Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 08/28/2023 (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 <u>CPC Outlook</u>.

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)	<u>Condition</u>	Value (ft)	<u>Condition</u>	Value (ft)	<u>Condition</u>	Value (ft)	<u>Condition</u>
Current (Aug-Jan)	N/A	N/A	2.23	Very Wet	2.31	Very Wet	3.37	Very Wet
Multi Seasonal (Aug-Apr)	N/A	N/A	2.34	Normal	3.16	Wet	4.13	Wet

*Croley's Method Not Produced for This Report

See <u>Seasonal</u> and <u>Multi-Seasonal</u> 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:

-387 cfs 14-day running average for Lake Okeechobee Net Inflow through 08/27/2023. According to the classification in <u>Tributary Hydrologic Conditions</u> table, this condition is Dry.

-2.92 for Palmer Drought Index on 08/26/2023.

According to the classification in <u>Tributary Hydrologic Conditions</u> table, this condition is Dry.

The wetter of the two conditions above is Dry.

LORS2008 Classification Tables:

Lake Okeechobee Stage on 08/28/2023:

Lake Okeechobee Stage: 15.32 feet

Lake Okeechobee Management Zone/Band		Bottom Elevation (feet, NGVD)	Current Lake Stage
High Lake Manage	ement Band	16.41	
	High sub-band	16.02	
Operational Band	Intermediate sub-band	15.62	
	Low sub-band	13.82	← 15.32 ft
Base Flow sub-band		12.60	
Beneficial Use sub-band		12.30	
Water Shortage M	lanagement Band		

Part C of LORS2008: Discharge to WCAs

No releases to WCAs.

Part D of LORS2008: Discharge to Tide

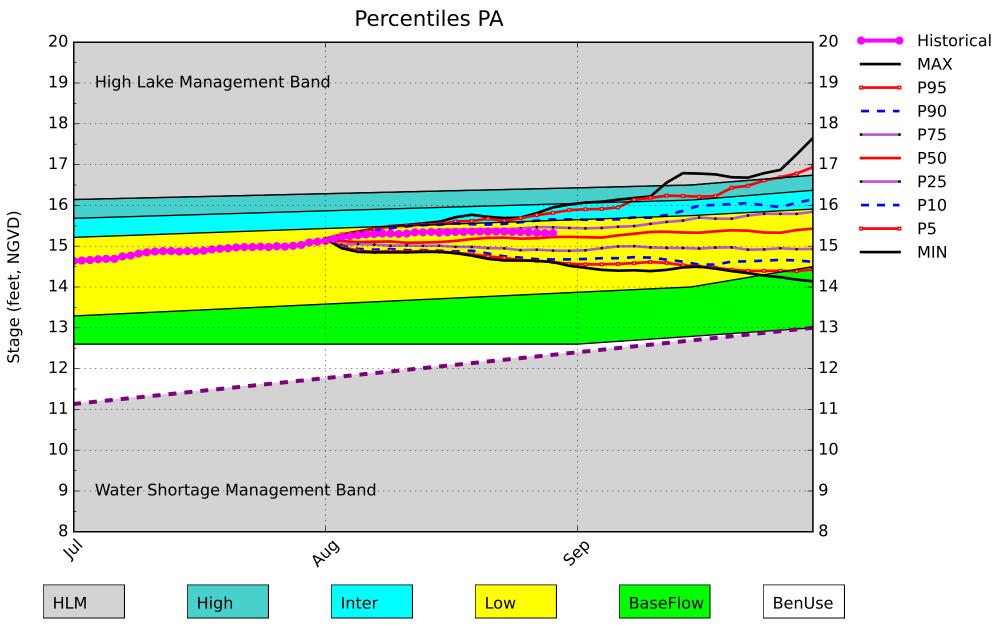
Up to 450 cfs at S-79 and up to 200 cfs at S-80.

LORS2008 Implementation on 08/28/2023 (ENSO Condition- El Niño): Status for week ending 08/28/2023:

Water Supply Risk Evaluation

Area	Indicator	Value	Color Coded Scoring Scheme
	Projected LOK Stage for the next two months	Low Sub-band	L
	Palmer Drought Index for LOK Tributary Conditions	-2.92 (Extremely Dry)	н
	CPC Precipitation Outlook	1 month: Above Normal	L
LOK	CFC Frecipitation Outlook	3 months: Above Normal	L
	LOK Seasonal Net Inflow Outlook	2.31 ft	1
	ENSO Forecast	Normal to Extremely Wet	L
	LOK Multi-Seasonal Net Inflow Outlook	3.16 ft	
	ENSO Forecast	Normal	М
	WCA 1: 3 Station Average (Sites 1-7, 1-8T, and 1-9)	Above Line 1 (16.75 ft)	L
WCAs	WCA 2A: Site 2-17	Above Line 1 (12.69 ft)	L
	WCA-3A: 3 Station Average (Sites 63, 64, and 65)	Above Line 1 (10.90 ft)	L
	Service Area 1	Year-Round Irrigation Rule in effect	L
LEC	Service Area 2	Year-Round Irrigation Rule in effect	L
	Service Area 3	Year-Round Irrigation Rule in effect	L

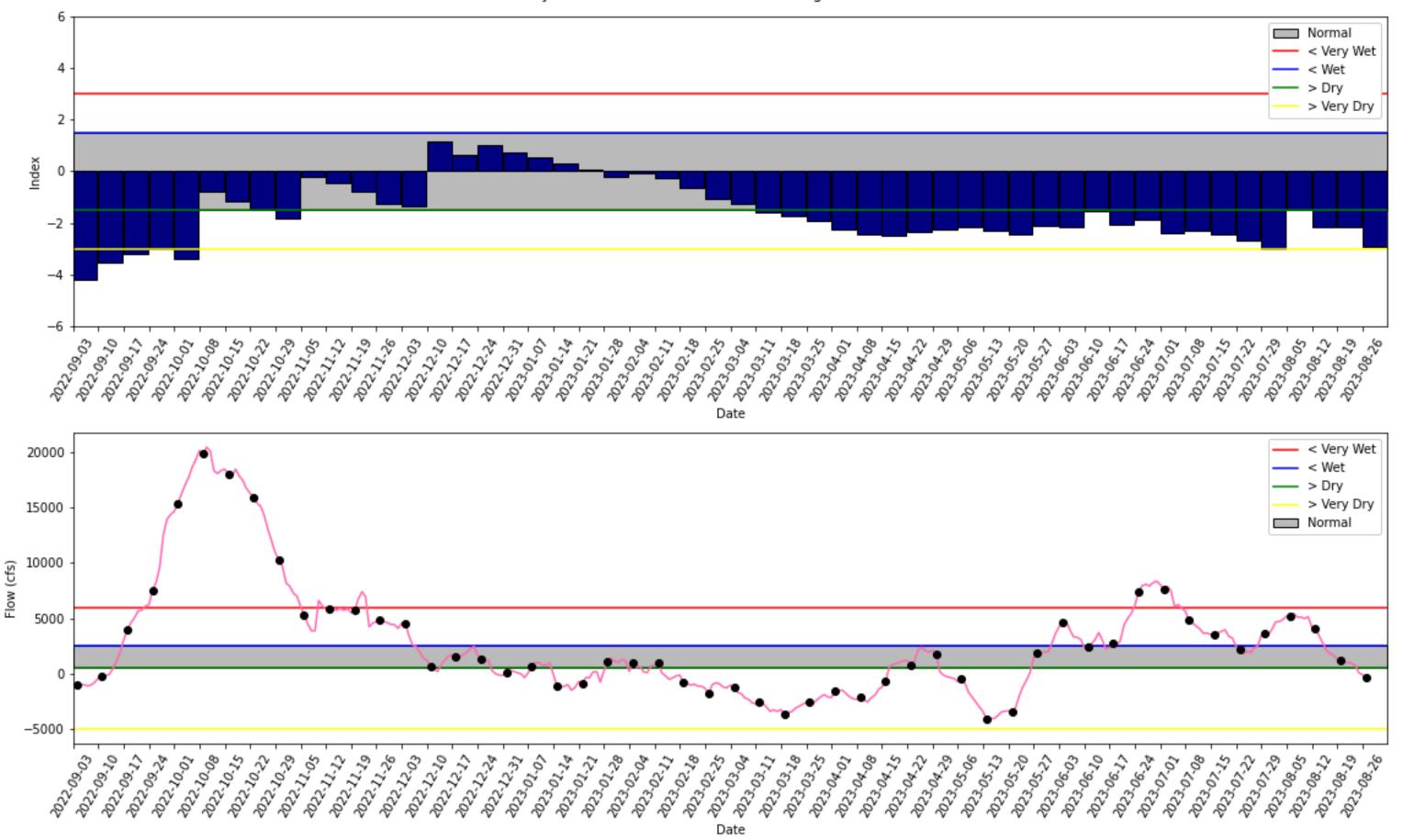
Note: The water supply risk classification based on the Palmer index, as well as the LOK seasonal and multi-seasonal net inflow outlooks use slightly different classification intervals than those used by the 2008-LORS.



Lake Okeechobee SFWMM August 2023 Position Analysis

(See assumptions on the Position Analysis Results website)

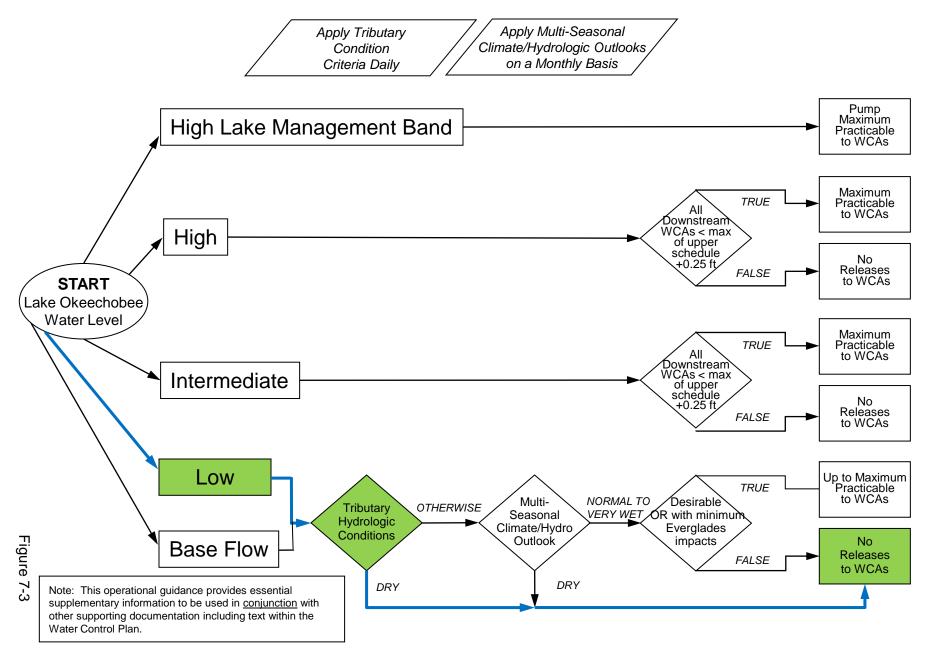
08/29/23 08:11:13



Tributary Basin Condition Indicators as of August 27 2023

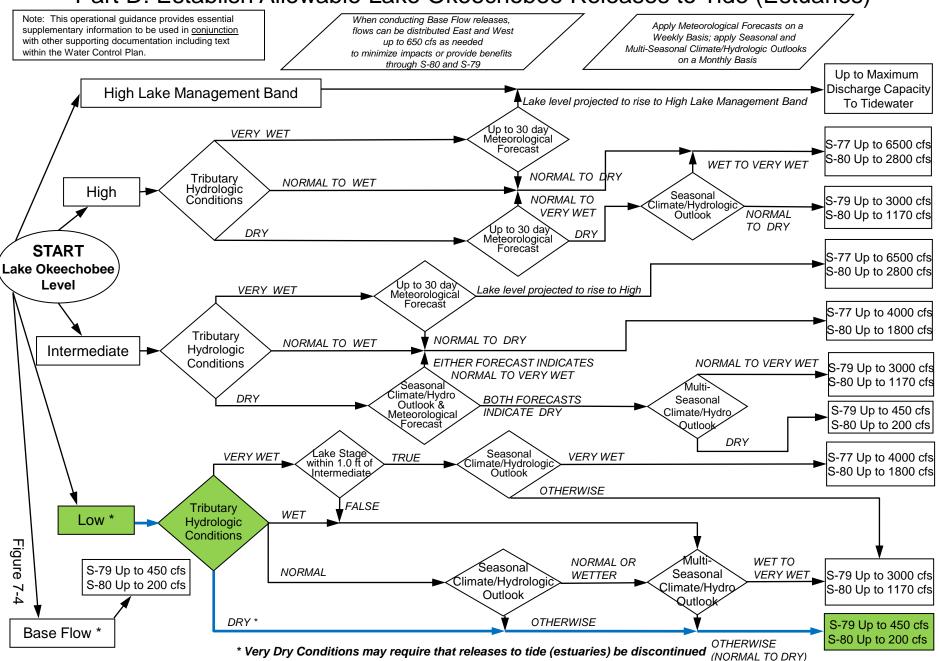
2008 LORS

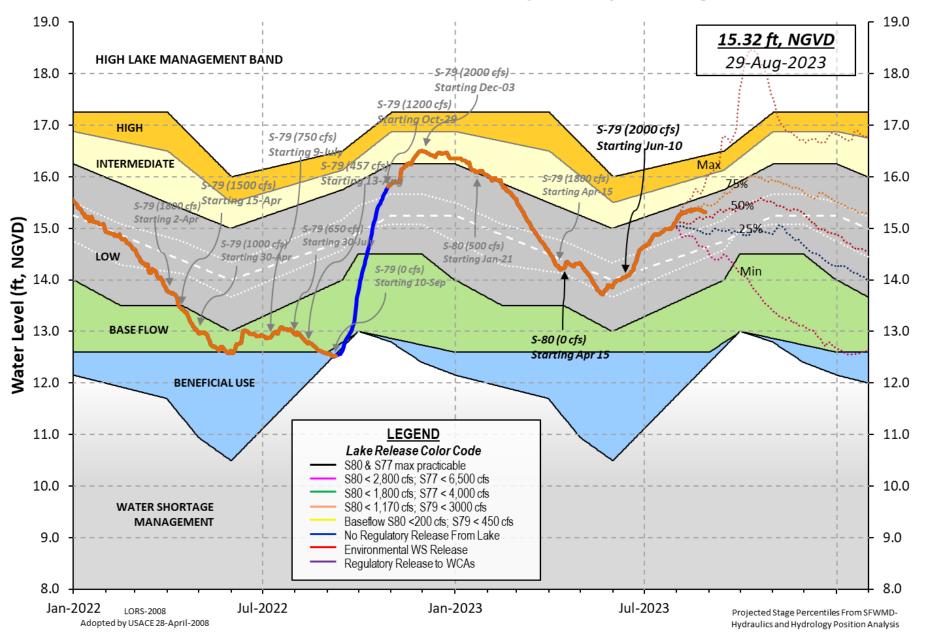
Part C: Establish Allowable Lake Okeechobee Releases to the Water Conservation Areas



2008 LORS

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





Lake Okeechobee Water Level History and Projected Stages

8/28/23, 1:46 PM

oke

U. S. Army Corps of Engineers, Jacksonville District Lake Okeechobee and Vicinity Report ** Preliminary Data - Subject to Revision ** Data Ending 2400 hours 27 AUG 2023 Okeechobee Lake Regulation Elevation Last Year 2YRS Ago (ft-NGVD) (ft-NGVD) (ft-NGVD) *Okeechobee Lake Elevation 15.32 12.60 14.61 (Official Elv) Bottom of High Lake Mngmt= 16.41 Top of Water Short Mngmt= 12.30 Currently in Operational Management Band Simulated Average LORS2008 [1965-2000] 13.15 Difference from Average LORS2008 2.17 27AUG (1965-2007) Period of Record Average 14.16 Difference from POR Average 1.16 Today Lake Okeechobee elevation is determined from the 4 Int & 4 Edge stations

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 • 9.26' ++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 • 7.46' Bridge Clearance = 49.38'

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

L001 L005 L006 LZ40 S4 S352 S308 S133 15.34 15.35 15.32 15.24 15.33 15.42 15.33 15.23

*Combination Okeechobee Avg-Daily Lake Average = 15.32

(*See	Note)
-------	-------

Okeechobee Inflo	ws (cfs):				
S65E	547	S65EX1	0	Fisheating Cr	190
S154	17	S191	0	S135 Pumps	0
S84	69	S133 Pumps	0	S2 Pumps	0
S84X	26	S127 Pumps	0	S3 Pumps	0
S71	127	S129 Pumps	0	S4 Pumps	0
S72	216	S131 Pumps	0	C5	0
Total Inflows:	1192				
Okeechobee Outfl	.ows (cfs)	:			
S135 Culverts	0	S354	0	S77	6
S127 Culverts	0	S351	0	S308	449
S129 Culverts	0	S352	0		
S131 Culverts	0	L8 Canal Pt	-0		
Total Outflows:	454				

****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 0.33 S308 0.17 Average Pan Evap x 0.75 Pan Coefficient = 0.19" = 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 -2168 cfs or -4300 AC-FT

	Headwater	Tailwater				- Gat	te Pos	sitio	ıs	
		Elevation				#3	#4	#5	#6 #7	#8
	(ft-msl)	(ft-msl)					(ft)	(ft)	(ft) (ft)	(ft)
Nonth East Sh		()	I) see i	note at	υοττ	om				
North East Sh		15 22	0	0	0	٥	0	٥	(afa)	
S133 Pumps:	13.42	15.33	0	0	0	0	0	0	(cfs)	
S193:	10.50	15 20	0	0.0	0 0	~ ~				
S191:	18.59	15.29	0	0.0	0.0	0.0	0		(
S135 Pumps:		15.21	0 0	0	0	0	0		(cfs)	
S135 Culver	·ts:		0	0.0	0.0					
Nonth Wort Ck										
North West Sł S65E:	20.81	15 26	547	0.3	о г	0 0	0.5	<u>م</u> 2	0.0	
S65EX1:	20.81	15.26 15.26	547 0	0.5	0.5	0.0	0.5	0.5	0.0	
				0	0	٥	0	0	(cfc)	
S127 Pumps:		15.27	0	0	0	0	0	0	(cfs)	
S127 Culver	יל:		0	0.0						
	10.07	15 26	0	0	0	٥			(cfc)	
S129 Pumps:		15.36	0	0	0	0			(cfs)	
S129 Culver	יל:		0	0.0						
C121 Dumper	1 1 2 2 2	ND	0	0	0				(cfc)	
S131 Pumps: S131 Culver		-NR-	0 0	0	0				(cfs)	
SISI CUIVER	····		0							
Fisheating	Cnook									
nr Palmda		31.54	190							
		51.54	190							
nr Lakepo		15 20		0	0 0	0 0	1			
S282	15.35	15.38		0.	0 0.	0 0	. 1			
South Shore										
	10.96	-NR-	0	0	0	0			(cfc)	
S4 Pumps:	10.86	-NR-	-NR-	0 ND	-NR-	-			(cfs)	
S169:	15.31	-NK-		- INFC -	- NK -	- NK -				
S310:	15.26	15 22	-16	•	0	•			(
S3 Pumps:	10.44	15.32	0	0	0	0			(cfs)	
S354:	15.32	10.44	0	0.0	0.0	~	0		(-(-)	
S2 Pumps:	10.04	15.37	0	0	0	0	0		(cfs)	
S351:	15.37	10.04	0	0.0		0.0				
S352:	15.39	10.29	0	0.0		_				
S271:	15.60	14.31	_	- NR -	0.0	0	.0 0	0.0		
L8 Canal P1	Г	14.01	-0							
	535	1 and S352	Tempora	ary Pum	ips/S3	54 Sp	DITIMS	ау		
C 2 F 1 -	10.04	15 77	~				ND	ND		
S351:	10.04	15.37	-	-NR N				-NK-		
S352:	10.29	15.39	-	-NR N						
S354:	10.44	15.32	0	-NRN	IK NK	NK·	-			
Calaacabataba	Divon (C77 C70 C	-70)							
Caloosahatche S47B:	13.37	5//, 5/8, 3 10.82	,,,,	0.0	0.5					
			100		0.5					
S47D:	10.88	10.86	100	6.5						
S77:	and Costs	n Dnoformer								
Sbirimaà		r Preferred		000						
	15.19	10.69		0.0 0	1.0 E	.0 6	0.0			
FIOM DUE	to Lockag	25+:	6							
670										

S78:

8/28/23, 1:46 PM Spillway and Sector Flow: 292 1.0 0.0 0.0 10.76 2.89 0.0 Flow Due to Lockages+: 16 S79: Spillway and Sector Flow: 3.11 1.47 858 0.0 0.0 1.0 1.5 1.5 1.5 0.0 0.0 Flow Due to Lockages+: 7 0% Percent of flow from S77 Chloride (ppm) 0 St. Lucie Canal (S308, S80) S308: Spillway and Sector Preferred Flow: 15.33 446 0.0 0.0 0.0 0.0 14.12 Flow Due to Lockages+: 3 S153: 18.90 0 13.82 0.0 0.0 S80: Spillway and Sector Flow: 14.05 1.46 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Flow Due to Lockages+: 9 Percent of flow from S308 NA % (mg/ml) **** Steele Point Top Salinity 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

				Wi	nd
Daily Precipitation Totals	1-Day	3-Day	7-Day	Directio	on Speed
	(inches)	(inches)	(inches)	(Deg�)	(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	154	3
S78:	- NR -	0.00	0.00	73	3
S79:	- NR -	0.00	0.00	49	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		
\$308:	- NR -	0.00	0.00	- NR -	- NR -
S80:	- NR -	0.00	0.00	111	1
Okeechobee Average	- NR -	0.00	0.00		
(Sites S78, S79 and	S80 not ind	luded)			
Oke Nexrad Basin Avg	-NR-	0.00	0.00		

15.32 Difference from 27AUG23 0.01 15.33

8/28/23, 1:46 PM		oke	•
27AUG23 -2 Days =	25 AUG 2023	15.34	0.02
27AUG23 -3 Days =	24 AUG 2023	15.35	0.03
27AUG23 -4 Days =	23 AUG 2023	15.35	0.03
27AUG23 -5 Days = 27AUG23 -6 Days =	22 AUG 2023 21 AUG 2023	15.36 15.36	0.04 0.04
27AUG23 -7 Days =	20 AUG 2023	15.36	0.04
27AUG23 -30 Days =	28 JUL 2023	15.03	-0.29
27AUG23 - 1 Year =	27 AUG 2022	12.60	-2.72
27AUG23 -2 Year =	27 AUG 2021	14.61	-0.71
Long Term Mean 30day Avearg	ge ET for Lake	Alfred (Inches) =	- NR -
		Net Inflow (LONIN)	
Average 27AUG23 Today =	27 AUG 2023	previous 14 days -384 MON	Avg-Daily Flow -1722
27AUG23 -1 Day =	26 AUG 2023	-78 SUN	-2166
27AUG23 -2 Days =	25 AUG 2023	102 SAT	-2155
27AUG23 -3 Days =	24 AUG 2023	759 FRI	0
27AUG23 -4 Days =	23 AUG 2023	960 THU	-2167
27AUG23 -5 Days =	22 AUG 2023	1015 WED	166
27AUG23 -6 Days =	21 AUG 2023	1057 TUE	0
27AUG23 -7 Days =	20 AUG 2023	1227 MON	359
27AUG23 -8 Days =	19 AUG 2023	1357 SUN	2
27AUG23 -9 Days =	18 AUG 2023	1666 SAT	2168
27AUG23 -10 Days =	17 AUG 2023	1834 FRI	0
27AUG23 -11 Days =	16 AUG 2023	2168 THU	2168
27AUG23 -12 Days =	15 AUG 2023	2805 WED	2310
27AUG23 -13 Days =	14 AUG 2023	3434 TUE	-4336
A	S65E	manufacia 14 davia	Ave Deily Flow
	27 AUG 2023	previous 14 days	Avg-Daily Flow
27AUG23 Today= 27AUG23 -1 Day =	27 AUG 2023 26 AUG 2023	995 MON 1033 SUN	623 647
27AUG23 -2 Days =	25 AUG 2023	1070 SAT	670
27AUG23 -3 Days =	24 AUG 2023	1090 FRI	691
27AUG23 -4 Days =	23 AUG 2023	1116 THU	845
27AUG23 -5 Days =	22 AUG 2023	1161 WED	1060
27AUG23 -6 Days =	21 AUG 2023	1203 TUE	949
27AUG23 -7 Days =	20 AUG 2023	1273 MON	1153
27AUG23 -8 Days =	19 AUG 2023	1355 SUN	1362
27AUG23 -9 Days =	18 AUG 2023	1402 SAT	1434
27AUG23 -10 Days =	17 AUG 2023	1445 FRI	1005
27AUG23 -11 Days =	16 AUG 2023	1481 THU	907
27AUG23 -12 Days =		1519 WED	1509
27AUG23 -13 Days =	14 AUG 2025	1541 TUE	1075
•	S65EX1	nnovious 11 J 1	
		previous 14 days	
27AUG23 Today= 27AUG23 -1 Day =	27 AUG 2023 26 AUG 2023	0 MON 0 SUN	0 0
27AUG23 -2 Days =	25 AUG 2023		0
27AUG23 -2 Days = 27AUG23 -3 Days =			0
27AUG23 -4 Days =		0 THU	0
27AUG23 -5 Days =	22 AUG 2023	0 WED	0
27AUG23 -6 Days =	21 AUG 2023	0 TUE	0
27AUG23 -7 Days =	20 AUG 2023	0 MON	0
27AUG23 -8 Days =	19 AUG 2023	Ø SUN	j 0
27AUG23 -9 Days =	18 AUG 2023	0 SAT	0
27AUG23 -10 Days =		0 FRI	0
27AUG23 -11 Days =		0 THU	0
27AUG23 -12 Days =		0 WED	0
27AUG23 -13 Days =	14 AUG 2023	0 TUE	0

https://w3.saj.usace.army.mil/h2o/reports/r-oke.html

Lake Okeechobee Outlets Last 14 Days

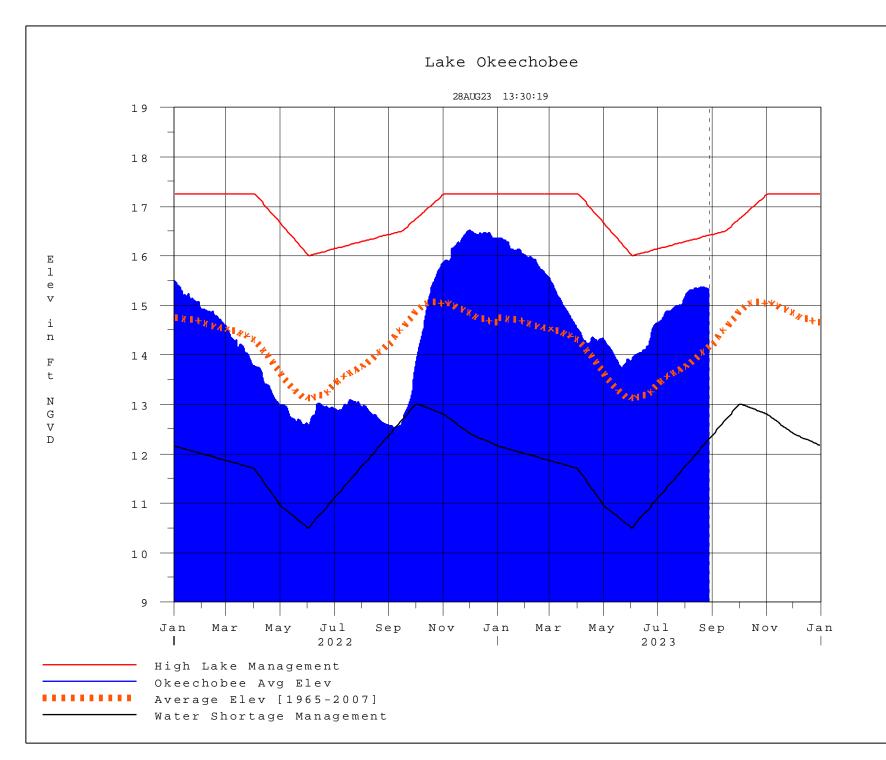
	S-77	Below S-77	S-78	S-79	
	Discharge	Discharge	Discharge	Discharge	
	(ALL DAY)	(ALL-DAY)	(ALL DAY)	(ALL DAY)	
DATE	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)	
27 AUG 2023	3 12	-316	609	1737	
26 AUG 2023	3 14	-307	613	1438	
25 AUG 2023	3 12	-91	776	2442	
24 AUG 2023	3 3	-152	1198	2835	
23 AUG 2023	3 5	-152	1104	3362	
22 AUG 2023	3 3	-137	872	2953	
21 AUG 2023	31	63	1223	3033	
20 AUG 2023	3 15	337	2110	4953	
19 AUG 2023	3 16	229	1540	5214	
18 AUG 2023	3 8	38	814	3666	
17 AUG 2023	39	86	1174	2352	
16 AUG 2023	3 8	327	1193	3118	
15 AUG 2023	3 2	285	992	1887	
14 AUG 2023	39	209	980	2915	
	C 210	6 251	6 252	C 254	
	S-310	S-351 Discharge	S-352 Dischange	S-354 Discharge	L8 Canal Pt
	Discharge (ALL DAY)	(ALL DAY)	Discharge (ALL DAY)	(ALL DAY)	Discharge (ALL DAY)
DATE	(ALL DAT) (AC-FT)	(ALL DAT) (AC-FT)	(ALL DAT) (AC-FT)	(ALL DAT) (AC-FT)	(AC-FT)
27 AUG 2023	• •	•	• •	•	• •
		0	0	0 0	-0
26 AUG 2023 25 AUG 2023		0 0	0 0	0	6 19
24 AUG 2023		0	0	0	1
23 AUG 2023				0	1 7
22 AUG 2023		0	0 0	0	2
21 AUG 2023		0		0	2 7
20 AUG 2023		0 0	0	0	3
19 AUG 2023			0		9
		0	0	0	
18 AUG 2023 17 AUG 2023		0	0	0	-3 -13
		0 0	0	0 0	-13
16 AUG 2023 15 AUG 2023			0	0	-4
14 AUG 2023		0 0	0 0	0	-15
14 AUG 2023	5 52	0	U	U	-15
	S-308	Below S-308			
	Discharge	Discharge	Discharge		
	(ALL DAY)	(ALL-DAY)	(ALL-DAY)	
DATE	(AC-FT)	(AC-FT)	(AC-FT)		
27 AUG 2023		-NR-	18		
26 AUG 2023		- NR -	42		
25 AUG 2023		- NR -	43		
24 AUG 2023		- NR -	22		
23 AUG 2023		- NR -	15		
22 AUG 2023		- NR -	8		
21 AUG 2023		-NR-	23		
20 AUG 2023		-NR-	23		
19 AUG 2023		- NR -	- NR -		
18 AUG 2023		-NR-	70		
17 AUG 2023		-NR-	31		
16 AUG 2023		-NR-	12		
15 AUG 2023		-NR-	31		
14 AUG 2023	3 3	- NR -	35		
*** NOTE:	Discha	arge (All DAN	() is comput	ted using S	pillway, Sector
NOTE:		ges Discharge			
	- (

Gate and

* 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. 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

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

Report Generated 28AUG2023 @ 13:39 ** Preliminary Data - Subject to Revision **



Classification Tables

Supplemental Tables used in conjunction with the LORS2008 Release

Guidance Flow Charts

• <u>Class Limits for Tributary Hydrologic Conditions</u>

Table K-2 in the Lake Okeechobee Water Control Plan

• <u>6-15 Day Precipitation Outlook Categories</u>

Table ?? in the Lake Okeechobee Water Control Plan

• <u>Classification of Lake Okeechobee Net Inflow for Seasonal</u>

<u>Outlook</u>

 Table K-3 in the Lake Okeechobee Water Control Plan

<u>Classification of Lake Okeechobee Net Inflow for Multi-</u>

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	Palmer Index	2-wk Mean L.O. Net
Classification*	Class Limits	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	Equivalent Depth**	Lake Okeechobee
[million acre-feet]	[feet]	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	Equivalent Depth**	Lake Okeechobee
[million acre-feet]	[feet]	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