

APRIL 2022

BIG CYPRESS BASIN HYDROLOGIC REPORT



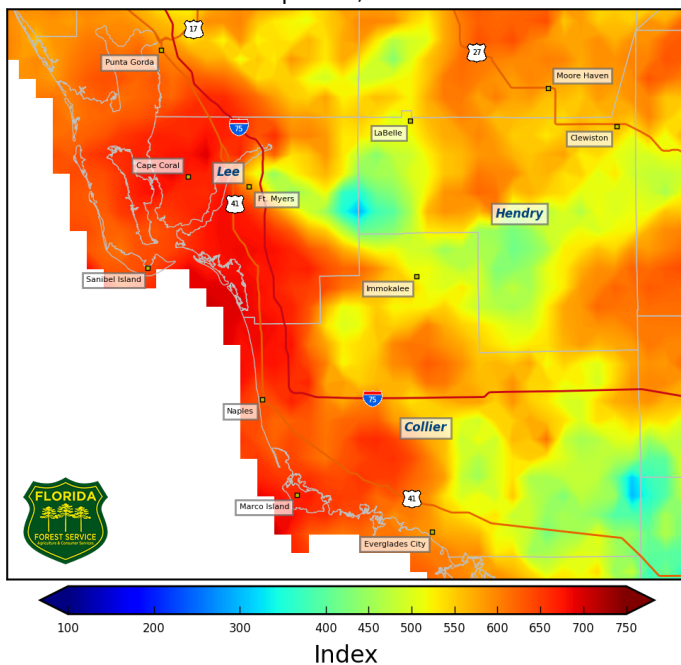
SUMMARY OF HYDROLOGIC CONDITIONS IN THE BIG CYPRESS BASIN

April 2022

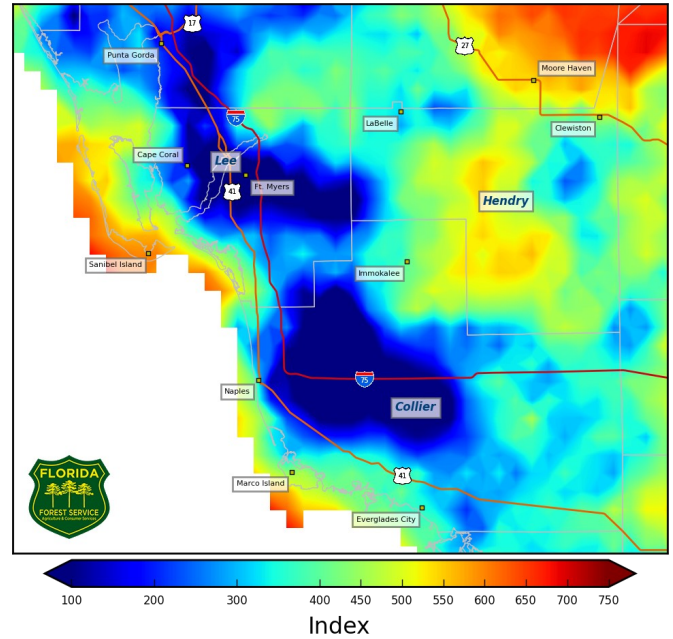
SUMMARY

Late April's rainfall finally reversed the almost 6 month below average rainfall trend. While the majority of April was extremely dry, the last 3 days of the month brought significant wet-season like rainfall to the Basin. It may have felt and looked like the beginning of wet season, however the above average rainfall was a result of a stalled weather system over the region and not daily sea-breeze thunderstorms. April's rainfall of about 200% of normal was impressive, however it was not enough to completely erase the 2022 rainfall deficit but did shrink to only about half an inch.

4 km Resolution KBDI
Caloosahatchee Forestry Center
April 09, 2022



4 km Resolution KBDI
Caloosahatchee Forestry Center
May 09, 2022



The eastern regions of the Basin received the highest rainfall which rivaled even the wettest months of June—September. Isolated regions of the Fakahatchee, Picayune Strand Restoration, and

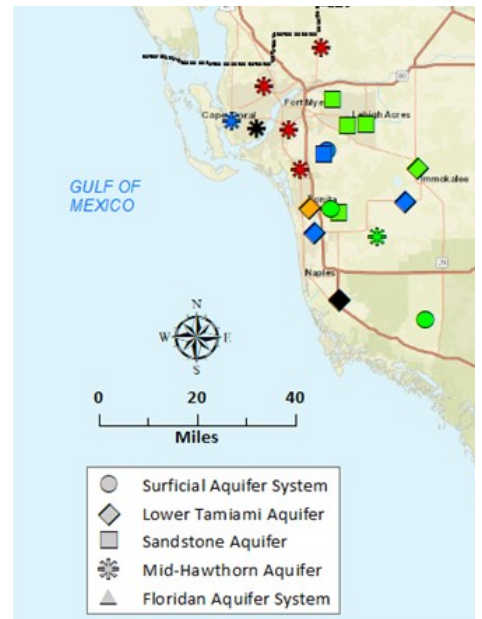
northern Corkscrew Regional Ecosystem Watershed (CREW) accumulated localized totals around 14 inches.

As a result of the widespread rainfall, drought conditions, surface soil moisture, and ground/surface water levels all significantly improved as the month closed. A comparison of the Florida Forest Service's KBDI (above) indicates significant improvement of the surface soil moisture content since early April.

Groundwater levels typically decline during April, however this year, levels increased in all regions of the Basin. Most groundwater levels are now above median levels or even higher for early May (right).

Long term forecasts do not indicate any climatological anomalies that would indicate wetter or drier conditions for the next few months.

Therefore, 30 day and 3 month outlook for May and June—August indicate equal chances for below, above, or average rainfall.



BCB RAINFALL

The weather pattern in April was once again mostly hot and dry, except for the very end of the month which provided some much needed temporary relief from the long dry period. As measured by twenty-four (24) reporting stations (ref. **Figures 1, 2, Table 1**), the basin-wide monthly average was **4.46 inches (200% of normal)**, which is well above the average 2.24 inches typically collected.

Based on collected gauge data, the rainfall distribution across the Basin was not very uniform as extreme rainfall totals near 14 inches occurred in eastern portions while areas of less than 1 inch occurred closer to the coast. **Figure 3a** shows the average rainfall for each of the Basin's watersheds based on gauge adjusted radar. The Barron River basin received the highest rainfall with a **8.1 inch** areal average across the watershed and the lowest was the Gordon River & Freedom Park basins with about **1.5 inches**. The Basin's total areal weighted average rainfall was **4.7 inches**. The month's highest gauge totals were collected at SGGWX (Site R-7) and Fakahatchee Strand (Site R-16), which received **11.64 inches**. This month's lowest rainfall was recorded at Marco Island (Site R-15), which received **1.35 inches**. Marco Island (1.35") and Picayune Strand Restoration Project (11.6") are only about 15 miles apart indicating the extreme variability that does occur any time of year. 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 canals were maintained in water conservation mode during the month to hold as much water as possible to promote groundwater recharge. As the month ended and in the beginning of May, all but one small segment of BCB canals were above the 90th percentile (**Figure 4a**).

- **GOLDEN GATE SYSTEM**

The Golden Gate Main canal system was operated in water conservation mode with zero operations occurring to move surface water through structures until the very end of the month. Minimal discharges throughout the Golden Gate system were made to maintain levels near the top of water conservation operational levels. As the month ended, canal levels throughout were well above average and in some cases above historical maximums for this time of year (ref **Figure 5A & 5B**). Interestingly, some water was able to be moved north into the Corkscrew canal from Golden Gate and Curry canals instead of being released from the system.

- **COCOHATCHEE SYSTEM**

The entire Cocohatchee system was operated to conserve water with minimal discharges to tide during the heavy rainfall at the end of the month. Levels are all above average and are close to the 90th percentile for end of April and early May (ref **Figure 6A, 6B, 6C, & 6D**).

- **FAKA UNION SYSTEM**

The entire Faka Union system was operated for water conservation. Due to the extremely heavy rainfall in the southern portion of the system, water was able to be moved north through FU4S to help balance water levels upstream and deliveries to PSRP. As the month ended, all canal levels were well above the 90th percentile (ref **Figure 7A & 7B**).

- **HENDERSON CREEK SYSTEM**

Water control structures in the Henderson Creek system remained fully closed. Canal levels increased at the end of the month (ref **Figure 8A & 8B**). The higher than normal levels in the

canal will cause discharges to occur from HC1 earlier than normal

- **CORKSCREW SWAMP**

Figure 10 shows the historical trends for Corkscrew, Bird Rookery, and the Cork 3 structure and the 2022 corresponding levels. All sites experience a rapid accession in water levels from the late month rainfall. Both Cork 3 and Bird Rookery water levels are above normal for early May. Current water levels at both sites are closer to what the sites would normally experience in late June or early July. CRKSWPS recovered some as well from the rainfall and is now much closer to median levels. Water levels at Lake Trafford are shown in **Figure 10A**, which show lake levels rebounding to the 50th percentile as rainfall in that region was not as heavy.

BIG CYPRESS BASIN & LOWER WEST COAST GROUNDWATER LEVELS

The current reporting (05/09/2022) for the Lower West Coast [LWC] indicate increasing trends for April. Only one reporting well (C-1004R) remain in the yellow (caution) indicator levels and all others remain in green (normal) levels. Well C-1004R recovered from near record low levels in early April to above average levels as the month closed. Most of the reporting wells in the region are now at or above median levels for early May. (ref. **Table 2**). All reported wells in **Table 2—April** show an average increase of 1.7 feet. C-1004R recorded the highest increase of 3.3 feet and L-2195 a very small increase of 0.04 (ref. **Table 2, Figure 9**).

BIG CYPRESS BASIN

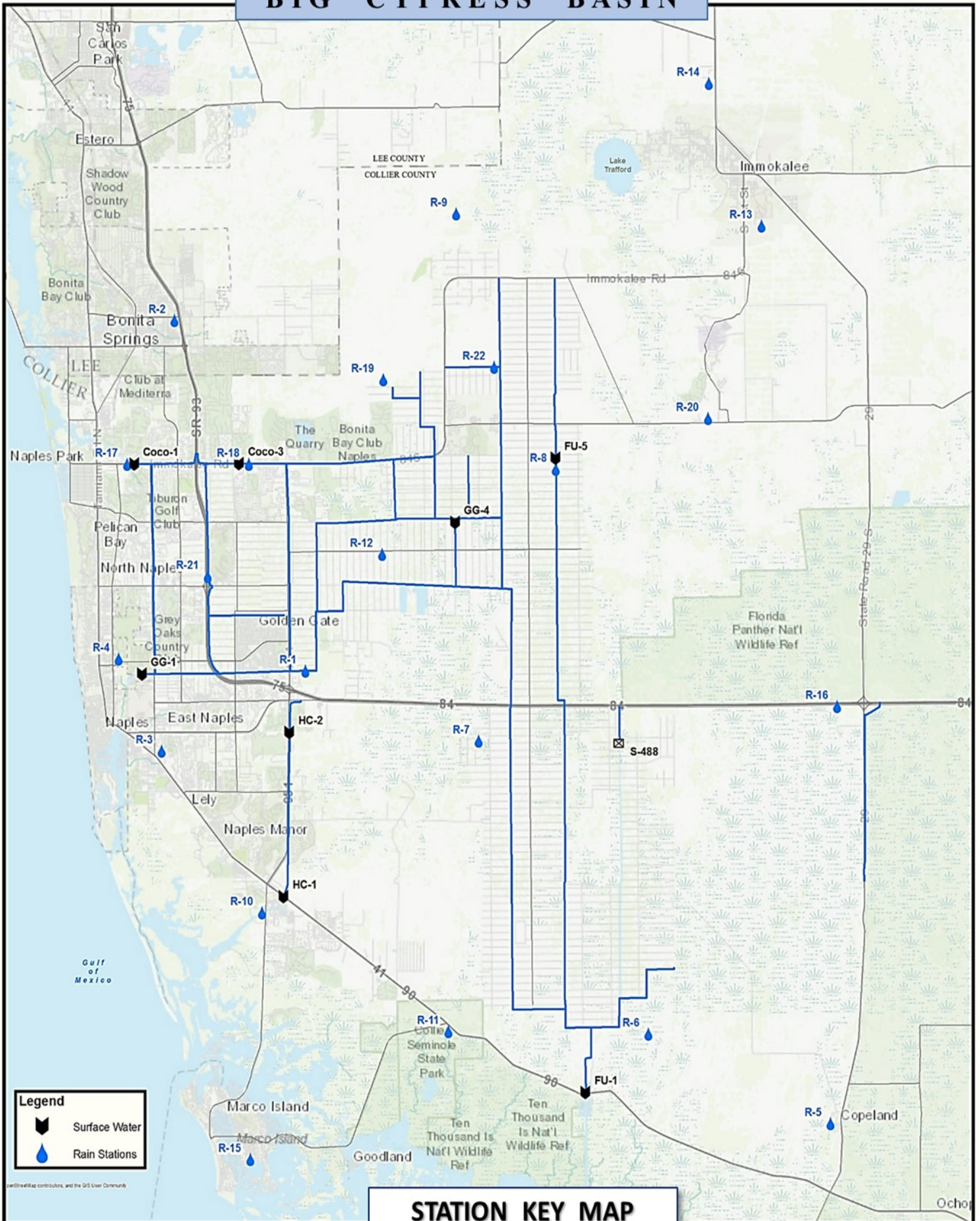


FIGURE 1

**TABLE 1
RAINFALL REPORT - APRIL 2022
DISTRICT/BASIN RAINFALL STATIONS
(ALL NUMBERS ARE IN INCHES)**

STATION INDEX NO.	STATION NAME	APRIL 2022	LONG TERM MONTHLY AVERAGE	MONTHLY DIFFERENCE	CALENDAR YEAR 2022 CUMULATIVE TOTAL	AVERAGE CALENDAR YEAR TO DATE	YEAR TO DATE DIFFERENCE
R-1	GG#3	5.99	2.01	3.98	8.44	7.28	1.16
R-2	BONITA SPRINGS WATER PLANT	1.97	1.98	-0.01	4.24	8.26	-4.02
R-3	COLLIER COUNTY COURTHOUSE	2.52	2.32	0.20	5.46	8.12	-2.66
R-4	FREEDOM PARK	1.51	2.13	-0.62	5.02	7.45	-2.43
R-5	FAKAHATCHEE STRAND HQ	4.28	2.25	2.03	8.28	8.22	0.06
R-6	DAN HOUSE PRAIRIE	3.09	2.29	0.80	4.83	7.01	-2.18
R-7	SGGE WEATHER STATION	11.64	2.46	9.18	15.91	7.25	8.66
R-8	FAKA UNION #5	6.60	2.35	4.26	13.09	8.36	4.73
R-9	CORKSCREW SWAMP NORTH END	3.34	2.04	1.30	5.87	7.38	-1.51
R-10	ROOKERY BAY HQ	4.69	2.19	2.50	7.61	7.59	0.02
R-11	COLLIER SEMINOLE STATE PARK	3.18	2.41	0.77	5.01	8.01	-3.00
R-12	G.G. FIRE STATION	3.62	2.44	1.18	6.64	8.51	-1.87
R-13	IMMOKALEE LANDFILL	2.82	2.36	0.46	5.80	8.91	-3.11
R-14	IFAS	4.29	2.27	2.02	6.18	9.02	-2.84
R-15	MARCO R.O. PLANT	1.35	2.34	-0.99	3.10	8.77	-5.67
R-16	FAKAHATCHEE STRAND NORTH END	11.64	2.87	8.77	15.00	9.91	5.09
R-17	COCO#1	3.86	1.96	1.90	6.94	7.73	-0.79
R-18	COCO#3	3.50	2.38	1.12	5.75	7.57	-1.82
R-19	BIRD ROOKERY	3.20	1.85	1.35	5.78	5.62	0.16
R-20	AVE MARIA	1.95	2.57	-0.62	4.87	8.96	-4.09
R-21	I75W2	3.28	2.10	1.18	6.29	5.90	0.39
R-22	GG#7	5.54	1.71	3.83	11.93	5.39	6.54
R-23	FPWX	3.95	2.28	1.67	6.19	8.18	-1.99
R-24	DSOTO10	9.22	New Site	New Site	New Site	No Historical Data	

AVERAGES	4.46	2.24	2.22	7.31	7.80	-0.49
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BCB ANNUAL RAINFALL
MONTHLY AVERAGE & HISTORICAL AVERAGE TRENDS
(FROM BCB RAINFALL GAUGE DATA)

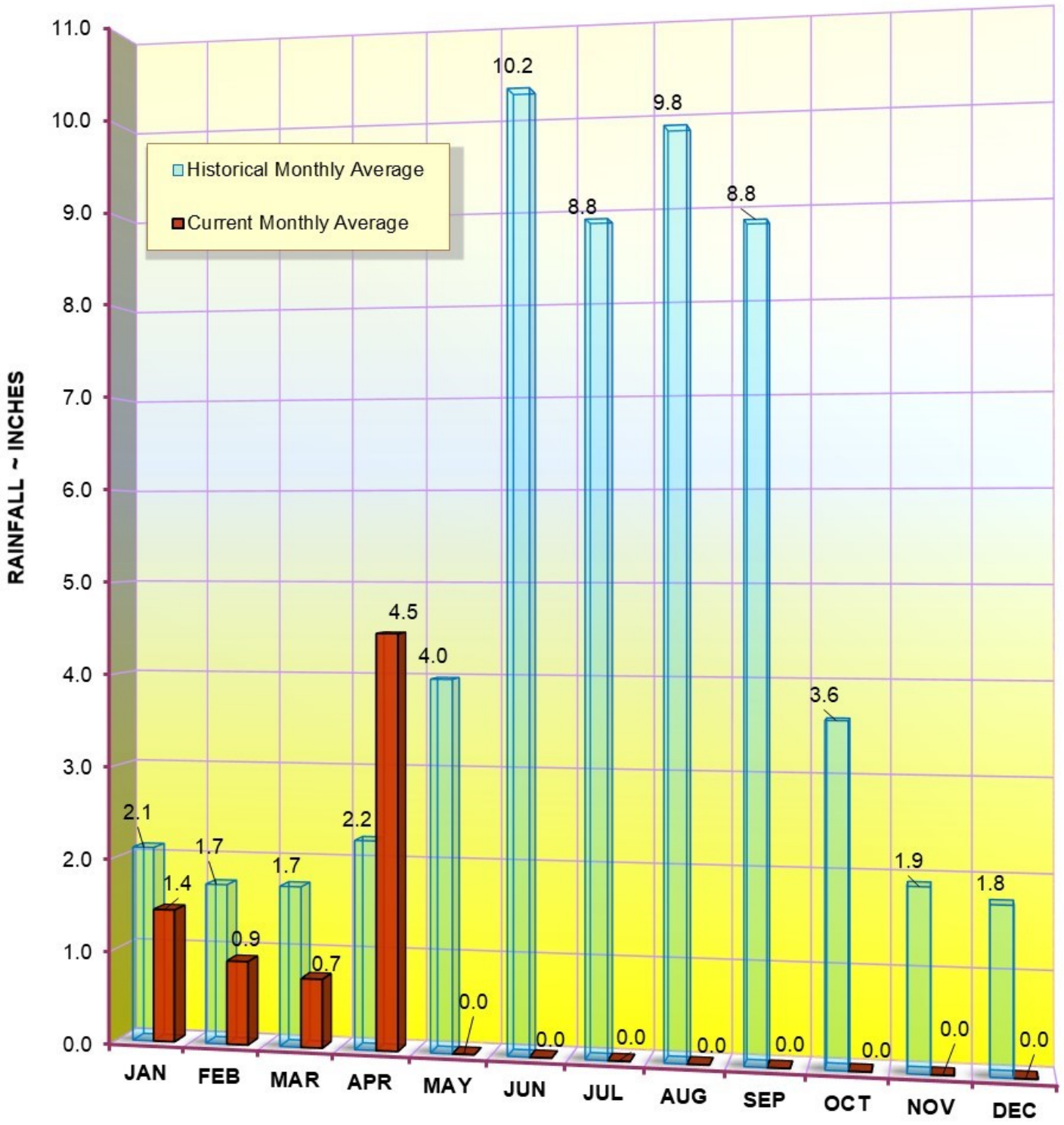


FIGURE 2
BCB GAUGE RAINFALL
MONTHLY AVERAGES THROUGH APRIL 2022

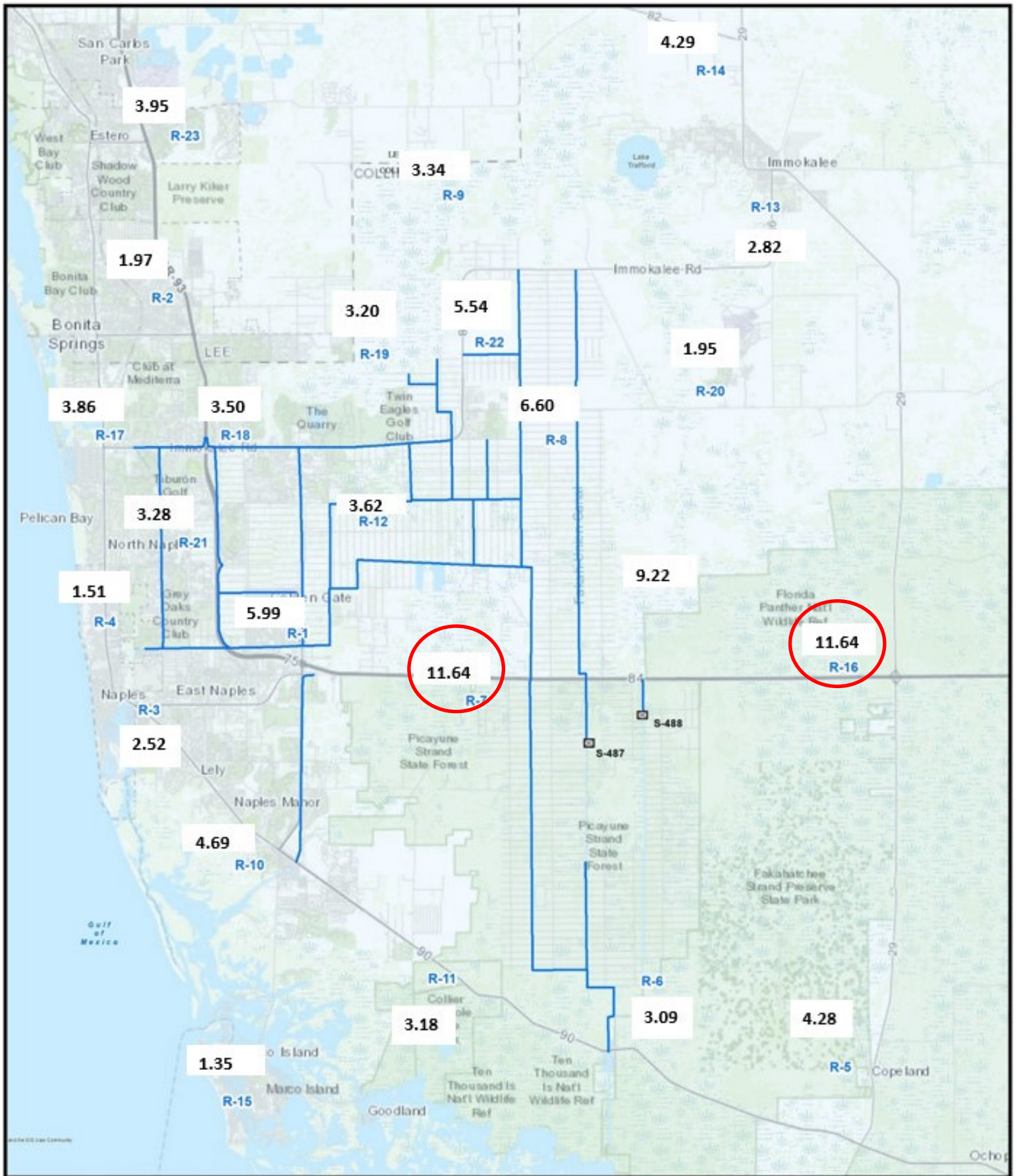
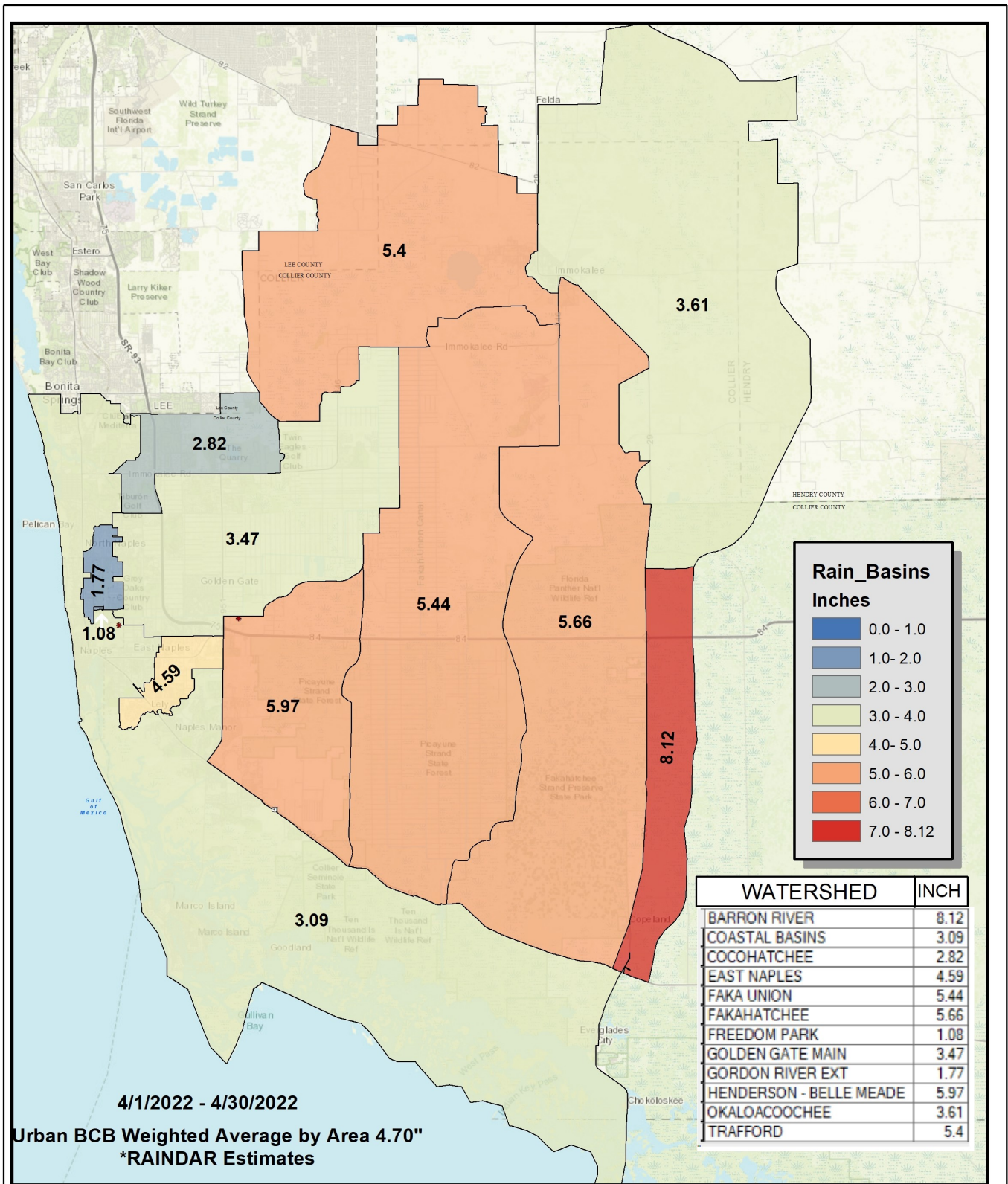
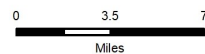


FIGURE 3
BCB RAINFALL DISTRIBUTION
APRIL 2022



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*Rainfall estimates based on gauge adjusted radar



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SFWM
2660 Horseshoe Dr. N.
Naples, Florida 34104
239-263-7615

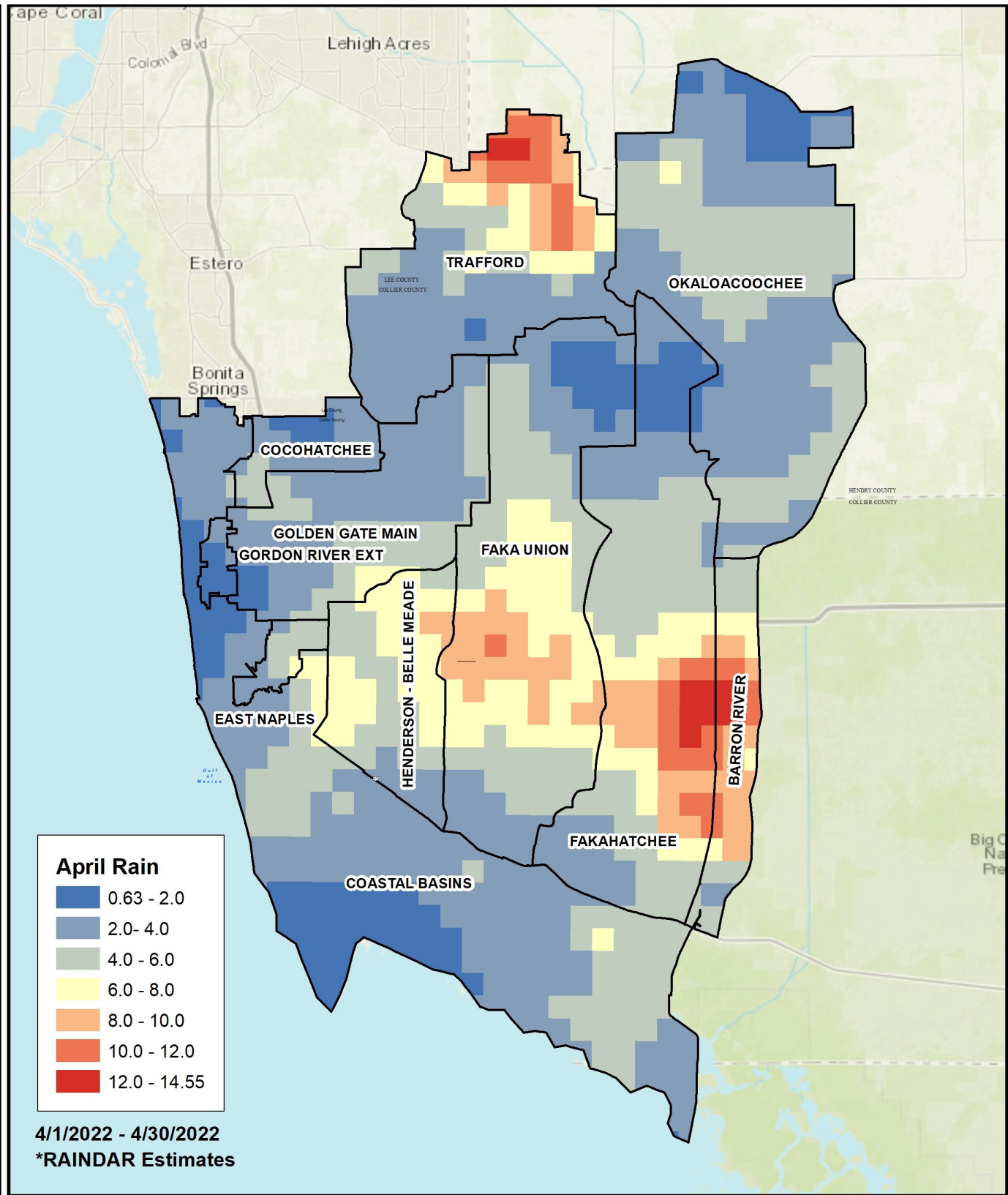
BCB RAINFALL
SPATIAL DISTRIBUTION

Urban Collier County, Florida



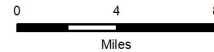
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FIGURE 3a



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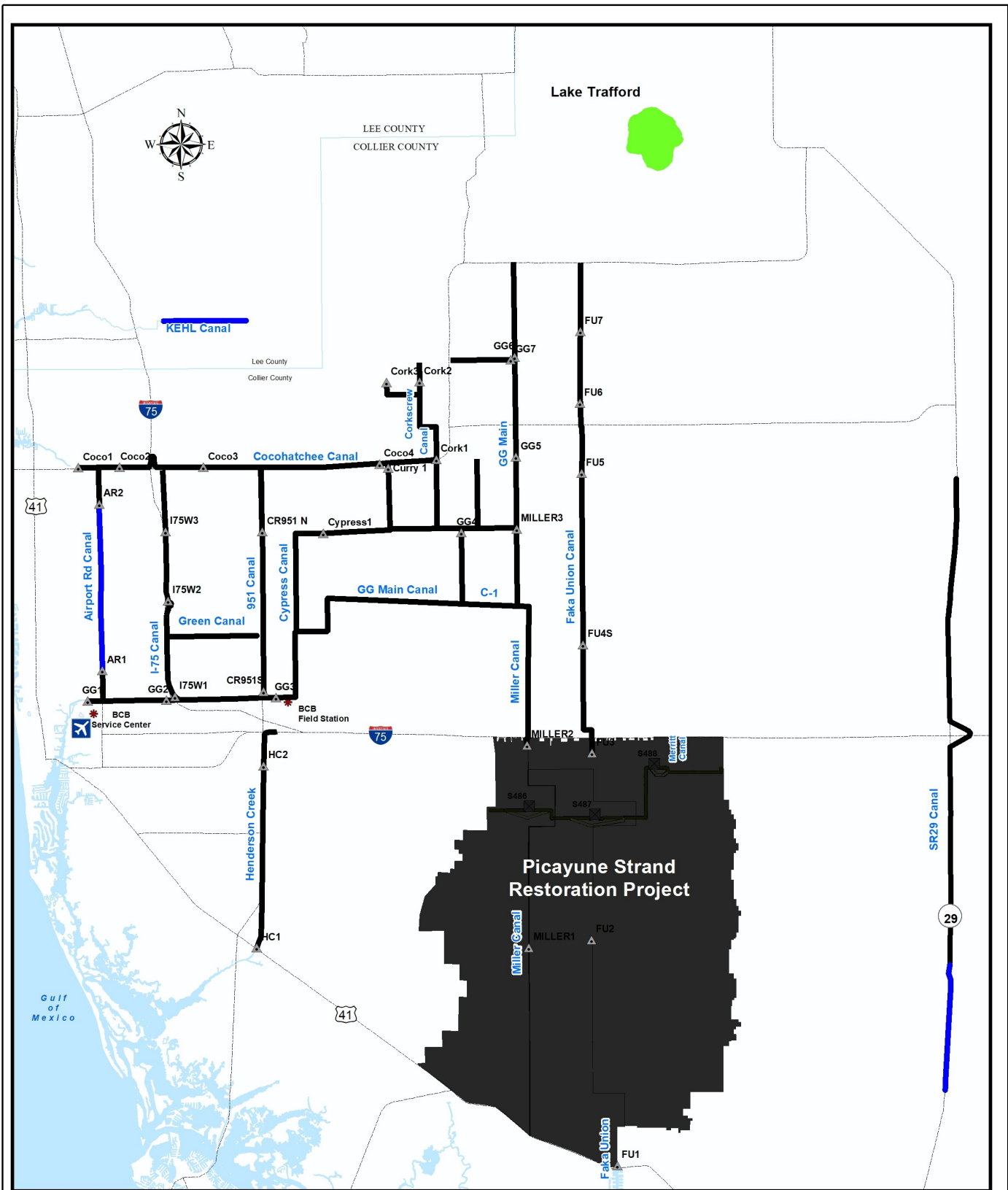
**BCB RAINFALL
SPATIAL DISTRIBUTION**

Urban Collier County, Florida



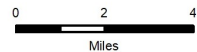
SFWMD_21_Map_04_2019

FIGURE 4



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* Based on period of record for each canal reach



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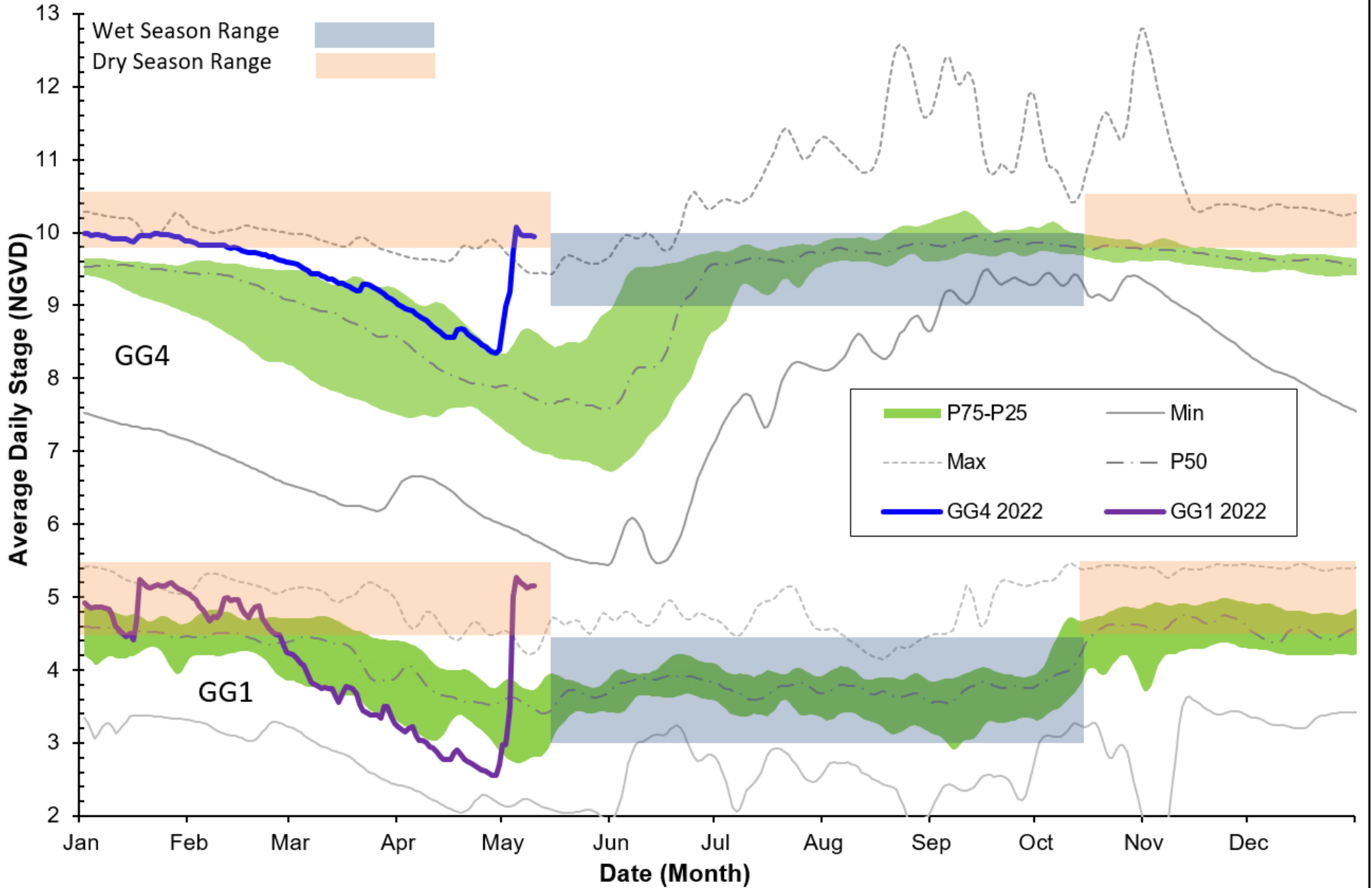
BCB Conditions Index
 5/10/22
 Urban Collier County, Florida



SFWMD_FL_Map_May_2019

FIGURE 4A

Golden Gate Canal Historic Average Daily Headwater Percentiles



Cocohatchee Canal Historic Average Daily Headwater Percentiles

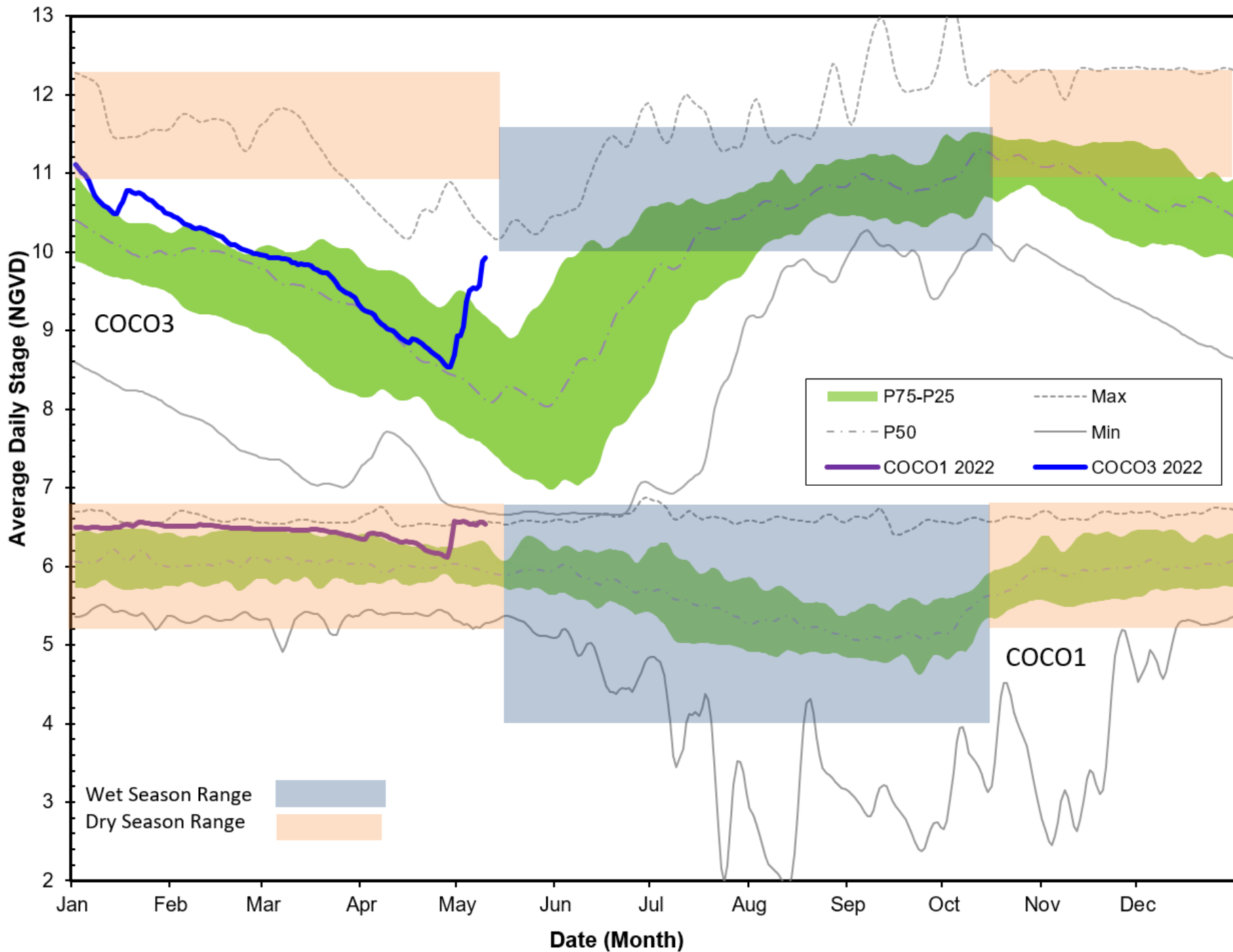


Figure 6C - CORK1 Historic Average Daily Headwater Percentiles (1989-2020)

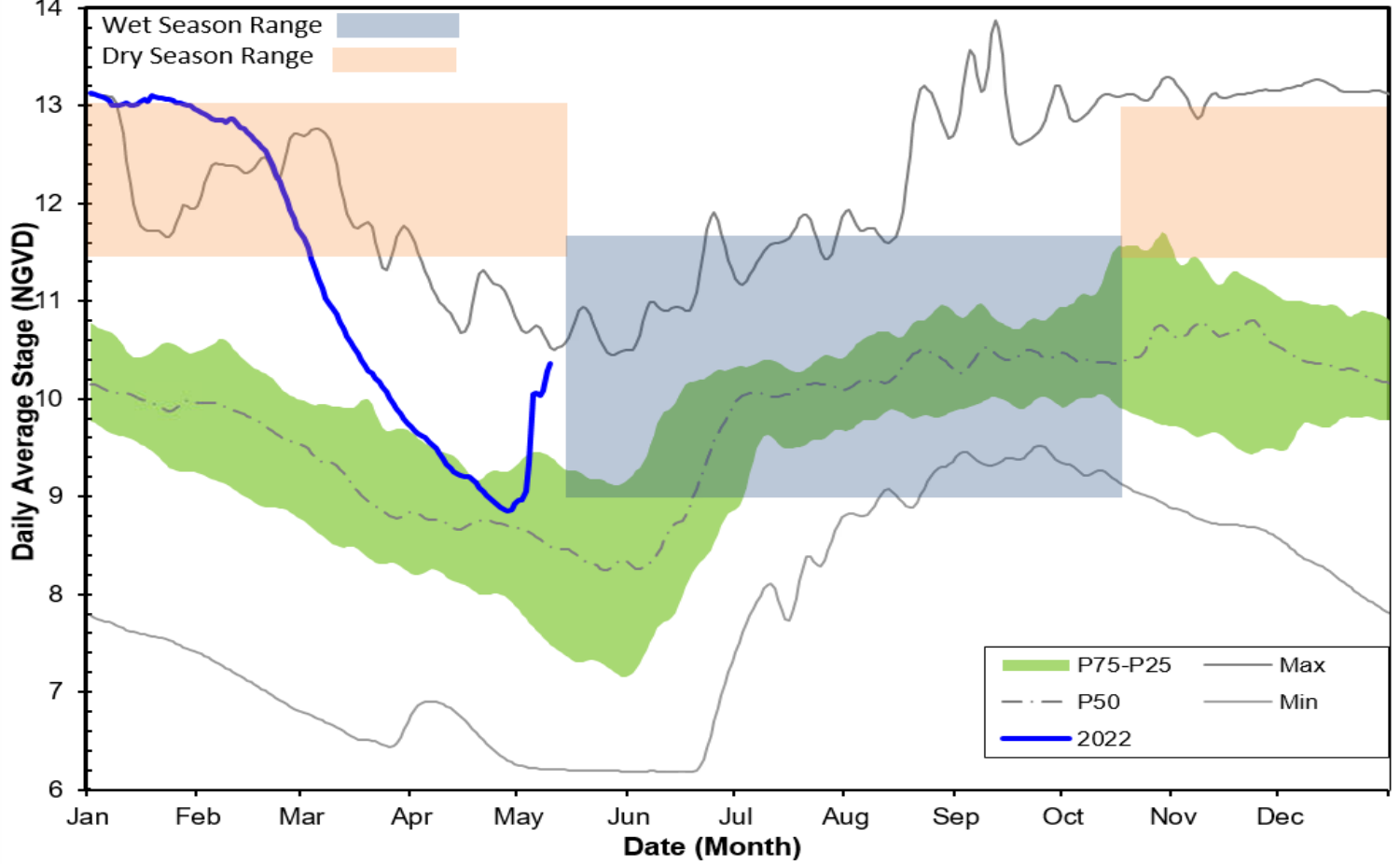
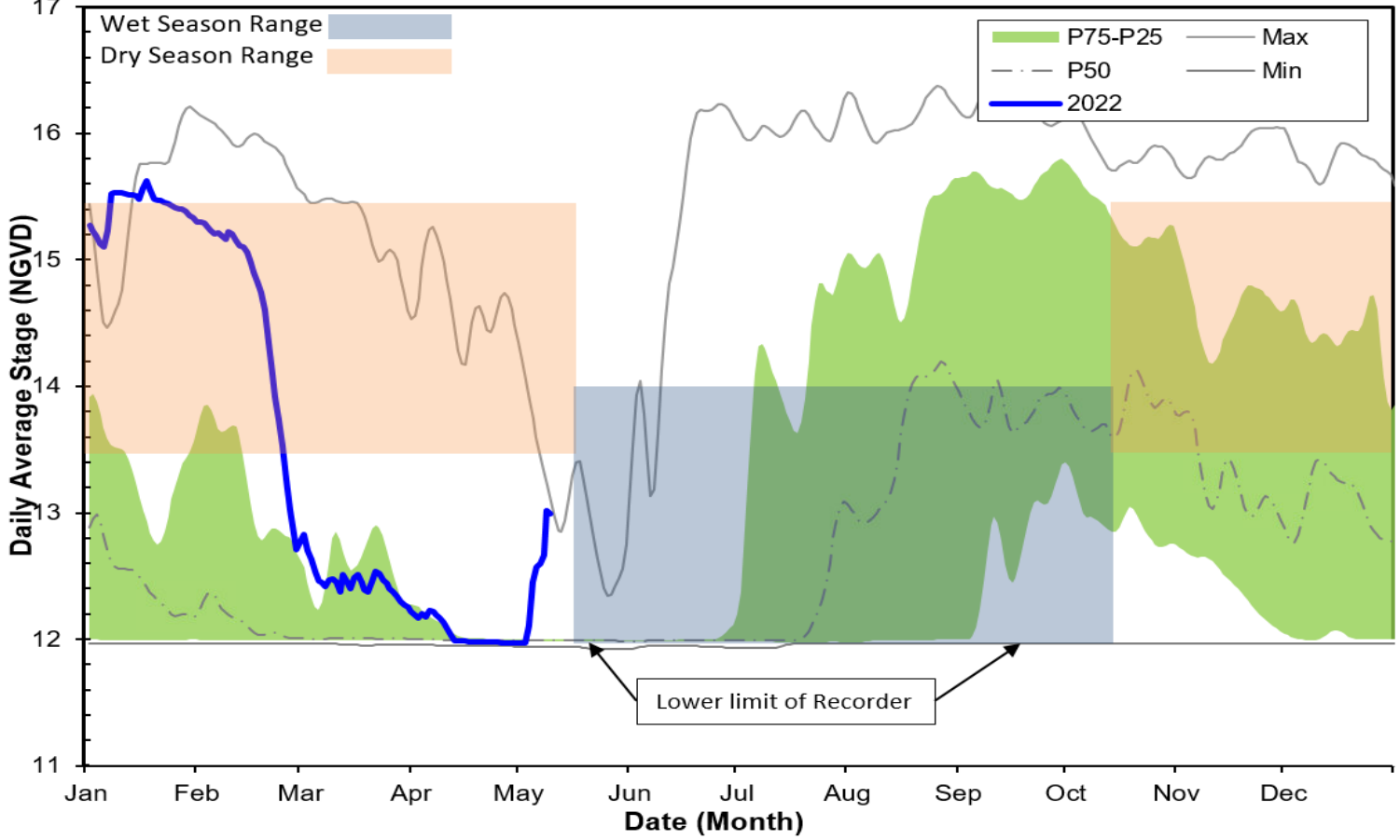
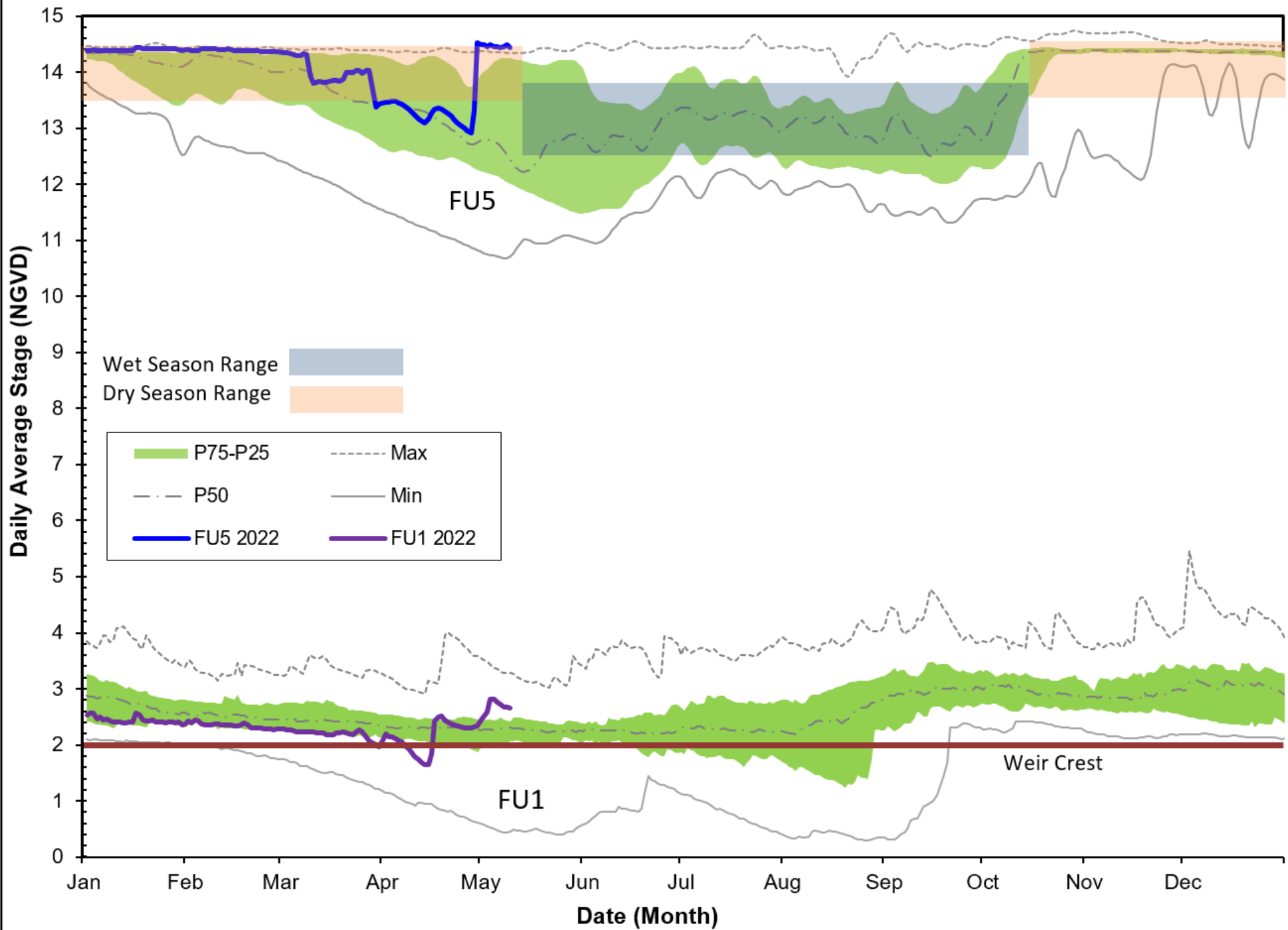


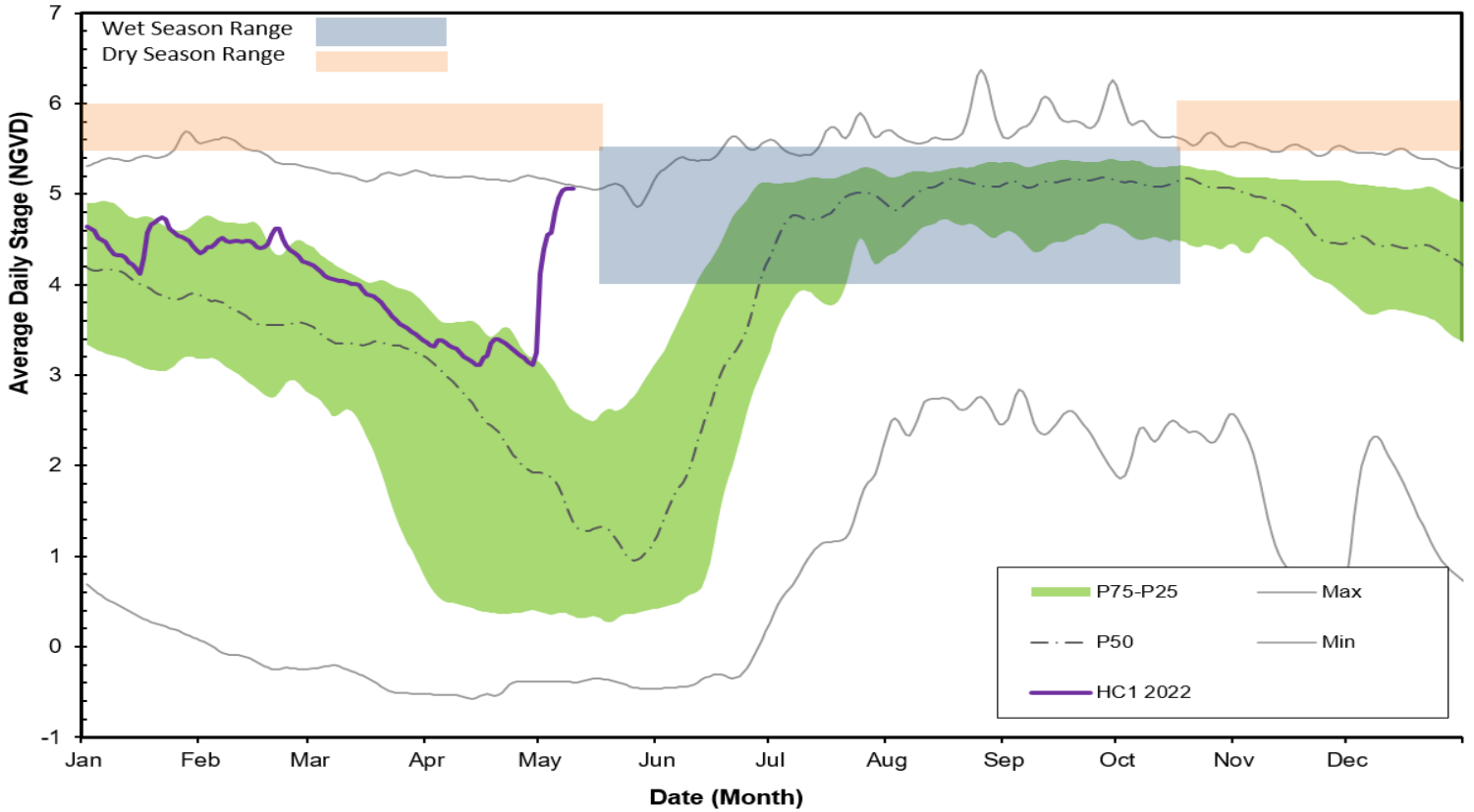
Figure 6D - CORK3 Average Daily Headwater Percentiles (2004-2020)



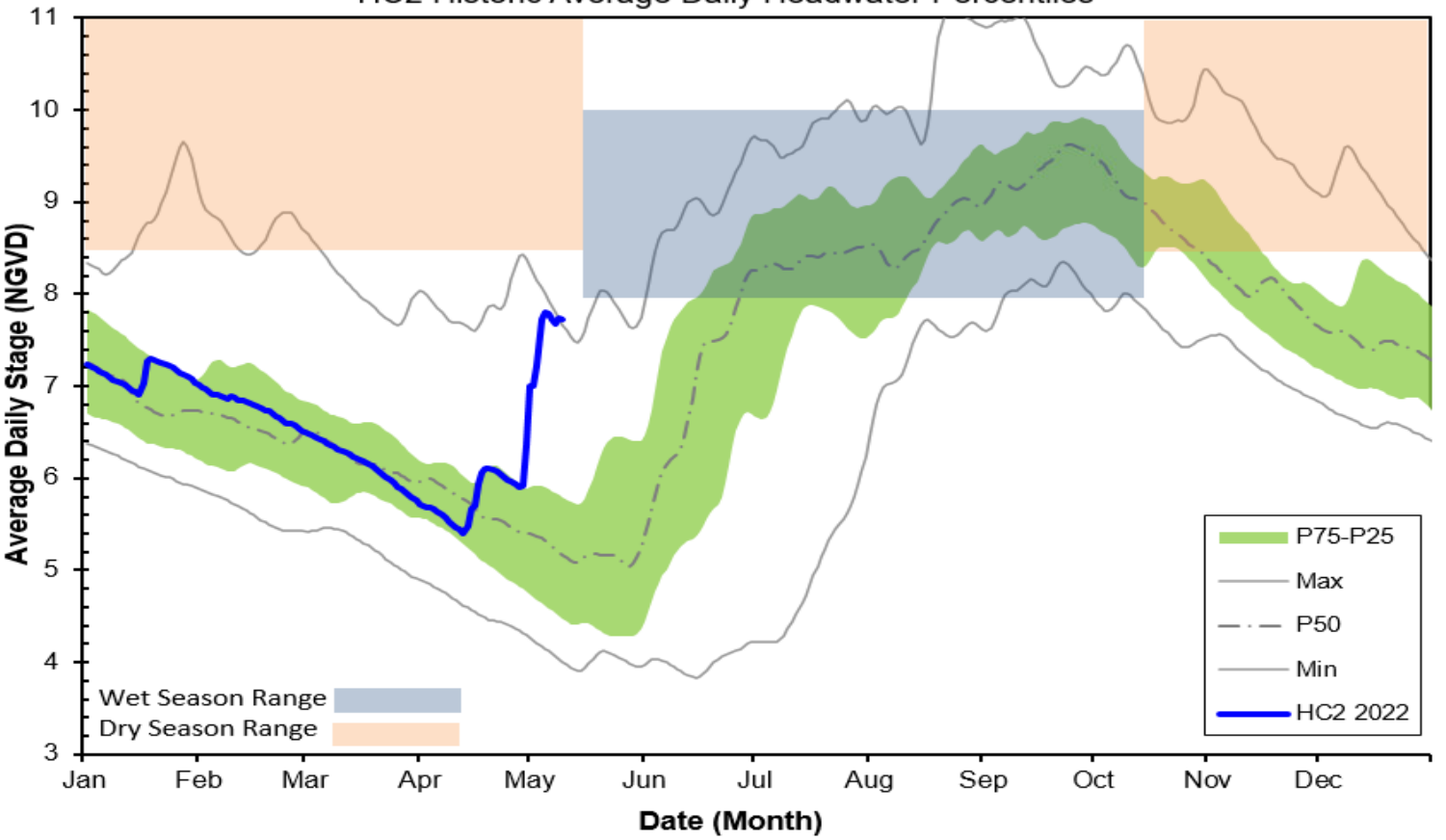
Faka Union Canal Historic Average Daily Headwater Percentiles



HC1 Historic Average Daily Headwater Percentiles



HC2 Historic Average Daily Headwater Percentiles



WATER CONDITIONS SUMMARY - April 2022
SELECTED STATIONS for BCB AREA / SW FLORIDA

Last Reading Date :		May 9, 2021					
Previous Period Reading Date:		April 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	1.33	27.19	28.52	↑	GREEN
C-1004R	Naples	Lower Tamiami Aquifer	3.26	-1.79	1.47	↑	YELLOW
C-1224	Marco Lakes	Lower Tamiami Aquifer	0.45	2.81	3.26	↑	GREEN
C-948R	Golden Gate	Mid Hawthorn Aquifer	1.72	29.35	31.07	↑	
C-951R	Golden Gate	Lower Tamiami Aquifer	2.96	1.47	4.43	↑	
L-2194	Bonita Springs	Sandstone Aquifer	2.30	-1.15	1.15	↑	GREEN
L-2195	Bonita Springs	Surficial Aquifer System	0.04	8.19	8.23	↑	GREEN
L-738	Bonita Springs	Lower Tamiami Aquifer	1.78	-4.35	-2.57	↑	GREEN

TABLE 2
BCB WATER CONDITIONS SUMMARY
APRIL 2022

BIG CYPRESS BASIN

APRIL 2022

GROUNDWATER LEVEL DAILY TRENDS COMPARED TO HISTORICAL AVERAGE

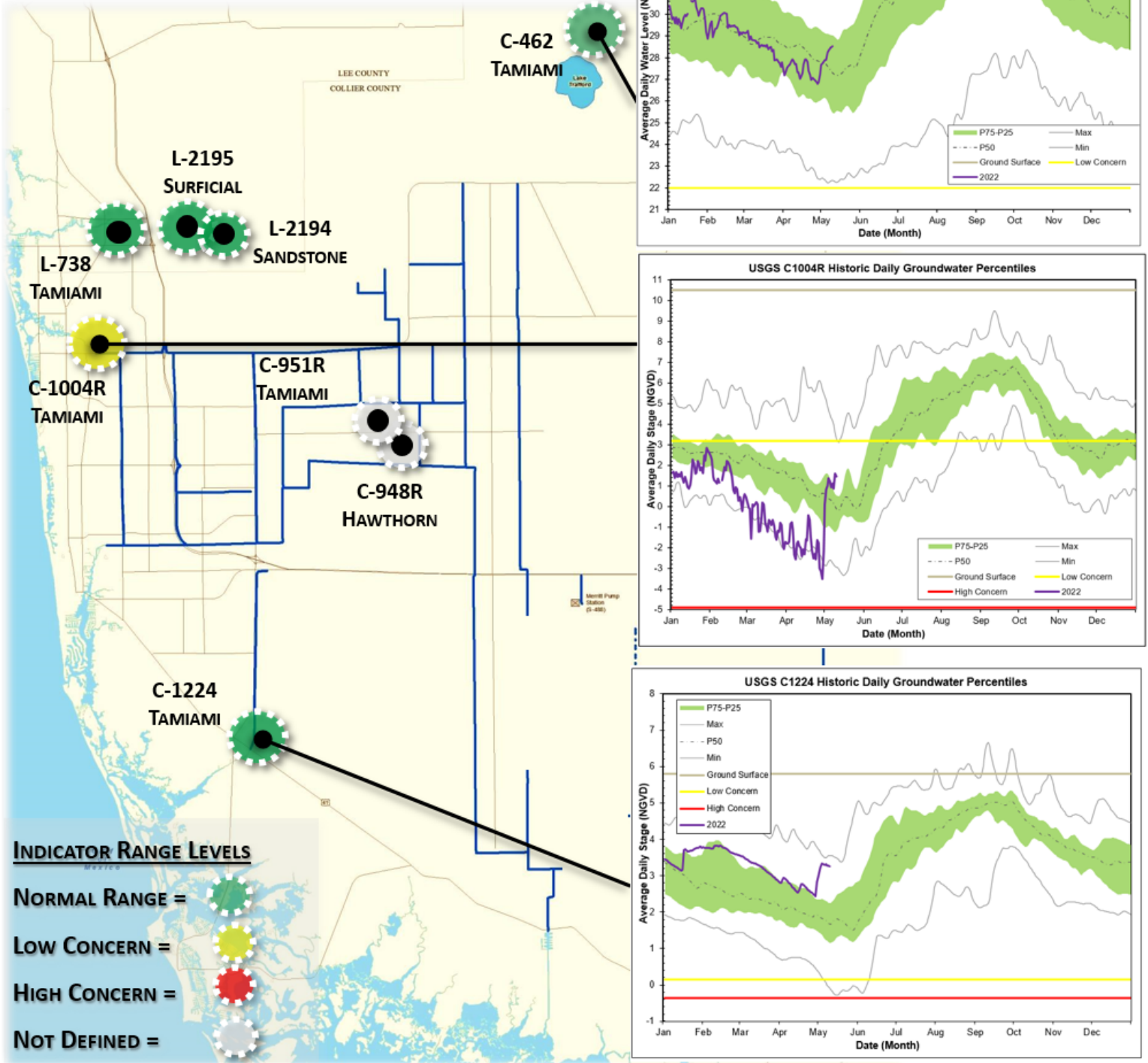


FIGURE 9

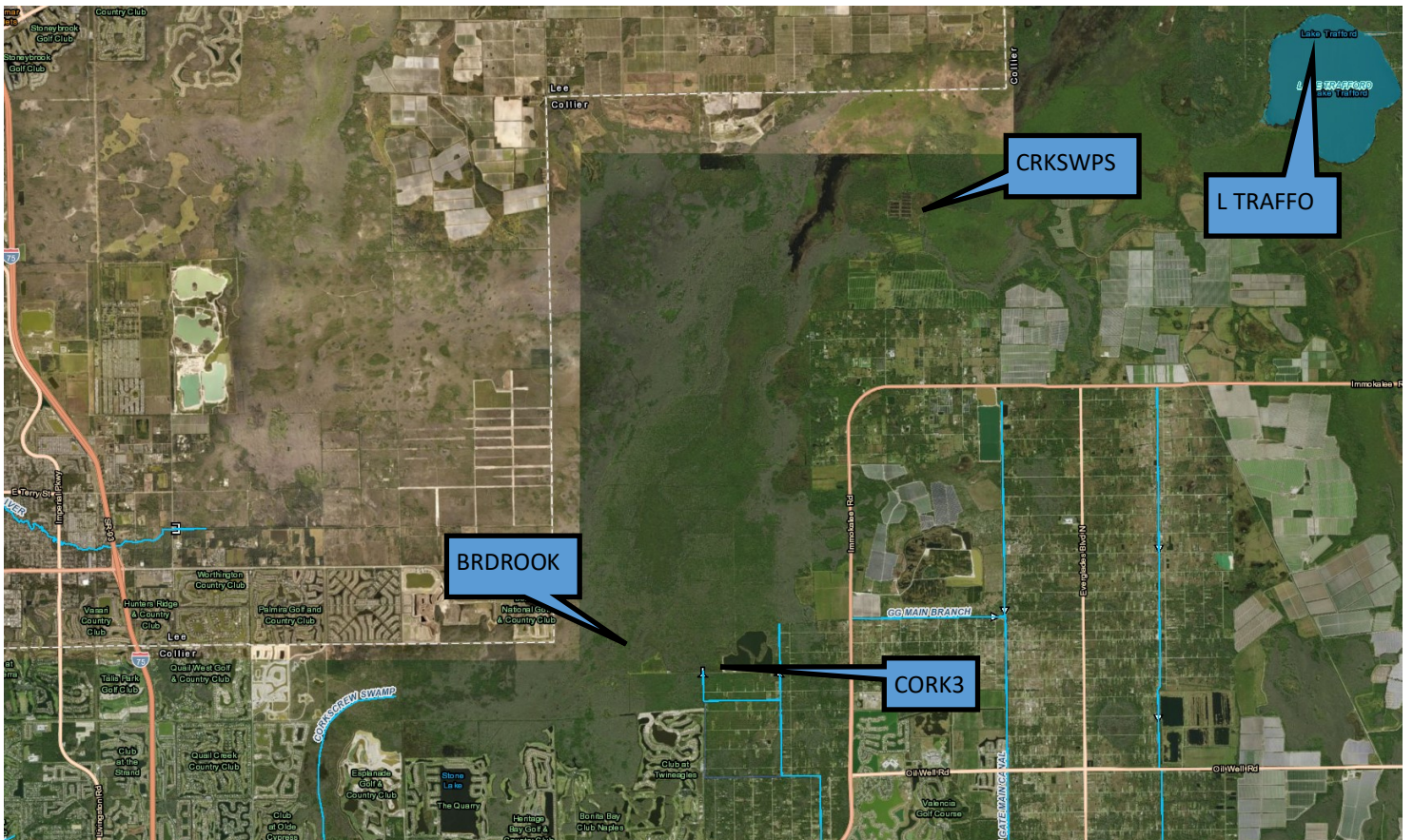
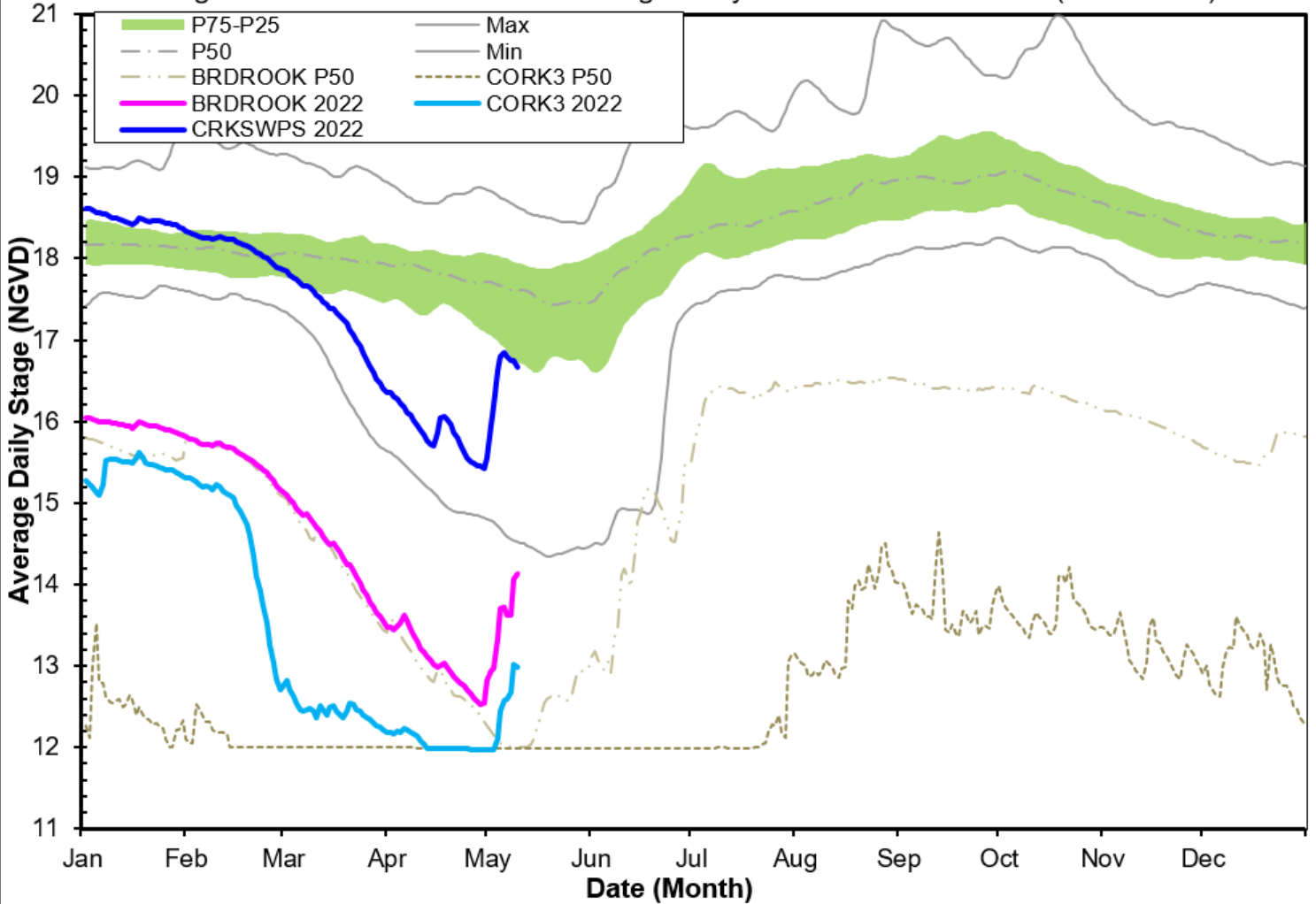


Figure 10-Corkscrew Historic Average Daily Headwater Percentiles(1984-2019)



Lake Trafford Historic Daily Water Level Percentiles (1941-2021)

