

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 7/3/2017 (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 (Jul-Dec)	N/A	N/A	2.34	Very Wet	2.66	Very Wet	3.97	Very Wet
Multi Seasonal (Jun-Apr)	N/A	N/A	2.61	Wet	4.14	Wet	4.16	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:](#)

3125 cfs 14-day running average for Lake Okeechobee Net Inflow through 7/3/2017. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Wet.

-2.16 for Palmer Index on 7/3/2017.

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 7/3/2017

Lake Okeechobee Stage: **12.40 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		16.15	
Operational Band	High sub-band	15.69	
	Intermediate sub-band	15.22	
	Low sub-band	13.30	
Base Flow sub-band		12.60	
Beneficial Use sub-band		11.16	← 12.40
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 7/3/2017 (ENSO Neutral Condition):

Status for week ending 7/3/2017:

District wide, Raindar rainfall was 1.25 inches for the week. Lake stage on 7/3/2017 was 12.40 ft, up 0.22 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

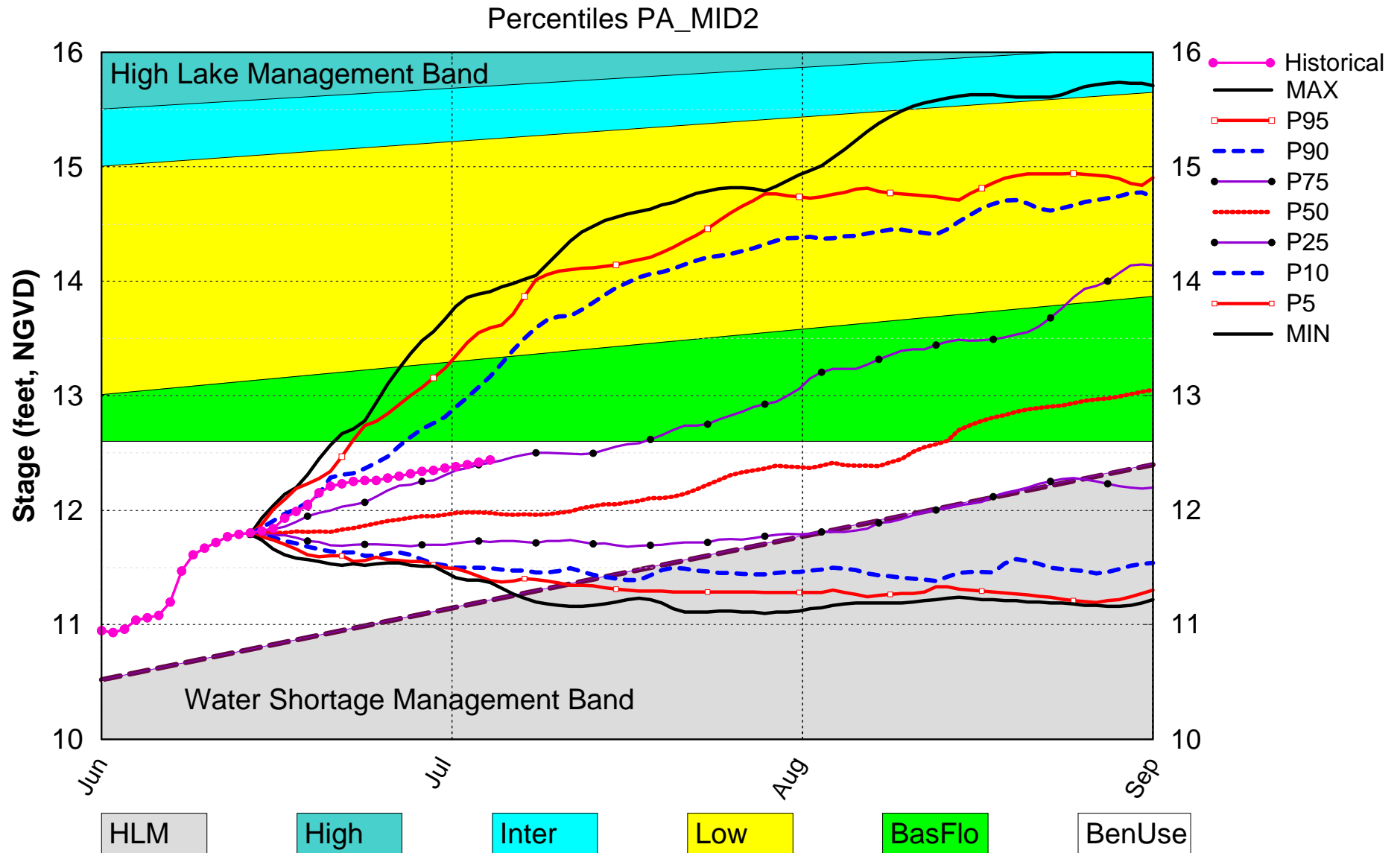
Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Base Flow Sub Band	M
	Palmer Index for LOK Tributary Conditions	-2.16 (Extremely Dry)	H
	CPC Precipitation Outlook	1 month: Normal	L
		3 months: Normal	L
	LOK Seasonal Net Inflow Outlook	2.66 ft (Normal)	L
	ENSO La Nina Years		L
	LOK Multi-Seasonal Net Inflow Outlook		L
WCAs	ENSO La Nina Years	4.14 ft (Wet)	L
	WCA 1: Site 1-7, Site 1-8T, & Site 1-9 Average	Above Line 1 (16.44 ft)	L
	WCA 2A: Site 2-17 HW	Above Line 1 (13.49 ft)	L
LEC	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (11.24 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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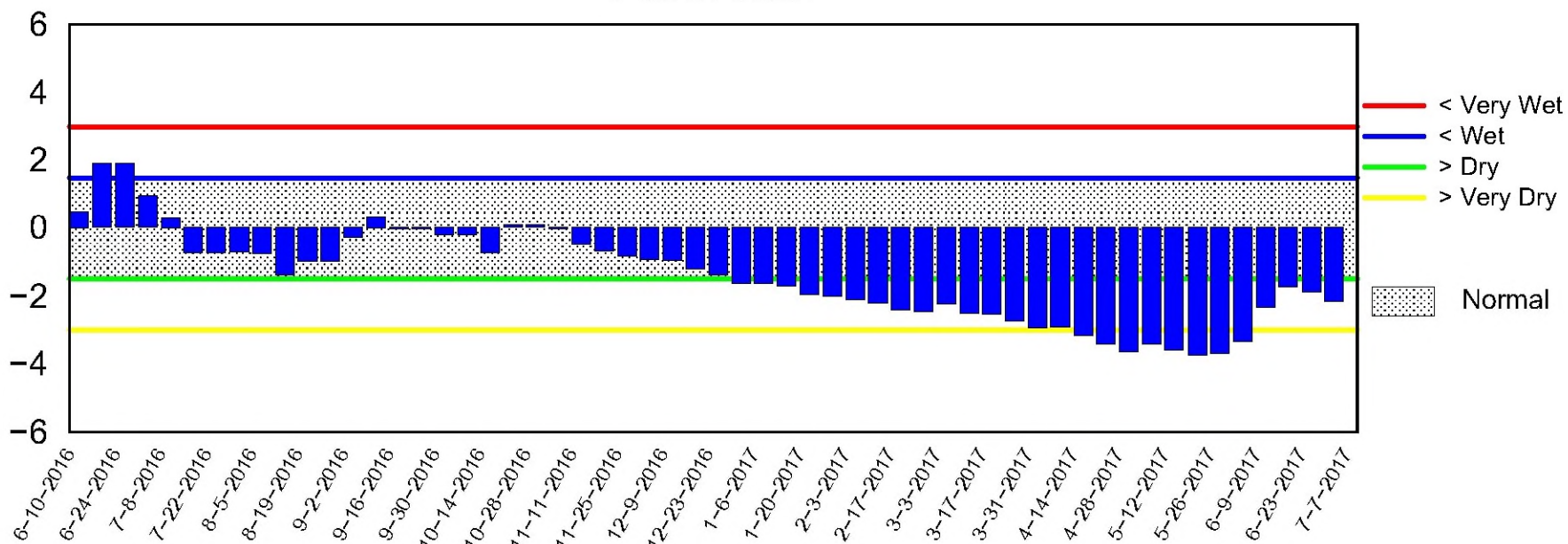
Lake Okeechobee SFWMM June 14, 2017 Position Analysis



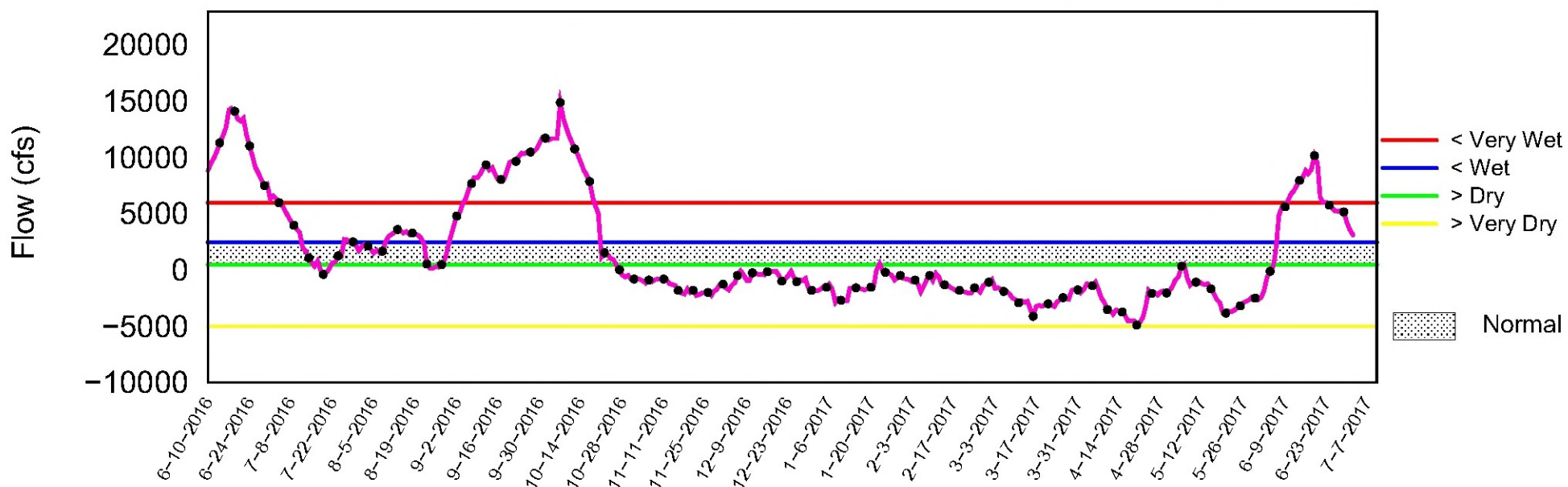
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of July 3 2017

Palmer Index

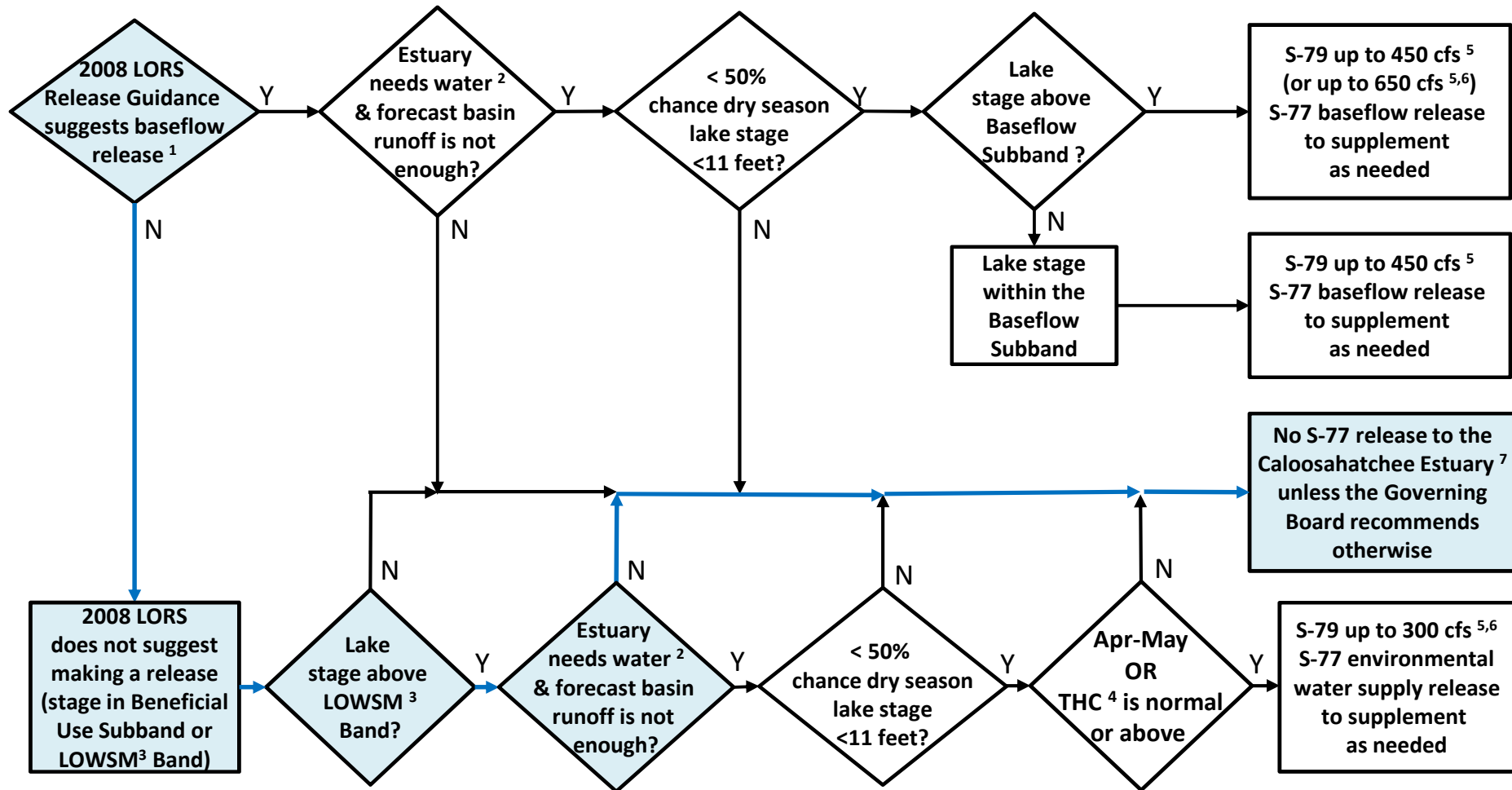


Lake Okeechobee Net Inflow (LONIN) 14-day Running Average



Mon Jul 03 16:44:10 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.

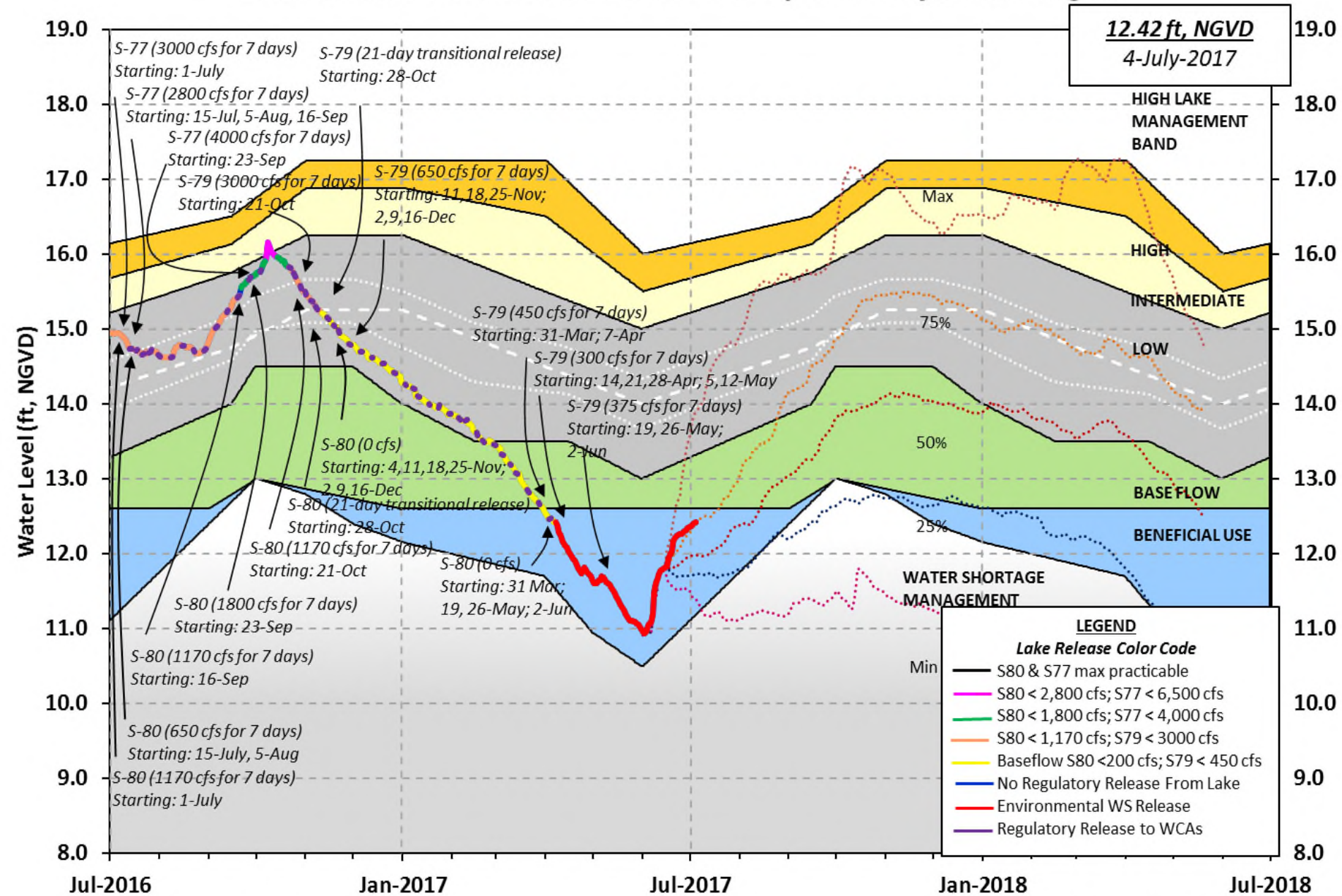
⁴Tributary Hydrologic Condition (THC) is based on classification of Lake Okeechobee Net Inflow and Palmer Index.

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



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 02 JUL 2017

Okeechobee Lake Regulation	Elevation	Last Year	2YRS Ago
	(ft-NGVD)	(ft-NGVD)	(ft-NGVD)
*Okeechobee Lake Elevation	12.40	14.95	12.18 (Official Elv)
Bottom of High Lake Mngmt= 16.15 Top of Water Short Mngmt= 11.14			
Currently in Operational Management Band			

Simulated Average LORS2008 [1965-2000]	12.30
Difference from Average LORS2008	0.10

02JUL (1965-2007) Period of Record Average	13.44
Difference from POR Average	-1.04

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ÷ 6.34'

++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷ 4.54'

Bridge Clearance = 49.98'

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

L001	L005	L006	LZ40	S4	S352	S308	S133
12.32	12.46	12.39	12.38	12.43	12.54	12.30	12.37

*Combination Okeechobee Avg-Daily Lake Average = 12.40
(*See Note)

Okeechobee Inflows (cfs):

S65E	0	S65EX1	1534	Fisheating Cr	579
S154	0	S191	106	S135 Pumps	0
S84	0	S133 Pumps	0	S2 Pumps	1049
S84X	469	S127 Pumps	0	S3 Pumps	0
S71	105	S129 Pumps	0	S4 Pumps	0
S72	67	S131 Pumps	0	C5	0
Total Inflows:		3908			

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	0	S77	3
S127 Culverts	0	S351	0	S308	-480
S129 Culverts	0	S352	0		
S131 Culverts	0	L8 Canal Pt	-503		
Total Outflows:		-980			

S4 Pumps: 12.47 12.52 0 0 0 0 (cfs)

S169:	12.47	12.46	37	5.0	5.0	5.0			
S310:	12.32		41						
S3 Pumps:	9.74	12.37	0	0	0	0			(cfs)
S354:	12.37	9.74	0	0.0	0.0				
S2 Pumps:	11.08	12.35	1049	0	1065	0	0		(cfs)
S351:	12.35	11.08	0	0.0	0.0	0.0			
S352:	12.48	9.56	0	0.0	0.0				
C10A:	-NR-	12.83		8.0	8.0	8.0	0.0	0.0	
L8 Canal PT		12.70	-503						

S351 and S352 Temporary Pumps/S354 Spillway

S351:	11.08	12.35	0	-NR--NR--NR--NR--NR--NR-
S352:	9.56	12.48	0	-NR--NR--NR--NR-
S354:	9.74	12.37	0	-NR--NR--NR--NR-

Caloosahatchee River (S77, S78, S79)

S47B:	13.25	10.79		0.0	0.0
S47D:	10.78	10.79	17	6.2	

S77:

Spillway and Sector Flow:

	12.52	10.89	0.00	0.0	0.0	0.0	0.0
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Flow Due to Lockages+: 3

S77 Below USGS Flow Gage -45

S78:

Spillway and Sector Flow:

	10.68	2.56	522	0.0	0.0	0.0	1.5
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Flow Due to Lockages+: 18

S79:

Spillway and Sector Flow:

	3.03	1.42	1947	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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1.0

Flow Due to Lockages+: 12

Percent of flow from S77 0%

Chloride (ppm) 57

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Flow:

	12.31	13.52	*****	0.0	0.0	0.0	1.0
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Flow Due to Lockages+: -3

S308 Below USGS Flow Gage -477

S153:	18.43	13.38	536	1.1	1.1
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S80:

Spillway and Sector Flow:

	13.58	0.66	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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Flow Due to Lockages+: 24

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	0.16	3.23	183	0
S78:	0.00	0.19	0.65	357	1
S79:	0.00	0.73	2.27	270	0
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:	0.15	1.22	1.43	107	4
S80:	0.00	0.96	0.96	73	2
Okeechobee Average	0.08	0.11	0.36		
(Sites S78, S79 and S80 not included)					

Oke Nexrad Basin Avg	0.21	0.36	0.98		

Okeechobee Lake Elevations	02 JUL 2017	12.40	Difference from
02JUL17			
02JUL17 -1 Day =	01 JUL 2017	12.38	-0.02
02JUL17 -2 Days =	30 JUN 2017	12.37	-0.03
02JUL17 -3 Days =	29 JUN 2017	12.35	-0.05
02JUL17 -4 Days =	28 JUN 2017	12.34	-0.06
02JUL17 -5 Days =	27 JUN 2017	12.31	-0.09
02JUL17 -6 Days =	26 JUN 2017	12.30	-0.10
02JUL17 -7 Days =	25 JUN 2017	12.28	-0.12
02JUL17 -30 Days =	02 JUN 2017	10.96	-1.44
02JUL17 -1 Year =	02 JUL 2016	14.95	2.55
02JUL17 -2 Year =	02 JUL 2015	12.18	-0.22

Long Term Mean 30day Avearge ET for Lake Alfred (Inches) = 4.65

Lake Okeechobee Net Inflow (LONIN)						
Average Flow over the previous 14 days					Avg-Daily Flow	
02JUL17	Today =	02 JUL 2017	4885	MON		3832
02JUL17	-1 Day =	01 JUL 2017	5444	SUN		1916
02JUL17	-2 Days =	30 JUN 2017	6084	SAT		3832
02JUL17	-3 Days =	29 JUN 2017	6956	FRI		1916
02JUL17	-4 Days =	28 JUN 2017	7071	THU		5748
02JUL17	-5 Days =	27 JUN 2017	6913	WED		1916
02JUL17	-6 Days =	26 JUN 2017	6906	TUE		4347
02JUL17	-7 Days =	25 JUN 2017	6855	MON		4101
02JUL17	-8 Days =	24 JUN 2017	7210	SUN		0
02JUL17	-9 Days =	23 JUN 2017	7848	SAT		1966
02JUL17	-10 Days =	22 JUN 2017	8463	FRI		3933
02JUL17	-11 Days =	21 JUN 2017	9994	THU		3933
02JUL17	-12 Days =	20 JUN 2017	13177	WED		11545
02JUL17	-13 Days =	19 JUN 2017	13872	TUE		19410

S65E						
Average Flow over previous 14 days					Avg-Daily Flow	
02JUL17	Today=	02 JUL 2017	0	MON		0
02JUL17	-1 Day =	01 JUL 2017	0	SUN		0
02JUL17	-2 Days =	30 JUN 2017	0	SAT		0
02JUL17	-3 Days =	29 JUN 2017	0	FRI		0
02JUL17	-4 Days =	28 JUN 2017	0	THU		0
02JUL17	-5 Days =	27 JUN 2017	0	WED		0
02JUL17	-6 Days =	26 JUN 2017	0	TUE		0
02JUL17	-7 Days =	25 JUN 2017	0	MON		0
02JUL17	-8 Days =	24 JUN 2017	0	SUN		0
02JUL17	-9 Days =	23 JUN 2017	0	SAT		0
02JUL17	-10 Days =	22 JUN 2017	0	FRI		0
02JUL17	-11 Days =	21 JUN 2017	0	THU		0
02JUL17	-12 Days =	20 JUN 2017	0	WED		0
02JUL17	-13 Days =	19 JUN 2017	0	TUE		0

S65EX1						
Average Flow over previous 14 days					Avg-Daily Flow	
02JUL17	Today=	02 JUL 2017	1592	MON		1534
02JUL17	-1 Day =	01 JUL 2017	1572	SUN		1674
02JUL17	-2 Days =	30 JUN 2017	1525	SAT		1762
02JUL17	-3 Days =	29 JUN 2017	1454	FRI		1797
02JUL17	-4 Days =	28 JUN 2017	1352	THU		1832
02JUL17	-5 Days =	27 JUN 2017	1241	WED		1823
02JUL17	-6 Days =	26 JUN 2017	1134	TUE		1668
02JUL17	-7 Days =	25 JUN 2017	1047	MON		1575
02JUL17	-8 Days =	24 JUN 2017	972	SUN		1563
02JUL17	-9 Days =	23 JUN 2017	890	SAT		1447
02JUL17	-10 Days =	22 JUN 2017	811	FRI		1466
02JUL17	-11 Days =	21 JUN 2017	735	THU		1431
02JUL17	-12 Days =	20 JUN 2017	659	WED		1367

02JUL17 -13 Days =

19 JUN 2017

578 TUE

1348

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)
02 JUL 2017	7	-88	1070	3890
01 JUL 2017	6	-117	982	2486
30 JUN 2017	4	-208	1051	3173
29 JUN 2017	4	-227	1418	5270
28 JUN 2017	3	-194	614	2917
27 JUN 2017	4	-77	319	2613
26 JUN 2017	3	-126	762	2114
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

	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)
02 JUL 2017	81	0	0	0	-998
01 JUL 2017	73	0	0	0	-886
30 JUN 2017	20	0	0	0	-758
29 JUN 2017	-72	0	0	0	-689
28 JUN 2017	-94	0	0	0	-644
27 JUN 2017	-77	0	0	-NR-	-910
26 JUN 2017	-91	-2296	0	0	-973
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

	S-308	Below S-308	S-80
	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)
02 JUL 2017	-1382	-946	48
01 JUL 2017	-1395	-992	58
30 JUN 2017	-15	-293	54
29 JUN 2017	-6	-89	47
28 JUN 2017	-414	-221	38
27 JUN 2017	-1326	-688	49
26 JUN 2017	-1339	-1108	36
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

*** 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

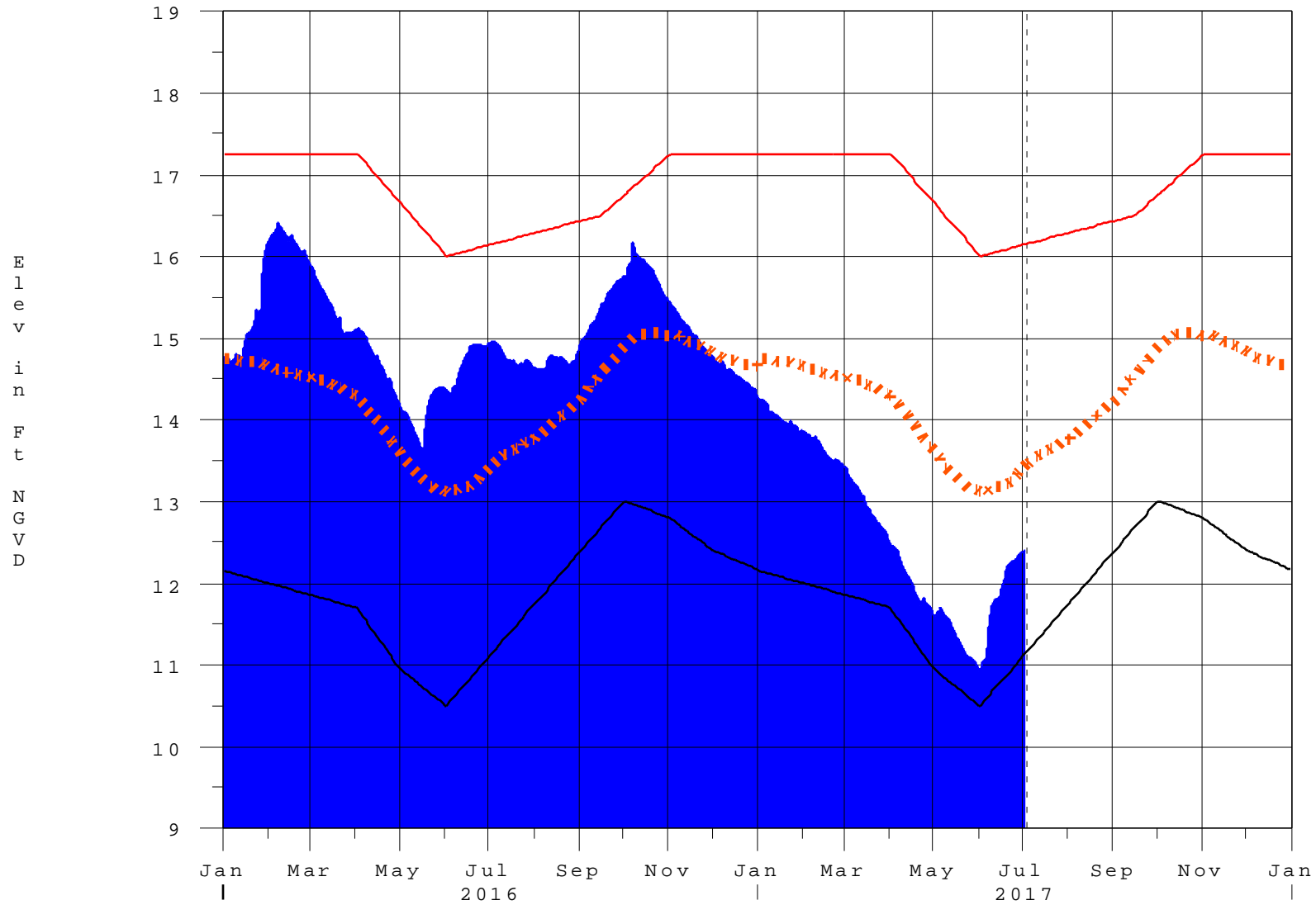
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* On 11 May 1999, Lake Okeechobee Elevation was switched from Instantaneous 2400 value to an average-daily lake average.
 On 14 Mar 2001, due to the isolation of various gages within the standard
 10 stations, the average of the interior 4 station 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 03JUL2017 @ 15:07 ** Preliminary Data - Subject to Revision
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Lake Okeechobee

03JUL17 15:00:20



- 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