

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 12/13/2021 (ENSO Condition: La Nina watch)

Lake Okeechobee Net Inflow Outlook:

The Lake Okeechobee Net Inflow Outlook has been computed using 4 methods: Croley's method¹, the SFWMD empirical method², a sub-sampling of ENSO Neutral years³ and a sub-sampling of warm years of the Atlantic Multi-decadal Oscillation (AMO) in combination with ENSO Neutral years⁴. 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 ^{1*}		SFWMD Empirical Method ²		Sub-sampling of La Nina Years ³		Sub-sampling of AMO Warm + La Nina Years ⁴	
	Value (ft)	<u>Condition</u>	Value (ft)	<u>Condition</u>	Value (ft)	<u>Condition</u>	Value (ft)	<u>Condition</u>
Current (Dec-May)	N/A	N/A	0.30	Dry	-0.44	Dry	-0.43	Dry
Multi Seasonal (Dec-Oct)	N/A	N/A	2.97	Wet	2.28	Normal	2.07	Normal

***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 ENSO forecast used.**

Tributary Hydrologic Conditions Graph:

–976 cfs 14-day running average for Lake Okeechobee Net Inflow through 12/13/2021. According to the classification in Tributary Hydrologic Conditions table, this condition is Dry.

–0.57 for Palmer Drought Index on 12/11/2021.

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 12/13/2021:

Lake Okeechobee Stage: **15.80 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	14.31	← 15.80 ft
Base Flow sub-band		12.68	
Beneficial Use sub-band		12.31	
Water Shortage Management Band			

Part C of LORS2008: Discharge to WCAs

Up to Maximum Practicable to the WCAs if Desirable or with Minimum Everglades Impacts; otherwise no releases.

Part D of LORS2008: Discharge to Tide

Up to 450 cfs at S-79 and up to 200 cfs at S-80.

LORS2008 Implementation on 12/13/2021 (ENSO Condition- La Nina Watch):

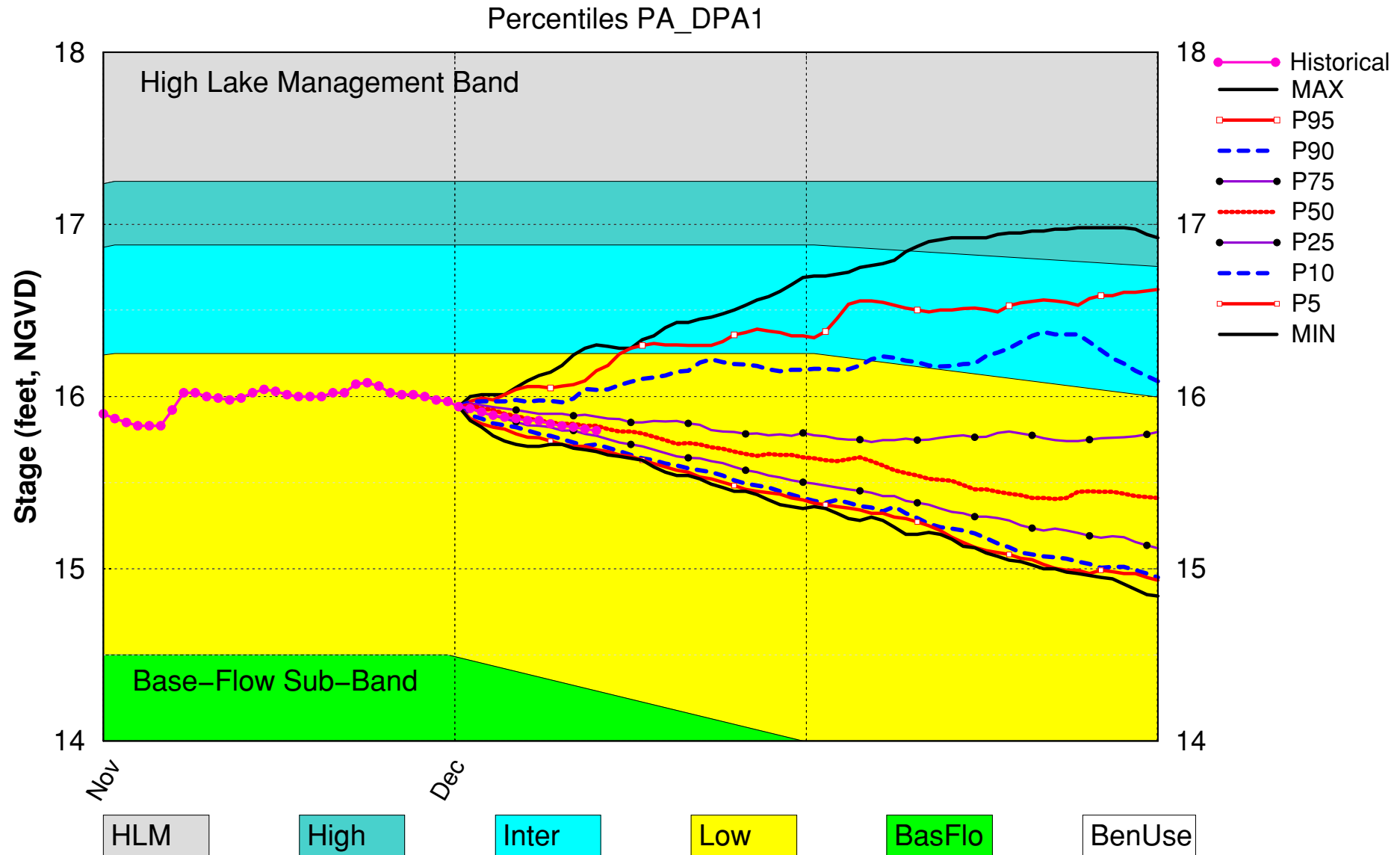
Status for week ending 12/13/2021:

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	-0.57 (Normal to Extremely Wet)	L
	CPC Precipitation Outlook	1 month: Below Normal	M
		3 months: Below Normal	H
	LOK Seasonal Net Inflow Outlook	-0.44 ft	H
	ENSO Forecast	Extremely Dry	
	LOK Multi-Seasonal Net Inflow Outlook	2.28 ft	M
	ENSO Forecast	Normal	
WCAs	WCA 1: 3 Station Average (Sites 1-7, 1-8T and 1-9)	Above Line 1 (17.33 ft)	L
	WCA 2A: Site 2-17	Above Line 1 (13.07 ft)	L
	WCA-3A: 3 Station Average (Sites 63, 64, and 65)	Above Line 1 (10.28 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

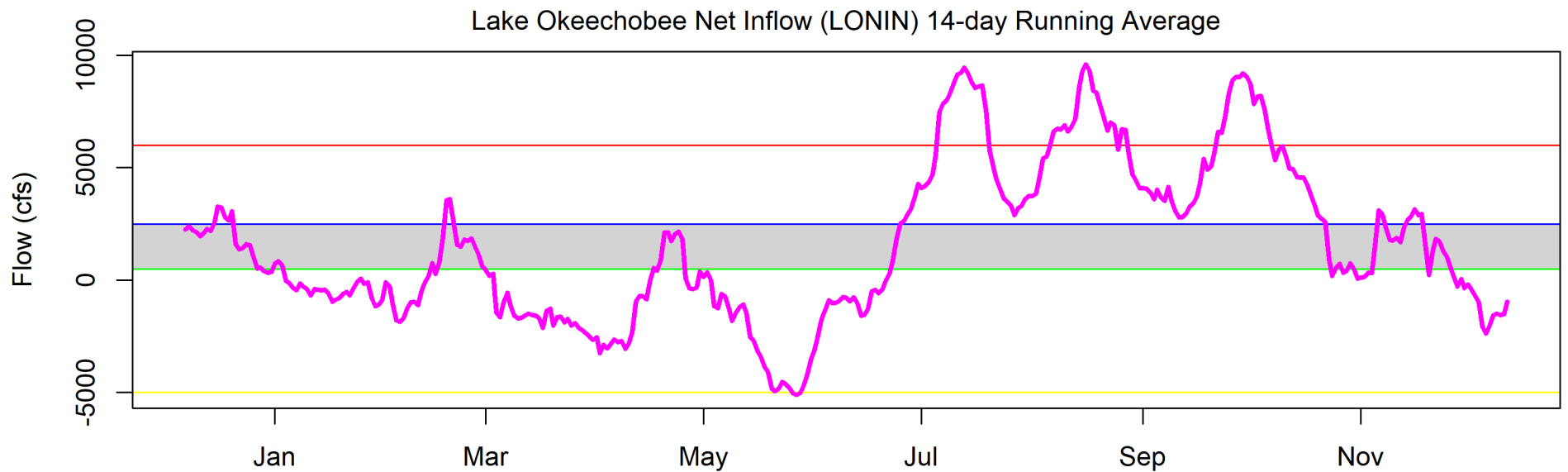
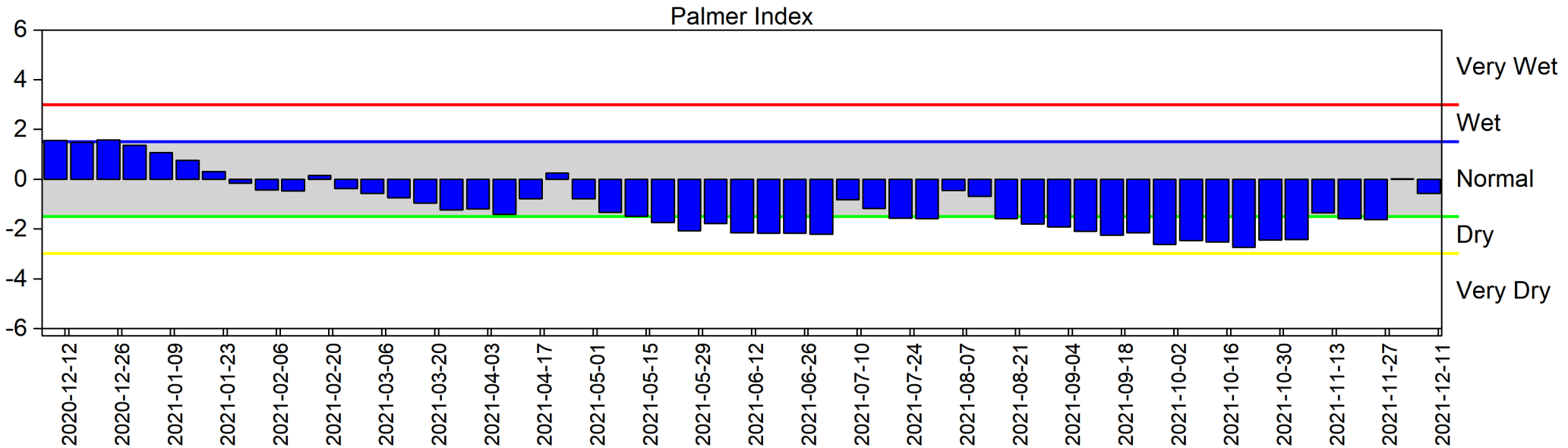
Note: The water supply risk classification based on the Palmer index, as well as the LOK seasonal and multi-seasonal net inflow outlooks use slightly different classification intervals than those used by the 2008-LORS.

Lake Okeechobee SFWMM Dec 2021 Position Analysis



(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of December 13 2021



2008 LORS

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

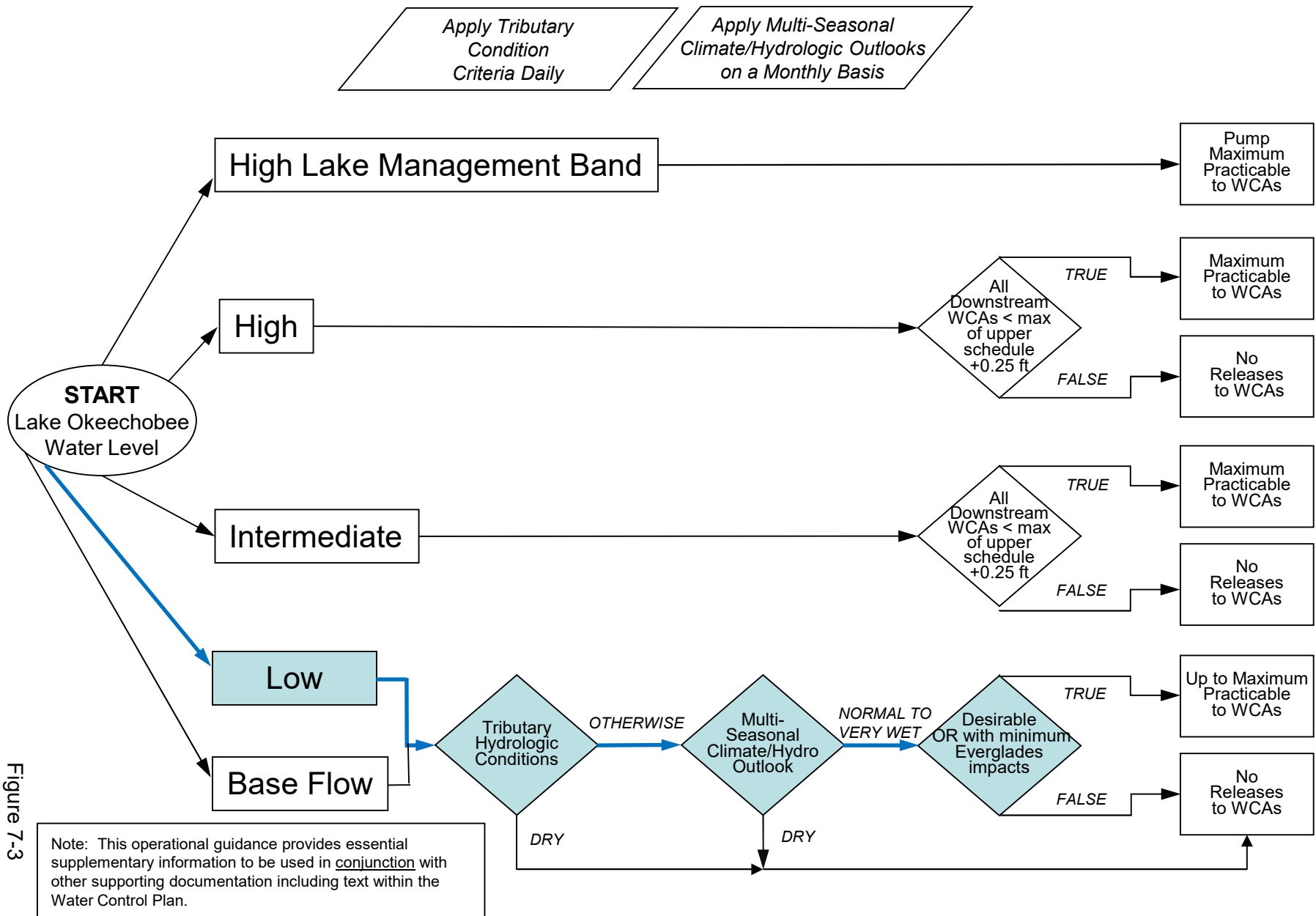


Figure 7-3

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

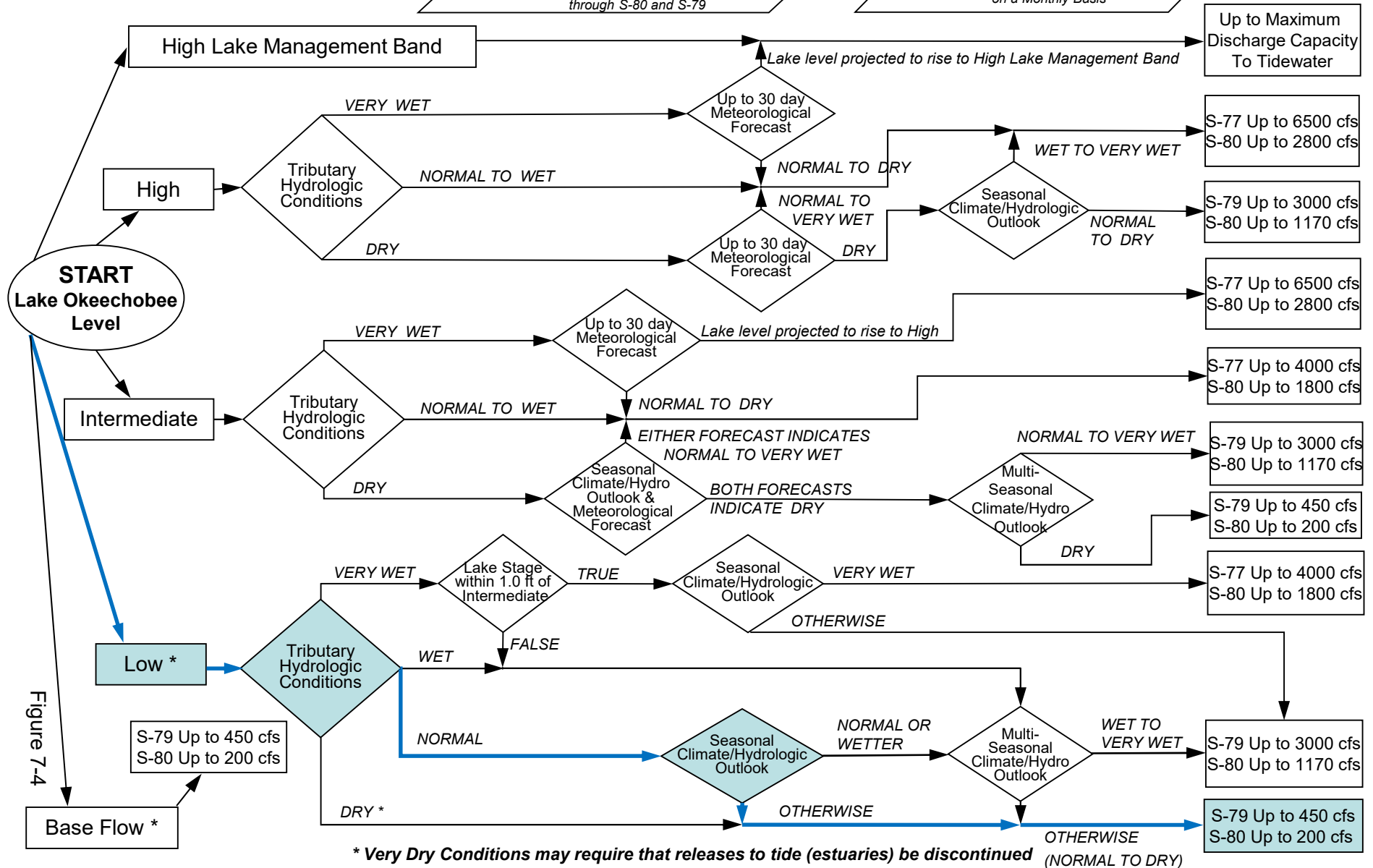
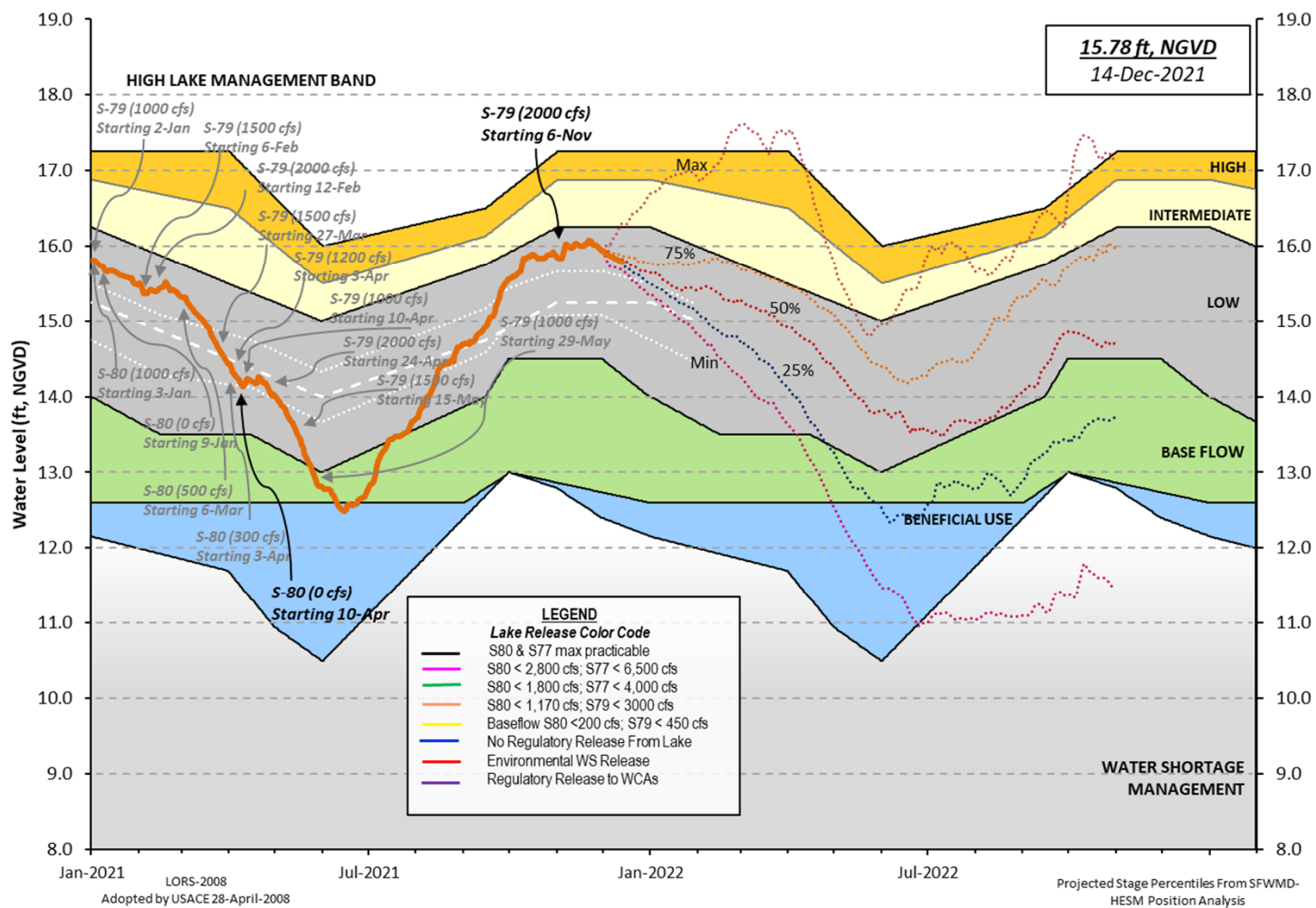


Figure 7-4

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 12 DEC 2021

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)
*Okeechobee Lake Elevation	15.80	15.99	12.95 (Official Elv)
Bottom of High Lake Mngmt=	17.25	Top of Water Short Mngmt=	12.31
Currently in Operational Management Band			

Simulated Average LORS2008 [1965-2000]	13.66
Difference from Average LORS2008	2.14

12DEC (1965-2007) Period of Record Average	14.74
Difference from POR Average	1.06

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ÷ 9.74'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷ 7.94'
Bridge Clearance = 49.90'

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

L001	L005	L006	LZ40	S4	S352	S308	S133
15.78	15.81	15.79	15.78	15.78	15.90	15.78	15.72

*Combination Okeechobee Avg-Daily Lake Average = 15.80
(*See Note)

Okeechobee Inflows (cfs):

S65E	370	S65EX1	0	Fisheating Cr	29
S154	0	S191	0	S135 Pumps	0
S84	109	S133 Pumps	0	S2 Pumps	0
S84X	16	S127 Pumps	0	S3 Pumps	0
S71	0	S129 Pumps	0	S4 Pumps	0
S72	0	S131 Pumps	0	C5	0
Total Inflows:	524				

Okeechobee Outflows (cfs):

S135 Culverts	-NR-	S354	290	S77	1614
S127 Culverts	0	S351	237	S308	9
S129 Culverts	0	S352	79		
S131 Culverts	0	L8 Canal Pt	-NR-		
Total Outflows:	2229				

***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	0.20	S308	0.10
Average Pan Evap x 0.75 Pan Coefficient = 0.11" = 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 -2168 cfs or -4300 AC-FT

Headwater		Tailwater	Disch	----- Gate Positions -----							
Elevation	Elevation			#1	#2	#3	#4	#5	#6	#7	#8
(ft-msl)	(ft-msl)		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
(I) see note at bottom											
North East Shore											
S133 Pumps:	13.64	15.62	0	0	0	0	0	0	0	(cfs)	
S193:											
S191:	19.14	15.62	0	0.0	0.0	0.0					
S135 Pumps:	13.46	15.62	0	0	0	0	0			(cfs)	
S135 Culverts:			-NR-	-NR-	-NR-						
North West Shore											
S65E:	21.08	15.47	370	-0.0	0.2	0.1	0.5	0.2	0.2		
S65EX1:	21.08	15.47	0								
S127 Pumps:	13.67	15.65	0	0	0	0	0	0	(cfs)		
S127 Culvert:			0	0.0							
S129 Pumps:	13.10	15.78	0	0	0	0			(cfs)		
S129 Culvert:			0	0.0							
S131 Pumps:	13.08	15.80	0	0	0				(cfs)		
S131 Culvert:			0								
Fisheating Creek											
nr Palmdale		29.13	29								
nr Lakeport											
C5:		-NR-	0	-NR-	-NR-	-NR-					
South Shore											
S4 Pumps:	11.81	15.85	0	0	0	0			(cfs)		
S169:		-NR-	-NR-	-NR-	-NR-	-NR-					
S310:	15.86		29								
S3 Pumps:	10.91	15.82	0	0	0	0			(cfs)		
S354:	15.82	10.91	290	0.2	0.2						
S2 Pumps:	10.40	-NR-	0	0	0	0	0		(cfs)		
S351:	-NR-	10.40	237	0.1	0.3	0.2					
S352:	15.89	10.34	79	0.1	0.0						
C10A:	-NR-	15.69		8.0	8.0	8.0	0.0	0.0			
L8 Canal PT		15.73	-NR-								

S351 and S352 Temporary Pumps/S354 Spillway

S351:	10.40	-NR-	237	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-
S352:	10.34	15.89	79	-NR-	-NR-	-NR-	-NR-		
S354:	10.91	15.82	290	-NR-	-NR-	-NR-	-NR-		

Caloosahatchee River (S77, S78, S79)

S47B:	13.30	12.87		2.5	3.0				
S47D:	12.86	11.25	33	0.0					
S77:									
Spillway and Sector Preferred Flow:									
	15.56	11.12	1603	0.5	3.0	2.5	0.5		
Flow Due to Lockages+:			11						

S78:

Spillway and Sector Flow:
11.13 2.80 1669 1.0 2.5 0.0 2.0
Flow Due to Lockages+: -NR-

S79:

Spillway and Sector Flow:
2.99 1.93 2133 0.0 0.0 2.0 2.5 2.5 1.0 0.0 0.0
Flow Due to Lockages+: 10
Percent of flow from S77 75%
Chloride (ppm) 0

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Preferred Flow:
15.75 13.60 0 0.0 0.0 0.0 0.0
Flow Due to Lockages+: 9

S153: 19.06 13.40 0 0.0 0.0

S80:

Spillway and Sector Flow:
13.68 0.30 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
Flow Due to Lockages+: 28
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 (Degø)	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:	2.61	2.68	2.69	61	5
S78:	0.00	0.00	0.00	56	2
S79:	3.39	3.39	3.39	305	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:	1.16	1.16	1.16	79	4
S80:	0.00	0.00	0.03	254	0
Okeechobee Average (Sites S78, S79 and S80 not included)	1.88	0.30	0.30		

Oke Nexrad Basin Avg	-NR-	0.00	0.00		

Okeechobee Lake Elevations	12 DEC 2021	15.80	Difference from 12DEC21
12DEC21 -1 Day =	11 DEC 2021	15.81	0.01

12DEC21	-2 Days =	10 DEC 2021	15.82	0.02
12DEC21	-3 Days =	09 DEC 2021	15.83	0.03
12DEC21	-4 Days =	08 DEC 2021	15.84	0.04
12DEC21	-5 Days =	07 DEC 2021	15.86	0.06
12DEC21	-6 Days =	06 DEC 2021	15.86	0.06
12DEC21	-7 Days =	05 DEC 2021	15.87	0.07
12DEC21	-30 Days =	12 NOV 2021	16.02	0.22
12DEC21	-1 Year =	12 DEC 2020	15.99	0.19
12DEC21	-2 Year =	12 DEC 2019	12.95	-2.85

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	
12DEC21	Today =	12 DEC 2021	-572 MON	45	
12DEC21	-1 Day =	11 DEC 2021	-799 SUN	-45	
12DEC21	-2 Days =	10 DEC 2021	-879 SAT	172	
12DEC21	-3 Days =	09 DEC 2021	-796 FRI	849	
12DEC21	-4 Days =	08 DEC 2021	-951 THU	-1962	
12DEC21	-5 Days =	07 DEC 2021	-1361 WED	2013	
12DEC21	-6 Days =	06 DEC 2021	-1750 TUE	-857	
12DEC21	-7 Days =	05 DEC 2021	-1444 MON	-387	
12DEC21	-8 Days =	04 DEC 2021	-525 SUN	-59	
12DEC21	-9 Days =	03 DEC 2021	-479 SAT	-1690	
12DEC21	-10 Days =	02 DEC 2021	30 FRI	-1178	
12DEC21	-11 Days =	01 DEC 2021	206 THU	176	
12DEC21	-12 Days =	30 NOV 2021	302 WED	-4260	
12DEC21	-13 Days =	29 NOV 2021	500 TUE	-831	

S65E					
Average Flow over previous 14 days				Avg-Daily Flow	
12DEC21	Today=	12 DEC 2021	157 MON	427	
12DEC21	-1 Day =	11 DEC 2021	172 SUN	431	
12DEC21	-2 Days =	10 DEC 2021	188 SAT	461	
12DEC21	-3 Days =	09 DEC 2021	202 FRI	138	
12DEC21	-4 Days =	08 DEC 2021	244 THU	2	
12DEC21	-5 Days =	07 DEC 2021	301 WED	3	
12DEC21	-6 Days =	06 DEC 2021	359 TUE	0	
12DEC21	-7 Days =	05 DEC 2021	422 MON	0	
12DEC21	-8 Days =	04 DEC 2021	490 SUN	0	
12DEC21	-9 Days =	03 DEC 2021	585 SAT	0	
12DEC21	-10 Days =	02 DEC 2021	692 FRI	0	
12DEC21	-11 Days =	01 DEC 2021	808 THU	-NR-	
12DEC21	-12 Days =	30 NOV 2021	860 WED	-NR-	
12DEC21	-13 Days =	29 NOV 2021	911 TUE	426	

S65EX1					
Average Flow over previous 14 days				Avg-Daily Flow	
12DEC21	Today=	12 DEC 2021	355 MON	0	
12DEC21	-1 Day =	11 DEC 2021	355 SUN	0	
12DEC21	-2 Days =	10 DEC 2021	355 SAT	0	
12DEC21	-3 Days =	09 DEC 2021	355 FRI	280	
12DEC21	-4 Days =	08 DEC 2021	335 THU	467	
12DEC21	-5 Days =	07 DEC 2021	302 WED	382	
12DEC21	-6 Days =	06 DEC 2021	274 TUE	539	
12DEC21	-7 Days =	05 DEC 2021	236 MON	546	
12DEC21	-8 Days =	04 DEC 2021	197 SUN	549	
12DEC21	-9 Days =	03 DEC 2021	158 SAT	549	
12DEC21	-10 Days =	02 DEC 2021	118 FRI	551	
12DEC21	-11 Days =	01 DEC 2021	79 THU	562	
12DEC21	-12 Days =	30 NOV 2021	39 WED	460	
12DEC21	-13 Days =	29 NOV 2021	6 TUE	85	

Lake Okeechobee Outlets Last 14 Days

		S-77	Below S-77	S-78	S-79
		Discharge	Discharge	Discharge	Discharge
		(ALL DAY)	(ALL-DAY)	(ALL DAY)	(ALL DAY)
		(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)
12	DEC 2021	3210	3407	-NR-	4249
11	DEC 2021	2712	2895	2932	3874
10	DEC 2021	2951	3056	2929	4527
09	DEC 2021	3761	3876	3061	4270
08	DEC 2021	3810	3854	3212	4116
07	DEC 2021	2962	3222	2951	3982
06	DEC 2021	2193	2584	2524	3597
05	DEC 2021	2039	2601	2205	3304
04	DEC 2021	2735	2924	2171	3346
03	DEC 2021	2710	2802	2757	4216
02	DEC 2021	3731	4072	2740	3928
01	DEC 2021	3392	3559	2681	3741
30	NOV 2021	-NR-	3156	2692	3524
29	NOV 2021	2483	2555	2534	3942

		S-310	S-351	S-352	S-354	L8 Canal Pt
		Discharge	Discharge	Discharge	Discharge	Discharge
		(ALL DAY)	(ALL DAY)	(ALL DAY)	(ALL DAY)	(ALL DAY)
		(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)
12	DEC 2021	58	470	157	575	-NR-
11	DEC 2021	30	517	148	697	-NR-
10	DEC 2021	-8	1017	233	367	-NR-
09	DEC 2021	-6	1258	156	817	-NR-
08	DEC 2021	-6	341	357	0	-NR-
07	DEC 2021	-0	764	46	271	-NR-
06	DEC 2021	5	211	49	179	-NR-
05	DEC 2021	105	486	49	935	6
04	DEC 2021	100	789	49	619	-36
03	DEC 2021	5	1509	137	882	-129
02	DEC 2021	-1	1500	0	1041	-162
01	DEC 2021	5	755	0	530	-172
30	NOV 2021	3	780	0	668	-178
29	NOV 2021	0	0	0	187	-NR-

		S-308	Below S-308	S-80
		Discharge	Discharge	Discharge
		(ALL DAY)	(ALL-DAY)	(ALL-DAY)
		(AC-FT)	(AC-FT)	(AC-FT)
12	DEC 2021	17	-NR-	55
11	DEC 2021	16	-NR-	47
10	DEC 2021	4	-NR-	36
09	DEC 2021	16	-NR-	36
08	DEC 2021	264	-NR-	22
07	DEC 2021	10	-NR-	55
06	DEC 2021	8	-NR-	30
05	DEC 2021	8	-NR-	49
04	DEC 2021	10	-NR-	49
03	DEC 2021	12	-NR-	45
02	DEC 2021	10	-NR-	56
01	DEC 2021	10	-NR-	29
30	NOV 2021	14	-NR-	65
29	NOV 2021	10	-NR-	296

*** 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 Okeechobee elevation is determined from the 4 Int & 4 Edge stations

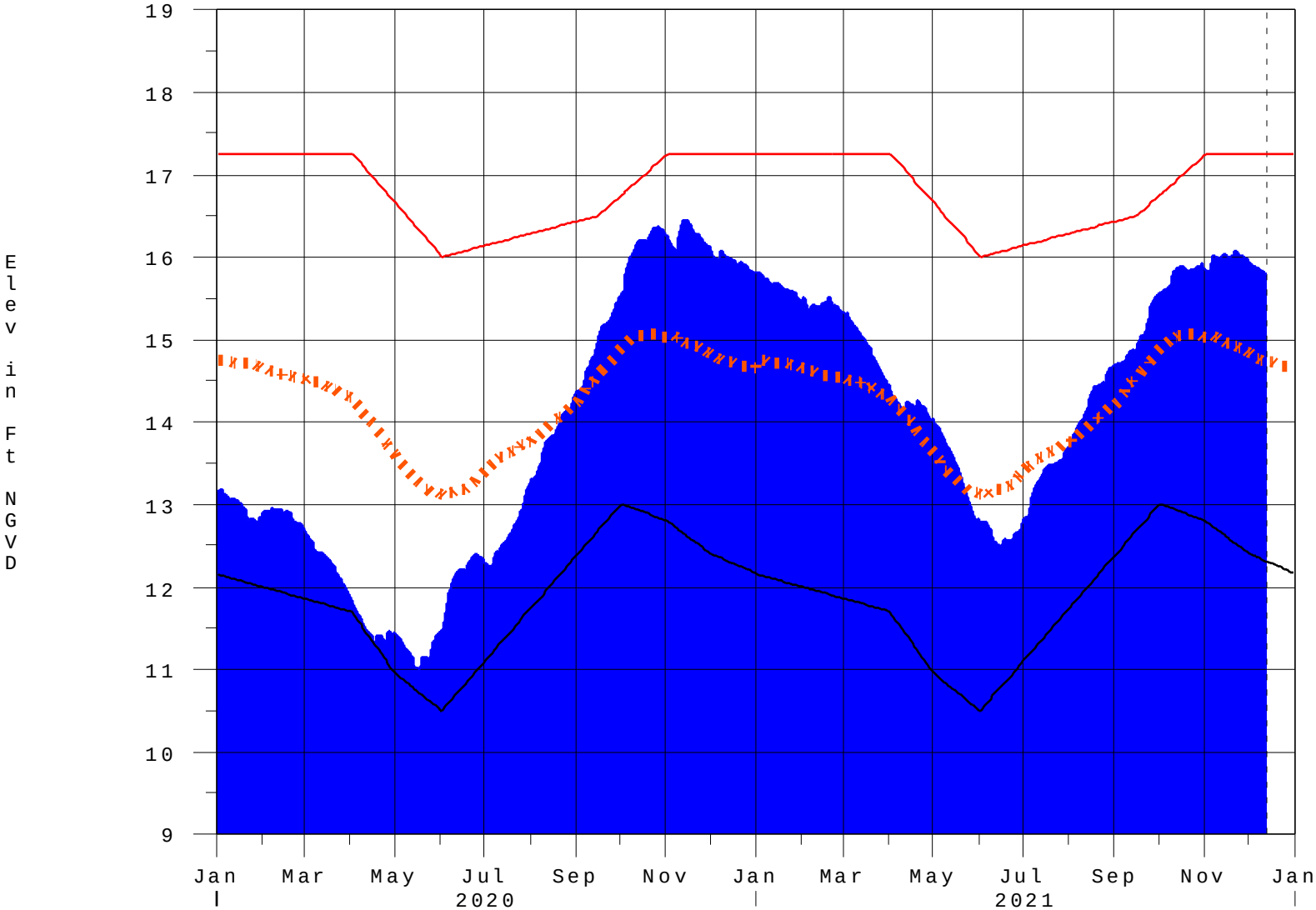
++ For more information see the Jacksonville District Navigation website at <http://www.saj.usace.army.mil/>

\$ For information regarding Lake Okeechobee Service Area water restrictions please refer to www.sfwmd.gov

Report Generated 13DEC2021 @ 10:15 ** Preliminary Data - Subject to Revision **

Lake Okeechobee

13DEC21 10:00:28



- 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**

Under Construction