

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 10/3/2016 (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 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 (Oct-Mar)	N/A	N/A	0.89	Normal	1.23	Normal	1.86	Wet
Multi Seasonal (Nov-Oct)	N/A	N/A	2.55	Wet	3.38	Wet	4.57	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:](#)

11756 cfs 14-day running average for Lake Okeechobee Net Inflow through 10/2/2016. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Very Wet.

-0.20 for Palmer Index on 10/1/2016.

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 10/3/2016

Lake Okeechobee Stage: **15.76 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		16.77	
Operational Band	High sub-band	16.40	
	Intermediate sub-band	15.93	
	Low sub-band	14.50	← 15.76
Base Flow sub-band		13.00	
Beneficial Use sub-band		12.99	
Water Shortage Management Band			

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

Release Guidance Flow Chart Outcome: Up to Maximum Releases to the WCAs if Desirable or with Minimum Everglades Impacts

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

Release Guidance Flow Chart Outcome: S-79 up to 3000 cfs and S-80 up to 1170 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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LORS2008 Implementation on 10/3/2016 (ENSO Neutral Condition):

Status for week ending 10/3/2016:

District wide, Raindar rainfall was 1.73 inches for the week. Lake stage on 10/3/2016 was 15.76 ft, up 0.07 ft from last week.

The updated September 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 **Very Wet**. The PDSI indicates normal condition and the LONIN is Very Wet. The classification is based on the wetter of the two.

Water Supply Risk Evaluation

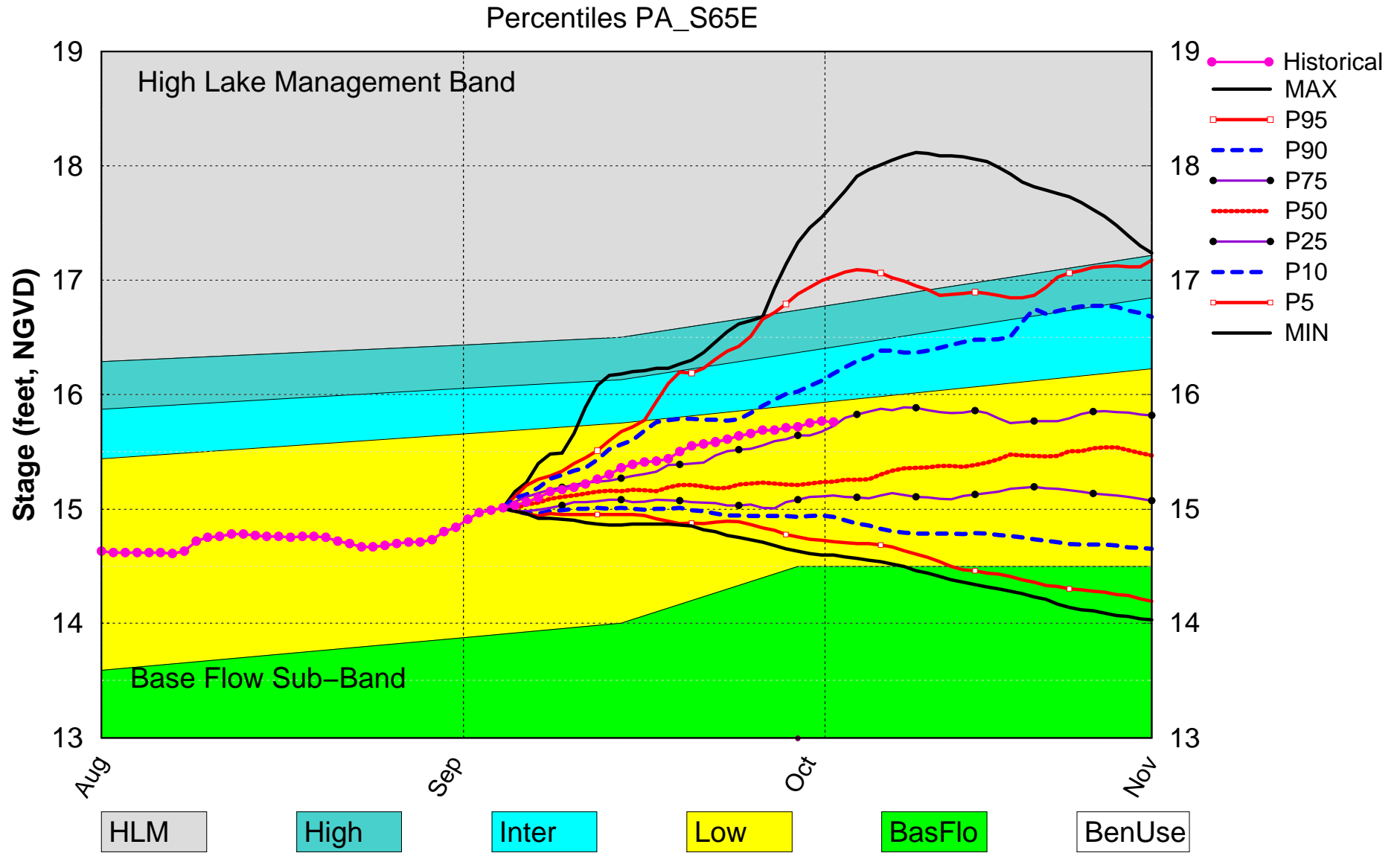
Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Low Sub-Band	L
	Palmer Index for LOK Tributary Conditions	-0.20 (Normal)	L
	CPC Precipitation Outlook	1 month: Normal	L
		3 months: Below Normal	M
	LOK Seasonal Net Inflow Forecast ENSO Neutral Years	1.23 ft (Normal to Extremely Wet)	L
	LOK Multi-Seasonal Net Inflow Forecast ENSO Neutral Years	1.15 ft (Normal)	M
WCAs	WCA 1: Site 1-7, Site 1-8T, & Site 1-9 Average	Above Line 1 (16.82 ft)	L
	WCA 2A: Site 2-17 HW	Above Line1 (13.23 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 forecasts use slightly different classification intervals than those used by the 2008-LORS.

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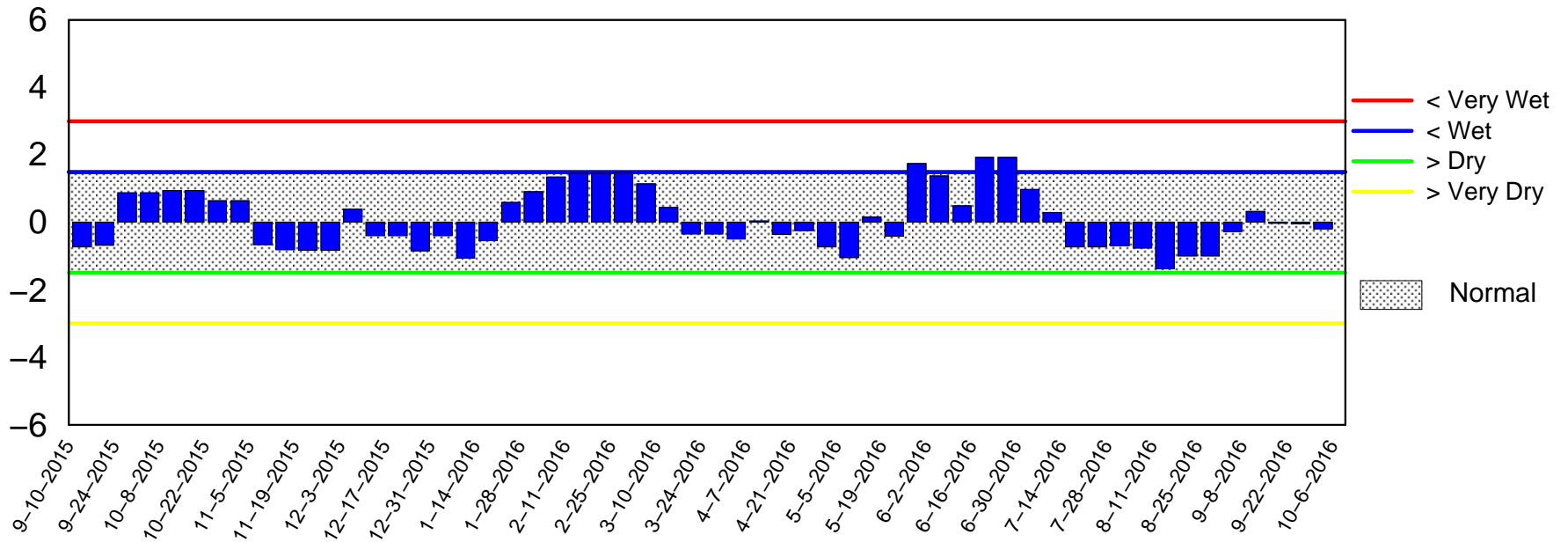
Lake Okeechobee SFWMM Sept 2016 Dynamic Position Analysis



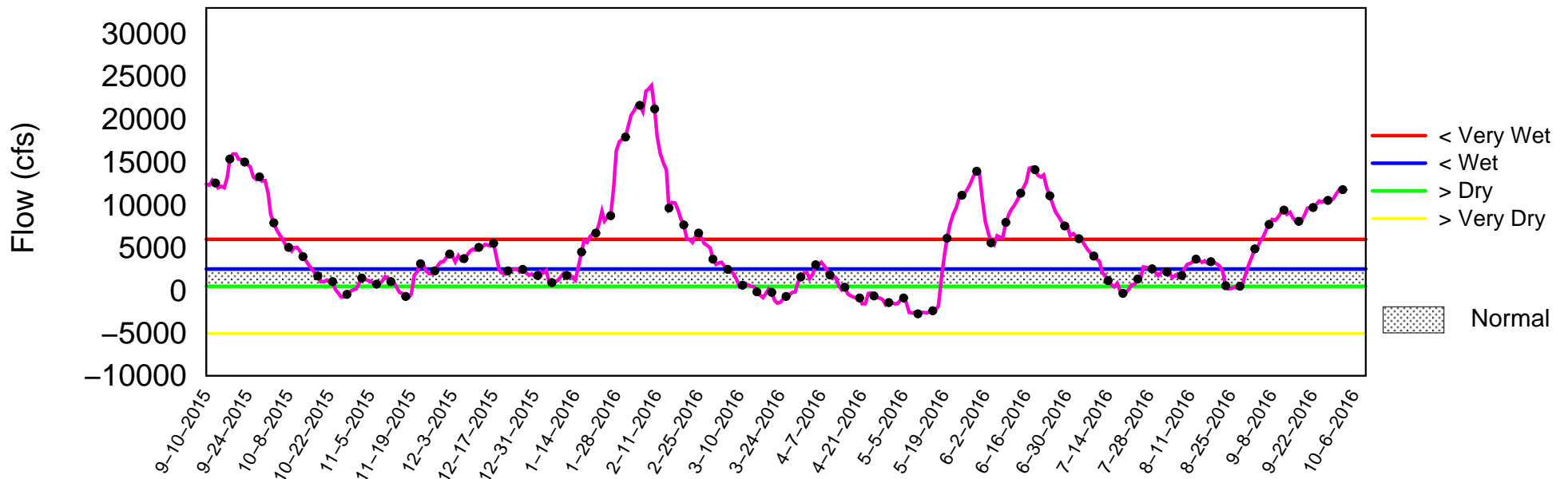
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of October 3 2016

Palmer Index



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



Mon Oct 03 17:45:13 EDT 2016

2008 LORS

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

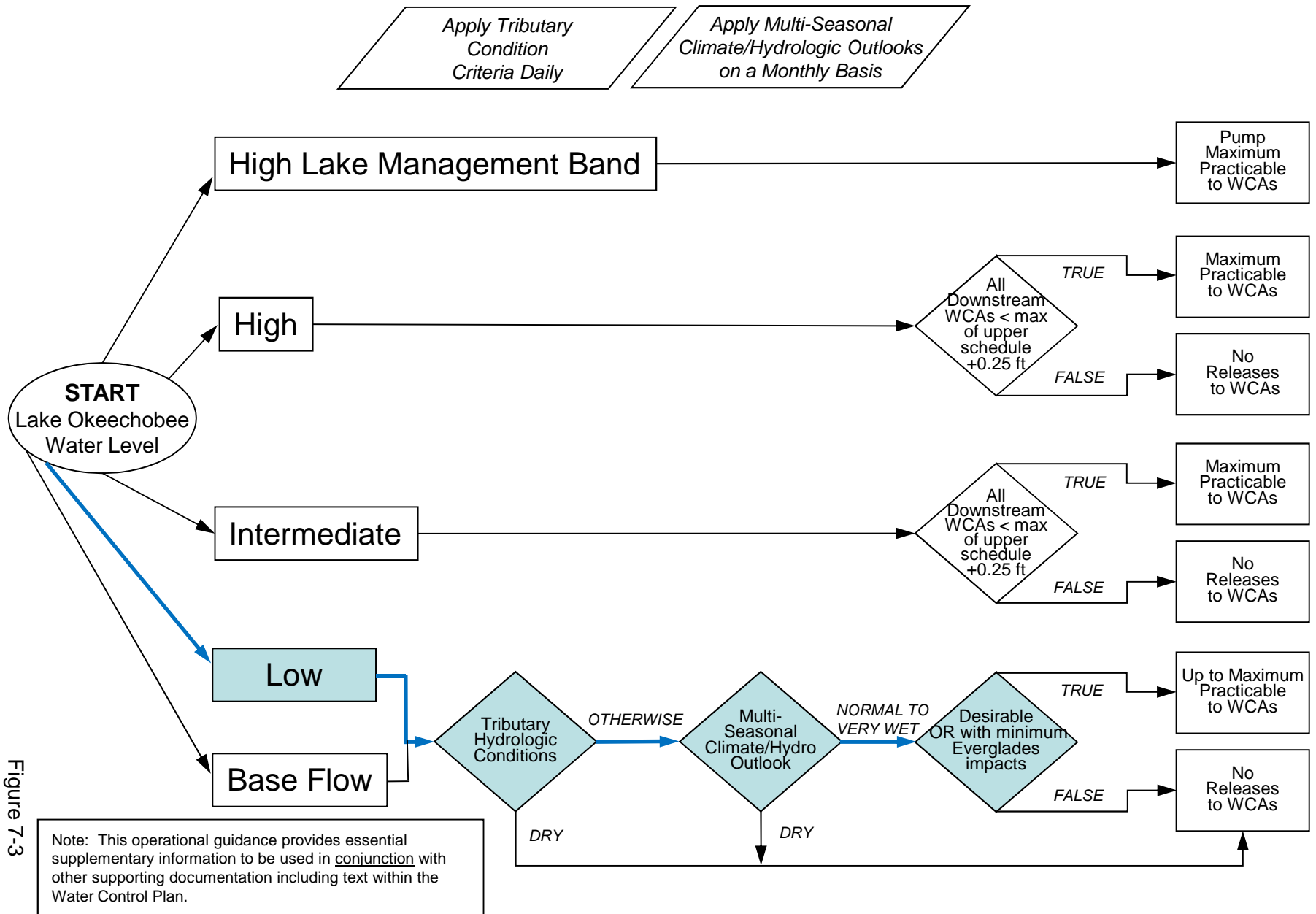


Figure 7-3

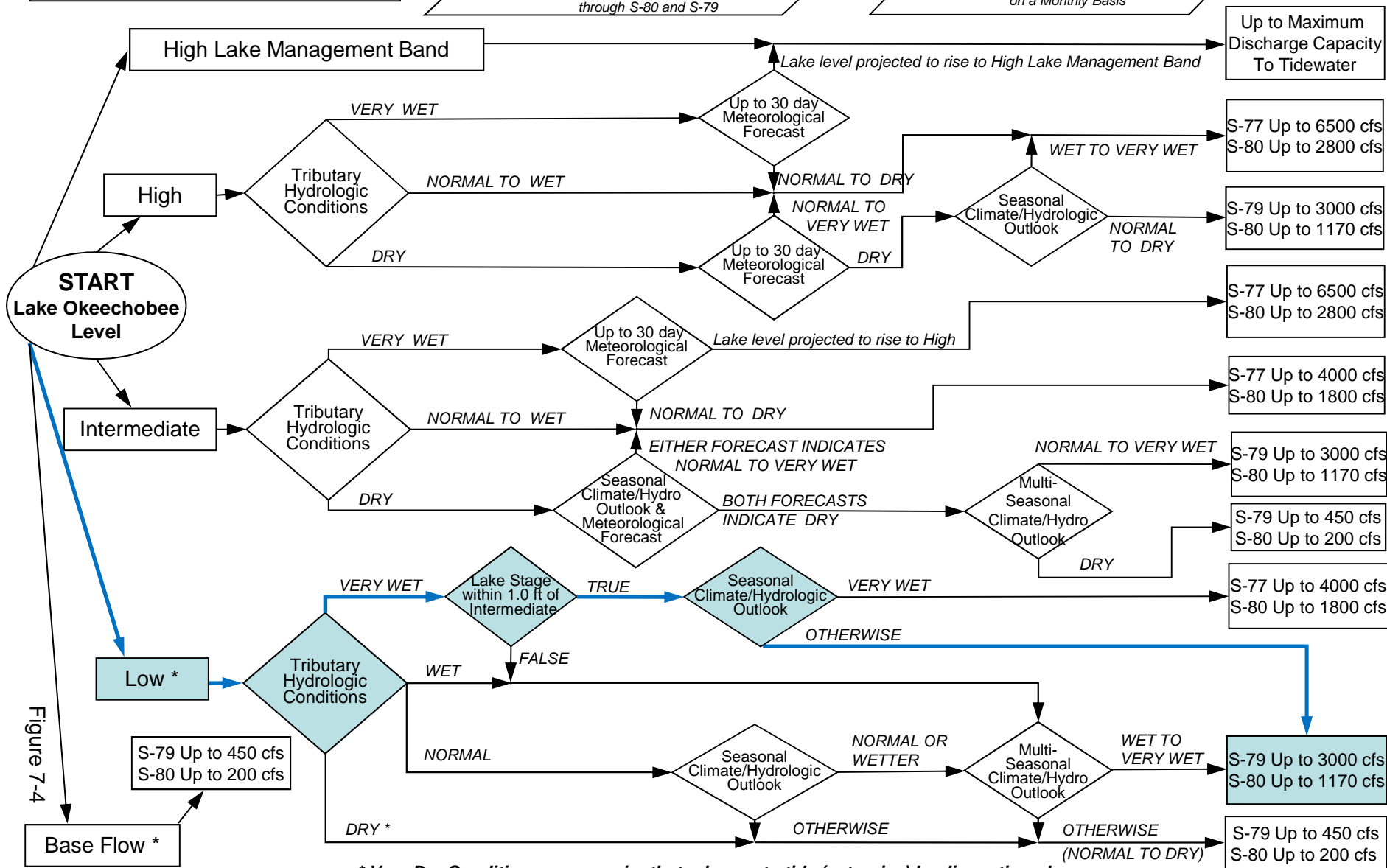
2008 LORS

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

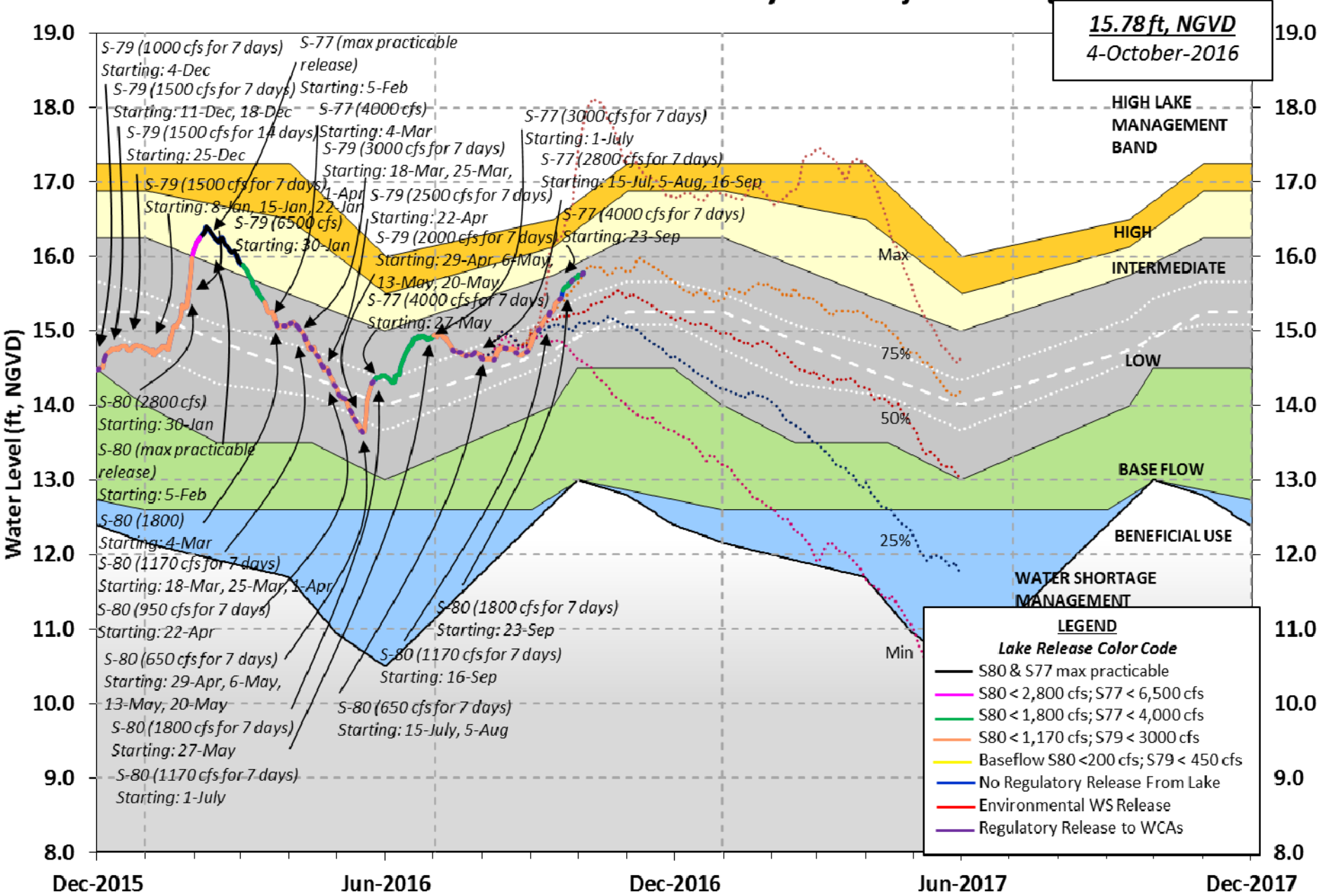


* Very Dry Conditions may require that releases to tide (estuaries) be discontinued

Figure 7-4

Lake Okeechobee Water Level History and Projected Stages

15.78 ft, NGVD
4-October-2016



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

Data Ending 2400 hours 02 OCT 2016

Okeechobee Lake Regulation	Elevation	Last Year	2YRS Ago
	(ft-NGVD)	(ft-NGVD)	(ft-NGVD)
*Okeechobee Lake Elevation	15.76	14.78	15.45 (Official Elv)
Bottom of High Lake Mngmt=	16.77	Top of Water Short Mngmt=	12.99
Currently in Operational Management Band			

Simulated Average LORS2008 [1965-2000]	13.81
Difference from Average LORS2008	1.95

02OCT (1965-2007) Period of Record Average	14.93
Difference from POR Average	0.84

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ÷ 9.70'
 ++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷ 7.90'
 Bridge Clearance = 48.97'

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

L001	L005	L006	LZ40	S4	S352	S308	S133
15.62	15.86	15.78	15.77	15.83	15.88	15.70	15.63

*Combination Okeechobee Avg-Daily Lake Average = 15.76
 (*See Note)

Okeechobee Inflows (cfs):

S65E	4100	C5	-104	Fisheating Cr	1143
S154	139	S191	446	S135 Pumps	0
S84	1002	S133 Pumps	79	S2 Pumps	0
S84X	804	S127 Pumps	42	S3 Pumps	0
S71	422	S129 Pumps	58	S4 Pumps	0
S72	189	S131 Pumps	22		
Total Inflows:	8342				

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	0	S77	3843
S127 Culverts	0	S351	0	S77Below	6190
S129 Culverts	0	S352	211	S308	-NR-
S131 Culverts	0	L8 Canal Pt	126	S308Below	1981
Total Outflows:	No Report Due To Missing S77 or S308 Discharge Data				

S310:	15.93		-4						
S3 Pumps:	9.86	15.97	0	0	0	0			(cfs)
S354:	15.97	9.86	0	0.0	0.0				
S2 Pumps:	9.67	15.89	0	0	0	0	0		(cfs)
S351:	15.89	9.67	0	0.0	0.0	0.0			
S352:	15.97	10.36	211	0.2	0.2				
C10A:	-NR-	14.14		0.0	0.0	3.0	0.0	0.0	
L8 Canal PT		13.96	126						

S351 and S352 Temporary Pumps/S354 Spillway

S351:	9.67	15.89	0	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-
S352:	10.36	15.97	211	-NR-	-NR-	-NR-	-NR-		
S354:	9.86	15.97	0	-NR-	-NR-	-NR-	-NR-		

Caloosahatchee River (S77, S78, S79)

S47B:	13.20	11.31		1.4	1.5				
S47D:	10.92	10.89	123	6.0					

S77:

Spillway and Sector Flow:									
	15.52	11.18	3839	0.0	5.5	5.5	3.0		
Flow Due to Lockages+:			4						

S77 Below USGS Flow Gage 6190

S78:

Spillway and Sector Flow:									
	10.71	3.39	6318	4.0	4.0	6.0	6.0		
Flow Due to Lockages+:			8						

S79:

Spillway and Sector Flow:									
	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-

NR-

Flow Due to Lockages+:	-NR-
Percent of flow from S77	-NR-%
Chloride (ppm)	-N

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Flow:									
	15.71	14.53	2188	-NR-	-NR-	-NR-	-NR-		
Flow Due to Lockages+:			-NR-						

S308 Below USGS Flow Gage 1981

S153:	19.18	14.30	25	0.1	0.0				
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S80:

Spillway and Sector Flow:									
	13.59	2.09	1794	0.0	1.9	1.9	0.0	1.9	1.9
Flow Due to Lockages+:			12						
Percent of flow from S308			122%						

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

Speedy Point Top Salinity (mg/ml) 3053
 Speedy Point Bottom Salinity (mg/ml) 3223

+ 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)	----- Wind ---	
				Direction (Degø)	
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:	0.01	0.04	3.39	69	2
S78:	0.05	0.07	3.11	53	1
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:	0.03	0.03	0.72	55	0
S80:	0.02	0.47	0.51	102	1
Okeechobee Average (Sites S78, S79 and S80 not included)	0.02	0.01	0.32		

Oke Nexrad Basin Avg	0.24	0.65	1.77		

Okeechobee Lake Elevations	02 OCT 2016	15.76	Difference from
02OCT16	-1 Day = 01 OCT 2016	15.77	0.01
02OCT16	-2 Days = 30 SEP 2016	15.75	-0.01
02OCT16	-3 Days = 29 SEP 2016	15.72	-0.04
02OCT16	-4 Days = 28 SEP 2016	15.71	-0.05
02OCT16	-5 Days = 27 SEP 2016	15.69	-0.07
02OCT16	-6 Days = 26 SEP 2016	15.69	-0.07
02OCT16	-7 Days = 25 SEP 2016	15.66	-0.10
02OCT16	-30 Days = 02 SEP 2016	14.97	-0.79
02OCT16	-1 Year = 02 OCT 2015	14.78	-0.98
02OCT16	-2 Year = 02 OCT 2014	15.45	-0.31

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
02OCT16	Today =	02 OCT 2016	11793	MON	6339
02OCT16	-1 Day =	01 OCT 2016	11854	SUN	12565
02OCT16	-2 Days =	30 SEP 2016	11349	SAT	14828
02OCT16	-3 Days =	29 SEP 2016	10783	FRI	11300
02OCT16	-4 Days =	28 SEP 2016	10506	THU	12947
02OCT16	-5 Days =	27 SEP 2016	10527	WED	8785
02OCT16	-6 Days =	26 SEP 2016	10571	TUE	12793
02OCT16	-7 Days =	25 SEP 2016	10371	MON	7491
02OCT16	-8 Days =	24 SEP 2016	10433	SUN	11918
02OCT16	-9 Days =	23 SEP 2016	10047	SAT	11171
02OCT16	-10 Days =	22 SEP 2016	9675	FRI	10505
02OCT16	-11 Days =	21 SEP 2016	9725	THU	10649
02OCT16	-12 Days =	20 SEP 2016	9616	WED	18556
02OCT16	-13 Days =	19 SEP 2016	8798	TUE	15261

S65E

Average Flow over previous 14 days					Avg-Daily Flow
02OCT16	Today=	02 OCT 2016	5580	MON	4292
02OCT16	-1 Day =	01 OCT 2016	5650	SUN	4731
02OCT16	-2 Days =	30 SEP 2016	5697	SAT	5336
02OCT16	-3 Days =	29 SEP 2016	5725	FRI	5350
02OCT16	-4 Days =	28 SEP 2016	5730	THU	5458
02OCT16	-5 Days =	27 SEP 2016	5745	WED	5495
02OCT16	-6 Days =	26 SEP 2016	5730	TUE	5533
02OCT16	-7 Days =	25 SEP 2016	5737	MON	5665
02OCT16	-8 Days =	24 SEP 2016	5719	SUN	6042
02OCT16	-9 Days =	23 SEP 2016	5662	SAT	6140
02OCT16	-10 Days =	22 SEP 2016	5556	FRI	6098
02OCT16	-11 Days =	21 SEP 2016	5398	THU	6371
02OCT16	-12 Days =	20 SEP 2016	5213	WED	5979
02OCT16	-13 Days =	19 SEP 2016	5059	TUE	5632

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)
02 OCT 2016	7620	12274	12544	-NR-
01 OCT 2016	7692	12228	12816	-NR-
30 SEP 2016	6617	11468	13725	-NR-
29 SEP 2016	6156	12111	11867	-NR-
28 SEP 2016	7081	10739	9633	-NR-
27 SEP 2016	7589	10784	8891	-NR-
26 SEP 2016	6963	9228	7411	-NR-
25 SEP 2016	7148	5928	7493	11158
24 SEP 2016	7811	8885	8956	10532
23 SEP 2016	7612	9071	7800	9783
22 SEP 2016	5770	8036	6591	9367
21 SEP 2016	5830	7206	6540	10459
20 SEP 2016	5601	5871	6424	11031

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)
19 SEP 2016	5768	5666	6085	11724	
02 OCT 2016	-8	0	418	0	250
01 OCT 2016	-37	0	0	0	248
30 SEP 2016	-9	0	0	0	234
29 SEP 2016	32	0	12	0	249
28 SEP 2016	16	0	103	0	264
27 SEP 2016	18	0	250	0	261
26 SEP 2016	14	0	16	0	249
25 SEP 2016	27	0	5	0	277
24 SEP 2016	144	0	56	0	289
23 SEP 2016	11	0	0	0	285
22 SEP 2016	7	0	252	0	276
21 SEP 2016	1	0	242	0	268
20 SEP 2016	-26	0	101	0	187
19 SEP 2016	9	0	0	0	-12

DATE	S-308 Discharge (ALL DAY) (AC-FT)	Below S-308 Discharge (ALL-DAY) (AC-FT)	S-80 Discharge (ALL-DAY) (AC-FT)
02 OCT 2016	-NR-	3927	2844
01 OCT 2016	-NR-	3842	2815
30 SEP 2016	4974	4804	3218
29 SEP 2016	5504	5737	4226
28 SEP 2016	5943	5970	4650
27 SEP 2016	6183	6125	4748
26 SEP 2016	3197	2978	3250
25 SEP 2016	3	46	218
24 SEP 2016	1228	1506	1185
23 SEP 2016	3962	4198	2883
22 SEP 2016	4127	3670	2531
21 SEP 2016	4864	4804	2897
20 SEP 2016	4802	4844	3019
19 SEP 2016	3144	3102	1970

*** 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

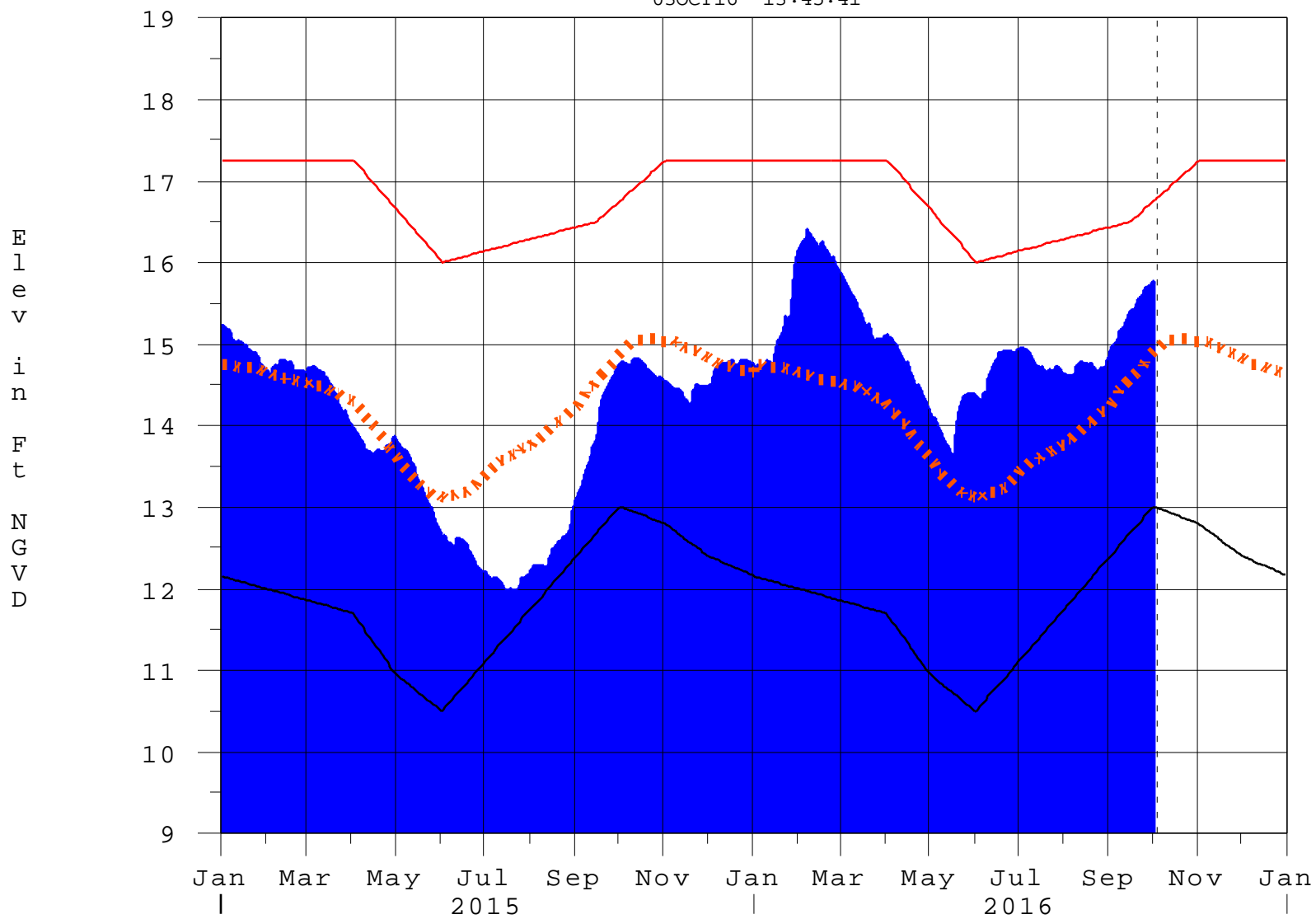
++ For more information see the Jacksonville District Navigation website at <http://www.saj.usace.army.mil/>

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

Report Generated 03OCT2016 @ 13:40 ** Preliminary Data - Subject to Revision
**

Lake Okeechobee

03OCT16 13:45:41



- 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