

SEPTEMBER 2023

BIG CYPRESS BASIN HYDROLOGIC REPORT



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SUMMARY OF HYDROLOGIC CONDITIONS IN THE BIG CYPRESS BASIN

September 2023

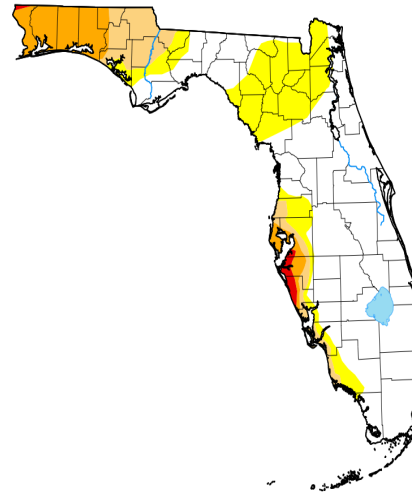
SUMMARY

September continued the trend with drier-than-normal conditions for the Big Cypress Basin (Basin). The last half of September brought much needed rainfall to the Basin, however, it was not enough to overcome the Basin's annual rainfall deficit. This year continues to follow a similar pattern to 2007, which holds the record as the driest year in the Basin's period of record (1990). As of October, the Basin is **16-inches** below the typical annual average for rainfall. Despite the annual deficit, canal levels in the Basin saw an increase for the month.

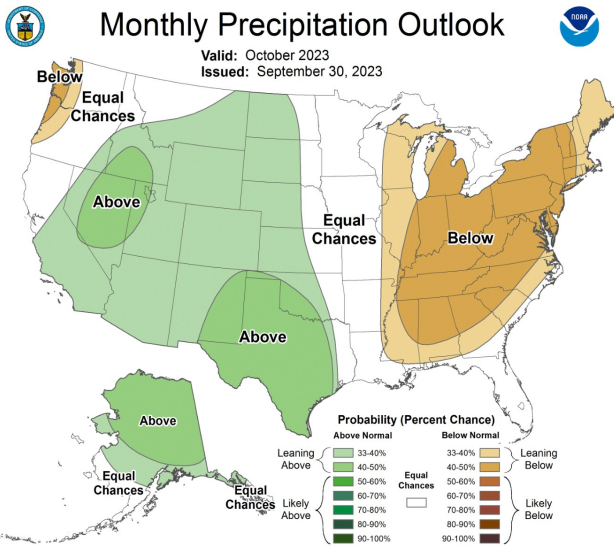
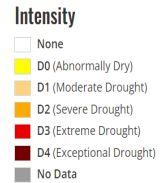
Some of the canal levels were at or near historic minimums heading into September and by the end of the month most of the canal levels were well above the 25th percentile.

Drought conditions for the Basin were mostly unchanged from the previous month. Based on

Florida



Map released: Thurs. October 5, 2023
Data valid: October 3, 2023 at 8 a.m. EDT

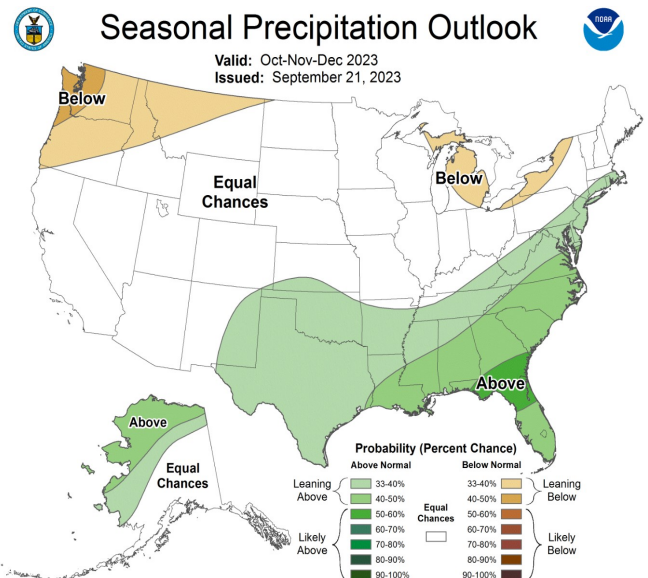


the latest report from the U.S. Drought Monitor, abnormally dry conditions increased slightly from last month and moderate drought conditions decreased for areas along the Basin's coast (top).

Groundwater levels saw an increase the last half of September and are currently above the historic minimums except for C-1224 which is currently below the historic minimum.

Based

on the National Weather Service's 30-day forecast, there is an equal chance of normal precipitation and normal temperatures (left). The 3-month projection for the Basin predicts a 40-50% chance of above normal precipitation (right) and a 40-50% likelihood of above-average temperatures. Long term dry season outlooks indicate above average rainfall chances for Florida from November through April 2024.



BCB RAINFALL

As measured by twenty-four (24) reporting stations (ref. **Figures 1, 2, Table 1**), the basin-wide monthly average was **7.5 inches (81% of normal)**, which is well below the average **9.3 inches** typically collected.

Based on collected gauge and radar data, the rainfall distribution across the Basin was not very uniform and ranged from almost 3 inches to an extreme of almost 13 inches. **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 **10.84 inch** areal average across the watershed and the lowest was the Coastal basin with about **4.57 inches**. The Basin's total areal weighted average rainfall was **8.12 inches**. The month's highest gauge total was collected at SGGE Weather Station (Site R-7), which received **12.74 inches**. This month's lowest rainfall was recorded at Marco R.O. Plant (Site R-15), which received **2.51 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 canals were maintained in water conservation mode during the month to hold as much water as possible to promote groundwater recharge. There were no discharges through coastal structures until the latter part of September. Water levels increased throughout most of the system as a result of much-needed rainfall. The majority of the system is currently above the 25th percentile (**Figure 4a**).

- **GOLDEN GATE SYSTEM**

Control structures in the Golden Gate Main canal system were maintained in dry season operations for the month to conserve as much water as possible to promote groundwater recharge. There were no discharges into tidal waters until the last half of September. Discharges into tidal waters from GG1 starting May 1st and ending October 1st were only 5,920 acre-ft which is only 4% of average. Water levels in the lower (coastal GG1) part of the system are above the 75th percentile. The middle reaches (GG3 to GG5) are all above the 75th percentile. The upper reach (GG5 to GG7) is above the 75th percentile except for GG5 which is above the 25th percentile (**ref Figure 5A & 5B**):

- **COCOHATCHEE SYSTEM**

All of the control structures in the Cocohatchee and Corkscrew canal systems were maintained in dry season operations for the month to conserve as much water as possible and promote groundwater recharge. There were no discharges into tidal waters until the last half of September. Discharges into tidal waters starting May 1st through October 1st were only 46 acre-feet which is only 0.1% of average. Water levels in the Cocohatchee system are above the 50th percentile. Water levels in the Corkscrew system increased for the month of September and are currently above the 50th percentile (**ref Figure 6A, 6B, & 6C**).

- **FAKA UNION SYSTEM**

The entire Faka Union system was operated in water conservation mode. The month of September saw canal levels increase and currently FU5's water level is above the 75th percentile, FU4S is above the 25th percentile and FU1 is above the 50th percentile (**ref Figure 7A & 7B**).

- **HENDERSON CREEK SYSTEM**

Water control structures in the Henderson Creek system remained fully closed for September to conserve water and promote groundwater levels. There were no discharges into tidal waters for September. Canal levels experienced an increase in HC1 and HC2 through most of

September and are currently above the 25th percentile (ref **Figure 8A & 8B**).

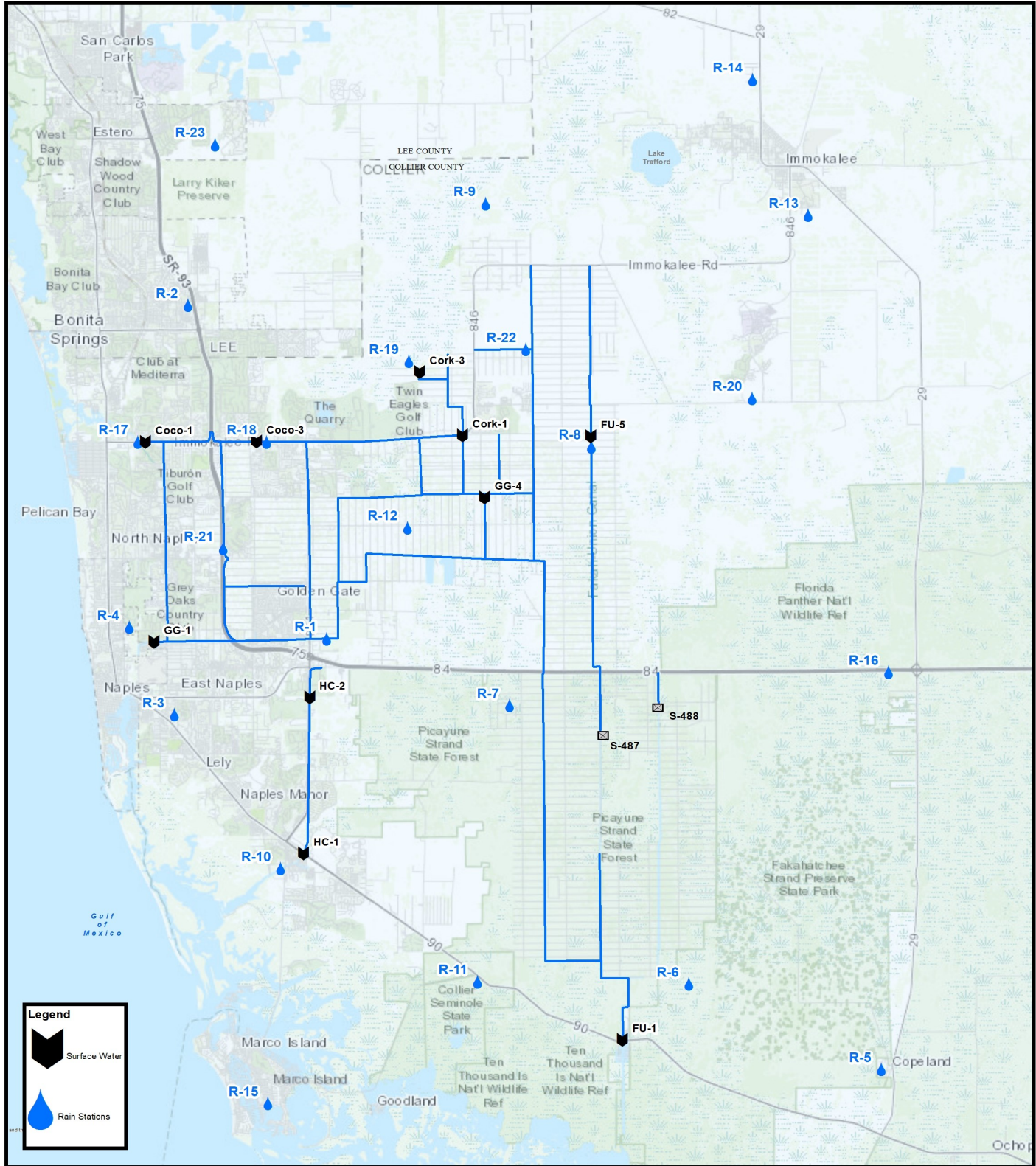
- **CORKSCREW SWAMP**

Figure 10 shows the historical trends for Corkscrew, Bird Rookery, and the Cork 3 structure and the 2023 corresponding levels. Corkscrew, Bird Rookery and Cork3 water levels increased for September due to much-needed rainfall in the latter half of the month. Corkscrew is currently above the 50th percentile, Bird Rookery is slightly below the historic minimum and Cork 3 is above the 50th percentile. Lake Trafford water levels increased throughout the month and is currently above the 10th percentile heading into October (**Figure 11**).

Figure 12 and Figure 13 shows the locations for Southern Corkscrew (SOCREW) sites 1 through 6 and the historical trends for SOCREW1 and SOCREW2. SOCREW sites 3, 4, 5 and 6 only have a period of record for a little over a year. All SOCREW sites are surface and shallow groundwater wells and their corresponding locations are depicted on **Figures 12 and 13**. SOCREW1 and SOCREW 2 both saw a decrease in groundwater levels the beginning of September but the last half of the month water levels increased heading into October. Both monitoring wells are above the 10th percentile at the beginning of October. In comparison to this time last year water levels for SOCREW3 are down 1.3 feet, SOCREW 4 is down 1.2 feet, SOCREW5 is down 1.1 feet and SOCREW6 is down 2.4 feet.

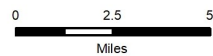
BIG CYPRESS BASIN & LOWER WEST COAST GROUNDWATER LEVELS

The current reporting (10/02/2023) for the Lower West Coast [LWC] indicate an increase in groundwater wells from the previous reporting in August. All of the groundwater levels increased throughout September with the exception of C-948R which showed a decrease in water level. Despite the much needed rainfall the latter part of September most of the groundwater levels are still near their respective historic minimums with the exception of C-462 which is above the 75th percentile. All reported wells in **Table 2** show an average increase of 2.03 feet. C-1004R recorded the largest increase of 3.53 feet, and C-1224 the smallest increase of 0.18 feet (ref. **Table 2, Figure 9**).



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BIG CYPRESS BASIN
 SFWMD
 2660 Horseshoe Dr. N.
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 239-263-7615

FIGURE 1

Hydrologic Station Map

Collier County, Florida



hydrolog_map_jul_2021.mxd

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

STATION INDEX NO.	STATION NAME	SEPTEMBER 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	9.17	11.40	-2.23	38.22	58.89	-20.67
R-2	BONITA SPRINGS WATER PLANT	6.45	8.19	-1.74	32.36	45.54	-13.18
R-3	COLLIER COUNTY COURTHOUSE	3.48	8.64	-5.16	30.05	46.31	-16.26
R-4	FREEDOM PARK	4.28	9.87	-5.59	23.71	51.58	-27.87
R-5	FAKAHATCHEE STRAND HQ	6.47	9.16	-2.69	31.87	52.86	-20.99
R-6	DAN HOUSE PRAIRIE	5.54	8.75	-3.21	37.52	45.92	-8.40
R-7	SGGE WEATHER STATION	12.74	11.10	1.64	43.10	55.32	-12.22
R-8	FAKA UNION #5	5.58	9.72	-4.14	37.32	56.81	-19.49
R-9	CORKSCREW SWAMP NORTH END	5.79	7.86	-2.07	38.80	45.67	-6.87
R-10	ROOKERY BAY HQ	5.75	10.01	-4.26	25.39	49.28	-23.89
R-11	COLLIER SEMINOLE STATE PARK	8.89	9.53	-0.64	34.32	49.94	-15.62
R-12	G.G. FIRE STATION	12.22	9.11	3.11	34.21	52.21	-18.00
R-13	IMMOKALEE LANDFILL	6.97	8.10	-1.13	32.20	45.79	-13.59
R-14	IFAS	11.03	7.03	4.00	43.27	44.03	-0.76
R-15	MARCO R.O. PLANT	2.51	8.58	-6.07	25.16	46.04	-20.88
R-16	FAKAHATCHEE STRAND NORTH END	12.49	8.57	3.92	46.70	52.92	-6.22
R-17	COCO#1	4.54	8.03	-3.49	25.60	42.70	-17.10
R-18	COCO#3	4.13	9.32	-5.19	29.96	50.12	-20.16
R-19	BIRD ROOKERY	9.16	10.63	-1.47	38.01	56.04	-18.03
R-20	AVE MARIA	8.09	8.33	-0.24	29.41	47.31	-17.90
R-21	I75W2	8.47	10.94	-2.47	30.63	54.66	-24.03
R-22	GG#7	9.37	10.76	-1.39	33.92	52.41	-18.49
R-23	FPWX	6.07	9.24	-3.17	33.04	48.31	-15.27
R-24	DSOTO10	10.56	New Site	New Site	New Site	No Historical Data	
AVERAGES		7.49	9.26	-1.77	33.69	50.03	-16.34

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

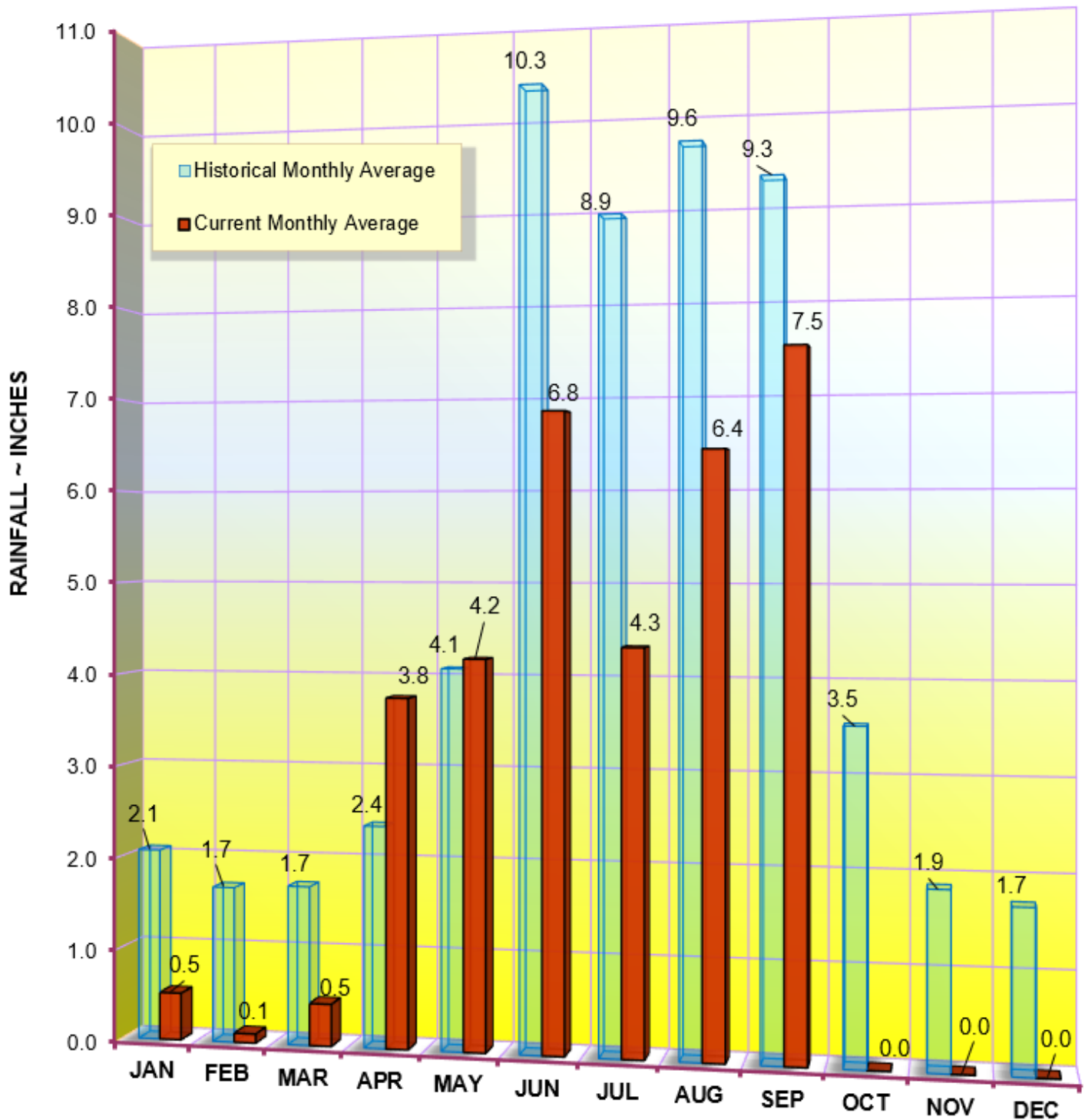


FIGURE 2
BCB GAUGE RAINFALL
MONTHLY AVERAGES THROUGH SEPTEMBER 2023

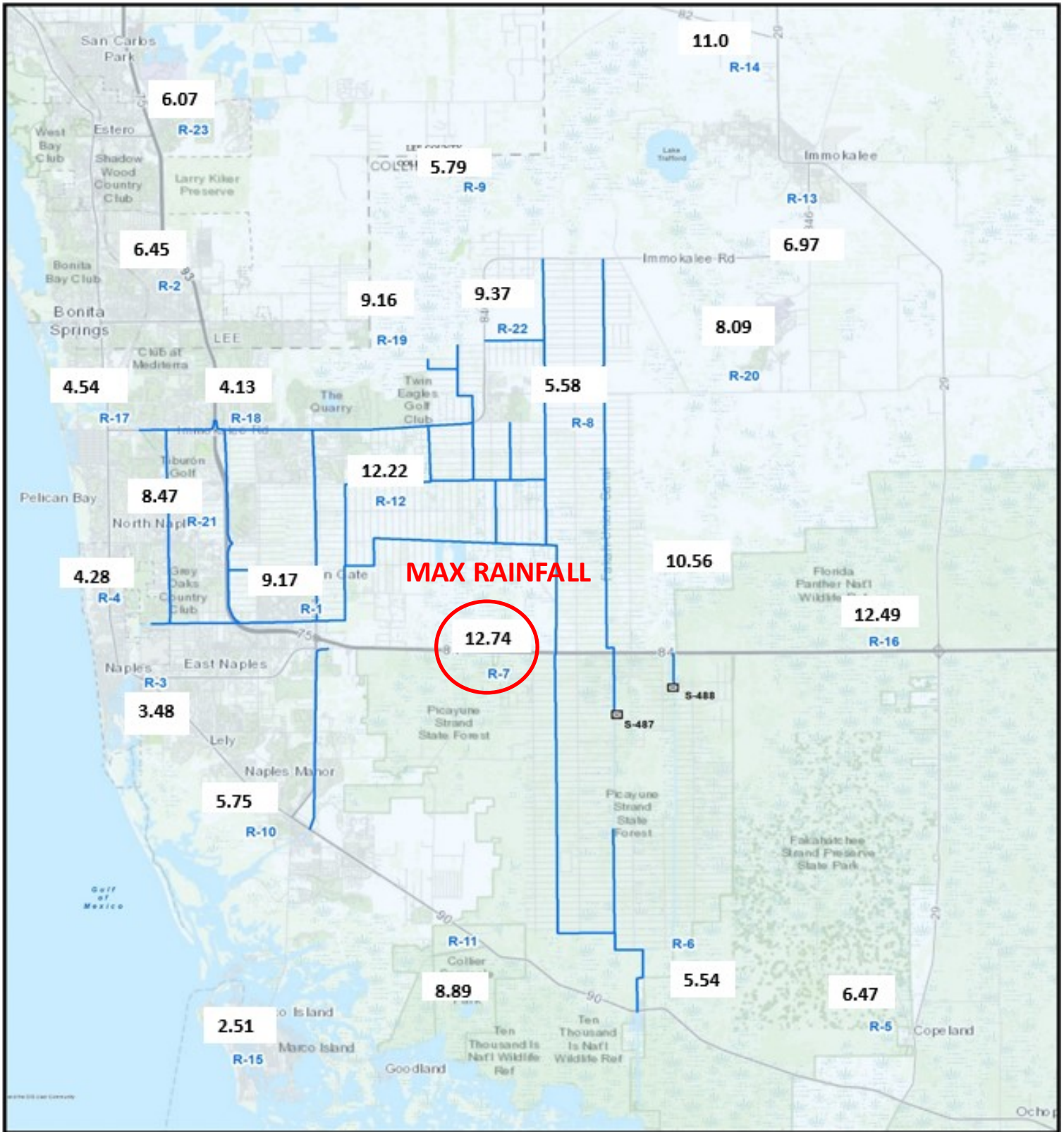


FIGURE 3
BCB RAINFALL DISTRIBUTION
SEPTEMBER 2023

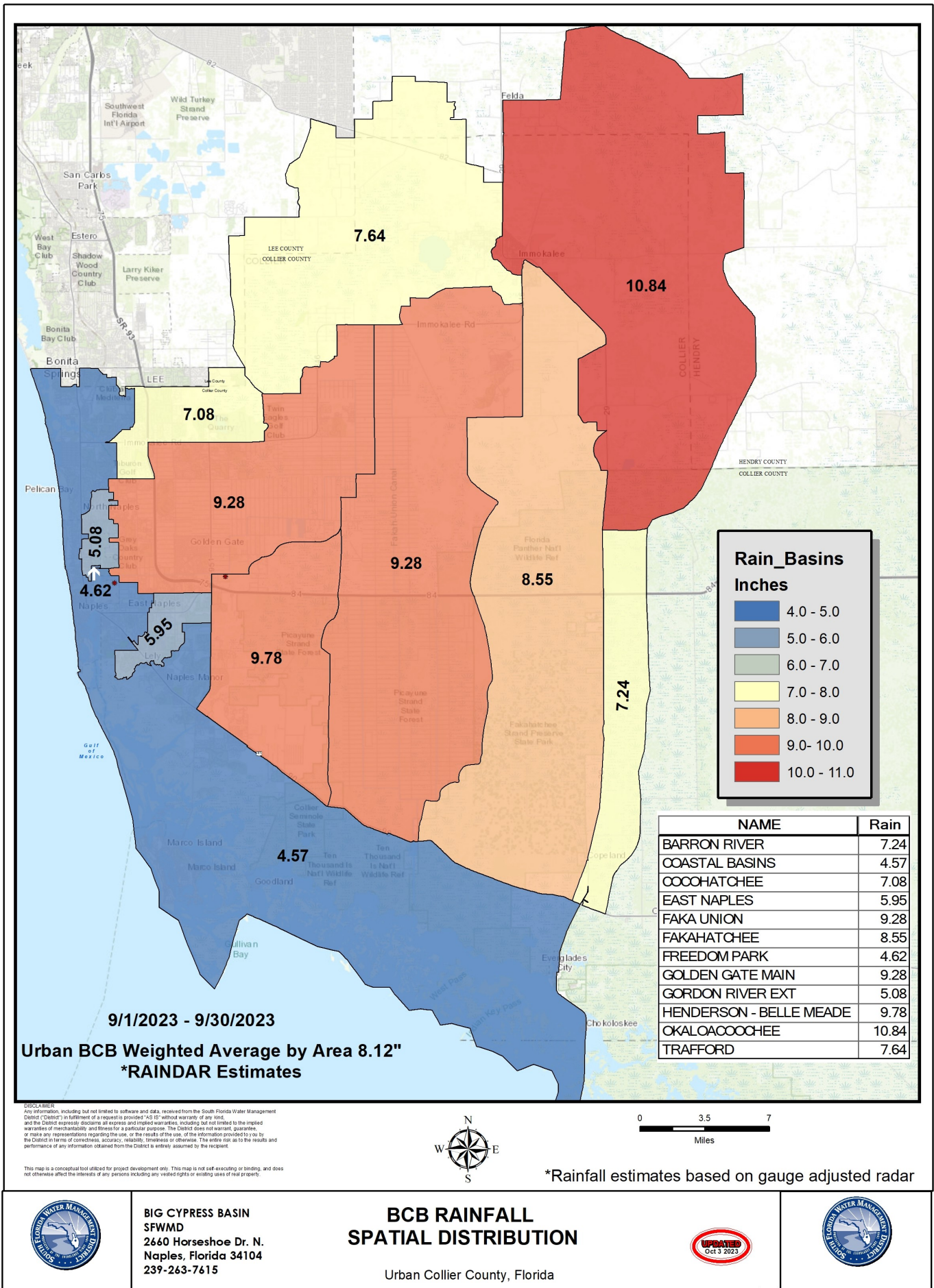


FIGURE 3a

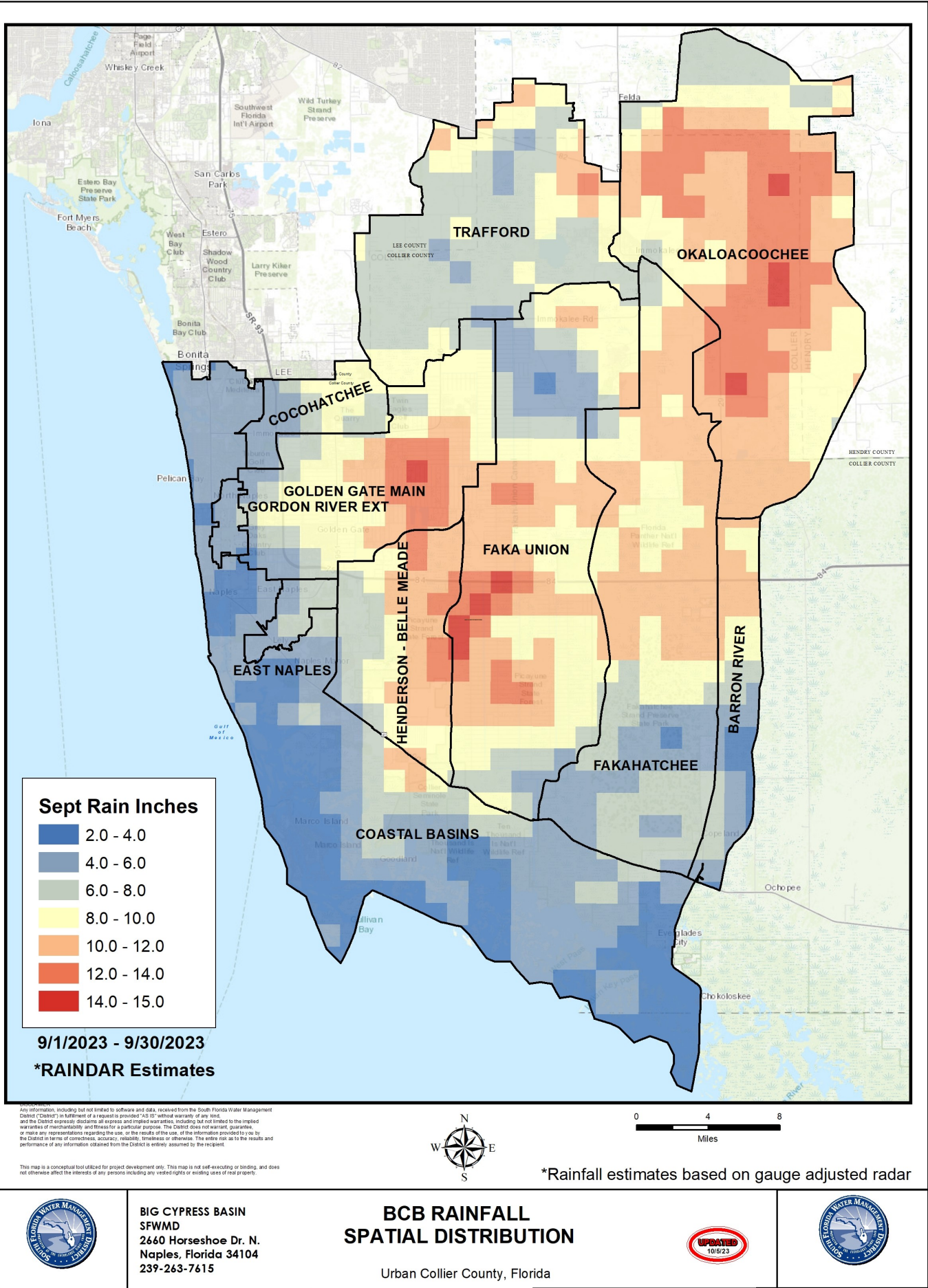
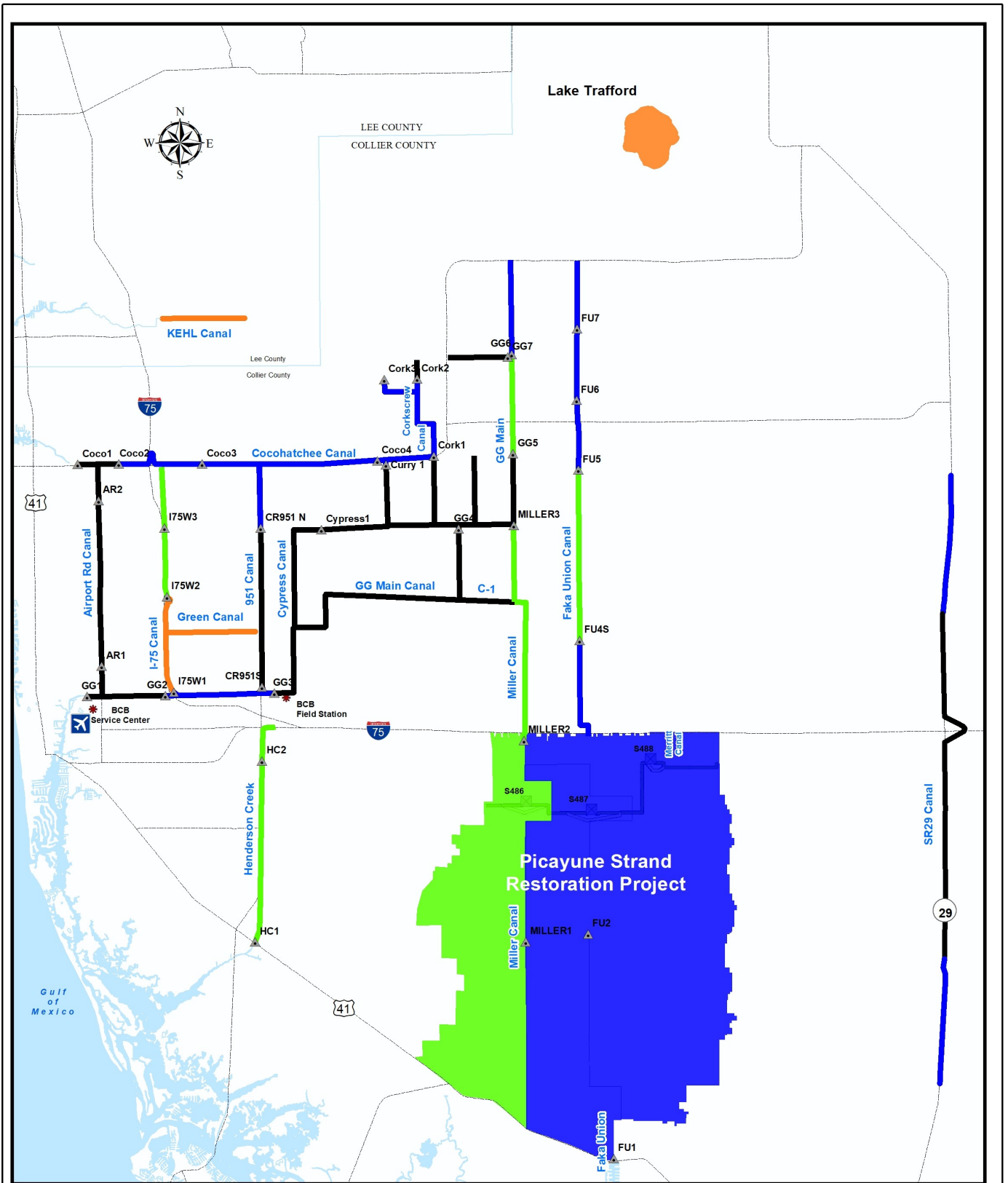
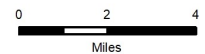


FIGURE 4



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* Based on period of record for each canal reach



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2660 Horseshoe Dr. N.
Naples, Florida 34104
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**BCB Conditions Index
10/3/23**

Urban Collier County, Florida



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FIGURE 4A

Figure 5 Golden Gate Canal Historic Average Daily Headwater Percentiles

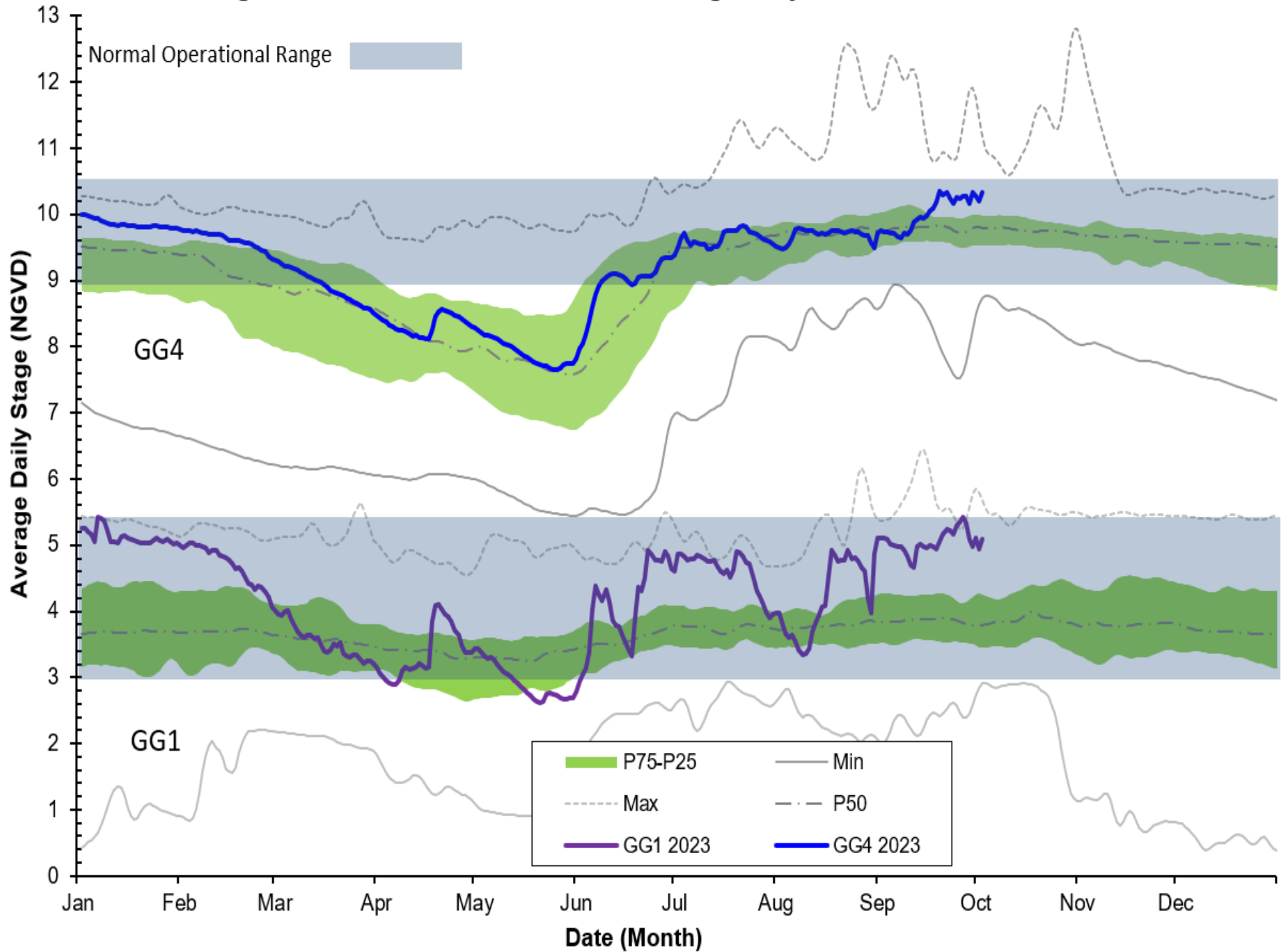


Figure 6A Cocohatchee Canal Historic Average Daily Headwater Percentiles

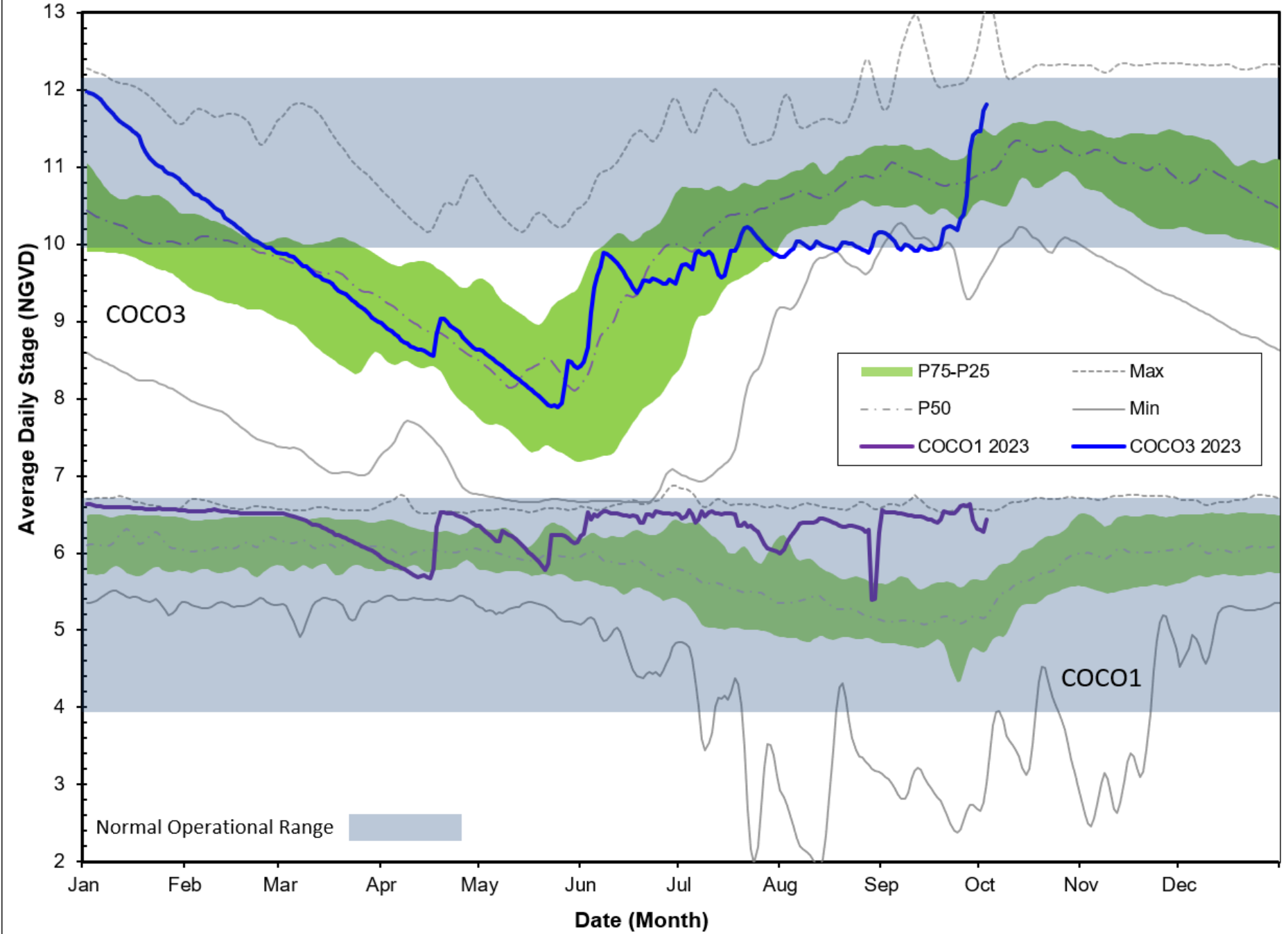


Figure 6B - CORK1 Historic Daily Headwater Percentiles (1989 - 2022)

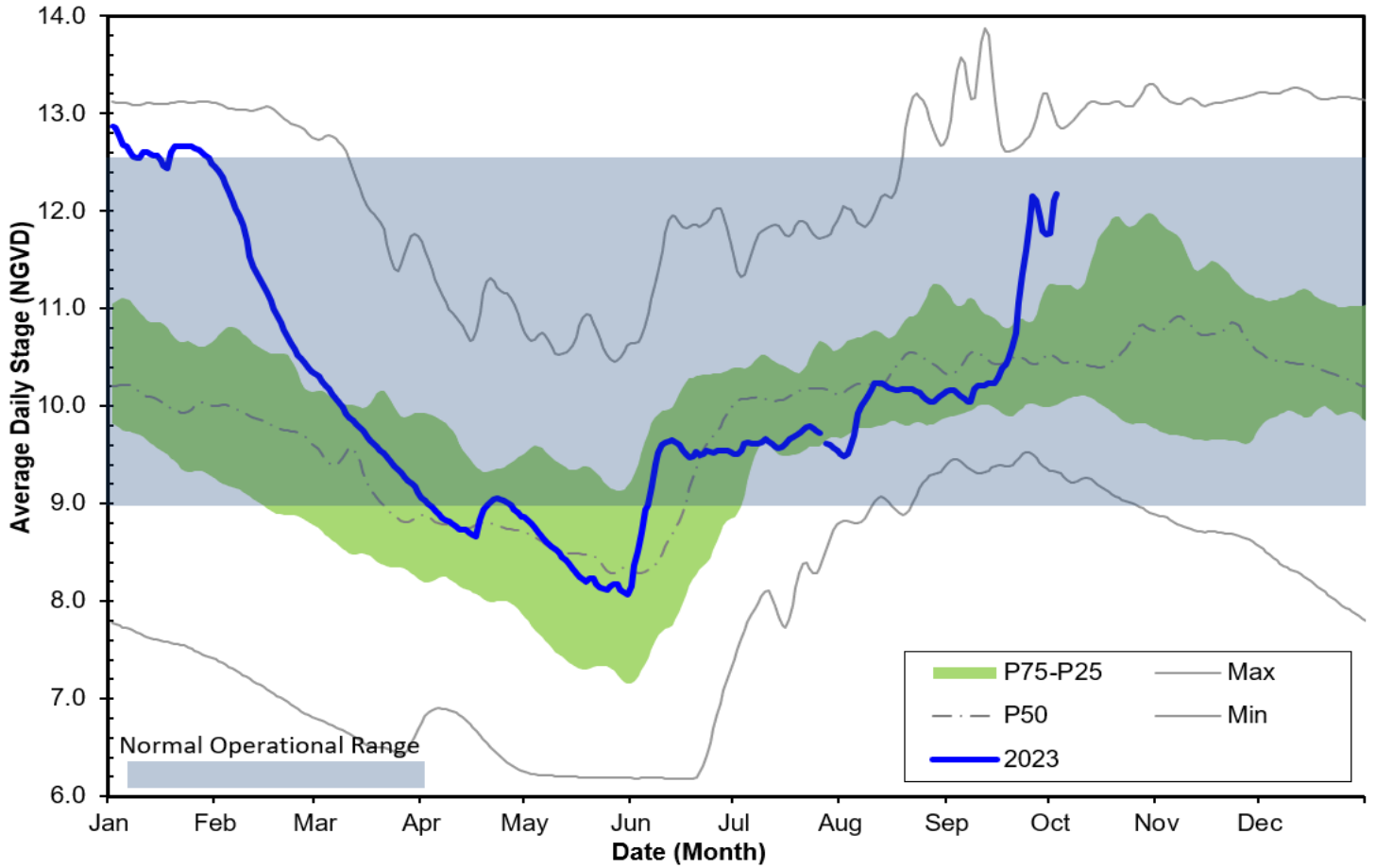


Figure 6C - CORK3 Historic Daily Headwater Percentiles (2004 - 2022)

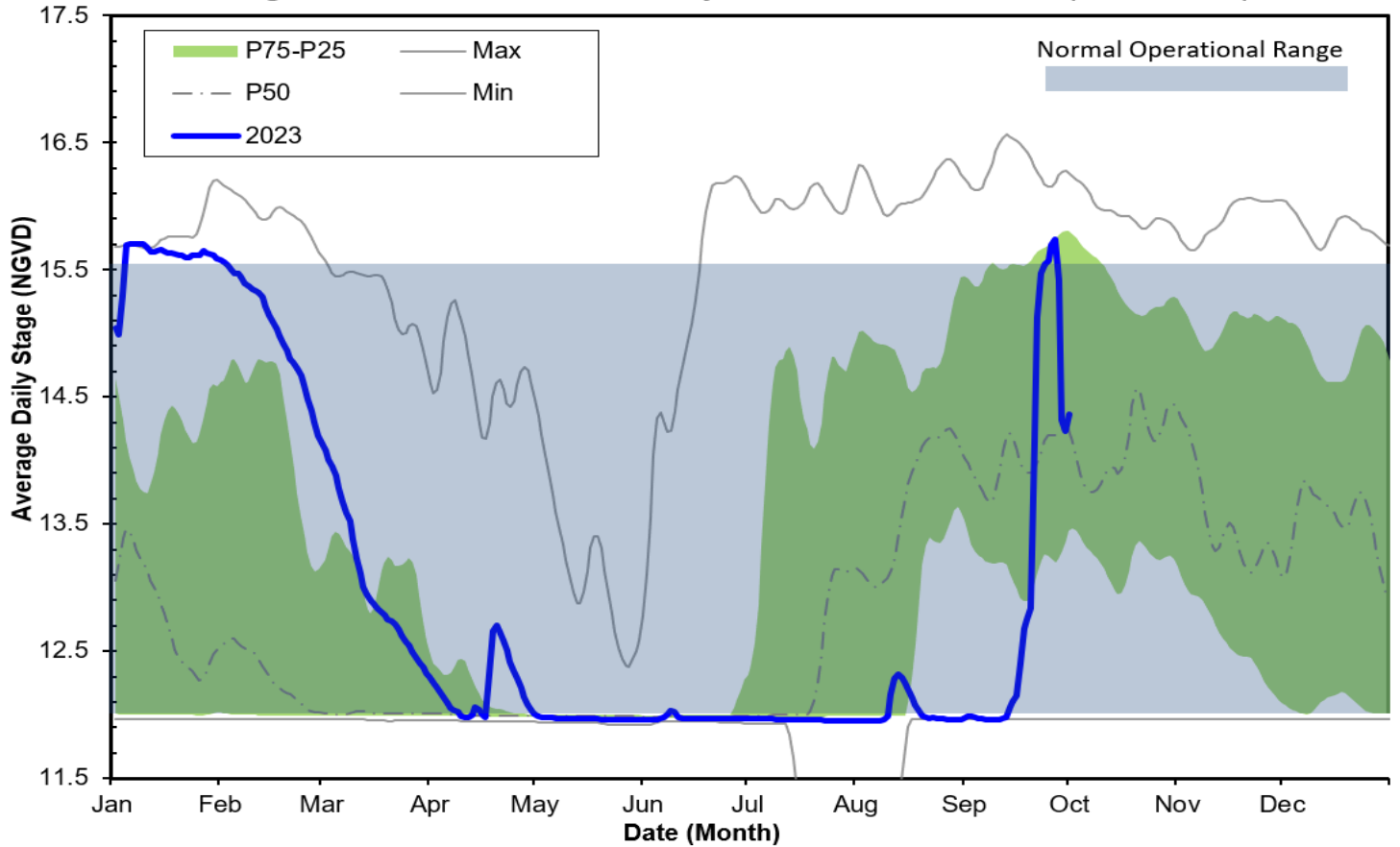


Figure 7A Faka Union Canal Historic Average Daily Headwater Percentiles

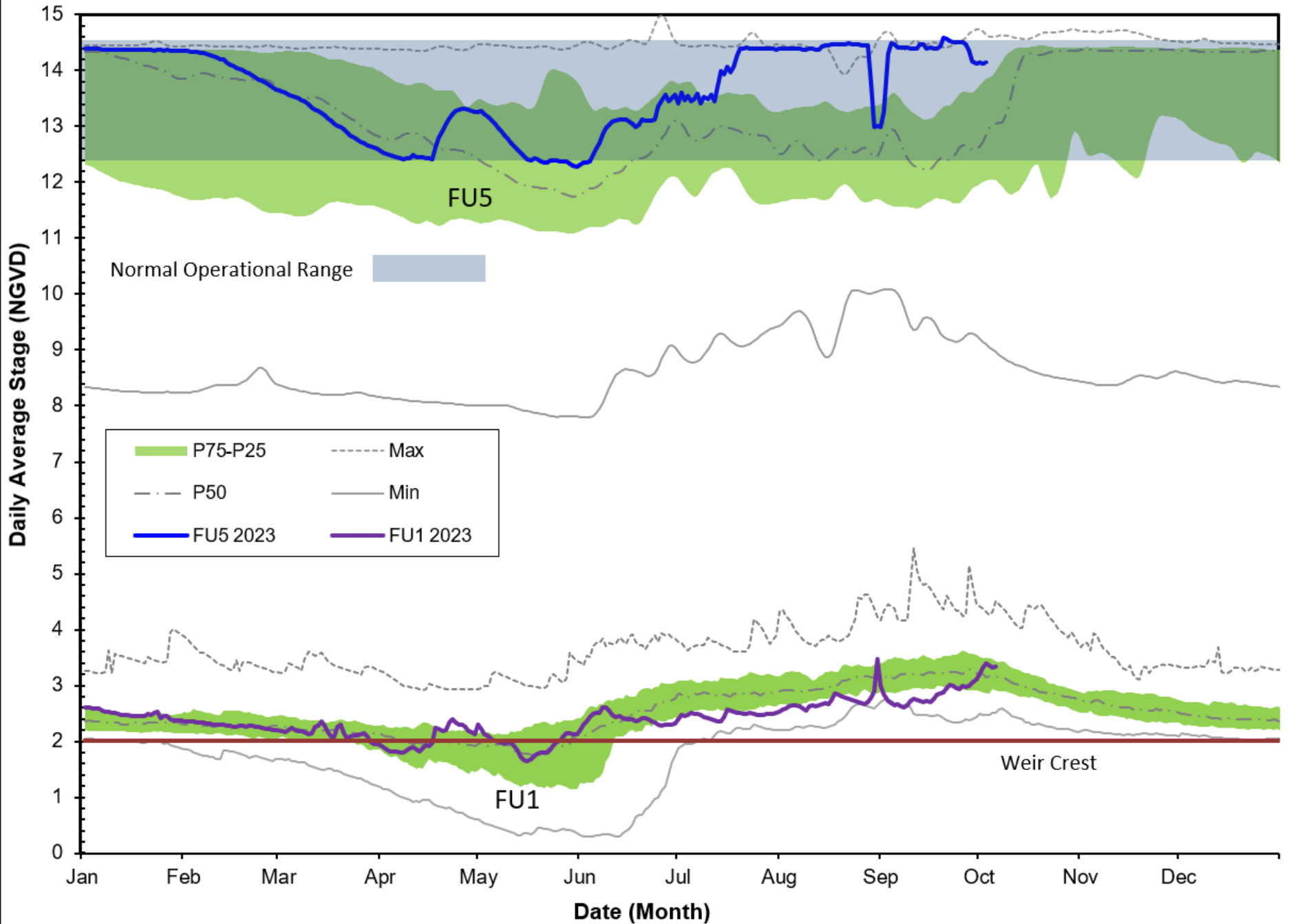


Figure 7B FU4S Historic Average Daily Water Percentiles

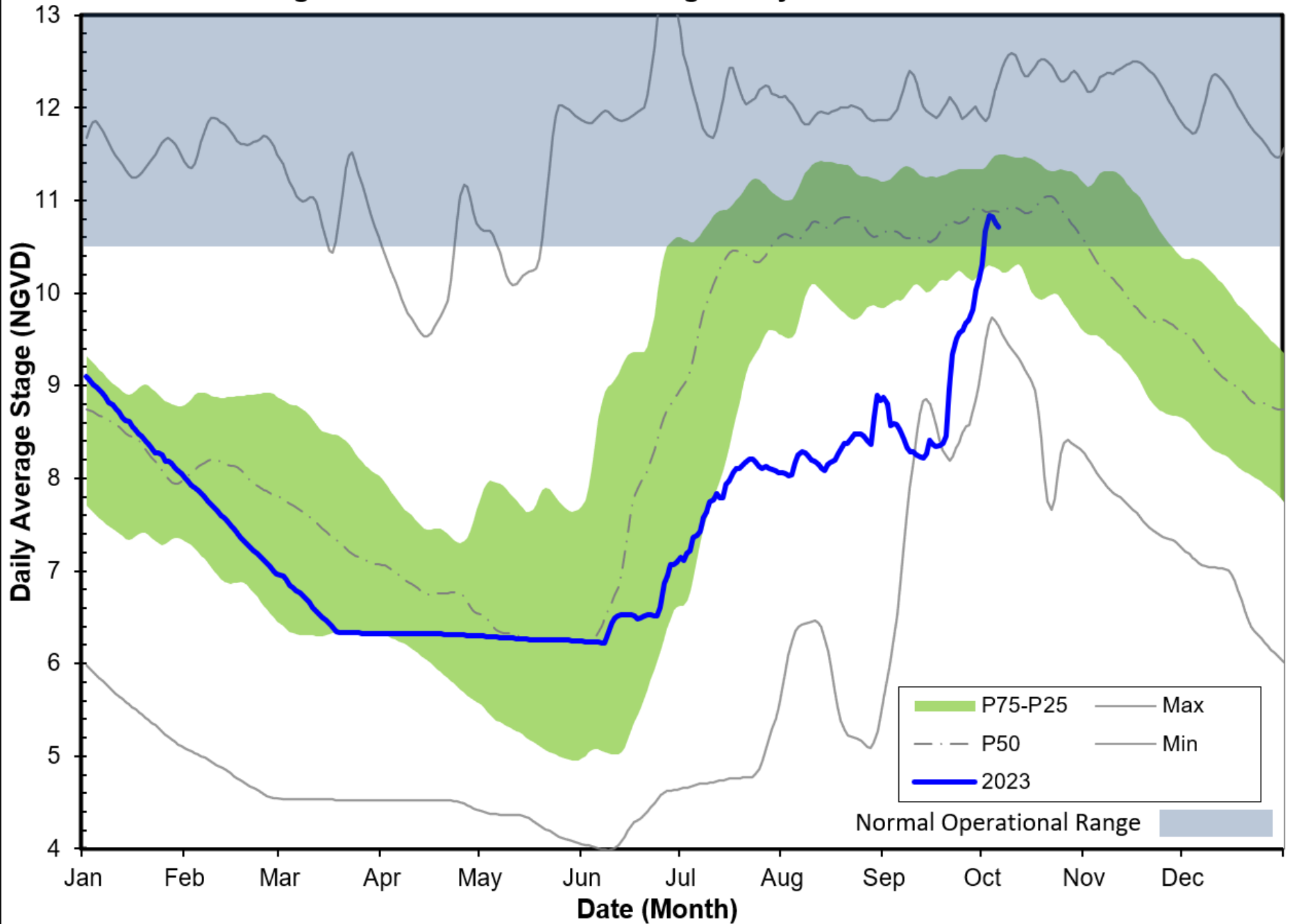


Figure 8A HC1 Historic Average Daily Headwater Percentiles

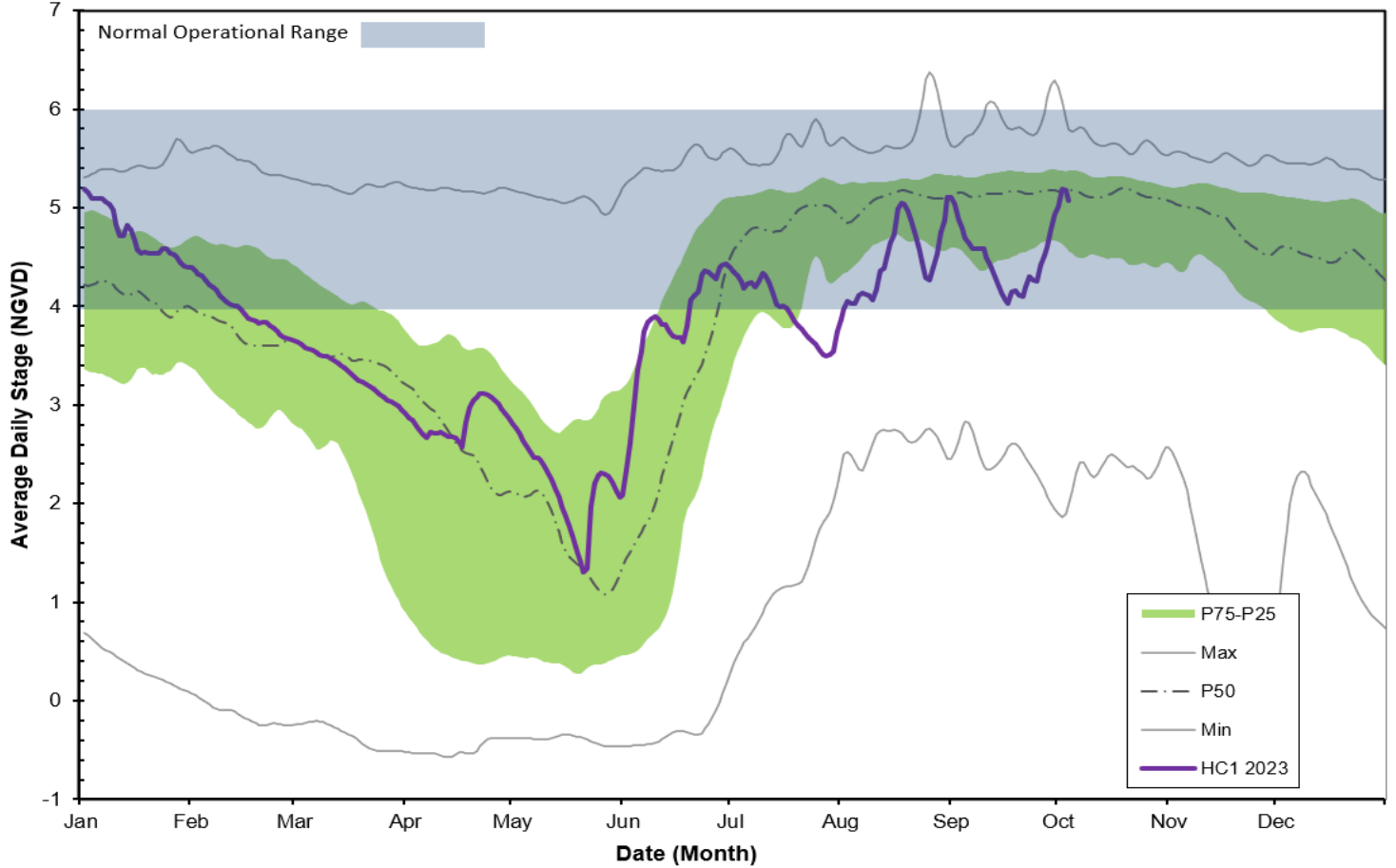
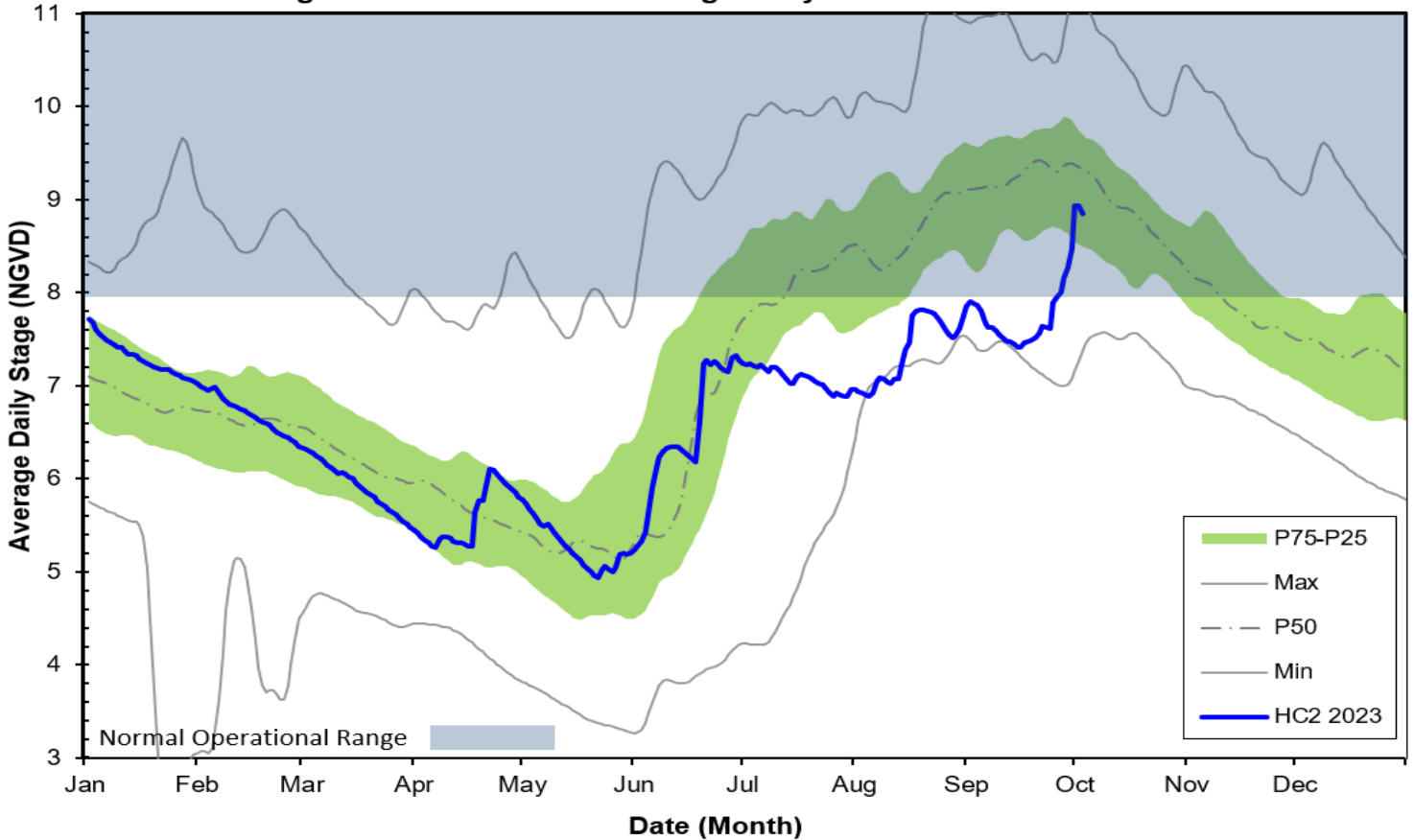


Figure 8B HC2 Historic Average Daily Headwater Percentiles



WATER CONDITIONS SUMMARY - September 2023

SELECTED STATIONS for BCB AREA / SW FLORIDA

Last Reading Date :		October 2, 2023					
Previous Period Reading Date:		September 5, 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	2.46	32.33	34.79	↑	GREEN
C-1004R	Naples	Lower Tamiami Aquifer	3.53	-0.34	3.19	↑	YELLOW
C-1224	Marco Lakes	Lower Tamiami Aquifer	0.18	3.40	3.58	↑	GREEN
C-948R	Golden Gate	Mid Hawthorn Aquifer	-2.13	32.71	30.58	↓	
C-951R	Golden Gate	Lower Tamiami Aquifer	2.82	3.02	5.84	↑	
L-2194	Bonita Springs	Sandstone Aquifer	2.22	3.21	5.43	↑	GREEN
L-2195	Bonita Springs	Surficial Aquifer System	0.78	9.85	10.63	↑	GREEN
L-738	Bonita Springs	Lower Tamiami Aquifer	2.25	-1.07	1.18	↑	GREEN

**TABLE 2
BCB WATER CONDITIONS SUMMARY
SEPTEMBER 2023**

BIG CYPRESS BASIN

SEPTEMBER 2023

GROUNDWATER LEVEL DAILY TRENDS COMPARED TO HISTORICAL AVERAGE

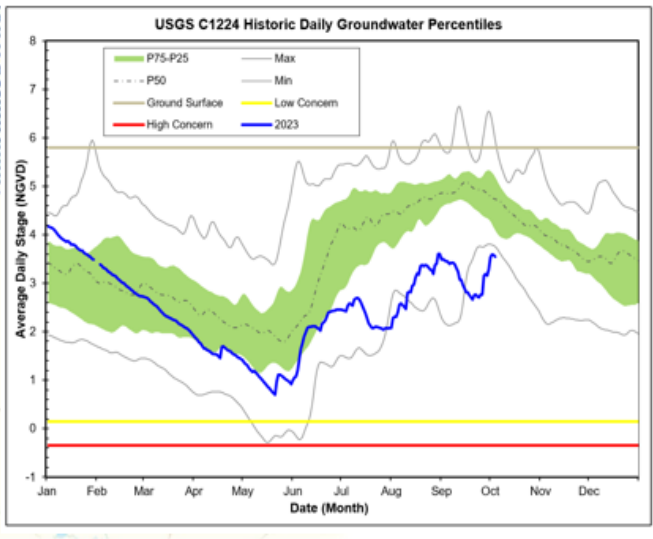
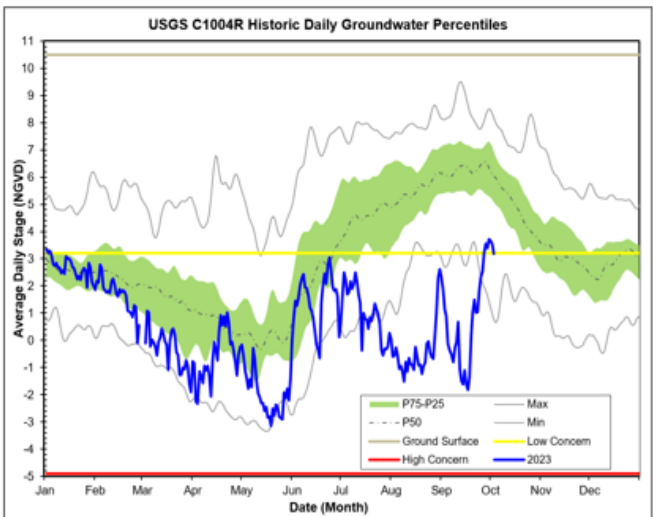
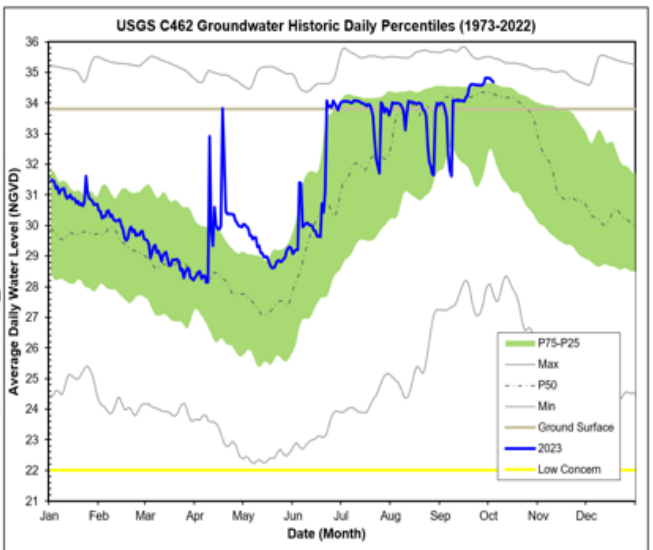
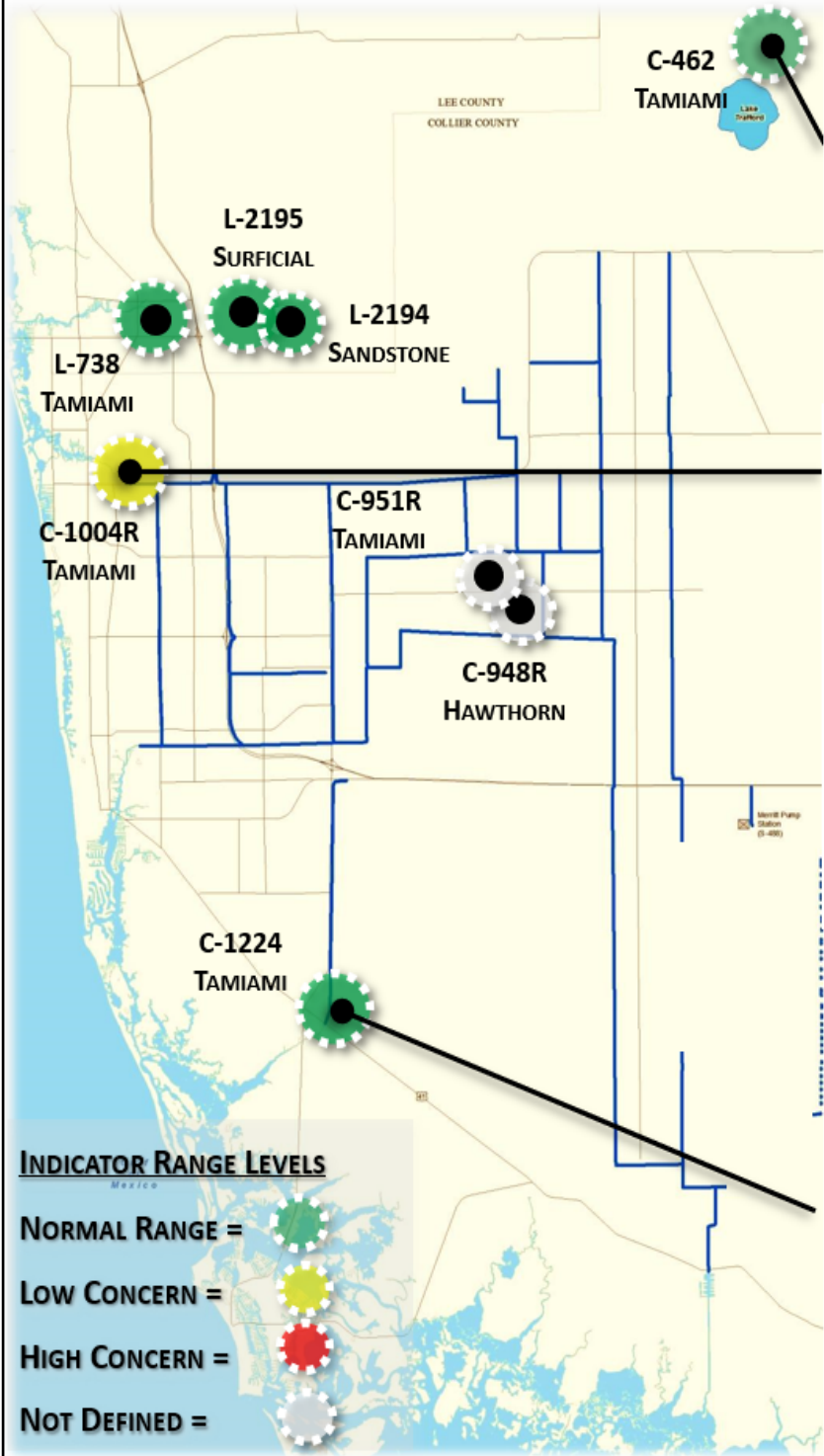


FIGURE 9

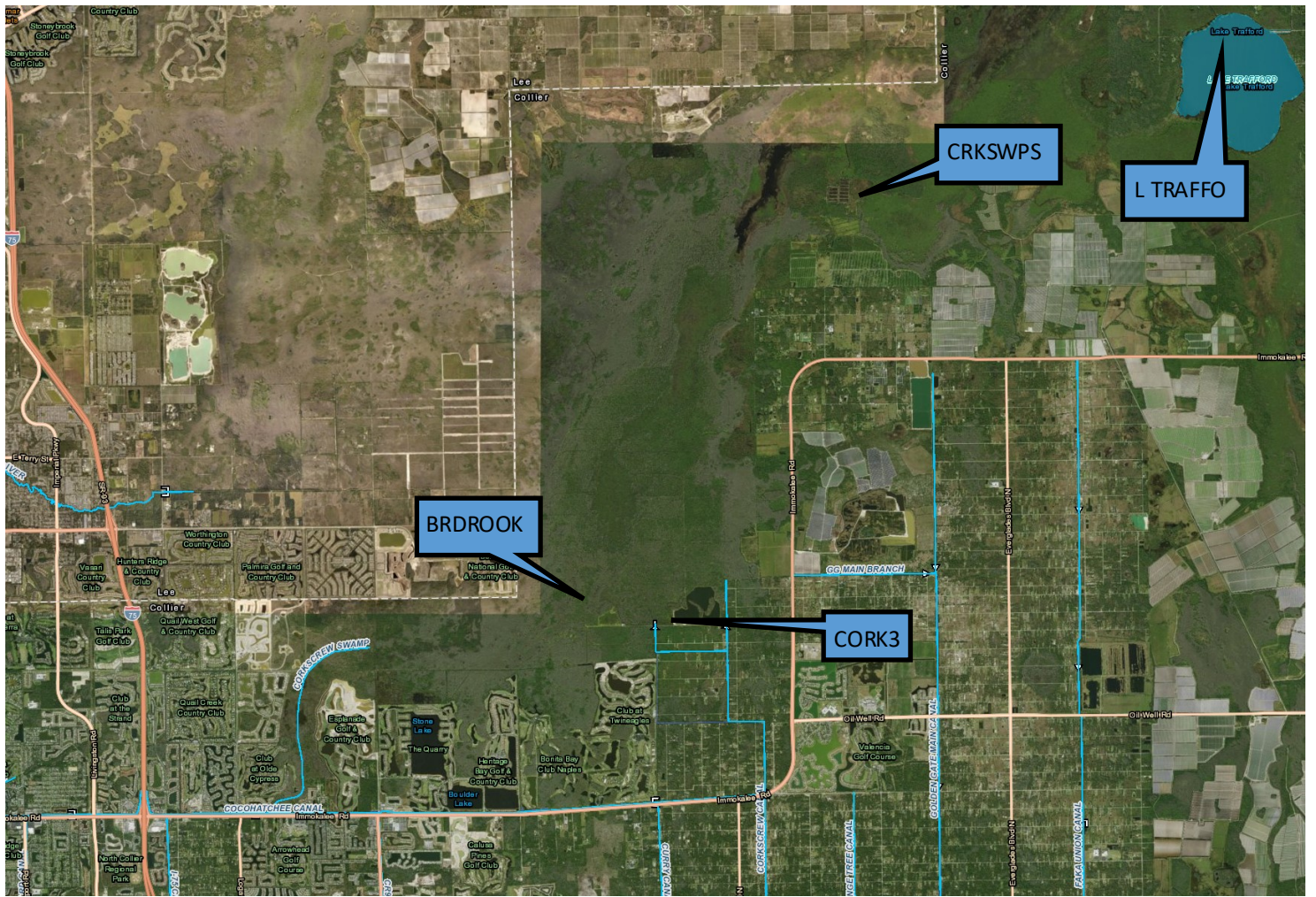


Figure 10-Corkscrew Historic Average Daily Headwater Percentiles(1984-2022)

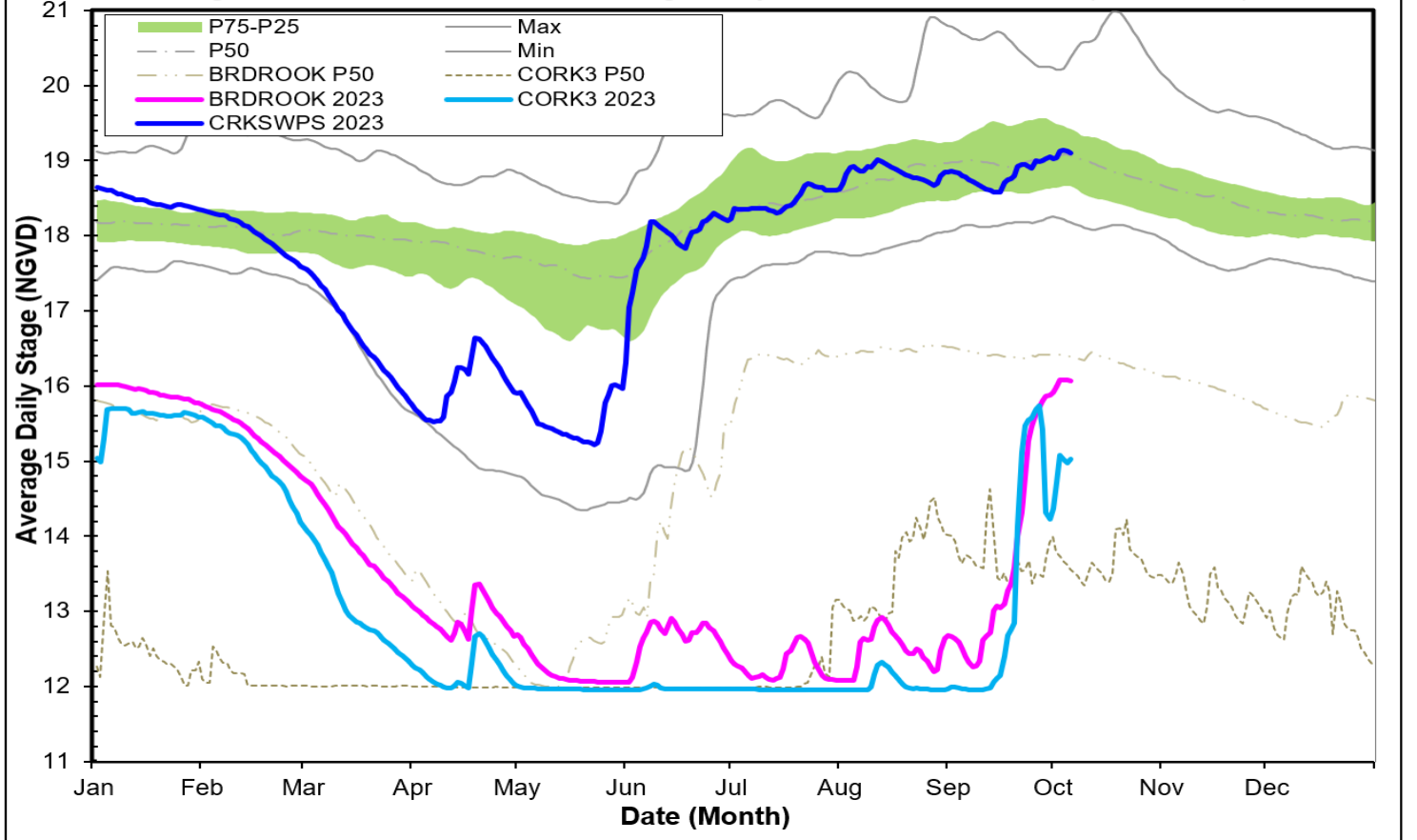
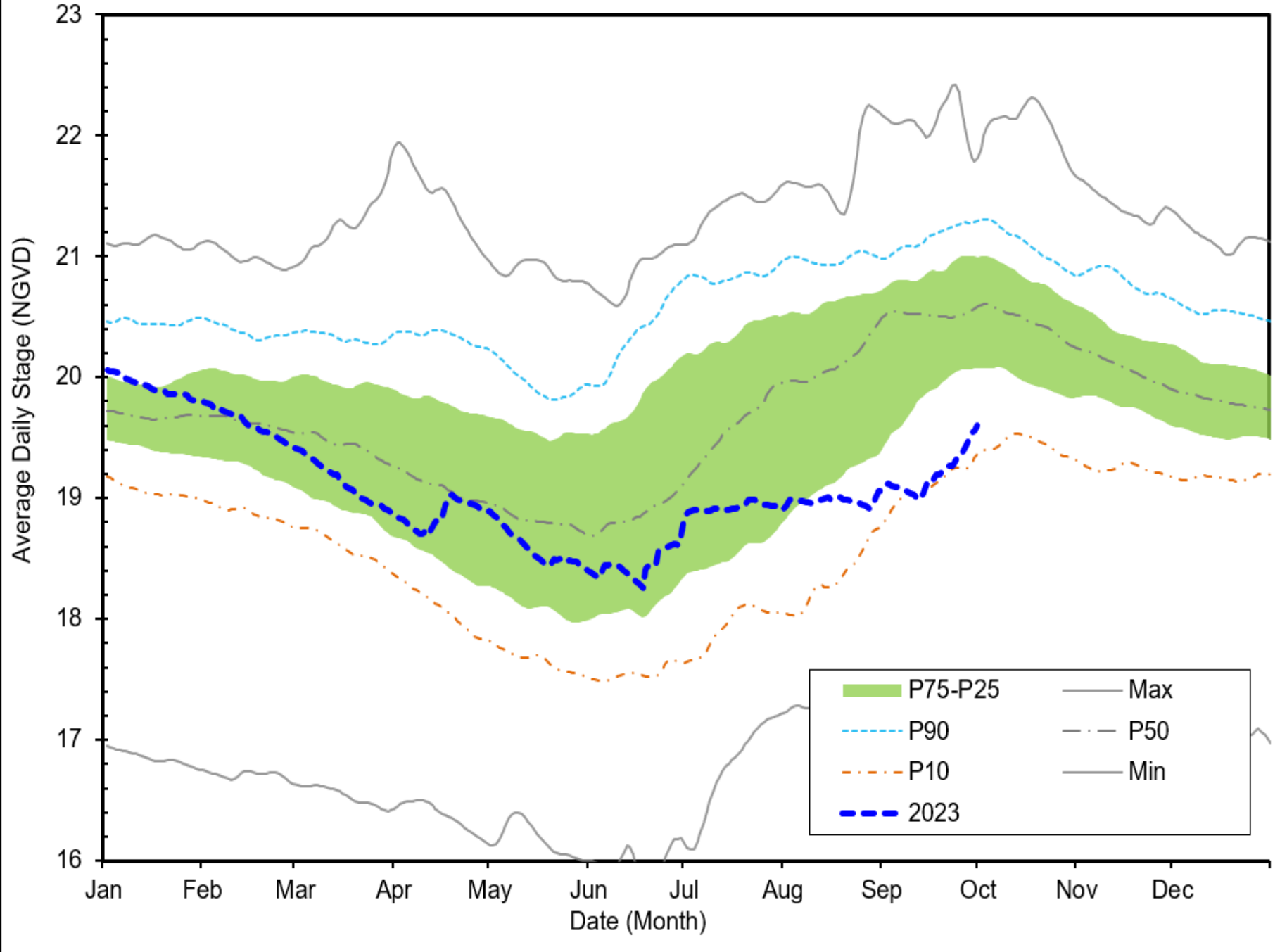
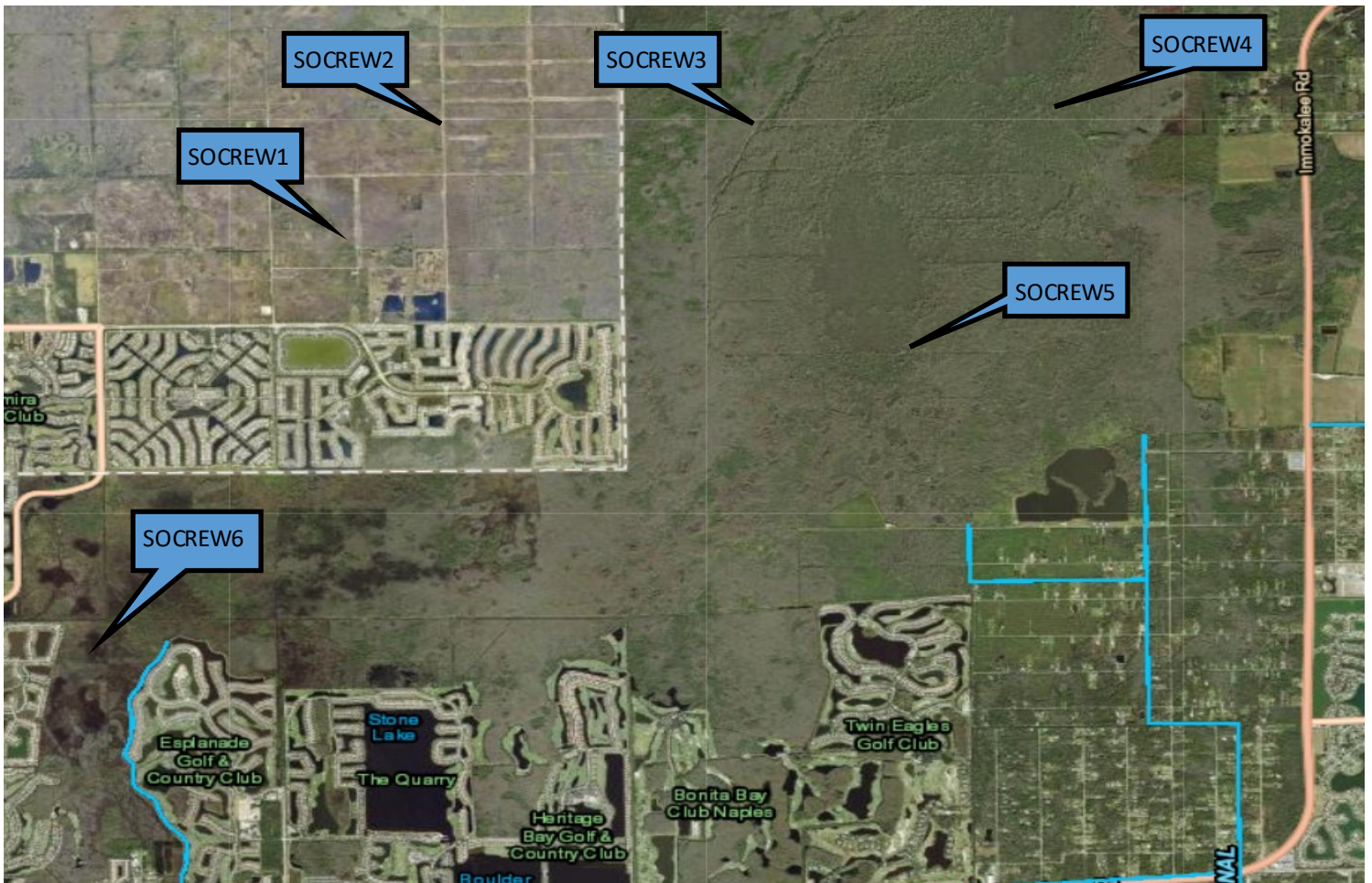
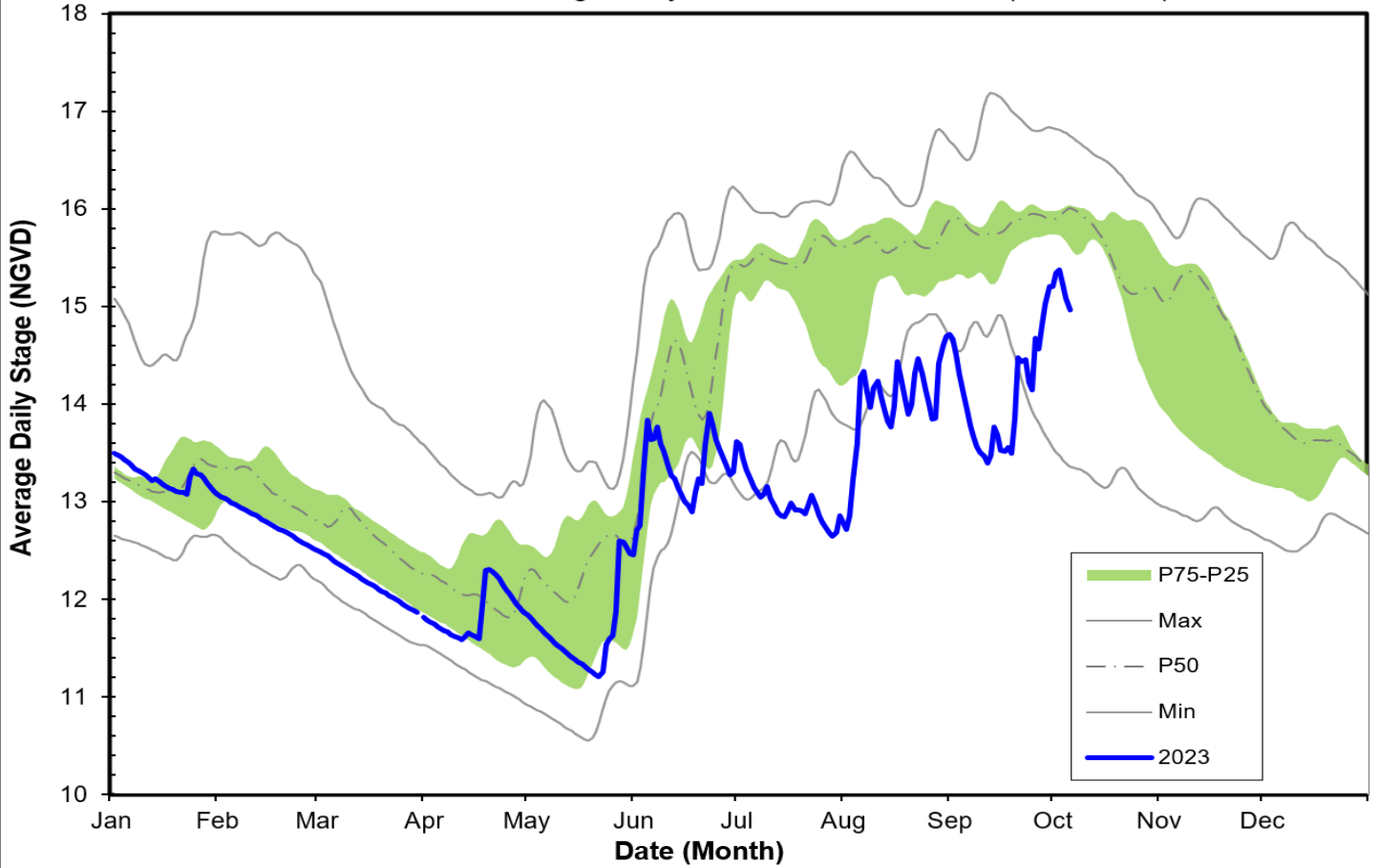


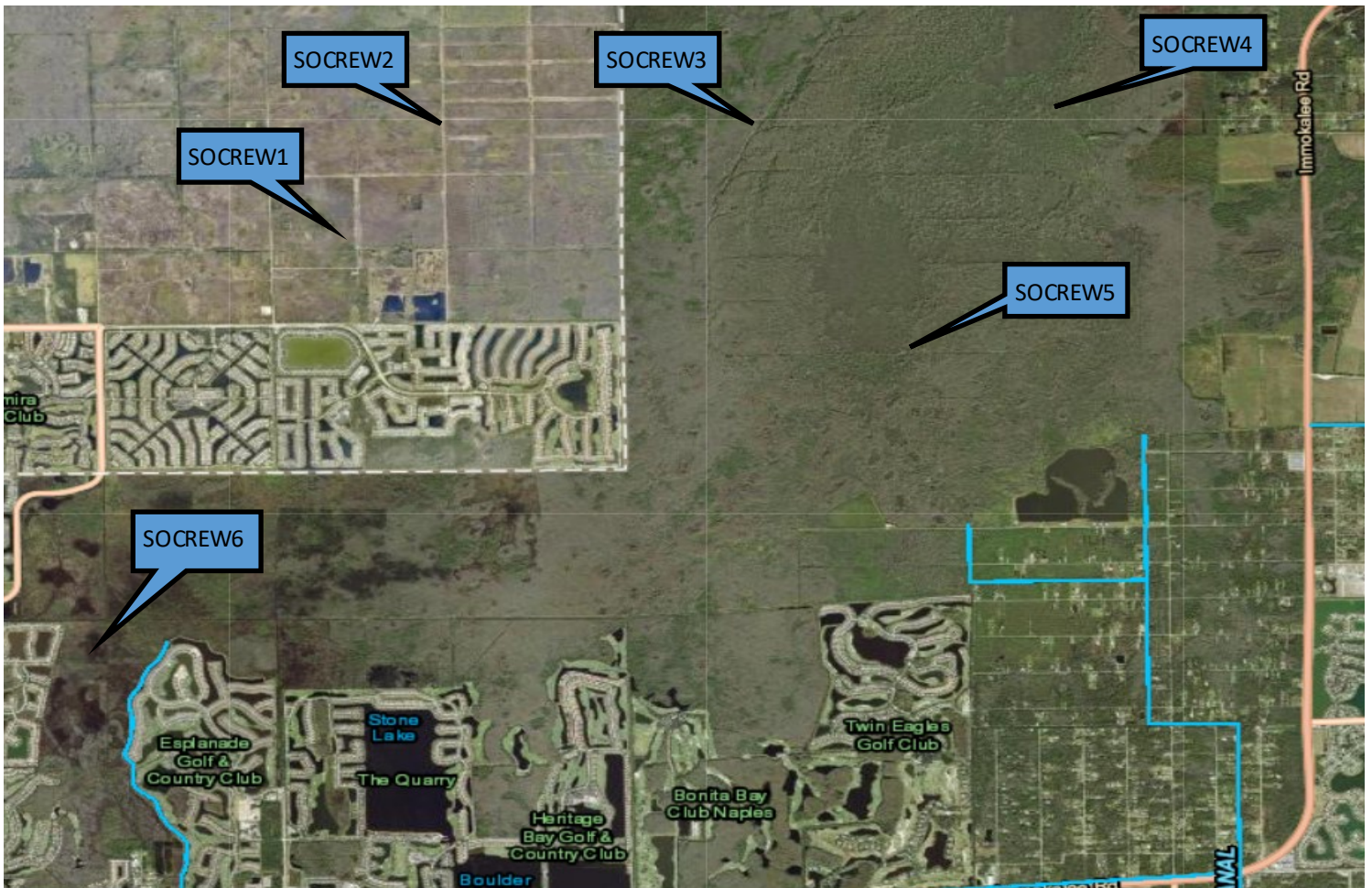
Figure 11 Lake Trafford Historic Daily Headwater Percentiles (1941 - 2022)





SOCREW1 Historic Average Daily Headwater Percentiles (2016-2022)





SOCREW2 Historic Average Daily Headwater Percentiles (2016-2022)

