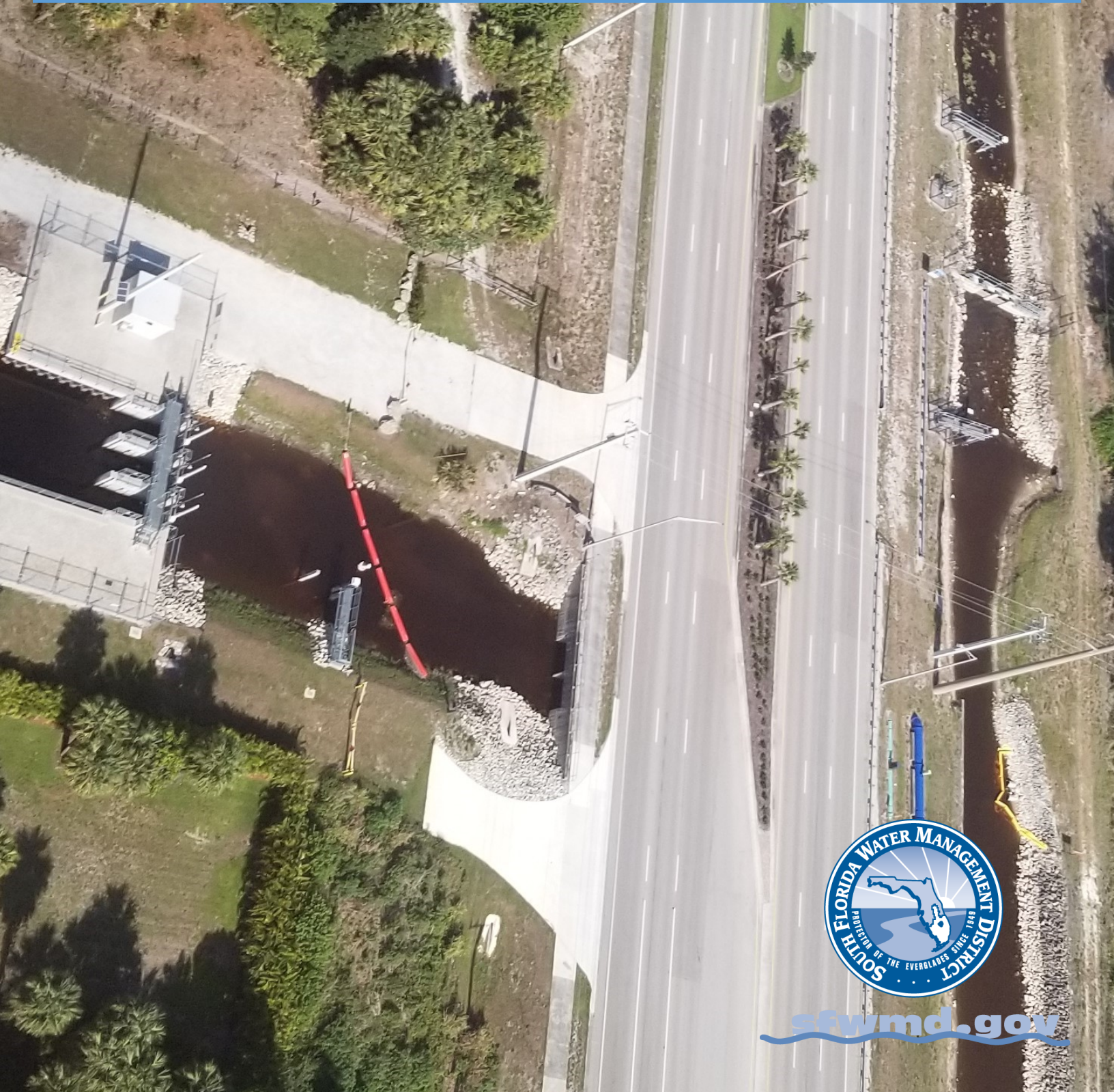


JULY 2021

BIG CYPRESS BASIN HYDROLOGIC REPORT



SUMMARY OF HYDROLOGIC CONDITIONS IN THE BIG CYPRESS BASIN

July 2021

SUMMARY

As July started Tropical Storm/Hurricane Elsa formed and threatened the Basin. Elsa took a more traditional August storm track from the eastern Caribbean. As it took a turn to the north through Cuba, Elsa passed by the west coast of Florida offshore, but did bring heavy rainfall to portions of southwest Florida. Fortunately, the Basin did not receive the heaviest rainfall in southwest

Florida. Western areas of the Basin received 3-5 inches, while eastern portions of the County only received 1-2 inches. This is in stark contrast to some of the totals



that occurred in coastal Charlotte and Lee where some rainfall totals topped 10 inches.

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 Elsa passed.

Looking ahead, there is much uncertainty 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.

BCB RAINFALL

As measured by twenty-three (23) reporting stations (ref. **Figures 1, 2, Table 1**), the basin-wide monthly average was **9.9 inches (115% of normal)**, which above the average 8.6 inches typically collected.

Based on collected gauge and radar data, the rainfall distribution across the Basin was highly variable. Some areas of Okaloacoochee and Trafford basins received 17—19” of rainfall, while portions Fakahatchee and Faka Union basins received only 5—7” of rain. **Figure 3a** shows the average rainfall for each of the Basin’s watersheds based on gauge adjusted radar. The East Naples basin received the highest rainfall with about **12.1 inch** areal average across the watershed and the lowest was the Barron River basin with about **7.8 inches**. The Basin’s total areal weighted average rainfall was **9.9 inches**. The month’s highest gauge total was collected at the Faka Union #5 (Site R-8), which received **13.96 inches**. This month’s lowest rainfall was recorded at Fakahatchee Strand HQ (Site R-5), which received **6.05 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 Elsa, but were returned to normal after the storm passed. As the month ended, about 95% of BCB water control structures were actively discharging 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 (ref **Figure 5A & 5B**).

- **COCOHATCHEE SYSTEM**

Western portions of the Cocohatchee system maintained flood control operations while the eastern areas have not yet filled enough to need active flood control operations. Regions east of COCO3 continued to conserve water and limit discharges out of the system (ref **Figure 6A, 6B, 6C, & 6D**).

- **FAKA UNION SYSTEM**

All areas of Faka Union have fully transitioned to flood control operations. Levels are being maintained at close as possible to the top of range for the middle reach 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**

Water control structures in the Henderson Creek system remained fully closed during July except for a brief period before and during TS Elsa. Canal levels are being maintained between the 75th and 90th percentile (ref **Figure 8A & 8B**).

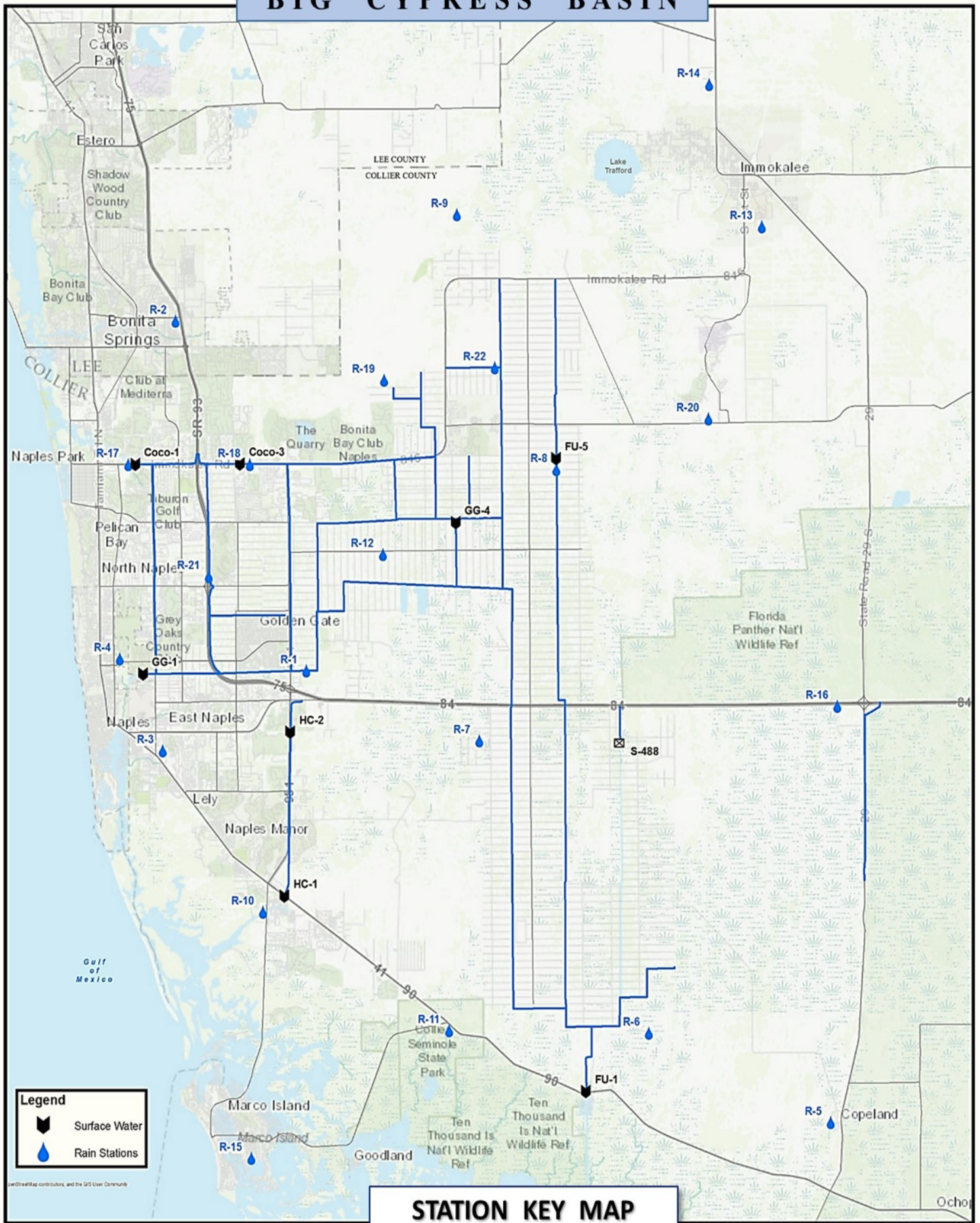
- **CORKSCREW SWAMP**

Figure 10 shows the historical trends for Corkscrew, Bird Rookery, and the Cork 3 structure and the 2021 corresponding levels. All three sites experienced accessions in water levels throughout the swamp and did begin to discharge at CORK3 and CORK2. Gate openings were incrementally increased during the month as the need for discharge increased. 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 (08/04/2021) for the Lower West Coast [LWC] indicate increasing groundwater levels for July. All reporting wells increased during July given the almost daily rainfall. Even though several wells were below the 25th percentile and in yellow and red indicator levels in May, all but two wells (C-948R and L-2194) have now recovered to median levels for July. All wells are now in the normal condition indicator (green color) (ref. **Table 2**). All reported wells in **Table 2** show an average increase of 2.1 feet. C-462 recorded the highest increase of 4.8 feet, and C-948R the smallest increase of 0.6 feet (ref. **Table 2, Figure 9**).

BIG CYPRESS BASIN



STATION KEY MAP

FIGURE 1

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

(ALL NUMBERS ARE IN INCHES)

STATION INDEX NO.	STATION NAME	JULY 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	9.80	8.55	1.25	30.00	35.30	-5.30
R-2	BONITA SPRINGS WATER PLANT	10.22	8.07	2.15	24.23	28.27	-4.04
R-3	COLLIER COUNTY COURTHOUSE	12.87	8.23	4.64	31.31	28.57	2.74
R-4	FREEDOM PARK	9.58	9.62	-0.04	31.05	31.86	-0.81
R-5	FAKAHATCHEE STRAND HQ	6.05	9.18	-3.13	22.58	33.36	-10.78
R-6	DAN HOUSE PRAIRIE	6.62	8.42	-1.80	24.71	28.05	-3.34
R-7	SGGE WEATHER STATION	7.00	9.25	-2.25	31.49	32.46	-0.97
R-8	FAKA UNION #5	13.96	8.61	5.35	35.66	35.73	-0.07
R-9	CORKSCREW SWAMP NORTH END	8.68	7.81	0.87	29.15	30.19	-1.04
R-10	ROOKERY BAY HQ	11.55	8.41	3.14	28.25	29.19	-0.94
R-11	COLLIER SEMINOLE STATE PARK	12.48	8.67	3.81	31.78	30.26	1.52
R-12	G.G. FIRE STATION	8.91	10.31	-1.40	28.80	32.83	-4.03
R-13	IMMOKALEE LANDFILL	12.06	7.77	4.29	23.76	30.19	-6.43
R-14	IFAS	8.68	7.26	1.42	20.46	29.24	-8.78
R-15	MARCO R.O. PLANT	11.08	7.55	3.53	25.84	28.75	-2.91
R-16	FAKAHATCHEE STRAND NORTH END	8.37	9.37	-1.00	20.85	35.08	-14.23
R-17	COCO#1	10.59	7.70	2.89	25.88	26.64	-0.76
R-18	COCO#3	7.99	10.43	-2.44	26.43	29.90	-3.47
R-19	BIRD ROOKERY	9.99		New Site	25.58	No Historical Data	
R-20	AVE MARIA	10.85	7.99	2.86	22.39	30.43	-8.04
R-21	I75W2	12.10		New Site	31.14	No Historical Data	
R-22	GG#7	9.55		New Site	28.11	No Historical Data	
R-23	FLINT PEN STRAND	8.13	8.71		INC/REC		

AVERAGES	9.87	8.60	1.28	27.25	30.86	-3.61
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BCB ANNUAL RAINFALL
MONTHLY AVERAGE & HISTORICAL AVERAGE TRENDS
(FROM BCB RAINFALL GAUGE DATA)

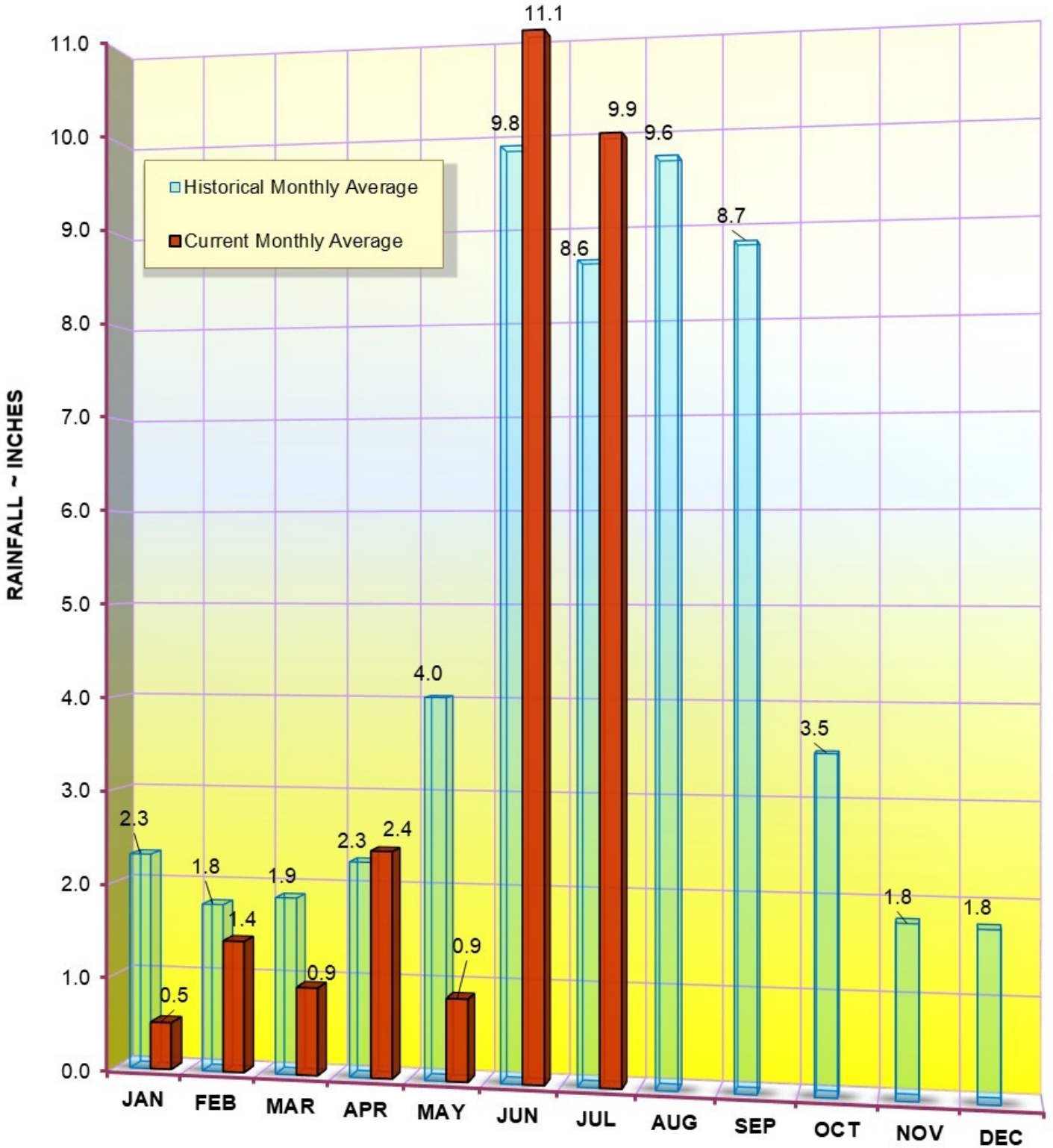
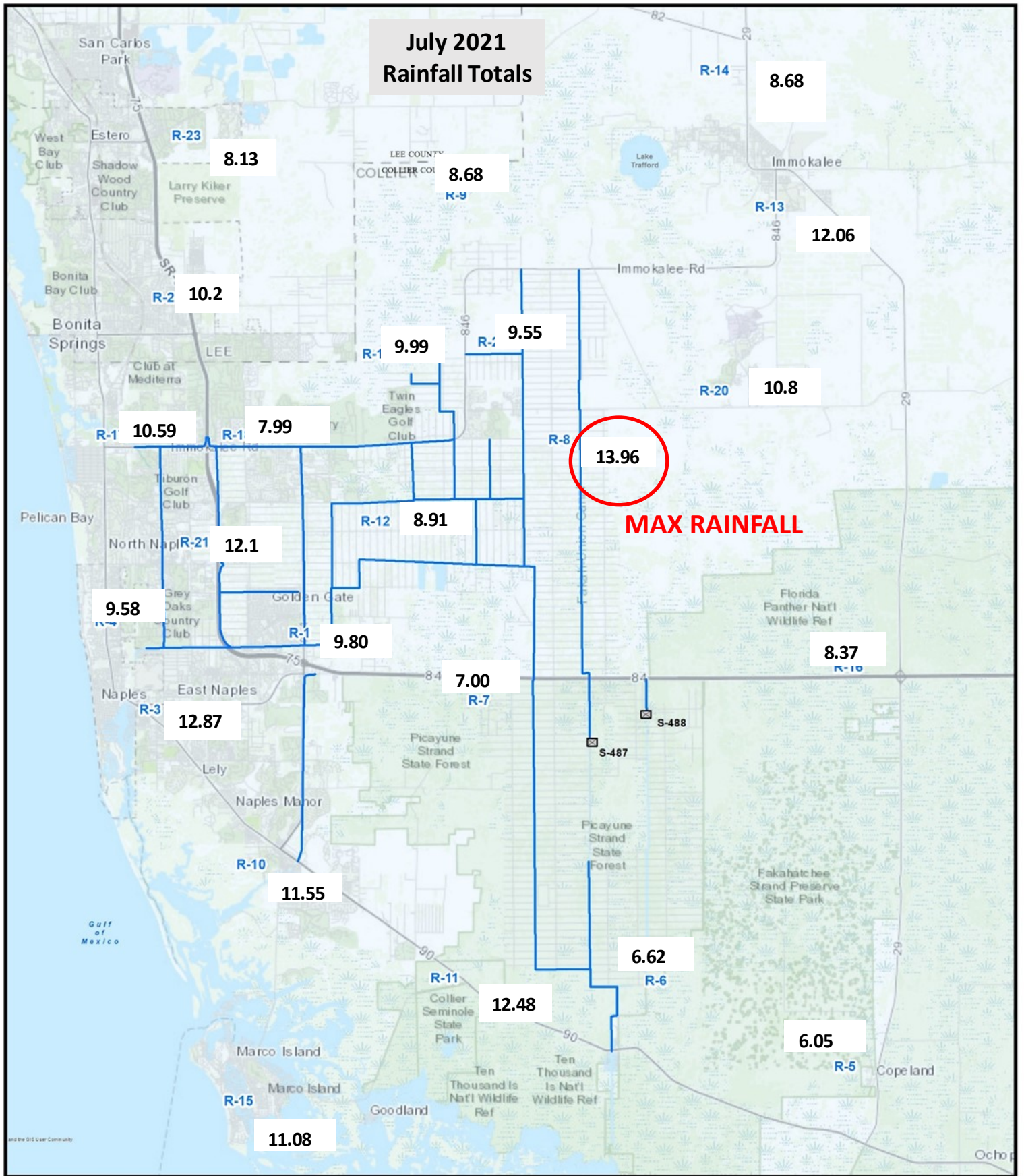
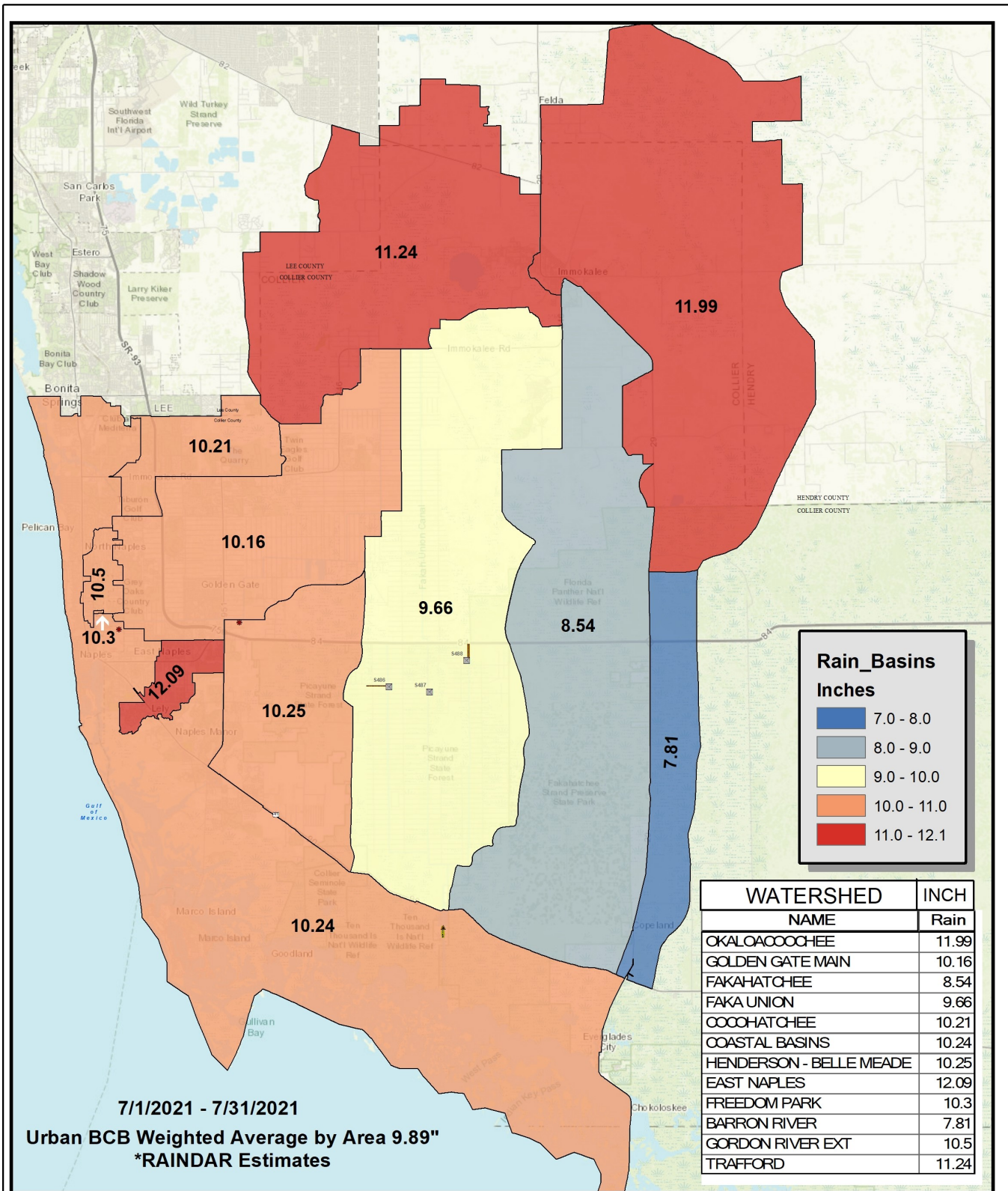


FIGURE 2
BCB GAUGE RAINFALL
MONTHLY AVERAGES THROUGH JULY 2021

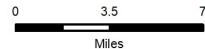


**FIGURE 3
BCB RAINFALL DISTRIBUTION
JULY 2021**



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



*Rainfall estimates based on gauge adjusted radar



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

BCB RAINFALL
SPATIAL DISTRIBUTION

Urban Collier County, Florida



SFWMD_PLUMBING_2015

FIGURE 3a

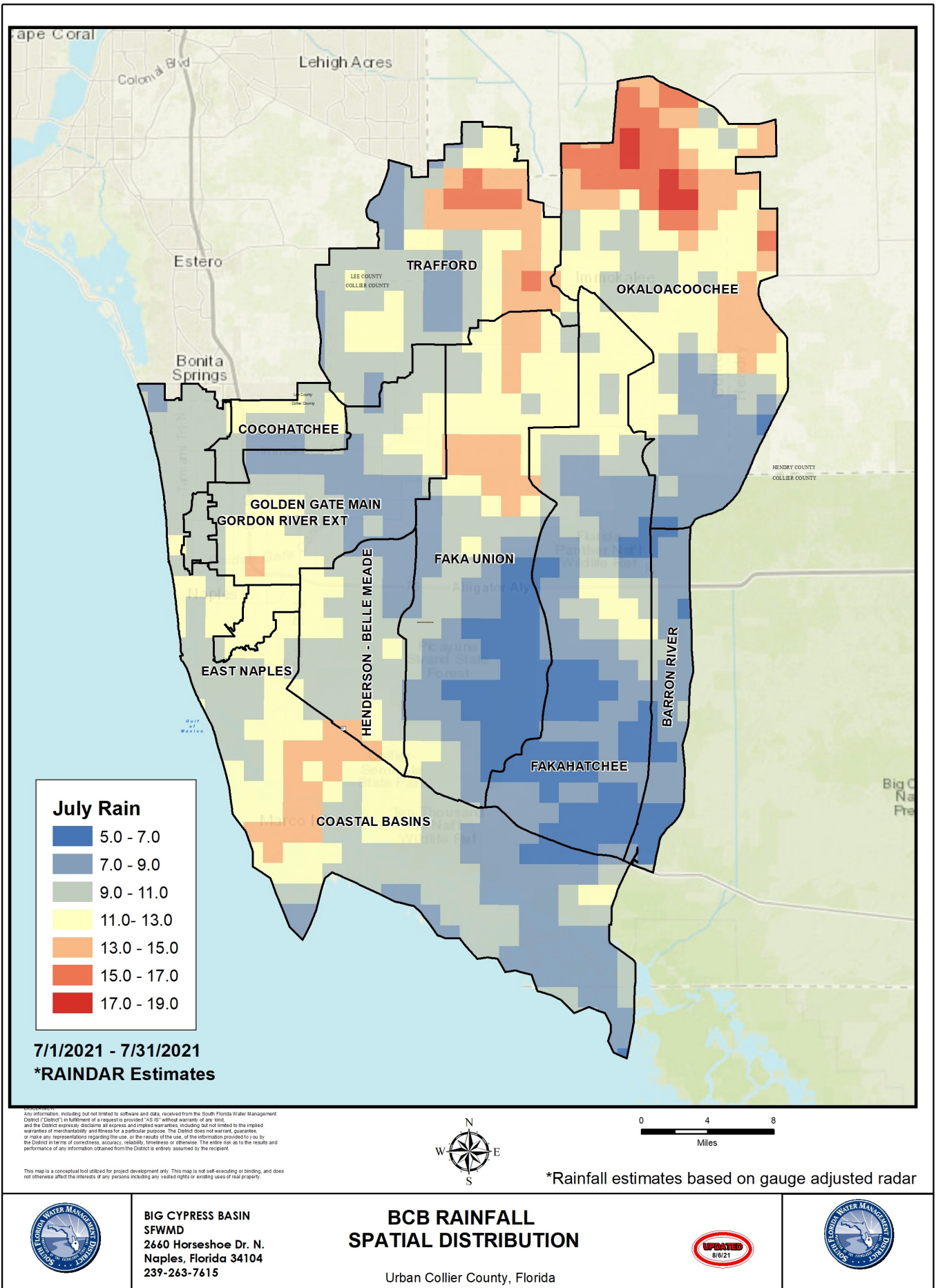
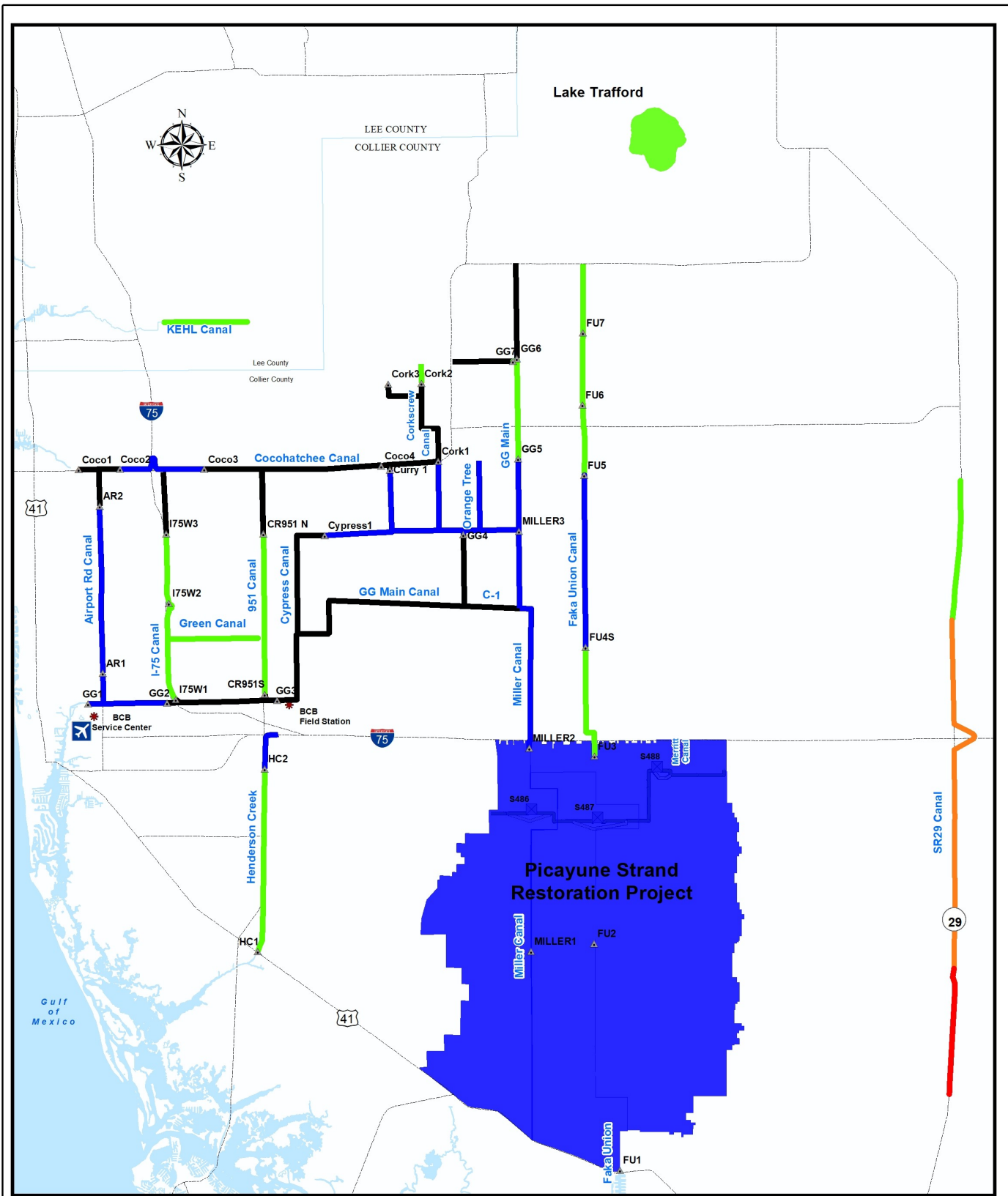
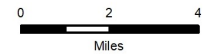
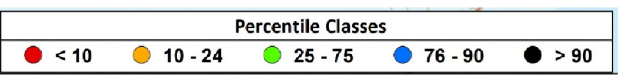


FIGURE 4



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* Based on period of record for each canal reach



BIG CYPRESS BASIN
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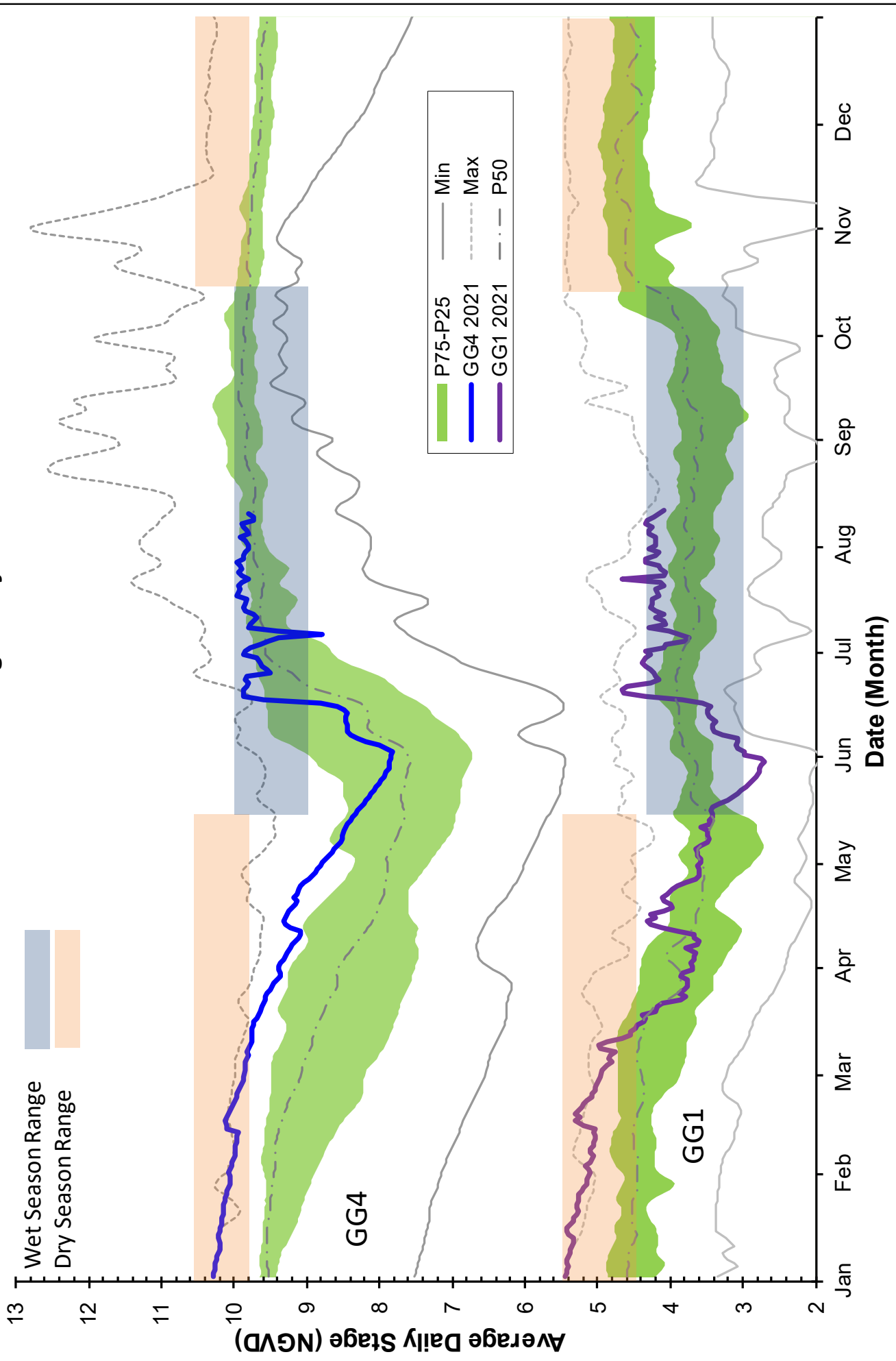
BCB Conditions Index
 7/26/21
 Urban Collier County, Florida



SFWMD_FL_Map_Mar_2019

FIGURE 4A

Golden Gate Canal Historic Average Daily Headwater Percentiles



Cocohatchee Canal Historic Average Daily Headwater Percentiles

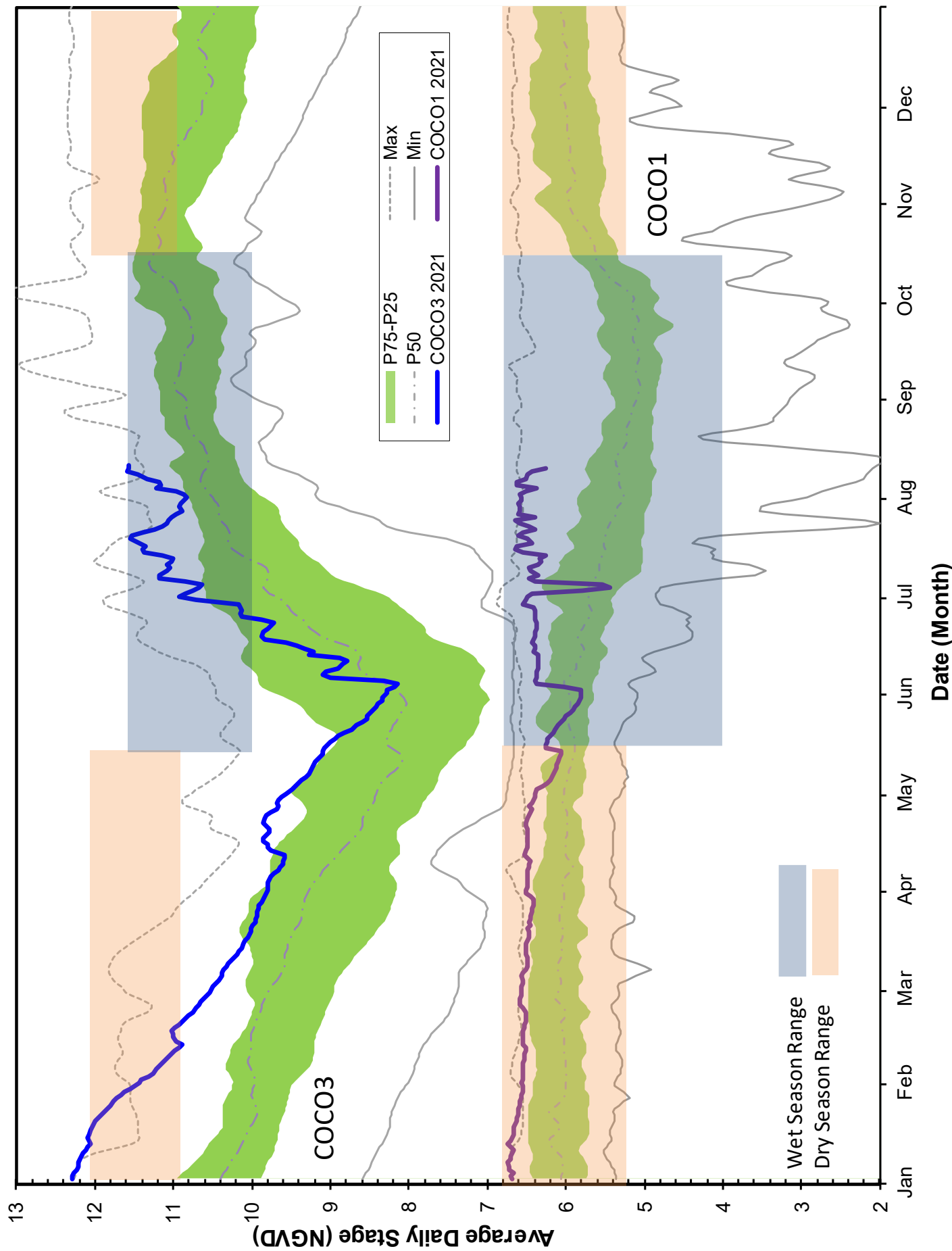


Figure 6C - CORK1 Historic Average Daily Headwater Percentiles (1989-2020)

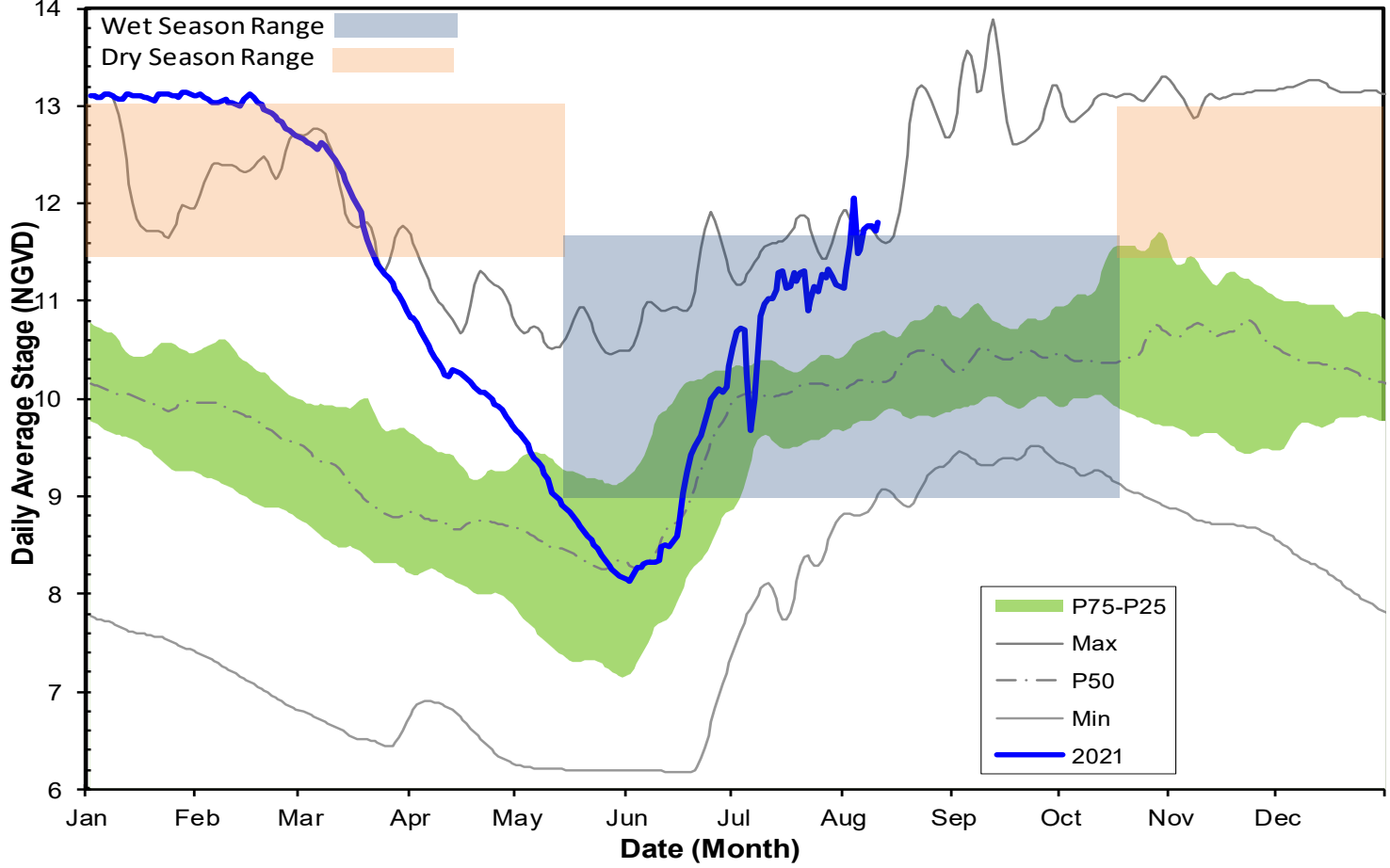
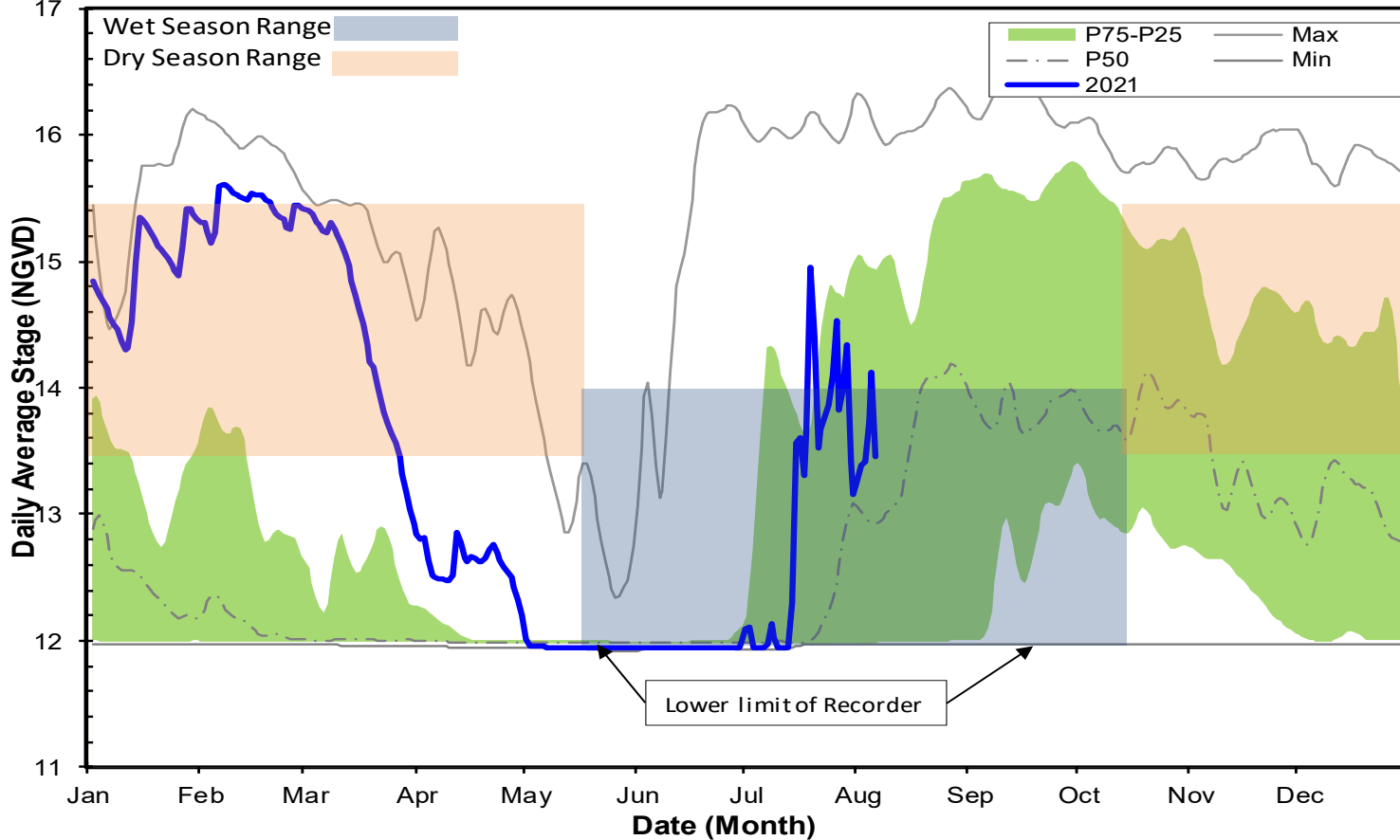
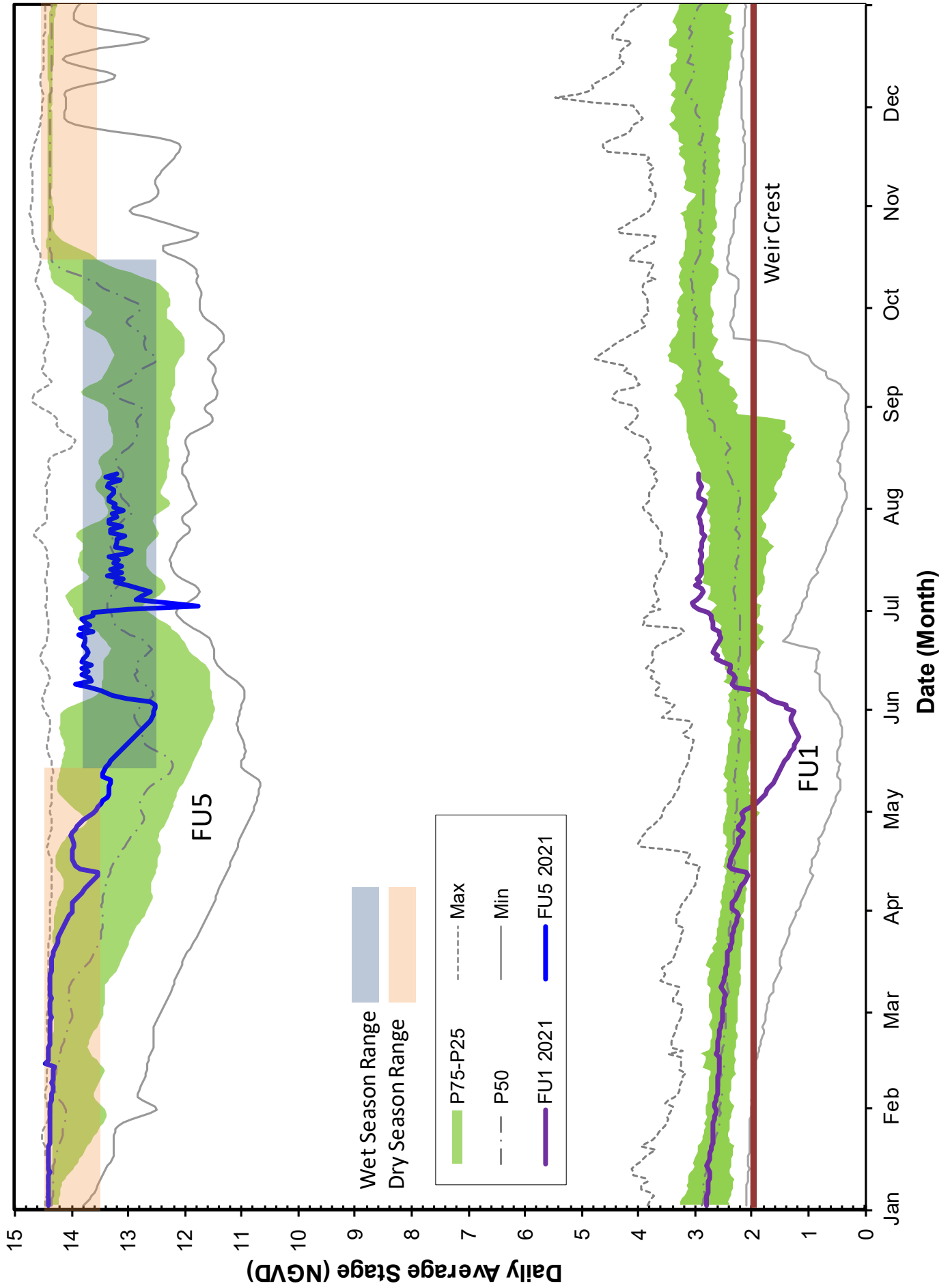


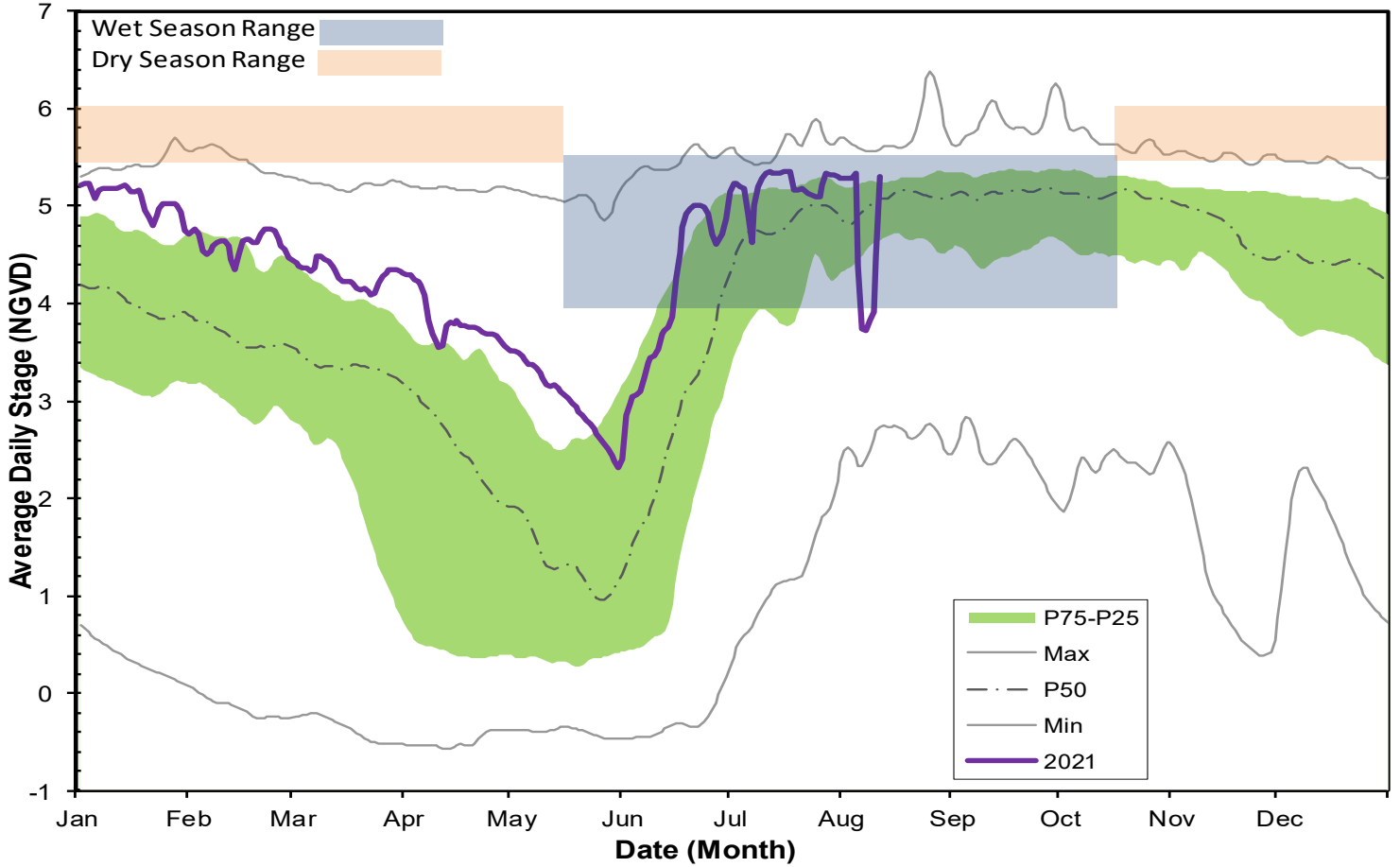
Figure 6D - CORK3 Average Daily Headwater Percentiles (2004-2020)



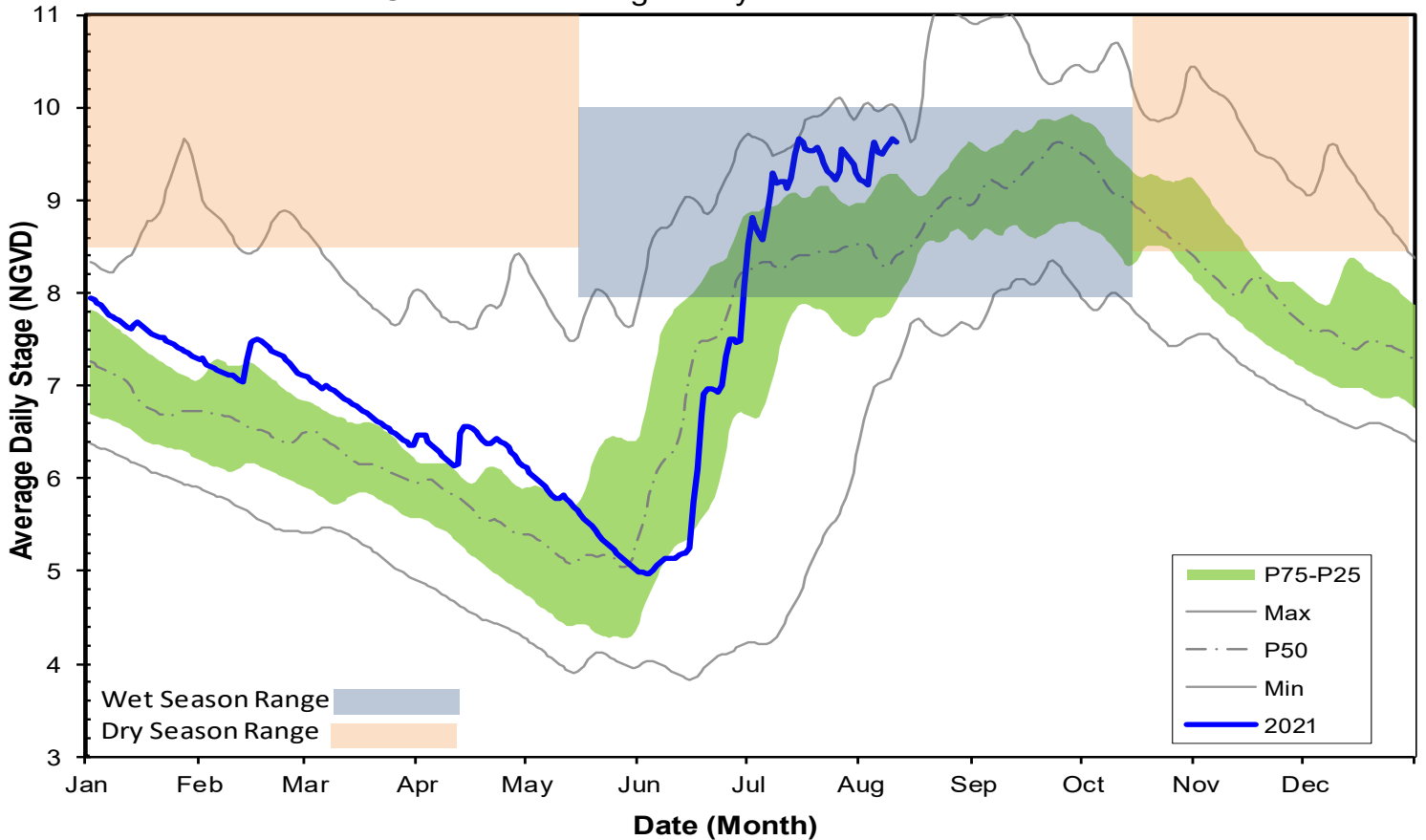
Faka Union Canal Historic Average Daily Headwater Percentiles



HC1 Historic Average Daily Headwater Percentiles



HC2 Historic Average Daily Headwater Percentiles



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

Last Reading Date :		August 4, 2021					
Previous Period Reading Date:		July 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	4.83	28.58	33.41	↑	GREEN
C-1004R	Naples	Lower Tamiami Aquifer	0.94	4.06	5.00	↑	GREEN
C-1224	Marco Lakes	Lower Tamiami Aquifer	0.91	4.57	5.48	↑	GREEN
C-948R	Golden Gate	Mid Hawthorn Aquifer	0.61	29.93	30.54	↑	
C-951R	Golden Gate	Lower Tamiami Aquifer	2.70	4.66	7.36	↑	
L-2194	Bonita Springs	Sandstone Aquifer	2.67	3.58	6.25	↑	GREEN
L-2195	Bonita Springs	Surficial Aquifer System	2.31	9.08	11.39	↑	GREEN
L-738	Bonita Springs	Lower Tamiami Aquifer	1.96	0.96	2.92	↑	GREEN

TABLE 2
BCB WATER CONDITIONS SUMMARY
JULY 2021

BIG CYPRESS BASIN

JULY 2021

GROUNDWATER LEVEL DAILY TRENDS COMPARED TO HISTORICAL AVERAGE

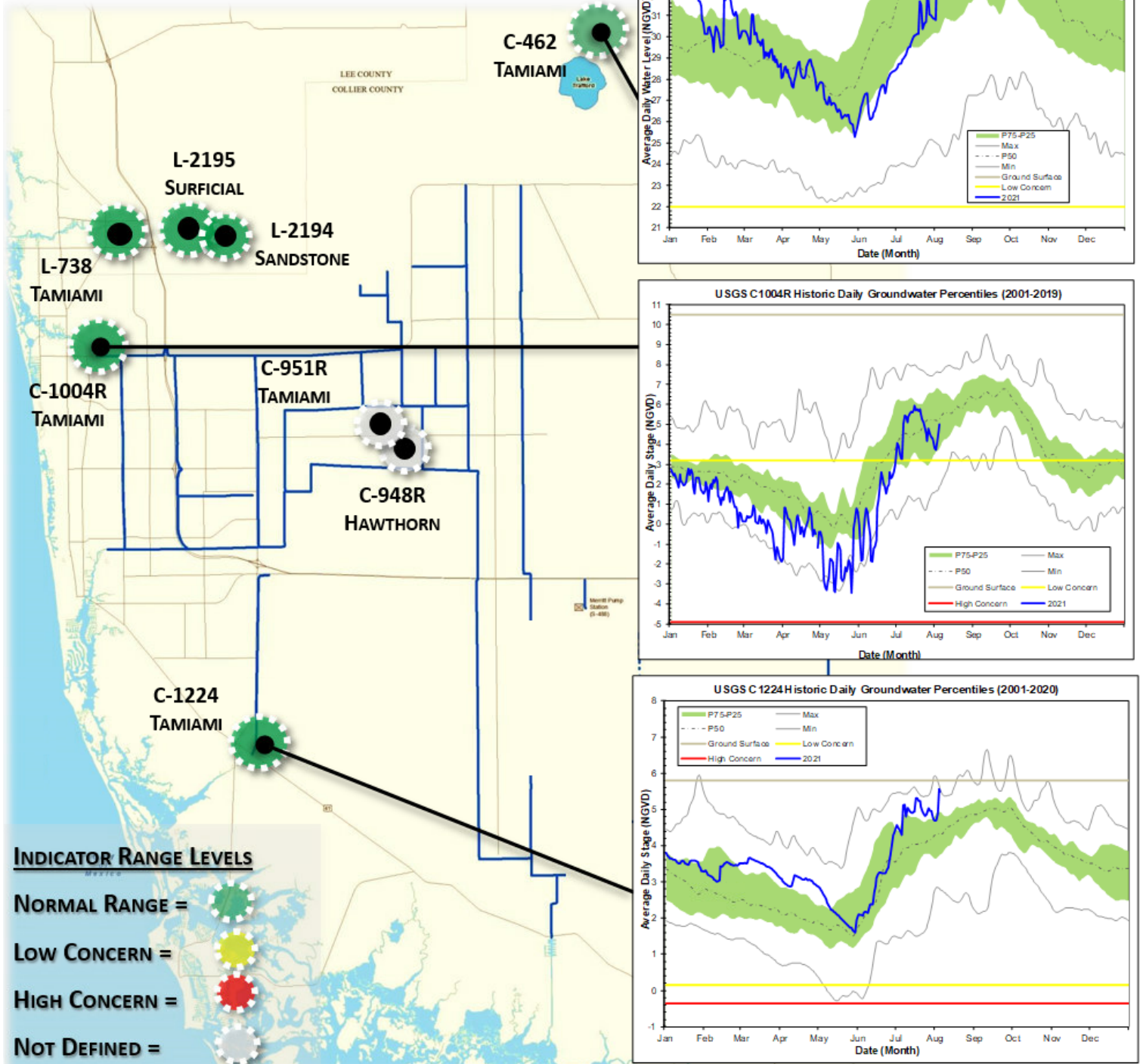


FIGURE 9

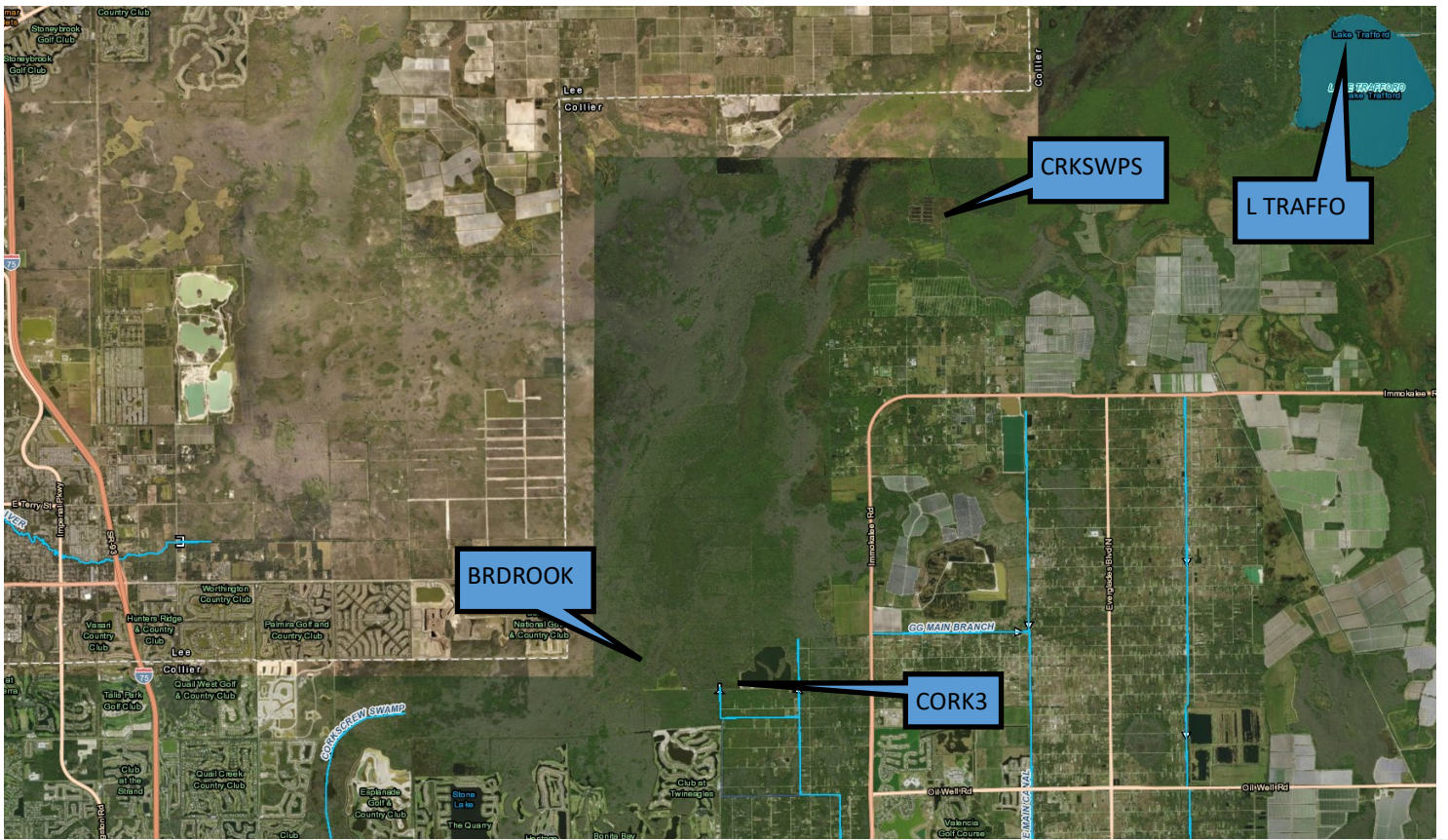


Figure 10-Corkscrew Historic Average Daily Headwater Percentiles(1984-1919)

