

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 6/1/2015 (Developing El Nino 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 El Nino years³ and a sub-sampling of warm years of the Atlantic Multi-decadal Oscillation (AMO) in combination with ENSO El Nino 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 ENSO El Nino Years ³		Sub-sampling of AMO Warm + ENSO El Nino Years ⁴	
	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition
Current (Jun-Nov)	N/A	N/A	2.62	Very Wet	2.37	Very Wet	3.64	Very Wet
Multi Seasonal (Jun-Apr)	N/A	N/A	3.05	Wet	3.91	Wet	5.75	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:](#)

-4333 cfs 14-day running average for Lake Okeechobee Net Inflow through 5/31/2015. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Dry.

- 1.45 for Palmer Index on 5/30/2015.

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 6/1/2015

Lake Okeechobee Stage: **12.68 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		16.00	
Operational Band	High sub-band	15.50	
	Intermediate sub-band	15.00	
	Low sub-band	13.00	← 12.68
Base Flow sub-band		12.60	
Beneficial Use sub-band		10.50	
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 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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LORS2008 Implementation on 6/1/2015 (ENSO Neutral Condition):

Water Supply Department Technical Input

Water Supply Outlook:

District wide, Raindar rainfall 0.54 inches for the week ending 6/2/2015. Lake stage on 6/1/2015 is 12.69 ft, down 0.33 ft from last week.

The updated May 2015 SFWMM Dynamic Position Analysis [percentile graph](#) and [tracking chart](#) for Lake Okeechobee show that the lake stage is in the Low Flow 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	Base Flow Sub-Band	M
	Palmer Index for LOK Tributary Conditions	-1.45 (Dry)	M
	CPC Precipitation Outlook	1 month: Above Normal	L
		3 months: Above Normal	L
	LOK Seasonal Net Inflow Forecast	3.64 ft (Normal to Extremely Wet)	L
	AMO warm/El Nino		
	LOK Multi-Seasonal Net Inflow Forecast	5.75 ft (Wet)	L
AMO warm/El Nino			
WCAs	WCA 1: Site 1-7, Site 1-8T, & Site 1-9 Average	Above Line 1 (15.63 ft)	L
	WCA 2A: Site 2-17 HW	Below Line 2 (10.51 ft)	H
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Line 1 – Line 2 (7.97 ft)	M
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

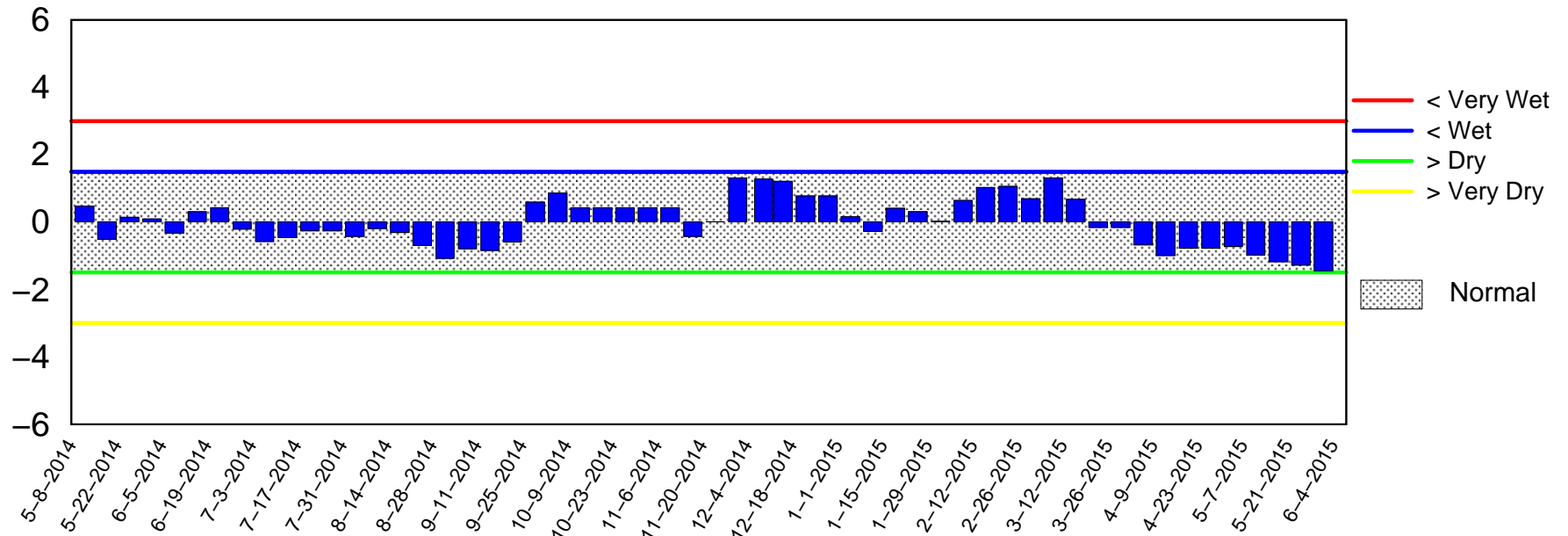
Note: The water supply risk classification based on the Palmer index, as well as the LOK seasonal and multi-seasonal net inflow forecasts use slightly different classification intervals than those used by the 2008-LORS for classifying the tributary hydrologic condition (THC).

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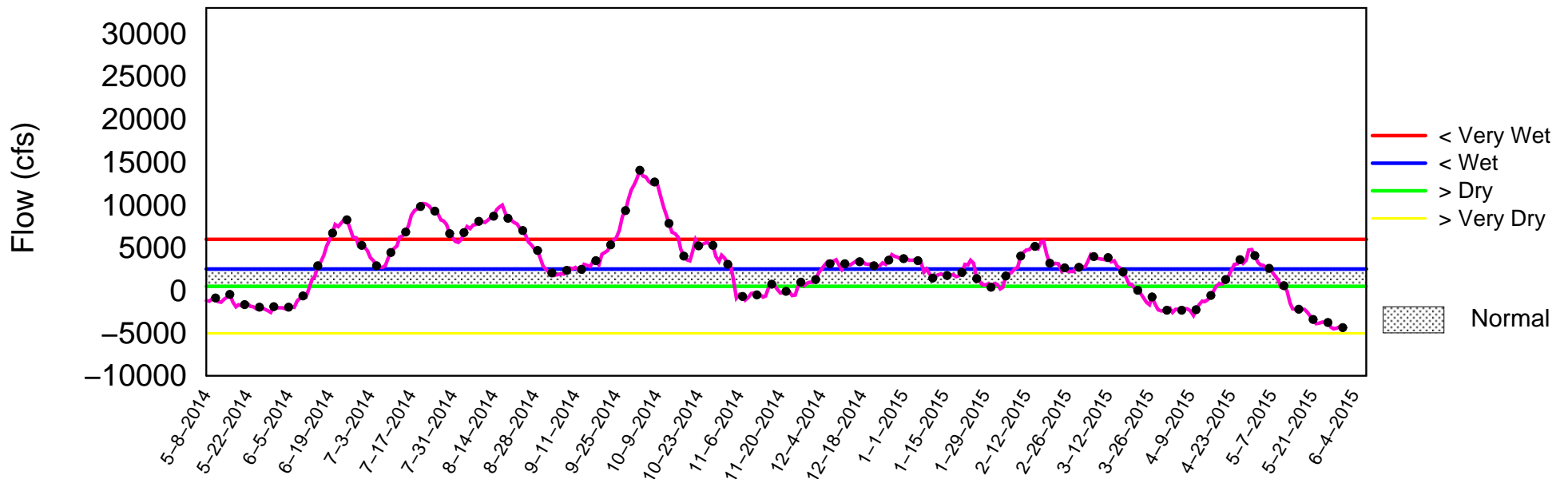
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Tributary Basin Condition Indicators as of June 1 2015

Palmer Index



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



2008 LORS

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

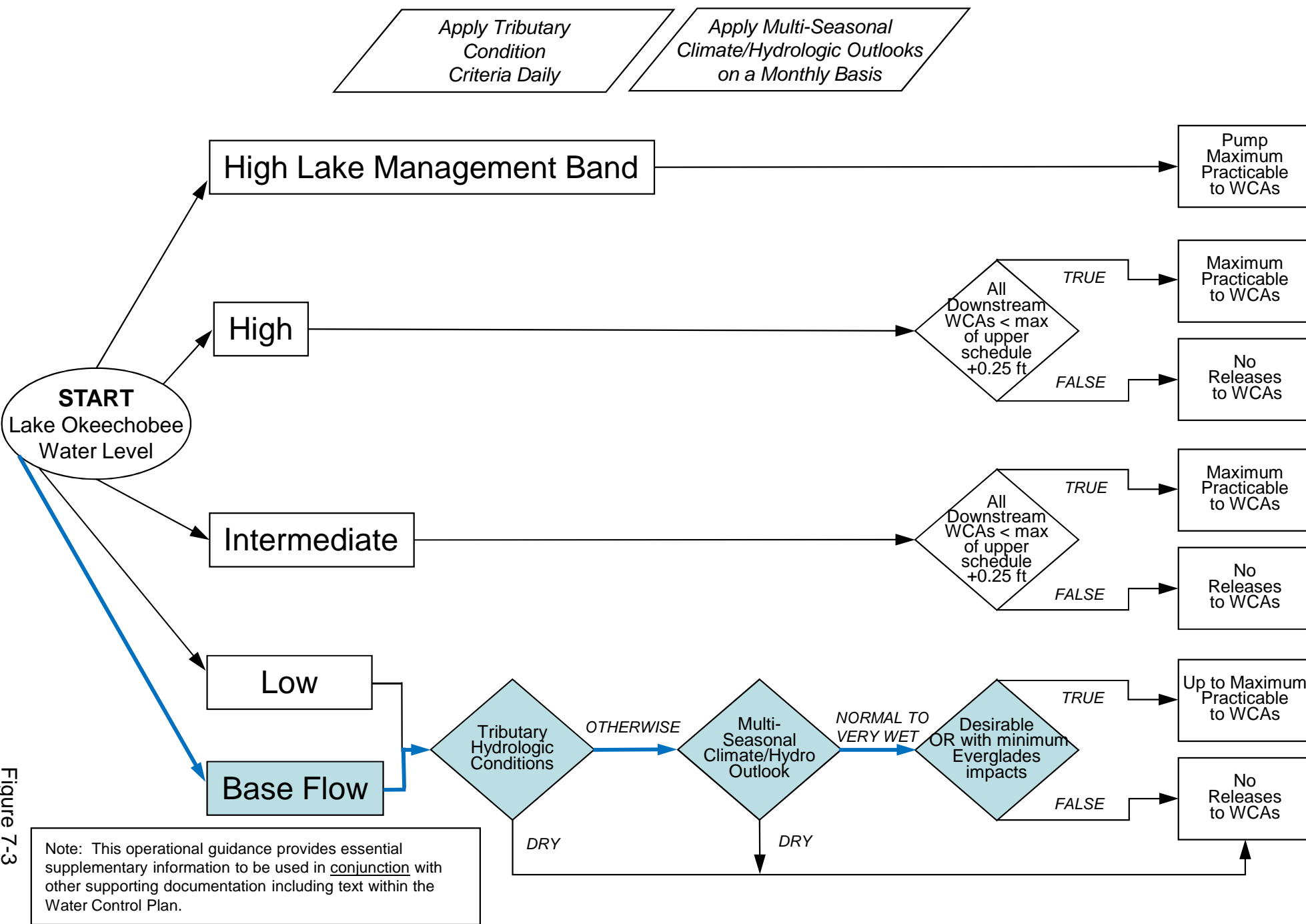
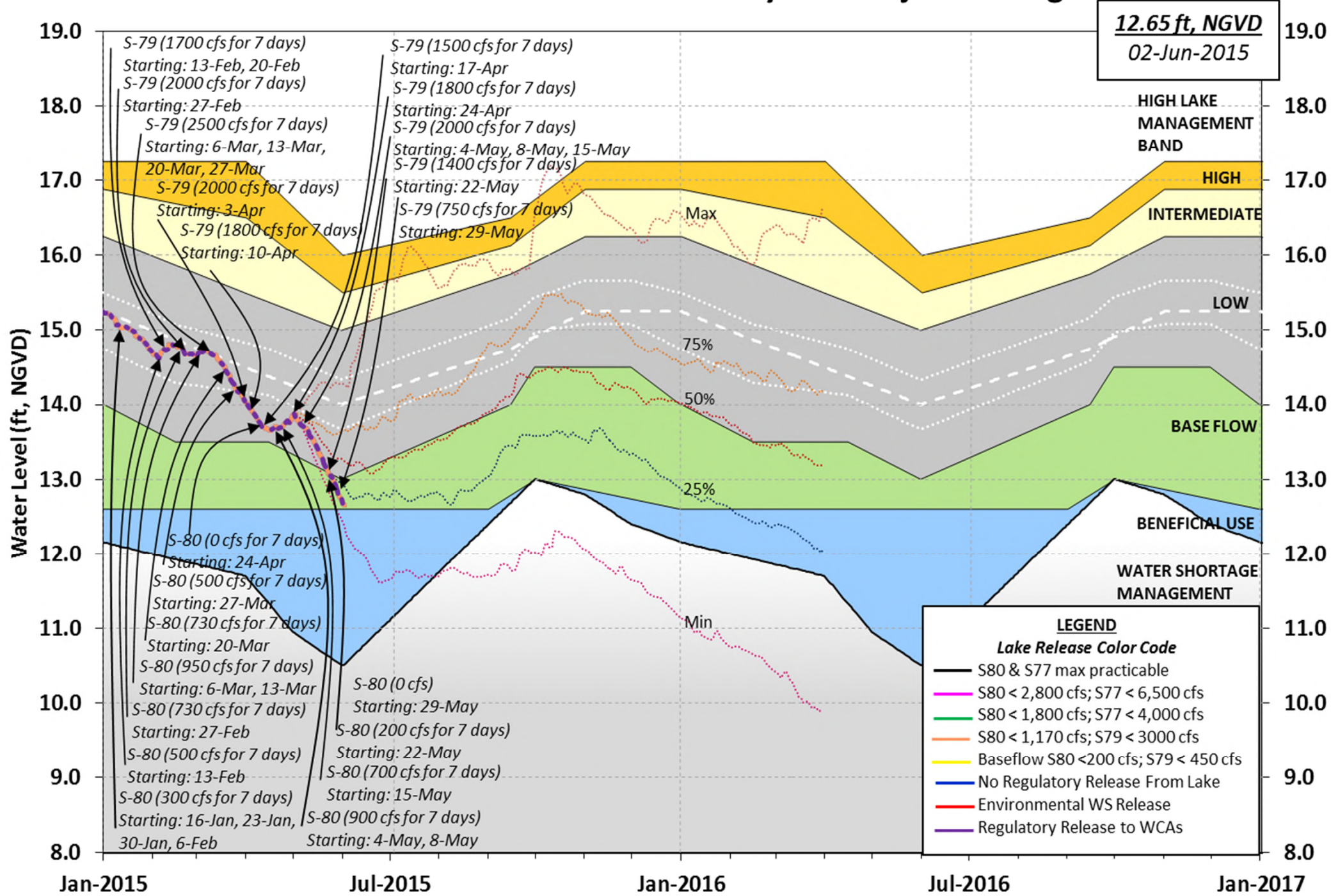


Figure 7-3

Lake Okeechobee Water Level History and Projected Stages



LORS-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 01 JUN 2015

Okeechobee Lake Regulation	Elevation	Last Year	2YRS Ago
	(ft-NGVD)	(ft-NGVD)	(ft-NGVD)
*Okeechobee Lake Elevation	12.65	12.46	13.33 (Official Elv)
Bottom of High Lake Mngmt=	16.00	Top of Water Short Mngmt=	10.50
Currently in Operational Management Band			

Simulated Average LORS2008 [1965-2000]	11.96
Difference from Average LORS2008	0.69

01JUN (1965-2007) Period of Record Average	13.12
Difference from POR Average	-0.47

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ÷ 6.59'
 ++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷ 4.79'
 Bridge Clearance = 51.10'

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

L001	L005	L006	LZ40	S4	S352	S308	S133
12.57	12.74	12.66	12.64	12.66	12.74	12.57	12.66

*Combination Okeechobee Avg-Daily Lake Average = 12.65
 (*See Note)

Okeechobee Inflows (cfs):

S65E	287	S191	0	Fisheating Cr	4
S154	0	S133 Pumps	0	S135 Pumps	0
S84	0	S127 Pumps	0	S2 Pumps	0
S71	0	S129 Pumps	0	S3 Pumps	0
S72	0	S131 Pumps	0	S4 Pumps	0
C5	0				
Total Inflows:	291				

Okeechobee Outflows (cfs):

S135 Culverts (Used)	-NR-	S354	834	S77	1082
S127 Culverts (USED)	0	S351	1199	S77Below	901 (NOT USED)

C5: 13.85 12.71 0 0.0 0.0 0.0

South Shore

S4 Pumps: 10.44 12.69 0 0 0 0 (cfs)
 S169: 12.84 10.43 0 0.0 0.0 0.0
 S310: 12.78 80
 S3 Pumps: 10.98 13.01 0 0 0 0 (cfs)
 S354: 13.01 10.98 834 1.8 2.0
 S2 Pumps: 10.94 12.90 0 0 0 0 0 (cfs)
 S351: 12.90 10.94 1199 2.2 2.4 2.2
 S352: 12.80 10.86 702 1.6 1.8
 C10A: -NR- 12.85 8.5 8.5 8.5 8.5 8.5
 L8 Canal PT 12.69 65

S351 and S352 Temporary Pumps/S354 Spillway

S351: 10.94 12.90 1199 -NR--NR--NR--NR--NR--NR-
 S352: 10.86 12.80 702 -NR--NR--NR--NR--
 S354: 10.98 13.01 834 -NR--NR--NR--NR-

Caloosahatchee River (S77, S78, S79)

S47B: 14.95 10.95 0.0 0.0
 S47D: 10.91 10.92 -68 4.8
 S77:
 Spillway and Sector Flow:
 12.45 10.96 1079 0.0 4.0 3.5 0.0
 Flow Due to Lockages+: 3
 S77 Below USGS Flow Gage 901
 S78:
 Spillway and Sector Flow:
 10.81 2.92 690 0.0 0.0 1.0 1.0
 Flow Due to Lockages+: 17
 S79:
 Spillway and Sector Flow:
 3.12 0.55 900 0.0 0.0 1.0 1.0 1.0 0.5 0.0
 0.0
 Flow Due to Lockages+: 5
 Percent of flow from S77 120%
 Chloride (ppm) 72

St. Lucie Canal (S308, S80)

S308:
 Spillway and Sector Flow:
 12.58 12.40 0 0.0 0.0 0.0 0.0
 Flow Due to Lockages+: 0
 S308 Below USGS Flow Gage 41
 S153: _____ -NR- -NR- 0.0 -NR-
 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.

	1-Day	3-Day	7-Day	----- Wind ---	
Daily Precipitation Totals				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-	0.14	0.35		
S127 Pump Station:	-NR-	0.04	0.36		
S129 Pump Station:	-NR-	0.00	0.00		
S131 Pump Station:	-NR-	0.00	0.00		
S77:	0.00	0.00	0.00	75	1
S78:	0.02	0.02	0.02	60	1
S79:	0.09	0.40	0.96	37	2
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-	0.04	0.04		
S308:	0.00	0.04	0.04	93	3
S80:	0.00	1.13	1.13	-NR-	-NR-
Okeechobee Average	0.00	0.02	0.06		
(Sites S78, S79 and S80 not included)					

Oke Nexrad Basin Avg	-NR-	0.09	0.15		

Okeechobee Lake Elevations	01 JUN 2015	12.65	Difference from
	01JUN15		
01JUN15 -1 Day =	31 MAY 2015	12.68	0.03
01JUN15 -2 Days =	30 MAY 2015	12.73	0.08
01JUN15 -3 Days =	29 MAY 2015	12.76	0.11
01JUN15 -4 Days =	28 MAY 2015	12.81	0.16
01JUN15 -5 Days =	27 MAY 2015	12.87	0.22
01JUN15 -6 Days =	26 MAY 2015	12.94	0.29
01JUN15 -7 Days =	25 MAY 2015	12.99	0.34
01JUN15 -30 Days =	02 MAY 2015	13.80	1.15
01JUN15 -1 Year =	01 JUN 2014	12.46	-0.19
01JUN15 -2 Year =	01 JUN 2013	13.33	0.68

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
01JUN15	Today =	01 JUN 2015	-4411	TUE	-3784
01JUN15	-1 Day =	31 MAY 2015	-4369	MON	-3551
01JUN15	-2 Days =	30 MAY 2015	-4303	SUN	-NR-
01JUN15	-3 Days =	29 MAY 2015	-4318	SAT	-4861
01JUN15	-4 Days =	28 MAY 2015	-4321	FRI	-6445
01JUN15	-5 Days =	27 MAY 2015	-4113	THU	-8431
01JUN15	-6 Days =	26 MAY 2015	-3629	WED	-5382
01JUN15	-7 Days =	25 MAY 2015	-3541	TUE	-2551
01JUN15	-8 Days =	24 MAY 2015	-3460	MON	-2558
01JUN15	-9 Days =	23 MAY 2015	-3648	SUN	-1808
01JUN15	-10 Days =	22 MAY 2015	-3718	SAT	-3385
01JUN15	-11 Days =	21 MAY 2015	-3251	FRI	-4967
01JUN15	-12 Days =	20 MAY 2015	-3119	THU	-6670
01JUN15	-13 Days =	19 MAY 2015	-2444	WED	-2947

S65E

		Average Flow over previous 14 days			Avg-Daily Flow
01JUN15	Today=	01 JUN 2015	376	TUE	287
01JUN15	-1 Day =	31 MAY 2015	396	MON	287
01JUN15	-2 Days =	30 MAY 2015	389	SUN	-NR-
01JUN15	-3 Days =	29 MAY 2015	373	SAT	337
01JUN15	-4 Days =	28 MAY 2015	381	FRI	318
01JUN15	-5 Days =	27 MAY 2015	391	THU	266
01JUN15	-6 Days =	26 MAY 2015	407	WED	377
01JUN15	-7 Days =	25 MAY 2015	432	TUE	456
01JUN15	-8 Days =	24 MAY 2015	484	MON	372
01JUN15	-9 Days =	23 MAY 2015	547	SUN	522
01JUN15	-10 Days =	22 MAY 2015	628	SAT	243
01JUN15	-11 Days =	21 MAY 2015	750	FRI	449
01JUN15	-12 Days =	20 MAY 2015	773	THU	510
01JUN15	-13 Days =	19 MAY 2015	937	WED	467

Lake Okeechobee Outlets Last 14 Days

DATE	S-77 Discharge (0700-2100) (AC-FT)	S-77 Discharge (ALL DAY) (AC-FT)	Below S-77 Discharge (ALL-DAY) (AC-FT)	S-78 Discharge (0700-2100) (AC-FT)	S-78 Discharge (ALL DAY) (AC-FT)	S-79 Discharge (ALL DAY) (AC-FT)
01 JUN 2015	1327	-NA-	1786	811	1402	1794
31 MAY 2015	1382	-NA-	2030	992	1751	2046
30 MAY 2015	1768	-NA-	2382	1132	1786	2249
29 MAY 2015	1428	-NA-	1886	819	1402	1542
28 MAY 2015	1487	-NA-	2045	821	1417	1329
27 MAY 2015	1511	-NA-	2141	822	1417	1602
26 MAY 2015	1456	-NA-	1862	804	1526	2044
25 MAY 2015	1275	-NA-	1509	1166	1989	2551

24 MAY 2015	1536	-NA-	2242	1220	2472	4489
23 MAY 2015	2294	-NA-	3546	2008	3473	5908
22 MAY 2015	2033	-NA-	3338	1543	-NR-	3700
21 MAY 2015	1164	-NA-	2330	632	1691	2038
20 MAY 2015	1701	-NA-	3118	1098	2456	2842
19 MAY 2015	1669	-NA-	3033	1168	2582	2933

	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)
01 JUN 2015	159	2378	1392	1654	129
31 MAY 2015	175	2514	1503	1931	70
30 MAY 2015	154	-NR-	-NR-	-NR-	128
29 MAY 2015	176	3107	1682	2288	156
28 MAY 2015	162	3159	1697	2320	333
27 MAY 2015	182	2976	1662	2384	381
26 MAY 2015	177	2481	1202	2048	337
25 MAY 2015	78	1906	605	1878	299
24 MAY 2015	62	1547	666	1666	246
23 MAY 2015	139	1606	637	1888	279
22 MAY 2015	179	2372	1412	2011	285
21 MAY 2015	177	3109	1818	1983	395
20 MAY 2015	183	3056	1495	1753	388
19 MAY 2015	119	2445	1229	1703	351

	S-308	Below S-308	S-80
	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)
01 JUN 2015	1	81	-NR-
31 MAY 2015	0	14	45
30 MAY 2015	127	181	45
29 MAY 2015	130	347	54
28 MAY 2015	1	141	-NR-
27 MAY 2015	298	405	107
26 MAY 2015	325	415	340
25 MAY 2015	433	538	562
24 MAY 2015	461	562	898
23 MAY 2015	566	564	1030
22 MAY 2015	-NA-	55	378
21 MAY 2015	-NA-	485	350
20 MAY 2015	-NA-	1051	1158
19 MAY 2015	-NA-	1282	1383

*** NOTE: 1) Discharge from (0700-2100) is computed using Spillway and Sector Gate Discharges from 0700 hrs to 2100 hrs.

2) 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

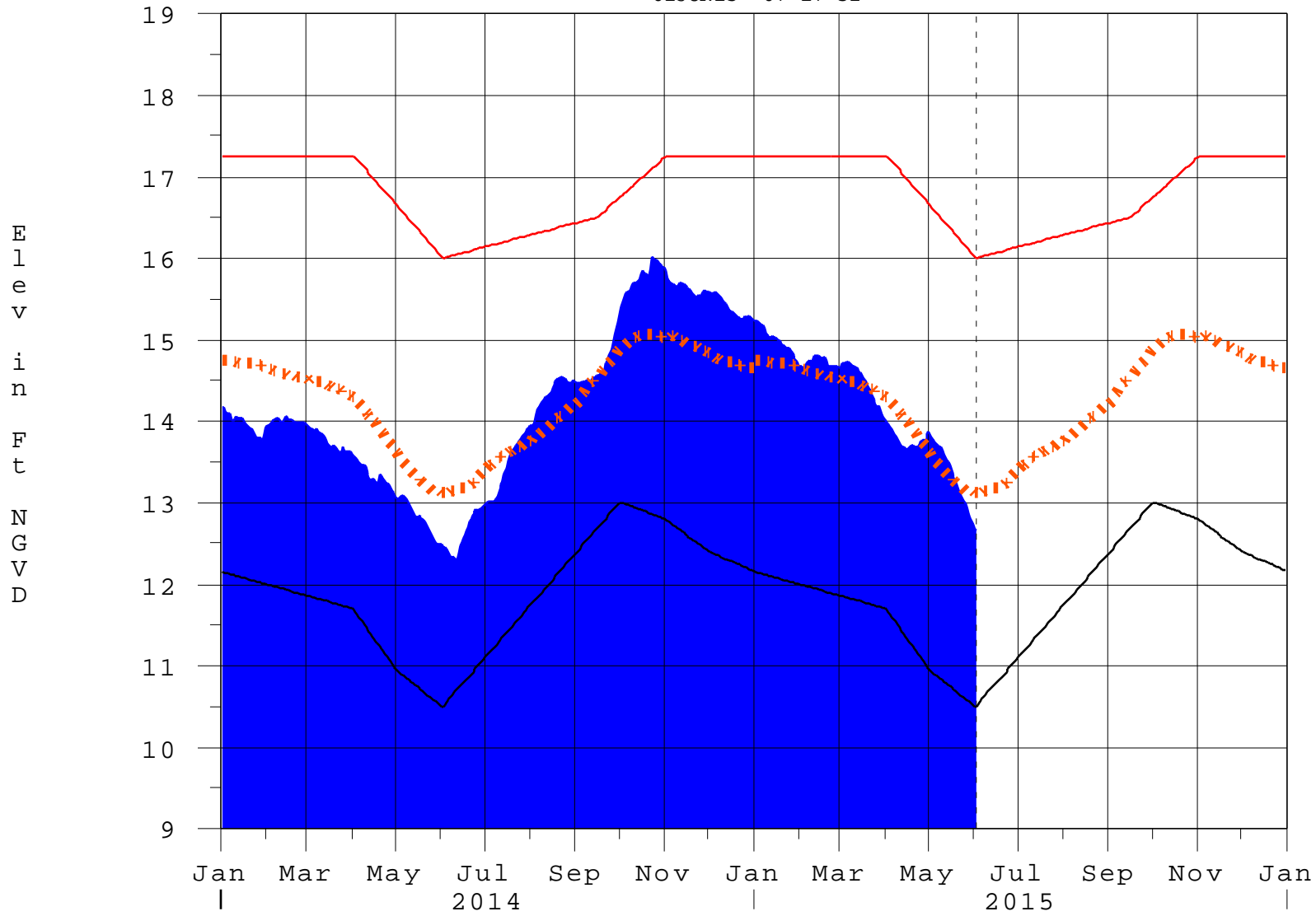
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* On 11 May 1999, Lake Okeechobee Elevation was switched from Instantaneous 2400 value to an average-daily lake average.
On 14 Mar 2001, due to the isolation of various gages within the standard
10 stations, the average of the interior 4 station gages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

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Report Generated 02JUN2015 @ 07:15 ** Preliminary Data - Subject to Revision
**

Lake Okeechobee

02JUN15 07:17:32



- 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