

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 4/10/2017 (ENSO Neutral 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 years³ and a sub-sampling of warm years of the Atlantic Multi-decadal 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 Neutral ENSO Years ³		Sub-sampling of AMO Warm + Neutral ENSO Years ⁴	
	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition
Current (Apr-Sep)	N/A	N/A	1.74	Wet	1.89	Wet	2.64	Very Wet
Multi Seasonal (Apr-Oct)	N/A	N/A	2.21	Normal	2.47	Normal	3.44	Wet

***Croley's Method Not Produced For This Report**

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:](#)

-2818 cfs 14-day running average for Lake Okeechobee Net Inflow through 4/10/2017. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Dry.

-2.91 for Palmer Index on 4/9/2017.

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

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

[LORS 2008 Classification Tables:](#)

Lake Okeechobee Stage on 4/10/2017

Lake Okeechobee Stage: **12.25 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		17.07	
Operational Band	High sub-band	16.35	
	Intermediate sub-band	15.43	
	Low sub-band	13.50	
Base Flow sub-band		12.60	
Beneficial Use sub-band		11.47	← 12.25
Water Shortage Management Band			

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

Release Guidance Flow Chart Outcome: No releases to the WCAs.

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

Release Guidance Flow Chart Outcome: No releases to the Estuaries.

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 4/10/2017 (ENSO Neutral Condition):

Status for week ending 4/10/2017:

District wide, Raindar rainfall was 0.18 inches for the week. Lake stage on 4/10/2017 was 12.25 ft, down 0.21 ft from last week.

The updated April 2017 SFWMM Dynamic Position Analysis [percentile graph](#) for Lake Okeechobee show that the current lake stage is in the Beneficial Use Operational Sub-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

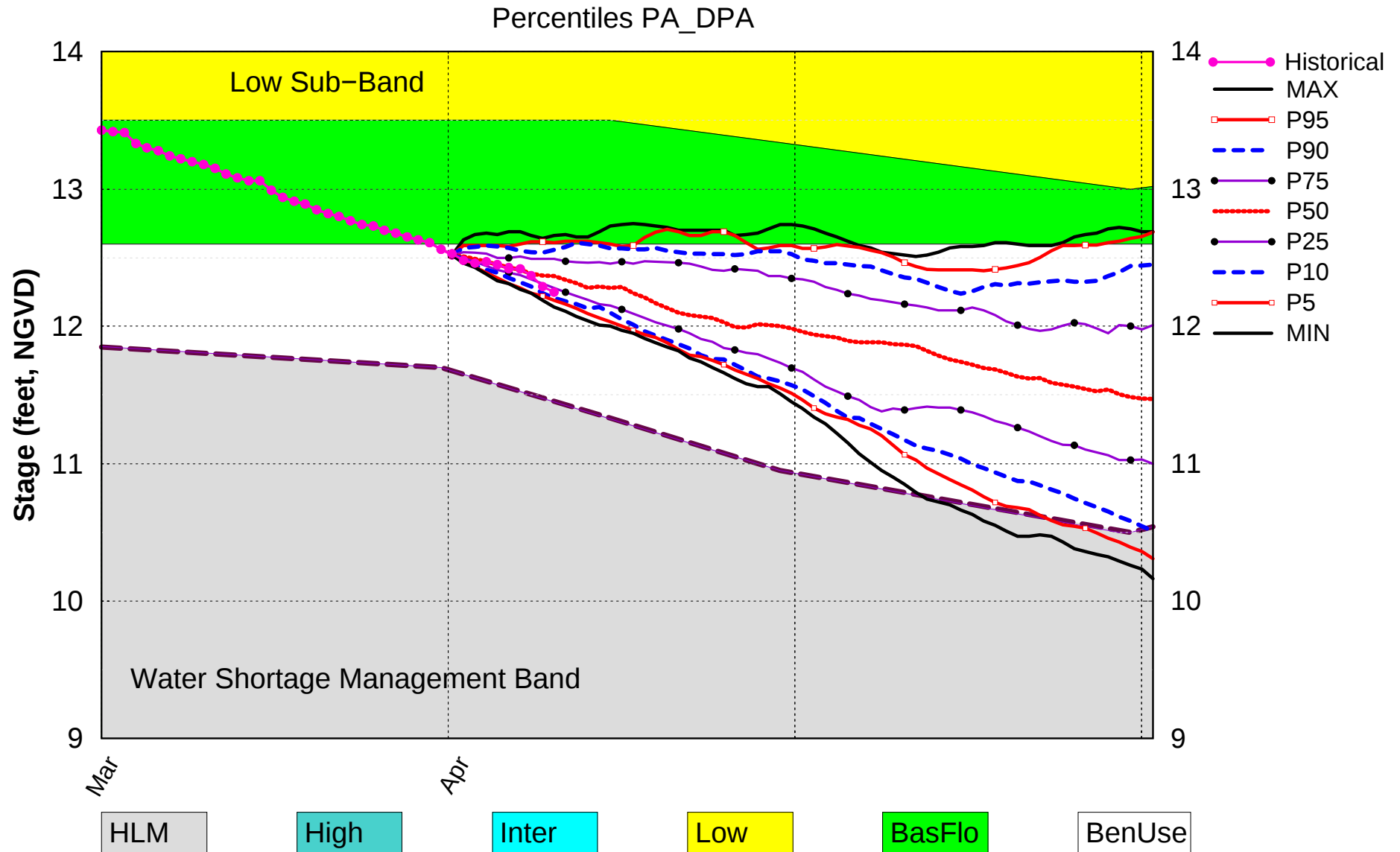
Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Beneficial Use Sub-Band	H
	Palmer Index for LOK Tributary Conditions	-2.91 (Extremely Dry)	H
	CPC Precipitation Outlook	1 month: Normal	L
		3 months: Normal	L
	LOK Seasonal Net Inflow Outlook	1.89 ft (Normal)	L
	ENSO La Nina Years		L
	LOK Multi-Seasonal Net Inflow Outlook	2.47 ft (Normal)	M
	ENSO La Nina Years		
WCAs	WCA 1: Site 1-7, Site 1-8T, & Site 1-9 Average	Above Line 1 (15.89 ft)	L
	WCA 2A: Site 2-17 HW	Above Line 1 (10.58 ft)	H
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (8.91 ft)	L
LEC	Service Area 1	Year-Round Irrigation Rule in effect	L
	Service Area 2	Year-Round Irrigation Rule in effect	L
	Service Area 3	Year-Round Irrigation Rule in effect	L

Note: The water supply risk classification based on the Palmer index, as well as the LOK seasonal and multi-seasonal net inflow outlooks use slightly different classification intervals than those used by the 2008-LORS.

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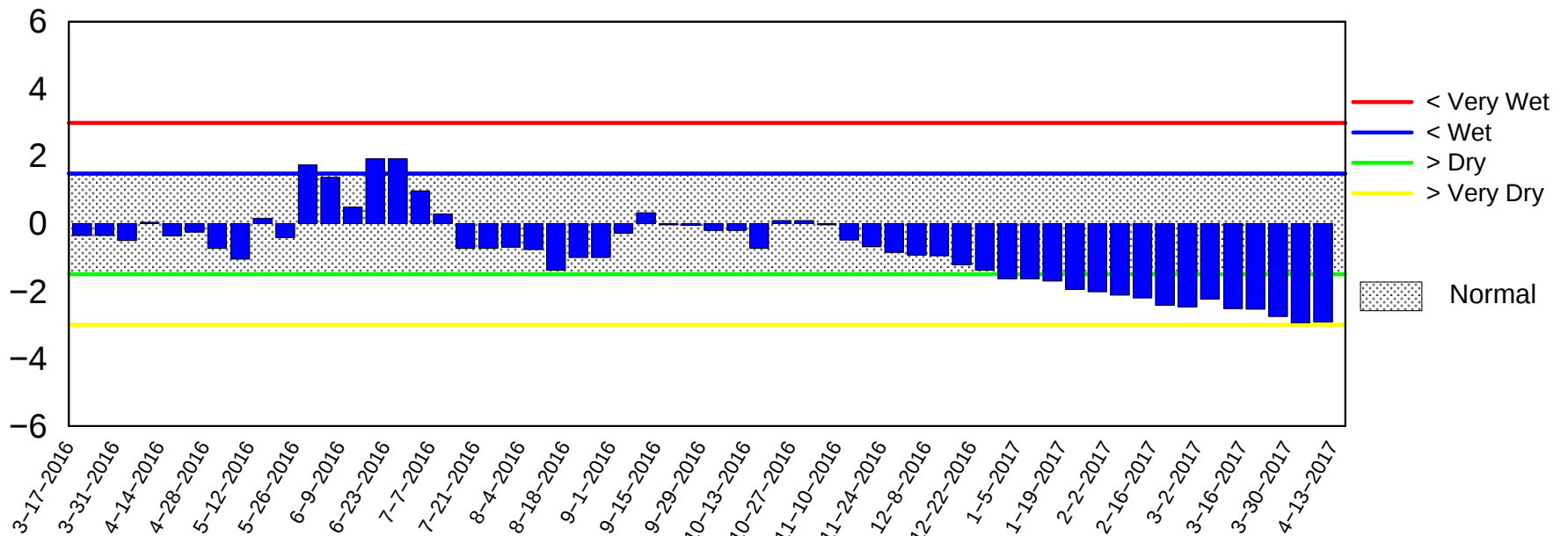
Lake Okeechobee SFWMM Apr 2017 Dynamic Position Analysis



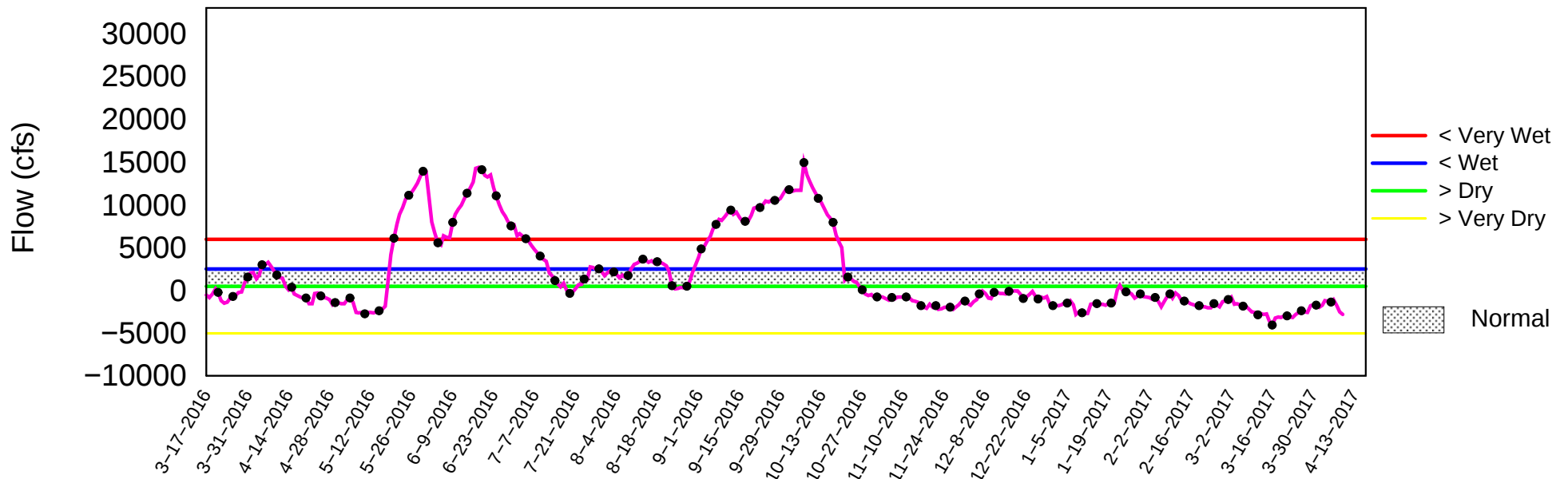
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of April 10 2017

Palmer Index

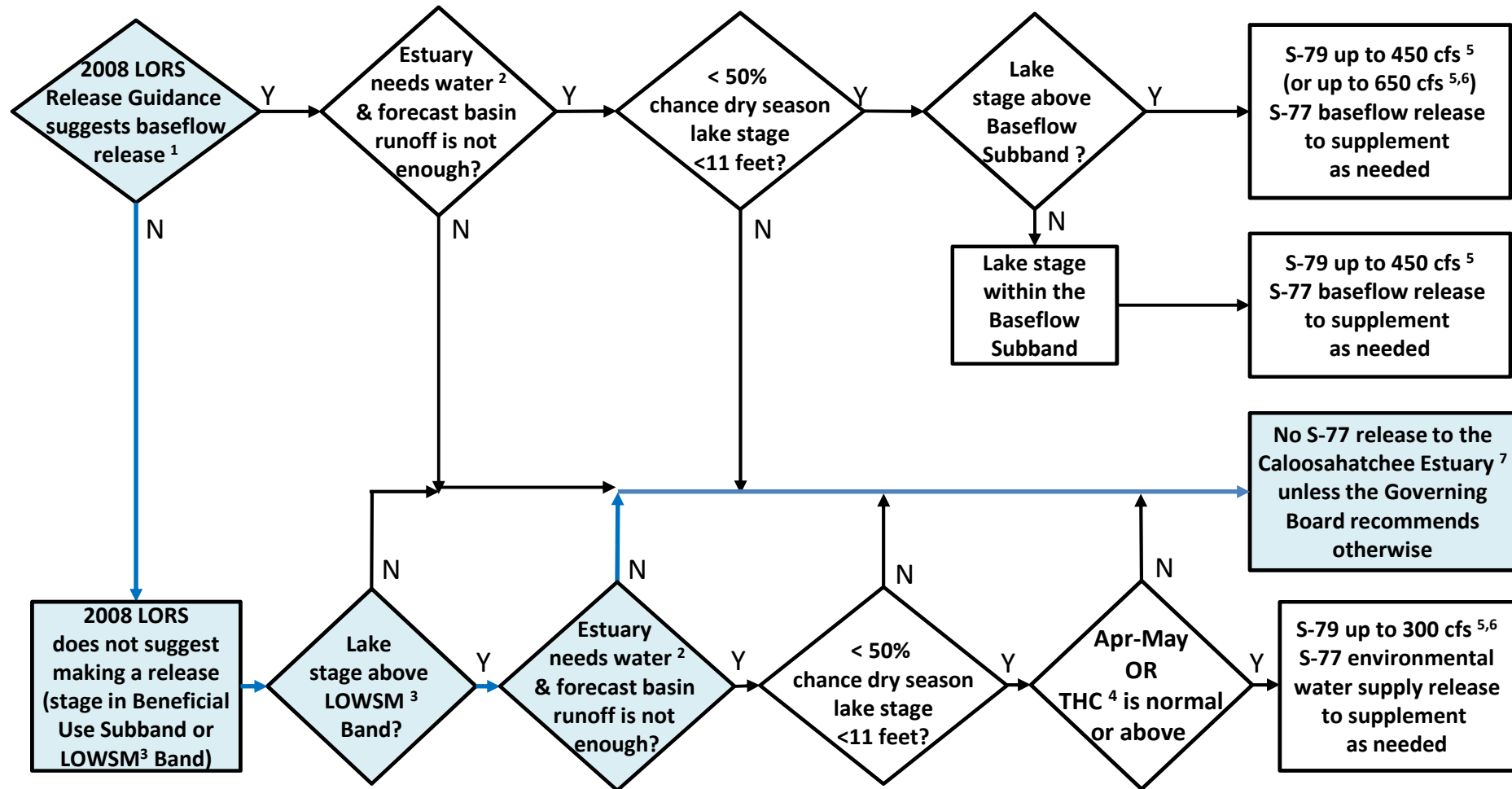


Lake Okeechobee Net Inflow (LONIN) 14-day Running Average



Mon Apr 10 10:52:26 EDT 2017

Flowchart to Guide Recommendations for Lake Okeechobee Releases to the Caloosahatchee Estuary for 2008 LORS Baseflow & for Environmental Water Supply (revised 9-Aug-2012)



¹The 2008 LORS Release Guidance (Part D) can suggest baseflow releases in the Intermediate, Low, or Baseflow 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.

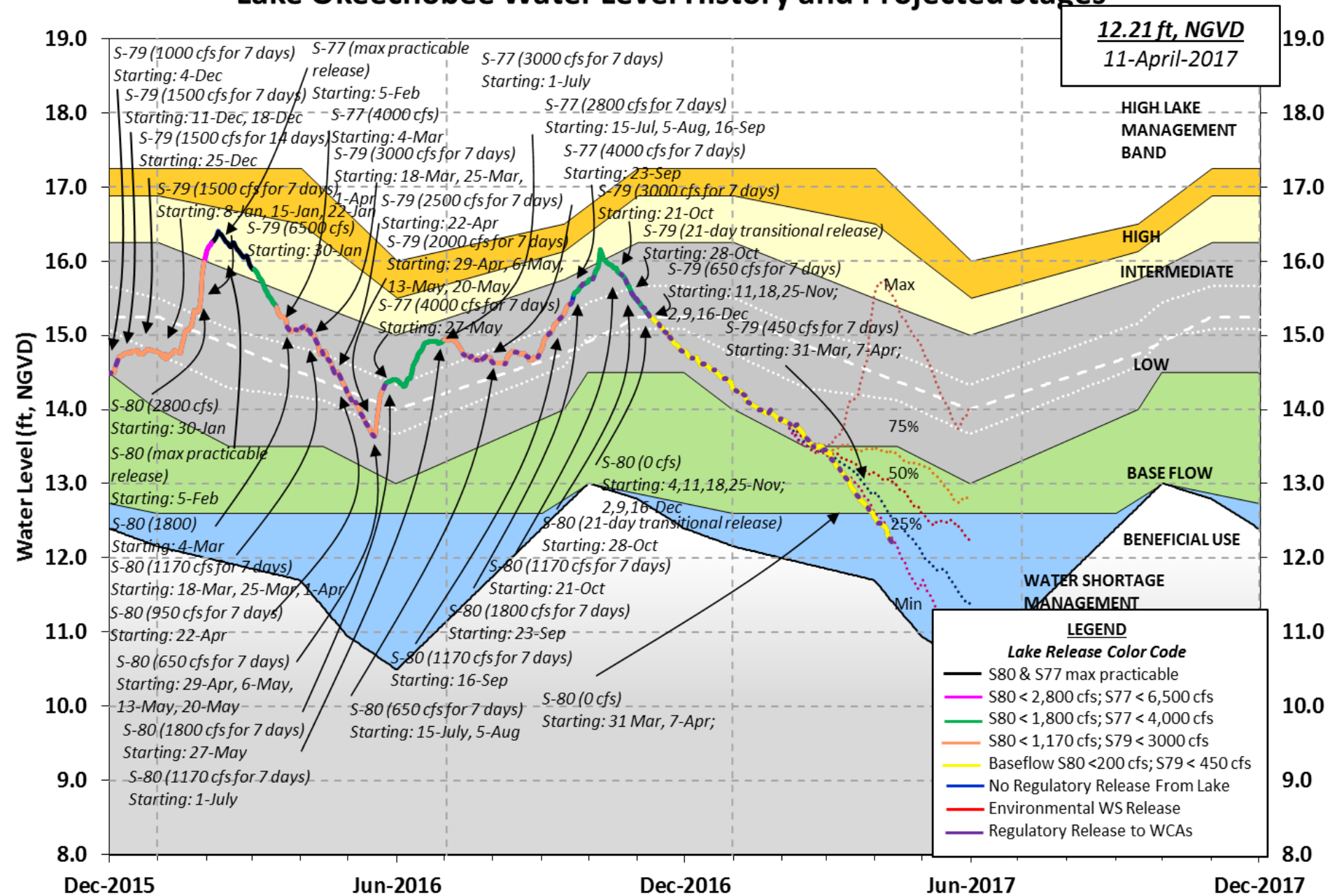
⁴Tributary Hydrologic Condition (THC) is based on classification of Lake Okeechobee Net Inflow and Palmer Index.

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.

Lake Okeechobee Water Level History and Projected Stages



U. S. Army Corps of Engineers, Jacksonville District
Lake Okeechobee and Vicinity Report
** Preliminary Data - Subject to Revision **

Data Ending 2400 hours 09 APR 2017

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)
*Okeechobee Lake Elevation	12.25	14.94	13.73 (Official Elv)
Bottom of High Lake Mngmt= 17.09 Top of Water Short Mngmt= 11.48			
Currently in Operational Management Band			

Simulated Average LORS2008 [1965-2000]	12.87
Difference from Average LORS2008	-0.62

09APR (1965-2007) Period of Record Average	14.12
Difference from POR Average	-1.87

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ÷ 6.19'

++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷ 4.39'

Bridge Clearance = 51.62'

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

L001	L005	L006	LZ40	S4	S352	S308	S133
-NR-	12.37	12.28	-NR-	12.47	12.24	12.11	12.02

*Combination Okeechobee Avg-Daily Lake Average = 12.25
(*See Note)

Okeechobee Inflows (cfs):

S65E	0	S65EX1	265	Fisheating Cr	1
S154	0	S191	0	S135 Pumps	0
S84	0	S133 Pumps	0	S2 Pumps	0
S84X	0	S127 Pumps	0	S3 Pumps	0
S71	0	S129 Pumps	0	S4 Pumps	0
S72	0	S131 Pumps	0	C5	0
Total Inflows:		265			

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	404	S77	962
S127 Culverts	0	S351	1322	S77Below	912
S129 Culverts	0	S352	792	S308	306
S131 Culverts	0	L8 Canal Pt	-32	S308Below	-8
Total Outflows:		3753			

S4 Pumps: 10.83 12.38 0 0 0 0 (cfs)

S169:	12.39	10.82	0	0.0	0.0	0.0		
S310:	12.33		96					
S3 Pumps:	11.24	12.27	0	0	0	0		(cfs)
S354:	12.27	11.24	404	1.2	1.4			
S2 Pumps:	11.39	12.20	0	0	0	0	0	(cfs)
S351:	12.20	11.39	1322	4.0	4.0	4.0		
S352:	12.10	11.21	792	2.9	2.9			
C10A:	-NR-	12.27		0.0	8.0	8.0	8.0	8.0
L8 Canal PT		12.07	-32					

S351 and S352 Temporary Pumps/S354 Spillway

S351:	11.39	12.20	1322	-NR--NR--NR--NR--NR--NR-
S352:	11.21	12.10	792	-NR--NR--NR--NR-
S354:	11.24	12.27	404	-NR--NR--NR--NR-

Caloosahatchee River (S77, S78, S79)

S47B:	12.85	10.77		0.0	0.0
S47D:	10.78	10.79	27	6.0	

S77:

Spillway and Sector Flow:

12.35	10.90	960	3.0	0.0	3.0	0.0
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Flow Due to Lockages+: 2

S77 Below USGS Flow Gage 912

S78:

Spillway and Sector Flow:

-NR-	-NR-	-NR-	0.0	0.0	0.0	2.0
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Flow Due to Lockages+: -NR-

S79:

Spillway and Sector Flow:

2.94	0.25	792	0.0	0.0	0.0	0.0	0.5	1.0	1.0
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0.0

Flow Due to Lockages+: 13

Percent of flow from S77 121%

Chloride (ppm) 63

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Flow:

12.07	11.88	306	0.0	0.0	0.0	0.0
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Flow Due to Lockages+: 0

S308 Below USGS Flow Gage -8

S153:	18.50	11.69	0	0.0	0.0
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S80:

Spillway and Sector Flow:

11.95	1.70	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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Flow Due to Lockages+: 23

Percent of flow from S308 NA %

Steele Point Top Salinity (mg/ml) *****

Steele Point Bottom Salinity (mg/ml) ****

Speedy Point Top Salinity (mg/ml) ****

Speedy Point Bottom Salinity (mg/ml) ****

+ 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.

				----- Wind -----	
Daily Precipitation Totals	1-Day	3-Day	7-Day	Direction	
Speed	(inches)	(inches)	(inches)	(Degø)	
(mph)					
S133 Pump Station:	-NR-	0.00	0.00		
S193:	-NR-	0.00	0.00	-NR-	-NR-
Okeechobee Field Station:	-NR-	0.00	0.00		
S135 Pump Station:	-NR-	0.00	0.00		
S127 Pump Station:	-NR-	0.00	0.00		
S129 Pump Station:	-NR-	0.00	0.00		
S131 Pump Station:	-NR-	0.00	0.00		
S77:	0.00	0.00	0.00	127	1
S78:	0.00	0.00	0.19	-NR-	-NR-
S79:	0.00	0.00	0.06	206	3
S4 Pump Station:	-NR-	0.00	0.00		
Clewiston Field Station:	-NR-	0.00	0.00		
S3 Pump Station:	-NR-	0.00	0.00		
S2 Pump Station:	-NR-	0.00	0.00		
S308:	0.00	0.00	0.01	346	2
S80:	0.00	0.00	0.97	84	2
Okeechobee Average	0.00	0.00	0.00		
(Sites S78, S79 and S80 not included)					

Oke Nexrad Basin Avg	-NR-	0.00	0.17		

Okeechobee Lake Elevations	09 APR 2017	12.25	Difference from
09APR17			
09APR17 -1 Day =	08 APR 2017	12.29	0.04
09APR17 -2 Days =	07 APR 2017	12.37	0.12
09APR17 -3 Days =	06 APR 2017	12.42	0.17
09APR17 -4 Days =	05 APR 2017	12.42	0.17
09APR17 -5 Days =	04 APR 2017	12.45	0.20
09APR17 -6 Days =	03 APR 2017	12.47	0.22
09APR17 -7 Days =	02 APR 2017	12.46	0.21
09APR17 -30 Days =	10 MAR 2017	13.15	0.90
09APR17 -1 Year =	09 APR 2016	14.94	2.69
09APR17 -2 Year =	09 APR 2015	13.73	1.48

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

Lake Okeechobee Net Inflow (LONIN)						
Average Flow over the previous 14 days					Avg-Daily Flow	
09APR17	Today =	09 APR 2017	-2803	MON		-4787
09APR17	-1 Day =	08 APR 2017	-2478	SUN		-12405
09APR17	-2 Days =	07 APR 2017	-1708	SAT		-7041
09APR17	-3 Days =	06 APR 2017	-1033	FRI		1883
09APR17	-4 Days =	05 APR 2017	-1344	THU		-3472
09APR17	-5 Days =	04 APR 2017	-1270	WED		-1584
09APR17	-6 Days =	03 APR 2017	-1191	TUE		5143
09APR17	-7 Days =	02 APR 2017	-1728	MON		-335
09APR17	-8 Days =	01 APR 2017	-1989	SUN		-5668
09APR17	-9 Days =	31 MAR 2017	-1599	SAT		-1711
09APR17	-10 Days =	30 MAR 2017	-1660	FRI		-6090
09APR17	-11 Days =	29 MAR 2017	-1766	THU		212
09APR17	-12 Days =	28 MAR 2017	-2686	WED		-736
09APR17	-13 Days =	27 MAR 2017	-2482	TUE		-2651

S65E						
Average Flow over previous 14 days					Avg-Daily Flow	
09APR17	Today=	09 APR 2017	0	MON		0
09APR17	-1 Day =	08 APR 2017	0	SUN		0
09APR17	-2 Days =	07 APR 2017	0	SAT		0
09APR17	-3 Days =	06 APR 2017	0	FRI		0
09APR17	-4 Days =	05 APR 2017	0	THU		0
09APR17	-5 Days =	04 APR 2017	0	WED		0
09APR17	-6 Days =	03 APR 2017	0	TUE		0
09APR17	-7 Days =	02 APR 2017	0	MON		0
09APR17	-8 Days =	01 APR 2017	0	SUN		0
09APR17	-9 Days =	31 MAR 2017	0	SAT		0
09APR17	-10 Days =	30 MAR 2017	0	FRI		0
09APR17	-11 Days =	29 MAR 2017	0	THU		0
09APR17	-12 Days =	28 MAR 2017	0	WED		0
09APR17	-13 Days =	27 MAR 2017	0	TUE		0

S65EX1						
Average Flow over previous 14 days					Avg-Daily Flow	
09APR17	Today=	09 APR 2017	335	MON		265
09APR17	-1 Day =	08 APR 2017	360	SUN		262
09APR17	-2 Days =	07 APR 2017	388	SAT		289
09APR17	-3 Days =	06 APR 2017	417	FRI		328
09APR17	-4 Days =	05 APR 2017	446	THU		313
09APR17	-5 Days =	04 APR 2017	477	WED		310
09APR17	-6 Days =	03 APR 2017	512	TUE		308
09APR17	-7 Days =	02 APR 2017	549	MON		299
09APR17	-8 Days =	01 APR 2017	591	SUN		344
09APR17	-9 Days =	31 MAR 2017	628	SAT		305
09APR17	-10 Days =	30 MAR 2017	667	FRI		342
09APR17	-11 Days =	29 MAR 2017	703	THU		411
09APR17	-12 Days =	28 MAR 2017	734	WED		434

Lake Okeechobee Outlets Last 14 Days

	S-77	Below S-77	S-78	S-79
	Discharge	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL-DAY)	(ALL DAY)	(ALL DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)
09 APR 2017	1900	1809	-NR-	1587
08 APR 2017	1613	1614	1189	1540
07 APR 2017	635	537	694	927
06 APR 2017	3	0	932	1567
05 APR 2017	3	251	1085	1530
04 APR 2017	3	473	1082	2160
03 APR 2017	3	1081	1045	1548
02 APR 2017	753	2161	1425	1443
01 APR 2017	2681	2484	1381	2001
31 MAR 2017	2002	1743	1141	1307
30 MAR 2017	2025	1767	715	779
29 MAR 2017	2550	2537	913	1011
28 MAR 2017	1109	1233	989	1070
27 MAR 2017	877	774	681	758

	S-310	S-351	S-352	S-354	L8 Canal Pt
	Discharge	Discharge	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL DAY)	(ALL DAY)	(ALL DAY)	(ALL DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)
09 APR 2017	191	2215	1473	607	-64
08 APR 2017	147	2195	1404	410	-69
07 APR 2017	54	2253	1491	805	146
06 APR 2017	21	1963	1372	0	238
05 APR 2017	23	2439	1475	420	166
04 APR 2017	5	1997	1372	468	164
03 APR 2017	-13	2415	1220	1180	125
02 APR 2017	59	2344	1362	954	203
01 APR 2017	125	2580	1386	1507	228
31 MAR 2017	114	2814	1404	1882	257
30 MAR 2017	107	2594	1372	1041	295
29 MAR 2017	104	2209	1295	1543	259
28 MAR 2017	104	2169	1408	882	280
27 MAR 2017	101	2142	1235	1450	317

	S-308	Below S-308	S-80
	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)
09 APR 2017	552	-16	45
08 APR 2017	549	270	52
07 APR 2017	272	-44	55
06 APR 2017	0	159	24
05 APR 2017	1	59	31
04 APR 2017	601	182	41
03 APR 2017	656	278	54
02 APR 2017	567	109	61
01 APR 2017	587	70	65
31 MAR 2017	611	204	58

30 MAR 2017	660	250	64
29 MAR 2017	606	176	51
28 MAR 2017	1	166	51
27 MAR 2017	744	221	58

*** NOTE: Discharge (ALL DAY) is computed using Spillway, Sector Gate and

Lockages Discharges from 0015 hrs to 2400 hrs.

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

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* 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. On 09 May 2011, Lake Okeechobee Elevation was switched to a 8 gage mix of interior and edge gages to obtain a more reliable representation of the lake level due to isolation of S135 from low lake levels. Today Lake Okechobee elevation is determined from the 4 Int & 4 Edge stations

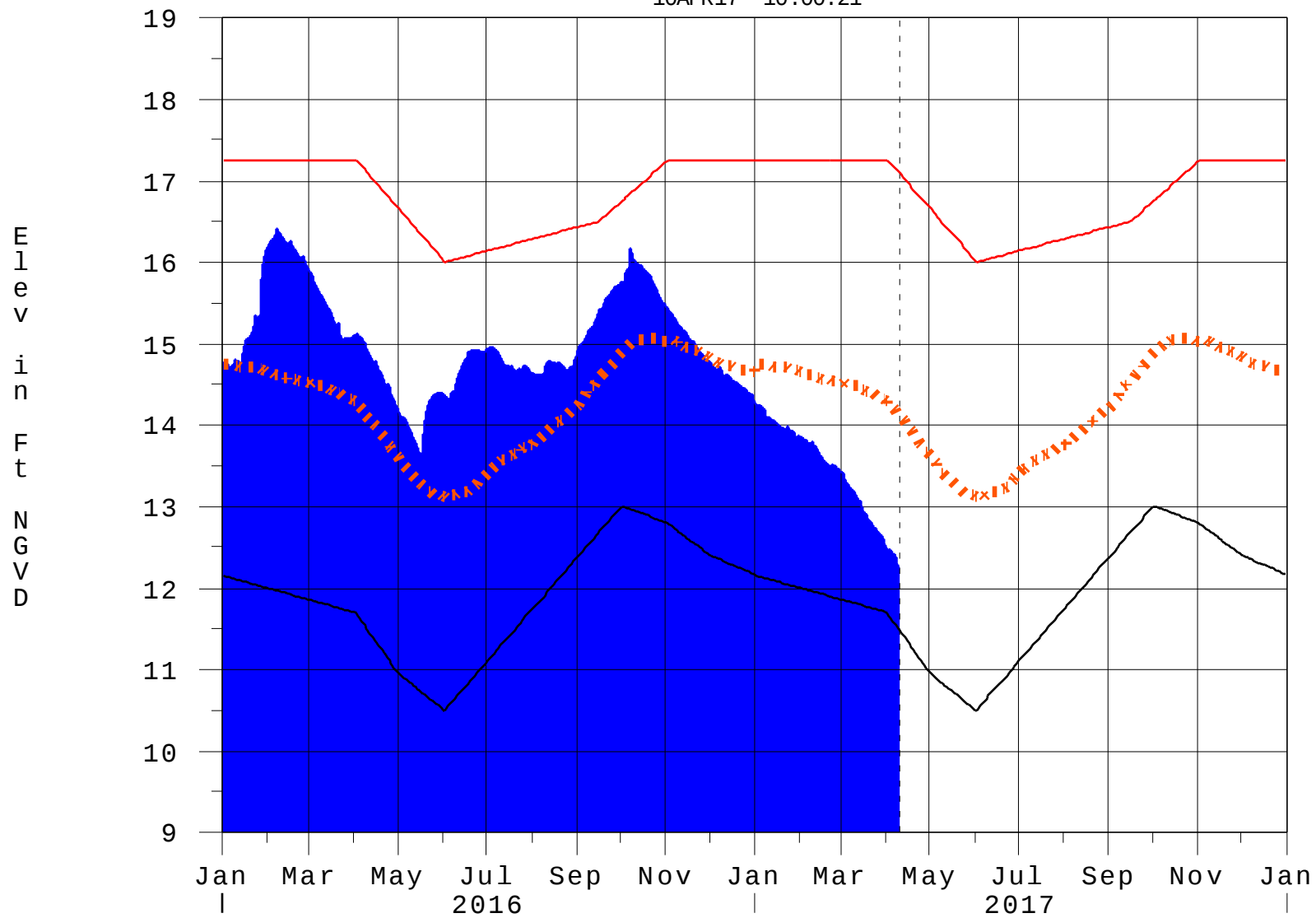
++ For more information see the Jacksonville District Navigation website at <http://www.saj.usace.army.mil/>

\$ For information regarding Lake Okeechobee Service Area water restrictions please refer to www.sfwmd.gov

Report Generated 10APR2017 @ 10:06 ** Preliminary Data - Subject to Revision

Lake Okeechobee

10APR17 10:00:21



- High Lake Management
- Okeechobee Avg Elev
- Average Elev [1965-2007]
- Water Shortage Management

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

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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