Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 11/21/2022 (ENSO Condition: La Niña)

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 La Niña years and a sub-sampling of warm years of the Atlantic Multi-decadal Oscillation (AMO) in combination with La Niña 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 La Niña ENSO Years**		Sub-sampling of AMO Warm + La Niña ENSO Years***	
	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition
Current (Nov-Apr)	N/A	N/A	0.52	Dry	0.25	Dry	0.06	Dry
Multi Seasonal (Nov-Oct)	N/A	N/A	2.82	Wet	2.92	Wet	2.52	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 Graph:

5777 cfs 14-day running average for Lake Okeechobee Net Inflow through 11/21/2022.
According to the classification in Tributary Hydrologic Conditions table, this condition is Wet.

-0.78 for Palmer Drought Index on 11/19/2022.
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 11/21/2022:

Lake Okeechobee Stage: **16.25 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	← 16.25 ft
	Low sub-band	14.50	
Base Flow sub-band		12.78	
Beneficial Use sub-band		12.53	
Water Shortage Management Band			

Part C of LORS2008: Discharge to WCAs

No releases 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 11/21/2022 (ENSO Condition- La Niña Watch):

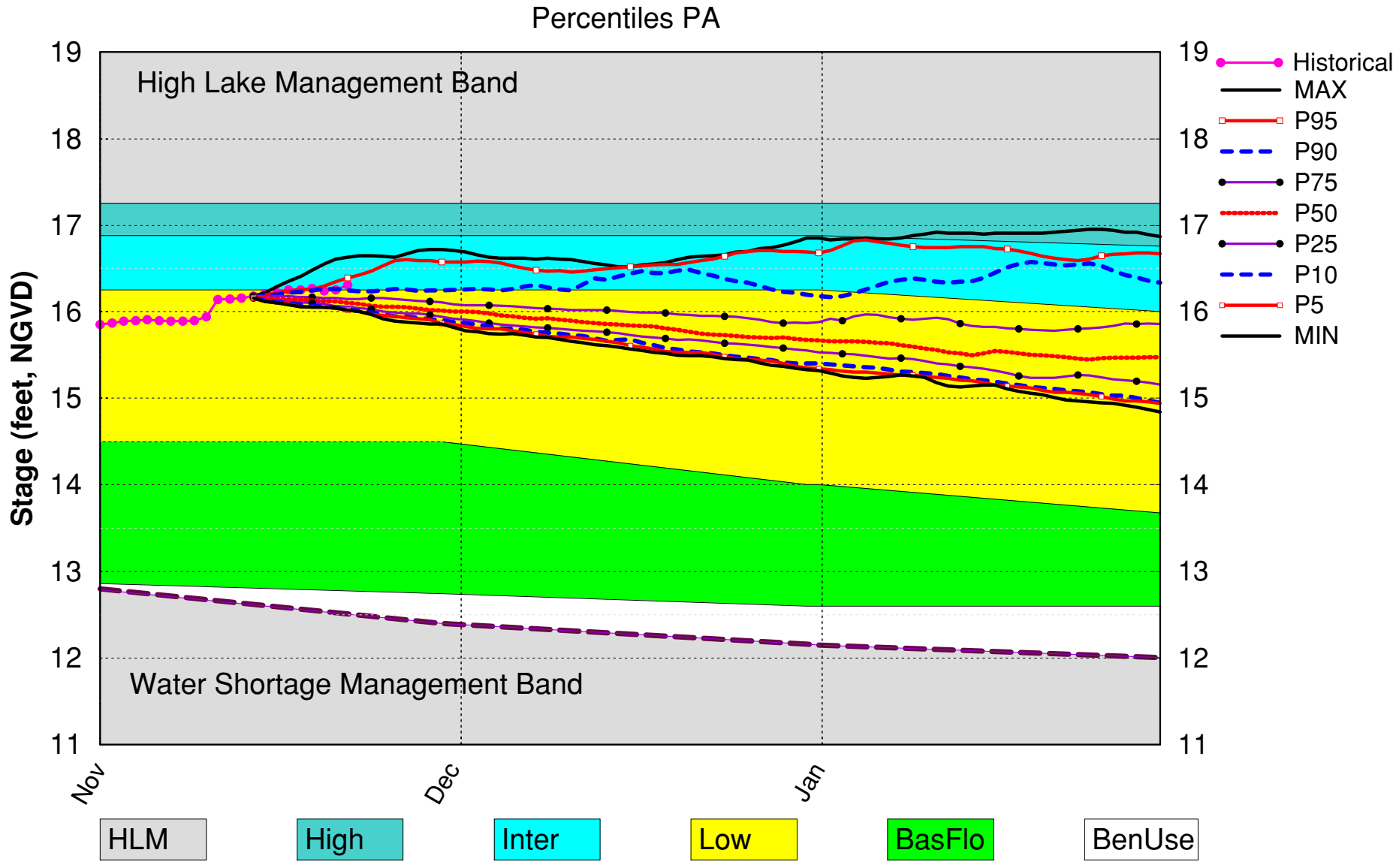
Status for week ending 11/21/2022:

Water Supply Risk Evaluation

Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Intermediate Sub-band	L
	Palmer Drought Index for LOK Tributary Conditions	-0.78 (Normal to Extremely Wet)	L
	CPC Precipitation Outlook	1 month: Below Normal	M
		3 months: Below Normal	M
	LOK Seasonal Net Inflow Outlook	0.25 ft	M
	ENSO Forecast	Dry	
	LOK Multi-Seasonal Net Inflow Outlook	2.92 ft	M
	ENSO Forecast	Normal	
WCAs	WCA 1: 3 Station Average (Sites 1-7, 1-8T, 1-9)	Above Line 1 (17.46 ft)	L
	WCA 2A: Site 2-17	Above Line 1 (13.38 ft)	L
	WCA-3A: 3 Station Average (Sites 63, 64, and 65)	Above Line 1 (10.52 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.

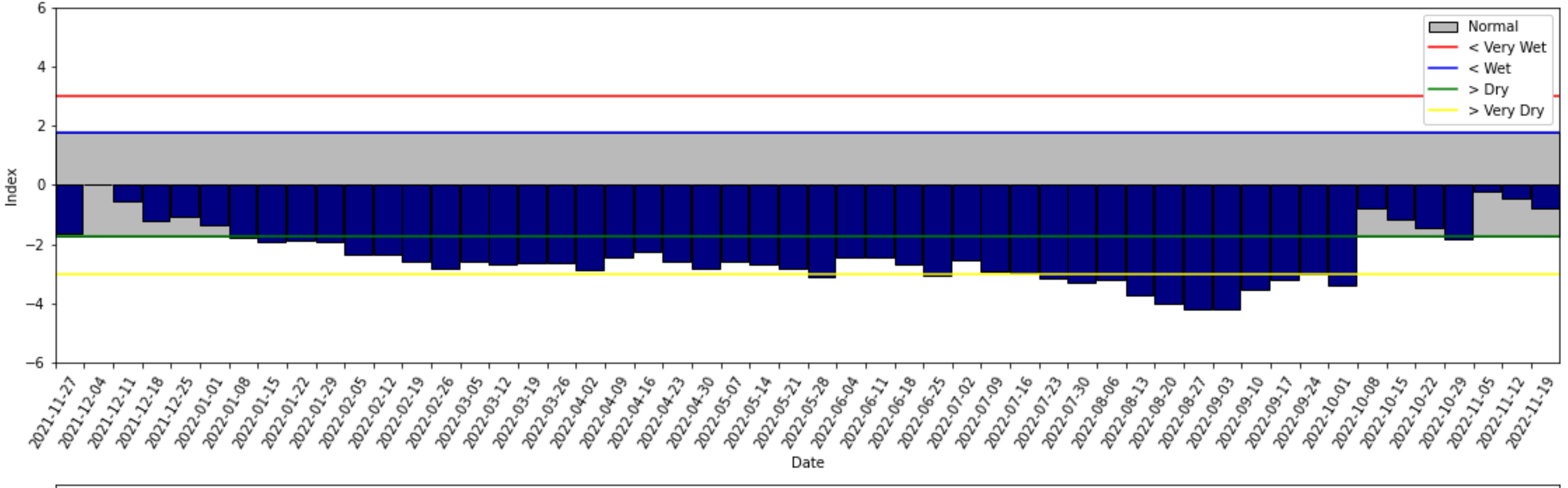
Lake Okeechobee SFWMM Nov Mid–Mon 2022 Position Analysis

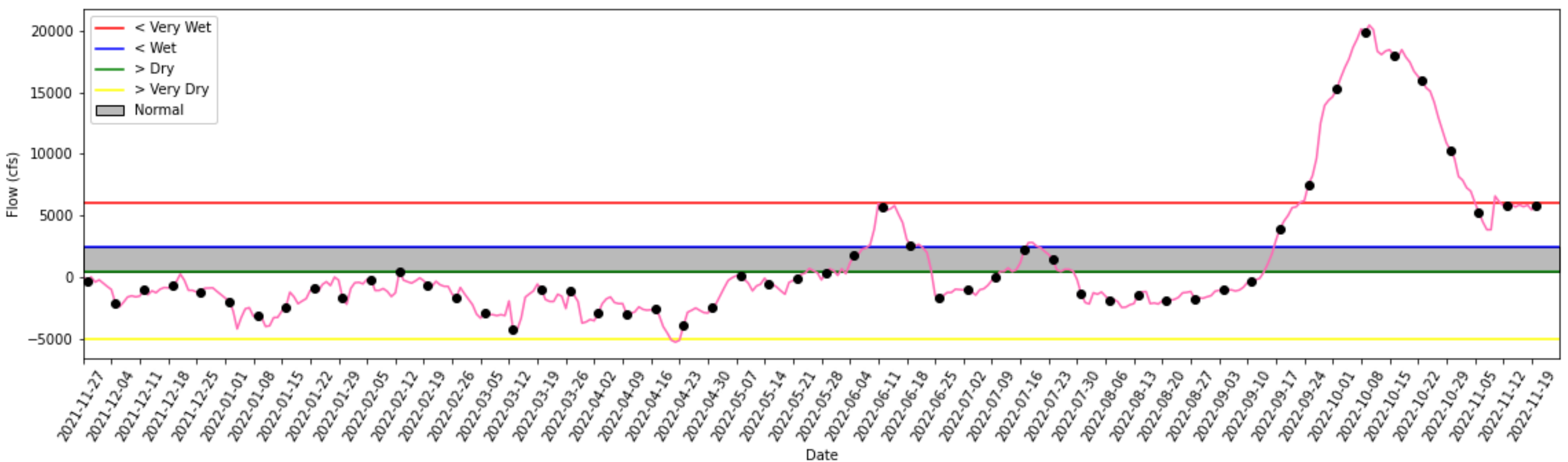


(See assumptions on the Position Analysis Results website)

Tue Nov 22 08:00:03 2022

Tributary Basin Condition Indicators as of November 20 2022





2008 LORS

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

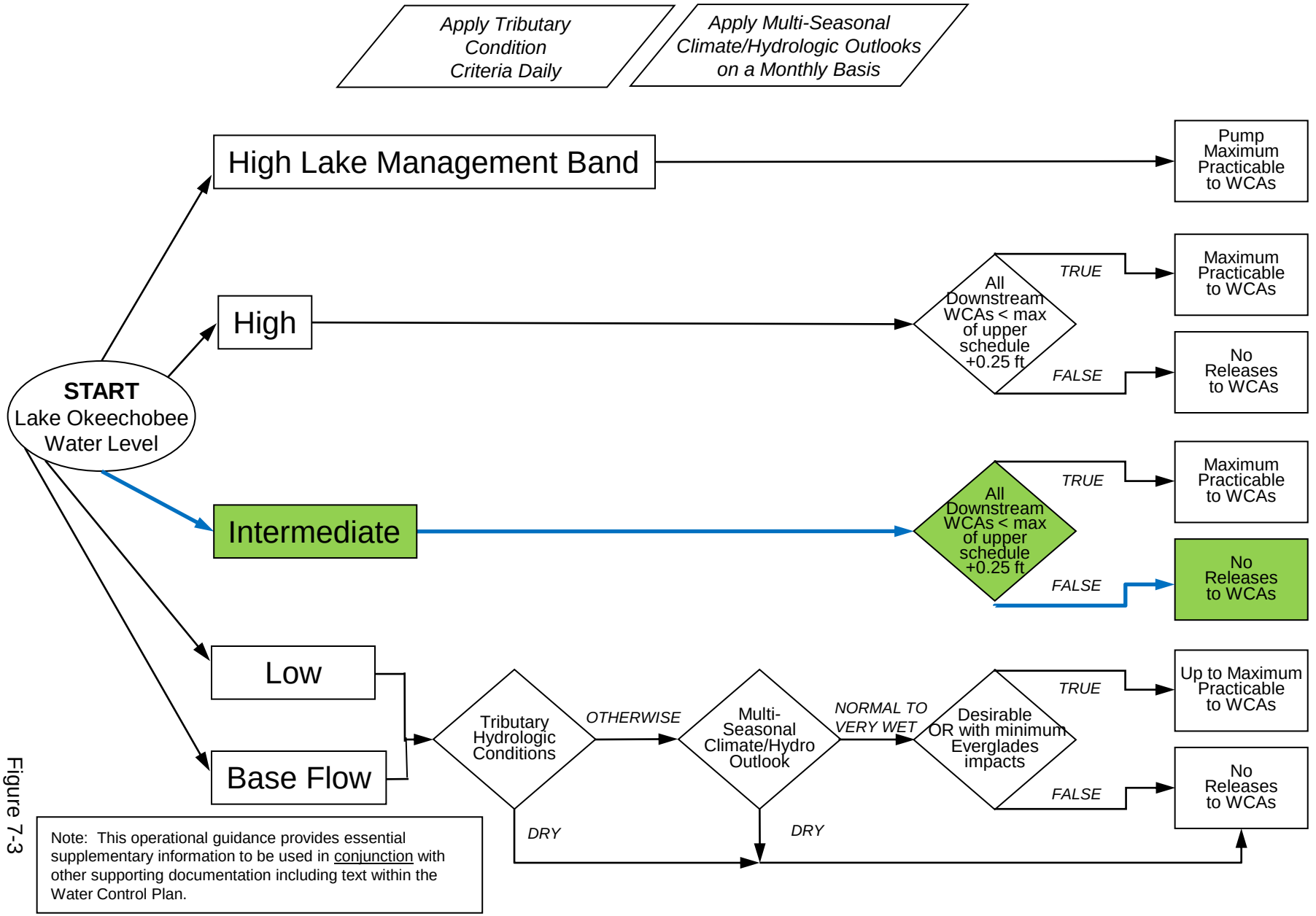


Figure 7-3

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

2008 LORS

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

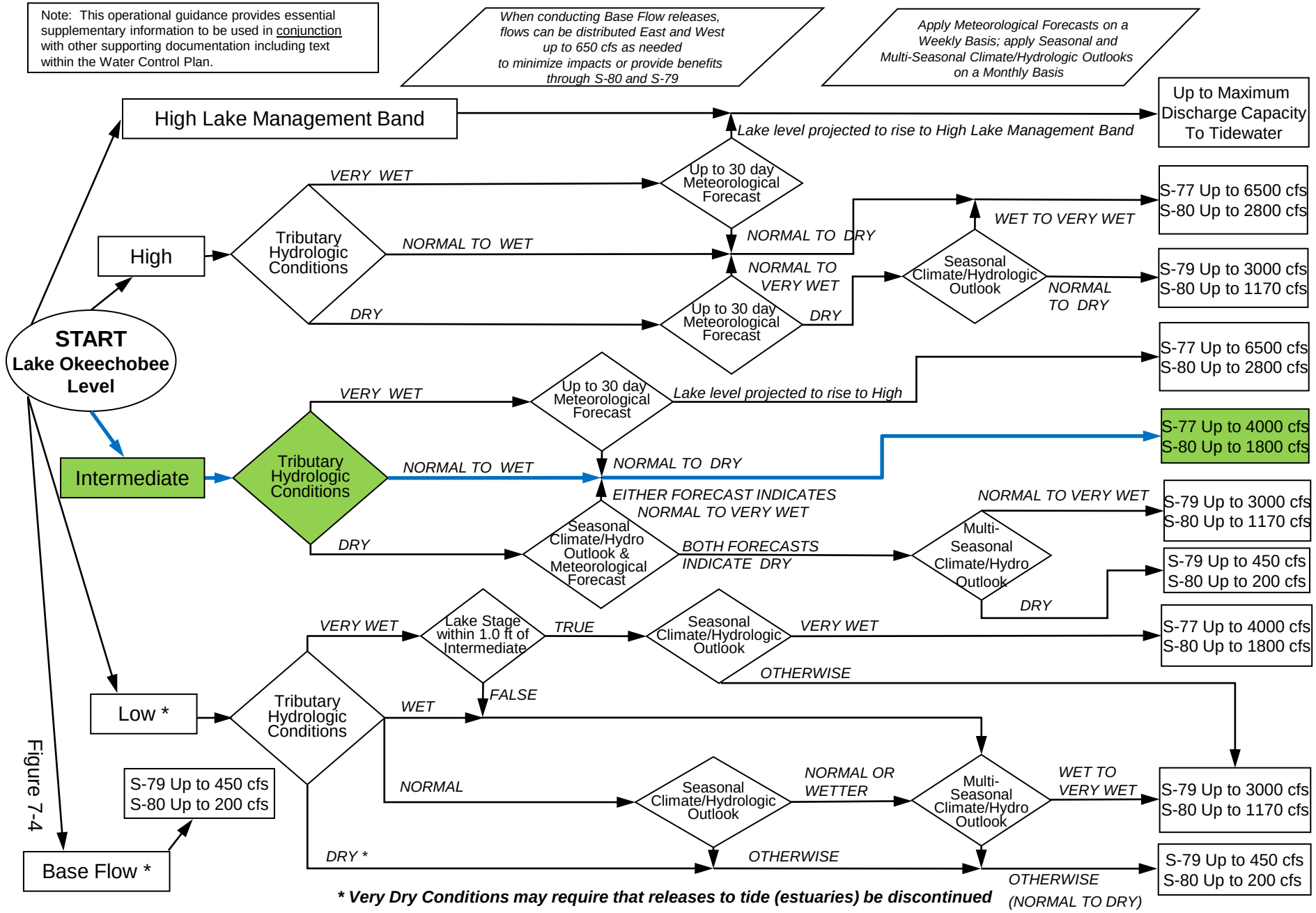
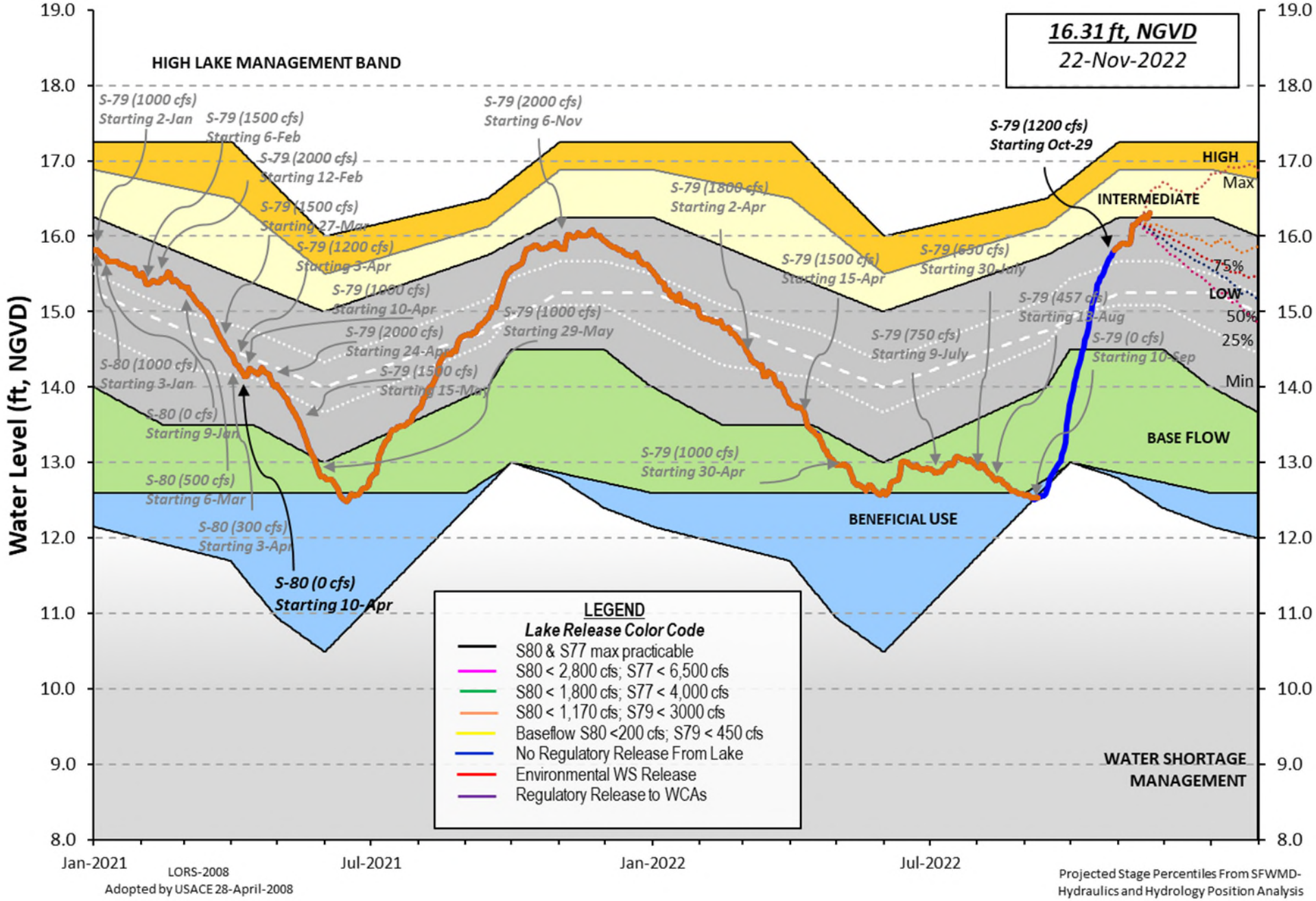


Figure 7-4

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 20 NOV 2022

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)	
*Okeechobee Lake Elevation	16.25	16.02	16.28	(Official Elv)

Bottom of High Lake Mngmt= 17.25 Top of Water Short Mngmt= 12.53
Currently in Operational Management Band

Simulated Average LORS2008 [1965-2000] 13.85
Difference from Average LORS2008 2.40

20NOV (1965-2007) Period of Record Average 14.92
Difference from POR Average 1.33

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 @ 10.19'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 @ 8.39'
Bridge Clearance = 49.51'

---

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

L001	L005	L006	LZ40	S4	S352	S308	S133
16.17	16.30	16.47	16.34	16.57	16.41	15.79	15.91

*Combination Okeechobee Avg-Daily Lake Average = 16.25 (*See Note)

Okeechobee Inflows (cfs):

S65E	2618	S65EX1	170	Fisheating Cr	322
S154	42	S191	119	S135 Pumps	0
S84	715	S133 Pumps	98	S2 Pumps	0
S84X	200	S127 Pumps	49	S3 Pumps	0
S71	330	S129 Pumps	28	S4 Pumps	0
S72	52	S131 Pumps	27	C5	0
Total Inflows:	4770				

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	0	S77	2
S127 Culverts	0	S351	0	S308	2
S129 Culverts	0	S352	23		
S131 Culverts	0	L8 Canal Pt	1		

Total Outflows: 29

****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 0.17 S308 0.09
  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 2269 cfs or 4500 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:	13.45	16.06	98	0	24	33	48	0				(cfs)
S193:												
S191:	19.69	16.06	119	0.5	0.5	0.5						
S135 Pumps:	13.40	16.11	0	0	0	0	0					(cfs)
S135 Culverts:			0	0.0	0.0							
North West Shore												
S65E:	21.08	16.05	2618	2.2	1.5	1.7	1.6	1.7	1.7			
S65EX1:	21.08	16.05	170									
S127 Pumps:	13.43	16.16	49	30	18	0	0	0				(cfs)
S127 Culvert:			0	0.0								
S129 Pumps:	12.88	16.27	28	0	0	30						(cfs)
S129 Culvert:			0	0.0								
S131 Pumps:	12.81	16.43	27	0	30							(cfs)
S131 Culvert:			0									
Fisheating Creek nr Palmdale		32.09	322									
nr Lakeport C5:		-NR-	0	-NR-	-NR-	-NR-						
South Shore												
S4 Pumps:	11.98	-NR-	0	-NR-	-NR-	-NR-						(cfs)
S169:		-NR-	-NR-	-NR-	-NR-	-NR-						

```
  S310:        16.41                -2
  S3 Pumps:     9.68     16.57       0      0    0    0            (cfs)
  S354:        16.57      9.68       0    0.0  0.0
  S2 Pumps:     9.55     16.50       0      0    0    0    0       (cfs)
  S351:        16.50      9.55       0    0.0  0.0  0.0
  S352:        16.41     10.04      23    0.1  0.0
  C10A:         -NR-      -NR-           -NR-  -NR-  -NR-  -NR-  -NR-
  L8 Canal PT            14.27       1
```

S351 and S352 Temporary Pumps/S354 Spillway

```
  S351:         9.55     16.50       0  -NR--NR--NR--NR--NR--NR-
  S352:        10.04     16.41      23  -NR--NR--NR--NR-
  S354:         9.68     16.57       0  -NR--NR--NR--NR-
```

```
Caloosahatchee River (S77, S78, S79)
  S47B:        14.81     12.09            0.0  0.5
  S47D:        12.11     11.42      17    0.0
  S77:
    Spillway and Sector Preferred Flow:
                16.28     11.32       0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:            2

  S78:
    Spillway and Sector Flow:
                11.30      3.11     241    1.5  0.0  0.0  1.5
    Flow Due to Lockages+:            5

  S79:
    Spillway and Sector Flow:
                 3.41      0.72     721    0.0  0.0  0.0  2.0  0.5  0.0  0.0
0.0
    Flow Due to Lockages+:            4
    Percent of flow from S77          0%
    Chloride             (ppm)      0


St. Lucie Canal (S308, S80)
  S308:
    Spillway and Sector Preferred Flow:
                15.84     13.99       0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:            2

  S153:        19.09     14.18      54    0.0  0.5
  S80:
    Spillway and Sector Flow:
                14.35      1.83     295    0.0  0.0  0.0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:           14
    Percent of flow from S308         0%

  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	51	6
S78:	-NR-	0.00	0.00	351	4
S79:	-NR-	0.00	0.00	0	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:	-NR-	0.00	0.00	92	5
S80:	-NR-	0.00	0.00	41	3
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	20 NOV 2022	16.25	Difference from 20NOV22
20NOV22 -1 Day =	19 NOV 2022	16.24	-0.01
20NOV22 -2 Days =	18 NOV 2022	16.27	0.02
20NOV22 -3 Days =	17 NOV 2022	16.25	0.00
20NOV22 -4 Days =	16 NOV 2022	16.25	0.00
20NOV22 -5 Days =	15 NOV 2022	16.22	-0.03
20NOV22 -6 Days =	14 NOV 2022	16.21	-0.04
20NOV22 -7 Days =	13 NOV 2022	16.18	-0.07
20NOV22 -30 Days =	21 OCT 2022	15.48	-0.77
20NOV22 -1 Year =	20 NOV 2021	16.02	-0.23
20NOV22 -2 Year =	20 NOV 2020	16.28	0.03

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
20NOV22	Today =	20 NOV 2022	5783	MON	2292
20NOV22	-1 Day =	19 NOV 2022	5498	SUN	-6777
20NOV22	-2 Days =	18 NOV 2022	5874	SAT	4561
20NOV22	-3 Days =	17 NOV 2022	5740	FRI	24
20NOV22	-4 Days =	16 NOV 2022	5895	THU	6829
20NOV22	-5 Days =	15 NOV 2022	5718	WED	2292
20NOV22	-6 Days =	14 NOV 2022	5930	TUE	6829
20NOV22	-7 Days =	13 NOV 2022	5842	MON	4561
20NOV22	-8 Days =	12 NOV 2022	5832	SUN	2292
20NOV22	-9 Days =	11 NOV 2022	6142	SAT	2292
20NOV22	-10 Days =	10 NOV 2022	6599	FRI	44793
20NOV22	-11 Days =	09 NOV 2022	3874	THU	8696
20NOV22	-12 Days =	08 NOV 2022	3872	WED	2190
20NOV22	-13 Days =	07 NOV 2022	4490	TUE	82

S65E

		Average Flow over previous 14 days			Avg-Daily Flow
20NOV22	Today=	20 NOV 2022	2842	MON	2779
20NOV22	-1 Day =	19 NOV 2022	2860	SUN	2745
20NOV22	-2 Days =	18 NOV 2022	2879	SAT	2982
20NOV22	-3 Days =	17 NOV 2022	2926	FRI	3117
20NOV22	-4 Days =	16 NOV 2022	2974	THU	3171
20NOV22	-5 Days =	15 NOV 2022	3054	WED	3125
20NOV22	-6 Days =	14 NOV 2022	3157	TUE	3068
20NOV22	-7 Days =	13 NOV 2022	3283	MON	3062
20NOV22	-8 Days =	12 NOV 2022	3465	SUN	2811
20NOV22	-9 Days =	11 NOV 2022	3700	SAT	2850
20NOV22	-10 Days =	10 NOV 2022	4000	FRI	2767
20NOV22	-11 Days =	09 NOV 2022	4356	THU	2326
20NOV22	-12 Days =	08 NOV 2022	4805	WED	2370
20NOV22	-13 Days =	07 NOV 2022	5307	TUE	2621

S65EX1

		Average Flow over previous 14 days			Avg-Daily Flow
20NOV22	Today=	20 NOV 2022	163	MON	170
20NOV22	-1 Day =	19 NOV 2022	151	SUN	167
20NOV22	-2 Days =	18 NOV 2022	139	SAT	170
20NOV22	-3 Days =	17 NOV 2022	127	FRI	171
20NOV22	-4 Days =	16 NOV 2022	115	THU	168
20NOV22	-5 Days =	15 NOV 2022	103	WED	168
20NOV22	-6 Days =	14 NOV 2022	93	TUE	168
20NOV22	-7 Days =	13 NOV 2022	96	MON	168
20NOV22	-8 Days =	12 NOV 2022	103	SUN	166
20NOV22	-9 Days =	11 NOV 2022	110	SAT	166
20NOV22	-10 Days =	10 NOV 2022	117	FRI	164
20NOV22	-11 Days =	09 NOV 2022	124	THU	179
20NOV22	-12 Days =	08 NOV 2022	130	WED	175
20NOV22	-13 Days =	07 NOV 2022	136	TUE	87

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)
20 NOV 2022	4	-64	496	1447
19 NOV 2022	21	25	22	801
18 NOV 2022	16	-14	660	1140
17 NOV 2022	18	2	1219	2356
16 NOV 2022	16	416	333	2280
15 NOV 2022	14	272	504	2173
14 NOV 2022	14	62	1604	4460
13 NOV 2022	13	326	1893	4890
12 NOV 2022	13	833	2304	7007
11 NOV 2022	9	763	3581	9666
10 NOV 2022	1	720	1702	3458
09 NOV 2022	2	367	1568	3508
08 NOV 2022	18	418	2041	4286
07 NOV 2022	111	461	1660	4412

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)
20 NOV 2022	-3	0	46	0	3
19 NOV 2022	4	0	46	0	13
18 NOV 2022	8	0	46	0	-6
17 NOV 2022	-4	0	47	0	-14
16 NOV 2022	95	0	45	0	-9
15 NOV 2022	124	0	46	0	2
14 NOV 2022	53	0	44	0	5
13 NOV 2022	12	0	47	0	2
12 NOV 2022	11	0	46	0	-19
11 NOV 2022	13	0	45	0	-10
10 NOV 2022	2	0	46	0	-17
09 NOV 2022	-12	0	48	0	-8
08 NOV 2022	-2	0	44	0	-2
07 NOV 2022	-4	0	58	0	1

DATE	S-308 Discharge (ALL DAY) (AC-FT)	Below S-308 Discharge (ALL-DAY) (AC-FT)	S-80 Discharge (ALL-DAY) (AC-FT)
20 NOV 2022	4	-NR-	585
19 NOV 2022	11	-NR-	520
18 NOV 2022	5	-NR-	451
17 NOV 2022	10	-NR-	300
16 NOV 2022	12	-NR-	658
15 NOV 2022	8	-NR-	621
14 NOV 2022	8	-NR-	447
13 NOV 2022	8	-NR-	1401
12 NOV 2022	9	-NR-	458
11 NOV 2022	6	-NR-	1042
10 NOV 2022	0	-NR-	1212
09 NOV 2022	0	-NR-	629
08 NOV 2022	11	-NR-	273

07 NOV 2022 7 -NR- 426

*** 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

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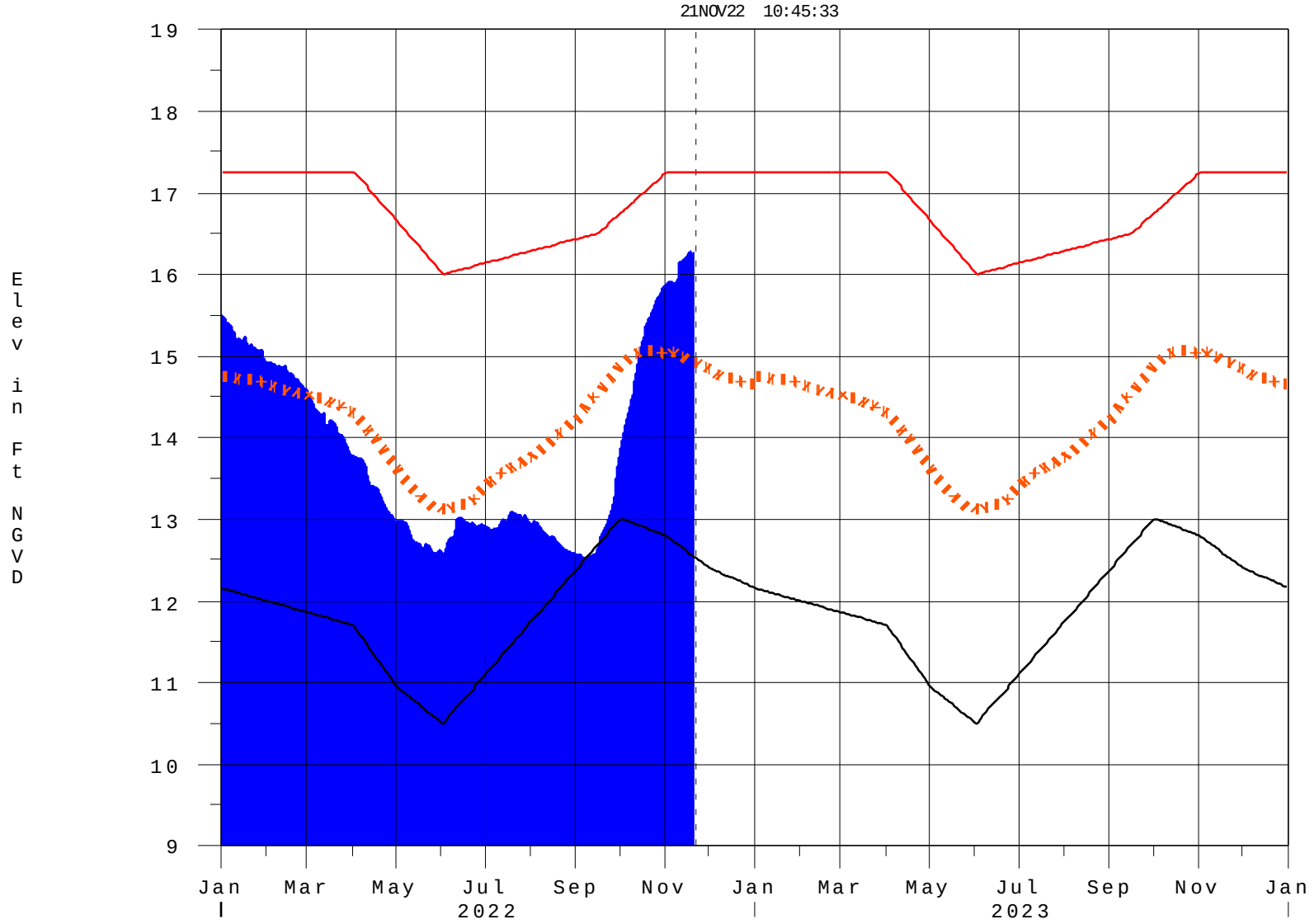
* On 11 May 1999, Lake Okeechobee Elevation was switched from
Instantaneous 2400 value to an average-daily lake average.
On 14 Mar 2001, due to the isolation of various gages within the standard
10 stations, the average of the interior 4 station gages was used
as the Lake Okeechobee Elevation.
On 05 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

Report Generated 21NOV2022 @ 10:40 ** 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**