

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 12/25/2017 (ENSO La Nina 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 La Nina 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 (Dec-May)	N/A	N/A	0.02	Dry	-0.23	Dry	-0.38	Dry
Multi Seasonal (Dec-Oct)	N/A	N/A	2.57	Wet	2.46	Normal	2.12	Normal

*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.

**Sub-sampling is a weighted average of ENSO conditions based on the ENSO forecast used.

[Tributary Hydrologic Conditions Graph:](#)

-530 cfs 14-day running average for Lake Okeechobee Net Inflow through 12/24/2017. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Dry.

0.97 for Palmer Index on 12/23/2017.

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

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

[LORS2008 Classification Tables:](#)

Lake Okeechobee Stage on 12/25/2017

Lake Okeechobee Stage: **15.59 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		17.25	
Operational Band	High sub-band	16.88	
	Intermediate sub-band	16.25	
	Low sub-band	14.11	← 15.59
Base Flow sub-band		12.63	
Beneficial Use sub-band		12.21	
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-79 Up to 450 cfs & S-80 Up to 200 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](#)

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

LORS2008 Implementation on 12/25/2017 (ENSO Neutral Condition):

Status for week ending 12/25/2017:

District wide, Raindar rainfall was 0.01 inches for the week. Lake stage on 12/25/2017 was 15.62 ft, down 0.11 ft from last week.

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

The 2008 LORS Tributary Hydrologic Condition (THC) tributary is classified as **Normal**. The PDSI indicates Normal condition and the LONIN is Dry. The THC classification is based on the wetter of the two [indices](#).

Water Supply Risk Evaluation

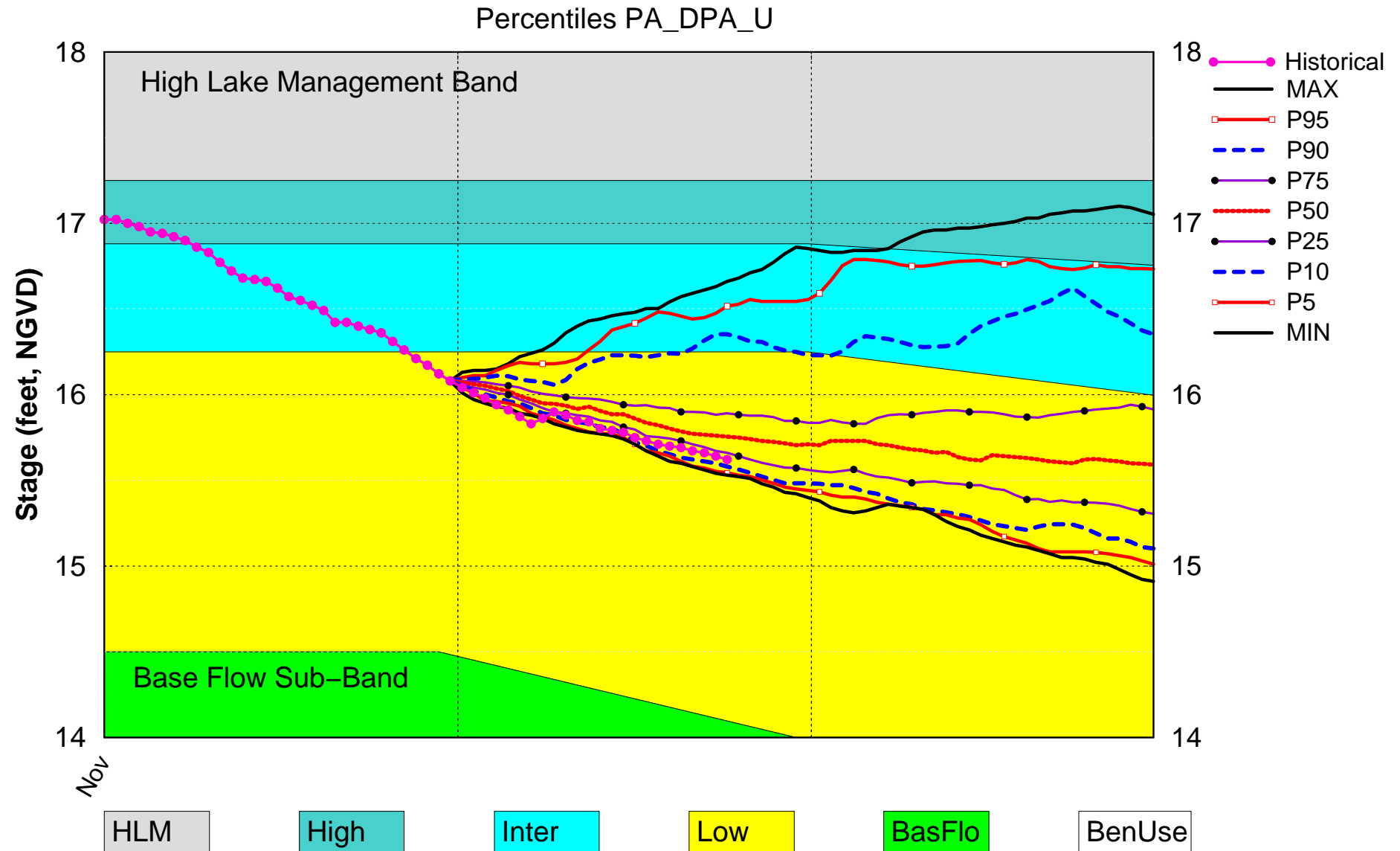
Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Low Sub Band	M
	Palmer Index for LOK Tributary Conditions	0.97 (Normal)	L
	CPC Precipitation Outlook	1 month: Normal	L
		3 months: Below Normal	M
	LOK Seasonal Net Inflow Outlook	-0.23 ft (Extremely Dry)	H
	ENSO La Nina Years		
	LOK Multi-Seasonal Net Inflow Outlook	2.46 ft (Normal)	M
	ENSO La Nina Years		
WCAs	WCA 1: Site 1-7, Site 1-8T, & Site 1-9 Average	Above Line 1 (17.25 ft)	L
	WCA 2A: Site 2-17 HW	Above Line 1 (12.72 ft)	L
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (10.72 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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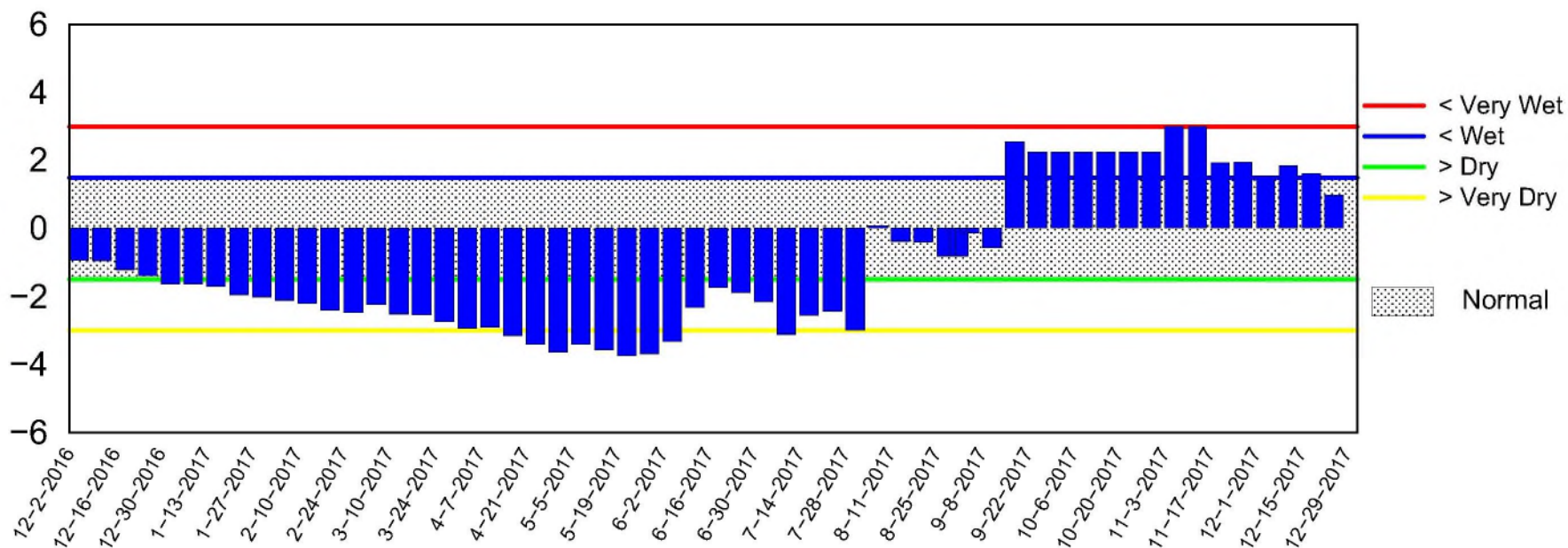
Lake Okeechobee SFWMM December 2017 Position Analysis



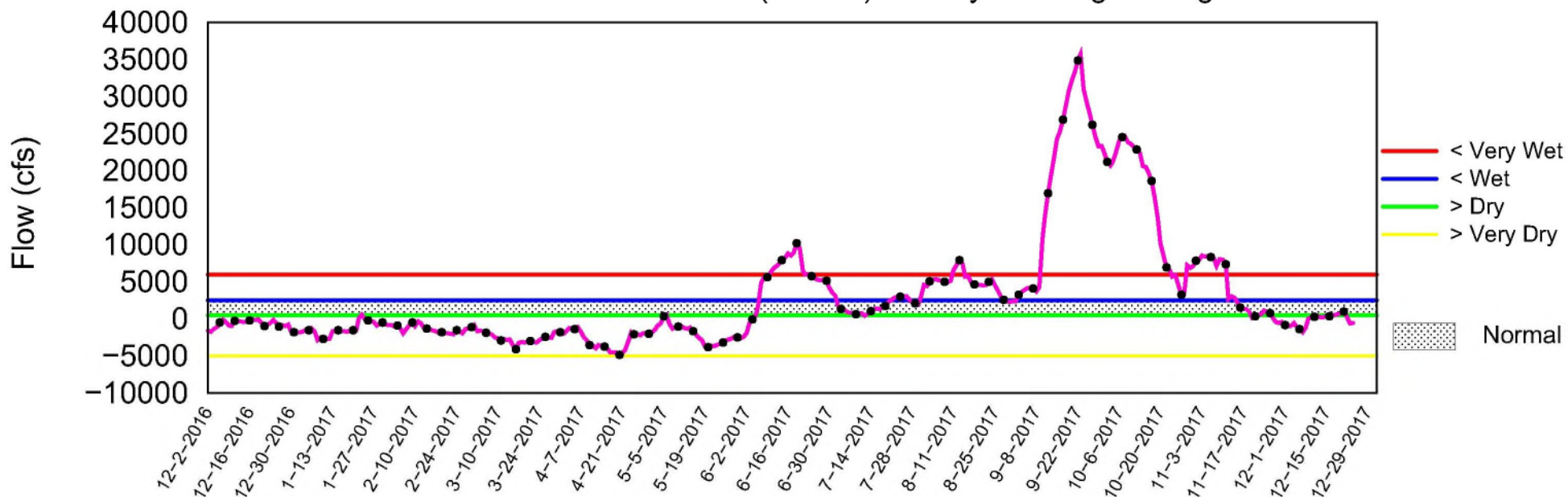
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of December 25 2017

Palmer Index



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



Tue Dec 26 12:06:20 EST 2017

2008 LORS

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

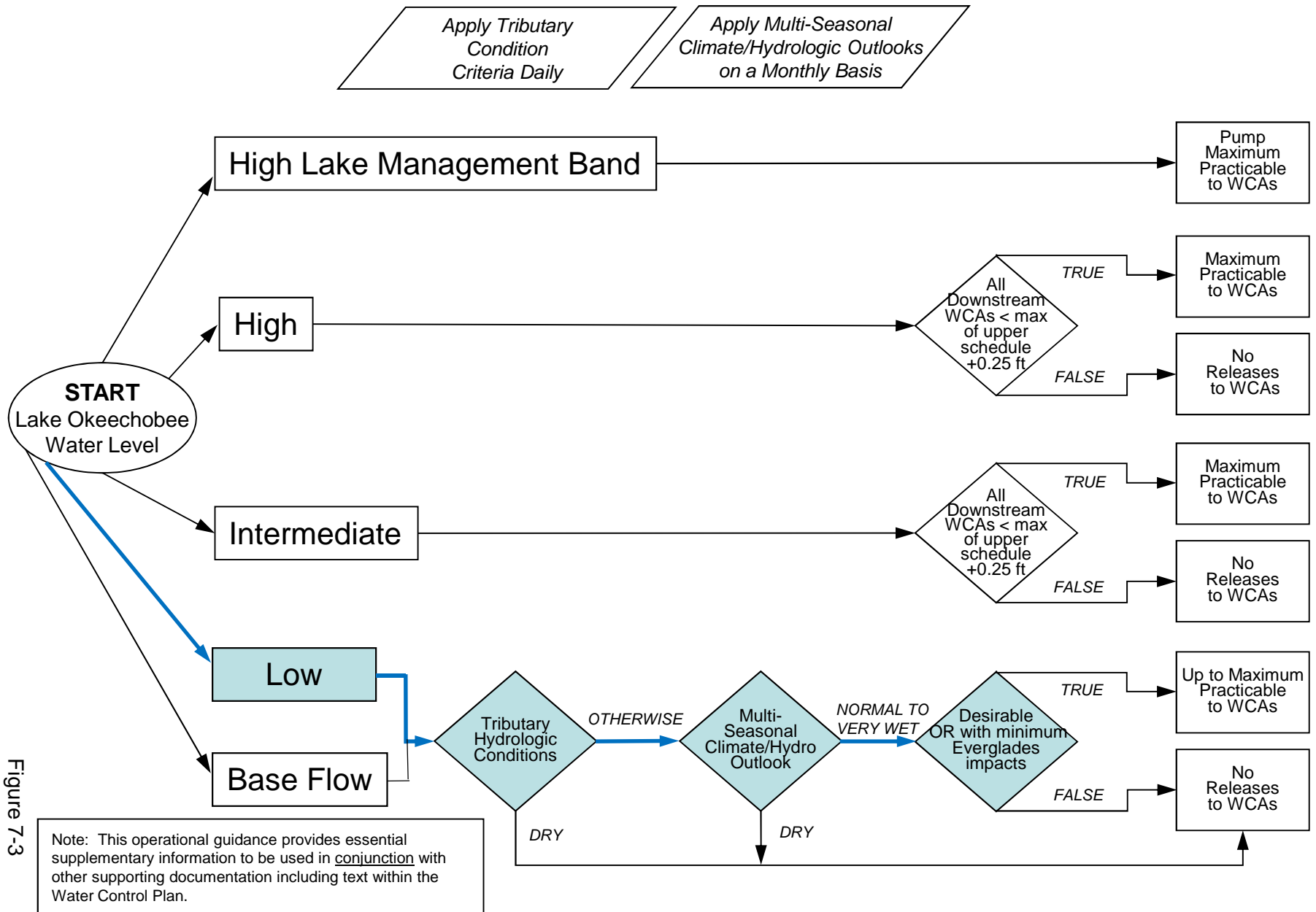


Figure 7-3

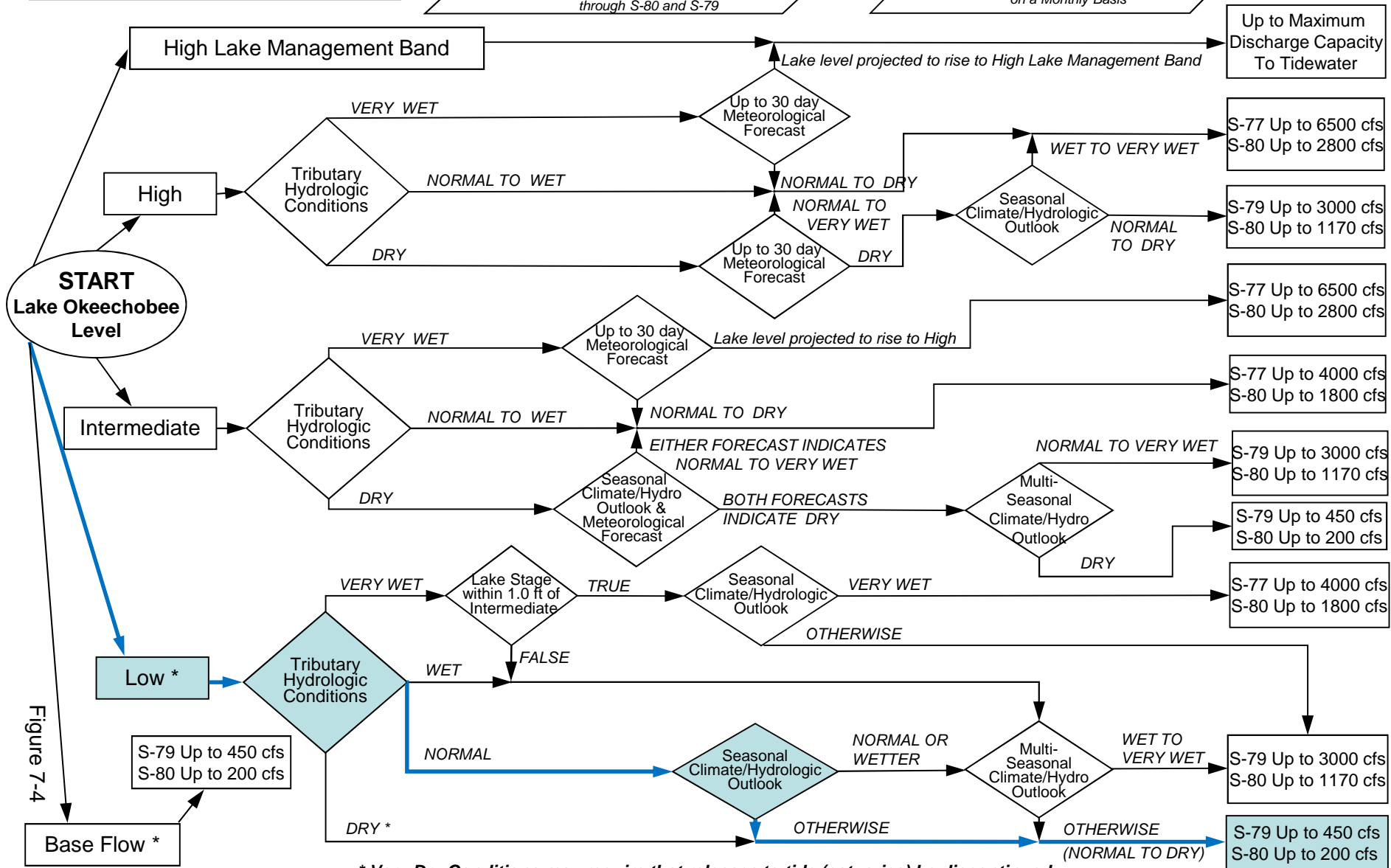
2008 LORS

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.

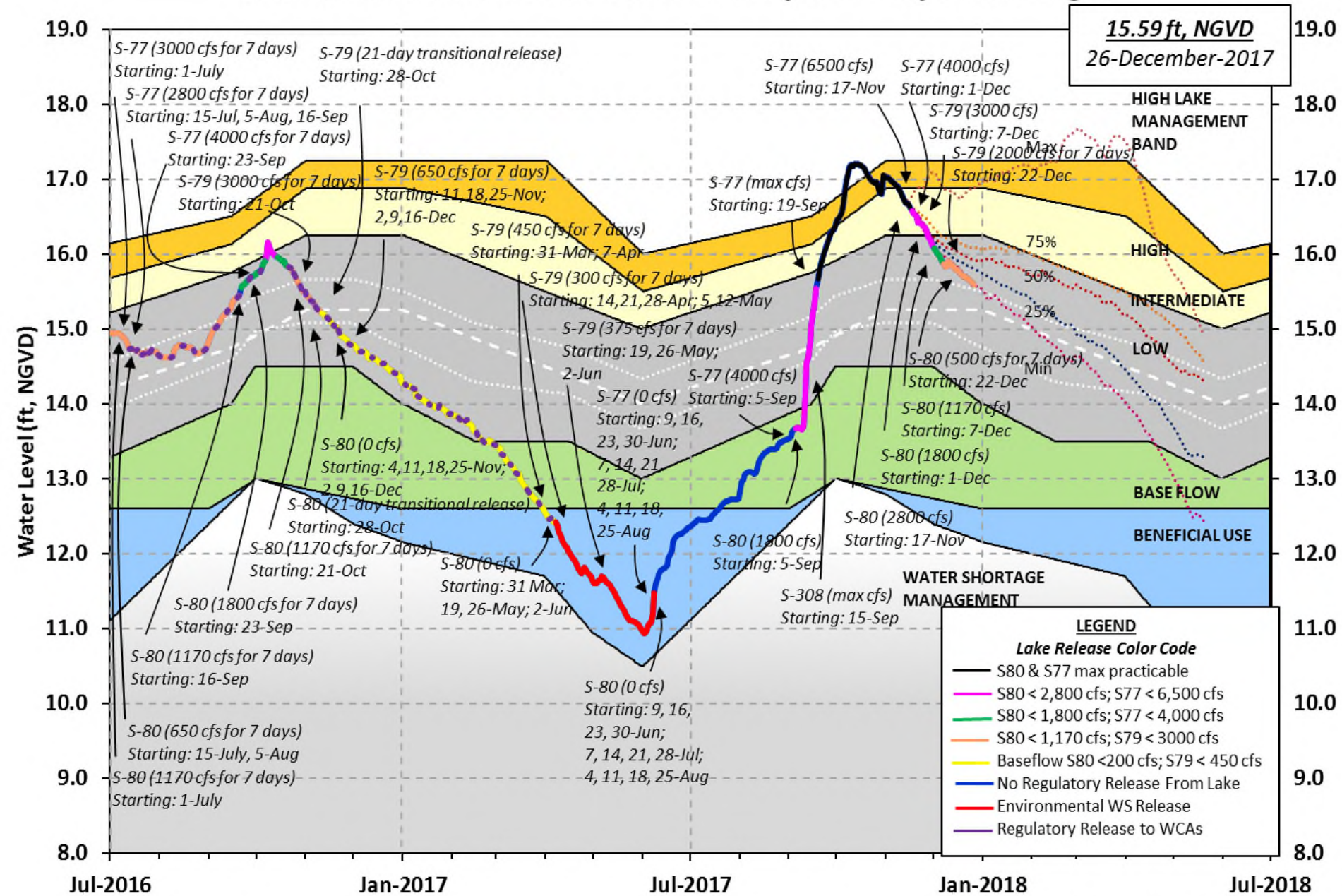
When conducting Base Flow releases, flows can be distributed East and West up to 650 cfs as needed to minimize impacts or provide benefits through S-80 and S-79

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

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 DEC 2017

Okeechobee Lake Regulation	Elevation	Last Year	2YRS Ago
	(ft-NGVD)	(ft-NGVD)	(ft-NGVD)
*Okeechobee Lake Elevation	15.59	14.42	14.81 (Official Elv)
Bottom of High Lake Mngmt= 17.25 Top of Water Short Mngmt= 12.21			
Currently in Operational Management Band			
Simulated Average LORS2008 [1965-2000]		13.56	
Difference from Average LORS2008		2.03	
25DEC (1965-2007) Period of Record Average		14.67	
Difference from POR Average		0.92	

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ÷ 9.53'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷ 7.73'
Bridge Clearance = 49.37'

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

L001	L005	L006	LZ40	S4	S352	S308	S133
15.51	15.61	15.65	15.58	15.66	15.74	15.54	15.44

*Combination Okeechobee Avg-Daily Lake Average = 15.59
(*See Note)

Okeechobee Inflows (cfs):

S65E	0	S65EX1	829	Fisheating Cr	39
S154	0	S191	0	S135 Pumps	0
S84	226	S133 Pumps	0	S2 Pumps	0
S84X	0	S127 Pumps	0	S3 Pumps	0
S71	51	S129 Pumps	0	S4 Pumps	0
S72	0	S131 Pumps	0	C5	0
Total Inflows:		1144			

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	262	S77	2496
S127 Culverts	0	S351	255	S308	573
S129 Culverts	0	S352	0		
S131 Culverts	0	L8 Canal Pt	4		
Total Outflows:		3590			

S3 Pumps:	10.89	15.94	0	0	0	0		(cfs)
S354:	15.94	10.89	262	0.5	0.5			
S2 Pumps:	10.62	15.86	0	0	0	0	0	(cfs)
S351:	15.86	10.62	255	0.2	0.3	0.3		
S352:	15.74	10.49	0	0.0	0.0			
C10A:	-NR-	13.17		8.0	8.0	8.0	0.0	0.0
L8 Canal PT		13.00	4					

S351 and S352 Temporary Pumps/S354 Spillway

S351:	10.62	15.86	255	-NR--NR--NR--NR--NR--NR-
S352:	10.49	15.74	0	-NR--NR--NR--NR-
S354:	10.89	15.94	262	-NR--NR--NR--NR-

Caloosahatchee River (S77, S78, S79)

S47B:	14.48	11.13		0.0	0.0
S47D:	11.18	11.17	85	6.6	

S77:

Spillway and Sector Flow:

15.55	11.25	*****	0.0	3.0	2.5	3.0
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Flow Due to Lockages+: 4

S77 Below USGS Flow Gage 2492

S78:

Spillway and Sector Flow:

11.03	2.86	2280	2.0	2.5	0.0	2.0
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Flow Due to Lockages+: -NR-

S79:

Spillway and Sector Flow:

2.93	0.80	3323	1.0	1.0	2.0	2.0	1.5	1.0	1.0
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1.0

Flow Due to Lockages+: 3

Percent of flow from S77 75%

Chloride (ppm) 55

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Flow:

15.44	14.13	572.72	1.0	1.0	1.0	1.0
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Flow Due to Lockages+: 0

S308 Below USGS Flow Gage 573

S153:	18.74	13.93	39	0.5	0.0
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S80:

Spillway and Sector Flow:

14.06	0.08	710	1.0	0.0	0.0	0.0	0.0	0.0	0.6
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Flow Due to Lockages+: 34

Percent of flow from S308 81%

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	45	8
S78:	0.00	0.01	0.01	22	3
S79:	0.00	0.00	0.00	179	4
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	65	1
S80:	0.00	0.00	0.00	341	3
Okeechobee Average	0.00	0.00	0.00		
(Sites S78, S79 and S80 not included)					

Oke Nexrad Basin Avg	-NR-	0.00	0.00		

Okeechobee Lake Elevations	25 DEC 2017	15.59	Difference from
25DEC17			
25DEC17 -1 Day =	24 DEC 2017	15.62	0.03
25DEC17 -2 Days =	23 DEC 2017	15.64	0.05
25DEC17 -3 Days =	22 DEC 2017	15.66	0.07
25DEC17 -4 Days =	21 DEC 2017	15.67	0.08
25DEC17 -5 Days =	20 DEC 2017	15.69	0.10
25DEC17 -6 Days =	19 DEC 2017	15.70	0.11
25DEC17 -7 Days =	18 DEC 2017	15.71	0.12
25DEC17 -30 Days =	25 NOV 2017	16.31	0.72
25DEC17 -1 Year =	25 DEC 2016	14.42	-1.17
25DEC17 -2 Year =	25 DEC 2015	14.81	-0.78

Long Term Mean 30day Avearge ET for Lake Alfred (Inches) = 1.99

Lake Okeechobee Net Inflow (LONIN)

Average Flow over the previous 14 days					Avg-Daily Flow
25DEC17	Today =	25 DEC 2017	-480	TUE	-2917
25DEC17	-1 Day =	24 DEC 2017	-496	MON	42
25DEC17	-2 Days =	23 DEC 2017	-534	SUN	188
25DEC17	-3 Days =	22 DEC 2017	361	SAT	1833
25DEC17	-4 Days =	21 DEC 2017	1026	FRI	-1595
25DEC17	-5 Days =	20 DEC 2017	974	THU	1194
25DEC17	-6 Days =	19 DEC 2017	745	WED	1443
25DEC17	-7 Days =	18 DEC 2017	766557	TUE	-57
25DEC17	-8 Days =	17 DEC 2017	766480	MON	731
25DEC17	-9 Days =	16 DEC 2017	766404	SUN	-1943
25DEC17	-10 Days =	15 DEC 2017	766498	SAT	489
25DEC17	-11 Days =	14 DEC 2017	766287	FRI	-381
25DEC17	-12 Days =	13 DEC 2017	766227	THU	-6389
25DEC17	-13 Days =	12 DEC 2017	766439	WED	639

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S65E Average Flow over previous 14 days					Avg-Daily Flow
25DEC17	Today=	25 DEC 2017	2	TUE	0
25DEC17	-1 Day =	24 DEC 2017	2	MON	0
25DEC17	-2 Days =	23 DEC 2017	2	SUN	0
25DEC17	-3 Days =	22 DEC 2017	2	SAT	0
25DEC17	-4 Days =	21 DEC 2017	2	FRI	0
25DEC17	-5 Days =	20 DEC 2017	2	THU	0
25DEC17	-6 Days =	19 DEC 2017	2	WED	0
25DEC17	-7 Days =	18 DEC 2017	2	TUE	0
25DEC17	-8 Days =	17 DEC 2017	42	MON	0
25DEC17	-9 Days =	16 DEC 2017	96	SUN	0
25DEC17	-10 Days =	15 DEC 2017	159	SAT	0
25DEC17	-11 Days =	14 DEC 2017	237	FRI	0
25DEC17	-12 Days =	13 DEC 2017	319	THU	0
25DEC17	-13 Days =	12 DEC 2017	406	WED	24

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S65EX1 Average Flow over previous 14 days					Avg-Daily Flow
25DEC17	Today=	25 DEC 2017	858	TUE	829
25DEC17	-1 Day =	24 DEC 2017	858	MON	851
25DEC17	-2 Days =	23 DEC 2017	853	SUN	863
25DEC17	-3 Days =	22 DEC 2017	857	SAT	868
25DEC17	-4 Days =	21 DEC 2017	834	FRI	836
25DEC17	-5 Days =	20 DEC 2017	815	THU	834
25DEC17	-6 Days =	19 DEC 2017	794	WED	835
25DEC17	-7 Days =	18 DEC 2017	777	TUE	900
25DEC17	-8 Days =	17 DEC 2017	727	MON	836
25DEC17	-9 Days =	16 DEC 2017	667	SUN	815
25DEC17	-10 Days =	15 DEC 2017	609	SAT	863
25DEC17	-11 Days =	14 DEC 2017	547	FRI	916
25DEC17	-12 Days =	13 DEC 2017	482	THU	913
25DEC17	-13 Days =	12 DEC 2017	416	WED	847

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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 DEC 2017		4903	4942	-NR-	6583
24 DEC 2017		6072	6048	5763	7594
23 DEC 2017		6505	6520	5719	8415
22 DEC 2017		5086	4894	4554	6549
21 DEC 2017		2922	2868	2603	3209
20 DEC 2017		3510	3458	3256	4314
19 DEC 2017		3966	3973	3597	5682
18 DEC 2017		5126	5036	4760	6788
17 DEC 2017		6267	6353	5989	8055
16 DEC 2017		6798	6716	6596	9030
15 DEC 2017		3830	3433	4005	6002
14 DEC 2017		2518	2264	1988	2912
13 DEC 2017		3274	3073	3434	4969
12 DEC 2017		3715	3537	3938	4840

		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 DEC 2017		108	-NR-	0	486	8
24 DEC 2017		74	-NR-	0	412	5
23 DEC 2017		74	-NR-	0	305	10
22 DEC 2017		89	-NR-	208	740	4
21 DEC 2017		338205	-NR-	24	555	8
20 DEC 2017		152	-NR-	353	621	4
19 DEC 2017		56	-NR-	218	343	8
18 DEC 2017		1	-NR-	0	0	7
17 DEC 2017		3	-NR-	0	0	14
16 DEC 2017		8	-NR-	0	0	27
15 DEC 2017		12	-NR-	0	0	5
14 DEC 2017		27	-NR-	0	0	4
13 DEC 2017		13	-NR-	0	0	-2
12 DEC 2017		4	-NR-	0	0	5

		S-308	Below S-308	S-80
		Discharge	Discharge	Discharge
		(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE		(AC-FT)	(AC-FT)	(AC-FT)
25 DEC 2017		2034	1136	1461
24 DEC 2017		2950	1616	1677
23 DEC 2017		1981	1357	-NR-
22 DEC 2017		1324	651	1076
21 DEC 2017		1762	1183	1265
20 DEC 2017		2486	1627	1773
19 DEC 2017		3070	2245	2270
18 DEC 2017		3445	2674	2794
17 DEC 2017		3667	3123	3156
16 DEC 2017		3052	2301	3246
15 DEC 2017		2527	1830	2471
14 DEC 2017		1972	1277	2256
13 DEC 2017		2012	1452	1822

12 DEC 2017 2920 2023 2248

*** 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

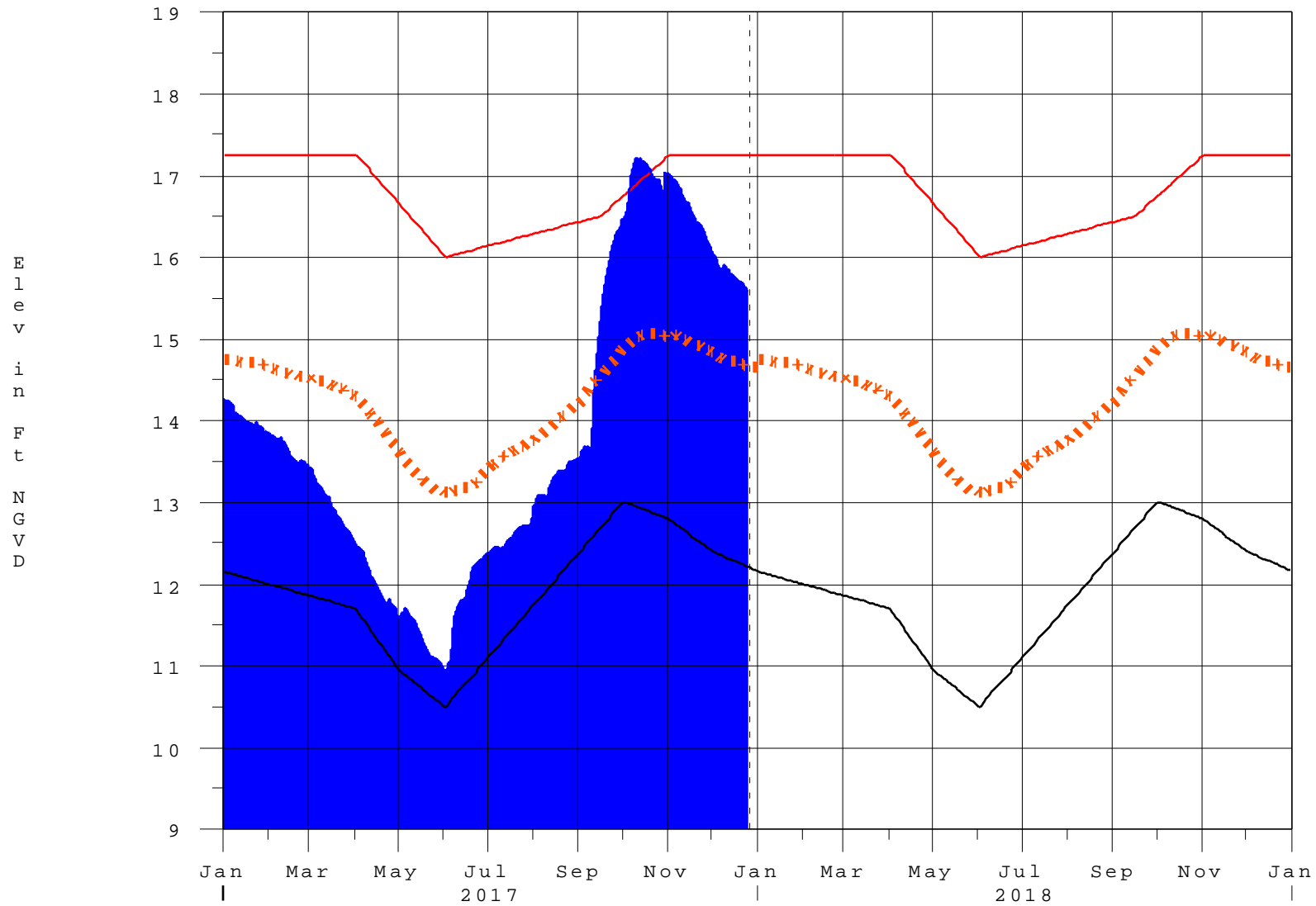
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* On 11 May 1999, Lake Okeechobee Elevation was switched from
Instantaneous 2400 value to an average-daily lake average.
On 14 Mar 2001, due to the isolation of various gages within the
standard
10 stations, the average of the interior 4 station gages 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 26DEC2017 @ 10:41 ** Preliminary Data - Subject to Revision
**

Lake Okeechobee

26DEC17 10:30:35



- 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