

PUBLIC SUPPLY WATER USE, PALM BEACH COUNTY,
FLORIDA, 1978-82

By Wesley L. Miller and José A. Alvarez

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ABSTRACT

Public supply water-use data are listed for 32 utilities in Palm Beach County, Florida, for 1978 through 1982. The data are tabulated as monthly and yearly untreated water withdrawals from each public supply utility. Utilities using ground water as a source are listed separately from those using surface-water sources. In 1978, the total public supply water withdrawal in the county was 37,580.64 million gallons, of which 74.0 percent (27,823.22 million gallons) was ground water. By 1982, the total withdrawal had increased to 43,263.48 million gallons, of which 77.5 percent (33,543.84 million gallons) was ground water. Nearly 57 percent of the ground-water withdrawal was in southeast Palm Beach County (zone 1) during 1982. The greatest surface-water withdrawal during 1982 was from Clear Lake and Lake Mangonia (zone 2) and amounted to 79.3 percent of the county's total surface-water withdrawal.

INTRODUCTION

Palm Beach County, Fla. (fig. 1), receives most of the public supply water from 32 utilities at 40 locations. The water source for 27 utilities withdrawing water at 37 well fields is the surficial aquifer. The other five utilities withdraw surface water from Lake Okeechobee, Lake Mangonia, or Clear Lake.

The demand for water for public supply has increased in recent years because of rapid population growth in the county. During the 5 years, 1978-82, the Palm Beach County estimated population increased from 534,551 to 637,940, or 16.2 percent (University of Florida, 1983, p. 21). The population served by public supply was estimated at 505,100 in 1980 or 88 percent of the then total population of 573,100 (Leach, 1983).

In 1982, the U.S. Geological Survey entered into a cooperative program with Palm Beach County to determine the effects of increasing ground-water withdrawals on the surficial aquifer. As part of the program, a 5-year water-use data base, 1978 through 1982, has been prepared by collecting and updating data on untreated (raw) water withdrawal by the 32 major public supply utilities. The withdrawal data herein for 1980 updates that previously reported by Leach (1983). The data were obtained from files of the U.S. Geological Survey, the South Florida Water Management District, the Florida Department of Environmental Regulation, and the individual utilities.

This report presents public supply withdrawal by 32 major utilities in Palm Beach County from 1978 through 1982 as a data base for comparison with future withdrawal data. Public supply utilities withdrawing ground water are listed (table 1) separately from those drawing from surface-water sources (table 2). Total monthly and yearly ground-water and surface-water withdrawals are listed in table 3.

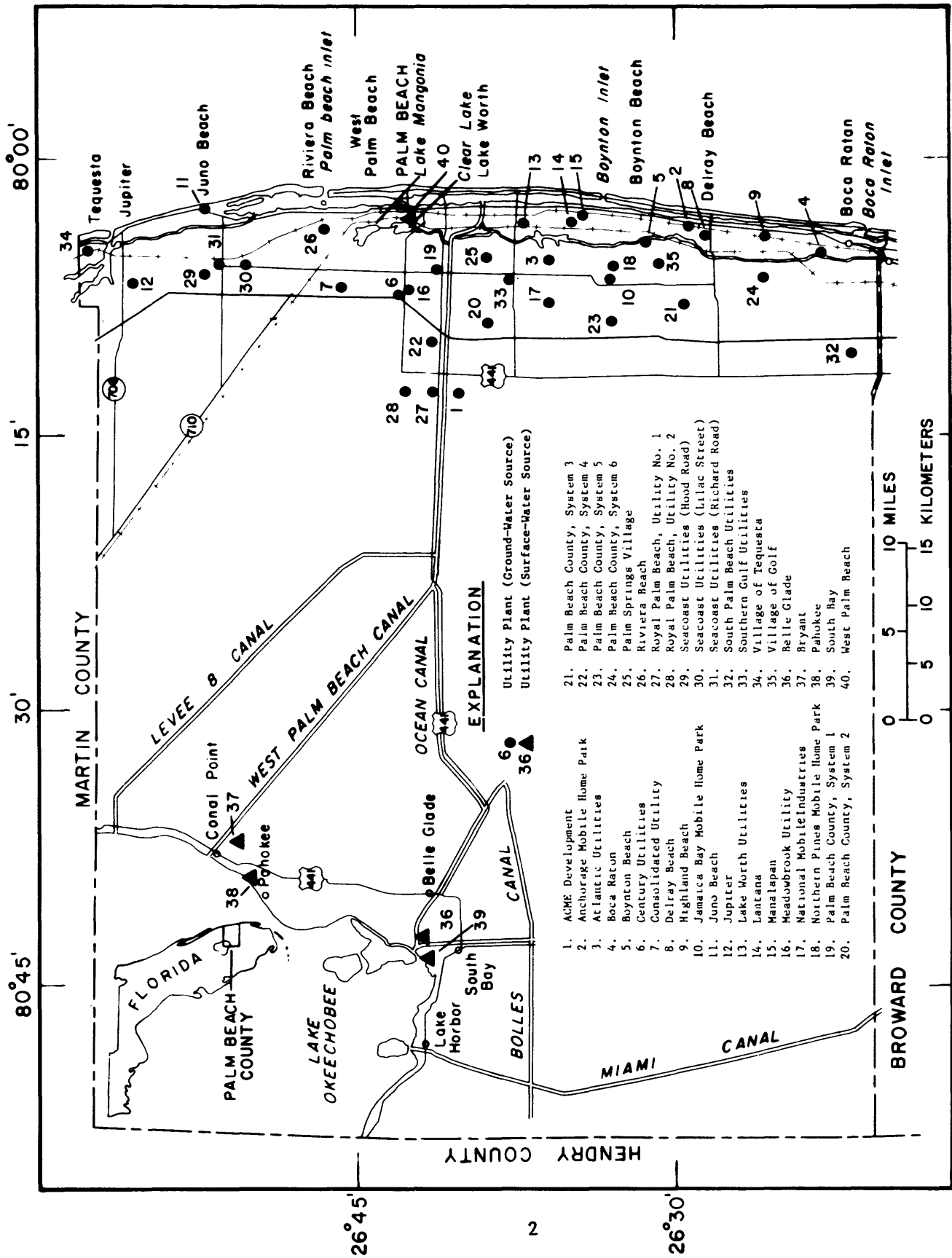


Figure 1.--Location of Palm Beach County, Florida, and public supply utilities.

PUBLIC SUPPLY WATER SOURCES

Sources of water for public supplies in Palm Beach County are the surficial aquifer, Lake Okeechobee, Lake Mangonia, and Clear Lake (fig. 1). Of the sources, the surficial aquifer provides the greatest amount of water withdrawn for public supplies. In 1978, public supply withdrawals totaled 37,580.64 million gallons (Mgal), of which 74.0 percent (27,823.22 Mgal) was ground water from the aquifer (table 3). Peak withdrawals during the 5 years occurred in 1980 with a total of 45,193.80 Mgal, of which 76.1 percent (34,406.55 Mgal) was from the aquifer. In 1982, total withdrawals were 43,263.48 Mgal with 77.5 percent (33,543.84 Mgal) from the aquifer (table 3).

Surface water withdrawn from the three lakes for public supply was 9,757.42 Mgal in 1978 and 9,719.64 Mgal in 1982 (table 3). During 1978 through 1982, Lake Mangonia and Clear Lake, which are the water sources for West Palm Beach (table 2), provided nearly 80 percent of the surface water withdrawn by public supplies. Lake Okeechobee, the water source for Belle Glade, Bryant, Pahokee, and South Bay (fig. 1) public supplies (table 2), provided slightly greater than 20 percent of the surface water withdrawn by public supplies in each of the 5 years.

PUBLIC SUPPLY ZONES

The parts of the county receiving water from public supply utilities have been divided into five zones (fig. 2) to examine public supply water-use data. Zones 1 to 3 are along the heavily developed coastal area, zone 4 is an area of rapid urbanization in the central part of the county, and zone 5 is the urbanized area on the perimeter of Lake Okeechobee. The boundaries between zones coincide with the service area boundaries of major public supplies within the zones.

Public supply utilities (fig. 1) providing water for the zones are as follows:

Zone 1.--Anchorage Mobile Home Park; Boca Raton; Boynton Beach; Delray Beach; Highland Beach; Jamaica Bay Mobile Home Park; Manalapan; North Pines Mobile Home Park; Palm Beach County Systems 3, 5, and 6; South Palm Beach Utilities; and Village of Golf.

Zone 2.--Atlantic Utilities; Century Utilities; Consolidated Utility; Lake Worth Utilities; Lantana; National Mobile Industries; Palm Beach County Systems 1 and 2 (system 4 merged with 1 in 1980); Palm Springs Village; Riviera Beach; and West Palm Beach.

Zone 3.--Juno Beach; Jupiter; Seacoast Utilities; and Village of Tequesta.

Zone 4.--ACME Development Company; and Royal Palm Beach Utilities 1 and 2.

Zone 5.--Belle Glade; Bryant; Panhokee; and South Bay.

From 1978 through 1982, zones 1, 3, and 4 were totally supplied by ground water from the surficial aquifer, whereas zone 5 was totally supplied by water from Lake Okeechobee. Zone 2 was the only part of Palm Beach County relying on both ground-water and surface-water withdrawals for public supply.

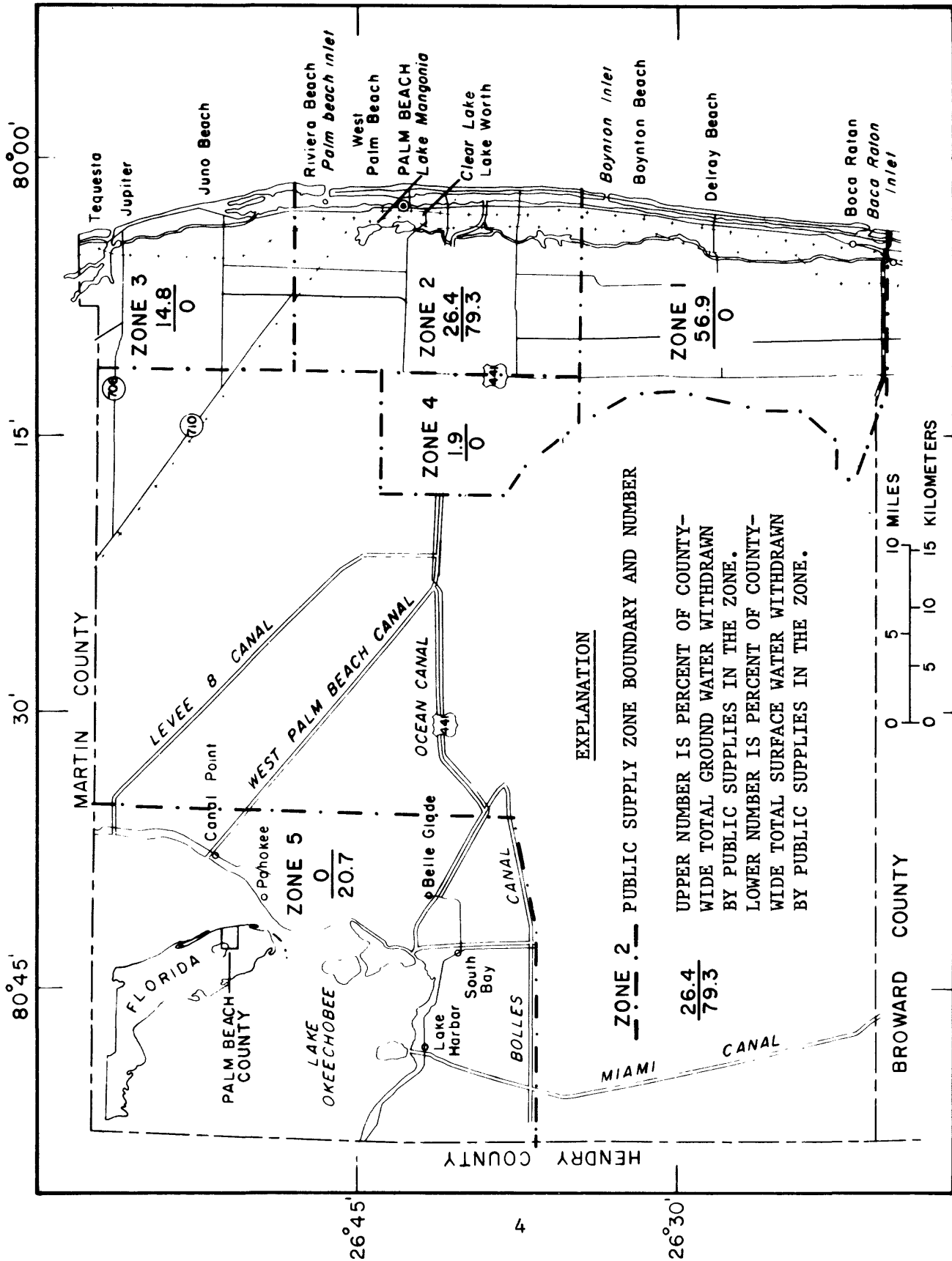


Figure 2.--Public water-supply zones and percent of total ground-water and total surface-water withdrawals during 1982.

CHANGES IN PUBLIC SUPPLY WITHDRAWALS, 1978 TO 1982

Total water withdrawals by public supplies in Palm Beach County increased from 37,580.64 Mgal in 1978 to a peak of 45,193.80 Mgal in 1980 (table 3). In 1982, the total public supply withdrawal was 43,263.48 Mgal, 4.3 percent below the peak withdrawal, even though the county's estimated population had increased by over 60,000 since 1980 (University of Florida, 1983, p. 21). Contributory to the decreases were mandatory reductions of water withdrawn by public supplies ranging from 10 to 25 percent between May 6 and September 11, 1981 (South Florida Water Management District, 1981, p. 9) and an areal rainfall in the county of 84.93 inches, above 20 inches above normal, in 1982 (Lin, S., South Florida Water Management District, oral commun., 1983).

The 1982 total public supply withdrawal was 15.1 percent greater than in 1978. Ground-water withdrawals increased 20.6 percent, and surface-water withdrawals decreased 0.4 percent during this time. The most rapid increase in ground-water withdrawals occurred in zone 4 (fig. 2), which used 70.5 percent more water in 1982 than in 1978. The greatest reduction of public supply surface-water withdrawals during this time occurred in zone 5, where 6.7 percent less water was withdrawn from Lake Okeechobee.

In 1978, zones 1 and 2 (fig. 2) each accounted for slightly over 40 percent of the Palm Beach County total (combined ground-water and surface-water) public supply water withdrawals (table 3). During 1982, zone 1 accounted for 44 percent of the county's total withdrawal, whereas zone 2 accounted for 38 percent of the total.

Total ground-water withdrawals by public supplies in the county were 33,543.84 Mgal during 1982, of which 56.9 percent (19,081.09 Mgal) came from zone 1 (fig. 2). Surface-water withdrawals in zone 2 equaled 79.3 percent of the county's total during this time.

Projections of population increases and expansion of public supply services in Palm Beach County through the year 2000 (Palm Beach County Department of Planning, Building, and Zoning, 1980, p. 57) indicate that the demand for public supply water will continue to be the greatest in zone 1 (fig. 2). Most or all of the increased water withdrawals will be from the surficial aquifer, which is presently the only source of public supply water in zone 1.

REFERENCES CITED

- Leach, S. D., 1983, Source, use, and disposition of water in Florida, 1980: U.S. Geological Survey Water-Resources Investigations Report 82-4090, 337 p.
- Palm Beach County Department of Planning, Building, and Zoning, 1980, Comprehensive Plan: 83 p.
- South Florida Water Management District, 1981, The 1981 water shortage: 127 p.
- University of Florida, 1983, Florida estimates of population, April 1983: Bureau of Economic and Business Research, 43 p.

Table 1.--Ground-water withdrawal by public supply utilities in Palm Beach County, 1978-82

[In million gallons; n.a. = not available]

Public supply utility (map No.)	Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly total pumpage
ACME Development Company, Wellington (1)	1978	9.68	9.62	12.24	16.50	14.44	9.91	9.89	10.91	10.64	10.33	10.16	12.38	136.70
	1979	12.34	13.67	17.04	26.11	16.31	23.56	26.20	24.28	16.31	21.06	17.00	18.95	232.83
	1980	22.57	20.38	28.63	25.03	30.80	34.06	26.38	27.22	23.86	26.03	28.27	30.25	323.48
	1981	36.65	28.72	37.54	44.34	38.40	31.68	35.70	30.51	31.30	36.59	34.14	42.20	427.77
	1982	37.91	26.82	34.80	35.12	35.79	25.89	28.78	30.89	26.54	28.41	29.81	33.17	373.93
Anchorage Mobile Home Park (2)	1978	1.23	1.54	1.69	1.89	1.86	1.27	1.48	1.85	1.60	1.46	1.43	1.62	18.92
	1979	1.45	1.96	2.52	2.84	1.60	1.95	2.61	1.94	0.77	1.03	1.27	1.45	21.39
	1980	1.50	1.16	2.23	1.73	1.67	1.37	1.38	1.77	1.23	1.63	1.55	1.84	19.06
	1981	1.89	1.45	2.11	2.38	2.07	1.55	1.66	1.16	0.91	1.08	1.21	1.39	18.86
	1982	1.59	1.20	1.37	1.24	0.97	1.02	1.54	1.12	0.81	1.18	1.24	1.41	14.69
Atlantis Utilities (3)	1978	n.a.	n.a.	n.a.	n.a.	n.a.	17.00	15.20	16.41	17.01	15.36	16.13	14.89	112.00
	1979	15.59	16.61	19.22	19.89	14.41	18.42	19.15	15.12	12.80	15.52	15.52	16.74	198.99
	1980	18.18	16.58	20.85	18.32	18.04	17.57	17.50	16.83	16.07	18.40	17.15	18.31	213.80
	1981	19.56	17.44	20.27	21.69	15.94	16.16	16.48	14.70	13.63	17.46	18.35	19.05	210.73
	1982	18.16	16.52	17.01	16.77	17.75	17.71	13.73	15.98	17.01	18.04	16.70	18.21	203.59
Boca Raton--combined pumpage, three well fields (4)	1978	541.60	522.80	606.60	686.10	644.00	545.40	636.70	669.70	626.30	603.90	576.60	623.70	7,283.40
	1979	609.10	678.30	830.80	829.00	616.70	817.50	927.90	852.00	519.00	624.00	585.60	672.20	8,562.10
	1980	721.60	662.40	824.20	674.60	784.00	659.30	717.10	766.30	693.90	846.60	655.30	759.90	8,765.20
	1981	798.80	653.70	852.80	873.70	674.90	666.90	802.70	616.70	551.40	634.00	683.50	817.50	8,626.60
	1982	761.40	676.20	700.80	778.80	697.90	591.40	926.90	861.20	824.10	782.70	614.70	752.20	8,968.30
Boynton Beach (5)	1978	198.16	186.82	227.85	253.59	257.04	178.83	208.07	225.04	217.62	202.11	186.39	192.16	2,533.68
	1979	174.44	187.65	214.76	203.53	182.38	238.46	266.99	259.32	165.23	184.73	187.83	212.29	2,477.61
	1980	229.81	209.81	287.74	230.55	264.61	252.71	240.02	251.65	223.73	255.57	211.89	230.07	2,888.16
	1981	183.09	216.50	268.13	303.65	233.76	234.31	254.67	201.77	179.89	232.92	236.40	264.68	2,809.77
	1982	247.92	224.92	244.08	241.03	236.04	202.54	291.16	248.37	241.44	235.19	211.91	245.01	2,869.61

Table 1.--Ground-water withdrawal by public supply utilities in Palm Beach County, 1978-82--Continued

Public supply utility (map No.)	Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly total pumpage
Century Utilities (6)	1978	34.62	33.59	37.45	31.01	28.94	26.54	27.33	26.05	25.44	27.36	29.84	34.60	362.77
	1979	34.64	35.07	36.23	33.14	28.00	25.51	29.24	28.50	27.71	28.89	30.89	34.55	372.37
	1980	38.53	34.75	37.07	32.45	29.12	26.27	27.11	27.85	25.66	30.43	30.19	35.32	374.75
	1981	36.33	33.20	35.54	33.56	28.62	25.67	26.81	26.02	28.42	31.20	31.08	35.05	371.50
	1982	37.67	33.48	35.34	31.05	27.39	24.46	27.25	28.17	26.20	29.40	30.22	25.92	366.55
Consolidated Utility, Gramercy Park (7)	1978	4.42	3.93	5.01	7.87	6.95	5.60	6.84	5.71	5.18	4.76	4.48	4.90	65.65
	1979	4.98	5.49	8.52	9.05	6.26	6.94	7.41	5.53	4.77	4.93	4.69	4.84	73.41
	1980	5.39	4.51	6.18	5.61	6.55	5.87	5.64	5.20	5.01	5.15	4.81	5.04	64.96
	1981	5.03	4.49	5.30	6.51	5.22	5.34	5.93	5.17	4.95	5.11	4.74	5.01	62.80
	1982	4.86	4.64	5.04	4.89	4.93	4.87	5.79	5.15	4.80	4.82	4.66	4.89	59.34
Delray Beach (8)	1978	275.15	259.05	317.92	354.61	351.10	285.19	306.04	329.91	327.31	304.37	277.54	301.71	3,689.90
	1979	282.09	332.48	396.82	433.17	311.15	406.63	446.62	443.07	307.81	355.64	314.80	345.12	4,375.40
	1980	371.80	342.88	427.38	367.92	411.12	395.82	394.80	421.00	370.94	443.74	385.97	398.90	4,732.27
	1981	404.30	345.20	424.65	455.60	387.11	329.66	394.30	326.30	280.38	323.86	325.68	420.01	4,417.05
	1982	365.37	349.07	365.74	353.32	320.12	266.87	420.27	400.03	420.16	388.23	306.06	365.92	4,321.16
Highland Beach (9)	1978	22.45	23.64	24.40	25.06	24.62	20.30	24.27	23.96	21.36	20.03	21.79	21.53	273.41
	1979	22.42	23.70	27.17	25.81	20.48	24.19	27.58	26.27	18.98	21.70	21.81	24.76	284.87
	1980	25.12	23.66	26.78	22.50	23.98	23.84	25.27	28.87	25.10	27.40	24.81	29.38	306.71
	1981	32.16	26.93	35.09	35.24	25.07	21.42	29.27	26.25	21.69	24.26	25.26	28.21	330.85
	1982	27.57	24.79	27.27	27.44	24.24	22.55	31.84	32.33	30.96	29.56	25.68	31.44	335.67
Jamaica Bay Mobile Home Park (10)	1978	2.49	2.27	2.67	2.87	3.08	1.78	1.66	1.72	1.75	2.18	2.67	2.73	27.87
	1979	2.92	2.76	3.36	3.19	2.42	2.59	3.39	3.26	2.73	3.04	3.18	3.16	36.00
	1980	2.40	2.63	2.92	2.45	2.39	2.08	1.82	1.67	1.51	2.02	2.76	2.46	27.11
	1981	2.24	2.12	2.59	2.02	1.56	1.19	1.17	1.10	0.63	0.87	1.01	0.96	17.46
	1982	2.16	2.09	2.30	2.05	1.40	1.11	1.26	1.26	1.35	1.46	1.76	2.04	20.24

Table 1.--Ground-water withdrawal by public supply utilities in Palm Beach County, 1978-82--Continued

Public supply utility (map No.)	Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly total pumpage
Juno Beach (11)	1978	n.a.	7.15	9.50	9.59	n.a.	6.79	7.22	8.06	7.53	7.17	6.74	6.83	76.58
	1979	7.70	8.66	10.01	10.09	7.06	7.33	9.31	9.31	9.77	6.42	8.45	8.43	102.54
	1980	11.10	10.21	12.59	9.50	9.16	8.40	8.53	8.53	8.53	6.85	8.71	7.56	109.01
	1981	8.97	7.56	10.35	8.69	4.48	5.06	5.68	4.68	4.68	5.95	7.90	8.74	87.75
	1982	9.02	7.55	8.16	8.09	6.19	n.a.	9.33	9.56	9.56	8.63	Purchased water from Jupiter		67.89
Jupiter (12)	1978	61.00	65.34	75.66	96.87	89.54	79.88	68.39	79.32	70.58	72.38	68.53	66.77	894.26
	1979	68.19	76.90	95.59	114.07	75.89	95.85	96.70	100.88	68.08	79.99	79.80	88.94	1,040.88
	1980	97.36	86.59	118.15	104.67	115.64	112.01	96.87	103.29	95.01	106.42	98.70	100.03	1,234.74
	1981	108.60	95.23	115.70	132.42	112.26	108.94	120.22	100.84	95.13	113.55	110.18	123.36	1,336.43
	1982	118.49	99.44	113.39	110.21	105.31	98.34	135.79	128.60	118.14	118.14	119.36	109.25	1,386.16
Lake Worth Utilities (13)	1978	169.10	169.23	197.37	218.60	197.94	185.83	200.00	203.32	204.15	166.28	171.30	172.46	2,255.58
	1979	172.44	194.11	231.97	239.01	190.98	230.47	269.45	239.89	177.82	196.83	189.45	204.56	2,536.98
	1980	223.57	186.81	222.48	188.33	211.50	189.71	152.53	197.47	156.72	208.25	190.71	209.30	2,337.38
	1981	228.44	194.30	242.79	280.86	217.93	232.01	227.86	189.82	190.50	213.77	193.67	213.34	2,625.29
	1982	195.98	182.74	209.18	212.77	203.84	194.56	247.49	193.53	168.58	181.47	152.18	178.18	2,320.50
Lantana (14)	1978	37.66	37.06	44.59	51.82	50.17	50.66	54.93	59.42	57.71	47.21	44.67	42.49	578.39
	1979	38.51	44.44	54.13	59.68	42.43	57.27	64.28	60.44	38.59	45.82	41.16	44.22	590.97
	1980	48.50	42.45	60.82	51.59	60.90	59.54	58.01	59.64	47.61	58.45	47.54	51.21	646.26
	1981	55.98	46.11	59.00	73.61	62.62	56.63	58.14	46.51	43.80	54.22	50.36	53.50	660.48
	1982	49.76	44.91	50.76	52.20	51.58	43.13	68.17	55.68	56.39	40.39	40.39	46.39	615.46
Manalapan (15)	1978	16.33	15.75	19.47	20.99	20.69	17.67	21.23	22.34	21.95	18.80	18.31	19.69	233.22
	1979	17.11	19.67	24.36	25.87	17.94	25.71	28.94	26.34	17.26	20.10	21.31	22.14	266.75
	1980	25.00	21.32	28.71	24.21	29.02	27.79	26.43	25.61	14.73	19.00	14.84	15.58	272.24
	1981	16.95	14.19	19.25	25.24	16.63	16.15	18.77	12.97	11.39	19.61	20.43	24.60	216.18
	1982	21.18	17.74	19.94	21.54	20.19	16.87	31.30	27.33	26.36	24.83	16.50	23.89	267.67

Table 1.--Ground-water withdrawal by public supply utilities in Palm Beach County, 1978-82--Continued

Public supply utility (map No.)	Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly total pumpage
Meadowbrook Utility (16)	1978	n.a.	n.a.	17.10	15.58	16.95	15.79	16.54	14.27	14.51	11.54	n.a.	n.a.	122.28
	1979	15.08	14.60	16.62	19.28	15.08	15.79	15.58	16.83	14.80	14.99	14.33	15.90	188.88
	1980	11.59	13.44	19.97	17.41	18.07	18.46	16.33	17.07	15.55	17.76	18.64	21.38	205.67
	1981	22.74	19.80	25.02	25.35	24.15	23.78	21.66	22.67	18.25	17.38	17.60	18.30	256.70
	1982	18.80	16.54	19.40	19.46	17.37	16.22	17.83	18.24	18.37	15.90	20.98	27.42	226.53
National Mobile Industries, Lake Worth Village (17)	1978	4.91	4.65	6.96	8.66	7.33	4.77	4.39	4.57	4.36	3.84	3.78	4.28	62.50
	1979	3.97	5.72	8.58	9.93	4.49	6.93	8.36	4.76	2.69	3.93	4.12	4.57	68.05
	1980	6.75	5.67	10.66	6.39	7.44	6.81	6.97	5.53	3.97	5.55	4.36	5.24	75.34
	1981	7.49	5.84	8.73	7.31	2.66	2.77	3.47	2.45	1.26	2.39	3.85	5.07	53.29
	1982	5.60	5.14	5.97	5.50	3.41	2.51	4.73	3.57	3.52	4.20	3.32	4.99	52.46
Northern Pines Mobile Home Park (18)	1978	1.74	2.04	2.44	3.23	2.80	1.29	1.07	1.35	1.26	1.21	1.57	1.80	21.80
	1979	1.35	2.39	2.84	3.44	1.27	2.59	2.73	1.77	0.88	1.21	1.46	1.62	23.55
	1980	1.17	2.07	2.46	2.98	1.11	1.90	1.92	1.15	0.97	1.57	1.71	1.76	20.77
	1981	2.42	1.76	2.08	2.64	1.35	1.10	1.33	0.95	0.85	1.37	1.56	1.57	18.98
	1982	1.57	1.65	1.71	1.72	1.04	0.77	1.56	1.21	1.33	1.22	1.01	1.21	16.00
Palm Beach County System No. 1 (19)	1978	44.75	43.11	54.67	69.15	61.57	54.74	58.72	61.85	61.61	55.66	50.03	67.80	683.66
	1979	56.12	58.90	69.98	81.16	60.14	74.09	81.29	66.92	55.51	67.63	65.58	78.35	815.67
	1980	86.03	75.83	89.46	73.61	78.55	76.17	70.76	72.80	62.76	68.96	63.56	67.14	885.63
	1981	70.82	50.06	60.85	78.53	77.31	79.57	85.92	69.18	68.29	73.52	73.16	80.10	867.31
	1982	74.32	72.36	75.20	74.21	74.29	73.42	86.32	84.57	81.31	78.57	71.28	101.26	947.11
Palm Beach County System No. 2 (20)	1978	21.02	20.56	26.31	28.84	27.08	24.23	24.97	26.72	25.19	25.31	25.78	27.29	303.30
	1979	27.82	30.16	43.24	43.71	32.73	40.70	43.80	41.60	33.26	36.01	36.00	46.28	455.31
	1980	70.32	65.71	73.88	56.91	72.78	59.07	64.76	69.03	54.40	69.65	63.36	66.91	786.78
	1981	70.91	55.35	77.30	86.20	65.09	54.60	65.35	59.43	59.85	66.96	73.03	83.69	817.76
	1982	74.53	65.96	75.20	69.90	77.62	68.11	82.53	76.71	73.65	77.31	76.80	71.39	889.71

Table 1.--Ground-water withdrawal by public supply utilities in Palm Beach County, 1978-82--Continued

Public supply utility (map No.)	Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly total pumpage
Palm Beach County System No. 3 (21)	1978	29.65	27.82	31.93	30.79	32.38	25.34	26.72	30.33	25.02	29.28	31.26	40.00	360.52
	1979	40.70	34.01	38.02	34.56	31.79	39.11	41.28	40.50	34.07	40.12	43.34	50.69	468.19
	1980	55.94	53.92	58.33	45.54	43.09	39.84	40.28	40.38	42.45	59.56	60.51	66.27	606.11
	1981	69.98	70.88	76.18	64.14	47.85	41.53	47.22	44.00	44.64	44.64	59.12	70.81	692.71
1982	71.70	65.51	62.99	54.35	47.92	37.89	43.55	43.55	44.34	46.22	48.96	48.91	58.83	631.17
Palm Beach County System No. 4 (22)	1978	4.91	4.75	5.57	6.58	6.95	3.64	4.18	4.42	4.16	4.11	5.19	6.80	61.26
	1979	5.89	5.75	6.43	5.20	5.18	4.78	5.05	5.00	5.03	0.85	Merged into system No. 1		49.16
	1980													0
	1981													0
	1982													0
Palm Beach County System No. 5 (23)	1978	2.75	9.13	2.81	2.69	4.04	2.50	2.61	3.48	2.30	3.35	3.36	3.57	42.59
	1979	3.91	3.96	4.69	5.05	4.14	7.42	6.89	4.60	3.65	6.31	4.10	4.66	59.38
	1980	4.54	5.08	6.14	5.53	4.97	4.96	4.72	5.46	4.09	7.56	4.96	6.64	64.65
	1981	7.35	8.70	15.78	10.82	4.22	4.77	5.65	4.70	4.49	5.15	6.15	6.67	84.45
1982	5.81	5.80	5.23	4.71	4.87	3.68	3.37	3.50	3.50	3.64	4.10	3.87	4.99	53.57
Palm Beach County System No. 6, Pheasant Run, Inc. (24)	1978	2.73	2.11	2.65	3.10	3.60	2.82	2.83	3.22	3.01	4.09	3.01	2.82	35.99
	1979	3.42	3.87	5.98	5.84	4.40	5.56	6.00	5.08	3.37	3.76	3.59	4.66	55.53
	1980	4.65	4.17	6.06	5.30	6.20	6.53	6.38	6.24	5.82	6.21	5.31	5.22	68.09
	1981	5.79	4.49	6.23	6.89	5.70	4.77	6.09	4.65	4.29	4.92	5.28	5.57	64.67
1982	5.41	5.38	5.34	5.81	5.22	4.55	6.59	6.56	6.56	6.53	5.94	4.85	5.87	68.05
Palm Springs Village (25)	1978	57.35	55.17	63.62	70.80	64.71	57.39	63.36	66.64	61.90	62.42	73.11	77.09	773.56
	1979	73.82	80.24	96.02	104.31	77.13	87.58	100.51	87.39	72.00	82.62	75.90	82.41	1,019.93
	1980	86.38	78.10	100.32	83.98	100.33	98.70	86.30	89.67	73.60	81.20	86.50	90.54	1,055.62
	1981	101.73	87.90	107.50	117.49	94.17	85.51	95.98	81.31	77.96	91.92	89.84	95.81	1,127.12
1982	92.35	83.83	88.34	88.48	81.16	78.75	103.48	96.05	96.05	89.90	87.67	83.33	1,049.80	

Table 1.--Ground-water withdrawal by public supply utilities in Palm Beach County, 1978-82--Continued

Public supply utility (map No.)	Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly total pumpage
Riviera Beach (26)	1978	168.19	156.35	198.33	223.10	219.25	199.27	209.99	213.85	188.15	189.78	173.11	176.60	2,315.97
	1979	171.07	190.58	234.65	243.21	181.63	212.61	252.32	245.88	172.42	193.31	184.21	192.73	2,474.62
	1980	201.40	171.14	218.48	191.73	208.17	204.31	198.93	214.41	181.17	203.68	178.28	188.17	2,359.87
	1981	202.43	162.39	194.07	225.76	199.04	177.36	209.55	178.44	175.28	192.90	190.02	195.71	2,302.95
	1982	186.98	169.43	184.41	180.01	172.64	165.27	215.56	182.01	176.70	183.25	151.21	178.48	2,145.95
Royal Palm Beach, Utility No. 1, Okeechobee Road (27)	1978	17.74	16.39	21.67	26.98	21.01	16.35	16.09	14.70	14.86	15.35	18.15	22.50	221.79
	1979	22.36	21.62	26.16	29.74	19.22	21.51	21.49	18.32	14.76	15.68	15.49	17.21	243.56
	1980	20.26	17.45	25.32	20.21	24.76	21.72	13.67	14.56	18.24	20.24	19.15	21.17	236.75
	1981	23.77	19.48	24.25	30.34	23.89	17.99	25.17	22.20	17.38	22.79	21.24	27.04	275.54
	1982	23.11	19.76	22.79	22.57	23.57	21.47	22.05	20.83	20.76	20.51	20.70	22.80	260.92
Royal Palm Beach, Utility No. 2, Southern Boulevard (28)	1978	1.01	2.01	0.82	1.26	1.48	2.20	1.33	1.35	0.64	1.20	1.27	1.32	15.89
	1979	0.87	0.53	0.32	1.10	1.01	0.95	1.28	0.86	1.03	0.93	1.78	2.08	12.74
	1980	1.82	0.73	1.71	1.10	2.05	0.80	4.91	7.16	1.28	0.44	0.26	0.51	22.77
	1981	0.94	0.54	0.19	1.21	0.32	0.61	0.60	0.35	0.39	0.82	1.38	0.43	7.78
	1982	0.31	0.68	0.47	0.51	0.14	0.46	0.17	0.10	0.12	0.15	0.29	0.12	3.52
Seacoast Utilities, Hood Road Plant (29)	1978	66.57	65.36	78.09	104.02	106.78	106.16	101.91	116.87	114.24	112.52	94.96	104.06	1,171.54
	1979	111.73	109.14	142.60	213.04	164.45	196.54	211.13	175.50	146.91	149.31	193.47	188.72	2,002.54
	1980	175.54	147.24	207.66	185.31	201.62	197.50	204.57	209.95	152.68	164.82	138.72	137.17	2,122.78
	1981	148.56	121.74	172.38	204.60	168.58	172.53	201.36	140.92	133.80	165.75	160.03	186.75	1,977.00
	1982	157.41	140.36	173.18	156.88	168.91	147.89	196.67	198.24	194.30	194.68	161.94	185.56	2,076.02
Seacoast Utilities, Lilac Street well field (30)	1978	58.77	58.78	73.37	105.98	95.10	76.96	100.92	83.11	76.51	64.17	64.52	67.68	925.87
	1979	67.23	84.07	100.99	78.98	49.57	58.78	70.80	68.50	48.27	45.62	n.a.	31.08	703.89
	1980	58.41	44.18	69.96	55.69	67.63	83.12	67.18	31.96	53.52	68.10	57.13	66.45	723.33
	1981	81.73	65.69	77.12	85.77	88.36	24.26	47.88	59.90	51.57	58.85	51.85	39.56	732.54
	1982	41.37	37.79	42.92	45.42	20.61	35.21	48.38	42.23	31.87	25.73	21.19	29.46	422.18

Table 1.--Ground-water withdrawal by public supply utilities in Palm Beach County, 1978-82--Continued

Public supply utility (map No.)	Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly total pumpage
Seacoast Utilities, Richard Road Plant (31)	1978	109.12	106.74	135.28	152.60	144.46	130.82	124.99	131.90	101.84	98.43	95.23	98.13	1,429.54
	1979	104.44	122.19	140.09	142.00	113.02	128.15	142.16	129.56	88.13	114.50	105.46	121.21	1,450.91
	1980	124.14	121.80	151.80	131.27	138.63	121.86	129.05	148.47	146.48	147.54	116.88	121.13	1,599.05
	1981	126.67	98.55	103.35	117.15	98.71	90.60	115.62	86.72	84.96	96.26	92.39	97.57	1,208.55
	1982	91.52	74.13	77.36	76.55	84.40	77.66	110.84	92.54	94.96	77.37	61.43	70.83	989.59
South Palm Beach Utilities, Sandlefoot (32)	1978	40.75	39.87	43.33	52.94	57.68	44.96	39.97	45.69	47.00	48.43	49.16	56.94	566.72
	1979	60.60	64.22	74.53	79.88	61.29	70.42	73.47	67.03	57.75	65.82	65.57	76.29	816.87
	1980	90.53	86.48	109.57	88.38	98.67	92.67	84.73	130.23	85.90	95.77	89.23	102.85	1,155.01
	1981	109.13	94.78	118.24	112.51	92.96	81.19	96.21	85.79	83.27	93.05	99.96	117.33	1,184.42
	1982	111.37	106.48	133.69	130.15	117.70	102.24	128.76	109.05	102.74	105.78	110.82	120.18	1,378.96
Southern Gulf Utilities (33)	1978	4.56	5.67	6.38	6.72	6.62	5.22	5.10	5.14	4.97	4.56	6.18	4.13	65.25
	1979	4.42	5.06	5.96	6.62	5.04	5.20	5.40	5.35	4.72	5.06	4.91	2.86	60.60
	1980				Merged into Palm Beach County system No. 2									0
	1981						do.							0
	1982						do.							0
Village of Tequesta (34)	1978													
	1979													
	1980													
	1981	5.34	1.71	3.11	11.49	4.27	1.85	7.81	2.43	0	8.48	6.07	7.69	60.25
	1982	0	1.67	3.47	5.04	3.18	1.29	8.96	8.94	7.80	1.95	0	0.37	42.67
Village of Golf (35)	1978	7.88	8.15	10.38	9.94	8.43	7.96	7.44	7.30	6.80	8.23	8.91	9.44	100.86
	1979	9.98	10.92	10.75	10.43	7.98	6.40	6.67	6.78	6.49	7.99	9.07	8.68	102.14
	1980	10.30	10.06	11.56	9.23	8.32	6.58	6.05	6.30	6.49	9.73	9.52	9.06	103.20
	1981	10.08	10.24	11.59	10.94	6.72	5.44	6.26	5.14	5.20	7.84	8.53	10.46	98.44
	1982	9.61	9.45	11.68	9.47	6.66	5.55	6.84	5.91	6.59	8.53	9.19	10.17	99.65

Most water purchased from Jupiter during 1978-80; breakdown not available.

Table 2.--Surface-water withdrawal by public supply utilities in Palm Beach County, 1978-82

[In million gallons]

Public supply utility (map No. and source)	Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly total pumpage
Belle Glade (36, Lake Okeechobee)	1978	160.30	146.23	167.10	129.95	104.67	89.48	87.87	99.62	105.66	114.84	167.47	157.17	1,530.36
	1979	160.04	156.43	179.48	133.71	120.32	103.76	92.50	89.49	88.93	141.95	149.28	154.78	1,570.67
	1980	157.06	137.37	144.83	151.18	170.51	157.83	102.78	100.46	97.61	118.37	149.39	154.14	1,641.53
	1981	156.21	140.60	158.65	172.85	158.24	138.28	103.62	100.06	90.50	107.92	112.10	145.92	1,584.95
	1982	144.97	132.64	149.03	142.15	93.67	81.29	77.49	83.62	84.28	100.62	109.03	139.54	1,338.33
Bryant, combined public and industrial pumpage (37, Lake Okeechobee)	1978	32.58	28.66	5.50	3.47	3.45	3.07	3.50	4.11	3.27	4.31	8.18	37.96	138.06
	1979	31.90	29.88	33.21	4.81	3.78	3.06	3.15	4.21	4.34	5.47	34.11	32.45	190.37
	1980	34.03	33.39	16.13	3.20	3.80	3.77	3.73	3.37	3.84	5.02	17.91	26.30	154.49
	1981	24.47	21.99	17.70	4.37	3.02	2.91	3.03	2.94	3.25	5.78	22.84	25.75	138.05
	1982	28.45	26.92	15.90	6.87	5.86	5.97	5.69	6.53	7.48	9.26	35.73	34.70	189.36
Pahokee (38, Lake Okeechobee)	1978	33.87	27.43	29.93	24.49	25.02	24.71	24.81	27.53	24.29	27.29	25.57	26.75	321.69
	1979	24.35	24.22	26.02	23.87	22.04	21.64	24.19	23.30	22.30	22.54	24.52	23.83	282.82
	1980	24.65	19.86	19.40	19.59	24.12	23.33	24.42	25.46	26.27	25.49	26.46	28.84	287.89
	1981	29.23	25.21	28.86	25.99	26.89	23.12	28.00	25.92	24.04	26.25	25.27	30.04	318.82
	1982	28.79	24.19	26.83	25.59	24.27	23.61	22.92	23.10	22.55	24.91	24.66	28.67	300.09
South Bay (39, Lake Okeechobee)	1978	14.79	15.02	16.49	14.33	13.44	10.96	12.78	12.91	13.59	14.26	15.56	17.28	171.41
	1979	18.88	16.98	17.43	15.49	13.00	11.97	12.17	13.22	13.22	15.18	15.77	18.70	182.01
	1980	19.38	18.22	17.89	18.16	15.97	12.97	12.67	12.35	11.52	13.14	14.48	16.15	182.90
	1981	15.73	15.67	15.96	13.40	11.69	9.81	8.91	10.00	12.10	11.23	11.76	18.05	154.31
	1982	17.80	16.36	18.07	17.00	15.53	13.30	14.10	15.39	14.15	16.08	14.53	15.93	188.24
West Palm Beach (40, Lake Mangonia and Clear Lake)	1978	609.75	544.87	625.41	726.37	692.71	614.51	684.30	703.69	670.84	604.92	555.86	562.67	7,595.90
	1979	538.84	587.47	712.89	772.47	553.96	680.30	814.49	826.65	572.89	633.95	621.55	659.60	7,975.06
	1980	669.31	609.10	792.47	682.11	761.79	742.26	726.81	783.39	655.98	756.92	660.90	679.40	8,520.44
	1981	738.56	605.80	733.33	873.32	679.77	614.13	697.58	539.25	522.06	688.38	666.01	721.10	8,079.29
	1982	671.98	596.06	650.70	643.83	621.81	553.35	766.11	676.71	662.92	649.80	555.75	654.60	7,703.62

Table 3.--Total ground-water and surface-water withdrawals by public supply utilities in Palm Beach County, 1978-82

[In million gallons]

	1978		1979		1980		1981		1982	
	Ground water	Surface water	Ground water	Surface water	Ground water	Surface water	Ground water	Surface water	Ground water	Surface water
January	2,018.29	851.29	2,248.70	774.01	2,852.20	904.43	3,006.87	964.20	2,870.81	891.99
February	1,966.45	762.21	2,489.40	814.98	2,569.21	817.94	2,567.04	809.27	2,594.03	796.17
March	2,364.13	844.43	3,000.95	969.03	3,270.07	990.72	3,215.08	954.50	2,824.53	860.53
April	2,700.33	898.61	3,151.93	950.36	2,739.63	874.24	3,498.65	1,089.93	2,847.94	835.44
May	2,578.59	839.29	2,373.57	713.10	3,080.89	976.19	2,831.92	879.61	2,664.35	761.14
June	2,215.06	742.73	2,967.49	820.73	2,857.34	940.16	2,622.90	788.25	2,354.26	677.52
July	2,402.38	813.26	3,321.98	946.50	2,806.90	870.41	3,042.49	841.14	3,328.79	886.31
August	2,520.48	847.86	3,088.38	956.87	3,013.27	925.03	2,475.73	678.17	3,033.70	805.35
September	2,374.46	817.65	2,153.37	701.68	2,617.30	795.22	2,291.70	651.95	2,931.78	791.38
October	2,247.18	765.62	2,465.35	819.09	3,086.54	918.94	2,683.11	839.56	2,826.86	800.67
November	2,145.16	772.64	2,351.14	845.23	2,640.13	869.14	2,705.81	837.98	2,411.31	739.70
December	2,290.71	801.83	2,632.35	889.36	2,873.07	904.83	3,108.68	940.86	2,855.48	873.44
Subtotal yearly withdrawal	<u>27,823.22</u>	<u>9,757.42</u>	<u>32,244.61</u>	<u>10,200.94</u>	<u>34,406.55</u>	<u>10,787.25</u>	<u>34,049.98</u>	<u>10,275.42</u>	<u>33,543.84</u>	<u>9,719.64</u>
Total yearly withdrawal	37,580.64		42,445.55		45,193.80		44,325.40		43,263.48	
Percent of total withdrawal	74.04	25.96	75.97	24.03	76.13	23.87	76.82	23.18	77.53	22.47