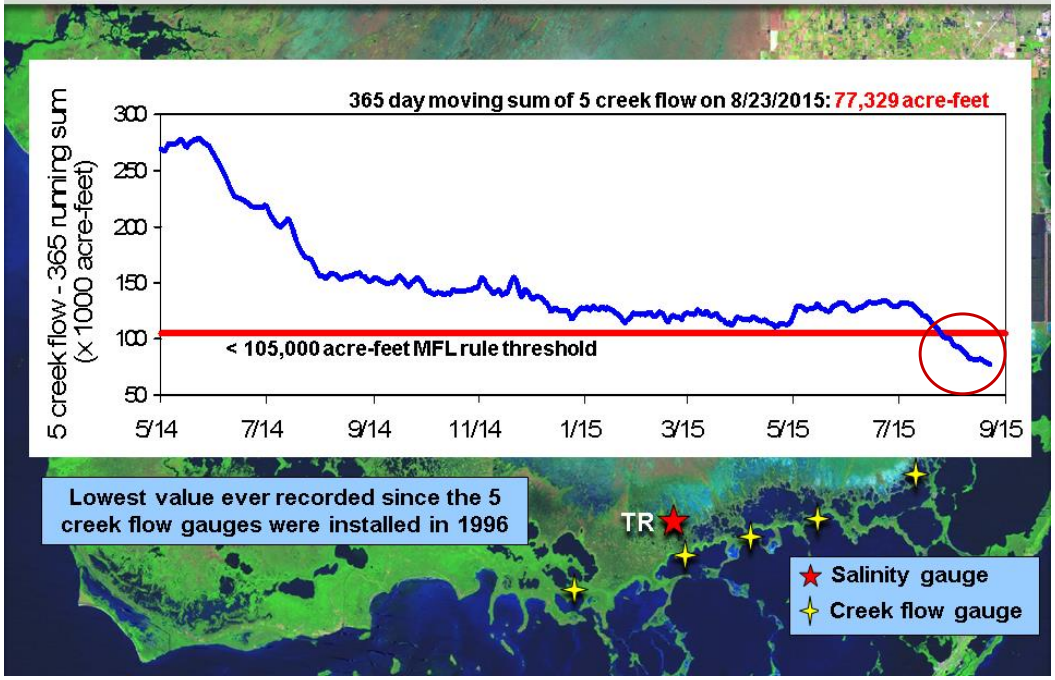
Salinities in Florida Bay remain 10 to 32 psu above average for this time of year and were relatively stable last week. Salinity in the nearshore embayments are at least double the expected salinity for this time of year; the lowest daily average salinity for these stations is 45 psu. Only the upstream station at Taylor River (TR) experienced a large change this week where salinities dropped to 35.4 psu, still more than 30 psu above the long-term average. The 30-day moving average salinity at TR decreased to 43.3 after peaking at 45.7 this year.

The 365-day running sum of the cumulative flow from five creeks flowing into Florida Bay decreased again to its lowest in the period of record since 1996. As of August 23, creek inflow was 77,329 acre-feet. Creek flow data are provisional data from the USGS.





Florida Bay Flow Update



Water management recommendations:

- Water levels are far below what is needed in the Everglades and Florida Bay. Increased water is needed throughout the system, particularly in ENP to Florida Bay through Taylor Slough. We recommend moving water south as much as possible and storing water whenever possible in the natural systems.

- We recommend targeting ascension rates of up to 0.25 feet per week (or 0.5 feet over two weeks to allow for large rain events) for the wet season to meet the end of wet season stage targets for environmental needs (prey species support, peat, and plant community needs).

- We continue to recommend releases into northeastern WCA-3A through S-150 while conditions are very dry. If water levels rise above ground, additional releases should no longer be needed. Gauge 63 is still 0.17 feet below ground and stages north of the gauge are over two feet below ground.

Site-specific recommendations appear in the summary table below. The red text represents new or modified information or recommendations.

Summary of Everglades Recommendations, August 25, 2015 (SFWMD) (red is new text)

Area	Current Condition	Cause(s)	Recommendation	Reasons
WCA-1	Stage changed from 0.03' to -0.09'	Rainfall, ET, management	Target rainfall driven wetland stages at the top of Zone A2. Recommend ascension rates up to 0.25 ft/wk, or 0.5 ft/14 days.	Promote native habitat and maintain wetland plant communities. Moderate ascension rates to protect habitats and sensitive species and to take advantage of rain events.
WCA-2A	Stage increased 0.23'	Rainfall, ET, management	Recommend ascension rates up to 0.25 ft/wk, or 0.5 ft/14 days. High season target stage of 13 ft NGVD at 2-17 on Oct 1	Promote native habitat and maintain wetland plant communities. Moderate ascension rates to protect habitats and sensitive species and to take advantage of rain events.
WCA-2B	Stage increased 0.11' to 1.62'.	Rainfall, ET, management	Recommend ascension rates up to 0.25 ft/wk, or 0.5 ft/14 days.	High stages preclude wading bird use, but provide good habitat for ducks.
WCA-3A NE	Stage increased 0.05'; gauge 63 is -0.17' below ground	Rainfall, ET, management	Strongly recommend releases into far NE 3A to protect peat and wetlands until water levels are above ground again. Average water stage of gauges 62 and 63 should remain under 11.60 feet. Recommend ascension rates up to 0.25 ft/wk, or 0.5 ft/14 days.	Promote native habitat and maintain wetland plant communities. Moderate ascension rates to protect habitats and sensitive species in 3A, and also to allow taking advantage of rain events.
WCA-3A NW	Stage increased 0.04'	Rainfall, ET, management		
Central WCA-3A S	Stage increased 0.08'	Rainfall, ET, management	Move water into WCA-3A as much as possible. Season's dry conditions jeopardize peat and prey populations for the upcoming dry season conditions. Wet season target is 10.67 3AVG by Oct 30. Recommend ascension rates up to 0.25 ft/wk, or 0.5 ft/14 days.	Promote native habitat and maintain wetland plant communities. Moderate ascension rates to protect habitats and sensitive species in 3A, and take advantage of rain events. Avoid or minimize discharge through S-12A and S-12B through at least August 15 and as long as possible to benefit Cape Sable seaside sparrow nesting and habitat conditions.
Southern WCA-3A S	Stage did not change.	Rainfall, ET, management		
WCA-3B	Stage decreases ranged from -0.03' to -0.14'	Rainfall, ET, management	Recommend ascension rates up to 0.25 ft/wk, or 0.5 ft/14 days.	Promote native habitat and maintain wetland plant communities. Provide foraging habitat for wading birds.
ENP-SRS	Stage increased 0.01'	ET, rainfall, topography, management	Discharges to the Park with the ERTP rainfall plan. Water deliveries to Shark Slough should be made through S-333, then through S-12D and S-12C.	Promote native habitat and maintain wetland plant communities.
ENP-CSSS habitats	Nesting appears to be complete. Conditions are still fairly dry.	Rainfall, ET, management	Request for extended closures for S-12A and S-12B is ended.	Provide habitat and appropriate nesting conditions for CSSS.
Taylor Slough	2-10.5 inches below average.	Rain, ET, inflows	Move water southward as possible	Provide freshwater buffer for ecosystems and freshen saline conditions downstream
FB- Salinity	Hypersaline. Still 10-32 psu above average	Rain, ET, inflows, wind.	Move water southward as possible	Southward flows are still needed to reverse/slow salinity increases