

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 12/14/2020 (ENSO Condition: La Niña)

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 La Nina years³ and a sub-sampling of warm years of the Atlantic Multi-decadal Oscillation (AMO) in combination with La Nina ENSO 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 ENSO Years ³		Sub-sampling of AMO Warm + La Nina ENSO 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	0.49	Dry	-0.36	Dry	-0.24	Dry
Multi Seasonal (Dec-Oct)	N/A	N/A	3.16	Wet	2.35	Normal	2.26	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:

2272 cfs 14-day running average for Lake Okeechobee Net Inflow through 12/13/2020. According to the classification in Tributary Hydrologic Conditions table, this condition is Normal.

1.57 for Palmer Drought Index on 12/12/2020.

According to the classification in Tributary Hydrologic Conditions table, this condition is Wet.

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

LORS2008 Classification Tables:

Lake Okeechobee Stage on 12/14/2020:

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	14.29	← 15.99 ft
Base Flow sub-band		12.68	
Beneficial Use sub-band		12.30	
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 450 cfs at S-79 and up to 200 cfs at S-80.

LORS2008 Implementation on 12/14/2020 (ENSO Condition- La Nina):

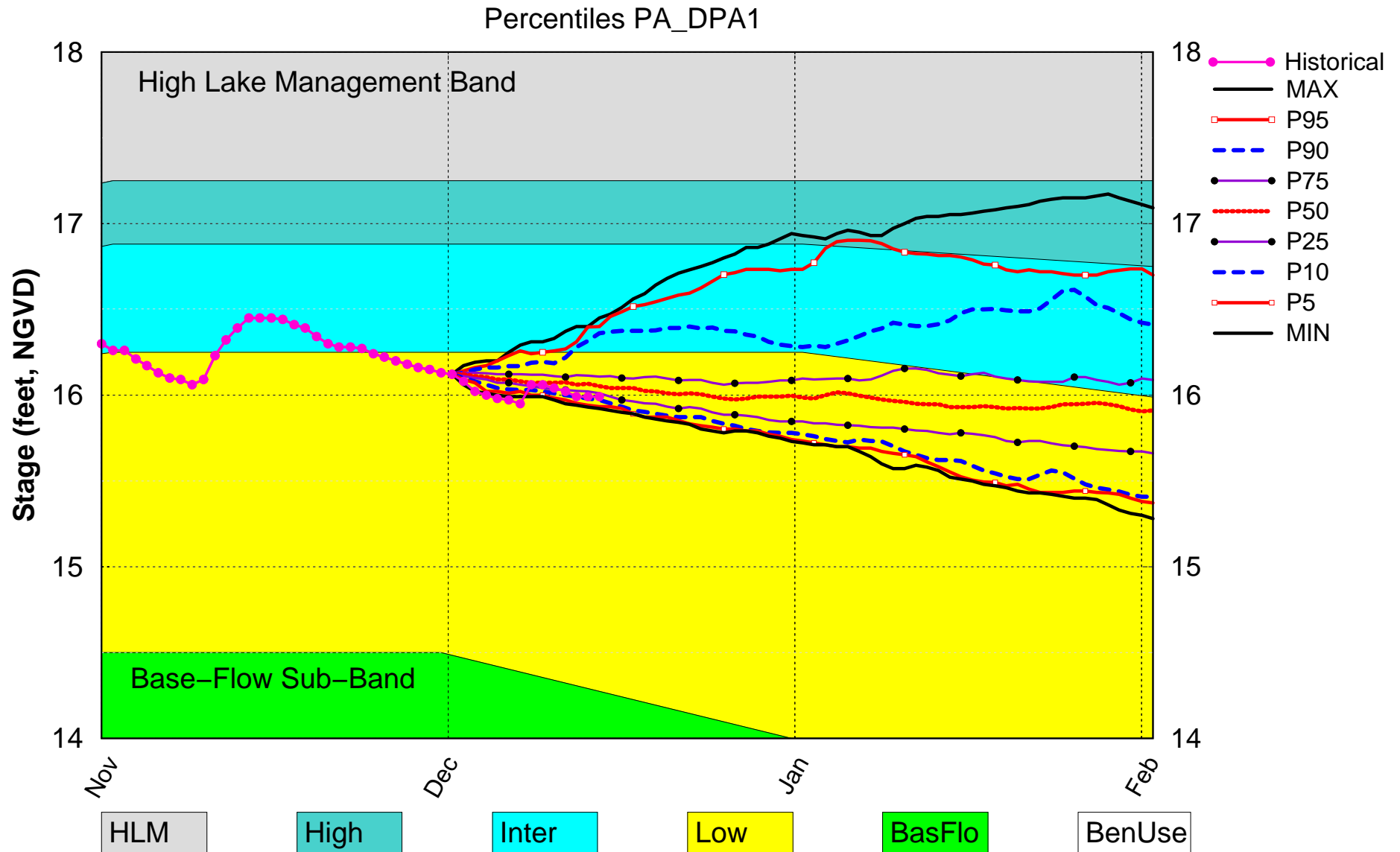
Status for week ending 12/14/2020:

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	1.57 (Normal to Extremely Wet)	L
	CPC Precipitation Outlook	1 month: Normal	L
		3 months: Below Normal	H
	LOK Seasonal Net Inflow Outlook	-0.36 ft	H
	ENSO Forecast	Extremely Dry	
	LOK Multi-Seasonal Net Inflow Outlook	2.35 ft	M
	ENSO Forecast	Normal	
WCAs	WCA 1: 3 Station Average (Site 1-7, 1-8T and 1-9)	Above Line 1 (17.45 ft)	L
	WCA 2A: Site 2-17	Above Line 1 (13.74 ft)	L
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (12.26 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.

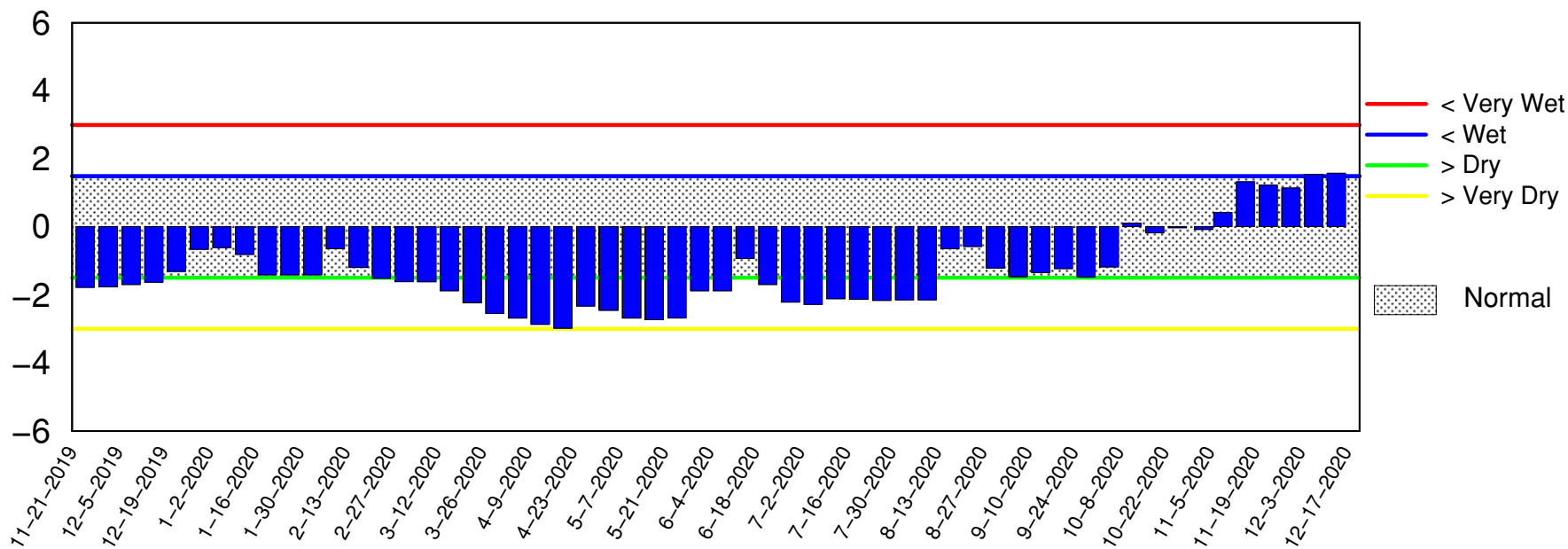
Lake Okeechobee SFWMM Dec 2020 Position Analysis



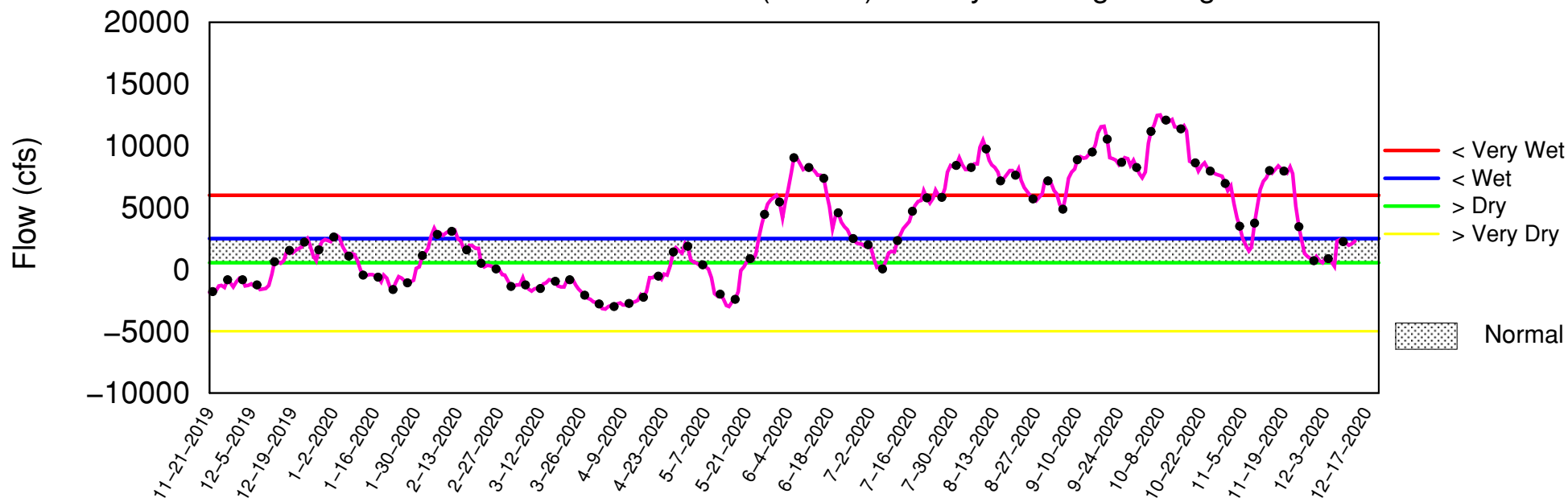
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of December 14 2020

Palmer Index



Lake Okeechobee Net Inflow (LONIN) 14-day Running Average



Mon Dec 14 14:24:44 EST 2020

2008 LORS

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

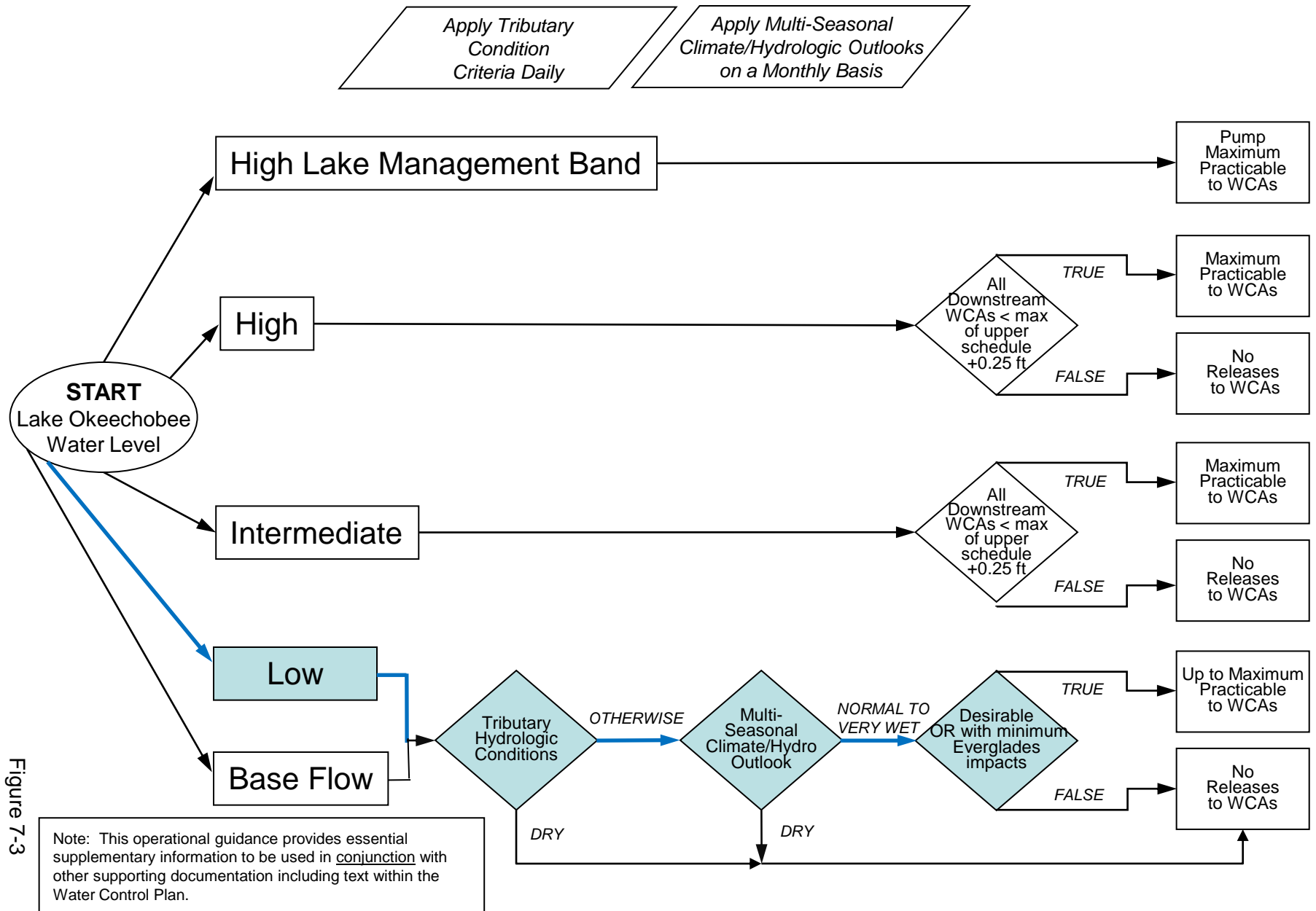


Figure 7-3

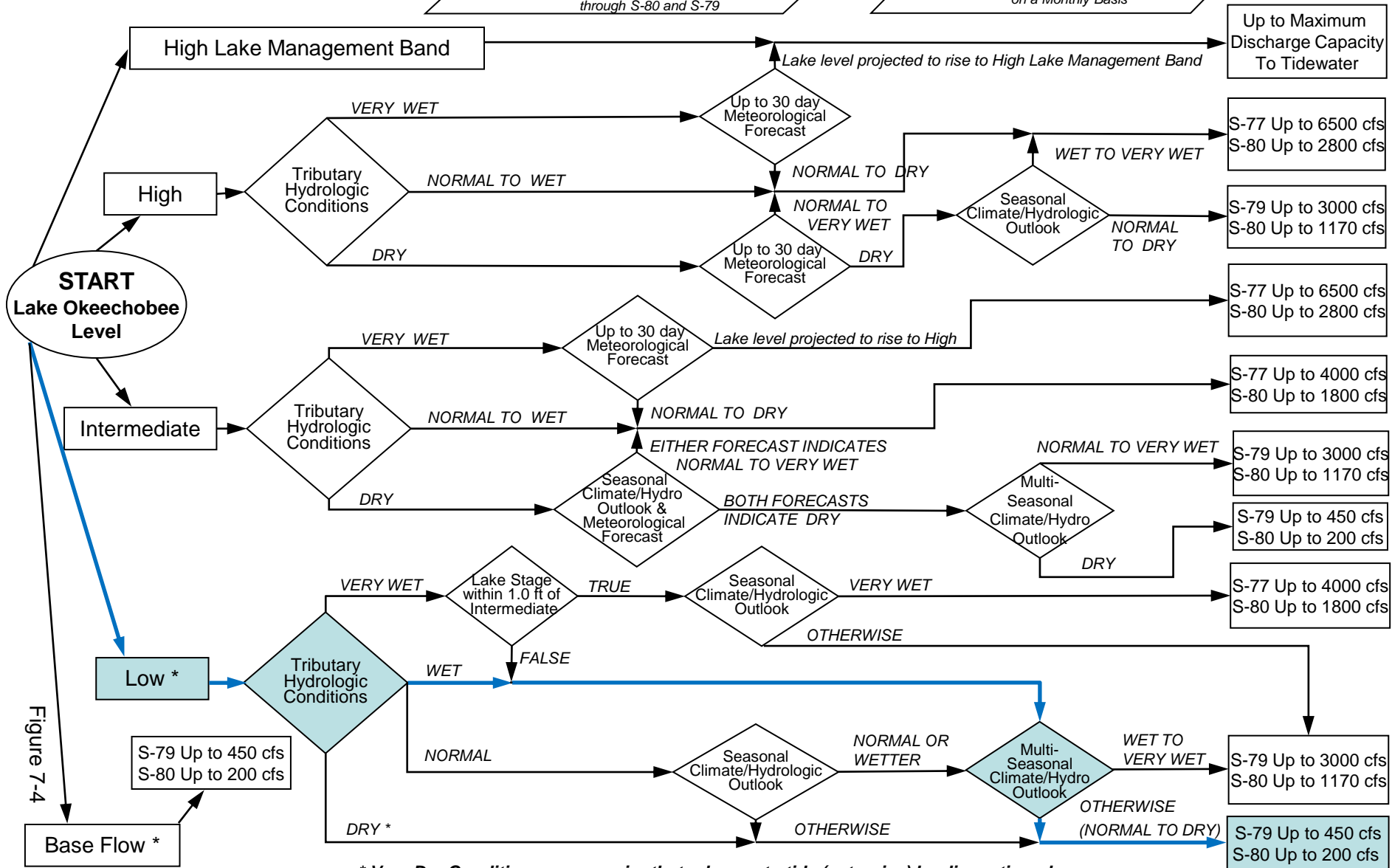
2008 LORS

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.

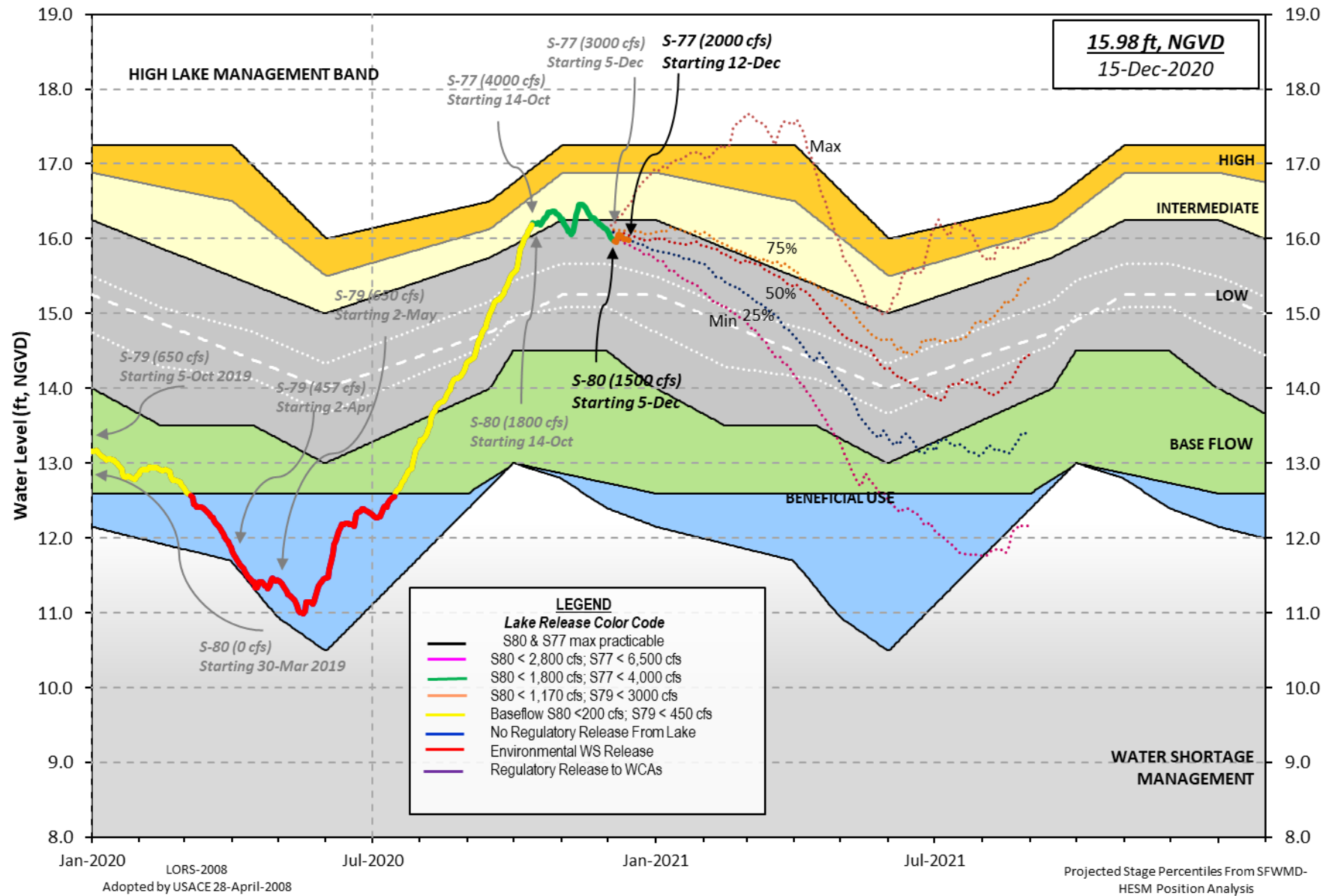
When conducting Base Flow releases, flows can be distributed East and West up to 650 cfs as needed to minimize impacts or provide benefits through S-80 and S-79

Apply Meteorological Forecasts on a Weekly Basis; apply Seasonal and Multi-Seasonal Climate/Hydrologic Outlooks on a Monthly Basis



* Very Dry Conditions may require that releases to tide (estuaries) be discontinued

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 13 DEC 2020

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)
*Okeechobee Lake Elevation	15.99	13.01	12.81 (Official Elv)
Bottom of High Lake Mngmt= 17.25 Top of Water Short Mngmt= 12.30			
Currently in Operational Management Band			

Simulated Average LORS2008 [1965-2000]	13.65
Difference from Average LORS2008	2.34

13DEC (1965-2007) Period of Record Average	14.73
Difference from POR Average	1.26

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 = 48.90'

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

L001	L005	L006	LZ40	S4	S352	S308	S133
15.96	16.01	15.98	15.96	15.99	16.08	15.97	15.96

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

Okeechobee Inflows (cfs):

S65E	1762	S65EX1	0	Fisheating Cr	135
S154	0	S191	0	S135 Pumps	128
S84	64	S133 Pumps	46	S2 Pumps	0
S84X	15	S127 Pumps	0	S3 Pumps	0
S71	237	S129 Pumps	0	S4 Pumps	0
S72	54	S131 Pumps	0	C5	0
Total Inflows:	2441				

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	0	S77	2062
S127 Culverts	0	S351	56	S308	1762
S129 Culverts	0	S352	0		
S131 Culverts	0	L8 Canal Pt	5		
Total Outflows:	3886				

****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	0.00	S308	0.12
Average Pan Evap x 0.75 Pan Coefficient = 0.04" = 0.00'			

Lake Average Precipitation using NEXRAD: = 0.00" = 0.00'

Evaporation - Precipitation: = 0.04" = 0.00'
 Evaporation - Precipitation using Lake Area of 730 square miles
 is equal to 883 cfs out of the lake.
 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:	13.33	15.96	46	48	0	0	0	0			(cfs)
S193:											
S191:	19.26	15.95	0	0.0	0.0	0.0					
S135 Pumps:	13.41	15.86	128	0	43	43	43				(cfs)
S135 Culverts:			0	0.3	0.0						
North West Shore											
S65E:	20.99	15.78	1762	1.5	1.4	1.5	1.0	0.9	0.9		
S65EX1:	20.99	15.78	0								
S127 Pumps:	13.40	15.94	0	0	0	0	0	0			(cfs)
S127 Culvert:			0	0.0							
S129 Pumps:	12.86	16.00	0	0	0	0					(cfs)
S129 Culvert:			0	0.0							
S131 Pumps:	12.90	16.00	0	0	0						(cfs)
S131 Culvert:			0								
Fisheating Creek											
nr Palmdale		31.24	135								
nr Lakeport											
C5:		-NR-	0	-NR-	-NR-	-NR-					
South Shore											
S4 Pumps:	11.27	15.96	0	0	0	0					(cfs)
S169:	15.23	11.28	55	0.0	0.0	0.0					
S310:	15.89		1								
S3 Pumps:	9.95	15.98	0	0	0	0					(cfs)
S354:	15.98	9.95	0	0.0	0.0						
S2 Pumps:	10.18	-NR-	0	-NR-	-NR-	-NR-	-NR-				(cfs)
S351:	-NR-	10.18	56	0.0	0.0	0.0					
S352:	16.05	9.46	0	0.0	0.0						
C10A:	-NR-	14.76		8.0	8.0	8.0	0.0	0.0			
L8 Canal PT		14.80	5								

S351 and S352 Temporary Pumps/S354 Spillway

S351:	10.18	-NR-	56	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-		
S352:	9.46	16.05	0	-NR-	-NR-	-NR-	-NR-				
S354:	9.95	15.98	0	-NR-	-NR-	-NR-	-NR-				

Caloosahatchee River (S77, S78, S79)

S47B:	14.20	12.82		1.0	1.0						
S47D:	12.83	11.17	6	0.0							

S77:
 Spillway and Sector Preferred Flow:
 15.77 11.09 2052 0.0 2.5 2.5 2.5
 Flow Due to Lockages+: 10

S78:
 Spillway and Sector Flow:
 11.05 2.90 2344 2.5 2.5 2.5 0.0
 Flow Due to Lockages+: 0

S79:
 Spillway and Sector Flow:
 3.13 2.17 3559 0.0 0.0 1.0 3.0 3.0 3.0 3.0 0.0
 Flow Due to Lockages+: 10
 Percent of flow from S77 58%
 Chloride (ppm) 0

St. Lucie Canal (S308, S80)

S308:
 Spillway and Sector Preferred Flow:
 15.95 14.60 1757 3.0 3.0 3.0 0.0
 Flow Due to Lockages+: 5

S153: 18.89 14.36 56 0.5 0.0

S80:
 Spillway and Sector Flow:
 14.06 1.46 1404 0.0 0.0 2.0 2.0 2.0 0.0 0.0
 Flow Due to Lockages+: 20
 Percent of flow from S308 125%

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

	1-Day	3-Day	7-Day	----- Wind -----	
Daily Precipitation Totals	(inches)	(inches)	(inches)	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:	0.04	0.13	0.43	197	3
S78:	0.00	0.10	0.14	77	1
S79:	0.00	0.00	0.05	357	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	0.41	0.75	185	5
S80:	0.00	0.60	1.03	186	0
Okeechobee Average	0.02	0.04	0.09		

(Sites S78, S79 and S80 not included)

Oke Nexrad Basin Avg 0.00 0.06 0.11

Okeechobee Lake Elevations	13 DEC 2020	15.99	Difference from 13DEC20
13DEC20 -1 Day =	12 DEC 2020	15.99	0.00
13DEC20 -2 Days =	11 DEC 2020	15.99	0.00
13DEC20 -3 Days =	10 DEC 2020	16.02	0.03
13DEC20 -4 Days =	09 DEC 2020	16.04	0.05
13DEC20 -5 Days =	08 DEC 2020	16.06	0.07
13DEC20 -6 Days =	07 DEC 2020	16.06	0.07
13DEC20 -7 Days =	06 DEC 2020	15.95	-0.04
13DEC20 -30 Days =	13 NOV 2020	16.45	0.46
13DEC20 -1 Year =	13 DEC 2019	13.01	-2.98
13DEC20 -2 Year =	13 DEC 2018	12.81	-3.18

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
13DEC20 Today =	13 DEC 2020	2276	MON		3871
13DEC20 -1 Day =	12 DEC 2020	2078	SUN		4929
13DEC20 -2 Days =	11 DEC 2020	1960	SAT		-1475
13DEC20 -3 Days =	10 DEC 2020	2135	FRI		-50
13DEC20 -4 Days =	09 DEC 2020	2212	THU		-1397
13DEC20 -5 Days =	08 DEC 2020	2388	WED		3027
13DEC20 -6 Days =	07 DEC 2020	2259	TUE		27510
13DEC20 -7 Days =	06 DEC 2020	229	MON		-1075
13DEC20 -8 Days =	05 DEC 2020	588	SUN		1869
13DEC20 -9 Days =	04 DEC 2020	864	SAT		1514
13DEC20 -10 Days =	03 DEC 2020	852	FRI		1136
13DEC20 -11 Days =	02 DEC 2020	543	THU		-8007
13DEC20 -12 Days =	01 DEC 2020	711	WED		-3431
13DEC20 -13 Days =	30 NOV 2020	1029	TUE		3439

S65E					
Average Flow over previous 14 days					Avg-Daily Flow
13DEC20 Today=	13 DEC 2020	1539	MON		1920
13DEC20 -1 Day =	12 DEC 2020	1520	SUN		1963
13DEC20 -2 Days =	11 DEC 2020	1498	SAT		1683
13DEC20 -3 Days =	10 DEC 2020	1508	FRI		1807
13DEC20 -4 Days =	09 DEC 2020	1507	THU		1702
13DEC20 -5 Days =	08 DEC 2020	1512	WED		1924
13DEC20 -6 Days =	07 DEC 2020	1513	TUE		1773
13DEC20 -7 Days =	06 DEC 2020	1528	MON		1047
13DEC20 -8 Days =	05 DEC 2020	1597	SUN		968
13DEC20 -9 Days =	04 DEC 2020	1670	SAT		1251
13DEC20 -10 Days =	03 DEC 2020	1713	FRI		1083
13DEC20 -11 Days =	02 DEC 2020	1778	THU		1154
13DEC20 -12 Days =	01 DEC 2020	1839	WED		1576
13DEC20 -13 Days =	30 NOV 2020	1868	TUE		1691

S65EX1					
Average Flow over previous 14 days					Avg-Daily Flow
13DEC20 Today=	13 DEC 2020	212	MON		0
13DEC20 -1 Day =	12 DEC 2020	212	SUN		0
13DEC20 -2 Days =	11 DEC 2020	212	SAT		0

13DEC20	-3 Days =	10 DEC 2020	212	FRI		0
13DEC20	-4 Days =	09 DEC 2020	212	THU		0
13DEC20	-5 Days =	08 DEC 2020	212	WED		0
13DEC20	-6 Days =	07 DEC 2020	212	TUE		108
13DEC20	-7 Days =	06 DEC 2020	205	MON		506
13DEC20	-8 Days =	05 DEC 2020	169	SUN		503
13DEC20	-9 Days =	04 DEC 2020	133	SAT		502
13DEC20	-10 Days =	03 DEC 2020	97	FRI		505
13DEC20	-11 Days =	02 DEC 2020	61	THU		510
13DEC20	-12 Days =	01 DEC 2020	24	WED		340
13DEC20	-13 Days =	30 NOV 2020	0	TUE		0

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)	
DATE	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)	
13 DEC 2020	4093	4775	4649	7083	
12 DEC 2020	4834	5710	5178	7505	
11 DEC 2020	6507	7305	6645	9973	
10 DEC 2020	6542	7388	7440	11086	
09 DEC 2020	6244	7379	8501	11284	
08 DEC 2020	6011	7308	8661	13399	
07 DEC 2020	6060	7282	7650	12438	
06 DEC 2020	6225	7434	6452	8810	
05 DEC 2020	6693	7534	6643	-NR-	
04 DEC 2020	7849	8402	7317	9553	
03 DEC 2020	7892	8245	7305	10218	
02 DEC 2020	7885	7990	7214	9491	
01 DEC 2020	7912	7771	7047	9121	
30 NOV 2020	7807	7827	7109	10203	

	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)
DATE	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)
13 DEC 2020	2	112	0	0	10
12 DEC 2020	135	1161	0	0	-8
11 DEC 2020	6	0	0	0	21
10 DEC 2020	4	0	0	0	4
09 DEC 2020	10	0	0	0	-402
08 DEC 2020	7	0	0	0	-387
07 DEC 2020	109	0	0	0	-4
06 DEC 2020	385	259	0	0	1
05 DEC 2020	445	226	0	53	-4
04 DEC 2020	424	236	28	146	5
03 DEC 2020	63	67	9	0	4
02 DEC 2020	59	0	55	0	11
01 DEC 2020	8	0	118	0	-1
30 NOV 2020	13	0	258	0	-9

	S-308	Below S-308	S-80
	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)
13 DEC 2020	3495	2912	2824
12 DEC 2020	3732	3520	2807
11 DEC 2020	3833	3925	2828
10 DEC 2020	2459	2419	2065
09 DEC 2020	4	64	1077
08 DEC 2020	7	26	827

07 DEC 2020	5	36	1572
06 DEC 2020	6	-58	352
05 DEC 2020	973	1059	1140
04 DEC 2020	3360	3271	3825
03 DEC 2020	3316	3335	3821
02 DEC 2020	3177	3263	3867
01 DEC 2020	3186	3427	3885
30 NOV 2020	3306	3377	3882

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

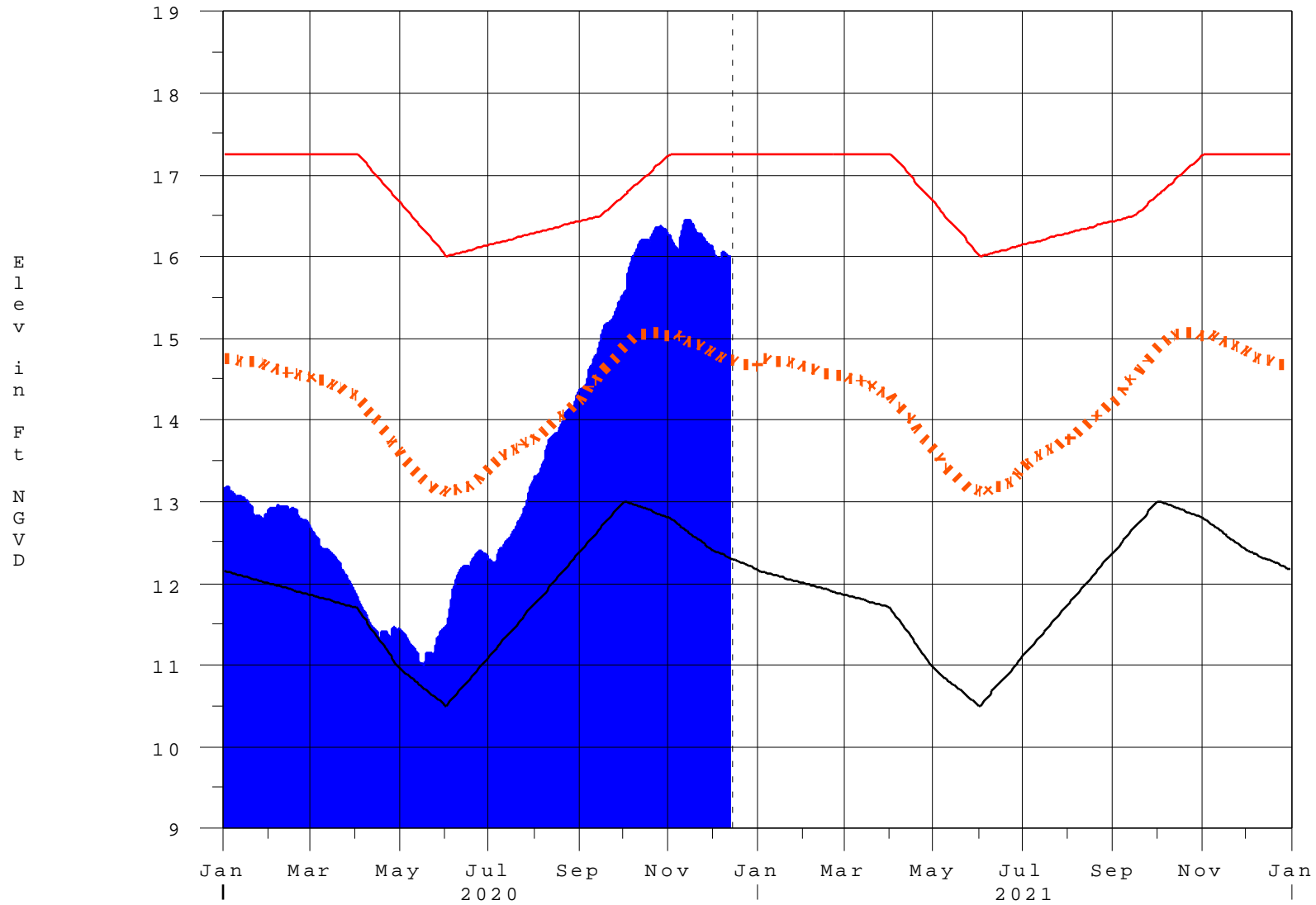
(I) - Flows preceded by "I" signify an instantaneous flow computed from the single value reported for the day

* 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 14DEC2020 @ 14:15 ** Preliminary Data - Subject to Revision **

Lake Okeechobee

14DEC20 20:02:19



- 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