

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 6/26/2017 (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 (Jun-Nov)	N/A	N/A	3.29	Very Wet	3.68	Very Wet	4.53	Very Wet
Multi Seasonal (Jun-Apr)	N/A	N/A	3.64	Wet	4.23	Wet	4.85	Very 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:](#)

5546 cfs 14-day running average for Lake Okeechobee Net Inflow through 6/26/2017. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Wet.

-1.87 for Palmer Index on 6/24/2017.

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

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

[LORS2008 Classification Tables:](#)

Lake Okeechobee Stage on 6/26/2017

Lake Okeechobee Stage: **12.28 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		16.12	
Operational Band	High sub-band	15.65	
	Intermediate sub-band	15.18	
	Low sub-band	13.23	
Base Flow sub-band		12.60	
Beneficial Use sub-band		11.01	← 12.28
Water Shortage Management Band			

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

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

[Part D of LORS2008: Discharge 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 6/26/2017 (ENSO Neutral Condition):

Status for week ending 6/26/2017:

District wide, Raindar rainfall was 0.62 inches for the week. Lake stage on 6/26/2017 was 12.28 ft, up 0.24 ft from last week.

The updated June 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 **Wet**. The PDSI indicates dry condition and the LONIN is Wet. The classification is based on the wetter of the two.

Water Supply Risk Evaluation

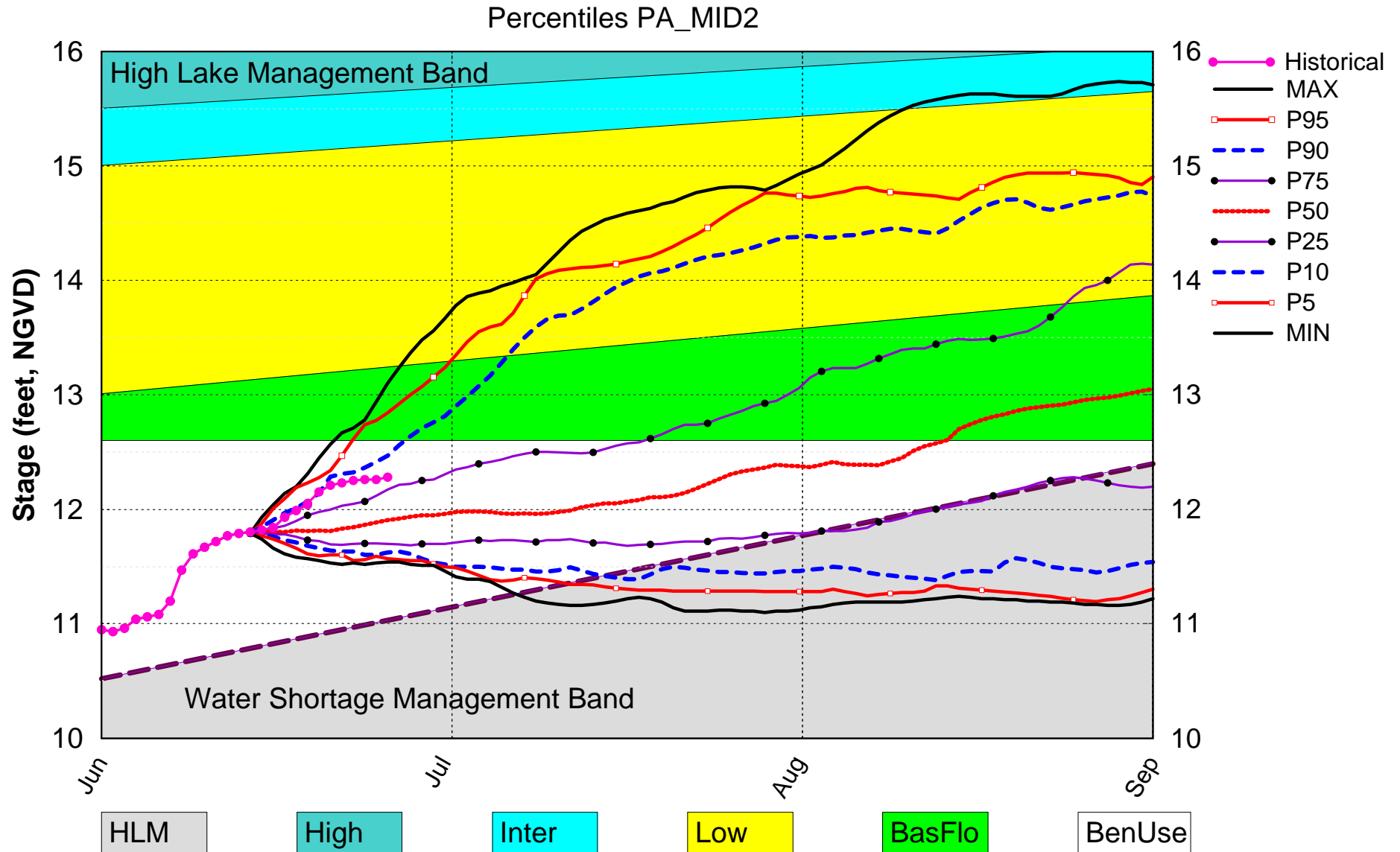
Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Beneficial Use Sub Band	M
	Palmer Index for LOK Tributary Conditions	-1.87 (Dry)	M
	CPC Precipitation Outlook	1 month: Normal	L
		3 months: Normal	L
	LOK Seasonal Net Inflow Outlook	3.68 ft (Normal)	L
	ENSO La Nina Years		L
	LOK Multi-Seasonal Net Inflow Outlook		L
WCAs	ENSO La Nina Years	4.23 ft (Wet)	L
	WCA 1: Site 1-7, Site 1-8T, & Site 1-9 Average	Above Line 1 (16.55 ft)	L
	WCA 2A: Site 2-17 HW	Above Line 1 (14.20 ft)	L
LEC	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (11.17 ft)	L
	Service Area 1	Year-Round Irrigation Rule in effect	L
	Service Area 2	Year-Round Irrigation Rule in effect	L
LEC	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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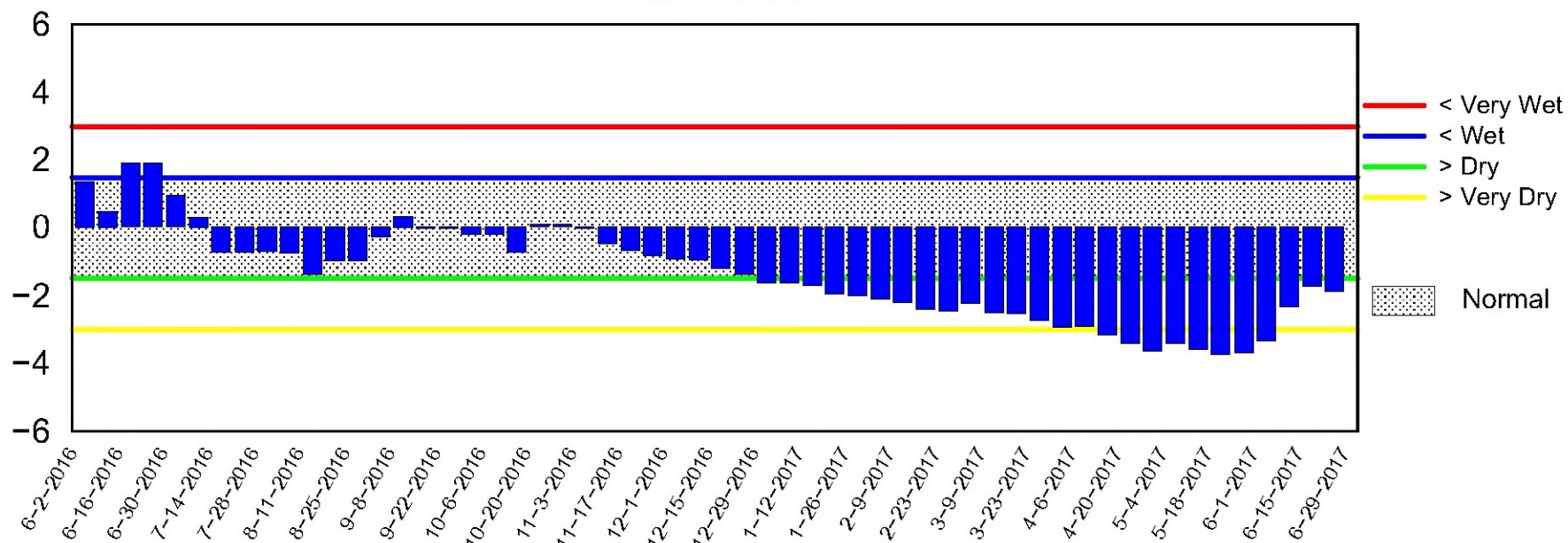
Lake Okeechobee SFWMM June 14, 2017 Position Analysis



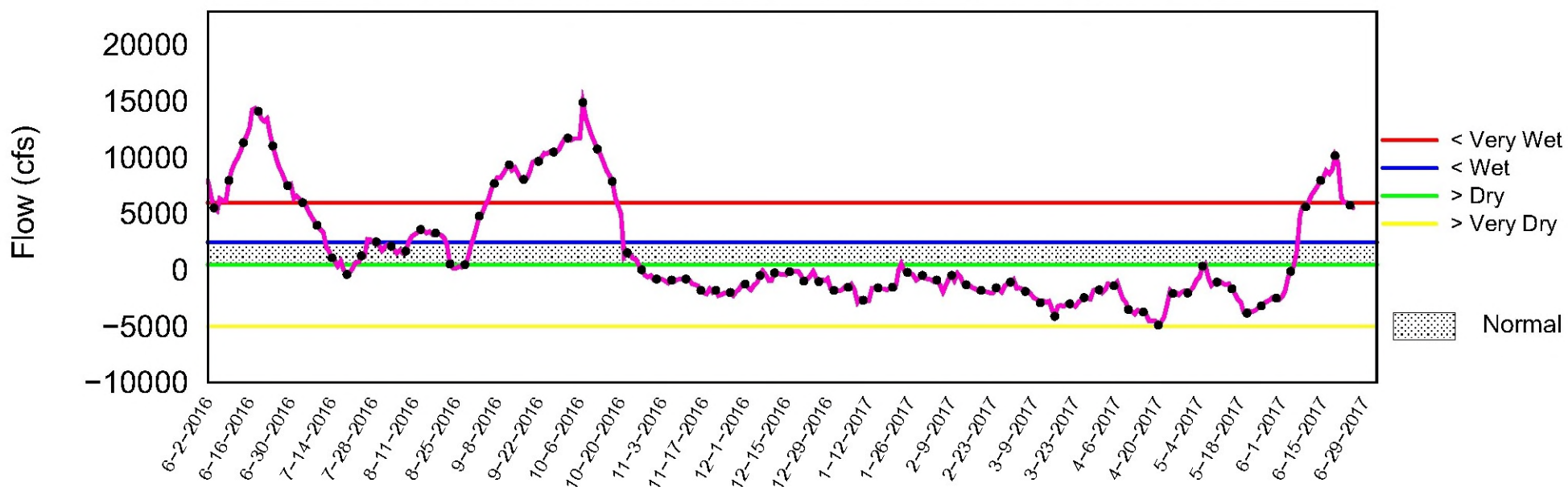
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of June 26 2017

Palmer Index

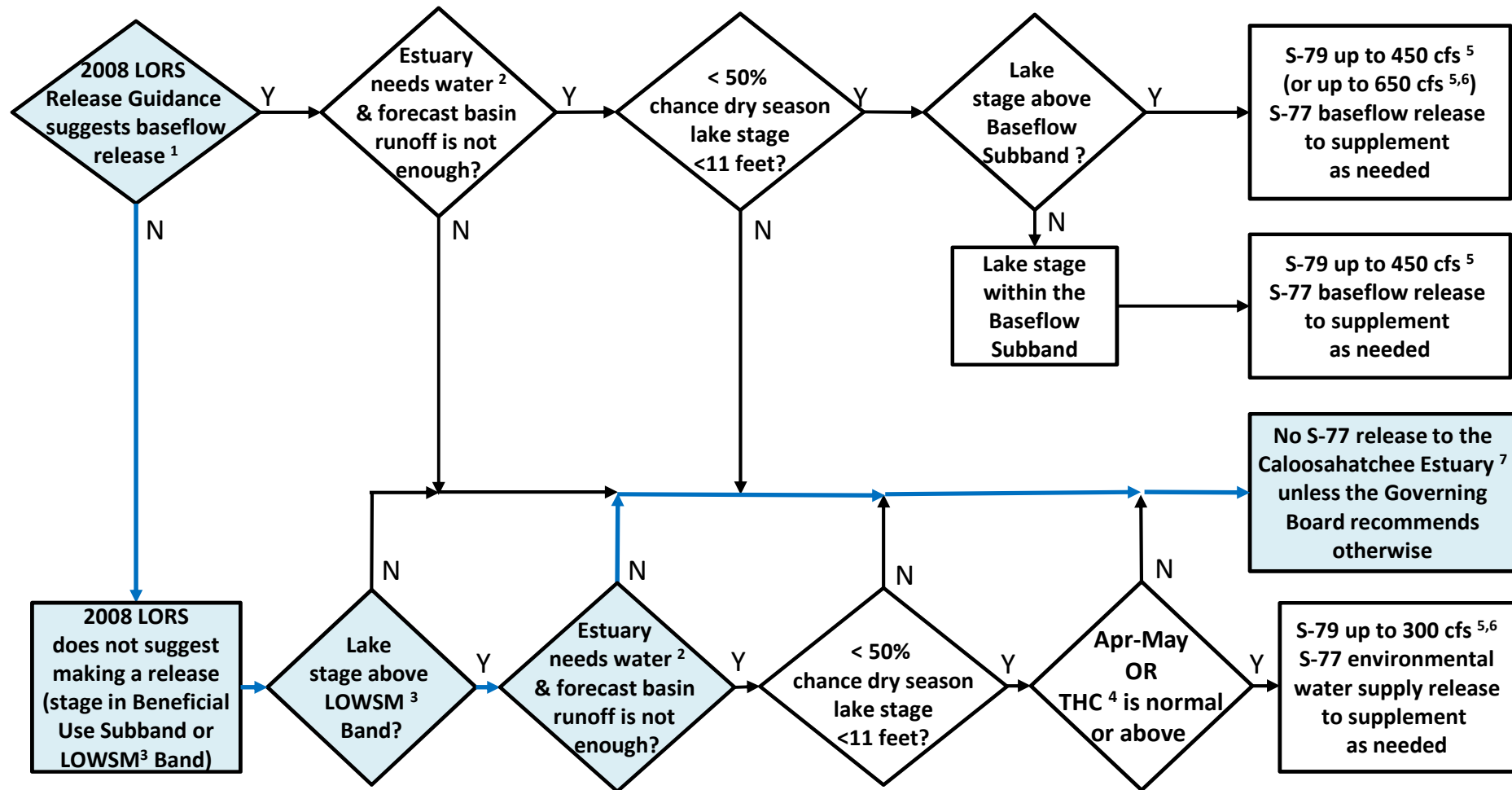


Lake Okeechobee Net Inflow (LONIN) 14-day Running Average



Mon Jun 26 16:01:05 EDT 2017

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.

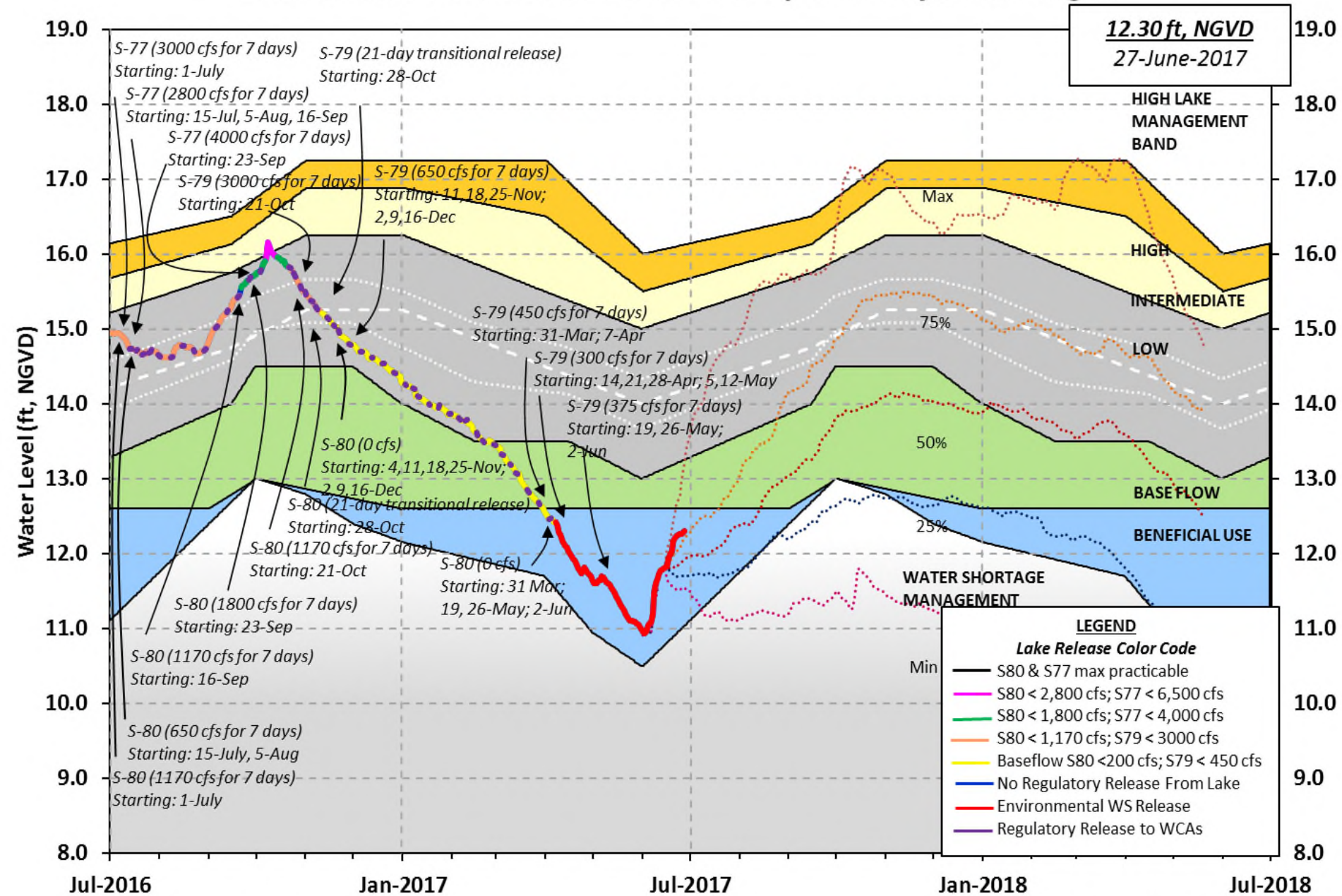
⁴Tributary Hydrologic Condition (THC) is based on classification of Lake Okeechobee Net Inflow and Palmer Index.

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



LORS-2008

Adopted by USACE 28-April-2008

Projected Stage Percentiles From
SFWMD-HESM Position Analysis

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

Data Ending 2400 hours 25 JUN 2017

Okeechobee Lake Regulation	Elevation	Last Year	2YRS Ago
	(ft-NGVD)	(ft-NGVD)	(ft-NGVD)
*Okeechobee Lake Elevation	12.28	14.91	12.29 (Official Elv)
Bottom of High Lake Mngmt= 16.11 Top of Water Short Mngmt= 11.00			
Currently in Operational Management Band			

Simulated Average LORS2008 [1965-2000]	12.16
Difference from Average LORS2008	0.12

25JUN (1965-2007) Period of Record Average	13.30
Difference from POR Average	-1.02

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ÷ 6.22'

++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷ 4.42'

Bridge Clearance = 50.80'

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

L001	L005	L006	LZ40	S4	S352	S308	S133
12.18	12.35	12.27	12.25	12.34	12.39	12.19	12.25

*Combination Okeechobee Avg-Daily Lake Average = 12.28
 (*See Note)

Okeechobee Inflows (cfs):

S65E	0	S65EX1	1577	Fisheating Cr	1031
S154	0	S191	0	S135 Pumps	0
S84	65	S133 Pumps	0	S2 Pumps	1713
S84X	0	S127 Pumps	0	S3 Pumps	0
S71	0	S129 Pumps	0	S4 Pumps	0
S72	67	S131 Pumps	0	C5	0
Total Inflows:		4453			

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	0	S77	2
S127 Culverts	6	S351	169	S308	-600
S129 Culverts	0	S352	0		
S131 Culverts	12	L8 Canal Pt	-340		
Total Outflows:		-752			

S169:	12.32	12.34	-51	5.0	5.0	5.0		
S310:	12.27		-39					
S3 Pumps:	10.16	12.20	0	0	0	0		(cfs)
S354:	12.20	10.16	0	0.0	0.0			
S2 Pumps:	9.66	12.27	1713	0	0	996	709	(cfs)
S351:	12.27	9.66	169	0.9	0.8	0.9		
S352:	12.44	9.86	0	0.0	0.0			
C10A:	-NR-	12.68		8.0	8.0	8.0	0.0	0.0
L8 Canal PT		12.48	-340					

S351 and S352 Temporary Pumps/S354 Spillway

S351:	9.66	12.27	169	-NR--NR--NR--NR--NR--NR-
S352:	9.86	12.44	0	-NR--NR--NR--NR-
S354:	10.16	12.20	0	-NR--NR--NR--NR-

Caloosahatchee River (S77, S78, S79)

S47B:	13.42	10.78		0.0	0.5
S47D:	10.88	10.87	59	6.2	

S77:

Spillway and Sector Flow:

12.39	10.97	0.00	0.0	0.0	0.0	0.0
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Flow Due to Lockages+: 2

S77 Below USGS Flow Gage -74

S78:

Spillway and Sector Flow:

10.78	2.54	588	0.0	0.0	0.0	0.0
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Flow Due to Lockages+: 12

S79:

Spillway and Sector Flow:

3.07	1.00	1811	0.0	0.0	1.0	1.0	1.0	0.0	0.0
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0.0

Flow Due to Lockages+: 8

Percent of flow from S77 0%

Chloride (ppm) 59

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Flow:

12.19	12.70	*****	1.0	1.5	1.5	1.0
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Flow Due to Lockages+: -2

S308 Below USGS Flow Gage -500

S153:	18.67	12.47	387	1.6	1.1
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S80:

Spillway and Sector Flow:

12.83	1.14	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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Flow Due to Lockages+: 21

Percent of flow from S308 NA %

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

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

Speedy Point Top Salinity (mg/ml) 8816

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	0.48	208	0
S78:	0.01	0.01	0.64	172	1
S79:	0.00	0.16	2.08	335	1
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:	0.81	0.81	1.15	117	4
S80:	0.00	0.00	0.01	161	2
Okeechobee Average	0.41	0.06	0.13		
(Sites S78, S79 and S80 not included)					

Oke Nexrad Basin Avg	0.21	0.22	0.88		

Okeechobee Lake Elevations	25 JUN 2017	12.28	Difference from
25JUN17			
25JUN17 -1 Day =	24 JUN 2017	12.26	-0.02
25JUN17 -2 Days =	23 JUN 2017	12.26	-0.02
25JUN17 -3 Days =	22 JUN 2017	12.25	-0.03
25JUN17 -4 Days =	21 JUN 2017	12.23	-0.05
25JUN17 -5 Days =	20 JUN 2017	12.21	-0.07
25JUN17 -6 Days =	19 JUN 2017	12.15	-0.13
25JUN17 -7 Days =	18 JUN 2017	12.05	-0.23
25JUN17 -30 Days =	26 MAY 2017	11.09	-1.19
25JUN17 -1 Year =	25 JUN 2016	14.91	2.63
25JUN17 -2 Year =	25 JUN 2015	12.29	0.01

Long Term Mean 30day Avearge ET for Lake Alfred (Inches) = 4.74

Lake Okeechobee Net Inflow (LONIN)					
Average Flow over the previous 14 days					Avg-Daily Flow
25JUN17	Today =	25 JUN 2017	6855	MON	4101
25JUN17	-1 Day =	24 JUN 2017	7210	SUN	0
25JUN17	-2 Days =	23 JUN 2017	7848	SAT	1966
25JUN17	-3 Days =	22 JUN 2017	8463	FRI	3933
25JUN17	-4 Days =	21 JUN 2017	9994	THU	3933
25JUN17	-5 Days =	20 JUN 2017	13177	WED	11545
25JUN17	-6 Days =	19 JUN 2017	13872	TUE	19410
25JUN17	-7 Days =	18 JUN 2017	12759	MON	11646
25JUN17	-8 Days =	17 JUN 2017	12209	SUN	10890
25JUN17	-9 Days =	16 JUN 2017	12437	SAT	16033
25JUN17	-10 Days =	15 JUN 2017	11698	FRI	3529
25JUN17	-11 Days =	14 JUN 2017	11363	THU	3529
25JUN17	-12 Days =	13 JUN 2017	10819	WED	1822
25JUN17	-13 Days =	12 JUN 2017	10351	TUE	3630

S65E					
Average Flow over previous 14 days					Avg-Daily Flow
25JUN17	Today=	25 JUN 2017	0	MON	0
25JUN17	-1 Day =	24 JUN 2017	0	SUN	0
25JUN17	-2 Days =	23 JUN 2017	0	SAT	0
25JUN17	-3 Days =	22 JUN 2017	0	FRI	0
25JUN17	-4 Days =	21 JUN 2017	0	THU	0
25JUN17	-5 Days =	20 JUN 2017	0	WED	0
25JUN17	-6 Days =	19 JUN 2017	0	TUE	0
25JUN17	-7 Days =	18 JUN 2017	1	MON	0
25JUN17	-8 Days =	17 JUN 2017	1	SUN	0
25JUN17	-9 Days =	16 JUN 2017	1	SAT	0
25JUN17	-10 Days =	15 JUN 2017	1	FRI	0
25JUN17	-11 Days =	14 JUN 2017	1	THU	0
25JUN17	-12 Days =	13 JUN 2017	1	WED	0
25JUN17	-13 Days =	12 JUN 2017	1	TUE	0

S65EX1					
Average Flow over previous 14 days					Avg-Daily Flow
25JUN17	Today=	25 JUN 2017	1048	MON	1577
25JUN17	-1 Day =	24 JUN 2017	972	SUN	1563
25JUN17	-2 Days =	23 JUN 2017	890	SAT	1447
25JUN17	-3 Days =	22 JUN 2017	811	FRI	1466
25JUN17	-4 Days =	21 JUN 2017	735	THU	1431
25JUN17	-5 Days =	20 JUN 2017	659	WED	1367
25JUN17	-6 Days =	19 JUN 2017	578	TUE	1348
25JUN17	-7 Days =	18 JUN 2017	492	MON	1250
25JUN17	-8 Days =	17 JUN 2017	417	SUN	1026
25JUN17	-9 Days =	16 JUN 2017	360	SAT	763
25JUN17	-10 Days =	15 JUN 2017	336	FRI	367
25JUN17	-11 Days =	14 JUN 2017	316	THU	279
25JUN17	-12 Days =	13 JUN 2017	303	WED	329

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)
25 JUN 2017	4	-146	1182	3532
24 JUN 2017	6	-225	1776	4836
23 JUN 2017	4	-105	1785	4469
22 JUN 2017	4	-175	1772	6139
21 JUN 2017	4	-7	2432	6625
20 JUN 2017	3	-48	3034	8323
19 JUN 2017	2	-149	1931	8276
18 JUN 2017	5	-113	2449	6873
17 JUN 2017	2	-127	4080	12069
16 JUN 2017	2	-123	3306	11925
15 JUN 2017	1	-116	3289	8565
14 JUN 2017	1	-227	3305	7436
13 JUN 2017	2	-360	3252	7477
12 JUN 2017	1	-212	4109	7738

	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)
25 JUN 2017	-76	-1624	0	0	-675
24 JUN 2017	-169	0	0	0	-464
23 JUN 2017	-225	0	0	0	-660
22 JUN 2017	-342	0	0	0	-835
21 JUN 2017	-515	0	0	0	-857
20 JUN 2017	-770	0	0	0	-1015
19 JUN 2017	-776	0	0	0	-742
18 JUN 2017	-825	0	0	0	-783
17 JUN 2017	-890	0	0	0	-808
16 JUN 2017	-820	0	0	0	-809
15 JUN 2017	-803	0	0	0	-729
14 JUN 2017	-983	0	0	0	-577
13 JUN 2017	-1141	4	0	0	-697
12 JUN 2017	-1183	-178	0	-246	-902

	S-308	Below S-308	S-80
	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)
25 JUN 2017	-1188	-991	42
24 JUN 2017	-1330	-1000	46
23 JUN 2017	-1587	-1246	40
22 JUN 2017	-1986	-1343	63
21 JUN 2017	-2455	-2041	48
20 JUN 2017	-2857	-3397	37
19 JUN 2017	-2263	-2361	36
18 JUN 2017	-2282	-2424	33
17 JUN 2017	-2025	-2070	53
16 JUN 2017	-1513	-1916	36

15 JUN 2017	-1111	-958	36
14 JUN 2017	-361	-291	28
13 JUN 2017	-810	-868	35
12 JUN 2017	-621	-357	41

*** NOTE: 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. 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

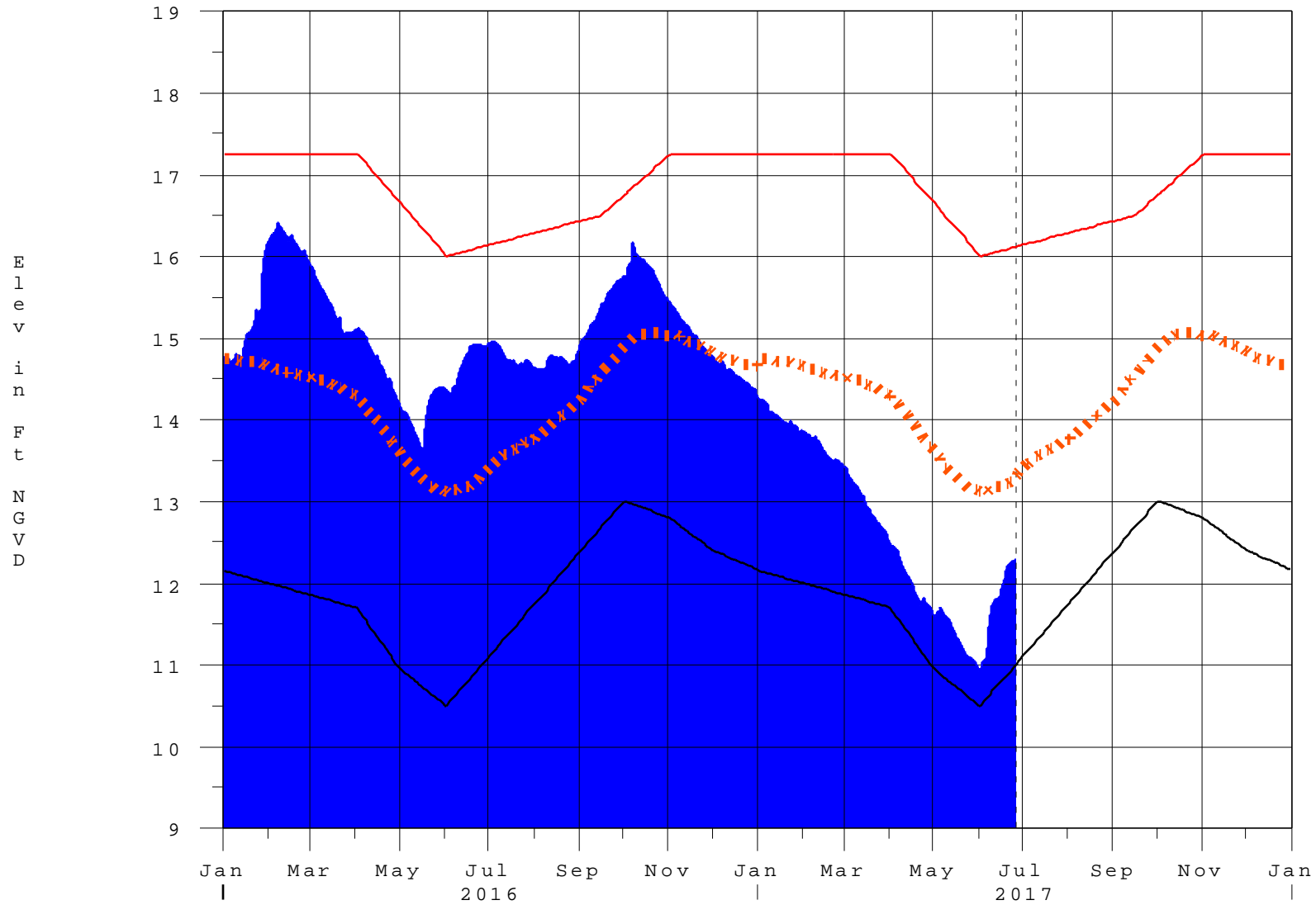
++ For more information see the Jacksonville District Navigation website at <http://www.saj.usace.army.mil/>

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

Report Generated 26JUN2017 @ 13:38 ** Preliminary Data - Subject to Revision **

Lake Okeechobee

26JUN17 14:00:21



- 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