Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 5/10/2021 (ENSO Condition: La Niña Advisory)

Lake Okeechobee Net Inflow Outlook:

The Lake Okeechobee Net Inflow Outlook has been computed using 4 methods: Croley's method[1], the SFWMD empirical method[2], a sub-sampling of La Nina years[3] and a sub-sampling of warm years of the Atlantic Multi-decadal Oscillation (AMO) in combination with La Nina ENSO years[4]. 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)	Condition	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition
Current (May-Oct)	N/A	N/A	2.41	Very Wet	2.60	Very Wet	3.64	Very Wet
Multi Seasonal (May-Apr)	N/A	N/A	3.08	Wet	2.93	Wet	4.28	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 ENSO forecast used.

Tributary Hydrologic Conditions Graph:

-1814 cfs 14-day running average for Lake Okeechobee Net Inflow through 5/9/2021.
According to the classification in Tributary Hydrologic Conditions table, this condition is Dry.

-1.33 for Palmer Drought Index on 5/8/2021.
According to the classification in Tributary Hydrologic Conditions table, this condition is Normal.

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

LORS2008 Classification Tables:

Lake Okeechobee Stage on 5/10/2021:

Lake Okeechobee Stage: **13.74 feet**

Lake Okeechobee Management Zone/Band		Bottom Elevation (feet, NGVD)	Current Lake Stage
High Lake Management Band		16.47	
Operational Band	High sub-band	15.88	
	Intermediate sub-band	15.18	
	Low sub-band	13.24	← 13.74 ft
Base Flow sub-band		12.60	
Beneficial Use sub-band		10.82	
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 5/10/2021 (ENSO Condition- La Nina Advisory):

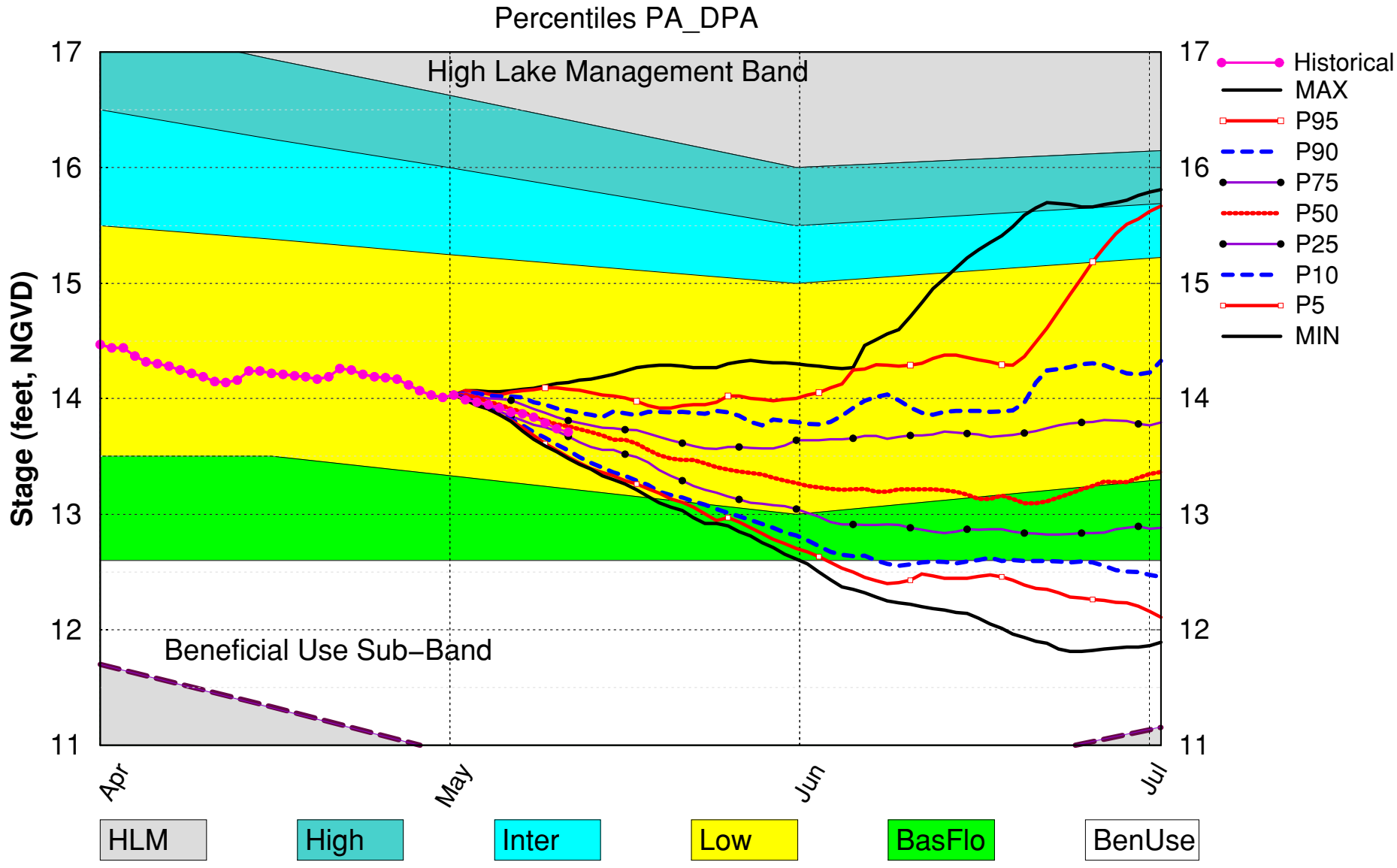
Status for week ending 5/10/2021:

Water Supply Risk Evaluation

Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Low Sub-band	L
	Palmer Drought Index for LOK Tributary Conditions	-1.33 (Dry)	M
	CPC Precipitation Outlook	1 month: Above Normal	L
		3 months: Above Normal	L
	LOK Seasonal Net Inflow Outlook	2.60 ft	L
	ENSO Forecast	Normal to Extremely Wet	
	LOK Multi-Seasonal Net Inflow Outlook	2.93 ft	M
	ENSO Forecast	Normal	
WCAs	WCA 1: Site 1-8C	Above Line 1 (15.72 ft)	L
	WCA 2A: Site S-11B	Below Line 2 (10.83 ft)	H
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (8.90 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 May 2021 Position Analysis

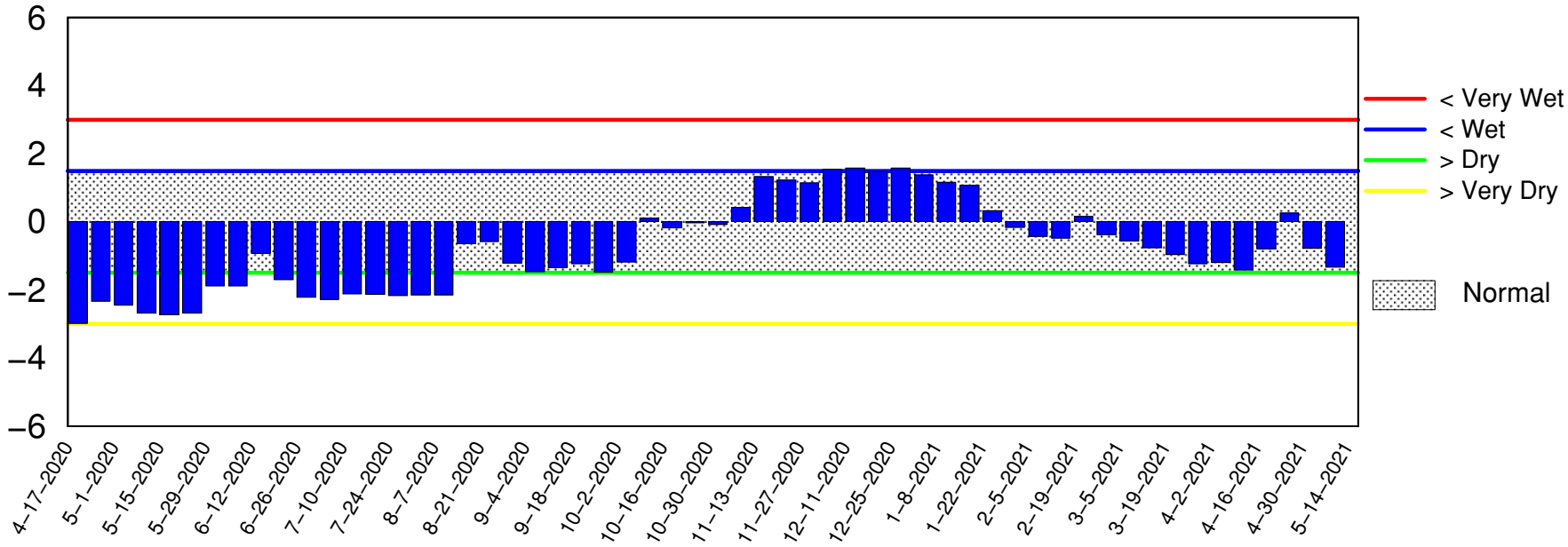


(See assumptions on the Position Analysis Results website)

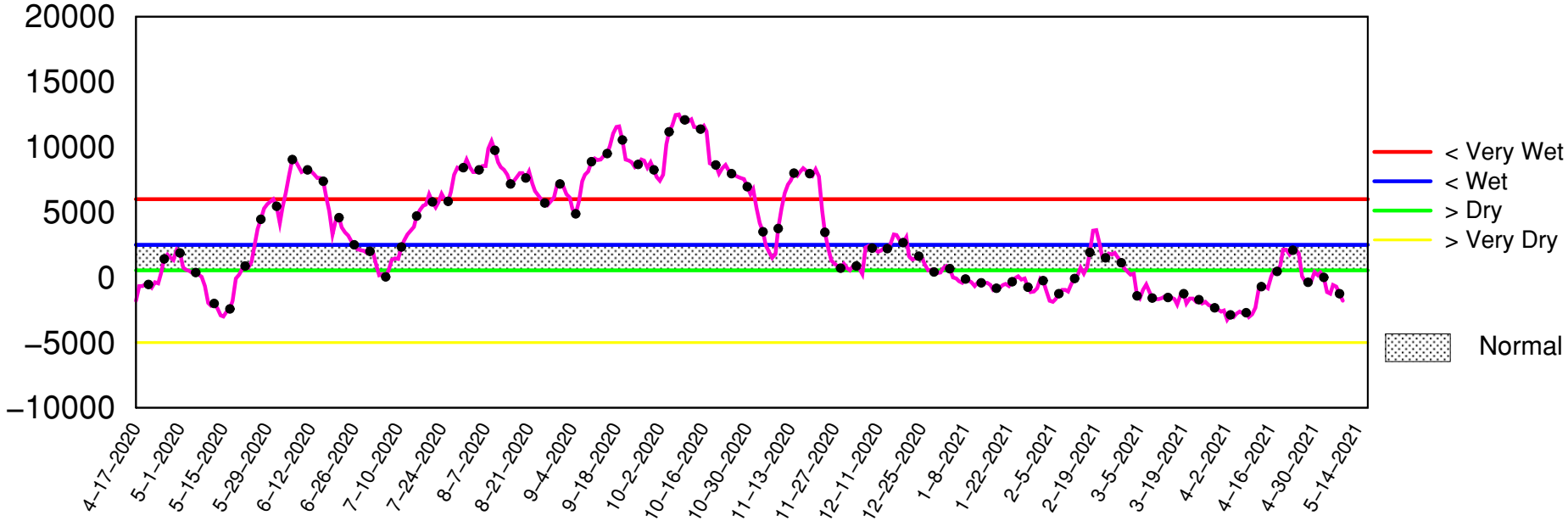
Tue May 11 07:37:35 2021

Tributary Basin Condition Indicators as of May 10 2021

Palmer Index



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



Tue May 11 07:36:37 EDT 2021

2008 LORS

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

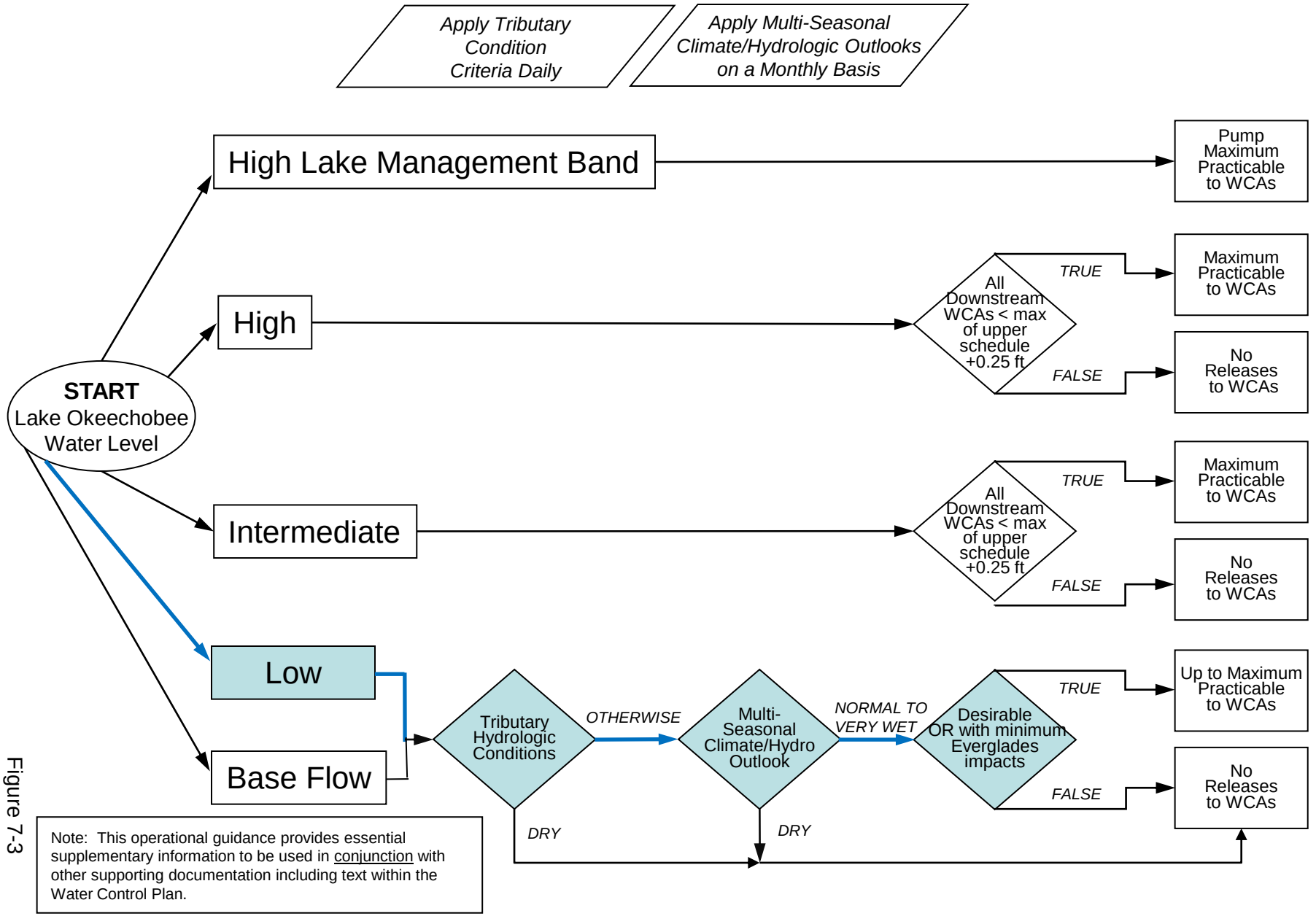


Figure 7-3

2008 LORS

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

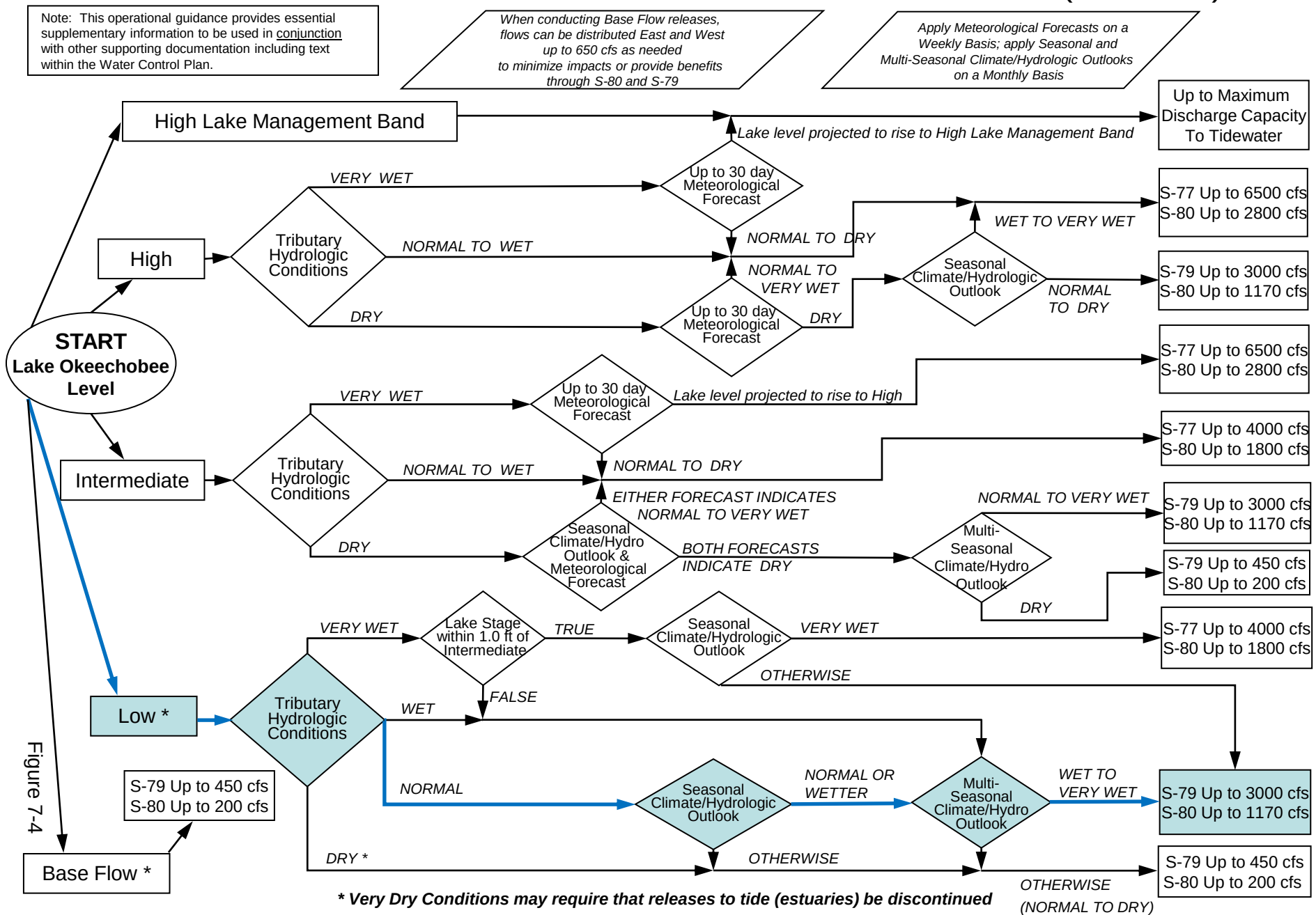
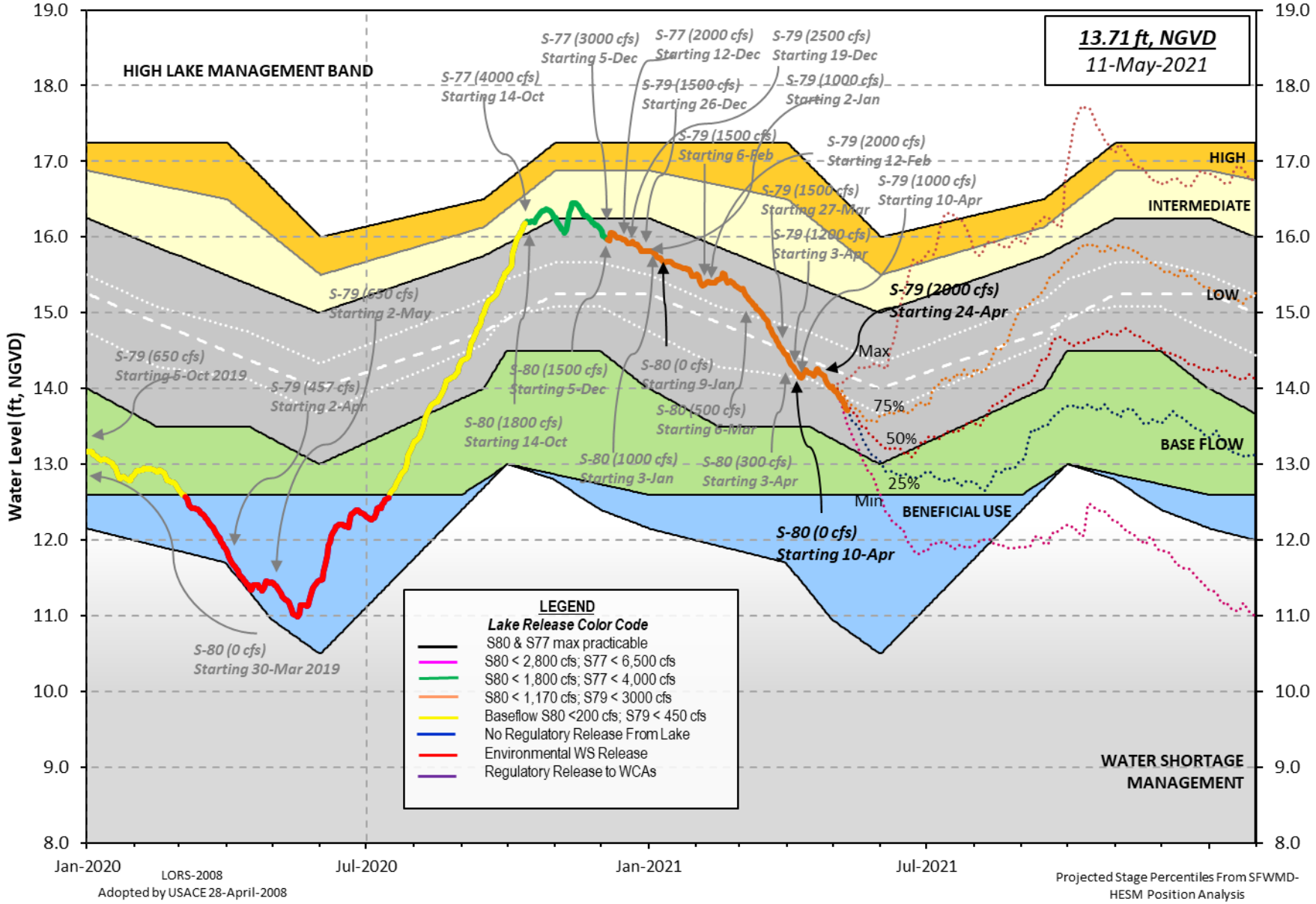


Figure 7-4

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 09 MAY 2021

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)	
*Okeechobee Lake Elevation	13.74	11.22	11.25	(Official Elv)

Bottom of High Lake Mngmt= 16.47 Top of Water Short Mngmt= 10.82
Currently in Operational Management Band

Simulated Average LORS2008 [1965-2000] 12.19
Difference from Average LORS2008 1.55

09MAY (1965-2007) Period of Record Average 13.41
Difference from POR Average 0.33

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ◆ 7.68'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ◆ 5.88'
Bridge Clearance = 50.09'

---

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

L001	L005	L006	LZ40	S4	S352	S308	S133
13.79	13.89	13.69	13.70	13.70	13.77	13.67	13.74

*Combination Okeechobee Avg-Daily Lake Average = 13.74 (*See Note)

Okeechobee Inflows (cfs):

S65E	573	S65EX1	0	Fisheating Cr	26
S154	0	S191	0	S135 Pumps	0
S84	214	S133 Pumps	0	S2 Pumps	0
S84X	66	S127 Pumps	0	S3 Pumps	0
S71	0	S129 Pumps	0	S4 Pumps	0
S72	0	S131 Pumps	0	C5	0

Total Inflows: 880

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	717	S77	2538
S127 Culverts	0	S351	755	S308	0
S129 Culverts	0	S352	368		
S131 Culverts	0	L8 Canal Pt	-NR-		

Total Outflows: 4380

****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	0.28	S308	0.35

Average Pan Evap x 0.75 Pan Coefficient = 0.24" = 0.02'

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 -10588 cfs or -21000 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:	13.48	13.82	0	0	0	0	0	0	(cfs)		
S193:											
S191:	18.15	13.80	0	0.0	0.0	0.0					
S135 Pumps:	12.88	13.64	0	0	0	0	0	(cfs)			
S135 Culverts:			0	0.0	0.0						
North West Shore											
S65E:	20.93	13.68	573	0.0	0.4	0.2	0.4	0.3	0.4		
S65EX1:	20.93	13.68	0								
S127 Pumps:	13.36	13.82	0	0	0	0	0	0	(cfs)		
S127 Culvert:			0	0.0							
S129 Pumps:	12.85	13.82	0	0	0	0	(cfs)				
S129 Culvert:			0	0.0							
S131 Pumps:	12.89	13.86	0	0	0	(cfs)					
S131 Culvert:			0								
Fisheating Creek											
nr Palmdale		29.02	26								
nr Lakeport											
C5:		-NR-	0	-NR-	-NR-	-NR-					
South Shore											
S4 Pumps:	11.39	13.55	0	0	0	0	(cfs)				
S169:	13.58	11.47	-NR-	1.3	-NR-	1.3					
S310:	13.62		124								
S3 Pumps:	10.17	13.56	0	0	0	0	(cfs)				
S354:	13.56	10.17	717	2.5	2.5						
S2 Pumps:	10.22	-NR-	0	0	0	0	0	(cfs)			
S351:	-NR-	10.22	755	1.2	0.9	1.2					
S352:	13.78	10.47	368	0.6	0.8						
C10A:	-NR-	13.56		8.0	8.0	8.0	0.0	0.0			
L8 Canal PT			-NR-								
S351 and S352 Temporary Pumps/S354 Spillway											
S351:	10.22	-NR-	755	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-	
S352:	10.47	13.78	368	-NR-	-NR-	-NR-	-NR-				
S354:	10.17	13.56	717	-NR-	-NR-	-NR-	-NR-				
Caloosahatchee River (S77, S78, S79)											
S47B:	13.19	12.75		1.7	2.2						
S47D:	12.81	10.95	20	0.0							
S77:											
Spillway and Sector Preferred Flow:											
	13.30	10.88	2534	2.5	3.5	3.5	2.5				
Flow Due to Lockages+:			4								
S78:											

```
    Spillway and Sector Flow:
              10.80      3.01    1911    0.5  2.5  2.5  0.5
    Flow Due to Lockages+:          14

  S79:
    Spillway and Sector Flow:
               3.22      0.67    2000    0.5  1.0  1.0  1.0  1.0  1.0  1.0  1.0
    Flow Due to Lockages+:          10
    Percent of flow from S77       127%
    Chloride            (ppm)      0


St. Lucie Canal (S308, S80)
  S308:
    Spillway and Sector Preferred Flow:
              13.65     13.41       0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:           0

  S153:        18.97     13.07       0    0.0  0.0
  S80:
    Spillway and Sector Flow:
              13.32      1.23       0    0.0  0.0  0.0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:          20
    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:	2.05	2.05	2.06	152	4
S78:	15.15	15.15	16.02	165	2
S79:	4.36	4.36	4.36	24	2
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:	20.37	20.37	21.29	94	4
S80:	0.81	0.81	1.26	175	2
Okeechobee Average (Sites S78, S79 and S80 not included)	11.21	1.72	1.80		
Oke Nexrad Basin Avg	-NR-	0.00	0.00		

```
Okeechobee Lake Elevations  09 MAY 2021          13.74 Difference from 09MAY21
   09MAY21  -1 Day  =       08 MAY 2021          13.79             0.05
```

09MAY21	-2 Days =	07 MAY 2021	13.84	0.10
09MAY21	-3 Days =	06 MAY 2021	13.87	0.13
09MAY21	-4 Days =	05 MAY 2021	13.88	0.14
09MAY21	-5 Days =	04 MAY 2021	13.92	0.18
09MAY21	-6 Days =	03 MAY 2021	13.95	0.21
09MAY21	-7 Days =	02 MAY 2021	13.97	0.23
09MAY21	-30 Days =	09 APR 2021	14.15	0.41
09MAY21	-1 Year =	09 MAY 2020	11.22	-2.52
09MAY21	-2 Year =	09 MAY 2019	11.25	-2.49

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
09MAY21	Today =	09 MAY 2021	-1814	MON	-6175
09MAY21	-1 Day =	08 MAY 2021	-1282	SUN	-6520
09MAY21	-2 Days =	07 MAY 2021	-736	SAT	-2872
09MAY21	-3 Days =	06 MAY 2021	-616	FRI	1378
09MAY21	-4 Days =	05 MAY 2021	-1265	THU	-3513
09MAY21	-5 Days =	04 MAY 2021	-1153	WED	-1019
09MAY21	-6 Days =	03 MAY 2021	-5	TUE	615
09MAY21	-7 Days =	02 MAY 2021	352	MON	442
09MAY21	-8 Days =	01 MAY 2021	166	SUN	-3588
09MAY21	-9 Days =	30 APR 2021	405	SAT	9983
09MAY21	-10 Days =	29 APR 2021	-332	FRI	1446
09MAY21	-11 Days =	28 APR 2021	-418	THU	-3577
09MAY21	-12 Days =	27 APR 2021	-363	WED	-5379
09MAY21	-13 Days =	26 APR 2021	86	TUE	-6623

S65E

			Average Flow over previous 14 days		Avg-Daily Flow
09MAY21	Today=	09 MAY 2021	772	MON	662
09MAY21	-1 Day =	08 MAY 2021	800	SUN	707
09MAY21	-2 Days =	07 MAY 2021	826	SAT	758
09MAY21	-3 Days =	06 MAY 2021	847	FRI	419
09MAY21	-4 Days =	05 MAY 2021	897	THU	0
09MAY21	-5 Days =	04 MAY 2021	979	WED	366
09MAY21	-6 Days =	03 MAY 2021	1026	TUE	1003
09MAY21	-7 Days =	02 MAY 2021	1028	MON	948
09MAY21	-8 Days =	01 MAY 2021	1023	SUN	812
09MAY21	-9 Days =	30 APR 2021	1040	SAT	1032
09MAY21	-10 Days =	29 APR 2021	1029	FRI	1003
09MAY21	-11 Days =	28 APR 2021	1014	THU	1012
09MAY21	-12 Days =	27 APR 2021	992	WED	1028
09MAY21	-13 Days =	26 APR 2021	958	TUE	1052

S65EX1

			Average Flow over previous 14 days		Avg-Daily Flow
09MAY21	Today=	09 MAY 2021	137	MON	0
09MAY21	-1 Day =	08 MAY 2021	137	SUN	0
09MAY21	-2 Days =	07 MAY 2021	137	SAT	0
09MAY21	-3 Days =	06 MAY 2021	137	FRI	357
09MAY21	-4 Days =	05 MAY 2021	111	THU	911
09MAY21	-5 Days =	04 MAY 2021	46	WED	646
09MAY21	-6 Days =	03 MAY 2021	16	TUE	0
09MAY21	-7 Days =	02 MAY 2021	44	MON	0
09MAY21	-8 Days =	01 MAY 2021	44	SUN	0
09MAY21	-9 Days =	30 APR 2021	44	SAT	0
09MAY21	-10 Days =	29 APR 2021	44	FRI	0
09MAY21	-11 Days =	28 APR 2021	44	THU	0
09MAY21	-12 Days =	27 APR 2021	44	WED	0
09MAY21	-13 Days =	26 APR 2021	44	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)
09 MAY 2021	5021	5018	3816	3996
08 MAY 2021	4392	4193	3419	4416
07 MAY 2021	3881	4071	2944	4216
06 MAY 2021	3938	4189	2913	4388
05 MAY 2021	4097	4207	2876	4235
04 MAY 2021	3743	3827	2855	4103
03 MAY 2021	3303	3503	2897	4021
02 MAY 2021	3374	3877	2950	3514
01 MAY 2021	3544	3998	2975	3911
30 APR 2021	4618	4896	3158	4121
29 APR 2021	4981	4953	3541	3899
28 APR 2021	3715	3738	3155	4063
27 APR 2021	4861	5162	2920	4206
26 APR 2021	3634	3720	3312	3670

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)
09 MAY 2021	247	1498	730	1423	-NR-
08 MAY 2021	137	1754	671	1240	-NR-
07 MAY 2021	350	974	657	1022	-NR-
06 MAY 2021	280	1086	624	746	-NR-
05 MAY 2021	295	2363	1575	1142	-NR-
04 MAY 2021	367	2313	1580	2226	-NR-
03 MAY 2021	242	2211	1362	2456	-NR-
02 MAY 2021	120	2213	1279	2207	-NR-
01 MAY 2021	135	2335	1262	2201	-NR-
30 APR 2021	169	2640	1094	2185	-NR-
29 APR 2021	285	2657	1061	2065	-NR-
28 APR 2021	352	2528	970	1955	-NR-
27 APR 2021	173	2561	909	1604	-NR-
26 APR 2021	117	2156	825	1525	-NR-

DATE	S-308 Discharge (ALL DAY) (AC-FT)	Below S-308 Discharge (ALL-DAY) (AC-FT)	S-80 Discharge (ALL-DAY) (AC-FT)
09 MAY 2021	1	289	40
08 MAY 2021	1	70	54
07 MAY 2021	287	97	47
06 MAY 2021	346	236	56
05 MAY 2021	431	-NR-	53
04 MAY 2021	484	445	41
03 MAY 2021	116	-26	40
02 MAY 2021	2	-61	55
01 MAY 2021	162	28	56
30 APR 2021	765	442	59
29 APR 2021	349	169	57
28 APR 2021	416	651	61
27 APR 2021	383	467	46
26 APR 2021	0	218	40

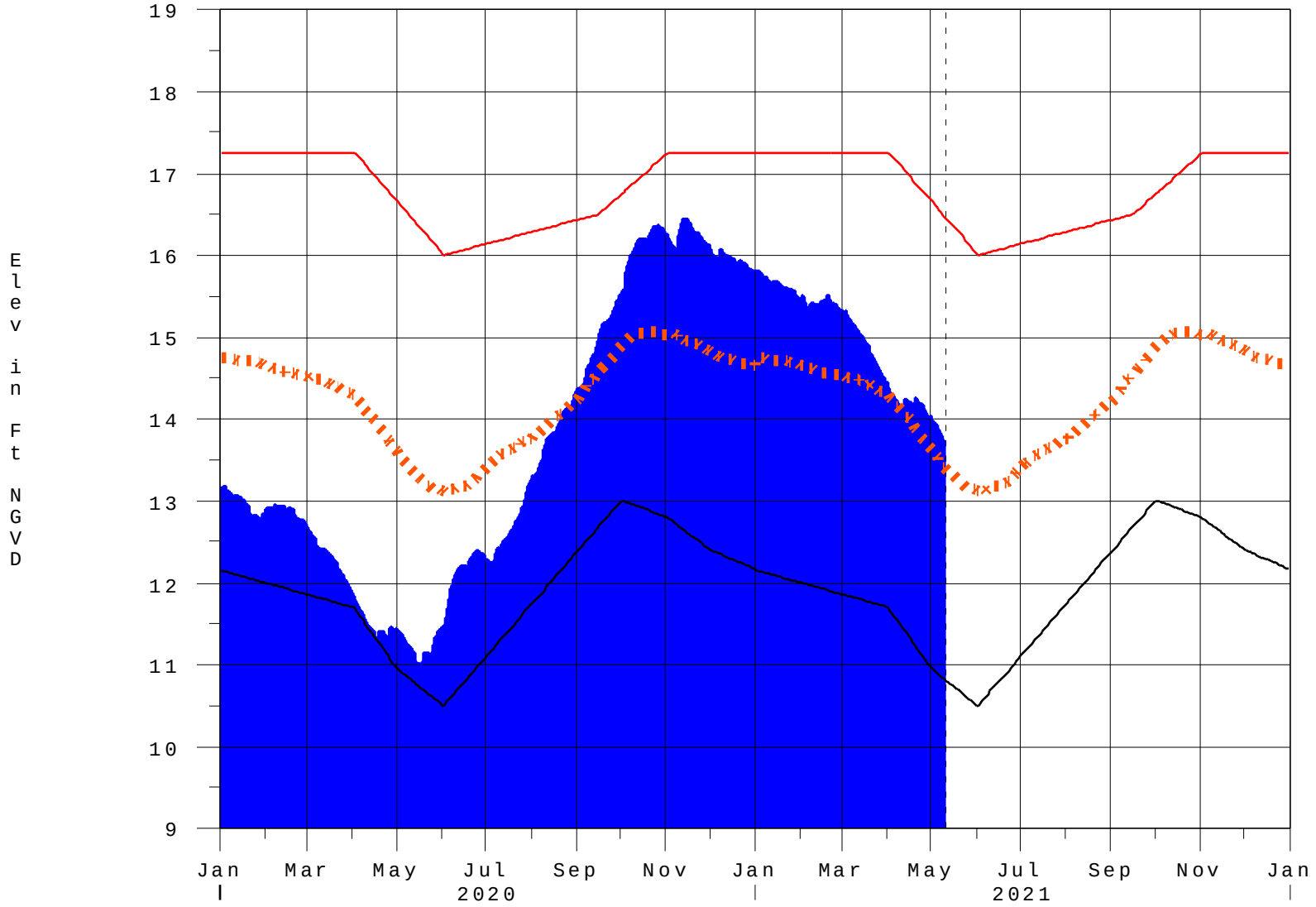
*** NOTE: Discharge (ALL DAY) is computed using Spillway, Sector Gate and Lockages Discharges from 0015 hrs to 2400 hrs.

(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 10MAY2021 @ 16:39  ** Preliminary Data - Subject to Revision **
```

Lake Okeechobee

11MAY21 07:17:50



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**

Under Construction