

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 11/14/2016 (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 La Nina ENSO Years ³		Sub-sampling of AMO Warm + La Nina ENSO Years ⁴	
	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition
Current (Nov-Apr)	N/A	N/A	0.10	Dry	0.32	Dry	0.44	Dry
Multi Seasonal (Nov-Oct)	N/A	N/A	2.59	Wet	3.38	Wet	4.26	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:](#)

-1168 cfs 14-day running average for Lake Okeechobee Net Inflow through 11/13/2016. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Dry.

-0.47 for Palmer Index on 11/12/2016.

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 11/14/2016

Lake Okeechobee Stage: **15.15 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	14.50	← 15.15
Base Flow sub-band		12.81	
Beneficial Use sub-band		12.63	
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 and 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](#)
- [Operations Department](#)

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Lake Okeechobee Stage on 11/14/2016

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LORS2008 Implementation on 11/14/2016 (ENSO La Nina Condition):

Status for week ending 11/14/2016:

District wide, Raindar rainfall was 0.00 inches for the week. Lake stage on 11/14/2016 was 15.15 ft, down 0.15 ft from last week.

The updated November 2016 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 **Normal**. The PDSI indicates normal condition and the LONIN is Dry. The classification is based on the wetter of the two.

Water Supply Risk Evaluation

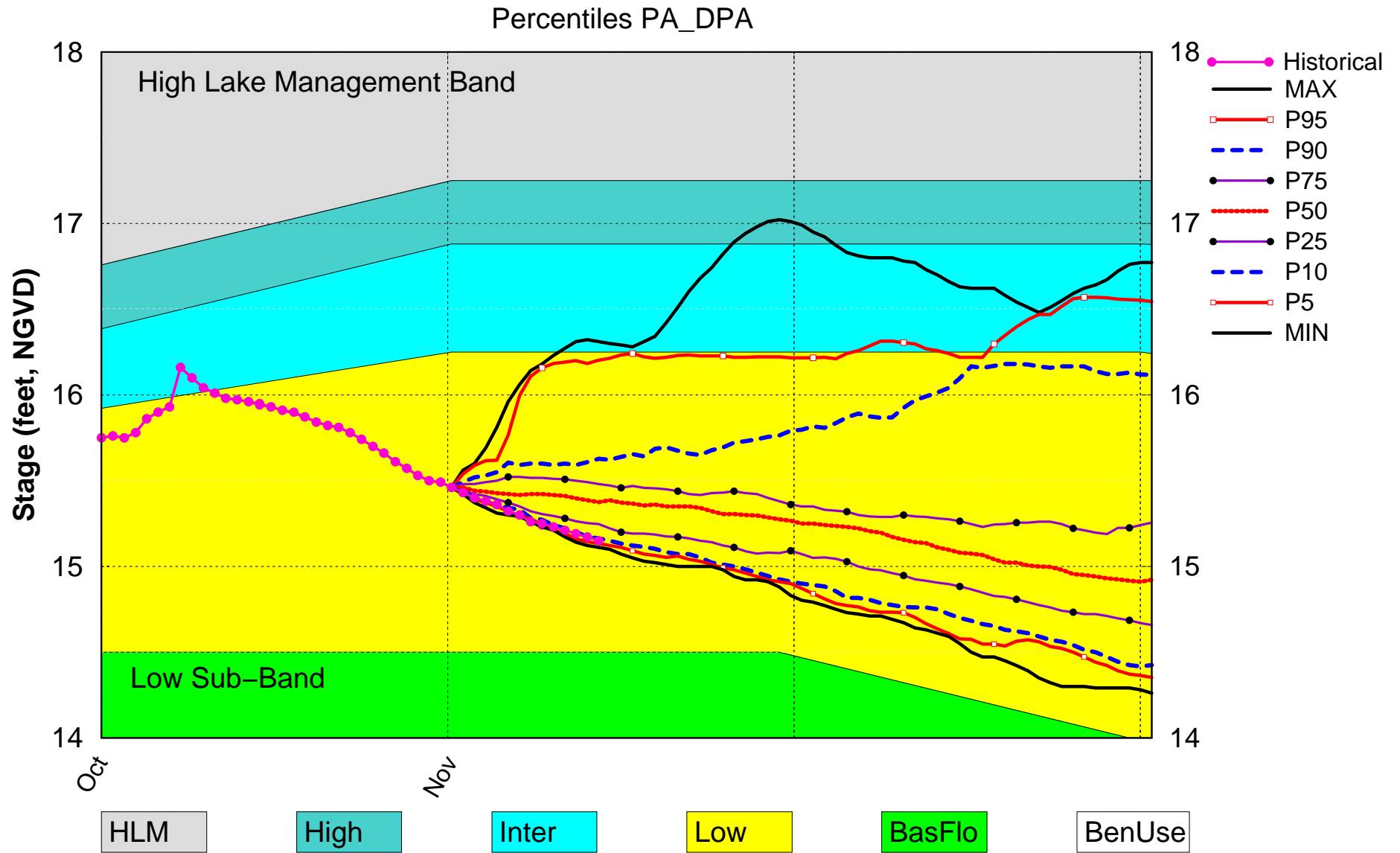
Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Low Sub-Band	L
	Palmer Index for LOK Tributary Conditions	-0.47 (Normal)	L
	CPC Precipitation Outlook	1 month: Below Normal	M
		3 months: Below Normal	M
	LOK Seasonal Net Inflow Outlook ENSO Neutral Years	0.32 ft (Dry)	M
	LOK Multi-Seasonal Net Inflow Outlook ENSO Neutral Years	3.38 ft (Wet)	L
	WCA 1: Site 1-7, Site 1-8T, & Site 1-9 Average		
WCAs	WCA 2A: Site 2-17 HW	Above Line1 (12.85 ft)	L
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (10.30 ft)	L
	LEC	Service Area 1	Year-Round Irrigation Rule in effect
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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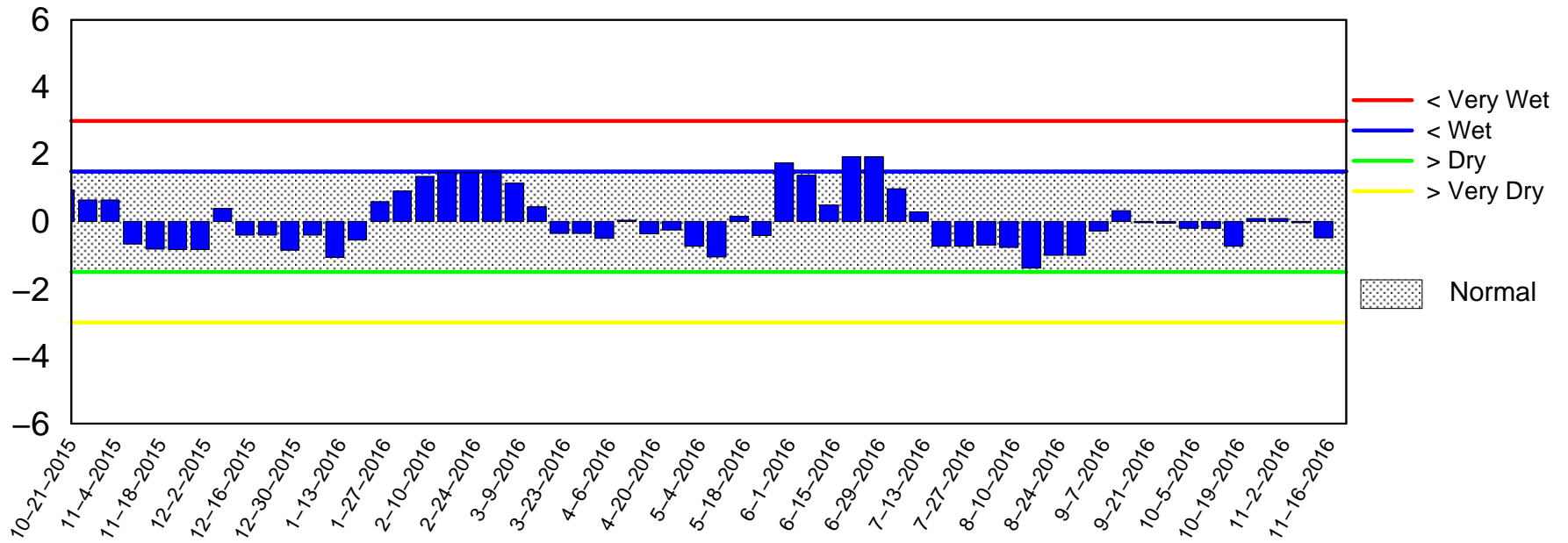
Lake Okeechobee SFWMM Nov 2016 Dynamic Position Analysis



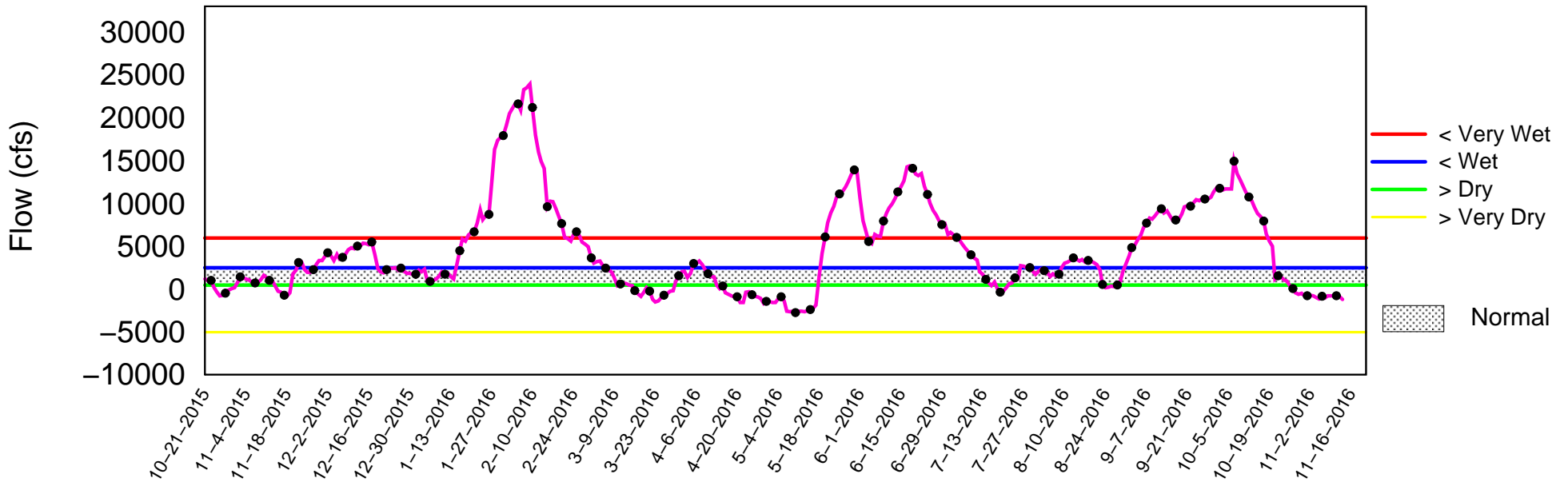
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of November 14 2016

Palmer Index



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



Mon Nov 14 15:06:00 EST 2016

2008 LORS

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

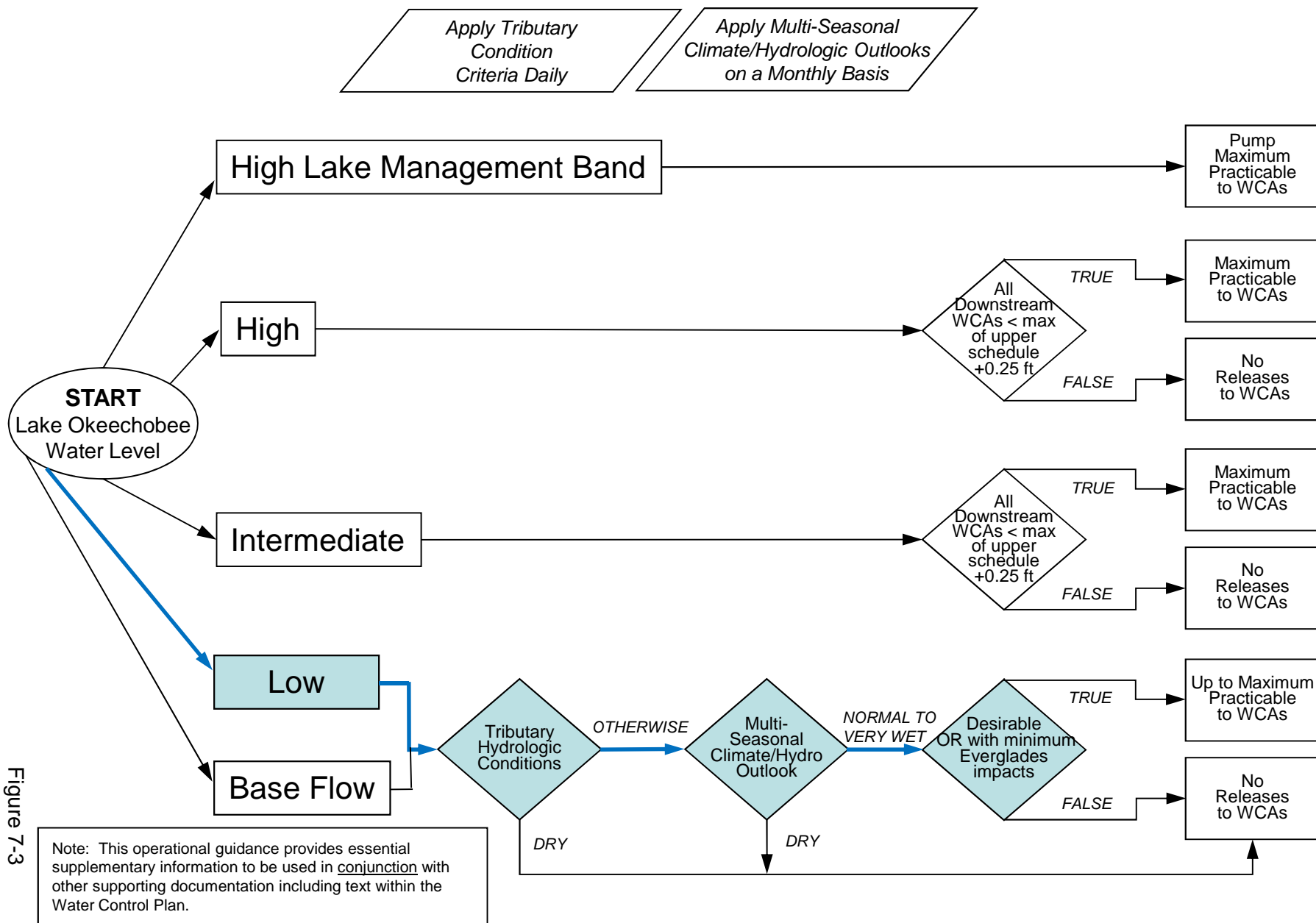


Figure 7-3

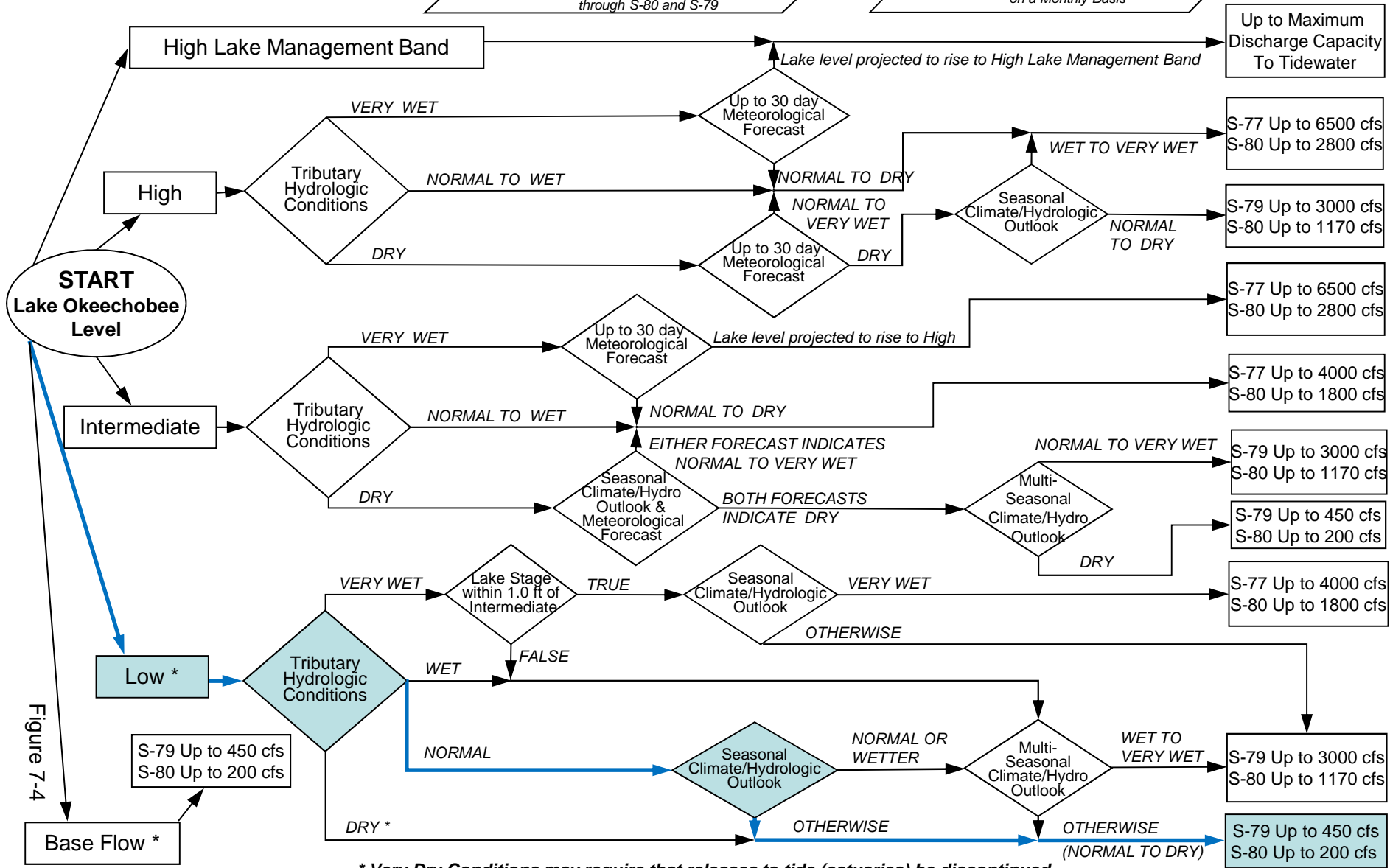
2008 LORS

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

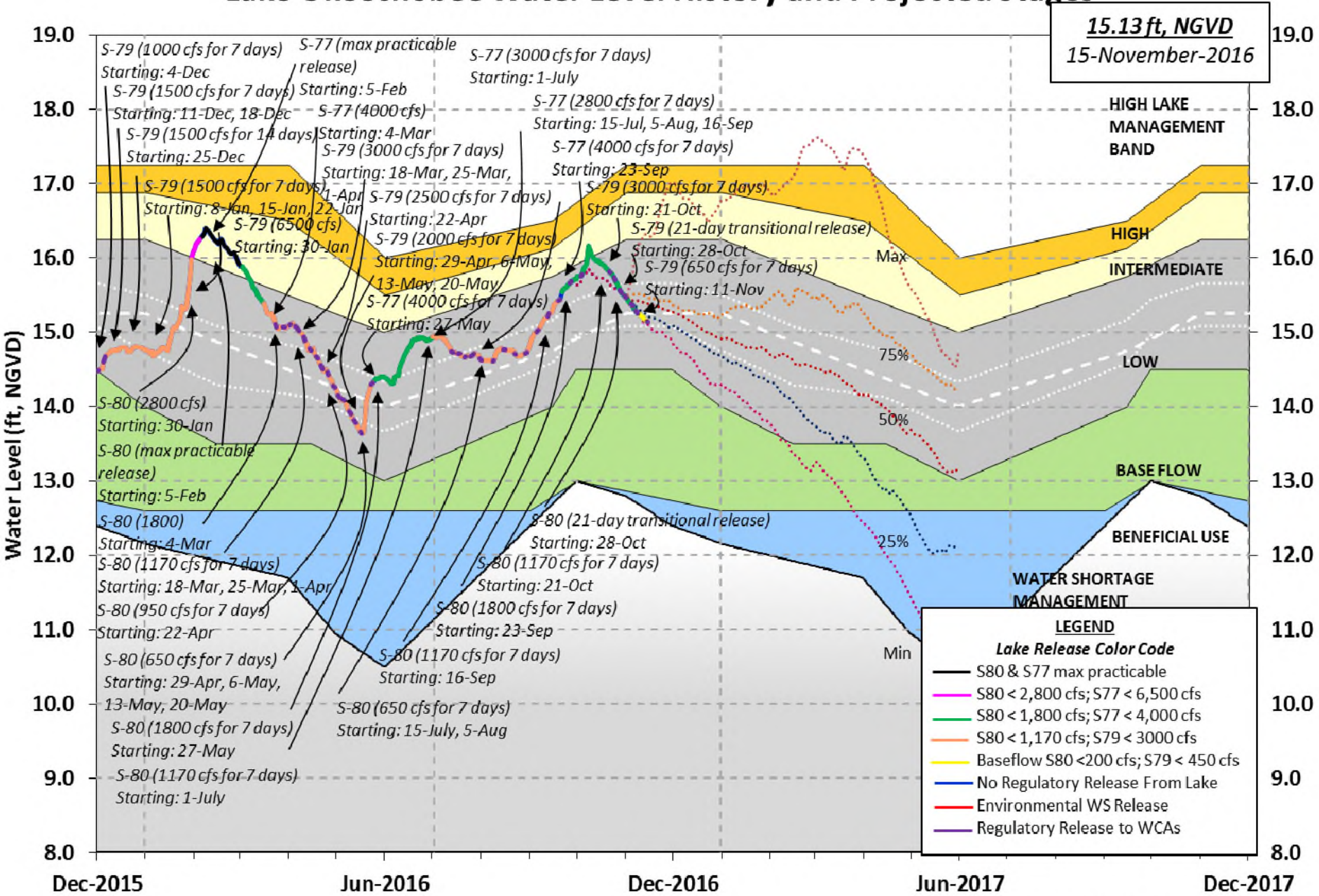


* Very Dry Conditions may require that releases to tide (estuaries) be discontinued

Figure 7-4

Lake Okeechobee Water Level History and Projected Stages

15.13 ft, NGVD
15-November-2016



LEGEND

Lake Release Color Code

- S80 & S77 max practicable
- S80 < 2,800 cfs; S77 < 6,500 cfs
- S80 < 1,800 cfs; S77 < 4,000 cfs
- S80 < 1,170 cfs; S79 < 3000 cfs
- Baseflow S80 < 200 cfs; S79 < 450 cfs
- No Regulatory Release From Lake
- Environmental WS Release
- Regulatory Release to WCAs

S310:	15.09		76						
S3 Pumps:	11.14	15.16	0	0	0	0			(cfs)
S354:	15.16	11.14	507	0.8	1.0				
S2 Pumps:	10.95	15.18	0	0	0	0	0		(cfs)
S351:	15.18	10.95	839	1.2	1.1	1.1			
S352:	15.29	10.84	166	0.3	0.2				
C10A:	-NR-	14.02		0.0	0.0	8.0	0.0	0.0	
L8 Canal PT		13.85	229						

S351 and S352 Temporary Pumps/S354 Spillway

S351:	10.95	15.18	839	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-
S352:	10.84	15.29	166	-NR-	-NR-	-NR-	-NR-		
S354:	11.14	15.16	507	-NR-	-NR-	-NR-	-NR-		

Caloosahatchee River (S77, S78, S79)

S47B:	12.99	10.88		0.0	0.0				
S47D:	10.88	10.87	42	6.0					

S77:

Spillway and Sector Flow:									
	-NR-	-NR-	-NR-	0.0	3.5	0.0	0.0		
Flow Due to Lockages+:			-NR-						

S77 Below USGS Flow Gage 1063

S78:

Spillway and Sector Flow:									
	-NR-	-NR-	-NR-	0.0	0.0	0.0	1.5		
Flow Due to Lockages+:			-NR-						

S79:

Spillway and Sector Flow:										
	-NR-	-NR-	-NR-	0.0	0.0	0.0	0.5	1.0	1.0	0.5
Flow Due to Lockages+:			-NR-							
Percent of flow from S77			-NR-%							
Chloride (ppm)			-N							

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Flow:									
	-NR-	-NR-	-NR-	0.0	0.0	1.0	1.0		
Flow Due to Lockages+:			-NR-						

S308 Below USGS Flow Gage 50

S153:	19.00	13.94	0	0.0	0.0				
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S80:

Spillway and Sector Flow:										
	-NR-	-NR-	-NR-	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Flow Due to Lockages+:			-NR-							
Percent of flow from S308			-NR-%							

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:	-NR-	0.00	0.00	-NR- -NR-
S78:	-NR-	0.00	0.00	-NR- -NR-
S79:	-NR-	0.00	0.00	-NR- -NR-
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:	-NR-	0.00	0.00	-NR- -NR-
S80:	-NR-	0.00	0.96	-NR- -NR-
Okeechobee Average (Sites S78, S79 and S80 not included)	-NR-	0.00	0.00	

Oke Nexrad Basin Avg	0.00	0.00	0.00	

Okeechobee Lake Elevations	13 NOV 2016	15.15 Difference from
13NOV16		
13NOV16 -1 Day =	12 NOV 2016	15.17 0.02
13NOV16 -2 Days =	11 NOV 2016	15.19 0.04
13NOV16 -3 Days =	10 NOV 2016	15.21 0.06
13NOV16 -4 Days =	09 NOV 2016	15.23 0.08
13NOV16 -5 Days =	08 NOV 2016	15.25 0.10
13NOV16 -6 Days =	07 NOV 2016	15.26 0.11
13NOV16 -7 Days =	06 NOV 2016	15.30 0.15
13NOV16 -30 Days =	14 OCT 2016	15.94 0.79
13NOV16 -1 Year =	13 NOV 2015	14.41 -0.74
13NOV16 -2 Year =	13 NOV 2014	15.67 0.52

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
13NOV16	Today =	13 NOV 2016	-1161	MON	-1535
13NOV16	-1 Day =	12 NOV 2016	-812	SUN	-1493
13NOV16	-2 Days =	11 NOV 2016	-768	SAT	-1332
13NOV16	-3 Days =	10 NOV 2016	-780	FRI	-950
13NOV16	-4 Days =	09 NOV 2016	-750	THU	-2098
13NOV16	-5 Days =	08 NOV 2016	-796	WED	1409
13NOV16	-6 Days =	07 NOV 2016	-990	TUE	-5110
13NOV16	-7 Days =	06 NOV 2016	-860	MON	-1126
13NOV16	-8 Days =	05 NOV 2016	-1110	SUN	-5177
13NOV16	-9 Days =	04 NOV 2016	-948	SAT	107
13NOV16	-10 Days =	03 NOV 2016	-790	FRI	1466
13NOV16	-11 Days =	02 NOV 2016	-736	THU	-362
13NOV16	-12 Days =	01 NOV 2016	-778	WED	148
13NOV16	-13 Days =	31 OCT 2016	-790	TUE	-204

S65E

Average Flow over previous 14 days					Avg-Daily Flow
13NOV16	Today=	13 NOV 2016	1005	MON	933
13NOV16	-1 Day =	12 NOV 2016	1019	SUN	971
13NOV16	-2 Days =	11 NOV 2016	1034	SAT	980
13NOV16	-3 Days =	10 NOV 2016	1047	FRI	974
13NOV16	-4 Days =	09 NOV 2016	1079	THU	928
13NOV16	-5 Days =	08 NOV 2016	1130	WED	981
13NOV16	-6 Days =	07 NOV 2016	1171	TUE	1026
13NOV16	-7 Days =	06 NOV 2016	1229	MON	1029
13NOV16	-8 Days =	05 NOV 2016	1299	SUN	1030
13NOV16	-9 Days =	04 NOV 2016	1389	SAT	1025
13NOV16	-10 Days =	03 NOV 2016	1482	FRI	1024
13NOV16	-11 Days =	02 NOV 2016	1583	THU	1019
13NOV16	-12 Days =	01 NOV 2016	1695	WED	1066
13NOV16	-13 Days =	31 OCT 2016	1813	TUE	1083

Lake Okeechobee Outlets Last 14 Days

DATE	S-77 Discharge (ALL DAY) (AC-FT)	Below S-77 Discharge (ALL-DAY) (AC-FT)	S-78 Discharge (ALL DAY) (AC-FT)	S-79 Discharge (ALL DAY) (AC-FT)
13 NOV 2016	-NR-	2107	-NR-	-NR-
12 NOV 2016	-NR-	1961	1085	1157
11 NOV 2016	-NR-	2158	851	1050
10 NOV 2016	-NR-	2186	710	1147
09 NOV 2016	1960	627	1059	1973
08 NOV 2016	2840	3236	5344	3136
07 NOV 2016	3282	4154	12925	2966
06 NOV 2016	3251	3984	2701	3471
05 NOV 2016	3722	4452	2923	4044
04 NOV 2016	4757	5400	3812	4212
03 NOV 2016	4463	5154	3819	4676
02 NOV 2016	4457	5458	4054	5115
01 NOV 2016	5039	6415	4557	5632

DATE	S-310 Discharge (ALL DAY) (AC-FT)	S-351 Discharge (ALL DAY) (AC-FT)	S-352 Discharge (ALL DAY) (AC-FT)	S-354 Discharge (ALL DAY) (AC-FT)	L8 Canal Pt Discharge (ALL DAY) (AC-FT)
31 OCT 2016	5132	6466	4529	5990	
13 NOV 2016	150	1664	329	902	453
12 NOV 2016	173	1814	524	894	445
11 NOV 2016	140	1735	718	896	445
10 NOV 2016	59	2076	1077	819	449
09 NOV 2016	40	1826	980	557	447
08 NOV 2016	67	1610	954	775	452
07 NOV 2016	46	1297	734	385	463
06 NOV 2016	127	1015	230	535	470
05 NOV 2016	105	1323	52	599	450
04 NOV 2016	77	1436	440	488	454
03 NOV 2016	131	1352	773	997	449
02 NOV 2016	78	1418	371	1134	455
01 NOV 2016	51	1099	763	1138	449
31 OCT 2016	9	1126	1697	992	448

DATE	S-308 Discharge (ALL DAY) (AC-FT)	Below S-308 Discharge (ALL-DAY) (AC-FT)	S-80 Discharge (ALL-DAY) (AC-FT)
13 NOV 2016	-NR-	98	-NR-
12 NOV 2016	268	-80	64
11 NOV 2016	249	3	49
10 NOV 2016	465	108	49
09 NOV 2016	237	-58	56
08 NOV 2016	6	65	39
07 NOV 2016	3	31	28
06 NOV 2016	4	130	28
05 NOV 2016	8	54	54
04 NOV 2016	938	592	503
03 NOV 2016	3661	2778	1974
02 NOV 2016	4201	3343	3148
01 NOV 2016	4256	3326	2176
31 OCT 2016	2096	1764	1900

*** 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 Okeechobee elevation is determined from the 4 Int & 4 Edge stations

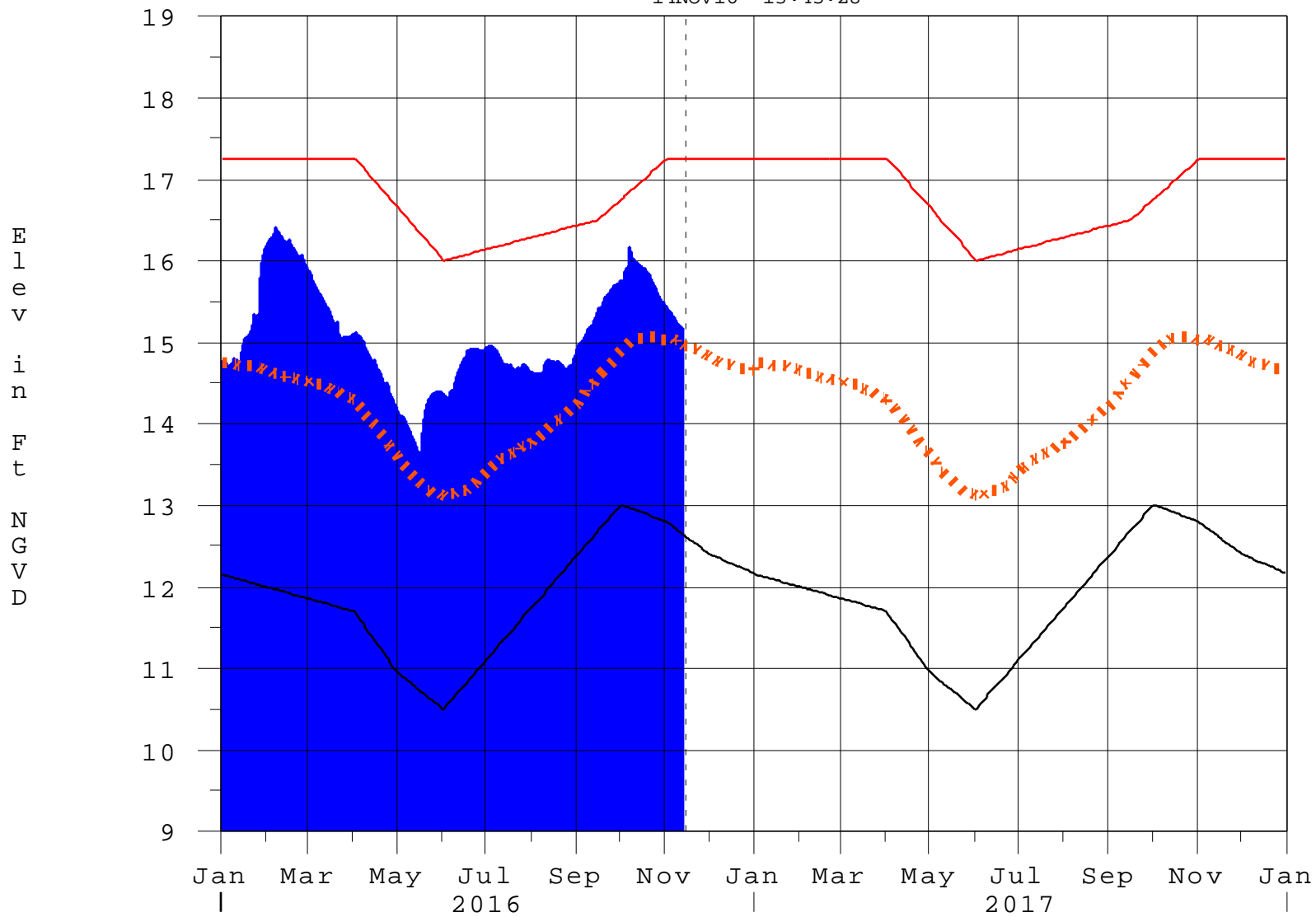
++ For more information see the Jacksonville District Navigation website at <http://www.saj.usace.army.mil/>

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

Report Generated 14NOV2016 @ 13:40 ** Preliminary Data - Subject to Revision
**

Lake Okeechobee

14NOV16 13:45:28



- 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