

JUNE 2021

# BIG CYPRESS BASIN HYDROLOGIC REPORT



# SUMMARY OF HYDROLOGIC CONDITIONS IN THE BIG CYPRESS BASIN

June 2021

## SUMMARY

As usual the rainy season ramped up in June with daily afternoon thunderstorms occurring over the region. While the month did not bring enough rain to overcome the May deficit, June did finish with above normal rainfall (approximately 113% of normal). The rainfall was enough to eliminate the drought conditions that had covered the Basin during April and May (right).

Surface and ground water levels have all increased throughout the region in response to the rainfall. As the month came to a close, all water levels are near normal for late June.

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 (below).

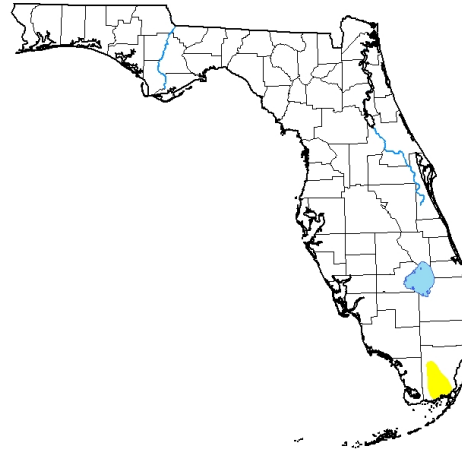
## BCB RAINFALL

As measured by twenty-three (23) reporting stations (ref. **Figures 1, 2, Table 1**), the basin-wide monthly average was **11.12 inches (113% of normal)**, which just above the average 9.8 inches typically collected.



## U.S. Drought Monitor Florida

July 6, 2021  
(Released Thursday, Jul. 8, 2021)  
Valid 8 a.m. EDT



### Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

### Author:

Deborah Bathke  
National Drought Mitigation Center



Based on collected gauge and radar data, the rainfall distribution across the Basin was highly variable. Some areas of Golden Gate Main and Faka Union received 18—20” of rainfall, while portions Okaloacoochee basin received only 3—5” of rain. **Figure 3a** shows the average rainfall for each of the Basin’s watersheds based on gauge adjusted radar. The Golden Gate and Henderson Creek basins received the highest rainfall with about **14.5 inch** areal average across the watersheds and the lowest was the Okaloacoochee basin with about **6.8 inches**. The Basin’s total areal weighted average rainfall was **12.2 inches**. The month’s highest gauge total was collected at the SGGE Weather Station (Site R-7), which received **16.97 inches**. This month’s lowest rainfall was recorded at IFAS (Site R-14), which received **4.67 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 transitioned to flood control mode as water levels reached the top of the normal wet season operational ranges. As the month ended, about 90% 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 transitioned to flood control. Water levels were maintained near the top of the normal operational ranges. Discharges started from GG1 around the middle of June. Canal water levels in most areas of the Golden Gate

system were held between the 50th and 75th percentile (ref **Figure 5A & 5B**).

- **COCOHATCHEE SYSTEM**

Western portions of the Cocohatchee system have been transitioned for flood control while the eastern areas have not yet filled enough to need active flood control discharges. Discharges out of the system at COCOC1 started a little later than normal near the end of the month (ref **Figure 6A, 6B, 6C, & 6D**).

- **FAKA UNION SYSTEM**

Upper portions of Faka Union have fully transitioned to flood control operations, however the middle reaches near FU4S continues to fill and conserve water. Flood control operations are expected to commence in July through FU4S. Water levels between FU4S and S487 in the Picayune Strand Restoration Project, have been steadily increasing due to the completion of the partial plugging of the canal south of S487. Operations commenced at S487 on July 1st to control canal water levels upstream (ref **Figure 7A & 7B**).

- **HENDERSON CREEK SYSTEM**

Water control structures in the Henderson Creek system remained fully closed during June. Canal levels have increased from rainfall but not enough to require structure operations. Water began slowly discharging from HC1 around July 1st (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 but have not increased enough to begin any discharges from CORK3 or CORK2. This is typical as these structures don't usually start discharging until late July or August. Water levels at Lake Trafford are shown in **Figure 10A**, which show lake levels remaining fairly steady through June but remain near the 25th and 50th percentiles.

## **BIG CYPRESS BASIN & LOWER WEST COAST GROUNDWATER LEVELS**

The current reporting (07/01/2021) for the Lower West Coast [LWC] indicate increasing groundwater levels for June. All reporting wells increased during June given the almost daily rainfall. Even though several wells were below the 25th percentile and in yellow and red indicator levels in May, all wells have now recovered to median levels for June. 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 3.7 feet. L-738 recorded the highest increase of 6.5 feet, and L-2195 the smallest increase of 1.3 feet (ref. **Table 2, Figure 9**).

BIG CYPRESS BASIN

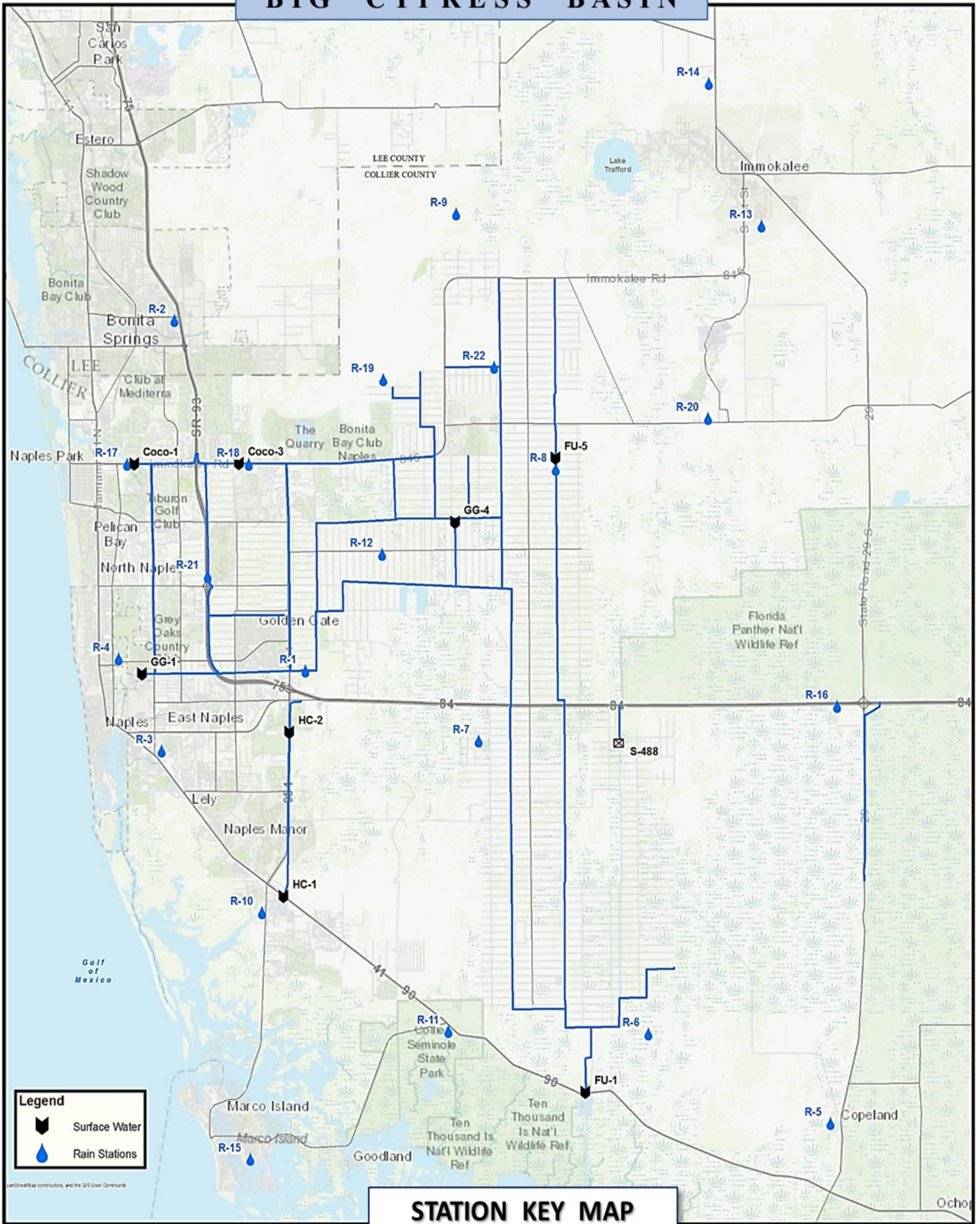


FIGURE 1

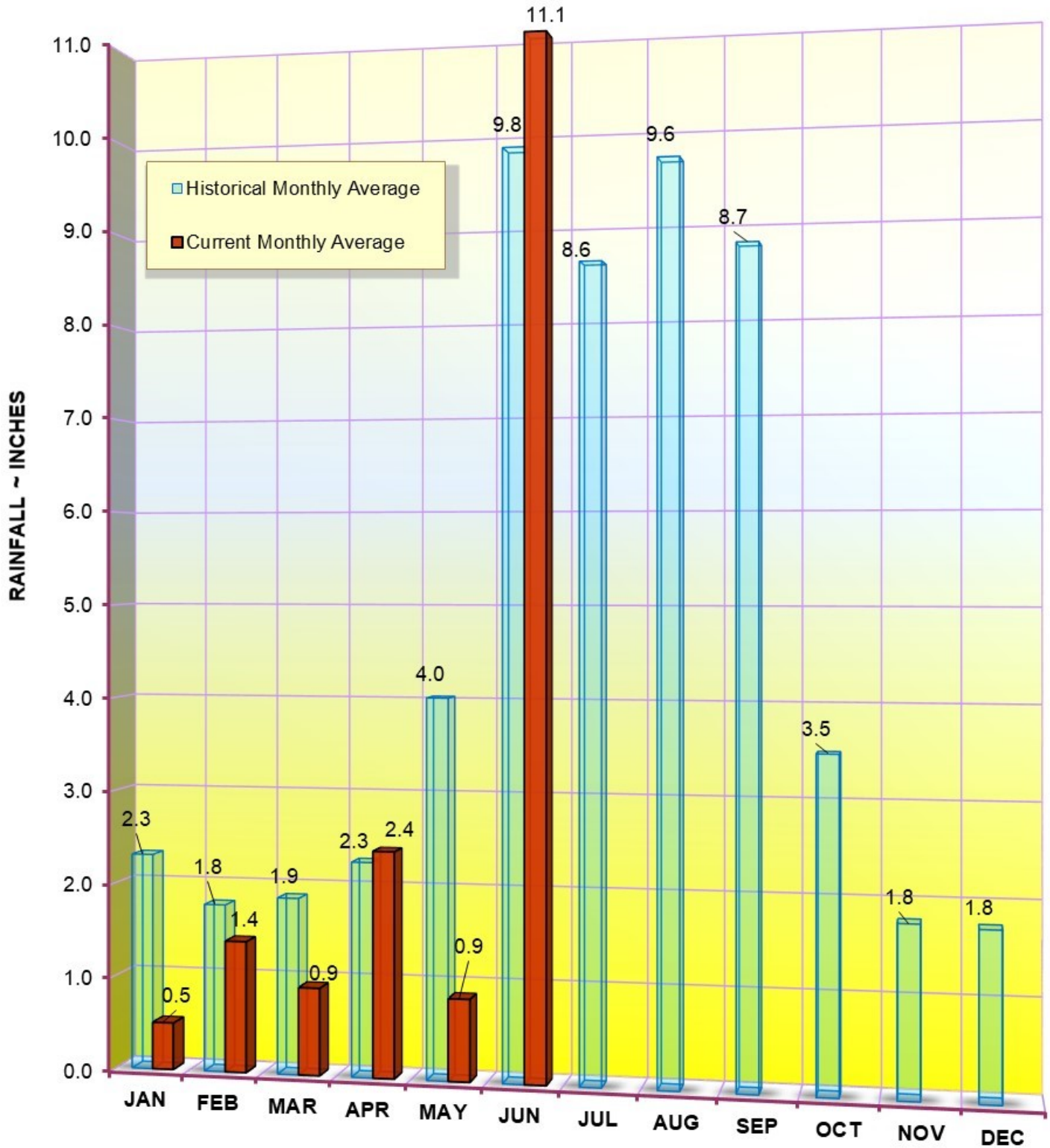
**RAINFALL REPORT - JUNE 2021**  
**DISTRICT/BASIN RAINFALL STATIONS**

(ALL NUMBERS ARE IN INCHES)

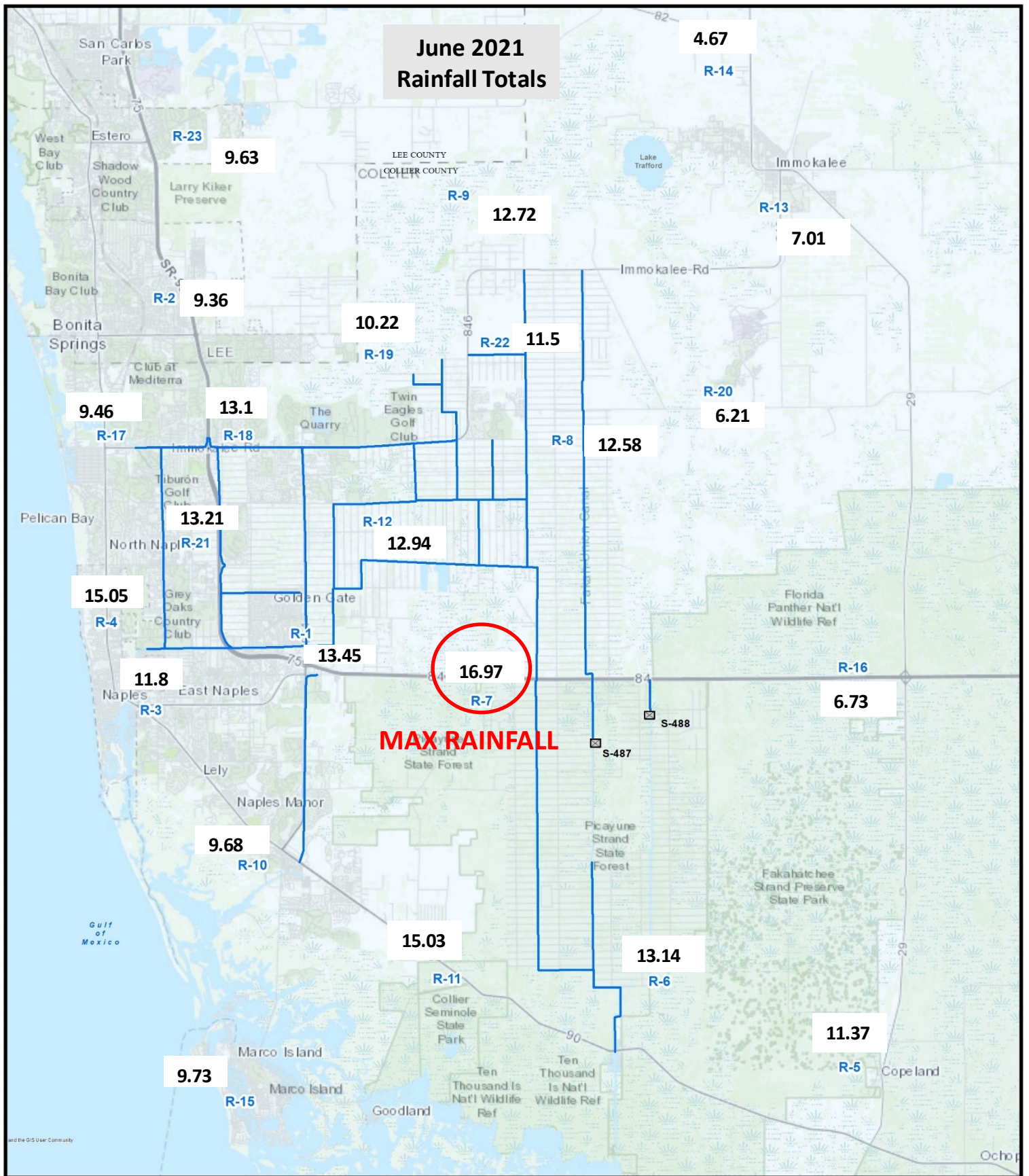
STATION INDEX NO.	STATION NAME	JUNE 2021	LONG TERM AVERAGE FOR THIS MONTH	MONTHLY DIFFERENCE	CALENDAR YEAR 2021 CUMULATIVE TOTAL	AVERAGE CALENDAR YEAR TO DATE	YEAR TO DATE DIFFERENCE
R-1	GOLDEN GATE #3	13.45	12.53	0.92	20.20	25.85	-5.65
R-2	BONITA SPRINGS WATER PLANT	9.36	8.43	0.93	14.01	20.16	-6.15
R-3	COLLIER COURTHOUSE	11.82	8.33	3.49	18.44	20.16	-1.72
R-4	FREEDOM PARK	15.05	9.30	5.75	21.47	22.31	-0.84
R-5	FAKAHATCHEE STRAND HQ	11.37	11.06	0.31	16.53	23.99	-7.46
R-6	DAN HOUSE PRAIRIE	13.14	8.84	4.30	18.09	19.47	-1.38
R-7	SGGE WEATHER STATION	16.97	11.04	5.93	24.49	23.02	1.47
R-8	FAKA UNION #5	12.58	13.09	-0.51	21.70	25.99	-4.29
R-9	CORKSCREW SWAMP NORTH END	12.72	11.47	1.25	20.47	22.36	-1.89
R-10	ROOKERY BAY HQ	9.68	9.55	0.13	16.70	20.70	-4.00
R-11	COLLIER SEMINOLE STATE PARK	15.03	9.87	5.16	19.30	21.83	-2.53
R-12	G.G. FIRE STATION	12.94	9.87	3.07	19.89	22.59	-2.70
R-13	IMMOKALEE LANDFILL	7.01	8.89	-1.88	11.70	22.29	-10.59
R-14	IFAS	4.67	8.80	-4.13	11.78	21.68	-9.90
R-15	MARCO R.O. PLANT	9.73	9.10	0.63	14.76	21.43	-6.67
R-16	FAKAHATCHEE STRAND NORTH END	6.73	10.57	-3.84	12.48	25.06	-12.58
R-17	COCO#1	9.46	8.28	1.18	15.29	19.00	-3.71
R-18	COCO#3	13.10	8.36	4.74	18.44	19.30	-0.86
R-19	BIRD ROOKERY	10.22		New Site	15.59	No Historical Data	
R-20	AVE MARIA	6.21	8.81	-2.60	11.54	22.40	-10.86
R-21	I75W2	13.21		New Site	19.04	No Historical Data	
R-22	GG#7	11.57		New Site	18.56	No Historical Data	
R-23	FLINT PEN STRAND	9.63	9.68	New Site		No Historical Data	

AVERAGES	11.12	9.79	1.32	17.29	22.08	-4.79
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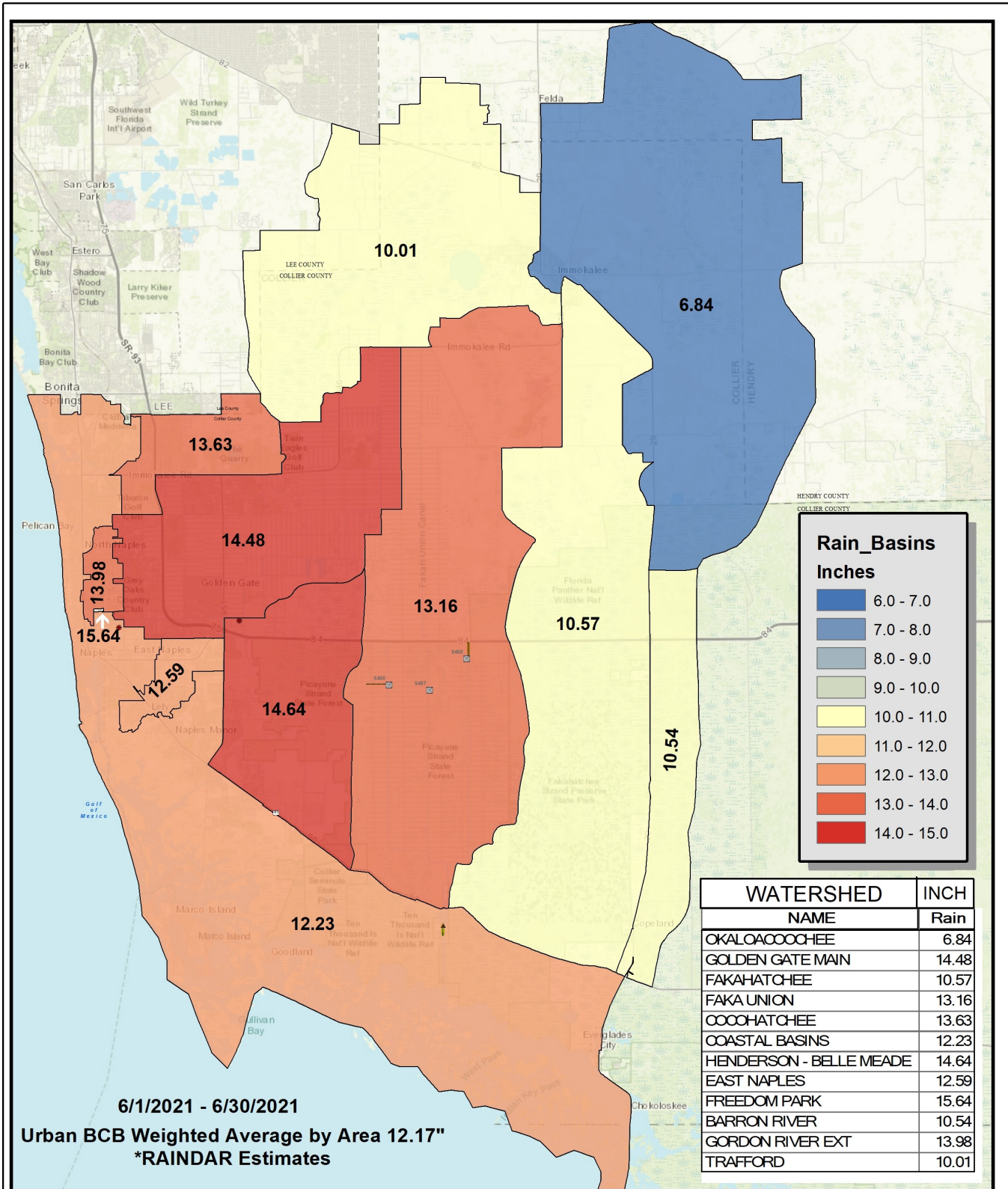
**BCB ANNUAL RAINFALL**  
**MONTHLY AVERAGE & HISTORICAL AVERAGE TRENDS**  
**(FROM BCB RAINFALL GAUGE DATA)**



**FIGURE 2**  
**BCB GAUGE RAINFALL**  
**MONTHLY AVERAGES THROUGH JUNE 2021**

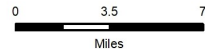


**FIGURE 3  
BCB RAINFALL DISTRIBUTION  
JUNE 2021**



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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 parties 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**

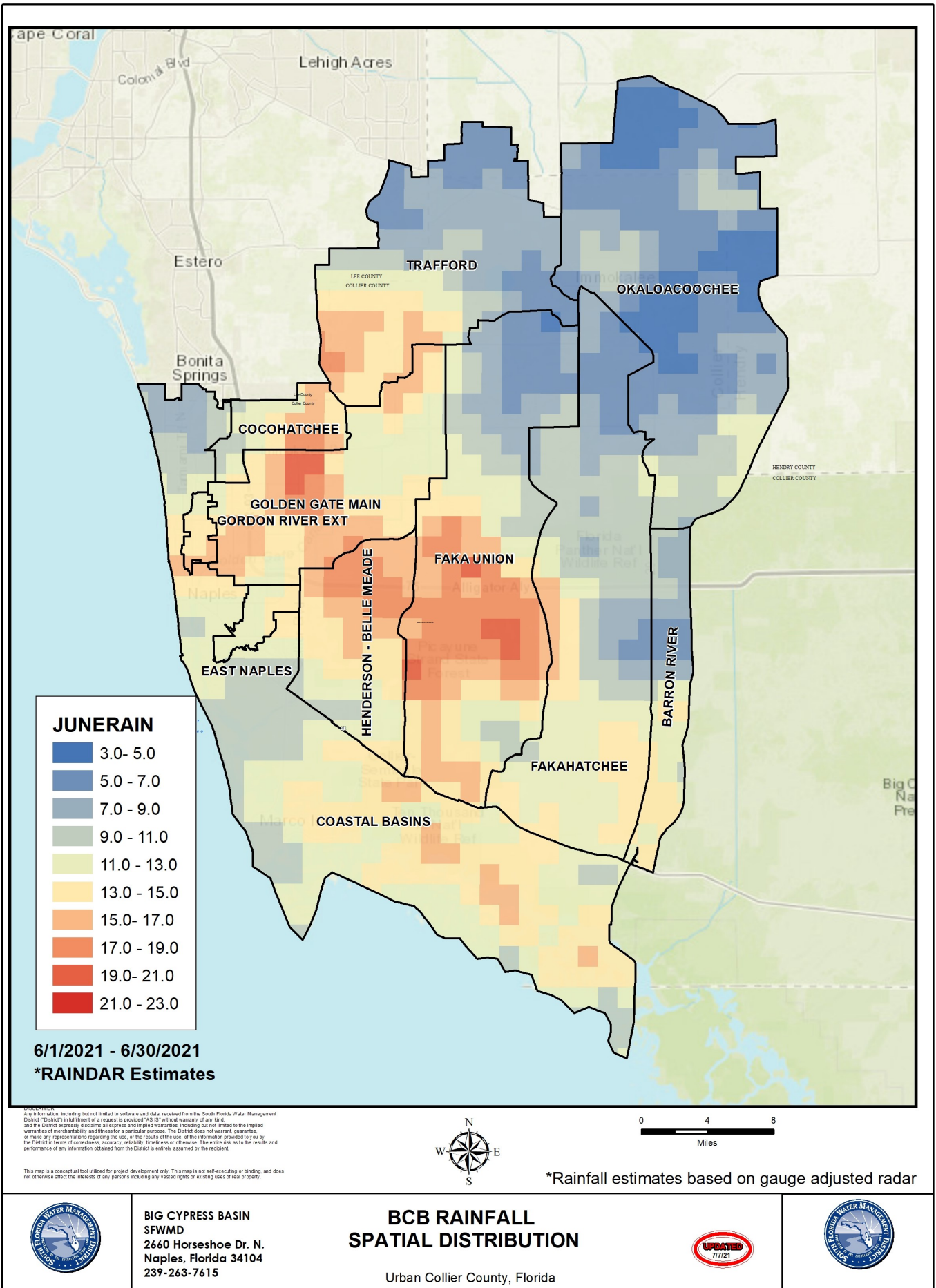
Urban Collier County, Florida



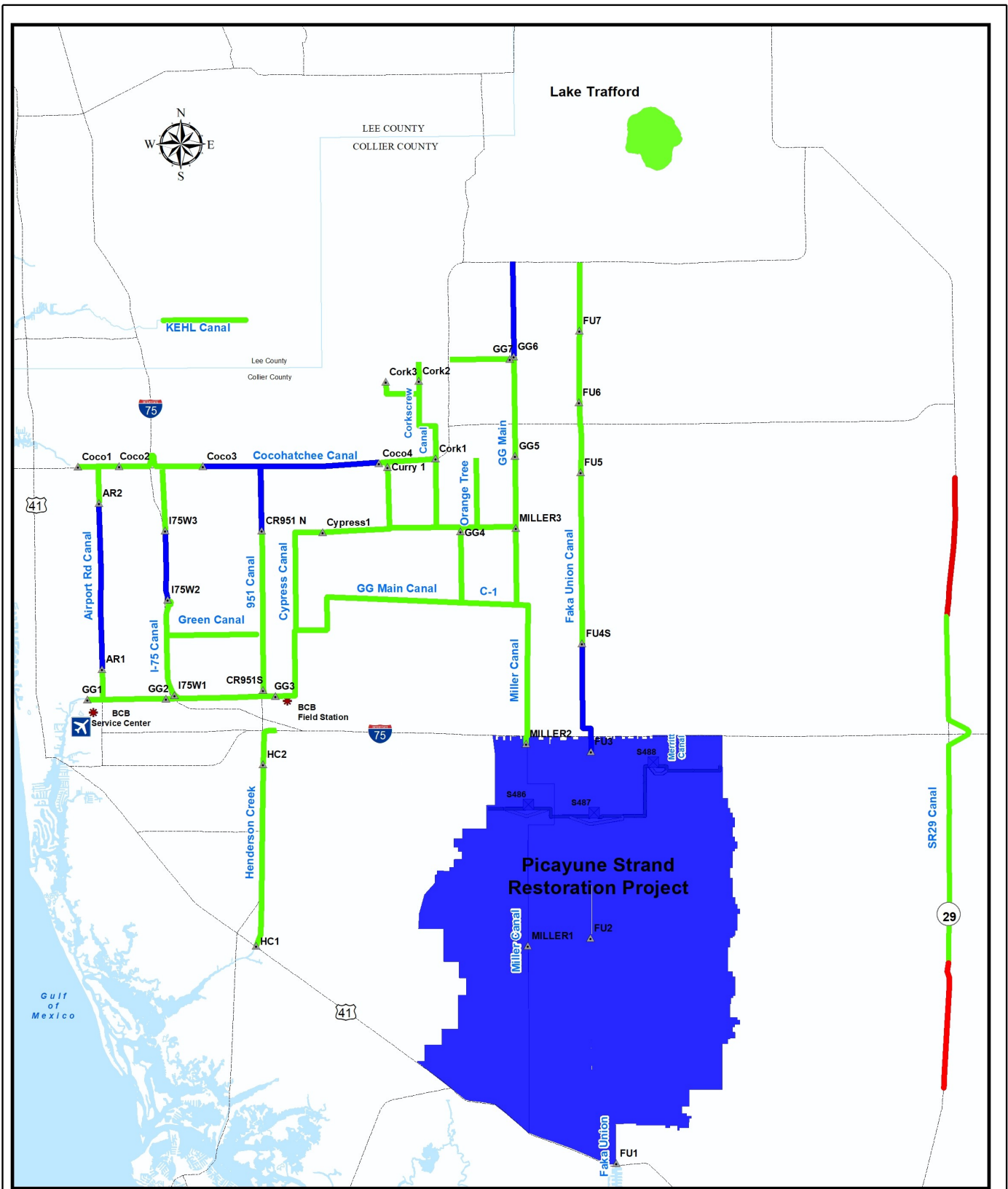
SFWMD\_PLUMBING\_2019

**FIGURE 3a**



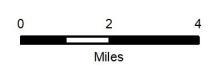


**FIGURE 4**



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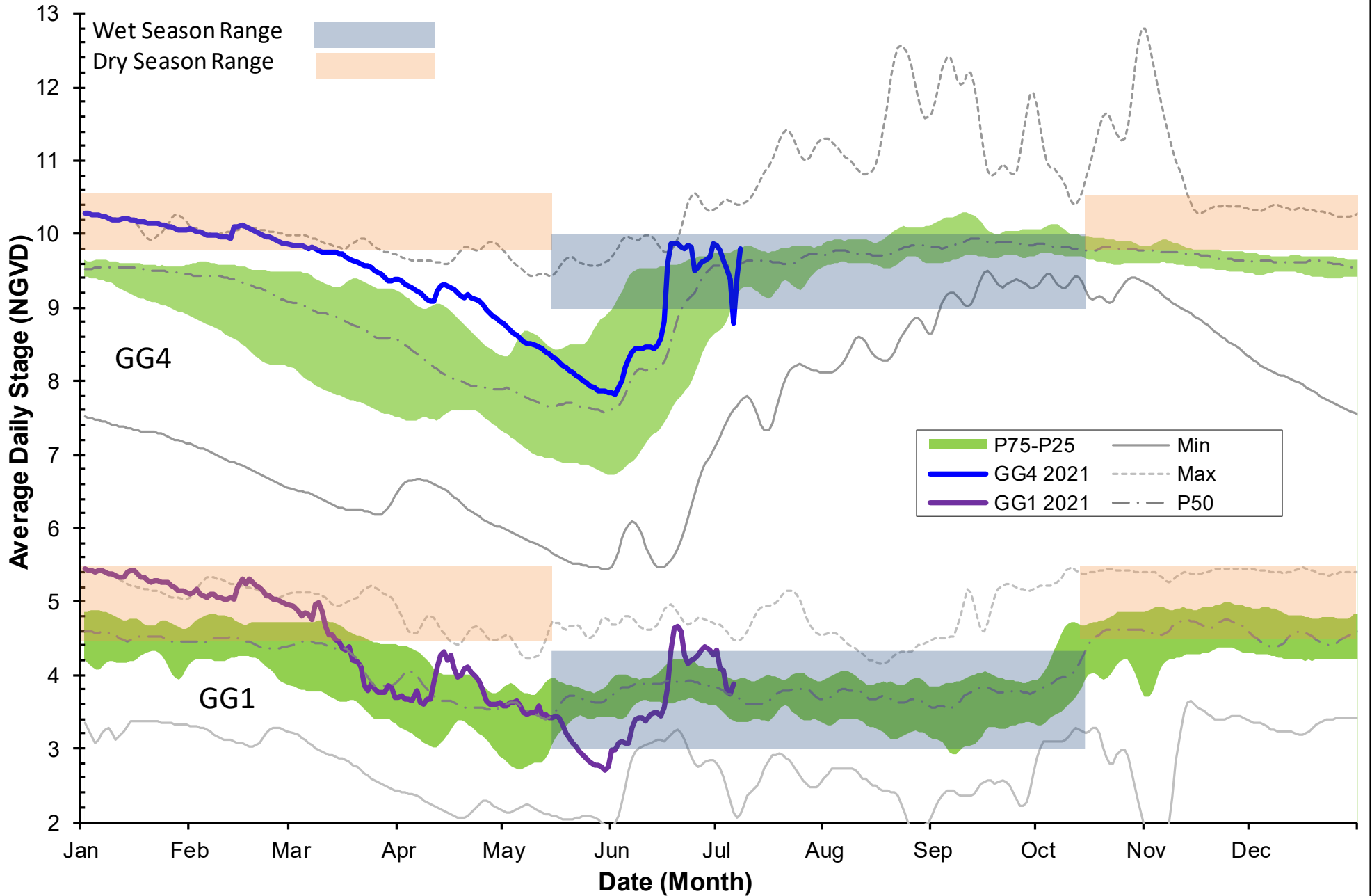


\* Based on period of record for each canal reach

	<p><b>BIG CYPRESS BASIN</b>  <b>SFWM</b>          2660 Horseshoe Dr. N.          Naples, Florida 34104          239-263-7615</p>	<p><b>BCB Conditions Index</b>  <b>7/6/21</b>          Urban Collier County, Florida</p>		
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**FIGURE 4A**

# Golden Gate Canal Historic Average Daily Headwater Percentiles



# Cocohatchee Canal Historic Average Daily Headwater Percentiles

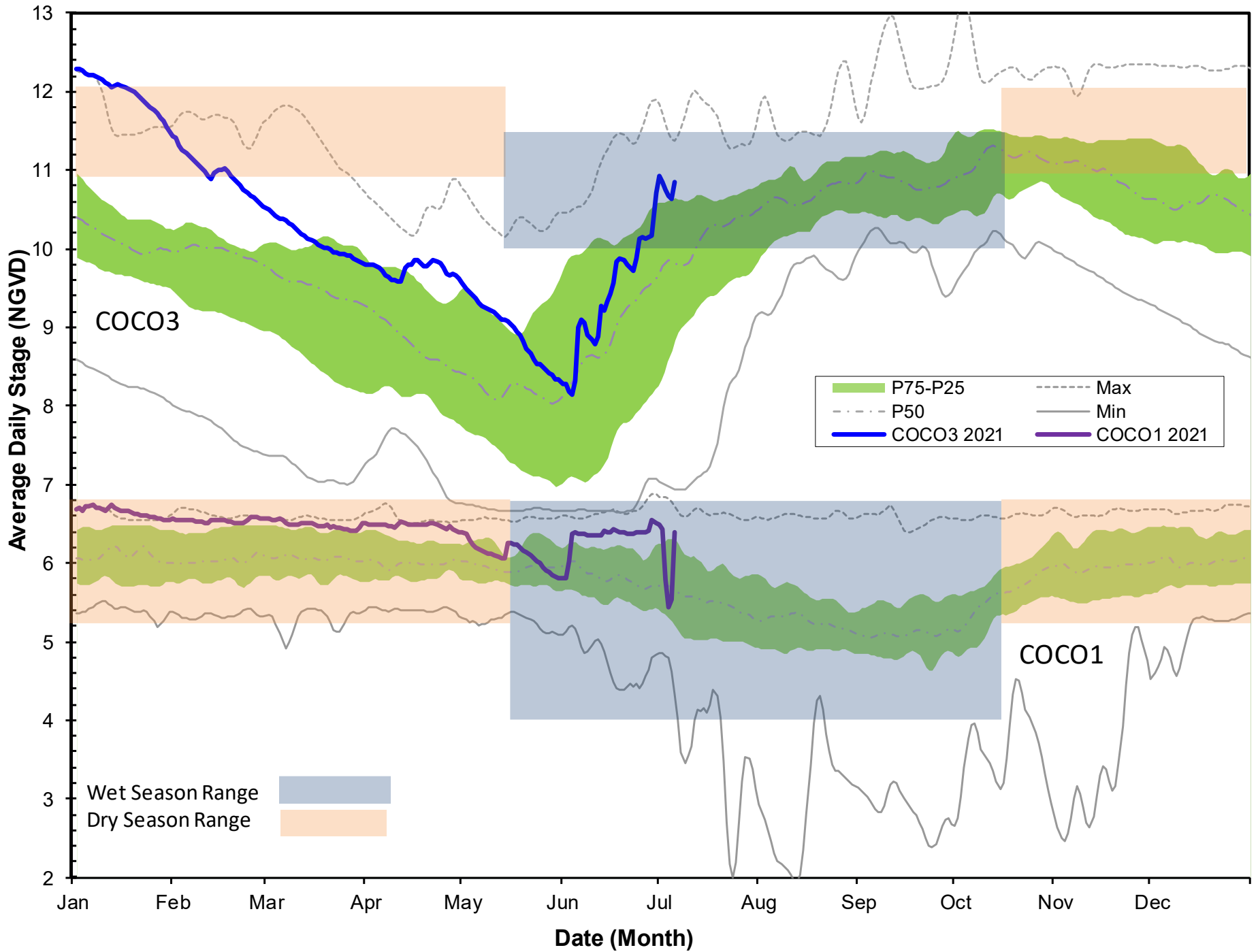


Figure 6C - CORK1 Historic Average Daily Headwater Percentiles (1989-2020)

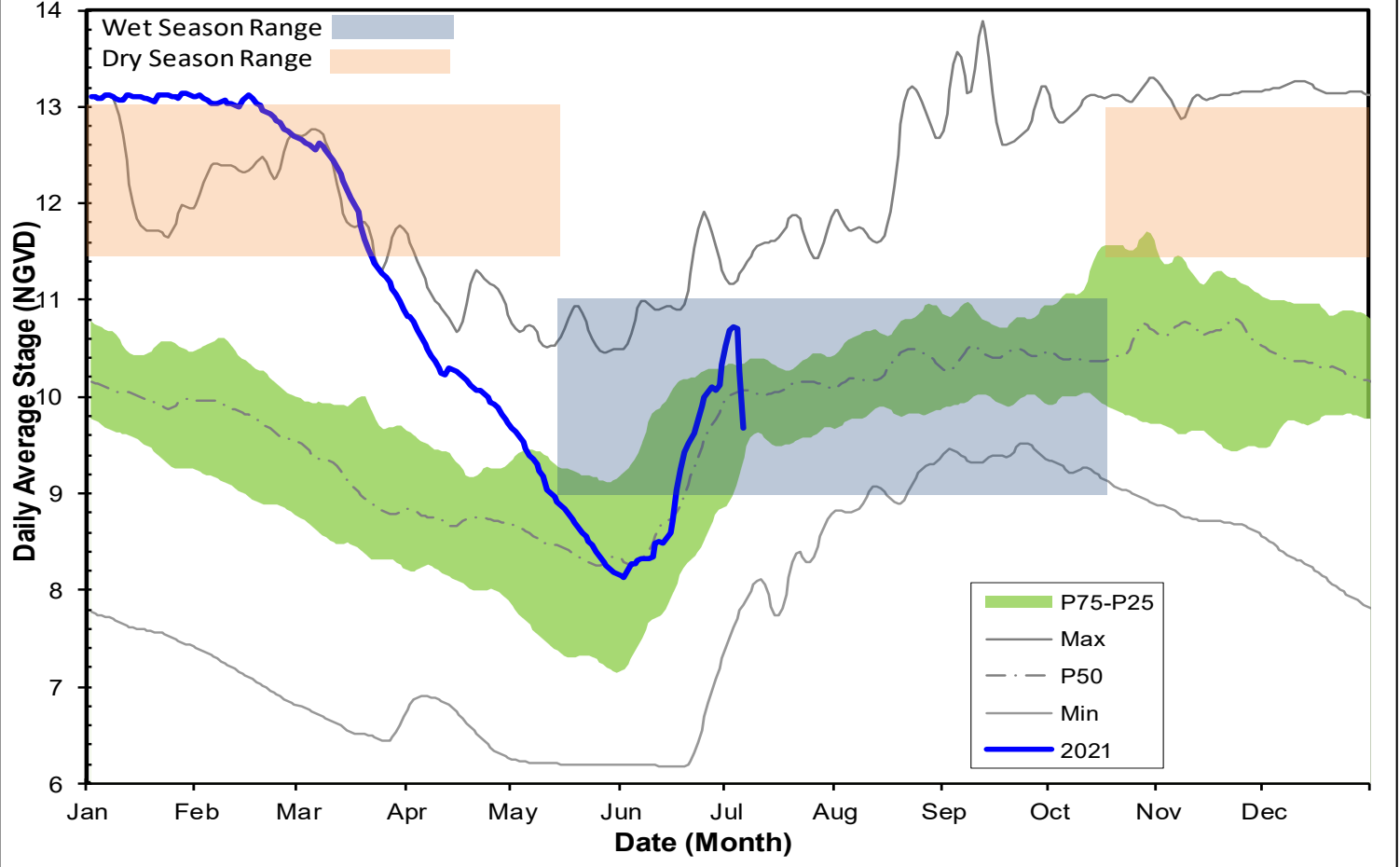
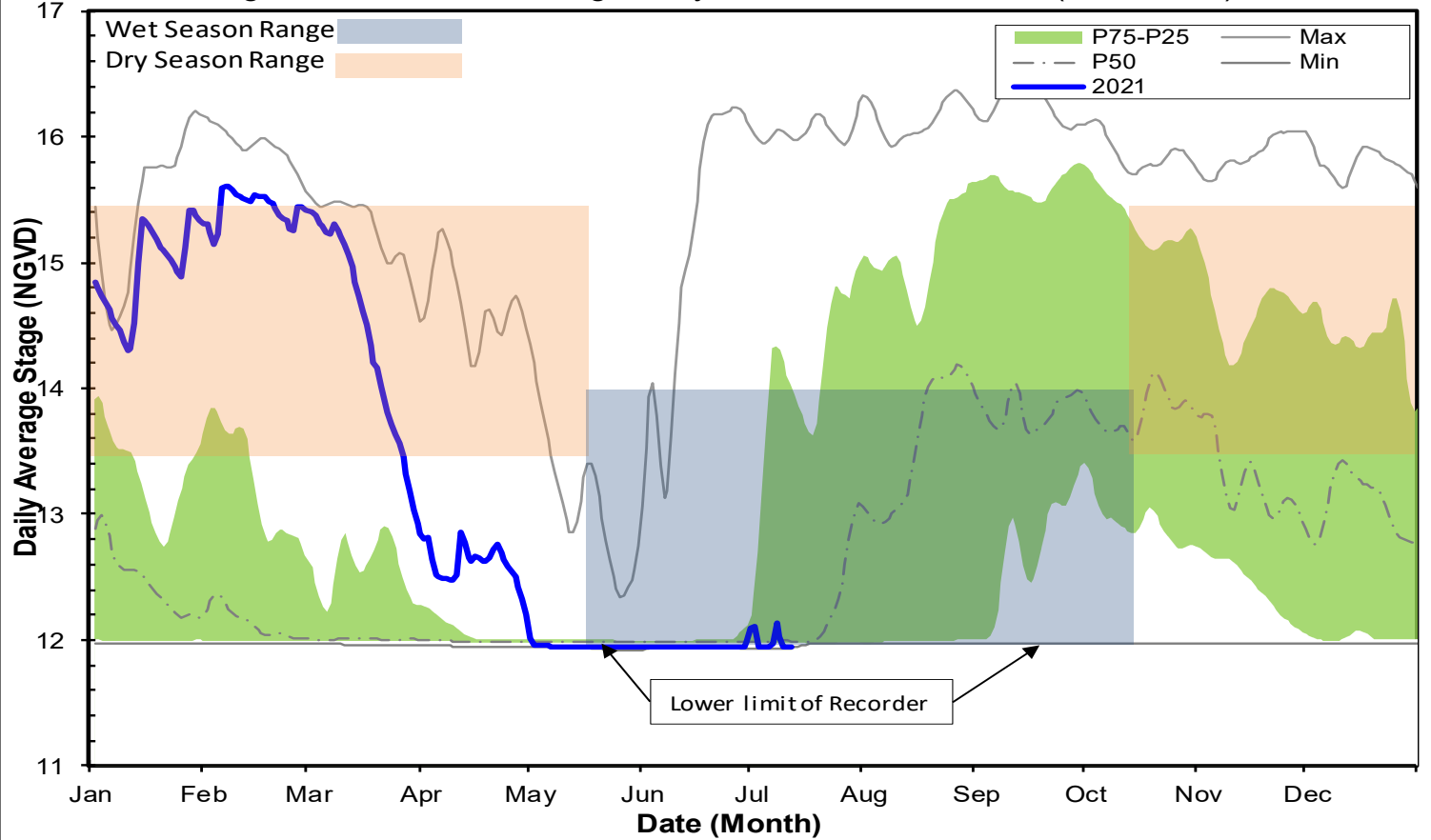
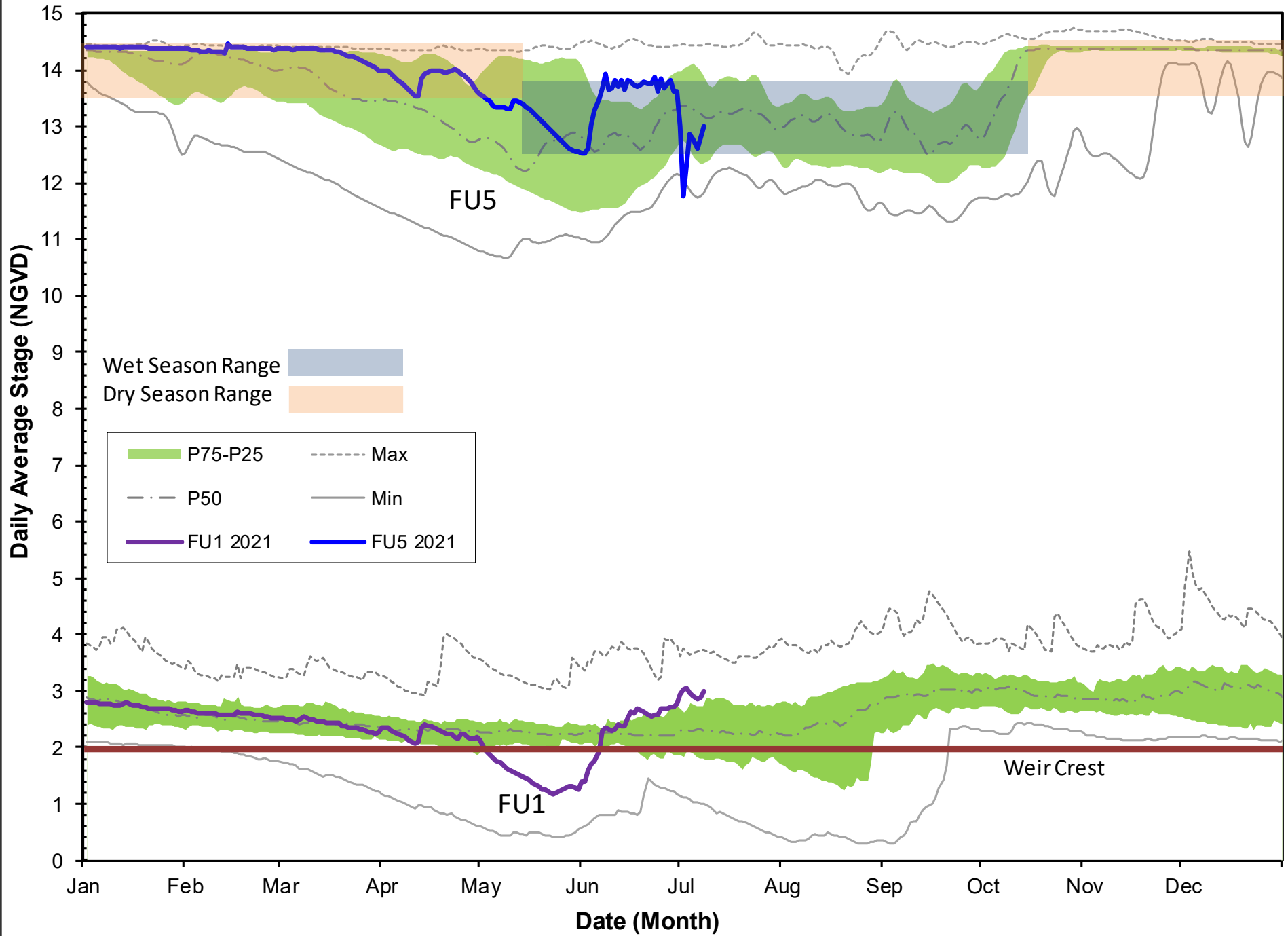


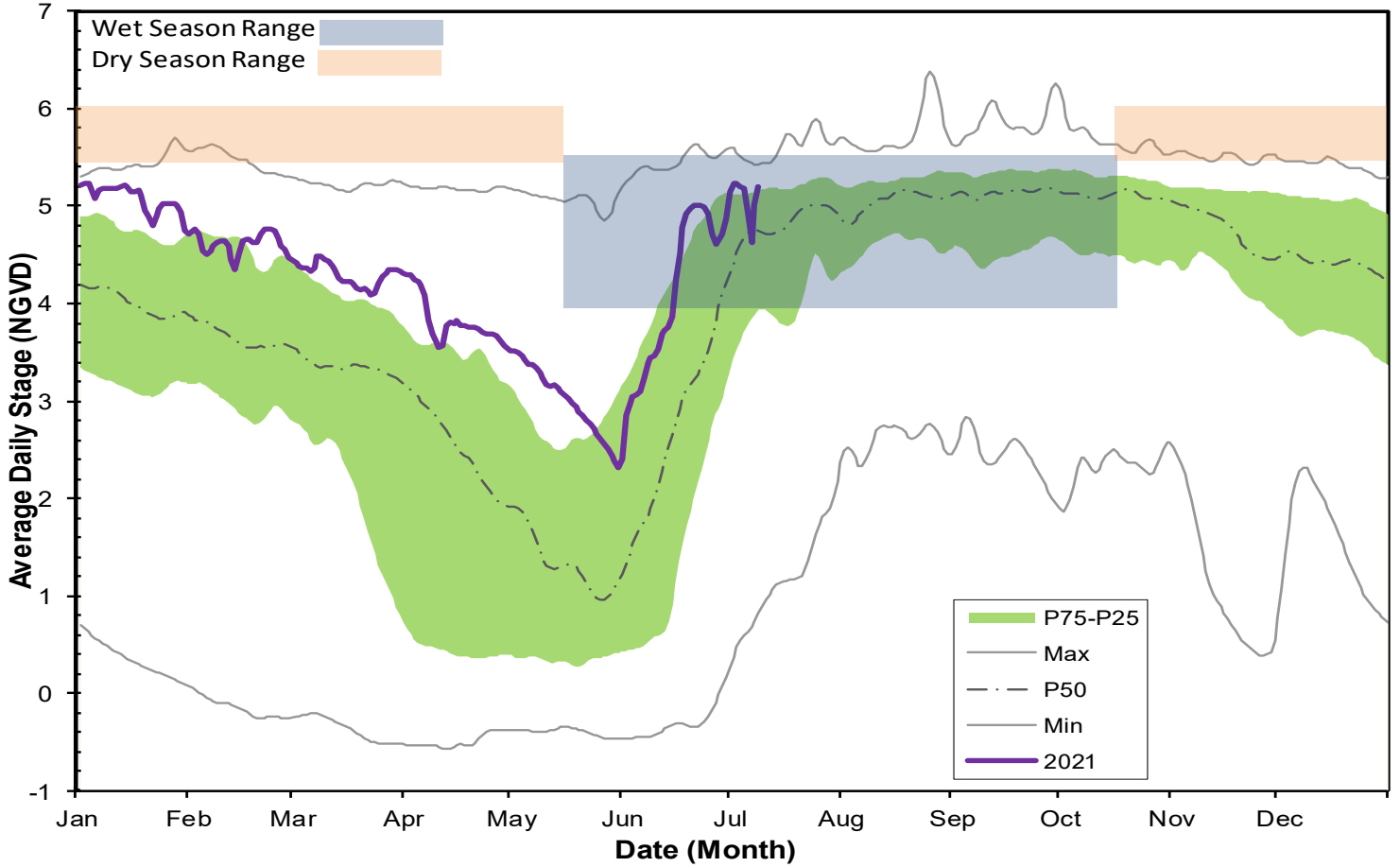
Figure 6D - CORK3 Average Daily Headwater Percentiles (2004-2020)



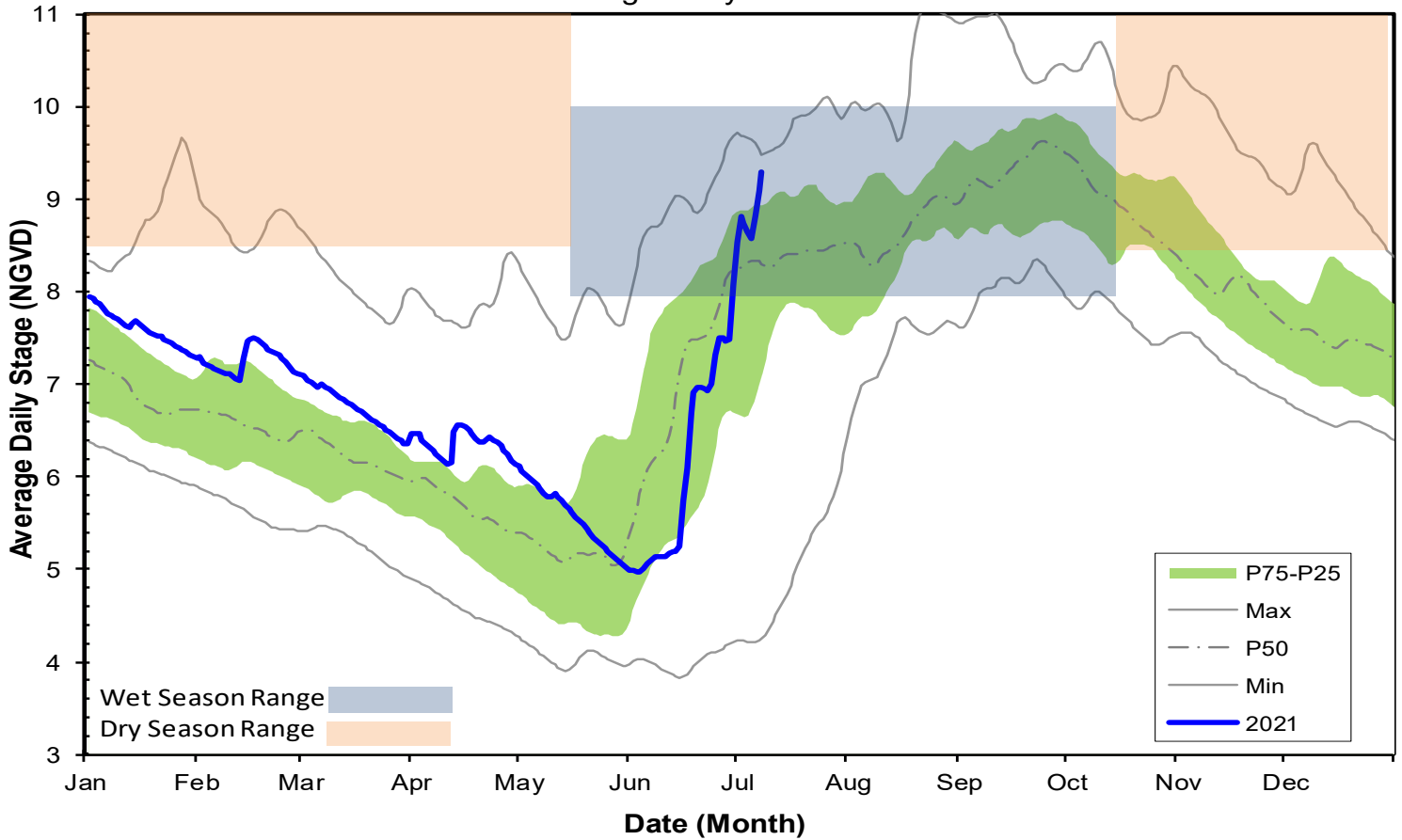
# Faka Union Canal Historic Average Daily Headwater Percentiles



### HC1 Historic Average Daily Headwater Percentiles



### HC2 Historic Average Daily Headwater Percentiles



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

Last Reading Date :		July 1, 2021					
Previous Period Reading Date:		June 1, 2021					
<b>STATION INDEX NO.</b>	<b>WELL LOCATION</b>	<b>WELL / AQUIFER - TYPE</b>	<b>CHANGE (from previous date)</b>	<b>PREVIOUS LEVEL</b>	<b>CURRENT LEVEL (ft)</b>	<b>DIRECTION OF CHANGE</b>	<b>CONCERN INDICATOR</b>
ALL INDICATOR LEVELS SHOWN IN FT-NGVD							
C-462	Immokalee	Lower Tamiami Aquifer	2.13	26.45	28.58	↑	GREEN
C-1004R	Naples	Lower Tamiami Aquifer	4.67	-0.61	4.06	↑	GREEN
C-1224	Marco Lakes	Lower Tamiami Aquifer	2.47	2.10	4.57	↑	GREEN
C-948R	Golden Gate	Mid Hawthorn Aquifer	1.95	27.98	29.93	↑	
C-951R	Golden Gate	Lower Tamiami Aquifer	3.74	0.92	4.66	↑	
L-2194	Bonita Springs	Sandstone Aquifer	6.60	-3.02	3.58	↑	GREEN
L-2195	Bonita Springs	Surficial Aquifer System	1.33	7.75	9.08	↑	GREEN
L-738	Bonita Springs	Lower Tamiami Aquifer	6.53	-5.57	0.96	↑	GREEN

**TABLE 2**  
**BCB WATER CONDITIONS SUMMARY**  
**JUNE 2021**



BIG CYPRESS BASIN

JUNE 2021

GROUNDWATER LEVEL DAILY TRENDS COMPARED TO HISTORICAL AVERAGE

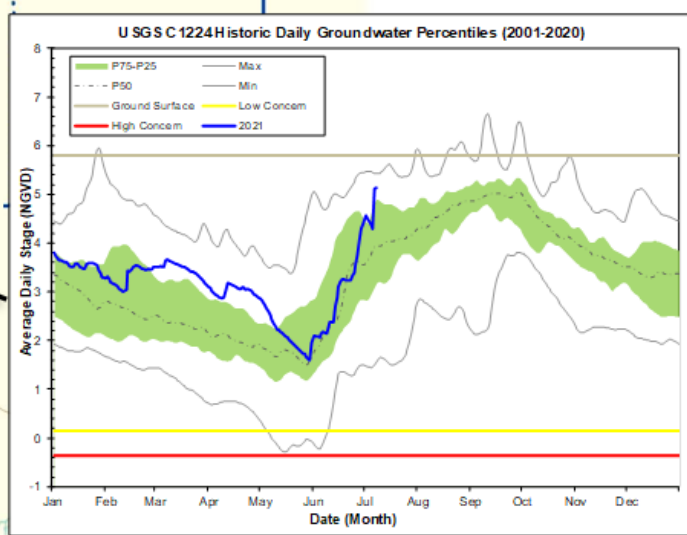
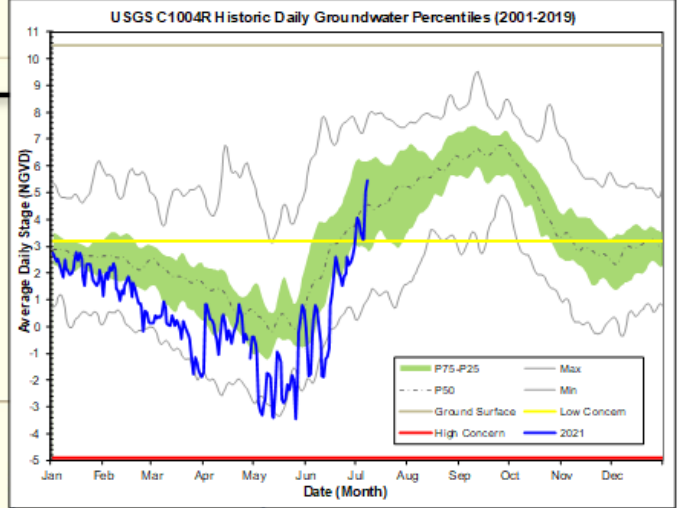
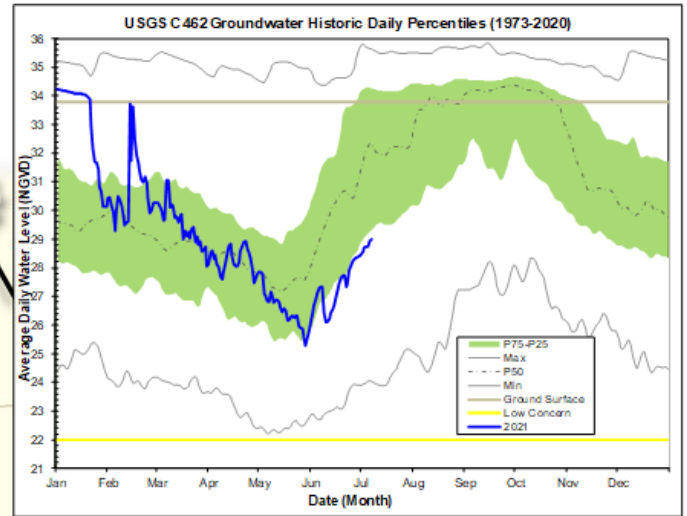
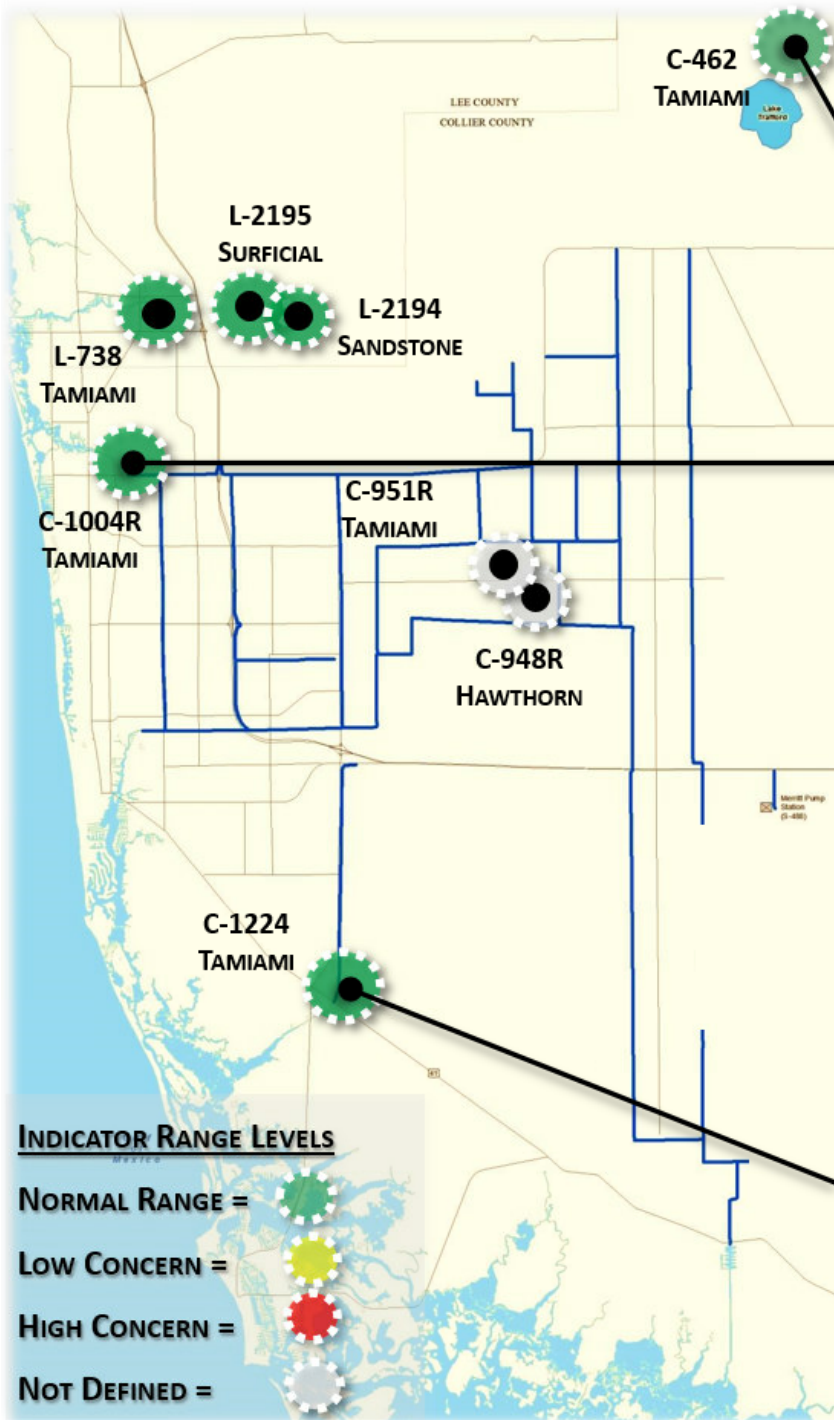


FIGURE 9

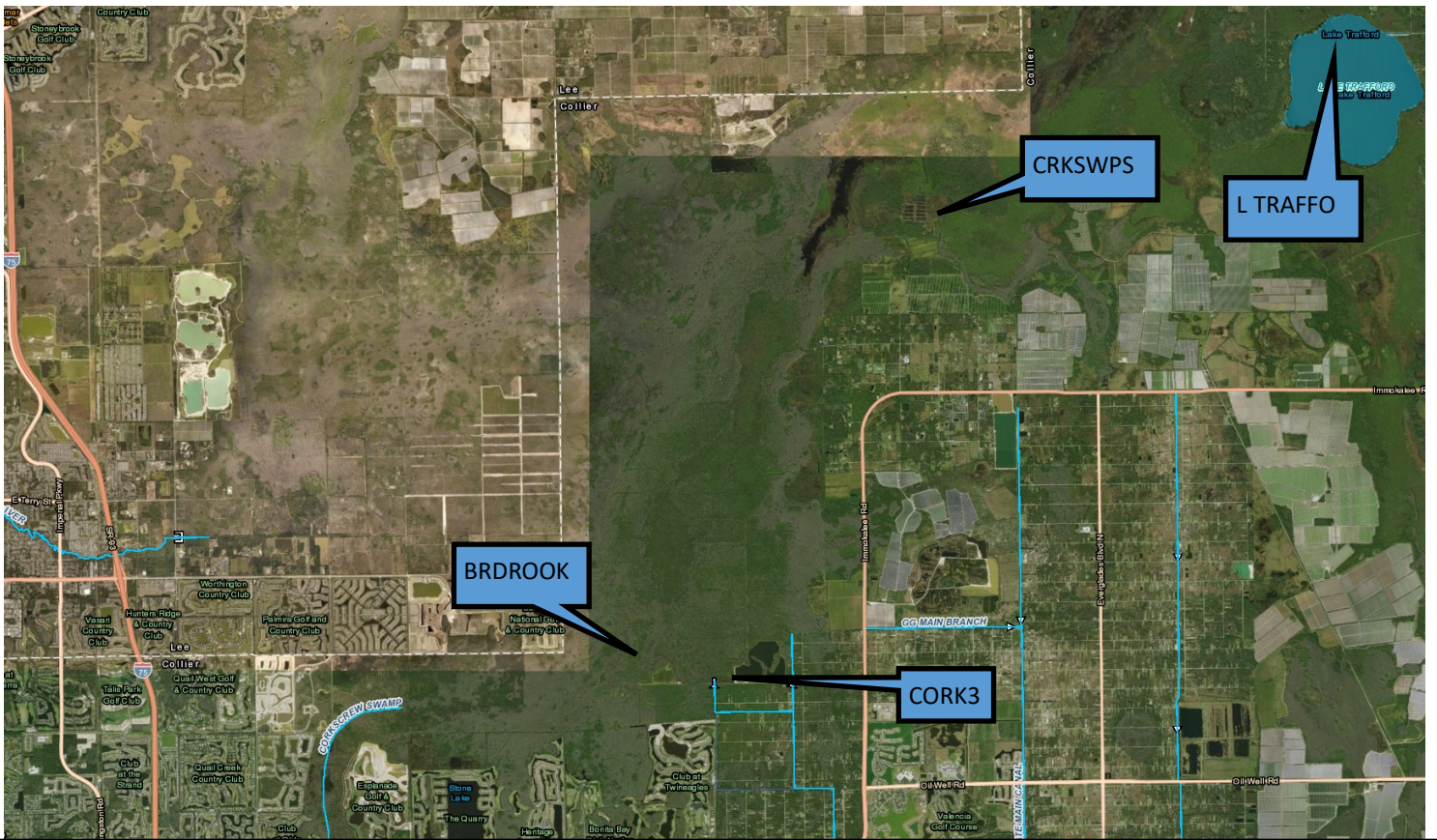


Figure 10-Corkscrew Historic Average Daily Headwater Percentiles(1984-2019)

