Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 12/18/2023 (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	0.94	Normal	1.47	Normal	1.67	Wet
Multi Seasonal (Dec-Oct)	N/A	N/A	3.40	Wet	4.16	Wet	5.52	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:

2220 cfs 14-day running average for Lake Okeechobee Net Inflow through 12/18/2023. According to the classification in Tributary Hydrologic Conditions table, this condition is Near Normal.

-1.30 for Palmer Drought Index on 12/16/2023. 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 12/18/2023:

Lake Okeechobee Stage: **16.03 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	14.23	← 16.03 ft
Base Flow sub-band		12.66	
Beneficial Use sub-band		12.27	
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 12/18/2023 (ENSO Condition- El Niño):

Status for week ending 12/18/2023*:

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	-1.30 (Dry)	M
	CPC Precipitation Outlook	1 month: Above Normal	L
		3 months: Above Normal	L
	LOK Seasonal Net Inflow Outlook	1.47 ft	L
	ENSO Forecast	Normal to Extremely Wet	
	LOK Multi-Seasonal Net Inflow Outlook	4.16 ft	L
	ENSO Forecast	Wet	
WCAs	WCA 1: 3 Station Average (Sites 1-7, 1-8T, and 1-9)	Above Line 1 (17.46 ft)	L
	WCA 2A: Site 2-17	Above Line 1 (13.14 ft)	L
	WCA-3A: 3 Station Average (Sites 63, 64, and 65)	Above Line 1 (10.81 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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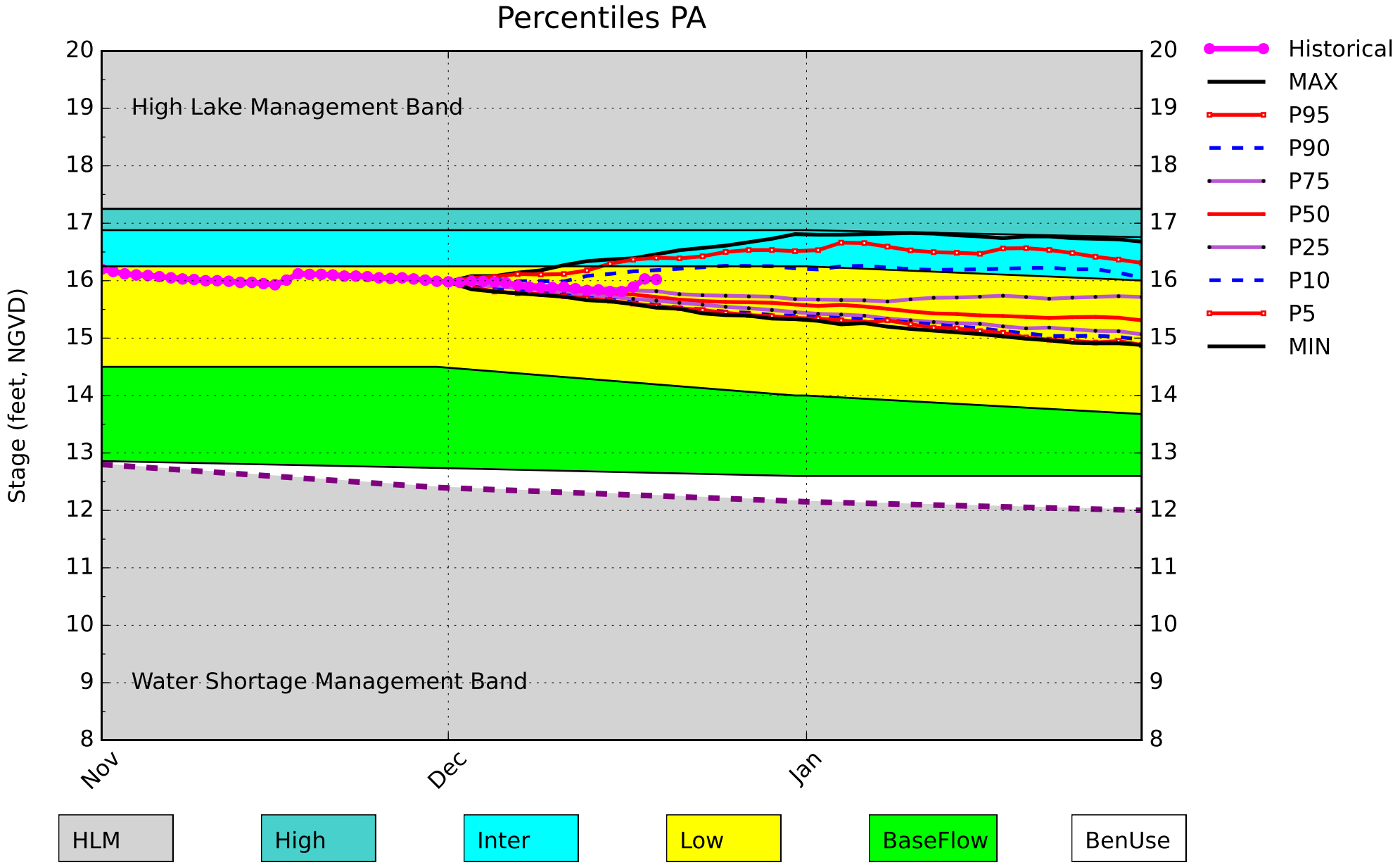
*- S80 flow data for 12/12,12/13 & 12/15-12/17 is not available from USACE Daily Reports and was assumed to be 0.

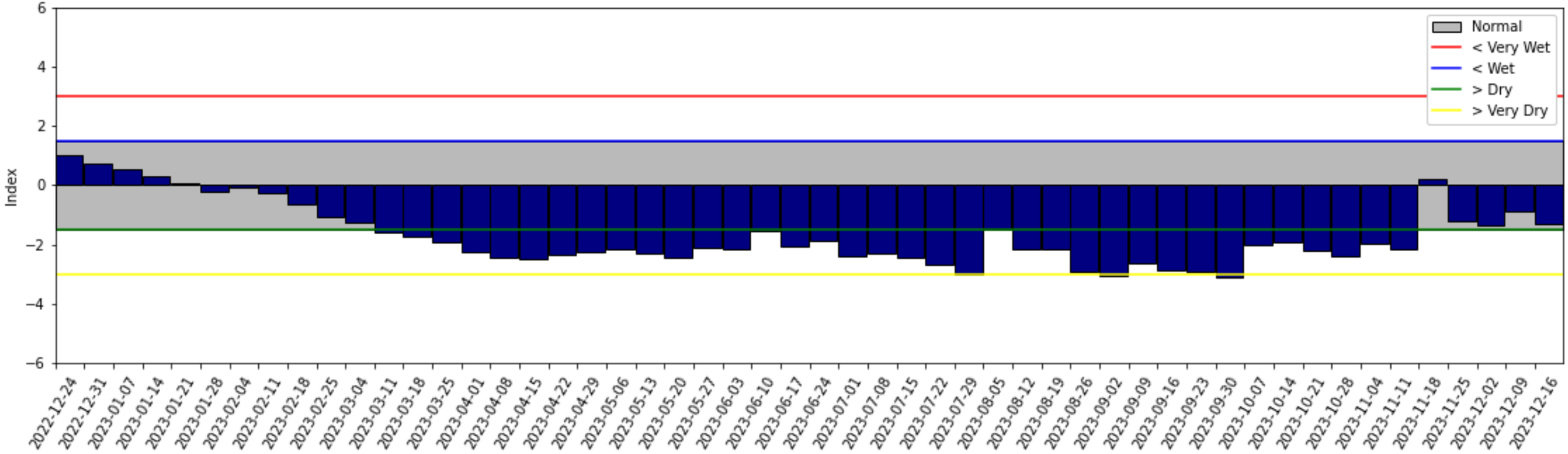
Lake Okeechobee SFWMM Decenter 2023 Position Analysis

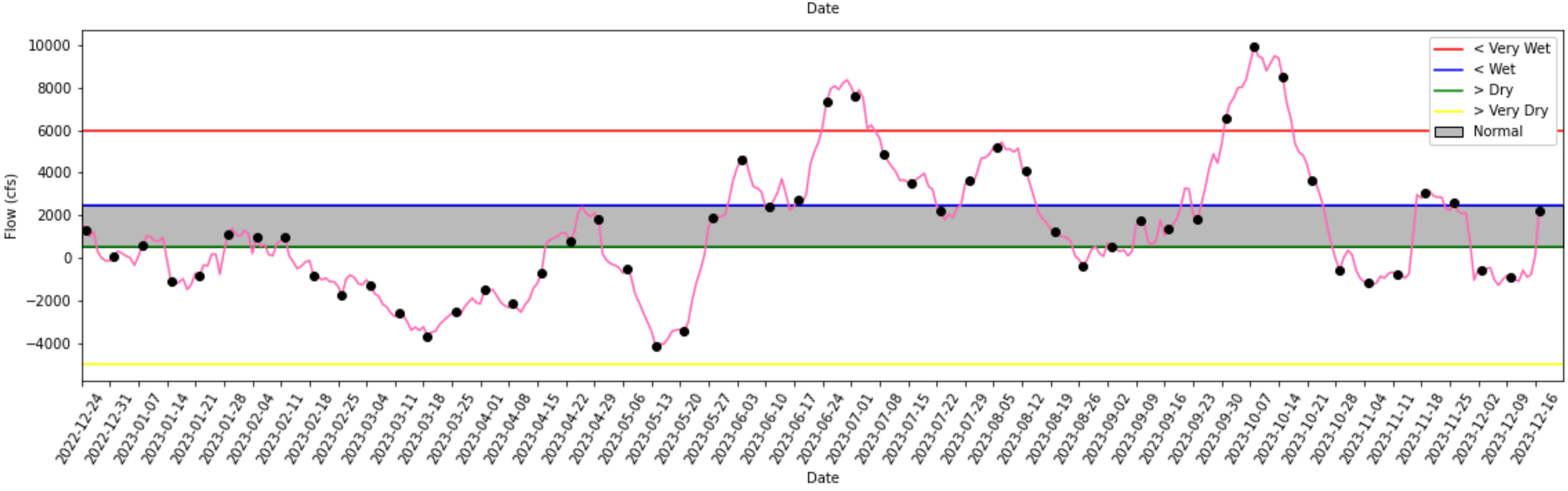


(See assumptions on the Position Analysis Results website)

12/19/23 08:06:12

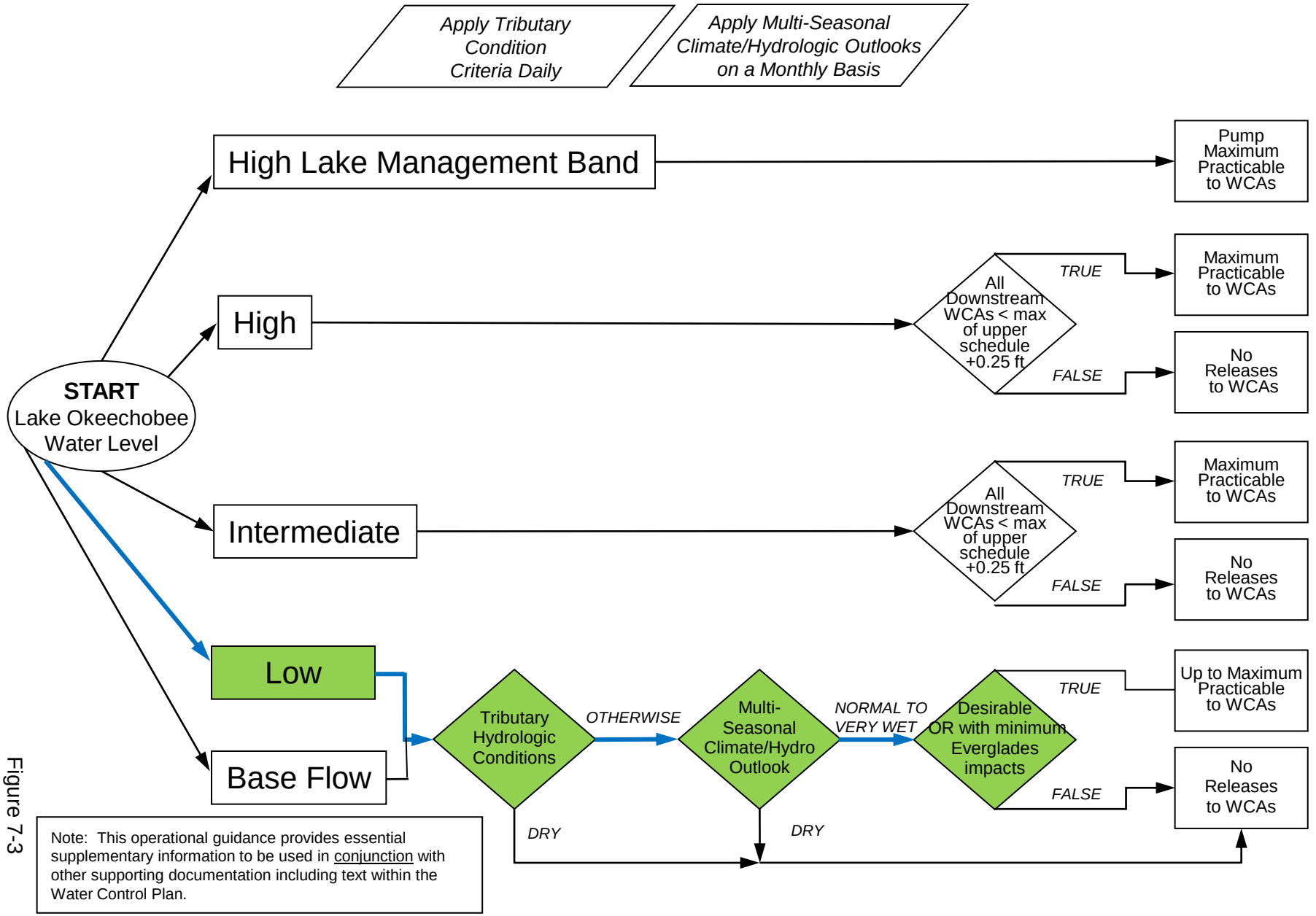
Tributary Basin Condition Indicators as of December 17 2023





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)

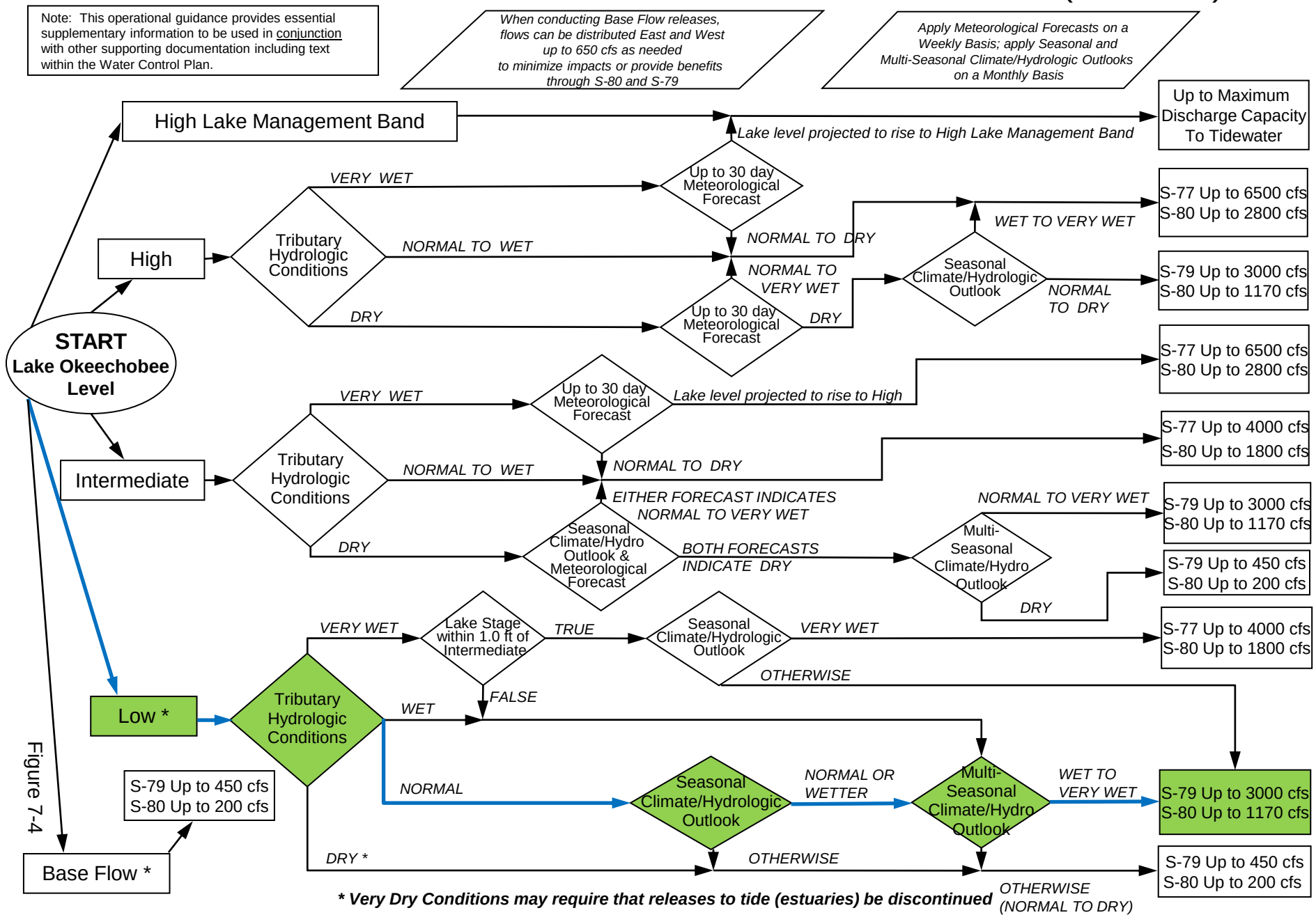
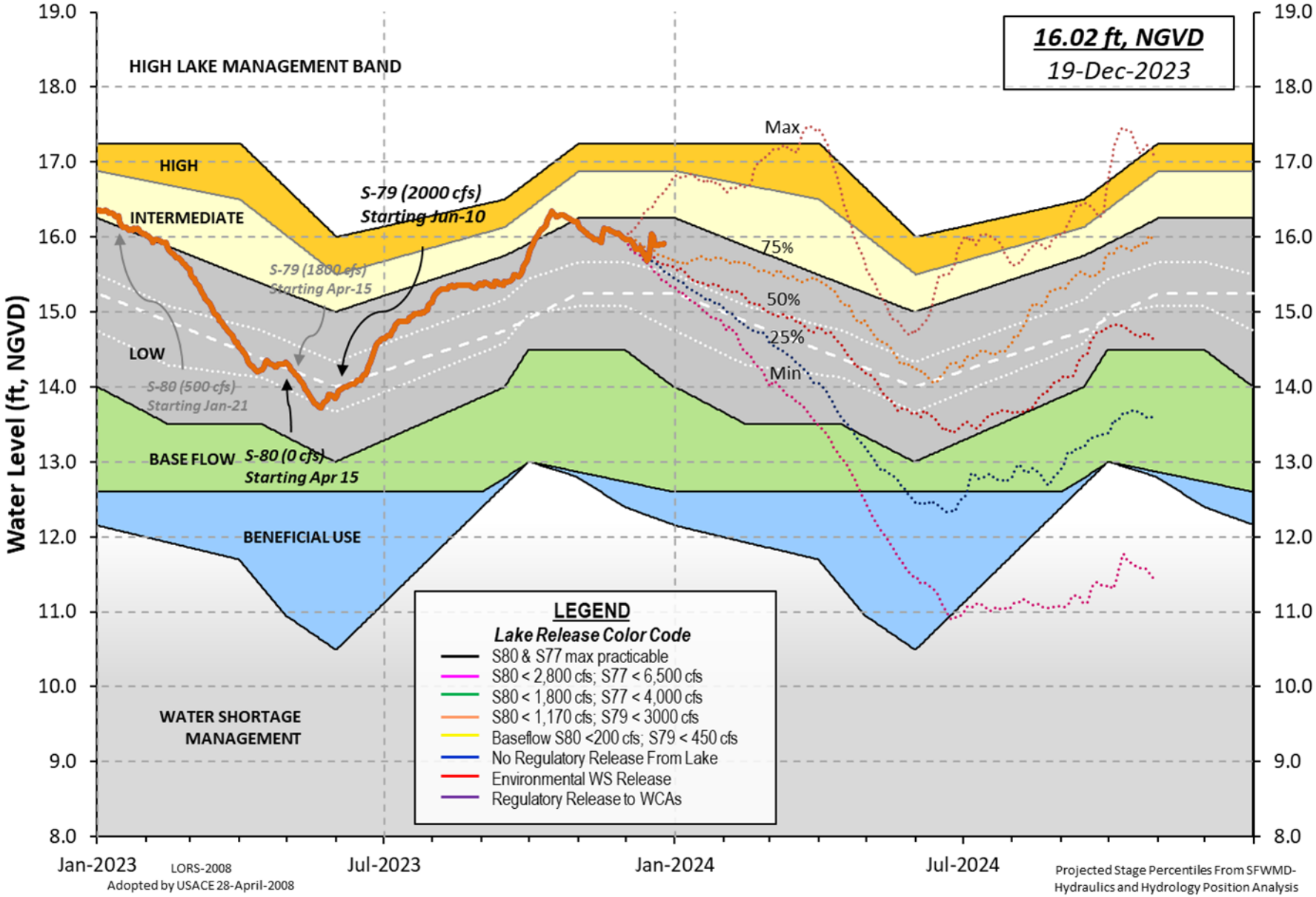


Figure 7-4

Lake Okeechobee Water Level History and Projected Stages



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

Data Ending 2400 hours 17 DEC 2023

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)
*Okeechobee Lake Elevation	16.03	16.47	15.74 (Official Elv)

Bottom of High Lake Mngmt= 17.25 Top of Water Short Mngmt= 12.27
Currently in Operational Management Band

Simulated Average LORS2008 [1965-2000] 13.62
Difference from Average LORS2008 2.41

17DEC (1965-2007) Period of Record Average 14.71
Difference from POR Average 1.32

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ◆ 9.97'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ◆ 8.17'
Bridge Clearance = 49.14'

---

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

L001	L005	L006	LZ40	S4	S352	S308	S133
16.12	15.88	15.89	-NR-	16.08	16.14	16.14	16.05

*Combination Okeechobee Avg-Daily Lake Average = 16.03 (*See Note)

Okeechobee Inflows (cfs):

S65E	954	S65EX1	0	Fisheating Cr	21
S154	0	S191	264	S135 Pumps	0
S84	426	S133 Pumps	145	S2 Pumps	0
S84X	102	S127 Pumps	0	S3 Pumps	0
S71	126	S129 Pumps	58	S4 Pumps	0
S72	75	S131 Pumps	0	C5	0

Total Inflows: 2171

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	0	S77	-NR-
S127 Culverts	0	S351	0	S308	2
S129 Culverts	0	S352	25		
S131 Culverts	0	L8 Canal Pt	111		

Total Outflows: No Report Due To Missing S77 or S308 Discharge Data

****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	0.13	S308	0.14

Average Pan Evap x 0.75 Pan Coefficient = 0.10" = 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 30653 cfs or 60800 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:	13.29	15.95	145	0	48	30	30	36				(cfs)
S193:												
S191:	18.44	15.94	264	0.5	0.0	0.5						
S135 Pumps:	13.17	15.93	0	0	0	0	0					(cfs)
S135 Culverts:			0	0.0	0.0							
North West Shore												
S65E:	20.95	15.65	954	-0.0	0.4	0.4	0.6	0.5	0.5			
S65EX1:	20.95	15.65	0									
S127 Pumps:	13.59	15.81	0	0	0	0	0	0				(cfs)
S127 Culvert:			0	0.0								
S129 Pumps:	12.79	15.78	58	24	36	0						(cfs)
S129 Culvert:			0	0.0								
S131 Pumps:	13.03	-NR-	0	0	0							(cfs)
S131 Culvert:			0									
Fisheating Creek												
nr Palmdale		29.09	21									
nr Lakeport												
S282	15.68	15.66		0.0	0.0	0.1						
South Shore												
S4 Pumps:	12.87	-NR-	0	-NR-	-NR-	-NR-						(cfs)
S169:		-NR-	-NR-	-NR-	-NR-	-NR-						
S310:	15.83		5									
S3 Pumps:	10.35	16.02	0	0	0	0						(cfs)
S354:	16.02	10.35	0	0.0	0.0							
S2 Pumps:	11.17	16.14	0	0	0	0	0					(cfs)
S351:	16.14	11.17	0	0.0	0.0	0.0						
S352:	16.25	11.08	25	0.1	0.0							
S271:	16.44	15.57		0.0	0.0	0.0	-NR-					
L8 Canal PT		15.27	111									
S351 and S352 Temporary Pumps/S354 Spillway												
S351:	11.17	16.14	0	-NR--NR--NR--NR--NR--NR-								
S352:	11.08	16.25	25	-NR--NR--NR--NR-								
S354:	10.35	16.02	0	-NR--NR--NR--NR-								
Caloosahatchee River (S77, S78, S79)												
S47B:	13.18	11.71		0.5	0.5							
S47D:	11.74	11.31	-7	0.0								
S77:												
Spillway and Sector Preferred Flow:												
	******	11.14	640	0.0	0.5	0.5	0.0					
Flow Due to Lockages+:			-NR-									
S78:												

```
    Spillway and Sector Flow:
              11.18      2.80    1154    0.5  0.0  2.5  0.0
    Flow Due to Lockages+:           6

  S79:
    Spillway and Sector Flow:
               2.80      1.60    2537    0.0  0.0  0.0  3.0  3.0  2.0  0.0  0.0
    Flow Due to Lockages+:           0
    Percent of flow from S77        25%
    Chloride            (ppm)      0


St. Lucie Canal (S308, S80)
  S308:
    Spillway and Sector Preferred Flow:
              16.08     14.36       0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:           2

  S153:        18.88     14.15      22    0.5  0.0
  S80:
    Spillway and Sector Flow:
              14.52      1.31       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:	0.09	1.26	1.26	306	4
S78:	0.03	1.02	1.04	298	2
S79:	0.00	1.63	1.63	272	3
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	304	20
S80:	0.09	3.43	3.75	288	8
Okeechobee Average (Sites S78, S79 and S80 not included)	0.05	0.10	0.10		
Oke Nexrad Basin Avg	-NR-	0.00	0.00		

```
 Okeechobee Lake Elevations  17 DEC 2023          16.03 Difference from 17DEC23
    17DEC23  -1 Day  =       16 DEC 2023          15.89            -0.14
```

17DEC23 -2 Days =	15 DEC 2023	15.81	-0.22
17DEC23 -3 Days =	14 DEC 2023	15.81	-0.22
17DEC23 -4 Days =	13 DEC 2023	15.84	-0.19
17DEC23 -5 Days =	12 DEC 2023	15.83	-0.20
17DEC23 -6 Days =	11 DEC 2023	15.86	-0.17
17DEC23 -7 Days =	10 DEC 2023	15.89	-0.14
17DEC23 -30 Days =	17 NOV 2023	16.12	0.09
17DEC23 -1 Year =	17 DEC 2022	16.47	0.44
17DEC23 -2 Year =	17 DEC 2021	15.74	-0.29

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
17DEC23	Today =	17 DEC 2023	2224	MON	31319
17DEC23	-1 Day =	16 DEC 2023	115	SUN	17888
17DEC23	-2 Days =	15 DEC 2023	-773	SAT	843
17DEC23	-3 Days =	14 DEC 2023	-892	FRI	-5060
17DEC23	-4 Days =	13 DEC 2023	-570	THU	4125
17DEC23	-5 Days =	12 DEC 2023	-1082	WED	-4576
17DEC23	-6 Days =	11 DEC 2023	-996	TUE	-4923
17DEC23	-7 Days =	10 DEC 2023	-862	MON	3277
17DEC23	-8 Days =	09 DEC 2023	-830	SUN	1361
17DEC23	-9 Days =	08 DEC 2023	-1014	SAT	-86
17DEC23	-10 Days =	07 DEC 2023	-1272	FRI	-4534
17DEC23	-11 Days =	06 DEC 2023	-1022	THU	-6544
17DEC23	-12 Days =	05 DEC 2023	-446	WED	-1971
17DEC23	-13 Days =	04 DEC 2023	-492	TUE	16

S65E

		Average Flow over previous 14 days			Avg-Daily Flow
17DEC23	Today=	17 DEC 2023	910	MON	1072
17DEC23	-1 Day =	16 DEC 2023	901	SUN	894
17DEC23	-2 Days =	15 DEC 2023	900	SAT	892
17DEC23	-3 Days =	14 DEC 2023	900	FRI	841
17DEC23	-4 Days =	13 DEC 2023	906	THU	855
17DEC23	-5 Days =	12 DEC 2023	913	WED	912
17DEC23	-6 Days =	11 DEC 2023	917	TUE	953
17DEC23	-7 Days =	10 DEC 2023	915	MON	895
17DEC23	-8 Days =	09 DEC 2023	917	SUN	949
17DEC23	-9 Days =	08 DEC 2023	921	SAT	824
17DEC23	-10 Days =	07 DEC 2023	934	FRI	831
17DEC23	-11 Days =	06 DEC 2023	948	THU	927
17DEC23	-12 Days =	05 DEC 2023	962	WED	935
17DEC23	-13 Days =	04 DEC 2023	935	TUE	960

S65EX1

		Average Flow over previous 14 days			Avg-Daily Flow
17DEC23	Today=	17 DEC 2023	0	MON	0
17DEC23	-1 Day =	16 DEC 2023	0	SUN	0
17DEC23	-2 Days =	15 DEC 2023	0	SAT	0
17DEC23	-3 Days =	14 DEC 2023	0	FRI	0
17DEC23	-4 Days =	13 DEC 2023	0	THU	0
17DEC23	-5 Days =	12 DEC 2023	0	WED	0
17DEC23	-6 Days =	11 DEC 2023	0	TUE	0
17DEC23	-7 Days =	10 DEC 2023	0	MON	0
17DEC23	-8 Days =	09 DEC 2023	0	SUN	0
17DEC23	-9 Days =	08 DEC 2023	0	SAT	0
17DEC23	-10 Days =	07 DEC 2023	0	FRI	0
17DEC23	-11 Days =	06 DEC 2023	0	THU	0
17DEC23	-12 Days =	05 DEC 2023	0	WED	0
17DEC23	-13 Days =	04 DEC 2023	39	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)
17 DEC 2023	-NR-	1270	2282	5080
16 DEC 2023	-NR-	1017	1897	3245
15 DEC 2023	-NR-	1612	1893	2713
14 DEC 2023	2093	2805	2095	3606
13 DEC 2023	3495	3826	3076	4269
12 DEC 2023	3511	3772	3811	4893
11 DEC 2023	2748	2944	2925	4944
10 DEC 2023	1701	1944	2000	3024
09 DEC 2023	1722	2131	1836	3837
08 DEC 2023	2834	3307	2810	2625
07 DEC 2023	2480	2932	2577	3131
06 DEC 2023	3097	3269	2990	4579
05 DEC 2023	4151	4315	3909	5641
04 DEC 2023	3308	3601	3135	5042

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)
17 DEC 2023	9	0	49	0	221
16 DEC 2023	4	0	51	0	192
15 DEC 2023	12	0	53	0	196
14 DEC 2023	12	0	52	0	162
13 DEC 2023	1	0	50	0	139
12 DEC 2023	9	0	50	0	159
11 DEC 2023	9	114	76	0	173
10 DEC 2023	7	152	103	0	200
09 DEC 2023	10	439	128	0	230
08 DEC 2023	11	536	285	0	234
07 DEC 2023	15	641	333	0	231
06 DEC 2023	15	572	243	136	231
05 DEC 2023	18	339	37	0	224
04 DEC 2023	16	417	221	86	223

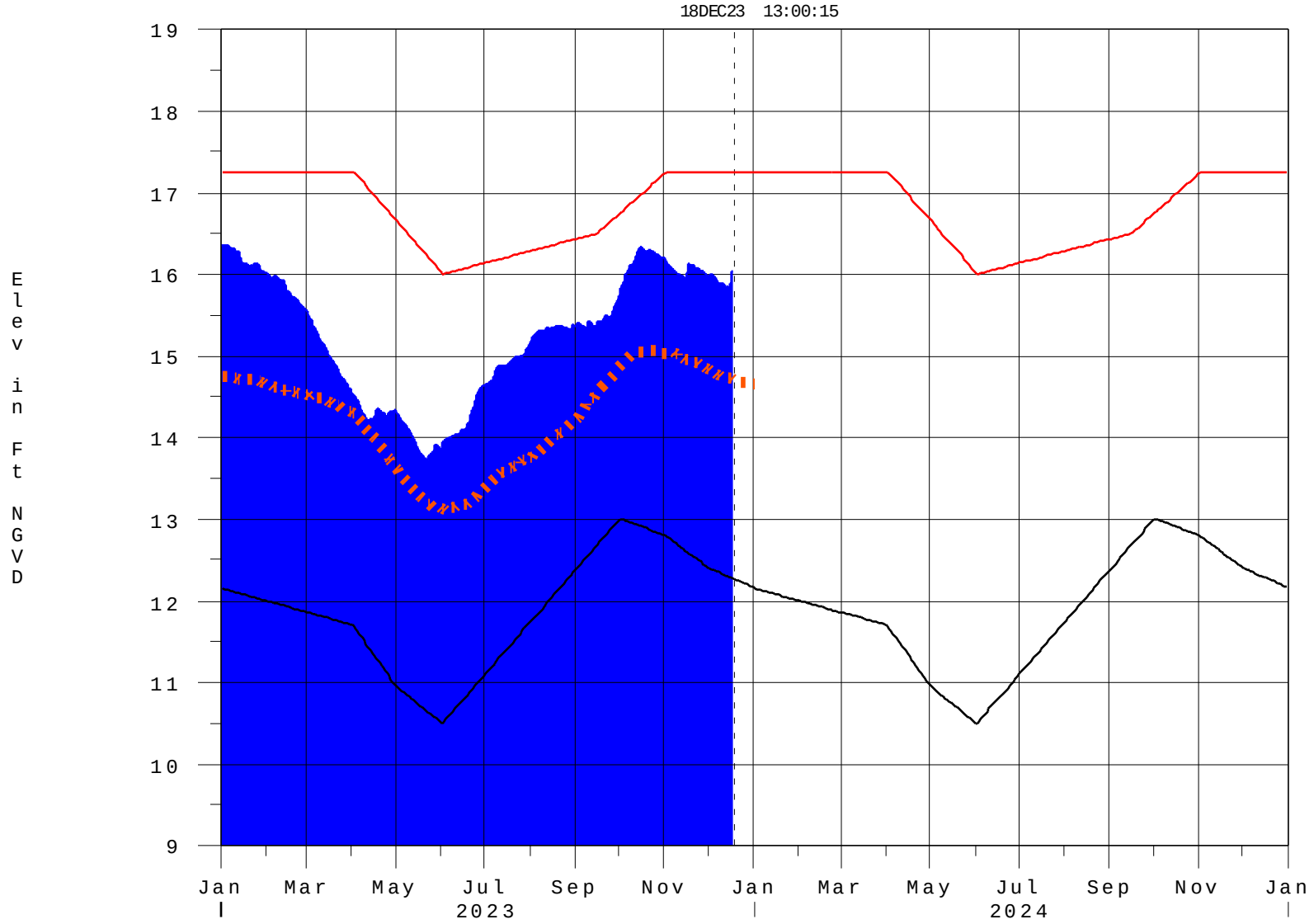
DATE	S-308 Discharge (ALL DAY) (AC-FT)	Below S-308 Discharge (ALL-DAY) (AC-FT)	S-80 Discharge (ALL-DAY) (AC-FT)
17 DEC 2023	3	-NR-	-NR-
16 DEC 2023	2	-NR-	-NR-
15 DEC 2023	6	-NR-	-NR-
14 DEC 2023	0	-NR-	3
13 DEC 2023	4	-NR-	-NR-
12 DEC 2023	4	-NR-	-NR-
11 DEC 2023	6	-NR-	41
10 DEC 2023	9	-NR-	34
09 DEC 2023	7	-NR-	44
08 DEC 2023	8	-NR-	32
07 DEC 2023	7	-NR-	25
06 DEC 2023	6	-NR-	25
05 DEC 2023	15	-NR-	58
04 DEC 2023	7	-NR-	44

*** 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 18DEC2023 @ 13:06  ** Preliminary Data - Subject to Revision **
```

Lake Okeechobee



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**