

MARCH 2022

# BIG CYPRESS BASIN HYDROLOGIC REPORT



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# SUMMARY OF HYDROLOGIC CONDITIONS IN THE BIG CYPRESS BASIN

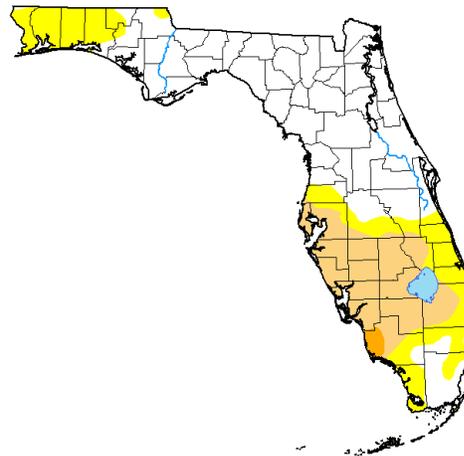
March 2022

## SUMMARY

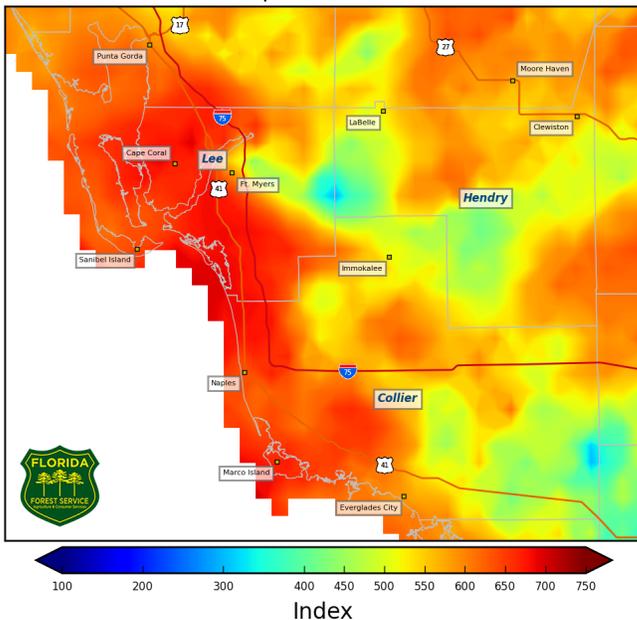
The below normal rainfall trend continued in March. Most of the Basin has not received meaningful rainfall since early November 2021. A couple of very isolated areas (<5 sq mi) in northern Golden Gate Main basin and Fakahatchee have higher than normal totals from one or two strong thunderstorms. Overall though, the December—March rainfall totals are well below average at 45% of normal with about a 4 inch deficit. Given the well below average rainfall and above average temperatures, the US Drought Monitor (right) now show severe drought conditions for western portions of the Basin. The Florida Forest Service also reports an extremely elevated KBDI (below) for Collier county indicating extremely dry conditions at the surface.

U.S. Drought Monitor  
Florida

April 5, 2022  
(Released Thursday, Apr. 7, 2022)  
Valid 8 a.m. EDT



4 km Resolution KBDI  
Caloosahatchee Forestry Center  
April 09, 2022



Groundwater levels continue to decline throughout the region also with very low rainfall. Groundwater levels are mixed in the Basin, with some in upper and middle percentiles for April and others in lower percentiles (below).

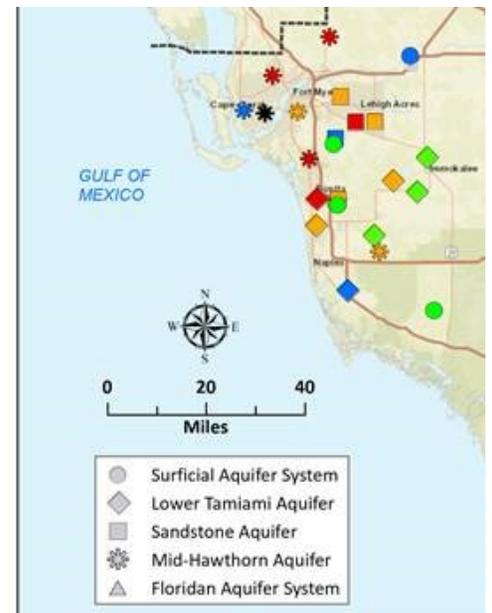
Long term forecasts do not indicate any climatological anomalies that would indicate wetter or drier conditions for the next few months.

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

## BCB RAINFALL

The weather pattern in March was once again mostly hot and dry which continues the pattern from the first half of the 2021/22 dry season. As measured by twenty-four (24) reporting stations (ref. **Figures 1, 2, Table 1**), the basin-wide monthly average was **0.74 inches (43% of normal)**, which is below the average 1.79 inches typically collected.

Based on collected gauge data, the rainfall distribution across the Basin was fairly uniform except a couple isolated areas in upper Golden Gate and Fakahatchee that received in excess of 4 inches from a localized



strong to severe thunderstorm. **Figure 3a** shows the average rainfall for each of the Basin's watersheds based on gauge adjusted radar. The Okaloacoochee basin received the highest rainfall with a **1.2 inch** areal average across the watershed and the lowest was the Costal basins with about **0.35 inches**. The Basin's total areal weighted average rainfall was **0.61 inches**. The month's highest gauge total was collected at GG#7 (Site R-22), which received **4.08 inches**. This month's lowest rainfall was recorded at COCO#3 (Site R-18), which received **0.11 inches**. These two sites are only 10 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, about 80% of BCB canals were just above the 25th percentile, with the remaining 20% split equally split between upper and lower percentiles (**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. Canal levels in the northern portions of Golden Gate basin are in upper percentiles due to localized heavy rainfall, while the lower reaches are well below the 25th percentile (ref **Figure 5A & 5B**).

- **COCOHATCHEE SYSTEM**

The entire Cocohatchee system was operated to conserve water with no discharges to tide and levels remain near average for this time of year. (ref **Figure 6A, 6B, 6C, & 6D**). The coastal areas of the Cocohatchee canal are slightly above normal for April even with the low rainfall.

- **FAKA UNION SYSTEM**

The entire Faka Union system was operated for water conservation with no water being released south through any structures. As the month ended, levels continued their annual recession in response to dry conditions and are between the 25th and 50th percentile for this time of year (ref **Figure 7A & 7B**).

- **HENDERSON CREEK SYSTEM**

Water control structures in the Henderson Creek system remained fully closed. Canal levels have declined as water use increased but remain close to the 50th percentile as the month came to a close (ref **Figure 8A & 8B**).

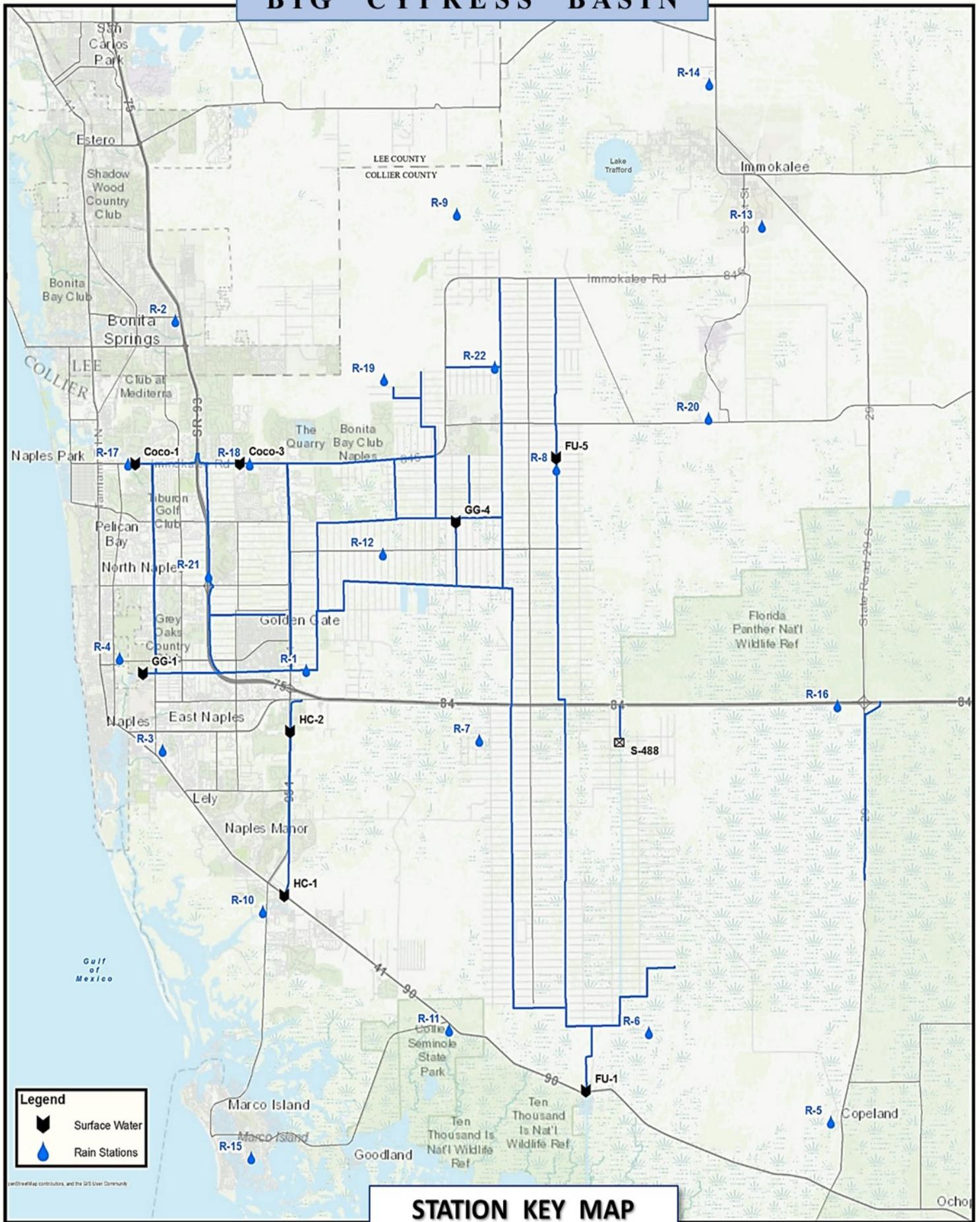
- **CORKSCREW SWAMP**

**Figure 10** shows the historical trends for Corkscrew, Bird Rookery, and the Cork 3 structure and the 2022 corresponding levels. Two of the three sites experienced a fairly normal recession rate and are near the 50th percentile for March with CRKSWPS being the outlier near the 10th percentile. It is noteworthy that water levels in nearby Corkscrew and upper Golden Gate canals are all well above normal from recent rainfall. Water levels at Lake Trafford are shown in **Figure 10A**, which show lake levels continuing a recession and have just dropped below the 50th percentile as the month ended.

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

The current reporting (04/06/2022) for the Lower West Coast [LWC] indicate decreasing trends for March. Three reporting wells (C-1004R, L-2194, & L-738) are in the yellow (caution) indicator levels and all others remain in green (normal) levels. Well C-1004R is showing record low levels for March and April. Approximately half of the reporting wells in the region are at or below the 25th percentile with other half near or just above median levels (ref. **Table 2**). All reported wells in **Table 2—March** show an average decrease of 1.3 feet. L-2194 and C-1004R recorded the highest decrease of 2.5 feet and 2.3 feet respectively, and C-948R a very small increase of 0.08 (ref. **Table 2, Figure 9**).

BIG CYPRESS BASIN



STATION KEY MAP

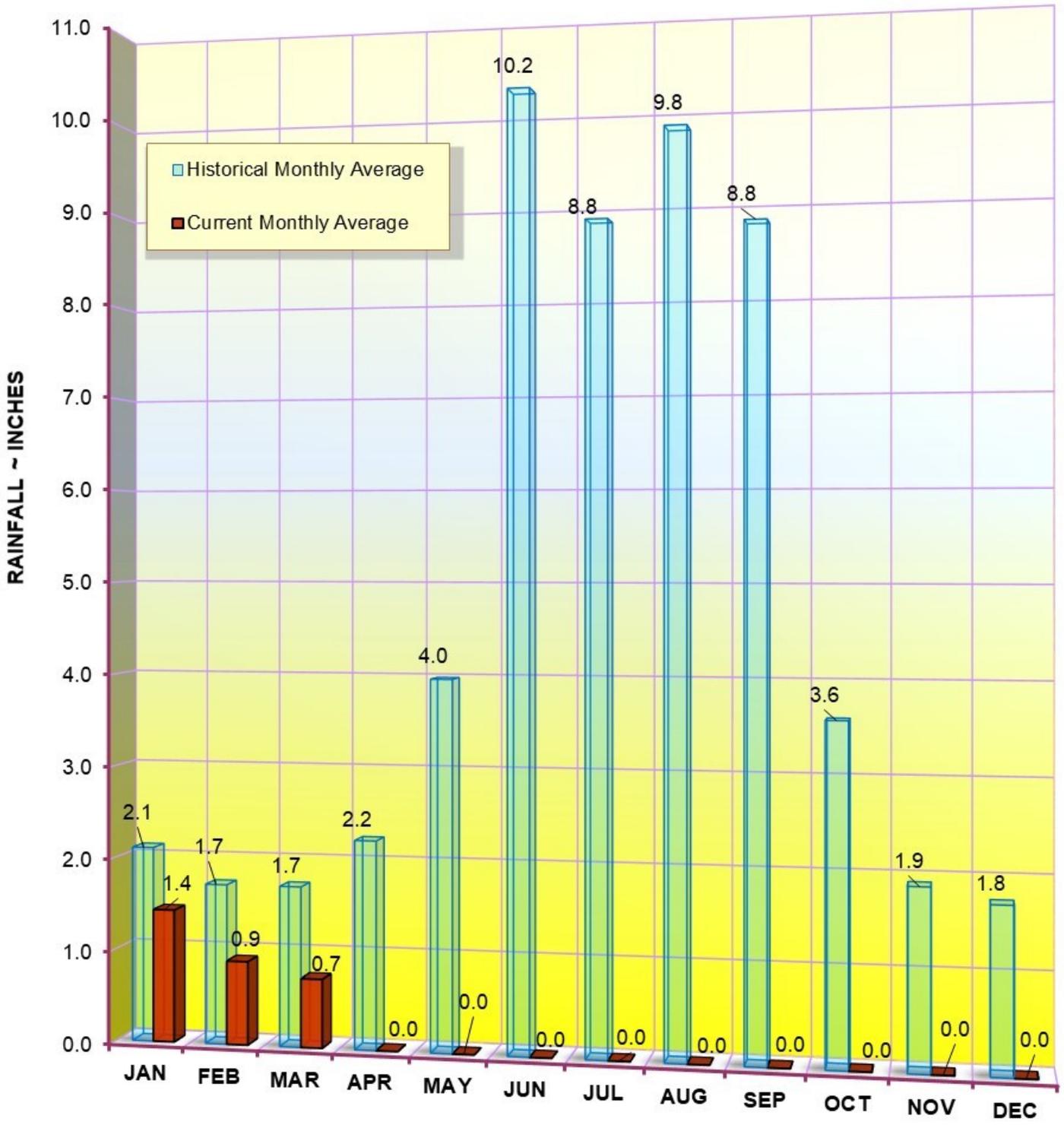
FIGURE 1

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

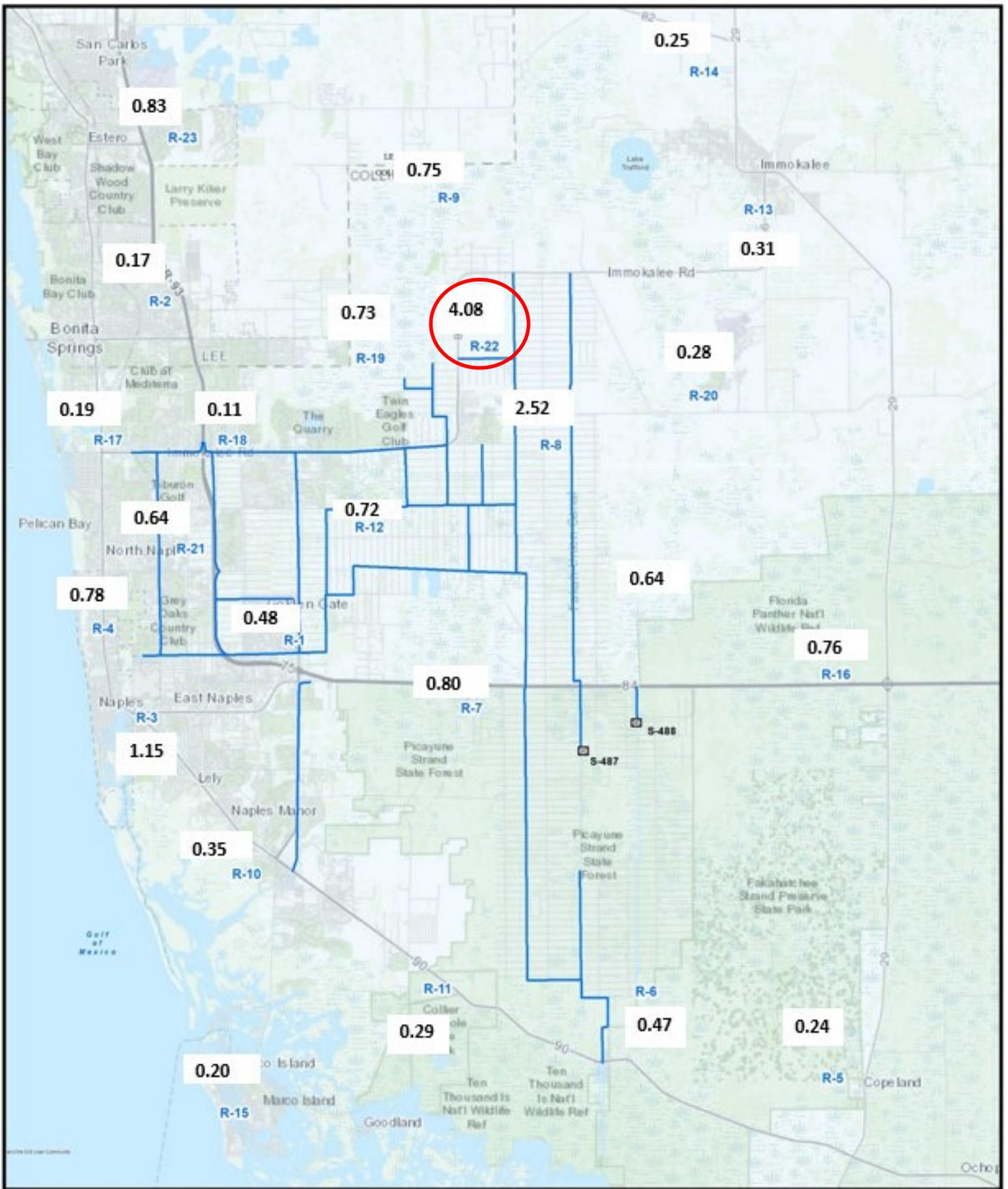
STATION INDEX NO.	STATION NAME	MARCH 2022	LONG TERM MONTHLY AVERAGE	MONTHLY DIFFERENCE	CALENDAR YEAR 2022 CUMULATIVE TOTAL	AVERAGE CALENDAR YEAR TO DATE	YEAR TO DATE DIFFERENCE
R-1	GG#3	0.48	0.74	-0.26	2.45	5.27	-2.82
R-2	BONITA SPRINGS WATER PLANT	0.17	2.29	-2.12	2.27	6.28	-4.01
R-3	COLLIER COUNTY COURTHOUSE	1.15	1.92	-0.77	2.94	5.81	-2.87
R-4	FREEDOM PARK	0.78	1.10	-0.32	3.51	5.32	-1.81
R-5	FAKAHATCHEE STRAND HQ	0.24	2.29	-2.05	4.00	5.97	-1.97
R-6	DAN HOUSE PRAIRIE	0.47	1.57	-1.10	1.74	4.72	-2.98
R-7	SGGE WEATHER STATION	0.80	1.40	-0.60	4.27	4.80	-0.53
R-8	FAKA UNION #5	2.52	1.00	1.52	6.49	6.02	0.47
R-9	CORKSCREW SWAMP NORTH END	0.75	1.65	-0.90	2.53	5.34	-2.81
R-10	ROOKERY BAY HQ	0.35	1.50	-1.15	2.92	5.41	-2.49
R-11	COLLIER SEMINOLE STATE PARK	0.29	2.02	-1.73	1.83	5.60	-3.77
R-12	G.G. FIRE STATION	0.72	2.19	-1.47	3.02	6.06	-3.04
R-13	IMMOKALEE LANDFILL	0.31	2.48	-2.17	2.98	6.55	-3.57
R-14	IFAS	0.25	2.70	-2.45	1.89	6.75	-4.86
R-15	MARCO R.O. PLANT	0.20	1.94	-1.74	1.75	6.43	-4.68
R-16	FAKAHATCHEE STRAND NORTH END	0.76	2.46	-1.70	3.36	7.04	-3.68
R-17	COCO#1	0.19	2.08	-1.89	3.08	5.77	-2.69
R-18	COCO#3	0.11	1.43	-1.32	2.25	5.19	-2.94
R-19	BIRD ROOKERY	0.73	0.76	-0.03	2.58	3.77	-1.19
R-20	AVE MARIA	0.28	2.34	-2.06	2.92	6.39	-3.47
R-21	I75W2	0.64	0.89	-0.25	3.01	3.80	-0.79
R-22	GG#7	4.08	0.80	3.28	6.39	3.68	2.71
R-23	FPWX	0.83	2.15	-1.32	2.24	5.90	-3.66
R-24	DSOTO10	0.64	New Site	New Site	New Site	No Historical Data	

AVERAGES	0.74	1.73	-0.99	3.06	5.56	-2.50
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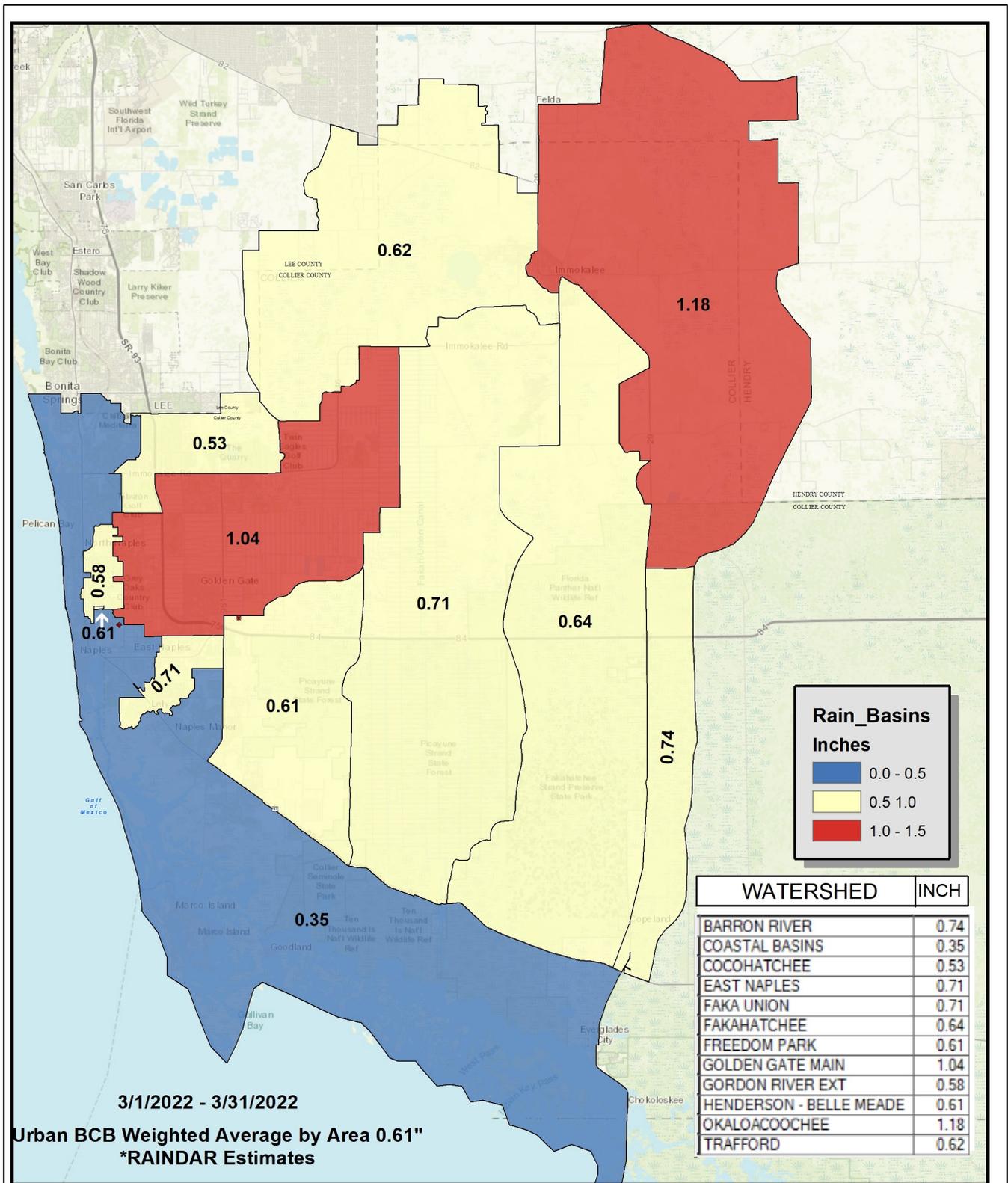
**BCB ANNUAL RAINFALL**  
**MONTHLY AVERAGE & HISTORICAL AVERAGE TRENDS**  
**(FROM BCB RAINFALL GAUGE DATA)**



**FIGURE 2**  
**BCB GAUGE RAINFALL**  
**MONTHLY AVERAGES THROUGH MARCH 2022**



**FIGURE 3**  
**BCB RAINFALL DISTRIBUTION**  
**MARCH 2022**



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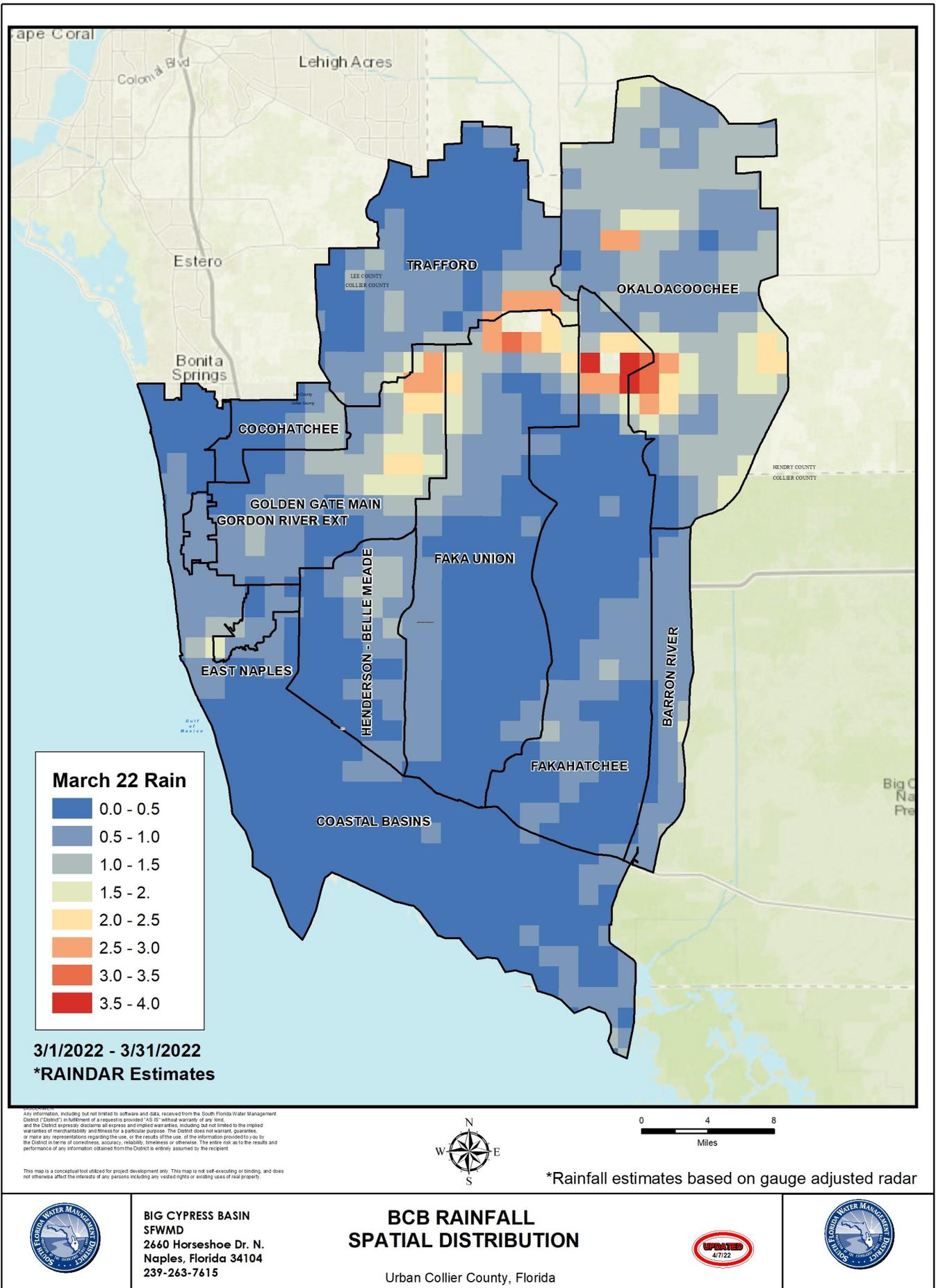
This map is a conceptual tool utilized for project development only. This map is not self-executing or binding, and does not otherwise affect the interests of any persons including any vested rights or existing uses of real property.



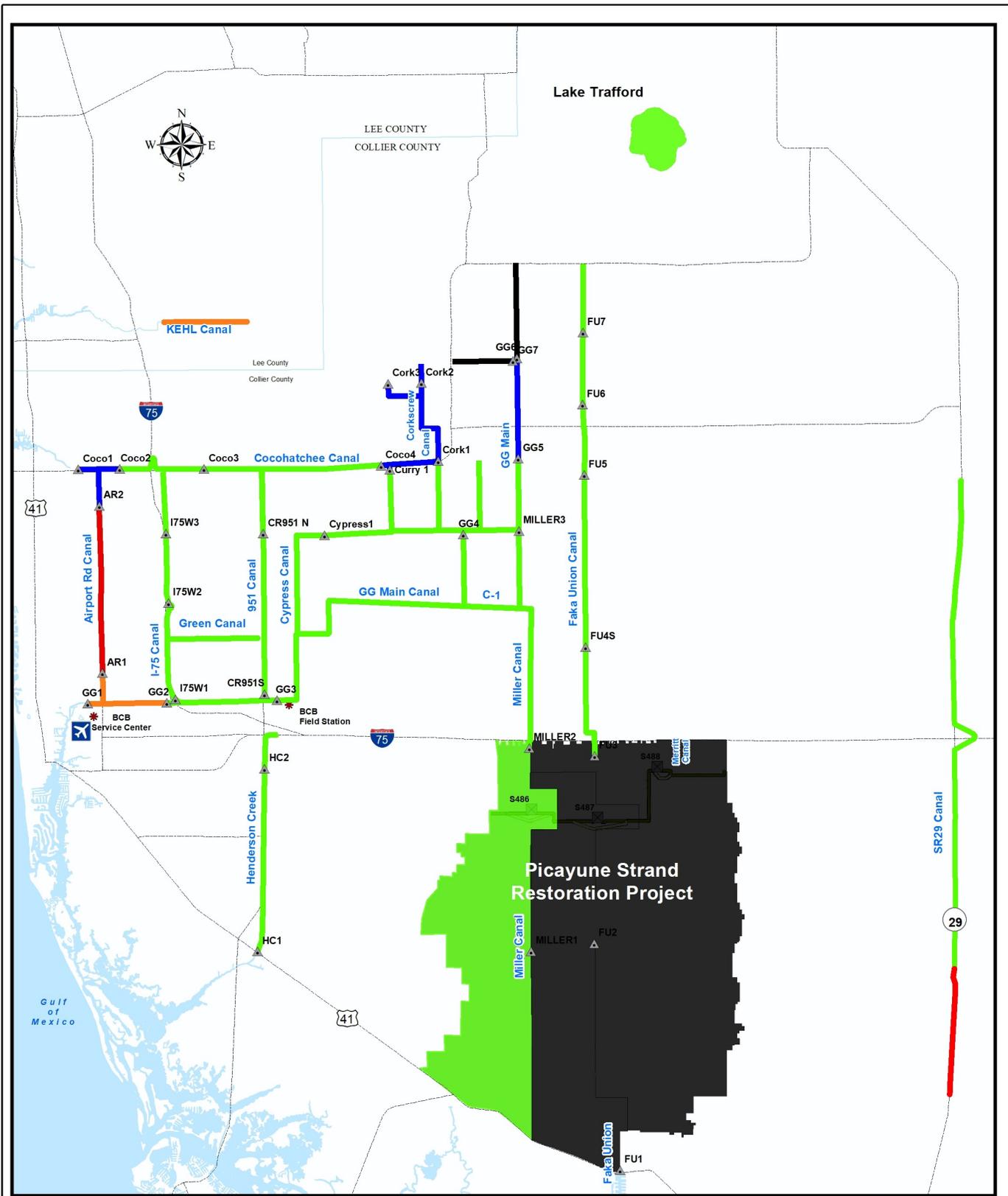
\*Rainfall estimates based on gauge adjusted radar

	<p><b>BIG CYPRESS BASIN</b>  <b>SFWMD</b>  <b>2660 Horseshoe Dr. N.</b>  <b>Naples, Florida 34104</b>  <b>239-263-7615</b></p>	<p><b>BCB RAINFALL</b>  <b>SPATIAL DISTRIBUTION</b></p>		
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**FIGURE 3a**



**FIGURE 4**



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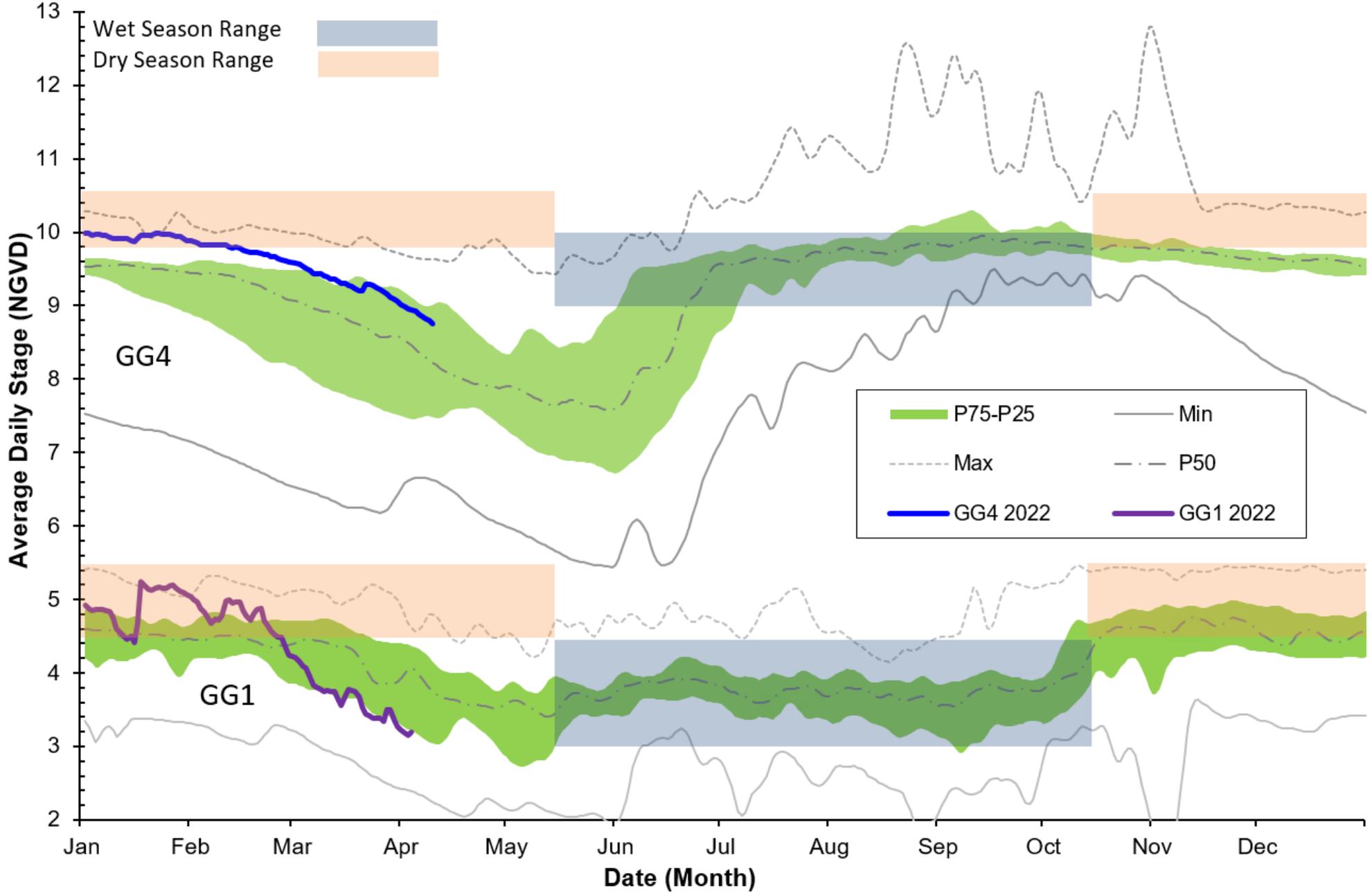
\* Based on period of record for each canal reach

	<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>4/6/22</b>          Urban Collier County, Florida</p>		
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SFAMC\_FL\_Map\_Mar\_2019

**FIGURE 4A**

# Golden Gate Canal Historic Average Daily Headwater Percentiles



# Cocohatchee Canal Historic Average Daily Headwater Percentiles

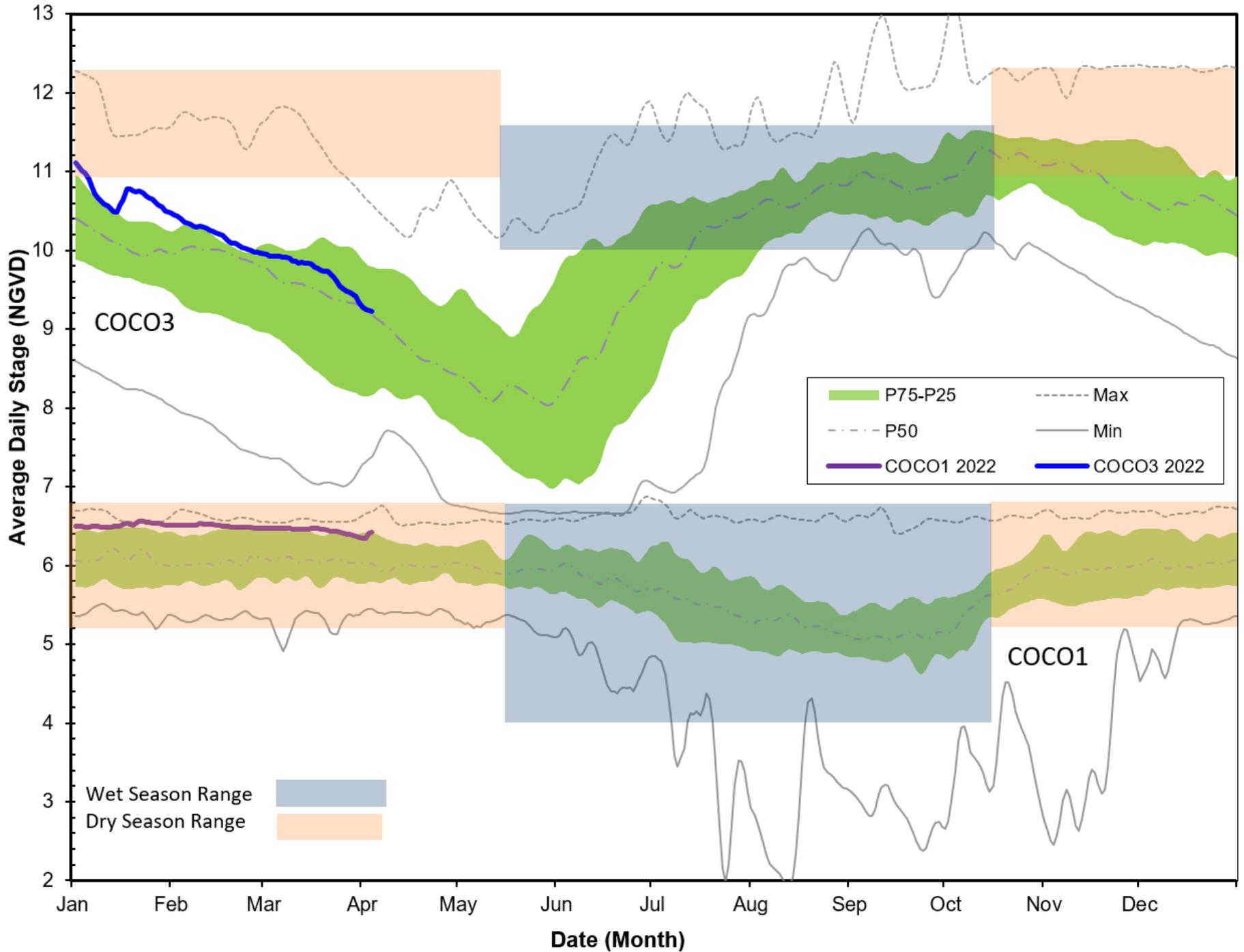


Figure 6C - CORK1 Historic Average Daily Headwater Percentiles (1989-2020)

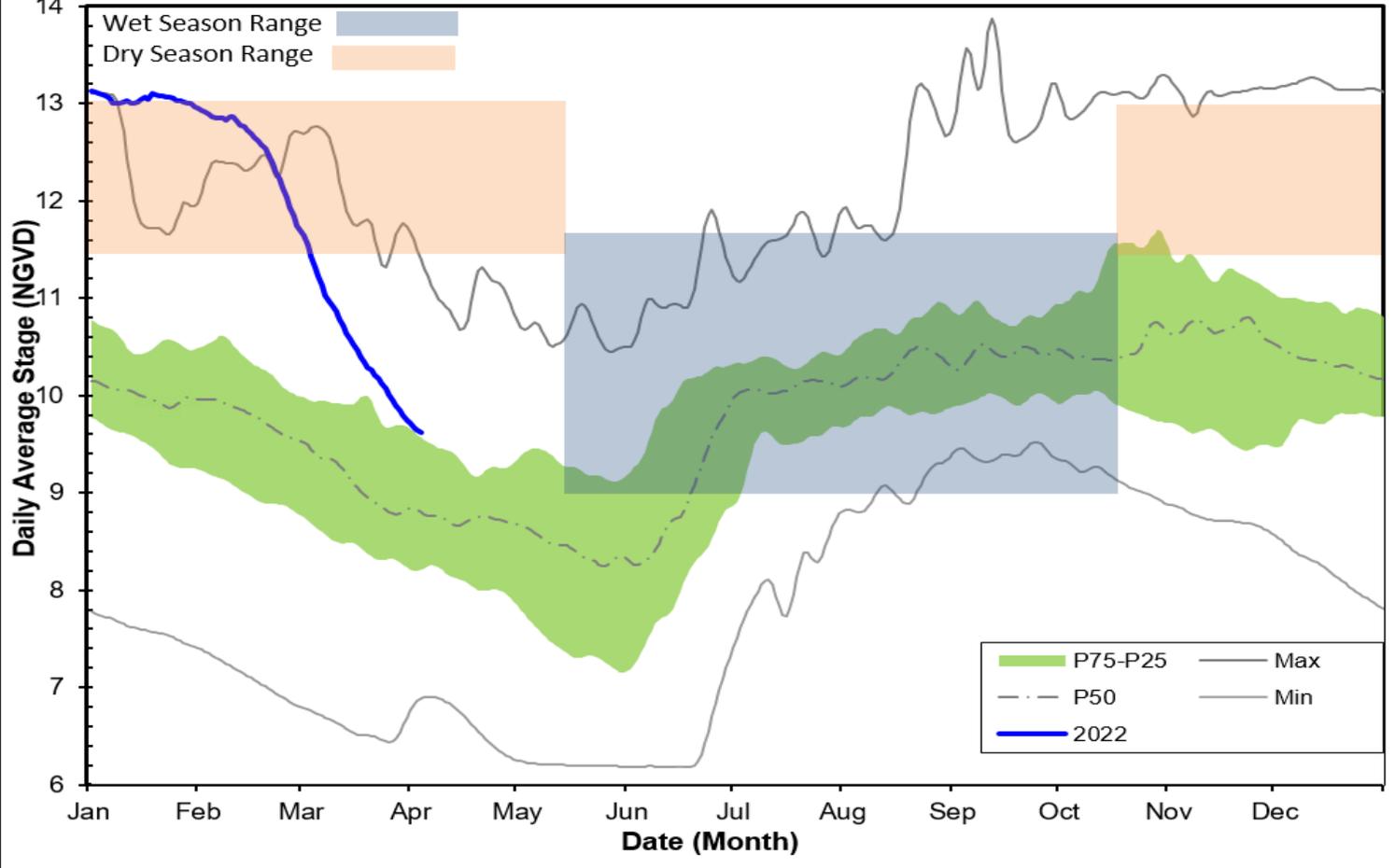
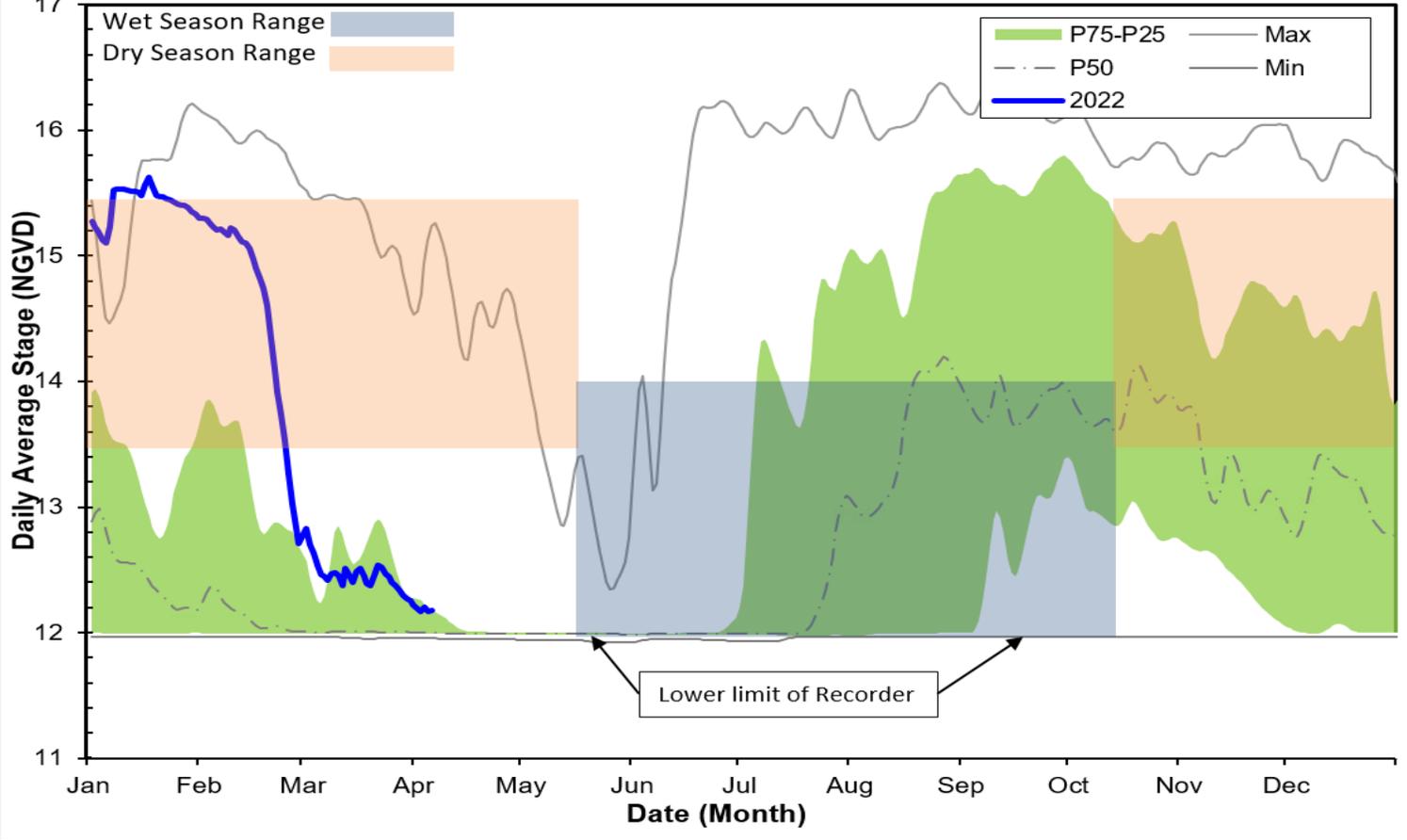
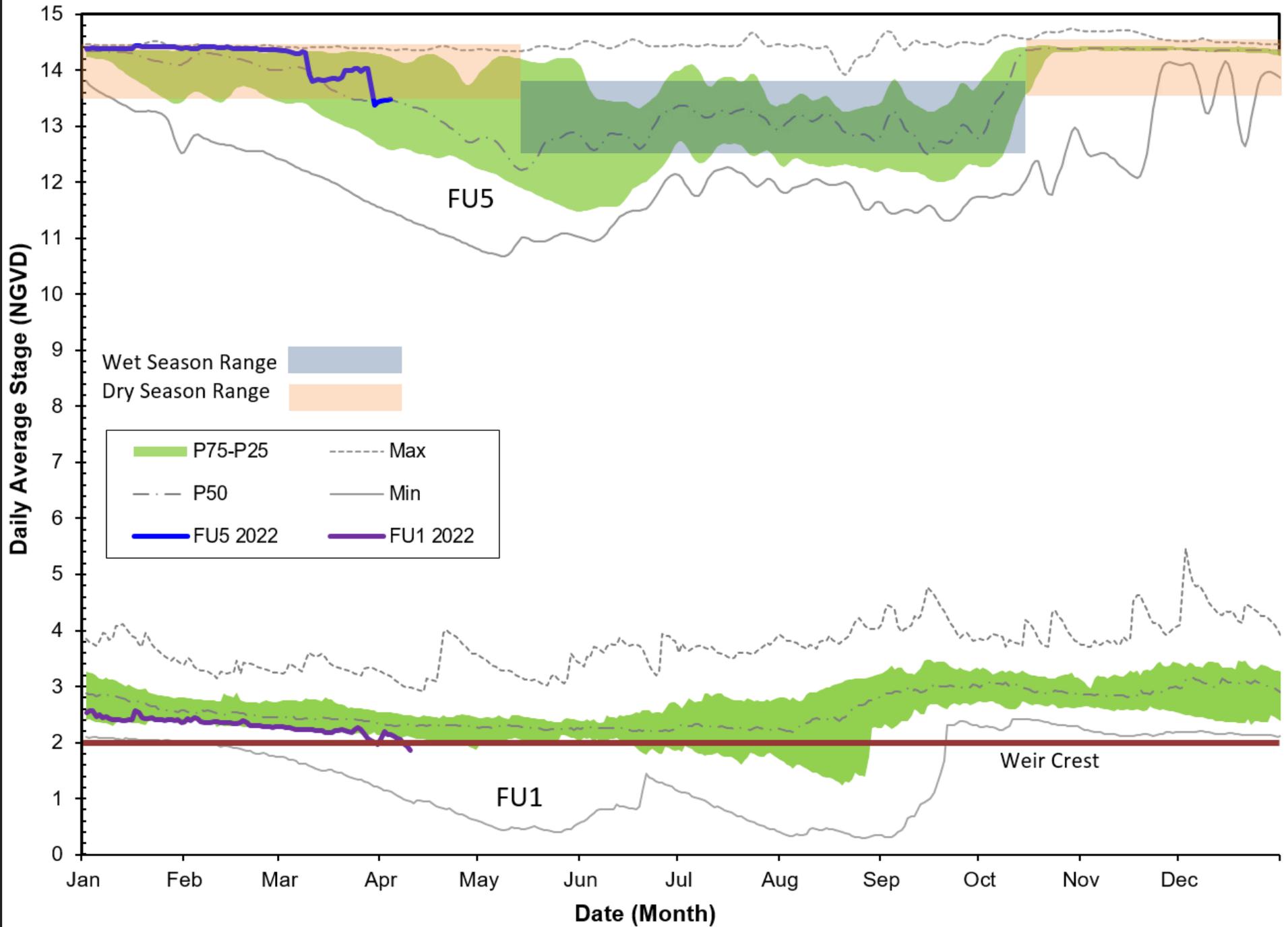


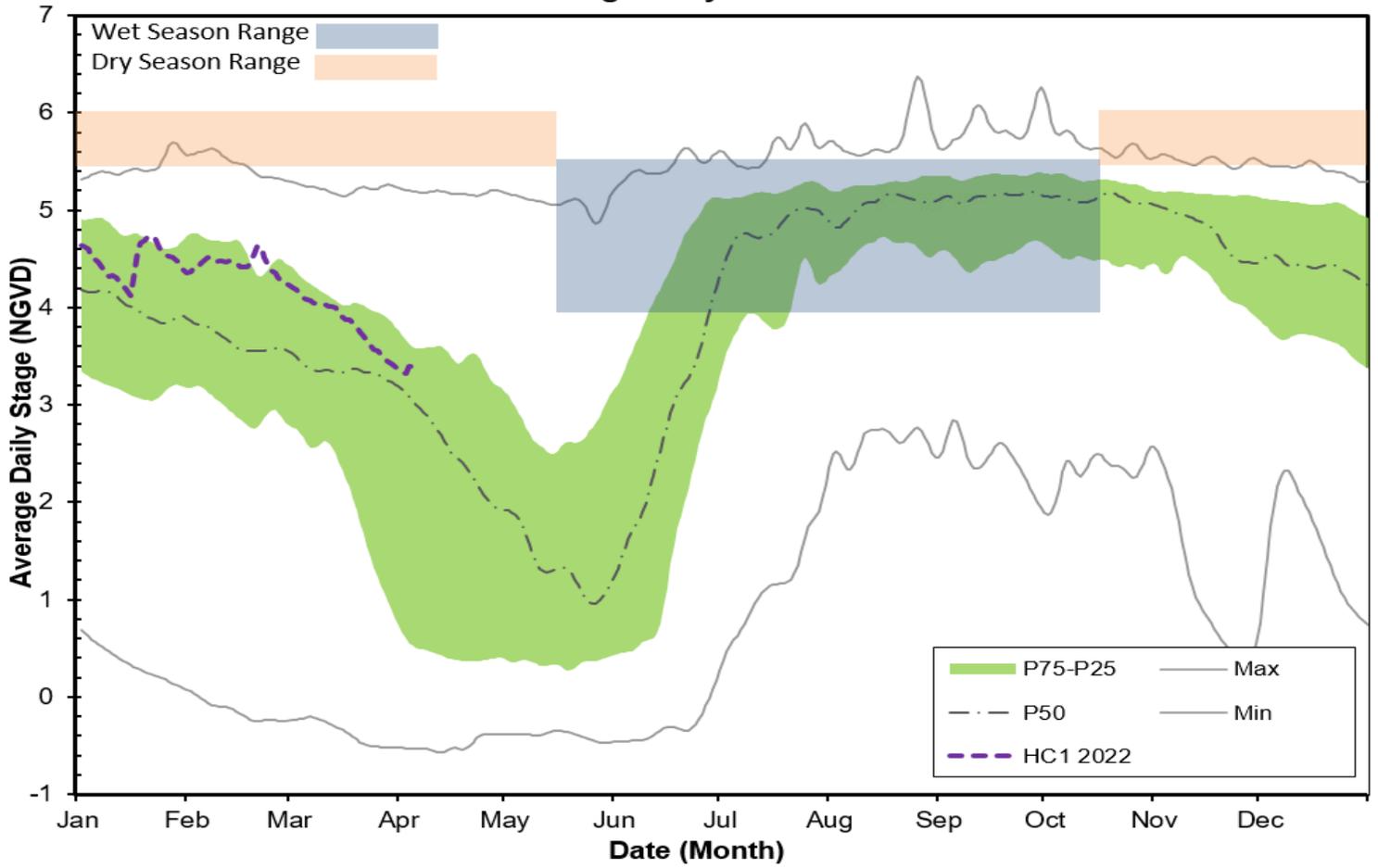
Figure 6D - CORK3 Average Daily Headwater Percentiles (2004-2020)



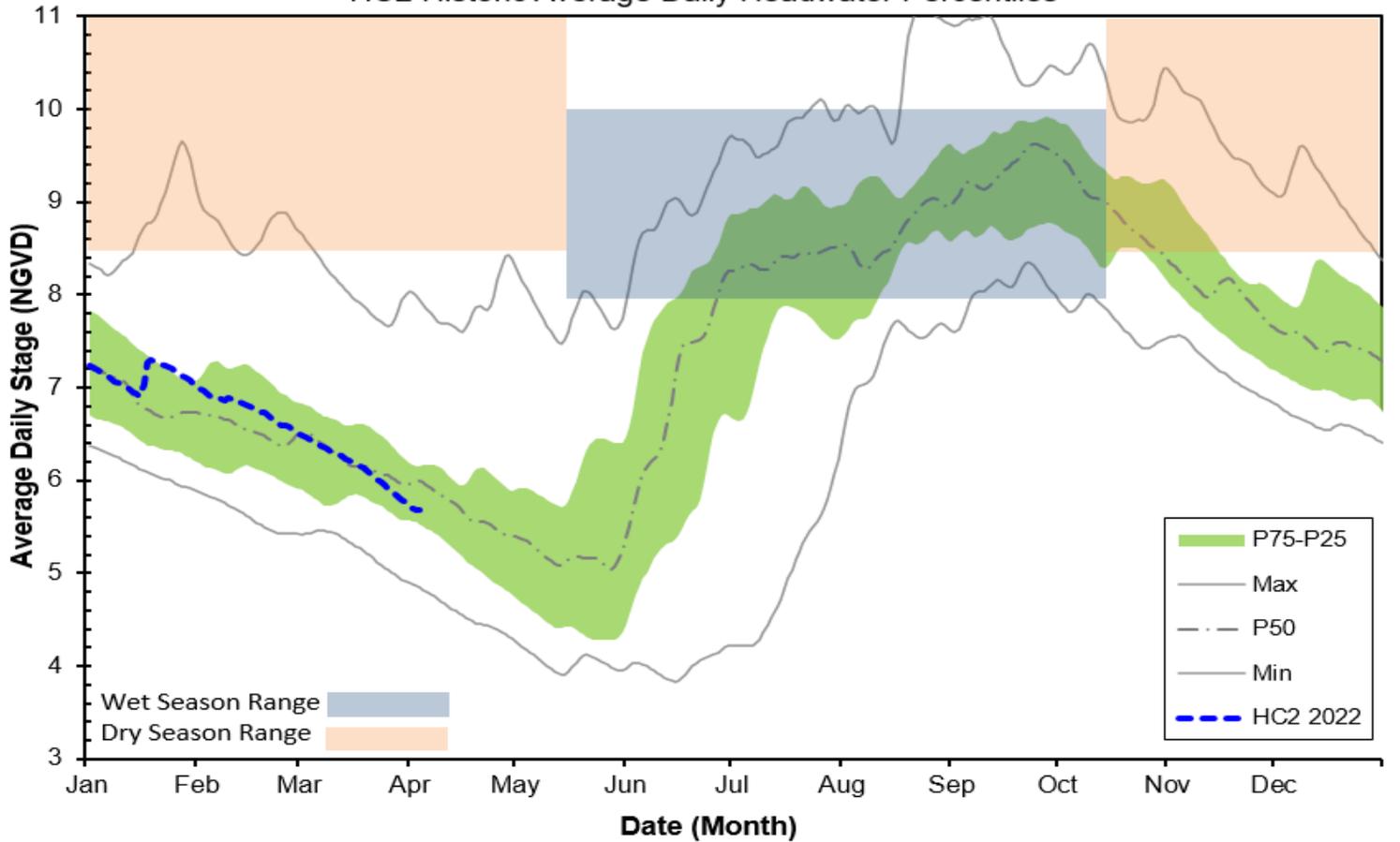
# Faka Union Canal Historic Average Daily Headwater Percentiles



### HC1 Historic Average Daily Headwater Percentiles



### HC2 Historic Average Daily Headwater Percentiles



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

Last Reading Date :		April 5, 2021					
Previous Period Reading Date:		March 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	-1.07	29.13	28.06	↓	GREEN
C-1004R	Naples	Lower Tamiami Aquifer	-2.27	-0.06	-2.33	↓	YELLOW
C-1224	Marco Lakes	Lower Tamiami Aquifer	-0.69	3.54	2.85	↓	GREEN
C-948R	Golden Gate	Mid Hawthorn Aquifer	0.08	28.87	28.95	↑	
C-951R	Golden Gate	Lower Tamiami Aquifer	-1.60	2.81	1.21	↓	
L-2194	Bonita Springs	Sandstone Aquifer	-2.53	1.29	-1.24	↓	YELLOW
L-2195	Bonita Springs	Surficial Aquifer System	-0.81	9.00	8.19	↓	GREEN
L-738	Bonita Springs	Lower Tamiami Aquifer	-1.78	-2.52	-4.30	↓	YELLOW

**TABLE 2**  
**BCB WATER CONDITIONS SUMMARY**  
**MARCH 2022**

BIG CYPRESS BASIN

MARCH 2022

GROUNDWATER LEVEL DAILY TRENDS COMPARED TO HISTORICAL AVERAGE

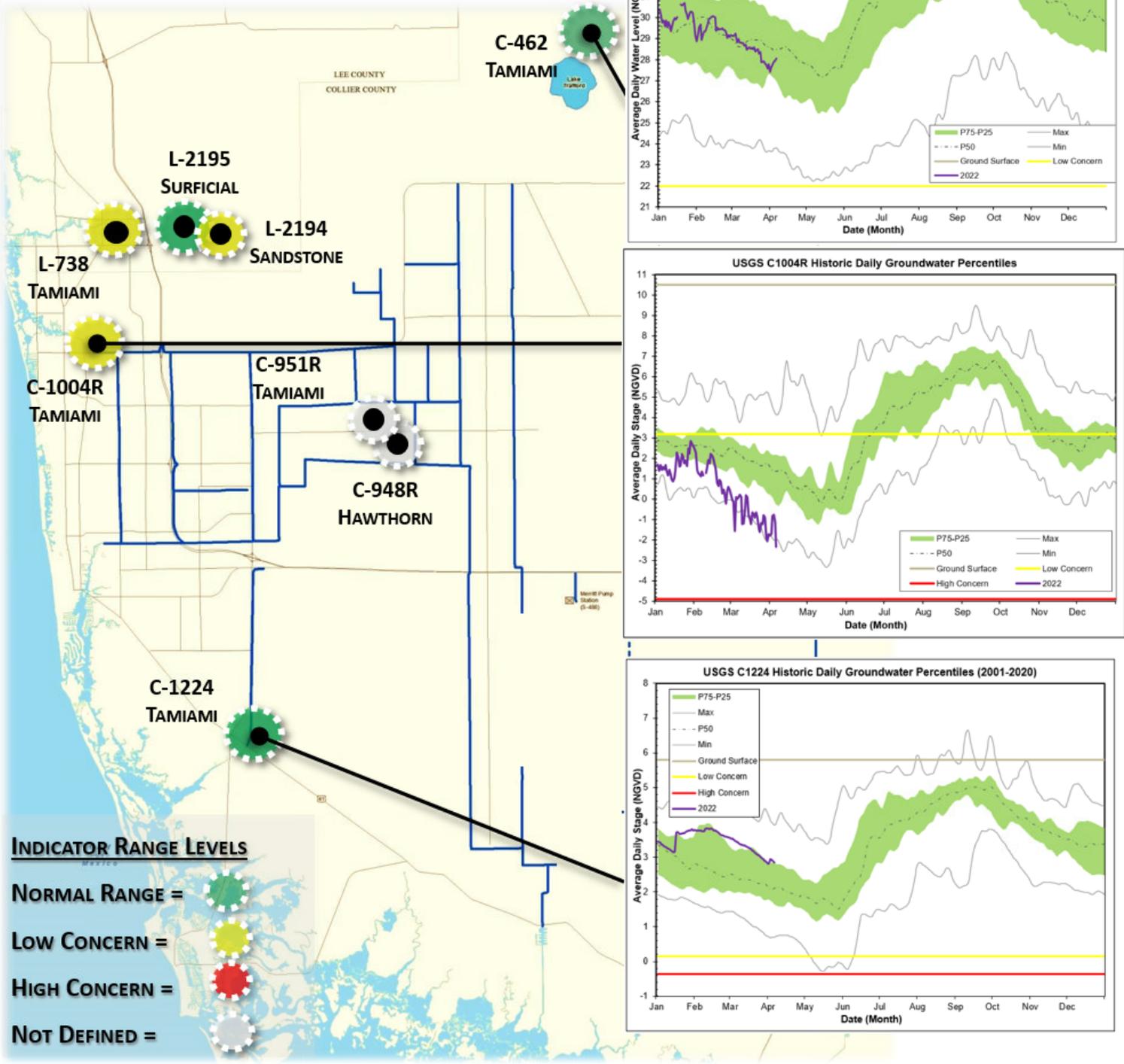


FIGURE 9

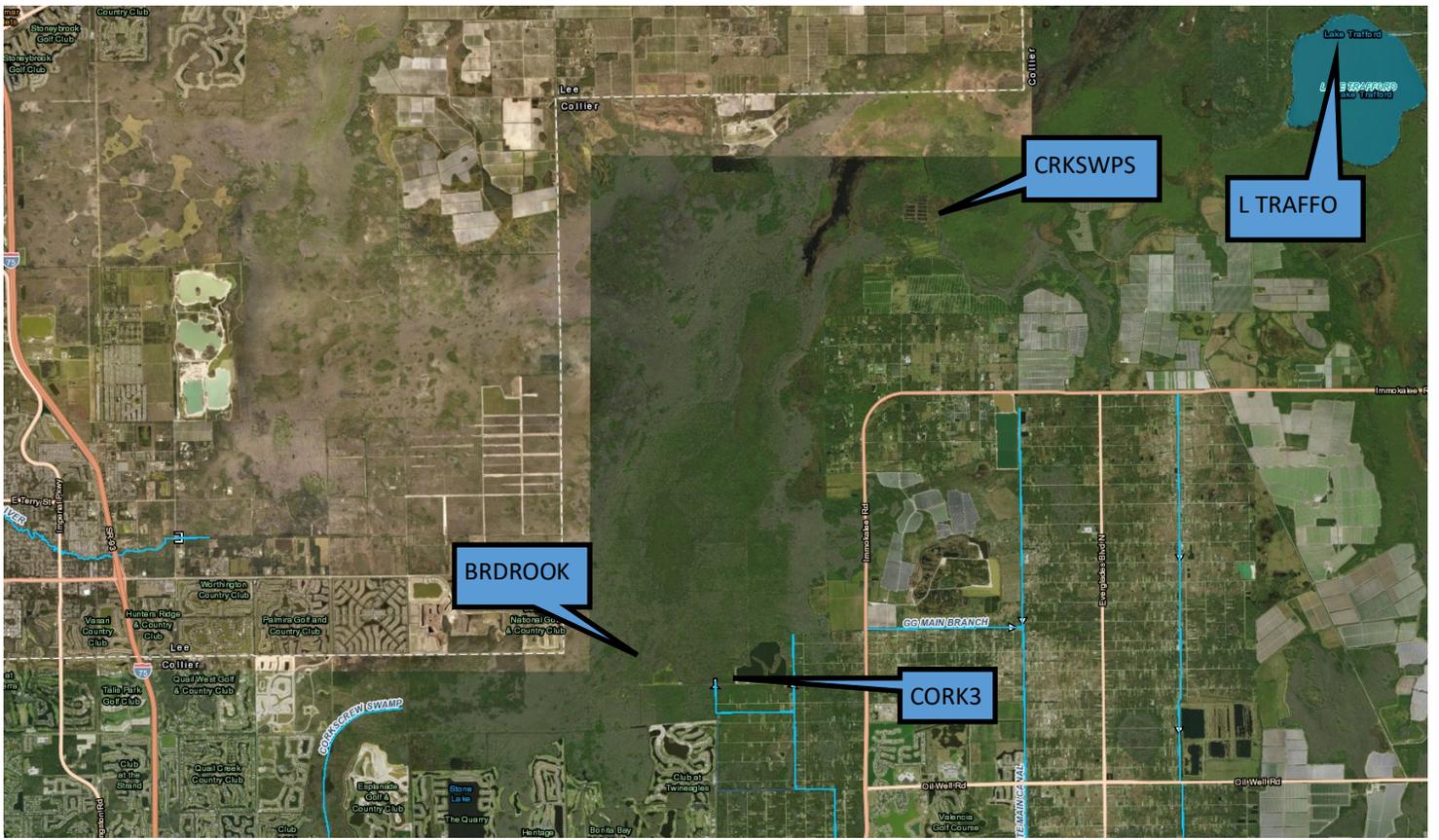
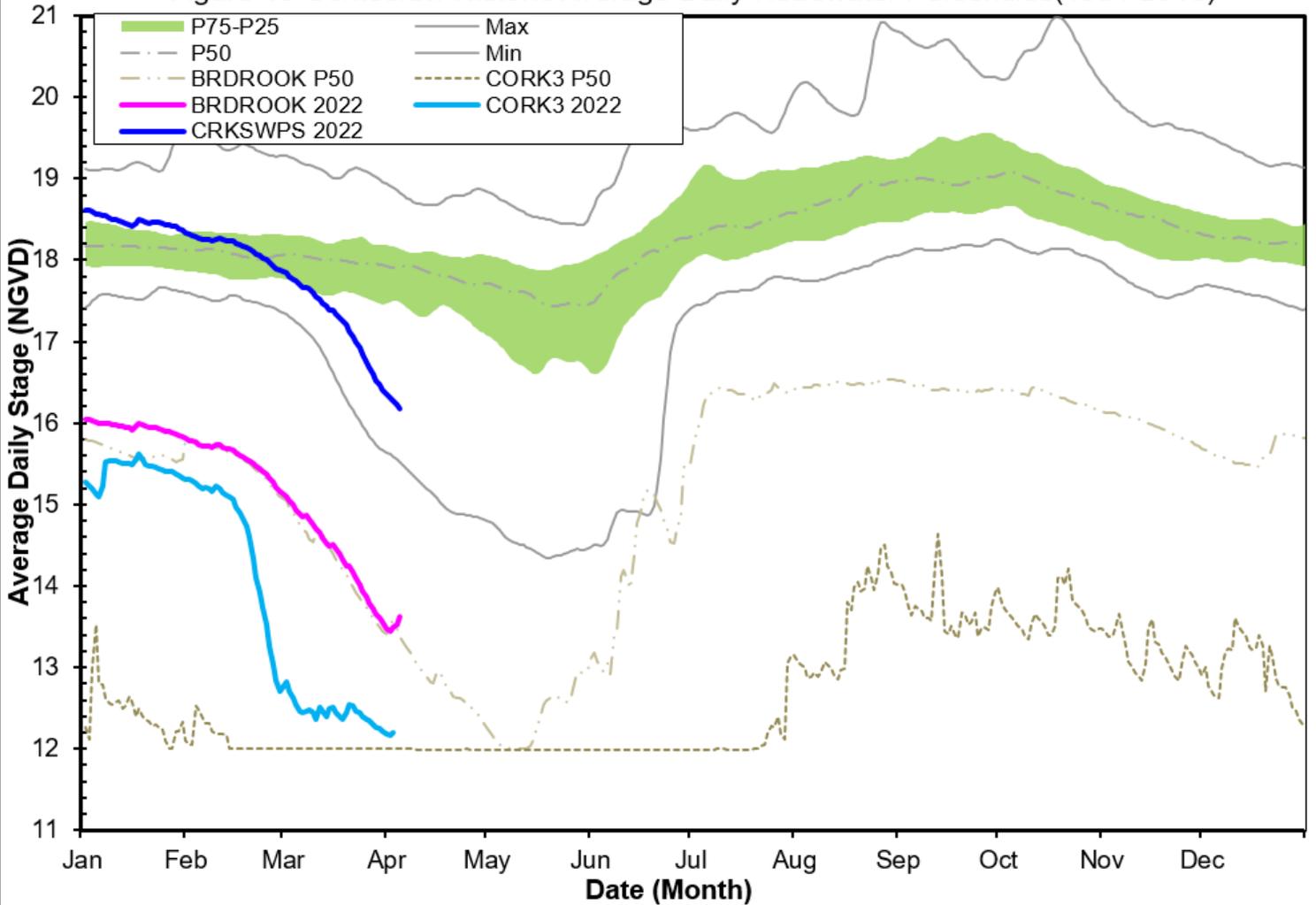


Figure 10-Corkscrew Historic Average Daily Headwater Percentiles(1984-2019)



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

