

APRIL 2024

BIG CYPRESS BASIN HYDROLOGIC REPORT



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SUMMARY OF HYDROLOGIC CONDITIONS IN THE BIG CYPRESS BASIN

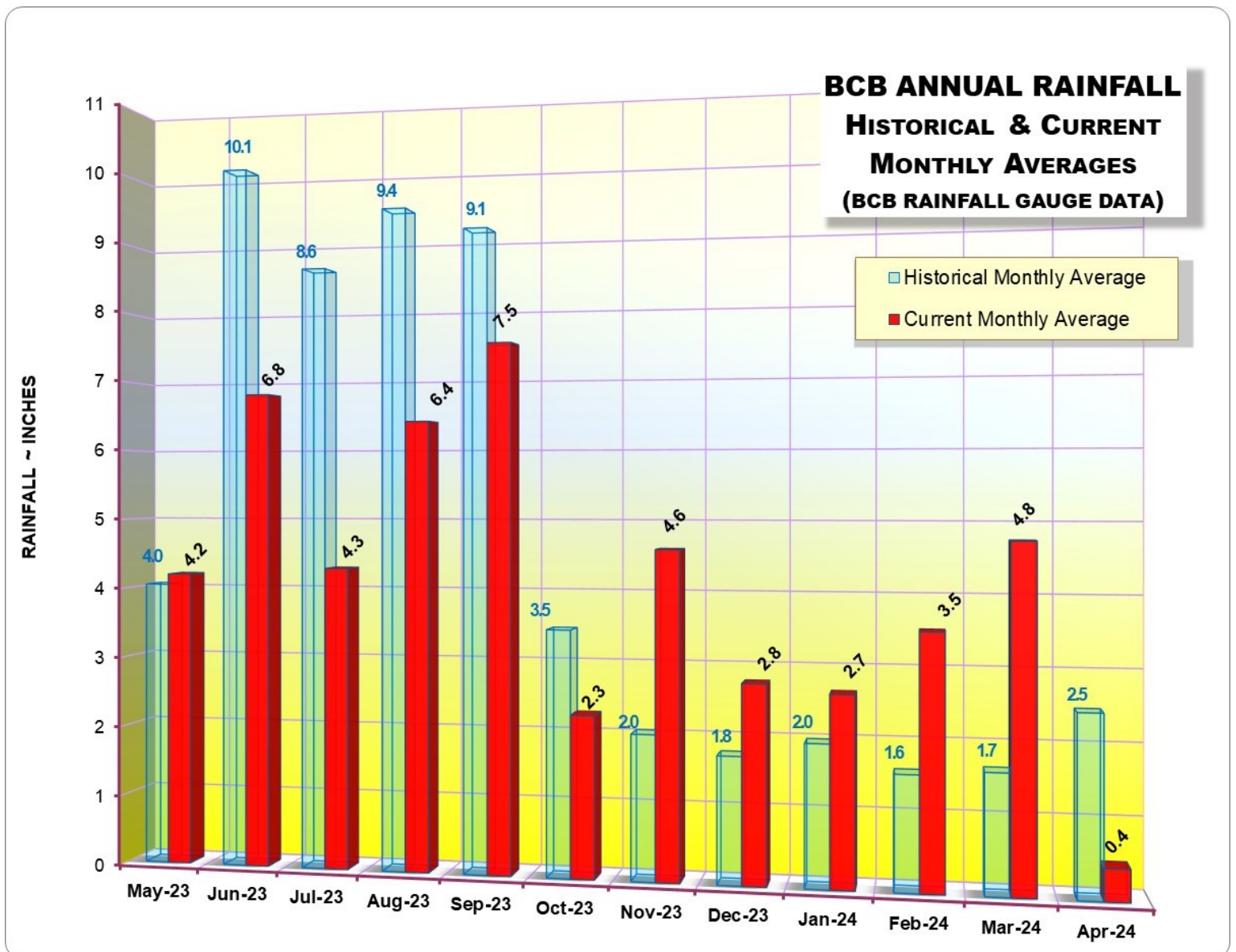
APRIL 2024

SUMMARY

April's rainfall in the Basin was only 0.44 inches which is 18% of the historical monthly average of 2.49 inches and is the third lowest rainfall since BCB's records started in 1990. Despite the drastic shift to well below average rainfall, the majority of the canal levels throughout the region remained above the 75th percentile. The Basin canal stages are beginning to naturally recede as expected during this time of year with the system still operated in water conservation mode. According to NOAA's seasonal outlook, there is an equal chance of above, below, or average rainfall during May, June, and July.

During the dry April, water levels throughout the system are receding naturally without any releases through any water control structures.

The 2023-2024 water year concluded on April 30th and after a dry wet season and a wet dry season, the Basin's rainfall total was close to average at 90% of normal.



APRIL 2024 BIG CYPRESS BASIN RAINFALL

The Basin-wide monthly average was well below the historical monthly average (**Figures 1, 2, Table 1**). The rainfall distribution was uniform across the Basin with 88% of rainfall stations receiving totals within half an inch (0.5”) of each other. The lowest recorded rainfall was 0.08 inches at gauge R-3 (COLLIER COUNTY COURTHOUSE), and the highest rainfall recorded was 1.79 inches at R-14 (IFAS). **Figure 3** shows the average rainfall for each of the Basin’s watersheds based on gauge adjusted radar. The rainfall totals and their locality distribution across the BCB/Lower West Coast are shown on **Figures 3a** and **4**.

BIG CYPRESS BASIN CANAL SYSTEMS

The canals were maintained in water conservation mode to hold as much water as possible to promote groundwater recharge. No discharges were made out of the BCB canal system during April and overall water levels decreased throughout the system. Even with low rainfall the system has remained above normal for April with most canals levels staying above the 75th percentile (**Figure 4a**).

GOLDEN GATE SYSTEM

As is standard operating procedure during dry season, control structures in the Golden Gate Main canal system were managed to conserve as much water as possible to promote groundwater recharge. Despite the abnormally dry April, water levels in the Golden Gate system remained elevated for the month and ended the month above the 75th percentile (ref **Figure 5**).

COCOHATCHEE SYSTEM

The Cocohatchee canal system was managed to conserve as much water as possible to promote groundwater recharge and no water was discharged through any structures. The system remained elevated above the 75th percentile (**Figures 6A, 6B, & 6C**).

FAKA UNION SYSTEM

The Faka Union system was maintained in water conservation mode to hold as much water as possible to promote groundwater recharge (**Figures 7A & 7B**). Despite the abnormally dry April, it remained higher than normal and ended the month above the 75th percentile.

HENDERSON CREEK SYSTEM

Water control structures in the Henderson Creek system were operated to conserve as much water as possible to promote groundwater recharge and canal levels in HC1 and HC2 ended the month above the 90th percentile (**Figures 8A & 8B**).

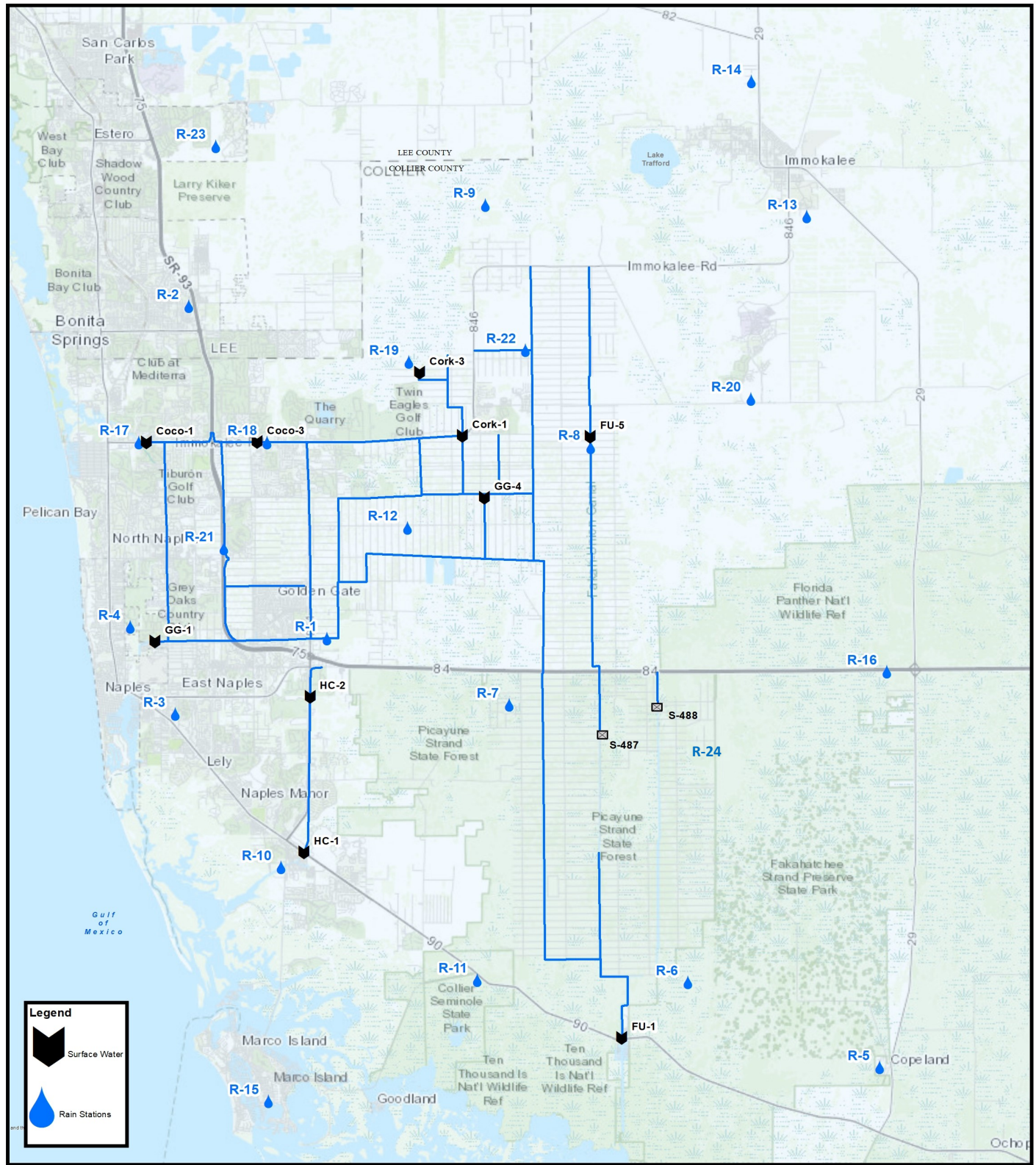
CORKSCREW SWAMP

Figure 10 shows the historical trends for Corkscrew Swamp, Bird Rookery, and the Cork 3 structure, and the 2024 corresponding water levels. Water levels throughout the swamp were near the 75th percentile for late April and have recovered some from the elevated “wet season like” levels in previous months. Lake Trafford water levels also began receding although ended the month at the 75th percentile. (**Figure 11**).

Figures 12 and Figure 13 show the locations for Southern Corkscrew (SOCREW) sites 1 through 6, all of which are combination surface and groundwater monitoring wells, as well as the historical trends for SOCREW1 and SOCREW2. SOCREW1 ended the month just below the historical record maximum, and SOCREW2 just above the 75th percentile.

BIG CYPRESS BASIN & LOWER WEST COAST GROUNDWATER LEVELS

The Lower West Coast [LWC] groundwater levels all declined since last month, ranging from -0.39 ft at C-462 (Immokalee, Lower Tamiami) to -4.54 ft (L-738 (Bonita Springs, Lower Tamiami). C-948R (Golden Gate, Mid Hawthorn) ended the month below the minimum; L-738 (Bonita Springs, Lower Tamiami) between the 10th and 25th percentiles; C-1004R (Naples, Lower Tamiami) and L-2194 (Bonita Springs, Sandstone) between the 25th and 50th percentiles; L-2195 (Bonita Springs, Surficial) between the 50th and 75th percentiles; C-462 (Immokalee, Lower Tamiami) above the 75th percentile; and C-951R (Golden Gate, Lower Tamiami) and C-1224 (Marco Lakes, Lower Tamiami) both above the 90th percentile. Note that while C-1004R is flagged as yellow, meaning below the low concern groundwater level of ~ 3 ft, it is still within normal range for this time of year. (**Table 2 and Figure 9**).



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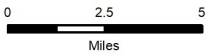


FIGURE 1
Hydrologic Station Map

Collier County, Florida



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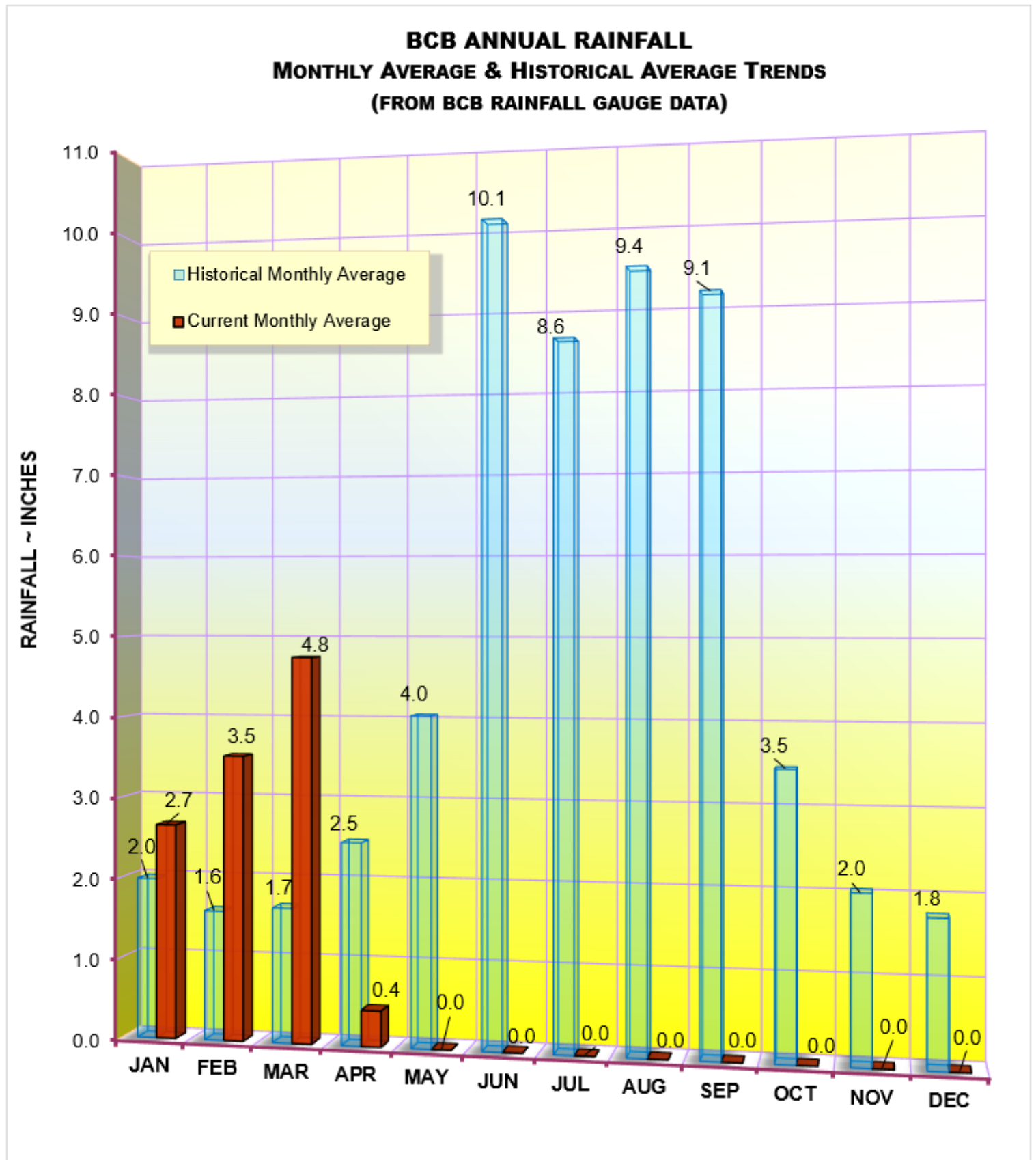


TABLE 1
RAINFALL REPORT - APRIL 2024
DISTRICT/BASIN RAINFALL STATIONS
 (ALL NUMBERS ARE IN INCHES)

STATION INDEX NO.	STATION NAME	APRIL 2024	LONG TERM MONTHLY AVERAGE	MONTHLY DIFFERENCE	CALENDAR YEAR 2024 CUMULATIVE TOTAL	AVERAGE CALENDAR YEAR TO DATE	YEAR TO DATE DIFFERENCE
R-1	GG#3	0.17	2.94	-2.77	11.48	7.32	4.16
R-2	BONITA SPRINGS WATER PLANT	0.27	1.99	-1.72	10.99	8.06	2.93
R-3	COLLIER COUNTY COURTHOUSE	0.08	2.45	-2.37	12.37	8.08	4.29
R-4	FREEDOM PARK	0.15	2.30	-2.15	11.14	6.96	4.18
R-5	FAKAHATCHEE STRAND HQ	0.43	2.30	-1.87	9.50	8.14	1.36
R-6	DANHOUSE PRAIRIE	0.63	2.35	-1.72	11.19	6.81	4.38
R-7	PSRP WEATHER STATION	0.17	2.95	-2.78	11.00	7.53	3.47
R-8	FAKA UNION #5	0.22	3.12	-2.90	11.93	8.51	3.42
R-9	CORKSCREW SWAMP NORTH END	0.77	2.19	-1.42	10.90	7.25	3.65
R-10	ROOKERY BAY HQ	0.16	2.41	-2.25	12.12	7.35	4.77
R-11	COLLIER SEMINOLE STATE PARK	0.32	2.45	-2.13	12.25	7.83	4.42
R-12	G.G. FIRE STATION	0.21	2.50	-2.29	11.75	8.36	3.39
R-13	IMMOKALEE LANDFILL	0.26	2.43	-2.17	8.52	8.75	-0.23
R-14	IFAS	1.79	2.37	-0.58	10.21	8.95	1.26
R-15	MARCO R.O. PLANT	0.37	2.35	-1.98	12.14	8.56	3.58
R-16	FAKAHATCHEE STRAND NORTH END	0.60	3.07	-2.47	11.80	9.92	1.88
R-17	COCO#1	0.52	2.02	-1.50	9.70	7.62	2.08
R-18	COCO#3	1.12	2.43	-1.31	12.91	7.25	5.66
R-19	BIRD ROOKERY	0.16	2.41	-2.25	12.67	5.63	7.04
R-20	AVE MARIA	0.36	2.58	-2.22	11.06	8.73	2.33
R-21	I75W2	0.29	2.45	-2.16	11.85	5.79	6.06
R-22	GG#7	0.23	2.70	-2.47	11.61	6.40	5.21
R-23	FPWX	1.07	2.45	-1.38	10.27	7.95	2.32
R-24	DSOTO10	0.21	New Site	New Site	New Site	No Historical Data	

AVERAGES	0.44	2.49	-2.05	11.28	7.73	3.55
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FIGURE 2
BCB GAUGE RAINFALL MONTHLY AVERAGES



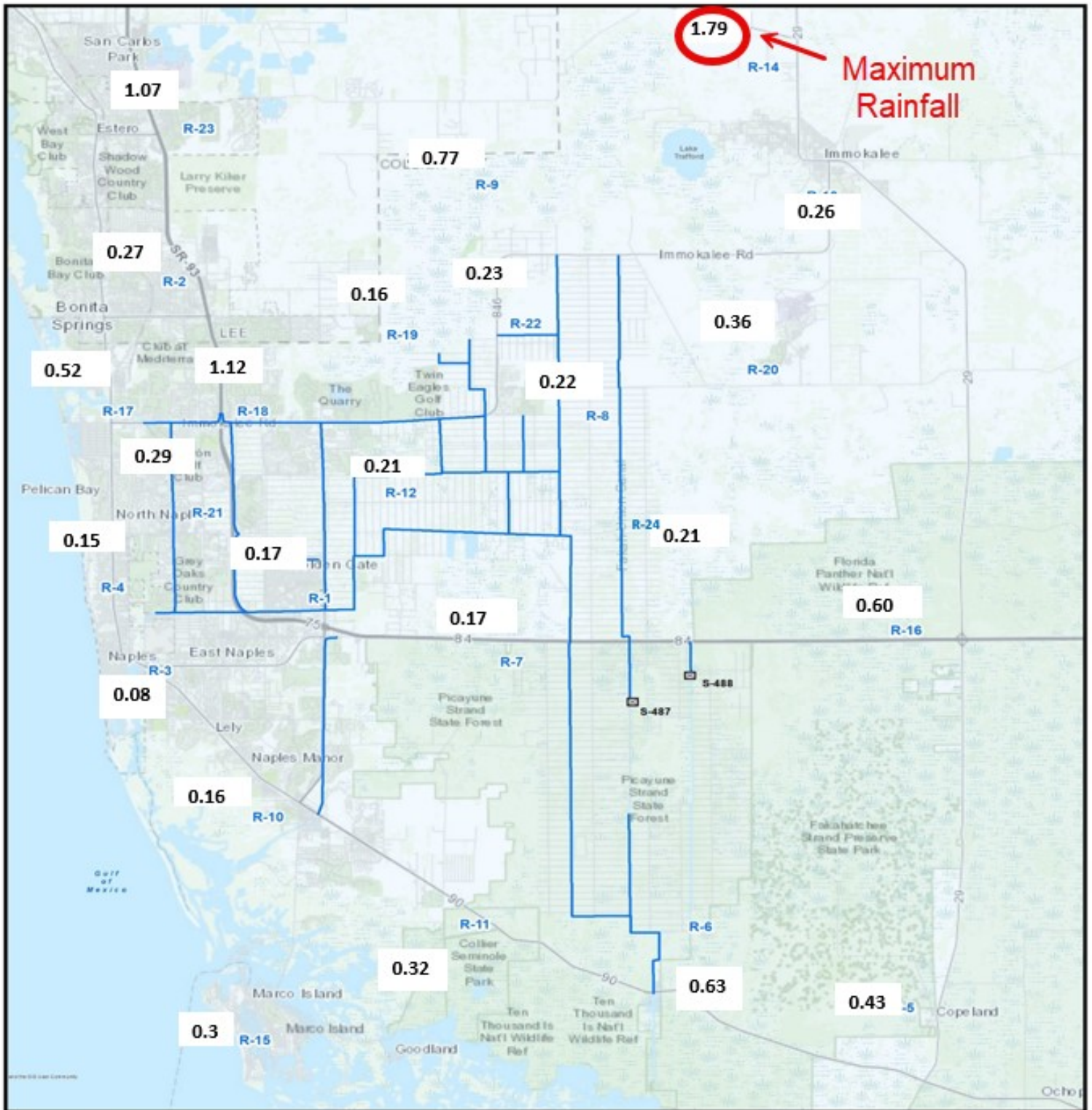
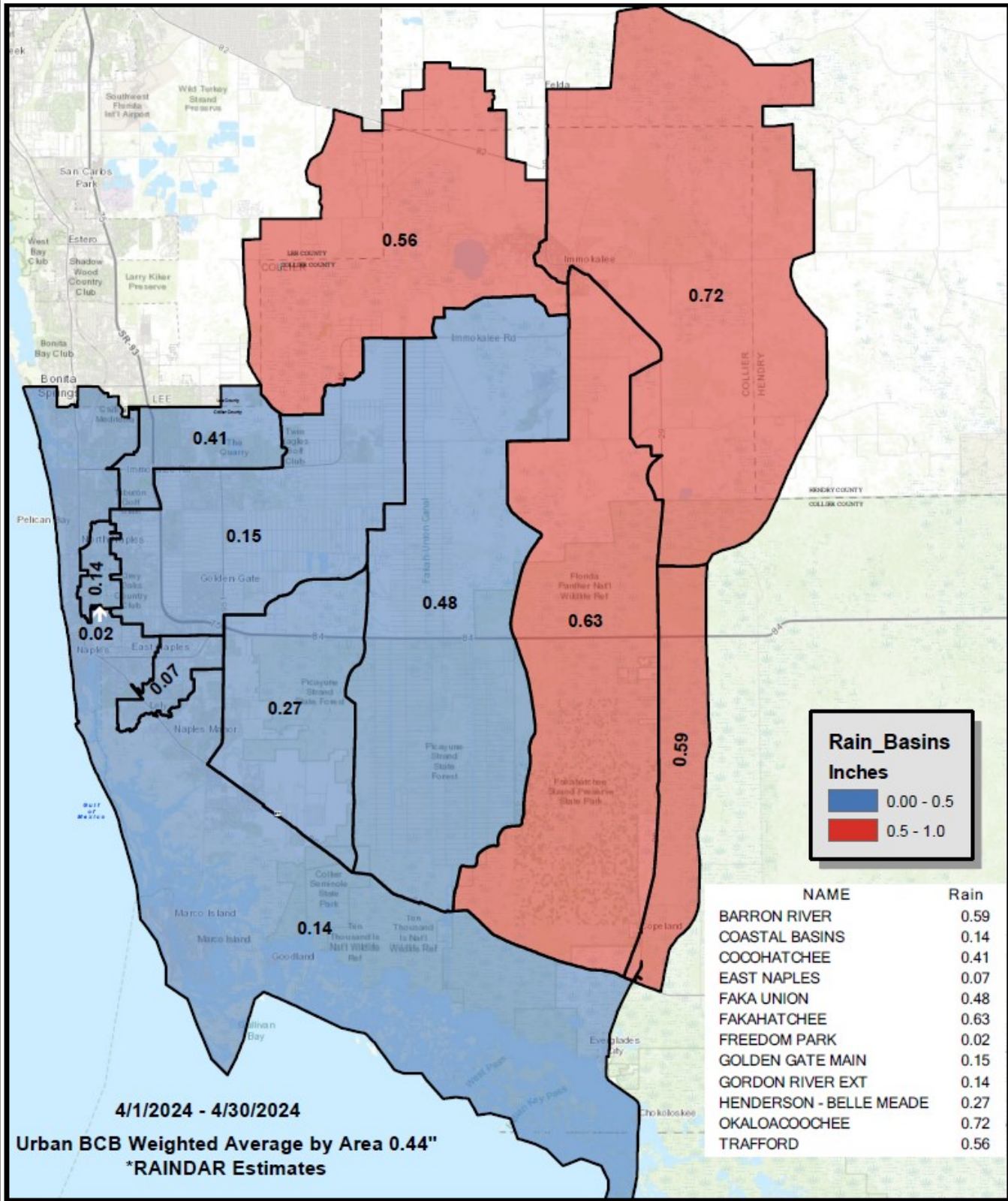


FIGURE 3
BCB RAINFALL DISTRIBUTION
APRIL 2024



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*Rainfall estimates based on gauge adjusted radar



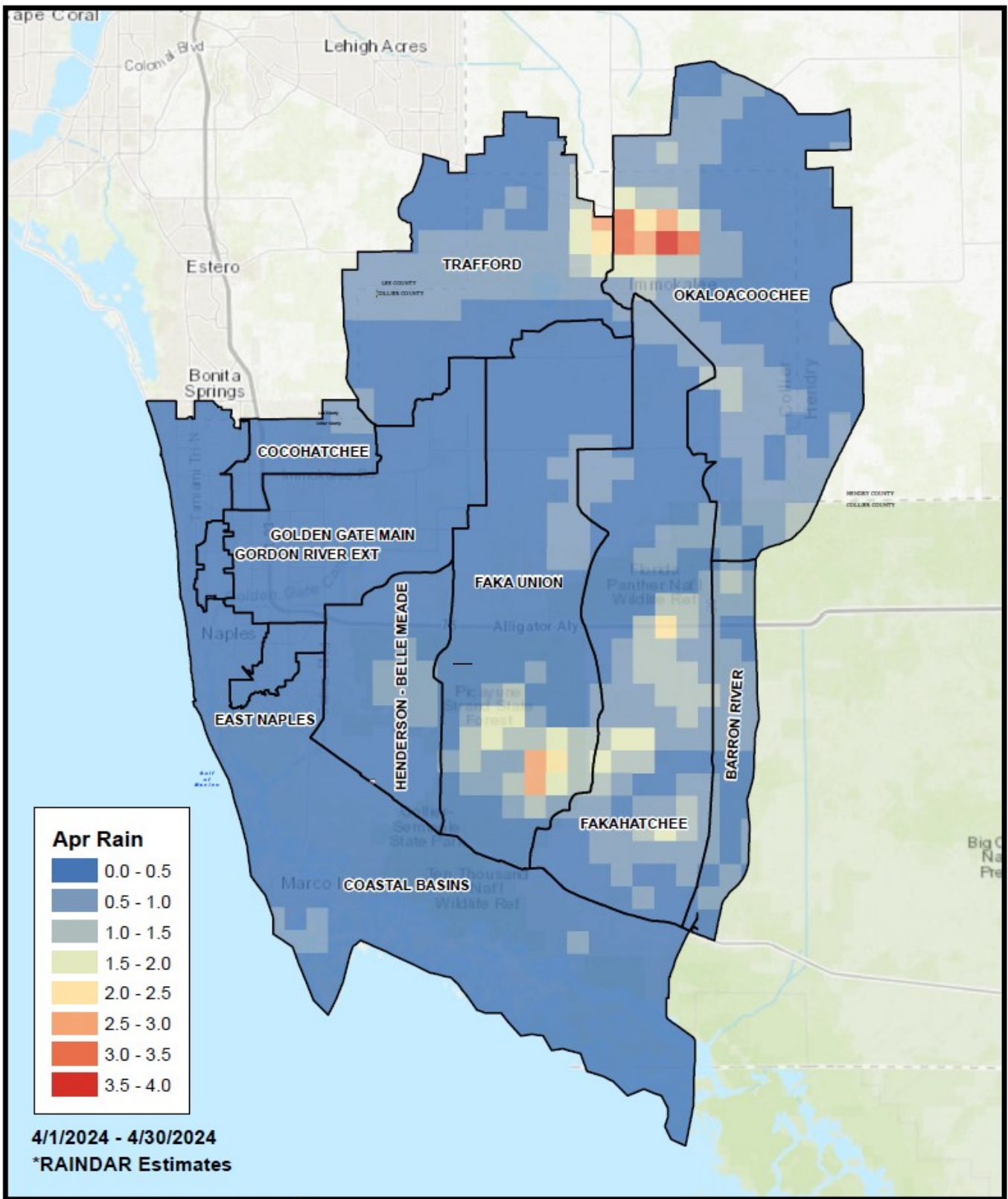
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BCB RAINFALL
SPATIAL DISTRIBUTION

Urban Collier County, Florida



APRIL 2024—FIGURE 3a



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BCB RAINFALL
SPATIAL DISTRIBUTION
 Urban Collier County, Florida



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APRIL 2024—FIGURE 4

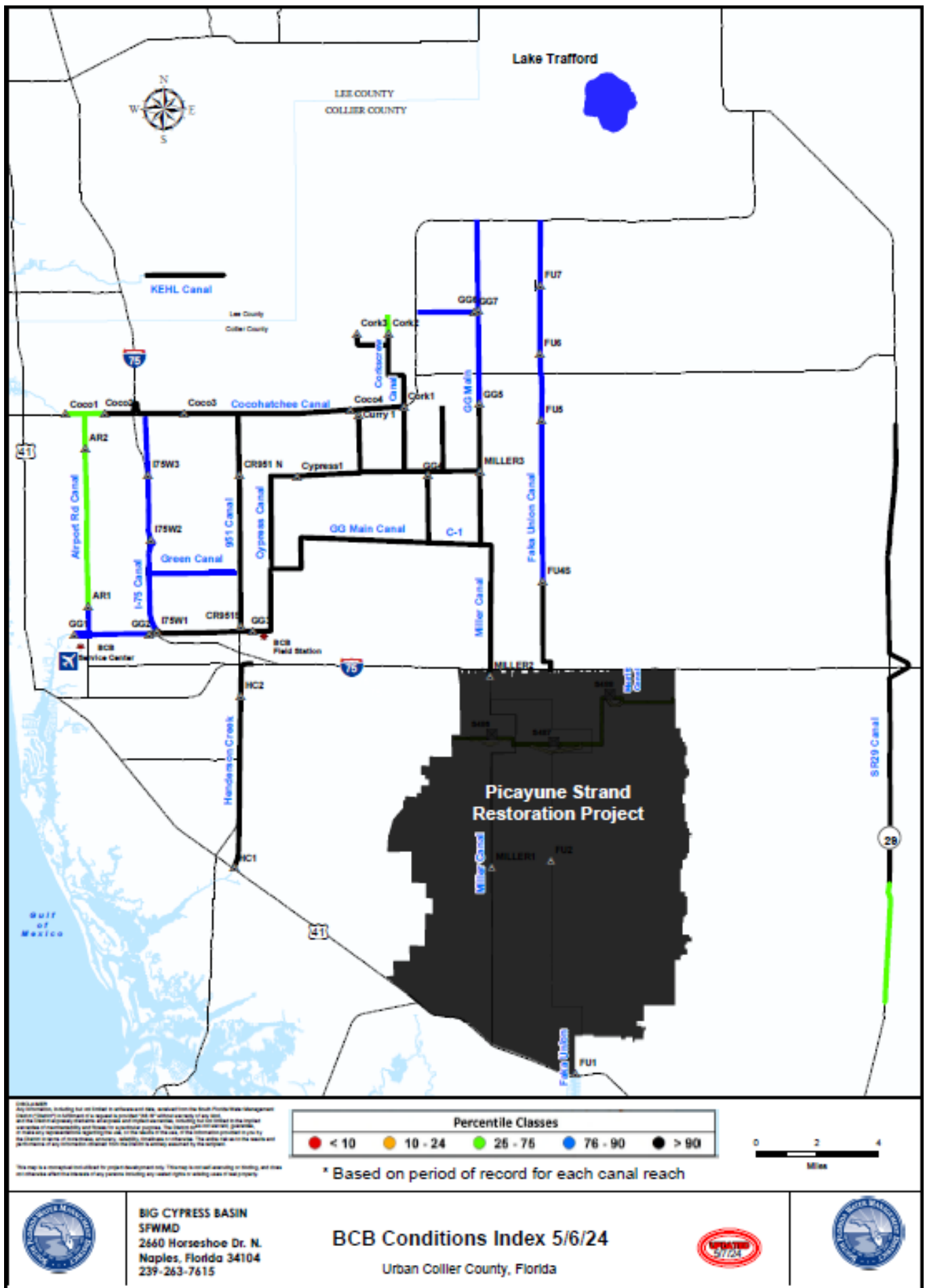


FIGURE 4a

Figure 5 Golden Gate Canal Historic Average Daily Headwater Percentiles

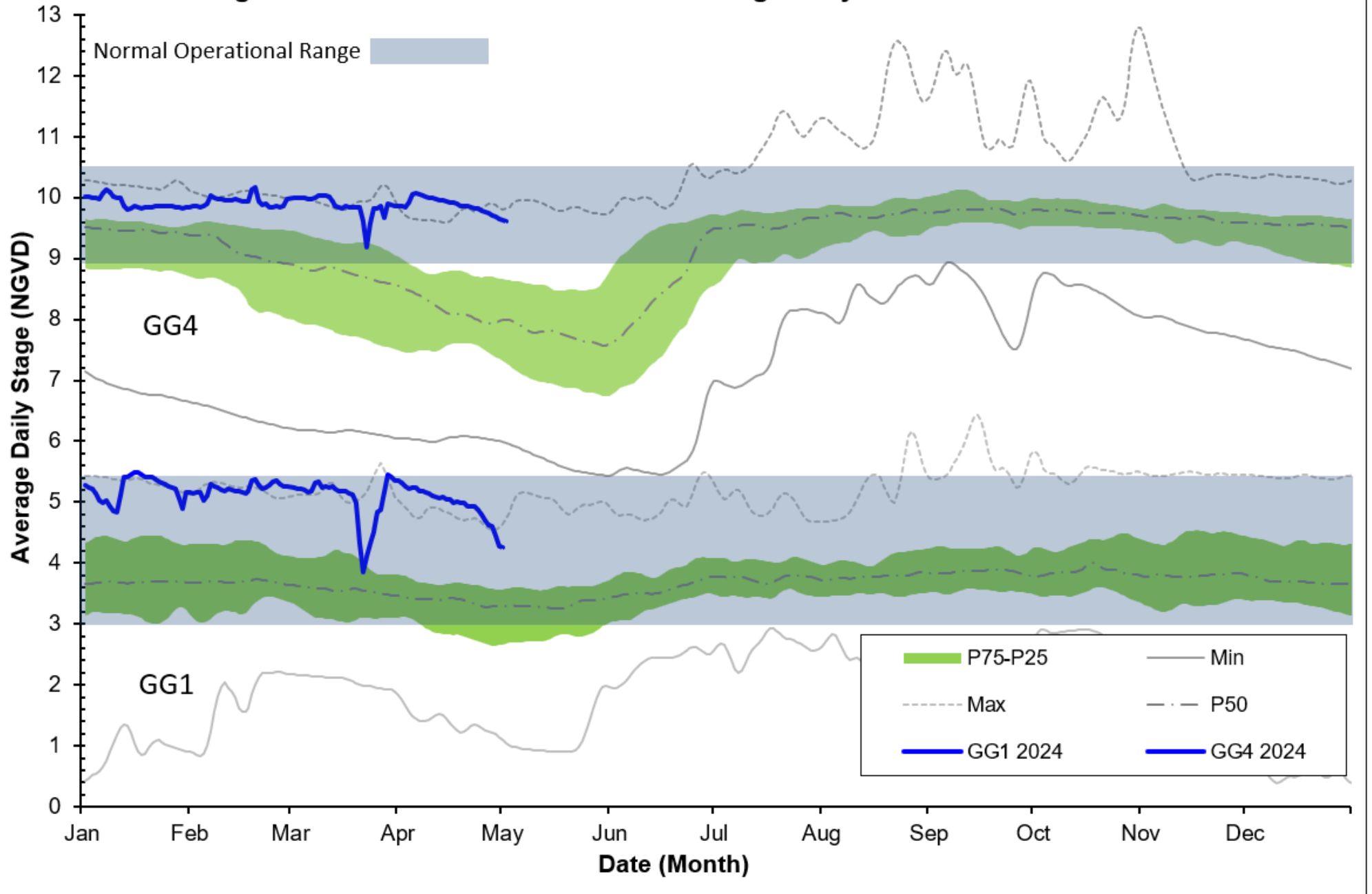


Figure 6A Cocohatchee Canal Historic Average Daily Headwater Percentiles

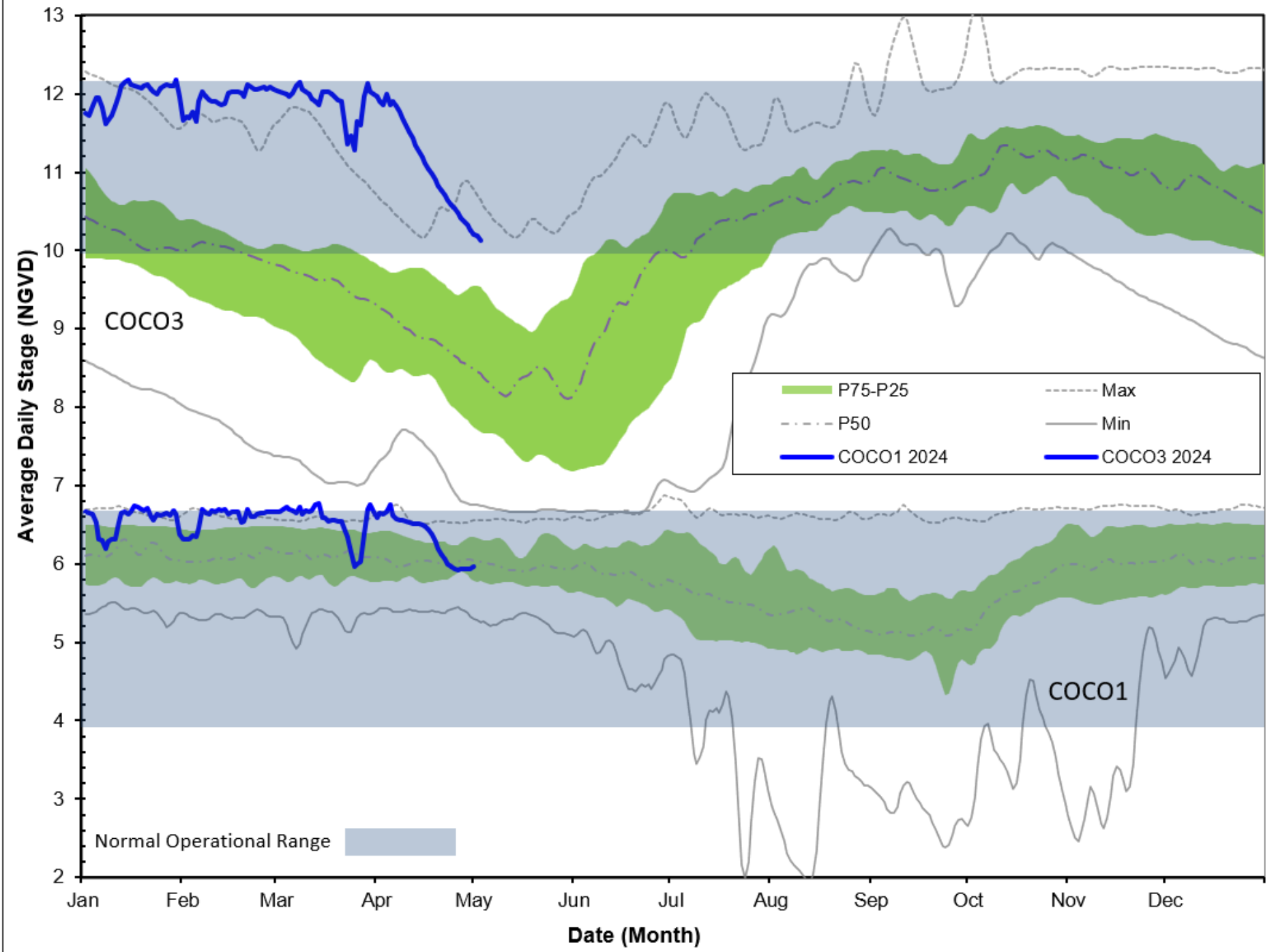


Figure 6 - B CORK1 Historic Average Daily Headwater Percentiles (1989-2022)

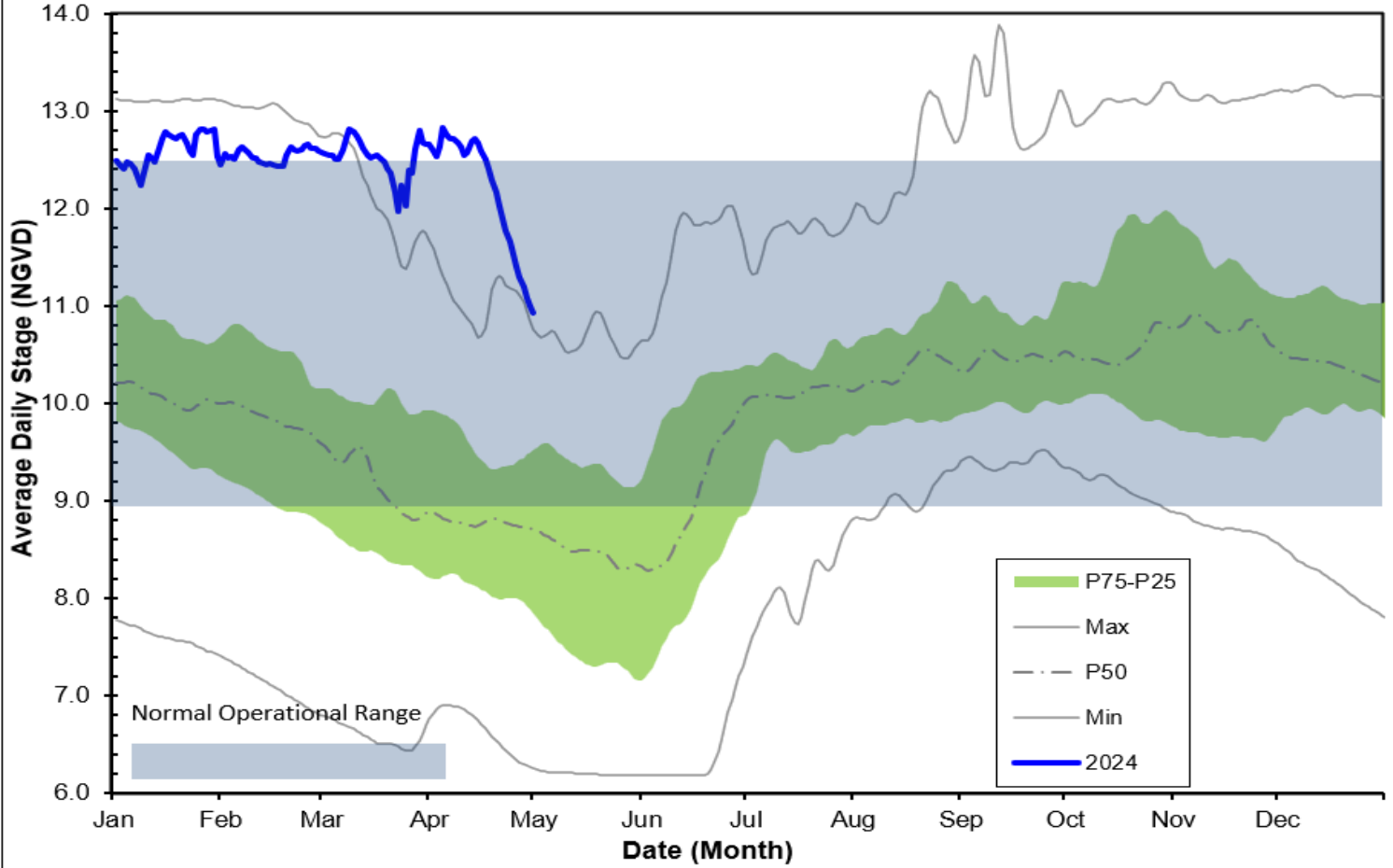


Figure 6C - CORK3 Historic Average Daily Headwater Percentiles (2004- 2022)

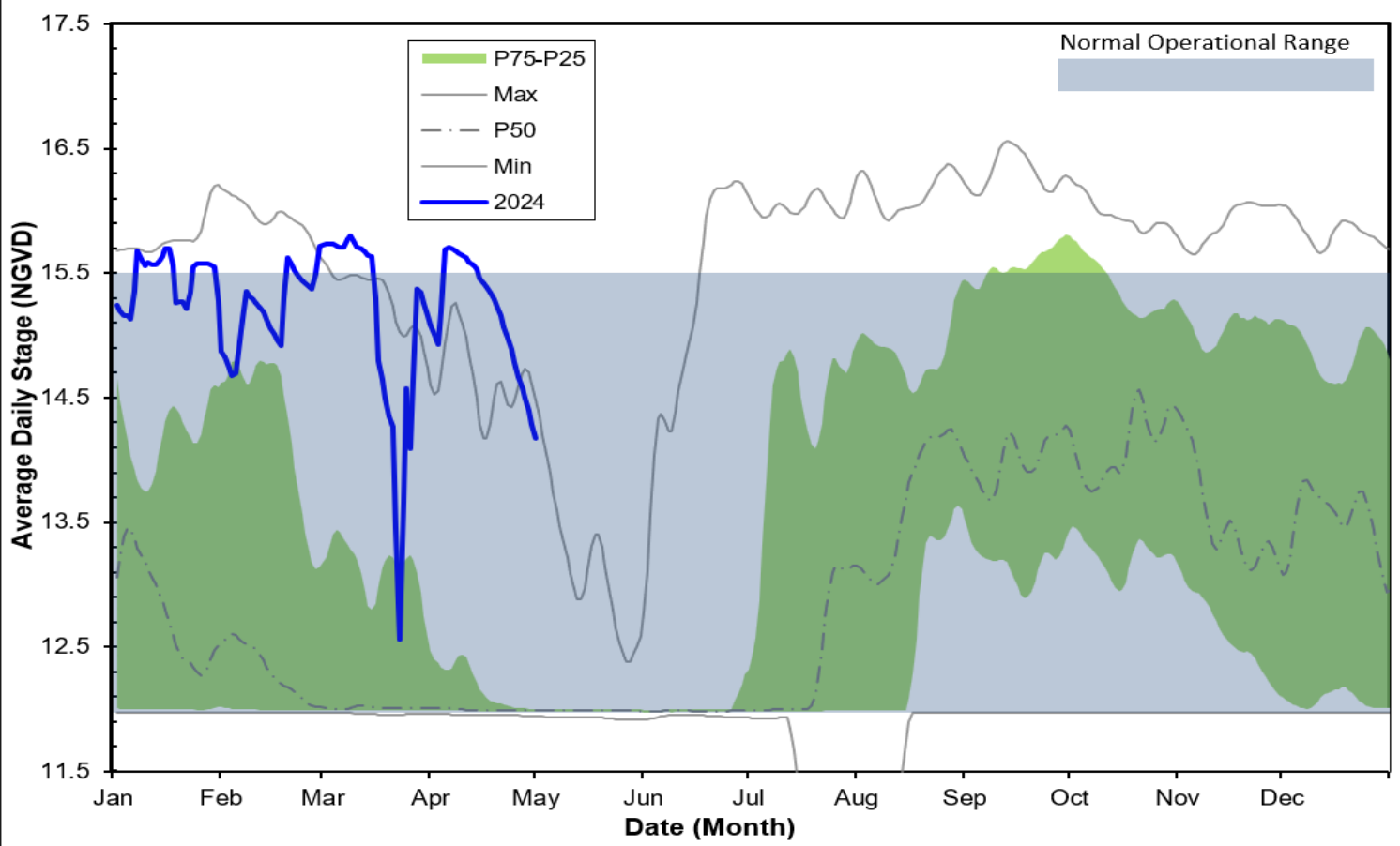


Figure 7A Faka Union Canal Historic Average Daily Headwater Percentiles

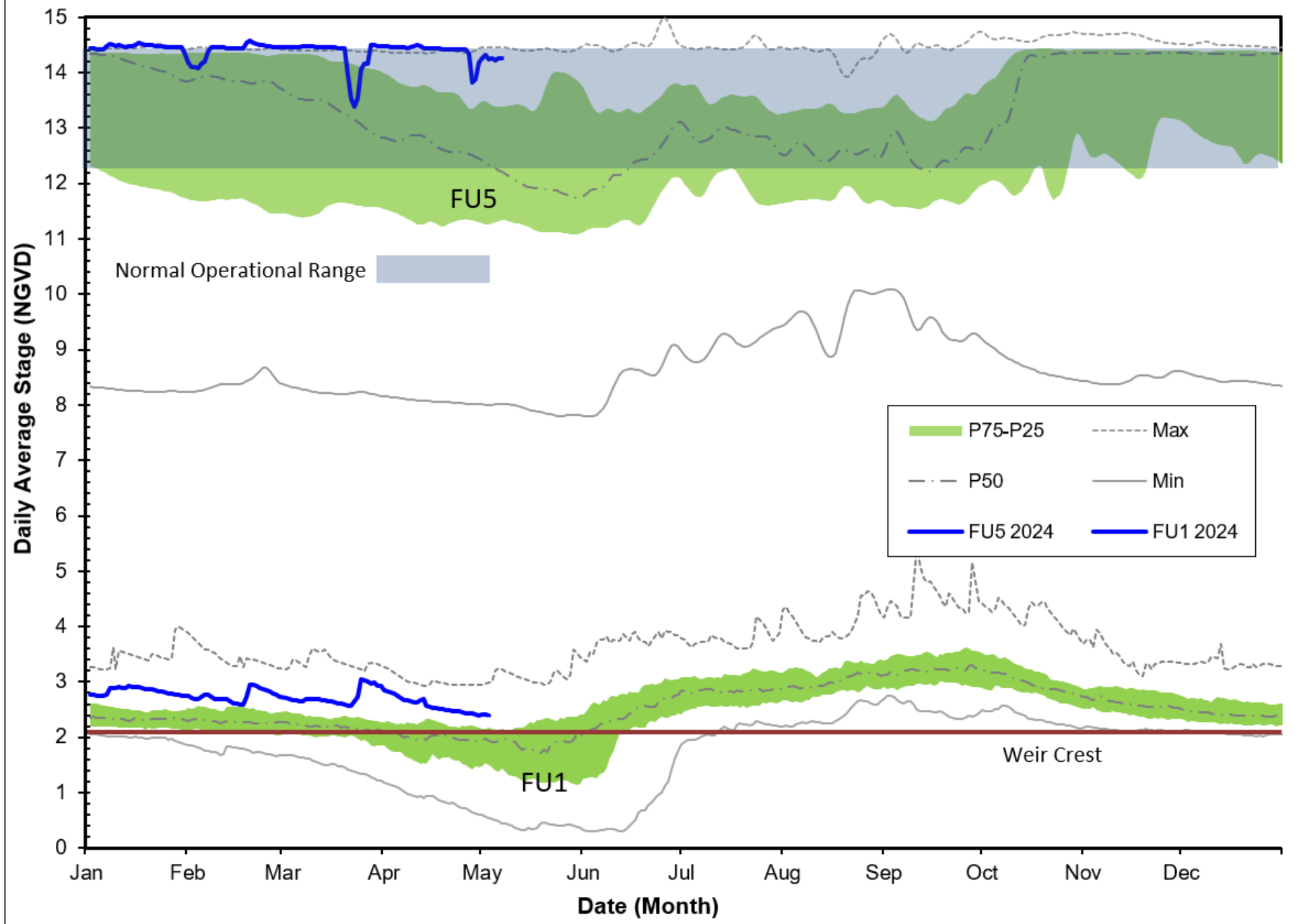


Figure 7B FU4S Historic Average Daily Water Percentiles

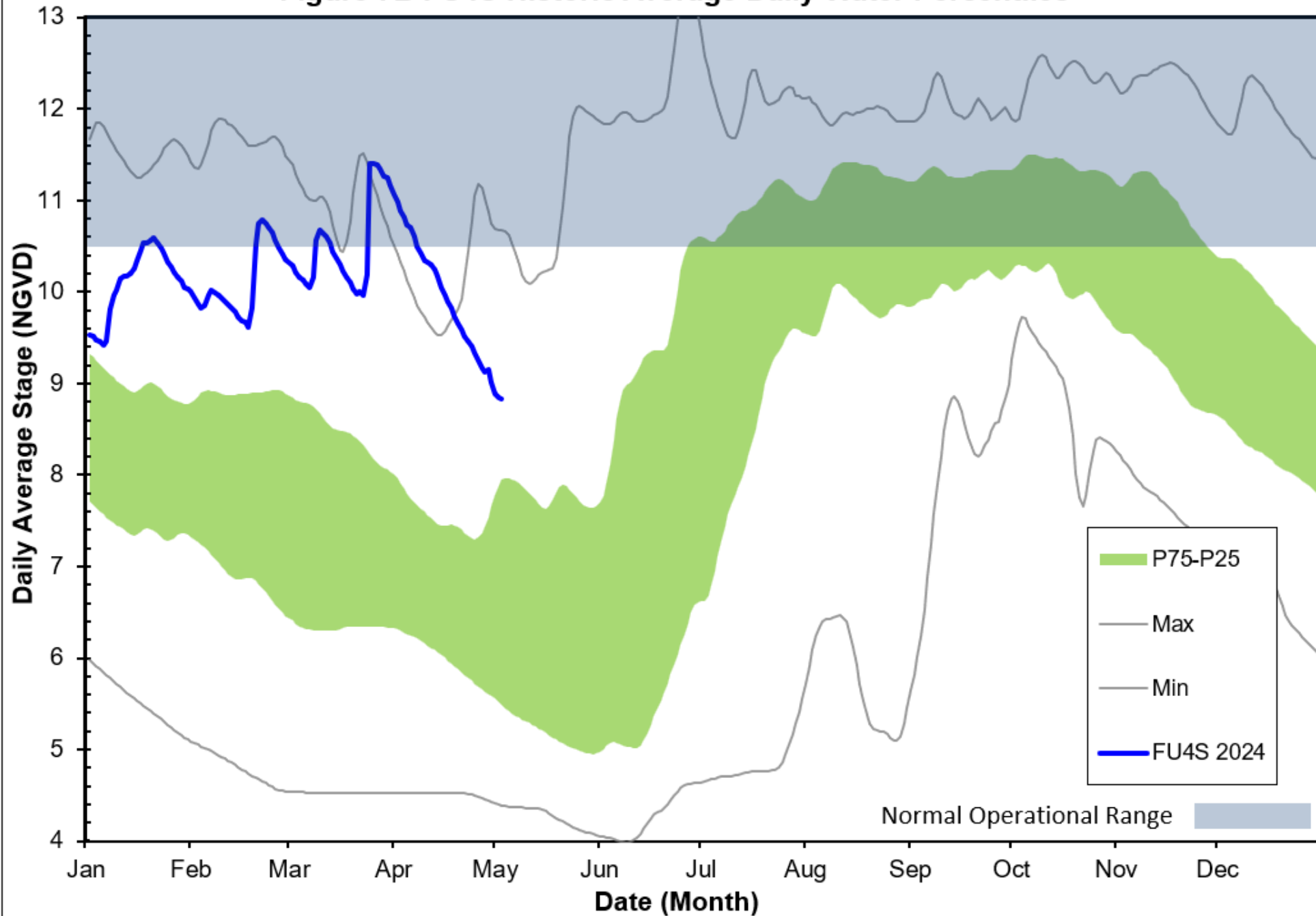


Figure 8A HC1 Historic Average Daily Headwater Percentiles

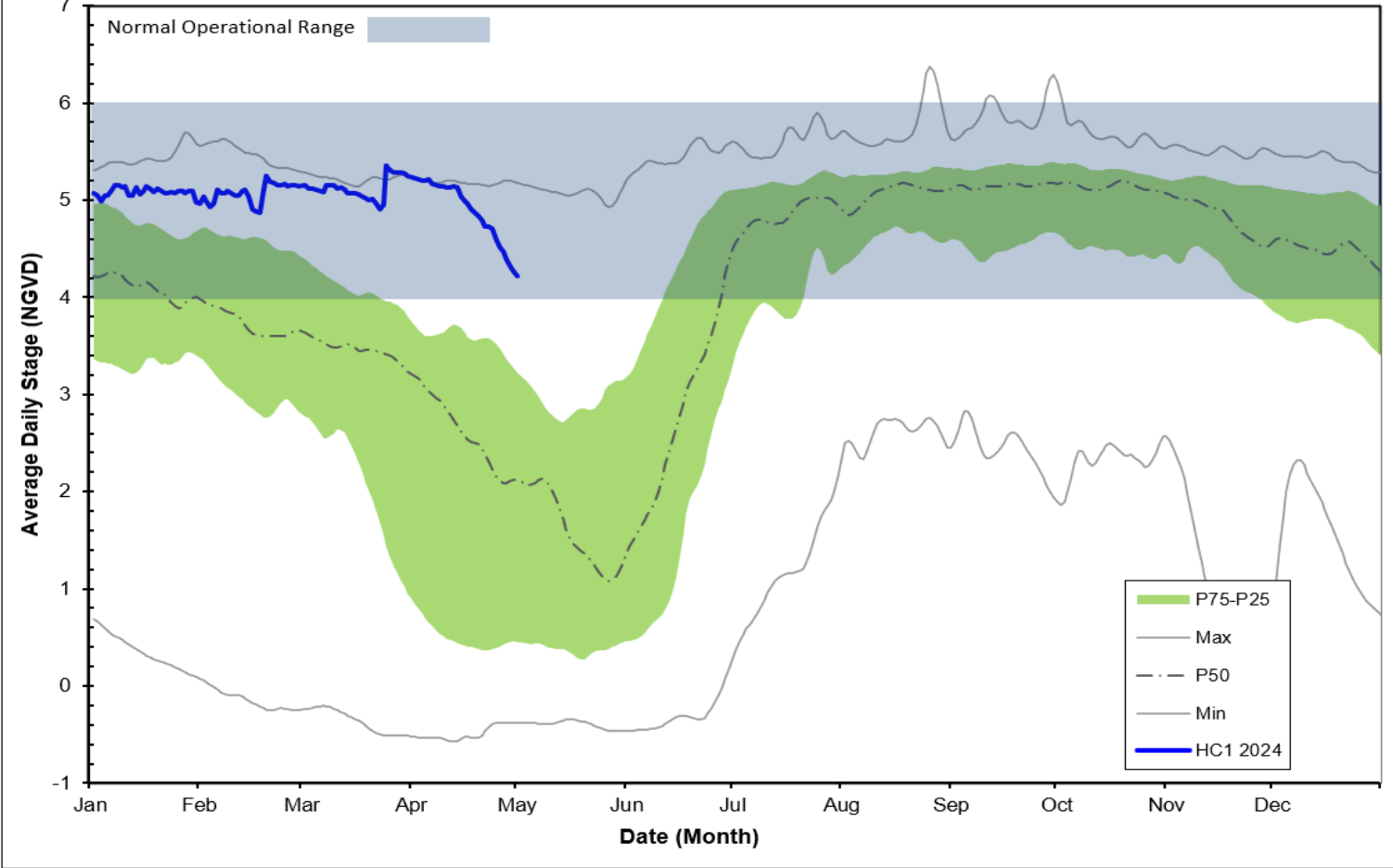


Figure 8B HC2 Historic Average Daily Headwater Percentiles

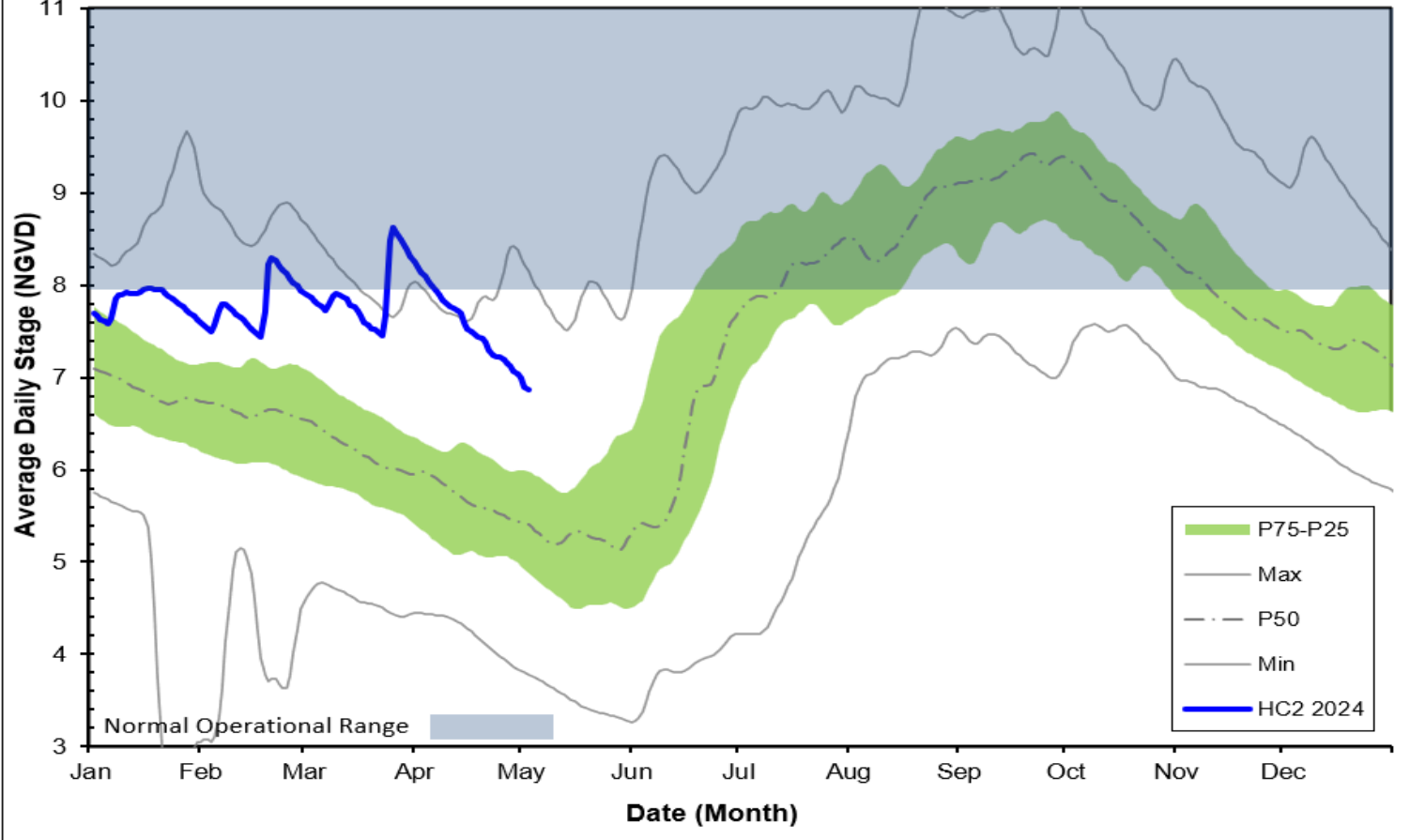


TABLE 2 - WATER CONDITIONS SUMMARY - April 2024

SELECTED STATIONS for BCB AREA / SW FLORIDA

Last Reading Date :		April 30, 2024					
Previous Period Reading Date:		March 31, 2024					
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	-0.39	34.10	33.71	↓	GREEN
C-1004R	Naples	Lower Tamiami Aquifer	-3.29	2.97	-0.32	↓	YELLOW
C-1224	Marco Lakes	Lower Tamiami Aquifer	-0.44	4.10	3.66	↓	GREEN
C-948R	Golden Gate	Mid Hawthorn Aquifer	-1.80	30.52	28.72	↓	
C-951R	Golden Gate	Lower Tamiami Aquifer	-2.37	4.45	2.08	↓	
L-2194	Bonita Springs	Sandstone Aquifer	-3.42	5.10	1.68	↓	GREEN
L-2195	Bonita Springs	Surficial Aquifer System	-1.14	10.72	9.58	↓	GREEN
L-738	Bonita Springs	Lower Tamiami Aquifer	-4.54	1.10	-3.44	↓	GREEN

BIG CYPRESS BASIN

APRIL 2024

GROUNDWATER LEVEL DAILY TRENDS COMPARED TO HISTORICAL AVERAGE

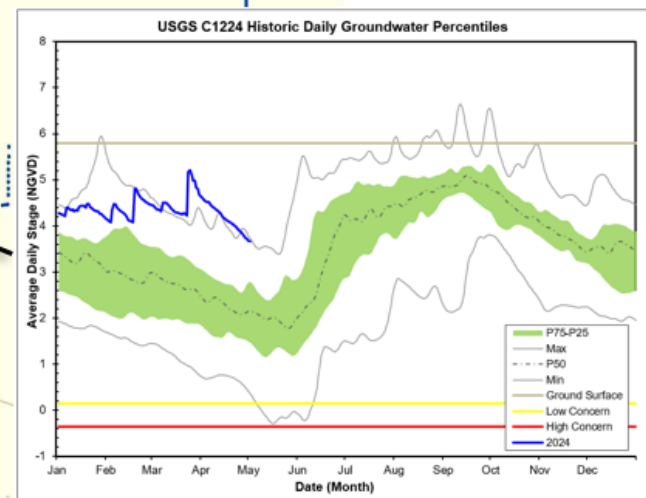
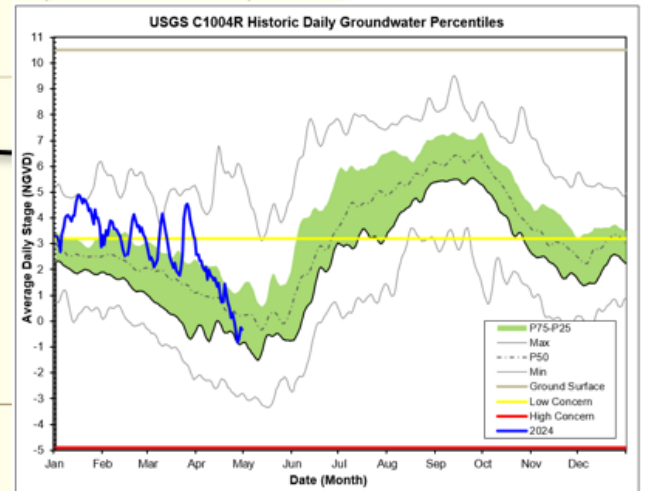
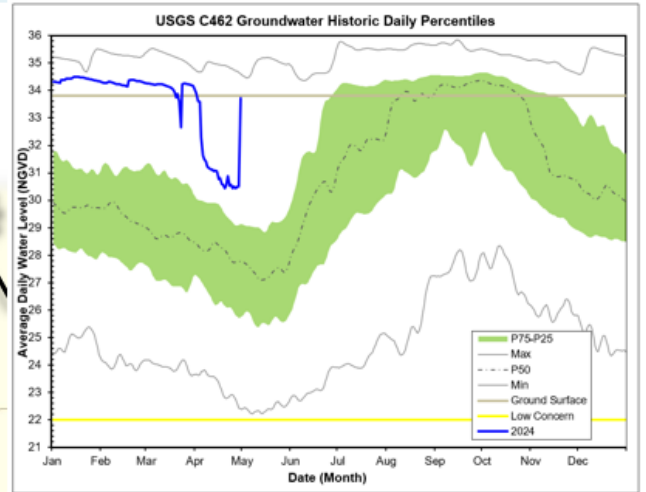
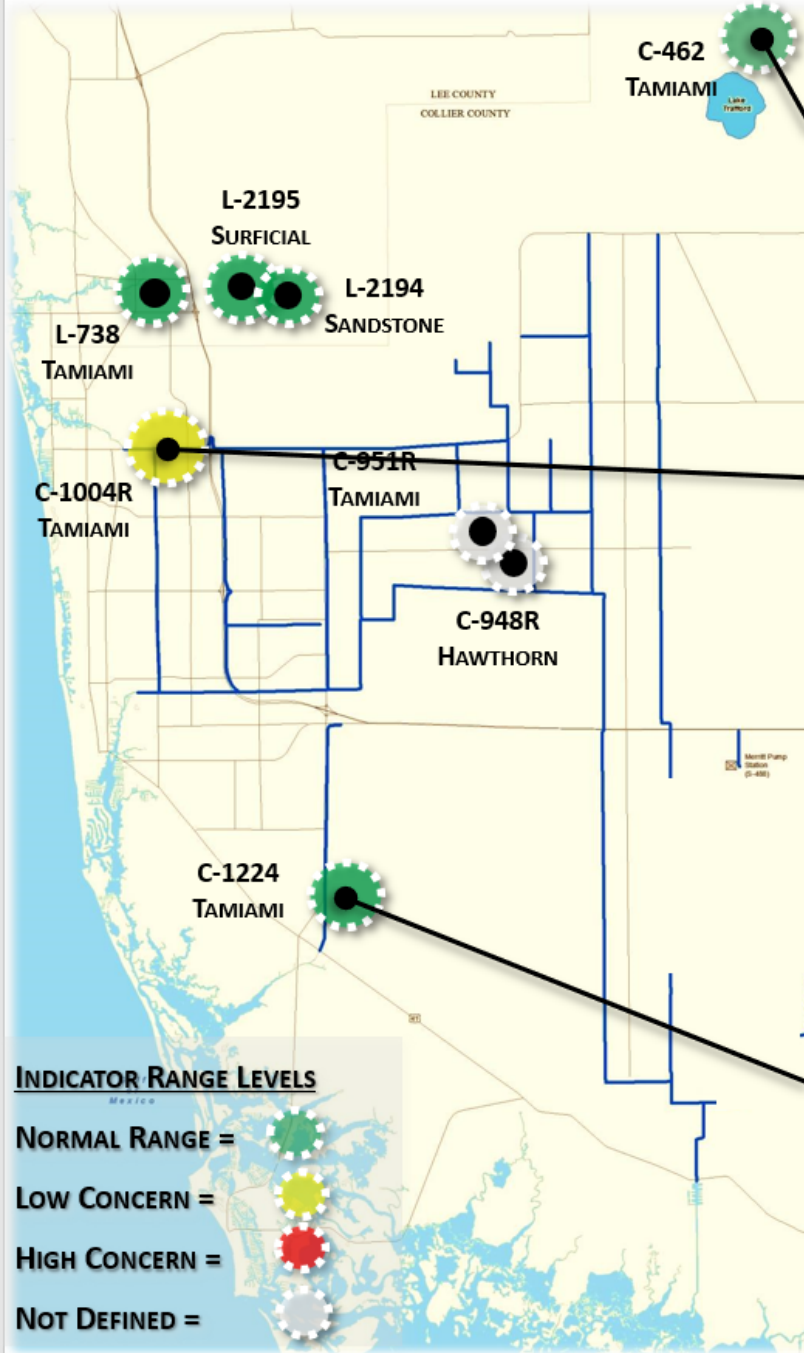


FIGURE 9

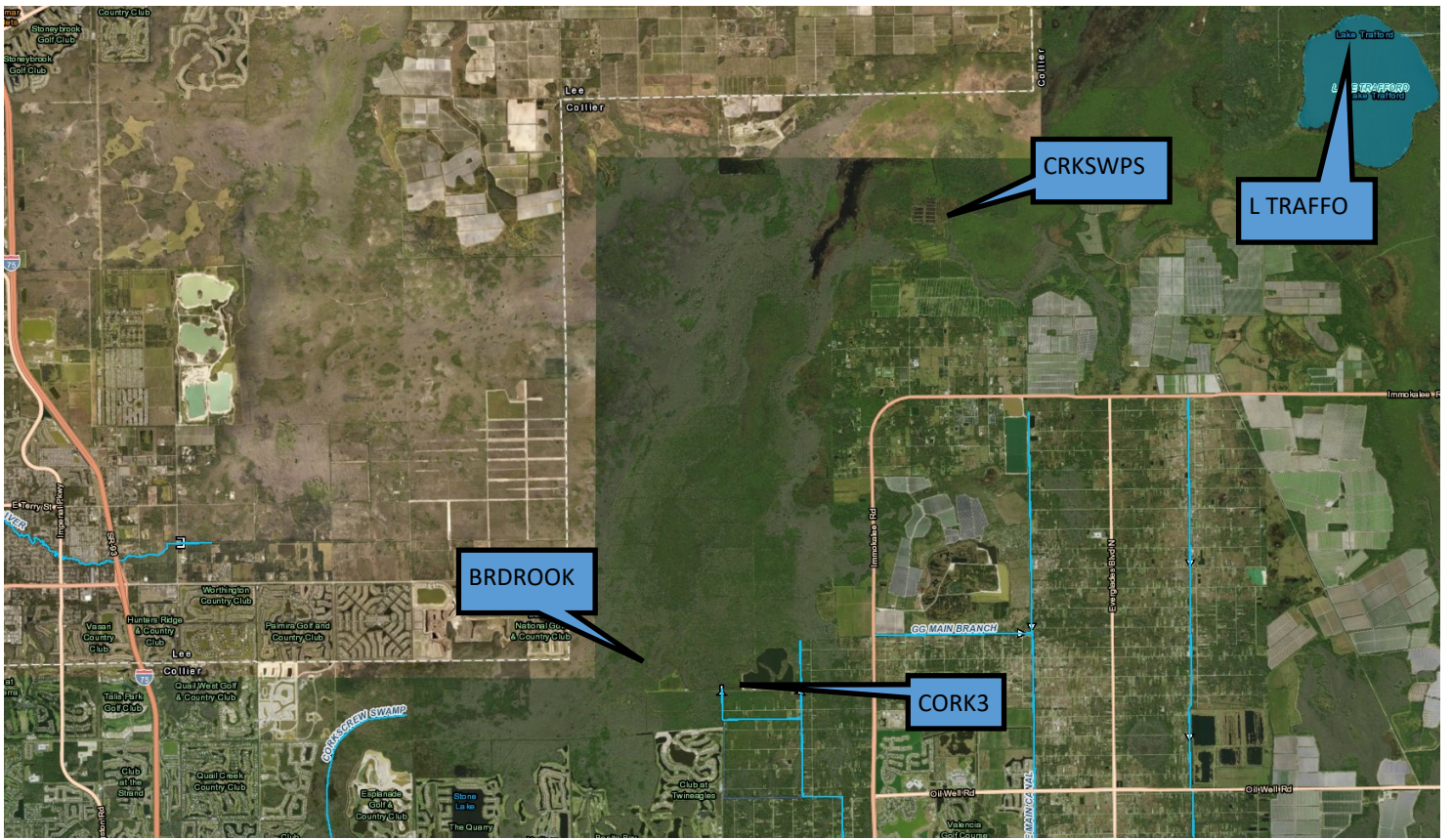


Figure 10-Corkscrew Historic Average Daily Headwater Percentiles (1984-2022)

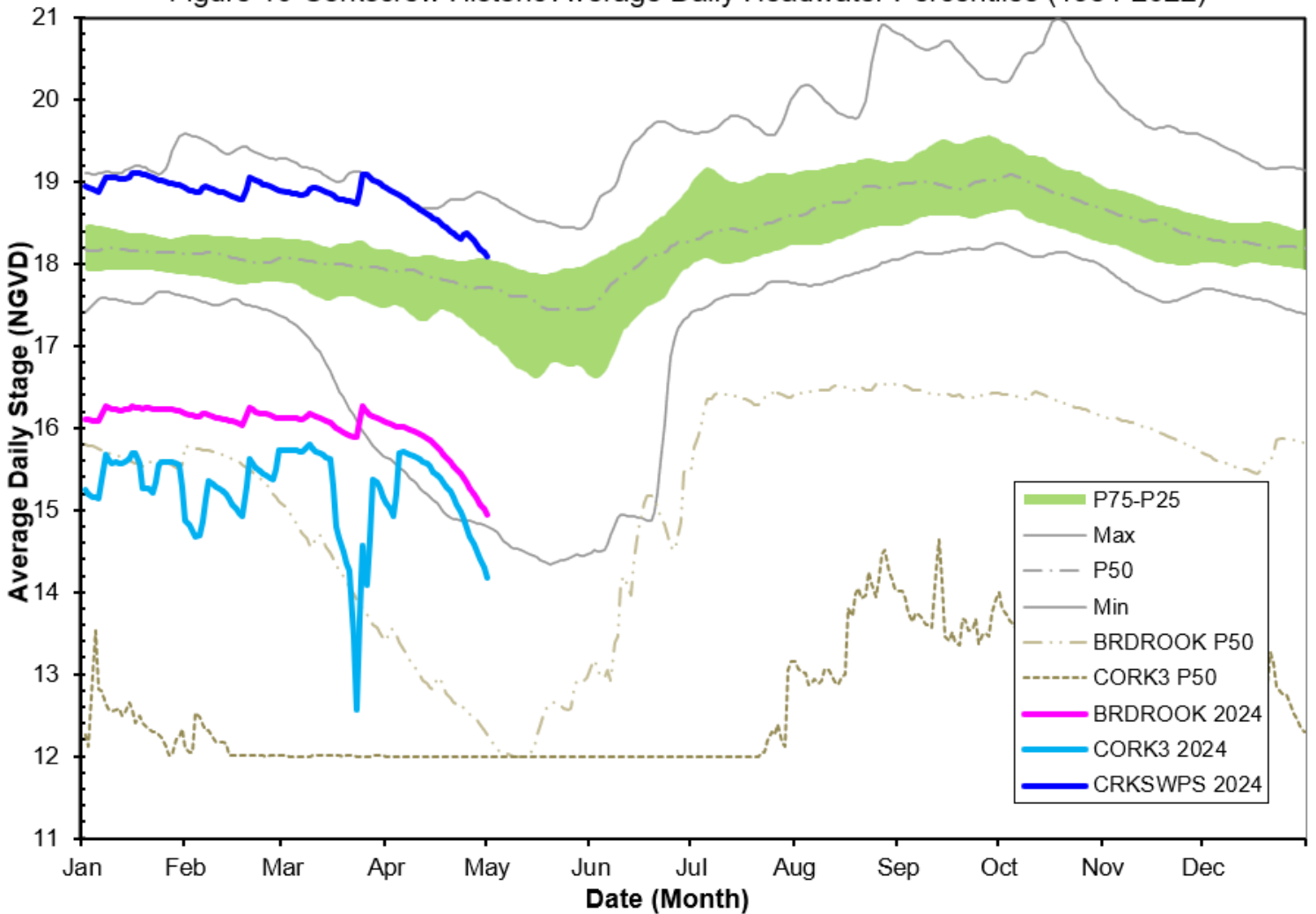


Figure 11 Lake Trafford Historic Daily Headwater Percentiles (1941 - 2022)

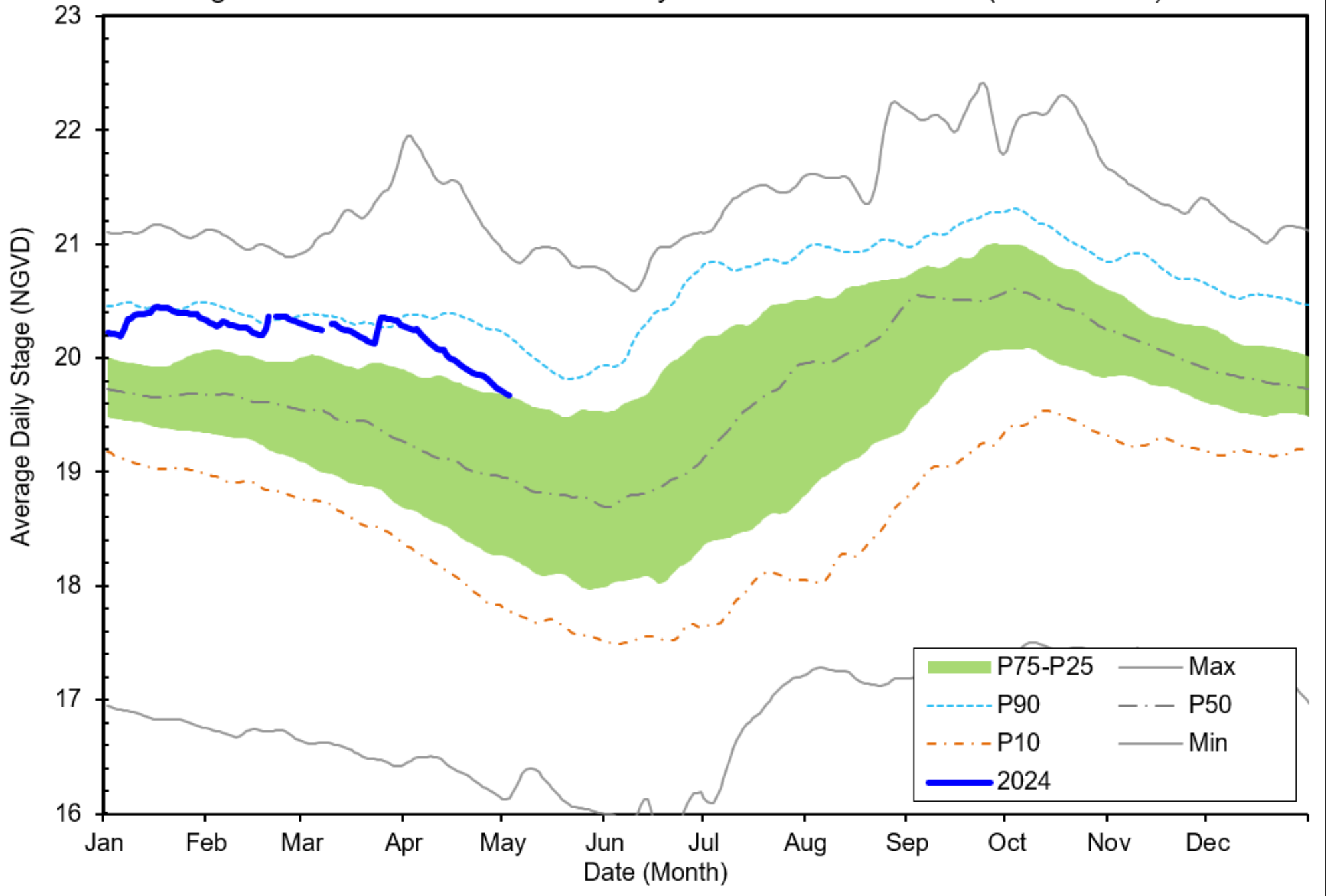
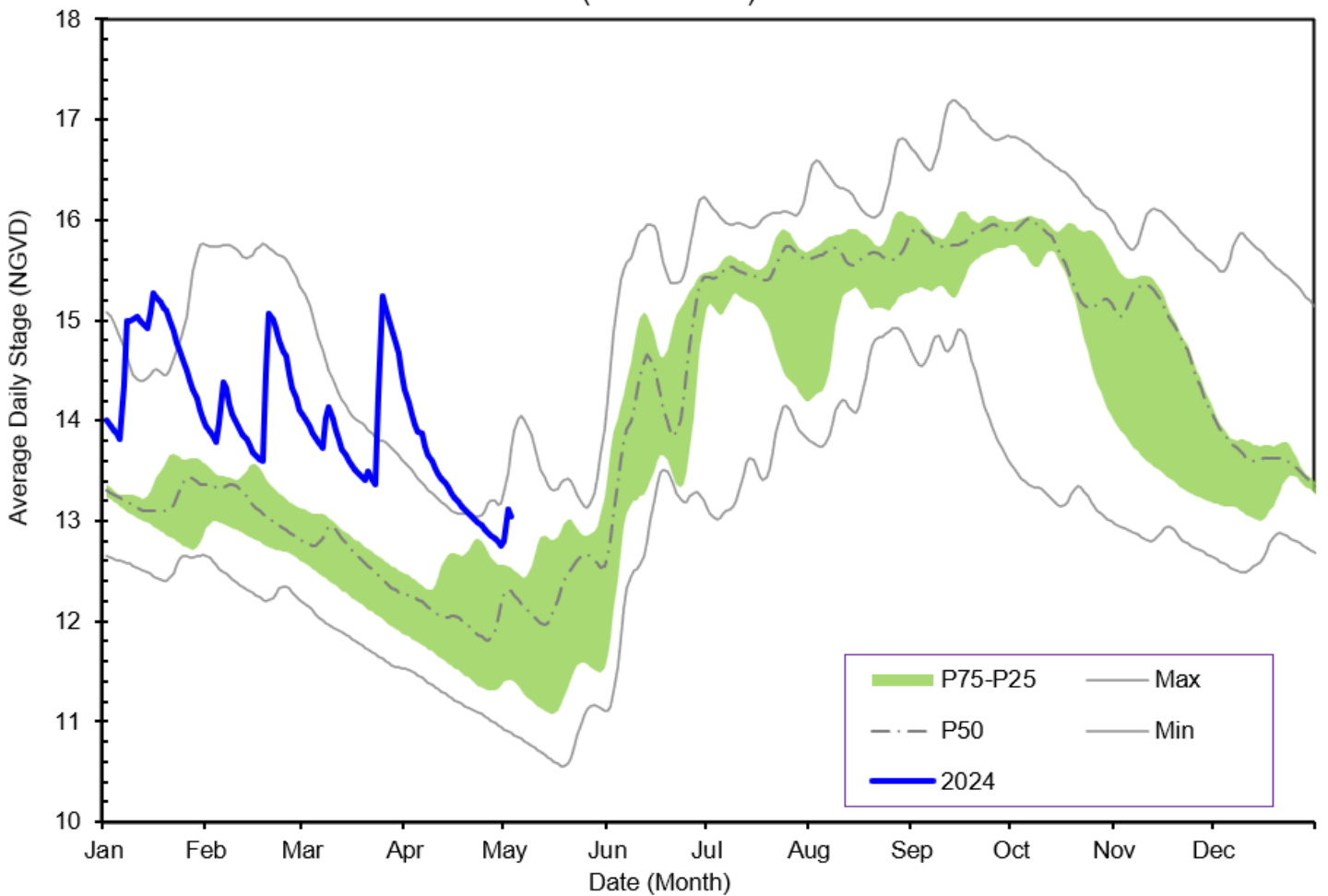




Figure 12 - SOCREW1 Historic Average Daily Headwater Percentiles (2016 - 2022)



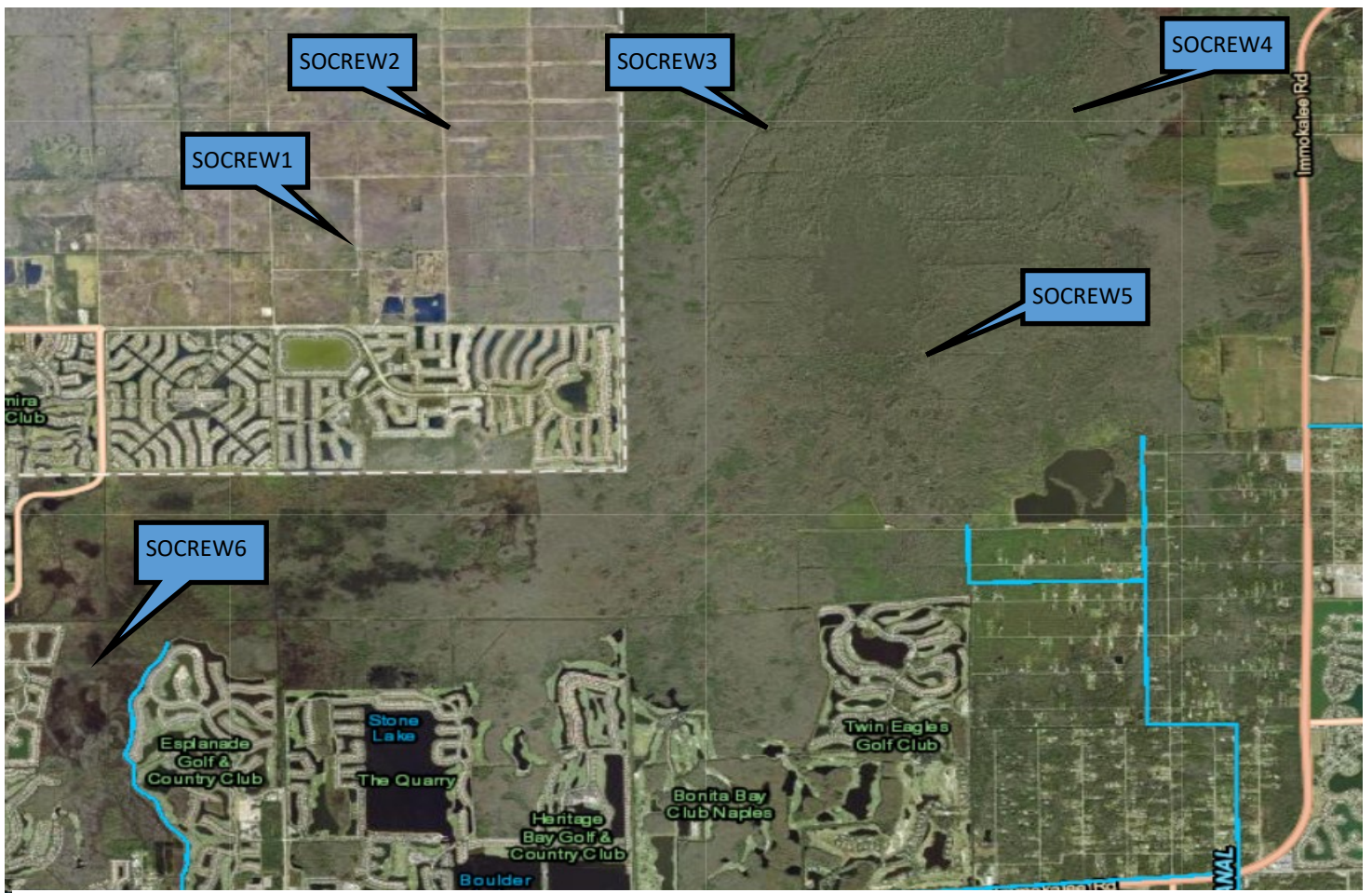


Figure 13 SOCREW2 Historic Average Daily Headwater Percentiles (2016 - 2022)

