

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 10/19/2015 (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	1.37	Normal	1.84	Wet	2.44	Very Wet
Multi Seasonal (Nov-Oct)	N/A	N/A	3.52	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:](#)

1692 cfs 14-day running average for Lake Okeechobee Net Inflow through 10/19/2015. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Normal.

0.95 for Palmer Index on 10/18/2015.

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 10/19/2015

Lake Okeechobee Stage: **14.74 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		17.03	
Operational Band	High sub-band	16.66	
	Intermediate sub-band	16.10	
	Low sub-band	14.50	← 14.74
Base Flow sub-band		12.93	
Beneficial Use sub-band		12.89	
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 10/19/2015 (ENSO Neutral Condition):

Water Supply Department Technical Input

Water Supply Outlook:

District wide, Raindar rainfall 0.36 inches for the week ending 10/20/2015. Lake stage on 10/29/2015 is 14.74 ft, down 0.08 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 **Normal**. The PDSI indicates normal condition and the LONIN is Normal. The classification is based on the wetter of the two.

Water Supply Risk Evaluation

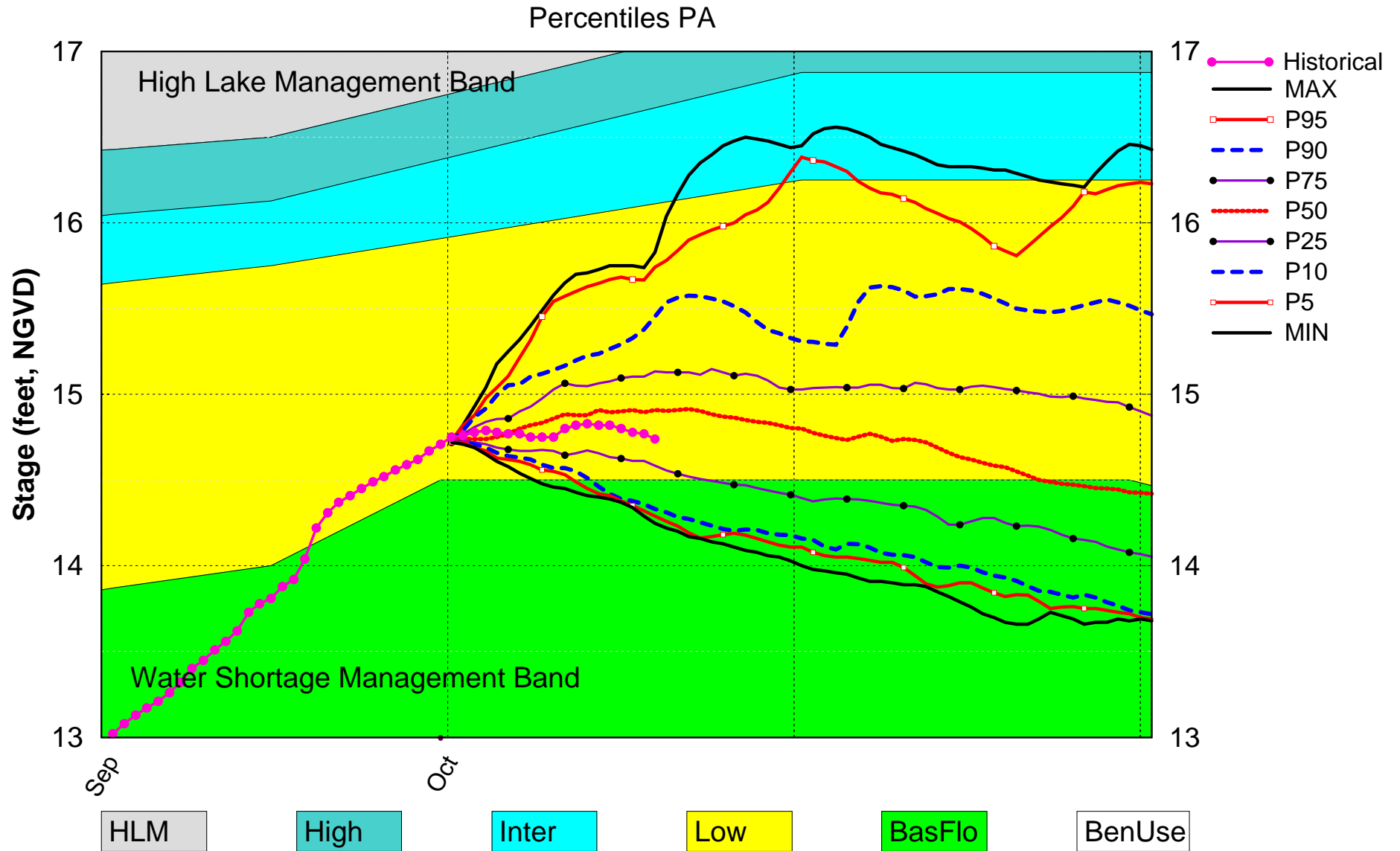
Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Base Flow Sub-Band	M
	Palmer Index for LOK Tributary Conditions	0.95 (Normal)	L
	CPC Precipitation Outlook	1 month: Above Normal	L
		3 months: Above Normal	L
	LOK Seasonal Net Inflow Forecast	1.84 ft (Normal 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	(17.04 ft)	L
	WCA 2A: Site 2-17 HW	(12.85 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	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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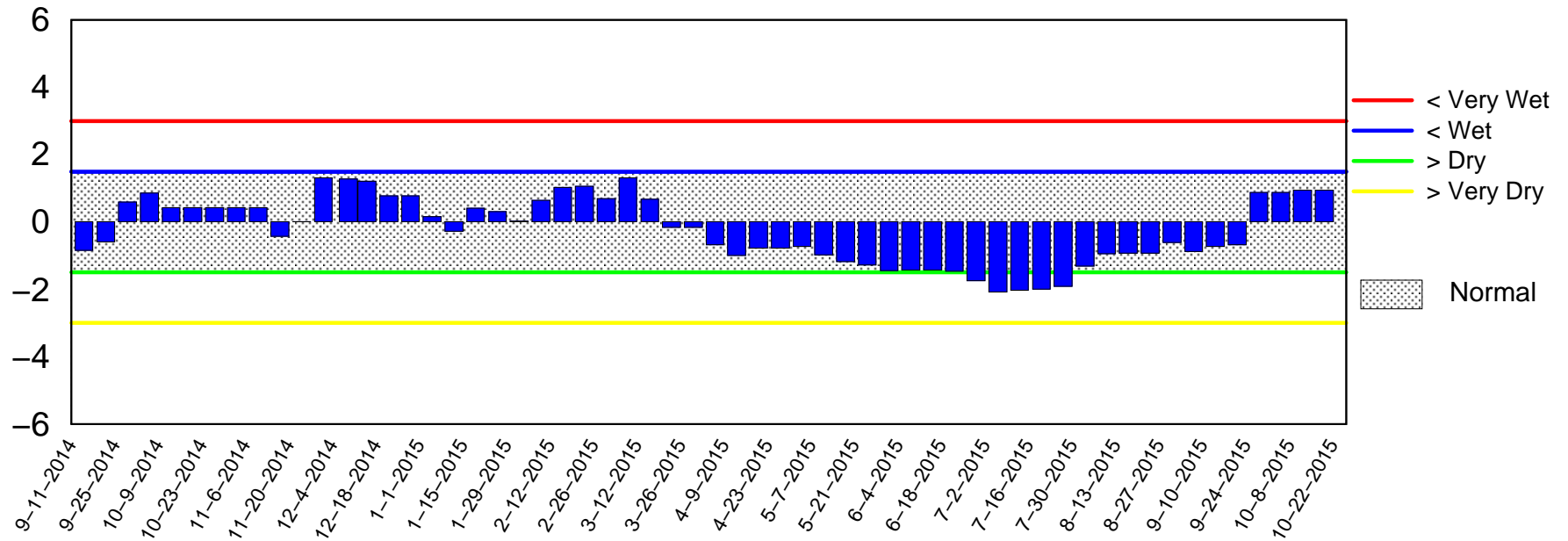
Lake Okeechobee SFWMM Oct 2015 Dynamic Position Analysis



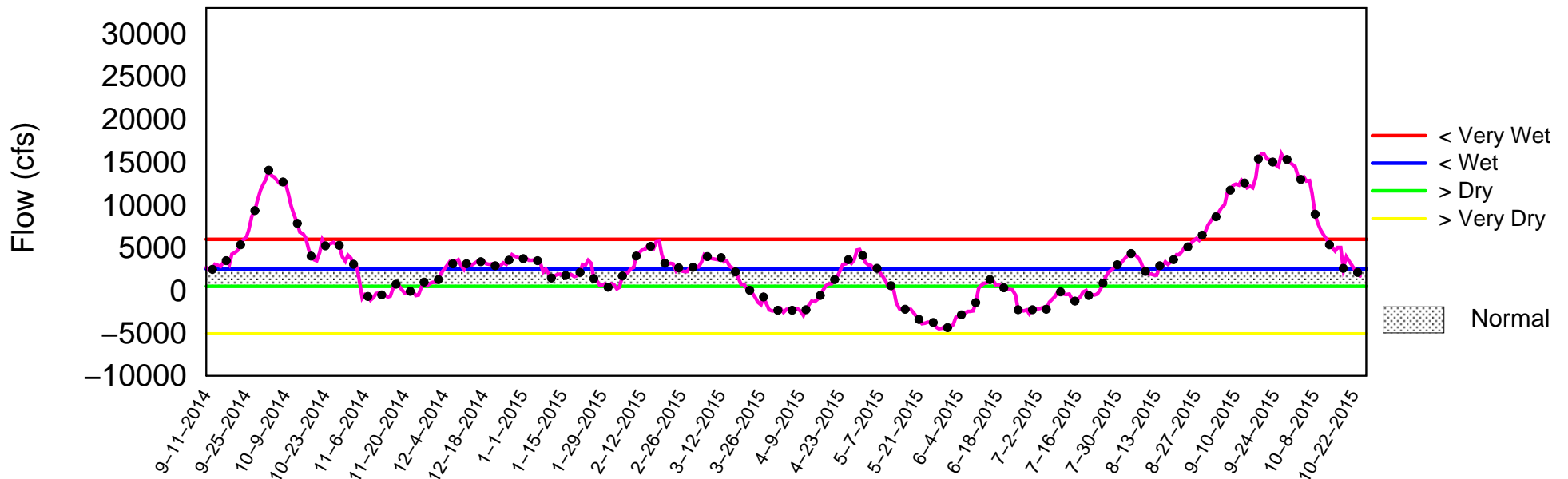
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of October 19 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

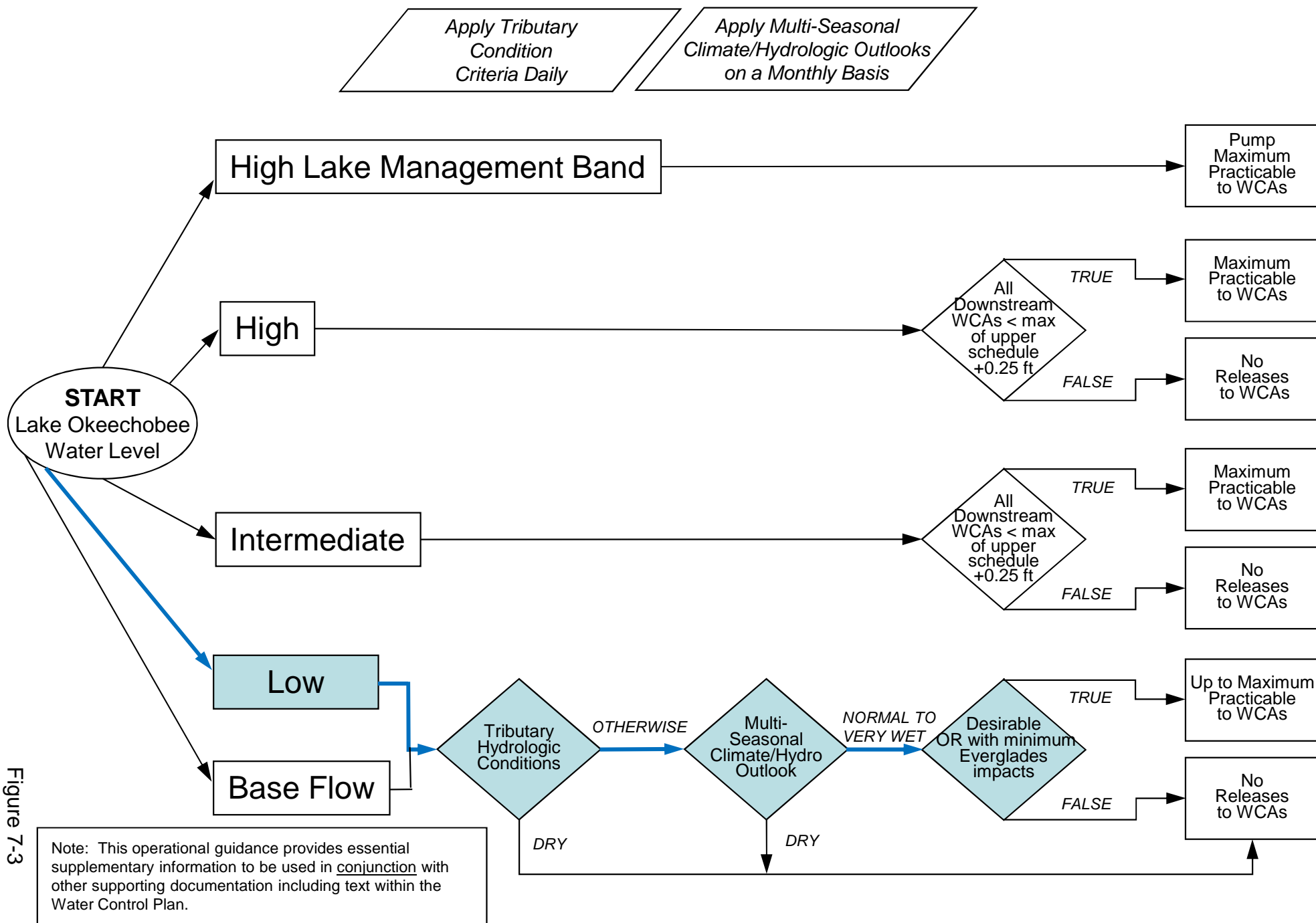


Figure 7-3

2008 LORS FORECAST

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

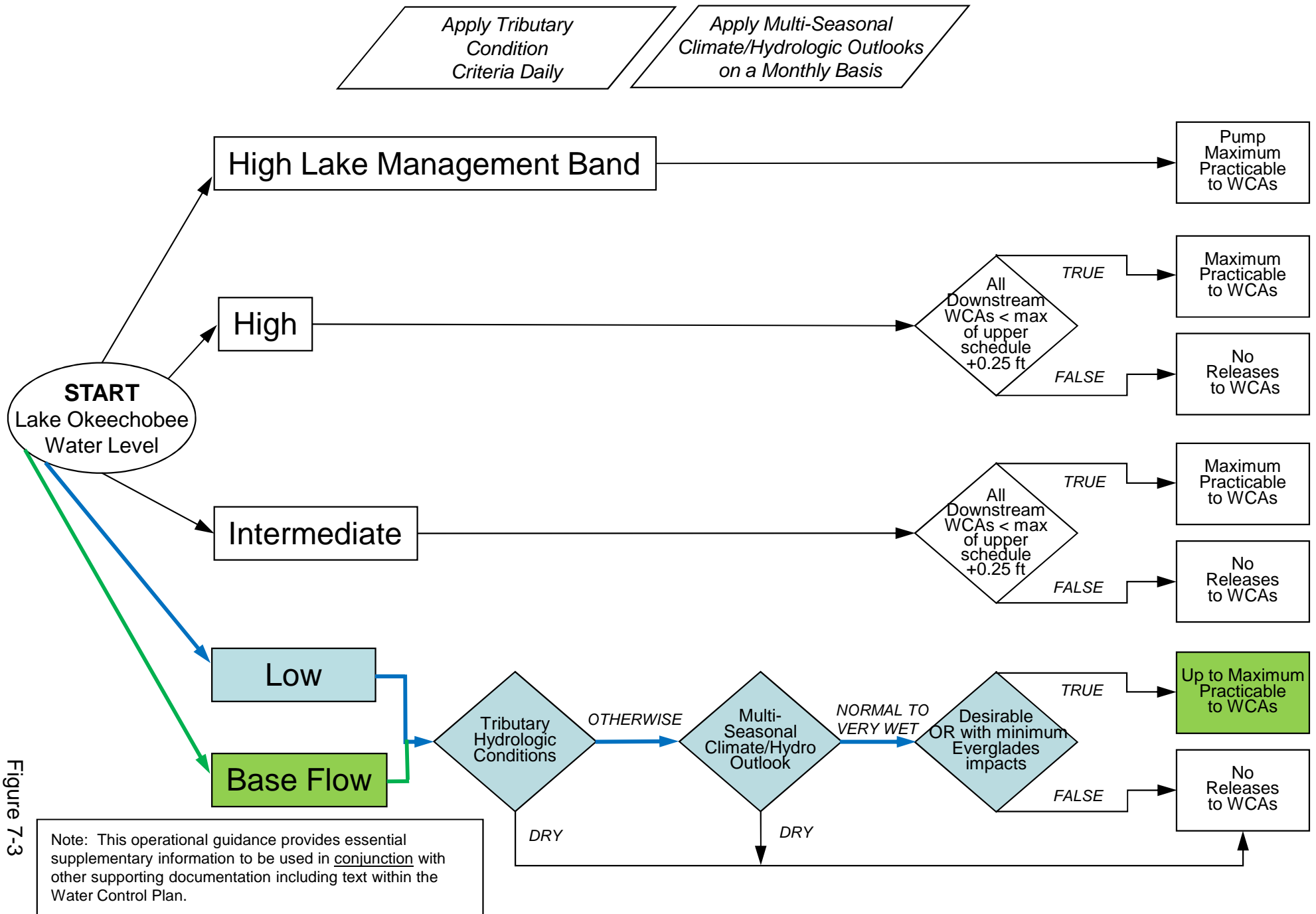


Figure 7-3

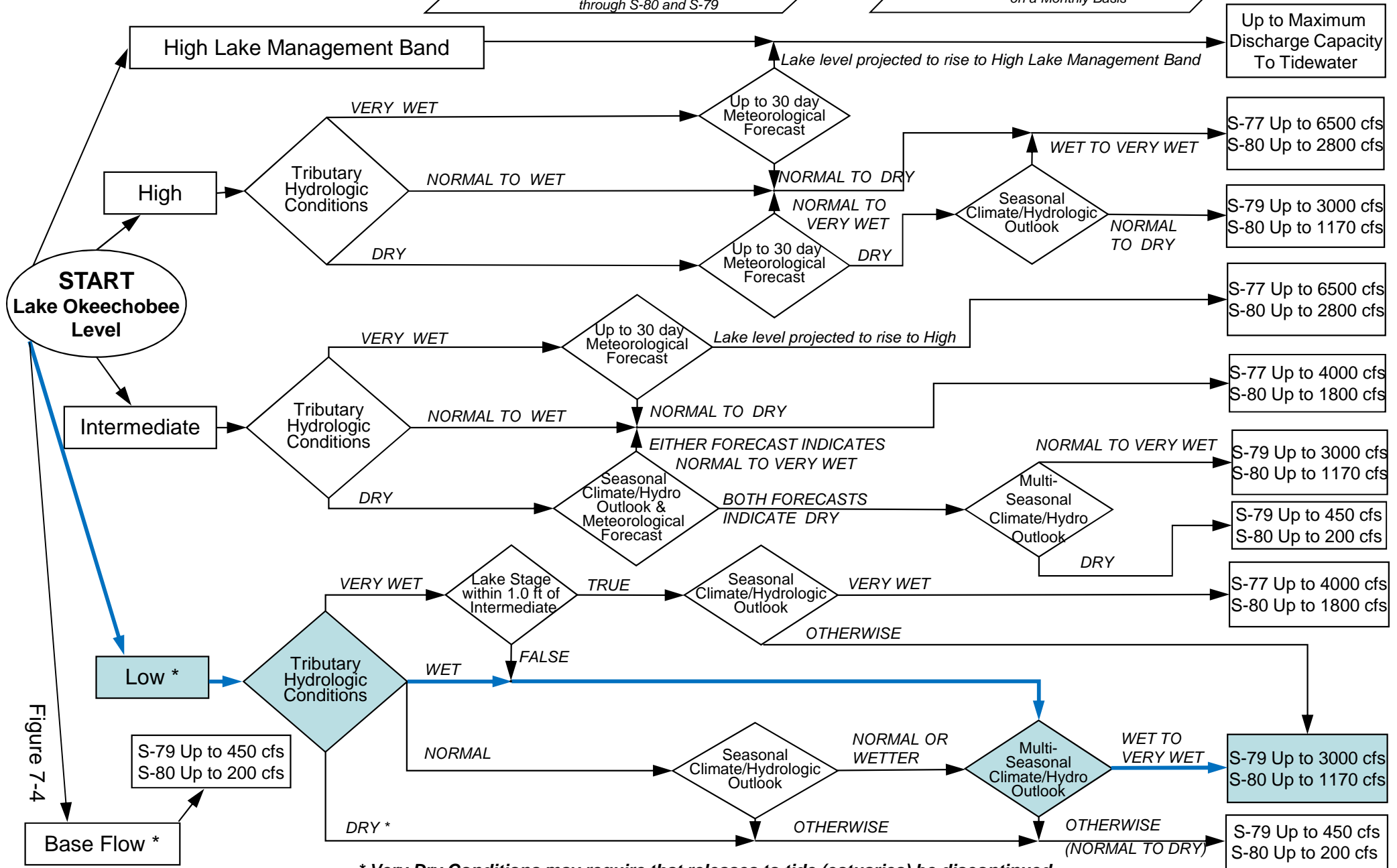
2008 LORS

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



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

Figure 7-4

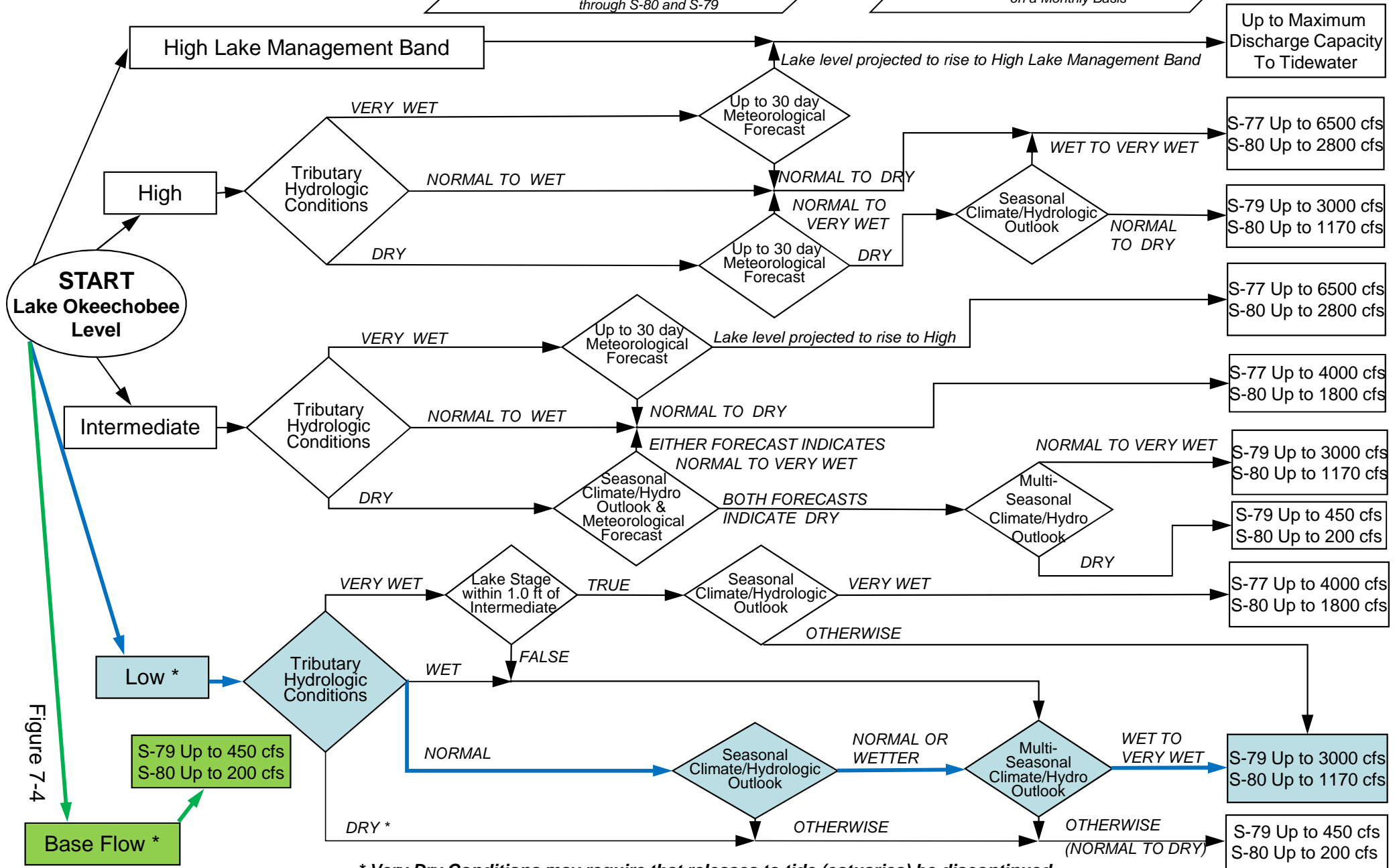
2008 LORS FORECAST

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Figure 7-4

C5: 15.06 14.93 0 0.0 0.0 0.0

South Shore

S4 Pumps: 10.98 15.12 0 0 0 0 (cfs)
 S169: 15.18 10.97 0 0.0 0.1 0.0
 S310: 15.16 13
 S3 Pumps: 10.86 15.12 0 0 0 0 (cfs)
 S354: 15.12 10.86 0 0.0 0.0
 S2 Pumps: 10.83 14.95 0 0 0 0 0 (cfs)
 S351: 14.95 10.83 581 0.6 0.8 0.7
 S352: 14.72 11.10 877 1.4 1.8
 C10A: -NR- 14.66 0.0 8.5 8.5 8.5 8.5
 L8 Canal PT 14.47 276

S351 and S352 Temporary Pumps/S354 Spillway

S351: 10.83 14.95 581 -NR--NR--NR--NR--NR--NR--
 S352: 11.10 14.72 877 -NR--NR--NR--NR--
 S354: 10.86 15.12 0 -NR--NR--NR--NR--

Caloosahatchee River (S77, S78, S79)

S47B: 13.02 10.84 0.0 0.0
 S47D: 10.94 10.94 -0 5.0
 S77:
 Spillway and Sector Flow:
 14.82 10.97 230 0.0 0.0 1.0 0.0
 Flow Due to Lockages+: 8
 S77 Below USGS Flow Gage 28
 S78:
 Spillway and Sector Flow:
 10.82 2.87 0 0.0 0.0 0.0 0.0
 Flow Due to Lockages+: 14
 S79:
 Spillway and Sector Flow:
 3.07 0.89 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
 0.0
 Flow Due to Lockages+: 6
 Percent of flow from S77 NA %
 Chloride (ppm) 55

St. Lucie Canal (S308, S80)

S308:
 Spillway and Sector Flow:
 14.43 13.90 0 0.0 0.0 0.0 0.0
 Flow Due to Lockages+: 1
 S308 Below USGS Flow Gage 55
 S153: 18.75 13.74 55 0.0 0.0
 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.

					----- Wind ---	
Daily Precipitation Totals	1-Day	3-Day	7-Day	Direction		
Speed	(inches)	(inches)	(inches)	(Degø)		
(mph)						
S133 Pump Station:	0.00	0.00	0.00			
S193:	-NR-	0.00	0.00	-NR-	-NR-	
Okeechobee Field Station:	-NR-	0.00	0.00			
S135 Pump Station:	0.19	0.19	0.19			
S127 Pump Station:	0.00	0.00	0.00			
S129 Pump Station:	0.00	0.00	0.02			
S131 Pump Station:	0.00	0.00	0.00			
S77:	0.00	0.00	0.00	81	4	
S78:	0.00	0.03	0.03	29	3	
S79:	0.00	0.00	0.00	117	5	
S4 Pump Station:	-NR-	0.00	0.00			
Clewiston Field Station:	-NR-	0.00	0.00			
S3 Pump Station:	0.00	0.00	0.00			
S2 Pump Station:	0.00	0.00	0.00			
S308:	0.01	0.01	0.01	43	12	
S80:	0.00	0.97	1.05	-NR-	-NR-	
Okeechobee Average	0.02	0.02	0.02			
(Sites S78, S79 and S80 not included)						

Oke Nexrad Basin Avg	-NR-	0.00	0.02			

Okeechobee Lake Elevations	18 OCT 2015	14.74 Difference from
18OCT15		
18OCT15 -1 Day =	17 OCT 2015	14.77 0.03
18OCT15 -2 Days =	16 OCT 2015	14.78 0.04
18OCT15 -3 Days =	15 OCT 2015	14.80 0.06
18OCT15 -4 Days =	14 OCT 2015	14.82 0.08
18OCT15 -5 Days =	13 OCT 2015	14.82 0.08
18OCT15 -6 Days =	12 OCT 2015	14.83 0.09
18OCT15 -7 Days =	11 OCT 2015	14.82 0.08
18OCT15 -30 Days =	18 SEP 2015	14.22 -0.52
18OCT15 -1 Year =	18 OCT 2014	15.81 1.07
18OCT15 -2 Year =	18 OCT 2013	15.54 0.80

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
18OCT15	Today =	18 OCT 2015	-958	MON		-4388
18OCT15	-1 Day =	17 OCT 2015	-588	SUN		-176
18OCT15	-2 Days =	16 OCT 2015	-199	SAT		-2089
18OCT15	-3 Days =	15 OCT 2015	379	FRI		-40483
18OCT15	-4 Days =	14 OCT 2015	3464	THU		2251
18OCT15	-5 Days =	13 OCT 2015	3952	WED		505
18OCT15	-6 Days =	12 OCT 2015	4550	TUE		4410
18OCT15	-7 Days =	11 OCT 2015	5003	MON		6214
18OCT15	-8 Days =	10 OCT 2015	5027	SUN		12623
18OCT15	-9 Days =	09 OCT 2015	4598	SAT		2803
18OCT15	-10 Days =	08 OCT 2015	5035	FRI		3113
18OCT15	-11 Days =	07 OCT 2015	5183	THU		-1733
18OCT15	-12 Days =	06 OCT 2015	6005	WED		2826
18OCT15	-13 Days =	05 OCT 2015	6270	TUE		711

S65E						
Average Flow over previous 14 days						Avg-Daily Flow
18OCT15	Today=	18 OCT 2015	2722	MON		2297
18OCT15	-1 Day =	17 OCT 2015	2805	SUN		2203
18OCT15	-2 Days =	16 OCT 2015	2914	SAT		2243
18OCT15	-3 Days =	15 OCT 2015	3023	FRI		2435
18OCT15	-4 Days =	14 OCT 2015	3137	THU		2560
18OCT15	-5 Days =	13 OCT 2015	3272	WED		2579
18OCT15	-6 Days =	12 OCT 2015	3415	TUE		2633
18OCT15	-7 Days =	11 OCT 2015	3555	MON		2484
18OCT15	-8 Days =	10 OCT 2015	3716	SUN		2983
18OCT15	-9 Days =	09 OCT 2015	3859	SAT		2638
18OCT15	-10 Days =	08 OCT 2015	4020	FRI		3146
18OCT15	-11 Days =	07 OCT 2015	4166	THU		3252
18OCT15	-12 Days =	06 OCT 2015	4332	WED		3315
18OCT15	-13 Days =	05 OCT 2015	4536	TUE		3341

Lake Okeechobee Outlets Last 14 Days

DATE	S-77	S-77	Below S-77	S-78	S-78	S-79
	Discharge	Discharge	Discharge	Discharge	Discharge	Discharge
	(0700-2100)	(ALL DAY)	(ALL-DAY)	(0700-2100)	(ALL DAY)	(ALL DAY)
	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)
18 OCT 2015	271	-NA-	55	0	28	12
17 OCT 2015	273	-NA-	44	0	25	78
16 OCT 2015	277	-NA-	169	0	27	370
15 OCT 2015	258	-NA-	-72	0	18	272
14 OCT 2015	0	2	-192	0	18	429
13 OCT 2015	2	-NA-	-60	0	23	535
12 OCT 2015	37	-NA-	43	2	58	875
11 OCT 2015	0	11	-150	106	201	1512

10 OCT 2015	0	11	-157	97	133	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	90	162	1441
06 OCT 2015	0	7	-94	159	212	2106
05 OCT 2015	0	4	-74	72	79	2306

	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)
18 OCT 2015	25	1152	1739	0	548
17 OCT 2015	52	841	1739	155	561
16 OCT 2015	33	1083	1690	268	552
15 OCT 2015	105	-75600	1598	662	586
14 OCT 2015	-4	896	1573	1168	570
13 OCT 2015	-NR-	1184	1596	1507	584
12 OCT 2015	-NR-	940	1537	1303	603
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

	S-308	Below S-308	S-80
	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)
18 OCT 2015	2	108	-NR-
17 OCT 2015	98	246	52
16 OCT 2015	199	195	42
15 OCT 2015	760	742	44
14 OCT 2015	-NA-	42	40
13 OCT 2015	-NA-	76	24
12 OCT 2015	1	-59	210
11 OCT 2015	3	-25	322
10 OCT 2015	2	-214	487
09 OCT 2015	1	-148	989
08 OCT 2015	2	135	231
07 OCT 2015	3	164	531
06 OCT 2015	1	212	841
05 OCT 2015	1	77	308

*** 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

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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

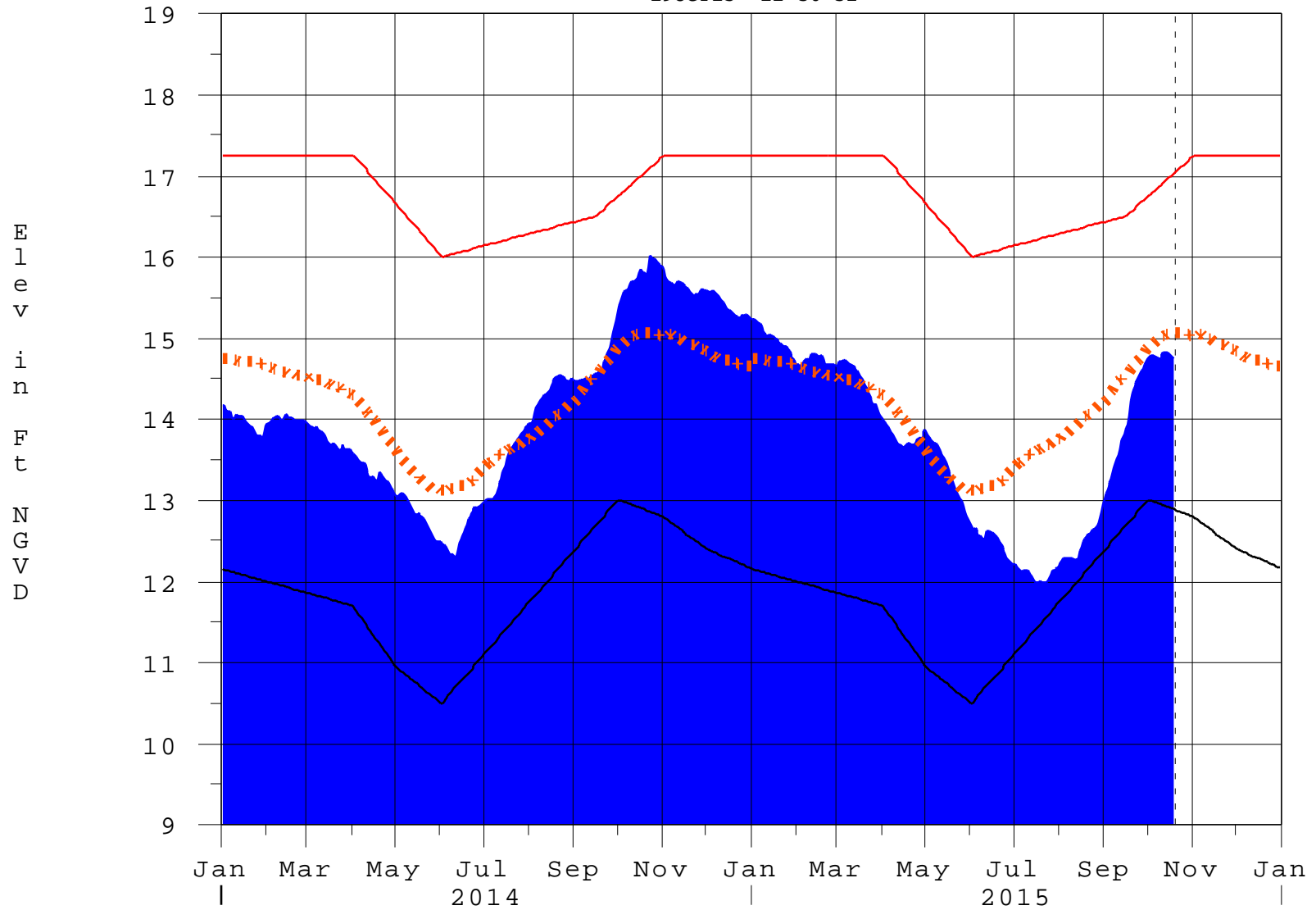
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Report Generated 19OCT2015 @ 11:39 ** Preliminary Data - Subject to Revision

**

Lake Okeechobee

19OCT15 11:30:32



- 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