

MARCH 2023

BIG CYPRESS BASIN HYDROLOGIC REPORT



sfwmd.gov

SUMMARY OF HYDROLOGIC CONDITIONS IN THE BIG CYPRESS BASIN

March 2023

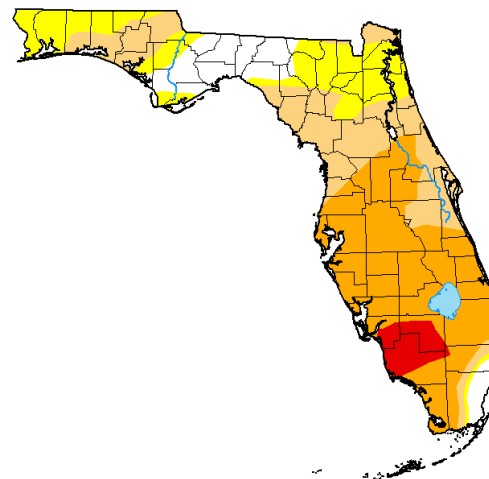
SUMMARY

In March, the Basin experienced unusually dry weather conditions with below-average precipitation levels. The total rainfall for the month was only 26% of the historical average, measuring 0.45 inches. Additionally, certain regions within the Basin have gone without significant rainfall for over three months, further exacerbating the drier conditions.

According to the current Florida drought maps the Basin is in a severe drought, with some areas of the basin experiencing an extreme drought (right). The Florida Forest Service also reports an extremely elevated KBDI (below) for Collier county indicating extremely dry conditions at the surface. This has caused water levels throughout the system to recede slightly quicker than normal for this time of the year.

U.S. Drought Monitor
Florida

March 28, 2023
(Released Thursday, Mar. 30, 2023)
Valid 8 a.m. EDT



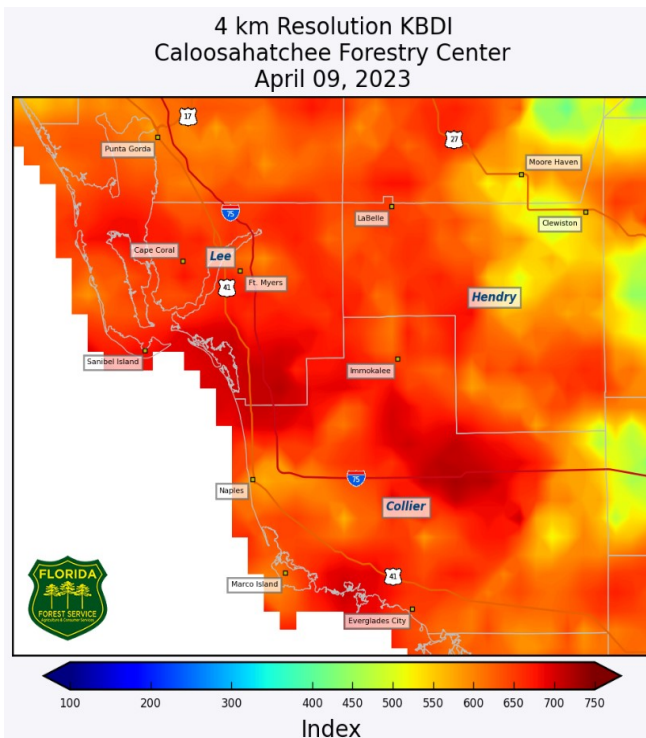
Intensity:

- 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:

Curtis Riganti
National Drought Mitigation Center



Due to the abnormally dry conditions, a fire ban has been imposed in Collier County effective March 4th, as there is an increased risk of wildfires. The county witnessed its first fire in early March, “The Jung Fire” which spanned more than 300 acres, and was caused by a power line coming in contact with a tree.

According to the latest weather forecasts from the National Weather Service, April is expected to bring an equal chance for normal, above normal and below normal rainfall and a 50-60% chance of above-average temperatures. The outlook for the following three months also shows an equal chance for normal, above normal and below normal levels of rainfall and a 50-60% chance of above-average temperatures from April through June.

BCB RAINFALL

As measured by twenty-four (24) reporting stations (ref. **Figures 1, 2, Table 1**), the basin-wide monthly average was **0.45 inches (26% of normal)**, which is below the average 1.71 inches typically collected. Based on collected gauge data, the rainfall distribution across the Basin was fairly uniform except for Marco Island which received 2 inches from a strong localized 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 **1.1 inch** areal average across the watershed and the lowest was the

Freedom Park basin with about **0.24 inches**. The Basin's total areal weighted average rainfall was **0.58 inches**. The month's highest gauge total was collected at Marco R.O. Plant (Site R-15), which received **2.05 inches**. This month's lowest rainfall was recorded at FPWX (Site R-23), which received **0.07 inches**. 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 March to hold as much water as possible to promote groundwater recharge. As the month ended, most of the BCB canals were above the 25th percentile, with the remaining canals above the 10th percentile (**Figure 4a**).

- **GOLDEN GATE SYSTEM**

Control structures in the Golden Gate Main canal system were operated in water conservation mode. To maintain high water levels, all water control structures have been kept fully closed since the start of the year. The canal water levels for the majority of the Golden Gate system are above the 25th percentile, with the exception of GG1, which experienced a faster decline in water levels due to dry conditions and an increase in water use. (ref **Figure 5A & 5B**).

- **COCOCHATCHEE SYSTEM**

All portions of the Cocohatchee system remain in water conservation mode and gates are fully closed to promote groundwater recharge. Levels in the canal are above the 25th percentile except for COCO2 and a few of the smaller reaches in the system due to drier than normal conditions. (ref **Figure 6A, 6B, 6C, & 6D**).

- **FAKA UNION SYSTEM**

The entire Faka Union system was operated in water conservation mode with no discharges through the structures. As the month ended, levels continued their annual recession in response to dry conditions and are above the 25th percentile for this time of year except for FU4S (ref **Figure 7A & 7B**).

- **HENDERSON CREEK SYSTEM**

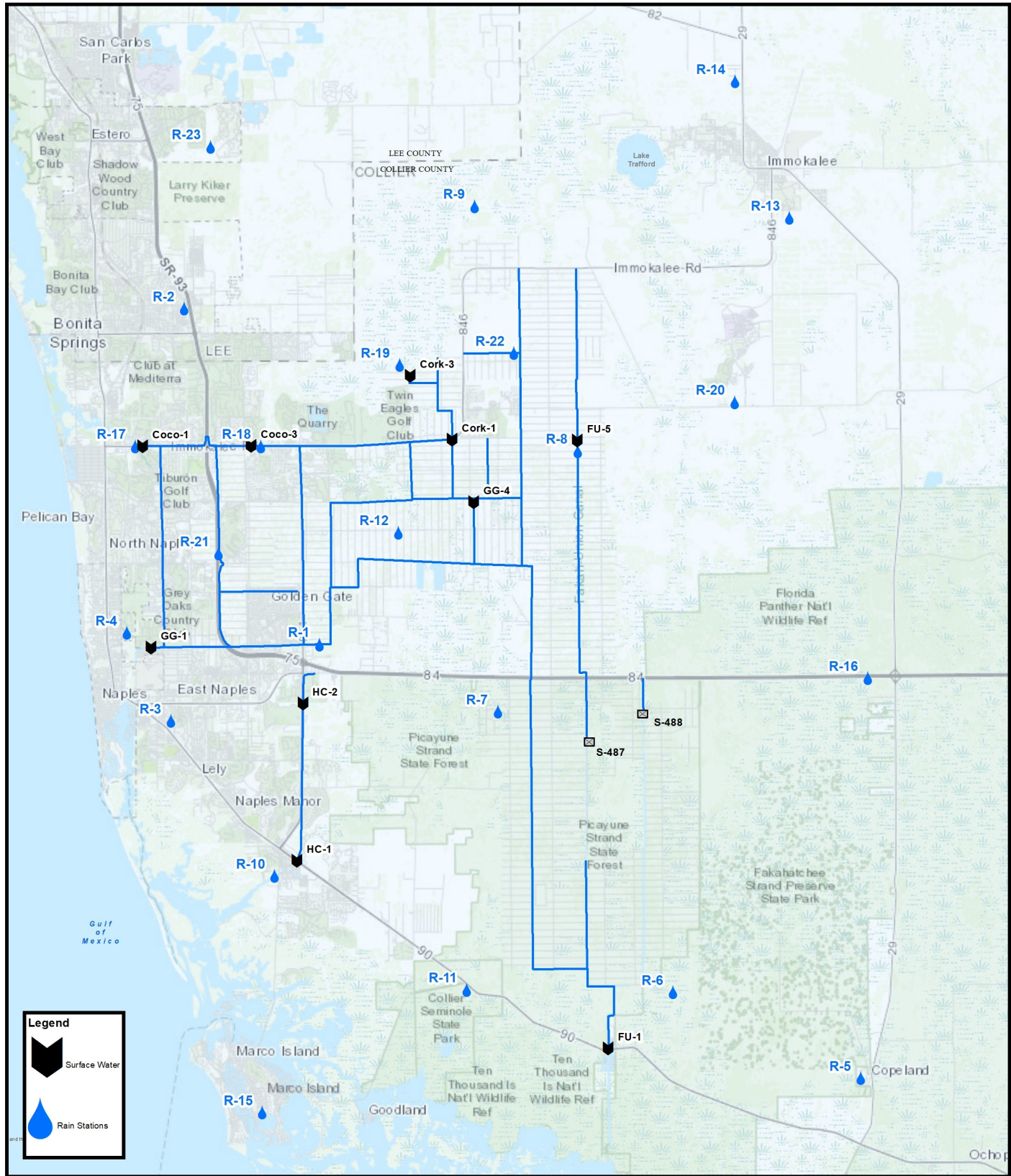
Water control structures in the Henderson Creek system remained fully closed. Canal levels have declined as water use increased but remains above the 25th percentile as the month came to a close (ref **Figure 8A & 8B**).

- **CORKSCREW SWAMP**

Figure 10 shows the historical trends for Corkscrew, Bird Rookery, and the Cork 3 structure and the 2023 corresponding levels. All three sites experienced a slightly quicker recession rate due to the dry conditions and are above the 25th percentile for March. **Figure 11** displays the water levels at Lake Trafford, indicating that the lake's water levels are steadily decreasing but remain above the 25th percentile

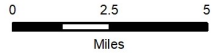
BIG CYPRESS BASIN & LOWER WEST COAST GROUNDWATER LEVELS

The current reporting (04/03/2023) for the Lower West Coast [LWC] indicate decreasing trends for March. Two reporting wells (C-1004R & L-738) are in the yellow (caution) indicator levels, L-2194 is in the red indicator level and all others remain in green (normal) levels. 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** show an average decrease of 1.36 feet. L-738 recorded the highest decrease of 2.64 feet, and C-951R had the smallest decrease of 0.08 feet (ref. **Table 2, Figure 9**).



DISCLAIMER
 Any information, including but not limited to software and data, received from the South Florida Water Management District ("District") in fulfillment of a request is provided "AS IS" without warranty of any kind, and the District expressly disclaims all express and implied warranties, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. The District does not warrant, guarantee, or make any representations regarding the use, or the results of the use, of the information provided to you by the District in terms of correctness, accuracy, reliability, timeliness or otherwise. The entire risk as to the results and performance of any information obtained from the District is entirely assumed by the recipient.

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.



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

FIGURE 1

Hydrologic Station Map

Collier County, Florida



TABLE 1
RAINFALL REPORT - MARCH 2023
DISTRICT/BASIN RAINFALL STATIONS
 (ALL NUMBERS ARE IN INCHES)

STATION INDEX NO.	STATION NAME	MARCH 2023	LONG TERM MONTHLY AVERAGE	MONTHLY DIFFERENCE	CALENDAR YEAR 2023 CUMULATIVE TOTAL	AVERAGE CALENDAR YEAR TO DATE	YEAR TO DATE DIFFERENCE
R-1	GG#3	0.38	0.70	-0.32	1.02	4.87	-3.85
R-2	BONITA SPRINGS WATER PLANT	0.09	2.24	-2.15	0.82	6.19	-5.37
R-3	COLLIER COUNTY COURTHOUSE	0.54	1.90	-1.36	1.38	5.74	-4.36
R-4	FREEDOM PARK	0.28	1.06	-0.78	1.23	5.09	-3.86
R-5	FAKAHATCHEE STRAND HQ	0.33	2.25	-1.92	0.61	5.93	-5.32
R-6	DAN HOUSE PRAIRIE	0.54	1.53	-0.99	0.78	4.61	-3.83
R-7	SGGE WEATHER STATION	0.48	1.37	-0.89	0.81	4.77	-3.96
R-8	FAKA UNION #5	0.68	1.09	-0.41	1.42	5.96	-4.54
R-9	CORKSCREW SWAMP NORTH END	0.17	1.61	-1.44	0.99	5.22	-4.23
R-10	ROOKERY BAY HQ	0.34	1.44	-1.10	0.60	5.28	-4.68
R-11	COLLIER SEMINOLE STATE PARK	0.87	1.98	-1.11	1.08	5.50	-4.42
R-12	G.G. FIRE STATION	0.21	2.16	-1.95	1.14	5.99	-4.85
R-13	IMMOKALEE LANDFILL	0.74	2.42	-1.68	1.30	6.46	-5.16
R-14	IFAS	0.37	2.66	-2.29	1.13	6.67	-5.54
R-15	MARCO R.O. PLANT	2.05	1.89	0.16	2.31	6.31	-4.00
R-16	FAKAHATCHEE STRAND NORTH END	0.54	2.43	-1.89	0.67	6.97	-6.30
R-17	COCO#1	0.21	2.03	-1.82	1.38	5.70	-4.32
R-18	COCO#3	0.27	1.36	-1.09	0.78	5.03	-4.25
R-19	BIRD ROOKERY	0.32	0.76	-0.44	1.05	3.57	-2.52
R-20	AVE MARIA	0.15	2.28	-2.13	0.52	6.30	-5.78
R-21	I75W2	0.44	0.85	-0.41	1.32	3.67	-2.35
R-22	GG#7	0.33	1.34	-1.01	1.08	4.13	-3.05
R-23	FPWX	0.07	2.08	-2.01	1.17	5.71	-4.54
R-24	DSOTO10	0.50	New Site	New Site	New Site	No Historical Data	
AVERAGES		0.45	1.71	-1.26	1.07	5.46	-4.39

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

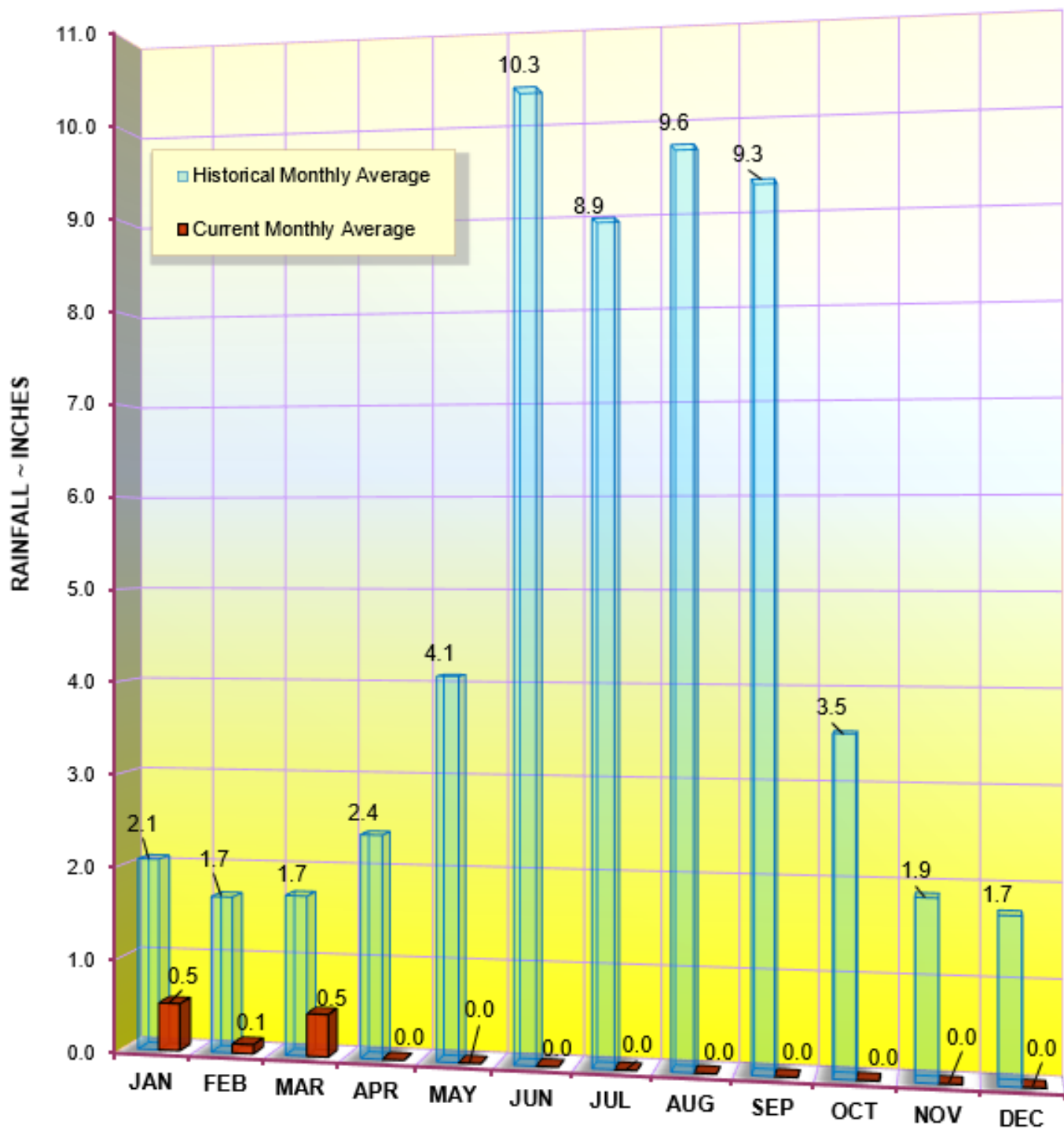


FIGURE 2
BCB GAUGE RAINFALL
MONTHLY AVERAGES THROUGH MARCH 2023

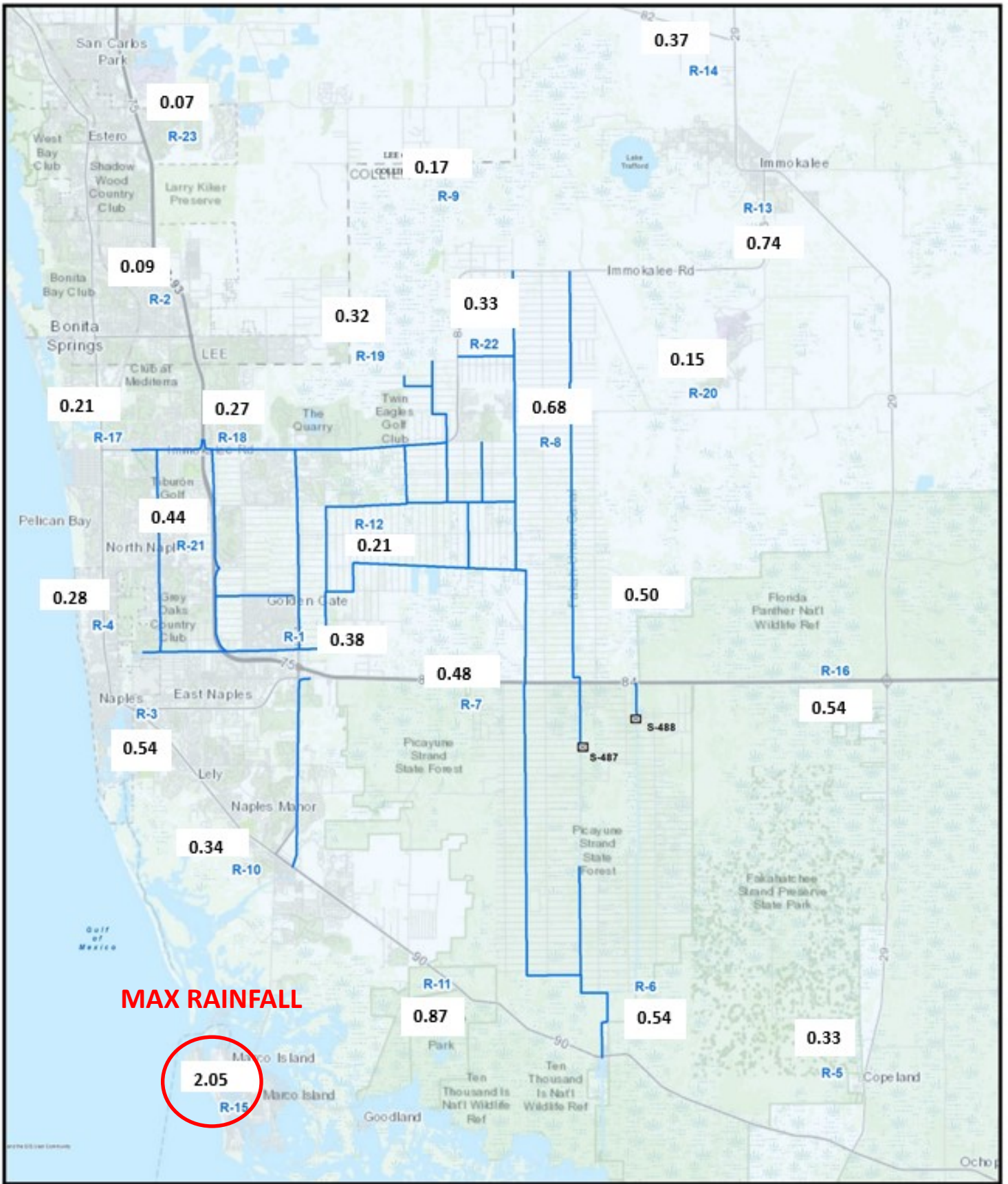
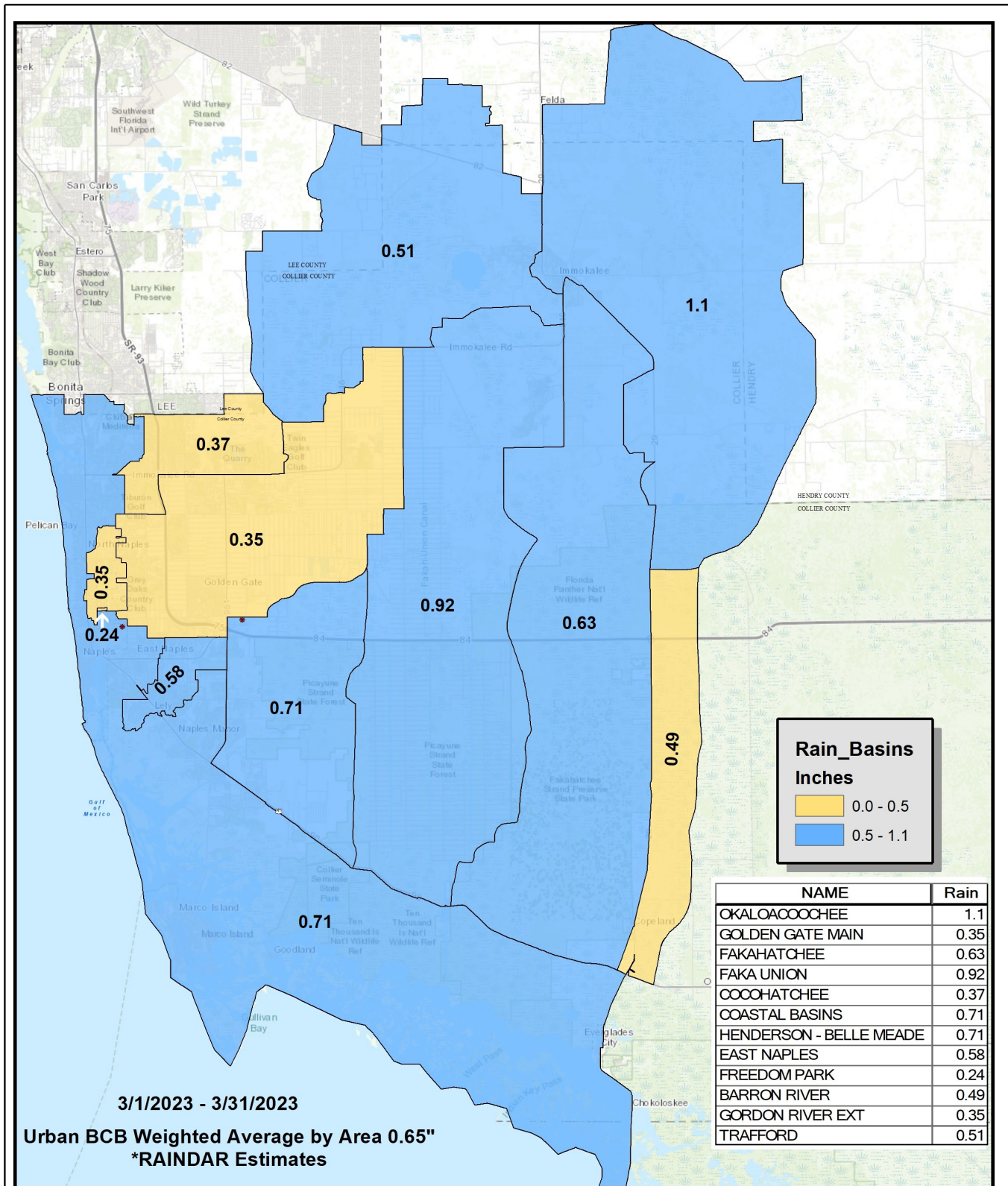
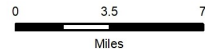


FIGURE 3
BCB RAINFALL DISTRIBUTION
MARCH 2023



DISCLAIMER
 Any information, including but not limited to software and data, received from the South Florida Water Management District ("District") in fulfillment of a request is provided "AS IS" without warranty of any kind, and the District expressly disclaims all express and implied warranties, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. The District does not warrant, guarantee, or make any representations regarding the use, or the results of the use, of the information provided to be by the District in terms of correctness, accuracy, reliability, timeliness or otherwise. The entire risk as to the results and performance of any information obtained from the District is entirely assumed by the recipient.

This map is a conceptual tool utilized for project development only. This map is not self-averting 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_2019

FIGURE 3a

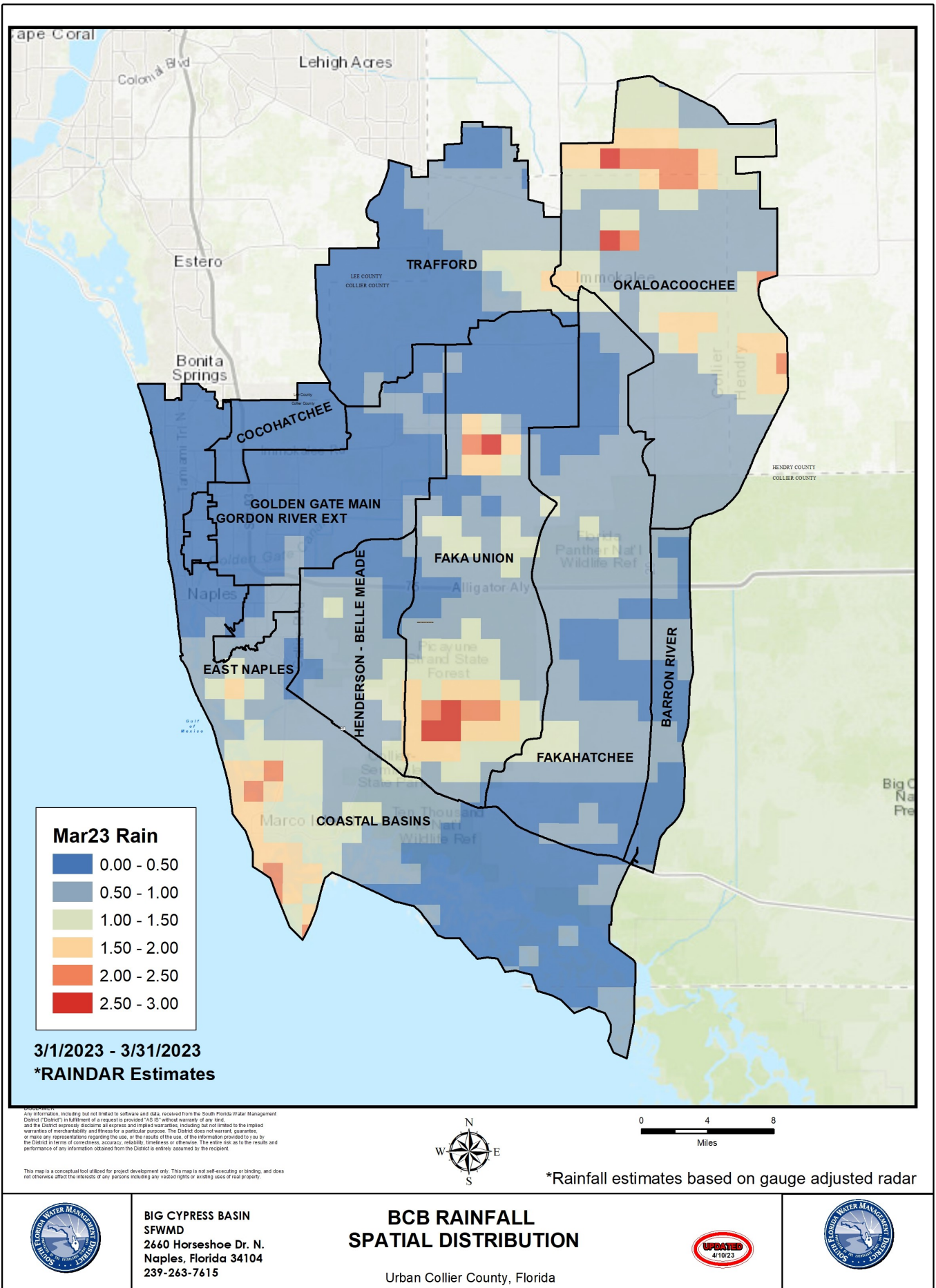
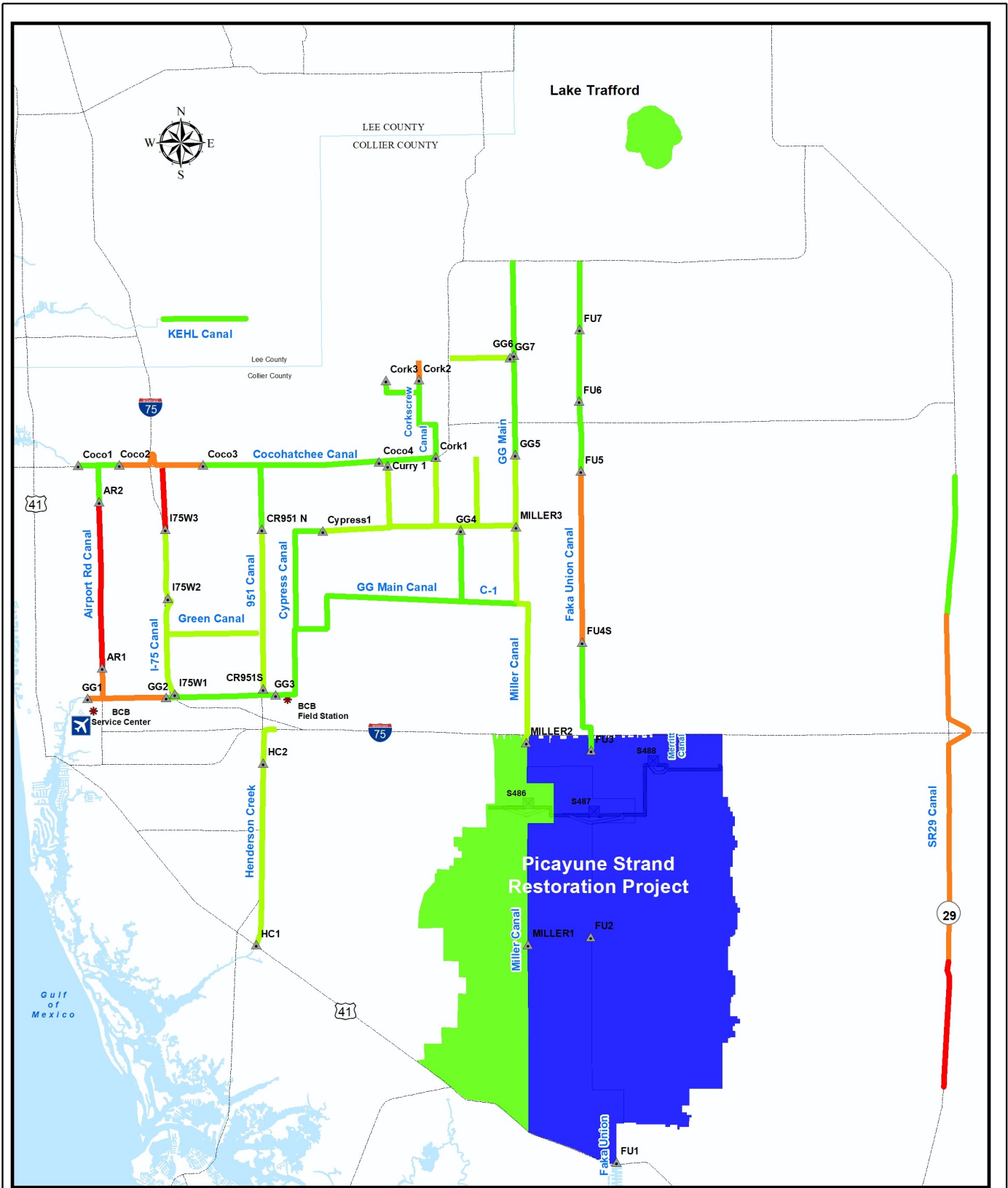
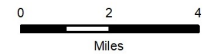


FIGURE 4



DISCLAIMER
 Any information, including but not limited to software and data, received from the South Florida Water Management District ("District") in fulfillment of a request is provided "AS IS" without warranty of any kind, and the District expressly disclaims all express and implied warranties, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. The District does not warrant, guarantee, or make any representations regarding the use, or the results of the use, of the information provided to it by the District in terms of correctness, accuracy, reliability, timeliness or otherwise. The entire risk as to the results and performance of any information obtained from the District is entirely assumed by the recipient.

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 vested rights or existing uses of real property.



* Based on period of record for each canal reach



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

BCB Conditions Index
 4/8/23
 Urban Collier County, Florida



SFWMD_FL_Map_Mar_2019

FIGURE 4A

Figure 5 Golden Gate Canal Historic Average Daily Headwater Percentiles

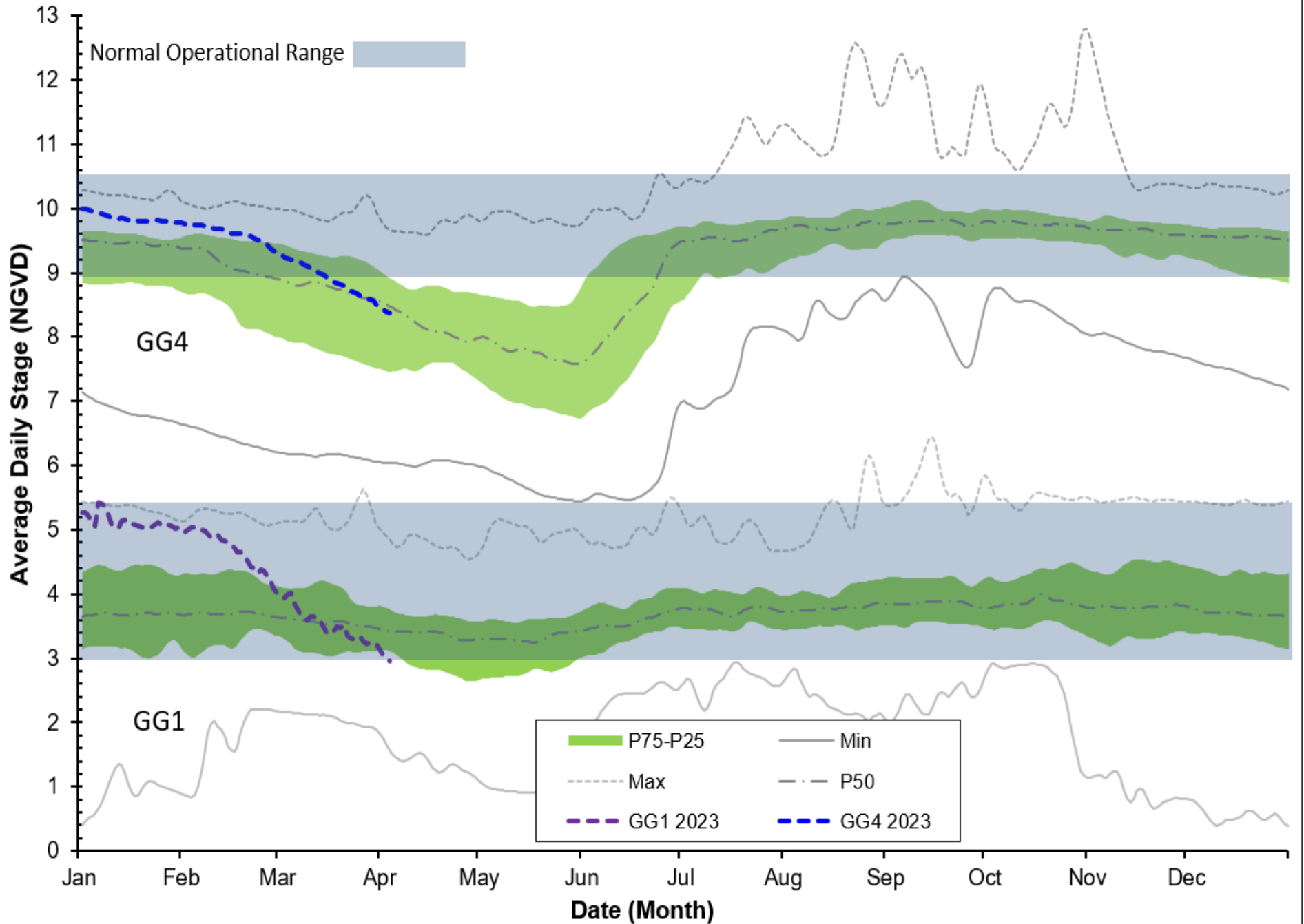


Figure 6A Cocohatchee Canal Historic Average Daily Headwater Percentiles

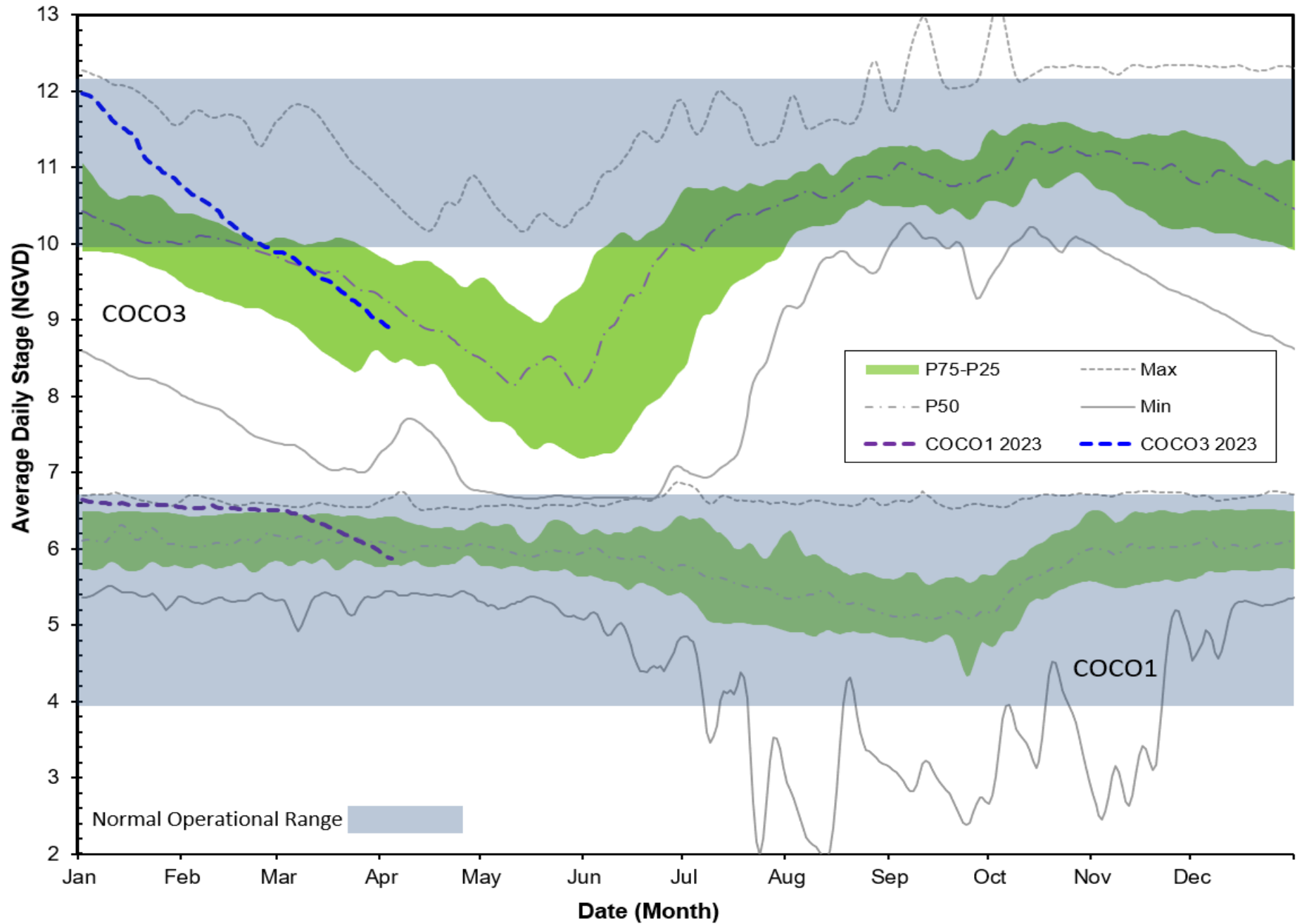


Figure 6B - CORK1 Historic Daily Headwater Percentiles (1989 - 2022)

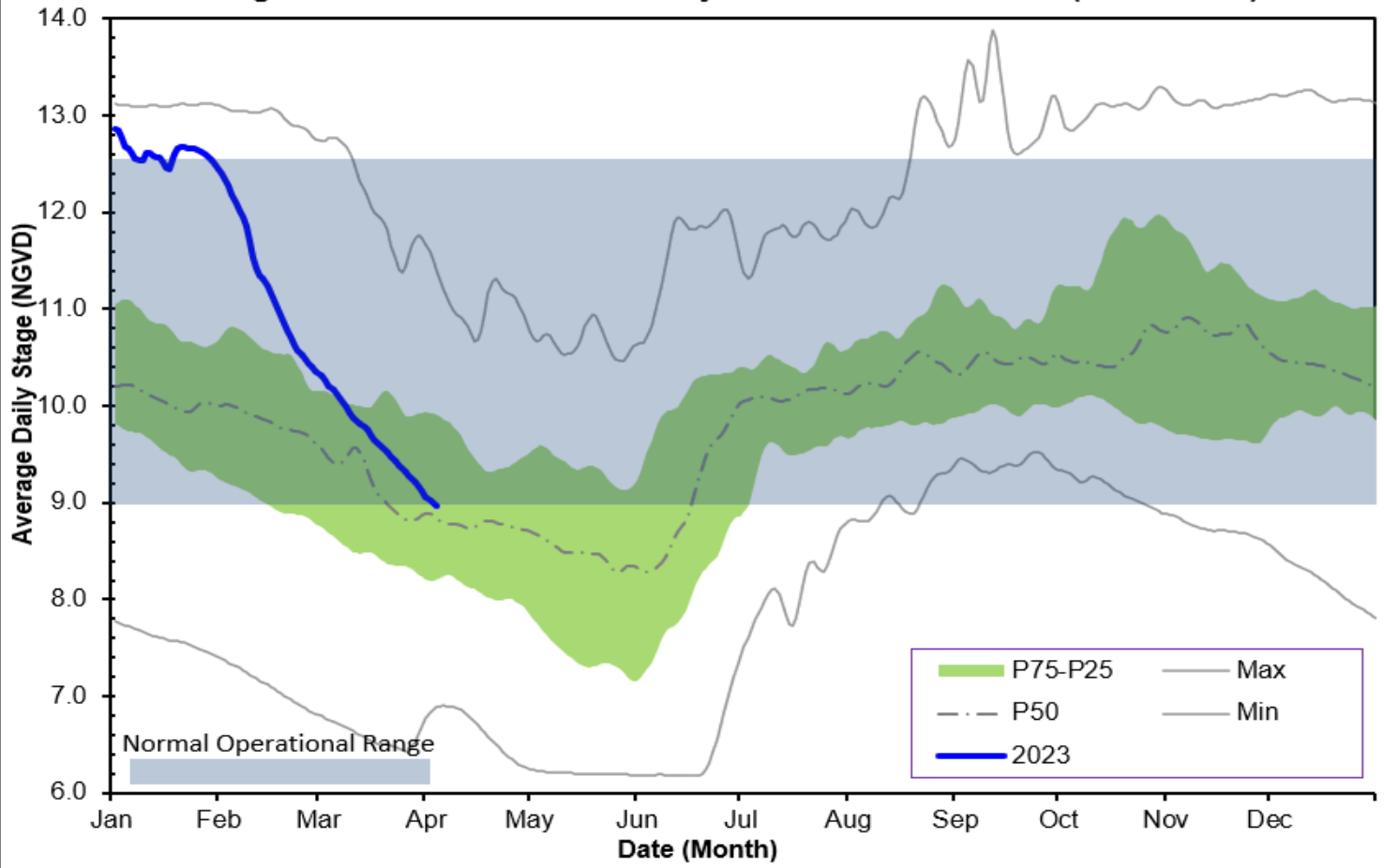


Figure 6C - CORK3 Historic Daily Headwater Percentiles (2004 - 2022)

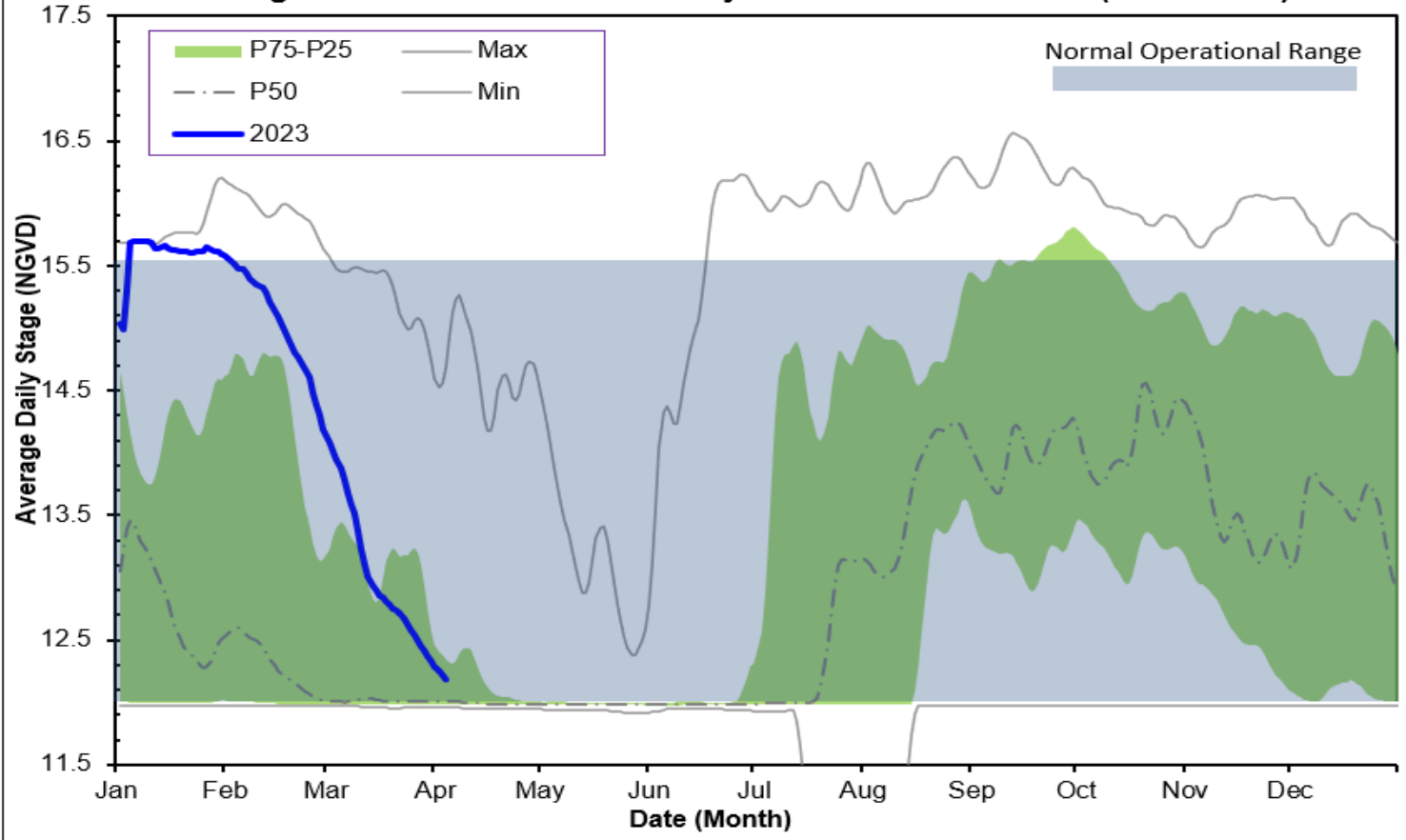


Figure 7A Faka Union Canal Historic Average Daily Headwater Percentiles

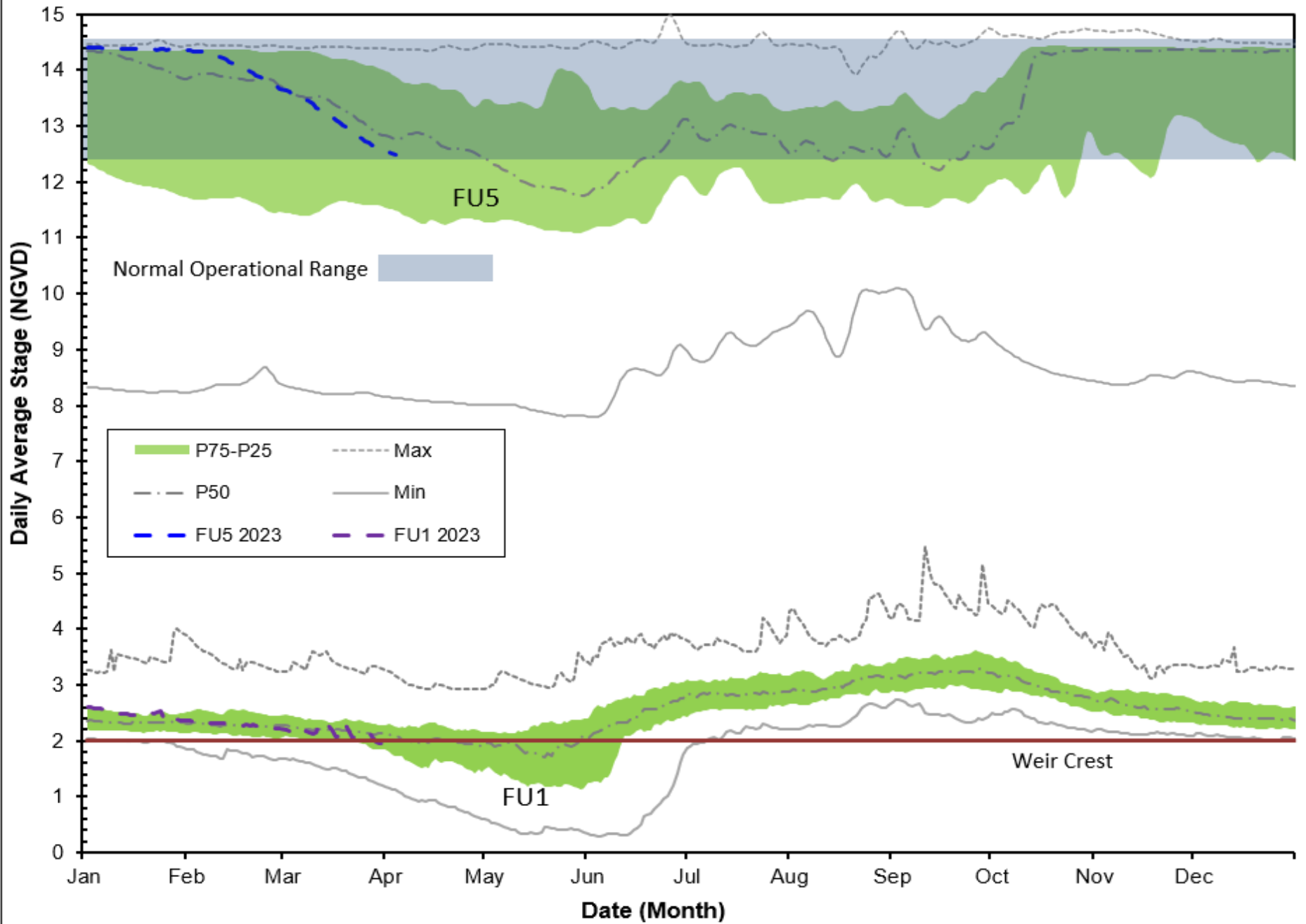


Figure 7B FU4S Historic Average Daily Water Percentiles

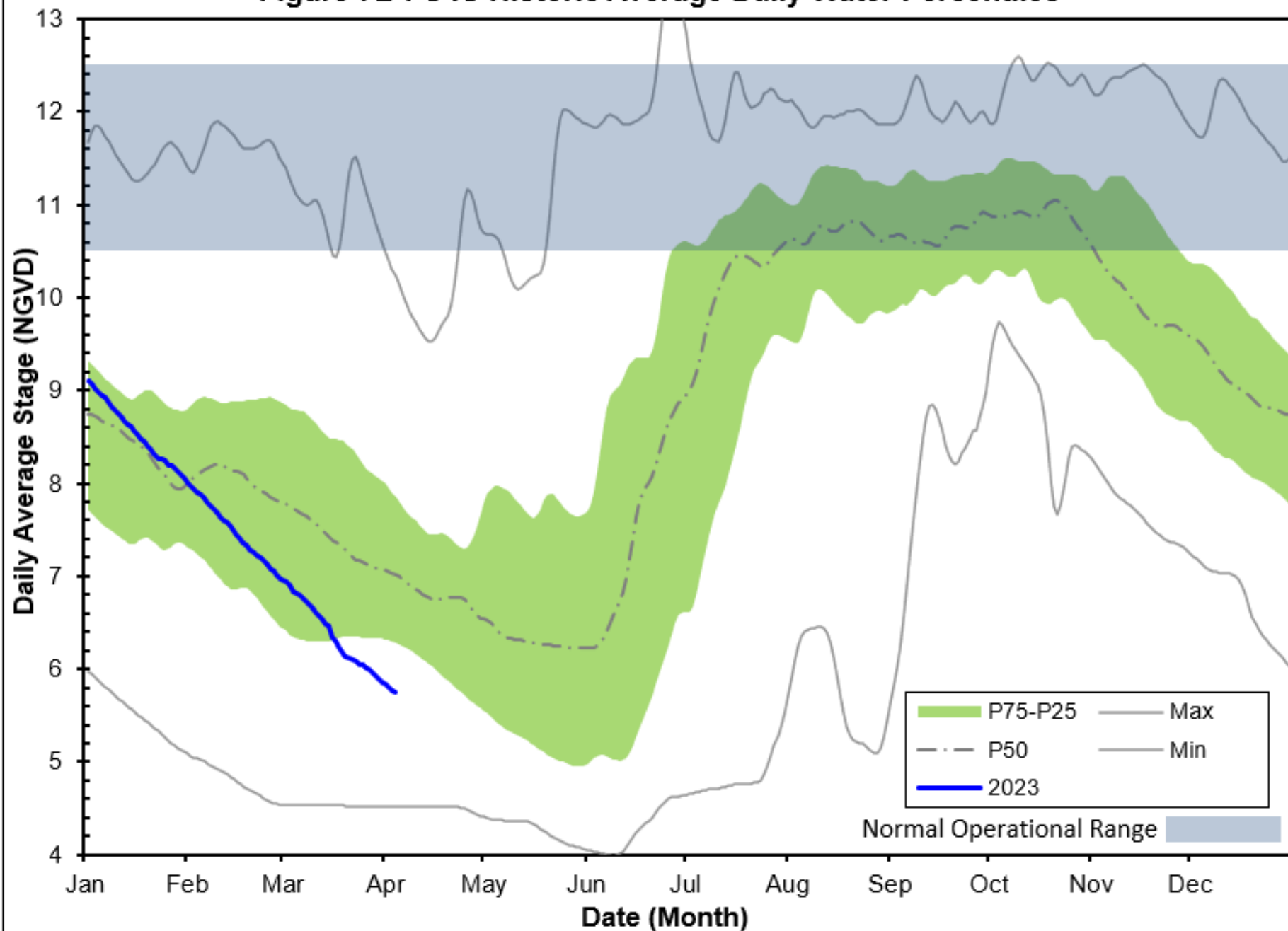


Figure 8A HC1 Historic Average Daily Headwater Percentiles

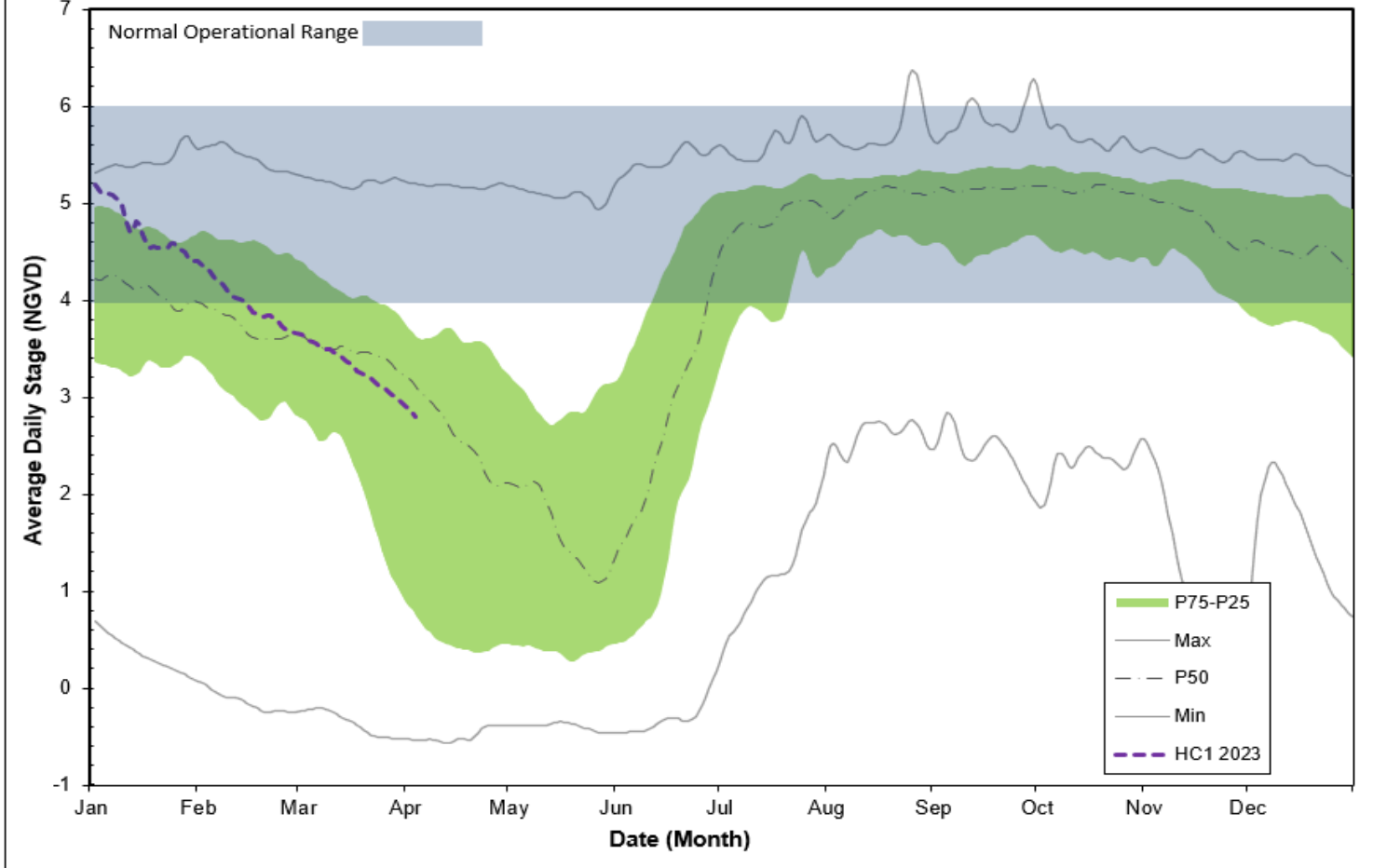
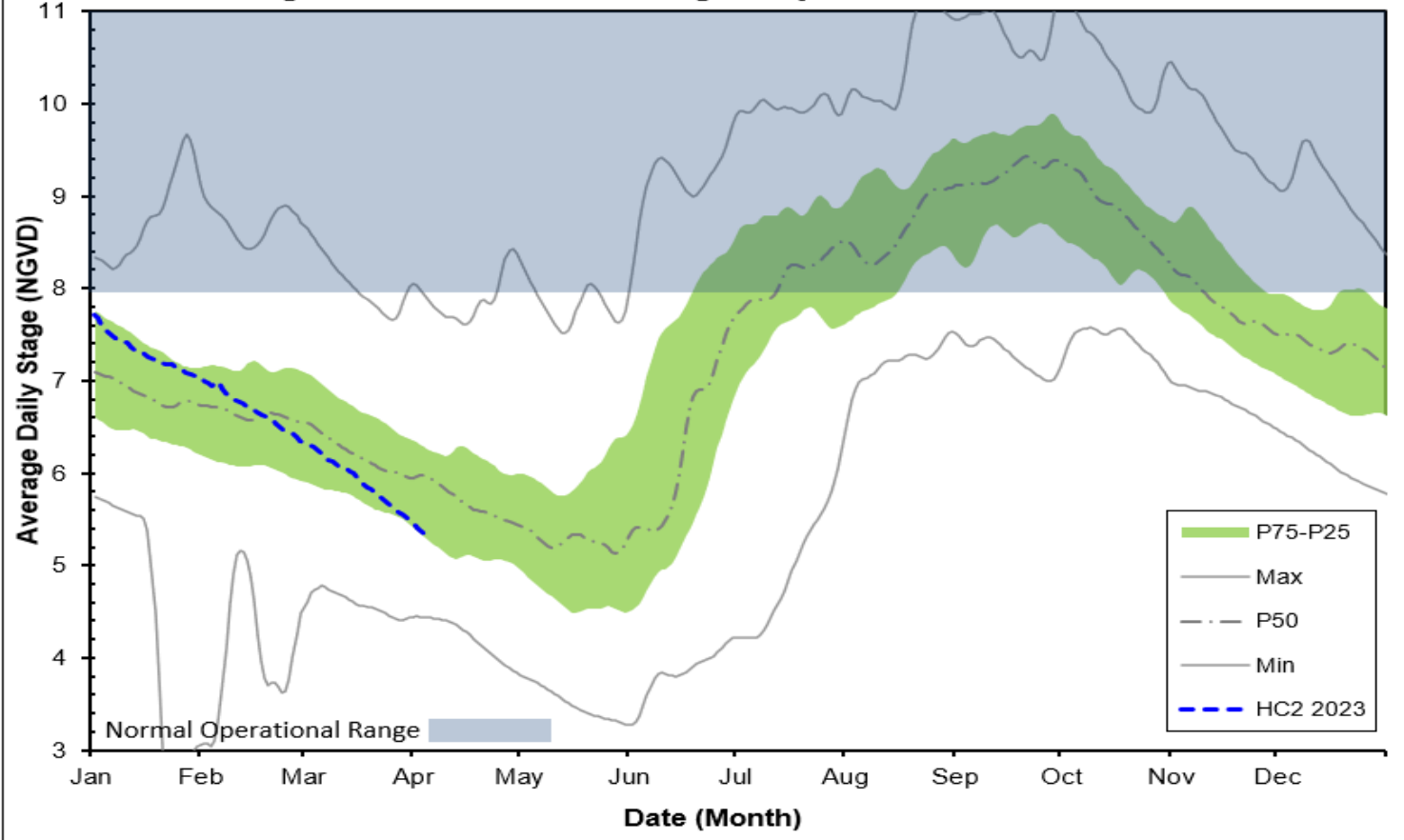


Figure 8B HC2 Historic Average Daily Headwater Percentiles



WATER CONDITIONS SUMMARY - March 2023
SELECTED STATIONS for BCB AREA / SW FLORIDA

Last Reading Date :		April 3, 2023					
Previous Period Reading Date:		March 6, 2023					
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	-0.85	29.32	28.47	↓	GREEN
C-1004R	Naples	Lower Tamiami Aquifer	-2.02	-0.23	-2.25	↓	YELLOW
C-1224	Marco Lakes	Lower Tamiami Aquifer	-0.76	2.60	1.84	↓	GREEN
C-948R	Golden Gate	Mid Hawthorn Aquifer	-1.15	30.63	29.48	↓	
C-951R	Golden Gate	Lower Tamiami Aquifer	-0.08	0.97	0.89	↓	
L-2194	Bonita Springs	Sandstone Aquifer	-2.54	0.71	-1.83	↓	RED
L-2195	Bonita Springs	Surficial Aquifer System	-0.80	8.84	8.04	↓	GREEN
L-738	Bonita Springs	Lower Tamiami Aquifer	-2.64	-2.62	-5.26	↓	YELLOW

TABLE 2
BCB WATER CONDITIONS SUMMARY
MARCH 2023

BIG CYPRESS BASIN

MARCH 2023

GROUNDWATER LEVEL DAILY TRENDS COMPARED TO HISTORICAL AVERAGE

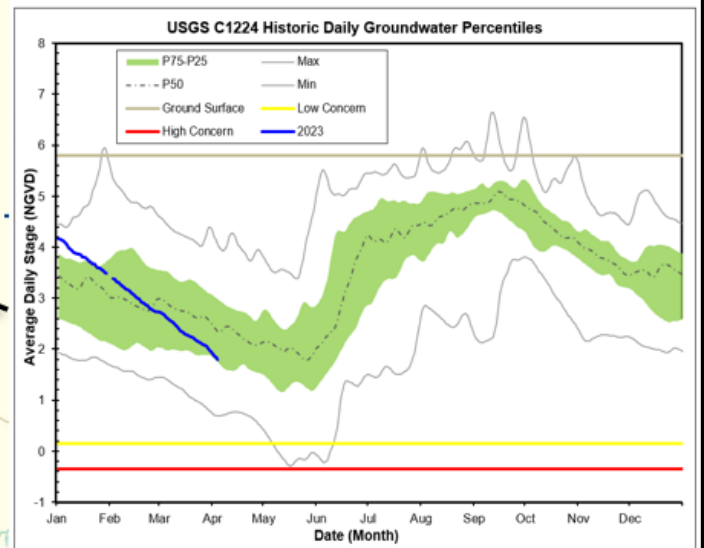
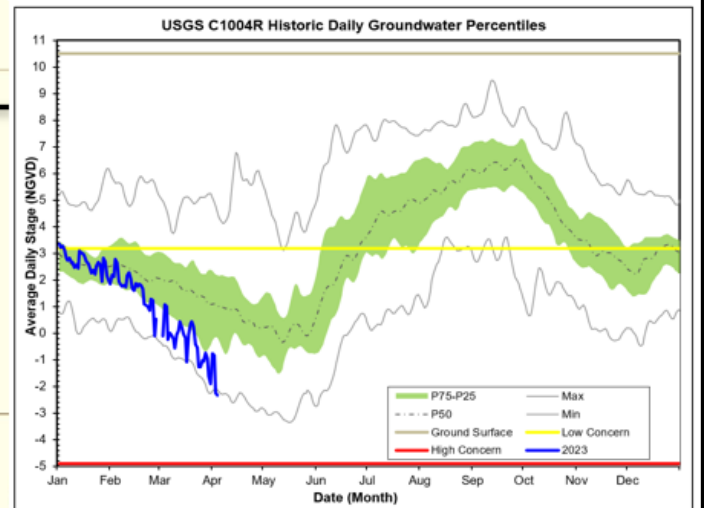
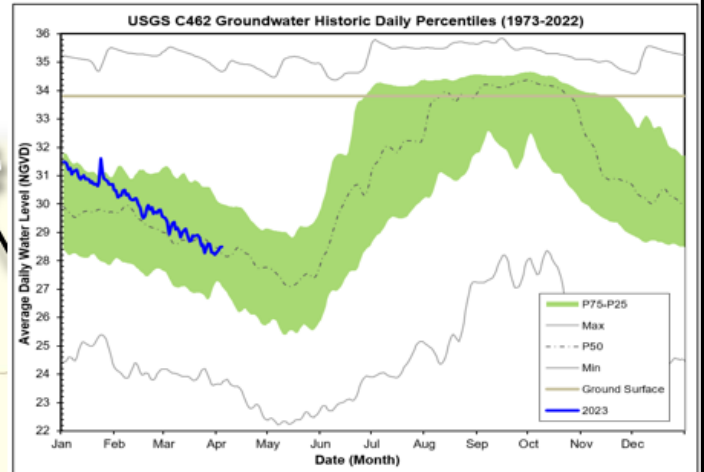
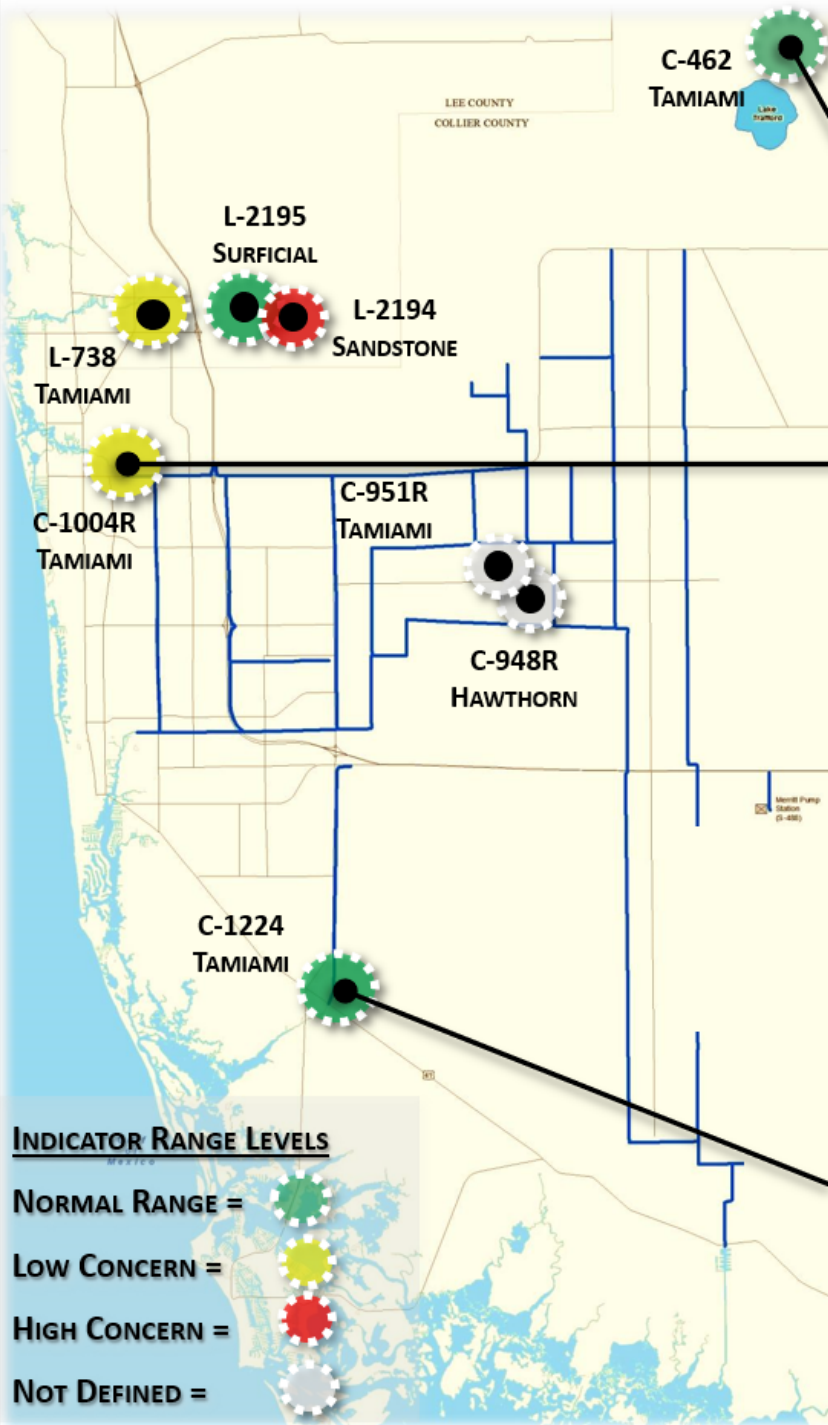


FIGURE 9

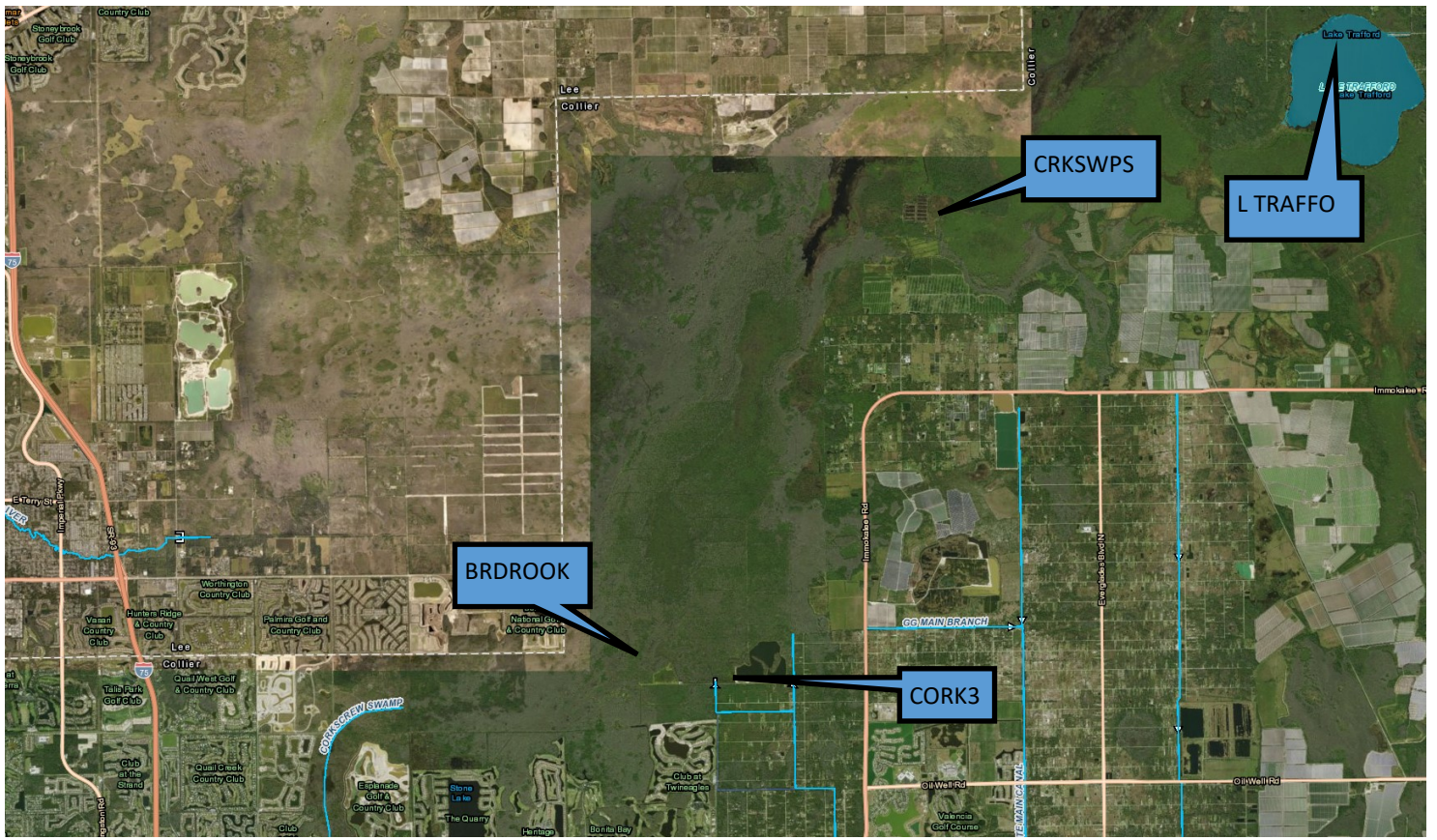


Figure 10-Corkscrew Historic Average Daily Headwater Percentiles(1984-2022)

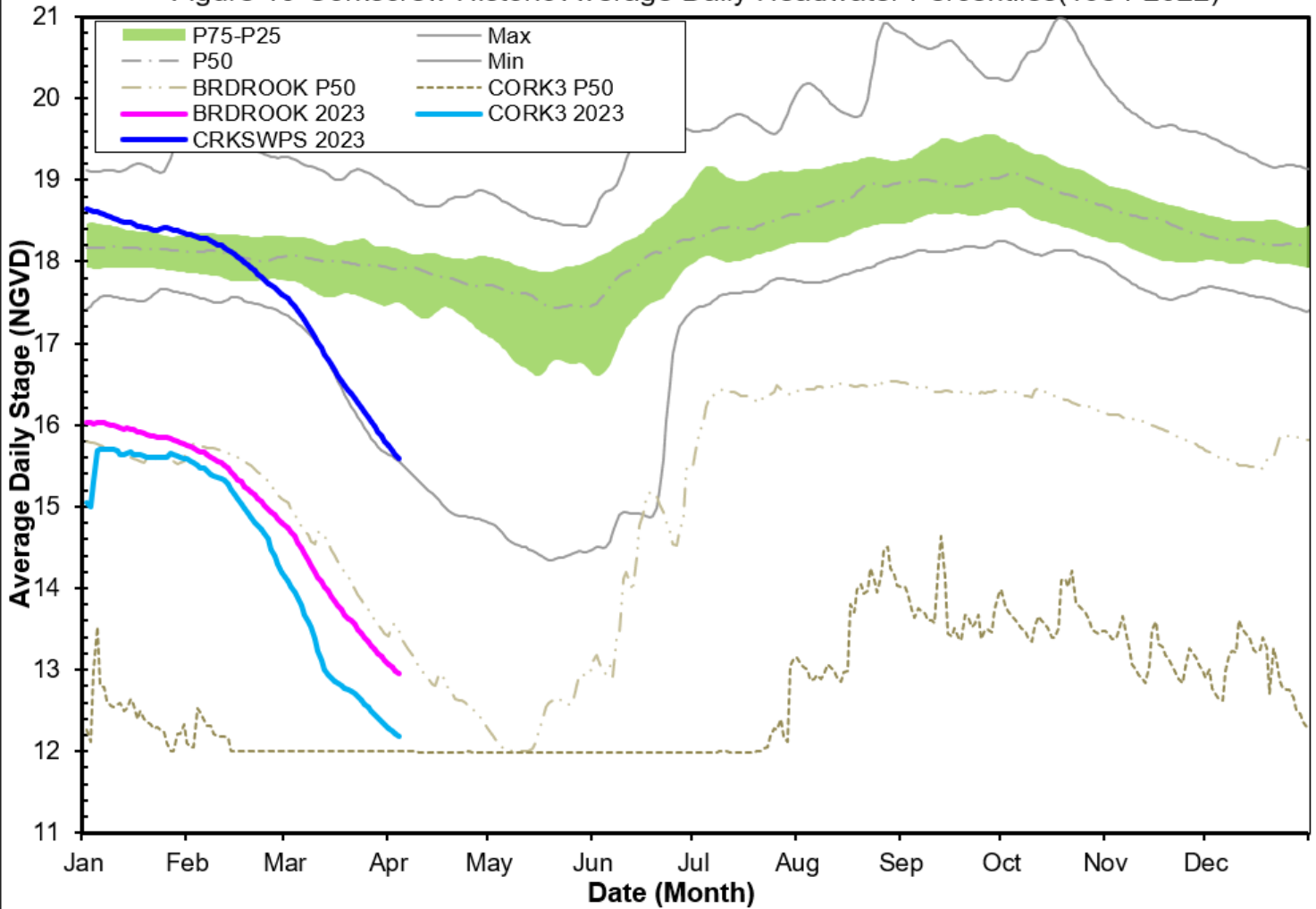


Figure 11 Lake Trafford Historic Daily Headwater Percentiles (1941 - 2022)

