

DECEMBER 2022

# BIG CYPRESS BASIN HYDROLOGIC REPORT



# SUMMARY OF HYDROLOGIC CONDITIONS IN THE BIG CYPRESS BASIN

December 2022

## SUMMARY

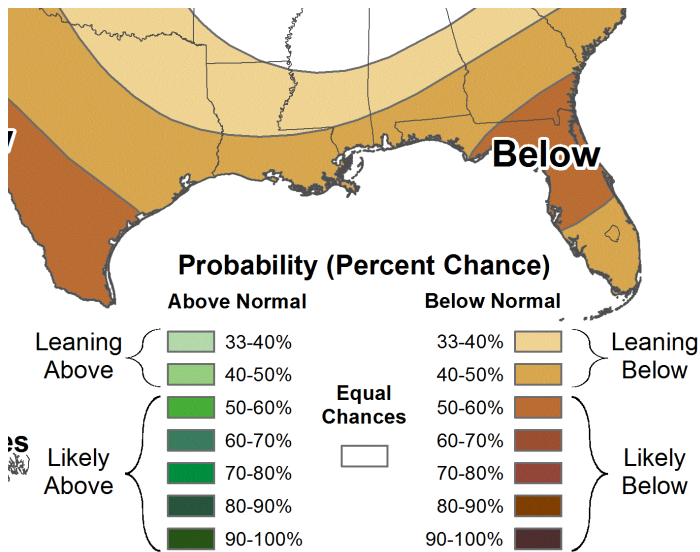
The month of December for the Big Cypress Basin continued with warm and dry conditions apart from the last week which ushered in a strong cold front. The cold front was the result of an arctic blast which brought in near freezing conditions to the Basin which triggered the unusual weather warning of “falling iguanas.”

Even with a rainfall deficit for December, the 2022 cumulative rainfall for the Basin was above average at 63.9 inches (**Table 1**) which is 113% above average. The basin that received the most rainfall for 2022 was Henderson Belle Meade with 74.8 inches of rain (**Figure 3.2**). September was the wettest month with 15.2 inches, and March was the driest with 0.7 inches. 2022 brought with it 14 named tropical storms six of which were hurricanes and two were major hurricanes. Three of these storms (Alex, Ian, & Nicole) impacted South Florida which contributed to 2022 being the 4th wettest year since 1990.

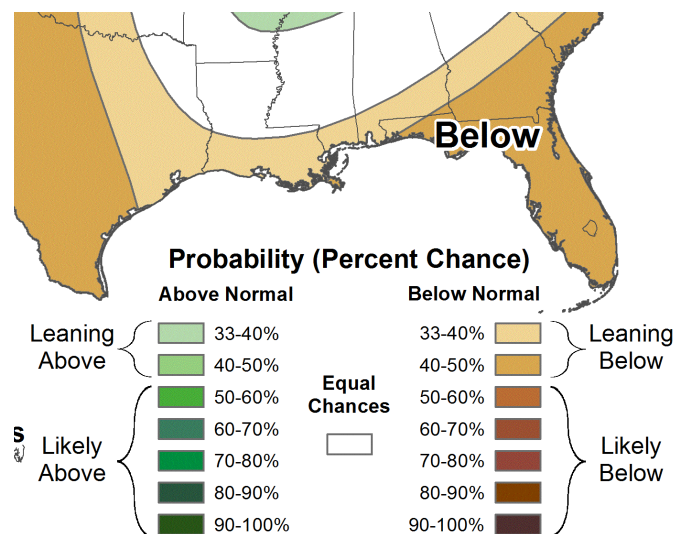
Operational conditions for the Basin remain in water conservation mode and most areas are currently at or above the 75th percentile. The dry season recession rates throughout the region are typical based on recorded data.

La Nina conditions in the Pacific Ocean continue to have an impact on Florida’s climate by continuing to bring warmer and drier than normal weather. The current predictions anticipate that La Nina will transition to average conditions in February or March (Spring) of 2023.

### December — February



### February — April



## BCB RAINFALL

As measured by twenty-four (24) reporting stations (ref. **Figures 1, 2, Table 1**), the basin-wide December monthly average was **1.7 inches which is 94% of normal**, which is below the average 1.8 inches typically collected.

Based on collected gauge and radar data, the rainfall distribution across the Basin was fairly uniform. Most of the Basin generally received 1 to 2 inches of rainfall. The month’s lowest gauge total was collected at Immokalee Landfill (Site R-13), which received **0.76 inches**. This month’s highest rainfall was recorded at Fakahatchee Strand (Site R-5), which received **2.96 inches**. The rainfall totals and their distribution across the BCB/Lower West Coast are shown on **Figure 3**.

## **BCB CANAL SYSTEMS**

All of the BCB canals remain in water conservation mode for December. As the month ended most canal water levels were at or above the 75th percentile with the exception of a few reaches in Airport Road, I-75, Henderson Creek and Faka Union Canal systems which were above the 50th percentile for the end of December. (**Figure 4**).

- **GOLDEN GATE SYSTEM**

Control structures in the Golden Gate Main canal system remain in water conservation mode. Water levels were maintained near the top of normal operational ranges. Canal levels in the lower and middle reaches were kept at or above the 75th percentile while some of the upper reaches (Airport Road and I-75) were above the 50th percentile. Back-pumping operations continued to hold water levels as high as possible in the Airport and 951 canals (ref **Figure 5**).

- **COCOCHATCHEE SYSTEM**

All sections of the Cocohatchee system remain in water conservation mode and fully closed, except for COCO4 which was able to conserve water at COCO3 rather than send to tide through the Golden Gate Main system. Water levels continue to recede but remain at or above the 75th percentile (ref **Figure 6A, 6B, & 6C**).

- **FAKA UNION SYSTEM**

The Faka Union canal system continues to operate in water conservation mode with all structures fully closed for the month of December. The lower and upper reaches of Faka Union Canal remain at normal levels, while the middle reach (FU4S) remains above the 50th percentile (ref **Figure 7A & 7B**).

- **HENDERSON CREEK SYSTEM**

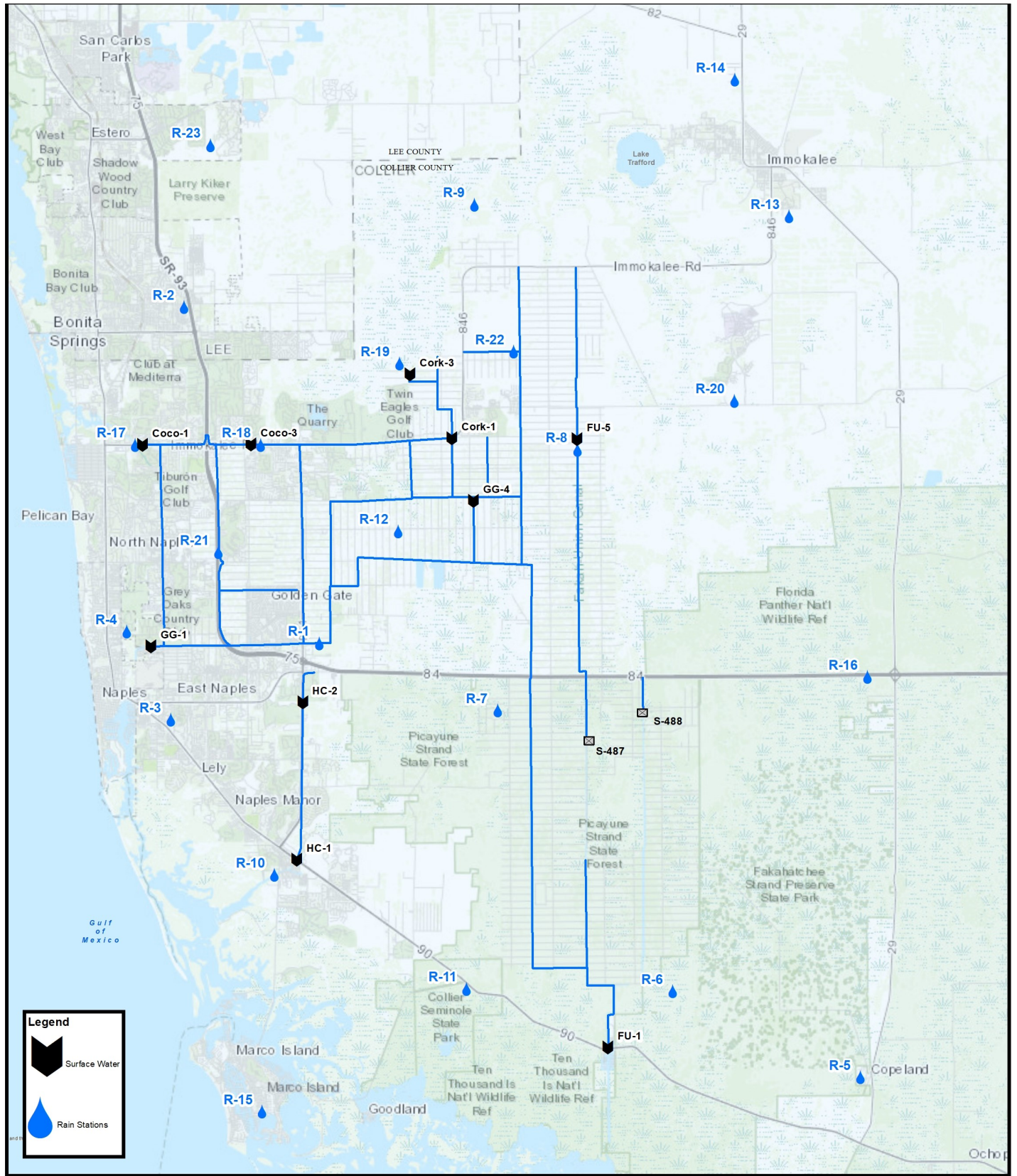
Both control structures in Henderson Creek remain closed throughout December and flows continued to recede apart from an end of month rainfall event. HC1 is above the 90th percentile and HC2 is above the 50th percentile (ref **Figure 8A & 8B**).

- **CORKSCREW SWAMP**

**Figure 10** shows the historical trends for Corkscrew, Bird Rookery, and the Cork 3 structure at the 2022 corresponding levels. All surface water monitoring sites remained at normal ranges and ended the month at or near the 75th percentile. Water levels upstream of CORK2 and CORK3 are being maintained as high as possible. Recent upgrades at CORK2 allow water levels to be maintained well above historical levels. In addition, recent upgrades provide flow estimates through the structure where flows have stopped at CORK2 as the month ended. Lake Trafford levels remain above the 75th percentile as November ended (**Figure 11**).

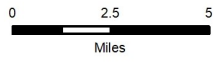
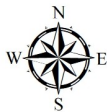
## **BIG CYPRESS BASIN & LOWER WEST COAST GROUNDWATER LEVELS**

The current reporting (01/01/2023) for the Lower West Coast [LWC] indicate decreasing groundwater trends except for C-1004R Naples which increased for December. All reporting wells remain in the normal (green) indicator levels. Most wells are above average for the end of December with some above the 75th percentile (ref. **Table 2**).



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**BIG CYPRESS BASIN**  
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 Naples, Florida 34104  
 239-263-7615

# FIGURE 1

## Hydrologic Station Map

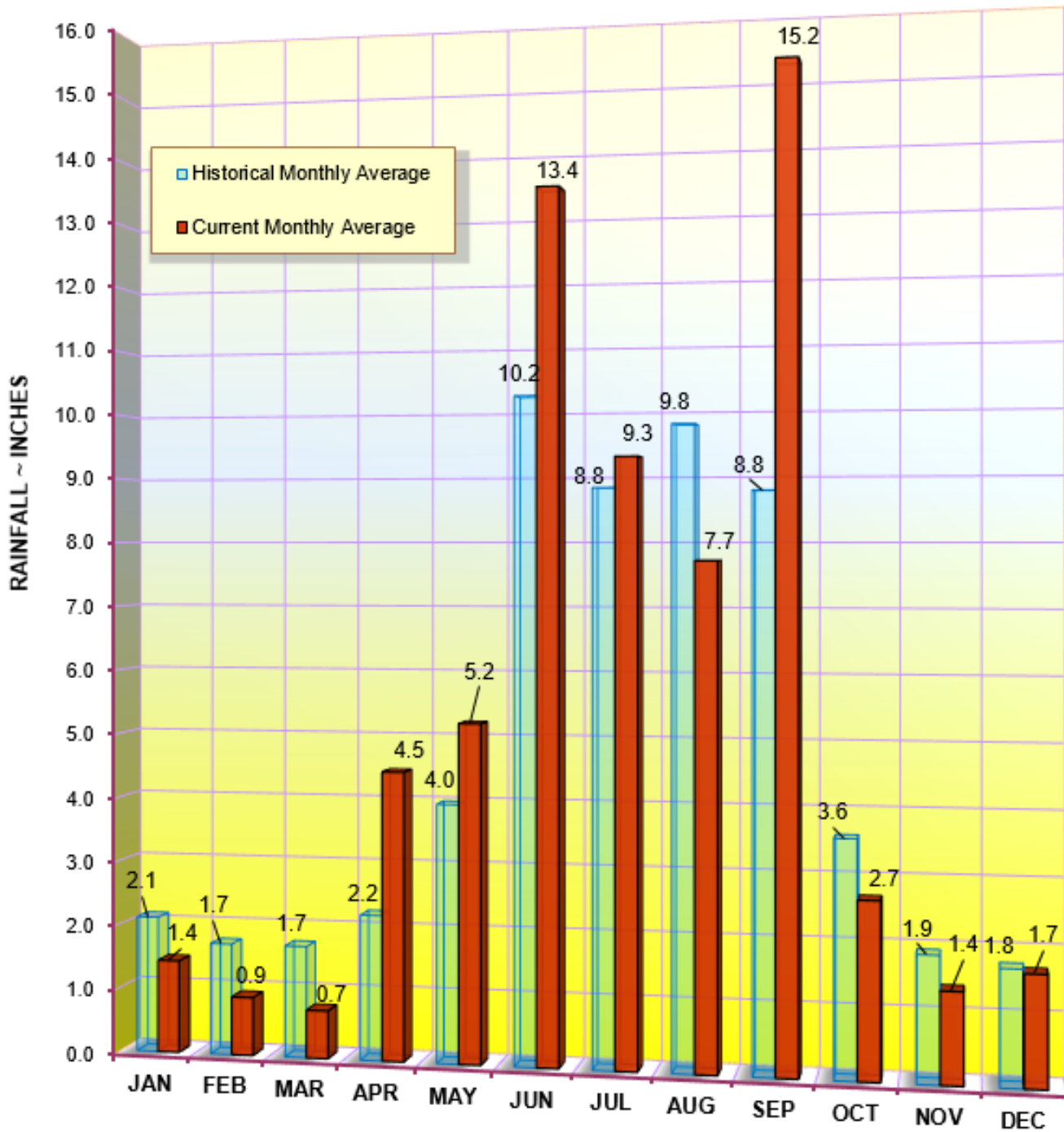
Collier County, Florida



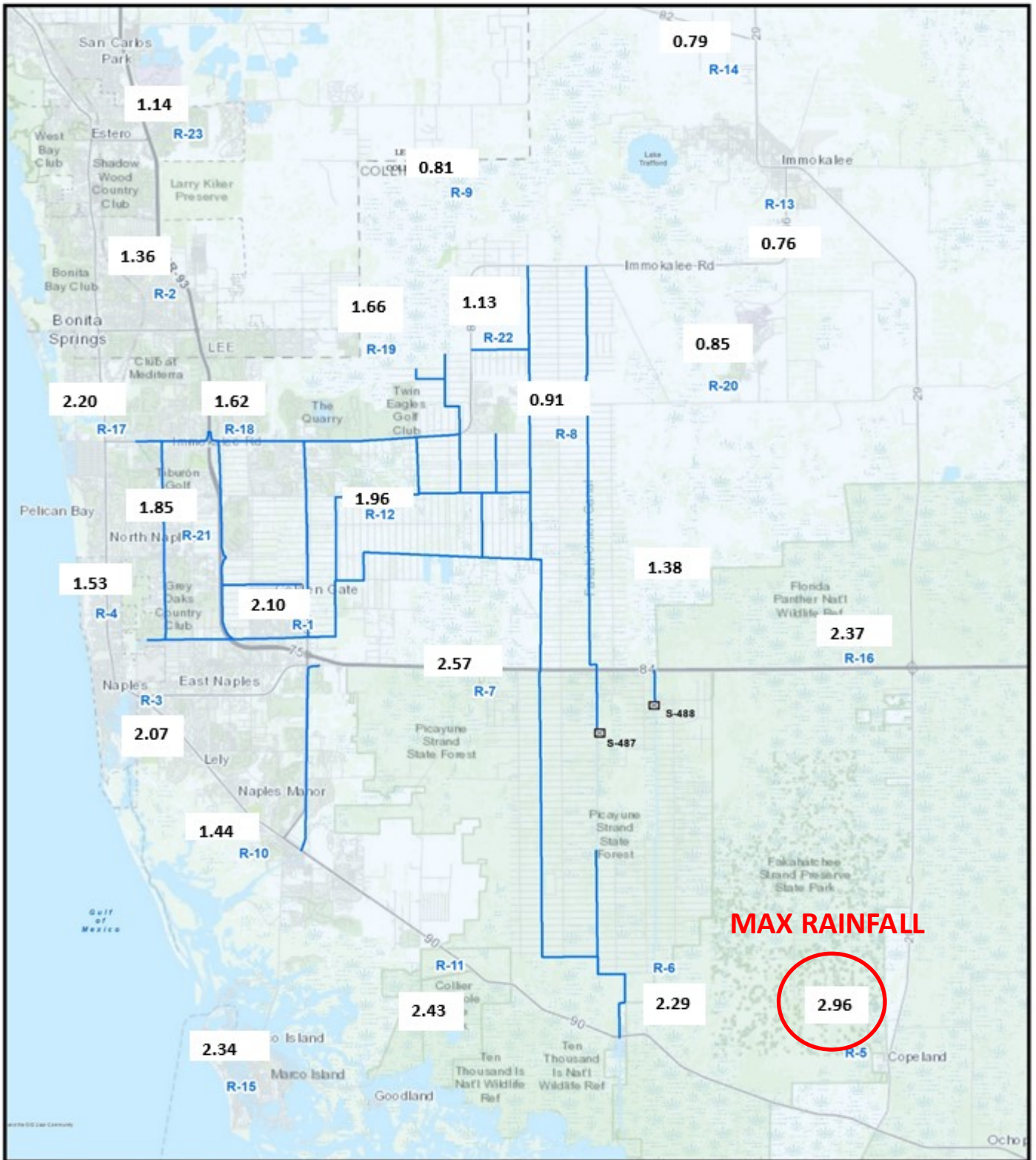
**TABLE 1**  
**RAINFALL REPORT - DECEMBER 2022**  
**DISTRICT/BASIN RAINFALL STATIONS**  
 (ALL NUMBERS ARE IN INCHES)

STATION INDEX NO.	STATION NAME	DECEMBER 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	2.10	1.96	0.14	80.47	63.92	16.56
R-2	BONITA SPRINGS WATER PLANT	1.36	1.49	-0.13	59.92	52.07	7.85
R-3	COLLIER COUNTY COURTHOUSE	2.07	1.68	0.39	66.14	53.61	12.53
R-4	FREEDOM PARK	1.53	2.00	-0.47	59.71	59.69	0.02
R-5	FAKAHATCHEE STRAND HQ	2.96	1.53	1.43	59.85	59.63	0.22
R-6	DAN HOUSE PRAIRIE	2.29	1.45	0.84	62.61	52.62	9.99
R-7	SGGE WEATHER STATION	2.57	1.43	1.14	84.82	60.48	24.34
R-8	FAKA UNION #5	0.91	2.02	-1.11	72.78	62.98	9.81
R-9	CORKSCREW SWAMP NORTH END	0.81	1.63	-0.82	62.49	51.30	11.19
R-10	ROOKERY BAY HQ	1.44	1.75	-0.31	62.77	56.02	6.75
R-11	COLLIER SEMINOLE STATE PARK	2.43	1.70	0.73	58.56	57.49	1.07
R-12	G.G. FIRE STATION	1.96	1.66	0.30	72.38	59.11	13.27
R-13	IMMOKALEE LANDFILL	0.76	1.53	-0.77	61.44	52.72	8.72
R-14	IFAS	0.79	1.56	-0.77	62.93	50.30	12.63
R-15	MARCO R.O. PLANT	2.34	1.66	0.68	49.80	53.66	-3.86
R-16	FAKAHATCHEE STRAND NORTH END	2.37	1.96	0.41	59.38	60.59	-1.21
R-17	COCO#1	2.20	1.68	0.52	51.82	49.79	2.03
R-18	COCO#3	1.62	1.80	-0.18	57.68	56.75	0.93
R-19	BIRD ROOKERY	1.66	2.29	-0.63	69.04	63.00	6.04
R-20	AVE MARIA	0.85	1.60	-0.75	50.33	54.35	-4.02
R-21	I75W2	1.85	2.54	-0.69	70.52	61.30	9.22
R-22	GG#7	1.13	2.12	-0.99	75.62	57.95	17.67
R-23	FPWX	1.14	1.35	-0.21	58.33	54.52	3.81
R-24	DSOTO10	1.38	New Site	New Site	New Site	No Historical Data	
AVERAGES		1.69	1.76	-0.07	63.89	56.69	7.20

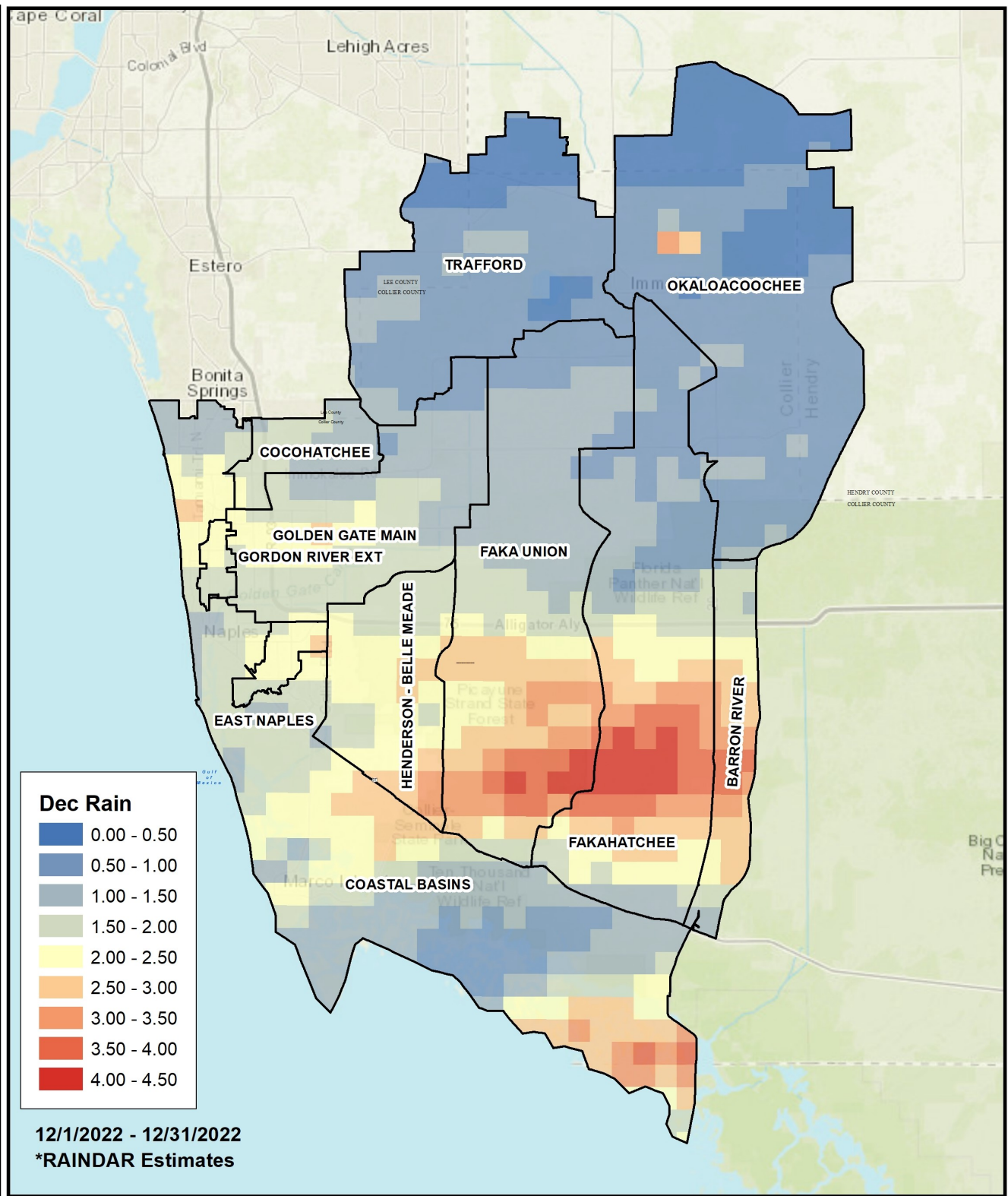
**BCB ANNUAL RAINFALL**  
**MONTHLY AVERAGE & HISTORICAL AVERAGE TRENDS**  
**(FROM BCB RAINFALL GAUGE DATA)**



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

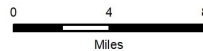


**FIGURE 3**  
**BCB RAINFALL DISTRIBUTION**  
**DECEMBER 2022**



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\*Rainfall estimates based on gauge adjusted radar



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**BCB RAINFALL  
SPATIAL DISTRIBUTION**

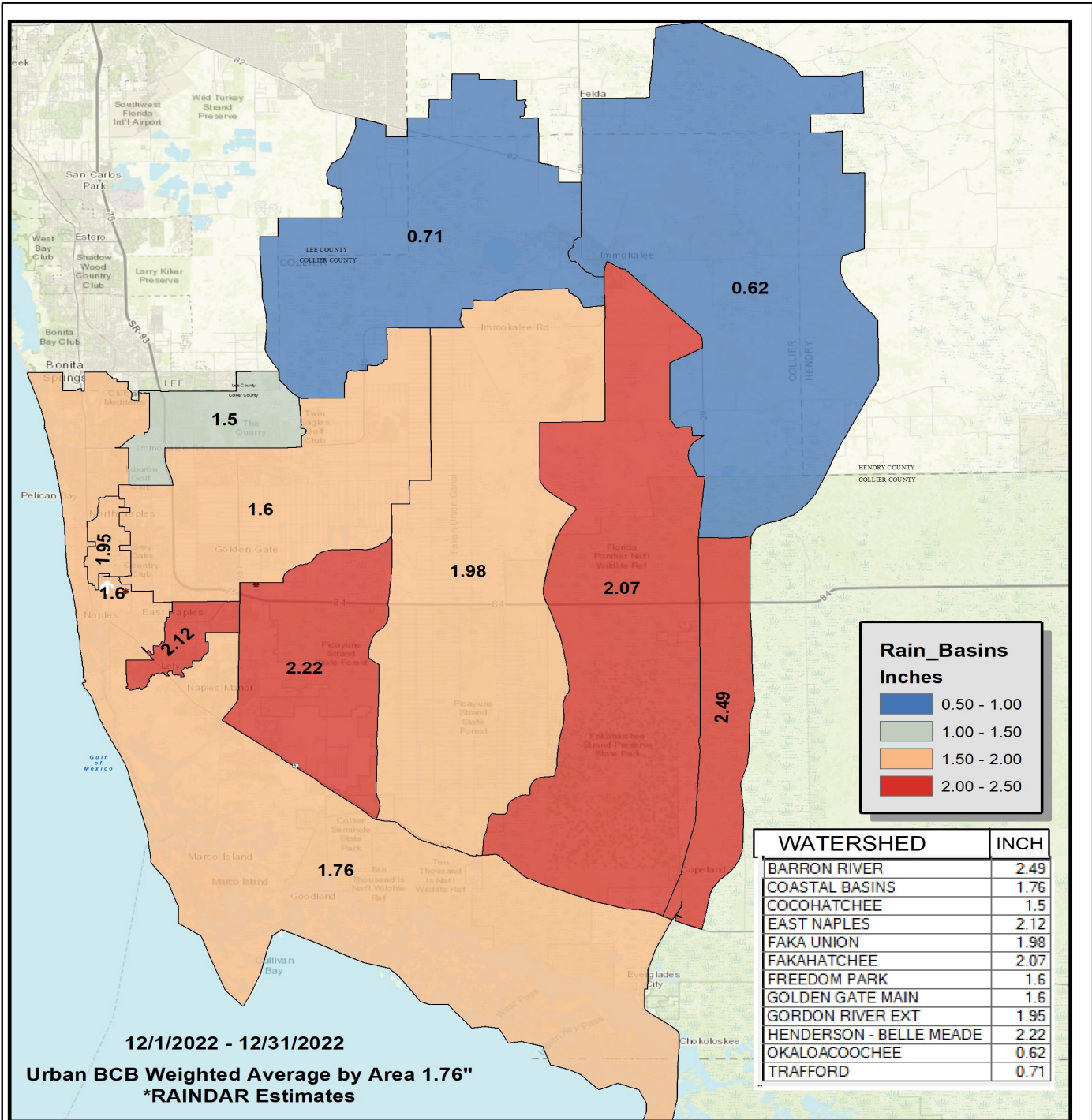
Urban Collier County, Florida



SFWMD\_FL\_Map\_Jan\_2019

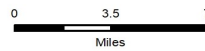
**FIGURE 3.1  
BCB RAINFALL DISTRIBUTION**





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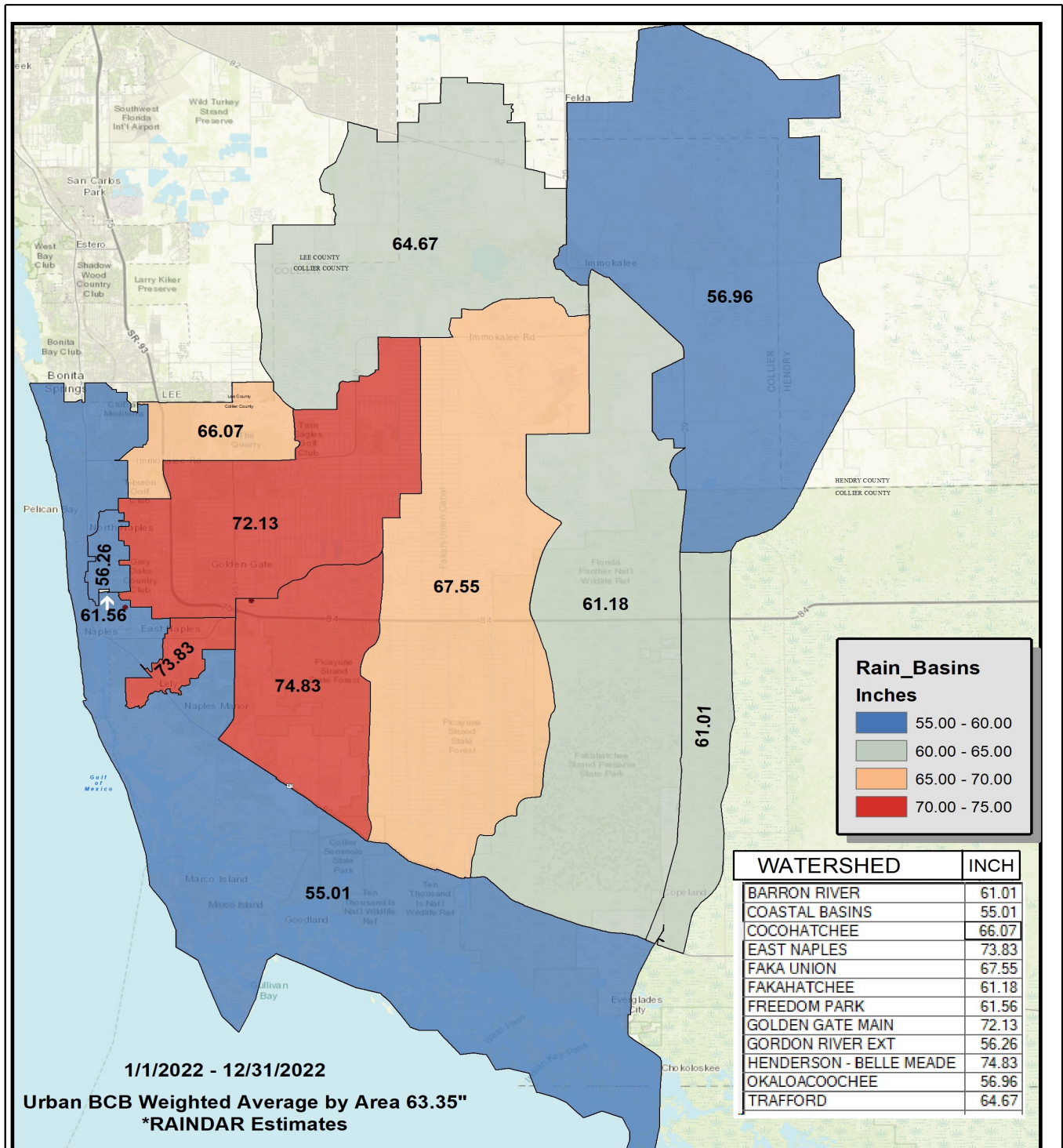
**BCB RAINFALL**  
**SPATIAL DISTRIBUTION**

Urban Collier County, Florida



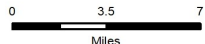
SFWMD\_FU\_Map\_Mar\_2019

**FIGURE 3.2**  
**BCB RAINFALL DISTRIBUTION**  
**DECEMBER 2022**



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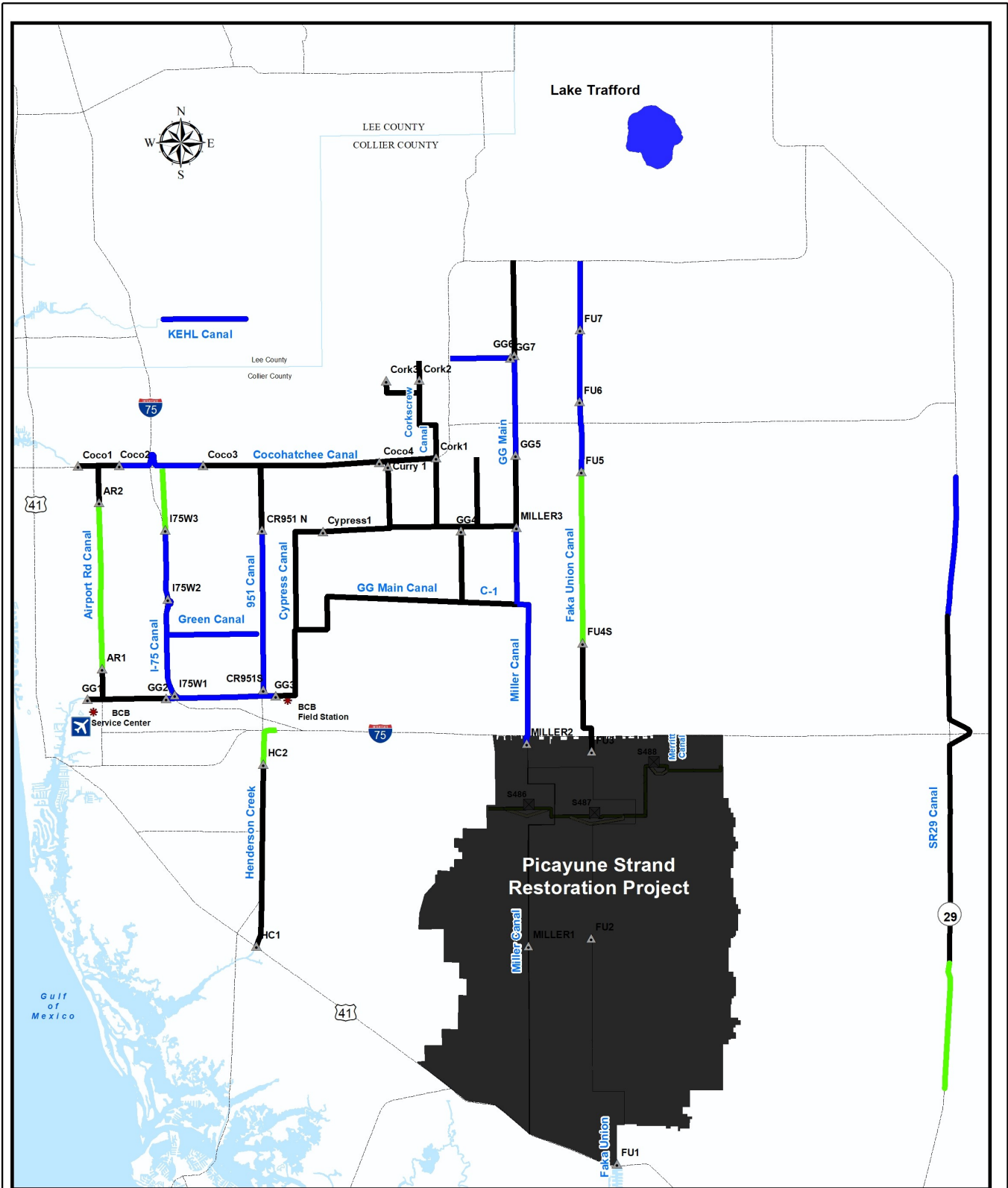
**BCB RAINFALL  
 SPATIAL DISTRIBUTION**

Urban Collier County, Florida



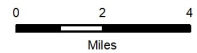
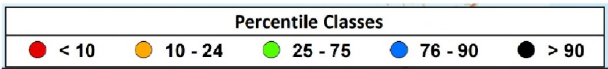
SPWMD\_FL\_NWJ\_Apr2018

**FIGURE 3.3  
 BCB RAINFALL DISTRIBUTION  
 2022 TOTALS**



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\* Based on period of record for each canal reach



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**BCB Conditions Index**  
 12/31/22  
 Urban Collier County, Florida



SFWMD\_FU\_Map\_Nov\_2019

**FIGURE 4**

**Figure 5 Golden Gate Canal Historic Average Daily Headwater Percentiles**

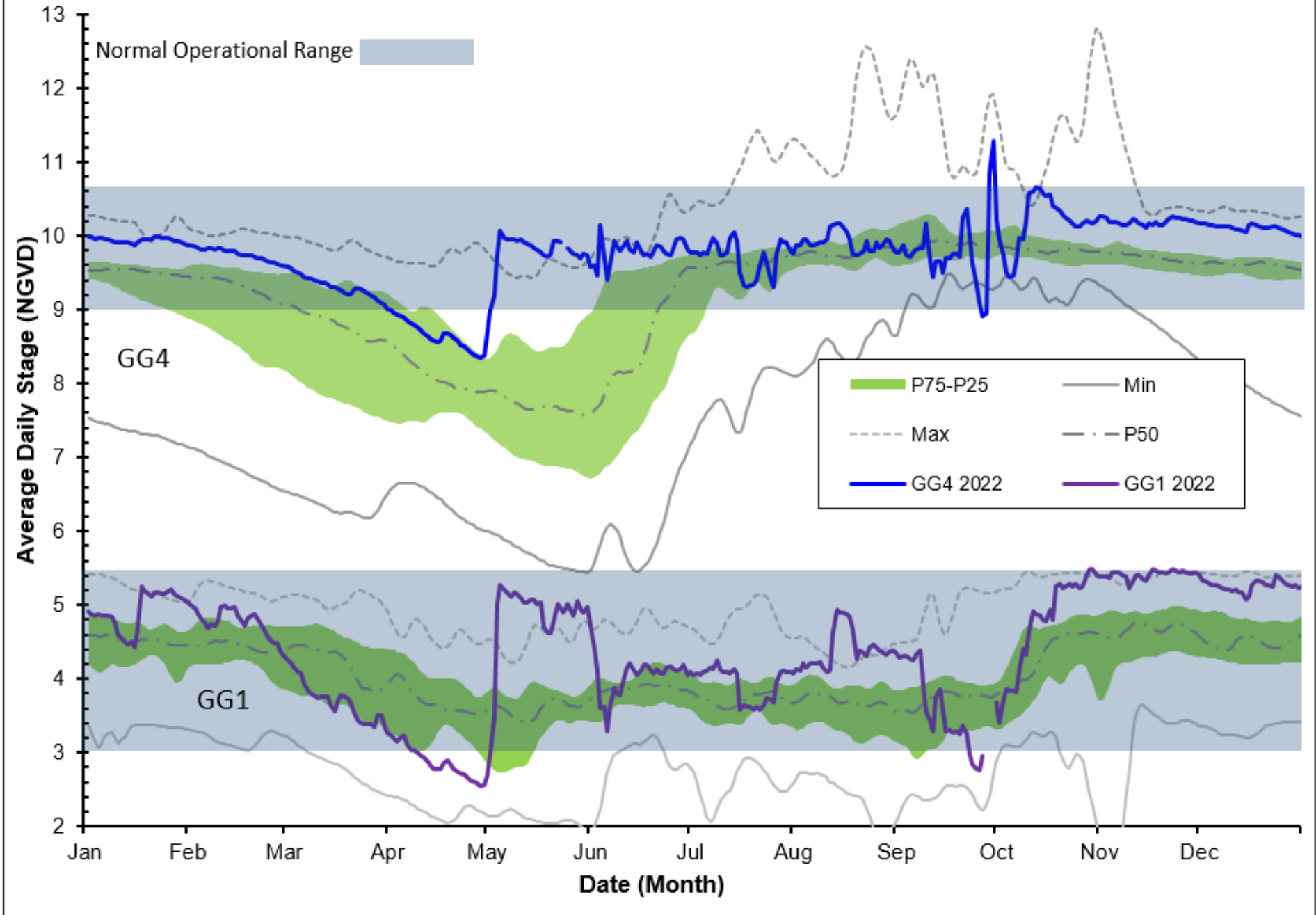


Figure 6A Cocohatchee Canal Historic Average Daily Headwater Percentiles

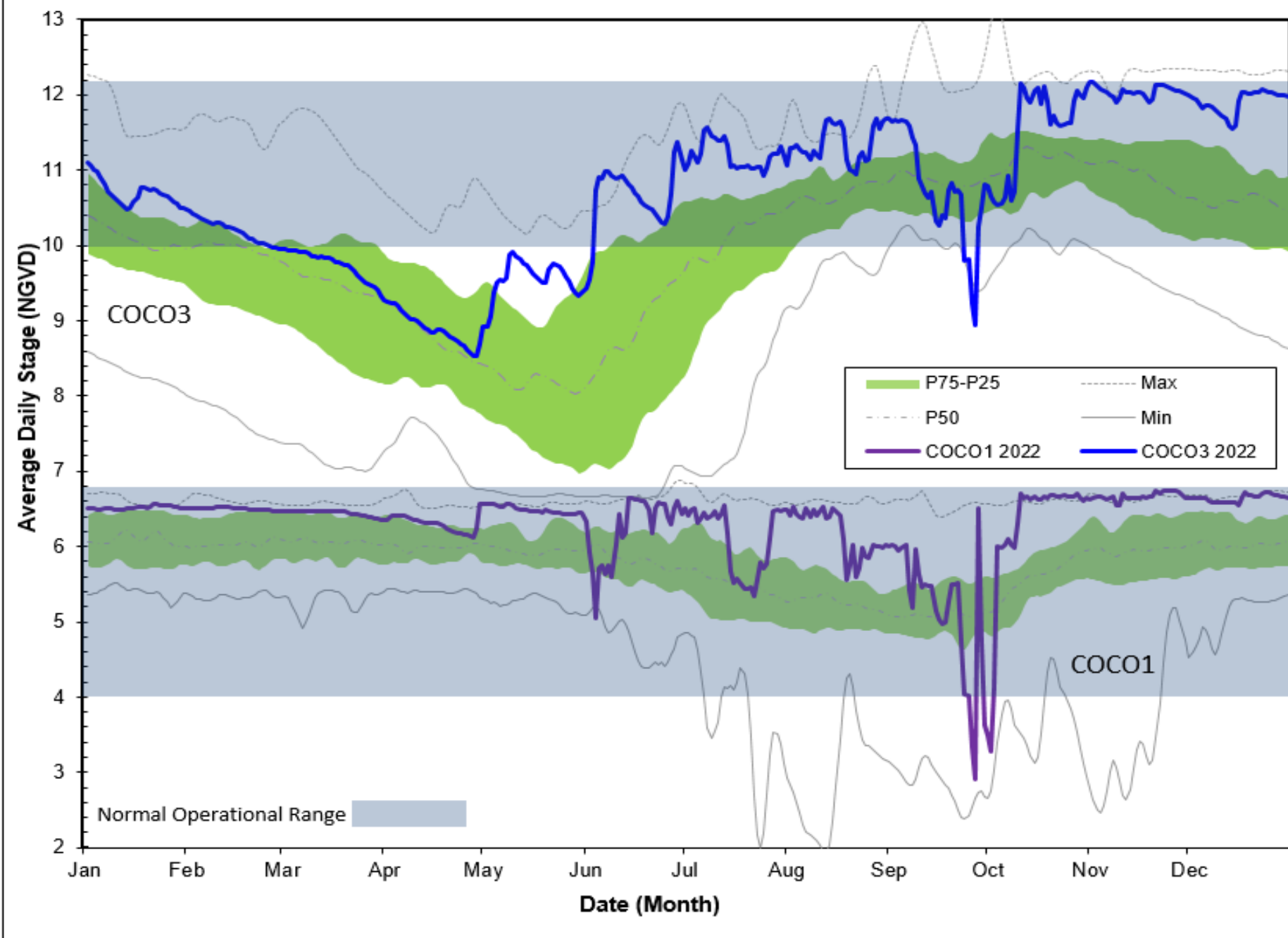


Figure 6B - CORK1 Historic Average Daily Headwater Percentiles (1989-2020)

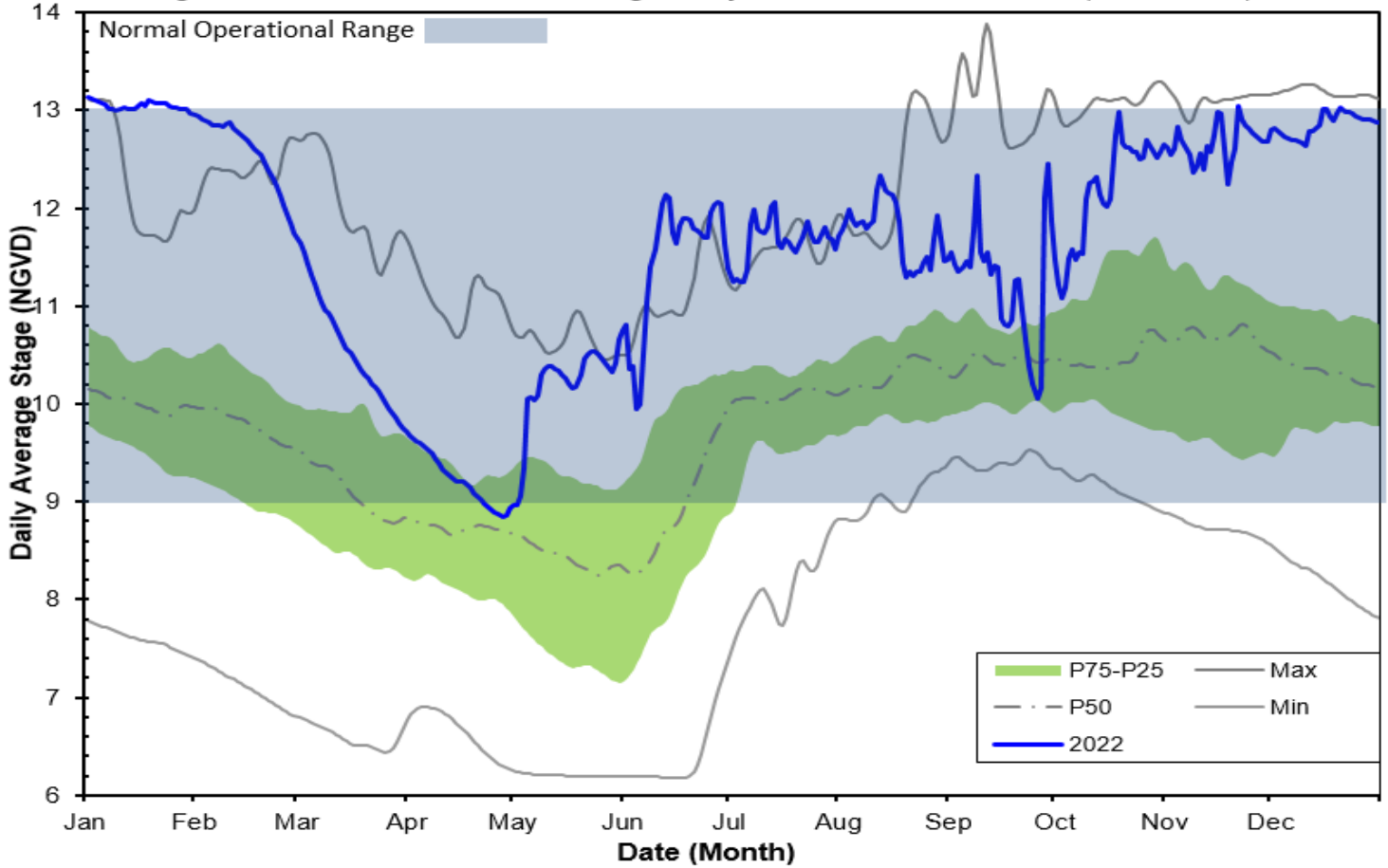


Figure 6C - CORK3 Average Daily Headwater Percentiles (2004-2020)

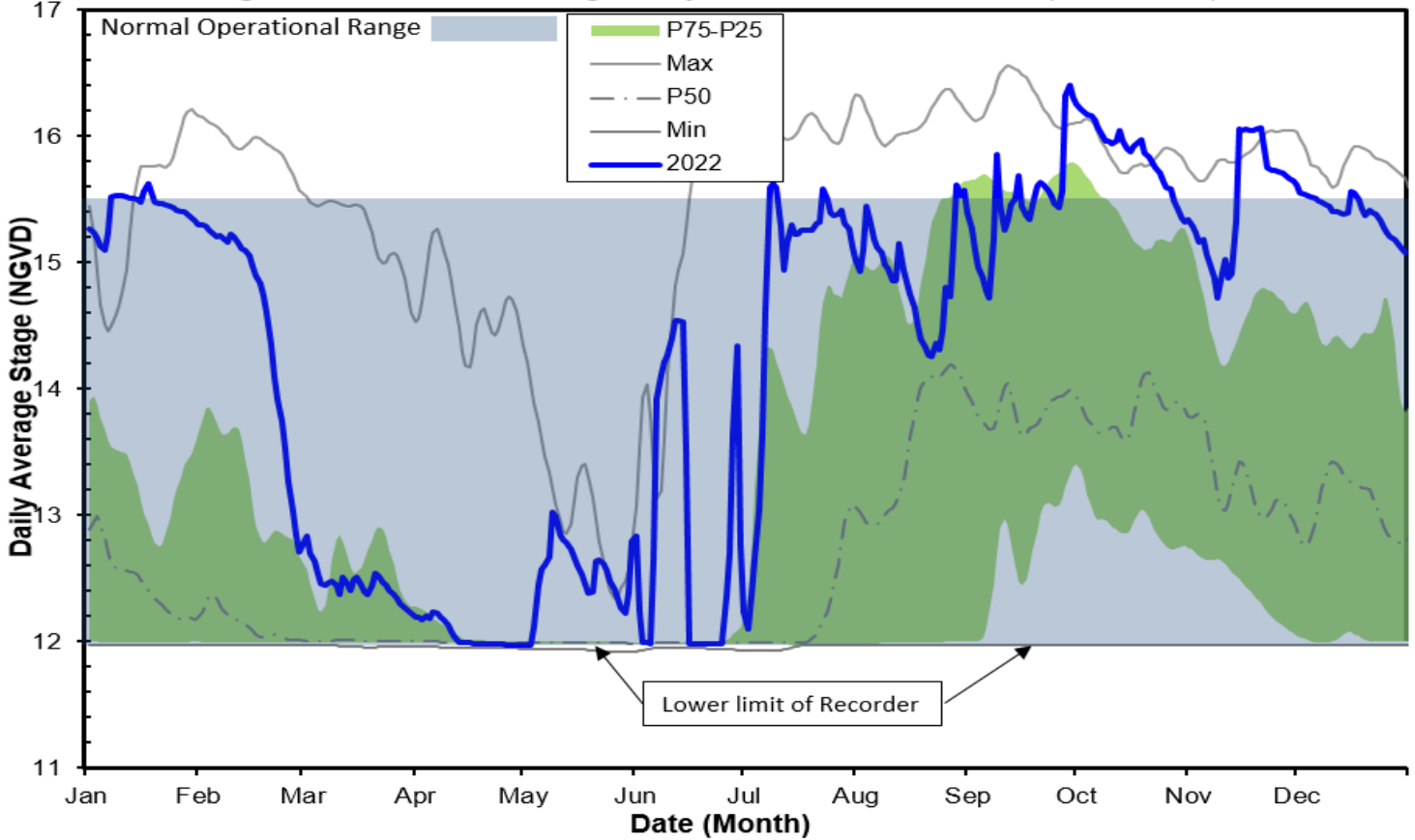


Figure 7A Faka Union Canal Historic Average Daily Headwater Percentiles

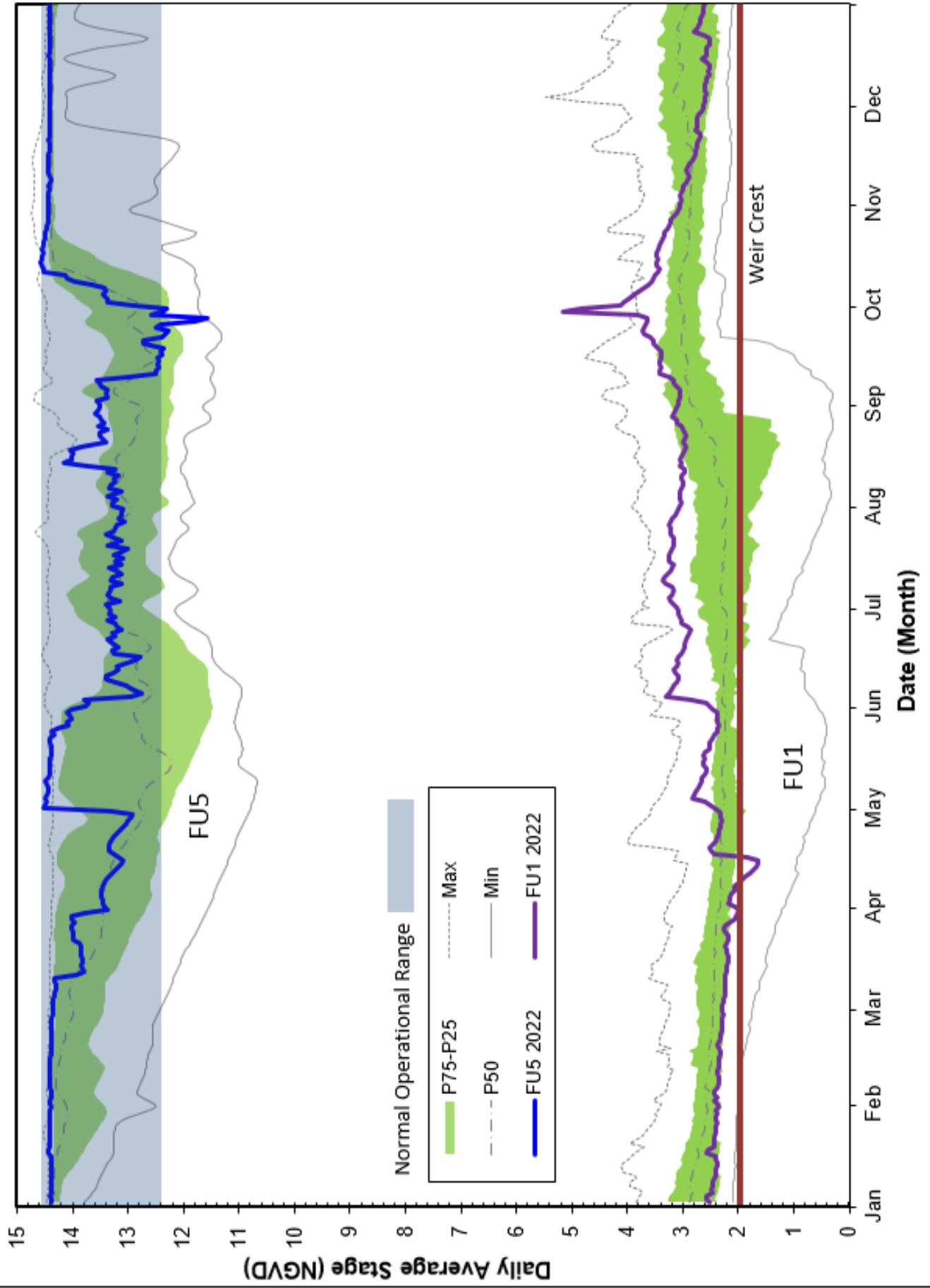


Figure 7B FU4S Historic Average Daily Water Percentiles

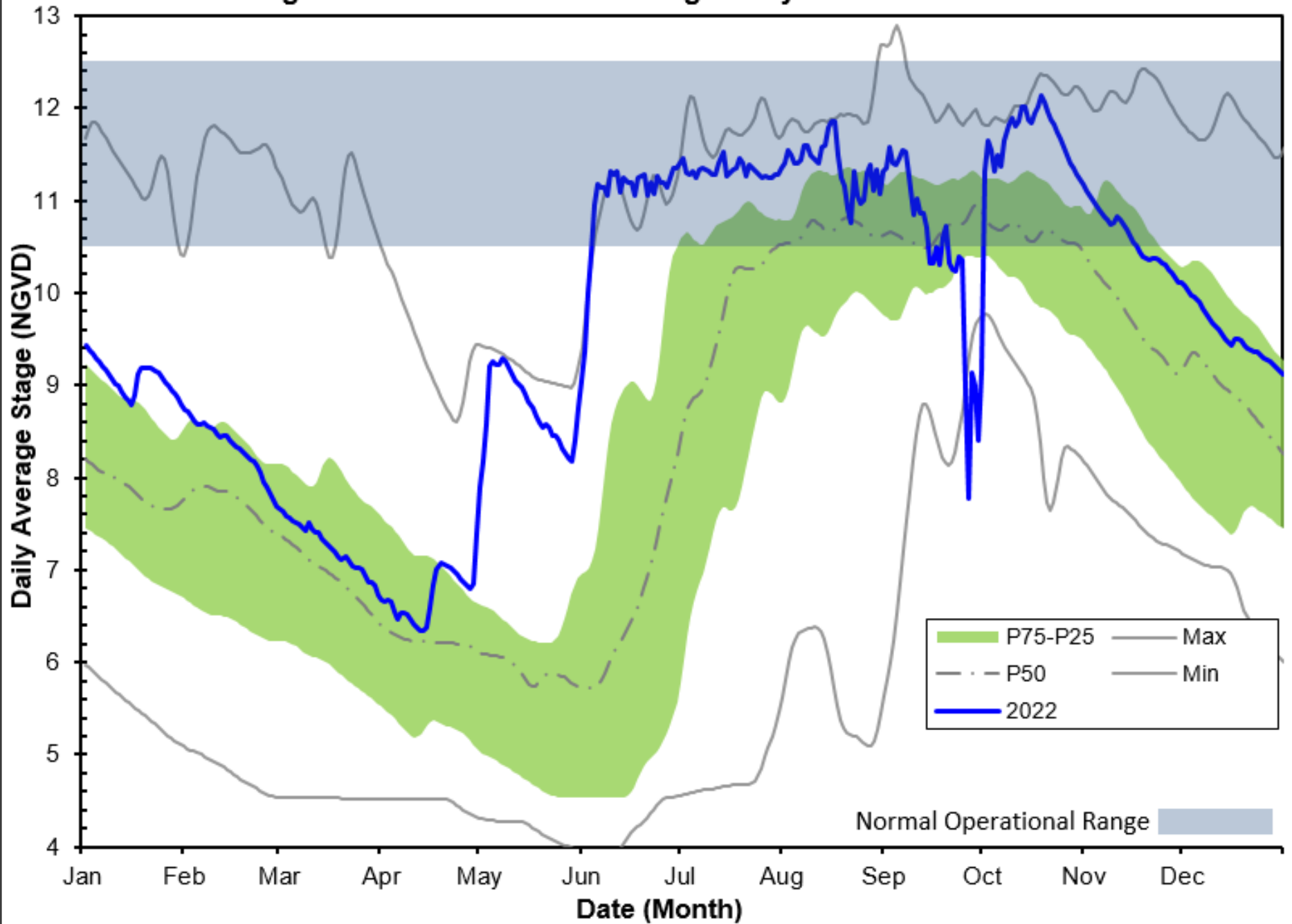




Figure 8A HC1 Historic Average Daily Headwater Percentiles

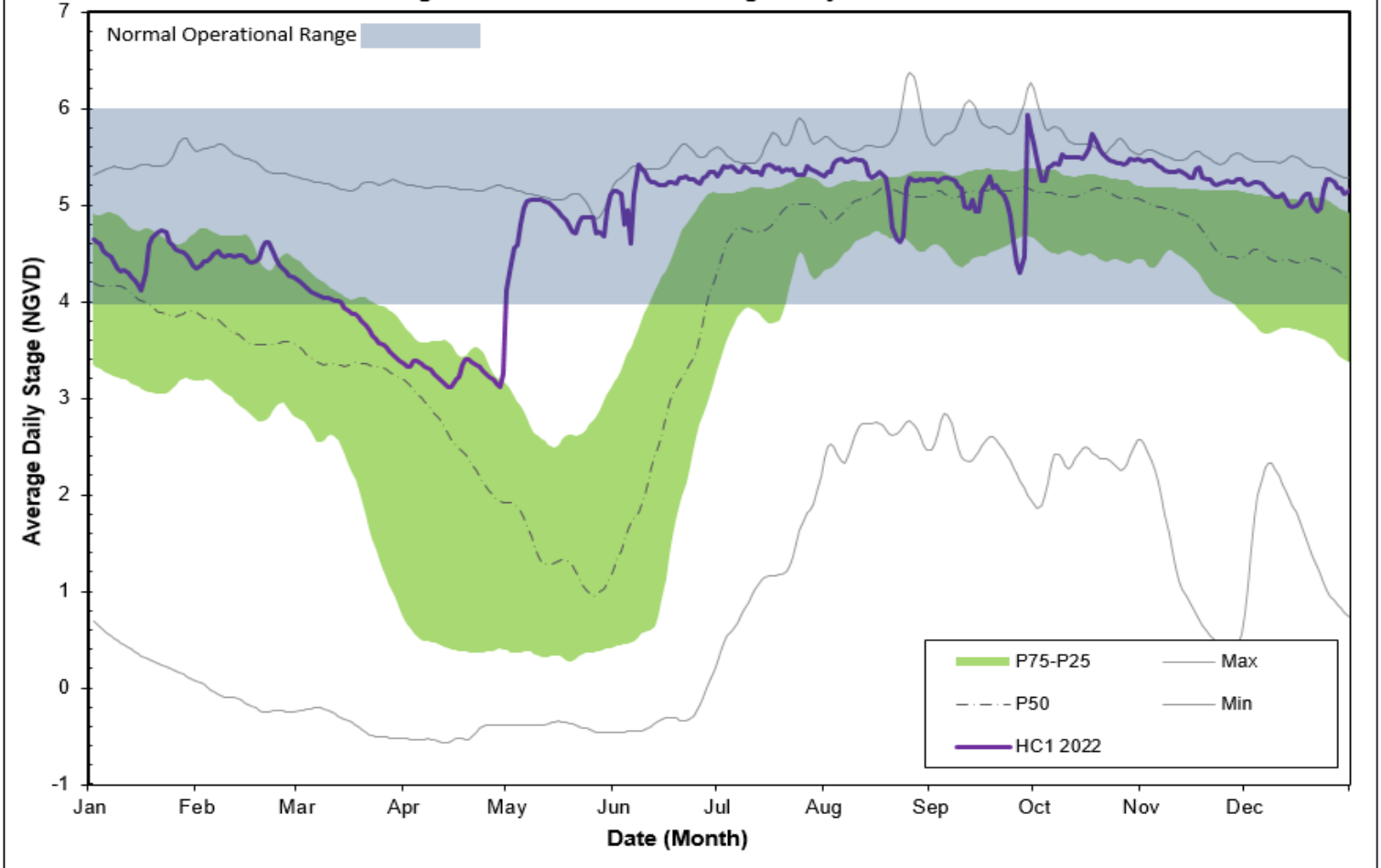
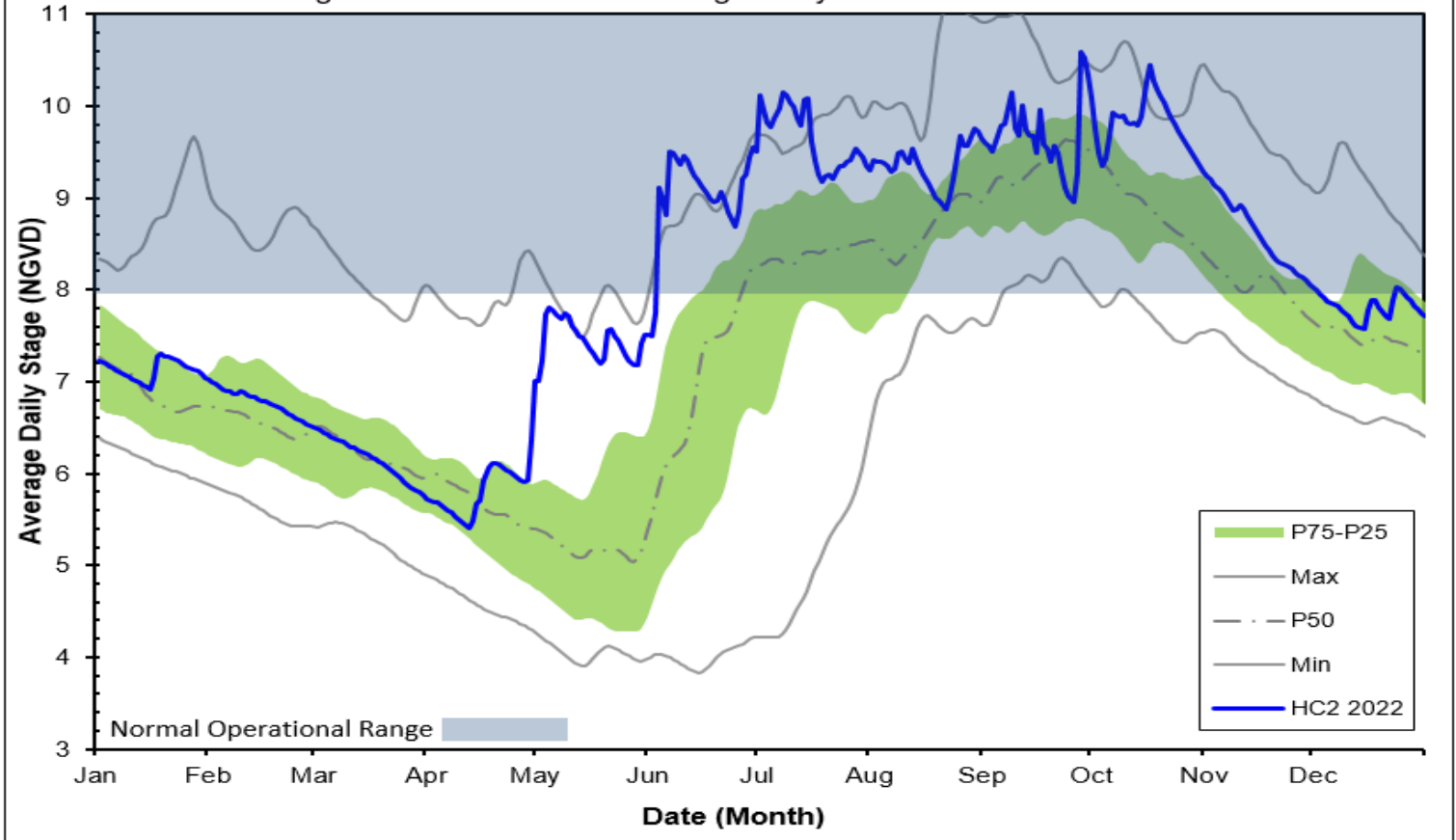


Figure 8B HC2 Historic Average Daily Headwater Percentiles



**WATER CONDITIONS SUMMARY - December 2022**

**SELECTED STATIONS for BCB AREA / SW FLORIDA**

Last Reading Date :		December 31, 2021					
Previous Period Reading Date:		November 30, 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	-2.59	34.11	31.52	↓	GREEN
C-1004R	Naples	Lower Tamiami Aquifer	1.72	1.90	3.62	↑	GREEN
C-1224	Marco Lakes	Lower Tamiami Aquifer	-0.21	4.38	4.17	↓	GREEN
C-948R	Golden Gate	Mid Hawthorn Aquifer	1.71	30.88	32.59	↑	
C-951R	Golden Gate	Lower Tamiami Aquifer	-1.69	5.23	3.54	↓	
L-2194	Bonita Springs	Sandstone Aquifer	-1.23	6.62	5.39	↓	GREEN
L-2195	Bonita Springs	Surficial Aquifer System	-0.88	11.46	10.58	↓	GREEN
L-738	Bonita Springs	Lower Tamiami Aquifer	-0.30	1.22	0.92	↓	GREEN

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

**BIG CYPRESS BASIN**

DECEMBER 2022

**GROUNDWATER LEVEL DAILY TRENDS COMPARED TO HISTORICAL AVERAGE**

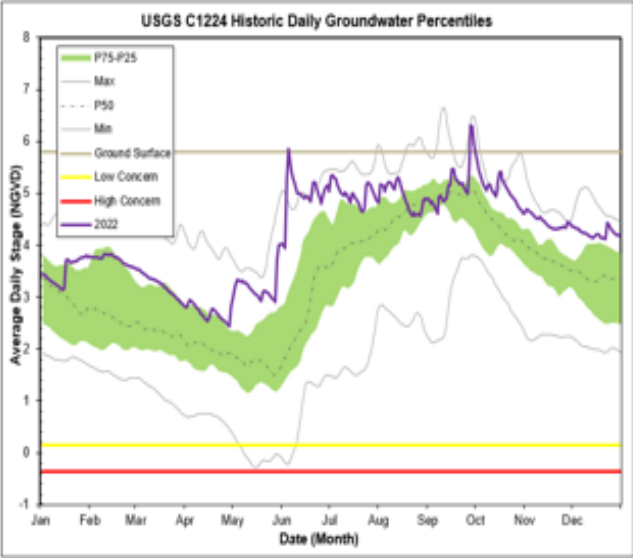
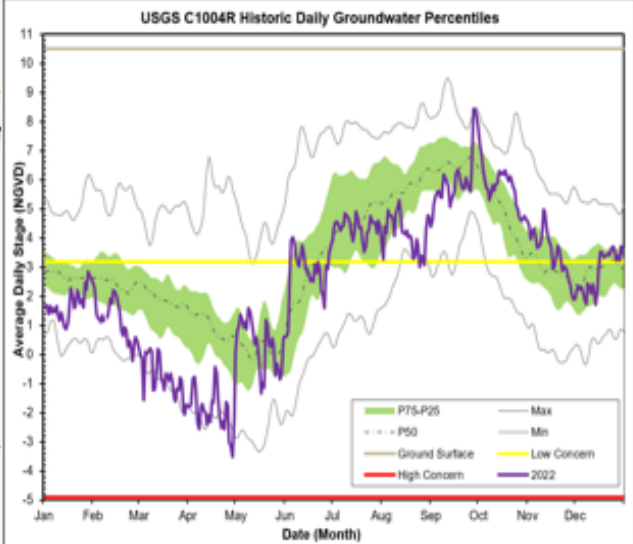
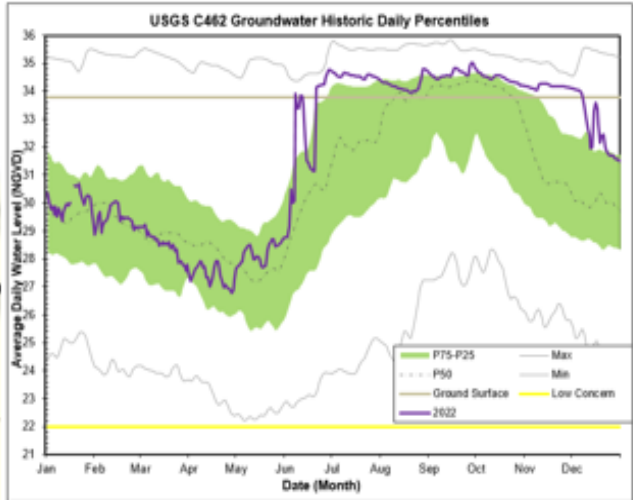
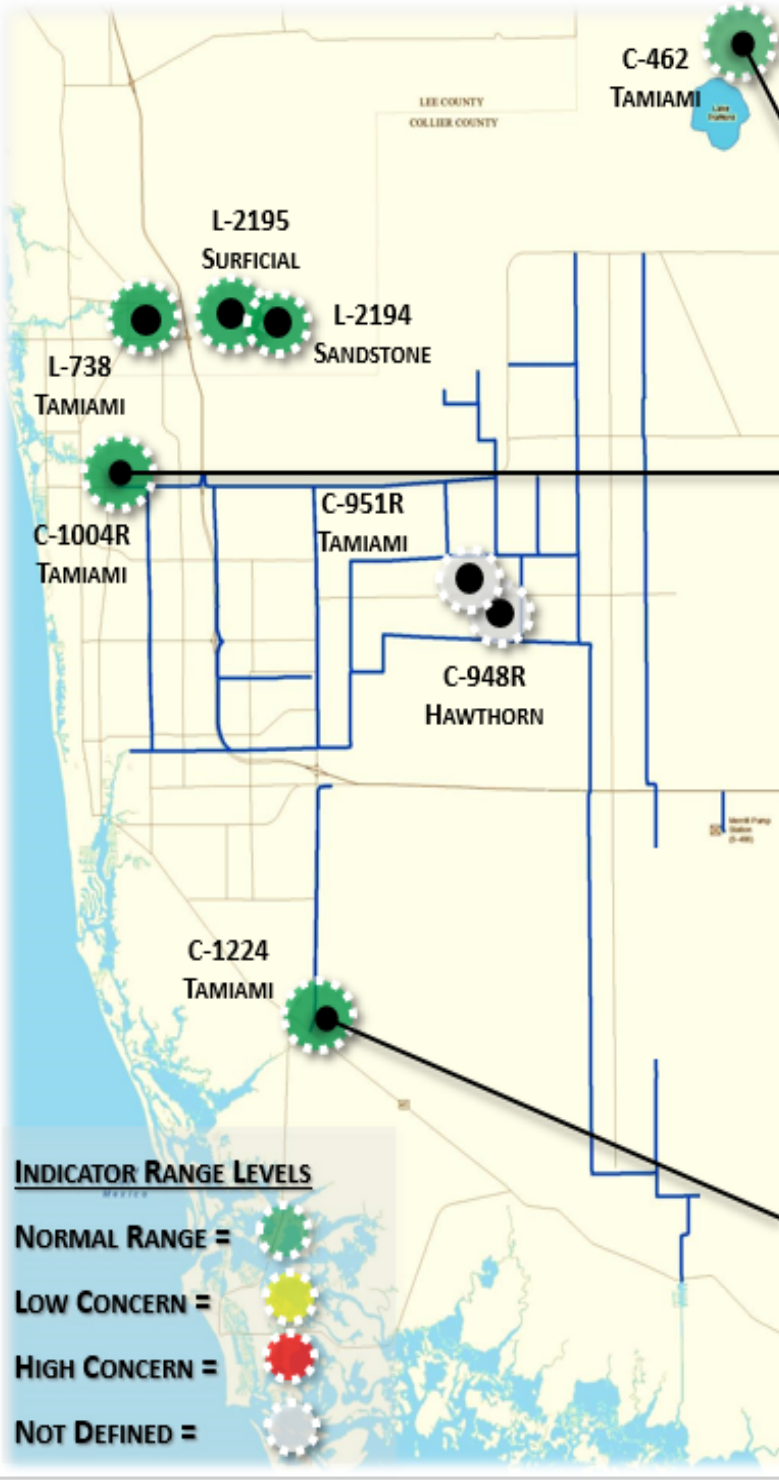


FIGURE 9

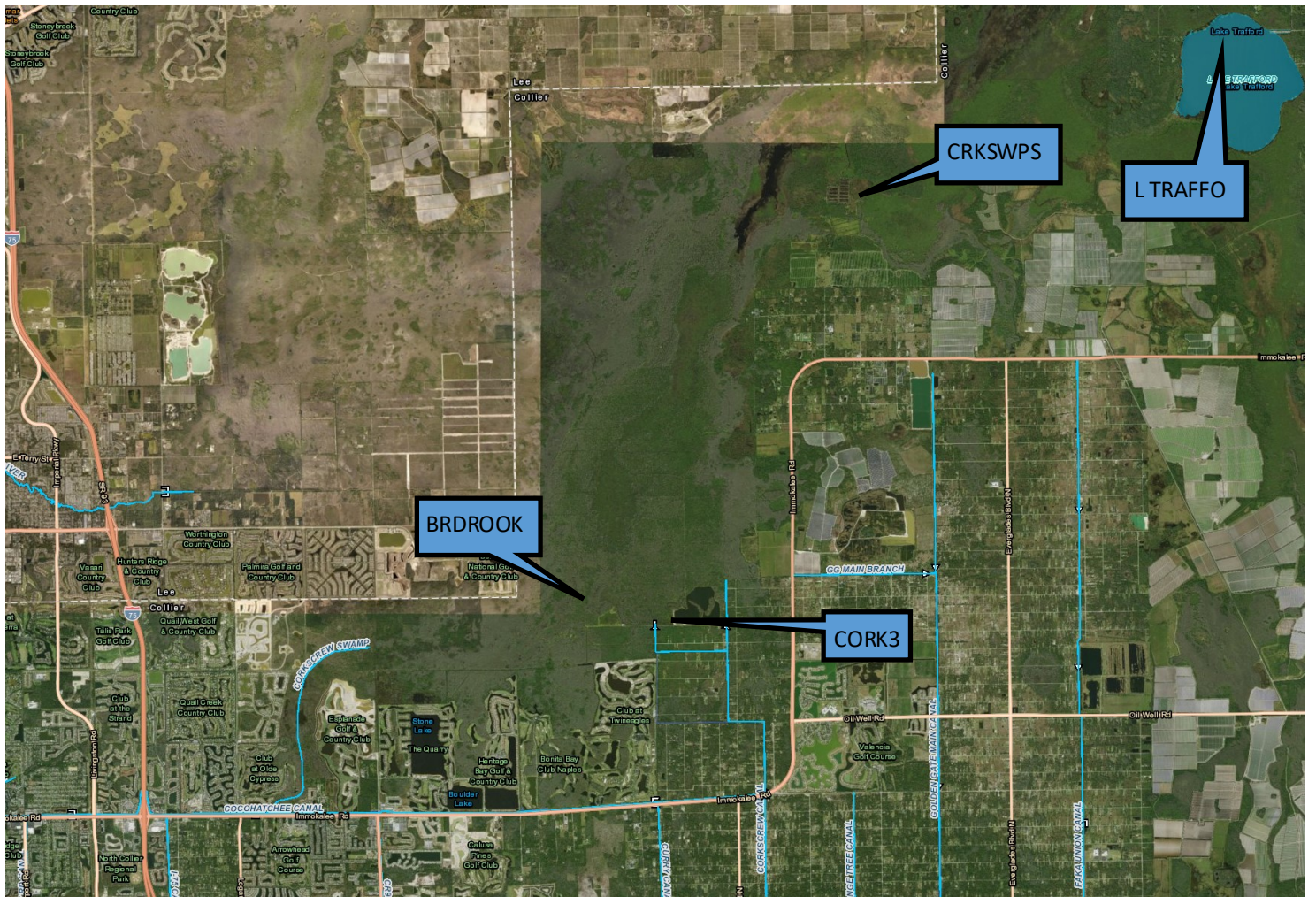


Figure 10-Corkscrew Historic Average Daily Headwater Percentiles(1984-2022)

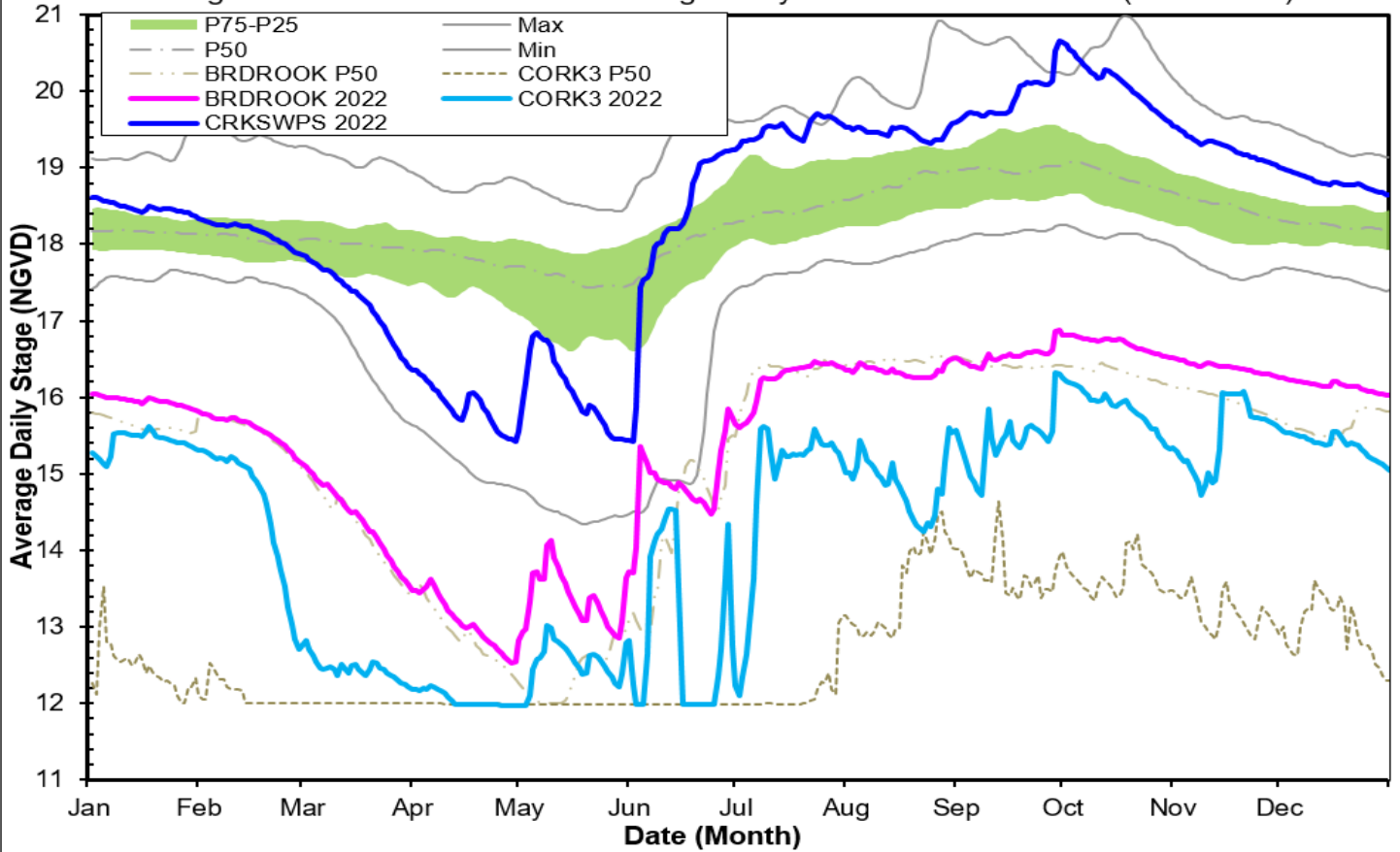


Figure 11 Lake Trafford Historic Daily Water Level Percentiles (1941-2021)

