

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 10/12/2015 (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 cold 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 (Oct-Mar)	N/A	N/A	1.21	Normal	2.13	Very Wet	2.78	Very Wet
Multi Seasonal (Nov-Oct)	N/A	N/A	3.10	Wet	3.99	Wet	5.96	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:](#)

5008 cfs 14-day running average for Lake Okeechobee Net Inflow through 10/12/2015. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Wet.

0.95 for Palmer Index on 10/11/2015.

According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Normal.

The wetter of the two conditions above is **Wet**.

[LORS2008 Classification Tables:](#)

Lake Okeechobee Stage on 10/12/2015

Lake Okeechobee Stage: **14.82 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		16.91	
Operational Band	High sub-band	16.54	
	Intermediate sub-band	16.03	
	Low sub-band	14.50	← 14.82
Base Flow sub-band		12.96	
Beneficial Use sub-band		12.93	
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 10/12/2015 (ENSO Neutral Condition):

Water Supply Department Technical Input

Water Supply Outlook:

District wide, Raindar rainfall 0.64 inches for the week ending 10/12/2015. Lake stage on 10/12/2015 is 14.82 ft, up 0.04 ft from last week.

The updated October 2015 SFWMM Dynamic Position Analysis [percentile graph](#) and [tracking chart](#) for Lake Okeechobee show that the lake stage is in the low Operational Sub-Band.

The LORS2008 tributary [indices](#) are classified as **Wet**. The PDSI indicates normal condition and the LONIN is Wet. The classification is based on the wetter of the two.

Water Supply Risk Evaluation

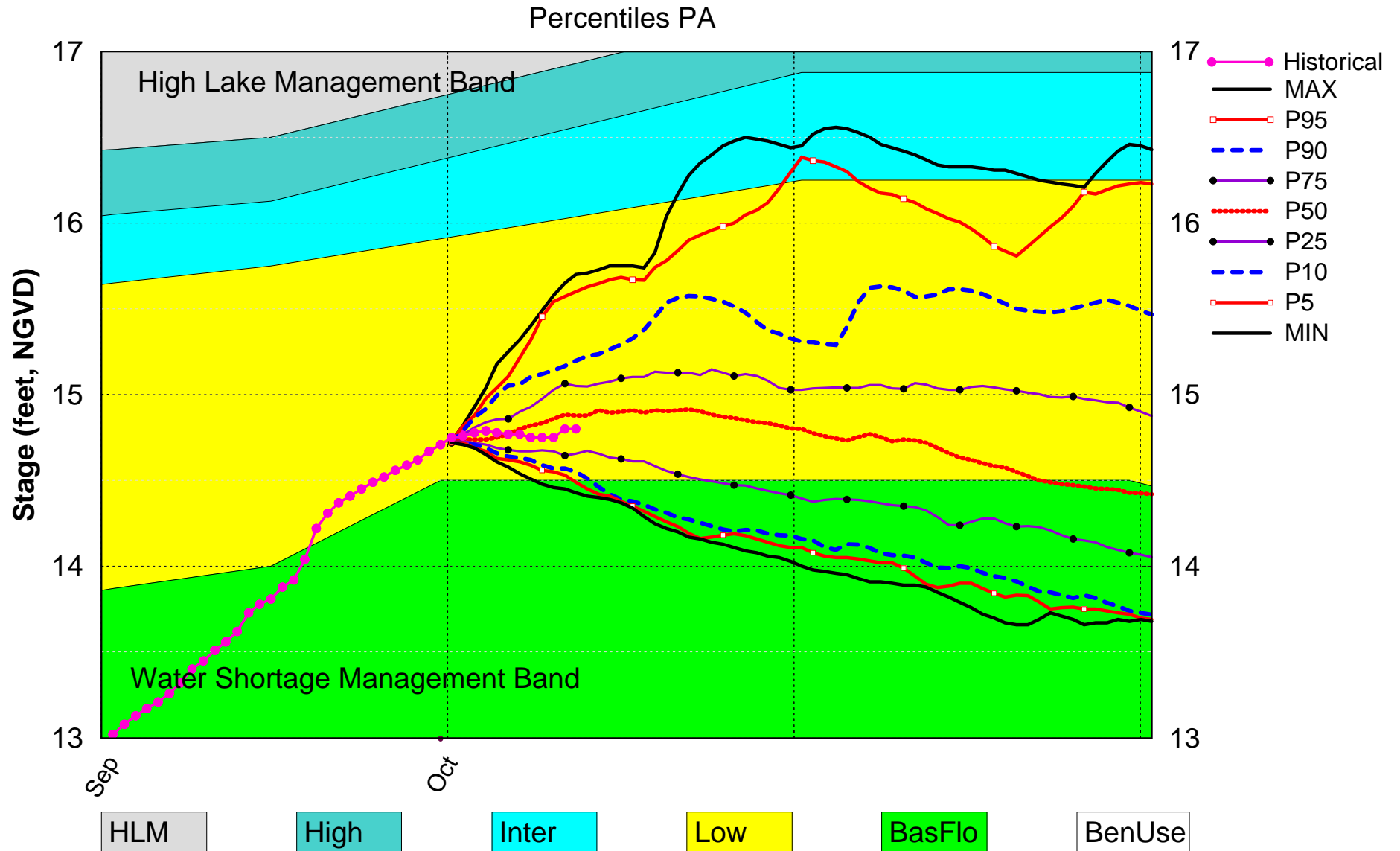
Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Low Sub-Band	L
	Palmer Index for LOK Tributary Conditions	0.95 (Normal)	L
	CPC Precipitation Outlook	1 month: Normal	L
		3 months: Above Normal	L
	LOK Seasonal Net Inflow Forecast	2.13 ft (Normal to Extremely Wet)	L
	AMO warm/El Nino		
	LOK Multi-Seasonal Net Inflow Forecast	3.99 ft (Wet)	L
AMO warm/El Nino			
WCAs	WCA 1: Site 1-7,1-8T, & 1-9	(16.95 ft)	L
	WCA 2A: Site 2-17 HW	(13.13 ft)	L
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	(10.32 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	50% or more of USGS wells are within the lowest 10-30% of past water elevations and not more than 25% are in the lowest 10% of past elevations	M

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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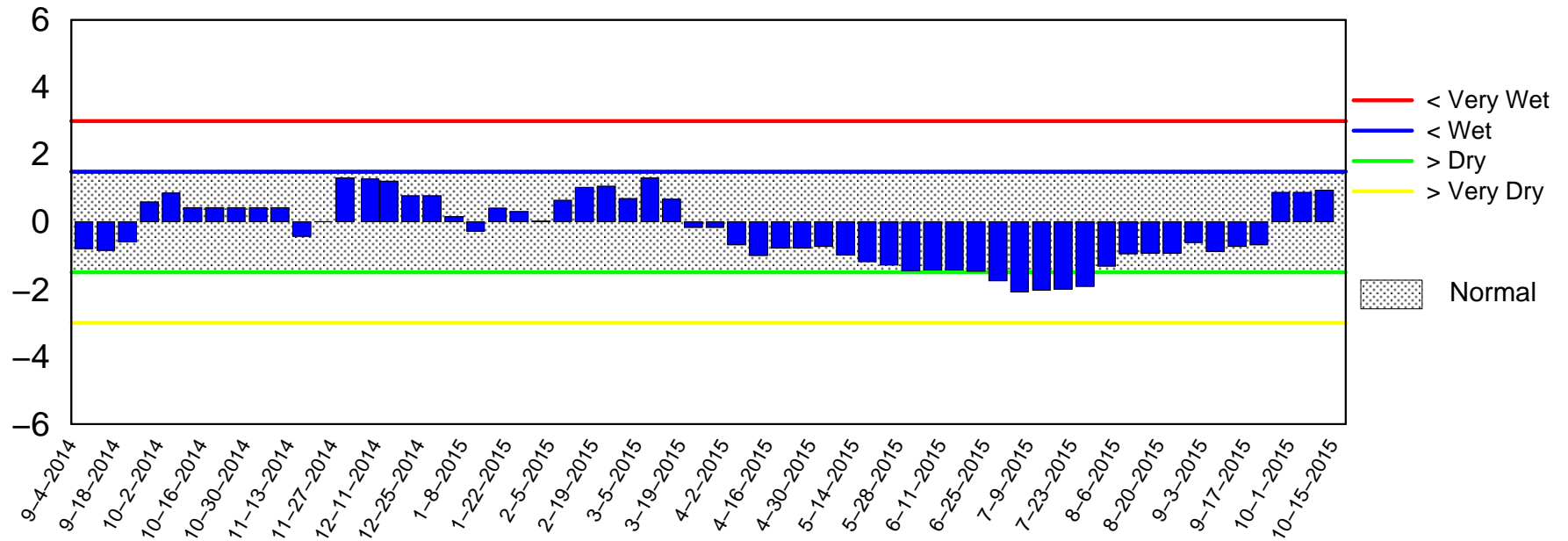
Lake Okeechobee SFWMM Oct 2015 Dynamic Position Analysis



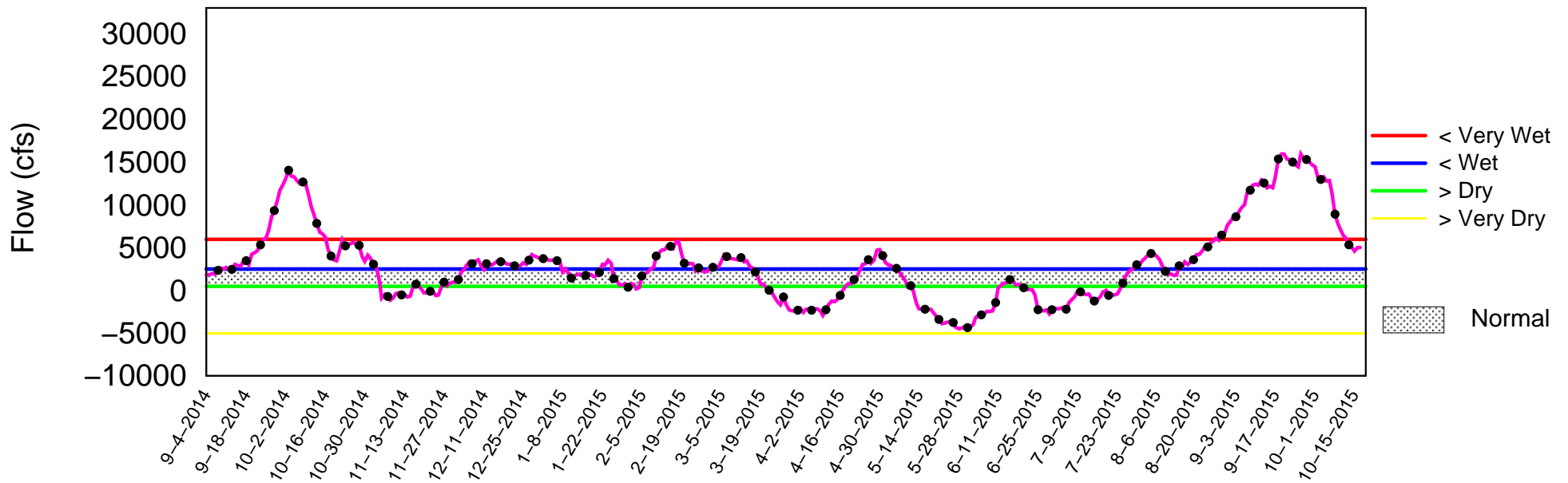
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of October 5 2015

Palmer Index



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



Mon Oct 12 16:00:01 2015

2008 LORS

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

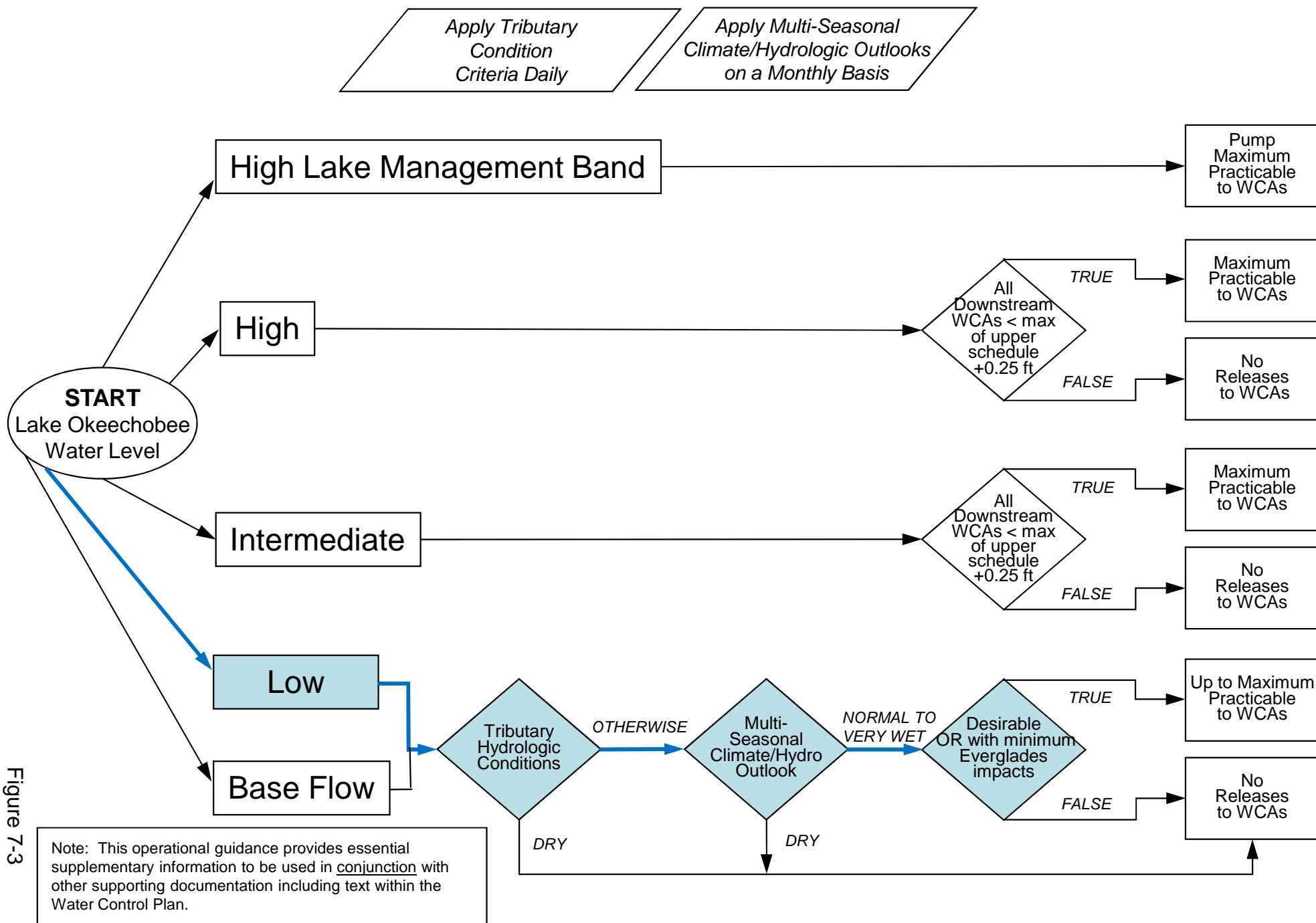


Figure 7-3

2008 LORS FORECAST

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

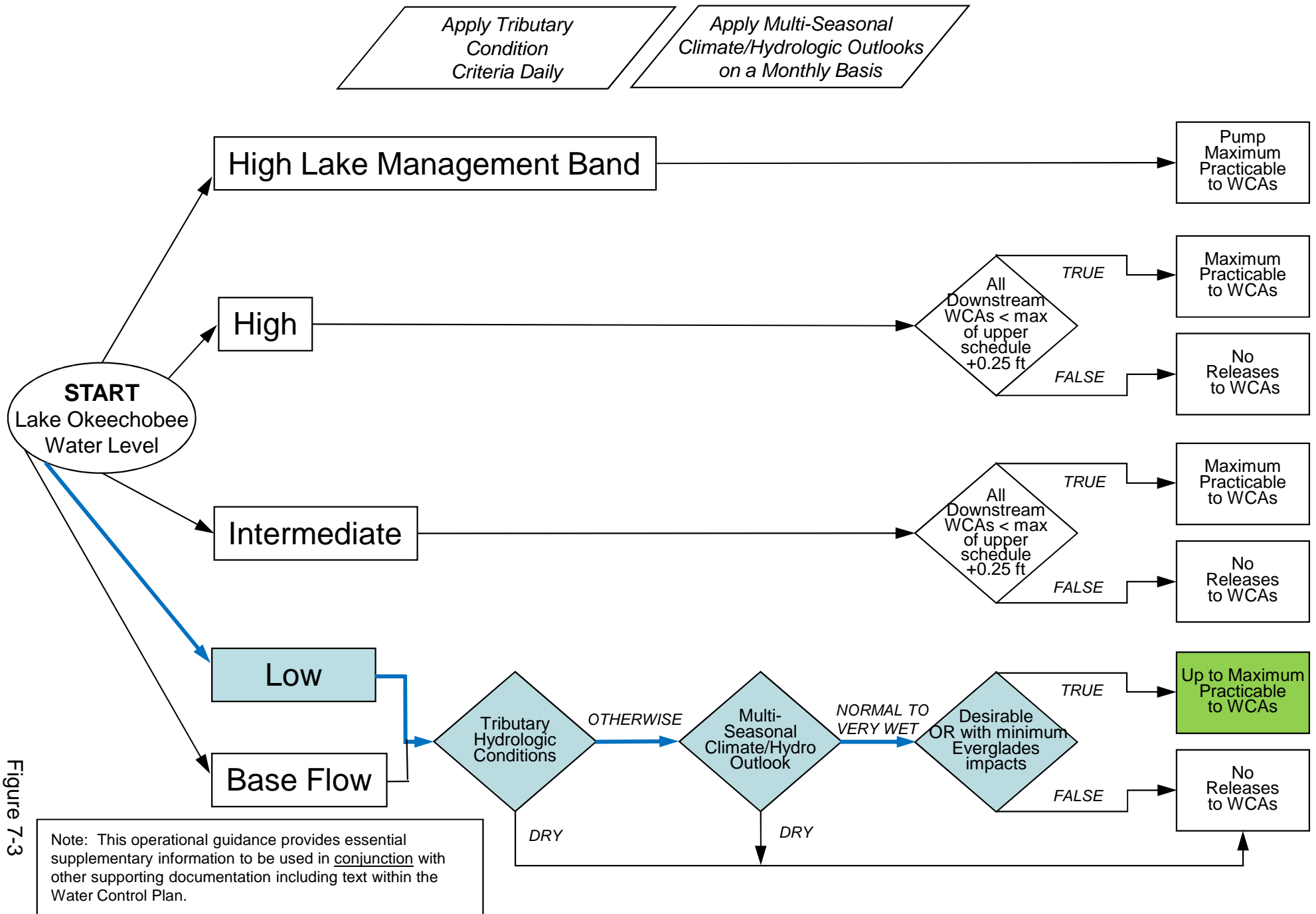


Figure 7-3

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

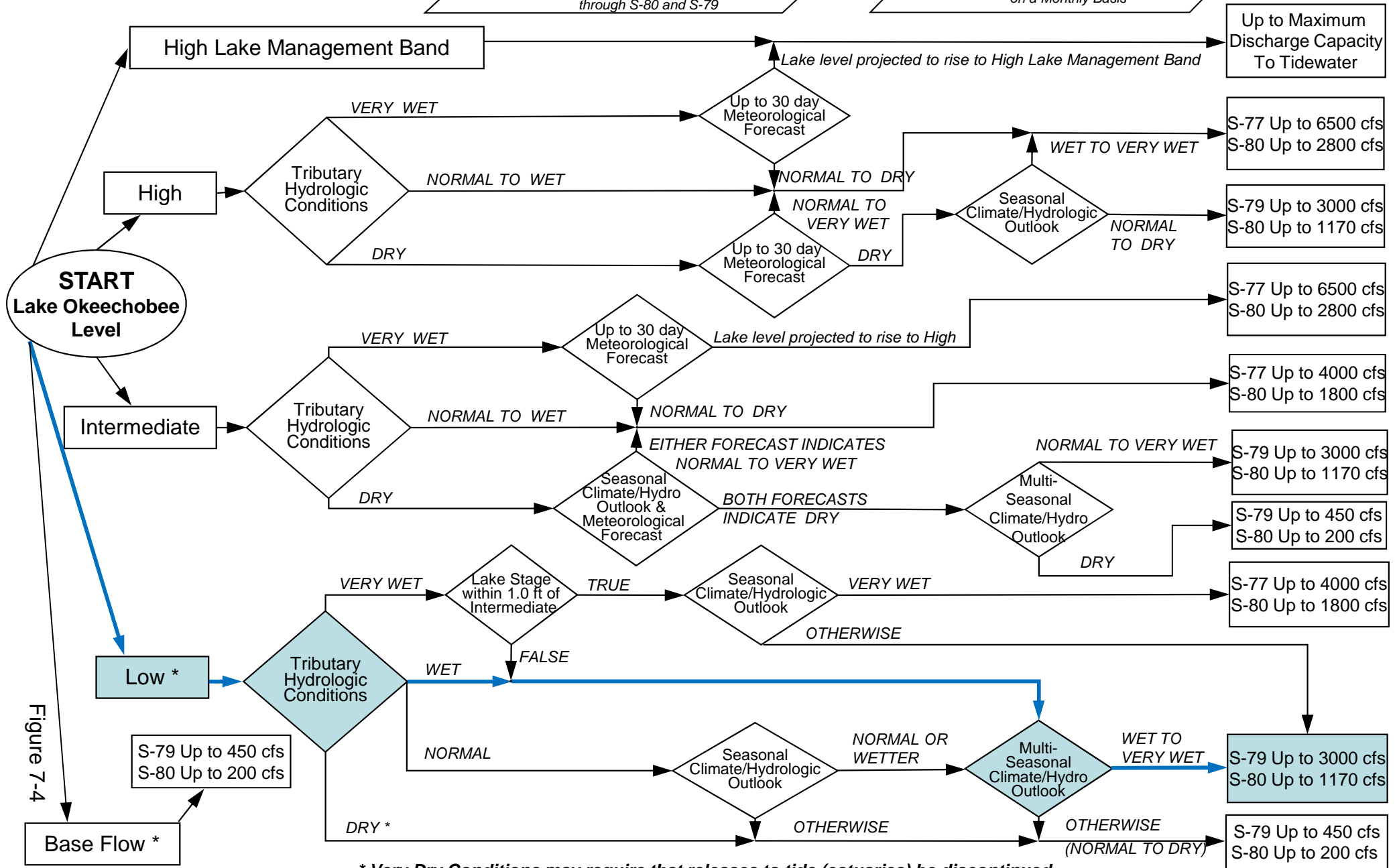


Figure 7-4

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

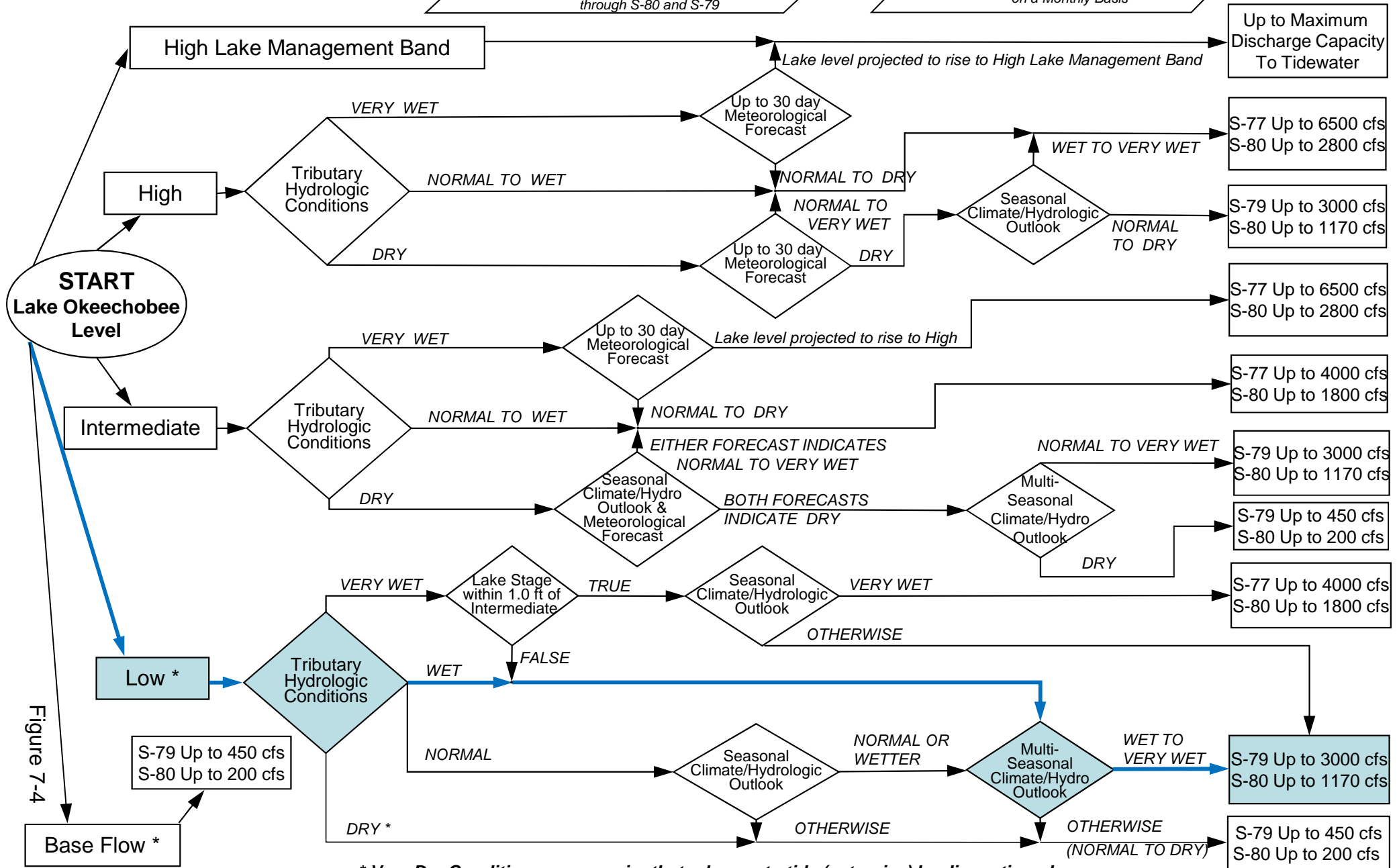
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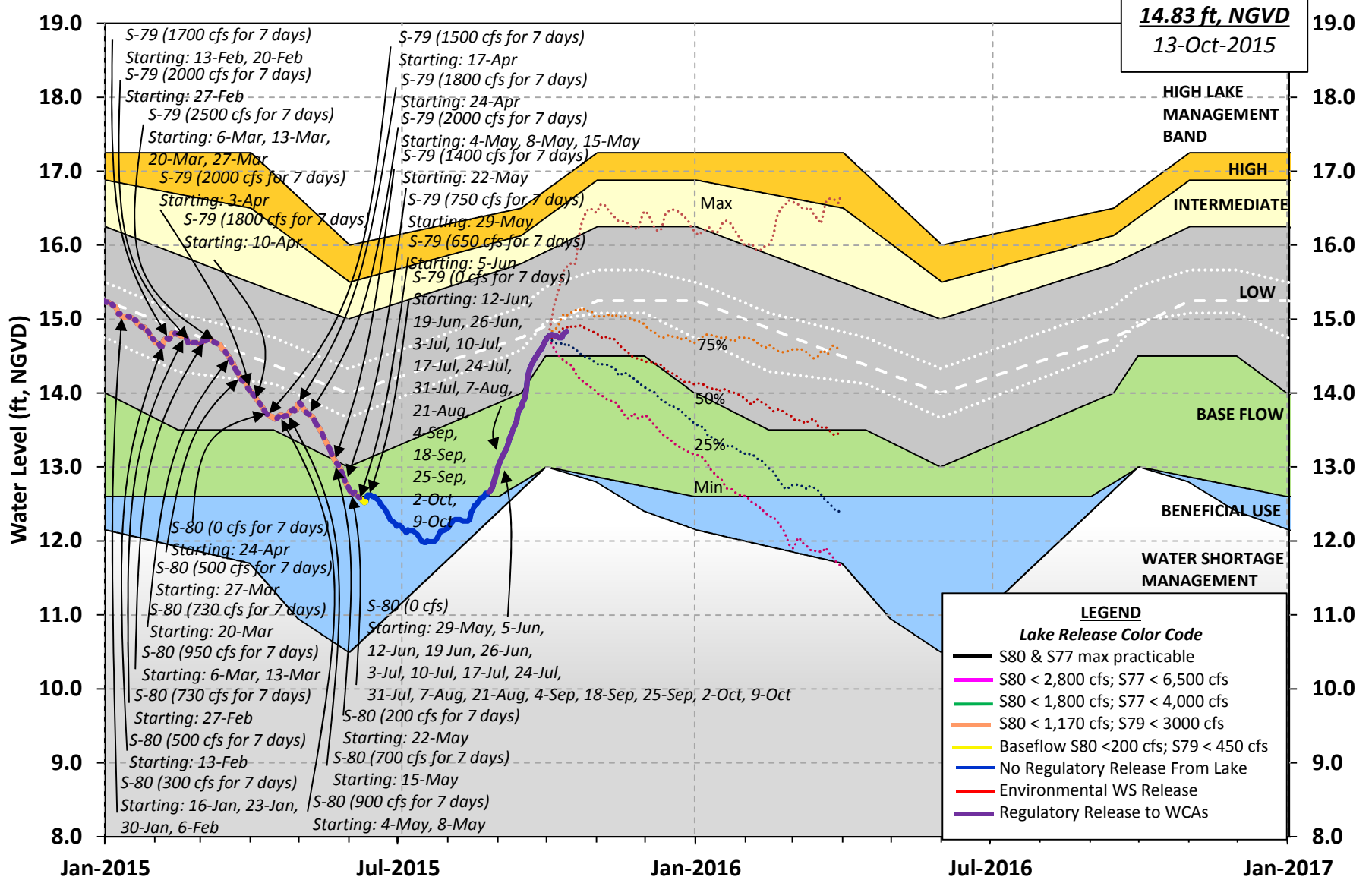
Apply Meteorological Forecasts on a Weekly Basis; apply Seasonal and Multi-Seasonal Climate/Hydrologic Outlooks on a Monthly Basis



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Figure 7-4

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 11 OCT 2015

Okeechobee Lake Regulation	Elevation	Last Year	2YRS Ago
	(ft-NGVD)	(ft-NGVD)	(ft-NGVD)
*Okeechobee Lake Elevation	14.82	15.70	15.75 (Official Elv)
Bottom of High Lake Mngmt=	16.91	Top of Water Short Mngmt=	12.93
Currently in Operational Management Band			

Simulated Average LORS2008 [1965-2000]	13.94
Difference from Average LORS2008	0.88

11OCT (1965-2007) Period of Record Average	15.02
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 ÷ 8.76'
 ++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷ 6.96'
 Bridge Clearance = 49.42'

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

L001	L005	L006	LZ40	S4	S352	S308	S133
14.68	14.83	14.93	14.80	14.87	14.99	14.75	14.72

*Combination Okeechobee Avg-Daily Lake Average = 14.82
 (*See Note)

Okeechobee Inflows (cfs):

S65E	2499	C5	0	Fisheating Cr	647
S154	33	S191	48	S135 Pumps	186
S84	284	S133 Pumps	170	S2 Pumps	0
S84X	810	S127 Pumps	0	S3 Pumps	0
S71	177	S129 Pumps	84	S4 Pumps	0
S72	0	S131 Pumps	68		
Total Inflows:	5006				

Okeechobee Outflows (cfs):

S135 Culverts (Used)	-NR-	S354	473	S77	6
S127 Culverts (USED)	0	S351	355	S77Below	-76 (NOT USED)

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	0.07		
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	0.04		
S129 Pump Station:	-NR-	0.00	0.07		
S131 Pump Station:	-NR-	0.00	0.10		
S77:	0.00	0.20	0.27	224	1
S78:	0.00	0.28	0.48	292	2
S79:	0.00	0.01	0.20	270	0
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	0.03		
S308:	0.00	0.12	0.18	88	0
S80:	-NR-	0.00	0.74	-NR-	-NR-
Okeechobee Average	0.00	0.02	0.06		
(Sites S78, S79 and S80 not included)					

Oke Nexrad Basin Avg	0.08	0.84	0.88		

Okeechobee Lake Elevations	11 OCT 2015	14.82 Difference from
11OCT15		
11OCT15 -1 Day =	10 OCT 2015	14.80 -0.02
11OCT15 -2 Days =	09 OCT 2015	14.75 -0.07
11OCT15 -3 Days =	08 OCT 2015	14.75 -0.07
11OCT15 -4 Days =	07 OCT 2015	14.75 -0.07
11OCT15 -5 Days =	06 OCT 2015	14.77 -0.05
11OCT15 -6 Days =	05 OCT 2015	14.77 -0.05
11OCT15 -7 Days =	04 OCT 2015	14.78 -0.04
11OCT15 -30 Days =	11 SEP 2015	13.62 -1.20
11OCT15 -1 Year =	11 OCT 2014	15.70 0.88
11OCT15 -2 Year =	11 OCT 2013	15.75 0.93

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
11OCT15	Today =	11 OCT 2015	5003	MON	6214
11OCT15	-1 Day =	10 OCT 2015	5027	SUN	12623
11OCT15	-2 Days =	09 OCT 2015	4598	SAT	2803
11OCT15	-3 Days =	08 OCT 2015	5035	FRI	3113
11OCT15	-4 Days =	07 OCT 2015	5183	THU	-1733
11OCT15	-5 Days =	06 OCT 2015	6005	WED	2826
11OCT15	-6 Days =	05 OCT 2015	6270	TUE	711
11OCT15	-7 Days =	04 OCT 2015	6932	MON	788
11OCT15	-8 Days =	03 OCT 2015	7937	SUN	5278
11OCT15	-9 Days =	02 OCT 2015	9091	SAT	5999
11OCT15	-10 Days =	01 OCT 2015	11809	FRI	2711
11OCT15	-11 Days =	30 SEP 2015	13709	THU	9074
11OCT15	-12 Days =	29 SEP 2015	13671	WED	8878
11OCT15	-13 Days =	28 SEP 2015	14180	TUE	10757

S65E

		Average Flow over previous 14 days			Avg-Daily Flow
11OCT15	Today=	11 OCT 2015	3556	MON	2499
11OCT15	-1 Day =	10 OCT 2015	3717	SUN	2985
11OCT15	-2 Days =	09 OCT 2015	3859	SAT	2652
11OCT15	-3 Days =	08 OCT 2015	4019	FRI	3130
11OCT15	-4 Days =	07 OCT 2015	4166	THU	3255
11OCT15	-5 Days =	06 OCT 2015	4332	WED	3315
11OCT15	-6 Days =	05 OCT 2015	4536	TUE	3341
11OCT15	-7 Days =	04 OCT 2015	4754	MON	3454
11OCT15	-8 Days =	03 OCT 2015	4987	SUN	3737
11OCT15	-9 Days =	02 OCT 2015	5203	SAT	3769
11OCT15	-10 Days =	01 OCT 2015	5398	FRI	4032
11OCT15	-11 Days =	30 SEP 2015	5563	THU	4442
11OCT15	-12 Days =	29 SEP 2015	5692	WED	4578
11OCT15	-13 Days =	28 SEP 2015	5812	TUE	4598

Lake Okeechobee Outlets Last 14 Days

DATE	S-77	S-77	Below S-77	S-78	S-78	S-79
	Discharge (0700-2100) (AC-FT)	Discharge (ALL DAY) (AC-FT)	Discharge (ALL-DAY) (AC-FT)	Discharge (0700-2100) (AC-FT)	Discharge (ALL DAY) (AC-FT)	Discharge (ALL DAY) (AC-FT)
11 OCT 2015	0	11	-150	172	312	1512
10 OCT 2015	0	11	-157	162	210	1143
09 OCT 2015	0	8	-157	0	23	1417
08 OCT 2015	0	8	-493	0	14	1166
07 OCT 2015	0	11	-194	136	261	1441
06 OCT 2015	0	7	-94	206	356	2106
05 OCT 2015	0	4	-74	72	124	2306
04 OCT 2015	44	-NA-	-7	59	108	1339

03 OCT 2015	0	7	-147	82	180	3311
02 OCT 2015	0	7	-217	173	307	2148
01 OCT 2015	0	16	-241	216	536	4351
30 SEP 2015	0	6	78	288	908	4306
29 SEP 2015	0	5	48	784	1528	4765
28 SEP 2015	0	5	435	658	1626	4743

	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)
11 OCT 2015	-NR-	704	1525	938	558
10 OCT 2015	-NR-	918	1452	1134	532
09 OCT 2015	-NR-	2161	1346	1519	531
08 OCT 2015	12	2459	1533	1676	506
07 OCT 2015	3	1674	1529	1291	469
06 OCT 2015	22	1680	1580	1894	449
05 OCT 2015	14	1951	1489	1713	456
04 OCT 2015	38	2015	1602	1588	513
03 OCT 2015	32	2304	1644	1781	538
02 OCT 2015	16	1261	835	924	479
01 OCT 2015	-29	448	254	0	475
30 SEP 2015	-56	426	333	0	438
29 SEP 2015	-63	295	103	0	411
28 SEP 2015	-185	0	0	0	336

	S-308	Below S-308	S-80
	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)
11 OCT 2015	3	-25	-NR-
10 OCT 2015	2	-214	-NR-
09 OCT 2015	1	-148	-NR-
08 OCT 2015	2	135	231
07 OCT 2015	3	164	531
06 OCT 2015	1	212	841
05 OCT 2015	1	77	308
04 OCT 2015	4	-33	398
03 OCT 2015	1	-23	469
02 OCT 2015	2	27	461
01 OCT 2015	2	90	702
30 SEP 2015	1	-213	1026
29 SEP 2015	0	-334	2223
28 SEP 2015	-0	-208	1825

*** 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

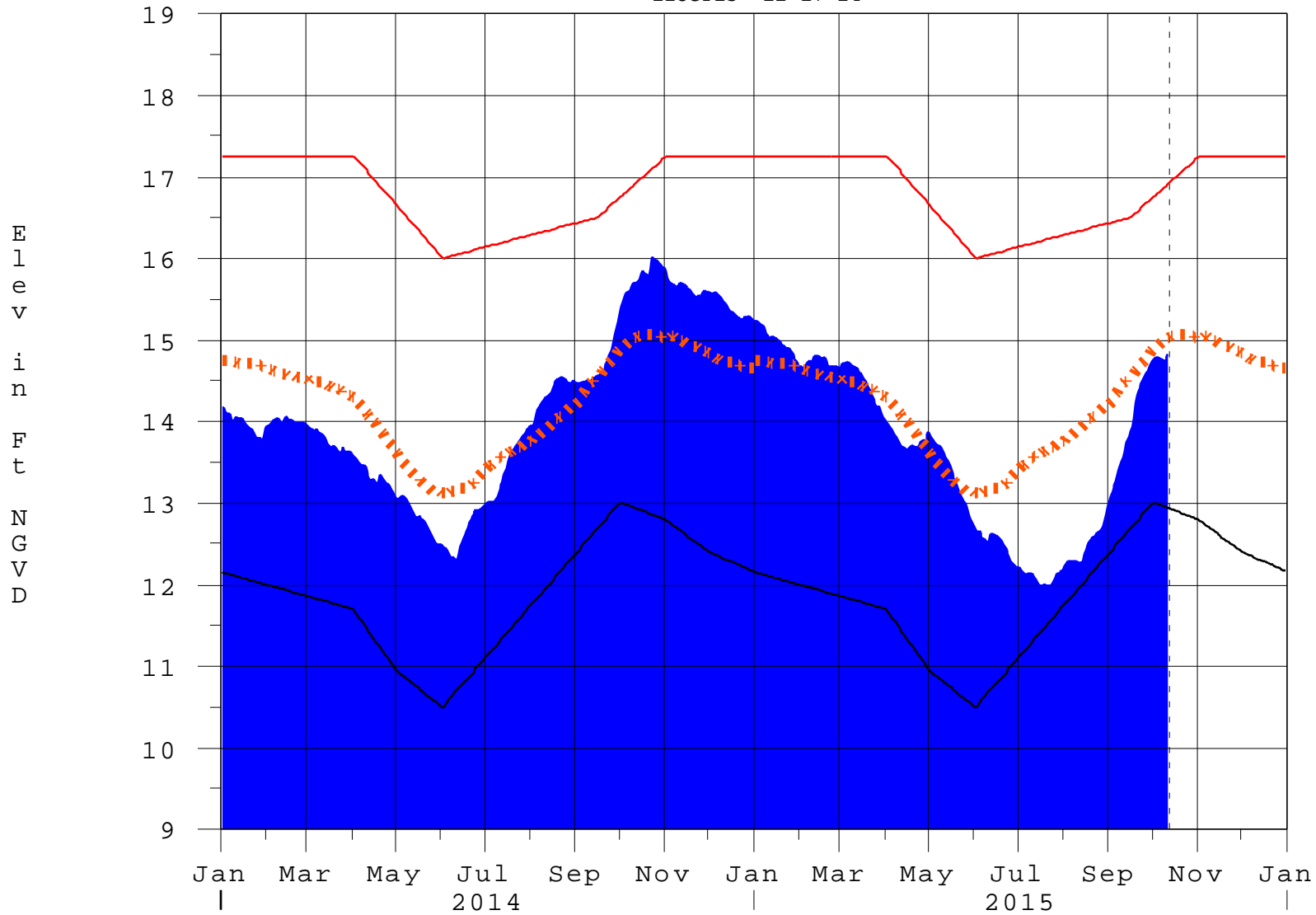
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* On 11 May 1999, Lake Okeechobee Elevation was switched from Instantaneous 2400 value to an average-daily lake average.
On 14 Mar 2001, due to the isolation of various gages within the standard
10 stations, the average of the interior 4 station gages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

—
Report Generated 12OCT2015 @ 11:19 ** Preliminary Data - Subject to Revision
**

Lake Okeechobee

12OCT15 11:17:24



- 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