Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 1/29/2024 (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 (Jan-Jun)	N/A	N/A	0.90	Normal	1.57	Wet	1.90	Wet
Multi Seasonal (Jan-Oct)	N/A	N/A	3.09	Wet	3.76	Wet	5.17	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:

4678 cfs 14-day running average for Lake Okeechobee Net Inflow through 1/29/2024. According to the classification in Tributary Hydrologic Conditions table, this condition is Wet.

1.09 for Palmer Drought Index on 1/27/2024. According to the classification in Tributary Hydrologic Conditions table, this condition is Near Normal.

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

LORS2008 Classification Tables:

Lake Okeechobee Stage on 1/29/2024:

Lake Okeechobee Stage: **16.33 feet**

Lake Okeechobee Management Zone/Band		Bottom Elevation (feet, NGVD)	Current Lake Stage
High Lake Management Band		17.25	
Operational Band	High sub-band	16.77	
	Intermediate sub-band	16.03	← 16.33 ft
	Low sub-band	13.70	
Base Flow sub-band		12.60	
Beneficial Use sub-band		12.01	
Water Shortage Management Band			

Part C of LORS2008: Discharge to WCAs

Maximum Practicable to WCAs.

Part D of LORS2008: Discharge to Tide

Up to 4000 cfs at S-77 and up to 1800 cfs at S-80.

LORS2008 Implementation on 1/29/2024 (ENSO Condition- El Niño):

Status for week ending 1/29/2024*:

Water Supply Risk Evaluation

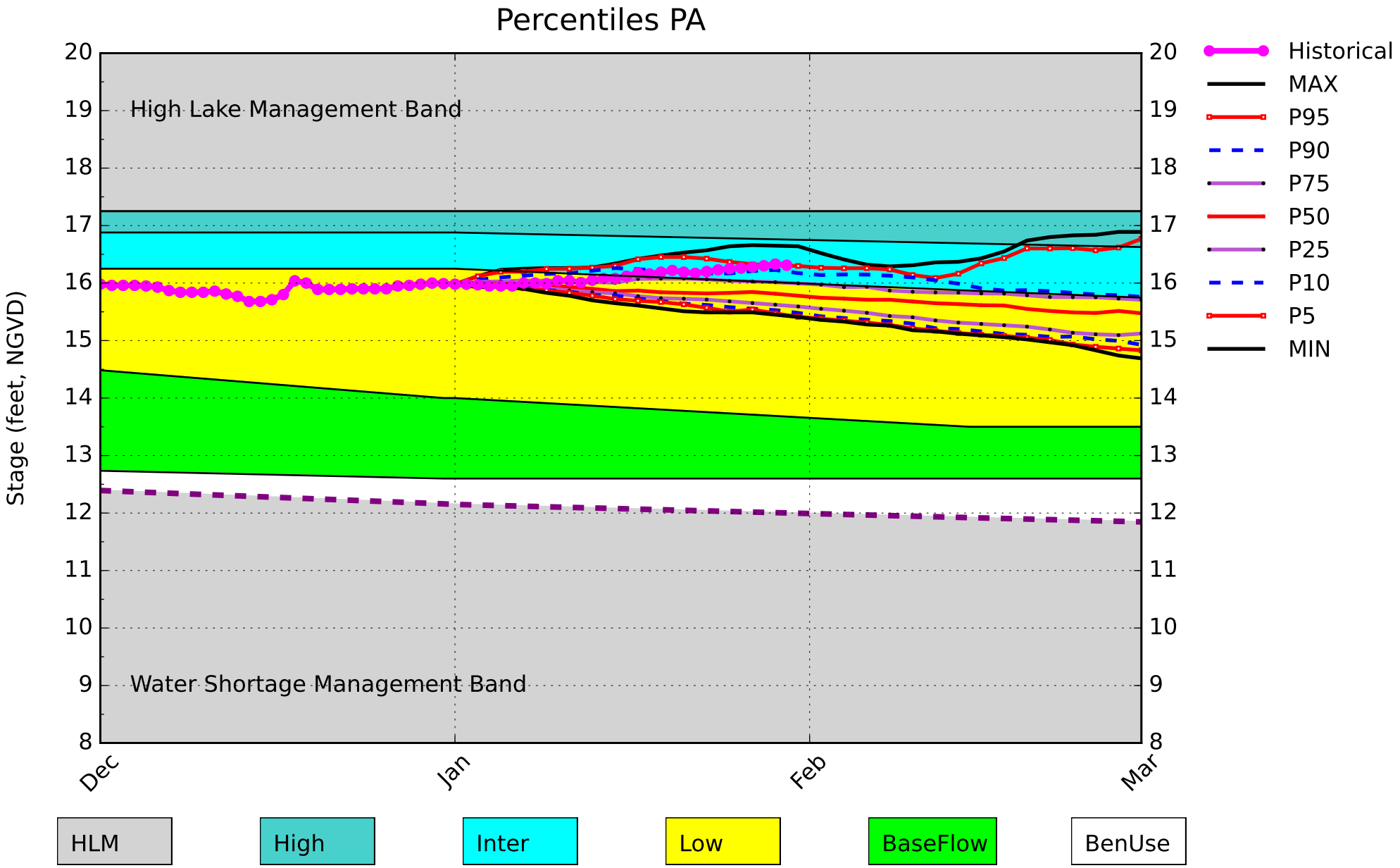
Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Low Sub-band	M
	Palmer Drought Index for LOK Tributary Conditions	1.09 (Normal to Extremely Wet)	L
	CPC Precipitation Outlook	1 month: Above Normal	L
		3 months: Above Normal	L
	LOK Seasonal Net Inflow Outlook	1.57 ft	L
	ENSO Forecast	Normal to Extremely Wet	
	LOK Multi-Seasonal Net Inflow Outlook	3.76 ft	L
	ENSO Forecast	Wet	
WCAs	WCA 1: Site 1-8C	Above Line 1 (17.06 ft)	L
	WCA 2A: Site 2-17	Above Line 1 (12.67 ft)	L
	WCA-3A: 3 Station Average (Sites 63, 64, and 65)	Above Line 1 (10.49 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.

---

*- S80 flow data for January 27th and 28th 2024 is not available from USACE Daily Reports and was assumed to be 0.

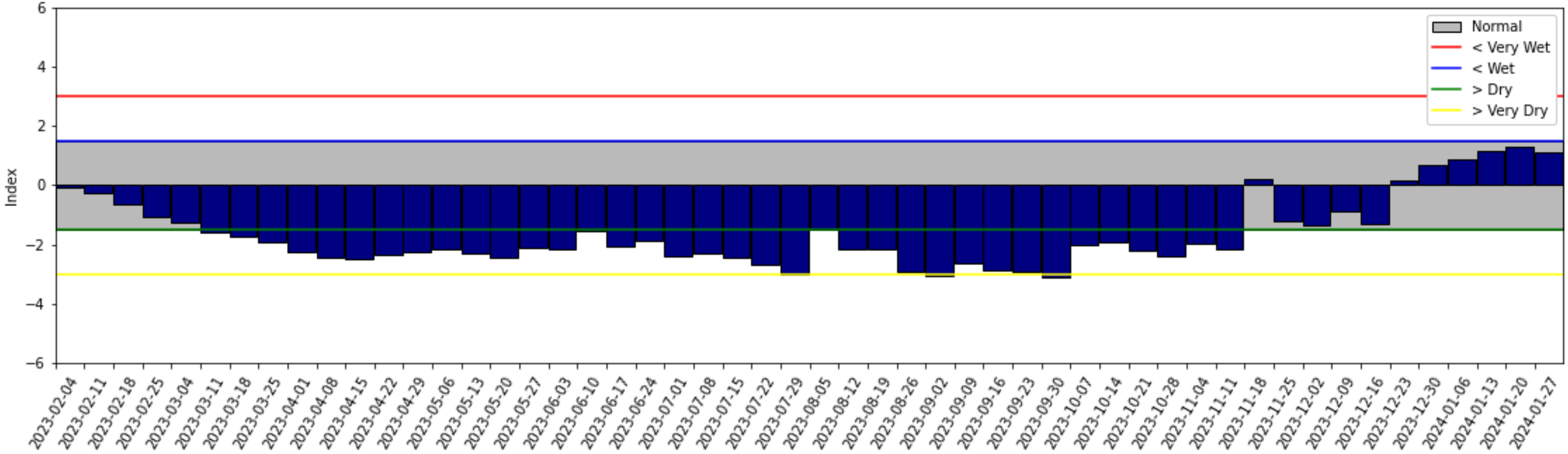
Lake Okeechobee SFWMM January 2024 Position Analysis



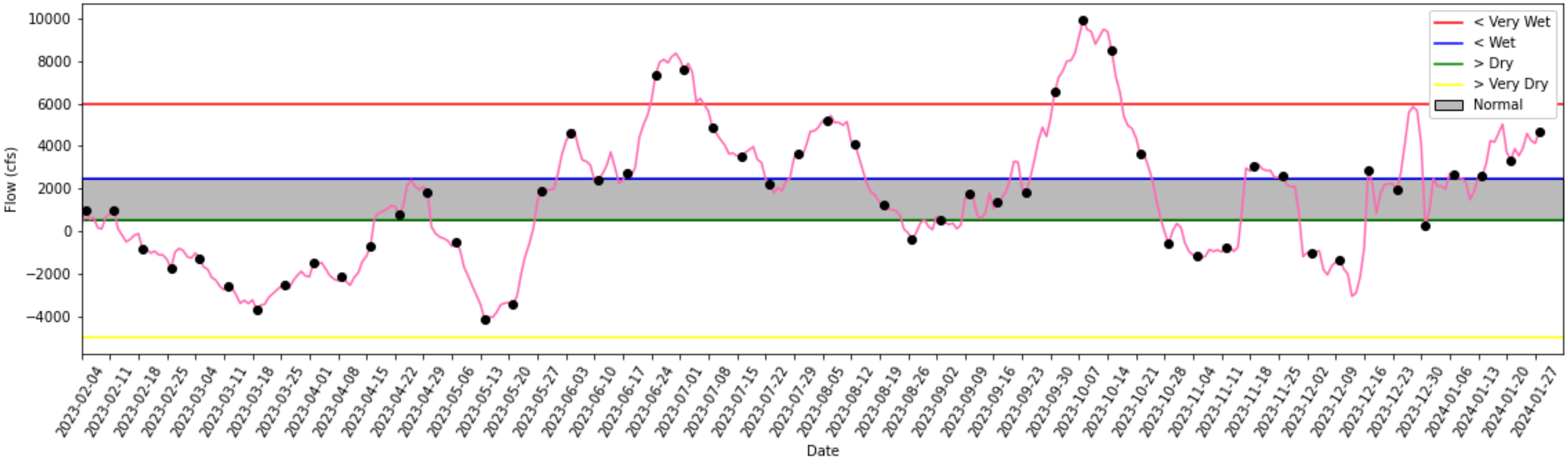
(See assumptions on the Position Analysis Results website)

01/30/24 08:14:03

Tributary Basin Condition Indicators as of January 28 2024



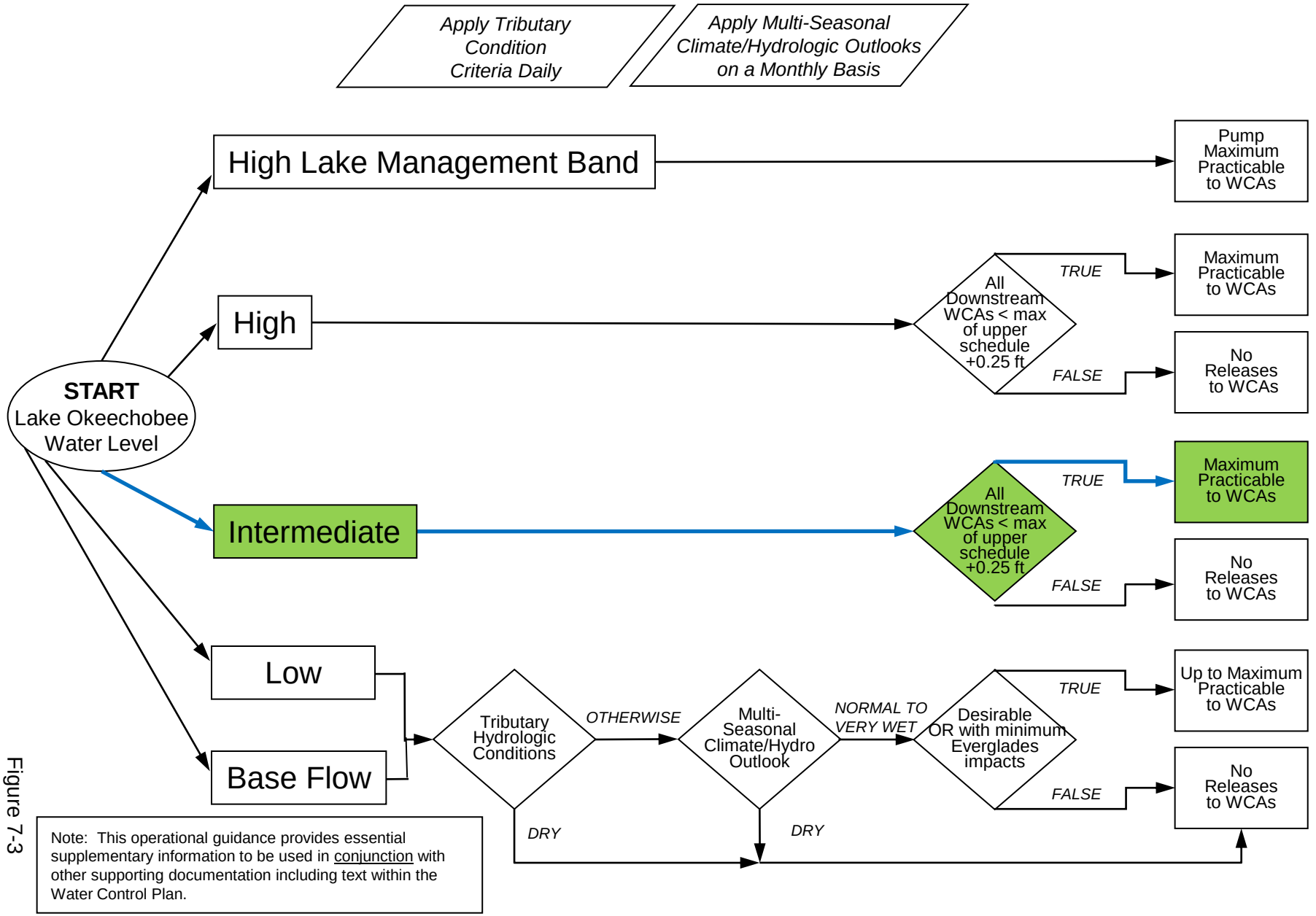
Date



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)

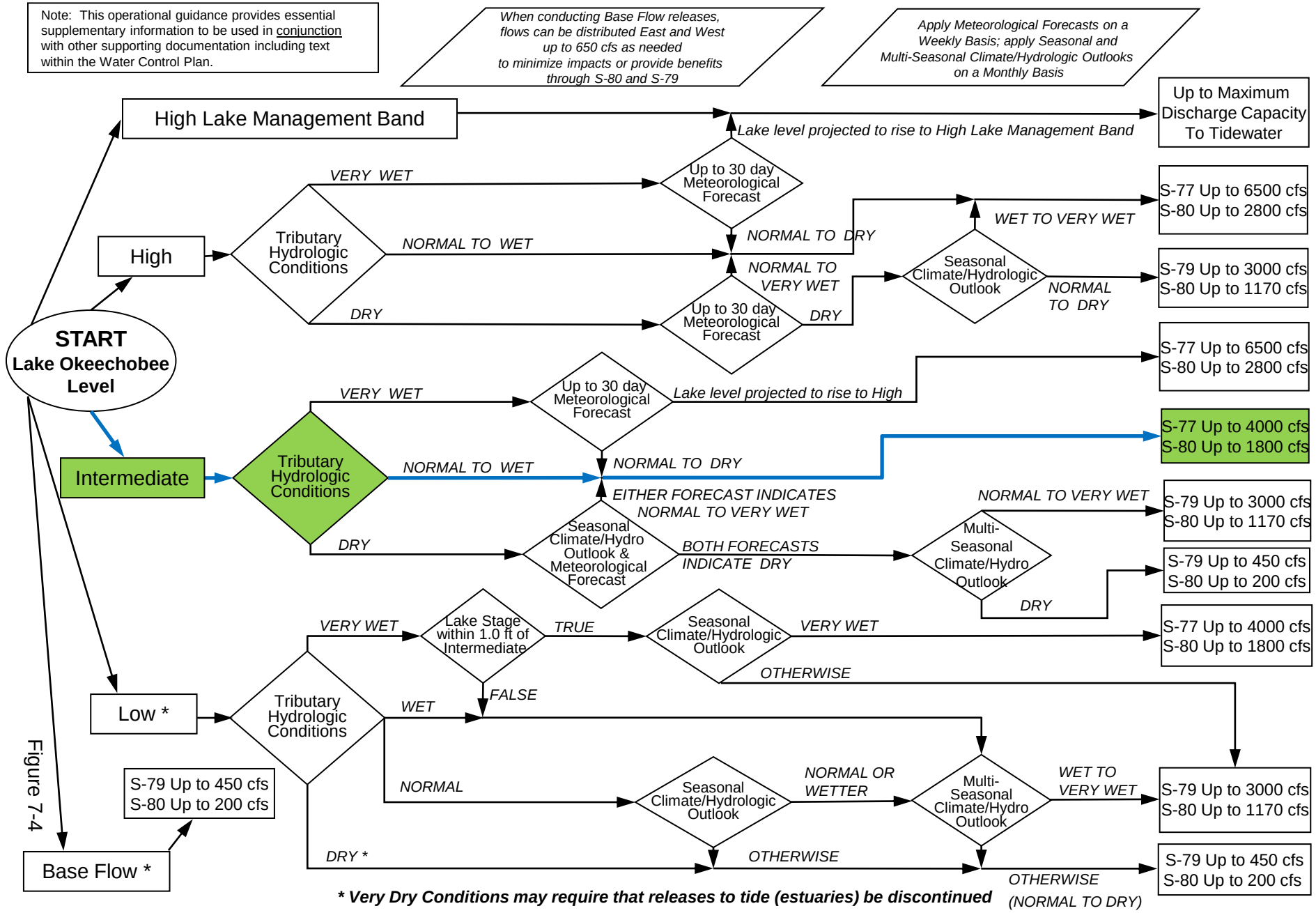
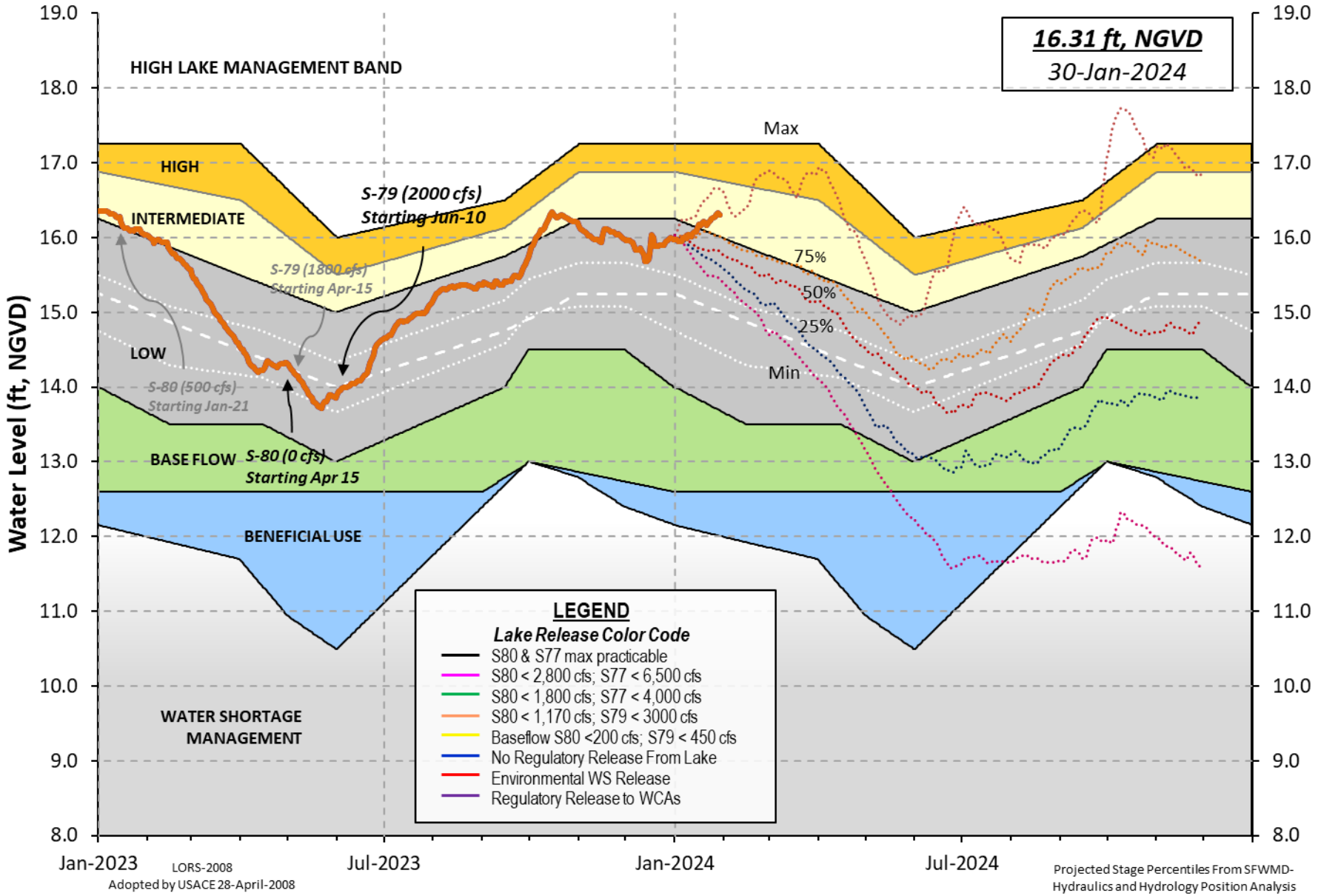


Figure 7-4

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 28 JAN 2024

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)
*Okeechobee Lake Elevation	16.33	16.05	15.08 (Official Elv)

Bottom of High Lake Mngmt= 17.25 Top of Water Short Mngmt= 12.01
Currently in Operational Management Band

Simulated Average LORS2008 [1965-2000] 13.54
Difference from Average LORS2008 2.79

28JAN (1965-2007) Period of Record Average 14.68
Difference from POR Average 1.65

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 = 10.27'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 = 8.47'
Bridge Clearance = 49.56'

---

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

L001	L005	L006	LZ40	S4	S352	S308	S133
16.32	16.23	15.89	16.31	16.20	16.55	16.46	16.22

*Combination Okeechobee Avg-Daily Lake Average = 16.33 (*See Note)

Okeechobee Inflows (cfs):

S65E	2917	S65EX1	0	Fisheating Cr	316
S154	18	S191	24	S135 Pumps	0
S84	198	S133 Pumps	0	S2 Pumps	0
S84X	28	S127 Pumps	0	S3 Pumps	0
S71	171	S129 Pumps	0	S4 Pumps	0
S72	306	S131 Pumps	0	C5	0

Total Inflows: 3978

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	352	S77	1003
S127 Culverts	0	S351	0	S308	3
S129 Culverts	0	S352	24		
S131 Culverts	0	L8 Canal Pt	98		

Total Outflows: 1481

****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	0.14	S308	0.10

Average Pan Evap x 0.75 Pan Coefficient = 0.09" = 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 6806 cfs or 13500 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:	13.63	16.02	0	0	0	0	0	0	(cfs)		
S193:											
S191:	18.92	16.08	24	0.0	0.0	0.0					
S135 Pumps:	13.45	16.31	0	0	0	0	0	(cfs)			
S135 Culverts:			0	0.0	0.0						
North West Shore											
S65E:	21.02	15.94	2917	0.9	0.9	1.6	1.6	1.6	1.6		
S65EX1:	21.02	15.94	0								
S127 Pumps:	13.60	16.02	0	0	0	0	0	0	(cfs)		
S127 Culvert:			0	0.0							
S129 Pumps:	13.07	16.00	0	0	0	0	(cfs)				
S129 Culvert:			0	0.0							
S131 Pumps:	13.01	13.28	0	0	0	(cfs)					
S131 Culvert:			0								
Fisheating Creek											
nr Palmdale		32.02	316								
nr Lakeport											
S282	15.90	15.92		0.0	0.0	0.1					
South Shore											
S4 Pumps:	11.66	-NR-	0	0	0	0	(cfs)				
S169:		-NR-	-NR-	-NR-	-NR-	-NR-					
S310:	16.25		5								
S3 Pumps:	10.55	16.59	0	0	0	0	(cfs)				
S354:	16.59	10.55	352	0.0	0.0						
S2 Pumps:	10.22	16.92	0	0	0	0	0	(cfs)			
S351:	16.92	10.22	0	0.0	0.0	0.0					
S352:	16.83	10.38	24	0.1	0.0						
S271:	16.47	14.62		0.0	0.0	0.0	0.0				
L8 Canal PT		14.34	98								
S351 and S352 Temporary Pumps/S354 Spillway											
S351:	10.22	16.92	0	-NR--NR--NR--NR--NR--NR-							
S352:	10.38	16.83	24	-NR--NR--NR--NR-							
S354:	10.55	16.59	352	-NR--NR--NR--NR-							
Caloosahatchee River (S77, S78, S79)											
S47B:	13.38	12.40		1.0	1.0						
S47D:	12.44	10.64	0	0.0							
S77:											
Spillway and Sector Preferred Flow:											
	15.87	10.52	997	0.0	0.5	3.0	0.0				
Flow Due to Lockages+:			6								
S78:											

```
    Spillway and Sector Flow:
              10.49      2.81     981    1.0  0.0  2.5  0.0
    Flow Due to Lockages+:          14

  S79:
    Spillway and Sector Flow:
               2.90      0.52    2239    0.0  1.0  2.0  2.0  2.0  2.0  0.0  0.0
    Flow Due to Lockages+:           6
    Percent of flow from S77        45%
    Chloride            (ppm)      0


St. Lucie Canal (S308, S80)
  S308:
    Spillway and Sector Preferred Flow:
              16.70     13.94       0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:           3

  S153:        18.99     13.77       0    0.0  0.0
  S80:
    Spillway and Sector Flow:
              14.05      0.64       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:	0.12	0.12	0.12	302	6
S78:	0.00	0.00	0.00	320	5
S79:	0.00	0.00	0.00	279	5
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	332	28
S80:	0.09	0.09	0.10	-NR-	-NR-
Okeechobee Average (Sites S78, S79 and S80 not included)	0.06	0.01	0.01		
Oke Nexrad Basin Avg	-NR-	0.00	0.00		

```
 Okeechobee Lake Elevations  28 JAN 2024          16.33 Difference from 28JAN24
    28JAN24  -1 Day  =       27 JAN 2024          16.30            -0.03
```

28JAN24	-2 Days =	26 JAN 2024	16.28	-0.05
28JAN24	-3 Days =	25 JAN 2024	16.26	-0.07
28JAN24	-4 Days =	24 JAN 2024	16.25	-0.08
28JAN24	-5 Days =	23 JAN 2024	16.23	-0.10
28JAN24	-6 Days =	22 JAN 2024	16.20	-0.13
28JAN24	-7 Days =	21 JAN 2024	16.17	-0.16
28JAN24	-30 Days =	29 DEC 2023	16.00	-0.33
28JAN24	-1 Year =	28 JAN 2023	16.05	-0.28
28JAN24	-2 Year =	28 JAN 2022	15.08	-1.25

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
28JAN24	Today =	28 JAN 2024	4684	MON	8180
28JAN24	-1 Day =	27 JAN 2024	4132	SUN	5659
28JAN24	-2 Days =	26 JAN 2024	4262	SAT	5452
28JAN24	-3 Days =	25 JAN 2024	4589	FRI	3361
28JAN24	-4 Days =	24 JAN 2024	3916	THU	5892
28JAN24	-5 Days =	23 JAN 2024	3544	WED	7561
28JAN24	-6 Days =	22 JAN 2024	3876	TUE	6832
28JAN24	-7 Days =	21 JAN 2024	3336	MON	-4512
28JAN24	-8 Days =	20 JAN 2024	3725	SUN	-6781
28JAN24	-9 Days =	19 JAN 2024	5026	SAT	6832
28JAN24	-10 Days =	18 JAN 2024	4598	FRI	7072
28JAN24	-11 Days =	17 JAN 2024	4180	THU	-3900
28JAN24	-12 Days =	16 JAN 2024	4254	WED	14304
28JAN24	-13 Days =	15 JAN 2024	3201	TUE	9625

S65E

			Average Flow over previous 14 days		Avg-Daily Flow
28JAN24	Today=	28 JAN 2024	1938	MON	3112
28JAN24	-1 Day =	27 JAN 2024	1808	SUN	2840
28JAN24	-2 Days =	26 JAN 2024	1698	SAT	2590
28JAN24	-3 Days =	25 JAN 2024	1602	FRI	2415
28JAN24	-4 Days =	24 JAN 2024	1510	THU	2110
28JAN24	-5 Days =	23 JAN 2024	1434	WED	1782
28JAN24	-6 Days =	22 JAN 2024	1377	TUE	1763
28JAN24	-7 Days =	21 JAN 2024	1321	MON	1537
28JAN24	-8 Days =	20 JAN 2024	1282	SUN	1568
28JAN24	-9 Days =	19 JAN 2024	1242	SAT	1533
28JAN24	-10 Days =	18 JAN 2024	1201	FRI	1499
28JAN24	-11 Days =	17 JAN 2024	1165	THU	1518
28JAN24	-12 Days =	16 JAN 2024	1127	WED	1498
28JAN24	-13 Days =	15 JAN 2024	1092	TUE	1361

S65EX1

			Average Flow over previous 14 days		Avg-Daily Flow
28JAN24	Today=	28 JAN 2024	0	MON	0
28JAN24	-1 Day =	27 JAN 2024	0	SUN	0
28JAN24	-2 Days =	26 JAN 2024	0	SAT	0
28JAN24	-3 Days =	25 JAN 2024	0	FRI	0
28JAN24	-4 Days =	24 JAN 2024	0	THU	0
28JAN24	-5 Days =	23 JAN 2024	0	WED	0
28JAN24	-6 Days =	22 JAN 2024	0	TUE	0
28JAN24	-7 Days =	21 JAN 2024	0	MON	0
28JAN24	-8 Days =	20 JAN 2024	0	SUN	0
28JAN24	-9 Days =	19 JAN 2024	0	SAT	0
28JAN24	-10 Days =	18 JAN 2024	0	FRI	0
28JAN24	-11 Days =	17 JAN 2024	0	THU	0
28JAN24	-12 Days =	16 JAN 2024	0	WED	0
28JAN24	-13 Days =	15 JAN 2024	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)
28 JAN 2024	1597	1977	2015	4474
27 JAN 2024	539	1396	1193	3314
26 JAN 2024	183	961	807	2887
25 JAN 2024	532	1346	806	3384
24 JAN 2024	1056	1828	1499	4184
23 JAN 2024	635	1450	1369	4793
22 JAN 2024	6	591	1140	5116
21 JAN 2024	14	442	1432	5060
20 JAN 2024	17	232	283	4872
19 JAN 2024	15	273	752	5577
18 JAN 2024	196	475	2021	6753
17 JAN 2024	501	1214	2271	7282
16 JAN 2024	489	1323	2395	7623
15 JAN 2024	501	1041	1737	4727

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)
28 JAN 2024	10	0	48	698	194
27 JAN 2024	2	0	46	782	188
26 JAN 2024	-0	0	46	805	195
25 JAN 2024	2	0	46	773	204
24 JAN 2024	11	0	46	811	194
23 JAN 2024	-4	0	46	0	192
22 JAN 2024	2	0	48	0	206
21 JAN 2024	3	0	50	0	205
20 JAN 2024	3	0	50	0	201
19 JAN 2024	11	0	51	0	194
18 JAN 2024	7	0	51	0	195
17 JAN 2024	-7	0	49	0	202
16 JAN 2024	8	0	48	0	127
15 JAN 2024	8	0	49	0	4

DATE	S-308 Discharge (ALL DAY) (AC-FT)	Below S-308 Discharge (ALL-DAY) (AC-FT)	S-80 Discharge (ALL-DAY) (AC-FT)
28 JAN 2024	6	-NR-	-NR-
27 JAN 2024	14	-NR-	-NR-
26 JAN 2024	11	-NR-	47
25 JAN 2024	8	-NR-	31
24 JAN 2024	7	-NR-	39
23 JAN 2024	6	-NR-	30
22 JAN 2024	10	-NR-	27
21 JAN 2024	3	-NR-	27
20 JAN 2024	7	-NR-	34
19 JAN 2024	12	-NR-	46
18 JAN 2024	11	-NR-	34
17 JAN 2024	12	-NR-	42
16 JAN 2024	6	-NR-	27
15 JAN 2024	10	-NR-	26

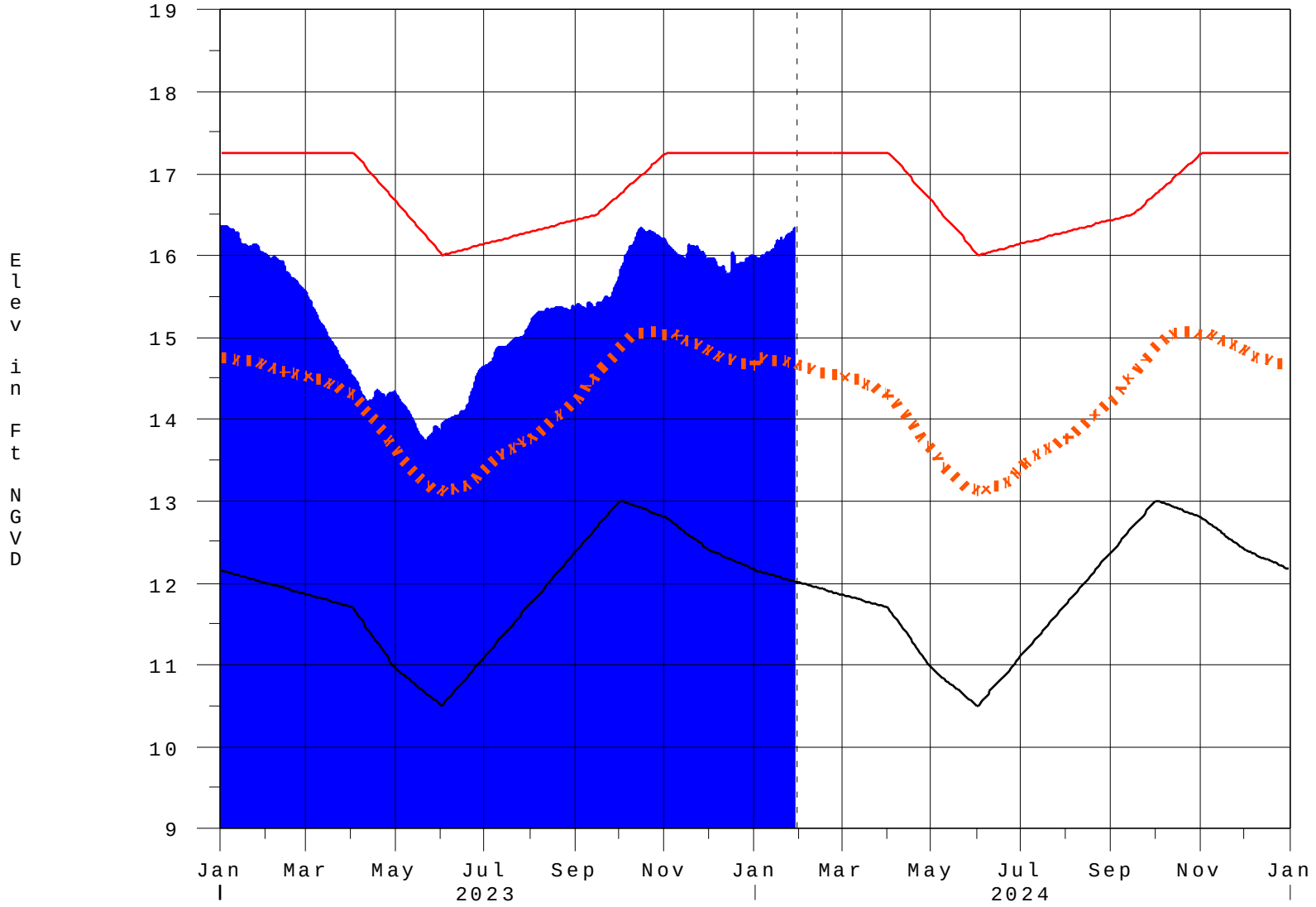
*** NOTE: Discharge (ALL DAY) is computed using Spillway, Sector Gate and Lockages Discharges from 0015 hrs to 2400 hrs.

(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 29JAN2024 @ 14:15  ** Preliminary Data - Subject to Revision **
```

Lake Okeechobee

29JAN24 14:00:15



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**