

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 9/18/2017 (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 (Sep-Feb)	N/A	N/A	3.04	Very Wet	3.34	Very Wet	4.14	Very Wet
Multi Seasonal (Sep-Apr)	N/A	N/A	3.08	Wet	3.34	Wet	4.14	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:](#)

29298 cfs 14-day running average for Lake Okeechobee Net Inflow through 9/17/2017. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Very Wet.

2.54 for Palmer Index on 9/16/2017.

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

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

[LORS2008 Classification Tables:](#)

Lake Okeechobee Stage on 9/18/2017

Lake Okeechobee Stage: **15.50 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		16.53	
Operational Band	High sub-band	16.16	
	Intermediate sub-band	15.77	
	Low sub-band	14.07	← 15.50
Base Flow sub-band		12.81	
Beneficial Use sub-band		12.73	
Water Shortage Management Band			

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

Release Guidance Flow Chart Outcome: Up to maximum practicable releases to the WCAs if desirable or with minimum everglades impacts; otherwise no releases.

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

Release Guidance Flow Chart Outcome: S-77 up to 4000 cfs and S-80 up to 1800 cfs.

Technical Input Summaries from:

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

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

[Back to U.S. Army Corps of Engineers LORSS Homepage](#)

LORS2008 Implementation on 9/18/2017 (ENSO Neutral Condition):

Status for week ending 9/19/2017:

District wide, Raindar rainfall was 0.54 inches for the week. Lake stage on 9/18/2017 was 15.50 ft, up 0.95 ft from last week.

The updated Mid-September 2017 SFWMM Dynamic Position Analysis [percentile graph](#) for Lake Okeechobee show that the current lake stage is in the Low Operational Sub-Band.

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

Water Supply Risk Evaluation

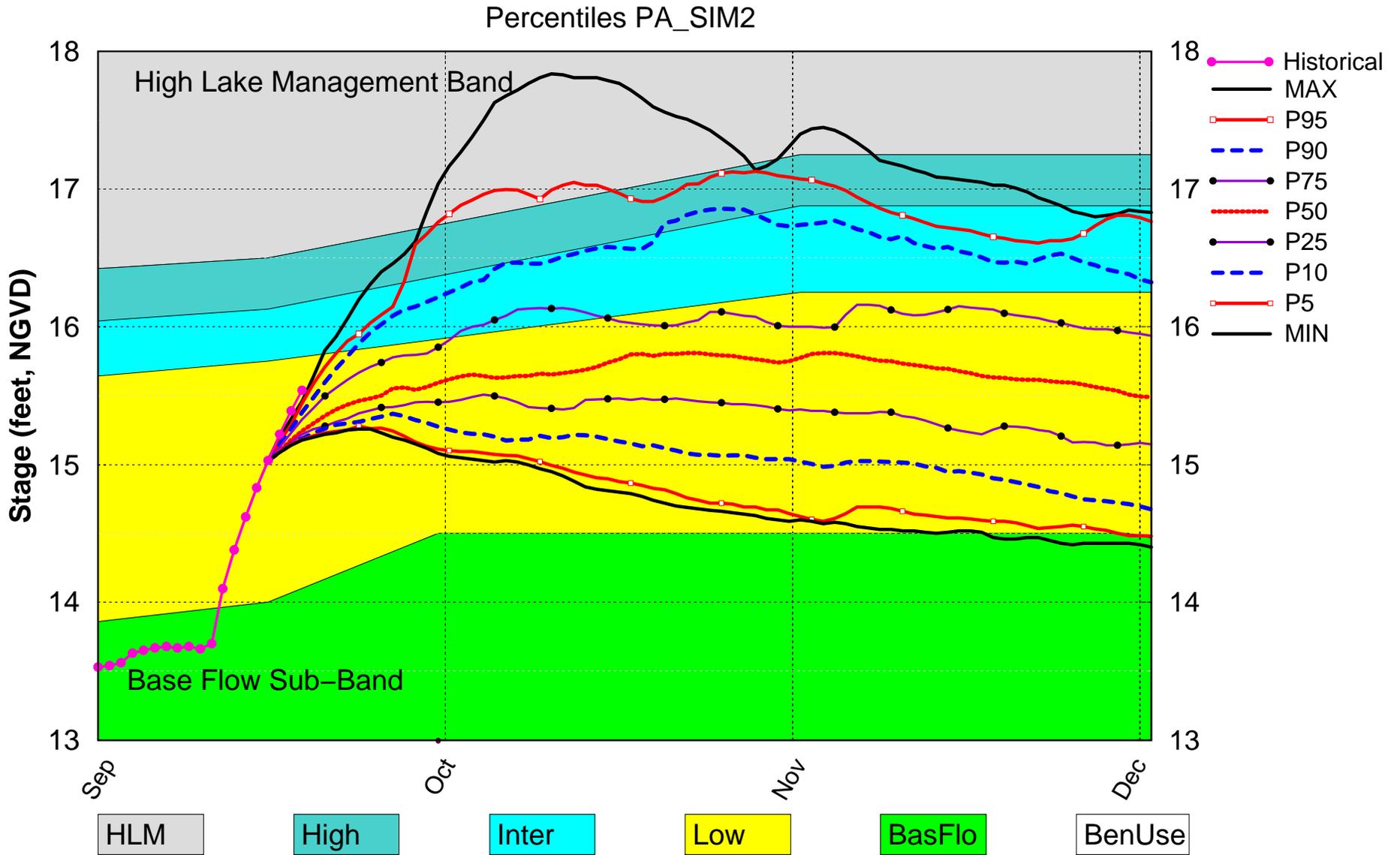
Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Intermediate Sub Band	L
	Palmer Index for LOK Tributary Conditions	2.54 (Normal)	L
	CPC Precipitation Outlook	1 month: Above Normal	L
		3 months: Above Normal	L
	LOK Seasonal Net Inflow Outlook ENSO La Nina Years	3.34 ft (Normal)	L
	LOK Multi-Seasonal Net Inflow Outlook ENSO La Nina Years	3.34 ft (Wet)	L
			L
WCAs	WCA 1: Site 1-7, Site 1-8T, & Site 1-9 Average	Above Line 1 (16.93 ft)	L
	WCA 2A: Site 2-17 HW	Above Line 1 (14.52 ft)	L
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (12.02 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.

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

[Back to U.S. Army Corps of Engineers LORSS Homepage](#)

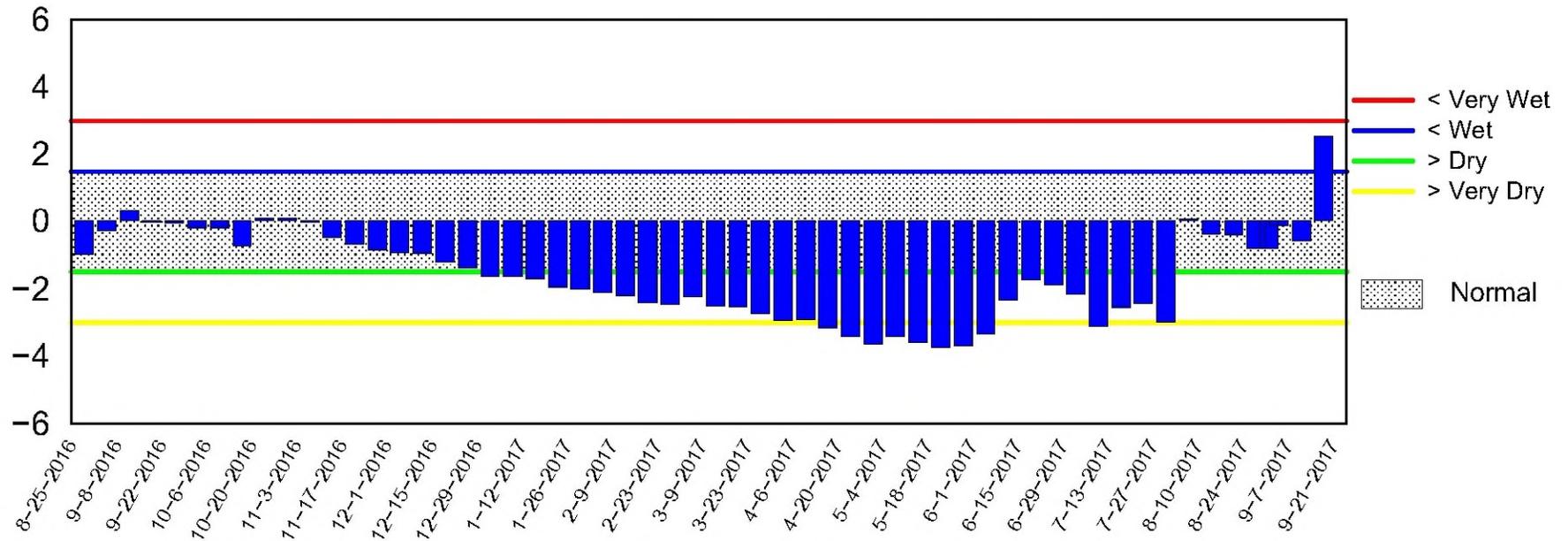
Lake Okeechobee SFWMM Sep 2017 Mid-Mon Dynamic Position Analysis



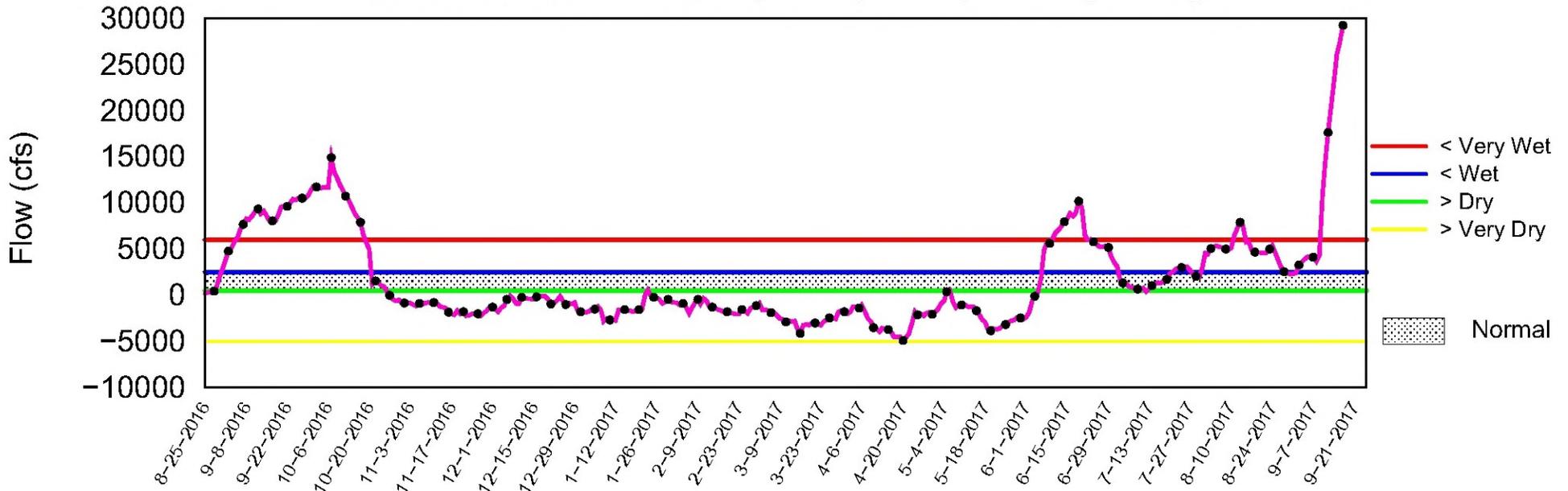
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of September 18 2017

Palmer Index

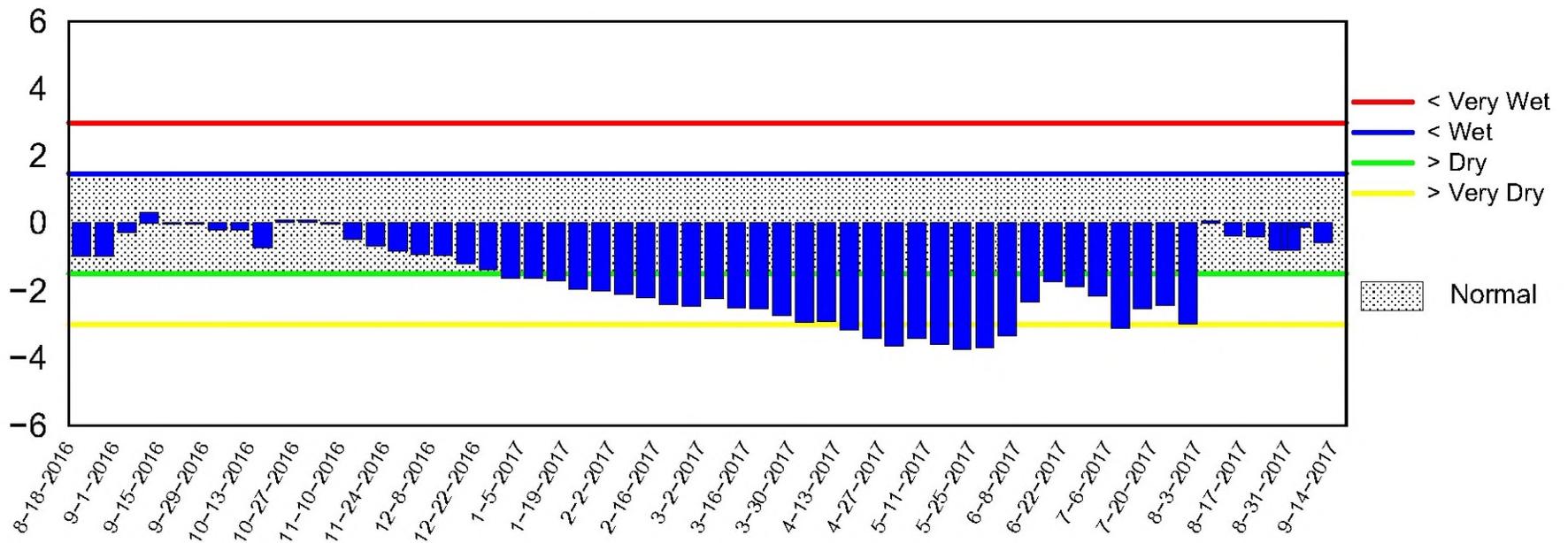


Lake Okeechobee Net Inflow (LONIN) 14-day Running Average

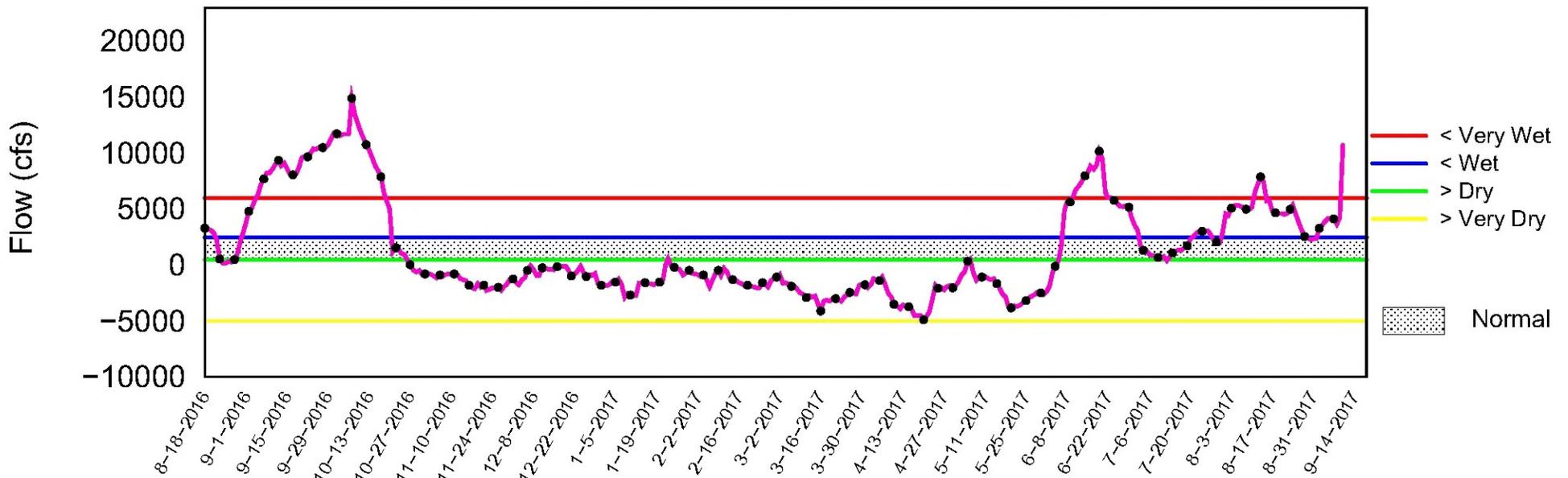


Tributary Basin Condition Indicators as of September 11 2017

Palmer Index



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



Tue Sep 12 09:30:55 EDT 2017

2008 LORS

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

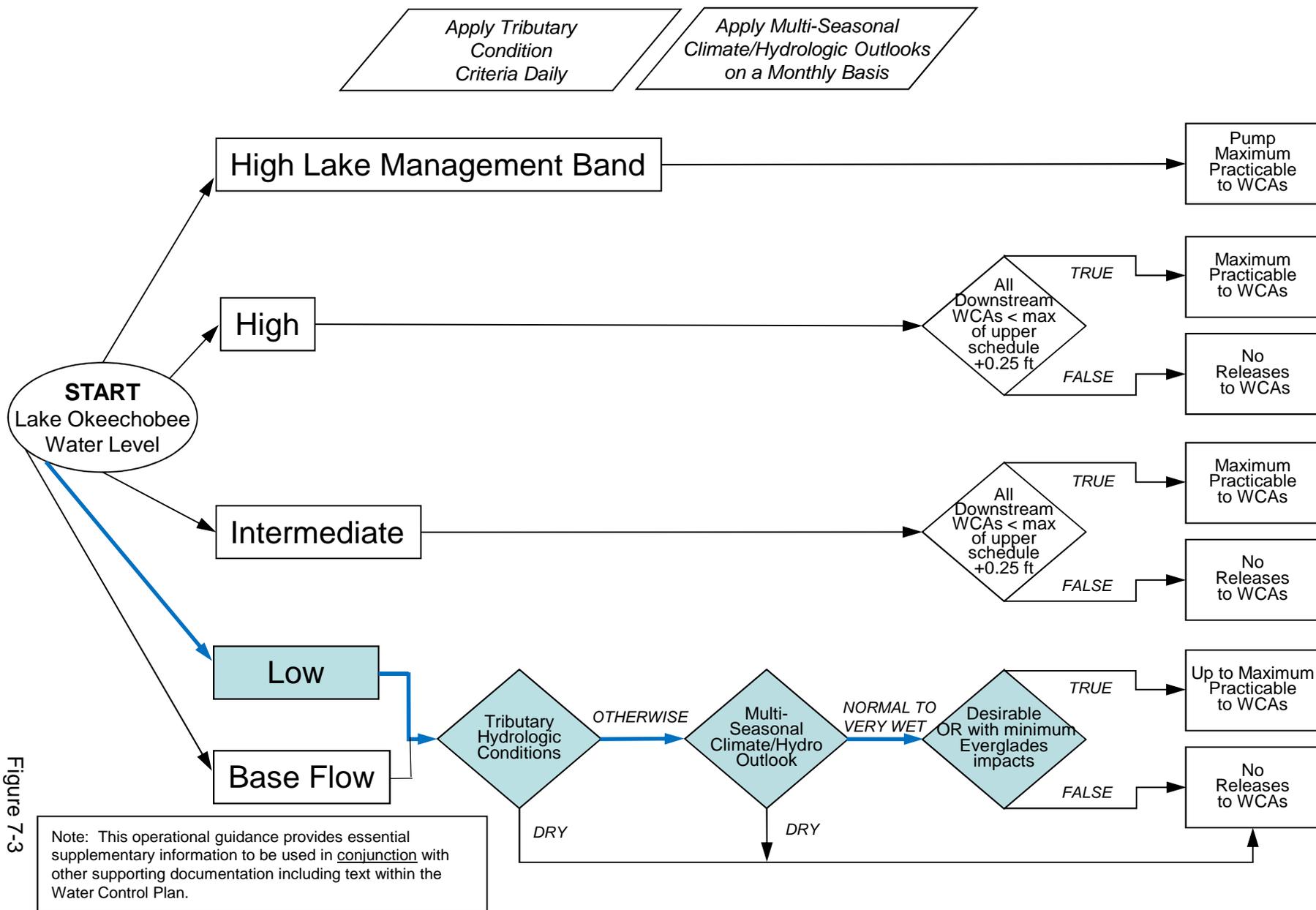


Figure 7-3

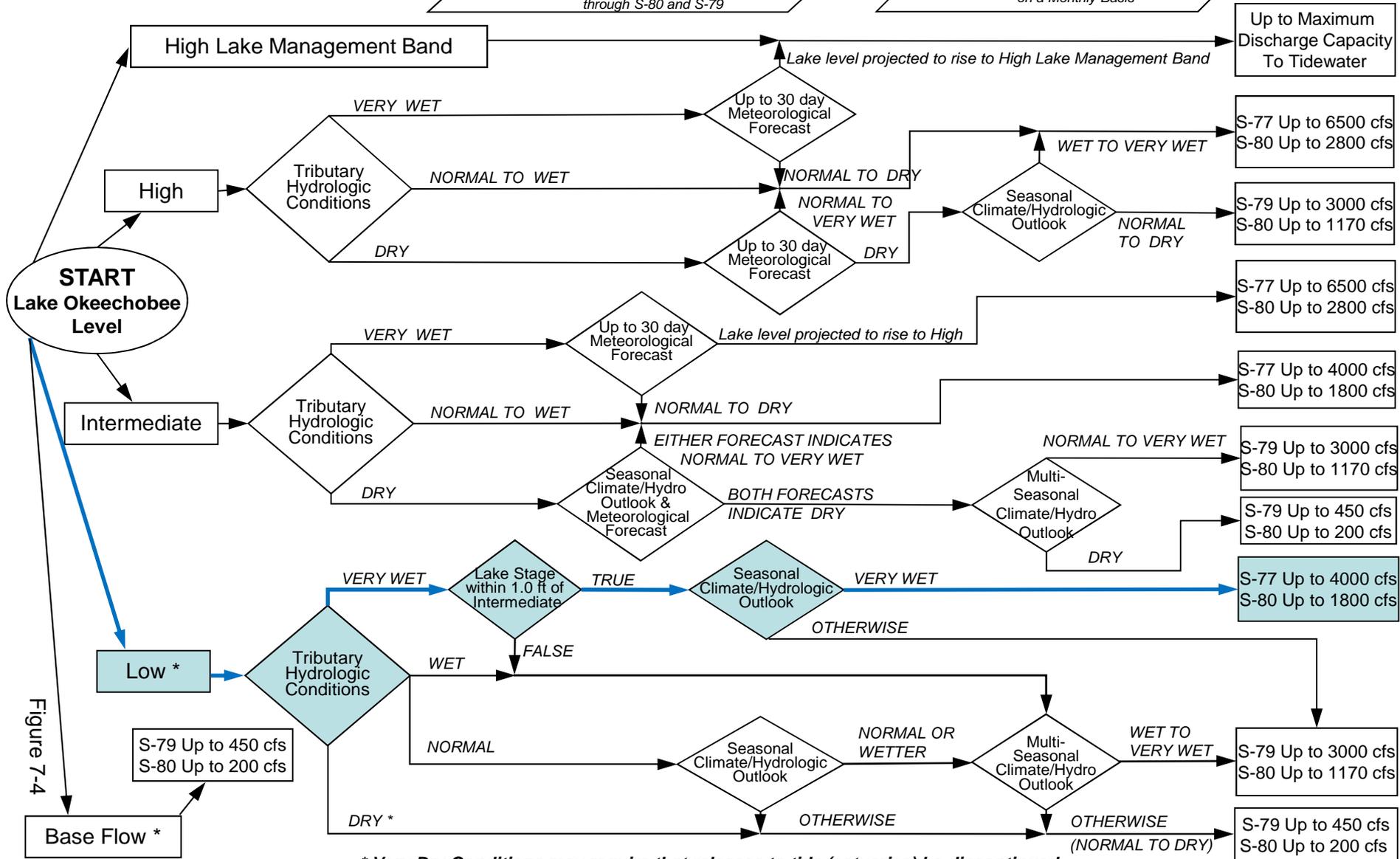
2008 LORS

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

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

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

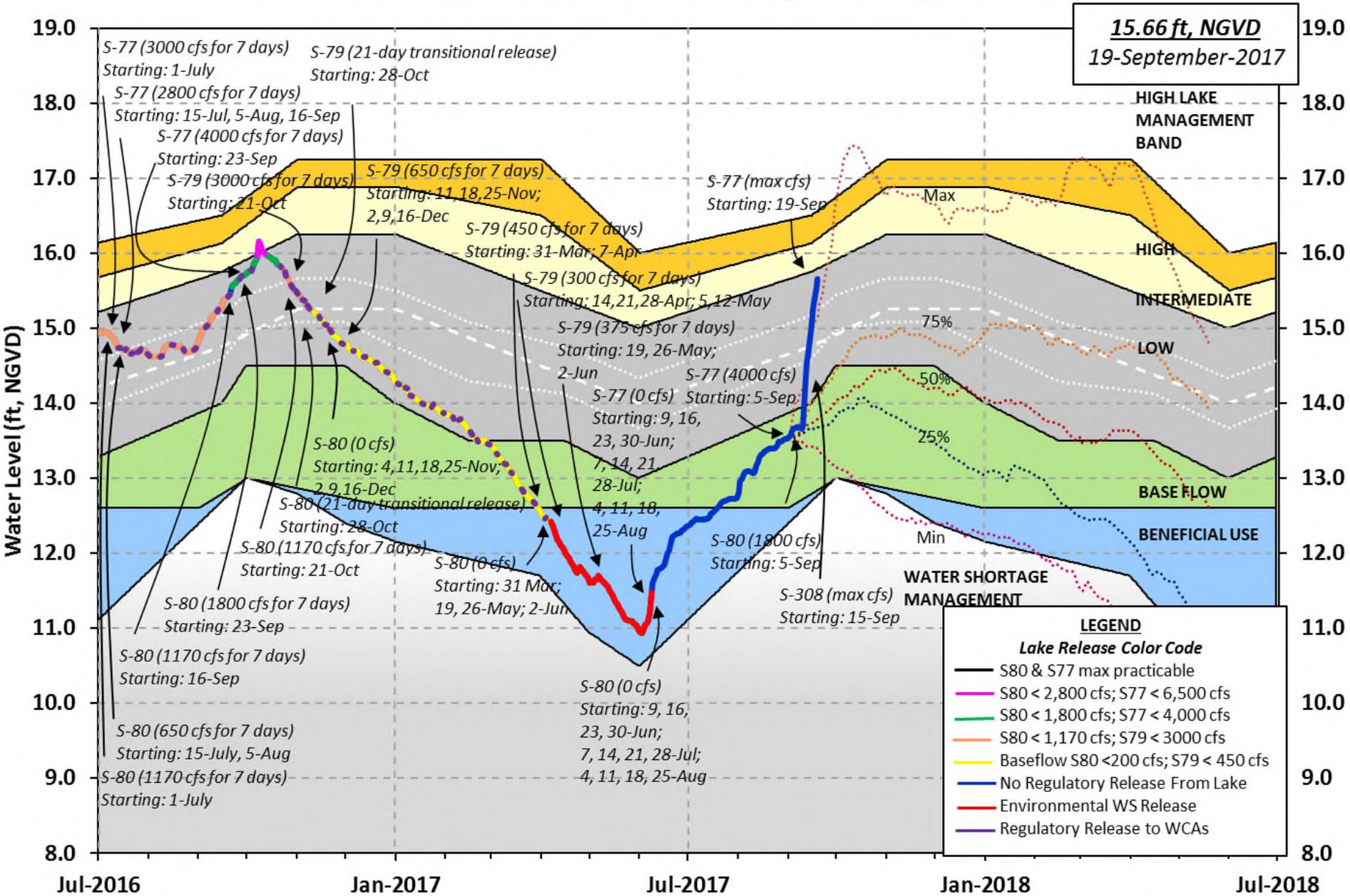
Apply Meteorological Forecasts on a Weekly Basis; apply Seasonal and Multi-Seasonal Climate/Hydrologic Outlooks on a Monthly Basis



* Very Dry Conditions may require that releases to tide (estuaries) be discontinued

Figure 7-4

Lake Okeechobee Water Level History and Projected Stages



LORS-2008

Adopted by USACE 28-April-2008

Projected Stage Percentiles From
SFWMD-HESM Position Analysis

S169:	15.79	10.46	472	0.0	0.0	0.0			
S310:	15.73		132						
S3 Pumps:	9.41	15.78	2326	740	788	797			(cfs)
S354:	15.78	9.41	0	0.0	0.0				
S2 Pumps:	9.77	15.76	1897	0	0	957	961		(cfs)
S351:	15.76	9.77	0	0.0	0.0	0.0			
S352:	15.77	9.55	0	0.0	0.0				
C10A:	-NR-	16.27		8.0	8.0	8.0	0.0	0.0	
L8 Canal PT		16.12	-747						

S351 and S352 Temporary Pumps/S354 Spillway

S351:	9.77	15.76	0	-NR--NR--NR--NR--NR--NR-
S352:	9.55	15.77	0	-NR--NR--NR--NR-
S354:	9.41	15.78	0	-NR--NR--NR--NR-

Caloosahatchee River (S77, S78, S79)

S47B:	12.95	11.14		1.5	1.5
S47D:	10.72	10.68	174	6.5	

S77:

Spillway and Sector Flow:								
	15.72	10.79	0.00	0.0	0.0	0.0	0.0	0.0
Flow Due to Lockages+:			2					

S77 Below USGS Flow Gage -213

S78:

Spillway and Sector Flow:							
	-NR-	-NR-	-NR-	3.0	3.0	3.0	3.0
Flow Due to Lockages+:			-NR-				

S79:

Spillway and Sector Flow:										
	2.91	1.74	11760	8.0	8.0	8.0	8.0	8.0	8.0	8.0
8.0										
Flow Due to Lockages+:			2							
Percent of flow from S77			0%							
Chloride (ppm)			40							

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Flow:							
	15.52	15.37	*****	8.0	8.0	8.0	8.0
Flow Due to Lockages+:			0				

S308 Below USGS Flow Gage 2824

S153:	18.55	15.14	330	0.9	0.5
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S80:

Spillway and Sector Flow:									
	14.09	2.93	2979	0.0	0.0	0.0	0.0	0.0	0.0
Flow Due to Lockages+:			5						
Percent of flow from S308			95%						

Steele Point Top Salinity (mg/ml) 4395

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

Speedy Point Top Salinity (mg/ml) 370

Speedy Point Bottom Salinity (mg/ml) 597

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

Daily Precipitation Totals Speed (mph)	1-Day (inches)	3-Day (inches)	7-Day (inches)	Direction (Degø)	Wind ---
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:	0.32	0.32	1.69	346	6
S78:	-NR-	0.00	1.04	-NR-	-NR-
S79:	0.00	0.00	0.19	59	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	0.00	13	3
S80:	0.00	0.00	0.04	0	3
Okeechobee Average (Sites S78, S79 and S80 not included)	0.16	0.02	0.13		
Oke Nexrad Basin Avg	-NR-	0.00	0.42		

Okeechobee Lake Elevations	17 SEP 2017	15.50	Difference from
17SEP17			
17SEP17 -1 Day =	16 SEP 2017	15.37	-0.13
17SEP17 -2 Days =	15 SEP 2017	15.22	-0.28
17SEP17 -3 Days =	14 SEP 2017	15.03	-0.47
17SEP17 -4 Days =	13 SEP 2017	14.83	-0.67
17SEP17 -5 Days =	12 SEP 2017	14.62	-0.88
17SEP17 -6 Days =	11 SEP 2017	14.38	-1.12
17SEP17 -7 Days =	10 SEP 2017	13.91	-1.59
17SEP17 -30 Days =	18 AUG 2017	13.38	-2.12
17SEP17 -1 Year =	17 SEP 2016	15.42	-0.08
17SEP17 -2 Year =	17 SEP 2015	14.04	-1.46

Long Term Mean 30day Avearge ET for Lake Alfred (Inches) = 4.09

Lake Okeechobee Net Inflow (LONIN)

Average Flow over the previous 14 days					Avg-Daily Flow
17SEP17	Today =	17 SEP 2017	29869	MON	31007
17SEP17	-1 Day =	16 SEP 2017	27957	SUN	35217
17SEP17	-2 Days =	15 SEP 2017	26502	SAT	42457
17SEP17	-3 Days =	14 SEP 2017	23801	FRI	42854
17SEP17	-4 Days =	13 SEP 2017	20935	THU	44619
17SEP17	-5 Days =	12 SEP 2017	17934	WED	51324
17SEP17	-6 Days =	11 SEP 2017	14422	TUE	100027
17SEP17	-7 Days =	10 SEP 2017	7428	MON	50820
17SEP17	-8 Days =	09 SEP 2017	4090	SUN	2118
17SEP17	-9 Days =	08 SEP 2017	4255	SAT	931
17SEP17	-10 Days =	07 SEP 2017	4866	FRI	7264
17SEP17	-11 Days =	06 SEP 2017	4950	THU	2243
17SEP17	-12 Days =	05 SEP 2017	5196	WED	3050
17SEP17	-13 Days =	04 SEP 2017	4919	TUE	4235

S65E

Average Flow over previous 14 days					Avg-Daily Flow
17SEP17	Today=	17 SEP 2017	2837	MON	8175
17SEP17	-1 Day =	16 SEP 2017	2253	SUN	8248
17SEP17	-2 Days =	15 SEP 2017	1664	SAT	8220
17SEP17	-3 Days =	14 SEP 2017	1077	FRI	7209
17SEP17	-4 Days =	13 SEP 2017	575	THU	4281
17SEP17	-5 Days =	12 SEP 2017	269	WED	2720
17SEP17	-6 Days =	11 SEP 2017	75	TUE	987
17SEP17	-7 Days =	10 SEP 2017	4	MON	57
17SEP17	-8 Days =	09 SEP 2017	0	SUN	0
17SEP17	-9 Days =	08 SEP 2017	0	SAT	0
17SEP17	-10 Days =	07 SEP 2017	0	FRI	0
17SEP17	-11 Days =	06 SEP 2017	0	THU	0
17SEP17	-12 Days =	05 SEP 2017	0	WED	0
17SEP17	-13 Days =	04 SEP 2017	0	TUE	0

S65EX1

Average Flow over previous 14 days					Avg-Daily Flow
17SEP17	Today=	17 SEP 2017	5079	MON	6896
17SEP17	-1 Day =	16 SEP 2017	4750	SUN	7016
17SEP17	-2 Days =	15 SEP 2017	4427	SAT	7306
17SEP17	-3 Days =	14 SEP 2017	4062	FRI	8052
17SEP17	-4 Days =	13 SEP 2017	3642	THU	8163
17SEP17	-5 Days =	12 SEP 2017	3221	WED	8161
17SEP17	-6 Days =	11 SEP 2017	2802	TUE	7473
17SEP17	-7 Days =	10 SEP 2017	2427	MON	4318
17SEP17	-8 Days =	09 SEP 2017	2271	SUN	2355
17SEP17	-9 Days =	08 SEP 2017	2261	SAT	2257
17SEP17	-10 Days =	07 SEP 2017	2240	FRI	2228
17SEP17	-11 Days =	06 SEP 2017	2264	THU	2226
17SEP17	-12 Days =	05 SEP 2017	2243	WED	2288

 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)
17 SEP 2017	4	-422	-NR-	23252
16 SEP 2017	5	-289	7497	29517
15 SEP 2017	4	-221	-NR-	21680
14 SEP 2017	-NR-	137	7924	22683
13 SEP 2017	-NR-	89	9773	27244
12 SEP 2017	3	126	10398	45419
11 SEP 2017	0	205	-NR-	56205
10 SEP 2017	0	-989	-NR-	27044
09 SEP 2017	0	-70	2876	7647
08 SEP 2017	6452	7982	10245	15795
07 SEP 2017	7032	8528	11023	17400
06 SEP 2017	6873	8780	10280	16703
05 SEP 2017	2080	2408	4256	8397
04 SEP 2017	2	-49	1238	6007

	S-310	S-351	S-352	S-354	L8 Canal Pt
	Discharge	Discharge	Discharge	Discharge	Discharge
	(ALL DAY)				
DATE	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)
17 SEP 2017	261	0	0	0	-1480
16 SEP 2017	-371	0	0	0	-1719
15 SEP 2017	-81	0	0	0	-1922
14 SEP 2017	-600	0	0	0	-2143
13 SEP 2017	-788	0	0	0	-2560
12 SEP 2017	-673	0	0	0	-2840
11 SEP 2017	-64	0	0	0	-2369
10 SEP 2017	-50	0	0	0	-1455
09 SEP 2017	4	0	0	0	-473
08 SEP 2017	-32	0	0	0	-496
07 SEP 2017	-NR-	0	0	0	-572
06 SEP 2017	-NR-	0	0	0	-579
05 SEP 2017	-NR-	0	0	0	-327
04 SEP 2017	18	0	0	0	-33

	S-308	Below S-308	S-80
	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)
17 SEP 2017	8083	5599	5823
16 SEP 2017	8914	5351	6610
15 SEP 2017	4753	2512	5517
14 SEP 2017	-0	244	2756
13 SEP 2017	-NR-	142	3914
12 SEP 2017	-1	180	7613
11 SEP 2017	-NR-	-862	7833
10 SEP 2017	-NR-	1164	2749
09 SEP 2017	-NR-	-7	880
08 SEP 2017	5948	3677	3485

07 SEP 2017	3338	3556	3552
06 SEP 2017	1643	3391	3505
05 SEP 2017	-305	21	1060
04 SEP 2017	-700	-484	33

*** 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 Okeechobee 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

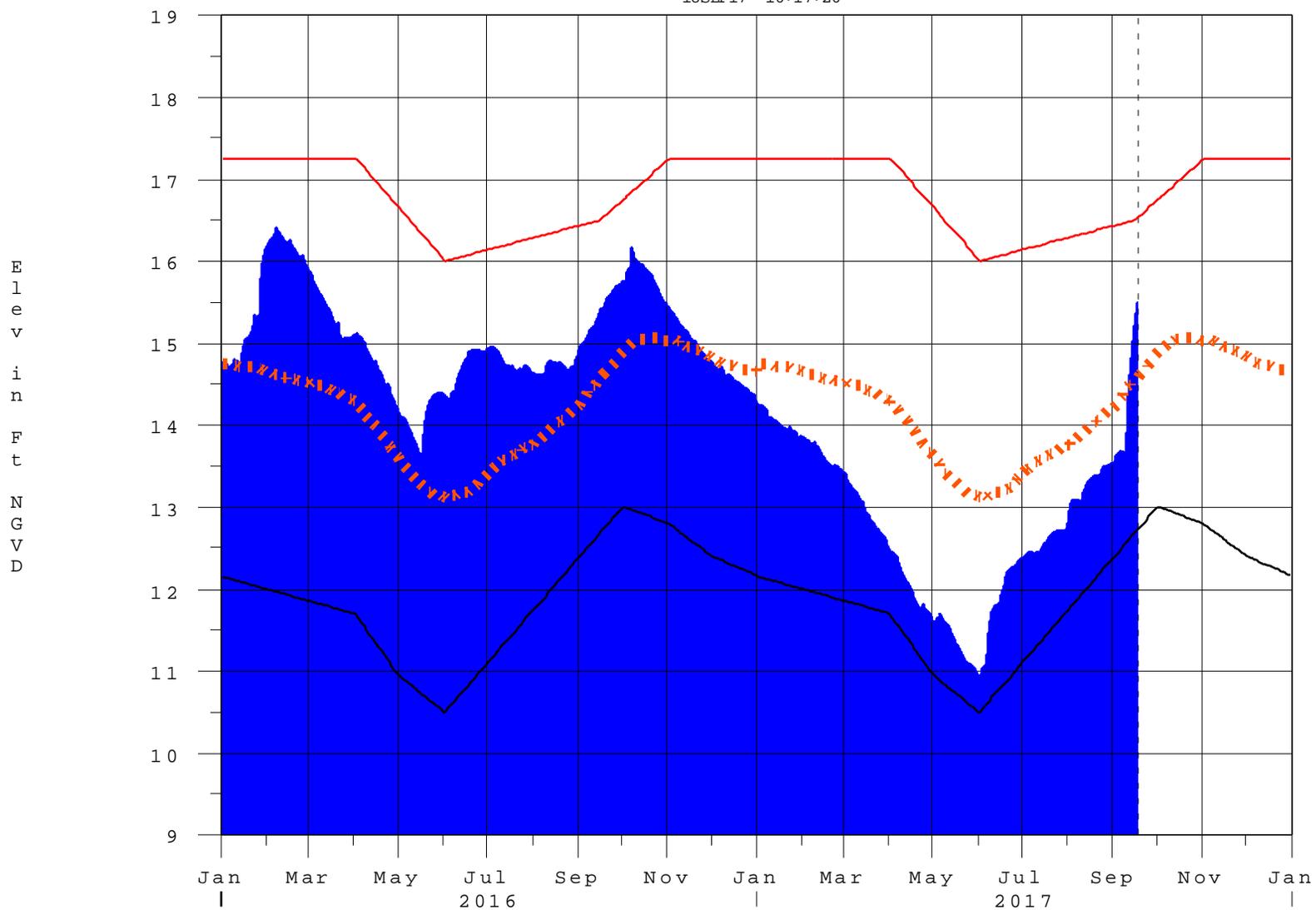
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Report Generated 18SEP2017 @ 10:15 ** Preliminary Data - Subject to Revision

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Lake Okeechobee

18SEP17 10:17:20



- 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

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

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

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

* use the wettest of the two indicators

Classification of Lake Okeechobee Net Inflow Seasonal Outlook*

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

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

Classification of Lake Okeechobee Net Inflow Multi-Seasonal Outlook*

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

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

6-15 Day Precipitation Outlook Categories*

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

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

Under Construction