Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 12/4/2023 (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)	Condition	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition
Current (Dec-May)	N/A	N/A	0.92	Normal	1.51	Wet	1.72	Wet
Multi Seasonal (Dec-Oct)	N/A	N/A	3.39	Wet	4.26	Wet	5.57	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:

-546 cfs 14-day running average for Lake Okeechobee Net Inflow through 12/4/2023. According to the classification in Tributary Hydrologic Conditions table, this condition is Dry.

-1.34 for Palmer Drought Index on 12/2/2023. According to the classification in Tributary Hydrologic Conditions table, this condition is Near Normal.

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

LORS2008 Classification Tables:

Lake Okeechobee Stage on 12/4/2023:

Lake Okeechobee Stage: **15.99 feet**

Lake Okeechobee Management Zone/Band		Bottom Elevation (feet, NGVD)	Current Lake Stage
High Lake Management Band		17.25	
Operational Band	High sub-band	16.88	
	Intermediate sub-band	16.25	
	Low sub-band	14.45	← 15.99 ft
Base Flow sub-band		12.72	
Beneficial Use sub-band		12.38	
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 12/4/2023 (ENSO Condition- El Niño):

Status for week ending 12/4/2023*:

Water Supply Risk Evaluation

Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Low Sub-band	M
	Palmer Drought Index for LOK Tributary Conditions	-1.34 (Dry)	M
	CPC Precipitation Outlook	1 month: Above Normal	L
		3 months: Above Normal	L
	LOK Seasonal Net Inflow Outlook	1.51 ft	L
	ENSO Forecast	Normal to Extremely Wet	
	LOK Multi-Seasonal Net Inflow Outlook	4.26 ft	L
	ENSO Forecast	Wet	
WCAs	WCA 1: 3 Station Average (Sites 1-7, 1-8T, and 1-9)	Above Line 1 (17.24 ft)	L
	WCA 2A: Site 2-17	Above Line 1 (13.29 ft)	L
	WCA-3A: 3 Station Average (Sites 63, 64, and 65)	Above Line 1 (10.86 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.

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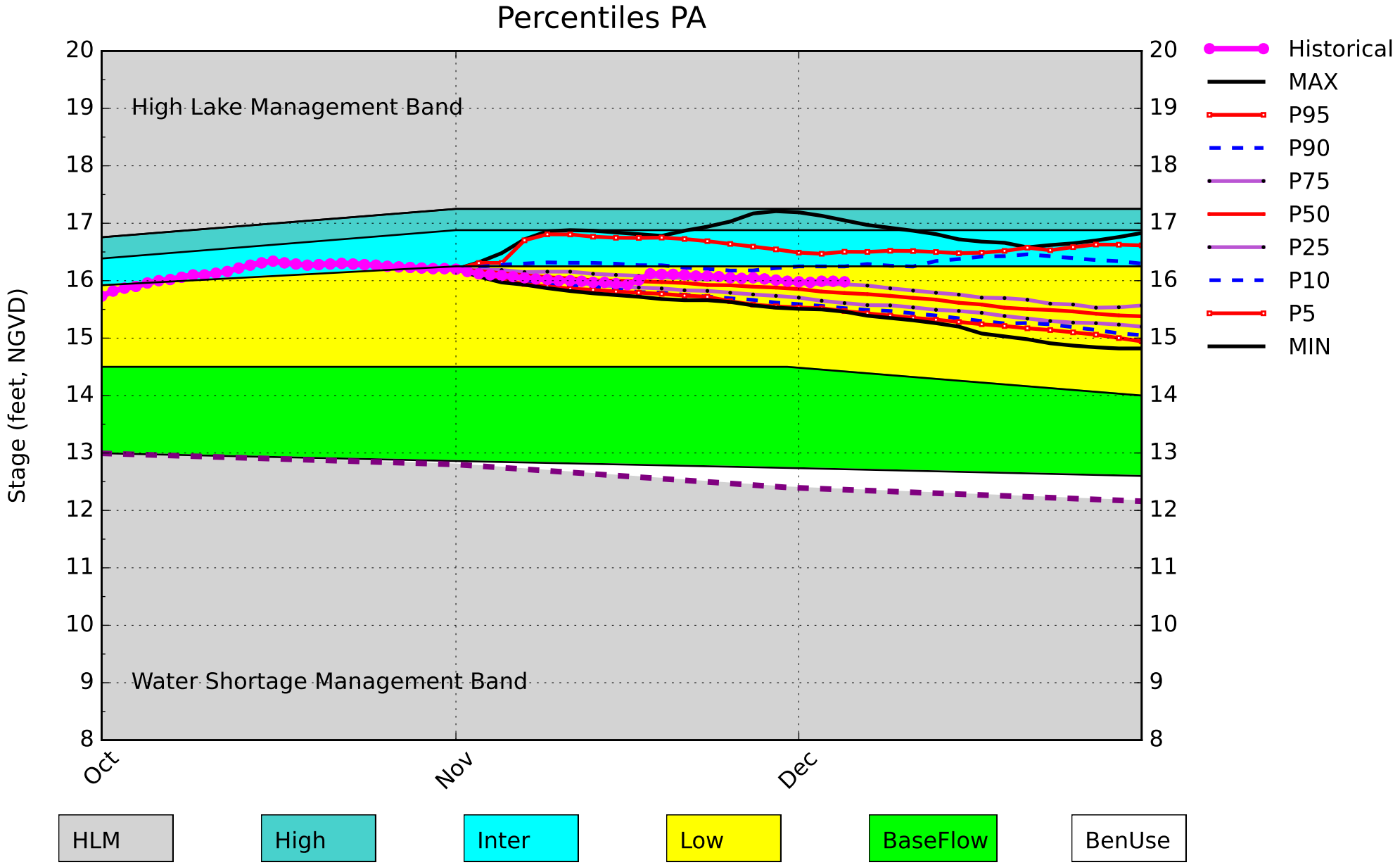
*- S80 flow data for 11/20-11/23, 11/27,11/28, 12/2, and 12/3 is not available from USACE Daily Reports and was assumed to be 0.

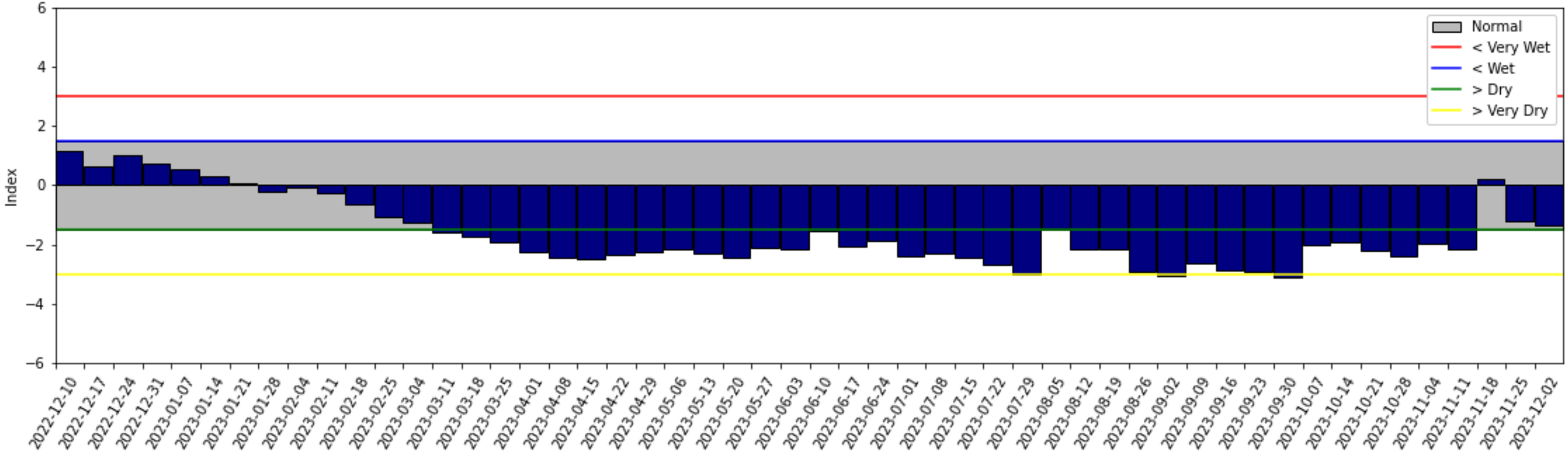
Lake Okeechobee SFWMM November 2023 Position Analysis



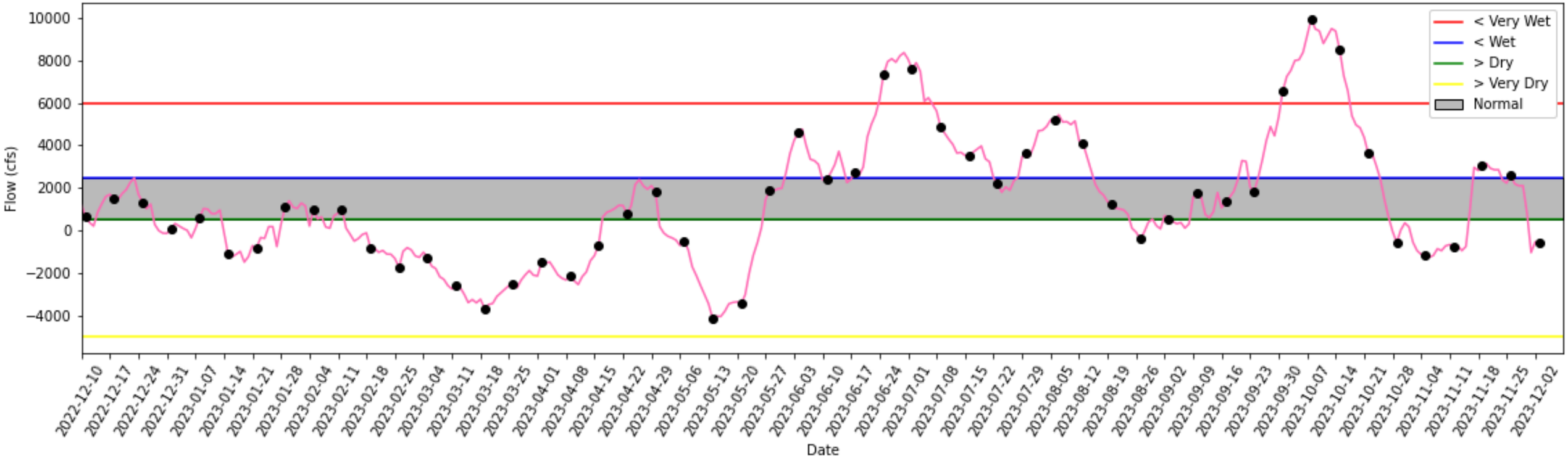
(See assumptions on the Position Analysis Results website)

12/05/23 08:16:41

Tributary Basin Condition Indicators as of December 03 2023



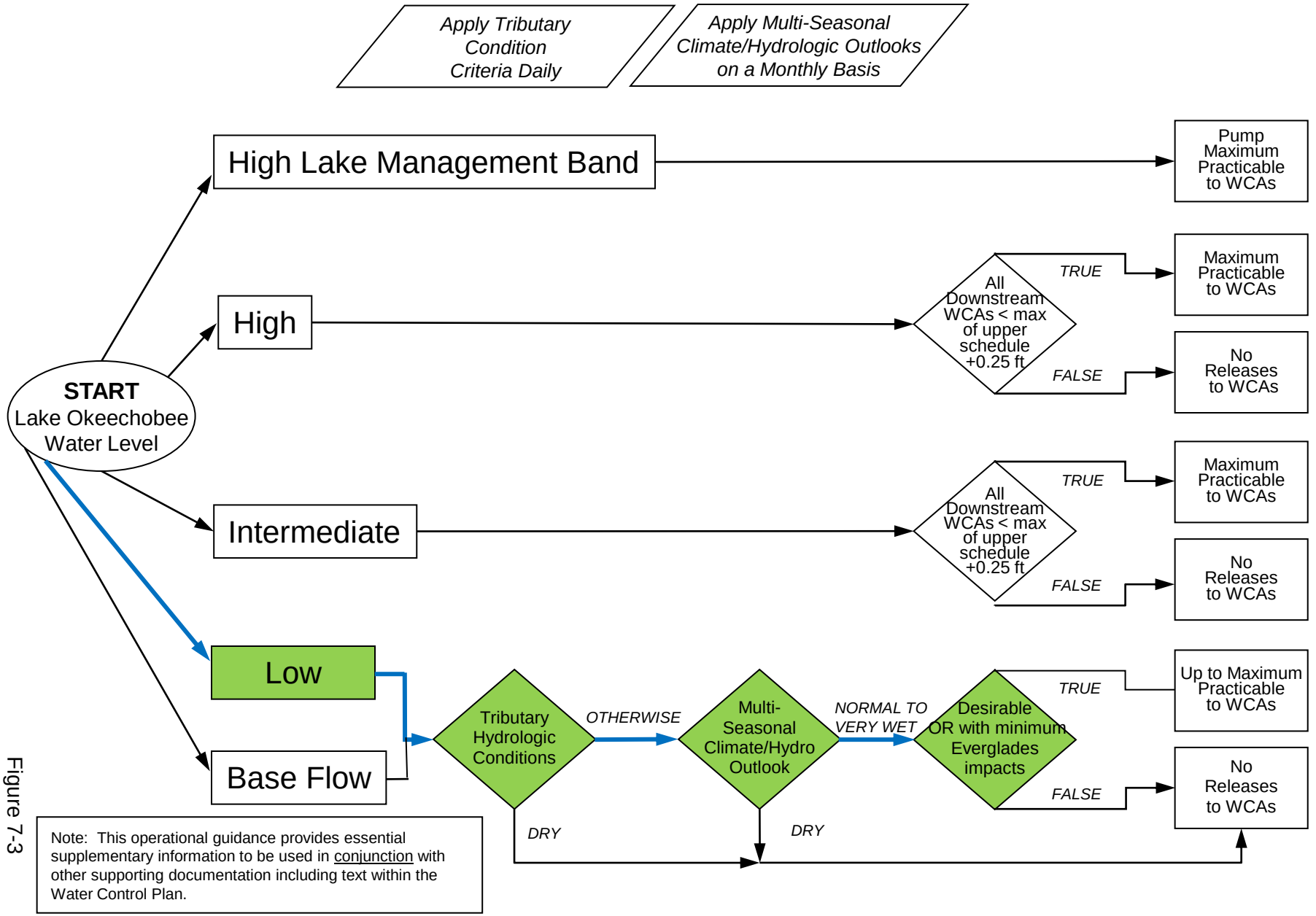
Date



Date

2008 LORS

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



Note: This operational guidance provides essential supplementary information to be used in conjunction with other supporting documentation including text within the Water Control Plan.

Figure 7-3

2008 LORS

Part D: Establish Allowable Lake Okeechobee Releases to Tide (Estuaries)

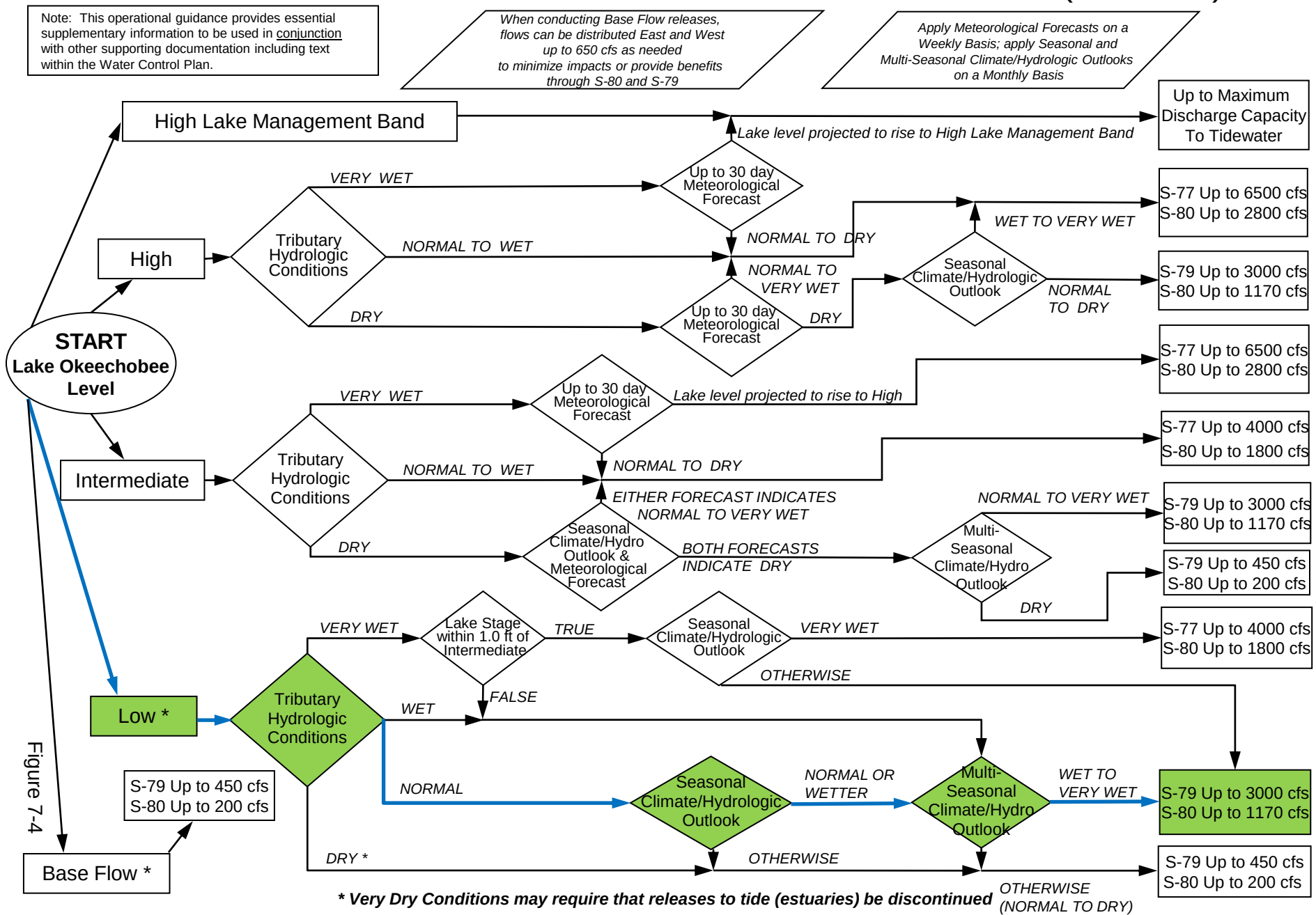
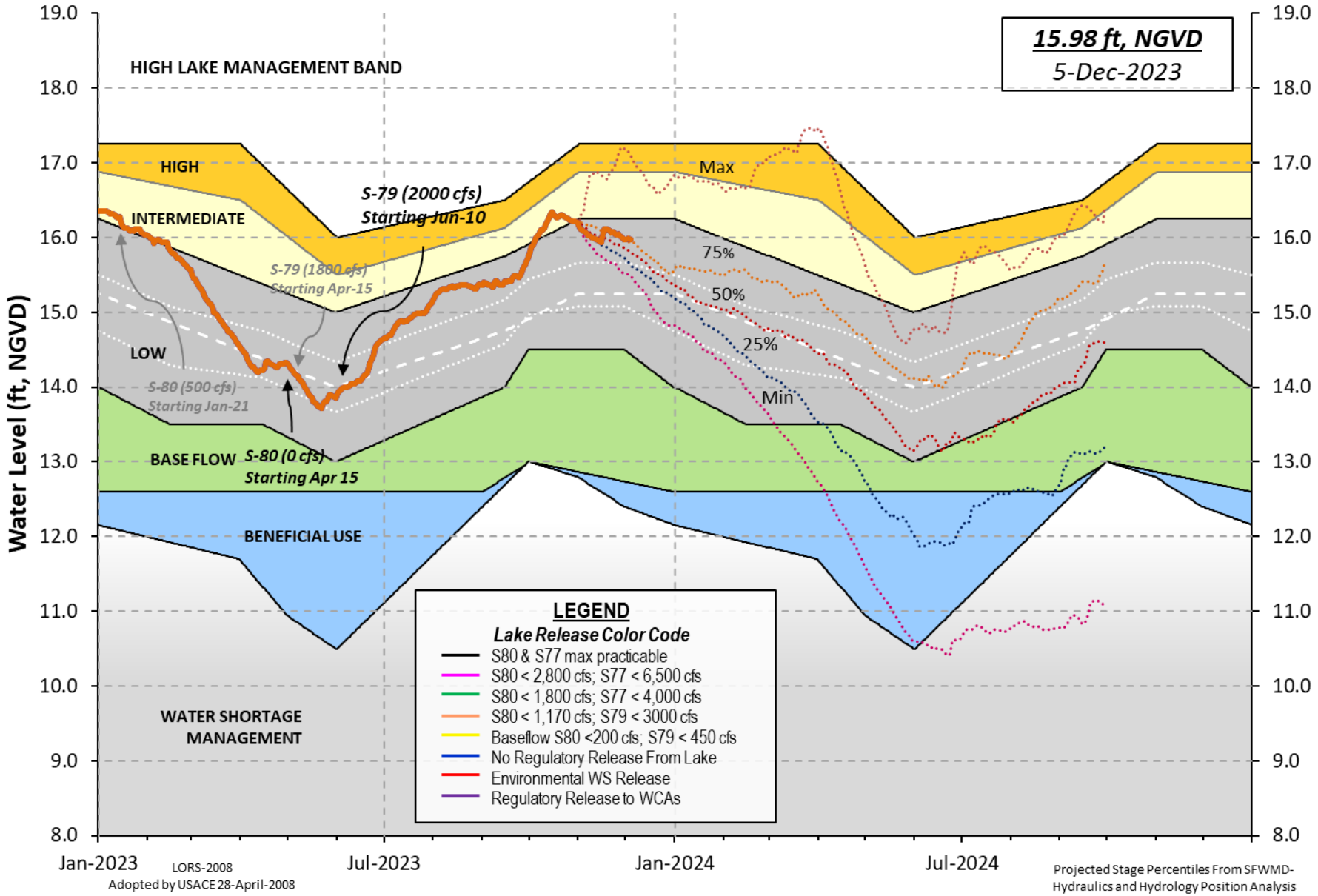


Figure 7-4

Lake Okeechobee Water Level History and Projected Stages



LORS-2008
Adopted by USACE 28-April-2008

Projected Stage Percentiles From SFWMD-Hydraulics and Hydrology Position Analysis

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

Data Ending 2400 hours 03 DEC 2023

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)
*Okeechobee Lake Elevation	15.99	16.48	15.89 (Official Elv)

Bottom of High Lake Mngmt= 17.25 Top of Water Short Mngmt= 12.38
Currently in Operational Management Band

Simulated Average LORS2008 [1965-2000] 13.74
Difference from Average LORS2008 2.25

03DEC (1965-2007) Period of Record Average 14.80
Difference from POR Average 1.19

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ◆ 9.93'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ◆ 8.13'
Bridge Clearance = 49.53'

---

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

L001	L005	L006	LZ40	S4	S352	S308	S133
15.99	15.97	15.91	15.91	16.23	16.04	16.00	15.90

*Combination Okeechobee Avg-Daily Lake Average = 15.99
(*See Note)

Okeechobee Inflows (cfs):

S65E	836	S65EX1	0	Fisheating Cr	24
S154	0	S191	0	S135 Pumps	0
S84	0	S133 Pumps	0	S2 Pumps	0
S84X	0	S127 Pumps	0	S3 Pumps	0
S71	0	S129 Pumps	0	S4 Pumps	0
S72	0	S131 Pumps	0	C5	0

Total Inflows: 860

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	66	S77	1240
S127 Culverts	0	S351	276	S308	4
S129 Culverts	0	S352	213		
S131 Culverts	0	L8 Canal Pt	109		

Total Outflows: 1908

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

Okeechobee Pan Evaporation (inches):

S77	0.21	S308	0.14

Average Pan Evap x 0.75 Pan Coefficient = 0.13" = 0.01'

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 0 cfs or 0 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:	13.59	15.94	0	0	0	0	0	0	(cfs)		
S193:											
S191:	18.46	15.95	0	0.0	0.0	0.0					
S135 Pumps:	13.44	15.86	0	0	0	0	0	(cfs)			
S135 Culverts:			0	0.0	0.0						
North West Shore											
S65E:	21.10	15.74	836	0.4	0.4	0.4	0.4	0.7	0.4		
S65EX1:	21.10	15.74	0								
S127 Pumps:	13.53	15.86	0	0	0	0	0	0	(cfs)		
S127 Culvert:			0	0.0							
S129 Pumps:	13.02	15.90	0	0	0	0	(cfs)				
S129 Culvert:			0	0.0							
S131 Pumps:	12.99	13.19	0	0	0	(cfs)					
S131 Culvert:			0								
Fisheating Creek											
nr Palmdale		28.98	24								
nr Lakeport											
S282	15.89	15.83		0.0	0.0	0.1					
South Shore											
S4 Pumps:	11.86	-NR-	0	0	0	0	(cfs)				
S169:		-NR-	-NR-	-NR-	-NR-	-NR-					
S310:	15.84		10								
S3 Pumps:	10.86	15.90	0	0	0	0	(cfs)				
S354:	15.90	10.86	66	0.0	0.2						
S2 Pumps:	10.67	15.95	0	0	0	0	0	(cfs)			
S351:	15.95	10.67	276	0.1	0.3	0.2					
S352:	16.02	10.26	213	0.1	0.3						
S271:	16.22	15.33		0.0	0.0	0.0	0.0				
L8 Canal PT		15.04	109								
S351 and S352 Temporary Pumps/S354 Spillway											
S351:	10.67	15.95	276	-NR--NR--NR--NR--NR--NR-							
S352:	10.26	16.02	213	-NR--NR--NR--NR-							
S354:	10.86	15.90	66	-NR--NR--NR--NR-							
Caloosahatchee River (S77, S78, S79)											
S47B:	13.40	12.65		2.0	2.0						
S47D:	12.65	10.84	0	0.0							
S77:											
Spillway and Sector Preferred Flow:											
	15.73	10.71	1236	0.0	2.5	2.5	0.0				
Flow Due to Lockages+:			4								
S78:											

```
    Spillway and Sector Flow:
              10.72      3.08    1244    2.0  0.0  2.5  0.0
    Flow Due to Lockages+:           6

  S79:
    Spillway and Sector Flow:
               3.25      1.79    1766    0.0  0.0  1.0  2.0  2.0  2.0  1.0  0.0
    Flow Due to Lockages+:           7
    Percent of flow from S77        70%
    Chloride            (ppm)      0


St. Lucie Canal (S308, S80)
  S308:
    Spillway and Sector Preferred Flow:
              15.98     13.97       0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:           4

  S153:        18.93     13.82       0    0.0  0.0
  S80:
    Spillway and Sector Flow:
              14.06      0.93       0    0.0  0.0  0.0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:        -NR-
    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:	2.10	2.10	2.10	189	4
S78:	1.61	1.61	1.61	182	2
S79:	1.31	1.31	1.31	171	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:	0.00	0.00	0.00	222	7
S80:	7.31	7.31	7.32	199	2
Okeechobee Average (Sites S78, S79 and S80 not included)	1.05	0.16	0.16		
Oke Nexrad Basin Avg	-NR-	0.00	0.00		

```
 Okeechobee Lake Elevations  03 DEC 2023          15.99 Difference from 03DEC23
    03DEC23  -1 Day  =       02 DEC 2023          15.99             0.00
```

03DEC23	-2 Days =	01 DEC 2023	15.97	-0.02
03DEC23	-3 Days =	30 NOV 2023	15.98	-0.01
03DEC23	-4 Days =	29 NOV 2023	15.99	0.00
03DEC23	-5 Days =	28 NOV 2023	16.01	0.02
03DEC23	-6 Days =	27 NOV 2023	16.03	0.04
03DEC23	-7 Days =	26 NOV 2023	16.05	0.06
03DEC23	-30 Days =	03 NOV 2023	16.10	0.11
03DEC23	-1 Year =	03 DEC 2022	16.48	0.49
03DEC23	-2 Year =	03 DEC 2021	15.89	-0.10

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
03DEC23	Today =	03 DEC 2023	-537	MON	1790
03DEC23	-1 Day =	02 DEC 2023	-531	SUN	5460
03DEC23	-2 Days =	01 DEC 2023	-1030	SAT	-822
03DEC23	-3 Days =	30 NOV 2023	827	FRI	-547
03DEC23	-4 Days =	29 NOV 2023	2115	THU	-3044
03DEC23	-5 Days =	28 NOV 2023	2106	WED	-3378
03DEC23	-6 Days =	27 NOV 2023	2197	TUE	-3044
03DEC23	-7 Days =	26 NOV 2023	2599	MON	3730
03DEC23	-8 Days =	25 NOV 2023	2234	SUN	-1218
03DEC23	-9 Days =	24 NOV 2023	2374	SAT	-3701
03DEC23	-10 Days =	23 NOV 2023	2856	FRI	-1032
03DEC23	-11 Days =	22 NOV 2023	2853	THU	1515
03DEC23	-12 Days =	21 NOV 2023	2924	WED	-2618
03DEC23	-13 Days =	20 NOV 2023	3152	TUE	-611

S65E

		Average Flow over previous 14 days			Avg-Daily Flow
03DEC23	Today=	03 DEC 2023	866	MON	947
03DEC23	-1 Day =	02 DEC 2023	798	SUN	878
03DEC23	-2 Days =	01 DEC 2023	736	SAT	890
03DEC23	-3 Days =	30 NOV 2023	672	FRI	929
03DEC23	-4 Days =	29 NOV 2023	606	THU	952
03DEC23	-5 Days =	28 NOV 2023	538	WED	961
03DEC23	-6 Days =	27 NOV 2023	469	TUE	926
03DEC23	-7 Days =	26 NOV 2023	403	MON	932
03DEC23	-8 Days =	25 NOV 2023	336	SUN	997
03DEC23	-9 Days =	24 NOV 2023	265	SAT	1013
03DEC23	-10 Days =	23 NOV 2023	193	FRI	1030
03DEC23	-11 Days =	22 NOV 2023	119	THU	1112
03DEC23	-12 Days =	21 NOV 2023	40	WED	557
03DEC23	-13 Days =	20 NOV 2023	0	TUE	0

S65EX1

		Average Flow over previous 14 days			Avg-Daily Flow
03DEC23	Today=	03 DEC 2023	135	MON	0
03DEC23	-1 Day =	02 DEC 2023	226	SUN	0
03DEC23	-2 Days =	01 DEC 2023	323	SAT	0
03DEC23	-3 Days =	30 NOV 2023	431	FRI	0
03DEC23	-4 Days =	29 NOV 2023	539	THU	0
03DEC23	-5 Days =	28 NOV 2023	646	WED	0
03DEC23	-6 Days =	27 NOV 2023	755	TUE	0
03DEC23	-7 Days =	26 NOV 2023	866	MON	0
03DEC23	-8 Days =	25 NOV 2023	972	SUN	0
03DEC23	-9 Days =	24 NOV 2023	1085	SAT	0
03DEC23	-10 Days =	23 NOV 2023	1193	FRI	0
03DEC23	-11 Days =	22 NOV 2023	1299	THU	0
03DEC23	-12 Days =	21 NOV 2023	1417	WED	548
03DEC23	-13 Days =	20 NOV 2023	1496	TUE	1348

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)
03 DEC 2023	1989	2450	2520	3562
02 DEC 2023	1447	1815	1555	2485
01 DEC 2023	2224	2359	1646	2690
30 NOV 2023	2744	2873	2535	3100
29 NOV 2023	1703	2105	2012	2791
28 NOV 2023	3834	2119	1124	1094
27 NOV 2023	2426	2917	2896	4873
26 NOV 2023	2281	2897	2772	3747
25 NOV 2023	1820	2085	2177	3654
24 NOV 2023	1580	1659	1754	3104
23 NOV 2023	2145	2452	2052	3625
22 NOV 2023	2780	3004	3206	3976
21 NOV 2023	2749	3345	3609	4887
20 NOV 2023	2762	3198	3523	5063

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)
03 DEC 2023	19	547	422	131	217
02 DEC 2023	10	239	164	11	220
01 DEC 2023	12	0	0	0	218
30 NOV 2023	16	0	127	0	227
29 NOV 2023	18	0	314	0	223
28 NOV 2023	19	0	180	0	224
27 NOV 2023	13	0	44	0	213
26 NOV 2023	31	0	0	0	210
25 NOV 2023	106	0	0	0	215
24 NOV 2023	24	0	0	0	217
23 NOV 2023	16	0	0	0	212
22 NOV 2023	25	0	0	0	222
21 NOV 2023	19	0	69	0	214
20 NOV 2023	22	0	90	0	224

DATE	S-308 Discharge (ALL DAY) (AC-FT)	Below S-308 Discharge (ALL-DAY) (AC-FT)	S-80 Discharge (ALL-DAY) (AC-FT)
03 DEC 2023	9	-NR-	-NR-
02 DEC 2023	17	-NR-	-NR-
01 DEC 2023	306	-NR-	32
30 NOV 2023	226	-NR-	35
29 NOV 2023	372	-NR-	39
28 NOV 2023	7	-NR-	-NR-
27 NOV 2023	4	-NR-	-NR-
26 NOV 2023	5	-NR-	29
25 NOV 2023	11	-NR-	21
24 NOV 2023	2	-NR-	25
23 NOV 2023	4	-NR-	25
22 NOV 2023	8	-NR-	-NR-
21 NOV 2023	462	-NR-	-NR-
20 NOV 2023	8	-NR-	-NR-

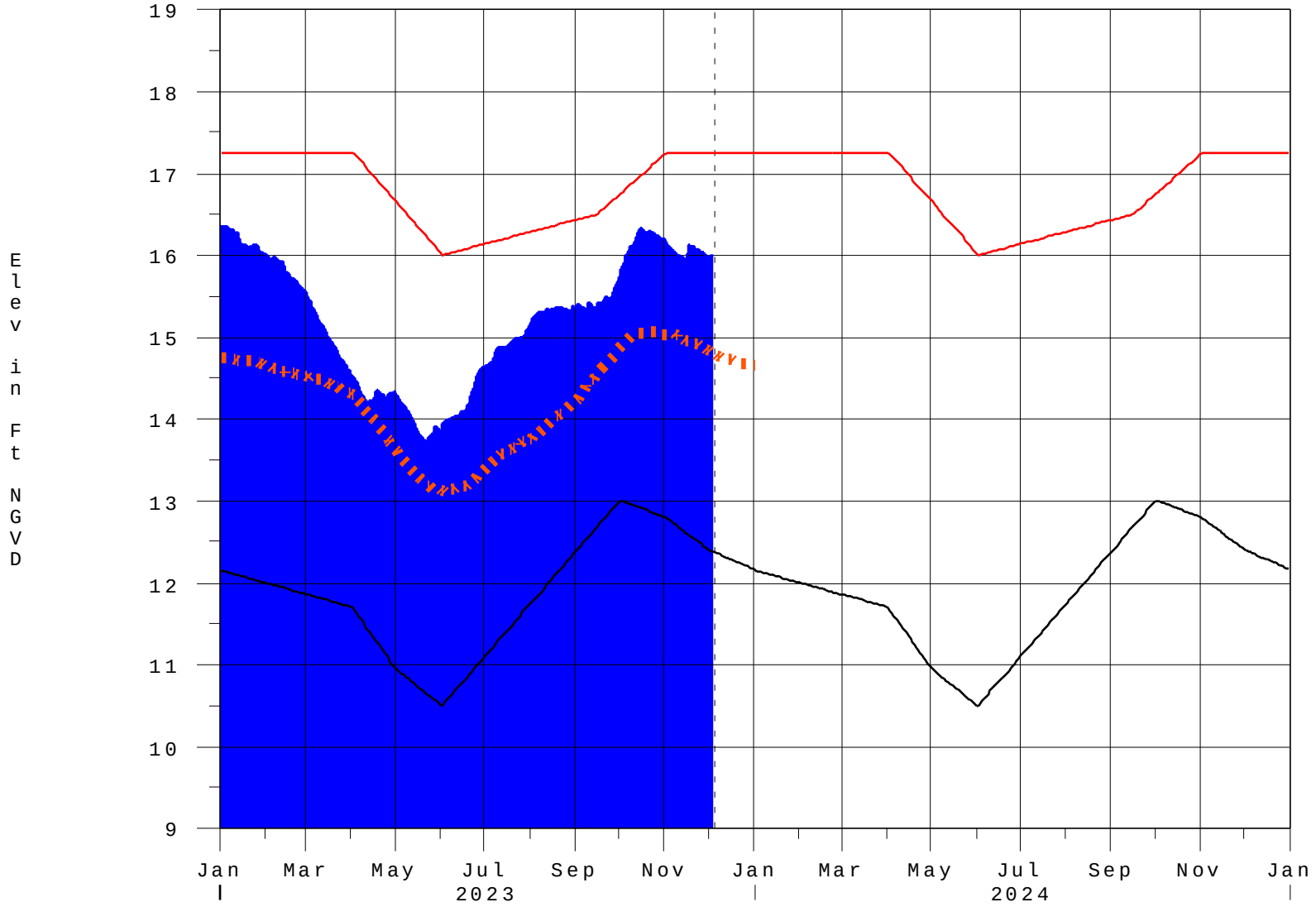
*** NOTE: Discharge (ALL DAY) is computed using Spillway, Sector Gate and Lockages Discharges from 0015 hrs to 2400 hrs.

(I) - Flows preceeded 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 04DEC2023 @ 13:38  ** Preliminary Data - Subject to Revision **
```

Lake Okeechobee

04DEC23 13:30:15



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 >= 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**