

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 5/25/2015 (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	2.36	Very Wet	2.00	Very Wet	3.04	Very Wet
Multi Seasonal (May-Apr)	N/A	N/A	2.89	Wet	3.73	Wet	5.37	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:](#)

-**3676 cfs** 14-day running average for Lake Okeechobee Net Inflow through 5/24/2015. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Dry.

- **1.28** for Palmer Index on 5/23/2015.

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 5/25/2015

Lake Okeechobee Stage: **13.02 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		16.14	
Operational Band	High sub-band	15.61	
	Intermediate sub-band	15.06	
	Low sub-band	13.08	← 13.02
Base Flow sub-band		12.60	
Beneficial Use sub-band		10.59	
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 5/25/2015 (ENSO Neutral Condition):

Water Supply Department Technical Input

Water Supply Outlook:

District wide, Raindar rainfall 0.85 inches for the week ending **5/26/2015**. Lake stage on 5/25/2015 is 13.02 ft, down 0.29 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

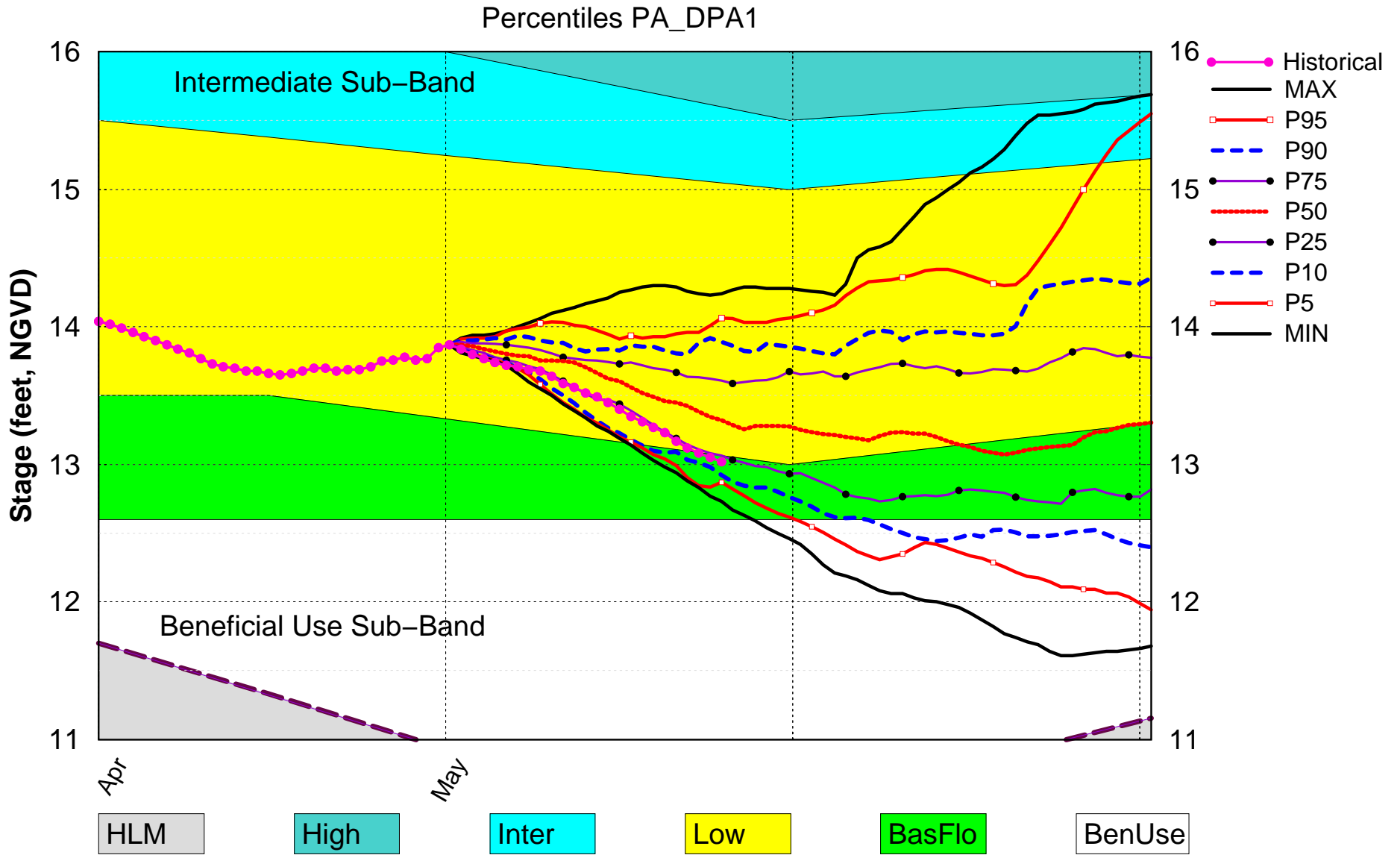
Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Base Flow Sub-Band	M
	Palmer Index for LOK Tributary Conditions	-1.28 (Dry)	M
	CPC Precipitation Outlook	1 month: Above Normal	L
		3 months: Above Normal	L
	LOK Seasonal Net Inflow Forecast	3.04 ft (Normal to Extremely Wet)	L
	AMO warm/El Nino		
	LOK Multi-Seasonal Net Inflow Forecast	5.37 ft (Wet)	L
AMO warm/El Nino			
WCAs	WCA 1: Site 1-7, Site 1-8T, & Site 1-9 Average	Above Line 1 (15.47 ft)	L
	WCA 2A: Site 2-17 HW	Above Line1 (11.54 ft)	L
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (8.88 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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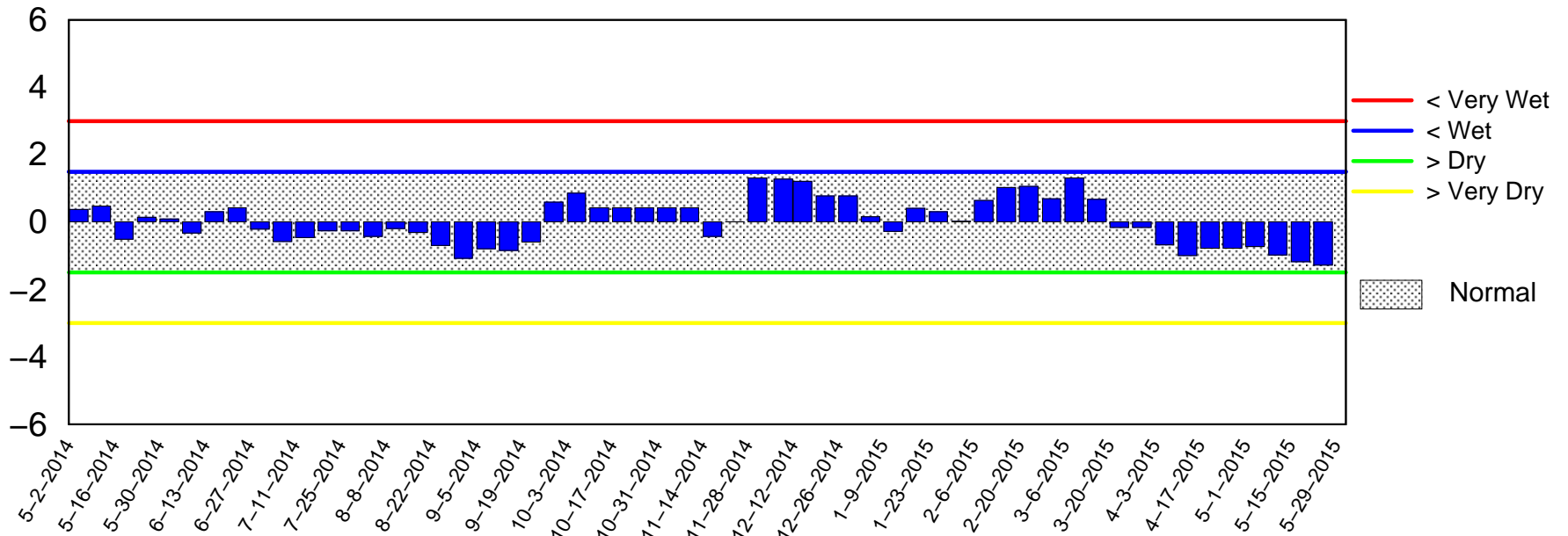
Lake Okeechobee SFWMM May 2015 Dynamic Position Analysis



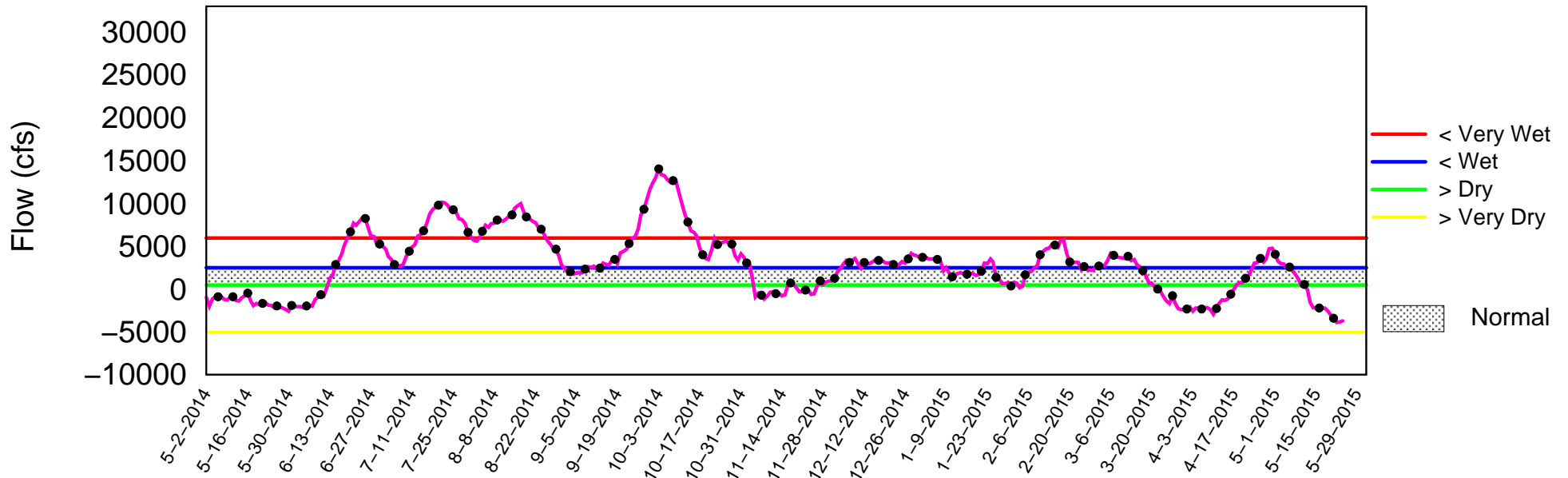
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of May 25 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

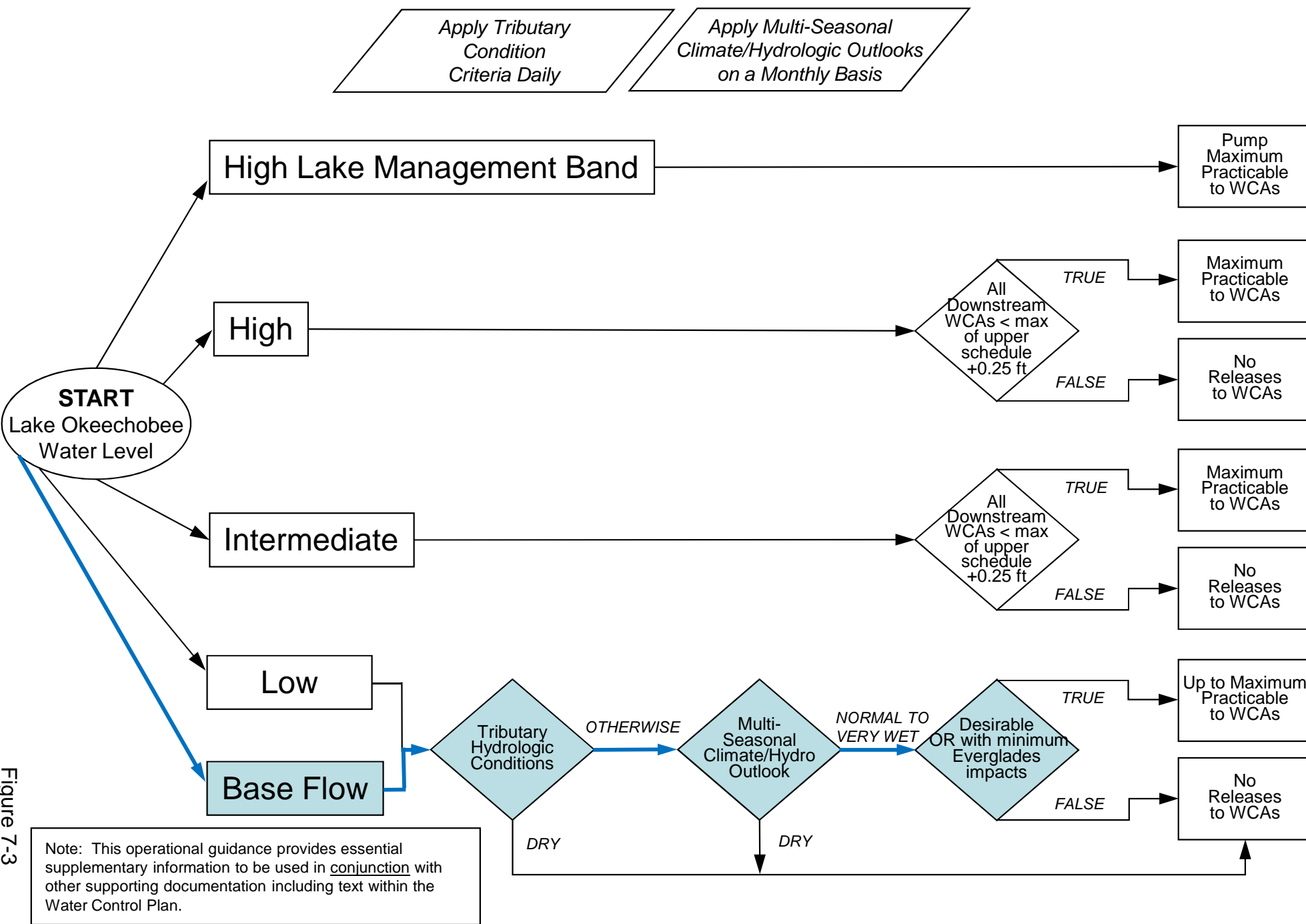


Figure 7-3

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

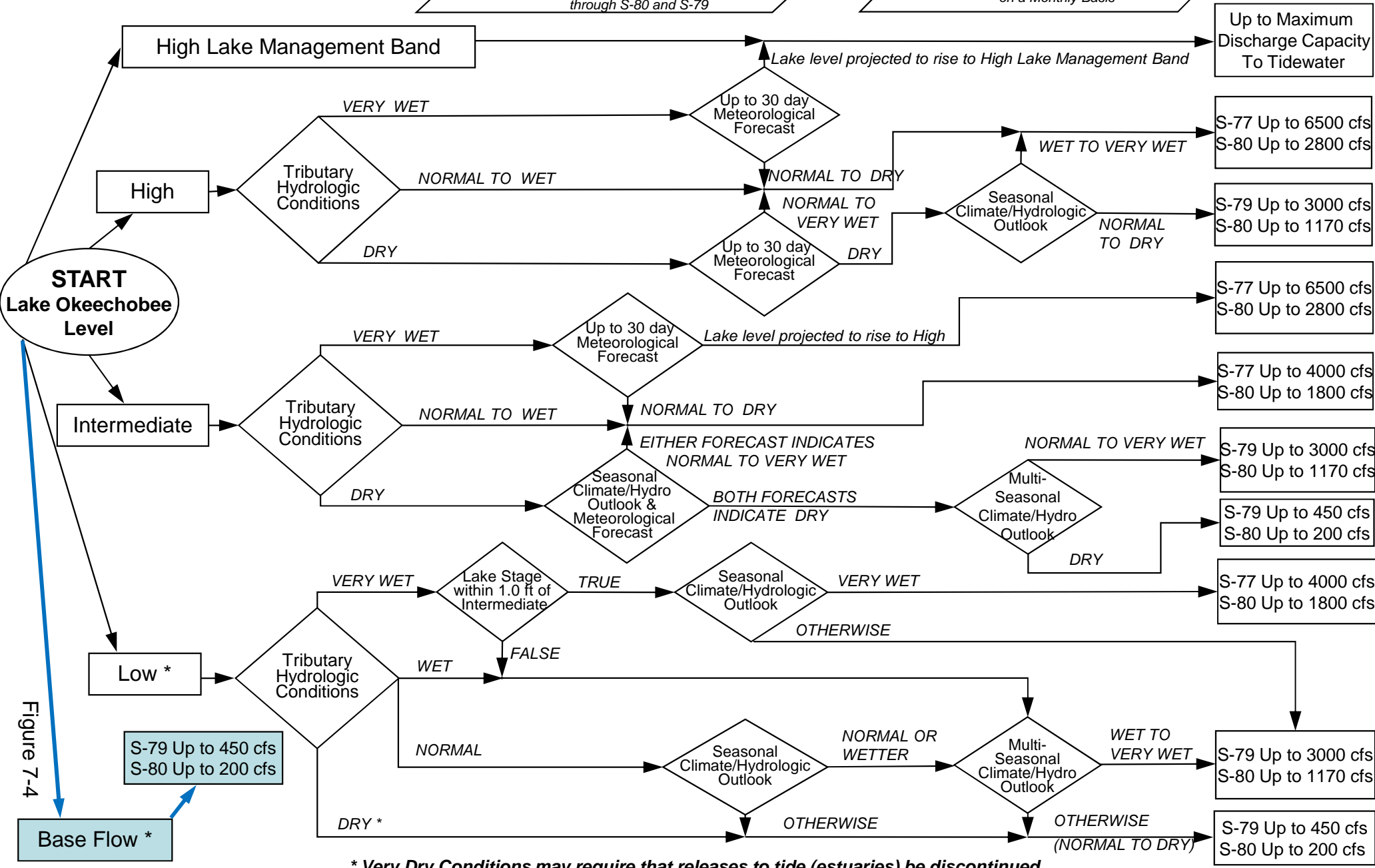
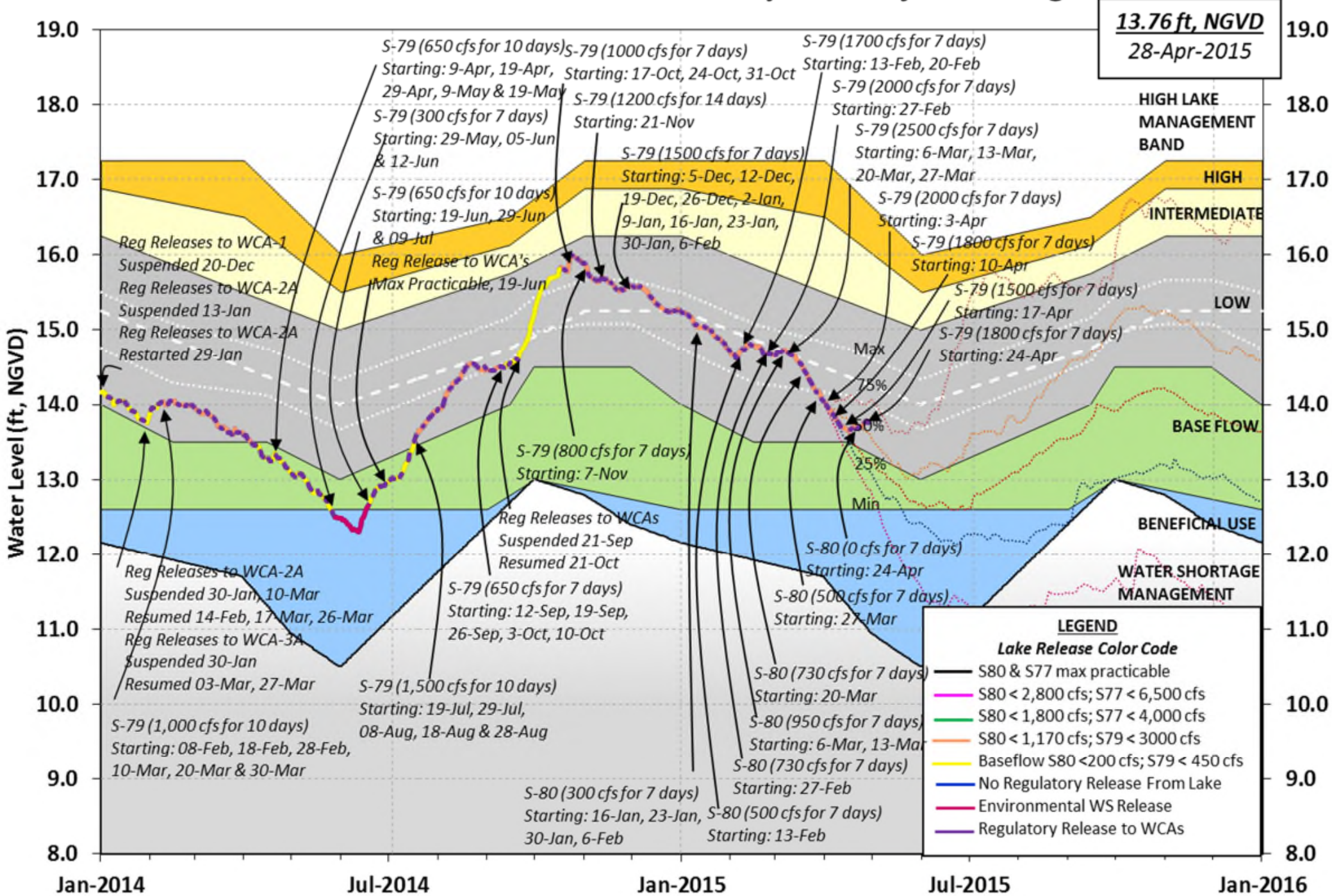


Figure 7-4

* 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 25 MAY 2015

Okeechobee Lake Regulation	Elevation	Last Year	2YRS Ago
	(ft-NGVD)	(ft-NGVD)	(ft-NGVD)
*Okeechobee Lake Elevation	12.99	12.58	13.37 (Official Elv)
Bottom of High Lake Mngmt=	16.14	Top of Water Short Mngmt=	10.59
Currently in Operational Management Band			

Simulated Average LORS2008 [1965-2000]	11.97
Difference from Average LORS2008	1.02

25MAY (1965-2007) Period of Record Average	13.15
Difference from POR Average	-0.16

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ÷ 6.93'
 ++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷ 5.13'
 Bridge Clearance = -NR-'

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

L001	L005	L006	LZ40	S4	S352	S308	S133
12.87	13.17	12.99	12.94	13.08	13.06	-NR-	12.95

*Combination Okeechobee Avg-Daily Lake Average = 12.99
 (*See Note)

Okeechobee Inflows (cfs):

S65E	437	S191	0	Fisheating Cr	10
S154	0	S133 Pumps	0	S135 Pumps	0
S84	297	S127 Pumps	0	S2 Pumps	0
S71	0	S129 Pumps	0	S3 Pumps	0
S72	0	S131 Pumps	0	S4 Pumps	0
C5	-70				
Total Inflows:	674				

Okeechobee Outflows (cfs):

S135 Culverts (Used)	-NR-	S354	947	S77	-NR-
S127 Culverts (USED)	0	S351	961	S77Below	761 (NOT USED)

C5: 13.12 13.24 -70 3.2 3.1 3.2

South Shore

S4 Pumps: 10.42 13.01 0 0 0 0 (cfs)
 S169: 13.05 10.40 0 0.0 0.0 0.0
 S310: 12.99 39
 S3 Pumps: 11.45 13.02 0 0 0 0 (cfs)
 S354: 13.02 11.45 947 2.7 2.9
 S2 Pumps: 11.24 12.90 0 0 0 0 0 (cfs)
 S351: 12.90 11.24 961 2.6 2.6 2.3
 S352: 13.07 10.80 305 0.9 0.9
 C10A: -NR- 13.02 8.5 8.5 8.5 8.5 8.5
 L8 Canal PT 12.86 151

S351 and S352 Temporary Pumps/S354 Spillway

S351: 11.24 12.90 961 -NR--NR--NR--NR--NR--NR--
 S352: 10.80 13.07 305 -NR--NR--NR--NR--
 S354: 11.45 13.02 947 -NR--NR--NR--NR--

Caloosahatchee River (S77, S78, S79)

S47B: 13.61 10.90 0.0 0.0
 S47D: 10.77 10.78 -24 4.8
 S77:
 Spillway and Sector Flow:
 -NR- -NR- -NR- 0.0 3.0 3.0 0.0
 Flow Due to Lockages+: -NR-
 S77 Below USGS Flow Gage 761
 S78:
 Spillway and Sector Flow:
 -NR- -NR- -NR- 1.0 0.0 1.0 1.0
 Flow Due to Lockages+: -NR-
 S79:
 Spillway and Sector Flow:
 -NR- -NR- -NR- 0.5 1.0 1.0 1.0 1.0 1.0 0.5
 0.0
 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 2.5 0.0
 Flow Due to Lockages+: -NR-
 S308 Below USGS Flow Gage 271
 S153: _____ -NR- -NR- 0.0 -NR-
 S80:
 Spillway and Sector Flow:
 -NR- -NR- -NR- 0.0 0.2 0.0 0.0 0.2 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	0.20		
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	0.08		
S129 Pump Station:	-NR-	0.00	0.00		
S131 Pump Station:	-NR-	0.00	0.00		
S77:	0.00	0.07	0.84	-NR-	-NR-
S78:	0.00	0.00	0.04	-NR-	-NR-
S79:	0.04	0.04	0.31	-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:	0.00	0.03	0.31	-NR-	-NR-
S80:	0.08	0.18	0.18	-NR-	-NR-
Okeechobee Average	0.00	0.01	0.11		
(Sites S78, S79 and S80 not included)					

Oke Nexrad Basin Avg	-NR-	0.15	0.55		

Okeechobee Lake Elevations	25 MAY 2015	12.99 Difference from
25MAY15		25MAY15
25MAY15 -1 Day =	24 MAY 2015	13.02 0.03
25MAY15 -2 Days =	23 MAY 2015	13.05 0.06
25MAY15 -3 Days =	22 MAY 2015	13.08 0.09
25MAY15 -4 Days =	21 MAY 2015	13.12 0.13
25MAY15 -5 Days =	20 MAY 2015	13.17 0.18
25MAY15 -6 Days =	19 MAY 2015	13.22 0.23
25MAY15 -7 Days =	18 MAY 2015	13.27 0.28
25MAY15 -30 Days =	25 APR 2015	13.76 0.77
25MAY15 -1 Year =	25 MAY 2014	12.58 -0.41
25MAY15 -2 Year =	25 MAY 2013	13.37 0.38

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
25MAY15	Today =	25 MAY 2015	-3617	TUE	-NR-
25MAY15	-1 Day =	24 MAY 2015	-3460	MON	-2558
25MAY15	-2 Days =	23 MAY 2015	-3648	SUN	-1808
25MAY15	-3 Days =	22 MAY 2015	-3718	SAT	-3385
25MAY15	-4 Days =	21 MAY 2015	-3251	FRI	-4967
25MAY15	-5 Days =	20 MAY 2015	-3119	THU	-4553
25MAY15	-6 Days =	19 MAY 2015	-2606	WED	-5064
25MAY15	-7 Days =	18 MAY 2015	-2241	TUE	-3245
25MAY15	-8 Days =	17 MAY 2015	-2194	MON	-2687
25MAY15	-9 Days =	16 MAY 2015	-2191	SUN	-4508
25MAY15	-10 Days =	15 MAY 2015	-2216	SAT	-4904
25MAY15	-11 Days =	14 MAY 2015	-2131	FRI	-3534
25MAY15	-12 Days =	13 MAY 2015	-1432	THU	-1657
25MAY15	-13 Days =	12 MAY 2015	91	WED	-4150

S65E

		Average Flow over previous 14 days			Avg-Daily Flow
25MAY15	Today=	25 MAY 2015	430	TUE	437
25MAY15	-1 Day =	24 MAY 2015	484	MON	407
25MAY15	-2 Days =	23 MAY 2015	544	SUN	500
25MAY15	-3 Days =	22 MAY 2015	627	SAT	252
25MAY15	-4 Days =	21 MAY 2015	748	FRI	448
25MAY15	-5 Days =	20 MAY 2015	771	THU	489
25MAY15	-6 Days =	19 MAY 2015	937	WED	467
25MAY15	-7 Days =	18 MAY 2015	1120	TUE	541
25MAY15	-8 Days =	17 MAY 2015	1318	MON	201
25MAY15	-9 Days =	16 MAY 2015	1543	SUN	161
25MAY15	-10 Days =	15 MAY 2015	1768	SAT	455
25MAY15	-11 Days =	14 MAY 2015	1981	FRI	456
25MAY15	-12 Days =	13 MAY 2015	2200	THU	490
25MAY15	-13 Days =	12 MAY 2015	2512	WED	721

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)
25 MAY 2015	1275	-NR-	1509	1166	-NR-	-NR-
24 MAY 2015	1536	-NA-	2242	1220	2472	4489
23 MAY 2015	2338	-NA-	3546	2043	3473	5908
22 MAY 2015	2481	-NA-	3338	1960	-NR-	3700
21 MAY 2015	1586	-NA-	2330	856	1691	2038
20 MAY 2015	2176	-NA-	3118	1440	2456	2842
19 MAY 2015	2126	-NA-	3033	1515	2582	2933
18 MAY 2015	2096	3727	3458	1547	2954	3849

17 MAY 2015	2815	4781	4719	2252	4109	5036
16 MAY 2015	3060	5023	4955	2847	4664	5788
15 MAY 2015	2014	-NA-	2913	1935	3400	4595
14 MAY 2015	737	-NA-	1556	629	1743	1954
13 MAY 2015	1056	2274	2109	1179	2611	2697
12 MAY 2015	1009	-NA-	2218	1197	2639	3464

	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 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
18 MAY 2015	79	1949	1081	1624	352
17 MAY 2015	108	2017	956	1642	342
16 MAY 2015	114	2411	1269	1920	396
15 MAY 2015	156	2647	1329	1993	376
14 MAY 2015	179	3026	1216	1997	406
13 MAY 2015	132	2709	1420	1342	400
12 MAY 2015	116	2762	1301	599	395

	S-308	Below S-308	S-80
	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)
25 MAY 2015	-NR-	538	-NR-
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
18 MAY 2015	1637	1817	1824
17 MAY 2015	1738	1951	2276
16 MAY 2015	1048	1809	2220
15 MAY 2015	976	1289	1411
14 MAY 2015	875	1317	1083
13 MAY 2015	1071	1505	1512
12 MAY 2015	1035	1946	1781

*** 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

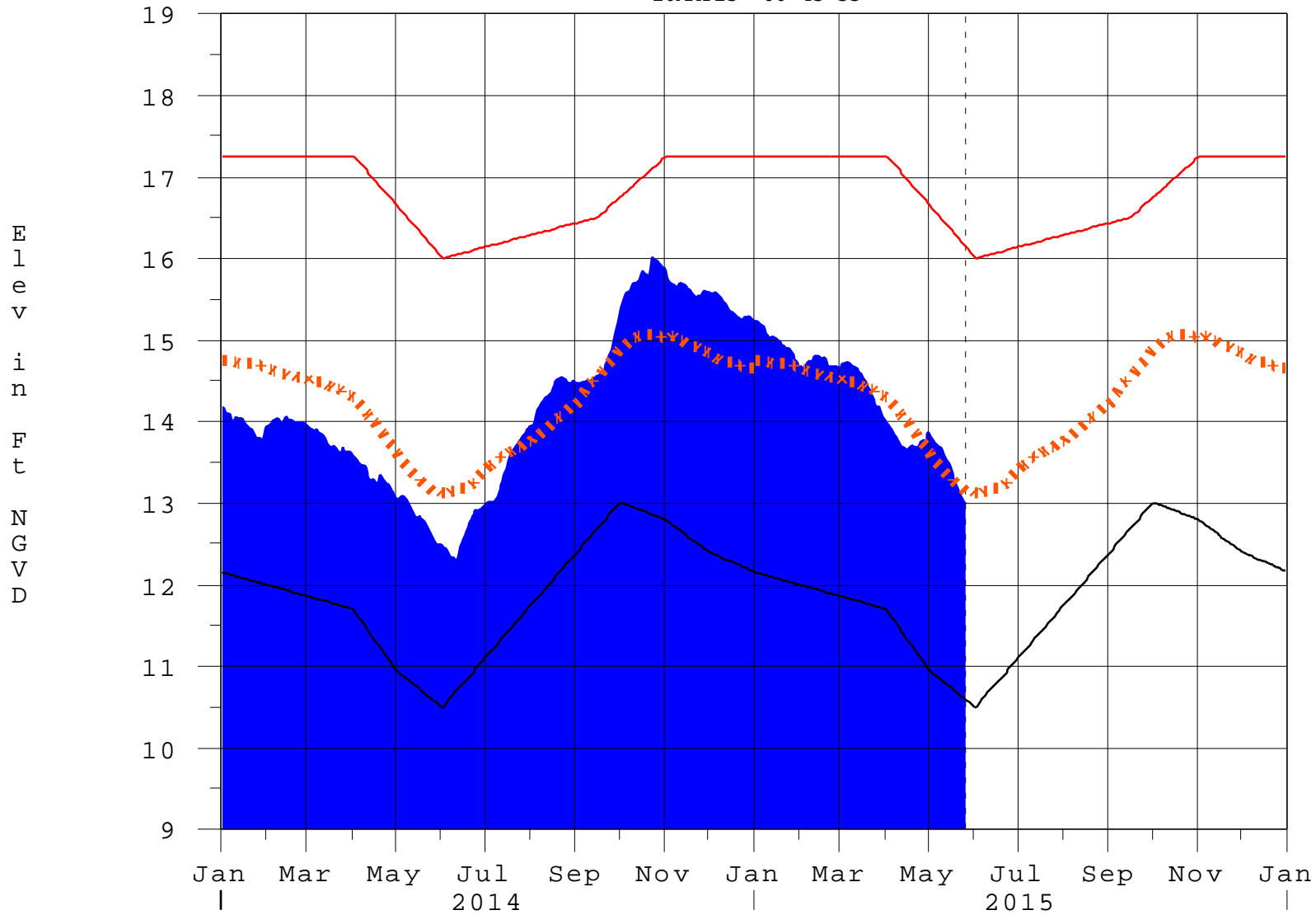
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* On 11 May 1999, Lake Okeechobee Elevation was switched from Instantaneous 2400 value to an average-daily lake average.
On 14 Mar 2001, due to the isolation of various gages within the standard
10 stations, the average of the interior 4 station gages 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 26MAY2015 @ 06:39 ** Preliminary Data - Subject to Revision
**

Lake Okeechobee

26MAY15 06:45:33



- 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