

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 07/24/2023 (ENSO Condition: El Niño)

Lake Okeechobee Net Inflow Outlook:

The Lake Okeechobee Net Inflow Outlook has been computed using methods described in the LORS2008 Water Control Plan: Croley's method, the SFWMD empirical method, a sub-sampling of El Niño years and a sub-sampling of warm years of the Atlantic Multi-decadal Oscillation (AMO) in combination with El Niño ENSO years. 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*		SFWMD Empirical Method		Sub-sampling of El Niño ENSO Years**		Sub-sampling of AMO Warm + El Niño ENSO Years***	
	Value (ft)	<u>Condition</u>	Value (ft)	<u>Condition</u>	Value (ft)	<u>Condition</u>	Value (ft)	<u>Condition</u>
Current (Jul-Dec)	N/A	N/A	2.61	Very Wet	2.69	Very Wet	3.75	Very Wet
Multi Seasonal (Jul-Apr)	N/A	N/A	3.00	Wet	3.68	Wet	5.00	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.

**Sub-sampling is a weighted average of ENSO conditions based on the IRI ENSO forecast published.

***Sub-sampling based on combination of ENSO and AMO conditions. For this predominant ENSO categorization is used instead of weights.

Tributary Hydrologic Conditions:

2195 cfs 14-day running average for Lake Okeechobee Net Inflow through 07/23/2023. According to the classification in Tributary Hydrologic Conditions table, this condition is Near Normal.

-2.68 for Palmer Drought Index on 07/22/2023.

According to the classification in Tributary Hydrologic Conditions table, this condition is Dry.

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

LORS2008 Classification Tables:

Lake Okeechobee Stage on 07/24/2023:

Lake Okeechobee Stage: **14.99 feet**

Lake Okeechobee Management Zone/Band		Bottom Elevation (feet, NGVD)	Current Lake Stage
High Lake Management Band		16.25	
Operational Band	High sub-band	15.81	
	Intermediate sub-band	15.37	
	Low sub-band	13.50	← 14.99 ft
Base Flow sub-band		12.60	
Beneficial Use sub-band		11.57	
Water Shortage Management Band			

Part C of LORS2008: Discharge to WCAs

Up to Maximum Practicable to the WCAs if desirable or with minimum Everglades impact; otherwise no releases to WCAs.

Part D of LORS2008: Discharge to Tide

Up to 3000 cfs at S-79 and up to 1170 cfs at S-80.

LORS2008 Implementation on 07/24/2023 (ENSO Condition- El Niño):

Status for week ending 07/24/2023*:

Water Supply Risk Evaluation

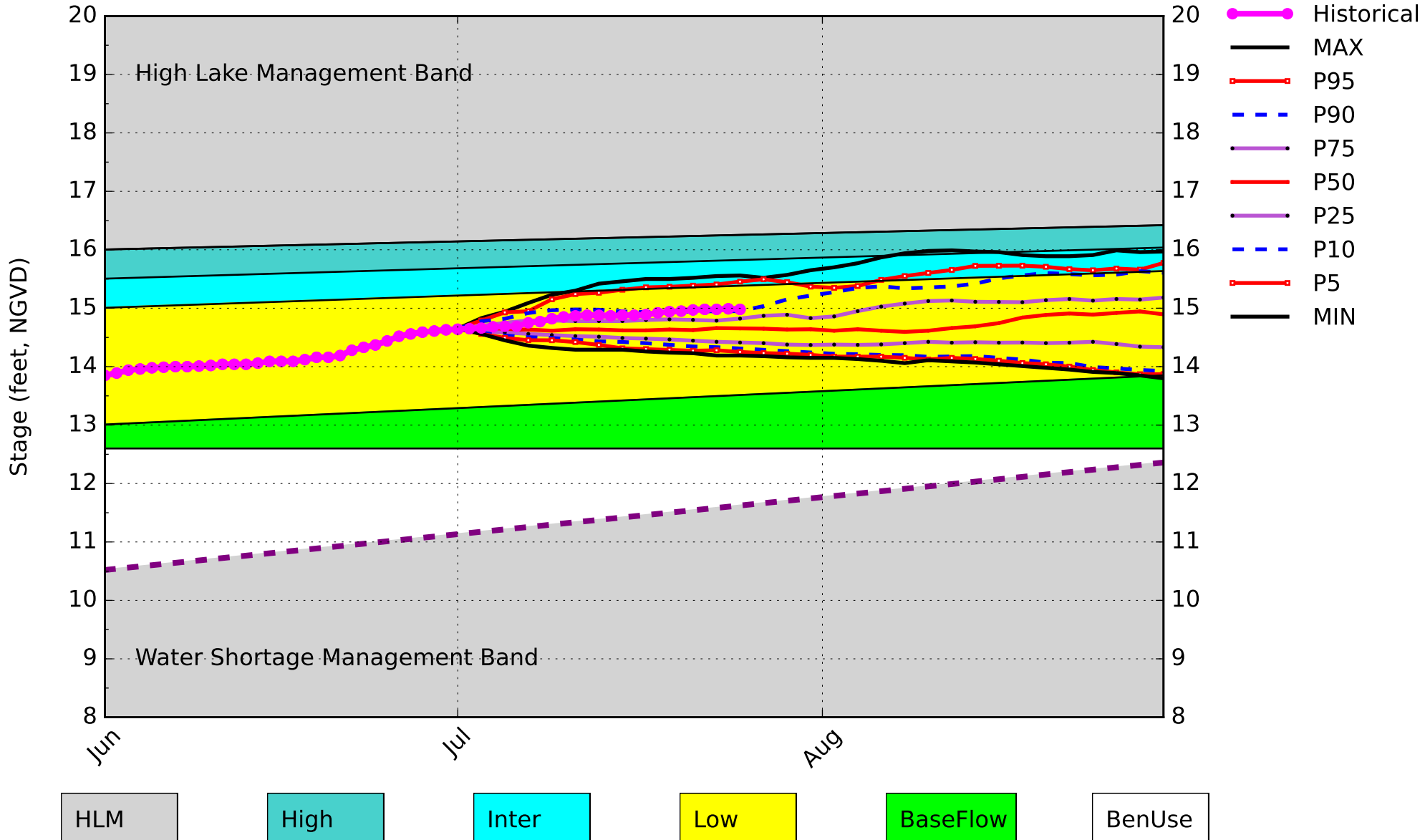
Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Low Sub-band	L
	Palmer Drought Index for LOK Tributary Conditions	-2.68 (Extremely Dry)	H
	CPC Precipitation Outlook	1 month: Equal Chances	L
		3 months: Equal Chances	L
	LOK Seasonal Net Inflow Outlook	2.69 ft	L
	ENSO Forecast	Normal to Extremely Wet	
	LOK Multi-Seasonal Net Inflow Outlook	3.68 ft	L
	ENSO Forecast	Wet	
WCAs	WCA 1: 3 Station Average (Site 1-8C)	Above Line 1 (15.99 ft)	L
	WCA 2A: Site 2-17	Above Line 1 (12.86 ft)	L
	WCA-3A: 2 Station Average (Sites 63, 64, and 65)	Above Line 1 (10.43 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 outlooks use slightly different classification intervals than those used by the 2008-LORS.

*- Site 64 in WCA-3A is missing elevation recording for 6/23/2023. An average of the two sites 63 and 65 was used instead of the normally measured 3 site average of 63, 64, & 65.

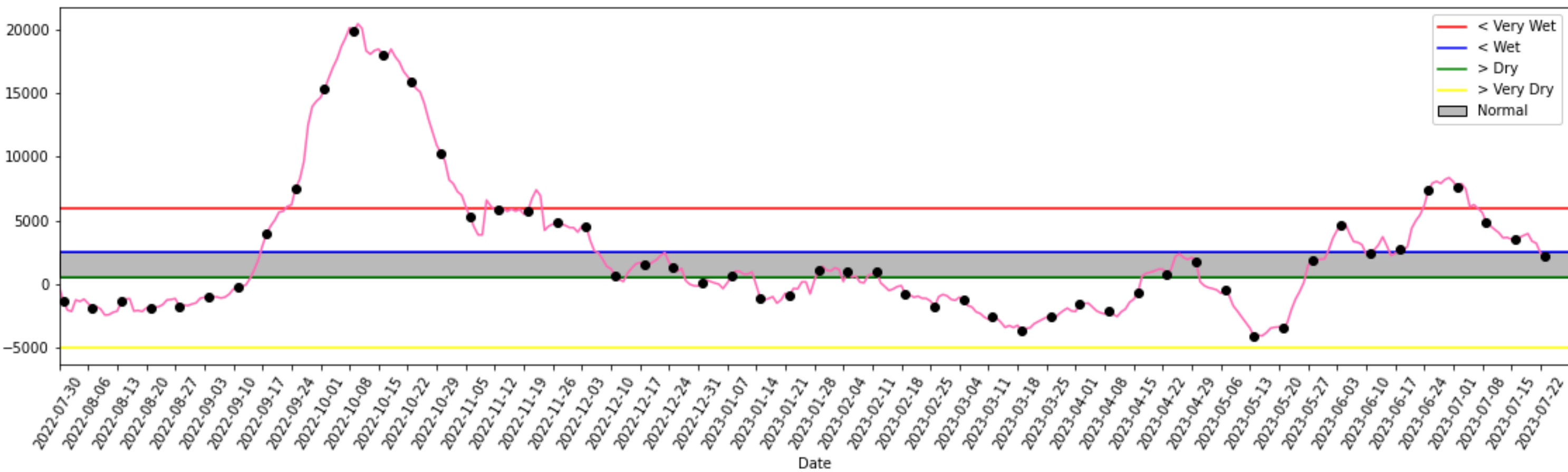
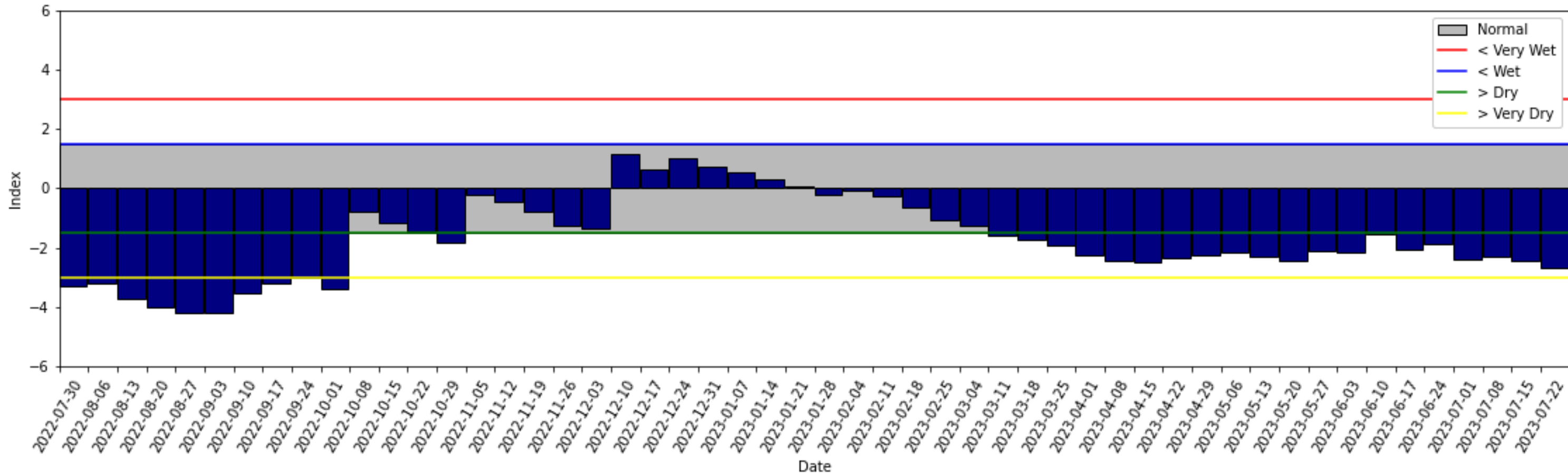
Lake Okeechobee SFWMM July 2023 Position Analysis

Percentiles PA



(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of July 23 2023



2008 LORS

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

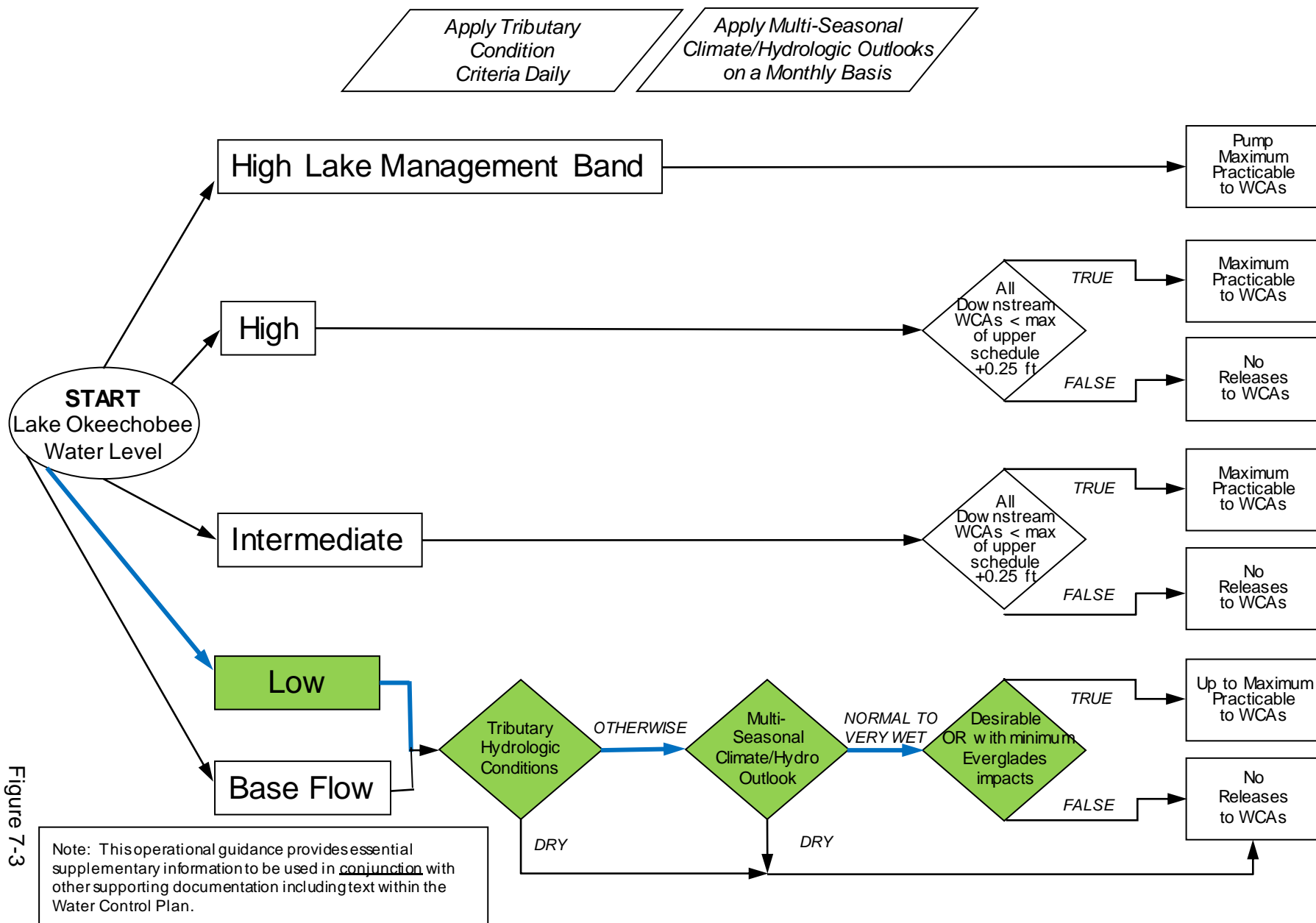


Figure 7-3

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

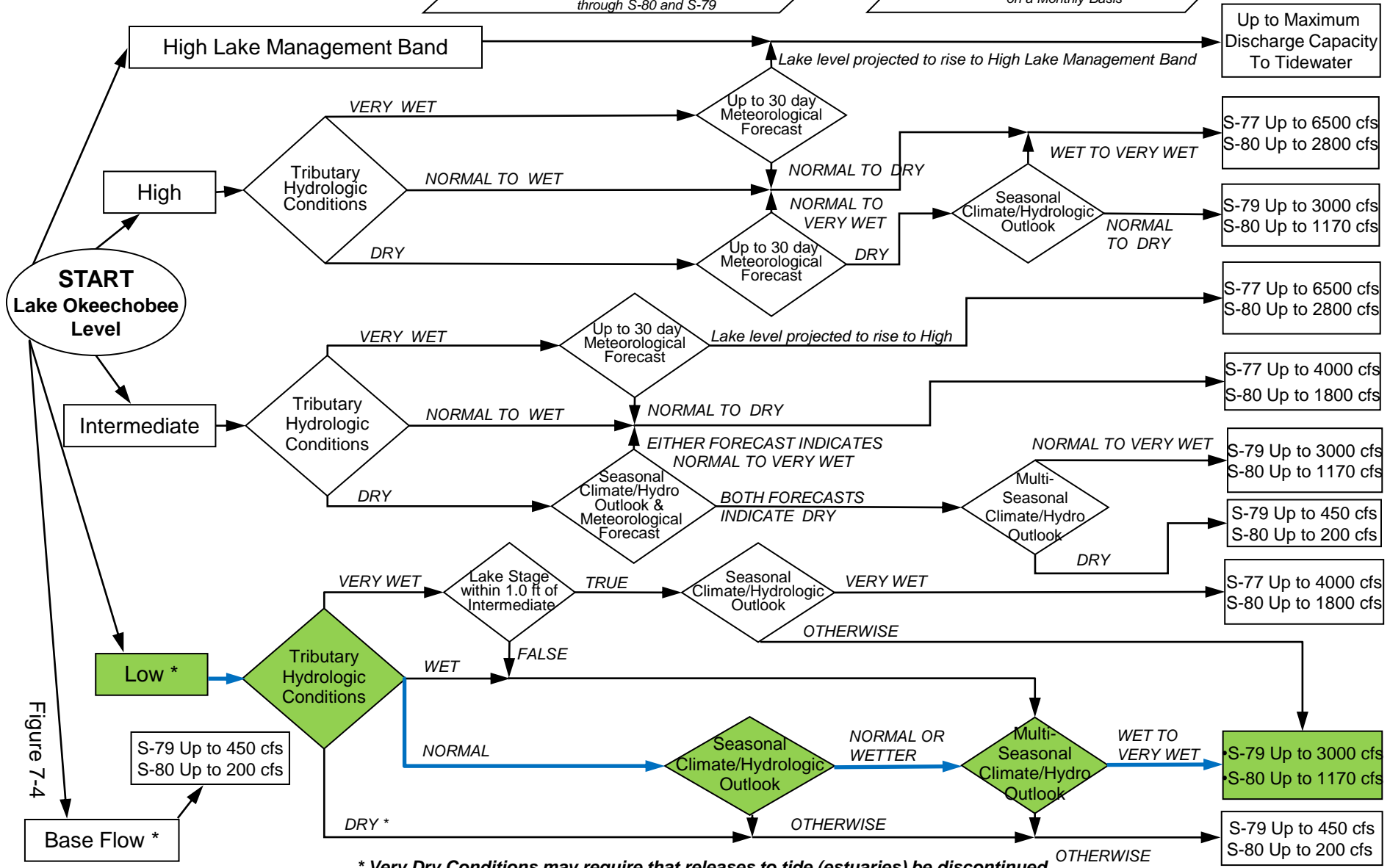
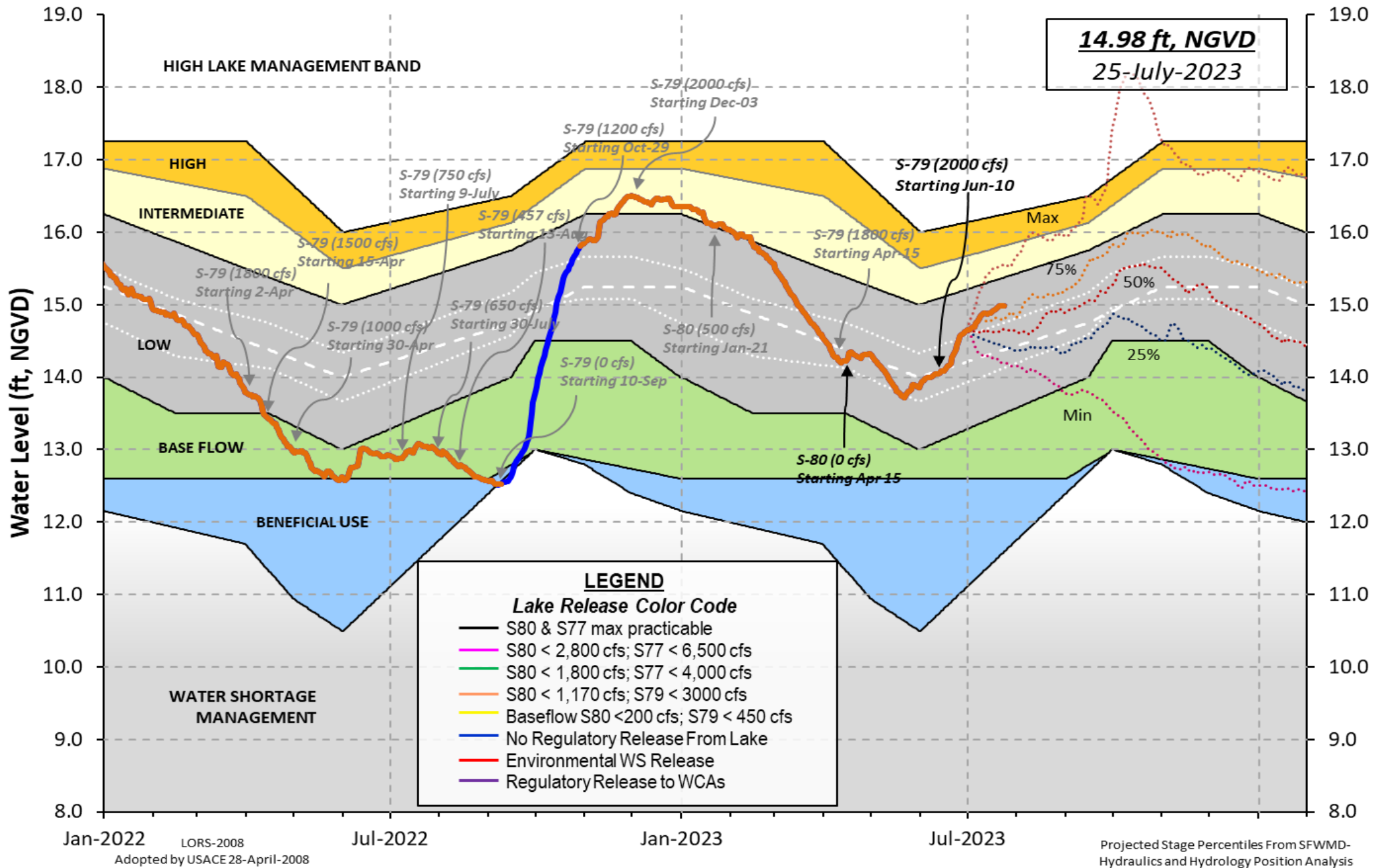


Figure 7-4

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

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 23 JUL 2023

Okeechobee Lake Regulation Elevation Last Year 2YRS Ago
(ft-NGVD) (ft-NGVD) (ft-NGVD)
*Okeechobee Lake Elevation 14.99 13.04 13.50 (Official Elv)
Bottom of High Lake Mngmt= 16.25 Top of Water Short Mngmt= 11.57
Currently in Operational Management Band

Simulated Average LORS2008 [1965-2000] 12.58
Difference from Average LORS2008 2.41

23JUL (1965-2007) Period of Record Average 13.68
Difference from POR Average 1.31

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 8.93'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 7.13'
Bridge Clearance = 50.22'

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

L001 L005 L006 LZ40 S4 S352 S308 S133
15.07 14.97 14.98 14.93 14.90 15.13 15.04 14.96

*Combination Okeechobee Avg-Daily Lake Average = 14.99
(*See Note)

Okeechobee Inflows (cfs):

S65E 1562 S65EX1 0 Fisheating Cr 648
S154 21 S191 232 S135 Pumps 0
S84 95 S133 Pumps 0 S2 Pumps 0
S84X 46 S127 Pumps 0 S3 Pumps 0
S71 399 S129 Pumps 0 S4 Pumps 0
S72 393 S131 Pumps 0 C5 0
Total Inflows: 3396

Okeechobee Outflows (cfs):

S135 Culverts 0 S354 0 S77 384
S127 Culverts 0 S351 0 S308 4
S129 Culverts 0 S352 0
S131 Culverts 0 L8 Canal Pt -NR-
Total Outflows: 388

***S77 structure flow is being used to compute Total Outflow.
***S308 structure flow is being used to compute Total Outflow.

Okeechobee Pan Evaporation (inches):

S77 0.34 S308 0.34
Average Pan Evap x 0.75 Pan Coefficient = 0.25" = 0.02'

Lake Average Precipitation using NEXRAD: = -NR-" = -NR-'

Evaporation - Precipitation: = -NR-" = -NR-'
Evaporation - Precipitation using Lake Area of 730 square miles

is equal to -NR-
 Lake Okeechobee (Change in Storage) Flow is 2118 cfs or 4200 AC-FT

	Headwater Elevation (ft-msl)	Tailwater Elevation (ft-msl)	Disch (cfs)	----- Gate Positions -----							
				#1 (ft)	#2 (ft)	#3 (ft)	#4 (ft)	#5 (ft)	#6 (ft)	#7 (ft)	#8 (ft)
(I) see note at bottom											
North East Shore											
S133 Pumps:	13.53	15.05	0	0	0	0	0	0	0	0	(cfs)
S193:											
S191:	18.96	15.00	232	0.0	0.5	0.0					
S135 Pumps:	13.43	14.92	0	0	0	0	0				(cfs)
S135 Culverts:			0	0.0	0.0						
North West Shore											
S65E:	20.94	14.76	1562	1.2	0.5	0.5	0.5	0.5	1.0		
S65EX1:	20.94	14.76	0								
S127 Pumps:	13.44	14.91	0	0	0	0	0	0			(cfs)
S127 Culvert:			0	0.0							
S129 Pumps:	13.06	14.92	0	0	0	0					(cfs)
S129 Culvert:			0	0.0							
S131 Pumps:	12.96	-NR-	0	0	0						(cfs)
S131 Culvert:			0								
Fisheating Creek											
nr Palmdale		32.63	648								
nr Lakeport											
C5:		-NR-	0	-NR-	-NR-	-NR-					
South Shore											
S4 Pumps:	11.71	-NR-	0	-NR-	-NR-	-NR-					(cfs)
S169:		-NR-	-NR-	-NR-	-NR-	-NR-					
S310:	14.99		45								
S3 Pumps:	10.70	14.87	0	0	0	0					(cfs)
S354:	14.87	10.70	0	0.0	0.0						
S2 Pumps:	10.19	14.93	0	0	0	0	0				(cfs)
S351:	14.93	10.19	0	0.0	0.0	0.0					
S352:	15.06	10.23	0	0.0	0.0						
C10A:	-NR-	-NR-		-NR-	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-	
L8 Canal PT		14.73	-NR-								

S351 and S352 Temporary Pumps/S354 Spillway

S351:	10.19	14.93	0	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-		
S352:	10.23	15.06	0	-NR-	-NR-	-NR-	-NR-				
S354:	10.70	14.87	0	-NR-	-NR-	-NR-	-NR-				

Caloosahatchee River (S77, S78, S79)

S47B:	12.95	11.89		0.5	1.0						
S47D:	11.89	11.10	0	0.0							
S77:											
Spillway and Sector Preferred Flow:	14.86	10.95	382	0.0	0.0	3.0	0.0				
Flow Due to Lockages+:			2								

S78:

Spillway and Sector Flow:
 10.96 3.04 1513 2.0 0.0 3.0 0.0
 Flow Due to Lockages+: 6

S79:

Spillway and Sector Flow:
 3.18 1.37 2635 0.0 0.0 2.0 2.0 2.0 2.0 2.0 0.0
 Flow Due to Lockages+: 9
 Percent of flow from S77 14%
 Chloride (ppm) 0

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Preferred Flow:
 15.03 13.28 0 0.0 0.0 0.0 0.0
 Flow Due to Lockages+: 4

S153: 18.82 13.05 0 0.0 0.0

S80:

Spillway and Sector Flow:
 13.39 0.54 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
 Flow Due to Lockages+: 18
 Percent of flow from S308 NA %

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.

++ Preferred flow is determined from either the spillway discharge or the below flow meter daily

Daily Precipitation Totals	1-Day (inches)	3-Day (inches)	7-Day (inches)	----- Wind -----	
				Direction (Deg)	Speed (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-	0.00	0.00		
S127 Pump Station:	-NR-	0.00	0.00		
S129 Pump Station:	-NR-	0.00	0.00		
S131 Pump Station:	-NR-	0.00	0.00		
S77:	-NR-	0.00	0.00	61	1
S78:	-NR-	0.00	0.00	262	1
S79:	-NR-	0.00	0.00	3	1
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:	-NR-	0.00	0.00	102	9
S80:	-NR-	0.00	0.00	195	2
Okeechobee Average (Sites S78, S79 and S80 not included)	-NR-	0.00	0.00		

Oke Nexrad Basin Avg	-NR-	0.00	0.00		

Okeechobee Lake Elevations 23 JUL 2023 14.99 Difference from 23JUL23
 23JUL23 -1 Day = 22 JUL 2023 14.98 -0.01

23JUL23	-2 Days =	21 JUL 2023	14.98	-0.01
23JUL23	-3 Days =	20 JUL 2023	14.97	-0.02
23JUL23	-4 Days =	19 JUL 2023	14.95	-0.04
23JUL23	-5 Days =	18 JUL 2023	14.94	-0.05
23JUL23	-6 Days =	17 JUL 2023	14.92	-0.07
23JUL23	-7 Days =	16 JUL 2023	14.89	-0.10
23JUL23	-30 Days =	23 JUN 2023	14.37	-0.62
23JUL23	-1 Year =	23 JUL 2022	13.04	-1.95
23JUL23	-2 Year =	23 JUL 2021	13.50	-1.49

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
23JUL23	Today =	23 JUL 2023	2289 MON	2500
23JUL23	-1 Day =	22 JUL 2023	2861 SUN	0
23JUL23	-2 Days =	21 JUL 2023	4388 SAT	2118
23JUL23	-3 Days =	20 JUL 2023	4690 FRI	4235
23JUL23	-4 Days =	19 JUL 2023	5900 THU	-NR-
23JUL23	-5 Days =	18 JUL 2023	5163 WED	-NR-
23JUL23	-6 Days =	17 JUL 2023	4824 TUE	-NR-
23JUL23	-7 Days =	16 JUL 2023	4766 MON	-NR-
23JUL23	-8 Days =	15 JUL 2023	4525 SUN	-NR-
23JUL23	-9 Days =	14 JUL 2023	4324 SAT	-NR-
23JUL23	-10 Days =	13 JUL 2023	4154 FRI	-NR-
23JUL23	-11 Days =	12 JUL 2023	4160 THU	666
23JUL23	-12 Days =	11 JUL 2023	4415 WED	2168
23JUL23	-13 Days =	10 JUL 2023	4714 TUE	4336

S65E

Average Flow over previous 14 days				Avg-Daily Flow
23JUL23	Today=	23 JUL 2023	2104 MON	1733
23JUL23	-1 Day =	22 JUL 2023	2148 SUN	1780
23JUL23	-2 Days =	21 JUL 2023	2222 SAT	2004
23JUL23	-3 Days =	20 JUL 2023	2284 FRI	2108
23JUL23	-4 Days =	19 JUL 2023	2349 THU	2303
23JUL23	-5 Days =	18 JUL 2023	2396 WED	2156
23JUL23	-6 Days =	17 JUL 2023	2473 TUE	2167
23JUL23	-7 Days =	16 JUL 2023	2568 MON	2210
23JUL23	-8 Days =	15 JUL 2023	2663 SUN	2058
23JUL23	-9 Days =	14 JUL 2023	2778 SAT	2042
23JUL23	-10 Days =	13 JUL 2023	2873 FRI	2094
23JUL23	-11 Days =	12 JUL 2023	2953 THU	2017
23JUL23	-12 Days =	11 JUL 2023	3020 WED	2201
23JUL23	-13 Days =	10 JUL 2023	3057 TUE	2580

S65EX1

Average Flow over previous 14 days				Avg-Daily Flow
23JUL23	Today=	23 JUL 2023	0 MON	0
23JUL23	-1 Day =	22 JUL 2023	0 SUN	0
23JUL23	-2 Days =	21 JUL 2023	0 SAT	0
23JUL23	-3 Days =	20 JUL 2023	0 FRI	0
23JUL23	-4 Days =	19 JUL 2023	0 THU	0
23JUL23	-5 Days =	18 JUL 2023	0 WED	0
23JUL23	-6 Days =	17 JUL 2023	0 TUE	0
23JUL23	-7 Days =	16 JUL 2023	0 MON	0
23JUL23	-8 Days =	15 JUL 2023	0 SUN	0
23JUL23	-9 Days =	14 JUL 2023	0 SAT	0
23JUL23	-10 Days =	13 JUL 2023	0 FRI	0
23JUL23	-11 Days =	12 JUL 2023	0 THU	0
23JUL23	-12 Days =	11 JUL 2023	0 WED	0
23JUL23	-13 Days =	10 JUL 2023	0 TUE	0

Lake Okeechobee Outlets Last 14 Days

DATE	S-77 Discharge (ALL DAY) (AC-FT)	Below S-77 Discharge (ALL-DAY) (AC-FT)	S-78 Discharge (ALL DAY) (AC-FT)	S-79 Discharge (ALL DAY) (AC-FT)
23 JUL 2023	818	1047	3013	5208
22 JUL 2023	12	555	2819	4962
21 JUL 2023	7	945	3352	5514
20 JUL 2023	4	1068	4977	8139
19 JUL 2023	4	1045	4170	6532
18 JUL 2023	9	567	2859	4921
17 JUL 2023	5	501	2621	4707
16 JUL 2023	11	564	2659	5427
15 JUL 2023	341	974	2323	5359
14 JUL 2023	771	992	2534	4321
13 JUL 2023	1147	1274	2943	5355
12 JUL 2023	1339	1681	2626	5400
11 JUL 2023	6	952	2772	6293
10 JUL 2023	6	907	3837	8380

DATE	S-310 Discharge (ALL DAY) (AC-FT)	S-351 Discharge (ALL DAY) (AC-FT)	S-352 Discharge (ALL DAY) (AC-FT)	S-354 Discharge (ALL DAY) (AC-FT)	L8 Canal Pt Discharge (ALL DAY) (AC-FT)
23 JUL 2023	90	0	0	0	-NR-
22 JUL 2023	9	0	0	0	-NR-
21 JUL 2023	23	0	0	0	-NR-
20 JUL 2023	-37	0	0	0	-NR-
19 JUL 2023	-29	0	0	0	-NR-
18 JUL 2023	-36	0	0	0	-NR-
17 JUL 2023	-45	0	0	0	-NR-
16 JUL 2023	-8	0	0	0	-NR-
15 JUL 2023	44	0	0	0	-NR-
14 JUL 2023	-51	0	0	0	-NR-
13 JUL 2023	-60	0	0	0	-NR-
12 JUL 2023	-96	0	0	0	-NR-
11 JUL 2023	-16	0	0	0	-NR-
10 JUL 2023	-97	0	0	0	-NR-

DATE	S-308 Discharge (ALL DAY) (AC-FT)	Below S-308 Discharge (ALL-DAY) (AC-FT)	S-80 Discharge (ALL-DAY) (AC-FT)
23 JUL 2023	7	-NR-	36
22 JUL 2023	8	-NR-	26
21 JUL 2023	4	-NR-	34
20 JUL 2023	5	-NR-	22
19 JUL 2023	-NR-	-NR-	34
18 JUL 2023	-NR-	-NR-	31
17 JUL 2023	-NR-	-NR-	19
16 JUL 2023	-NR-	-NR-	19
15 JUL 2023	-NR-	-NR-	34
14 JUL 2023	-NR-	-NR-	-NR-
13 JUL 2023	-NR-	-NR-	-NR-
12 JUL 2023	3	-NR-	30
11 JUL 2023	3	-NR-	26
10 JUL 2023	2	-NR-	29

*** NOTE: Discharge (ALL DAY) is computed using Spillway, Sector Gate and Lockages Discharges from 0015 hrs to 2400 hrs.

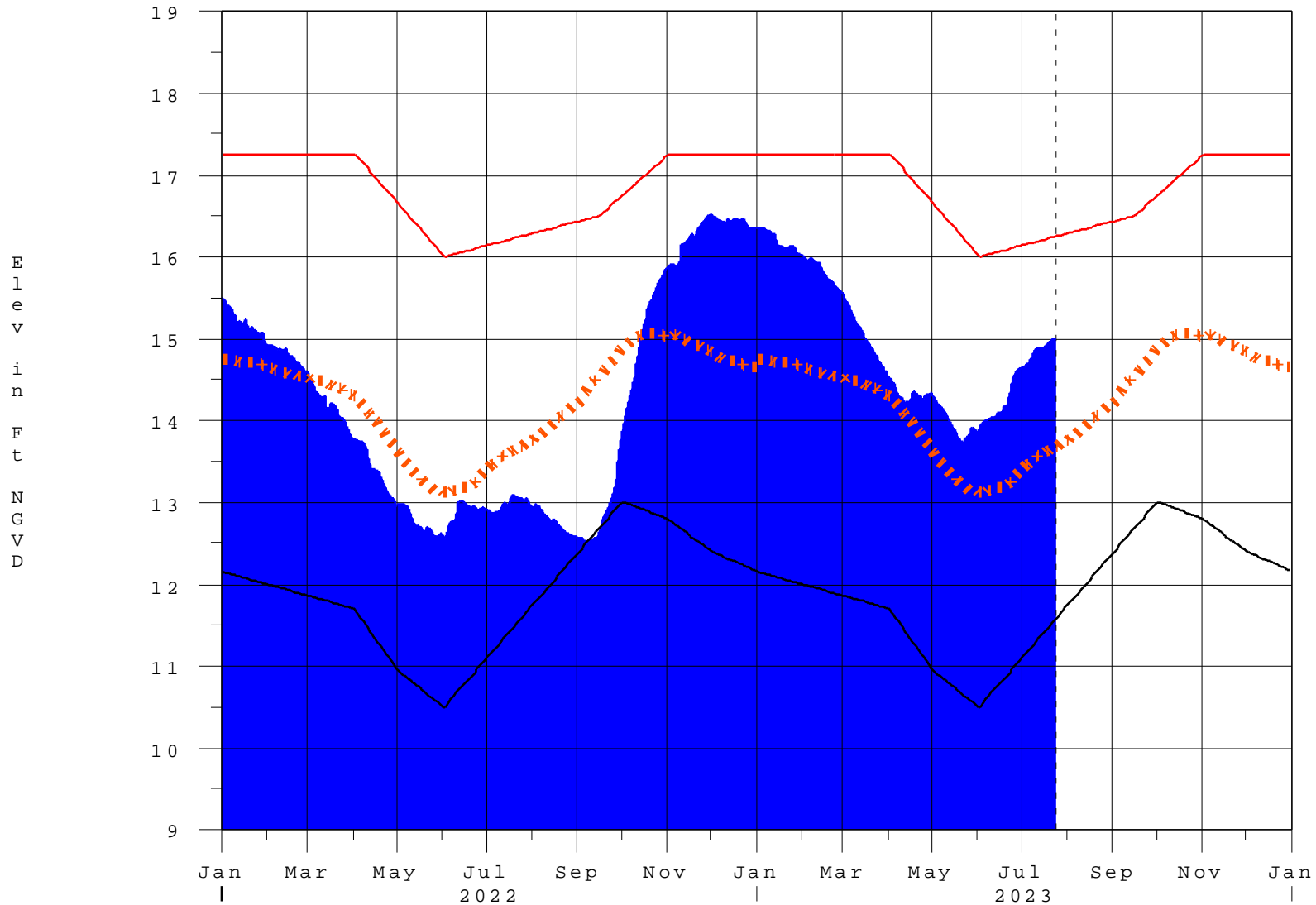
(I) - Flows preceded by "I" signify an instantaneous flow computed from the single value reported for the day

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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 Okeechobee 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 24JUL2023 @ 09:30 ** Preliminary Data - Subject to Revision **

Lake Okeechobee

24JUL23 09:17:21



- 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

[Back to Lake Okeechobee Operations Main Page](#)

[Back to U.S. Army Corps of Engineers Lake Okeechobee Operations Homepage](#)

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