

AUGUST 2021

BIG CYPRESS BASIN HYDROLOGIC REPORT



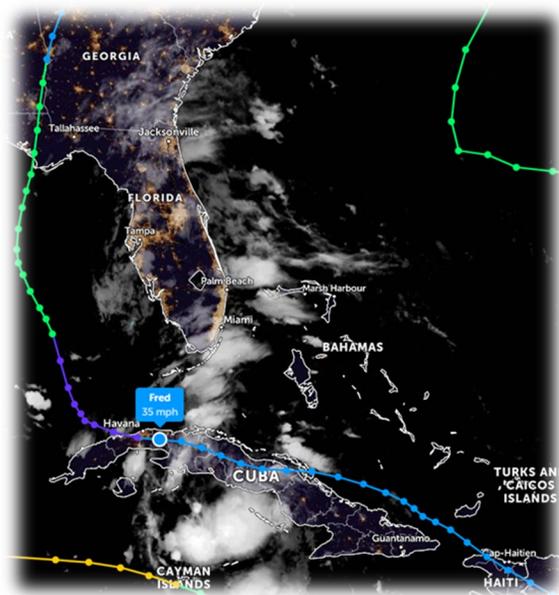
SUMMARY OF HYDROLOGIC CONDITIONS IN THE BIG CYPRESS BASIN

August 2021

SUMMARY

For most of August, a typical summer time pattern of daily thunderstorm activity was in place over the region. Near the middle of the month, Tropical Storm Fred formed and once again another storm threatened Florida. TS Fred was forecast to take a similar path as recent TS Elsa with similar total rainfall forecast amounts of 4-6" average across the

TS Fred Actual Track



region. Fortunately for Florida, Fred interacted with the mountainous terrain of Hispaniola and Cuba hindering further development. Fred ultimately passed west of Florida and actual rainfall totals were must less than previous forecasts. The region received an average of 2-3" rainfall from TS Fred. The BCB canal system was lowered slightly ahead of the event and was returned to the upper end of normal operational range after the threat of heavy rainfall passed. All BCB canals handled the event well and stayed within normal operational levels. The routine summer pattern of daily thunderstorms was re-established after Fred passed.

August 11, 2021—Fred Forecast



Looking ahead, much uncertainty remains on how the rest of the wet season will play out. The Basin has equal chances for above, normal, or below average rainfall for the next three months. There are some signals that La Nina is potential forming again in the Pacific Ocean, which similarly to last year, may signal a drier than normal dry season

BCB RAINFALL

As measured by twenty-three (23) reporting stations (ref. **Figures 1, 2, Table 1**), the basin-wide monthly average was **9.2 inches (92% of normal)**, which just below the average 10.0 inches typically collected.

Based on collected gauge and radar data, the rainfall distribution across the Basin was highly variable. Some areas of Okaloacoochee and Fakahatchee basins received 16—18" of rainfall, while portions of the Trafford basin received only 5—6" of rain. **Figure 3a** shows the average rainfall for each of the Basin's watersheds based on gauge adjusted radar. The Okaloacooche basin received the highest rainfall with about **11.7 inch** areal average across the watershed and the lowest was the Trafford basin with about **8.7 inches**. The Basin's total areal weighted average rainfall was **10.2 inches**. The month's highest gauge total was collected at the Golden Gate Fire Station (Site R-12), which received **13.77 inches**. This month's lowest rainfall was recorded at Fakahatchee Strand HQ (Site R-5), which received **6.25 inches**. The rainfall totals and their locality distribution across the BCB/Lower West Coast are shown on **Figure 3, 3a** and **4**.

BCB CANAL SYSTEMS

All of the BCB canals were maintained in flood control mode as water levels were held, to the extent possible, near the top of the normal wet season operational ranges. Canal levels were lowered ahead and during TS Fred, but were returned to normal after the storm passed. As the month ended, about 95% of BCB water control structures continue to discharge water for flood control (**Figure 4a**).

- **GOLDEN GATE SYSTEM**

Control structures in the Golden Gate Main canal system were operated in flood control mode. Water levels were maintained near the top of the normal operational ranges. Canal water levels in most areas of the Golden Gate system were able to be held between the 75th and 90th percentile given the many recent capital improvements to reduce operational response time and improve controls, such as the remote operations capability upgrades recently completed at GG1, GG2, and GG3 (ref **Figure 5A & 5B**).

- **COCOHATCHEE SYSTEM**

All portions of the Cocohatchee system are now operating for flood control, however, discharges are very limited out of COCO3 to maintain the top of normal operations range to balance flood control and water conservation (ref **Figure 6A, 6B, 6C, & 6D**).

- **FAKA UNION SYSTEM**

All areas of Faka Union continue on flood control operations. Levels are being maintained at close as possible to the top of range for the upper reaches of Faka Union in an effort to balance flood control and water conservation. Water levels between FU4S and S487 in the Picayune Strand Restoration Project are being maintained near the 75th percentile to mimic existing flood control levels while providing adequate water for the restoration project downstream (ref **Figure 7A & 7B**).

- **HENDERSON CREEK SYSTEM**

HC2 remained fully closed during August except for two days during TS Fred. HC1's two variable crest weirs had to be opened to control rising water levels upstream for about 65% of the month while the large underflow gate remained closed for the entire month even during TS Fred (ref **Figure 8A & 8B**).

- **CORKSCREW SWAMP**

Figure 10 shows the historical trends for Corkscrew, Bird Rookery, and the Cork 3 structure and the 2021 corresponding levels. All three sites experienced a slow down in their accession trend later in the month as the Trafford basin received less rainfall than other regions of the Basin. Even with the reduced rainfall, water levels are still near average for the end of August. Water levels at Lake Trafford are shown in **Figure 10A**, which show lake levels increasing along with the 50th percentile line.

BIG CYPRESS BASIN & LOWER WEST COAST GROUNDWATER LEVELS

The current reporting (08/01/2021) for the Lower West Coast [LWC] indicate increasing groundwater levels for August. All reporting wells but one (C-1224) increased during August given the continued daily rainfall. Even though several wells were below the 25th percentile and in yellow and red indicator levels in May, all but two wells (L-738 and L-2194) have now recovered to median levels for August. The two wells below the 25th percentile for August (L-738 and L-2194) are higher than the August 2020 levels. All wells are now in in the normal condition indicator (green color) (ref. **Table 2**). All reported wells in **Table 2** show an average increase of 1.3 feet. C-948R recorded the highest increase of 3.5 feet, and C-1224 the only decrease of 0.16 (ref. **Table 2, Figure 9**).

BIG CYPRESS BASIN

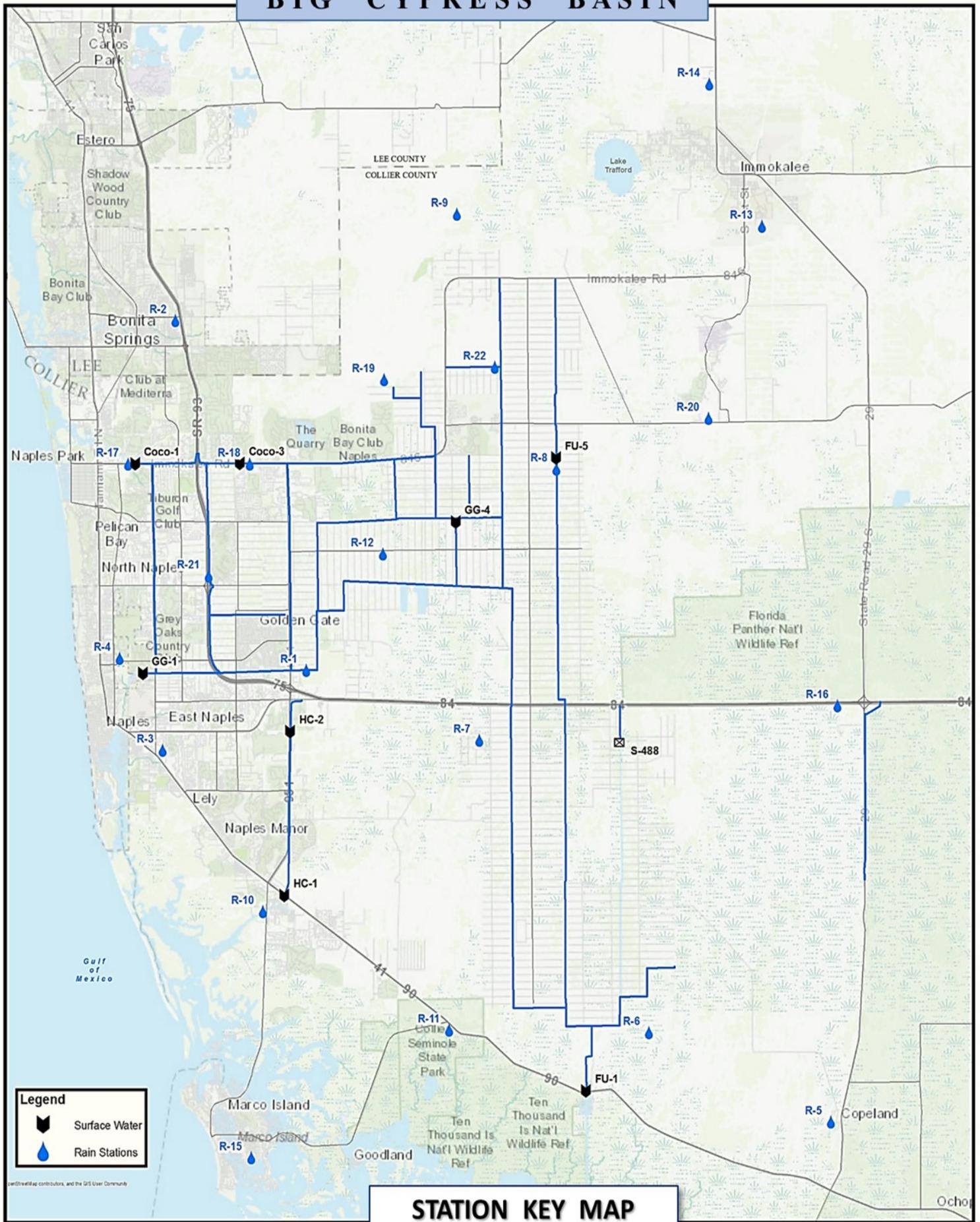


FIGURE 1

TABLE 1
RAINFALL REPORT - AUGUST 2021
DISTRICT/BASIN RAINFALL STATIONS

(ALL NUMBERS ARE IN INCHES)

STATION INDEX NO.	STATION NAME	AUGUST 2021	LONG TERM AVERAGE FOR THIS MONTH	MONTHLY DIFFERENCE	CALENDAR YEAR 2021 CUMULATIVE TOTAL	AVERAGE CALENDAR YEAR TO DATE	YEAR TO DATE DIFFERENCE
R-1	GOLDEN GATE #3	10.72	12.76	-2.04	40.72	48.06	-7.34
R-2	BONITA SPRINGS WATER PLANT	8.06	9.06	-1.00	32.29	37.33	-5.04
R-3	COLLIER COUNTY COURTHOUSE	9.40	8.97	0.43	40.71	37.54	3.17
R-4	FREEDOM PARK	9.07	10.77	-1.70	40.12	42.63	-2.51
R-5	FAKAHATCHEE STRAND HQ	6.25	10.77	-4.52	28.83	44.13	-15.30
R-6	DAN HOUSE PRAIRIE	11.29	8.96	2.33	36.00	37.02	-1.02
R-7	SGGE WEATHER STATION	8.57	11.07	-2.50	40.06	43.53	-3.47
R-8	FAKA UNION #5	10.08	11.11	-1.03	45.74	46.84	-1.10
R-9	CORKSCREW SWAMP NORTH END	6.42	7.53	-1.11	35.57	37.72	-2.15
R-10	ROOKERY BAY HQ	10.76	9.92	0.84	39.01	39.11	-0.10
R-11	COLLIER SEMINOLE STATE PARK	9.33	10.07	-0.74	41.11	40.33	0.78
R-12	G.G. FIRE STATION	13.77	10.20	3.57	42.57	43.04	-0.47
R-13	IMMOKALEE LANDFILL	11.33	7.51	3.82	35.09	37.70	-2.61
R-14	IFAS	6.38	7.79	-1.41	26.84	37.04	-10.20
R-15	MARCO R.O. PLANT	8.18	8.86	-0.68	34.02	37.61	-3.59
R-16	FAKAHATCHEE STRAND NORTH END	11.30	9.50	1.80	32.15	44.59	-12.44
R-17	COCO#1	7.85	8.17	-0.32	33.73	34.82	-1.09
R-18	COCO#3	9.70	11.25	-1.55	36.13	41.15	-5.02
R-19	BIRD ROOKERY	9.22		New Site	34.80	No Historical Data	
R-20	AVE MARIA	8.81	9.02	-0.21	31.20	39.45	-8.25
R-21	I75W2	7.75		New Site	38.89	No Historical Data	
R-22	GG#7	10.25		New Site	38.36	No Historical Data	
R-23	FLINT PEN STRAND	7.65			Inc/Rec	39.05	

AVERAGES	9.22	9.65	-0.42	36.54	40.43	-3.89
----------	------	------	-------	-------	-------	-------

BCB ANNUAL RAINFALL
MONTHLY AVERAGE & HISTORICAL AVERAGE TRENDS
(FROM BCB RAINFALL GAUGE DATA)

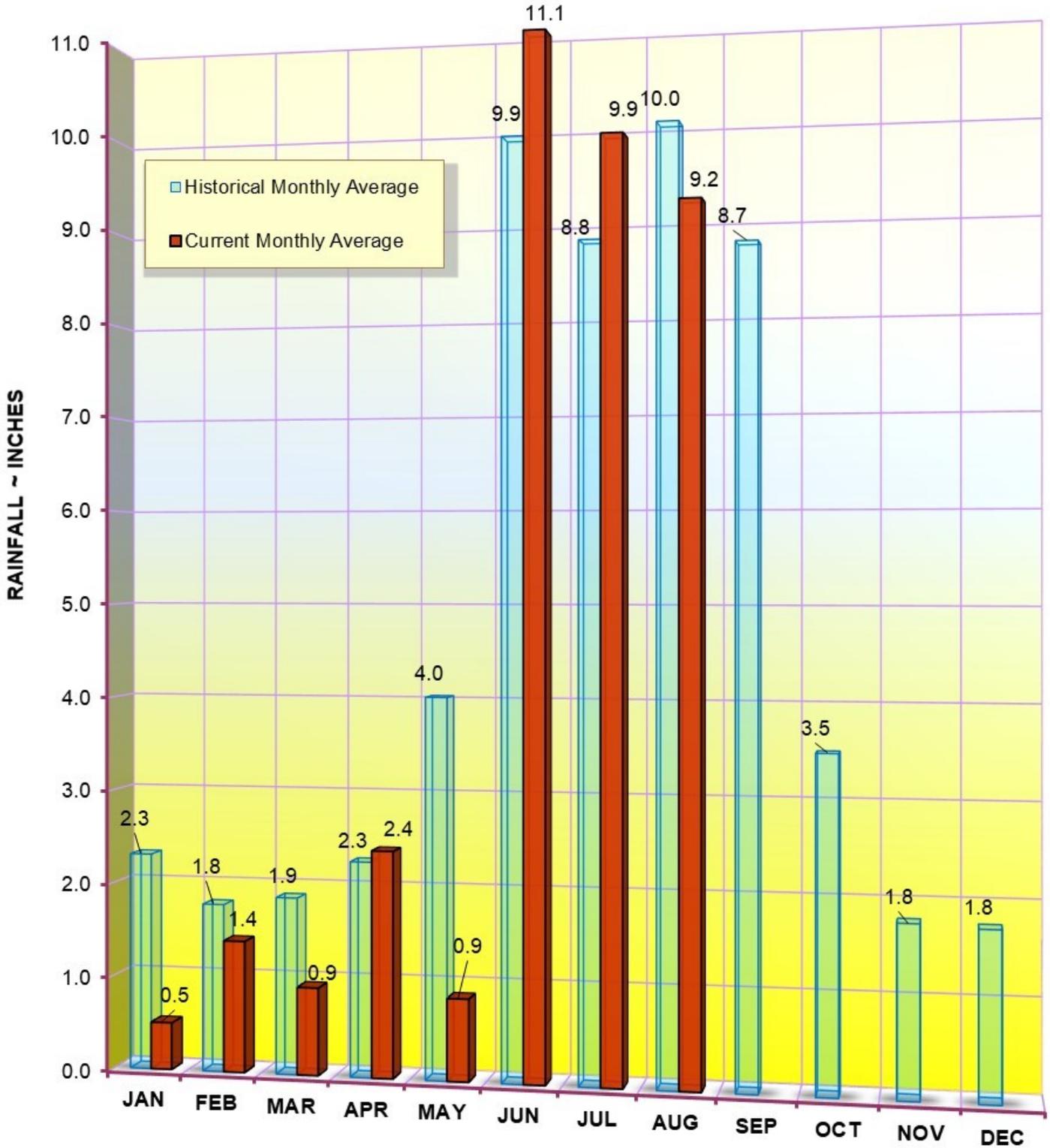
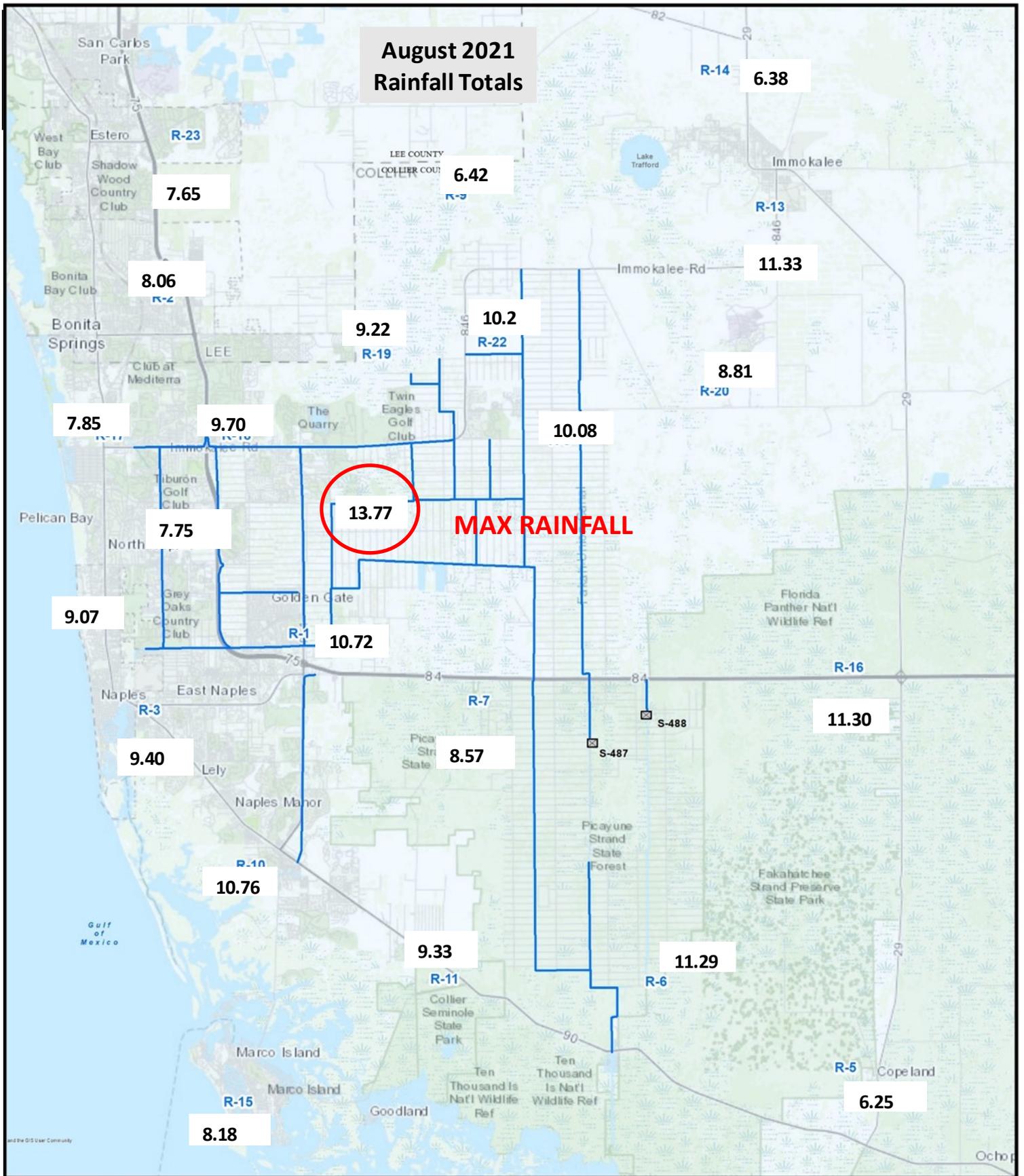


FIGURE 2
BCB GAUGE RAINFALL
MONTHLY AVERAGES THROUGH AUGUST 2021



**FIGURE 3
BCB RAINFALL DISTRIBUTION
AUGUST 2021**

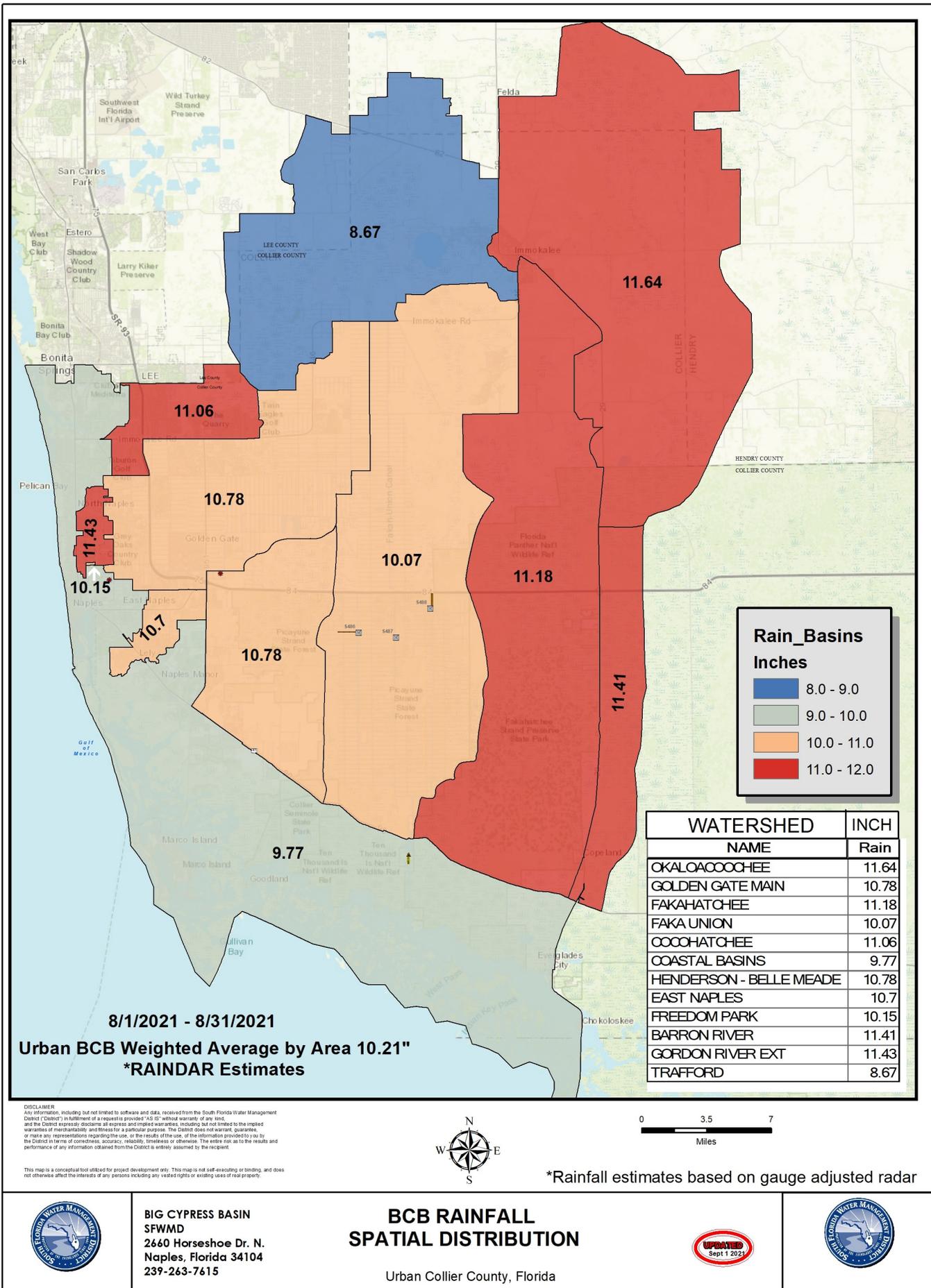


FIGURE 3a

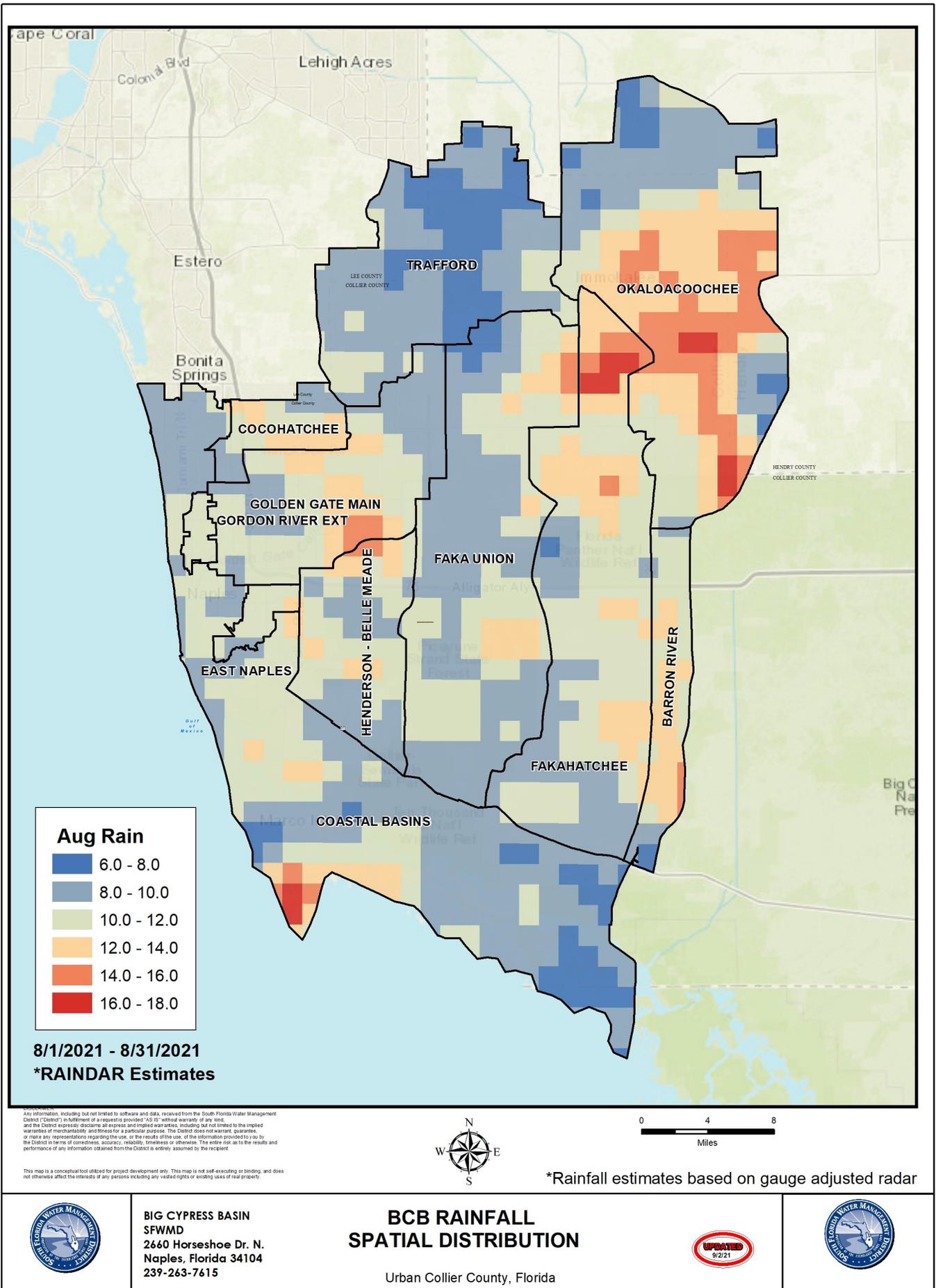
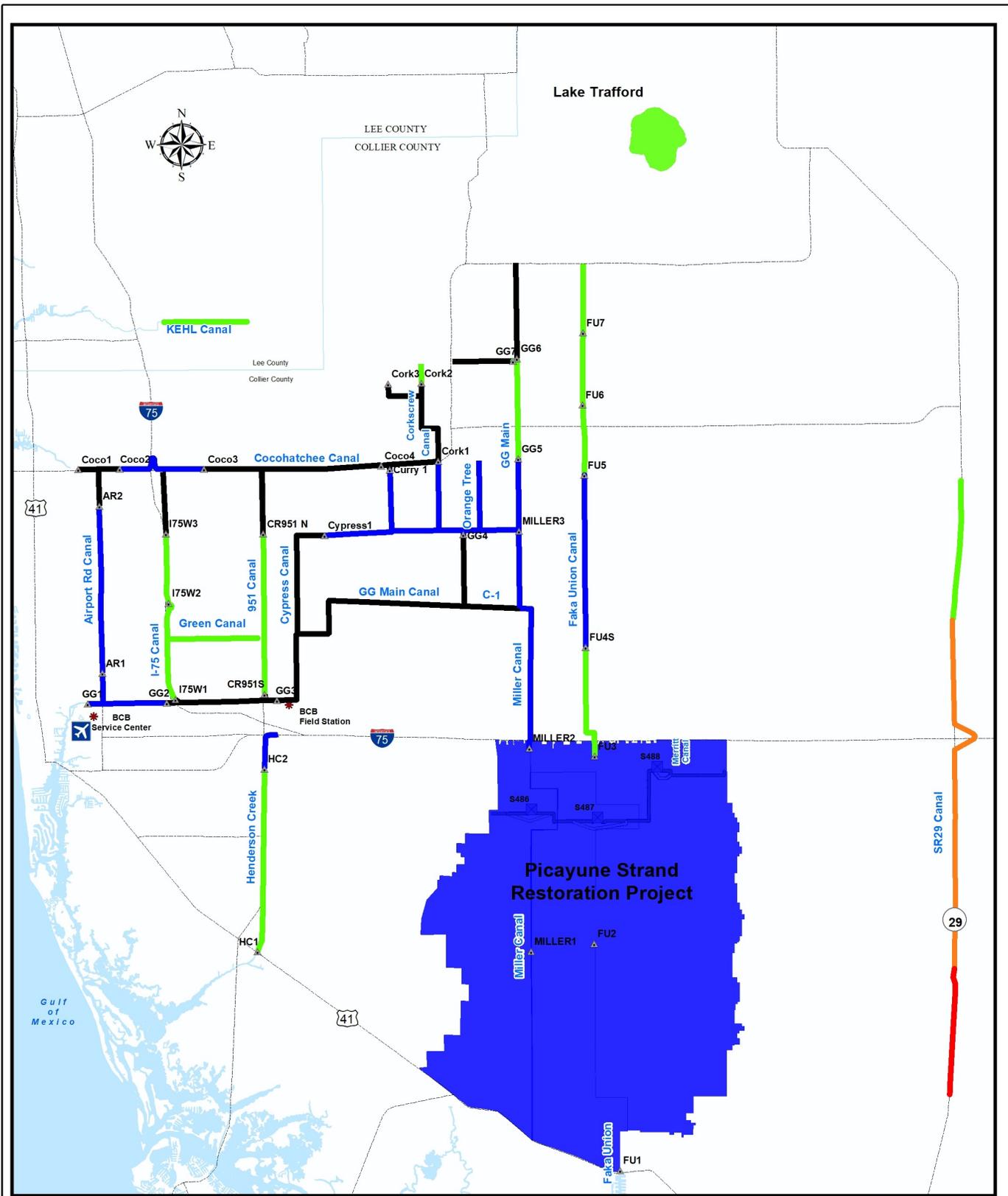


FIGURE 4



DISCLAIMER
 Any information, including but not limited to software and data, received from the South Florida Water Management District ("District") in fulfillment of a request is provided "AS IS" without warranty of any kind, and the District expressly disclaims all express and implied warranties, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. The District does not warrant, guarantee, or make any representations regarding the use, or the results of the use, of the information provided to it by the District in terms of correctness, accuracy, reliability, timeliness or otherwise. The entire risk as to the results and performance of any information obtained from the District is entirely assumed by the recipient.

This map is a conceptual tool utilized for project development only. This map is not self-executing or binding, and does not otherwise affect the interests of any persons including any vested rights or existing uses of real property.



* Based on period of record for each canal reach



BIG CYPRESS BASIN
 SFWMD
 2660 Horseshoe Dr. N.
 Naples, Florida 34104
 239-263-7615

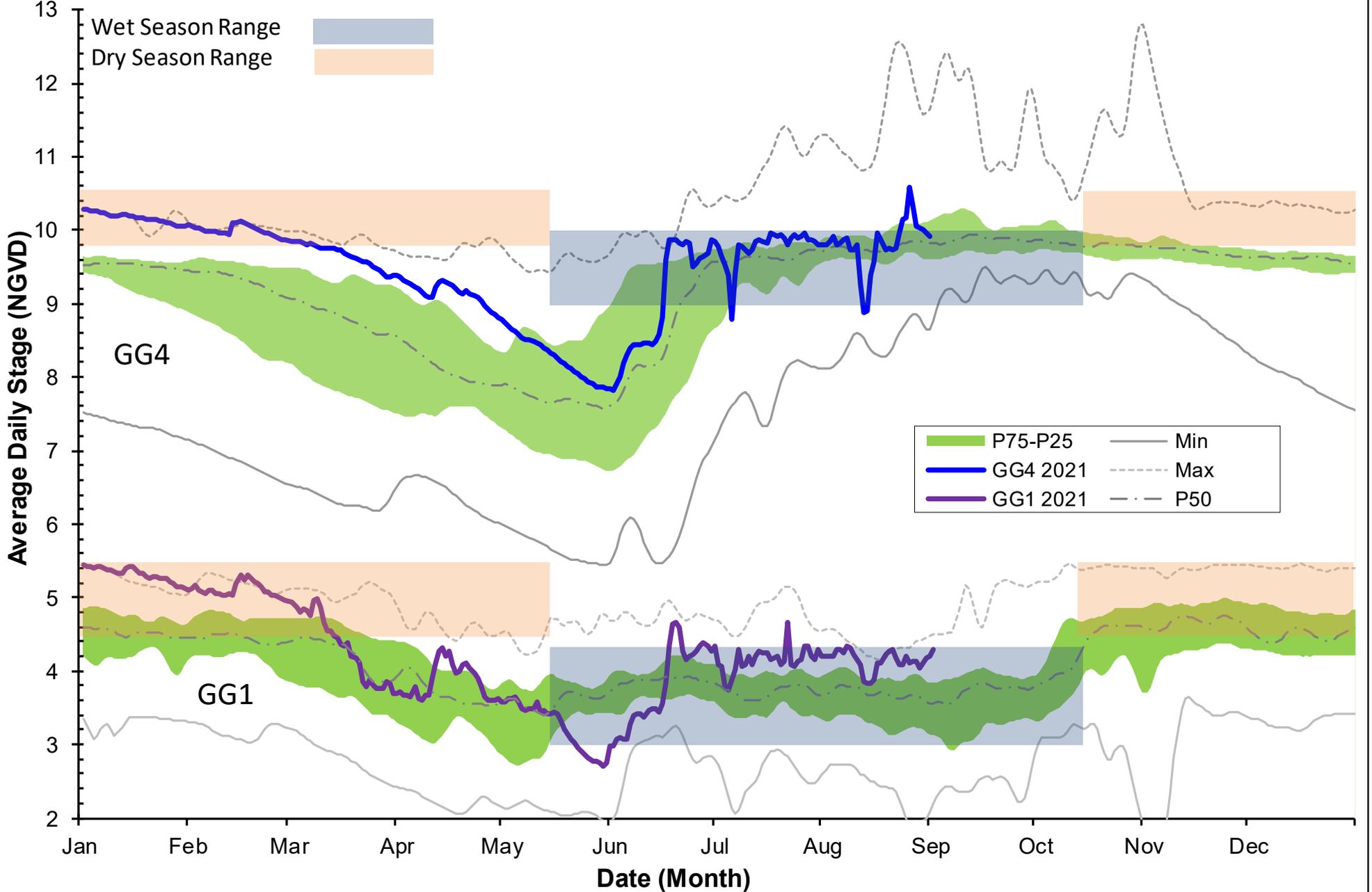
BCB Conditions Index
 Urban Collier County, Florida



SFWMD_FL_Map_Mar_2019

FIGURE 4A

Golden Gate Canal Historic Average Daily Headwater Percentiles



Cocohatchee Canal Historic Average Daily Headwater Percentiles

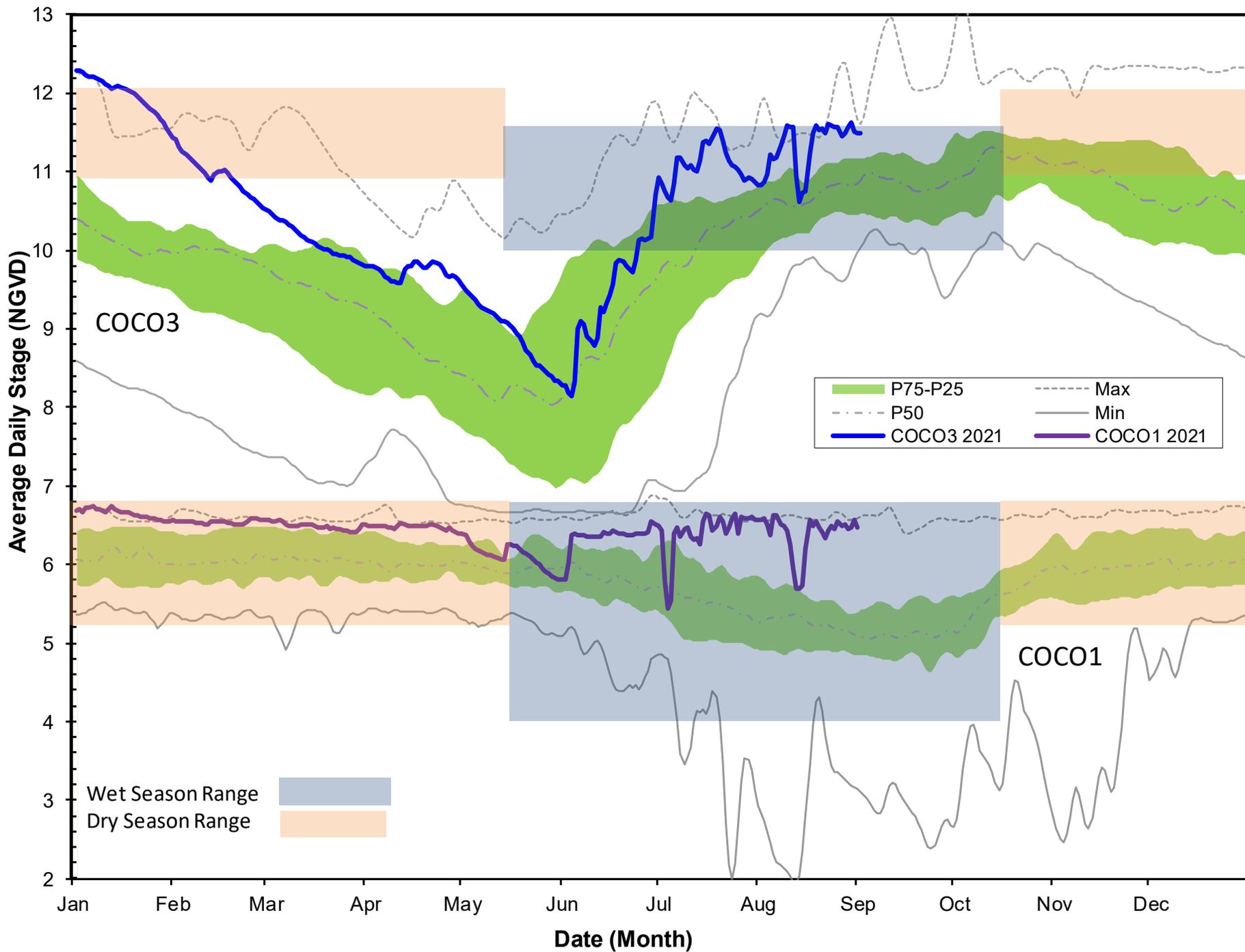


Figure 6C - CORK1 Historic Average Daily Headwater Percentiles (1989-2020)

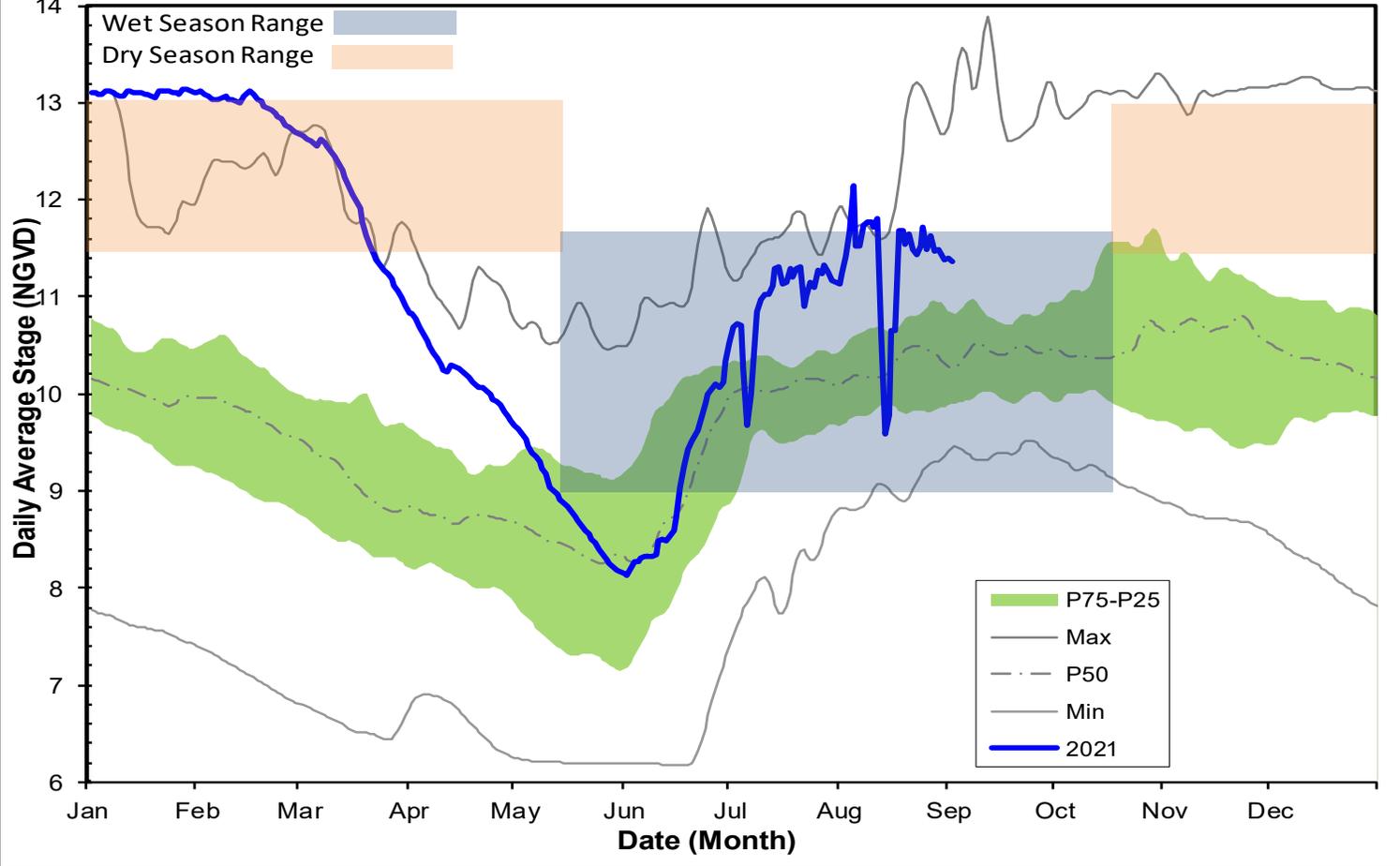
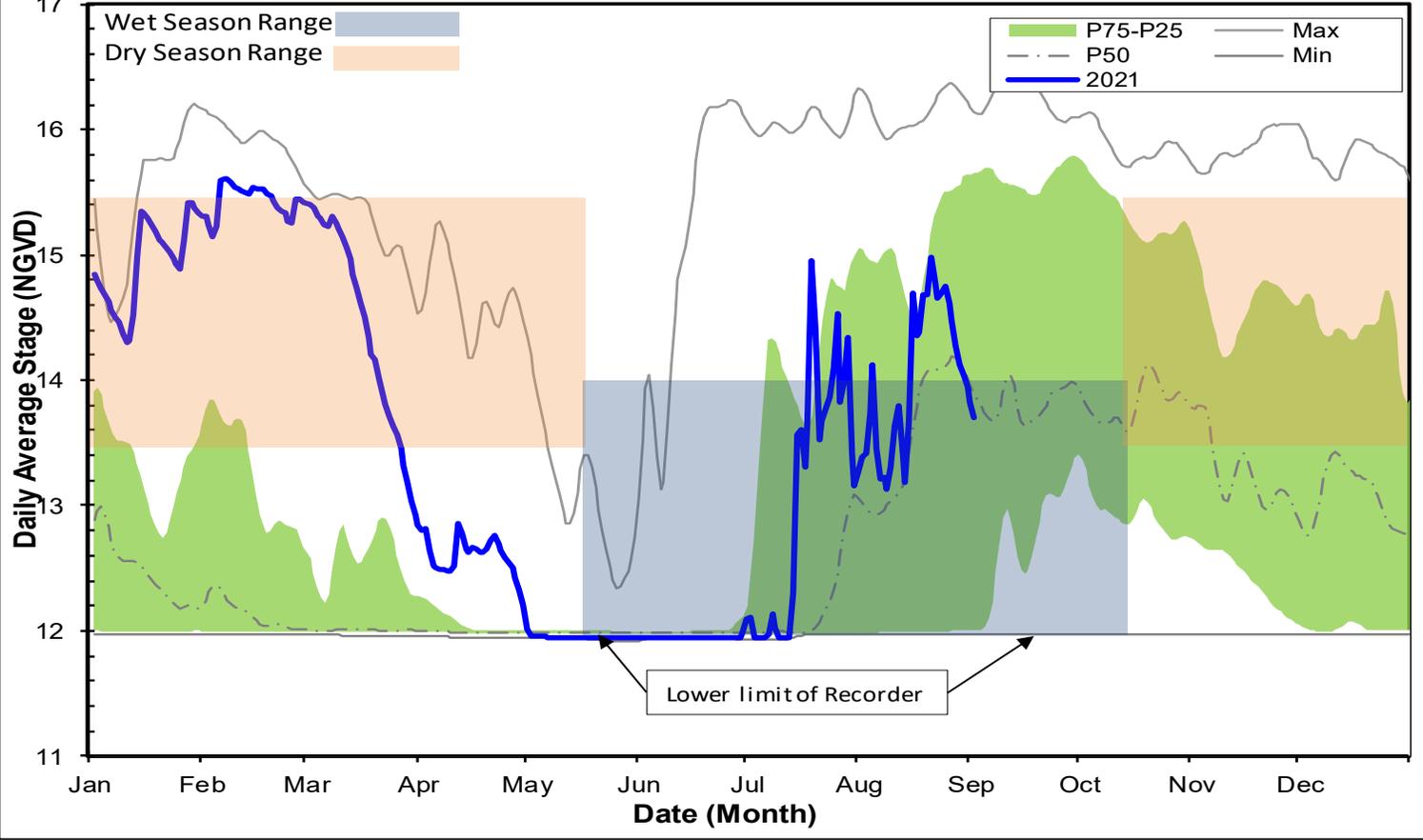
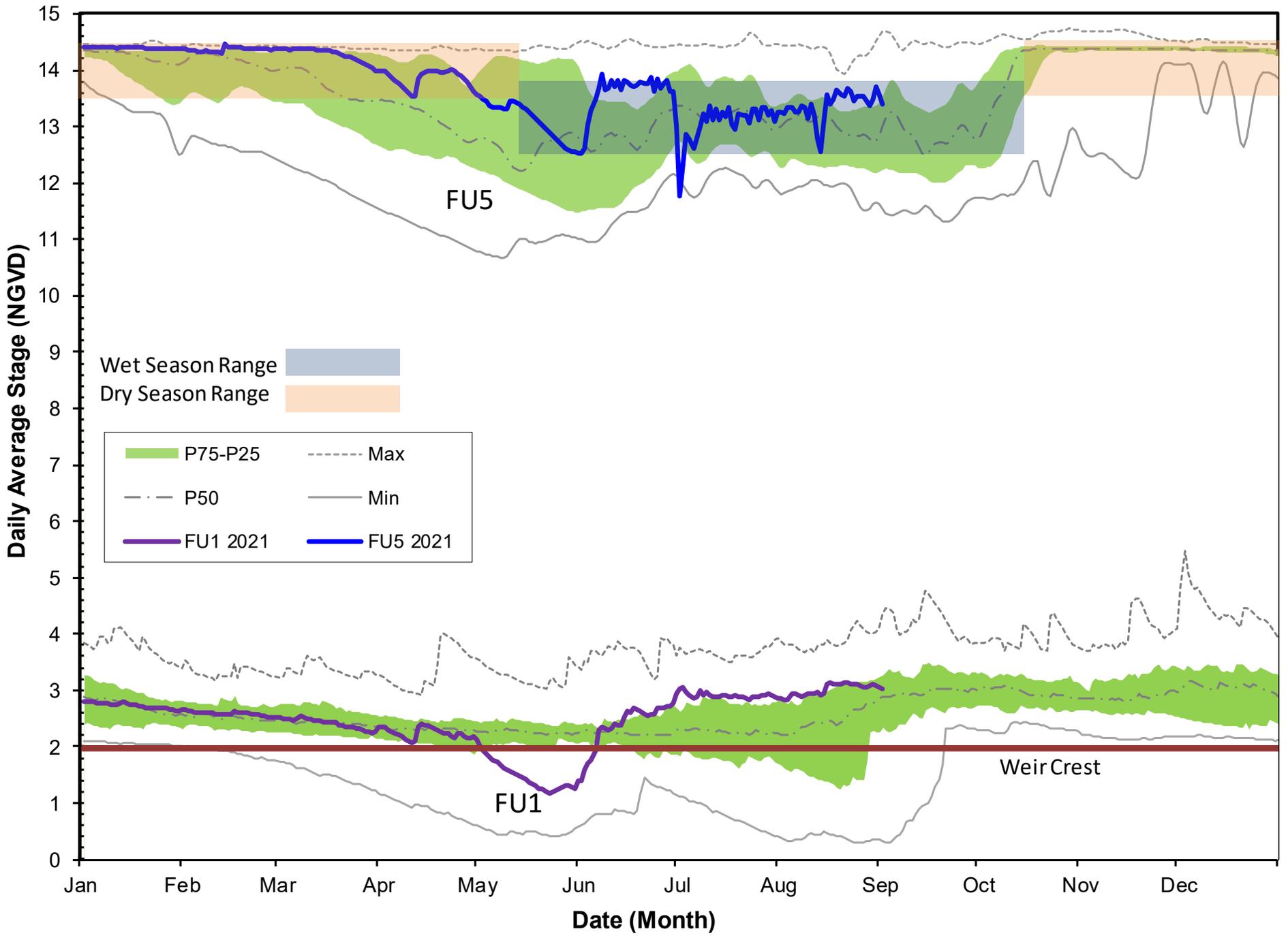


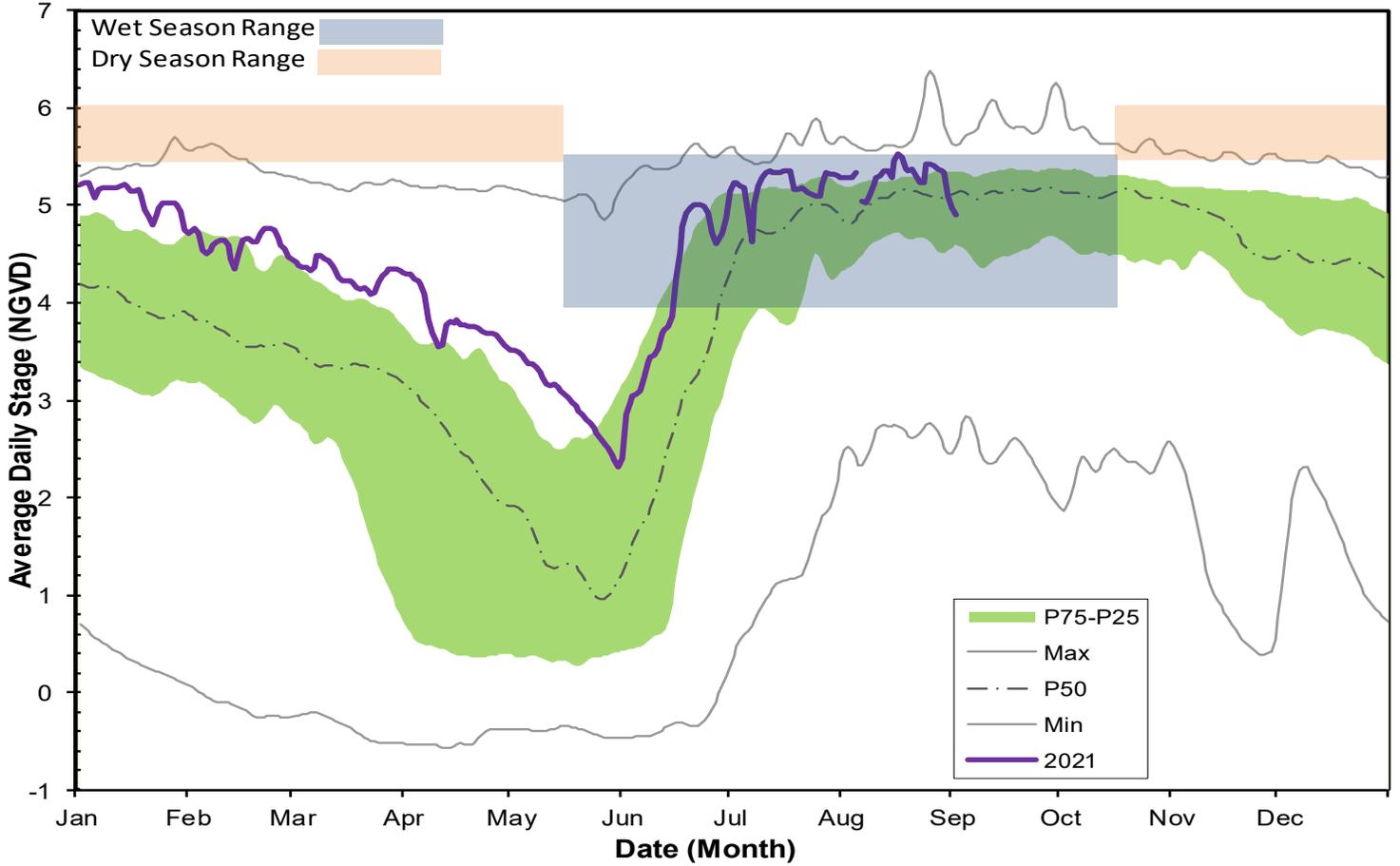
Figure 6D - CORK3 Average Daily Headwater Percentiles (2004-2020)



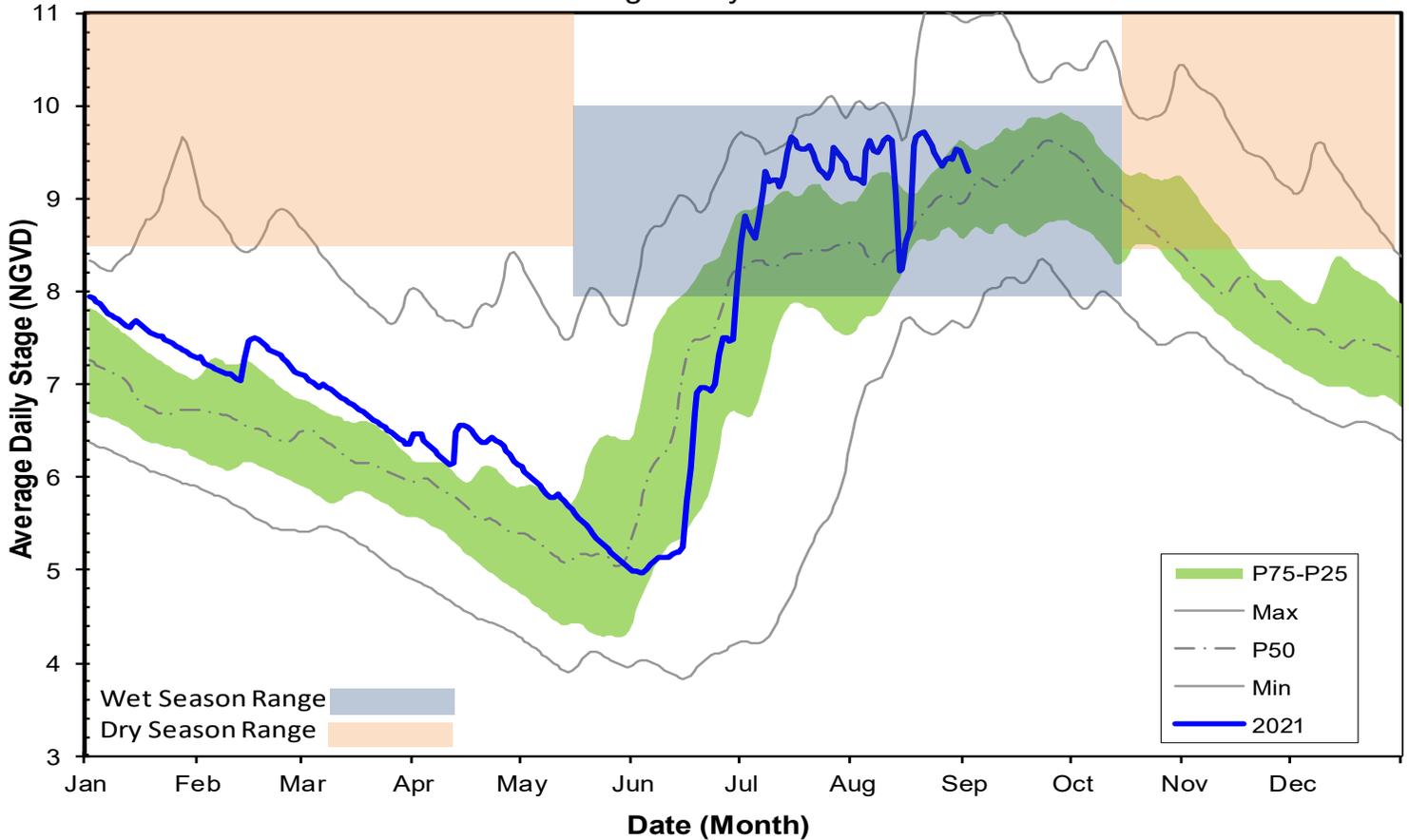
Faka Union Canal Historic Average Daily Headwater Percentiles



HC1 Historic Average Daily Headwater Percentiles



HC2 Historic Average Daily Headwater Percentiles



WATER CONDITIONS SUMMARY - August 2021
SELECTED STATIONS for BCB AREA / SW FLORIDA

Last Reading Date :		September 1, 2021					
Previous Period Reading Date:		August 1, 2021					
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	1.24	30.84	32.08	↑	GREEN
C-1004R	Naples	Lower Tamiami Aquifer	1.34	3.82	5.16	↑	GREEN
C-1224	Marco Lakes	Lower Tamiami Aquifer	-0.16	4.68	4.52	↓	GREEN
C-948R	Golden Gate	Mid Hawthorn Aquifer	3.51	32.76	36.27	↑	
C-951R	Golden Gate	Lower Tamiami Aquifer	0.02	6.15	6.17	↑	
L-2194	Bonita Springs	Sandstone Aquifer	2.02	6.20	8.22	↑	GREEN
L-2195	Bonita Springs	Surficial Aquifer System	0.89	11.40	12.29	↑	GREEN
L-738	Bonita Springs	Lower Tamiami Aquifer	1.77	2.34	4.11	↑	GREEN

TABLE 2
BCB WATER CONDITIONS SUMMARY
AUGUST 2021

BIG CYPRESS BASIN

AUGUST 2021

GROUNDWATER LEVEL DAILY TRENDS COMPARED TO HISTORICAL AVERAGE

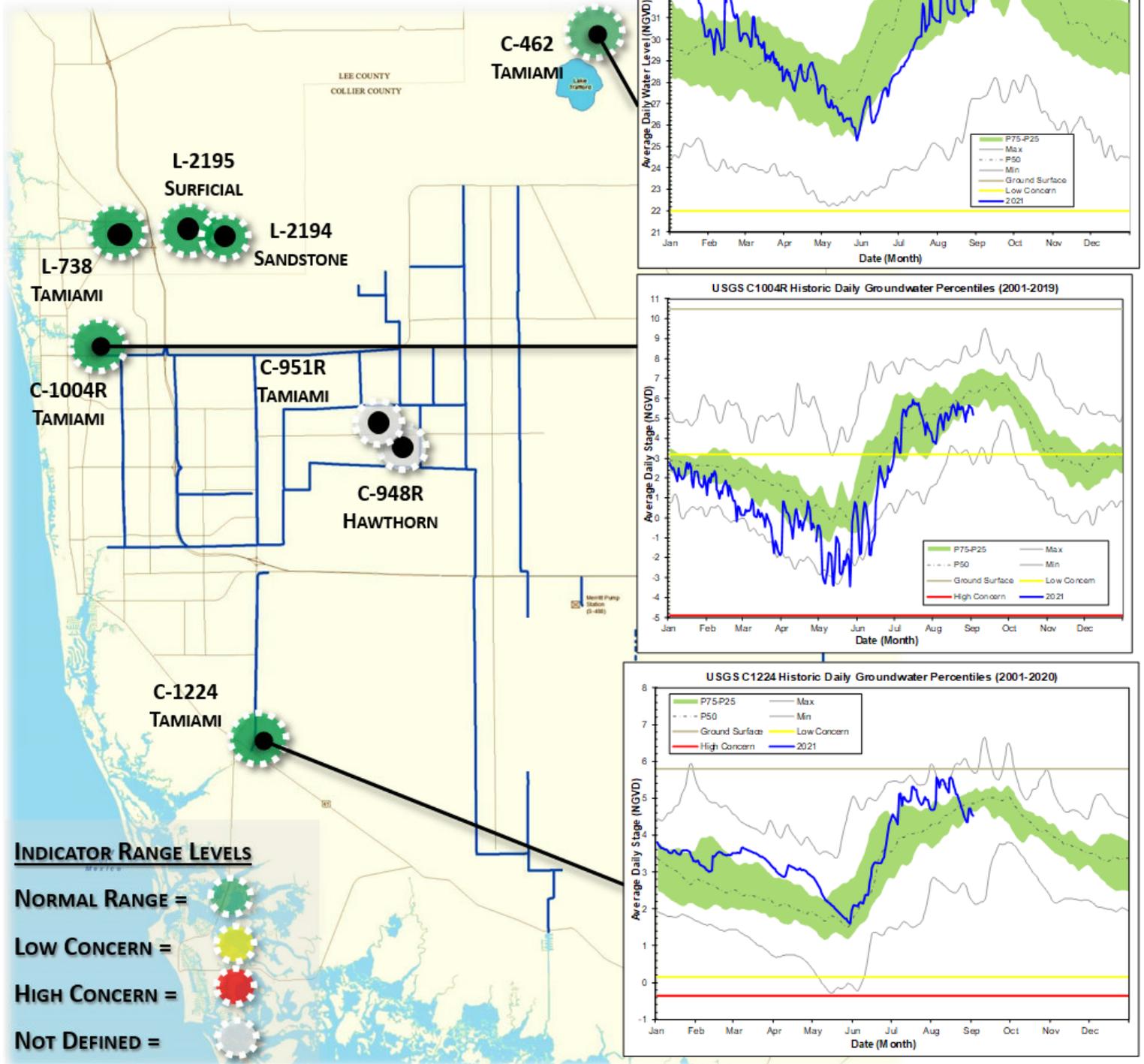


FIGURE 9

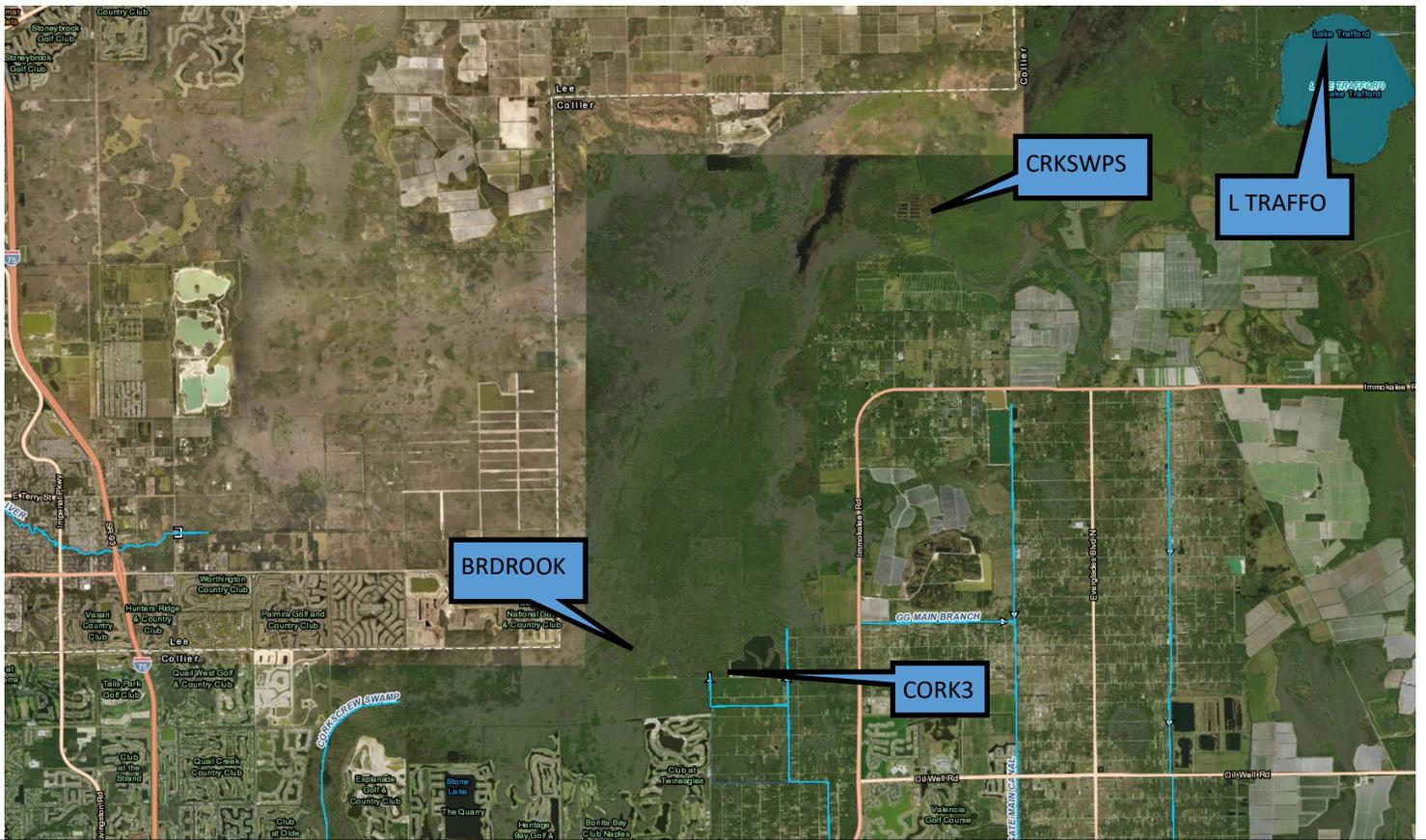


Figure 10-Corkscrew Historic Average Daily Headwater Percentiles(1984-2019)

