SOUTH FLORIDA RESEARCH CENTER

Report T-575

Annual Hydrology Review: Big Cypress National Preserve 1977

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ANNUAL HYDROLOGY REVIEW: BIG CYPRESS NATIONAL PRESERVE 1977

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PREFACE

This is the second in a series of Annual Reviews designed to provide insight into the yearly hydrologic regime of the Big Cypress National Preserve (BICY). The first review incorporated the hydrologic events which occurred in both the Big Cypress and Everglades National Park (EVER). Hydrological differences between these two NPS areas combined with the individual integrity of each National Park Service management unit prompted the separation of these reports. However, subsequent Annual Reviews will again combine these two areas to avoid redundancy and provide a single document of hydrologic data for all National Park Service areas within South Florida.

Each year a great effort is made to obtain hydrologic data in the Big Cypress Preserve. This review is an attempt to put these data in perspective throughout a calendar year.

This review serves as a ready reference describing the hydrologic conditions which prevailed in BICY during 1977. It is the intent of this review to provide an easily retrievable source of Big Cypress hydrology data thus providing greater insight into hydrologic conditions within the preserve.

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I. INTRODUCTION

The Big Cypress National Preserve was established in 1974, by an act of Congress. The preserve contributes nearly 56 percent (Klein, 1970) of the freshwater (surface) flows to Everglades National Park. It also possesses its own unique characteristics consisting of a vast subtropical wilderness containing many cypress sloughs, wet prairies and pinelands.

Hydrologic data within EVER and the BICY watershed have been collected by National Park Service (NPS) and U.S. Geologic Survey (USGS) personnel since 1939. The first water levels were monitored at the continuous water level recording station, Bridge 105. Presently, the BICY hydrology program consists of numerous staff gauges, continuous recording water level gauges, ERTS/Landsat telemetry stations and numerous flow determinations at the culverts located along the Tamiami Trail (U.S. 41). These records then, are the key to the past enabling assessment of historic hydrologic conditions and formulation of conclusions regarding the nature of the hydrologic balance for a given year.

The purpose of the 1977 Annual Review is to summarize and explain hydrologic conditions experienced in the BICY during the 1977 calendar year. The hydrologic parameters examined for 1977 include: precipitation and temperature (EVER stations), water levels, and discharge data. These data are summarized both graphically and in tabular formats to provide greater insight into the 1977 hydrologic events. A brief discussion is also included describing the 10 BICY study areas emphasizing the Turner River study area which has been assigned the highest priority area within BICY. Although not initiated until 1978 this description is included to introduce the reader to these study areas which will be the focus of subsequent BICY hydrology investigations.

II. BIG CYPRESS HYDROLOGY & WATERSHED CHARACTERISTICS

Located in the subtropics, the Big Cypress National Preserve is a water dominant system. Because of its geographic locale, latitudes N 26° 15' and N 25° 36' and longitudes W 80° 50' and N 81° 23' the preserve receives abundant inputs of seasonal precipitation during the rainy season (Figures 1 and 2). These inputs contribute directly to the sheet flow and subsurface recharge of the aquifer. Nearly 90 percent of the land during the wet season (May - October) is inundated by fresh water.

Utilizing photogrammetric determinations Klein (1970) divided the Big Cypress watershed into three distinct drainage areas (Figure 3). These units have been designated as subareas A, B, and C. Even though the Big Cypress Preserve lies solely within subarea C it is important to note the flow directions and characteristics of all three subareas (Figure 4).

Subarea A is situated in the northern portion of the Big Cypress drainage basin. The area contains approximately 450 square miles (1165.54 m^2) and supplies water into Conservation Area 3 which ultimately contributes surface flow into Everglades National Park via the S-12 control structures. The area is separated from subarea C by a low lying rock ridge. This ridge extends from the Hendry-Collier County line to the Broward County line in an easterly fashion.

Subarea B is adjacent to the western boundary of the BICY and is approximately 550 miles square (1424.5 km^2). Most of the surface flow has been directed by a system of canals and culverts. The general direction of flow is southward and westward. Eventually, the water flows into the Ten Thousand Island area of Everglades National Park and into the Gulf of Mexico.

Subarea C is situated in the central drainage area of the Big Cypress watershed and includes all of the BICY. Of the 1450 square miles (3755.5 km^2) in the subarea C, nearly 570,000 acres have been designated as the Preserve. Much of the area experiences natural, uninterrupted sheet flow. However, two canals, the Turner River and Barron River canals, intercept part of the sheet flow. Eventually the water flows southward and into the northwestern section of Everglades National Park.

A. Intensive Study Areas

During 1978 ten study plots were selected by National Park Service (NPS) scientists for Big Cypress ecological studies (Figure 5). The locations were selected on the basis of ecosystem identity, floristic characteristics and significant hydrological locales.

Some of the major drainage areas in the Big Cypress to be analyzed include Gum Slough, Roberts Lake Strand, Deep Lake Strand, Turner River, Okaloacoochee Slough, Gator Hook Strand, L-28 Tieback Canal, Pinecrest Hammocks, the pine ridge north of Jetport and the dense pine forest north of Monument Road.

Presently, the NPS hydrology staff has installed permanent recording stations in all of these study plots. The program is to include continuous monitoring of water levels in these areas beginning in FY 79. During the next three years, transects through each of these study areas will be established by NPS hydrology personnel so

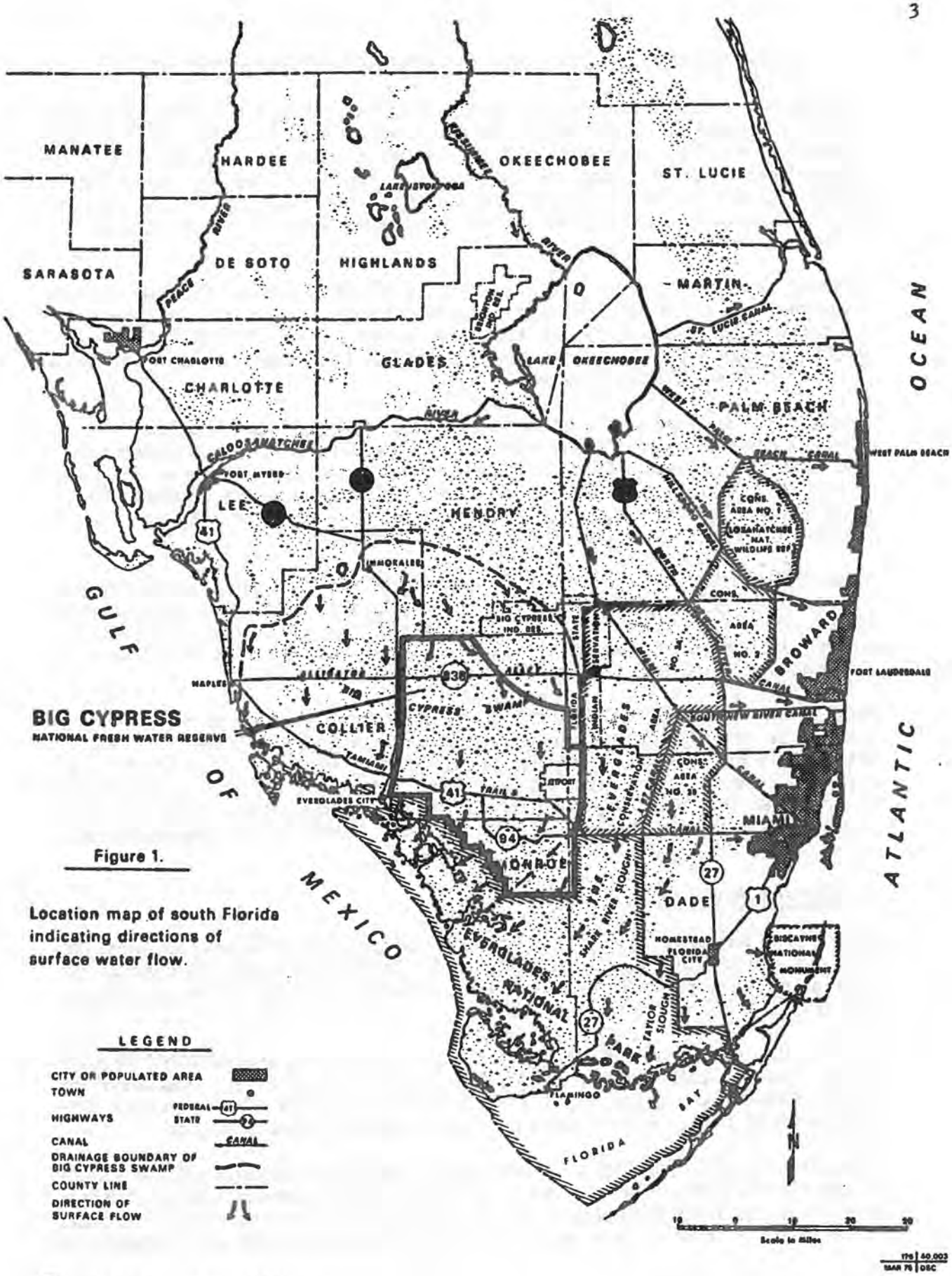


Figure 1.

Location map of south Florida indicating directions of surface water flow.

Figure 1: Location of Big Cypress National Preserve in South Florida

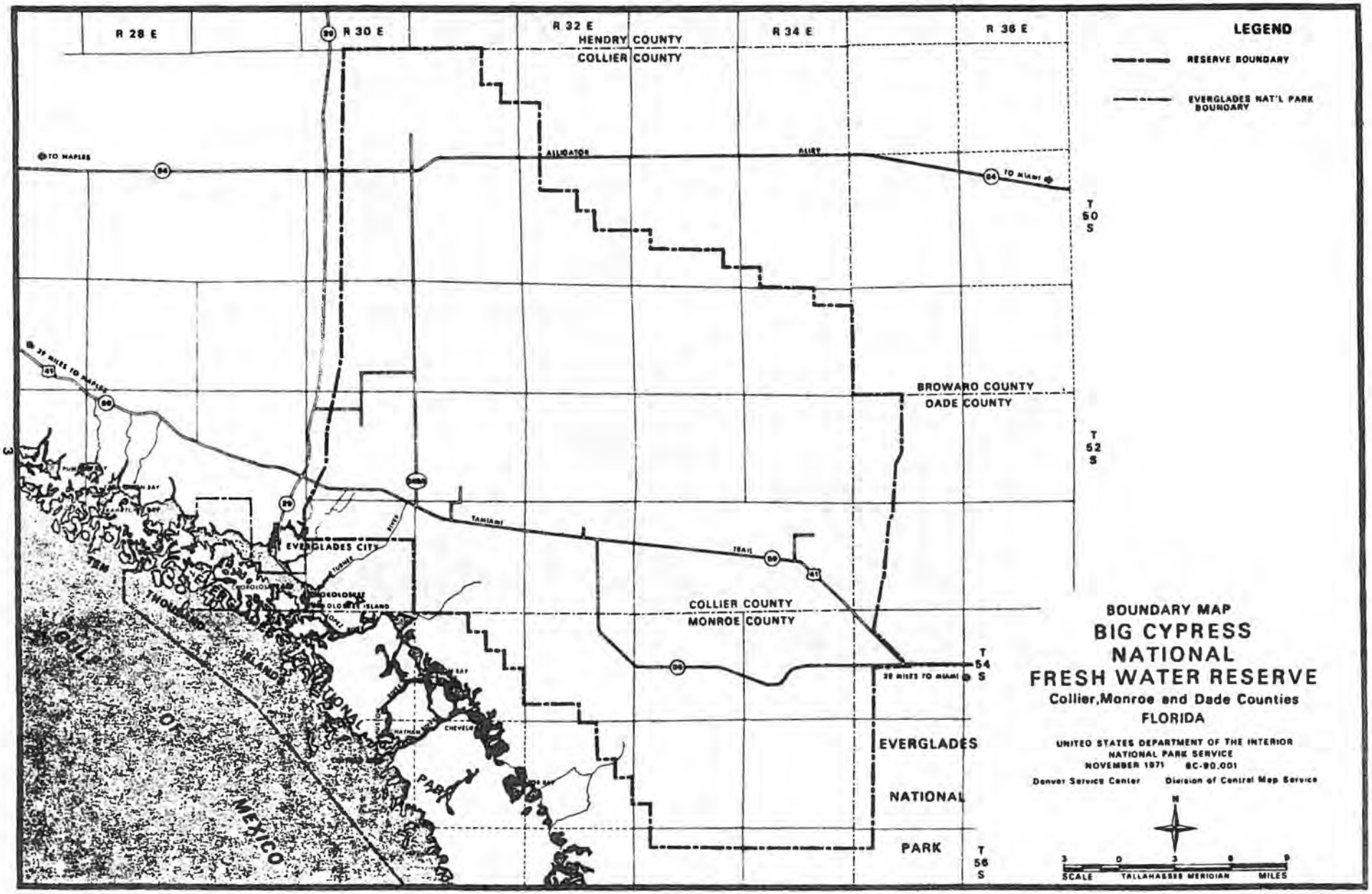


Figure 2: Boundary Map of Big Cypress National Preserve

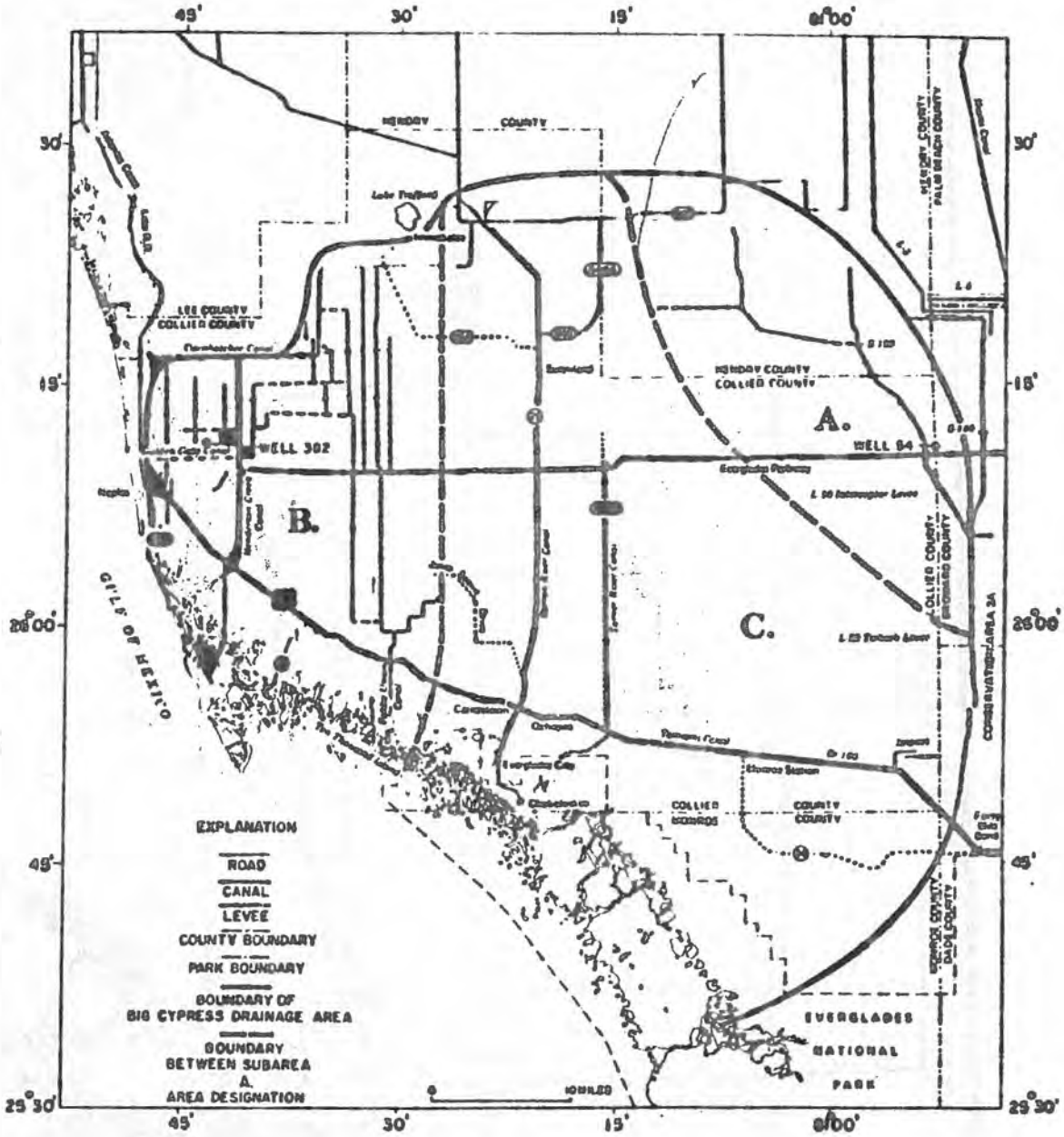


Figure 3: Map of the Big Cypress Watershed Showing the Delineations of the Drainage Subareas

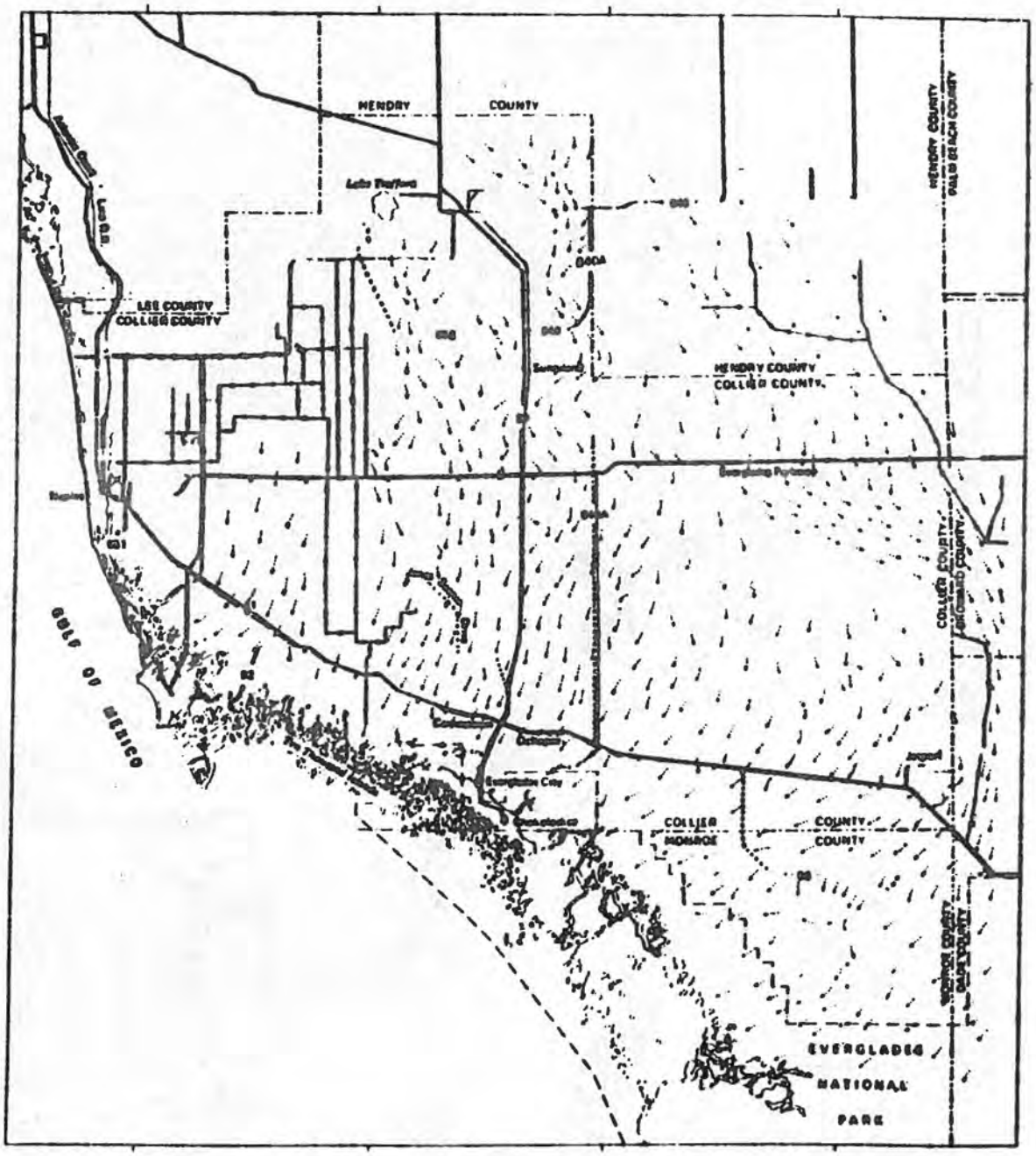


Figure 4: Map of the Big Cypress Showing Flow Directions

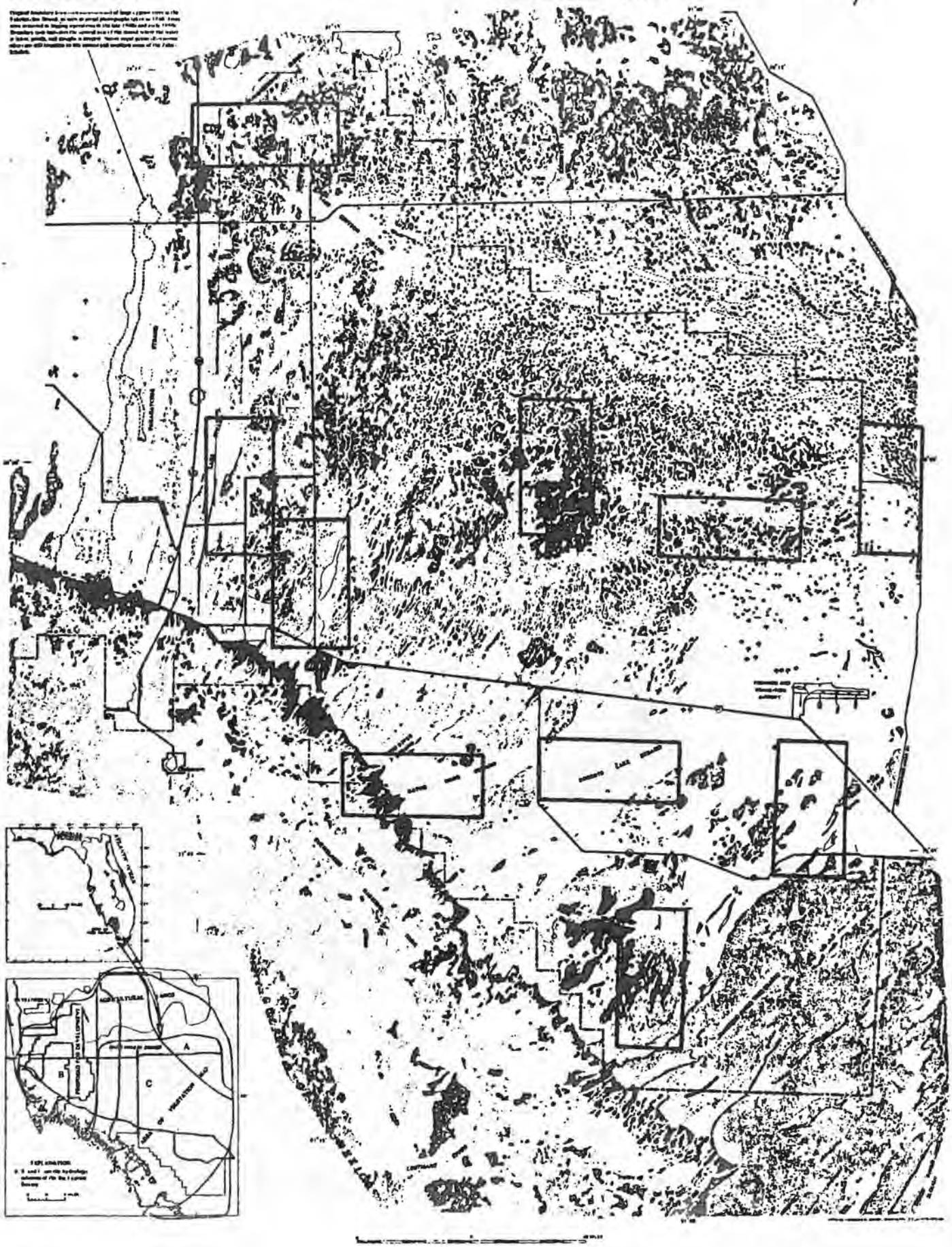


Figure 5: Location of Big Cypress Intensive Study Areas

that the spatial and temporal water distribution relationships can be determined through statistical correlations.

B. Turner River

Of the ten study areas established in the Big Cypress, the highest priority for hydrologic examination was the Turner River study plot located near Ochopee, Florida. A water management problem exists within this study plot involving the interruption of natural river flow due to diversion of waters through canal development.

The current hydrologic condition within the Turner River allows water to flow only through the meander during the height of the rainy season. All water flowing through the meander during this period is directed through a culvert located approximately 0.8 miles (1.30 km) north of Tamiami Trail on State Road 839 (Turner River Canal Road).

A hydrologic network was established at the Turner River meander in order to study the hydrologic effects of canal diversion on the river's headwaters. Eleven monitoring stations were established to measure weekly water levels (msl) and conductivity (Figure 6). Monthly velocity studies were also conducted in the Turner River meander and the adjacent canal. These experiments utilized Rhodamine Dye as a tracer whose concentrations were measured downstream with a Turner Fluorometer. In addition to velocity determinations, these intensive experiments measured the longitudinal dispersion coefficient for the meander and canal. It is expected that these data will accurately depict the yearly hydrologic conditions for the Turner River meander and canal. These hydrologic investigations will be of significant value in implementing an optimum water resources management plan for this area including reestablishment of historical flow through the meander.

TURNER RIVER HYDROLOGY STUDIES

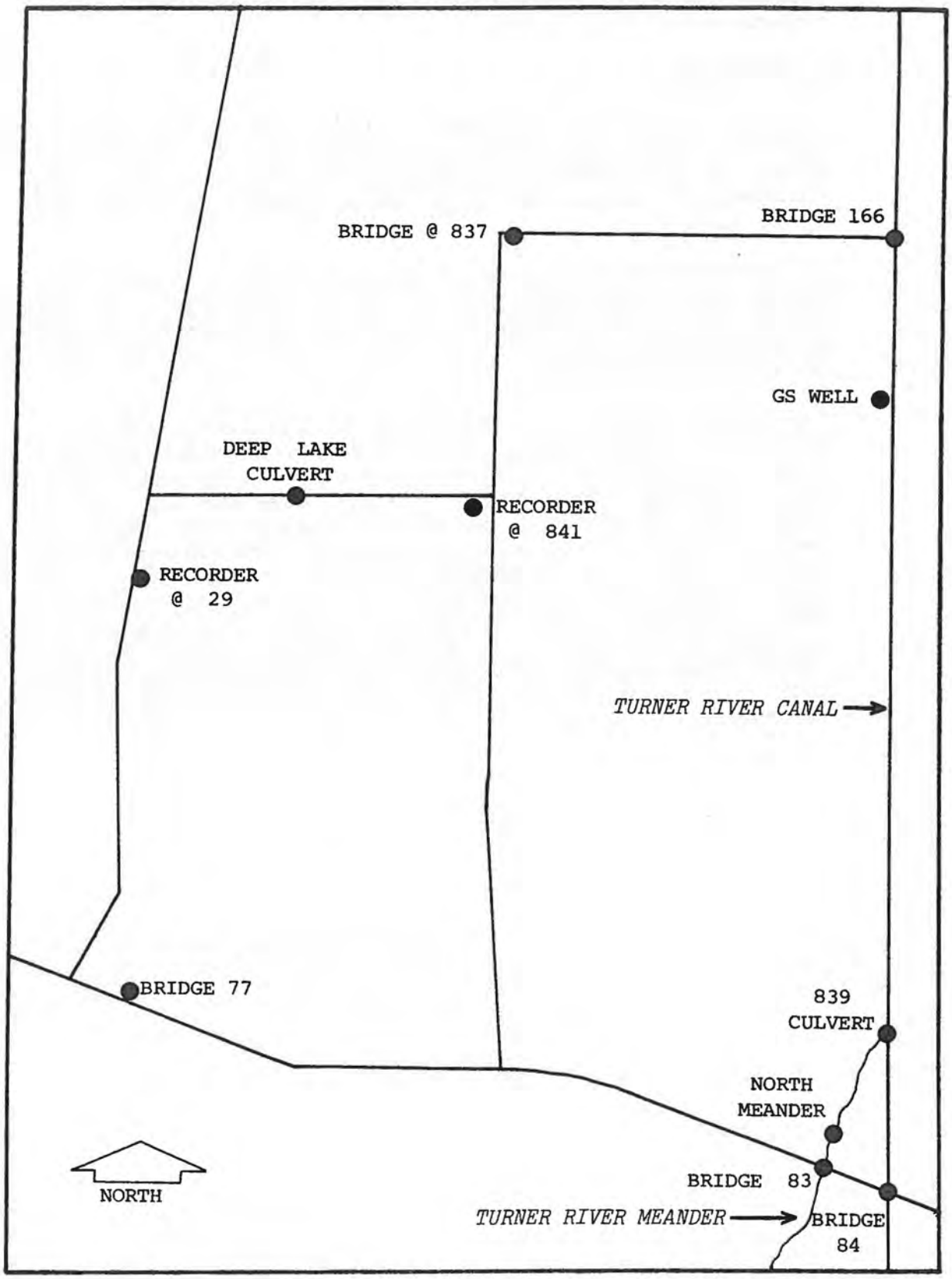


Figure 6: Turner River Hydrologic Network

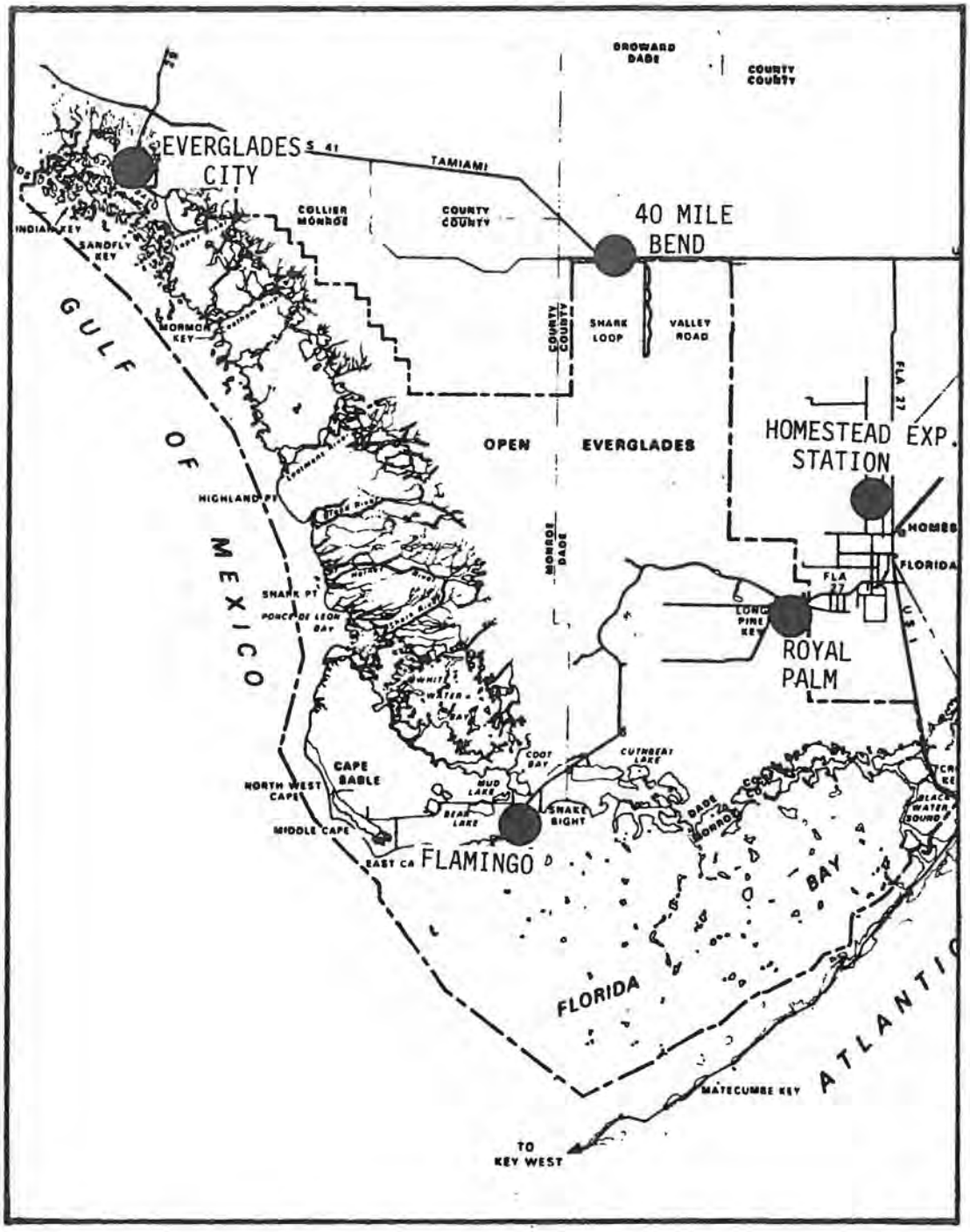


Figure 7: Map of Everglades National Park and South Florida Weather Stations

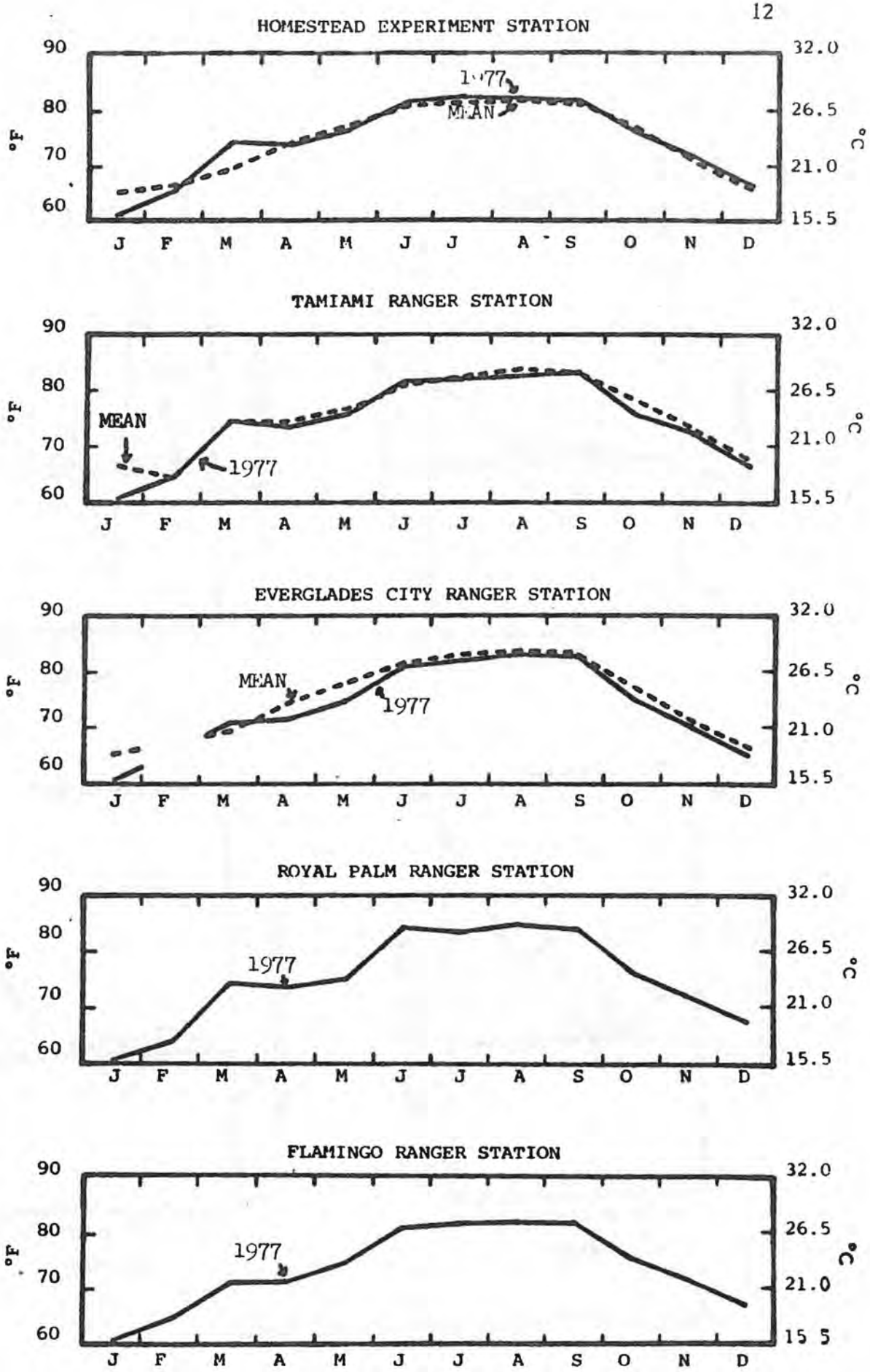


Figure 8: 1977 South Florida Temperatures

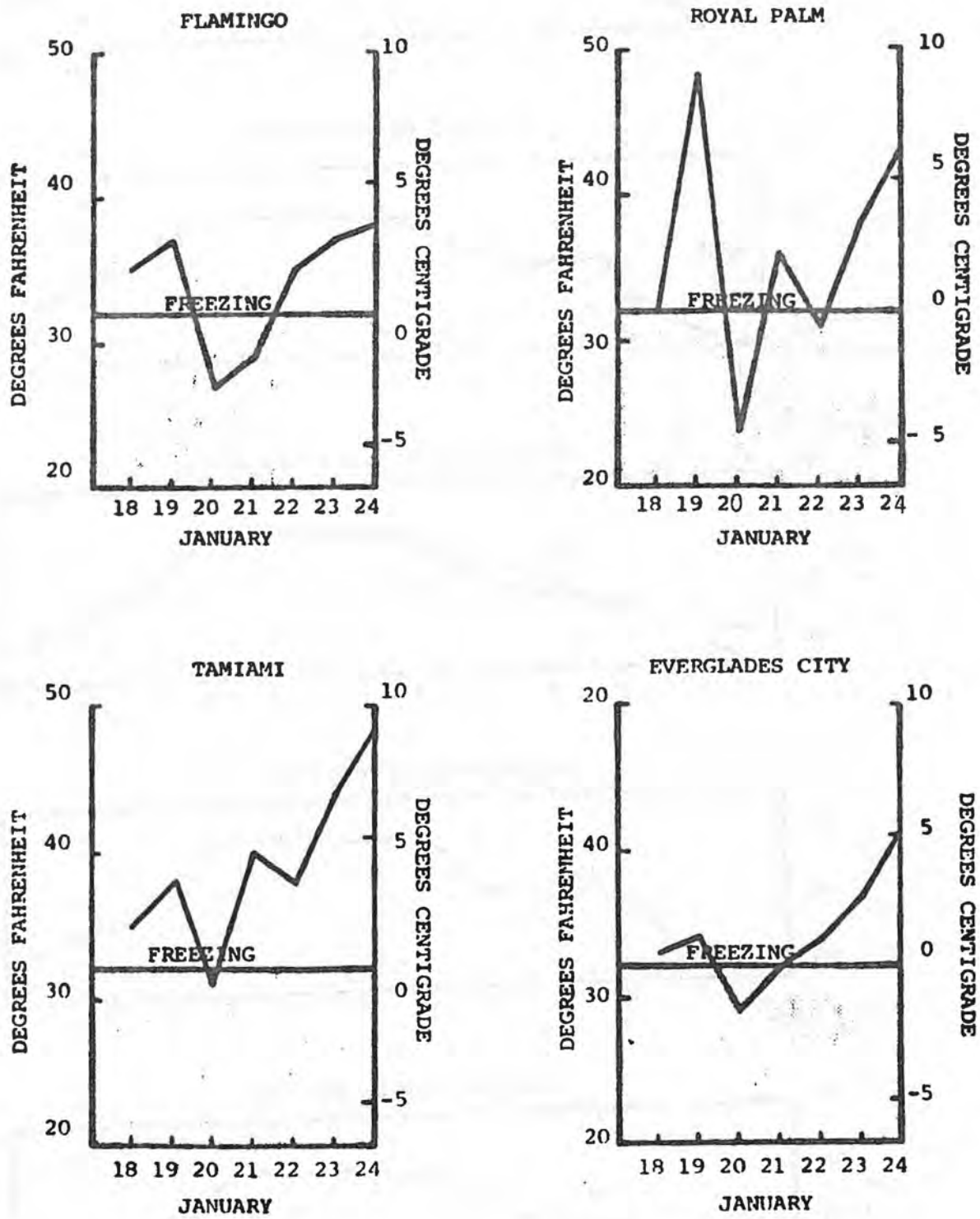


Figure 9: 1977 January Freeze in South Florida

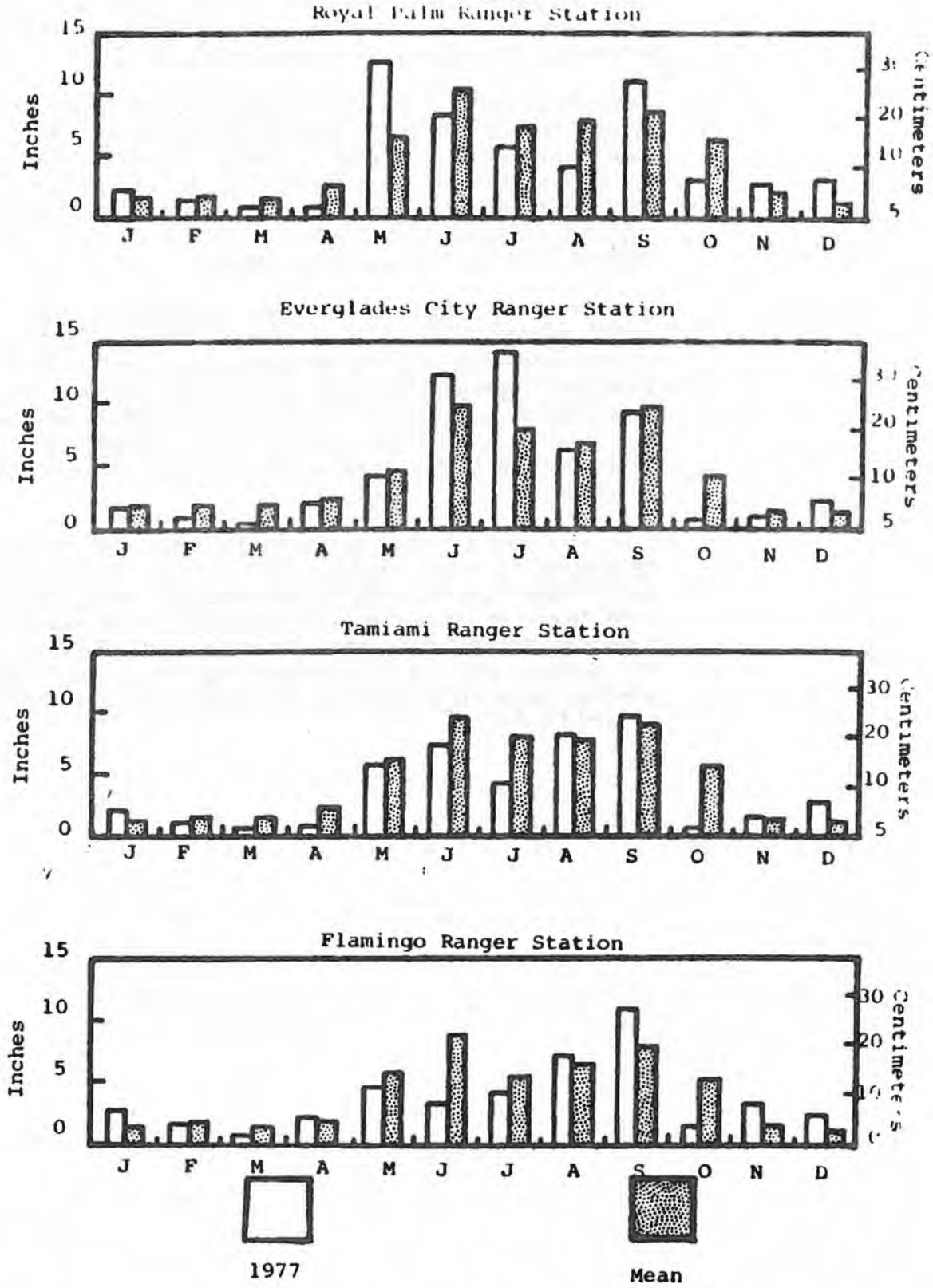


Figure 10: 1977 Everglades National Park Rainfall by Weather Station

rainstorms rectified the deficit precipitation amounts of the earlier months. September, November and December also reported rainfall totals greater than the norm while October was one of the driest Octobers in the history of the Big Cypress and EVER.

2. Everglades City: received slightly greater than normal inputs of precipitation during 1977. The rainfall distribution was similar to that experienced at Royal Palm. During the first five months rainfall amounts were below normal with February and March being extremely dry. Throughout the remainder of the year, abundant rainstorms supplied sufficient inputs into the system to counteract the deficit months which occurred earlier in the year.

3. Tamiami Ranger Station: the first six months of 1977 were months of deficit rainfall totals at 40-Mile Bend. During August and September intense and frequent thunderstorms gave some relief to the dry conditions experienced earlier in the year but were not of sufficient magnitude to compensate for the overall rainfall deficiency. October was a very dry month and in late November continuing through December rainstorms supplied more than the normally expected rainfall amounts.

4. Flamingo: like the other stations, Flamingo experienced dry conditions throughout the early months of 1977. During the months of February, March, May, June and July the precipitation totals were below normal. Late August thunderstorms and frequent rains in September generated surplus rainfall totals for each of these months. However, an extremely dry October assisted in counteracting the rainfall surplus of the previous months and rendering the station with a below normal rainfall amount for 1977.

IV. WATER LEVELS

The NPS in cooperation with the USGS maintained a network of water level gauges within BICY during FY 77 (Figure 11). There were six continuous recording gauges in operation during this period, one of which (Bridge 84), consisted of a satellite data collection platform (DPC). These stations also included Bridge 105, 40-Mile Bend, Bridge 77, NP 103 and Roberts Lake, all of which lie along Tamiami Trail or Loop Road. As shown in Figure 12, the period of record for Bridge 105 and 40-Mile Bend commensed in 1939, Bridges 77 and 84 in 1960 and NP 103 and Roberts Lake in 1973, all of these BICY hydrology stations are in operation today. The hydrographs presented show water levels during FY 77 compared against the historic mean. Actual daily stage data are presented in the Appendix for all six stations.

Bridge 105 provides a long term record of water stages for a centrally located segment of the Big Cypress National Preserve. The 40-Mile Bend station is located within the L-28 canal at its most south-easterly point and may reflect water levels along the eastern boundary of BICY. Bridge 84 sits within the Turner River canal toward the western portion of BICY. Stages within this station reflect general water levels in the Turner River area. Bridge 77 lies further to the west along Tamiami Trail between the Turner and Barron River canals. Its proximity to adjacent north/south canals is reflected by tidal induced stage fluctuations, a point confirmed by field salinity measurements.

These hydrographs show pronounced high and low stages reflecting the seasonal wet and dry seasons typical for south Florida. The lowest stages occurred during April and May and high stages in August, September and October. Water levels during FY 77 were lower than normal during the dry season with Bridge 105 dipping to 0.5 feet (0.15 m) of the 1968 May record low of 2.5 feet (0.76 m). This May low was approximately 3 feet (0.91 m) below the mean value of 6 feet (1.83 m). The other stations also reflect below average levels for May, but not as pronounced as that for Bridge 105.

Record low water levels were recorded during 1977 in August for the 40-Mile Bend station, in April and November for Bridge 84, in April for Bridge 77 and in August for the Roberts Lake station. Record high water levels are shown for Roberts Lake during December 1977 while NP 103 experienced record high levels during January, February, March, April, July, September and December.

Water level fluctuations for the two loop stations between the wet and dry seasons are shown to be 4 feet (1.22 m) or greater while other stations show fluctuations between 1 and 2 feet (0.3 and 0.61 m). This behavior is anticipated for NP 103 since this station is a ground water well whose hydrograph should reflect ground substrate porosity and permeability characteristics. The Roberts Lake station, although not a ground water station behaves similary suggesting a lessened hydroperiod for this area.

The most striking conclusion which can be drawn from analyses of these hydrographs is the inadequacy of describing the hydrology of a 540,000 acre area from just 6 stations.

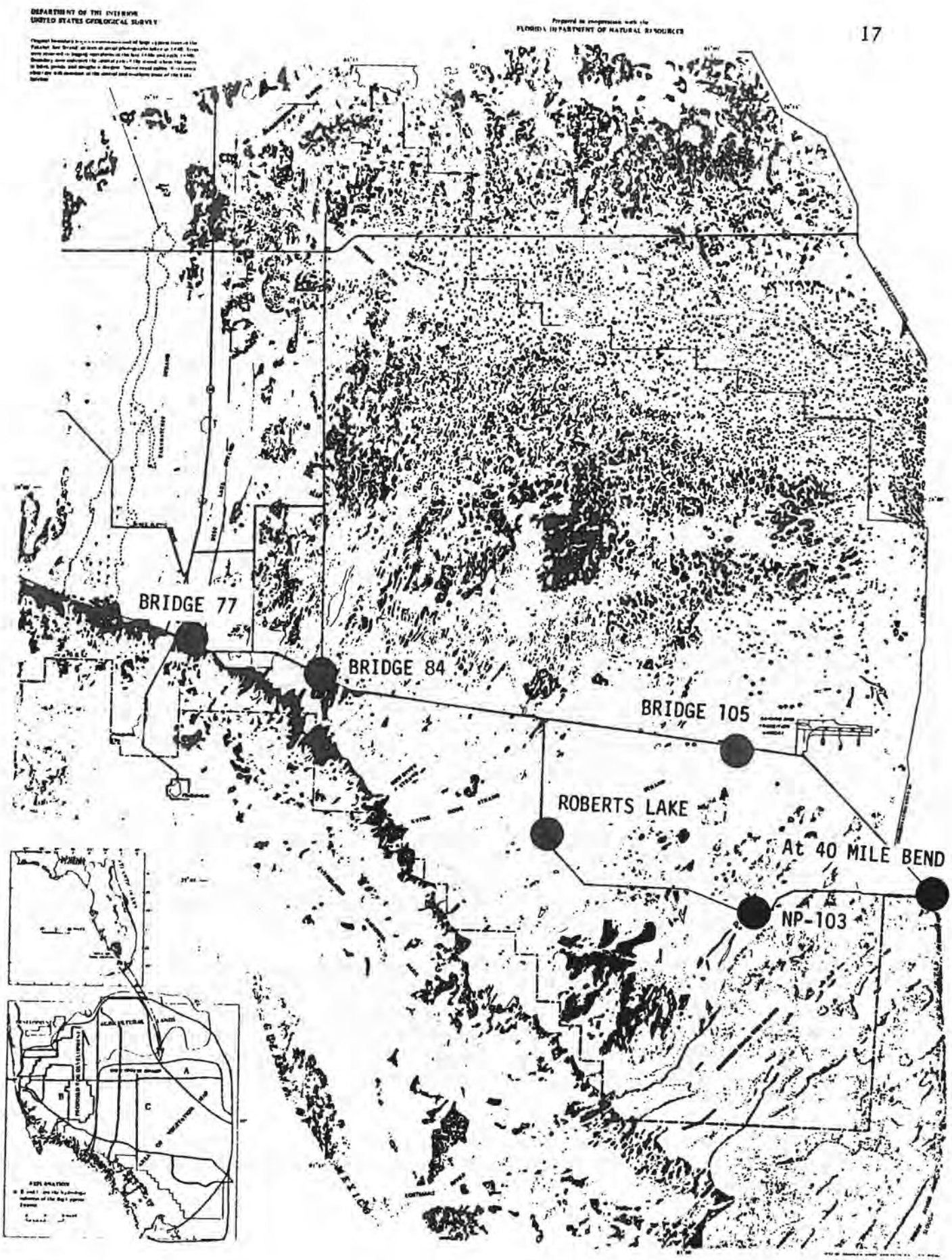


Figure 11: Location of Gauging Stations in the Big Cypress

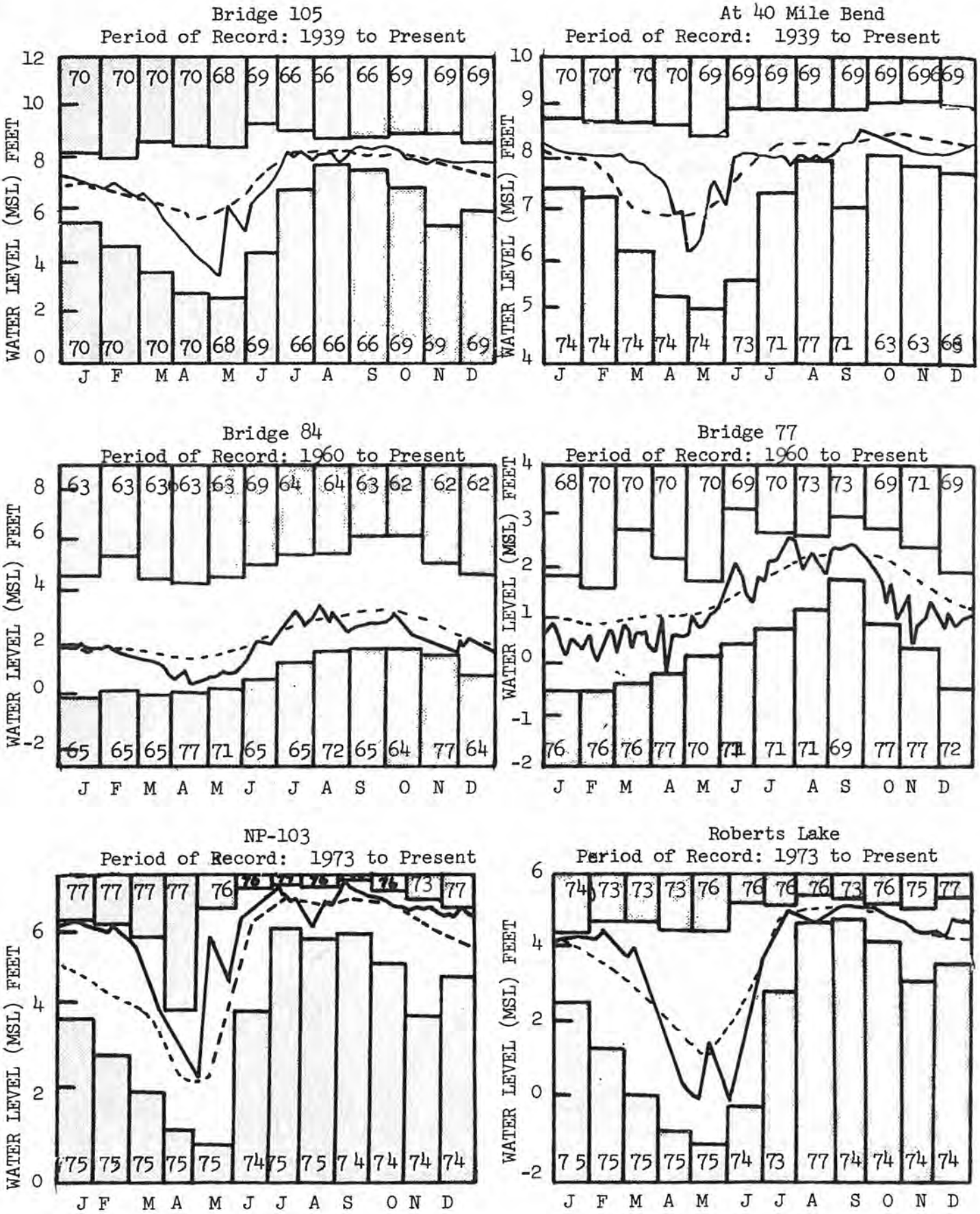


Figure 12: Big Cypress Hydrographs for 1977

The BICY consists of many cypress strands and wet prairies which transport surface water flows to the coastal areas. Additional continuous recording water level stations are planned in addition to many staff gauges from which water distribution hydraulic gradients, and hydroperiod can be determined. Initial installation of such stations are proposed for FY 79 and is anticipated to continue for several years.

V. BIG CYPRESS DISCHARGE

The BICY directly contributes freshwater supplies into the northwestern area of EVER. These contributions are measured along a series of data collection points at various culverts and bridges located on the Tamiami Trail (U.S. 41) from 40 Mile Bend to Carnestown. These measurements are combined to generate the hydrologic data records for the two stations representative of the Big Cypress water flow (Figure 11). A total of nineteen observations are made to determine the discharge values for the Tamiami Canal outlets: Monroe to Carnestown station. In addition, a total of 29 measurements are taken to determine the flow for the Tamiami Canal outlets: 40 Mile Bend to Monroe Station. These two stations then, measure the total discharge of surface waters from the BICY under the Tamiami Trail and eventually reflect the contribution of the BICY to EVER.

A. 1977 Discharge Rates

Discharge rates for the Tamiami Canal outlets (40 Mile Bend to Monroe and Monroe to Carnestown) were below normal during 1977 (Table 1). The annual daily mean discharge rate measured at the 40 Mile Bend to Monroe locale was 148.71 cfs (4.21 m^3/s) or some 92 cfs (2.61 $m^3/5$) lower than the mean for the period of record. Likewise, the discharge data for the Monroe to Carnestown was deficit, reporting a daily mean discharge of 333.36 cfs (9.44 $m^3/5$) which was 70 cfs (1.98 m^3/s) lower than normal.

These deficits become of value when analyzing the contribution the Big Cypress National Preserve made to the freshwater supplies in the northwestern area of Everglades National Park. Klein (1970) estimated that sub-basin C, most of which is now designated as Big Cypress National Preserve, contributed approximately 541,500 acre feet (667.68 hm^3) to the national park (mean values from 1957-1969). However, during 1977 the freshwater contributions to Everglades National Park were far below Klein's estimates. A tabulation of the measured discharge values recorded at the two Big Cypress stations indicated a contribution of only 350,846 acre feet (432.59 hm^3) throughout the year (Table 2). This was some 200,000 acre feet (246.60 hm^3) below Klein's (1970) estimate. If the means are indicative of past water flows from the Big Cypress to the park then the 162 cfs mean daily deficit (4.58 $m^3/5$) becomes significant. This, then, translates into a deficit of nearly 100,000 acre feet (4.23.40 hm^3) for the year by computing mean daily discharge values. This still indicates a change in annual discharge totals from Klein's (1970) report with a deficit of nearly 100,000 acre feet (123.30 hm^3).

The greatest discharge values during 1977 were associated with the Tamiami Canal outlets: Monroe to Carnestown location. The maximum daily discharge was measured to be 1950 cfs (55.2 m^3/s) during the year (Table 3). This peak discharge was measured during the first half of September. Conversely, a total of 73 days experienced no (zero) flow.

Throughout the year the Monroe to Carnestown area experienced daily discharge values less than 200 cfs (5.66 m^3/s) more than 70 percent of the time (Figure 13). The maximum discharge rates experienced represent discharge measurements taken during the latter stages of the wet season (Figure 14). At that time the Big Cypress discharge rates were far above the normally expected values. For the month of September, this location reported discharge values of 145 percent above normal. The 1977 September mean daily discharge was 1525 cfs (43.19 m^3/s) compared to a mean value for the period of record of 1046 cfs (29.62 m^3/s).

Table 1: Summary of Discharge Data for Tamiami Canal Outlets During 1977

	cfs Max Daily	cfs Min Daily	No. Days of O Flow	Mean cfs Daily	Average Period (cfs)
40 Mile Bend to Monroe	1350	0	41	148.71	241
Monroe to Carnestown	1950	0	73	333.36	40

Table 2: BICY Estimated Water Contributions to Everglades National Park Through the Tamiami Canal Outlets

	40 Mile Bend to Monroe	Acre Feet Monroe to Carnestown	Total
Jan.	2,110	4,620	6,730
Feb.	996	1,810	2,806
Mar.	433	191	624
Apr.	0	0	0
May	38	0	38
Jun.	2,310	5,180	7,490
Jul.	12,050	72,250	84,300
Aug.	9,410	43,230	52,640
Sept.	55,470	90,730	146,200
Oct.	17,790	19,250	37,040
Nov.	4,240	1,700	5,940
Dec.	2,561	3,339	5,900
			349,708

Table 3: 1977 Discharge for Tamiami Canal Outlets: Monroe to Carnestown

Month	Total Mean Discharge	1977 Mean Discharge	% Discharge 1977
Jan.	65	75.1	116
Feb.	58	32.6	56
Mar.	191	3.10	1.6
Apr.	52	0	0
May	43	0	0
Jun.	668	87.1	13
Jul.	799	1175	147
Aug.	889	703	79
Sept.	1046	1525	145
Oct.	645.8	313	48
Nov.	277	28.6	10
Dec.	106	578.6	55
Total	4839.8	4000.36	83%

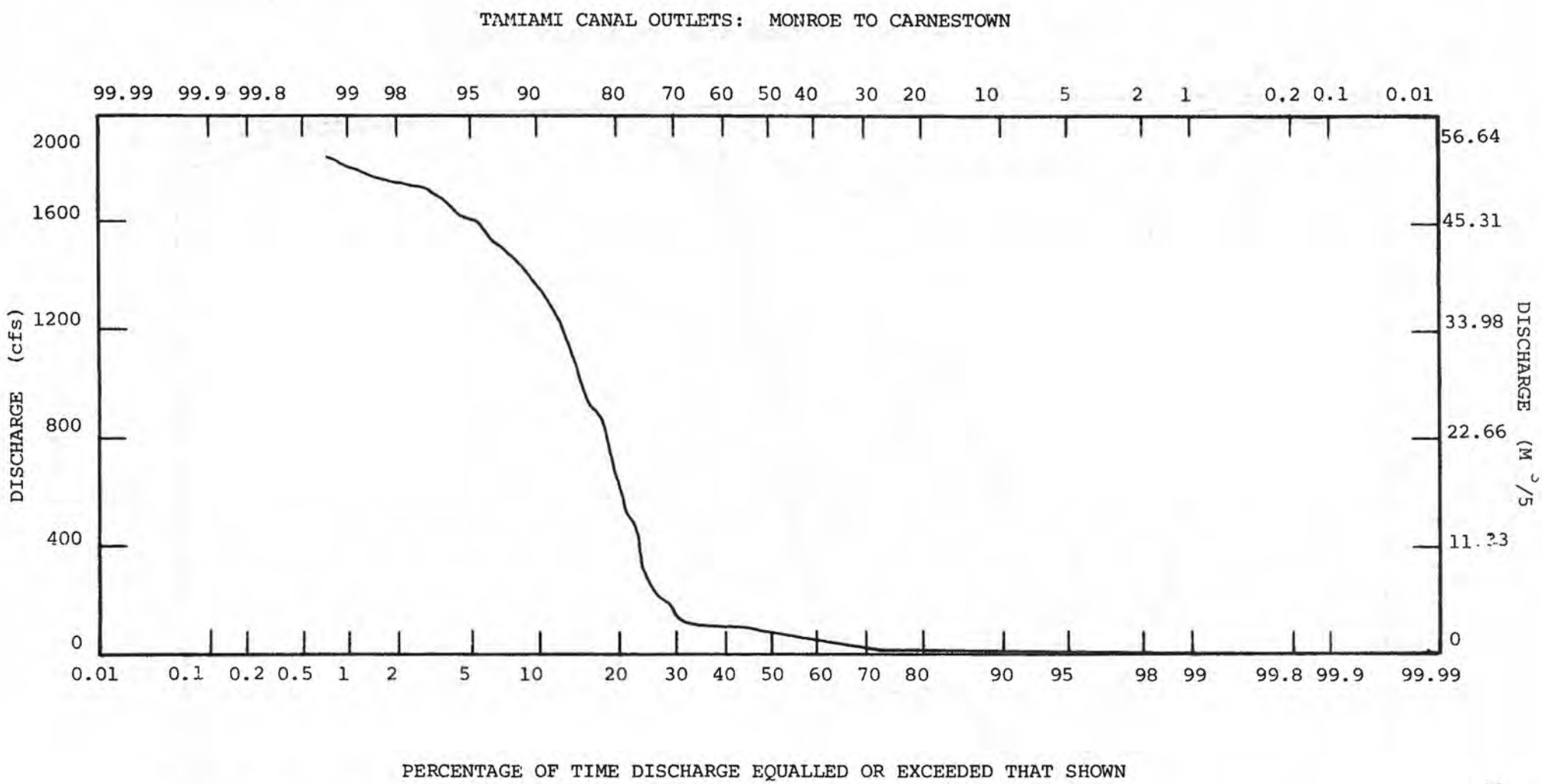


Figure 13: Flow Duration Curve for Tamiami Canal Outlets: Monroe to Carnestown, 1977

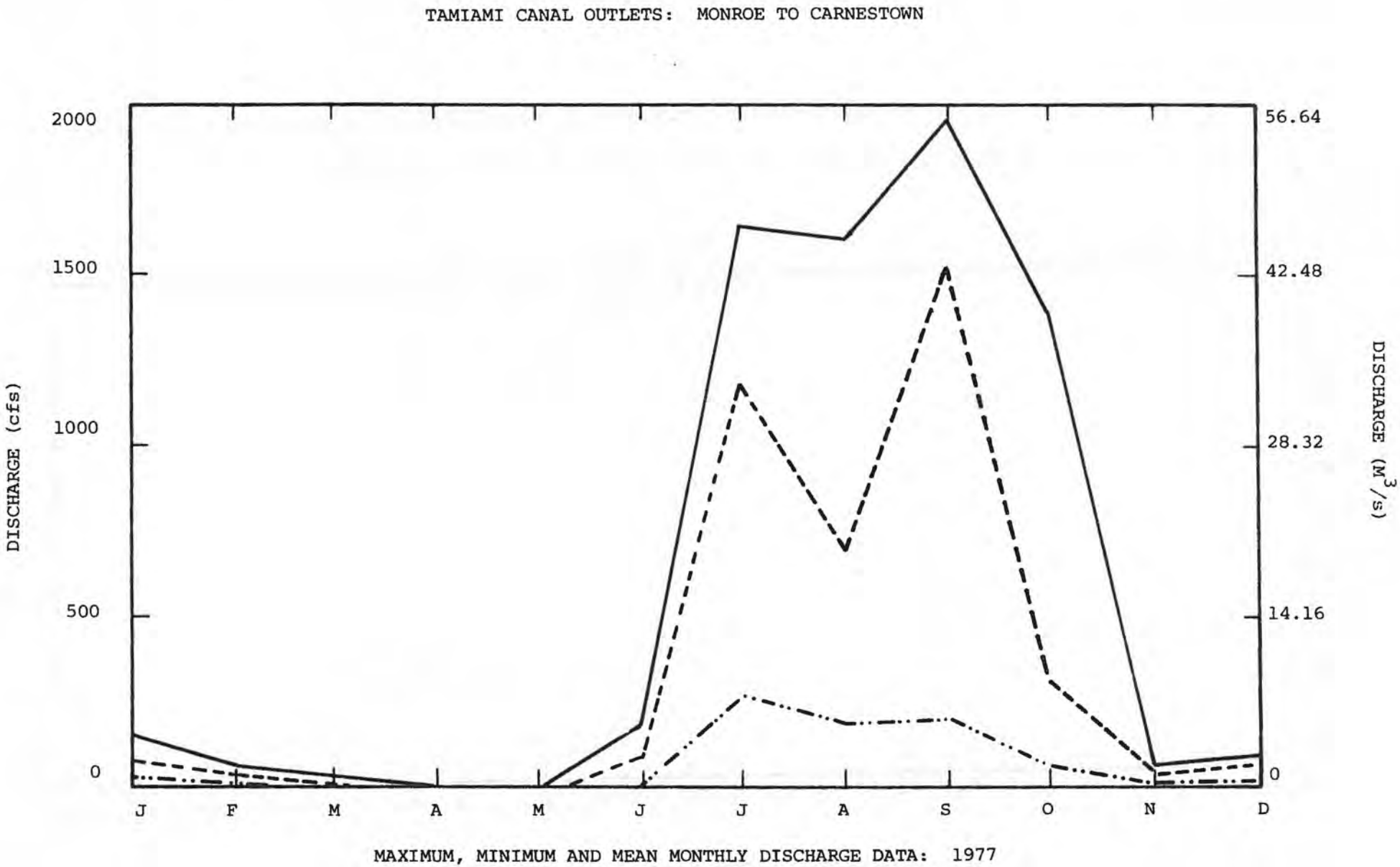


Figure 14: Discharge, Means and Extremes for Tamiami Canal Outlets: Monroe to Carnestown, 1977

January and July were other months during 1977 which experienced above normal discharge flow rates at the Monroe to Carnestown culvert unit. All of the remaining months throughout the year reported lower than normal discharge rates. Two months, April and May, experienced zero percent of normal the discharge rates and three other months; March, June and November reported less than 13 percent of normal conditions. These flow rates directly reflect the general precipitation patterns of south Florida during this period of time. At year's end this location reported only 83 percent of the total mean daily discharge. The other Big Cypress monitoring location for discharge values along the Tamiami Trail (US 41) is between 40 Mile Bend and Monroe, Florida. This area, like the Monroe to Carnestown location, reported deficit discharge rates throughout 1977. The maximum daily discharge was 1350 cfs (38.2 m^3/s) and there were 41 days of no (zero) flow (Table 2). Nearly 80 percent of the year the discharge value was less than 200 cfs (5.66 m^3/s) at this location (Figure 15).

Like the Monroe to Carnestown location there was similar response to precipitation inputs occurring in late August and September. The maximum discharge values reported at this station were experienced during this period of time. September was the only month during 1977 when mean daily discharge rates exceeded those for the period of record (Table 4). The mean daily discharge rate was 171 percent of the normally expected 545 cfs (15.43 m^3/s) (Figure 16). All of the remaining months experienced less than 66 percent of the mean discharge value. Even December, which was a relatively wet month, indicated a net decrease in discharge from the norm. By year's end, this location had experienced only 62 percent of the normally expected discharge.

The other two stations in the Big Cypress where discharge determinations are made include the station at Roberts Lake Slough and the Barron River. Nearly half of the year either no or very little flow was monitored at Roberts Lake Slough (Figure 17). The greatest discharge monitored at Roberts Lake was 440 cfs. Conversely, flow was monitored continuously at the Barron River. For greater than 95 percent of 1977 discharge was greater than 10 cfs at the Barron River (Figure 18). The greatest daily discharge achieved, however, was only 260 cfs.

B. Stage Duration and Stage Discharge

Stage duration curves for seven monitoring stations (either permanent recording or satellite telementry stations) were generated to determine the percentage of time that a specific water level is equaled or exceeded (Figures 19, 20, 21, 22, 23, 24, and 25).

The 1977 water levels at Bridge 105 (40 Mile Bend to Monroe) were also compared with cumulative data available from previous years, 1952-1967. The difference between these curves were averaged and it was found that water levels during 1977 averaged approximately 0.5 feet (0.15 m) below that of the mean value found between 1952 and 1969 (Figure 20).

Discharge data available from the two sections, 40 Mile Bend to Monroe and Monroe to Carnestown, were used in conjunction with the centrally located staff gauges (Figures 26 and 27) (Bridge 105 and Bridge 84, respectively) to generate Stage-Discharge curves.

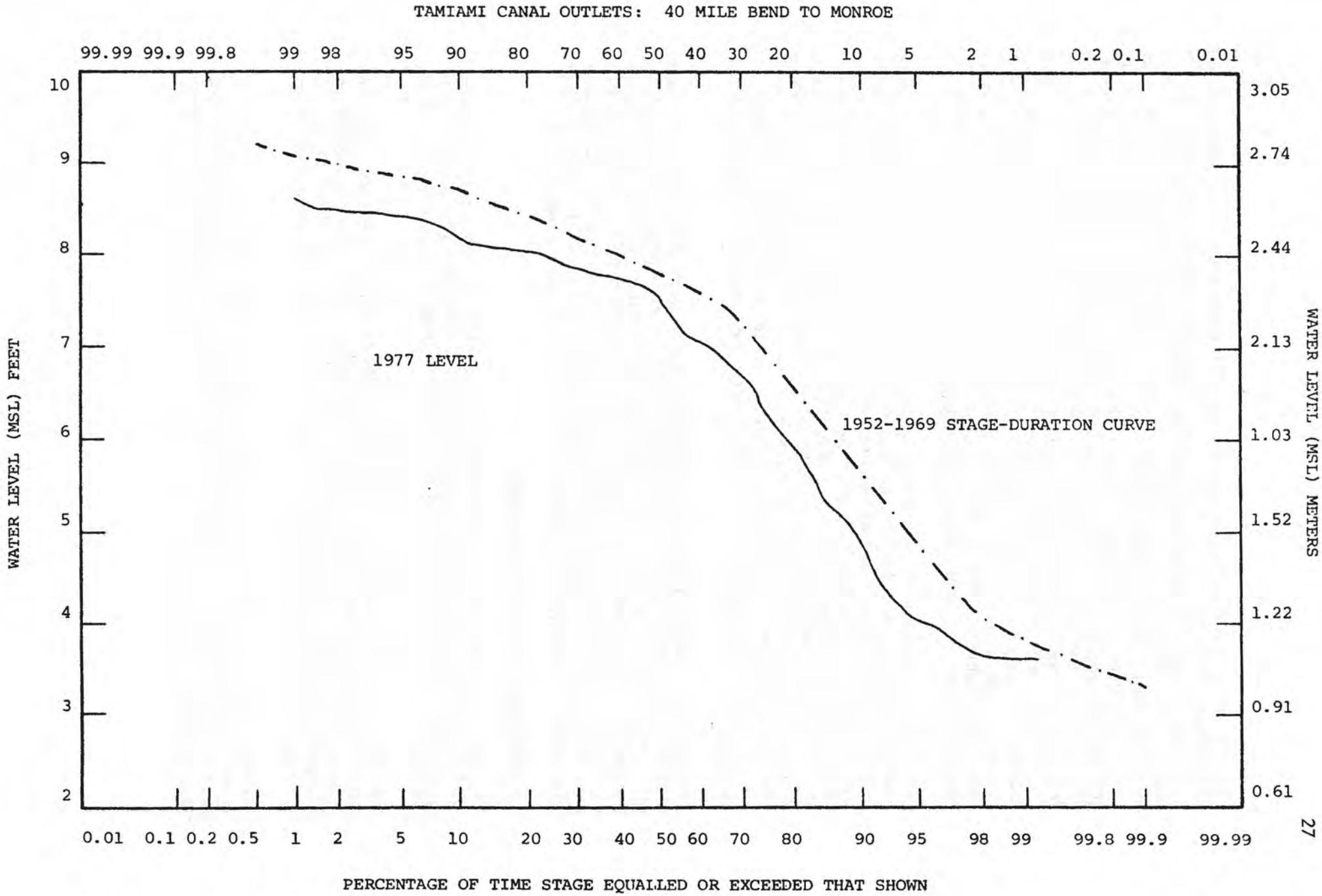
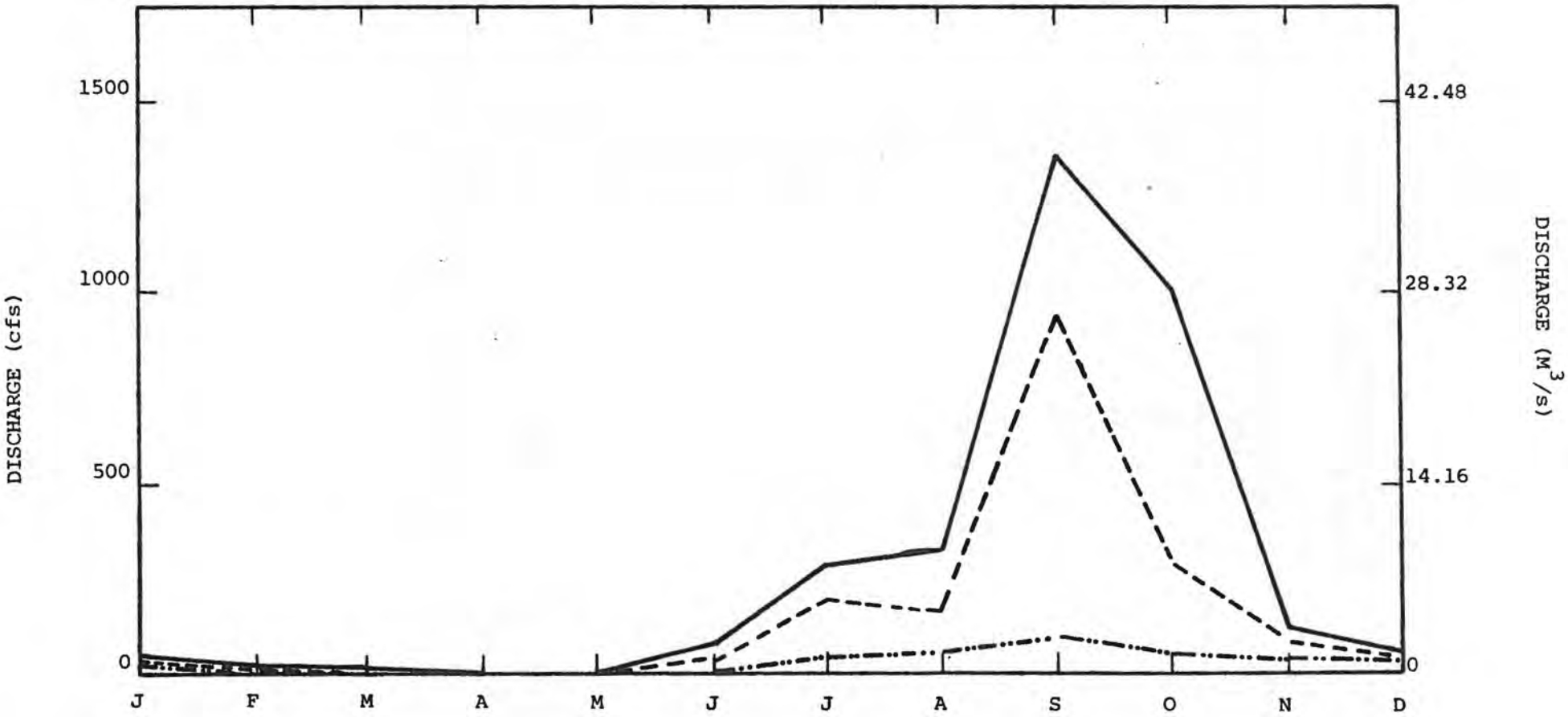


Figure 15: Flow Duration Curve for Tamiami Canal Outlets: 40 Mile Bend to Monroe, 1977

Table 4: 1977 Discharge Tamiami Canal Outlets
40 Mile Bend to Monroe

Month	Total Mean Discharge (cfs)	1977 Mean Discharge (cfs)	% Discharge 1977
Jan.	52	34.4	66
Feb.	49	17.9	37
Mar.	17	7.05	41
Apr.	36	0	0
May	79	0.63	0.79
Jun.	258	38.8	15
Jul.	555	196	35
Aug.	566	153	27
Sept.	545	932	171
Oct.	432	289	67
Nov.	213	71.3	33
Dec.	86	44.38	52
Total	2888	1784.46	62%

TAMIAMI CANAL OUTLETS: 40 MILE BEND TO MONROE



MAXIMUM, MINIMUM AND MEAN MONTHLY DISCHARGE DATA: 1977

Figure 16: Discharge Extremes and Means for Tamiami Canal Outlets: 40 Mile Bend to Monroe, 1977

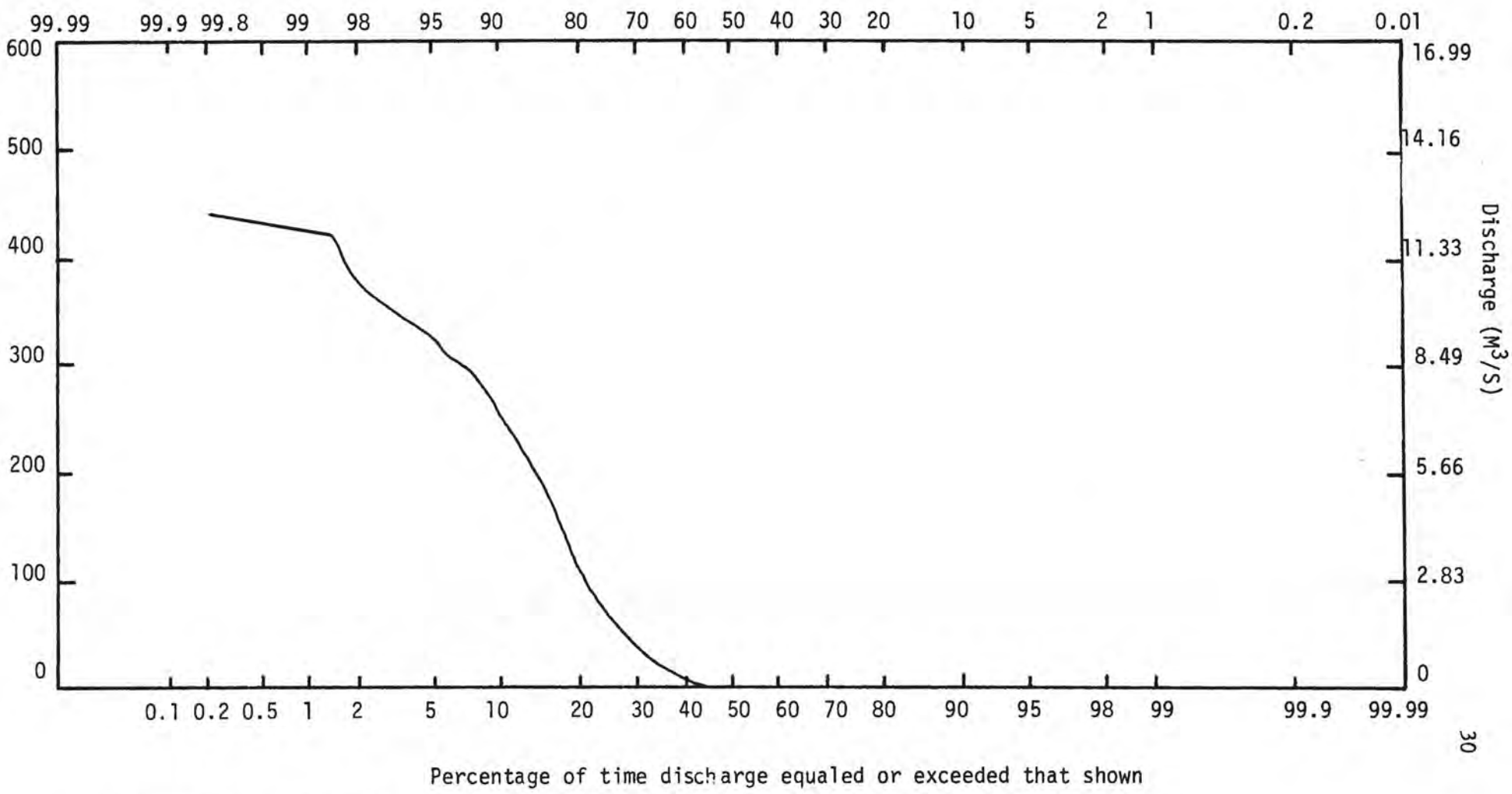


Figure 17: Flow Duration Curve for Roberts Lake Slough

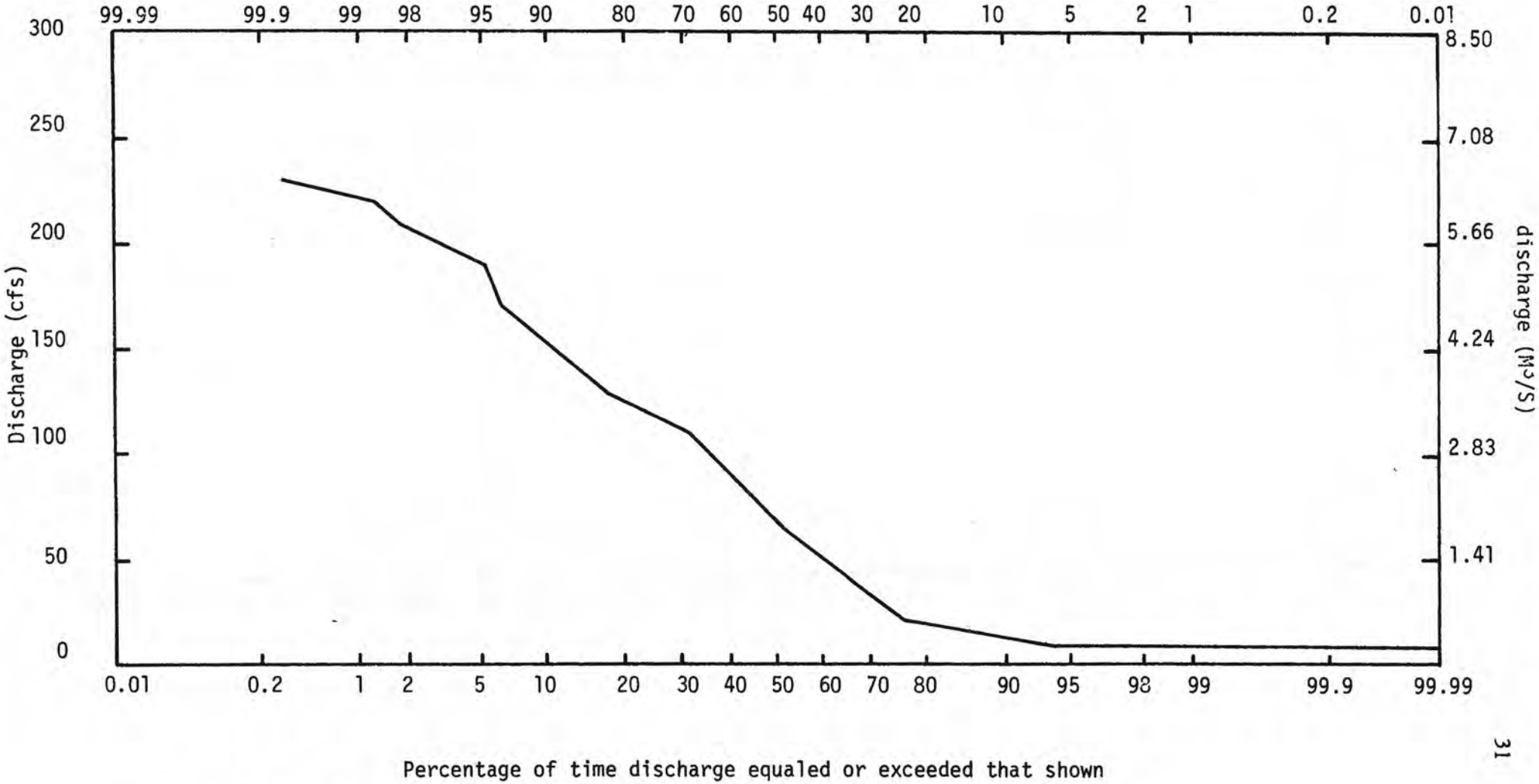


Figure 18: Flow Duration Curve for Barron River

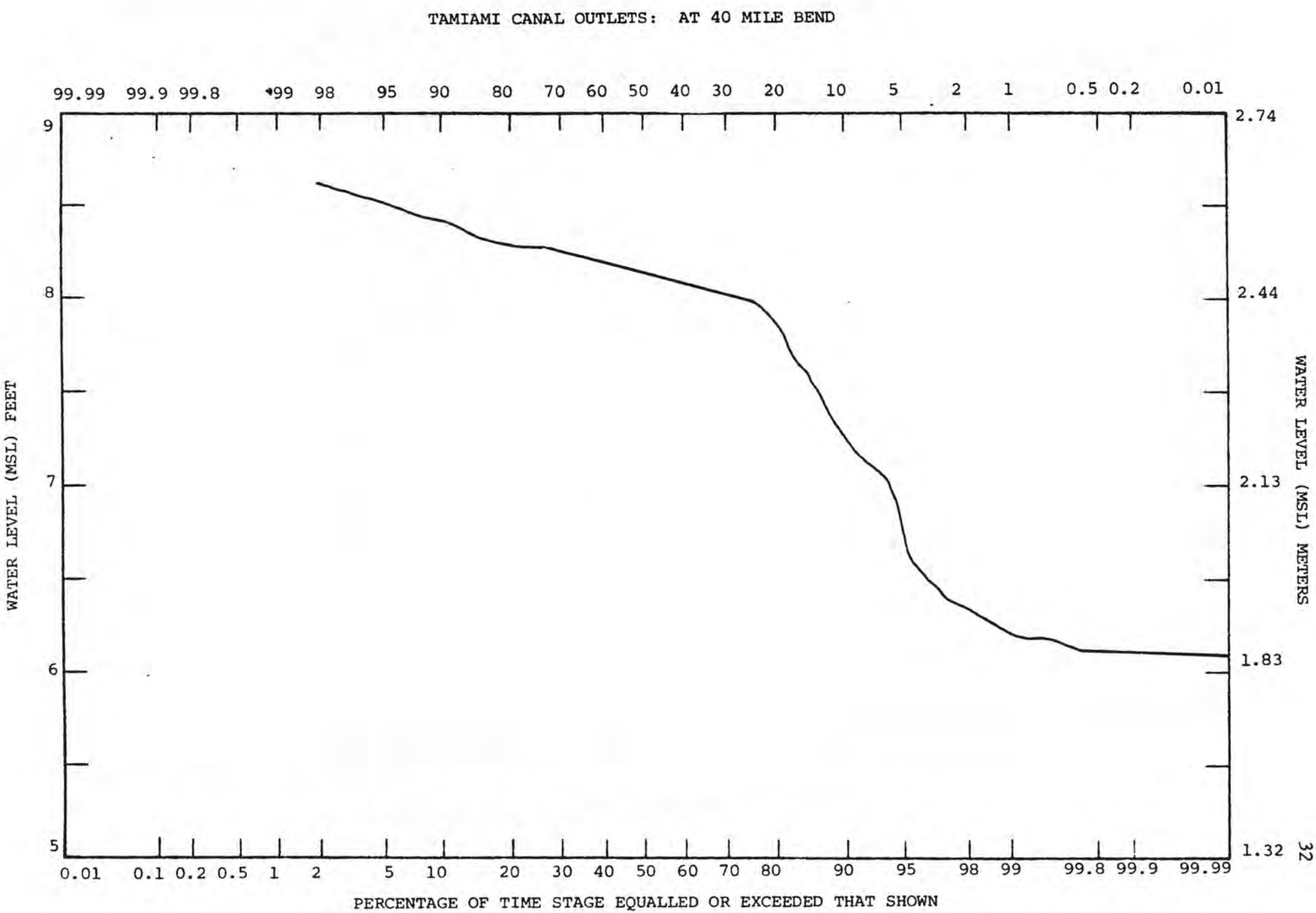


Figure 19: Stage Duration Curve for Tamiami Canal Outlets: At 40 Mile Bend, 1977

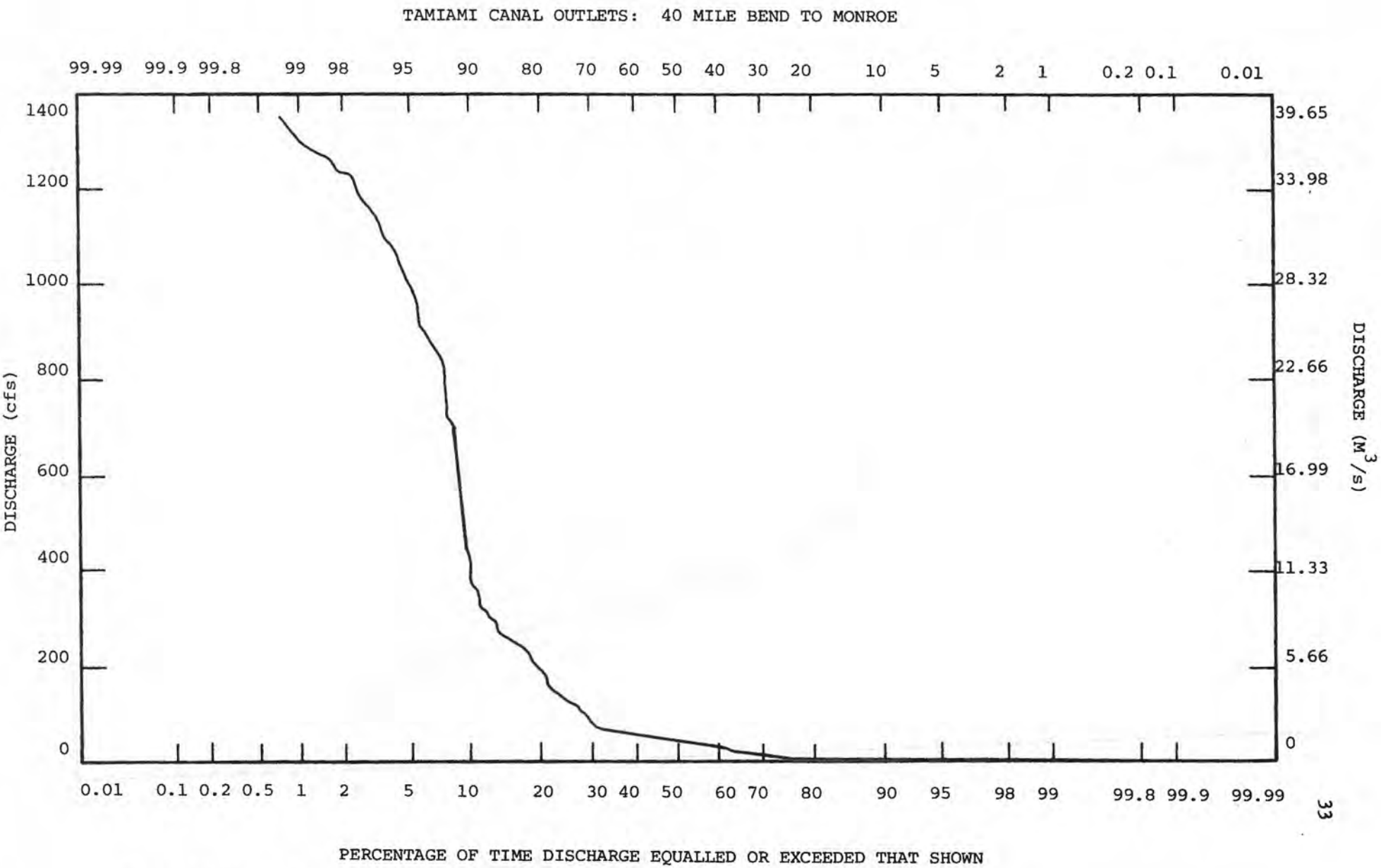


Figure 20: Stage Duration Curve for Tamiami Canal Outlets: 40 Mile Bend to Monroe, 1977

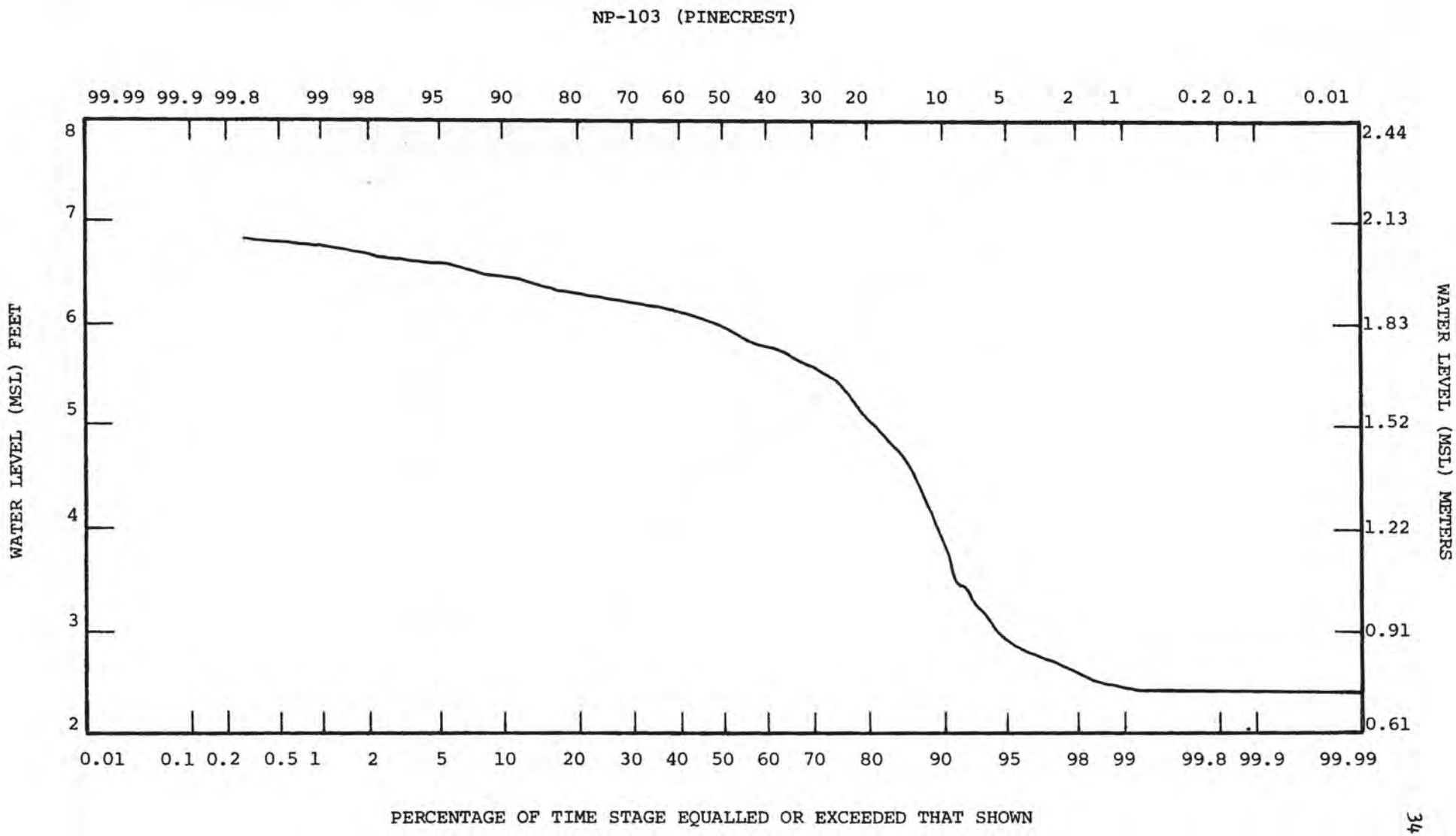


Figure 21: Stage Duration Curve at NP-103 (Pinecrest), 1977

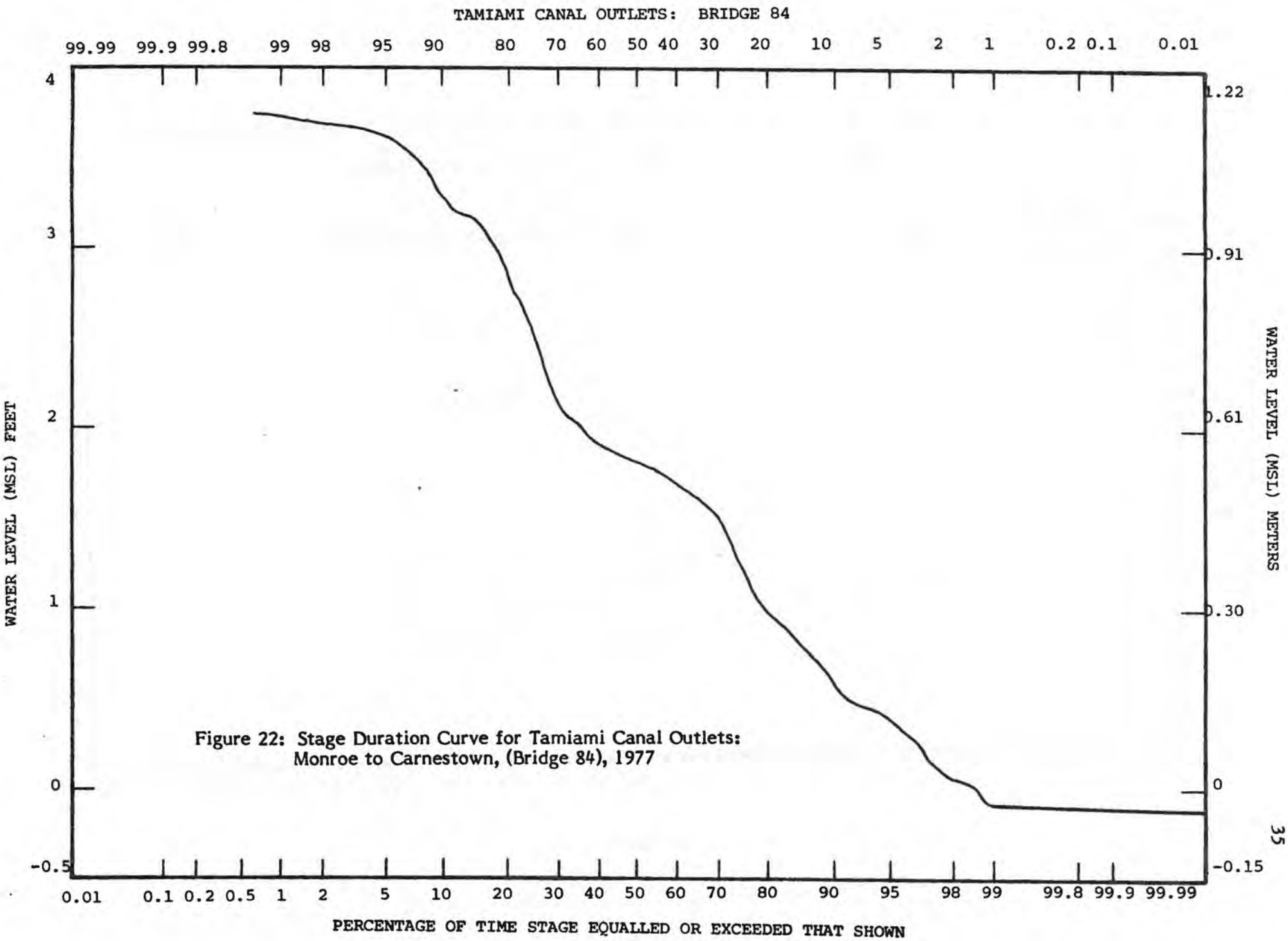


Figure 22: Stage Duration Curve for Tamiami Canal Outlets: Monroe to Carnestown, (Bridge 84), 1977

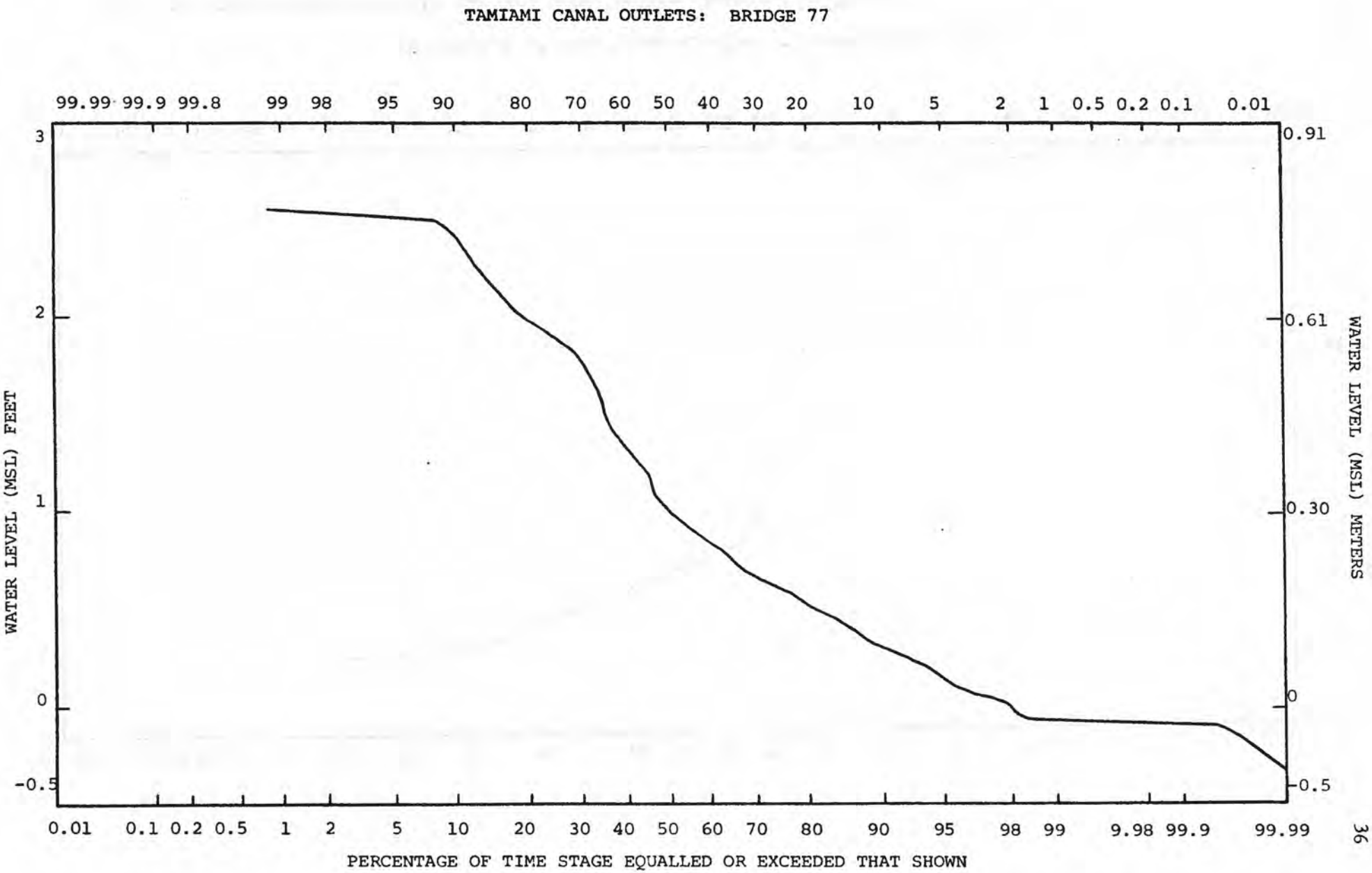


Figure 23: Stage Duration Curve for Tamiami Canal Outlets: Bridge 77

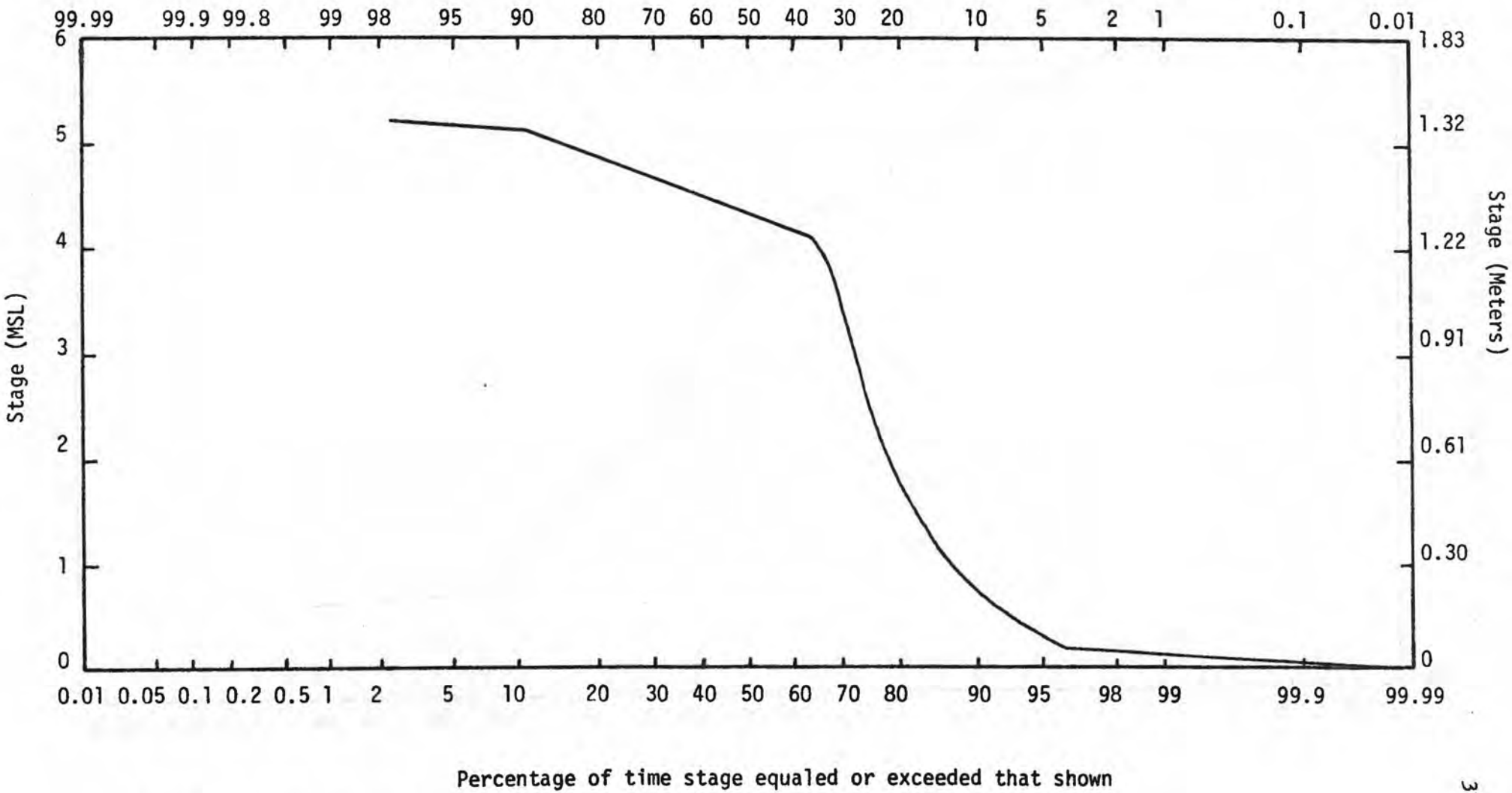


Figure 24: Stage Duration Curve for Tamiami Canal Outlets: Roberts Lake Slough

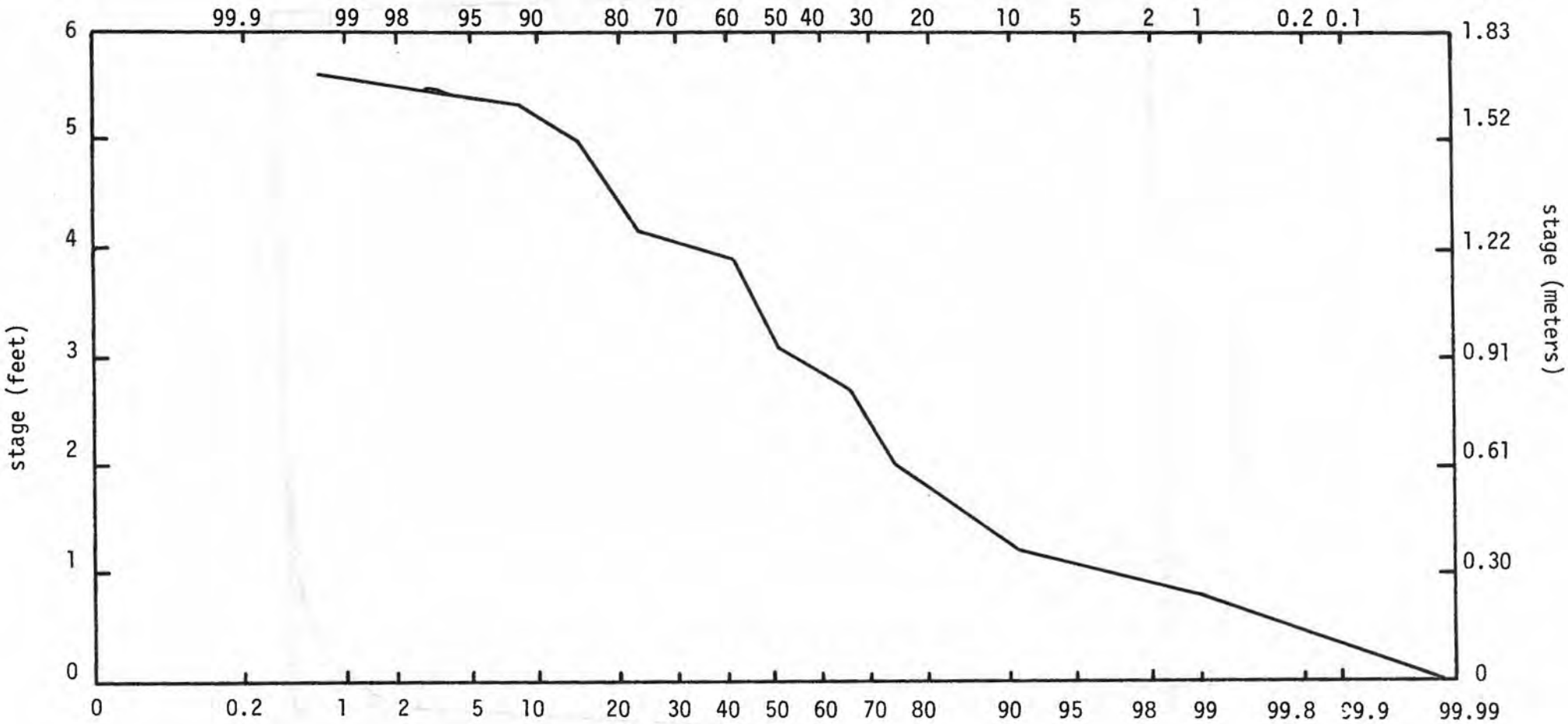


Figure 25: Stage Duration Curve for Tamiami Canal Outlets: Barron River

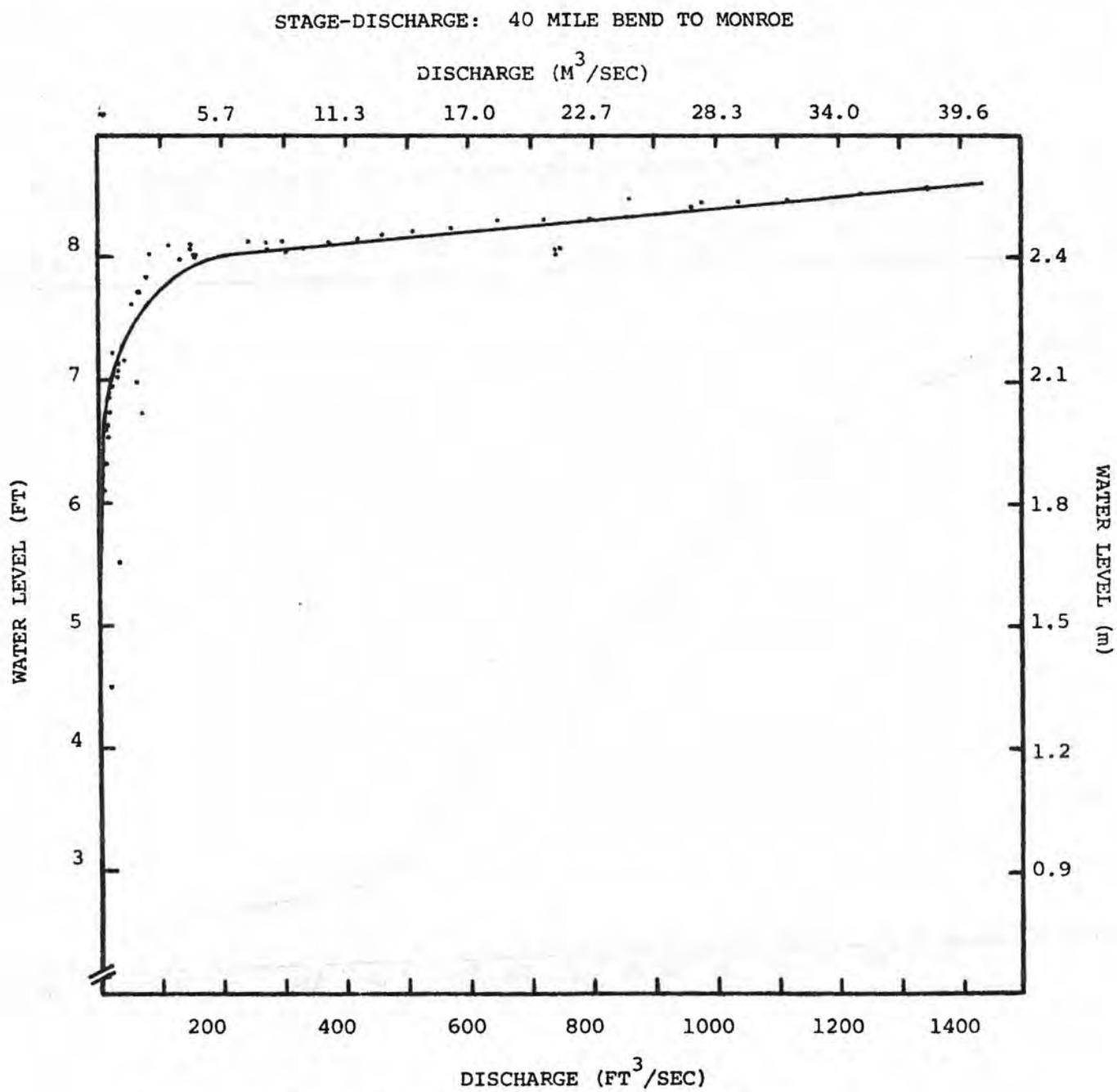
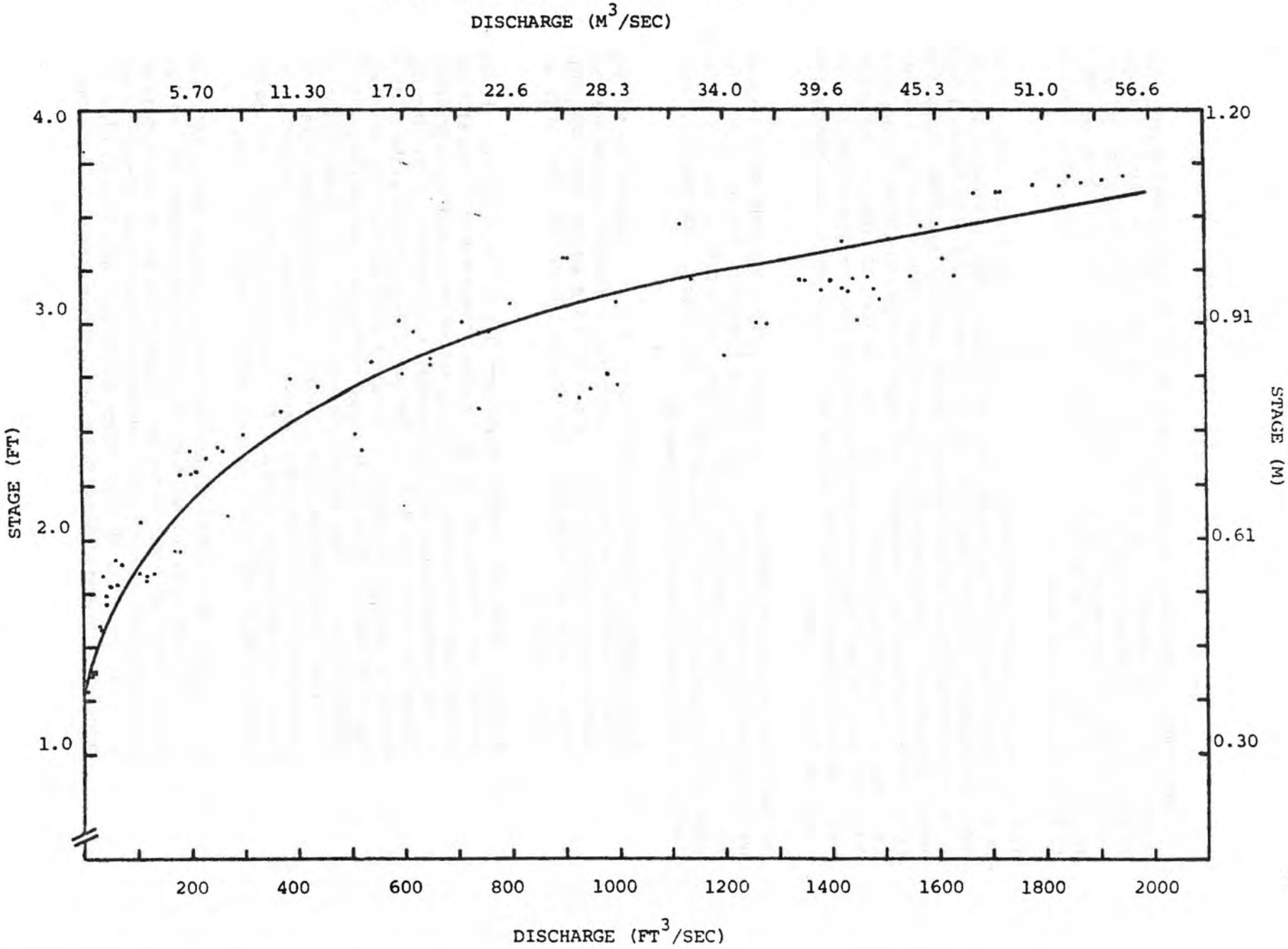


Figure 26: Stage Discharge Curve at Tamiami Canal Outlets: 40 Mile Bend to Monroe (Bridge 105), 1977

STAGE DISCHARGE: MONROE TO CARNESTOWN



VI. CONCLUSION

The hydrological parameters monitored within the Big Cypress Preserve provide an insight into water conditions for BICY wetlands and help to quantify surface freshwater contributions to EVER. It was found that approximately 350,246 acre-feet of freshwater was delivered via culverts under Tamiami Trail from the BICY to EVER in 1977. This represented 53 percent of total surface water flows to EVER for this period of time.

The hydrologic network which generated the data in this report consisted of, Stevens continuous recording gauges and ERTS telemetry hydrologic stations. Since the majority of BICY's monitoring stations were located along Tamiami Trail in the southernmost region of the Preserve, the network was expanded in 1978 to include permanent recording water level gauges in 10 areas of ecological significance within the BICY for continuous hydrologic monitoring. With this addition, the National Park Service will not only have an understanding of the water deliveries made by the Big Cypress Preserve to Everglades National Park but also have a greater understanding of the unique hydrologic balance established within other areas in the Preserve.

The hydrologic parameters reviewed in this report provide valuable information of hydrologic conditions which affect a large area of Everglades National Park. The annual reports to follow the 1977 Annual Review will provide a more extensive review of the hydrological condition with the preserve itself. The hydrologic data presented in this report indicated the following:

(1) Temperature: Temperature distribution in areas adjacent to the Big Cypress Preserve was essentially consistent with data found in previous years. The only deviation from this occurred in January when temperatures reported in Everglades City departed from the mean value by -8.0°F (-4.4°C).

(2) Rainfall: Since the rainfall characteristics of south Florida exhibits extreme distribution because of localized thunderstorms, two stations located near the boundaries of the preserve are considered significant in their representation of those events which occurred within the Big Cypress Preserve. The Tamiami Ranger Station, located on the eastern boundary, reported the greatest deviation from the norm by reporting only 80 percent of its normally expected seasonal rainfall during 1977. Primarily, this was due to six straight months the station reported lower than normal precipitation amounts. Conversely, Everglades City, located near the BICY western boundary, received 105 percent of its normal expected annual rainfall. The addition in 1978 of a rain gauge at Oasis in BICY will further expand the BICY rainfall data base.

(3) Water Level: Water level variations were considerable during 1977 due to the distributing of rainfall coupled with an unseasonably dry October and an unseasonably wet December. Water levels during the opening of the year through August fluctuated between mean levels to near record lows. By the close of 1977 water levels had been reestablished to normal conditions in response to the heavy rainfall events in December.

(4) Discharge: Due to the establishment of record low water levels in 1977, discharge rates were also below normal for the year. The discharge through the culverts between 40 Mile Bend to Monroe was approximately 92 cfs (4.21 m^3/s) lower than the mean for this section. The culverts between Monroe and Carnestown also reported unusually low discharges with values some 70 cfs (1.98 m^3/s) lower than normal.

This analysis has provided a greater perspective into the hydrologic events that occurred in the Big Cypress National Preserve throughout 1977. These data have provided valuable insight into the complex south Florida ecosystem which should enable a more sound resource management program to be formulated which will benefit the Preserve and enhance the experience for the visitor.

VII. LITERATURE CITED

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VIII. APPENDIX

HYDROLOGY STATION INDEX

Big Cypress National Preserve
Hydrologic Data Collected Continuously

Station #	USGS Designation	Location Lat.	Long.	Period of Record From	To	Parameters*
TCO: 40 Mile Bend to Monroe (Bridge 105)	02288900	N25°51'05"	W80°58'50"	11/39	Present	Q, W.L.
TCO: Monroe to Carnestown (Bridge 84)	02288800	N25°53'10"	W81°15'30"	8/60	Present	Q, W.L., RF
Tamiami Canal at Bridge 77	02288780	N25°53'55"	W81°21'25"	8/60	Present	W.L.
Tamiami Canal at 40 Mile Bend	02288990	N25°45'50"	W80°49'50"	12/39	Present	W.L.
Roberts Lake Slough near Monroe	02290950	N25°47'14"	W81°05'59"	1/73	Present	Q, W. L.
Barron River near Everglades	02291000	N25°57'28"	W81°21'19"	1/52	Present	Q, W.L.
NP-103 (Pinecrest)	03090202	N25°44'00"	W80°57'00"	10/70	Present	W.L.
C-495	255748081181801	N25°57'48"	W81°18'18"	1/71	Present	W.L.

*W.L. - Water Level

RF - Rainfall

Q - Discharge

TCO - Tamiami Canal Outlets

WATER LEVEL DATA

BIG CYPRESS NATIONAL PRESERVE HYDROLOGIC STATION AT 40 MILE BEND

1977

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	8.22	8.15	8.06	7.56	6.39	7.67	8.07	8.00	8.18	8.54	8.25	8.23
2	8.21	8.14	8.05	7.51	6.34	7.93	8.08	8.02	8.30	8.53	8.24	8.23
3	8.22	8.13	8.04	7.46	6.29	8.01	8.06	8.01	8.39	8.52	8.23	8.23
4	8.23	8.13	8.02	7.41	6.34	8.11	8.05	8.00	8.41	8.51	8.24	8.22
5	8.22	8.13	8.02	7.36	6.59	8.12	8.06	8.00	8.44	8.50	8.27	8.21
6	8.22	8.12	8.02	7.33	6.91	8.12	8.07	8.00	8.43	8.49	8.27	8.24
7	8.21	8.11	8.01	7.32	7.06	8.12	8.08	8.03	8.43	8.48	8.26	8.26
8	8.20	8.11	8.01	7.29	7.16	8.11	8.06	8.04	8.43	8.47	8.26	8.25
9	8.18	8.11	8.00	7.24	7.19	8.11	8.04	8.05	8.44	8.46	8.26	8.25
10	8.19	8.10	7.99	7.13	7.25	8.14	8.03	8.04	8.44	8.45	8.26	8.28
11	8.19	8.10	7.99	7.09	7.56	8.15	8.01	8.10	8.44	8.44	8.26	8.27
12	8.17	8.09	7.98	7.07	7.64	8.16	7.95	8.16	8.44	8.43	8.26	8.26
13	8.17	8.09	7.97	7.02	7.62	8.16	7.98	8.17	8.44	8.42	8.25	8.26
14	8.15	8.11	7.06	6.97	7.57	8.16	8.05	8.14	8.44	8.40	8.25	8.25
15	8.18	8.15	7.95	6.88	7.52	8.16	8.07	8.12	8.44	8.39	8.24	8.25
16	8.22	8.15	7.94	6.77	7.46	8.15	8.07	8.11	8.44	8.38	8.25	8.25
17	8.22	8.13	7.93	6.67	7.42	8.14	8.06	8.10	8.44	8.37	8.27	8.31
18	8.21	8.12	7.92	6.57	7.35	8.13	8.06	8.10	8.46	8.36	8.27	8.33
19	8.21	8.11	7.90	6.47	7.30	8.12	8.06	8.09	8.48	8.35	8.26	8.32
20	8.20	8.10	7.88	6.38	7.25	8.14	8.05	8.08	8.51	8.34	8.26	8.31
21	8.20	8.09	7.87	6.28	7.21	8.17	8.05	8.08	8.50	8.33	8.25	8.30
22	8.19	8.08	7.85	6.18	7.16	8.18	8.01	8.07	8.60	8.33	8.25	8.29
23	8.17	8.07	7.84	6.09	7.13	8.17	7.95	8.09	8.62	8.33	8.24	8.29
24	8.17	8.07	7.80	6.11	7.08	8.16	7.96	8.09	8.61	8.32	8.26	8.28
25	8.17	8.06	7.78	6.23	7.05	8.15	7.89	8.08	8.59	8.31	8.27	8.27
26	8.16	8.05	7.76	6.17	7.15	8.13	7.89	8.07	8.59	8.30	8.27	8.27
27	8.15	8.04	7.73	6.07	7.66	8.11	7.90	8.06	8.58	8.29	8.26	8.26
28	8.15	8.06	7.69	6.52	7.70	8.10	7.93	8.06	8.57	8.28	8.25	8.25
29	8.16	---	7.66	6.48	7.67	8.09	7.94	8.06	8.56	8.27	8.25	8.24
30	8.15	---	7.63	6.43	7.62	8.07	7.97	8.11	8.55	8.26	8.24	8.24
31	8.14	---	7.60	---	7.59	---	7.98	8.16	---	8.26	---	8.24
Mean	8.19	8.10	7.90	6.80	7.20	8.11	8.01	8.07	8.47	8.39	8.26	8.27
Max	8.23	8.15	8.06	7.56	7.70	8.18	8.08	8.17	8.62	8.54	8.27	8.33
Min	8.14	8.04	7.60	6.07	6.29	7.67	7.89	8.00	8.18	8.26	8.23	8.23

BIG CYPRESS NATIONAL PRESERVE HYDROLGIC STATION NP 103 NEAR COPELAND, FLORIDA

1977

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	5.84	5.76	5.48	3.87	2.48	5.15	6.86	6.05	6.74	6.51	6.15	6.00
2	5.81	5.75	5.43	3.79	2.44	5.16	6.65	6.00	6.64	6.49	6.12	5.98
3	5.93	5.74	5.39	3.73	2.40	5.74	6.51	5.95	6.58	6.47	6.08	5.95
4	5.92	5.72	5.35	3.65	2.37	5.67	6.49	5.91	6.60	6.45	6.06	5.93
5	5.89	5.70	5.33	3.57	2.37	5.64	6.48	5.86	6.78	6.44	6.12	5.91
6	5.87	5.67	5.29	3.49	2.37	5.58	6.47	5.83	6.73	6.42	6.15	6.12
7	5.85	5.65	5.26	3.45	4.81	5.54	6.50	5.83	6.70	6.40	6.19	6.11
8	5.84	5.62	5.21	3.41	4.85	5.47	6.47	5.84	6.96	6.38	6.22	6.07
9	5.81	5.62	5.17	3.34	4.85	5.45	6.44	5.83	6.84	6.37	6.23	6.08
10	5.80	5.59	5.14	3.28	5.42	5.59	6.43	5.79	6.73	6.35	6.24	8.09
11	5.80	5.57	5.12	3.24	5.70	5.57	6.39	6.23	6.71	6.34	6.23	6.07
12	5.77	5.53	5.08	3.21	5.69	5.55	6.35	6.46	6.68	6.32	6.22	6.04
13	5.75	5.51	5.05	3.17	5.60	5.56	6.30	6.38	6.66	6.30	6.18	6.01
14	5.71	5.81	5.00	3.13	5.49	5.55	6.27	6.30	6.65	6.28	6.16	6.00
15	5.93	5.83	4.98	3.08	5.40	5.52	6.24	6.30	6.64	6.27	6.12	5.99
16	5.97	5.83	4.90	3.01	5.32	5.51	6.26	6.29	6.62	6.25	6.10	5.97
17	5.97	5.80	4.85	2.97	5.24	5.47	6.42	6.30	6.65	6.23	6.09	6.25
18	5.94	5.76	4.81	2.92	5.14	5.51	6.37	6.30	6.64	6.22	6.06	6.24
19	5.93	5.74	4.74	2.87	5.07	6.07	6.35	6.30	6.63	6.21	6.04	6.22
20	5.91	5.71	4.68	2.81	5.00	6.01	6.35	6.33	6.62	6.14	6.01	6.21
21	5.89	5.67	4.63	2.76	4.88	6.52	6.33	6.31	6.60	6.24	5.97	6.20
22	5.88	5.63	4.55	2.72	4.78	6.43	6.30	6.25	6.60	6.27	6.11	6.19
23	5.86	5.58	4.49	2.68	4.68	6.32	6.27	6.21	6.60	6.35	6.08	6.19
24	5.85	5.57	4.40	2.73	4.57	6.33	6.40	6.20	6.61	6.34	6.20	6.18
25	5.82	5.54	4.33	2.74	4.47	6.33	6.35	6.15	6.50	6.32	6.17	6.19
26	5.79	5.49	4.28	2.71	4.84	6.32	6.27	6.09	6.59	6.30	6.14	6.19
27	5.78	5.45	4.22	2.67	4.93	6.31	6.23	6.05	6.58	6.29	6.11	6.18
28	5.77	5.48	4.15	2.60	4.93	6.27	6.16	6.15	6.56	6.27	6.07	6.16
29	5.82	---	4.07	2.55	4.87	6.25	6.14	6.12	6.54	6.26	6.05	6.14
30	5.81	---	4.01	2.51	4.74	6.59	6.08	6.27	6.52	6.22	6.04	6.13
31	5.78	---	3.94	---	4.75	---	6.07	6.27	---	6.19	---	6.10
Mean	5.85	5.65	4.62	3.09	4.53	5.83	6.36	6.13	6.65	---	6.12	6.10
Max	5.97	5.83	5.48	3.87	5.70	6.59	6.86	6.46	6.96	---	6.24	6.25
Min	5.71	5.45	3.94	2.51	2.37	5.15	6.07	5.79	6.50	---	5.97	5.91

BIG CYPRESS NATIONAL PRESERVE HYDROLOGIC STATION BRIDGE 84

1977

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1.89	1.78	1.28	.49	.34	.98	2.12	3.38	2.39	3.55	1.97	1.62
2	1.83	1.74	1.18	.58	.31	1.25	2.43	3.46	2.74	3.47	1.94	1.59
3	1.87	1.73	1.15	.67	.34	1.72	2.48	3.45	3.01	3.38	1.92	1.55
4	1.90	1.72	1.21	.73	.49	1.86	2.46	3.37	3.31	3.30	1.92	1.47
5	1.86	1.70	1.28	.90	.52	1.84	2.42	3.30	3.46	3.17	1.92	1.44
6	1.83	1.66	1.29	.77	.69	1.86	2.62	3.20	3.50	3.06	1.90	1.71
7	1.82	1.61	1.26	.33	.79	1.82	3.15	3.11	3.52	2.96	1.87	2.00
8	1.69	1.62	1.18	.08	.81	1.78	3.22	3.02	3.54	2.88	1.84	1.90
9	1.78	1.62	1.07	.07	.83	1.84	3.23	2.92	3.59	2.79	1.81	1.65
10	1.77	1.57	1.06	.11	.95	2.07	3.11	2.80	3.60	2.72	1.78	2.11
11	1.74	1.53	1.10	.02	1.28	2.03	3.07	2.76	3.63	2.65	1.75	2.05
12	1.70	1.50	1.08	-.12	1.20	1.96	3.01	2.84	3.66	2.58	1.67	1.97
13	1.66	1.50	1.06	-.09	1.01	1.89	2.84	2.95	3.68	2.52	1.61	1.92
14	1.64	1.62	1.05	.18	.82	1.84	2.71	3.04	3.67	2.45	1.57	1.91
15	1.79	1.81	1.03	.49	.88	1.82	2.65	3.11	3.66	2.37	1.55	1.91
16	2.05	1.80	.97	.61	.92	1.76	2.69	3.10	3.65	2.31	1.55	1.88
17	2.04	1.73	.94	.60	.79	1.72	2.66	3.07	3.64	2.26	1.55	1.92
18	1.99	1.66	.97	.56	.71	1.79	2.76	3.00	3.63	2.20	1.53	2.02
19	1.99	1.61	1.01	.55	.76	1.87	2.99	2.92	3.62	2.16	1.49	1.96
20	1.96	1.58	.99	.54	.81	1.81	3.16	2.82	3.61	2.11	1.44	1.89
21	1.73	1.51	.94	.47	.75	1.78	3.15	2.70	3.64	2.08	1.41	1.85
22	1.90	1.44	.92	.37	.69	1.76	3.16	2.58	3.67	2.07	1.46	1.79
23	1.88	1.39	.79	.38	.79	1.76	3.29	2.48	3.70	2.10	1.47	1.72
24	1.86	1.40	.60	.63	.93	1.78	3.21	2.41	3.73	2.08	1.69	1.68
25	1.85	1.37	.53	.72	.94	1.78	3.20	2.42	3.76	2.08	1.92	1.69
26	1.82	1.31	.50	.64	.93	1.77	3.19	2.37	3.75	2.09	1.85	1.78
27	1.80	1.30	.46	.41	.94	1.75	3.19	2.32	3.74	2.08	1.75	1.72
28	1.79	1.33	.43	.07	.95	1.76	3.21	2.31	3.73	2.06	1.67	1.64
29	1.79	---	.52	.11	.98	1.85	3.22	2.31	3.72	2.05	1.63	1.59
30	1.75	---	.54	.26	.96	1.95	3.32	2.30	3.70	2.03	1.64	---
31	1.74	---	.49	---	.95	---	3.45	2.38	---	2.00	---	---
Mean	1.83	1.58	.93	.40	.81	1.78	2.95	2.85	3.54	2.50	1.70	1.79
Max	2.05	1.81	1.29	.90	1.28	2.07	3.45	3.46	3.76	3.55	1.97	2.05
Min	1.64	1.30	.43	-.12	.31	.98	2.12	2.30	2.39	2.00	1.41	1.44

BIG CYPRESS NATIONAL PRESERVE HYDROLOGIC STATION TAMIAMI CANAL - BRIDGE 77

1977

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	.64	-.03	-.34	.59	.52	1.24	1.48	2.49	1.87	2.44	.74	.98
2	.32	-.09	-.09	.80	.42	1.48	1.75	2.42	2.06	2.39	1.07	.92
3	.95	.23	.39	.85	.57	1.92	1.75	2.37	2.31	2.29	1.27	.65
4	.71	.60	.84	.91	.64	1.99	1.77	2.33	2.37	2.19	1.31	.60
5	.68	.65	.91	1.21	.67	1.90	1.73	2.25	2.44	2.02	1.21	.93
6	.76	.34	.85	.52	.84	1.92	1.70	2.14	2.60	1.89	1.27	1.17
7	.94	.02	.83	-.15	.87	1.88	1.70	2.05	2.59	1.79	1.31	.35
8	.67	.02	.26	-.08	.85	1.84	1.67	1.99	2.55	1.78	1.33	.29
9	.78	.07	.20	.19	.91	1.83	1.66	1.95	2.51	1.84	1.35	.84
10	.97	.04	.59	.09	1.08	2.00	1.64	1.93	2.49	1.87	1.38	.78
11	.20	.14	.68	-.10	1.03	1.97	1.83	1.95	2.47	1.89	.88	.39
12	-.07	.28	.64	-.25	.57	1.89	1.98	2.02	2.46	1.89	.44	.60
13	.08	.53	.63	.18	.23	1.83	2.01	2.11	2.50	1.87	.72	.84
14	.63	.64	.61	.52	.45	1.77	2.01	2.16	2.51	1.72	.62	1.07
15	.97	.60	.60	.70	.84	1.74	2.01	2.16	2.51	1.64	.95	1.09
16	.88	.60	.48	.76	.81	1.70	2.04	2.15	2.50	1.62	.96	.91
17	.37	.07	.59	.72	.55	1.66	2.00	2.12	2.51	1.46	1.11	.97
18	.50	.32	.86	.66	.57	1.64	1.99	2.10	2.53	1.34	.86	.98
19	.40	.49	.88	.69	.81	1.57	2.09	2.07	2.53	1.38	.74	.57
20	.29	.69	.85	.62	.88	1.50	2.15	2.03	2.50	1.30	.80	.85
21	.40	.24	.75	.56	.77	1.43	2.19	1.98	2.47	1.26	.82	1.03
22	.16	.21	.77	.46	.75	1.37	2.20	1.95	2.50	1.18	.84	.56
23	.27	.43	.33	.58	.98	1.28	2.23	1.88	2.52	1.22	1.04	.30
24	.52	.71	-.05	.91	1.14	1.34	2.34	1.83	2.51	1.45	1.19	.50
25	.62	.31	.29	.74	1.04	1.34	2.50	1.87	2.49	1.53	1.28	.98
26	.18	.43	.25	.62	1.06	1.33	2.52	1.85	2.49	1.56	1.06	.96
27	.49	.49	.19	.16	1.12	1.33	2.52	1.79	2.50	1.58	.63	.54
28	.63	.34	.47	.05	1.20	1.39	2.48	1.80	2.53	1.48	.65	.44
29	.44	---	.60	.39	1.26	1.47	2.47	1.84	2.53	1.19	.69	.49
30	-.03	---	.44	.48	1.19	1.43	2.49	1.82	2.51	1.11	.81	---
31	.31	---	.40	---	1.20	---	2.53	1.86	---	.87	---	---
Mean	.51	.33	.51	.48	.83	1.63	2.05	2.04	2.46	1.65	.98	---
Max	.97	.71	.91	1.21	1.26	2.00	2.53	2.49	2.60	2.44	1.38	---
Min	-.07	-.09	-.34	-.25	.23	1.24	1.48	1.79	1.87	.87	.44	---

BIG CYPRESS NATIONAL PRESERVE HYDROLOGIC STATION 40-MILE BEND TO MONROE STATION

1977

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	7.21	7.03	6.73	4.90	3.67	5.08	7.67	8.13	7.90	8.41	7.58	7.70
2	7.17	6.99	6.66	4.85	3.63	5.27	8.03	8.15	8.06	8.37	7.55	7.68
3	7.20	6.97	6.59	4.80	3.60	5.61	8.07	8.16	8.25	8.34	7.60	7.66
4	7.21	6.96	6.55	4.75	3.59	6.05	8.08	8.15	8.28	8.30	7.82	7.64
5	7.15	6.93	6.51	4.68	3.60	6.07	8.07	8.13	8.31	8.27	7.88	7.62
6	7.12	6.88	6.47	4.60	3.58	6.01	8.07	8.11	8.40	8.23	7.90	7.67
7	7.10	6.84	6.44	4.56	3.57	5.99	8.05	8.09	8.46	8.20	7.91	7.75
8	7.07	6.89	6.39	4.51	3.55	5.94	8.03	8.08	8.46	8.17	7.92	7.74
9	7.04	6.90	6.35	4.46	3.54	5.94	8.01	8.05	8.45	8.14	7.92	7.74
10	7.03	6.85	6.32	4.40	3.61	6.21	7.99	8.02	8.44	8.10	7.91	7.84
11	7.01	6.81	6.29	4.35	5.41	6.32	7.96	8.00	8.43	8.07	7.90	7.83
12	6.97	6.78	6.25	4.31	6.28	6.44	7.63	8.05	8.44	8.04	7.88	7.80
13	6.94	6.76	6.21	4.28	6.21	6.76	7.97	8.09	8.47	8.02	7.86	7.78
14	6.92	6.82	6.15	4.25	6.10	6.75	8.09	8.06	8.45	7.98	7.84	7.77
15	7.02	7.02	6.10	4.20	6.03	6.72	8.04	8.03	8.43	7.94	7.82	7.76
16	7.35	7.01	6.04	4.16	6.05	6.69	8.05	7.98	8.41	7.91	7.81	7.74
17	7.35	6.93	5.98	4.11	5.96	6.60	8.06	7.95	8.38	7.88	7.81	7.79
18	7.30	6.88	5.92	4.07	5.87	6.59	8.06	7.94	8.36	7.84	7.80	7.86
19	7.33	6.83	5.85	4.02	5.77	6.68	8.04	7.91	8.34	7.82	7.79	7.86
20	7.28	6.80	5.78	3.98	5.68	6.97	8.05	7.87	8.33	7.79	7.77	7.84
21	7.24	6.74	5.70	3.93	5.58	7.19	8.03	7.83	8.33	7.76	7.75	7.82
22	7.20	6.69	5.62	3.89	5.48	7.29	8.00	7.79	8.44	7.76	7.75	7.80
23	7.17	6.67	5.54	3.85	5.38	7.28	7.99	7.76	8.50	7.77	7.74	7.78
24	7.15	6.65	5.45	3.88	5.29	7.25	8.01	7.74	8.50	7.75	7.75	7.77
25	7.13	6.61	5.37	3.90	5.21	7.22	8.06	7.70	8.49	7.73	7.78	7.75
26	7.09	6.57	5.31	3.85	5.18	7.19	8.06	7.66	8.54	7.72	7.78	7.75
27	7.07	6.54	5.24	3.80	5.29	7.35	8.05	7.63	8.52	7.69	7.75	7.72
28	7.04	6.62	5.17	3.76	5.35	7.50	8.04	7.60	8.50	7.67	7.73	7.70
29	7.05	---	5.09	3.73	5.29	7.51	8.05	7.62	8.48	7.64	7.71	7.69
30	7.02	---	5.02	3.70	5.20	7.50	8.11	7.71	8.44	7.62	7.71	---
31	7.00	---	4.96	---	5.12	---	8.10	7.86	---	7.60	---	---
Mean	7.13	6.82	5.94	4.22	4.96	6.60	8.02	7.93	8.39	7.95	7.79	---
Max	7.35	7.03	6.73	4.90	6.28	7.51	8.11	8.16	8.54	8.41	7.92	---
Min	6.92	6.54	4.96	3.70	3.54	5.08	7.63	7.60	7.90	7.60	7.55	---

BIG CYPRESS NATIONAL PRESERVE HYDROLOGIC STATION C-495

1977

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	4.14	4.03	3.47	2.73	2.25	3.43	5.00	6.38	6.20	6.17	4.22	3.59
2	4.14	4.03	3.47	2.71	2.16	3.50	5.06	6.30	6.33	6.14	4.17	3.55
3	4.31	4.01	3.43	2.67	2.15	3.75	5.12	6.28	6.40	6.10	4.13	3.51
4	4.31	3.97	3.41	2.65	2.20	4.01	5.19	6.26	6.40	6.06	4.10	3.46
5	4.30	3.97	3.39	2.63	2.25	4.40	5.26	6.26	6.42	6.00	4.09	3.43
6	4.23	3.95	3.38	2.59	2.33	4.77	5.33	6.24	6.42	5.93	4.05	3.94
7	4.18	3.90	3.38	2.57	2.41	4.98	5.38	6.22	6.43	5.86	4.00	3.95
8	4.14	3.89	3.32	2.54	2.48	5.08	5.41	6.19	6.43	5.79	3.95	3.94
9	4.08	3.89	3.27	2.51	2.55	5.15	5.41	6.19	6.42	5.72	3.92	4.08
10	4.08	3.88	3.26	2.49	2.65	5.20	5.40	6.19	6.41	5.65	3.88	4.13
11	4.00	3.84	3.26	2.45	2.77	5.45	5.50	6.16	6.39	5.58	3.84	4.11
12	3.95	3.81	3.26	2.43	2.89	5.50	5.60	6.25	6.39	5.51	3.77	4.04
13	3.91	3.78	3.24	2.40	3.00	5.48	5.69	6.30	6.39	5.44	3.72	3.98
14	3.89	3.91	3.22	2.66	3.10	5.40	5.78	6.30	6.39	5.32	3.68	3.98
15	4.40	3.97	3.19	2.82	3.20	5.35	5.80	6.30	6.38	5.22	3.65	3.98
16	4.52	3.97	3.16	2.82	3.24	5.26	5.77	6.29	6.36	5.13	3.61	3.93
17	4.52	3.95	3.13	2.82	3.29	5.22	5.75	6.25	6.33	5.04	3.58	4.10
18	4.48	3.86	3.11	2.78	3.32	5.17	5.82	6.21	6.38	4.94	3.55	4.12
19	4.43	3.79	3.09	2.72	3.35	5.01	5.89	6.16	6.36	4.87	3.52	4.08
20	4.36	3.76	3.05	2.68	3.34	5.02	5.96	6.12	6.33	4.80	3.49	3.99
21	4.30	3.72	3.03	2.62	3.31	5.10	6.04	6.06	6.32	4.73	3.46	3.92
22	4.24	3.67	3.00	2.57	3.28	5.20	6.12	6.03	6.32	4.68	3.49	3.87
23	4.19	3.63	2.96	2.58	3.26	5.30	6.19	5.96	6.31	4.68	3.46	3.81
24	4.16	3.61	2.94	2.59	3.25	5.40	6.28	5.95	6.29	4.64	3.86	3.78
25	4.13	3.60	2.91	2.63	3.24	5.41	6.35	5.95	6.28	4.60	3.88	3.90
26	4.11	3.56	2.89	2.65	3.25	5.38	6.40	5.92	6.28	4.56	3.85	4.13
27	4.07	3.53	2.86	2.55	3.26	5.26	6.46	5.85	6.28	4.52	3.76	4.11
28	4.04	3.51	2.83	2.47	3.25	5.20	6.46	5.82	6.27	4.45	3.68	4.04
29	4.03	---	2.81	2.41	3.28	5.14	6.43	5.81	6.24	4.38	3.63	3.98
30	4.03	---	2.78	2.35	3.31	5.05	6.40	6.04	6.21	4.32	3.62	3.94
31	4.02	---	2.76	---	3.39	---	6.39	6.12	---	4.23	---	3.92
Mean	4.18	3.82	3.14	2.60	2.94	4.99	5.79	6.14	6.35	5.20	3.79	3.92
Max	4.52	4.03	3.47	2.82	3.39	5.50	6.46	6.35	6.43	6.17	4.22	4.13
Min	3.89	3.51	2.76	2.35	2.15	3.43	5.00	5.81	6.20	4.23	3.46	3.43

BIG CYPRESS NATIONAL PRESERVE HYDROLOGIC STATION ROBERTS LAKE STRAND

1977

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	4.33	4.35	3.79	2.19	.16	.10	3.72	4.94	4.88	5.20	4.68	4.41
2	4.31	4.34	3.90	2.10	.13	.07	4.03	4.95	4.93	5.19	4.68	4.39
3	4.31	4.33	4.00	1.99	.11	.14	4.15	4.99	4.96	5.18	4.66	4.38
4	4.29	4.29	3.97	1.90	.07	.23	4.27	5.00	5.00	5.18	4.63	4.35
5	4.27	4.26	3.93	1.81	.09	.28	4.32	4.74	5.04	5.17	4.62	4.33
6	4.27	4.18	3.89	1.73	.07	.39	4.34	4.71	5.09	5.15	4.62	4.40
7	4.26	4.15	3.86	1.62	.06	.49	4.38	4.67	5.14	5.15	4.61	4.51
8	4.24	4.19	3.80	1.59	.06	.54	4.41	4.62	5.17	5.13	4.57	4.54
9	4.23	4.20	3.77	1.51	.05	.57	4.41	4.61	5.20	5.11	4.57	4.54
10	4.22	4.17	3.73	1.43	.22	.87	4.43	4.63	5.25	5.09	4.56	4.60
11	4.21	4.14	3.70	1.33	1.30	1.12	4.44	4.75	5.25	5.06	4.53	4.63
12	4.22	4.11	3.67	1.26	1.79	1.16	4.48	4.86	5.24	5.03	4.50	4.62
13	4.23	4.08	3.54	1.19	1.79	1.19	4.49	4.88	5.20	5.00	4.47	4.62
14	4.20	4.14	3.53	1.11	1.68	1.24	4.50	4.81	5.19	4.97	4.44	4.62
15	4.24	4.32	3.50	1.03	1.61	1.27	4.56	4.71	5.18	4.93	4.41	4.59
16	4.44	4.33	3.46	.95	1.51	1.29	4.67	4.70	5.16	4.90	4.37	4.57
17	4.44	4.28	3.41	.89	1.42	1.29	4.85	4.72	5.14	4.88	4.35	4.59
18	4.44	4.22	3.34	.82	1.33	1.41	5.09	4.73	5.14	4.86	4.32	4.60
19	4.45	4.17	3.26	.72	1.25	1.65	5.13	4.74	5.13	4.84	4.28	4.62
20	4.44	4.13	3.21	.67	1.16	1.84	5.10	4.76	5.12	4.83	4.27	4.61
21	4.45	4.07	3.16	.60	1.05	2.08	5.11	4.79	5.12	4.81	4.23	4.61
22	4.45	4.02	3.04	.55	.96	2.88	5.07	4.80	5.13	4.79	4.33	4.61
23	4.44	4.01	2.94	.46	.08	2.98	5.04	4.79	5.13	4.79	4.35	4.61
24	4.43	3.97	2.85	.43	.78	2.95	5.07	4.77	5.13	4.79	4.40	4.60
25	4.41	3.92	2.79	.45	.69	2.84	5.05	4.77	5.14	4.78	4.46	4.59
26	4.38	3.87	2.71	.41	.62	2.70	5.04	4.75	5.14	4.76	4.46	4.59
27	4.37	3.86	2.63	.36	.53	2.59	5.02	4.72	5.17	4.74	4.45	4.58
28	4.36	3.82	2.57	.30	.44	2.48	4.97	4.71	5.17	4.72	4.43	4.56
29	4.41	---	2.49	.25	.35	2.70	4.95	4.73	5.18	4.71	4.42	4.56
30	4.39	---	2.38	.22	.26	3.35	4.91	4.79	5.20	4.71	4.41	4.55
31	4.35	---	2.29	---	.18	---	4.91	4.84	---	4.70	---	4.55
Mean	4.34	4.14	3.33	1.06	.73	1.49	4.67	4.77	5.13	4.94	4.47	4.55
Max	4.45	4.35	4.00	2.19	1.79	3.35	5.13	5.00	5.25	5.20	4.68	4.63
Min	4.20	3.82	2.29	.22	.05	.07	3.72	4.61	4.88	4.70	4.23	4.33

HYDROLOGIC STATION PERIOD OF RECORD

MAXIMUMS, MINIMUMS, MEANS

AND YEAR

TAMIAMI CANAL OUTLETS, MONROE TO CARNESTOWN
(02288800)

Month	Mean	Max.	Year	Min.	Year
Jan.	1.48	4.56	1963	-0.05	1965
Feb.	1.63	5.35	1963	0.09	1965
Mar.	1.54	4.43	1963	-0.03	1965
Apr.	1.22	4.38	1963	-0.12	1977
May	1.34	4.52	1963	0.19	1971
Jun.	2.27	5.00	1969	0.47	1965
Jul.	2.81	5.24	1964	1.11	1965
Aug.	2.98	5.30	1964	1.60	1972
Sept.	3.28	6.07	1963	1.85	1965
Oct.	3.01	6.16	1962	1.75	1964
Nov.	2.46	5.14	1962	1.41	1977
Dec.	2.08	4.74	1962	0.71	1964

Period of Record: Aug 1960 to Present

TAMIAMI CANAL AT BRIDGE 77, NEAR CARNESTOWN
(02288780)

Jan.	0.88	1.75	1968	-0.60	1976
Feb.	0.81	1.69	1970	-0.62	1976
Mar.	0.98	2.66	1970	-0.38	1976
Apr.	0.90	2.22	1970	-0.25	1977
May	1.01	1.73	1970	0.21	1970
Jun.	1.58	3.04	1969	0.41	1971
Jul.	1.80	2.66	1970	0.78	1971
Aug.	2.05	2.58	1973	1.11	1971
Sept.	2.23	2.96	1973	1.70	1969
Oct.	2.04	2.85	1969	0.87	1977
Nov.	1.63	2.42	1971	0.44	1977
Dec.	1.11	1.93	1969	-0.42	1972

Period of Record: August 1960 to Present

TAMIAMI CANAL OUTLETS, 40 MILE BEND TO MONROE
(02288900)

Month	Mean	Max.	Year	Min.	Year
Jan.	6.99	8.21	1970	5.58	1971
Feb.	6.60	8.09	1970	4.58	1975
Mar.	6.14	8.52	1970	3.67	1975
Apr.	5.58	8.41	1970	2.79	1975
May	5.95	8.55	1968	2.65	1974
Jun.	7.57	9.18	1969	4.24	1965
Jul.	8.20	9.12	1966	6.75	1965
Aug.	8.24	8.77	1966	7.75	1972,1967
Sept.	8.20	8.71	1966	7.45	1974
Oct.	8.08	8.90	1969	6.67	1974
Nov.	7.64	8.90	1969	5.40	1974
Dec.	7.36	8.50	1969	6.10	1970

Period of Record: 1960 to Present

TAMIAMI CANAL AT 40 MILE BEND, NEAR MIAMI, FLORIDA
(02288990)

Jan.	8.18	8.84	1970	7.84	1974
Feb.	8.00	8.77	1970	7.24	1974
Mar.	7.56	8.84	1970	6.12	1974
Apr.	6.94	8.81	1970	5.25	1974
May	7.04	8.63	1969	5.07	1974
Jun.	7.91	9.17	1969	5.62	1973
Jul.	8.38	9.08	1969	7.42	1971
Aug.	8.47	9.05	1969	8.00	1977
Sept.	8.44	9.06	1969	7.09	1971
Oct.	8.53	9.22	1969	8.08	1963
Nov.	8.42	9.21	1969	7.90	1963
Dec.	8.30	9.05	1969	7.71	1963

Period of Record: 1939 to Present

ROBERTS LAKE SLOUGH
(02290950)

Month	Mean	Max.	Year	Min.	Year
Jan.	4.02	4.82	1978	2.52	1975
Feb.	3.57	4.84	1978	1.40	1975
Mar.	2.95	5.03	1978	0.02	1975
Apr.	1.68	4.76	1978	-0.73	1975
May	1.14	4.35	1976	-1.06	1975
Jun.	2.84	5.22	1976	-0.04	1974
Jul.	4.79	5.21	1976	2.89	1973
Aug.	5.01	5.30	1976	4.61	1977
Sept.	5.03	5.27	1973	4.62	1974
Oct.	4.87	5.20	1975, 76, 77	4.11	1974
Nov.	4.37	5.00	1975	3.04	1974
Dec.	4.18	4.63	1977	3.85	1974

BARRON RIVER
(02291000)

Jan.	2.75	4.26	1970	1.44	1976
Feb.	2.61	4.66	1963	1.26	1976
Mar.	2.20	5.61	1970	0.91	1976
Apr.	1.58	5.15	1970	0.71	1976
May	1.39	4.25	1970	0.52	1967
Jun.	2.95	5.83	1969	0.56	1967
Jul.	4.17	5.82	1968	1.51	1971
Aug.	4.81	5.78	1973	2.07	1967
Sept.	4.95	5.88	1971	3.55	1967
Oct.	4.60	5.91	1969	3.23	1972
Nov.	3.83	5.11	1971	2.01	1977
Dec.	3.11	4.38	1969	1.76	1975

C-495 - COLLIER COUNTY
(255748081181801)

Month	Mean	Max.	Year	Min.	Year
Jan.	3.68	4.58	1973	2.59	1975
Feb.	3.34	5.05	1978	2.25	1975
Mar.	3.15	5.62	1978	1.45	1975
Apr.	2.49	4.55	1978	1.05	1975
May	2.91	5.25	1976	1.09	1974
Jun.	4.41	6.28	1976	1.04	1974
Jul.	5.93	6.46	1977, 1975	4.80	1975
Aug.	6.20	6.50	1976	5.81	1977
Sept.	6.15	6.46	1975	5.71	1976
Oct.	5.46	6.33	1973	3.66	1974
Nov.	4.31	5.70	1973	2.89	1974
Dec.	3.91	5.00	1973	3.11	1975

BIG CYPRESS NATIONAL PRESERVE DISCHARGE DATA MONROE TO CARNESTOWN

1977

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	70	46	8.1	000	000	.01	269	1510	202	1390	51	35
2	62	43	4.9	000	000	1.6	444	1600	384	1210	45	32
3	67	42	4.0	000	000	18	503	1570	589	1050	42	27
4	71	43	4.8	000	000	29	522	1420	907	906	39	20
5	64	41	6.0	000	000	32	521	1280	1120	739	38	17
6	60	38	5.4	000	000	39	740	1140	1230	606	34	46
7	58	34	4.4	000	000	39	1380	1000	1310	511	31	77
8	54	36	2.5	000	000	40	1550	889	1400	427	26	60
9	51	37	.87	000	000	56	1630	760	1540	354	23	52
10	50	33	.61	000	000	104	1490	652	1600	294	20	94
11	45	30	.78	000	000	106	1480	601	1720	244	19	79
12	41	28	.39	000	000	101	1450	646	1850	204	16	64
13	37	27	.13	000	000	95	1200	737	1950	182	13	60
14	34	39	.03	000	000	96	1000	801	1910	156	13	60
15	53	62	0	000	000	101	926	861	1870	138	13	62
16	92	45	0	000	000	100	944	835	1830	121	14	60
17	89	50	26	000	000	92	887	788	1780	108	15	70
18	79	41	14	000	000	110	979	709	1740	96	15	92
19	78	35	7.8	000	000	129	1260	623	1710	89	13	82
20	70	32	4.4	000	000	117	1480	535	1670	80	12	72
21	154	26	1.0	000	000	109	1430	443	1710	74	11	67
22	144	20	0	000	000	107	1420	365	1720	73	14	61
23	136	17	0	000	000	107	1610	298	1760	79	16	53
24	131	17	0	000	000	113	1440	264	1800	76	37	50
25	129	16	0	000	000	114	1400	257	1830	76	66	54
26	122	12	0	000	000	113	1350	231	1800	78	58	68
27	116	11	0	000	000	108	1340	207	1760	78	47	63
28	45	11	0	000	000	114	1340	196	1720	75	41	52
29	44	---	0	000	000	140	1330	192	1690	69	39	49
30	41	---	0	000	000	181	1470	181	1640	64	38	---
31	41	---	0	000	000	---	1640	204	---	57	---	---
Total	2326	912	96.11	000	000	2611.61	36425	21795	45742	9706	859	---
Mean	75.1	32.6	3.10	000	000	87.1	1175	703	1525	313	28.6	---
Max	154	62	26	000	000	181	1640	1600	1950	1390	66	---
Min	34	11	0	000	000	.01	269	181	202	57	11	---
Ac-Ft	4620	1810	191	000	000	5180	72250	43230	90730	19250	1700	---

BIG CYPRESS NATIONAL PRESERVE DISCHARGE DATA 40 MILE BEND TO MONROE

1977

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	43	24	19	000	000	1.0	46	298	89	1000	50	37
2	40	23	17	000	000	2.1	85	310	158	882	49	36
3	42	22	16	000	000	5.7	102	320	307	799	54	35
4	42	21	15	000	000	15	110	299	368	723	81	34
5	39	20	14	000	000	16	117	278	448	650	98	33
6	37	18	14	000	000	16	125	247	651	572	103	36
7	35	17	13	000	000	16	136	234	827	516	110	41
8	34	18	12	000	000	15	141	214	866	467	114	40
9	32	18	11	000	000	16	151	187	917	424	120	40
10	32	16	11	000	000	26	154	166	981	373	120	48
11	30	15	10	000	.20	32	160	154	1040	336	113	46
12	29	14	9.8	000	1.1	42	149	184	1100	306	101	45
13	27	14	9.0	000	1.0	71	204	202	1250	256	93	44
14	26	16	8.2	000	.92	76	285	184	1190	208	85	44
15	30	23	7.0	000	.92	77	246	154	1120	177	76	43
16	49	23	6.0	000	1.2	78	254	132	1078	146	71	43
17	47	21	5.2	000	1.1	55	262	118	1020	122	68	47
18	43	20	4.6	000	1.1	45	255	115	967	109	64	53
19	44	19	3.8	000	.95	45	245	105	890	101	61	53
20	41	18	3.2	000	.88	63	247	98	859	91	57	52
21	38	17	2.5	000	.78	73	225	88	866	82	53	52
22	35	16	2.1	000	.69	71	205	79	1120	78	51	51
23	33	15	1.5	000	.62	59	192	74	1250	78	48	49
24	32	16	1.1	000	.56	47	214	69	1240	71	48	49
25	31	15	.92	000	.49	38	250	65	1240	67	48	48
26	29	14	.69	000	.59	31	248	59	1350	63	46	49
27	27	13	.48	000	1.2	35	240	57	1290	60	43	47
28	26	16	.30	000	1.5	36	233	54	1230	56	40	46
29	26	---	.15	000	1.4	31	237	55	1170	52	38	46
30	24	---	.01	000	1.2	31	286	64	1090	51	37	---
31	23	---	0	---	1.0	---	273	83	---	51	---	---
Total	1066	502	218.54	000	19.40	1164.8	6077	4746	27964	8967	2140	---
Mean	34.4	17.9	7.05	000	.63	38.8	196	153	932	289	71.3	
Max	49	24	19	000	1.5	78	286	320	1350	1000	120	---
Min	23	13	0	000	0	1.0	46	54	89	51	37	---
Ac-Ft	2110	996	433	000	38	2310	12050	9410	55470	17790	4240	---

BIG CYPRESS NATIONAL PRESERVE DISCHARGE DATA ROBERTS LAKE STRAND

1977

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	.00	.00	.00	.00	.00	.00	.00	163	129	424	18	.00
2	.00	.00	.00	.00	.00	.00	.00	168	156	422	18	.00
3	.00	.00	.00	.00	.00	.00	.00	197	174	397	17	.00
4	.00	.00	.00	.00	.00	.00	.00	201	203	359	17	.00
5	.00	.00	.00	.00	.00	.00	.00	65	229	357	15	.00
6	.00	.00	.00	.00	.00	.00	.00	55	262	345	11	.00
7	.00	.00	.00	.00	.00	.00	.05	42	306	330	8.3	.00
8	.00	.00	.00	.00	.00	.00	.20	27	333	324	6.7	.00
9	.00	.00	.00	.00	.00	.00	.30	22	363	314	1.8	.00
10	.00	.00	.00	.00	.00	.00	.60	28	426	291	1.1	.00
11	.00	.00	.00	.00	.00	.00	.80	72	439	270	.80	.00
12	.00	.00	.00	.00	.00	.00	1.5	119	422	242	.30	.00
13	.00	.00	.00	.00	.00	.00	2.5	131	372	216	.50	.00
14	.00	.00	.00	.00	.00	.00	3.2	95	356	194	.60	.00
15	.01	.00	.00	.00	.00	.00	13	53	342	172	.50	.00
16	.90	.00	.00	.00	.00	.00	42	52	331	152	.05	.00
17	.90	.00	.00	.00	.00	.00	115	57	305	133	.00	.00
18	.90	.00	.00	.00	.00	.00	266	63	309	118	.00	.00
19	1.0	.00	.00	.00	.00	.00	296	64	302	101	.00	.00
20	.90	.00	.00	.00	.00	.00	273	75	285	97	.00	.00
21	1.1	.00	.00	.00	.00	.00	284	87	288	91	.02	.00
22	.90	.00	.00	.00	.00	.00	250	89	299	80	.20	.00
23	.90	.00	.00	.00	.00	.00	229	88	300	74	.06	.00
24	.60	.00	.00	.00	.00	.00	246	78	301	67	.00	.00
25	.30	.00	.00	.00	.00	.00	235	76	305	57	.00	.00
26	.00	.00	.00	.00	.00	.00	230	71	310	50	.00	.00
27	.00	.00	.00	.00	.00	.00	212	58	332	44	.00	.00
28	.00	.00	.00	.00	.00	.00	184	56	339	34	.00	.00
29	.30	---	.00	.00	.00	.00	170	63	350	34	.00	.00
30	.20	---	.00	.00	.00	.00	147	85	364	29	.00	.00
31	.00	---	.00	---	.00	---	146	111	---	22	---	.00
Total	8.91	.00	.00	.00	.00	.00	3347.15	2611	9232	5840	16.93	.00
Mean	.29	.00	.00	.00	.00	.00	108	84.2	308	188	3.90	.00
Max	1.1	.00	.00	.00	.00	.00	296	201	439	424	18	.00
Min	.00	.00	.00	.00	.00	.00	.00	22	129	22	.00	.00
Ac-FT	18.	.00	.00	.00	.00	.00	6640	5180	18310	11580	232	.00

DISCHARGE BY CULVERT

United States Department of the Interior
Tamiami Canal Outlets: 40 Mile Bend to Monroe
Q for 2 Week Interval at Each Culvert

Bdg	Miles from 40 Mi Bend	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
28	0	1.53	0.29	0.45	0	0.00	1.25	0.29	-	1.29	0.00	0.00	1.25
		0.90	0.38	0.00	0	0.16	0.00	0.44	-	8.68	2.43	2.02	1.08
27	0.55	3.56	1.72	2.11	0	0.00	4.96	1.59	-	6.22	0.00	0.00	3.23
		2.68	1.59	0.00	0	0.98	1.08	0.58	-	10.93	5.18	3.8	3.93
26	1.05	5.35	4.67	2.19	0	0.00	8.76	0.00	-	6.71	0	5.54	4.58
		5.86	4.22	0.00	0	0.00	4.25	0.00	-	24.62	11.20	4.12	8.25
25	1.30	5.19	0.87	1.90	0	0.00	13.72	0.00	-	8.28	0	8.45	6.45
		1.33	1.12	0.00	0	0.00	4.46	0.00	-	23.86	11.86	8.68	8.15
24	1.75	3.87	2.31	0.51	0	0.00	13.76	0.00	-	9.59	0.00	12.69	7.14
		2.39	2.20	0.00	0	0.00	11.62	0.00	-	43.20	7.59	5.22	8.33
23	2.65	4.90	4.56	1.03	0	0.00	15.84	2.84	-	10.05	0.00	11.67	9.10
		6.89	3.56	0.00	0	0.00	4.31	1.31	-	42.17	5.81	5.67	6.27
22	3.65	0.00	0.00	0.00	0	0.00	7.82	0.00	-	4.02	0.00	8.74	5.08
		0.00	0.00	0.00	0	0.00	0.90	0.00	-	64.31	6.78	6.28	4.85
117	4.70	0.00	0.00	0.00	0	0.00	0.00	0.00	-	0.00	0.00	1.85	0.00
		0.00	0.00	0.00	0	0.00	0.00	0.00	-	14.81	0.00	0.00	0.65
116	5.60	0.00	0.00	0.00	0	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0	0.00	0.00	0.00	-	.026	0.00	0.00	0.00
115	5.95	0.00	0.00	0.00	0	0.00	0.00	0.00	-	0.00	0.00	0.41	0.00
		0.00	0.00	0.00	0	0.00	0.00	0.00	-	76.86	0.00	0.00	0.00
114	6.65	0.00	0.00	0.00	0	0.00	0.00	0.00	-	0.00	0.00	0.56	0.00
		0.00	0.00	0.00	0	0.00	0.00	0.00	-	0.91	0.00	0.00	0.00
113	7.45	0.00	0.00	0.00	0	0.00	0.00	0.00	-	0.00	0.00	0.70	0.00
		0.00	0.00	0.00	0	0.00	0.00	0.00	-	10.89	0.00	0.00	0.00
112	7.85	0.00	0.00	0.00	0	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0	0.00	0.00	0.00	-	21.34	0.00	0.00	0.00
111	8.50	0.00	0.00	0.00	0	0.00	0.00	0.00	-	0.00	0.00	5.46	0.00
		0.00	0.00	0.00	0	0.00	0.00	0.00	-	24.47	0.00	0.00	0.00
110	8.85	0.00	0.00	0.00	0	0.00	0.00	0.00	-	0.13	0.00	6.26	0.00
		0.00	0.00	0.00	0	0.00	0.00	0.00	-	32.27	0.00	0.00	0.00
109	9.45	0.00	0.00	0.00	0	0.00	0.00	0.00	-	0.13	0.00	18.44	0.00
		0.00	0.00	0.00	0	0.00	0.00	22.75	-	43.72	0.00	0.00	0.00

No Data Available for August

United States Department of the Interior
Everglades National Park
Hydrologic Data Sheet

Project Date Station		Parameter											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
108	10.05	0	0	0	0	0	0	0	-	0.26	0.00	14.89	0.00
		0	0	0	0	0	0	0	-	43.89	0.00	0.00	0.00
107	10.45	0	0	0	0	0	0	0	-	0.00	0.00	0.00	0.00
		0	0	0	0	0	0	0	-	36.16	0.00	0.00	0.00
106	11.45	0	0	0	0	0	0	0	-	0.52	0.00	0.00	0.00
		0	0	0	0	0	0	0	-	65.67	0.00	0.00	0.00
105	11.90	0	0	0	0	0	0	0	-	1.04	6.28	0.92	0.00
		0	0	0	0	0	0	0	-	68.51	0.00	0.00	0.00
104	12.15	0	0	0	0	0	0	0	-	0.00	0.00	0.00	0.00
		0	0	0	0	0	0	0	-	26.1	0.00	0.00	0.00
103	12.65	0	0	0	0	0	0	0	-	0.00	1.64	0.00	0.00
		0	0	0	0	0	0	0	-	22.31	0.00	0.00	0.00
102	13.15	0	0	0	0	0	0	0	-	0.13	10.51	0.00	0.00
		0	0	0	0	0	0	0	-	42.39	0.00	0.00	0.00
101	13.55	0	0	0	0	0	0	0	-	0.13	11.13	0.00	0.00
		0	0	0	0	0	0	0	-	22.31	0.00	0.00	0.00
100	14.35	0	0	0	0	0	0	0	-	0.52	51.15	3.32	0.00
		0	0	0	0	0	0	0	-	121.88	0.00	2.00	0.00
99	14.85	0	0	0	0	0	0	0	-	0.13	3.07	0.00	0.00
		0	0	0	0	0	0	0	-	52.08	0.00	0.00	0.00
98	16.85	0	0	0	0	0	0	0	-	8.00	22.1	0.00	0.00
		0	0	0	0	0	0	0	-	78.78	0.00	0.00	0.00
97	18.65	0	0	0	0	0	0	0	-	0.00	11.01	0.00	0.00
		0	0	0	0	0	0	0	-	0.00	0.00	0.00	0.00
96	19.40	0	0	0	0	0	0	0	-	22.80	35.77	6.03	7.88
		0	0	0	0	0	0	0	-	137.76	2.47	1.25	3.67

1977 WEATHER DATA FOR SOUTH FLORIDA

Weather Station Index for Everglades National Park

CLIMATE

Station Index

Station	County	MSL Elevation	Latitude	Longitude	Period of Record Temp.	Precip.
Royal Palm	Dade	7	N°25'23"	W°80'36"	29	29
Flamingo	Monroe	3	N°25'09"	W°80'55"	26	26
Everglades	Collier	5	N°25'51"	W°81'23"	51	51
Tamiami	Dade	15	N°25'45"	W°80'50"	36	36
Homestead Exp. Sta.	Dade	11	N°25'30'	W°80'30"	67	67

Everglades City 1977 Monthly Temperatures

Everglades City 1977

Monthly Temperatures (^{o}F)

Month	Avg. Max.	Avg. Min.	Avg.	Departure fm mean	Highest Temp.	Date	Lowest Temp.	Date
Jan.	69.5	45.7	57.6	-8.0	81	9	29	20
Feb.	-	-	-	-	-	-	-	-
Mar.	80.6(m)	62.2(m)	71.4(m)	1.5	86	22+	46	1
Apr.	82.8(m)	61.4(m)	72.1(m)	-2.0	88	22+	53	7
May	84.3	67.1	75.7	-1.8	90	23	59	14+
Jun.	87.0	73.5	80.3	-0.5	94	23	70	15
Jul.	89.5	73.1	81.3	-1.0	94	29+	67	24
Aug.	89.5	74.7	82.1	-0.8	95	26	71	31+
Sept.	88.6	74.2	81.4	-0.6	95	13	72	26+
Oct.	84.2	64.7	74.5	-3.4	92	1	52	19+
Nov.	80.8	60.4	70.6	-1.1	86	10+	44	27+
Dec.	75.2	54.6	64.9	-1.9	83	5	37	28+

Royal Palm 1977 Monthly Temperatures

Royal Palm 1977
Monthly Temperatures (^{o}F)

Month	Avg. Max.	Avg. Min.	Avg.	Departure fm mean	Highest Temp.	Date	Lowest Temp.	Date
Jan.	71.3	49.0	60.2	-	82	28	24	20
Feb.	74.1	53.0	63.6	-	84	4	35	17+
Mar.	84.3	64.9	74.6	-	94	22	46	2
Apr.	82.4	64.4	73.4	-	88	5	53	27+
May	84.5	66.7	75.6	-	91	24	62	1+
Jun.	91.2	76.6	83.9	-	96	28	72	21
Jul.	89.9	74.1	82.0					
Aug.	90.6	77.3	84.0	-	94+	20	71	13
Sept.	90.1	73.7	81.9	-	95	9	71+	1
Oct.	87.9	65.3	76.6	-	94	3+	53	14
Nov.	84.25	60.2	72.2	-	89+	8	44	14
Dec.	78.9	56.9	67.8	-	88	9	35	29

Flamingo 1977 Monthly Temperatures

Flamingo 1977
Monthly Temperatures (^{o}F)

Month	Avg. Max.	Avg. Min.	Avg.	Departure fm mean	Highest Temp.	Date	Lowest Temp.	Date
Jan.	71.9(m)	46.1(m)	56.0(m)	-	79	2	27	20
Feb.	75.0(m)	52.9(m)	64.0(m)	-	81	26	36	18
Mar.	80.5(m)	63.9(m)	72.2(m)	-	85	24+	50	2
Apr.	81.7(m)	63.7(m)	72.7(m)	-	85	10	44	28
May	83.5(m)	65.9(m)	74.7(m)	-	-	-	57	15
Jun.	87.7(m)	72.9(m)	80.3(m)	-	90	30+	58	2
Jul.	89.6	73.3	81.5	-	92	31+	70	25+
Aug.	89.6(m)	73.7(m)	81.7(m)	-	93	27	69	12
Sept.	88.1	74.9	81.5	-	94	12	72	30+
Oct.	84.9	64.8	74.9	-	91	4	51	15
Nov.	81.8	62.5	72.2	-	86	1	46	27
Dec.	77.1	56.9(m)	67.0(m)	-	84	16+	37	28+

Tamiami 1977 Monthly Temperatures

Tamiami Ranger Station 1977
Monthly Temperatures (°F)

Month	Avg. Max.	Avg. Min.	Avg.	Departure fm mean	Highest Temp.	Date	Lowest Temp.	Date
Jan.	71.0	49.9(m)	60.5(m)	-6.7	82	28+	31	20
Feb.	76.0(m)	54.1(m)	64.8(m)	-	85(m)	27	39	17
Mar.	85.7(m)	63.1(m)	73.7(m)	-	90	21+	50	1
Apr.	84.4(m)	60.4(m)	72.4(m)	-1.3	90	2	50	26
May	87.0(m)	64.3(m)	75.7(m)	-1.2	98	26	57	15
Jun.	90.1(m)	72.7	81.4(m)	0.8	94	28+	68	21
Jul.	90.7	73.1	81.9	-0.5	93	30+	70	24
Aug.	90.4(m)	73.7(m)	82.1(m)	-1.1	93	22+	69	31+
Sept.	91.7(m)	74.0(m)	82.8(m)	-	93	11+	70	2+
Oct.	84.9(m)	66.6(m)	75.8(m)	-2.6	90	12+	55	14
Nov.	82.3(m)	62.6(m)	72.5(m)	-0.3	88	4	48	27
Dec.	77.9(m)	56.8(m)	67.4(m)	-1.0	87	2	-	-

Homestead Experiment Station Monthly Temperatures

Homestead Experiment Station 1977
Monthly Temperatures (^{o}F)

Month	Avg. Max.	Avg. Min.	Avg.	Departure fm mean	Highest Temp.	Date	Lowest Temp.	Date
Jan.	71.5	47.2	59.4	-5.9	84	28	27	20
Feb.	75.1	53.9	64.5	-1.6	86	24	39	21
Mar.	83.4	63.7	73.6	4.2	92	22	50	2
Apr.	82.8	63.2	73.0	-0.1	91	5	52	29
May	84.6	66.2	75.4	-0.5	91	29+	58	15
Jun.	89.8	71.5	80.7	1.5	94	13	68	26
Jul.	90.1	72.5	81.3	0.8	93	14	69	8+
Aug.	89.4	73.1	81.3	0.3	94	21	70	22+
Sept.	89.2	72.3	80.8	0.6	93	11+	68	30
Oct.	84.6	64.1	74.4	-1.9	91	3	53	17
Nov.	81.7	61.9	71.8	1.4	88	17+	46	27
Dec.	77.2	56.1	66.7	0.3	87	15	37	23

Four Station Rainfall Data (inches), South Florida

1976 Year			Period of Record	
Month	4 Station Total Accumulated	4 Station Average	4 Station Accumulated Means	4 Station Mean
Jan.	7.83	1.96	6.14	1.54
Feb.	5.61	1.40	6.74	1.69
Mar.	1.04	0.26	6.55	1.64
Apr.	5.60	1.40	8.82	2.21
May	27.26	6.82	22.99	5.75
Jun.	31.18	7.80	38.04	9.51
Jul.	28.79	7.20	28.55	7.14
Aug.	26.42	6.61	28.72	7.18
Sept.	41.90	10.48	35.71	8.93
Oct.	5.05	1.26	21.04	5.26
Nov.	9.48	2.37	6.54	1.64
Dec.	11.11	2.78	5.19	1.30
TOTAL	201.27	50.34	215.03	53.79

Royal Palm 1977 Monthly Rainfall

Royal Palm Ranger Station

RAINFALL (inches)

Month	Total	Mean	% of Mean	Greatest	Date
Jan.	1.96	1.51	130	1.06	15
Feb.	1.65	1.81	91	0.90	15
Mar.	0.70	1.52	46	0.68	10
Apr.	0.64	2.40	27	0.52	11
May	12.81	6.69	191	4.77	10
Jun.	8.67	10.30	84	4.84	2
Jul.	5.53	7.05	78	2.01	16
Aug.	4.43	7.65	58	0.94	27
Sept.	11.68	8.74	134	3.09	1
Oct.	3.53	6.26	56	2.01	13
Nov.	2.89	2.19	132	2.31	24
Dec.	3.58	1.36	263	2.87	17
Total	58.07	57.48	101		

Everglades City 1977 Monthly Rainfall

Everglades City Ranger Station

RAINFALL (inches)

Month	Total	Mean	% of Mean	Greatest	Date
Jan.	1.46	1.58	92	0.70	16
Feb.	0.94	1.69	56	0.33	15
Mar.	0.03	1.76	2	0.02	9
Apr.	1.80	2.20	82	0.70	16
May	4.34	4.47	97	1.95	12
Jun.	11.80	9.69	122	4.16	3
Jul.	14.72	8.01	184	2.50	25
Aug.	6.96	6.90	101	1.43	8
Sept.	9.58	9.66	99	1.99	3
Oct.	0.33	4.24	8	0.13	23
Nov.	1.26	1.37	92	0.50	25
Dec.	4.28	1.46	2.93	0.99	10
Total	55.79	53.01	105	-	-

Tamiami 1977 Monthly Rainfall

Tamiami Ranger Station

RAINFALL (inches)

Month	Total	Mean	% of Mean	Greatest	Date
Jan.	2.01	1.45	139	0.85	3
Feb.	1.36	1.47	93	1.18	15
Mar.	0.08	1.80	4	0.08	9
Apr.	0.75	2.34	32	0.29	25
May	5.49	6.03	91	1.58	11
Jun.	7.67	9.23	83	1.13	21
Jul.	4.66	8.02	58	1.16	24
Aug.	7.90	7.62	104	2.07	31
Sept.	9.35	9.01	104	2.21	3
Oct.	0.14	5.61	2	0.14	23
Nov.	1.67	1.50	111	0.63	24
Dec.	3.08	1.17	263	1.51	17
Total	44.16	55.23	80	-	-

Flamingo 1977 Monthly Rainfall

Flamingo Ranger Station

RAINFALL (inches)

Month	Total	Mean	% of Mean	Greatest	Date
Jan.	2.40	1.60	150	1.02	16
Feb.	1.66	1.77	94	1.22	15
Mar.	0.23	1.47	16	0.15	1
Apr.	1.94	1.88	103	0.73	23
May	4.62	5.80	80	1.80	5
Jun.	3.04	8.82	34	1.60	2
Jul.	3.88	5.47	71	1.41	21
Aug.	7.13	6.55	109	3.00	31
Sept.	11.29	8.30	136	2.11	2
Oct.	1.05	4.93	21	0.80	23
Nov.	2.80	1.48	189	1.48	25
Dec.	1.88	1.20	157	0.65	17
Total	41.92	49.27	85	-	-