

MARCH 2024

BIG CYPRESS BASIN HYDROLOGIC REPORT

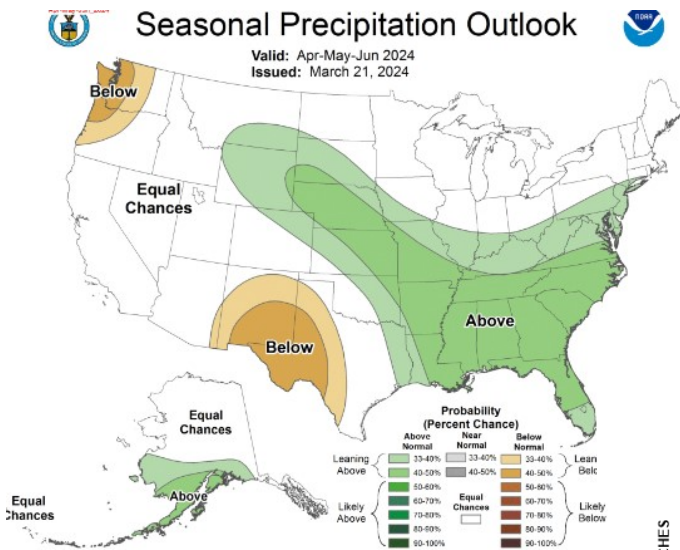


SUMMARY OF HYDROLOGIC CONDITIONS IN THE BIG CYPRESS BASIN

MARCH 2024

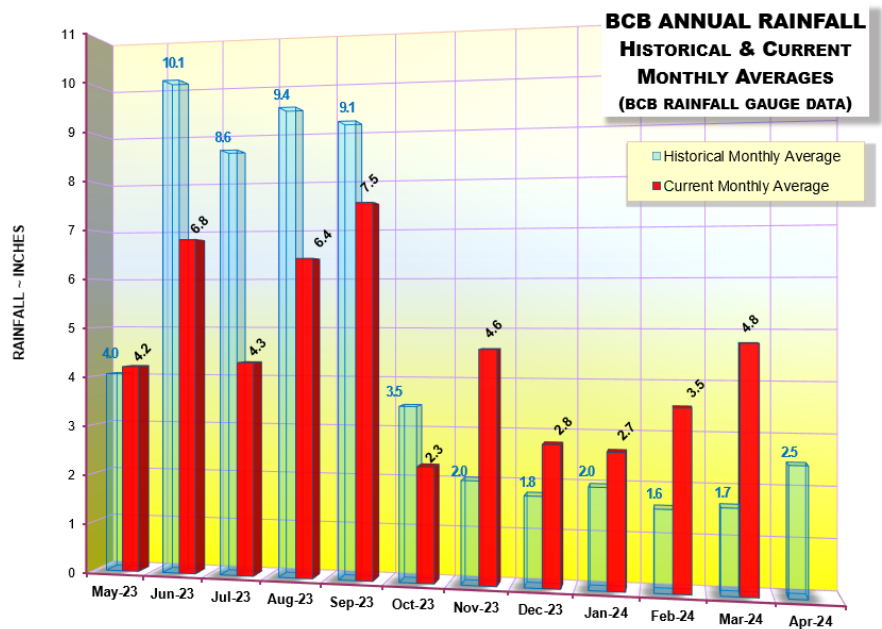
SUMMARY

El Niño'S influence on South Florida's winter weather contributed to wetter conditions during March, resulting in the Basin receiving 282% of average rainfall. The winter rainfall surplus has resulted in increased surface water, groundwater, and canal levels throughout the region and most were well above 90th percentile for late March. Basin canal stages were fairly steady at the top of the operational range during March and are expected to remain steady throughout April. According to NOAA's three month seasonal outlook for April, May, and June, there is a increased probability of higher than normal rainfall for the region.



Much of last year's wet season deficit has been erased due to the surplus of rainfall over the winter. The BCB region started the dry season with an 18 inch deficit which has now been reduced to only 6 inches through the end of March.

Water Year 2023-2024



Looking forward, Basin canal operations may be adjusted in April to commence a managed gradual recession of canal and water levels in order to mimic the natural recession of the canal system so that the region does not start the wet season without the normal amount of water storage available.

MARCH 2024 BCB RAINFALL

The Basin-wide monthly average was 4.8 inches, well above the historical monthly average of 1.7 inches (282% of historical) (Figures 1, 2, Table 1). Of the 4.8" received, 83% was from one rain event on March 22nd and 23rd. The rainfall distribution was varied, with two sites receiving the most at 6.1 inches which was recorded at R-24 (DSOTO10) and at R-3 (COLLIER COUNTY COURTHOUSE). The lowest rainfall of 3.0 inches was recorded at R-13 (IMMOKALEE LANDFILL). Figure 3 shows the average rainfall for each of the Basin's watersheds based on gauge adjusted radar. The Cocohatchee basin received the highest rainfall with a 5.9 inch areal average across the watershed and the lowest was the Okaloacoochee basin with 4.0 inches. The Basin's total areal weighted average rainfall was 4.5 inches. 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

For most of March, the canals were maintained in water conservation mode to hold as much water as possible to promote groundwater recharge. The system was transitioned to flood control operations for the March 22-23 rainfall. After the conclusion of that rain, the system was transitioned back to water conservation operations. At the end of March, the system was above the 90th percentile apart from the Airport Road reach which was 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. Due to the winter rainfall surplus, there has been ample water to maintain water levels at or near historical maximums throughout the Golden Gate system. A majority of the Golden Gate system was transitioned to flood control for 3 days for the March 22-23 rain. After the rain event passed, the system was transitioned back into water conservation mode. Water levels in the Golden Gate system remained at ideal levels for water conservation and were all either at historical maximums or above the 90th percentile for March (ref **Figure 5**).

COCOHATCHEE SYSTEM

The Cocohatchee canal system was operated similarly as the Golden Gate system and was maintained in water conservation mode except for the small change for the mid month rain. As the month concluded water levels in the watershed remain above the 90th percentile for March (**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 (**Figure 7A & 7B**). The Faka Union system was maintained in water conservation mode the entire month and no water was released through FU4S even with the 4 inch rainfall that occurred mid-month. As with other regions of the BCB, the Faka Union watershed had water levels above the 90th percentile as the month ended.

HENDERSON CREEK SYSTEM

Water control structures in the Henderson Creek system were operated in similar fashion as the rest of the system and canal levels in HC1 and HC2 ended the month above the 90th percentile (**Figure 8A & 8B**). Both control structure remained fully closed and only a small amount of water was discharged through HC1 over the fixed crest weir in response to the March 22-23 rainfall.

CORKSCREW SWAMP

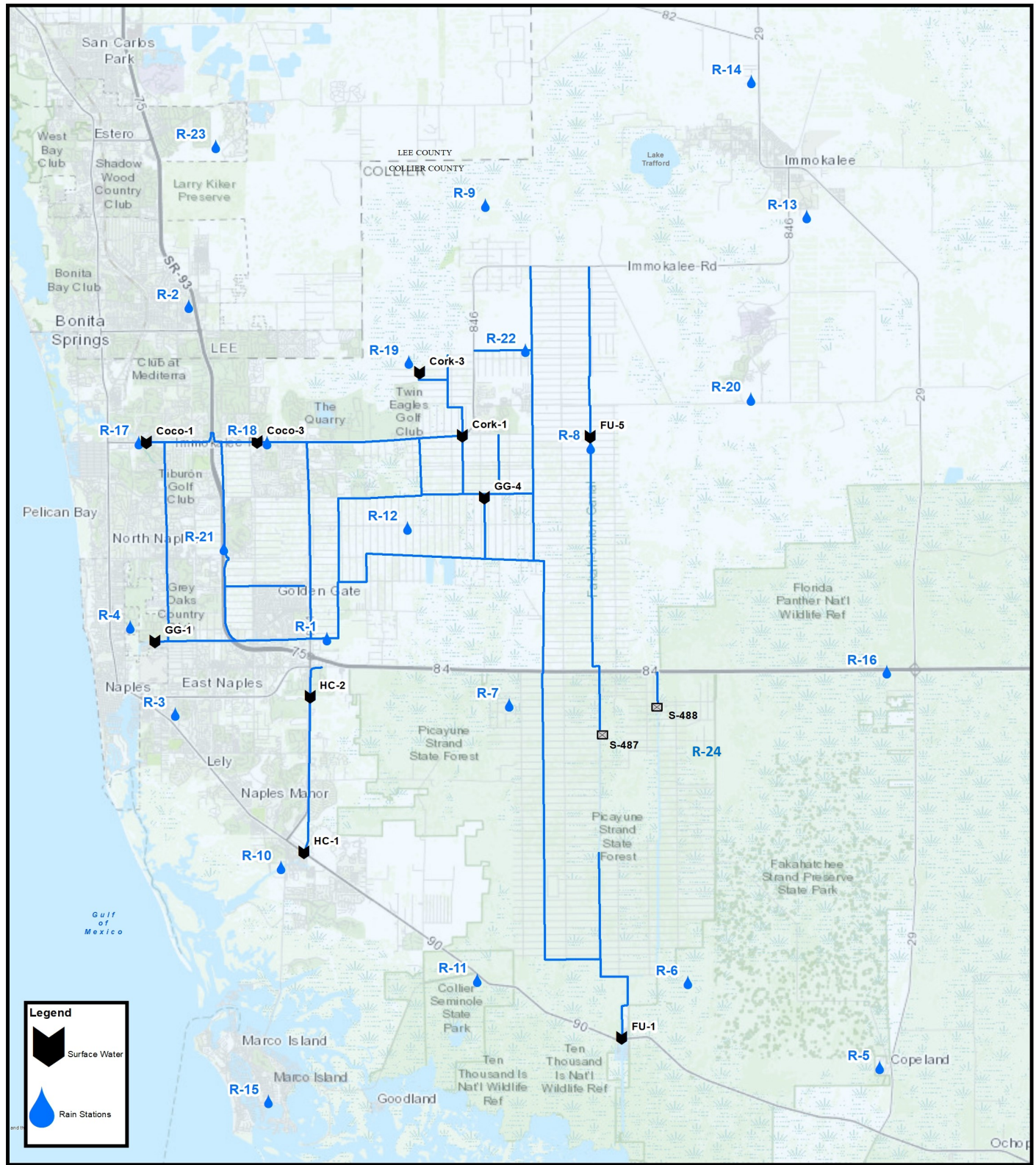
Figure 10 shows the historical trends for Corkscrew Swamp, Bird Rookery, and the Cork 3 structure, and the 2023/2024 corresponding water levels. Overall water levels in the swamp during March were more in line with typical late wet season levels. All locations were several feet above normal levels for March and near historical maximums. Lake Trafford water levels remained elevated throughout the month and within ~0.5 feet of historical record maximum for March (**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 over 1.50 ft above the historical record maximum, and SOCREW2 within ~0.5 feet of historical record maximum. The SOCREW sites 3, 4, 5 and 6 are newer sites and only have a period of record for approximately 1.5 years, so there is not adequate data to complete the statistical analysis. However, all stations remained closer to typical levels seen during the wet season.

BIG CYPRESS BASIN & LOWER WEST COAST GROUNDWATER LEVELS

The current reporting (03/31/2024) for the Lower West Coast [LWC] groundwater levels show all ended the month well above the levels at this time last year. All but two wells are at or above 90th percentile but are still above or near normal for March. L-2194 (Bonita Springs, Sandstone) is above the 75th percentile, and C-948R (Golden Gate, Mid Hawthorn) is above the 50th percentile. (**Table 2 and Figure 9**).



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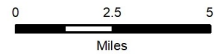


FIGURE 1
Hydrologic Station Map

Collier County, Florida



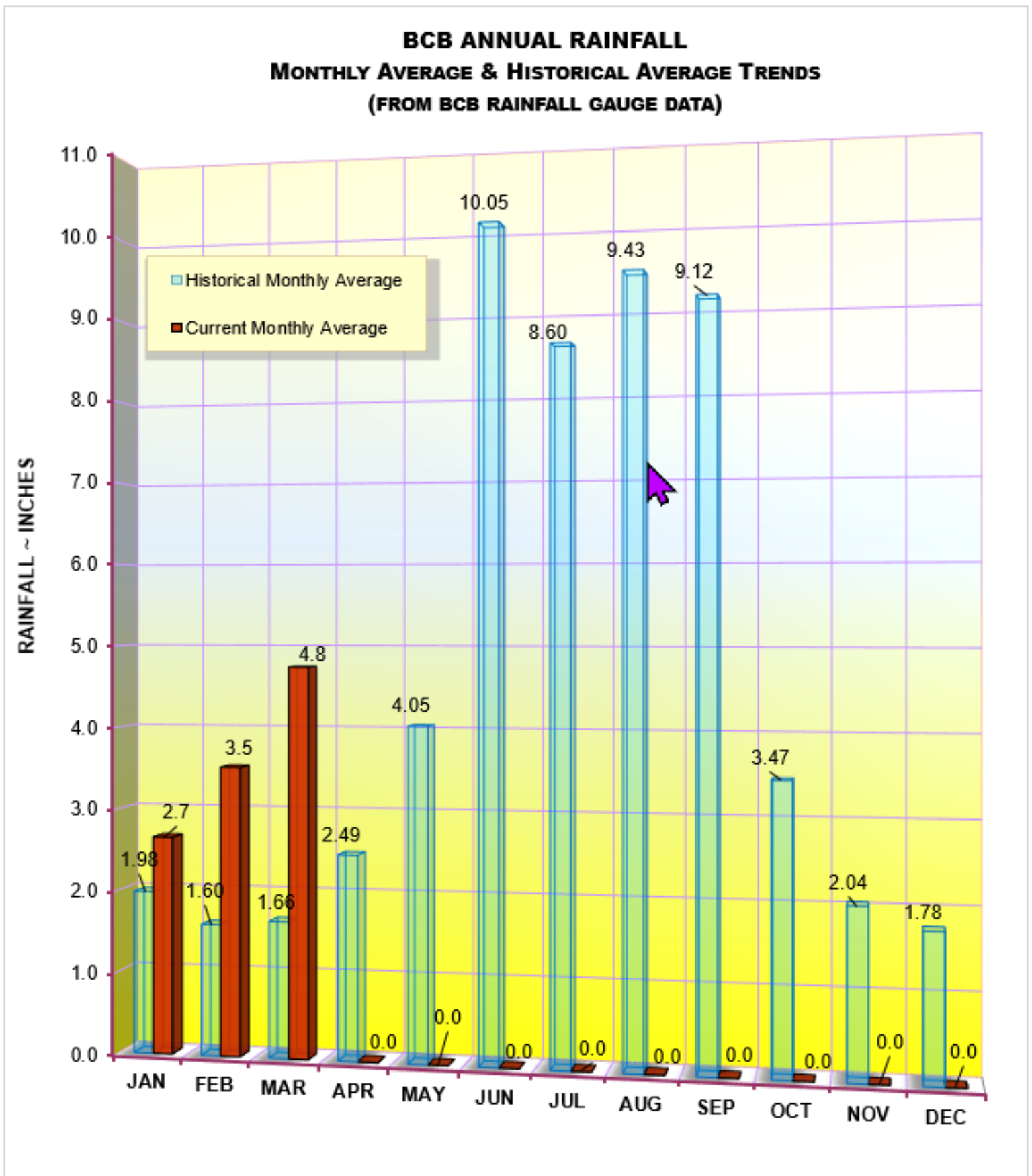
BIG CYPRESS BASIN
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 Naples, Florida 34104
 239-263-7615

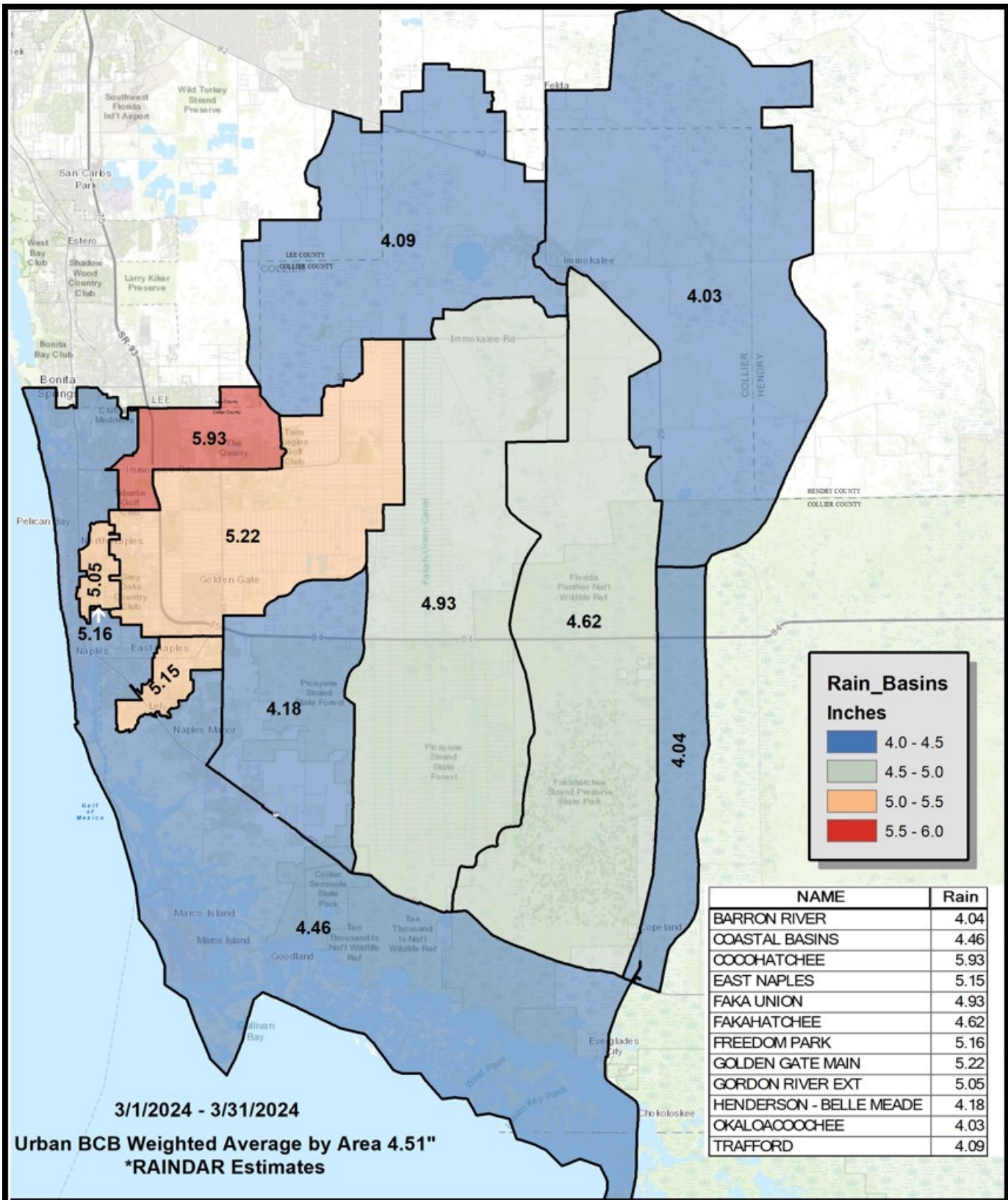


TABLE 1
RAINFALL REPORT - MARCH 2024
DISTRICT/BASIN RAINFALL STATIONS
 (ALL NUMBERS ARE IN INCHES)

STATION INDEX NO.	STATION NAME	MARCH 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	4.80	0.66	4.14	11.31	4.39	6.93
R-2	BONITA SPRINGS WATER PLANT	4.32	2.20	2.12	10.72	6.07	4.65
R-3	COLLIER COUNTY COURTHOUSE	6.10	1.87	4.23	12.29	5.63	6.66
R-4	FREEDOM PARK	5.41	0.97	4.44	10.99	4.66	6.33
R-5	FAKAHATCHEE STRAND HQ	4.24	2.21	2.03	9.07	5.84	3.24
R-6	DAN HOUSE PRAIRIE	4.70	1.49	3.21	10.56	4.47	6.09
R-7	SGGE WEATHER STATION	4.27	1.33	2.94	10.83	4.58	6.25
R-8	FAKA UNION #5	4.94	1.04	3.90	11.71	5.39	6.32
R-9	CORKSCREW SWAMP NORTH END	3.99	1.55	2.44	10.13	5.05	5.08
R-10	ROOKERY BAY HQ	4.96	1.33	3.63	11.96	4.94	7.02
R-11	COLLIER SEMINOLE STATE PARK	5.69	1.95	3.74	11.93	5.39	6.54
R-12	G.G. FIRE STATION	4.99	2.11	2.88	11.54	5.87	5.67
R-13	IMMOKALEE LANDFILL	3.03	2.38	0.65	8.26	6.33	1.93
R-14	IFAS	3.16	2.63	0.53	8.42	6.58	1.84
R-15	MARCO R.O. PLANT	4.18	1.90	2.28	11.77	6.22	5.55
R-16	FAKAHATCHEE STRAND NORTH END	5.03	2.40	2.63	11.20	6.86	4.34
R-17	COCO#1	3.62	1.99	1.63	9.18	5.59	3.59
R-18	COCO#3	5.66	1.31	4.35	11.79	4.81	6.98
R-19	BIRD ROOKERY	5.98	0.69	5.29	12.51	3.22	9.29
R-20	AVE MARIA	4.88	2.23	2.65	10.70	6.15	4.56
R-21	I75W2	4.88	0.79	4.09	11.56	3.33	8.23
R-22	GG#7	5.18	1.20	3.98	11.38	3.70	7.68
R-23	FPWX	3.90	1.98	1.92	9.20	5.49	3.71
R-24	DSOTO10	6.10	New Site	New Site	New Site	No Historical Data	
AVERAGES		4.75	1.66	3.09	10.83	5.24	5.58

FIGURE 2
BCB GAUGE RAINFALL MONTHLY AVERAGES



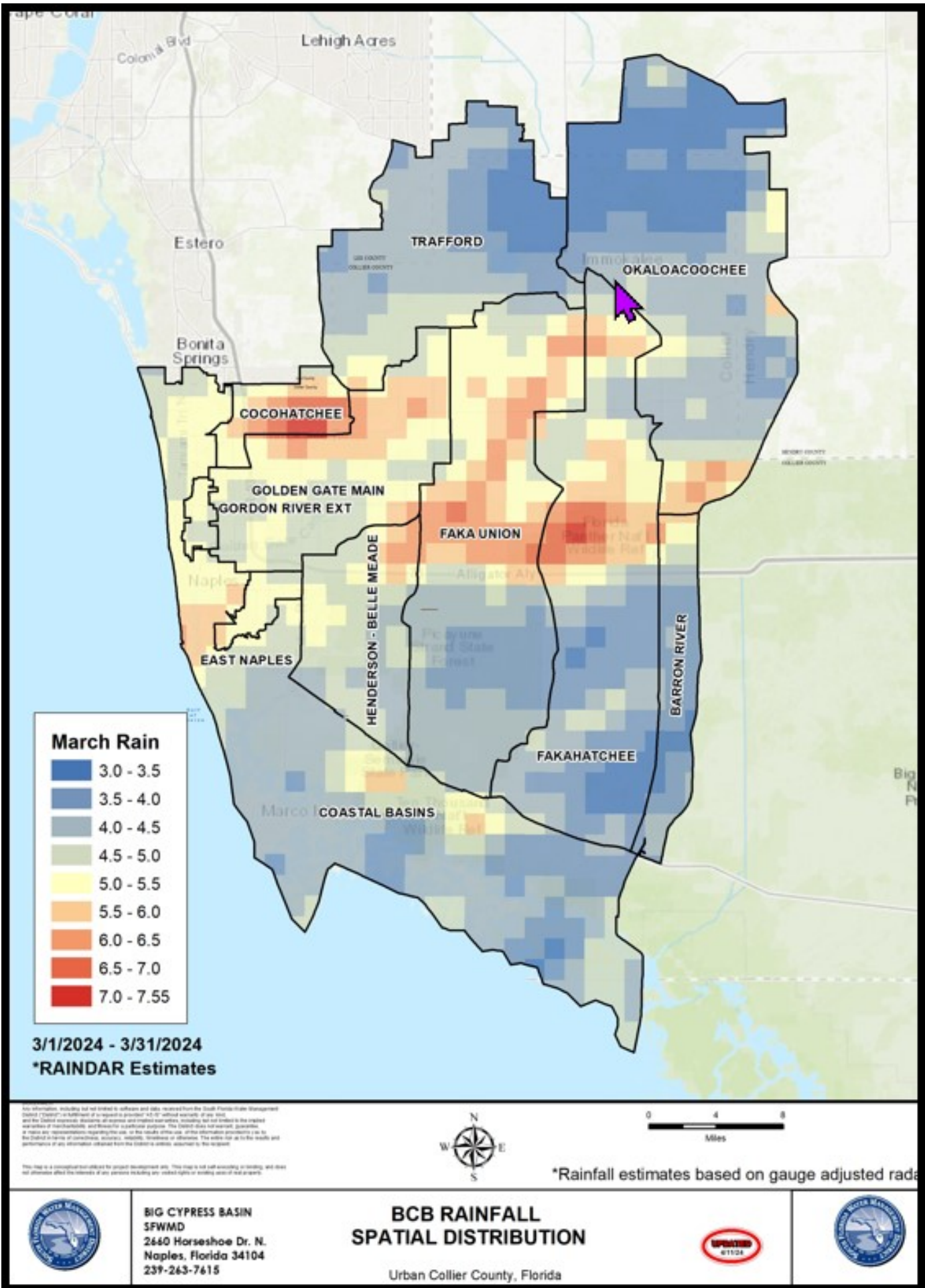


*Rainfall estimates based on gauge adjusted radar

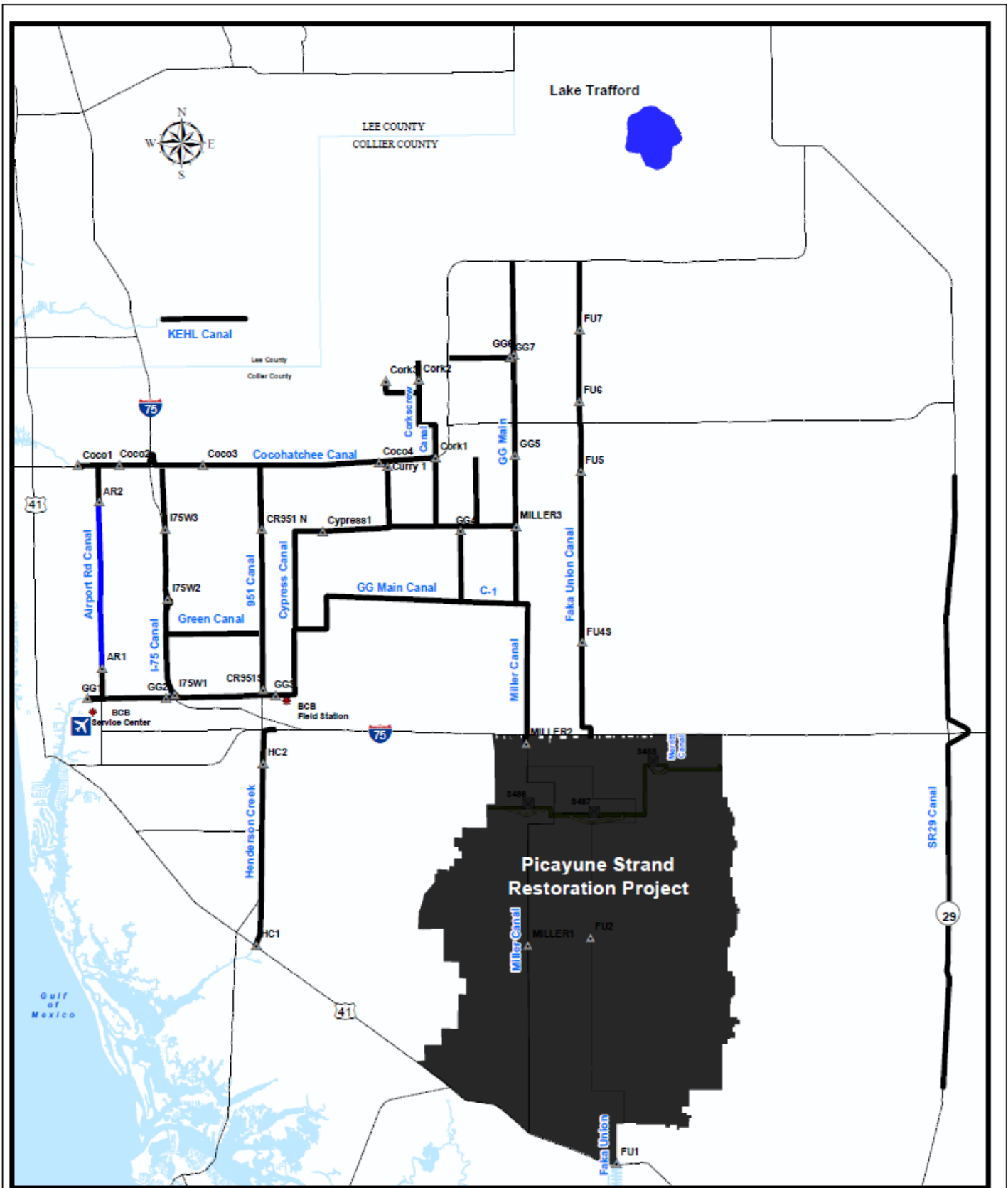
	<p>BIG CYPRESS BASIN SFWMD 2660 Horseshoe Dr. N. Naples, Florida 34104 239-263-7615</p>	<p>BCB RAINFALL SPATIAL DISTRIBUTION</p>		
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Urban Collier County, Florida

MARCH 2024—FIGURE 3a

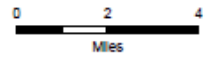
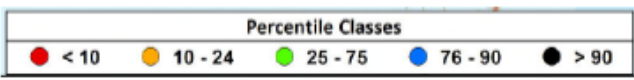


MARCH 2024—FIGURE 4



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* Based on period of record for each canal reach



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BCB Conditions Index 4/3/24

Urban Collier County, Florida



FIGURE 4a

Figure 5 Golden Gate Canal Historic Average Daily Headwater Percentiles

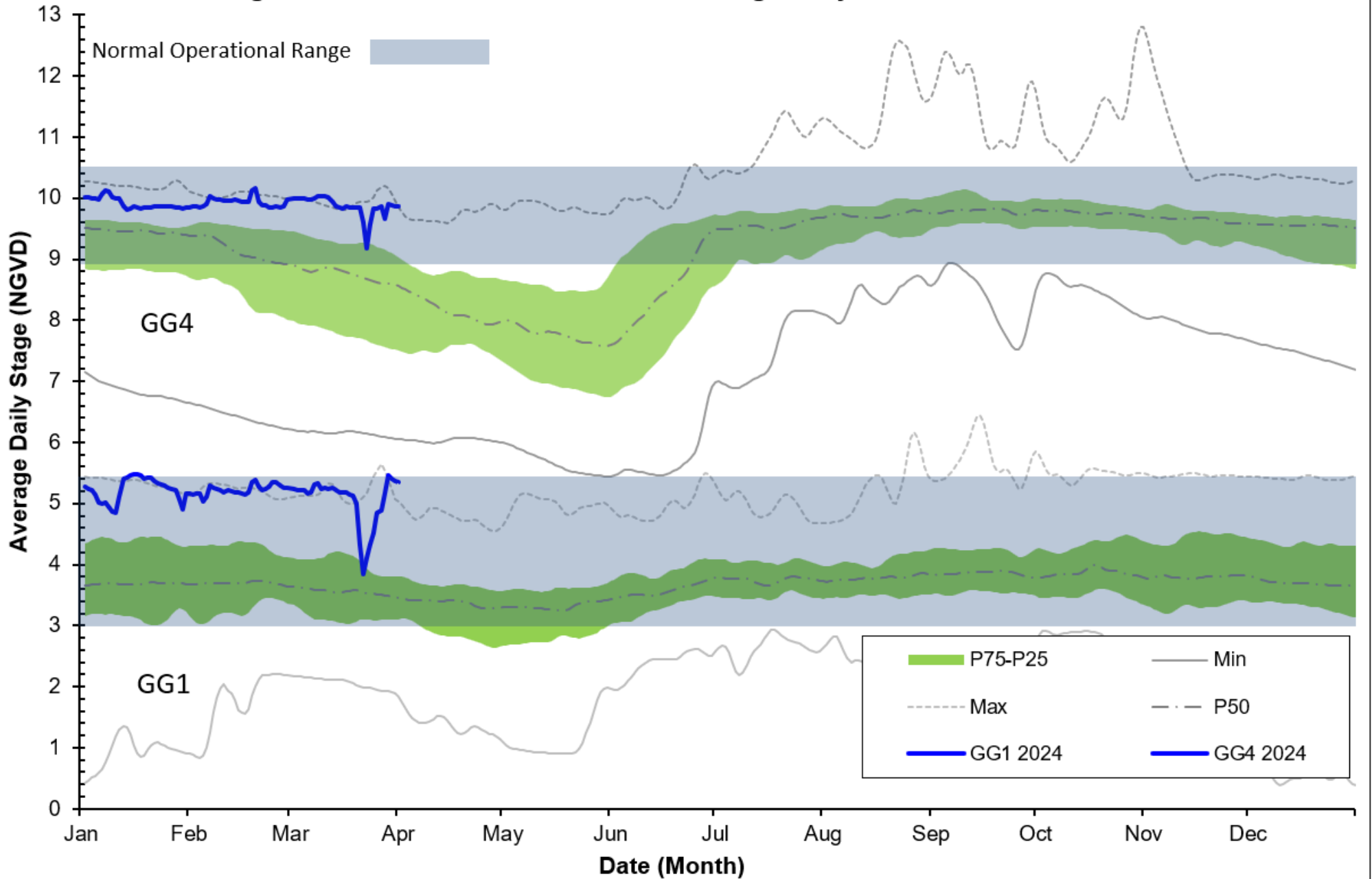


Figure 6A Cocohatchee Canal Historic Average Daily Headwater Percentiles

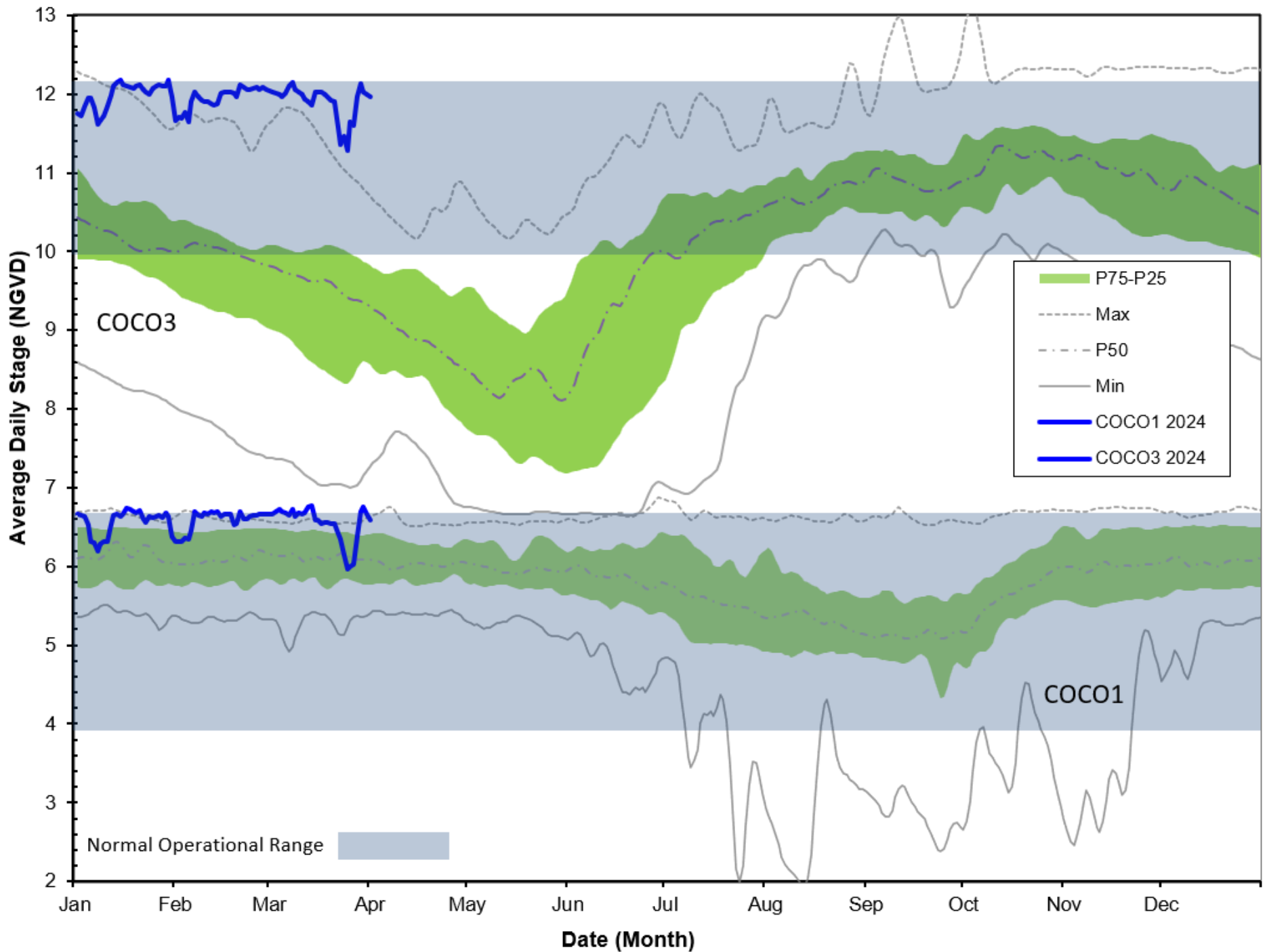


Figure 6 - B CORK1 Historic Average Daily Headwater Percentiles (1989-2022)

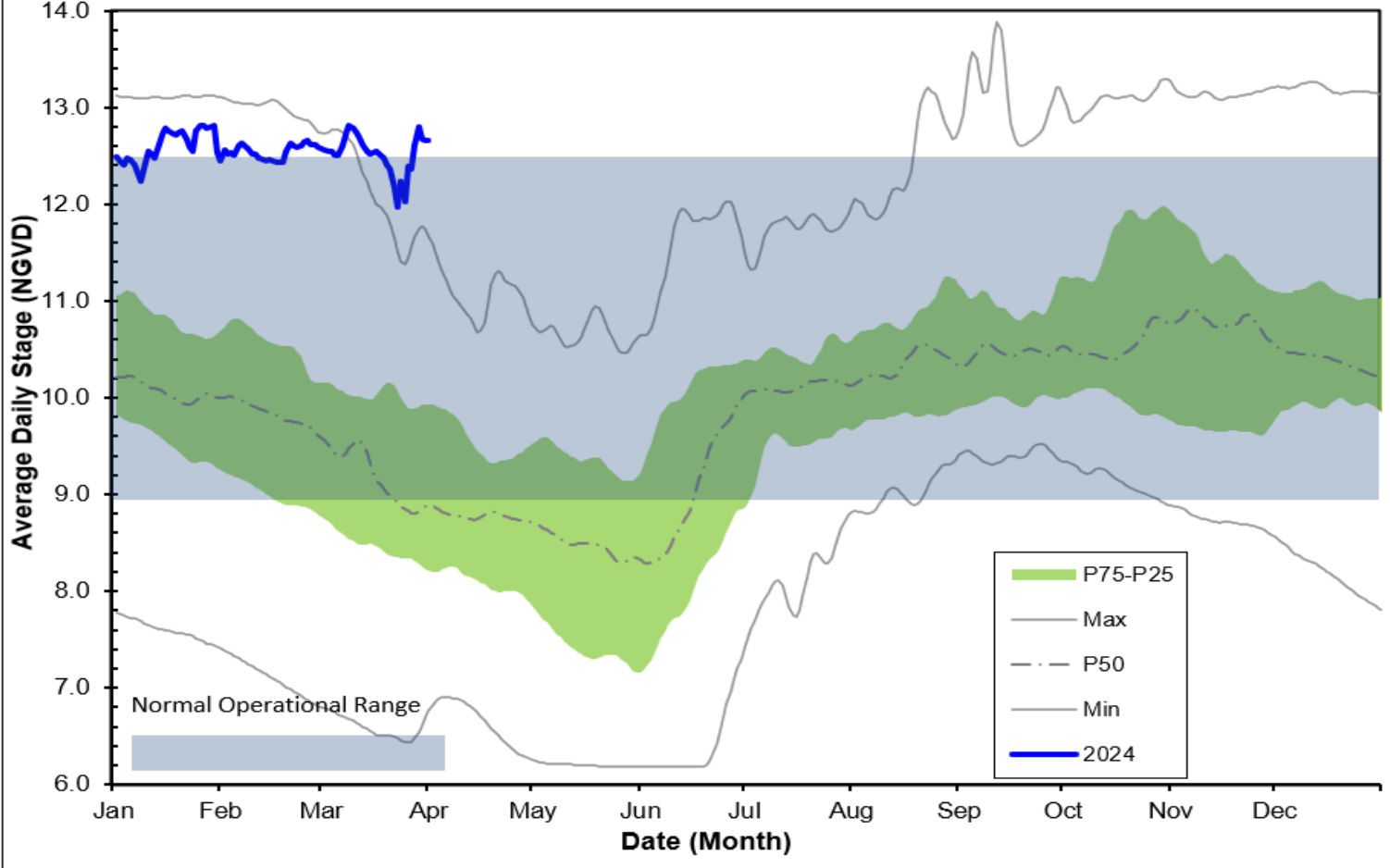


Figure 6C - CORK3 Historic Average Daily Headwater Percentiles (2004- 2022)

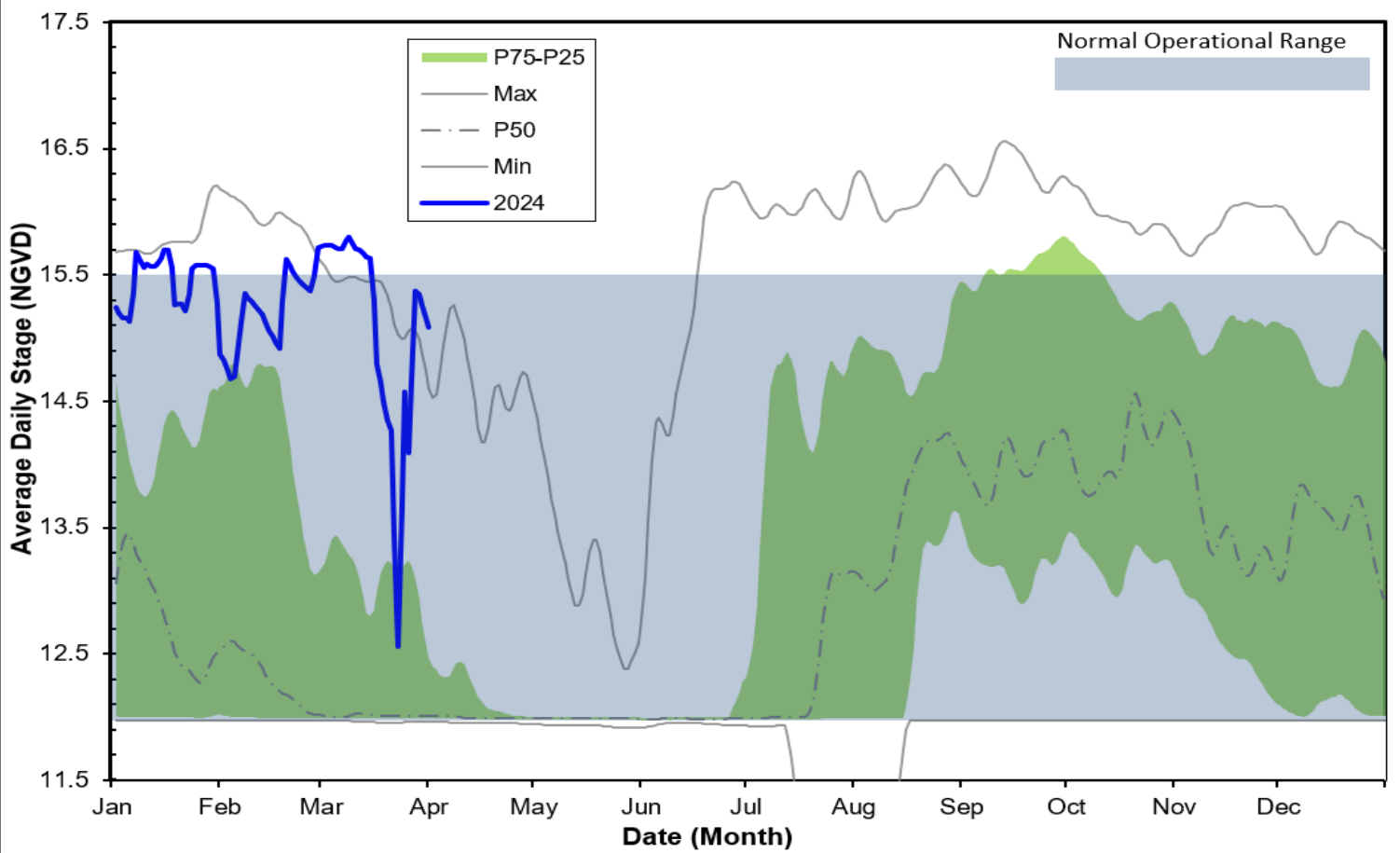


Figure 7A Faka Union Canal Historic Average Daily Headwater Percentiles

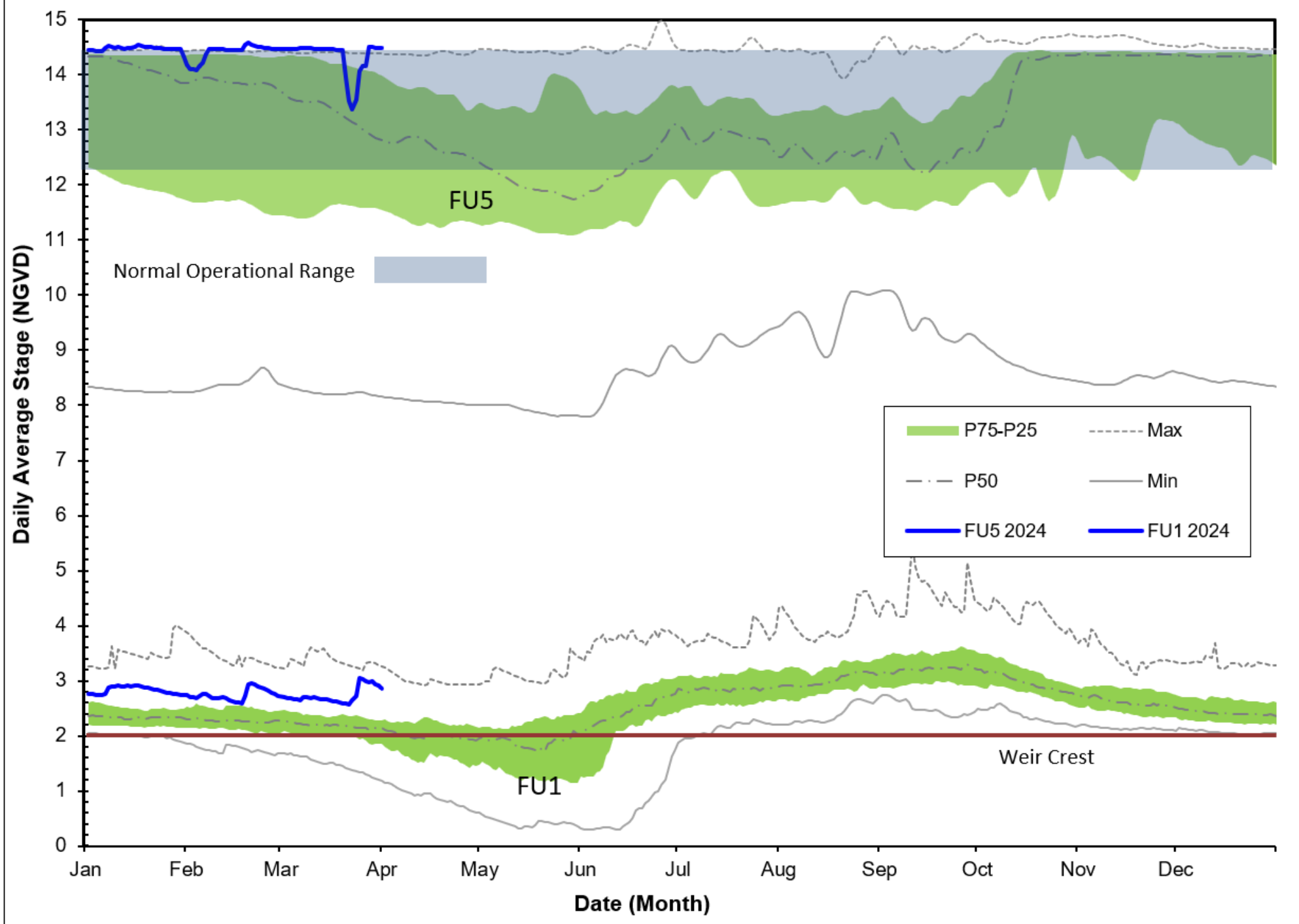


Figure 7B FU4S Historic Average Daily Water Percentiles

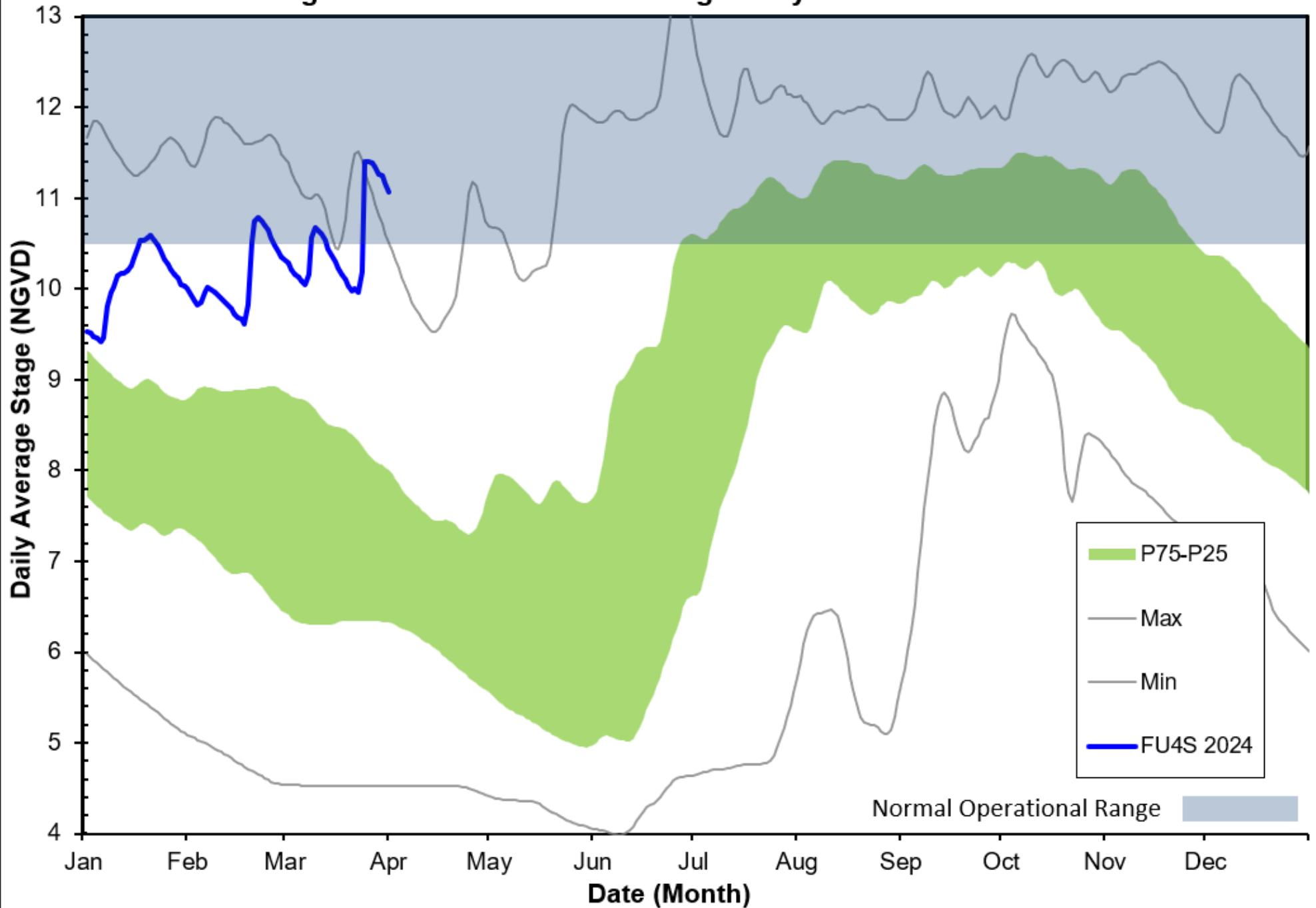


Figure 8A HC1 Historic Average Daily Headwater Percentiles

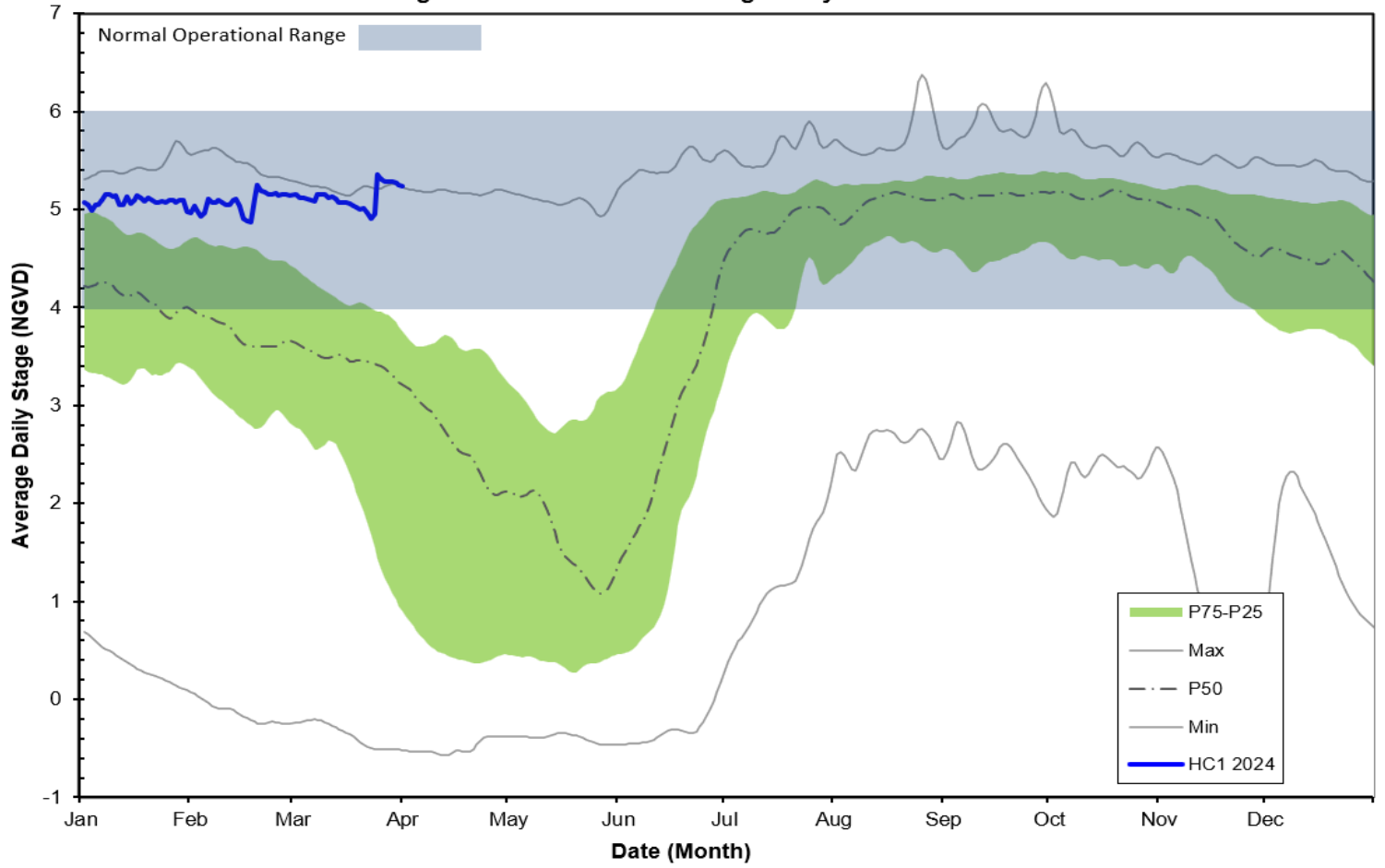
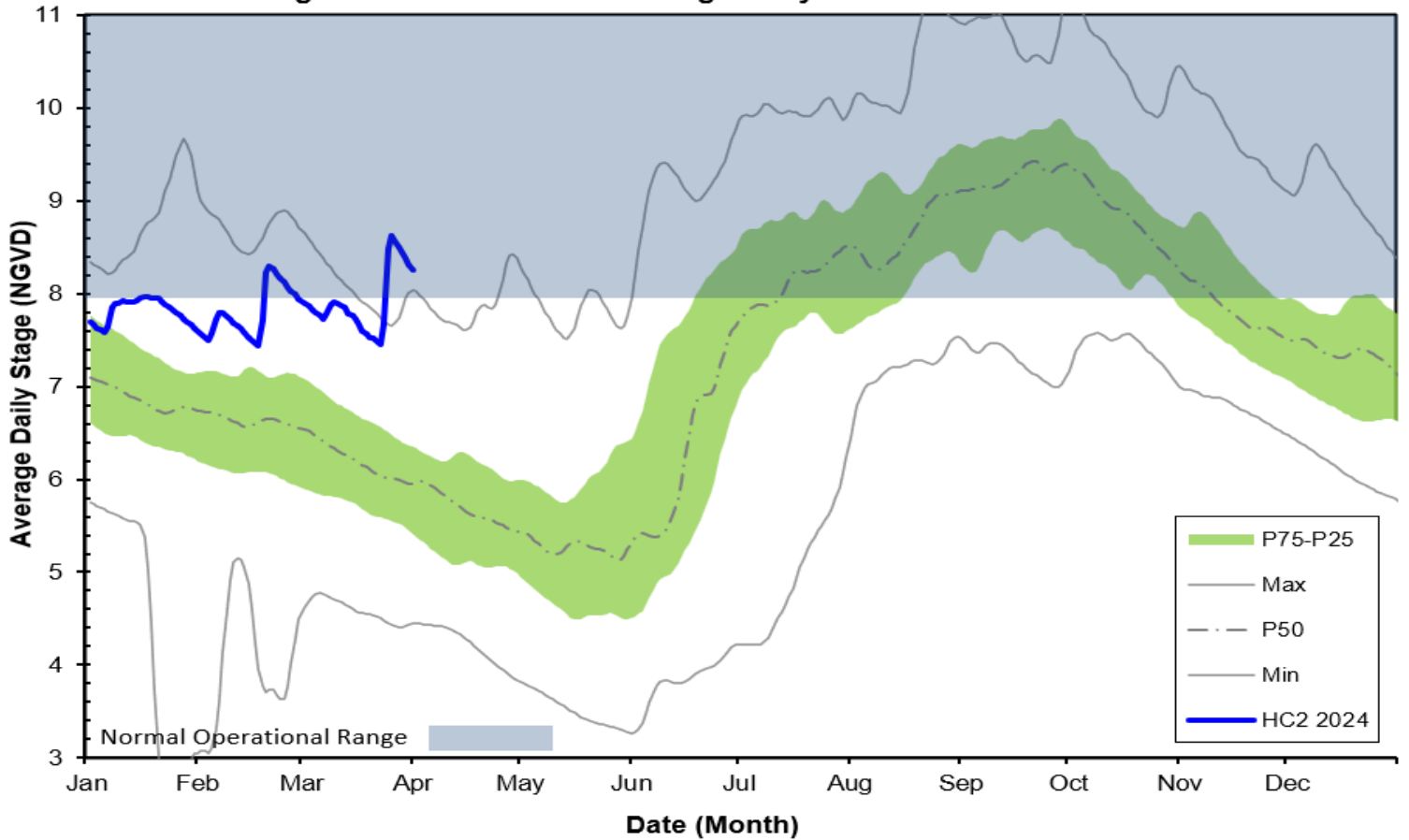


Figure 8B HC2 Historic Average Daily Headwater Percentiles



Last Reading Date :		March 31, 2024						
Previous Period Reading Date:		February 29, 2024						
STATION INDEX NO.	WELL LOCATION	WELL / AQUIFER - TYPE	PREVIOUS LEVEL	CURRENT LEVEL (ft)	CHANGE (from previous date)	DIRECTION OF CHANGE	% CHANGE	CONCERN INDICATOR
ALL INDICATOR LEVELS SHOWN IN FT-NGVD								
C-462	Immokalee	Lower Tamiami Aquifer	34.29	34.10	-0.19	↓	-1%	GREEN
C-1004R	Naples	Lower Tamiami Aquifer	3.37	2.97	-0.40	↓	-12%	YELLOW
C-1224	Marco Lakes	Lower Tamiami Aquifer	4.39	4.52	0.13	↑	3%	GREEN
C-948R	Golden Gate	Mid Hawthorn Aquifer	30.75	30.52	-0.23	↓	-1%	
C-951R	Golden Gate	Lower Tamiami Aquifer	4.04	4.45	0.41	↑	10%	
L-2194	Bonita Springs	Sandstone Aquifer	5.42	5.10	-0.32	↓	-6%	GREEN
L-2195	Bonita Springs	Surficial Aquifer System	10.82	10.72	-0.10	↓	-1%	GREEN
L-738	Bonita Springs	Lower Tamiami Aquifer	1.72	1.10	-0.62	↓	-36%	GREEN

**TABLE 2
BCB WATER CONDITIONS SUMMARY
MARCH 2024**

BIG CYPRESS BASIN

MARCH 2024

GROUNDWATER LEVEL DAILY TRENDS COMPARED TO HISTORICAL AVERAGE

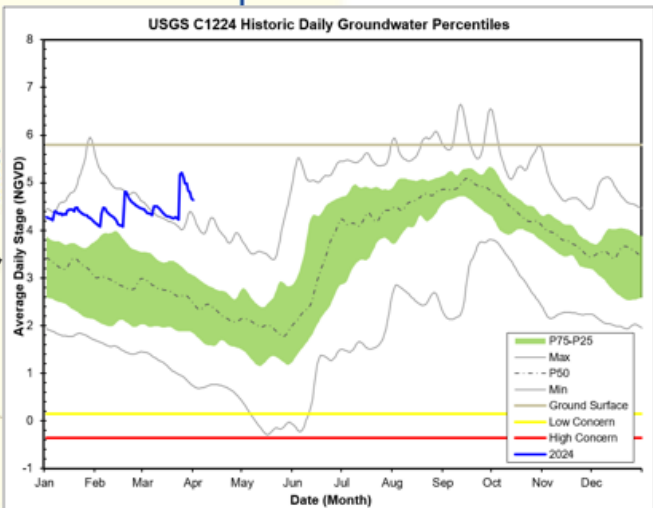
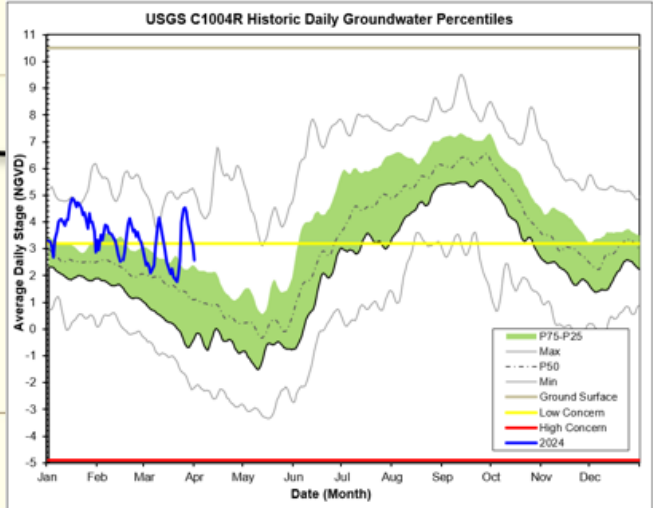
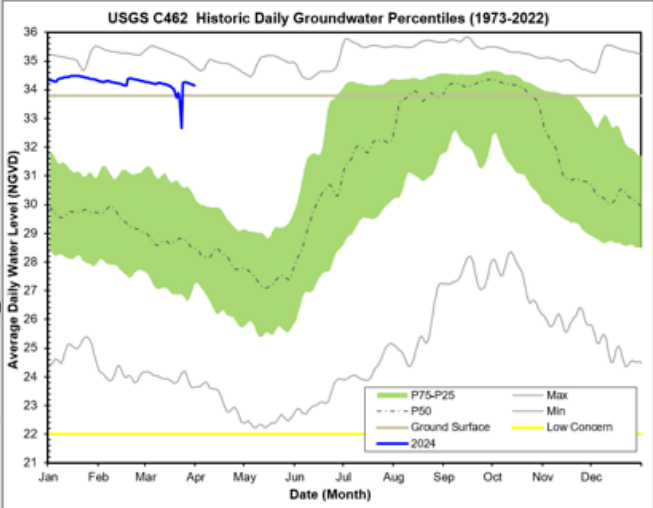
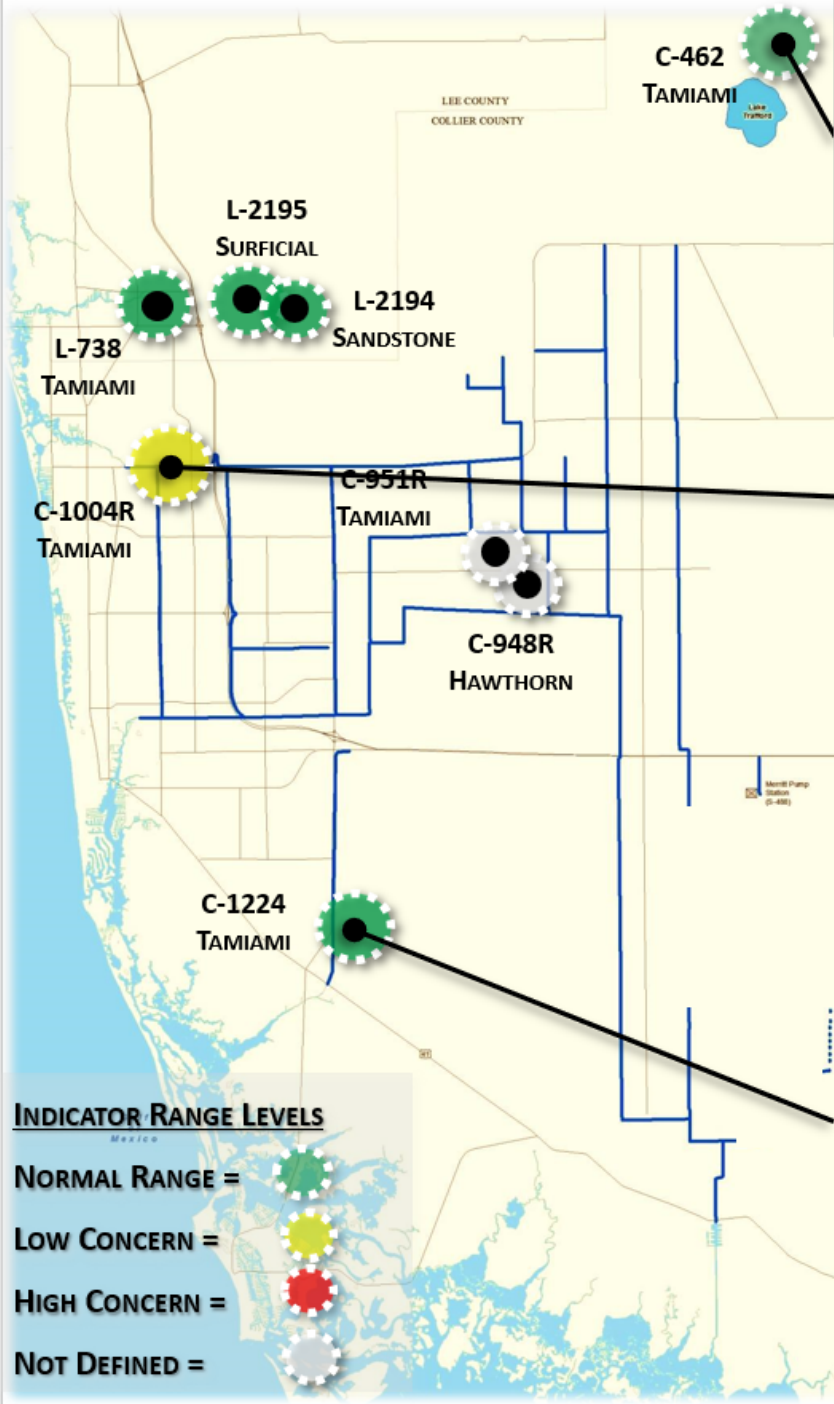


FIGURE 9

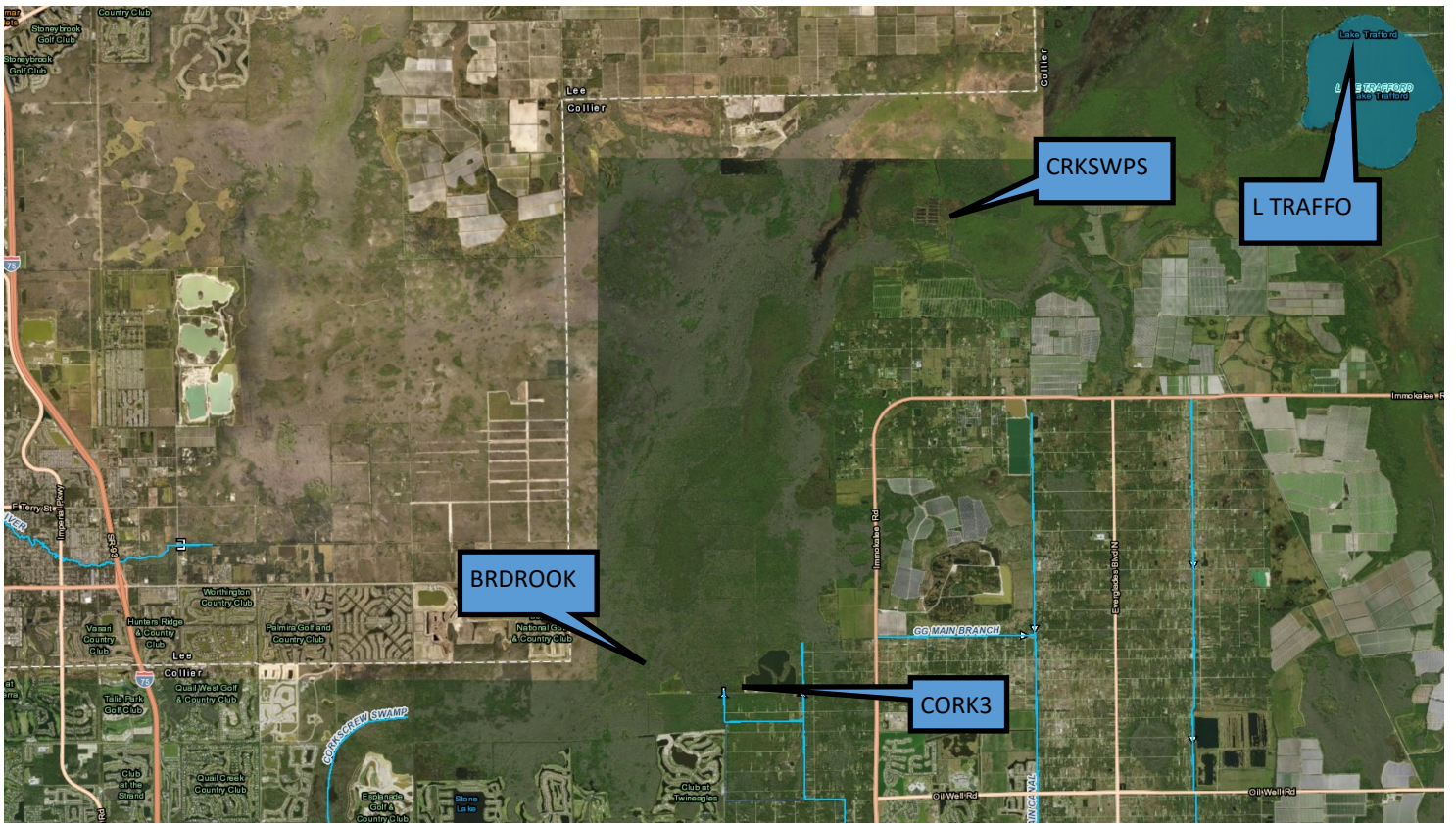


Figure 10-Corkscrew Historic Average Daily Headwater Percentiles (1984-2022)

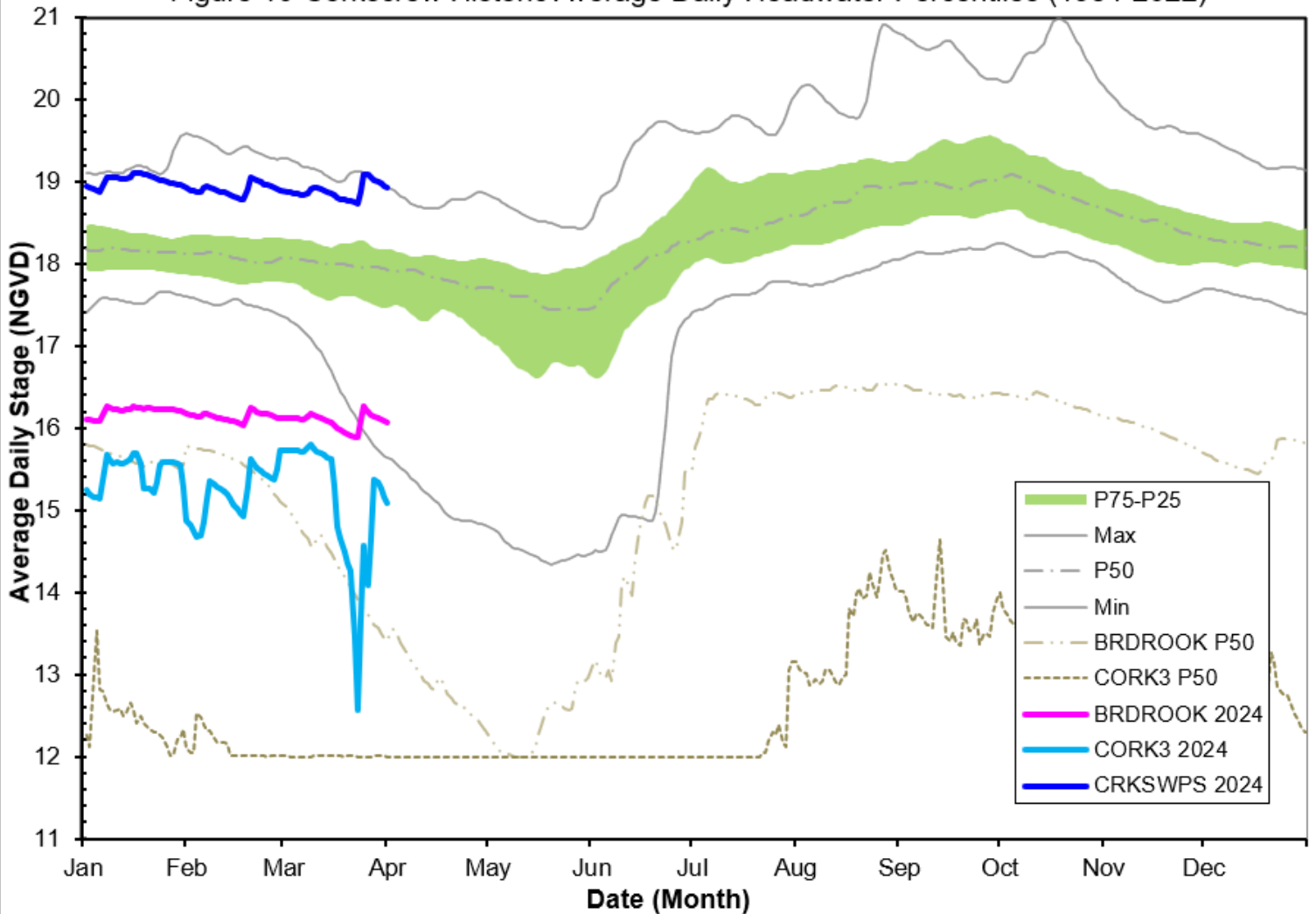
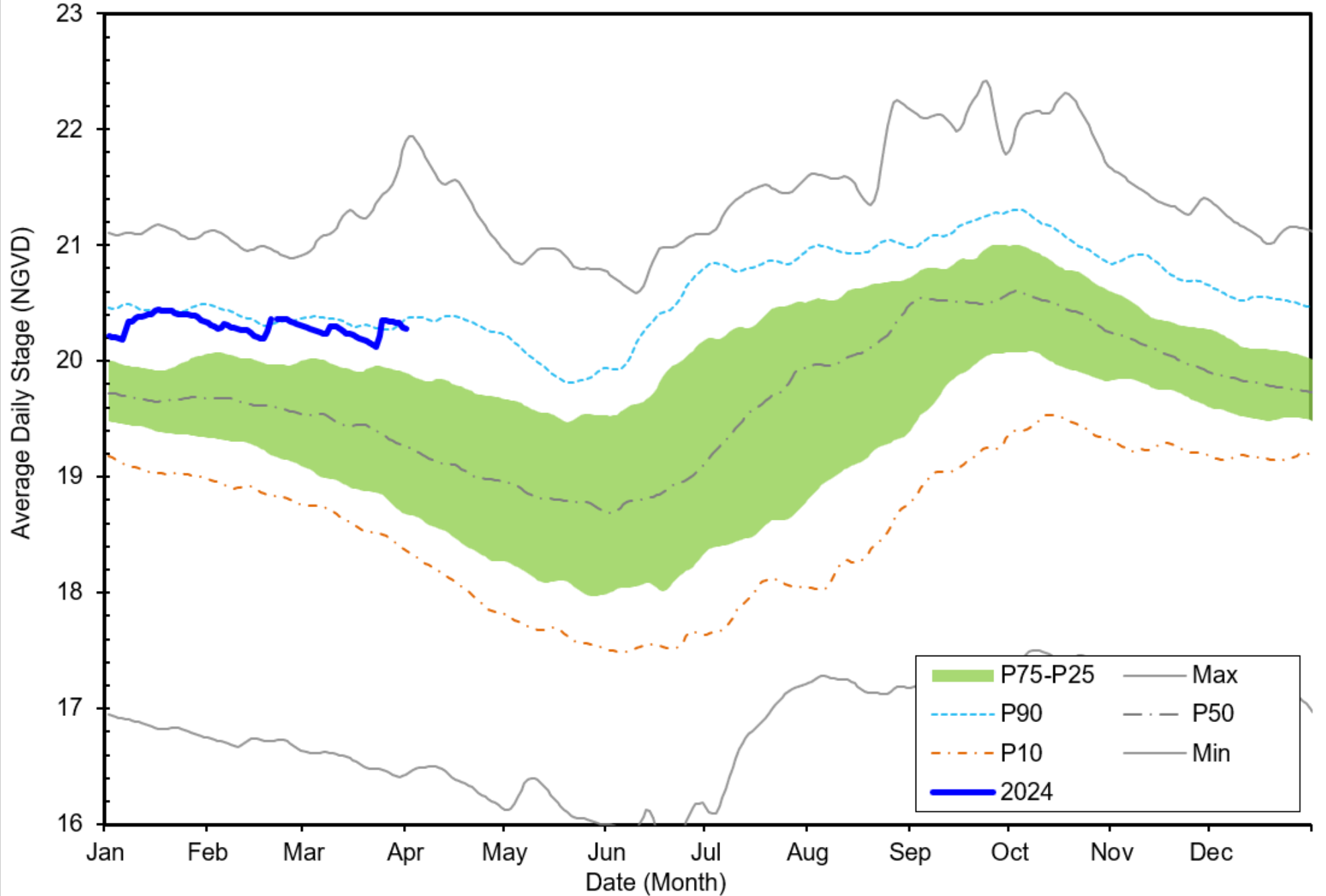


Figure 11 Lake Trafford Historic Daily Headwater Percentiles (1941 - 2022)



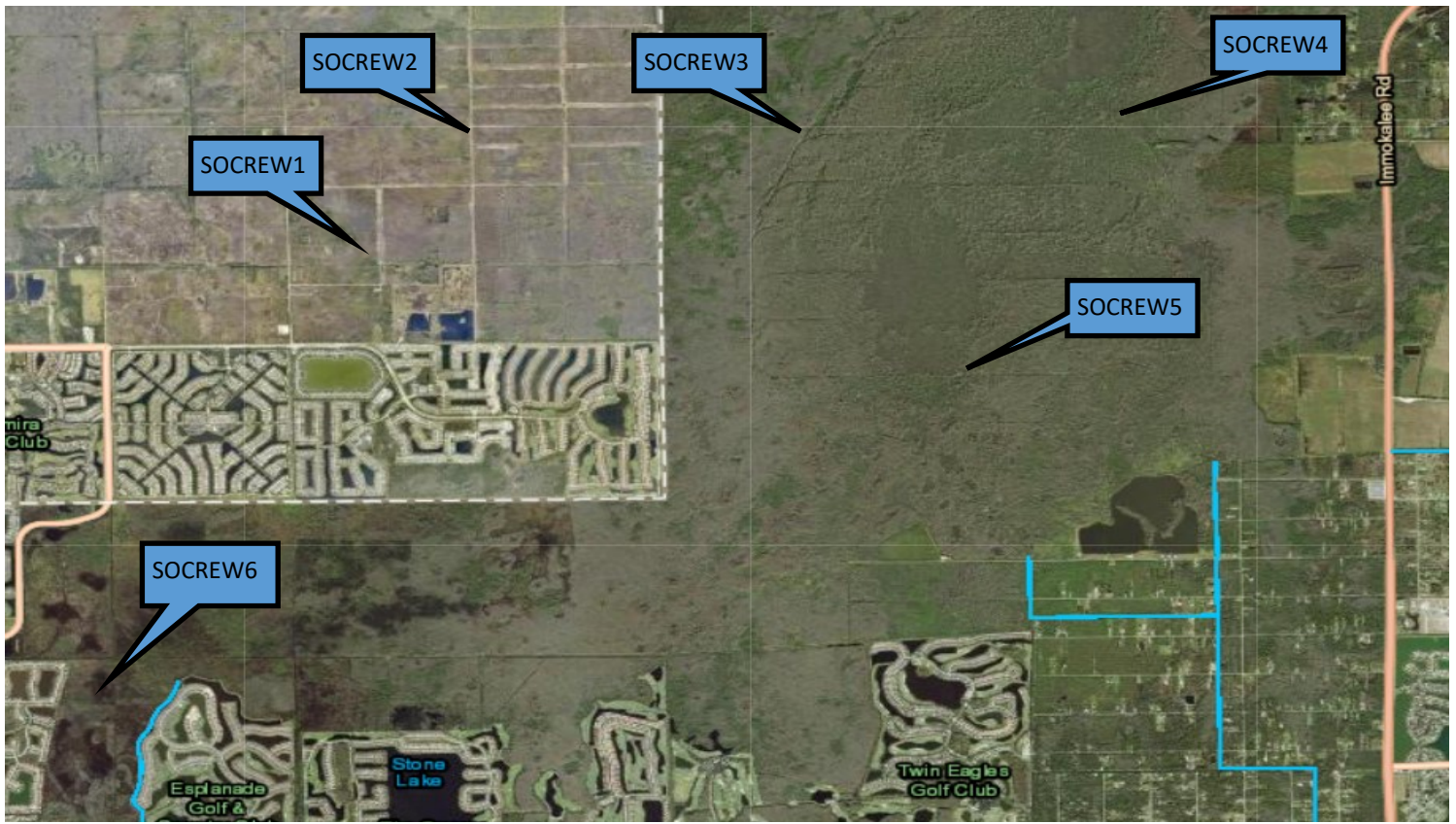
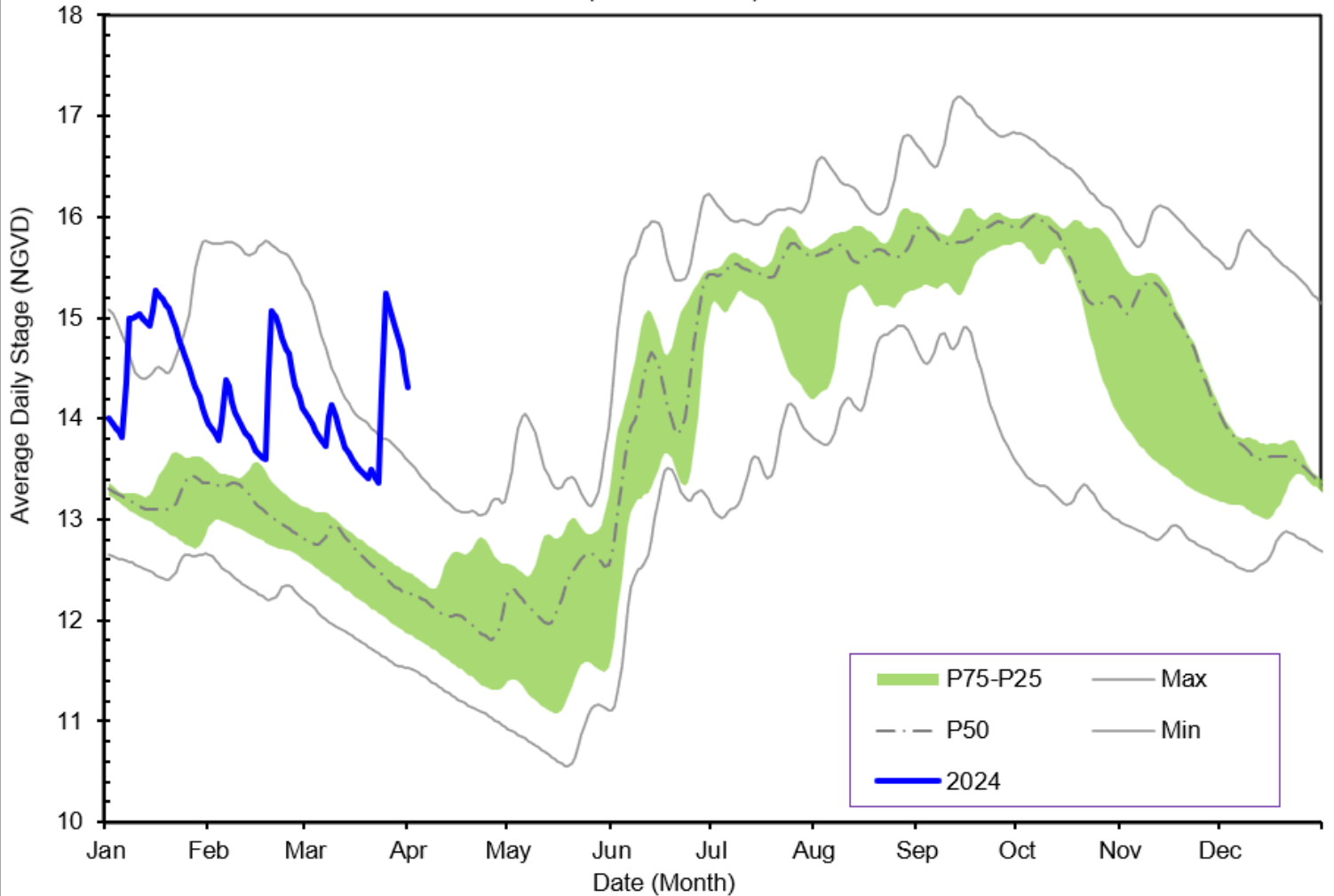


Figure 12 - SOCREW1 Historic Average Daily Headwater Percentiles (2016 - 2022)



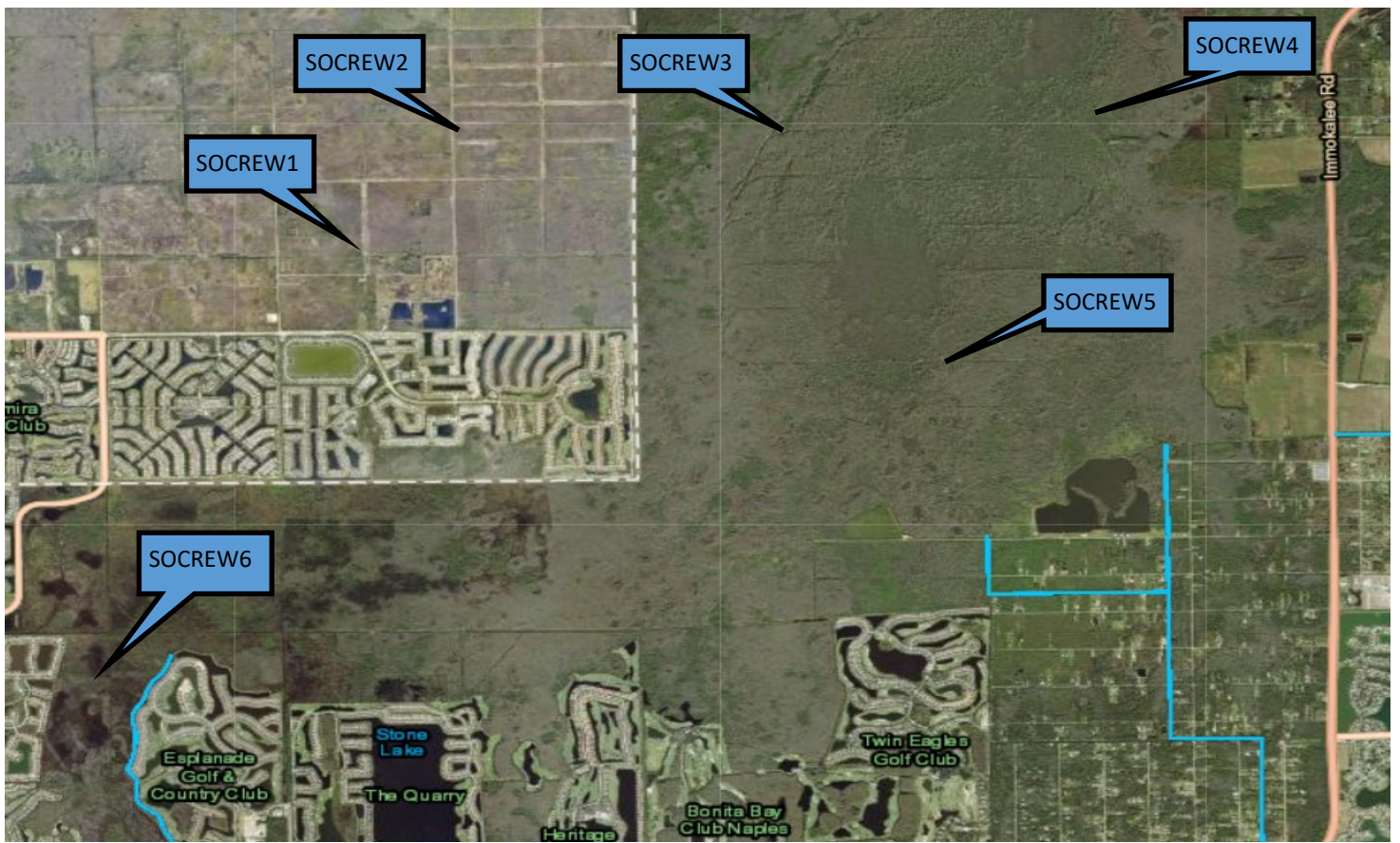


Figure 13 SOCREW2 Historic Average Daily Headwater Percentiles (2016 - 2022)

