

# HYDROLOGIC REPORT THE BIG CYPRESS BASIN

JULY 2018



# SUMMARY OF HYDROLOGIC CONDITIONS IN THE BIG CYPRESS BASIN

## July 2018

### SUMMARY

Weather conditions throughout July were drier than normal across the Big Cypress Basin [BCB]. Absent any significant tropical activity impacting the area, the characteristic pattern of afternoon and early evening thunderstorms were consistent for this time of year. By month's end, the basin-wide monthly rainfall fell short of the Basin's historical average. As a result, groundwater and canal levels in the upper watershed maintained a generally downward trend for the month. Canal system operations were kept under wet season criteria with muted outflows at tidal discharge structures.

### BCB RAINFALL

For the second consecutive month, rainfall across the BCB remained below the Basin's historic average. The July recorded basin-wide average rainfall was 7.16 inches, as observed at twenty-two (22) reporting stations (ref. **Figures 1, 2 & Table 1**). This tally was 1.4 inches below the monthly historic weighted average, which is 8.55 inches in July or 84% of the historic monthly total.

By the end of July, the accumulated precipitation for 2018 measured 27.42 inches, which is 2.82 inches less than the 30.25 inches normally expected by this time of year (ref. **Table 1**).

The spatial rainfall distribution for monitored locations across the BCB is provided on **Figure 3**. The month's highest total rainfall was recorded at the COCO#3 structure (Site R-18), which received 11.64 inches, and the lowest at the Marco Island R.O. Plant (Site R-15) with only 1.75 inches.

## **BCB CANAL SYSTEMS**

Records for July generally reflect the continued adjustments to gate operations, as runoff entered the canal systems. The BCB water management system maintained wet season flood control operations for the month.

- **GOLDEN GATE SYSTEM (BCB Central Collier)**

Water levels in the lower reaches of Golden Gate Main (GG1) (ref: **Figure 5a, 5b**) are shown merging with the historic baseline; however, the upstream canal water levels near GG4 dropped 1 foot below historic average. A new GG4 structure is currently under construction and at the beginning of the wet season a temporary sheet pile weir was lowered to handle heavy flows from high rainfall. With drier conditions over the last two months, canal stages have receded below normal. Accordingly, staff is working with the contractor to raise the temporary weir to achieve more normal water levels in the upper watershed.

- **COCOATCHEE SYSTEM (BCB Urban/ North Collier)**

Water levels in the Cocohatchee Canal (ref: **Figure 6a, 6b**) generally trended lower in the upstream (COCO3) structure last month. Stages at COCO3 began the period around 1-foot above the historic trend but, had decreased to around 0.5 ft lower than the historic trend.

- **FAKA UNION SYSTEM (BCB East Collier and South to Port of the Islands)**

The Faka Union canal system generally trended with the historic average in July (Ref. **Figures 7a and 7b**).

- **HENDERSON CREEK SYSTEM (BCB Urban /South Collier)**

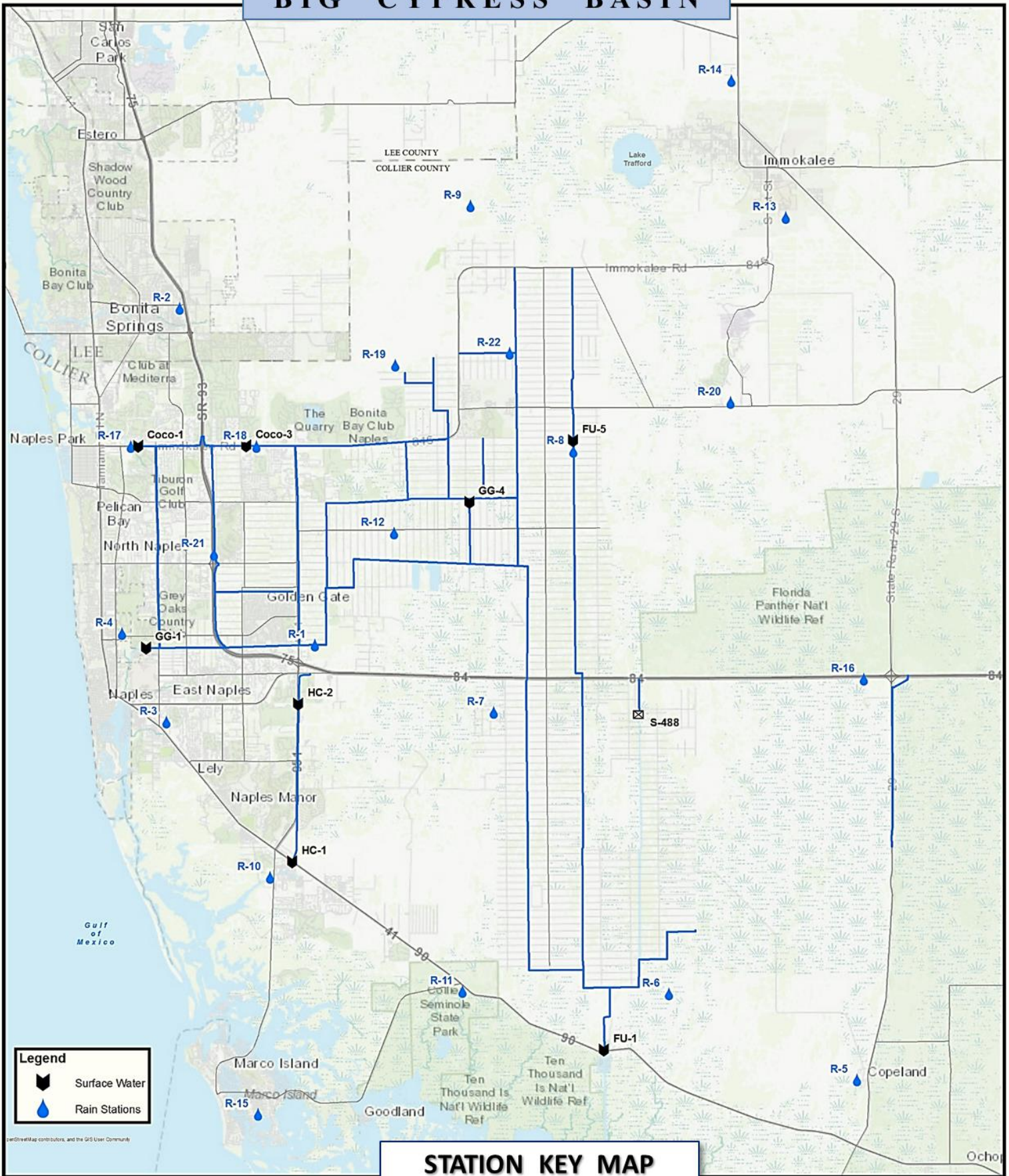
Water levels in the Henderson Creek Canal (ref: **Figure 8a, 8b**) trended lower in the upstream (HC2) and downstream (HC1) structures last month. The overall water level conditions reached near the historic average by month's end.

## **BCB / LWC GROUNDWATER LEVELS**

As per District report dated 07/30/2018, groundwater levels decreased in about sixty percent the Lower West Coast wells over the past week. The largest decrease was in the Lower Tamiami aquifer. Specifically, in the BCB area, groundwater level indicators gave mixed results for the monitoring wells shown on **Table 2**, with a general downward trend in the Lower Tamiami aquifer, and an overall mild increase in the Sandstone aquifer. At the end of July, although most of those sites remained within normal level-of-concern (green color), at site C-1004R in the Lower Tamiami aquifer, the water level dropped more than 2.06 ft as indicated by the yellow color on **Table 2**. The exhibit provided at the end of this report (ref: **Figure 9**) includes a reference locator map showing the status of these and some other key indicator wells in the BCB / Lower West Coast region.

# SOUTH FLORIDA WATER MANAGEMENT DISTRICT

## BIG CYPRESS BASIN



Map data by Mapbox contributors, and the GIS User Community

**RAINFALL REPORT - JULY 2018**  
**DISTRICT/BASIN RAINFALL STATIONS**

(ALL NUMBERS ARE IN INCHES)

STATION INDEX NO.	STATION NAME	JULY 2018	LONG TERM AVERAGE FOR THIS MONTH	MONTHLY DIFFERENCE	CALENDAR YEAR 2018 CUMULATIVE TOTAL	AVERAGE CALENDAR YEAR TO DATE	YEAR TO DATE DIFFERENCE
R-1	GOLDEN GATE #3	6.75		New Site	31.32	No Historical Data	
R-2	BONITA SPRINGS WATER PLANT	6.14	8.06	-1.92	24.99	28.41	-3.42
R-3	COLLIER COUNTY COURTHOUSE	4.52	8.30	-3.78	26.26	28.30	-2.04
R-4	FREEDOM PARK	6.20		New Site	23.88	No Historical Data	
R-5	FAKAHATCHEE STRAND HQ	7.26	9.34	-2.08	24.20	33.82	-9.62
R-6	DAN HOUSE PRAIRIE	8.01	8.52	-0.51	33.61	27.53	6.08
R-7	SGGE WEATHER STATION	11.08	9.11	1.97	31.93	32.19	-0.26
R-8	FAKA UNION #5	6.18		New Site	32.91	No Historical Data	
R-9	CORKSCREW SWAMP NORTH END	6.34	7.44	-1.10	31.21	30.05	1.16
R-10	ROOKERY BAY HQ	4.67	8.60	-3.93	29.98	29.01	0.97
R-11	COLLIER SEMINOLE STATE PARK	4.05	8.75	-4.70	25.03	30.34	-5.31
R-12	G.G. FIRE STATION	8.22	10.26	-2.04	25.77	33.00	-7.23
R-13	IMMOKALEE LANDFILL	6.31	7.82	-1.51	25.18	30.20	-5.02
R-14	IFAS	7.93	7.15	0.78	27.93	29.25	-1.32
R-15	MARCO R.O. PLANT	1.75	7.66	-5.91	15.27	28.89	-13.62
R-16	FAKAHATCHEE STRAND NORTH END	10.10	9.36	0.74	29.31	35.39	-6.08
R-17	COCO#1	5.20	7.74	-2.54	24.86	26.61	-1.75
R-18	COCO#3	11.64	10.78	0.86	27.52	30.30	-2.78
R-19	BIRD ROOKERY	10.25		New Site	33.79	No Historical Data	
R-20	AVE MARIA	7.71	7.98	-0.27	26.22	30.70	-4.48
R-21	I75W2	8.53		New Site	24.69	No Historical Data	
R-22	GG#7	8.66		New Site	27.48	No Historical Data	
	AVERAGES	7.16	8.55	-1.40	27.42	30.25	-2.82

Table 1

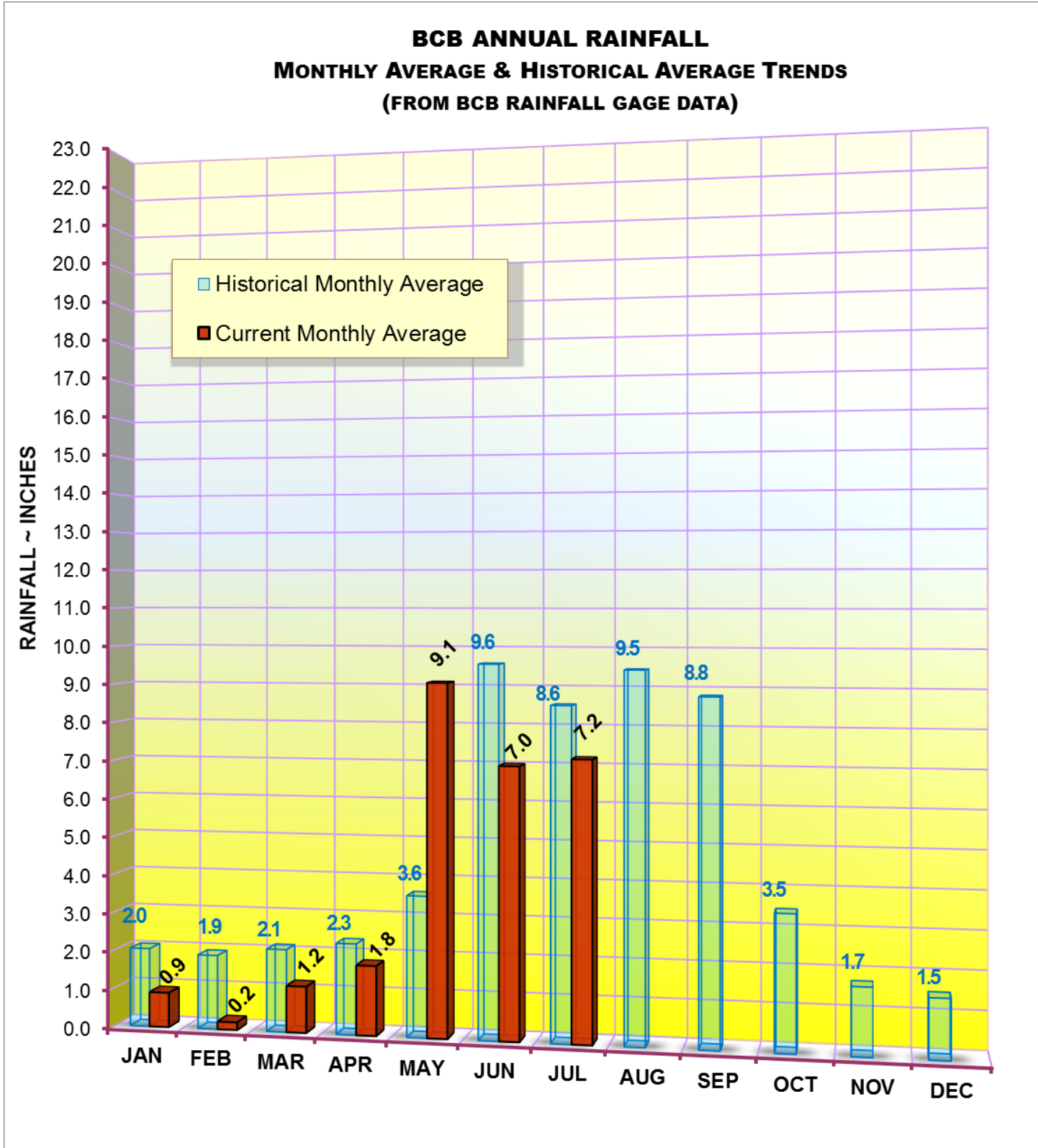
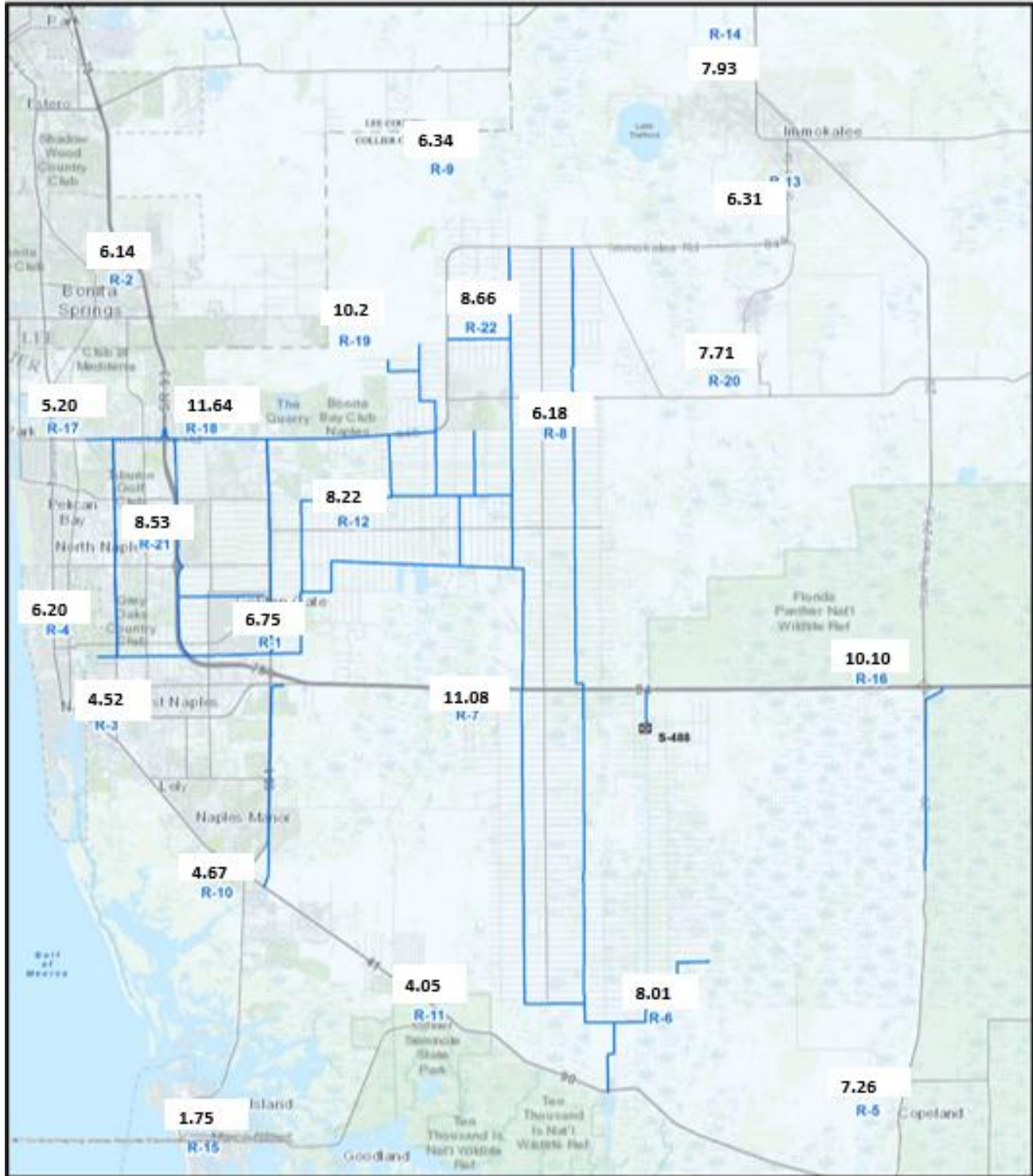


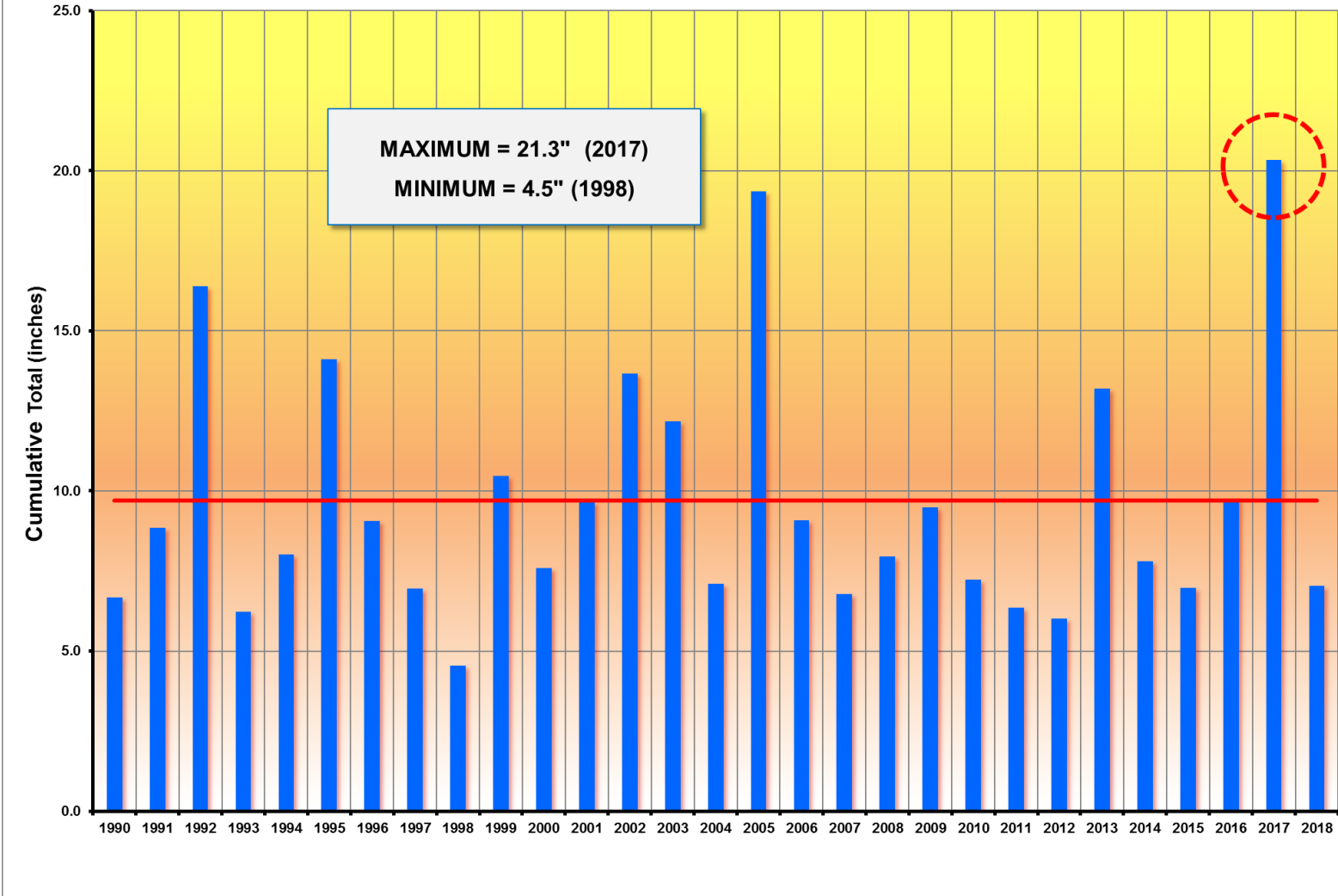
Figure 2  
BCB GAGE RAINFALL – MONTHLY AVERAGES THROUGH JULY 2018



**Figure 3**  
**BCB RAINFALL DISTRIBUTION - JULY 2018**



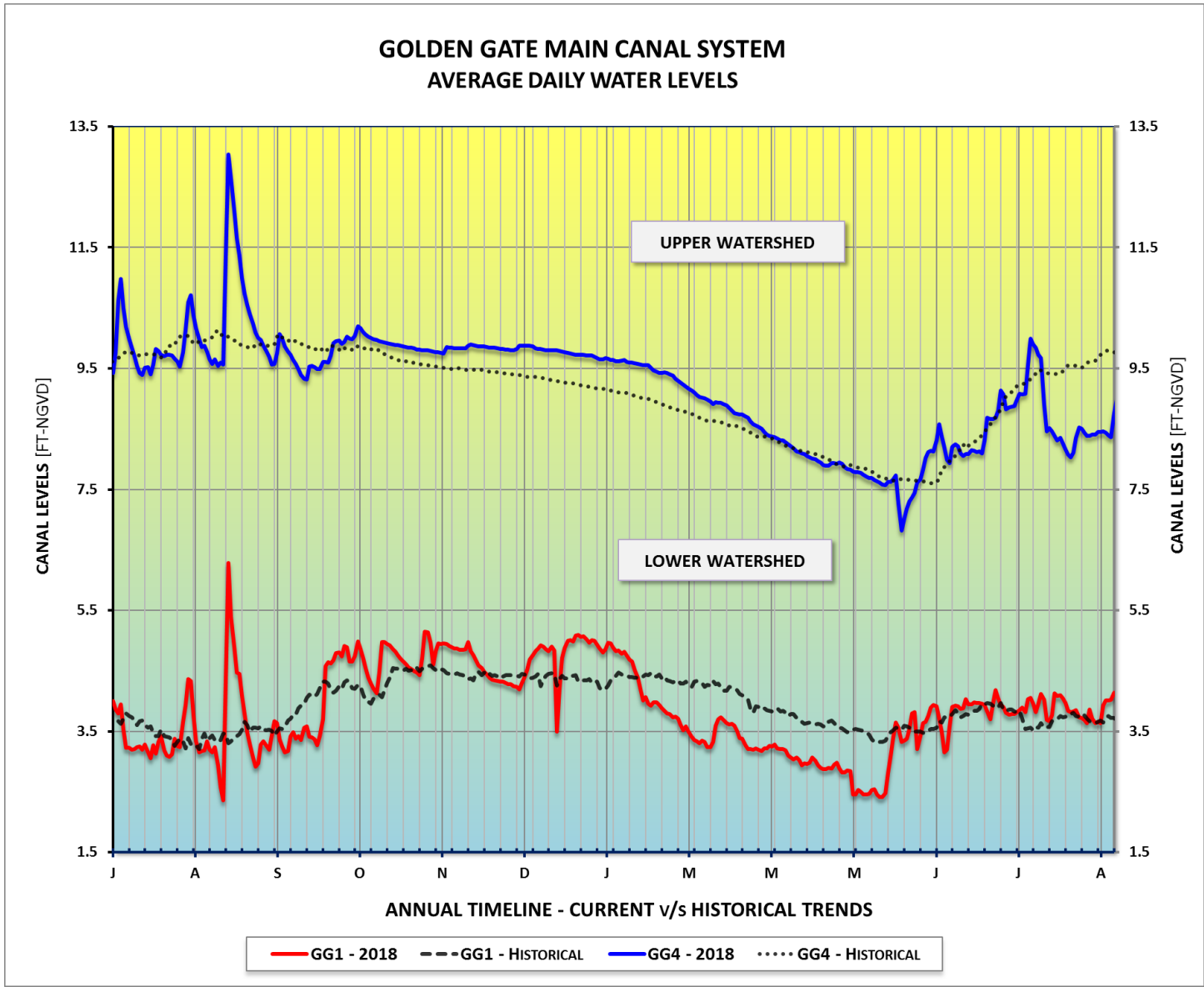
**BCB JUNE RAINFALL**  
**Period (1990 ~ 2018)**



**Figure 4**

**BCB MONTHLY AVERAGE RAINFALL – HISTORICAL TRENDS**

**(Period of Record: 1990 ~ 2018)**



**Figure 5a**

### GOLDEN GATE MAIN CANAL SYSTEM DIFFERENCE IN CANAL LEVELS

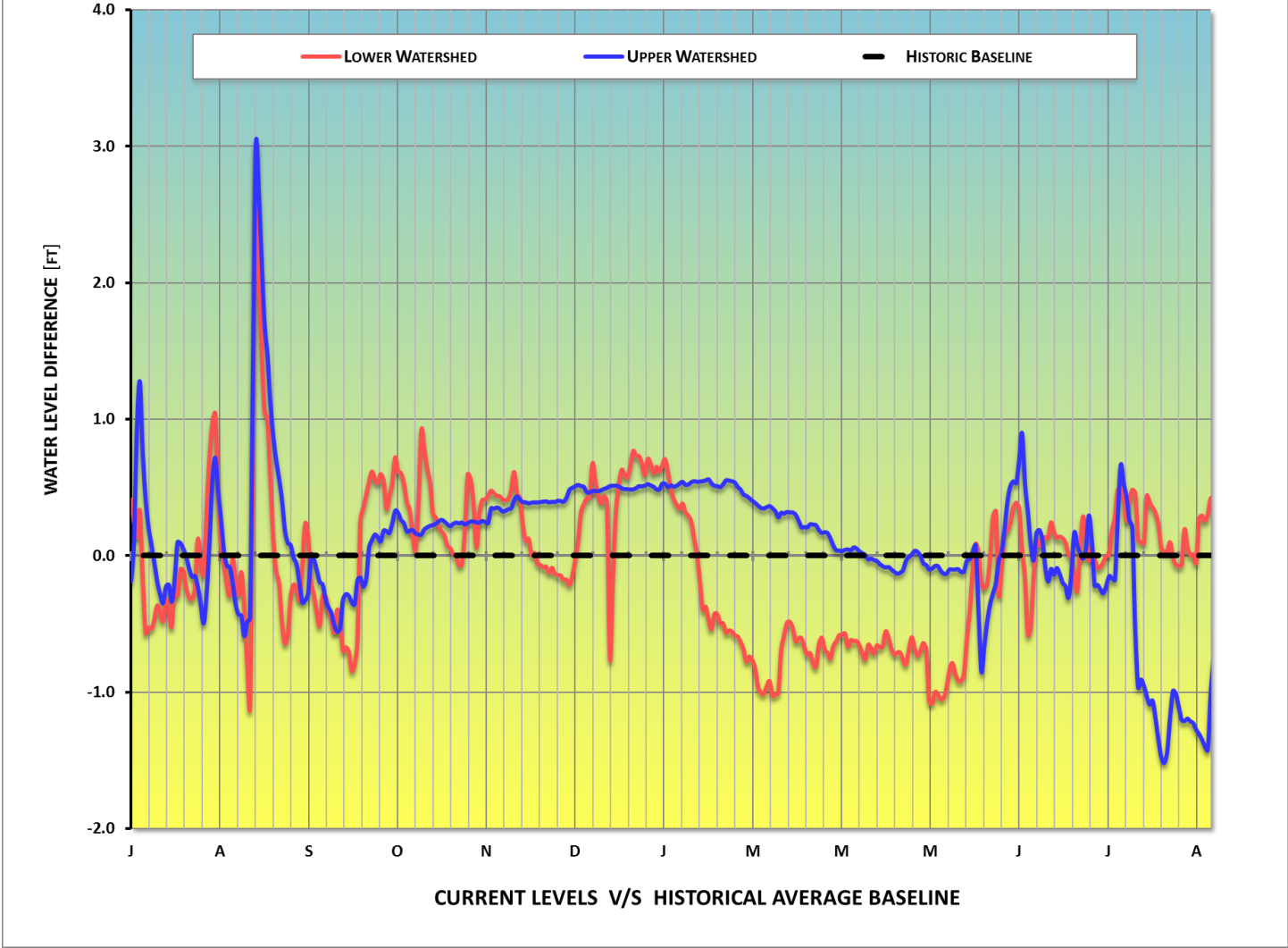


Figure 5b

### COCOHATCHEE CANAL SYSTEM AVERAGE DAILY WATER LEVELS

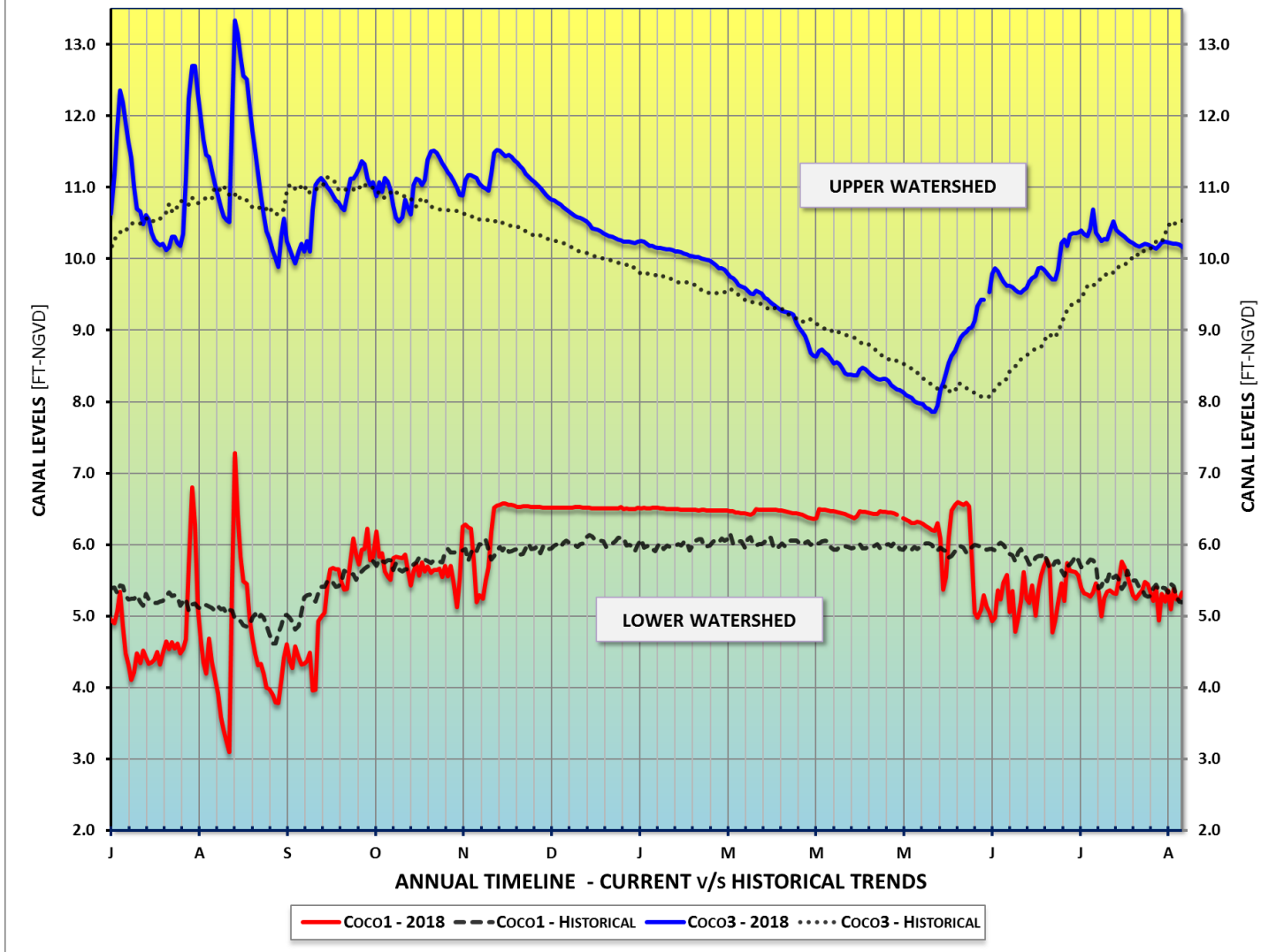


Figure 6a

### COCOHATCHEE CANAL SYSTEM DIFFERENCE IN CANAL LEVELS

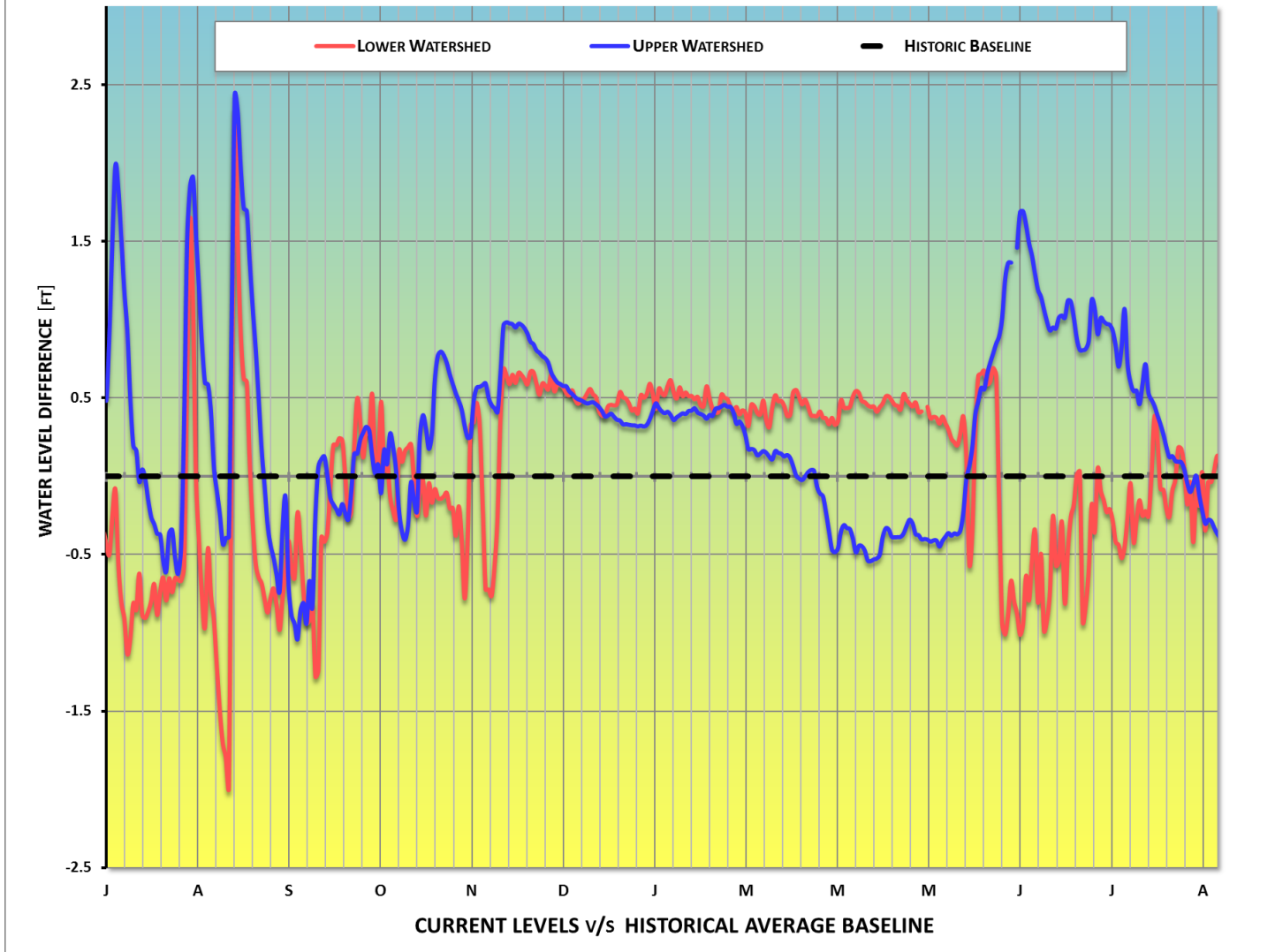
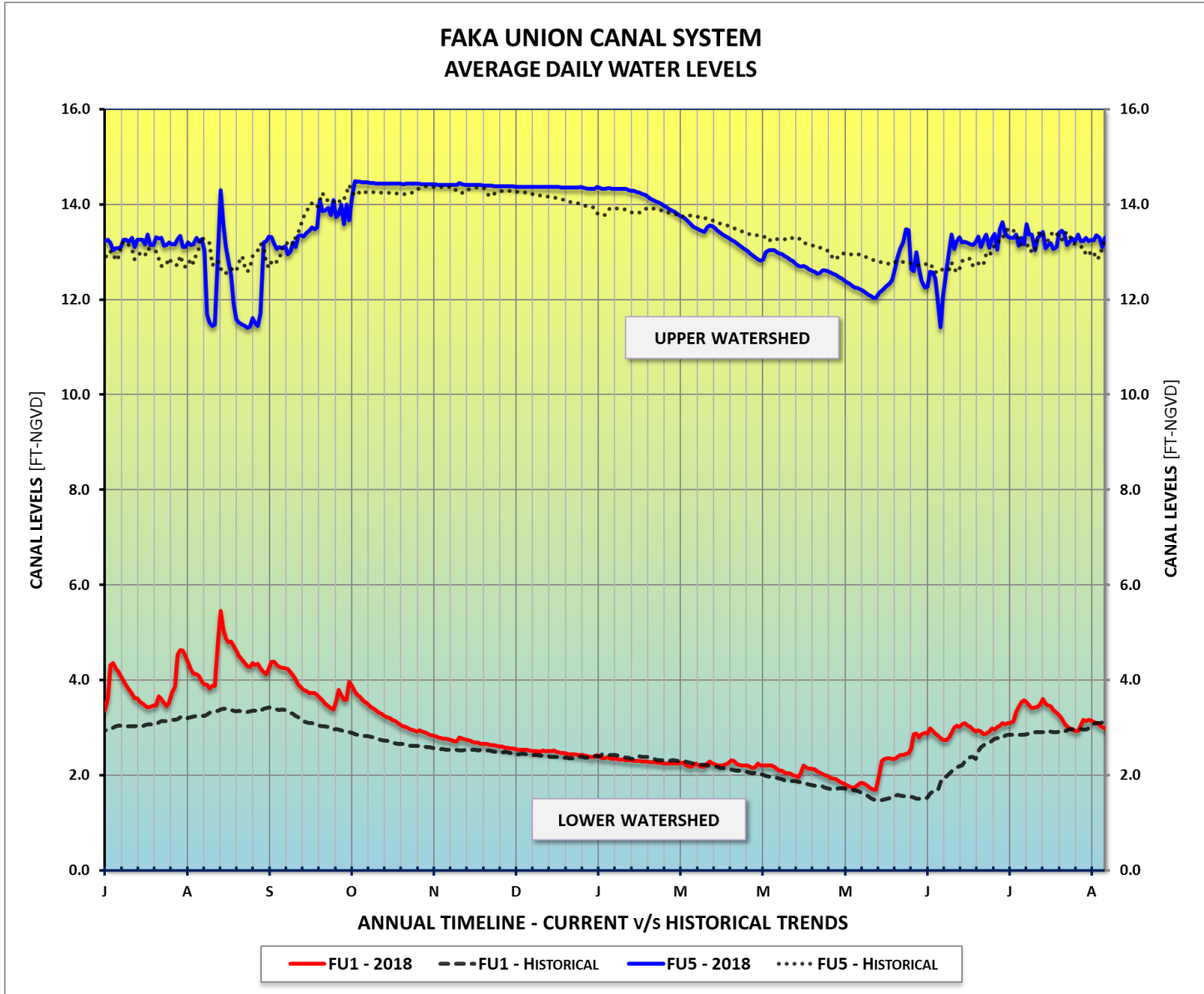


Figure 6b



**Figure 7a**

### FAKA UNION CANAL SYSTEM DIFFERENCE IN CANAL LEVELS

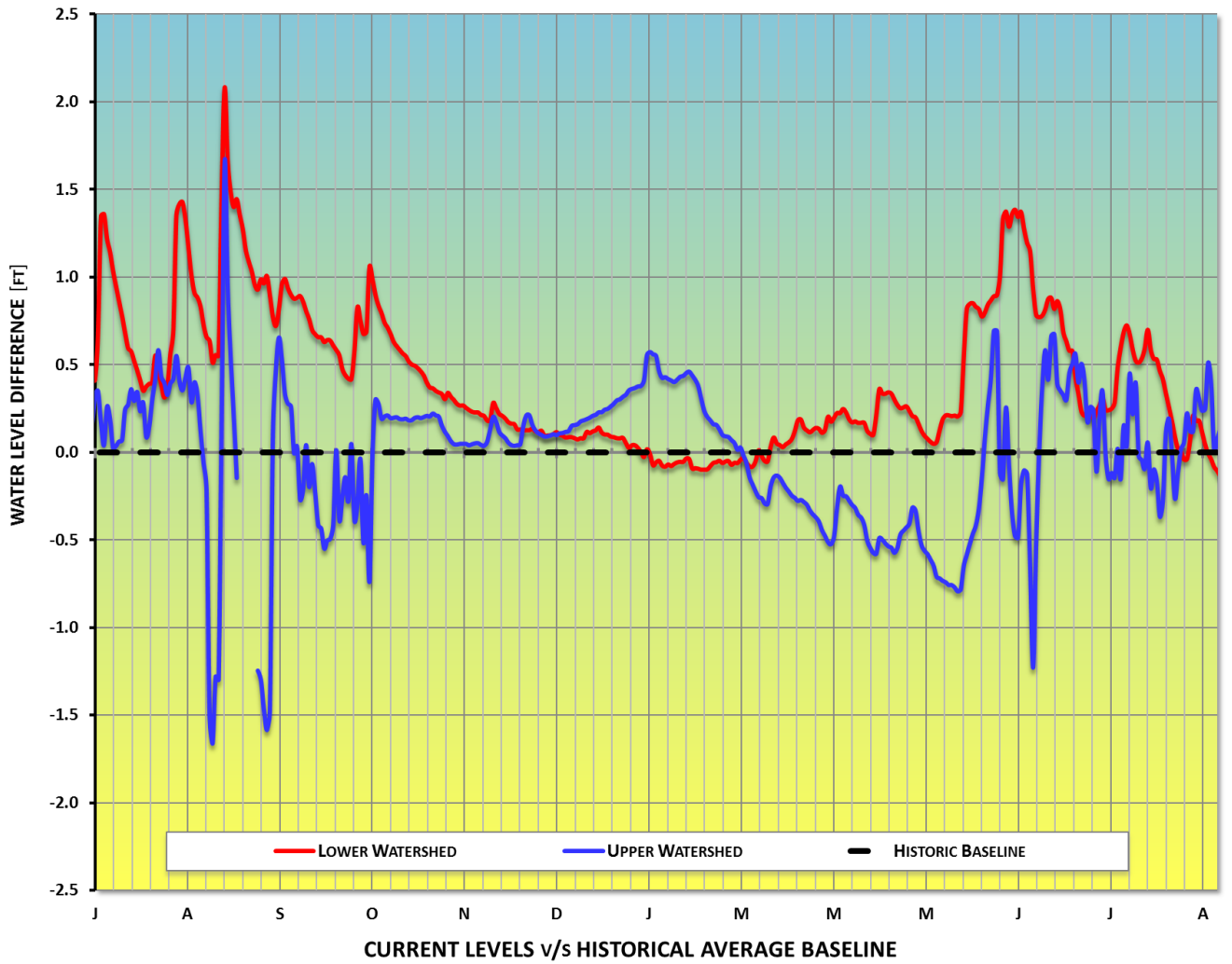


Figure 7b

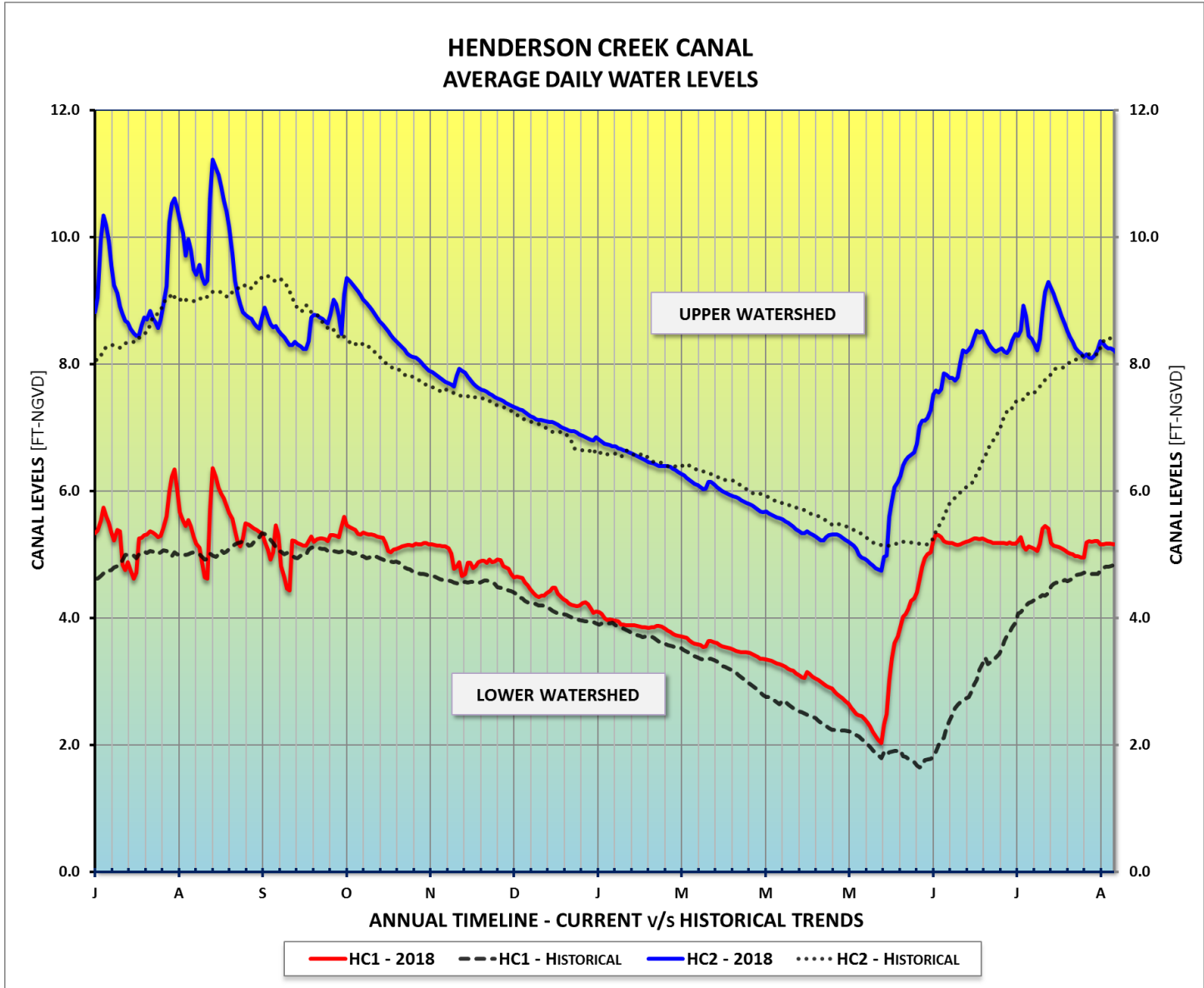


Figure 8a



### HENDERSON CREEK SYSTEM DIFFERENCE IN CANAL LEVELS

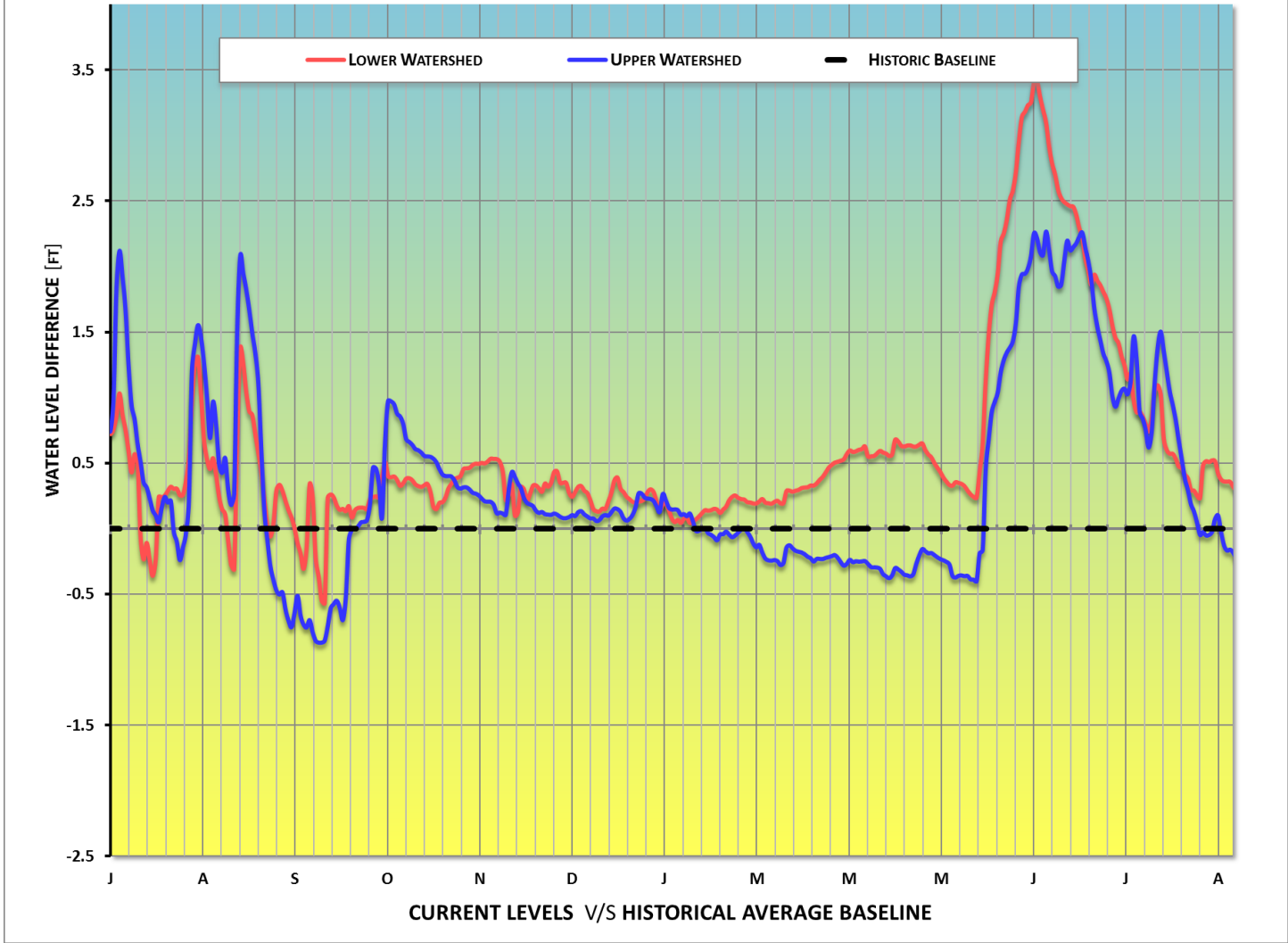


Figure 8b

**WATER CONDITIONS SUMMARY - July 2018**

**SELECTED STATIONS for BCB AREA / SW FLORIDA**

Last Reading Date :		July 30, 2018					
Previous Period Reading Date:		July 2, 2018					
STATION INDEX NO.	WELL LOCATION	WELL / AQUIFER - TYPE	CHANGE (from previous date)	PREVIOUS LEVEL	CURRENT LEVEL (ft)	DIRECTION OF CHANGE	CONCERN INDICATOR
ALL INDICATOR LEVELS SHOWN IN FT-NGVD							
C-462	Immokalee	Lower Tamiami Aquifer	0.55	33.82	34.37	↑	GREEN
C-1004R	Naples	Lower Tamiami Aquifer	-2.06	3.48	1.42	↓	YELLOW
C-1224	Marco Lakes	Lower Tamiami Aquifer	-0.24	4.62	4.38	↓	GREEN
L-2194	Bonita Springs	Sandstone Aquifer	0.51	4.59	5.10	↑	GREEN
L-2195	Bonita Springs	Surficial Aquifer System	0.59	10.51	11.10	↑	GREEN
L-738	Bonita Springs	Lower Tamiami Aquifer	-1.47	1.88	0.41	↓	GREEN

Table 2

BIG CYPRESS BASIN

JULY 2018

GROUNDWATER LEVEL DAILY TRENDS  
COMPARED TO HISTORICAL AVERAGE

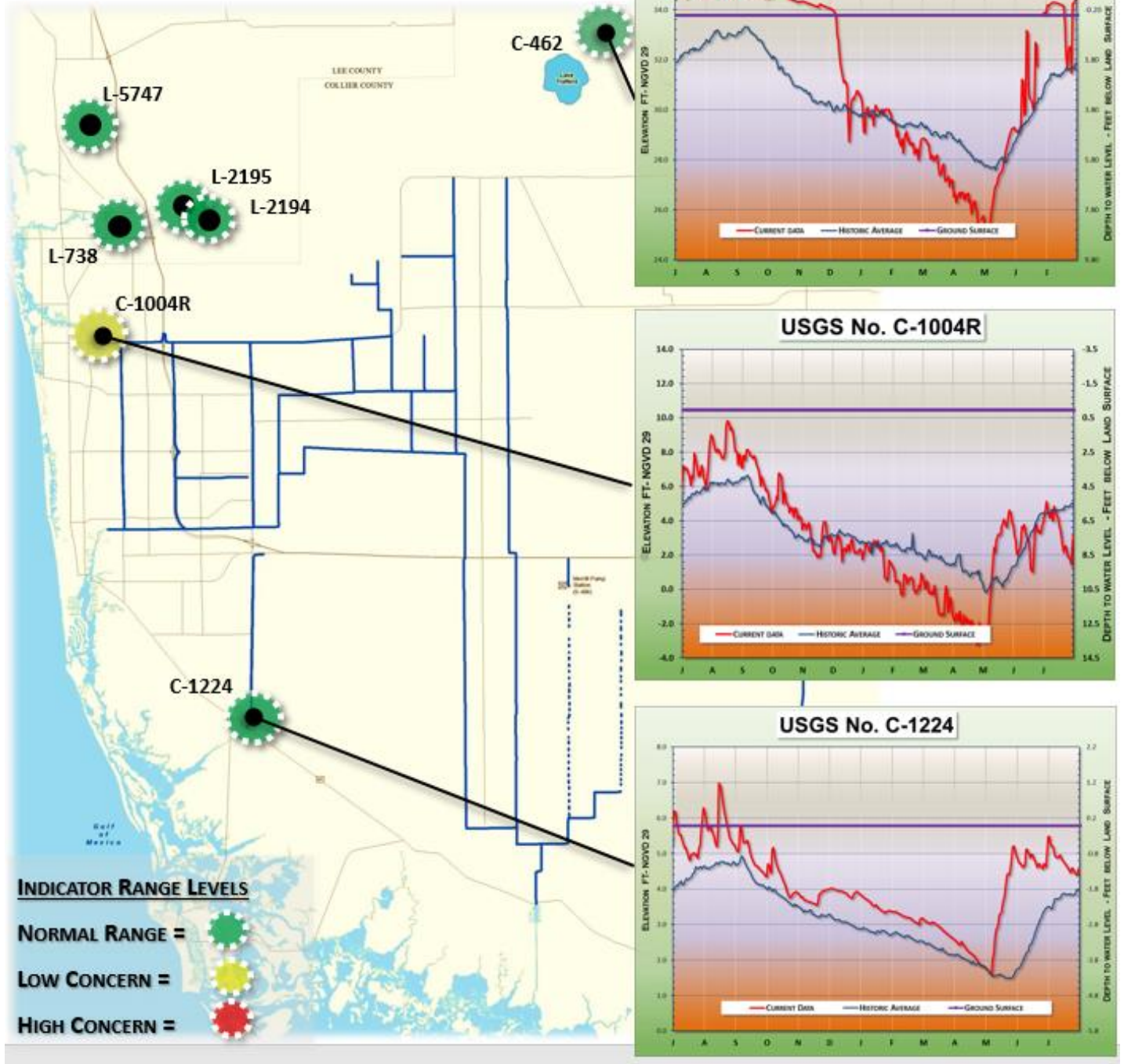


Figure 9