

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 5/11/2015 (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 (May-Oct)	N/A	N/A	2.34	Very Wet	2.24	Very Wet	3.27	Very Wet
Multi Seasonal (May-Apr)	N/A	N/A	2.99	Very Wet	3.96	Wet	5.60	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:](#)

444 cfs 14-day running average for Lake Okeechobee Net Inflow through 5/10/2015. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Dry.

- **0.98** for Palmer Index on 5/9/2015.

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 5/11/2015

Lake Okeechobee Stage: **13.59 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		16.43	
Operational Band	High sub-band	15.84	
	Intermediate sub-band	15.17	
	Low sub-band	13.23	← 13.59
Base Flow sub-band		12.60	
Beneficial Use sub-band		10.80	
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 5/11/2015 (ENSO Neutral Condition):

Water Supply Department Technical Input

Water Supply Outlook:

District wide, Raindar rainfall 1.47 inches for the week ending 5/11/2015. Lake stage on 5/4/2015 is 13.59 ft, down 0.18 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

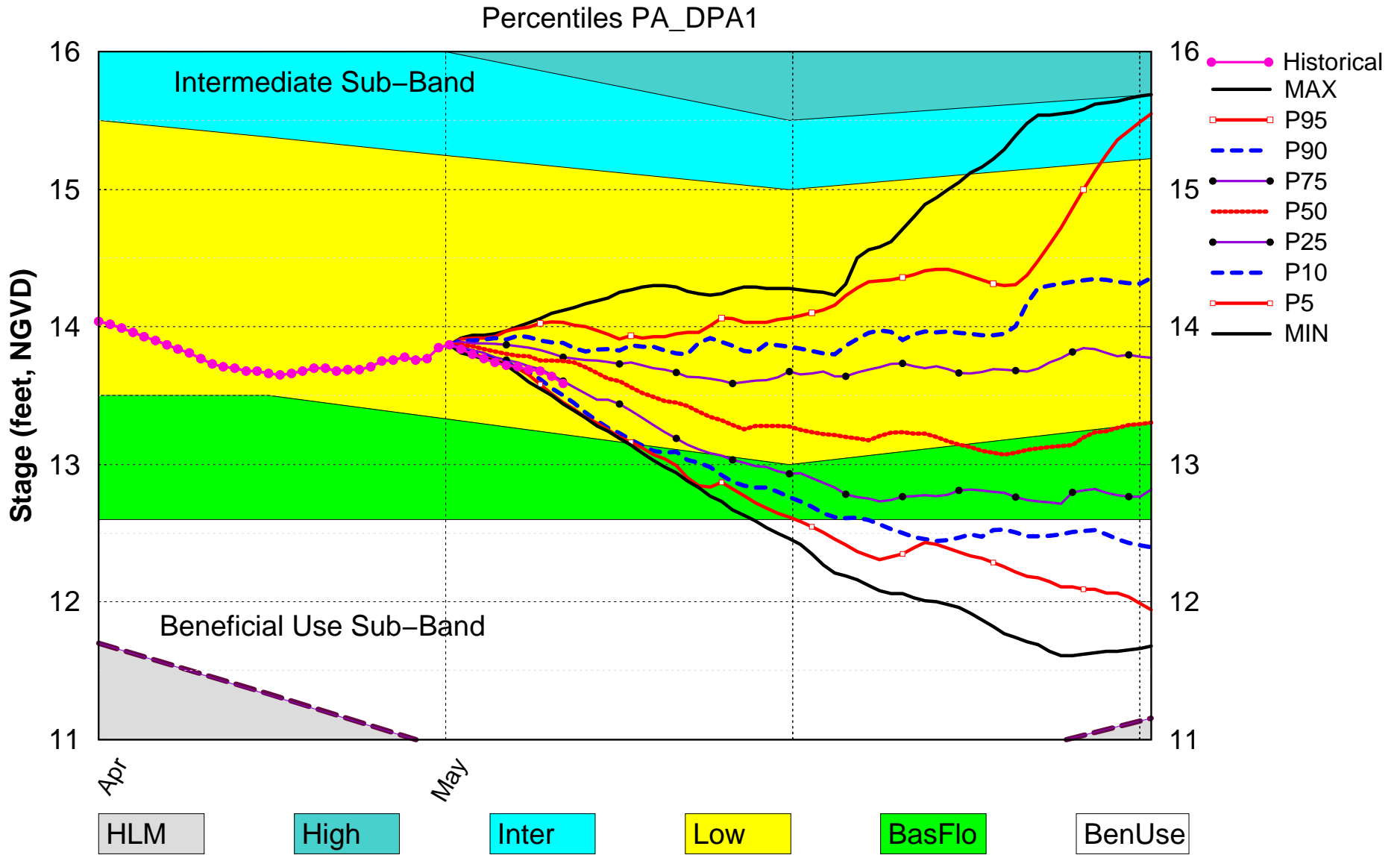
Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Low Sub-Band	L
	Palmer Index for LOK Tributary Conditions	-0.98 (Normal)	L
	CPC Precipitation Outlook	1 month: Normal	L
		3 months: Above Normal	L
	LOK Seasonal Net Inflow Forecast	3.27 ft (Normal to Extremely Wet)	L
	AMO warm/El Nino		
	LOK Multi-Seasonal Net Inflow Forecast	5.60 ft (Wet)	L
AMO warm/El Nino			
WCAs	WCA 1: Site 1-7, Site 1-8T, & Site 1-9 Average	Above Line 1 (15.95 ft)	L
	WCA 2A: Site 2-17 HW	Above Line1 (11.77 ft)	L
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (9.04 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 for classifying the tributary hydrologic condition (THC).

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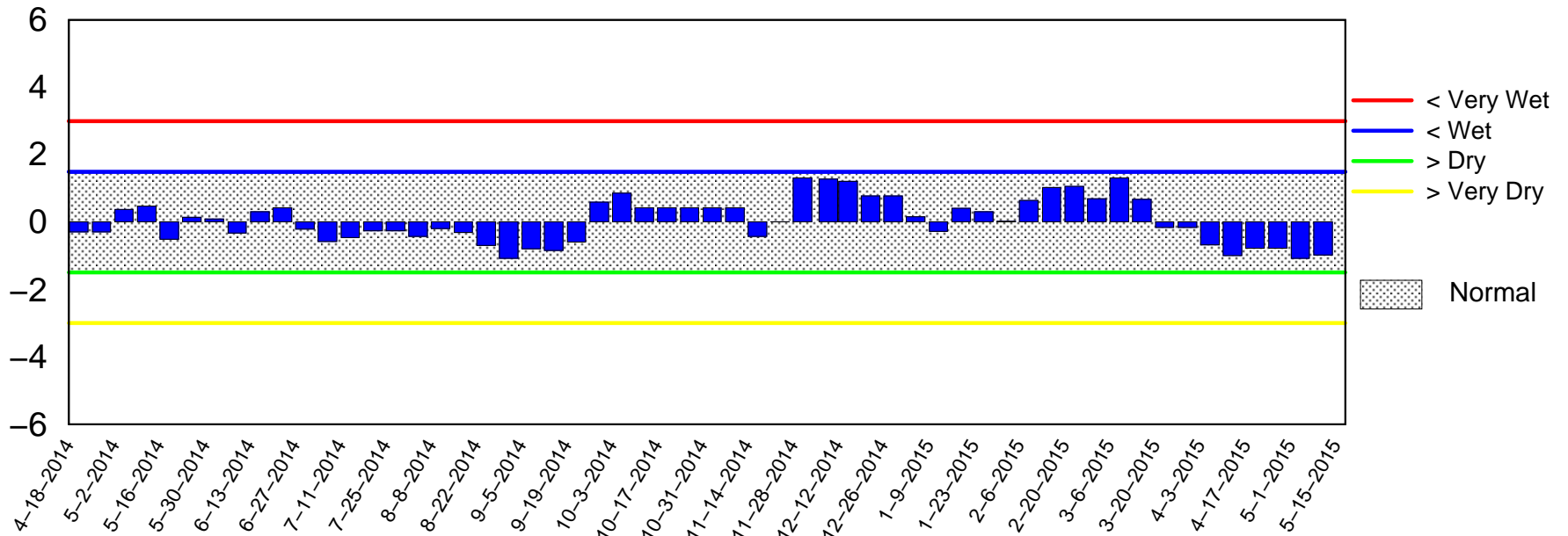
Lake Okeechobee SFWMM May 2015 Dynamic Position Analysis



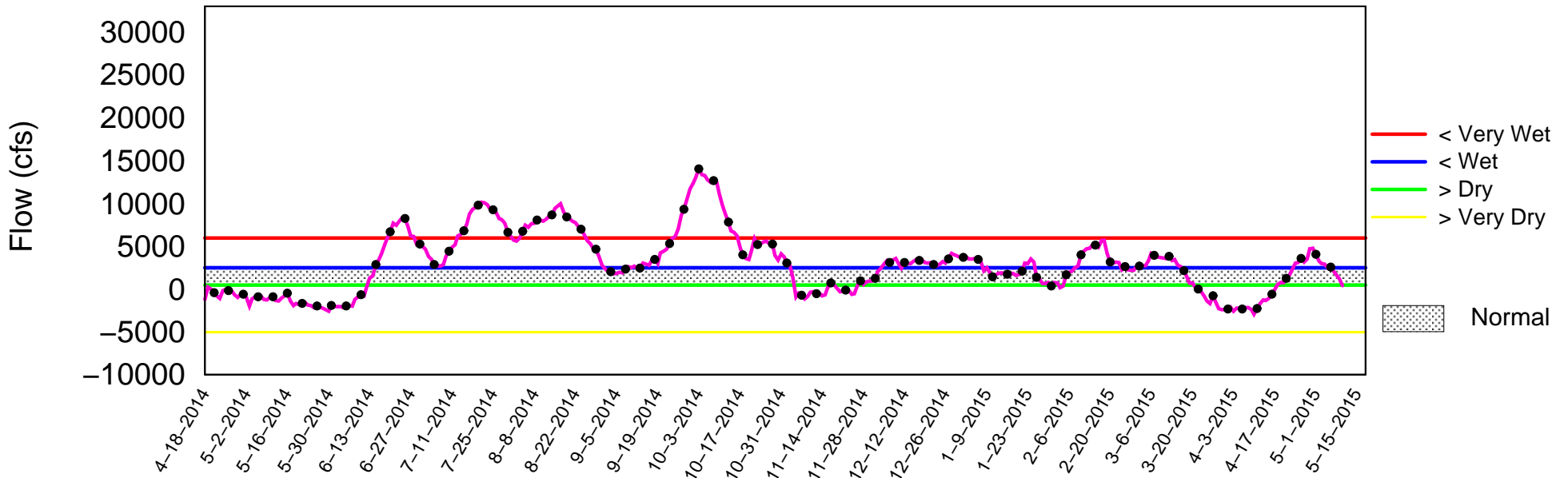
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of May 11 2015

Palmer Index



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



Mon May 11 15:25:46 EDT 2015

2008 LORS

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

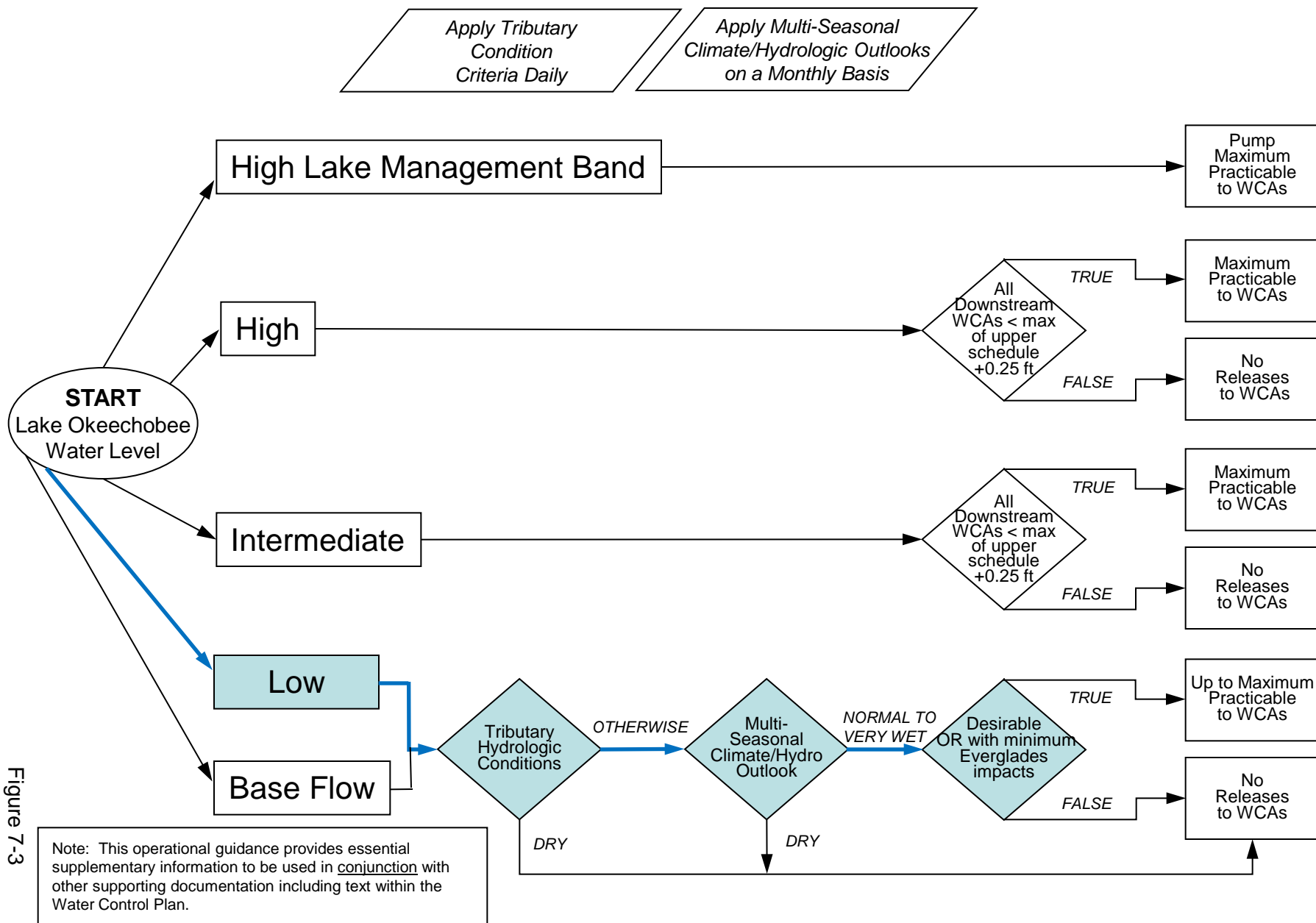


Figure 7-3

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

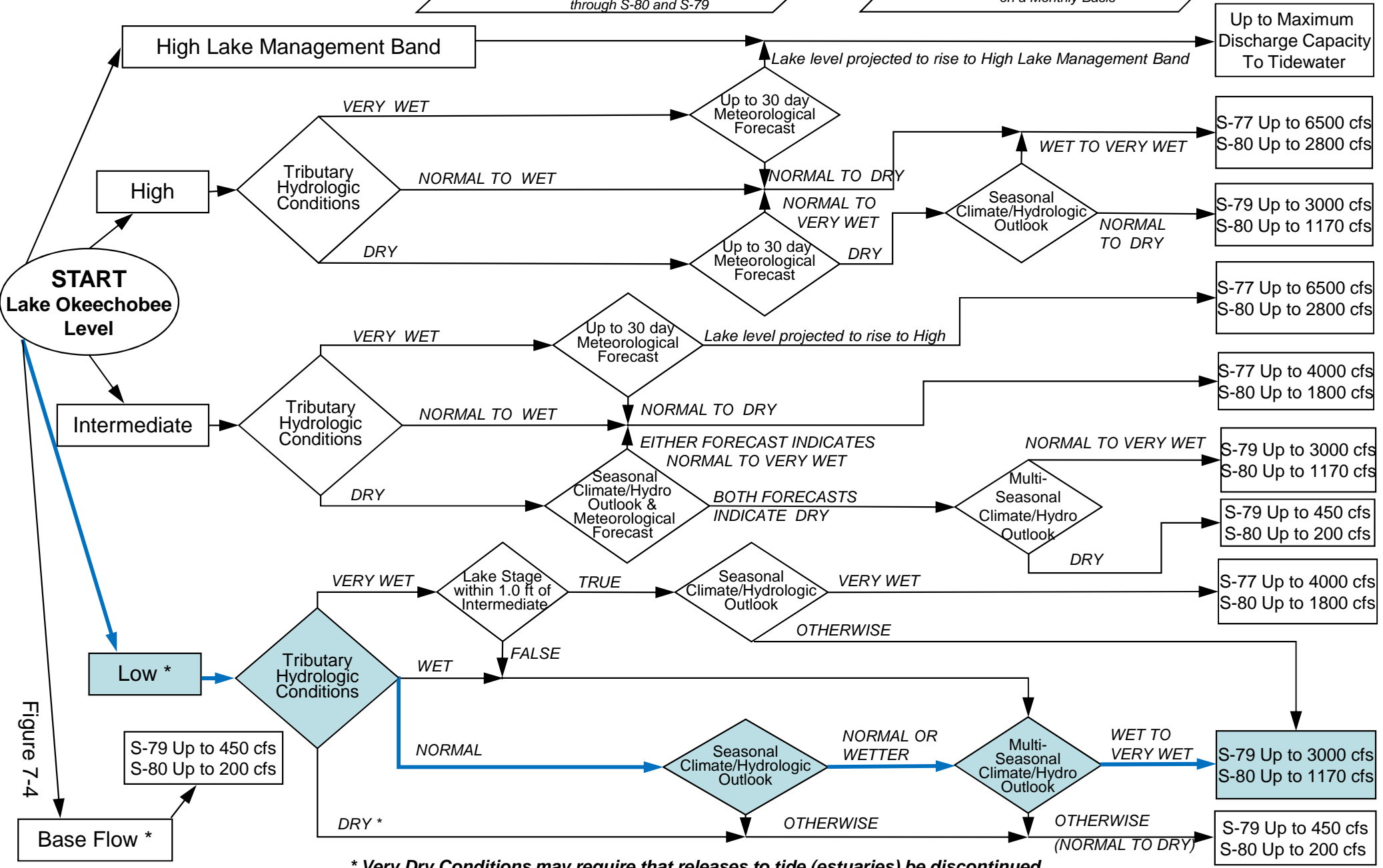
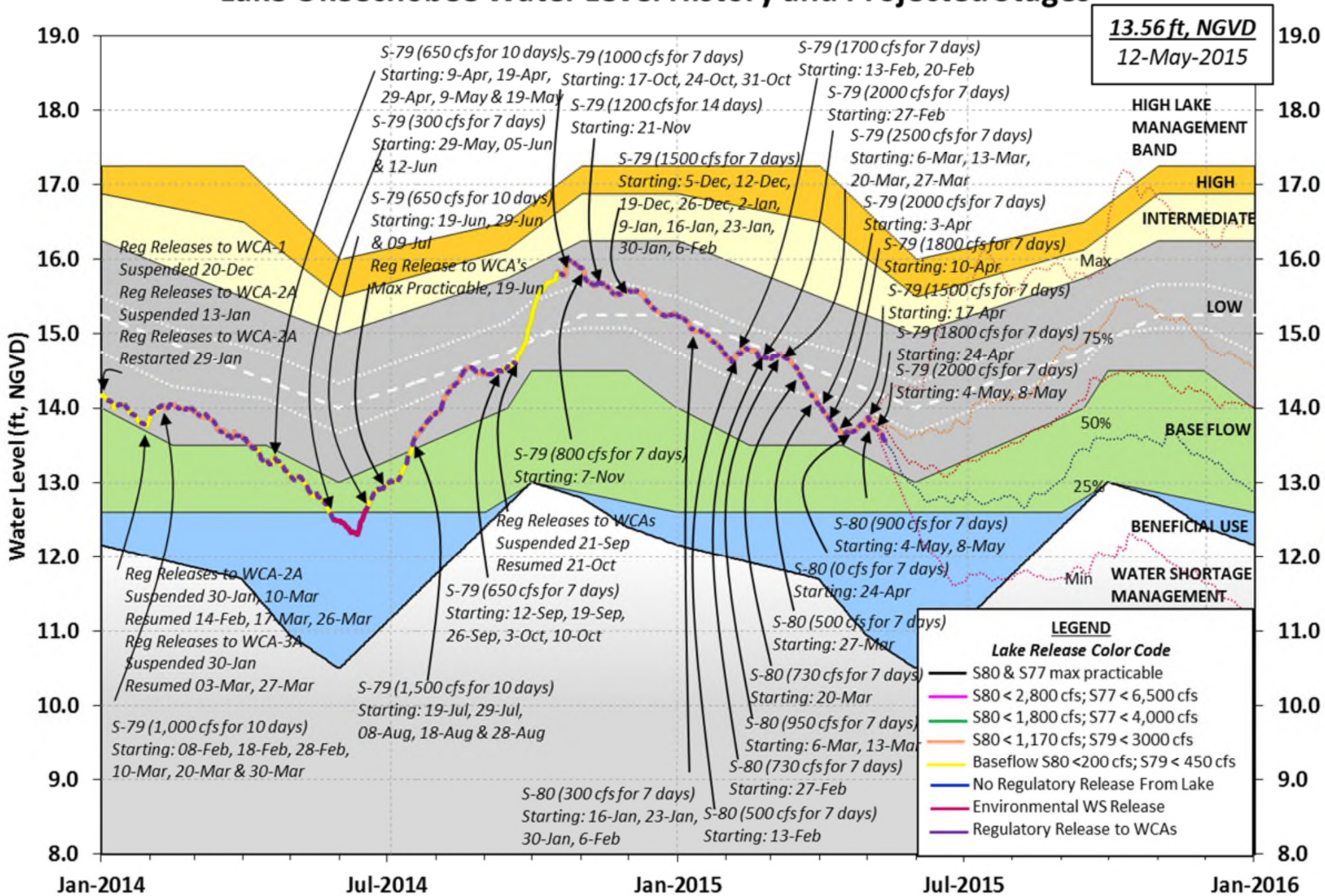


Figure 7-4

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

Lake Okeechobee Water Level History and Projected Stages



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

Data Ending 2400 hours 10 MAY 2015

Okeechobee Lake Regulation	Elevation	Last Year	2YRS Ago
	(ft-NGVD)	(ft-NGVD)	(ft-NGVD)
*Okeechobee Lake Elevation	13.59	12.94	13.51 (Official Elv)
Bottom of High Lake Mngmt= 16.45 Top of Water Short Mngmt= 10.80			
Currently in Operational Management Band			

Simulated Average LORS2008 [1965-2000]	12.18
Difference from Average LORS2008	1.41

10MAY (1965-2007) Period of Record Average	13.39
Difference from POR Average	0.20

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ÷ 7.53'

++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷ 5.73'

Bridge Clearance = 50.11'

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

L001	L005	L006	LZ40	S4	S352	S308	S133
13.47	13.69	13.63	13.57	13.57	13.74	13.51	13.57

*Combination Okeechobee Avg-Daily Lake Average = 13.59
 (*See Note)

Okeechobee Inflows (cfs):

S65E	1234	S191	0	Fisheating Cr	331
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	44				
Total Inflows:	1609				

Okeechobee Outflows (cfs):

S135 Culverts (Used)	-NR-	S354	322	S77	2541
S127 Culverts (USED)	0	S351	986	S77Below	2486 (NOT USED)

C5: 13.50 13.41 44 3.2 3.1 3.2

South Shore

S4 Pumps: 11.14 13.65 0 0 0 0 (cfs)
 S169: 13.58 11.18 0 0.0 0.0 0.0
 S310: 13.48 67
 S3 Pumps: 10.62 13.67 0 0 0 0 (cfs)
 S354: 13.67 10.62 322 2.0 2.0
 S2 Pumps: 11.25 13.66 0 0 0 0 0 (cfs)
 S351: 13.66 11.25 986 1.5 1.8 1.7
 S352: 13.80 11.28 628 1.6 1.5
 C10A: -NR- 13.72 8.5 8.5 8.5 8.5 8.5
 L8 Canal PT 13.56 184

S351 and S352 Temporary Pumps/S354 Spillway

S351: 11.25 13.66 986 -NR--NR--NR--NR--NR--NR--
 S352: 11.28 13.80 628 -NR--NR--NR--NR--
 S354: 10.62 13.67 322 -NR--NR--NR--NR--

Caloosahatchee River (S77, S78, S79)

S47B: 12.57 11.00 0.0 0.0
 S47D: 11.14 11.14 8 4.8
 S77:
 Spillway and Sector Flow:
 13.15 11.24 2538 3.0 4.0 4.0 3.0
 Flow Due to Lockages+: 3
 S77 Below USGS Flow Gage 2486
 S78:
 Spillway and Sector Flow:
 10.96 2.96 2189 2.0 3.0 1.0 1.0
 Flow Due to Lockages+: 13
 S79:
 Spillway and Sector Flow:
 3.10 1.37 2566 1.0 1.0 1.0 2.0 1.0 1.0 1.0
 1.0
 Flow Due to Lockages+: 11
 Percent of flow from S77 99%
 Chloride (ppm) 64

St. Lucie Canal (S308, S80)

S308:
 Spillway and Sector Flow:
 13.51 13.39 741 4.0 4.0 4.0 0.0
 Flow Due to Lockages+: 0
 S308 Below USGS Flow Gage 1196
 S153: 18.90 13.09 -NR- 0.0 -NR-
 S80:
 Spillway and Sector Flow:
 13.05 0.38 1254 0.5 0.5 0.5 0.0 0.5 0.5 0.0

Flow Due to Lockages+: 24
 Percent of flow from S308 59%

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	0.10		
S193:	-NR-	0.00	0.00	-NR-	-NR-
Okeechobee Field Station:	-NR-	0.00	0.00		
S135 Pump Station:	-NR-	0.00	0.39		
S127 Pump Station:	-NR-	0.00	0.40		
S129 Pump Station:	-NR-	0.00	0.05		
S131 Pump Station:	-NR-	0.00	0.09		
S77:	0.00	0.00	0.00	321	1
S78:	0.31	0.31	0.31	70	1
S79:	0.31	0.31	0.45	123	3
S4 Pump Station:	-NR-	0.00	0.00		
Clewiston Field Station:	-NR-	0.00	0.00		
S3 Pump Station:	-NR-	0.00	0.70		
S2 Pump Station:	-NR-	0.00	0.69		
S308:	0.00	0.00	0.05	51	2
S80:	0.00	0.00	0.84	86	2
Okeechobee Average	0.00	0.00	0.19		
(Sites S78, S79 and S80 not included)					

Oke Nexrad Basin Avg	-NR-	0.00	0.00		

Okeechobee Lake Elevations	10 MAY 2015	13.59 Difference from
10MAY15		10MAY15
10MAY15 -1 Day =	09 MAY 2015	13.64 0.05
10MAY15 -2 Days =	08 MAY 2015	13.68 0.09
10MAY15 -3 Days =	07 MAY 2015	13.69 0.10
10MAY15 -4 Days =	06 MAY 2015	13.71 0.12
10MAY15 -5 Days =	05 MAY 2015	13.72 0.13
10MAY15 -6 Days =	04 MAY 2015	13.74 0.15
10MAY15 -7 Days =	03 MAY 2015	13.77 0.18
10MAY15 -30 Days =	10 APR 2015	13.71 0.12
10MAY15 -1 Year =	10 MAY 2014	12.94 -0.65
10MAY15 -2 Year =	10 MAY 2013	13.51 -0.08

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
10MAY15	Today =	10 MAY 2015	644	MON	-5189
10MAY15	-1 Day =	09 MAY 2015	1509	SUN	-2776
10MAY15	-2 Days =	08 MAY 2015	1996	SAT	3148
10MAY15	-3 Days =	07 MAY 2015	1899	FRI	-NR-
10MAY15	-4 Days =	06 MAY 2015	1899	THU	2107
10MAY15	-5 Days =	05 MAY 2015	1812	WED	-309
10MAY15	-6 Days =	04 MAY 2015	2177	TUE	-2639
10MAY15	-7 Days =	03 MAY 2015	2146	MON	-2642
10MAY15	-8 Days =	02 MAY 2015	2582	SUN	-4839
10MAY15	-9 Days =	01 MAY 2015	3553	SAT	-3795
10MAY15	-10 Days =	30 APR 2015	4427	FRI	5548
10MAY15	-11 Days =	29 APR 2015	4375	THU	18150
10MAY15	-12 Days =	28 APR 2015	2862	WED	4048
10MAY15	-13 Days =	27 APR 2015	2410	TUE	-2445

S65E

		Average Flow over previous 14 days			Avg-Daily Flow
10MAY15	Today=	10 MAY 2015	3072	MON	1234
10MAY15	-1 Day =	09 MAY 2015	3297	SUN	1658
10MAY15	-2 Days =	08 MAY 2015	3454	SAT	1960
10MAY15	-3 Days =	07 MAY 2015	3579	FRI	-NR-
10MAY15	-4 Days =	06 MAY 2015	3579	THU	2650
10MAY15	-5 Days =	05 MAY 2015	3552	WED	2853
10MAY15	-6 Days =	04 MAY 2015	3520	TUE	3122
10MAY15	-7 Days =	03 MAY 2015	3422	MON	3117
10MAY15	-8 Days =	02 MAY 2015	3301	SUN	3084
10MAY15	-9 Days =	01 MAY 2015	3166	SAT	3228
10MAY15	-10 Days =	30 APR 2015	3014	FRI	3311
10MAY15	-11 Days =	29 APR 2015	2874	THU	4544
10MAY15	-12 Days =	28 APR 2015	2627	WED	4793
10MAY15	-13 Days =	27 APR 2015	2343	TUE	4376

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)
10 MAY 2015	3030	5040	4929	2583	4367	5110
09 MAY 2015	3345	5328	5030	2517	4241	5442
08 MAY 2015	2468	-NA-	3332	2468	3386	3727
07 MAY 2015	1668	-NA-	2412	869	1784	2059
06 MAY 2015	2584	-NA-	3305	1500	2520	2796
05 MAY 2015	1986	-NA-	2193	1491	2610	3375
04 MAY 2015	1989	-NA-	3269	1845	3526	4431
03 MAY 2015	2764	4861	4694	2760	4835	5567

02 MAY 2015	2971	4605	4326	3029	4656	6052
01 MAY 2015	1472	-NA-	2211	1557	2832	4197
30 APR 2015	534	-NA-	813	623	1547	3566
29 APR 2015	633	-NA-	1411	878	2239	2592
28 APR 2015	912	1971	1964	1310	2901	3170
27 APR 2015	865	-NA-	1401	909	2519	3698

	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)
10 MAY 2015	133	1955	1245	639	364
09 MAY 2015	153	1896	1454	752	408
08 MAY 2015	204	2382	1561	869	457
07 MAY 2015	167	-NR-	-NR-	-NR-	432
06 MAY 2015	71	1523	769	617	374
05 MAY 2015	-2	1380	694	623	380
04 MAY 2015	13	1053	821	573	374
03 MAY 2015	22	623	805	698	385
02 MAY 2015	21	597	900	690	416
01 MAY 2015	16	599	876	672	432
30 APR 2015	35	44	539	395	455
29 APR 2015	-9	0	418	30	391
28 APR 2015	-16	466	652	389	361
27 APR 2015	-13	395	656	424	425

	S-308	Below S-308	S-80
	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)
10 MAY 2015	1470	2372	2535
09 MAY 2015	1464	2225	2384
08 MAY 2015	1375	1910	1930
07 MAY 2015	1268	1621	1930
06 MAY 2015	1089	1358	1927
05 MAY 2015	1398	1703	1889
04 MAY 2015	-NR-	1171	1351
03 MAY 2015	-44	114	46
02 MAY 2015	-1	-31	58
01 MAY 2015	-1	-26	150
30 APR 2015	-1	-100	45
29 APR 2015	-1	-32	52
28 APR 2015	1	4	64
27 APR 2015	3	32	40

*** 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.

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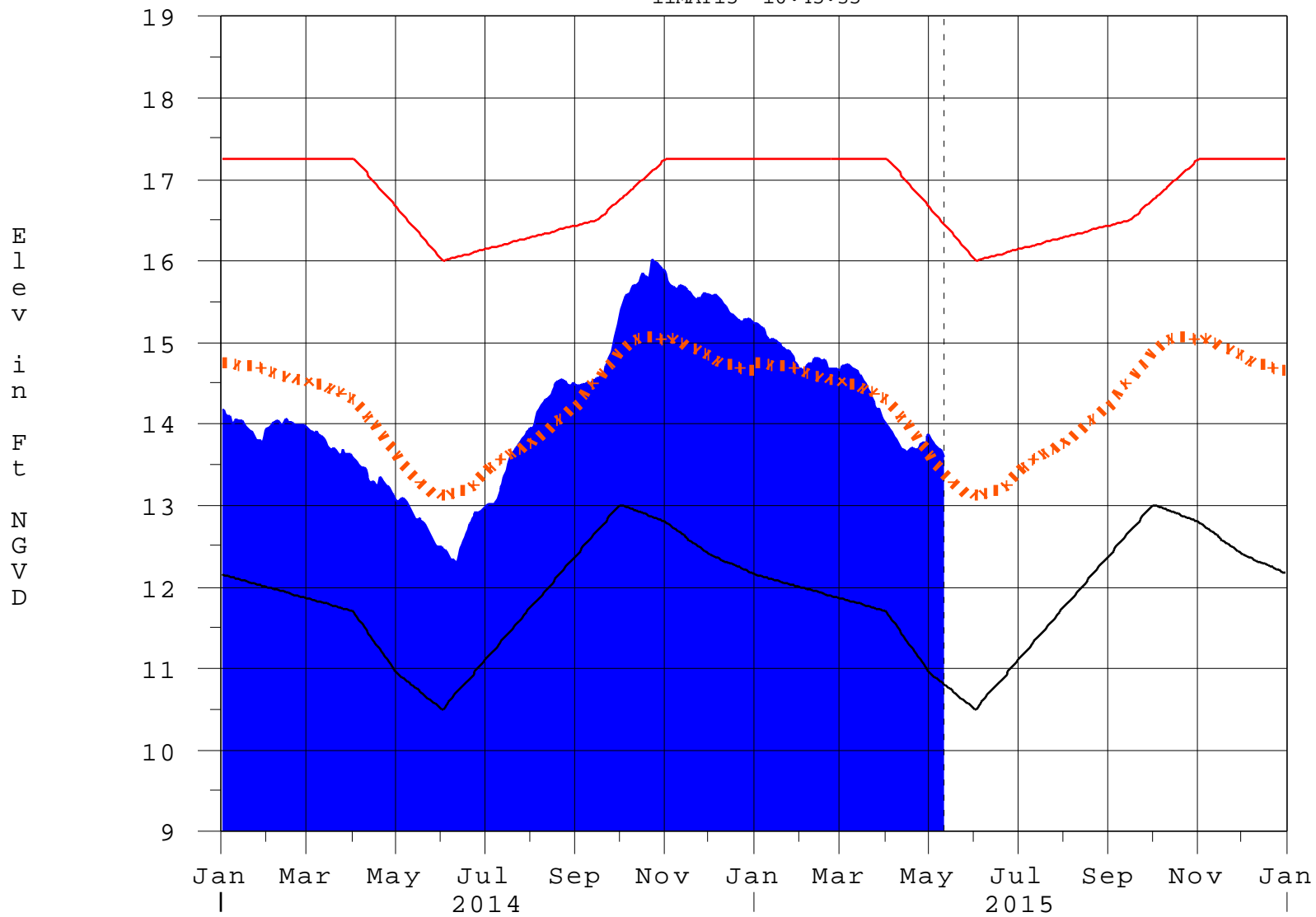
(I) - Flows preceded by "I" signify an instantaneous flow computed from the single value reported for the day

— * 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 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

— Report Generated 11MAY2015 @ 10:39 ** Preliminary Data - Subject to Revision
**

Lake Okeechobee

11MAY15 10:45:35



- 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