

02276870 ST. LUCIE CANAL AT LAKE OKEECHOBEE, FL

LOCATION.-- Lat 26°59'00", long 80°03'70", in sec.22, T.40 S., R.37 E., Martin County, Hydrologic Unit 03090202, 0.5 mi downstream of control structure 308, directly beneath the U.S. Highway 441 overpass, just north of U.S. Highway 76 and 24 mi upstream of control structure 80.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--April 1931 to September 1952, October 1981 to current year. Prior to October 1946, published as St. Lucie Canal at lock 1, at Lake Okeechobee. Previously published as station number 02276500. All published data stored under current station number. Canal stage previously published under 02276871 has been moved to the current station number 02276870 for publication. Lake and canal stage at Lock Structure S-308 discontinued September 30, 1998.

REVISED RECORDS.--WDR FL-00-2A, 1999; WRD FL-03-2A, 2002.

GAGE.--Satellite data collection platform with water-stage shaft encoder and acoustic doppler velocity meter. Satellite data collection platform with water-stage shaft encoder and acoustic velocity meter until October 19, 2001, when it was removed. The acoustic velocity meter and acoustic doppler velocity meter were run in tandem for the period of May 17, 2001 to October 19, 2001. This acoustic velocity meter station is located 0.5 mi downstream of S-308 and is stored under 02276877 in the files of the U.S. Geological Survey. Datum of gage is National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). Prior to January 17, 1934, staff gage at site 0.4 mi downstream at different datum. January 17, 1934 to March 15, 1951, water-stage recorder at site 0.8 mi downstream at datum 1.56 ft lower. March 16, 1951, to September 1952, water-stage recorder at bridge on U.S. Highway 441 at present datum. January 17, 1934, to September 1952, auxiliary water-stage recorder 10.9 mi downstream. Prior to April 24, 1992, canal stage data obtained with digital water level recorder. August 1, 1986 to June 20, 1989, electromagnetic velocity meter and canal stage recorder 1200 ft downstream of S-308. April 4, 1992 satellite data collection platform installed at S-308 for lake and canal stages. May 1994, satellite data collection platform with water-stage shaft encoder for canal stage and acoustic velocity meter with cross path installed 0.5 mi downstream of S-308. This data was not used until October 1, 1996, to determine the discharge from S-308. The discharge is computed under station number 02276877, then stored under 02276870 for publication. Prior to October 1, 1998, satellite data collection platform with water-stage shaft encoders for lake and canal stages in control house of S-308.

REMARKS.--Records poor. Flow regulated by control structure 308 gates and lock at Lake Okeechobee. Flow frequently reversed during and after periods of heavy rainfall by pumpage into the canal from agricultural lands in the Everglades (negative figures indicate reverse flow towards Lake Okeechobee). Discharge computed from relations between discharge, head, gate openings, and slope prior to October 1, 1996. Flow is determined by relationship between the mean cross-sectional velocity and an average index line velocity (from the cross path index line velocities) measured with the acoustic velocity meter, from October 1, 1996 to August 13, 2001, acoustic doppler velocity meter, August 14, 2001 to present. Extreme lake stages for the current year no longer published due to the discontinuation of the U.S. Geological Survey equipment at S-308.

COOPERATION.--Canal stage record provided by U.S. Army Corps of Engineers.

ANNUAL MEAN and ANNUAL RUNOFF (AC-FT) SUMMARY STATISTICS.--Figures represent 36 complete water years of discharge (1932-52, 1982-88, 1990, 1993-1996, 1999-2000, 2002).

EXTREME LAKE STAGES FOR PERIOD OF RECORD (1931-1998).--Maximum gage height, 19.63 ft Mar. 9, 1998; minimum, 9.63 ft June 22, 1990.

EXTREME CANAL STAGES FOR PERIOD OF RECORD.--Maximum gage height, 18.87 ft Sept. 26, 2004; minimum, 8.66 ft May 22, 2001.

EXTREME CANAL STAGES FOR CURRENT YEAR.--Maximum gage height, 18.87 ft Sept. 26; minimum, 11.72 ft Sept. 24.

02276870 ST. LUCIE CANAL AT LAKE OKEECHOBEE, FL-Continued

GAGE HEIGHT, FEET
 WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.44	---	14.42	14.12	14.20	14.30	14.20	13.86	12.79	12.66	12.61	13.73
2	14.50	---	14.05	14.09	14.52	14.11	14.22	13.89	12.67	12.65	12.61	13.68
3	14.58	14.59	14.20	14.16	14.57	14.10	14.14	13.95	12.58	12.63	12.70	13.66
4	14.73	14.63	14.13	14.26	14.34	14.50	14.36	13.89	12.61	12.62	12.68	14.00
5	14.72	---	14.11	---	14.32	14.26	14.30	13.88	12.66	12.59	12.81	15.48
6	14.74	14.28	14.18	---	14.42	14.37	14.35	13.82	12.65	12.57	12.91	14.60
7	14.76	14.05	14.15	---	14.55	14.22	14.31	13.80	12.68	12.60	12.85	14.70
8	14.73	---	---	---	14.37	13.96	14.27	13.76	12.70	12.56	12.81	14.69
9	15.05	---	14.11	---	14.46	14.33	14.35	13.68	12.71	12.50	12.77	14.31
10	15.09	14.07	---	14.55	14.38	14.38	14.34	13.64	12.78	12.43	12.77	13.73
11	14.84	14.50	---	14.43	14.26	14.30	14.30	13.64	12.83	12.44	12.81	12.80
12	14.72	14.22	14.36	14.39	14.24	14.37	14.41	13.58	12.85	12.43	12.87	12.67
13	14.83	14.12	14.41	14.39	14.14	14.51	14.31	13.47	12.83	12.42	12.88	13.06
14	14.58	---	14.58	14.29	14.36	14.54	14.31	13.43	12.83	12.42	13.04	13.27
15	14.56	14.01	14.62	14.28	14.18	14.43	14.34	13.37	12.83	12.39	13.14	13.64
16	14.29	14.07	14.64	14.24	14.40	14.41	14.25	13.37	12.78	12.38	13.22	14.05
17	14.23	14.02	14.49	14.19	14.39	14.44	14.19	13.33	12.69	12.38	13.20	14.40
18	14.34	14.03	---	14.45	14.44	14.43	14.17	13.30	12.74	12.44	13.22	14.55
19	14.52	14.21	---	14.24	14.37	14.44	14.16	13.30	12.83	12.54	13.28	14.55
20	14.17	14.48	---	14.35	14.33	14.43	14.19	13.25	12.88	12.53	13.27	14.38
21	13.99	14.13	---	14.37	14.34	14.30	14.15	13.21	12.90	12.48	13.28	15.20
22	14.50	14.55	14.36	14.40	14.10	14.22	14.11	13.20	12.92	12.40	13.32	15.39
23	14.74	14.27	14.38	14.34	14.12	14.38	14.05	13.15	12.87	12.40	13.39	13.98
24	14.76	---	---	14.61	14.10	14.37	14.04	13.10	12.82	12.38	13.51	12.74
25	14.65	14.18	14.25	14.34	14.33	14.52	14.10	13.08	12.79	12.38	13.58	12.34
26	14.49	14.19	14.33	14.34	14.14	14.59	14.00	13.06	12.77	12.42	13.70	16.83
27	14.28	14.30	14.34	14.30	14.16	14.47	14.02	13.04	12.75	12.43	13.82	17.15
28	---	14.42	14.40	14.12	14.21	14.43	13.85	13.00	12.73	12.44	13.76	16.25
29	---	14.51	14.36	14.22	14.35	14.36	13.82	12.91	12.73	12.40	13.72	14.66
30	---	14.57	14.30	14.38	---	14.23	13.87	12.87	12.69	12.36	13.77	14.93
31	---	---	14.26	14.53	---	14.31	---	12.85	---	12.49	13.73	---
TOTAL	---	---	---	---	415.09	445.01	425.48	415.68	382.89	386.76	408.03	429.42
MEAN	---	---	---	---	14.31	14.36	14.18	13.41	12.76	12.48	13.16	14.31
MAX	---	---	---	---	14.57	14.59	14.41	13.95	12.92	12.66	13.82	17.15
MIN	---	---	---	---	14.10	13.96	13.82	12.85	12.58	12.36	12.61	12.34

EVERGLADES AND SOUTHEASTERN COASTAL AREA

02276870 ST. LUCIE CANAL AT LAKE OKEECHOBEE, FL-Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	e1,220	484	643	214	224	381	90	303	1.7	-77	-378
2	---	e1,690	621	633	77	355	290	166	387	28	-36	-353
3	---	1,420	644	519	244	616	881	231	358	-20	23	-356
4	---	1,010	620	604	371	1,190	1,070	-29	363	-48	3.7	-451
5	---	e830	548	e558	237	852	1,240	82	152	-10	-330	---
6	---	690	465	e592	890	999	1,120	221	114	84	-725	e-2,380
7	---	739	443	e535	1,190	434	993	197	184	63	-508	-1,430
8	---	e753	e551	e464	1,350	689	849	31	-138	-101	-332	41
9	---	e743	639	e1,410	1,210	796	780	66	41	26	-305	233
10	---	800	e392	1,440	765	523	441	363	-104	-3.7	-201	440
11	1,090	538	e566	1,220	680	322	415	406	-335	-25	-298	369
12	1,470	557	373	1,400	515	440	45	458	-226	-147	-439	346
13	1,790	583	318	1,100	637	643	-8.8	515	-161	-108	-301	615
14	1,190	e625	369	644	212	902	122	364	-19	-133	-389	422
15	939	667	517	648	314	983	60	143	-165	-107	-848	1,040
16	951	585	1,250	447	114	671	379	140	-127	63	-891	1,310
17	773	701	1,050	605	178	210	511	181	-69	-63	-590	2,080
18	884	748	e1,080	233	153	363	494	314	80	-85	-500	1,150
19	771	546	e604	330	434	389	646	239	-64	-72	-520	488
20	859	531	e931	317	817	417	466	126	-147	-147	-435	177
21	911	730	e702	867	551	224	448	234	28	-221	-349	-139
22	1,410	573	470	1,180	505	459	455	86	-96	-128	-355	0.42
23	2,010	577	256	1,690	476	359	495	-2.0	-77	-60	-272	713
24	2,070	e644	e164	1,190	450	743	260	353	51	-75	-383	781
25	1,500	589	169	585	297	1,310	137	331	27	-54	-611	373
26	1,090	626	778	770	102	1,210	256	393	-84	-180	-908	-3,040
27	919	553	1,120	464	164	673	272	385	-78	-118	-1,150	-651
28	e889	421	1,330	604	139	481	227	303	89	-116	-939	333
29	e719	445	968	398	183	409	342	119	-23	-85	-608	1,410
30	e918	372	846	144	---	519	259	54	-24	7.2	-643	1,090
31	e677	---	629	140	---	372	---	134	---	-33	-492	---
TOTAL	---	21,506	19,897	22,374	13,469	18,777	14,325.2	6,694.0	240	-1,866.8	-14,408.3	---
MEAN	---	717	642	722	464	606	478	216	8.00	-60.2	-465	---
MAX	1,690	1,330	1,690	1,350	1,310	1,240	515	387	84	23	---	---
MIN	372	164	140	77	210	-8.8	-29	-335	-221	-1,150	---	---
AC-FT	---	42,660	39,470	44,380	26,720	37,240	28,410	13,280	476	-3,700	-28,580	---

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2004, BY WATER YEAR (WY)

MEAN	1,575	1,042	706	613	650	914	1,077	616	479	636	760	1,100
MAX	6,480	6,831	6,350	5,649	5,453	7,246	4,620	4,474	3,949	4,697	5,152	6,403
(WY)	(1948)	(1948)	(1948)	(1948)	(1948)	(1983)	(1983)	(1931)	(1931)	(1947)	(1947)	(1949)
MIN	-1101	-120	-138	-130	-24.1	-647	-531	-242	-1,107	-618	-614	-1,036
(WY)	(1988)	(1988)	(1986)	(1986)	(1991)	(1989)	(1991)	(1991)	(1994)	(1989)	(1985)	(1989)

SUMMARY STATISTICS

ANNUAL MEAN
HIGHEST ANNUAL MEAN
LOWEST ANNUAL MEAN
HIGHEST DAILY MEAN
LOWEST DAILY MEAN
ANNUAL SEVEN-DAY MINIMUM
ANNUAL RUNOFF (AC-FT)
10 PERCENT EXCEEDS
50 PERCENT EXCEEDS
90 PERCENT EXCEEDS

WATER YEARS 1931 - 2004

899
3,511 1948
-49.6 1986
8,150 Feb 26, 1983
-4,280 Sep 14, 1985
-2,980 Aug 7, 1985
650,900
3,700
185
0.00

e Estimated

The period of record statistics were computed from complete water year's of record. See the annual mean and annual runoff (ac-ft) summary statistics section of the manuscript.