SOUTH FLORIDA WATER MANAGEMENT DISTRICT

May 2024

Big Cypress Basin Hydrologic Report

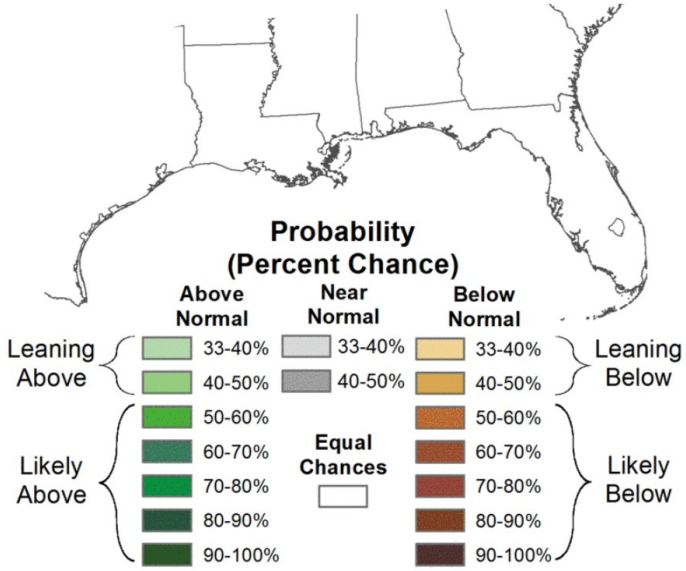
sfwmd.gov

SUMMARY OF HYDROLOGIC CONDITIONS IN THE BIG CYPRESS BASIN

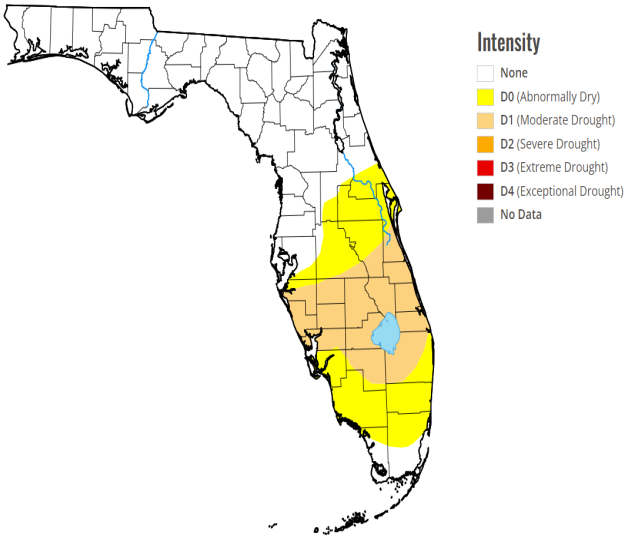
May 2024

SUMMARY

May saw record-high temperatures, making it the hottest May on record since 1914. Additionally, precipitation remained below normal, totaling 1.57 inches, or 40% of the average, marking the fourth lowest rainfall since Basin records began in 1990. This deficit in precipitation for the month, might be partially attributed to the transition from El Nino to neutral conditions. Neutral and La Nina conditions in the Pacific Ocean do not typically have a direct impact on the summer daily rainfall patterns of Florida. La Nina presence during the hurricane season does typically provide more favorable conditions for tropical cyclone development which is one reason why seasonal hurricane forecasts are calling for an extremely active season. According to the National Weather



May 2024

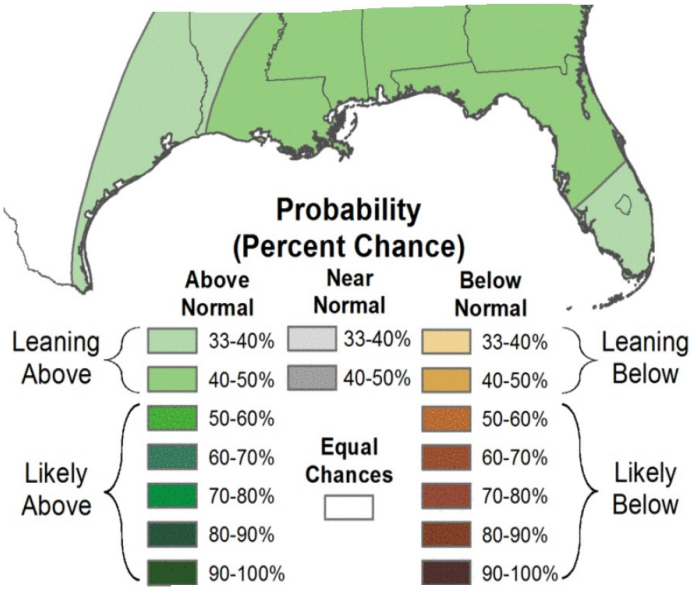


US Drought Monitor

Service (NWS), the wet season begins on May 15th and lasts until October 15th. District meteorologists have officially declared the start of the wet season as of May 13th.

With the persistence of dry conditions for the month of May and record breaking temperatures, water levels decreased in the Lower West Coast's surface and groundwater stations. Half of the monitoring stations are above the 25th percentile while the other half are at or near the historic minimums.

The US drought monitor for Florida indicated that the Basin's drought status had changed from mostly none (no drought) in April to the entire Basin being abnormally dry for the month of May (top-right).



May - July 2024

Based on the National Weather Service's 30-day forecast, there is an equal chance of above or below normal precipitation (above) through July. The temperature outlook for the next 30 days indicates a 40-50% likelihood of above-average temperatures. Additionally, the 3-month projection for the Basin predicts

a 33-40% above-normal precipitation and 40-50% above normal temperature (right).

BCB RAINFALL

May's weather pattern was hot and dry. As measured by twenty-four (24) reporting stations (ref. **Figures 1, 2, Table 1**), the basin-wide monthly average was **1.57 inches (40% of normal)**, which is below the 4.05 inch average typically collected.

Based on collected gauge data, the rainfall distribution across the Basin varied from 0.05 inches to 3.28 inches. The month's highest gauge totals were collected at G.G. Fire Station (Site R-12) which received **3.28 inches.** This month's lowest rainfall was recorded at I75W2 (Site R-21), which received **0.05 inches**. **Figure 3a** shows the average rainfall for each of the Basin's watersheds based on gauge adjusted radar. The Coastal basin received the highest rainfall with a **2.47 inch** areal average across the watershed and the lowest was the Gordon River Extension basin with about **0.29 inches**. The Basin's total areal weighted average rainfall was **2.06 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 the month to hold as much water as possible to promote groundwater recharge. As the month ended and in the beginning of June, all but two small segments of the BCB canals were above the 50th percentile (**Figure 4a**).

- **GOLDEN GATE SYSTEM**
  Control structures in the Golden Gate Main canal system were operated in water conservation mode and have been kept fully closed since the beginning of the year to promote/enhance groundwater recharge. Currently, the canal water levels for the Golden Gate system are at or above the 50th percentile with one segment that is below the 25th percentile (GG1)(ref **Figure 5A & 5B**).

- **COCOHATCHEE SYSTEM**
  The entire Cocohatchee system was operated to conserve water with no discharges to tide during the month. Levels in the Cocohatchee system are all above the 50th percentile for the end of May (ref **Figure 6A, 6B, 6C, & 6D**).

- **FAKA UNION SYSTEM**
  The entire Faka Union system was operated in water conservation mode and all of the structures ,except for FU1 (tidal influence) and FU5, had zero discharges through the structures. Water control structure FU5 water levels were managed to target wet season operational levels prior to the start of wet season. As the month ended, water levels were mostly above the 75th percentile except for FU4S which was above the 50th percentile for the end of May (ref **Figure 7A & 7B**).

- **HENDERSON CREEK SYSTEM**
  Water control structures in the Henderson Creek system remained fully closed. Canal levels are all near average for the end of May (ref **Figure 8A & 8B**).

- **CORKSCREW SWAMP**
  Figure 10 shows the historical trends for Corkscrew, Bird Rookery, and the CORK 3 structure

and the 2024 corresponding levels. Water levels at all three sites decreased for the month of May with a brief increase towards the end of the month due to isolated thunder storms in the area. Bird Rookery and CORK3 are above the 50th percentile while Corkscrew is below the 25th percentile for the beginning of June. **Figure 11** displays the water levels at Lake Trafford, indicating that the lake's water levels have decreased and are above the 50th percentile. **Figures 12 and Figure 13** show the locations for Southern Corkscrew (SOCREW) sites 1 through 6 as well as the historical trends for SOCREW1 and SOCREW2, all of which are a combination of surface and groundwater monitoring wells. SOCREW1 ended the month slightly above the historical minimum, and SOCREW2 ended slightly below the historical minimum.

BIG CYPRESS BASIN & LOWER WEST COAST GROUNDWATER LEVELS

The Lower West Coast [LWC] groundwater levels continued to decline throughout May, ranging from -0.46 ft at C-948R (Golden Gate, Mid Hawthorn) to –3.88 ft (C-462 (Immokalee, Lower Tamiami). C-948R (Golden Gate, Mid Hawthorn), C-951R (Golden Gate, Lower Tamiami), C-1004R (Naples, Lower Tamiami) and L-738 (Bonita Springs, Lower Tamiami) ended the month slightly above the historic minimum; L-2194 (Bonita Springs, Sandstone) ended the month slightly below the 25th percentile; L-2195 (Bonita Springs, Surficial) and C-462 (Immokalee, Lower Tamiami) ended the month above the 25th percentile (ref **Table 2 and Figure 9).**

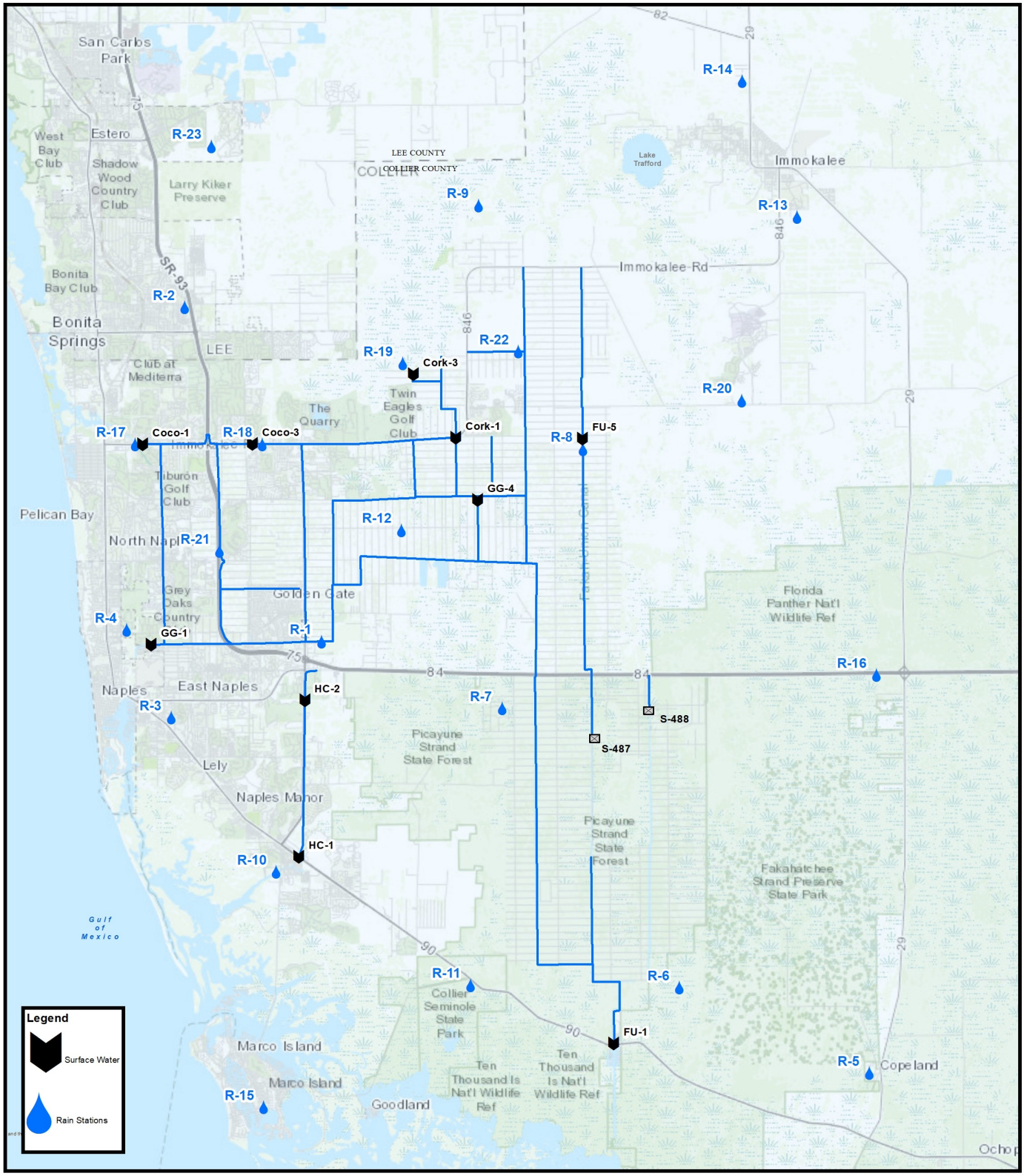


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FIGURE 1
Hydrologic Station Map

Collier County, Florida

UPDATED July 2021

Hydrologic_map_Jan_2016.mxd

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

STATION INDEX NO.	STATION NAME	MAY 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	0.34	5.72	-5.38	11.82	13.05	-1.23
R-2	BONITA SPRINGS WATER PLANT	1.34	3.46	-2.12	12.33	11.52	0.81
R-3	COLLIER COUNTY COURTHOUSE	0.82	3.73	-2.91	13.19	11.81	1.38
R-4	FREEDOM PARK	0.36	4.37	-4.01	11.50	11.33	0.17
R-5	FAKAHATCHEE STRAND HQ	0.05	4.71	-4.66	9.55	12.84	-3.29
R-6	DAN HOUSE PRAIRIE	0.40	3.64	-3.24	11.59	10.45	1.14
R-7	SGGE WEATHER STATION	1.84	4.86	-3.02	12.84	12.39	0.45
R-8	FAKA UNION #5	2.53	4.91	-2.38	14.46	13.42	1.04
R-9	CORKSCREW SWAMP NORTH END	1.09	3.48	-2.39	11.99	10.73	1.26
R-10	ROOKERY BAY HQ	1.83	3.51	-1.68	13.95	10.87	3.08
R-11	COLLIER SEMINOLE STATE PARK	1.97	3.55	-1.58	14.22	11.38	2.84
R-12	G.G. FIRE STATION	3.28	4.13	-0.85	15.03	12.49	2.54
R-13	IMMOKALEE LANDFILL	0.89	4.37	-3.48	9.41	13.12	-3.71
R-14	IFAS	2.79	4.06	-1.27	13.00	13.01	-0.01
R-15	MARCO R.O. PLANT	3.15	3.10	0.05	15.29	11.66	3.63
R-16	FAKAHATCHEE STRAND NORTH END	1.26	5.01	-3.75	13.06	14.94	-1.88
R-17	COCO#1	0.46	2.89	-2.43	10.16	10.50	-0.34
R-18	COCO#3	2.16	3.31	-1.15	15.07	10.56	4.51
R-19	BIRD ROOKERY	2.64	4.63	-1.99	15.31	10.26	5.05
R-20	AVE MARIA	1.15	4.39	-3.24	12.21	13.12	-0.91
R-21	I75W2	0.05	4.48	-4.43	11.90	10.27	1.63
R-22	GG#7	2.52	4.09	-1.57	14.13	10.49	3.64
R-23	FPWX	1.56	2.73	-1.17	11.83	10.68	1.15
R-24	DSOTO10	3.15	New Site	New Site	New Site	No Historical Data	
	AVERAGES	1.57	4.05	-2.48	12.78	11.78	1.00

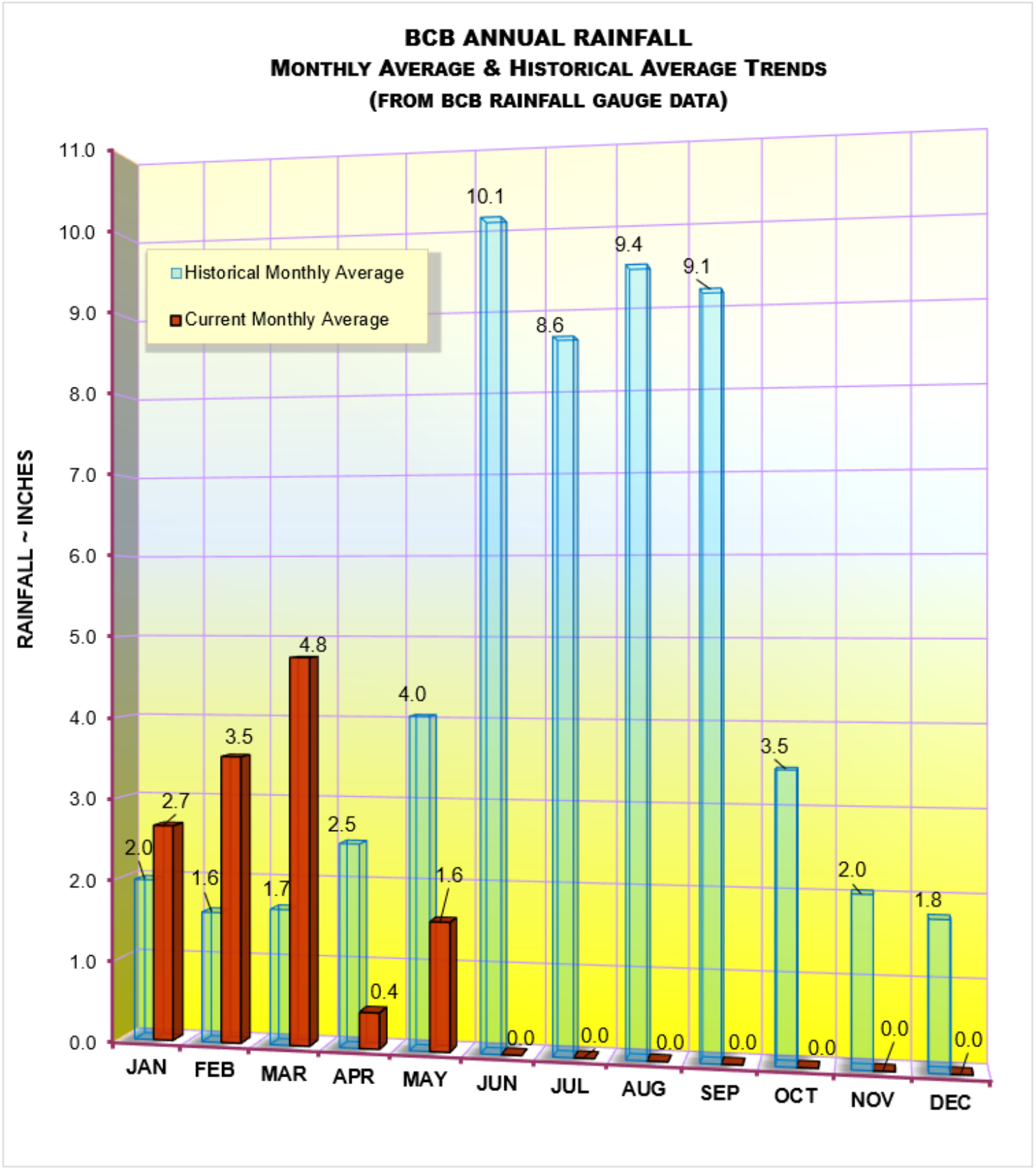


FIGURE 2
BCB GAUGE RAINFALL
MONTHLY AVERAGES THROUGH MAY 2024

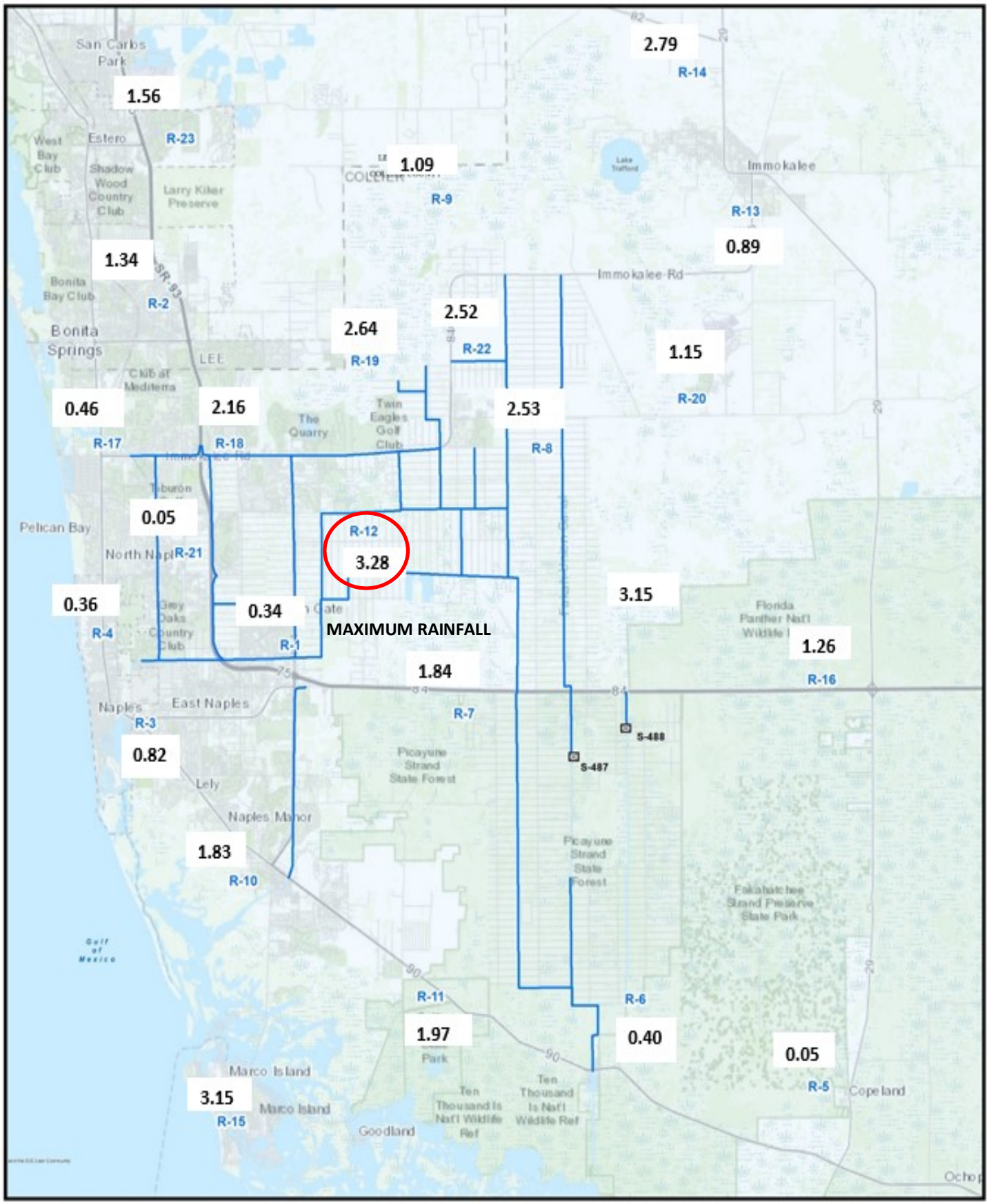
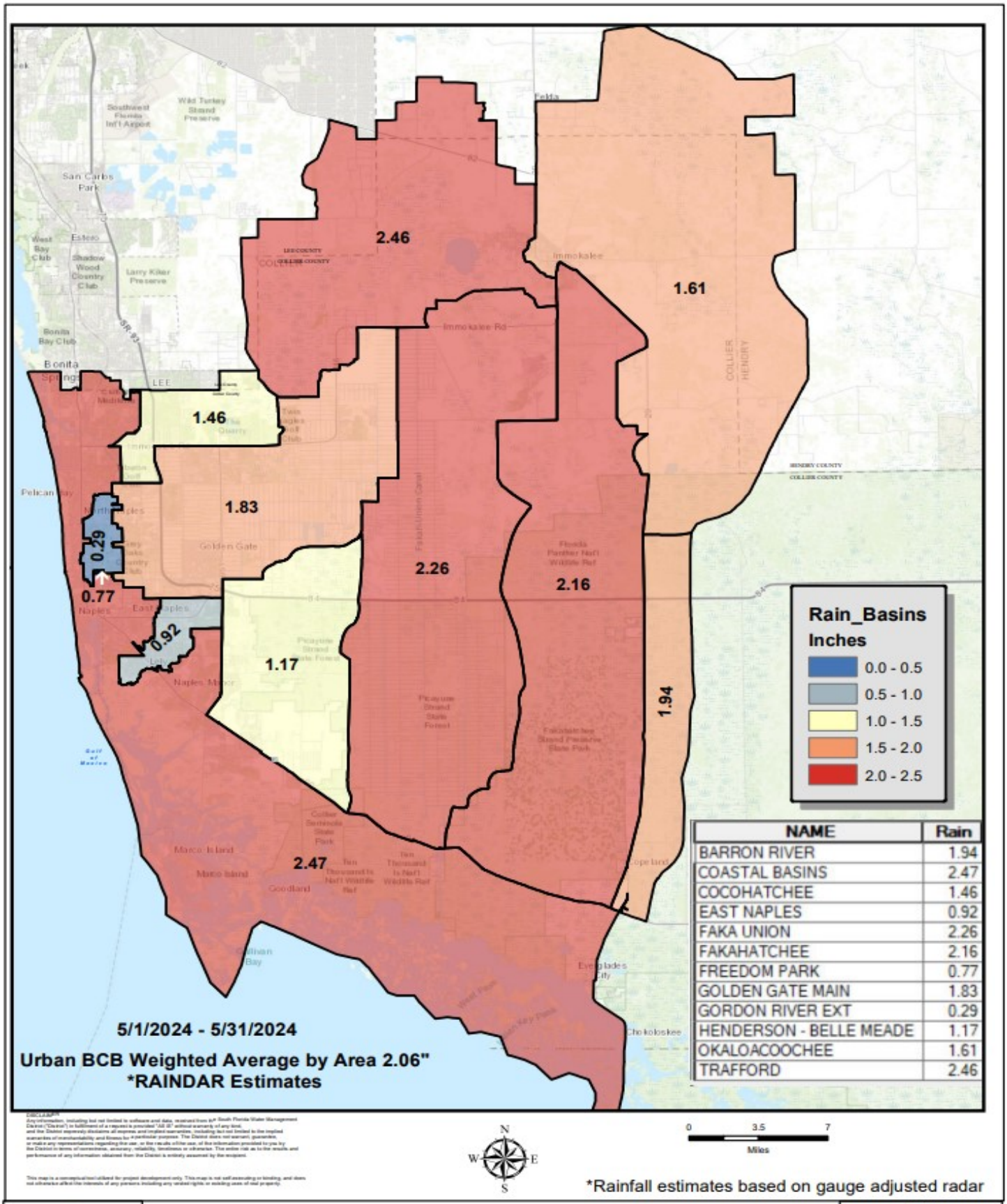


FIGURE 3
BCB RAINFALL DISTRIBUTION
MAY 2024



NAME	Rain
BARRON RIVER	1.94
COASTAL BASINS	2.47
COCOHATCHEE	1.46
EAST NAPLES	0.92
FAKA UNION	2.26
FAKAHATCHEE	2.16
FREEDOM PARK	0.77
GOLDEN GATE MAIN	1.83
GORDON RIVER EXT	0.29
HENDERSON - BELLE MEADE	1.17
OKALOACOOCHEE	1.61
TRAFFORD	2.46

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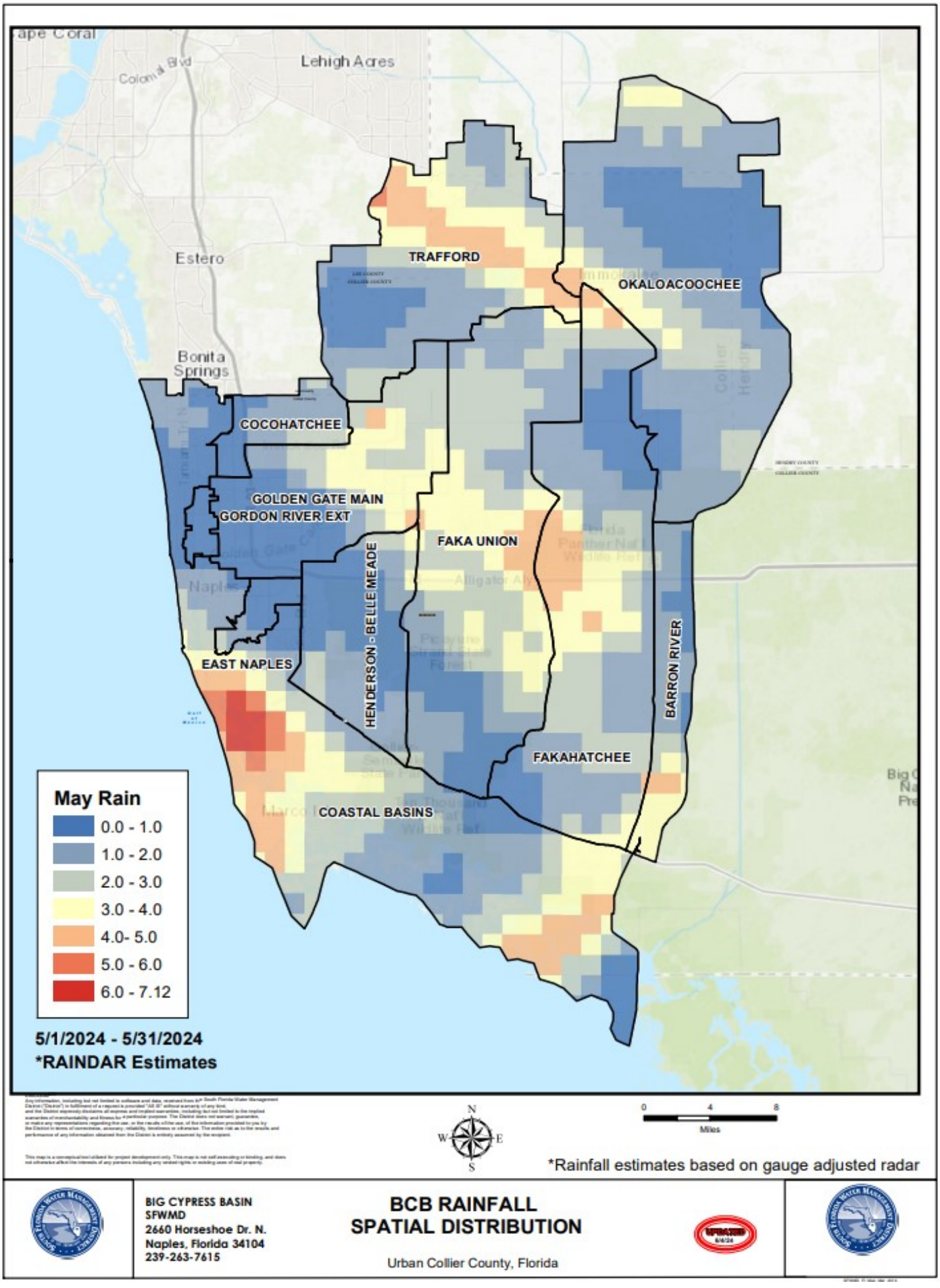
BCB RAINFALL SPATIAL DISTRIBUTION

Urban Collier County, Florida

FIGURE 3A


Lehigh Acres
Estero
Bonita Springs
TRAFFORD
OKALOACOOCHEE
COCOHATCHEE
GOLDEN GATE MAIN
GORDON RIVER EXT
FAKA UNION
HENDERSON - BELLE MEADE
BARRON RIVER
EAST NAPLES
FAKAHATCHEE
COASTAL BASINS
May Rain
0.0 - 1.0
1.0 - 2.0
2.0 - 3.0
3.0 - 4.0
4.0- 5.0
5.0 - 6.0
6.0 - 7.12
5/1/2024 - 5/31/2024
*RAINDAR Estimates
N
W
E
S
0
4
8
Miles
*Rainfall estimates based on gauge adjusted radar
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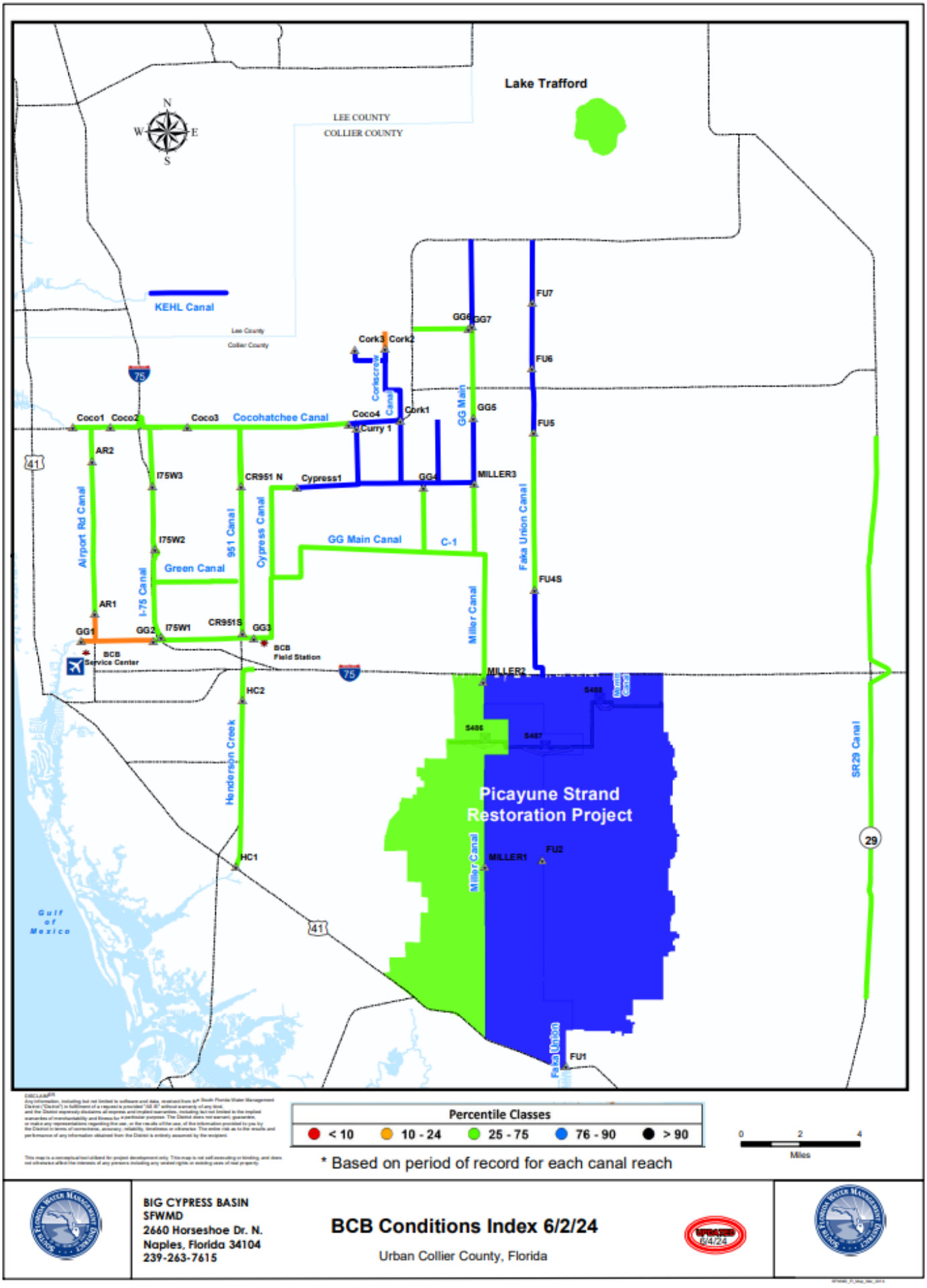
BCB RAINFALL
SPATIAL DISTRIBUTION
Urban Collier County, Florida

FIGURE 4


Lake Trafford
LEE COUNTY
COLLIER COUNTY
KEHL Canal
Lee County
Collier County
Cork3
Cork2
Cork4
Cork1
Corkscrew Canal
GG Main
GG6
GG7
GG5
FU7
FU6
FU5
Coco1
Coco2
Coco3
Cocohatchee Canal
Coco4
Curry 1
AR2
I75W3
CR951 N
Cypress1
GG4
MILLER3
Airport Rd Canal
951 Canal
Cypress Canal
Faka Union Canal
I75W2
GG Main Canal
C-1
Green Canal
FU4S
I-75 Canal
Miller Canal
AR1
GG1
GG2
I75W1
CR951S
GG3
BCB Service Center
BCB Field Station
MILLER2
HC2
S488
S486
S487
Henderson Creek
SR29 Canal
Picayune Strand Restoration Project
HC1
MILLER1
FU2
Gulf of Mexico
FU1
Faka Union
Percentile Classes
< 10
10 - 24
25 - 75
76 - 90
> 90
* Based on period of record for each canal reach
0
2
4
Miles
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SFWMD
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Naples, Florida 34104
239-263-7615
BCB Conditions Index 6/2/24
Urban Collier County, Florida
6/4/24

FIGURE 4A

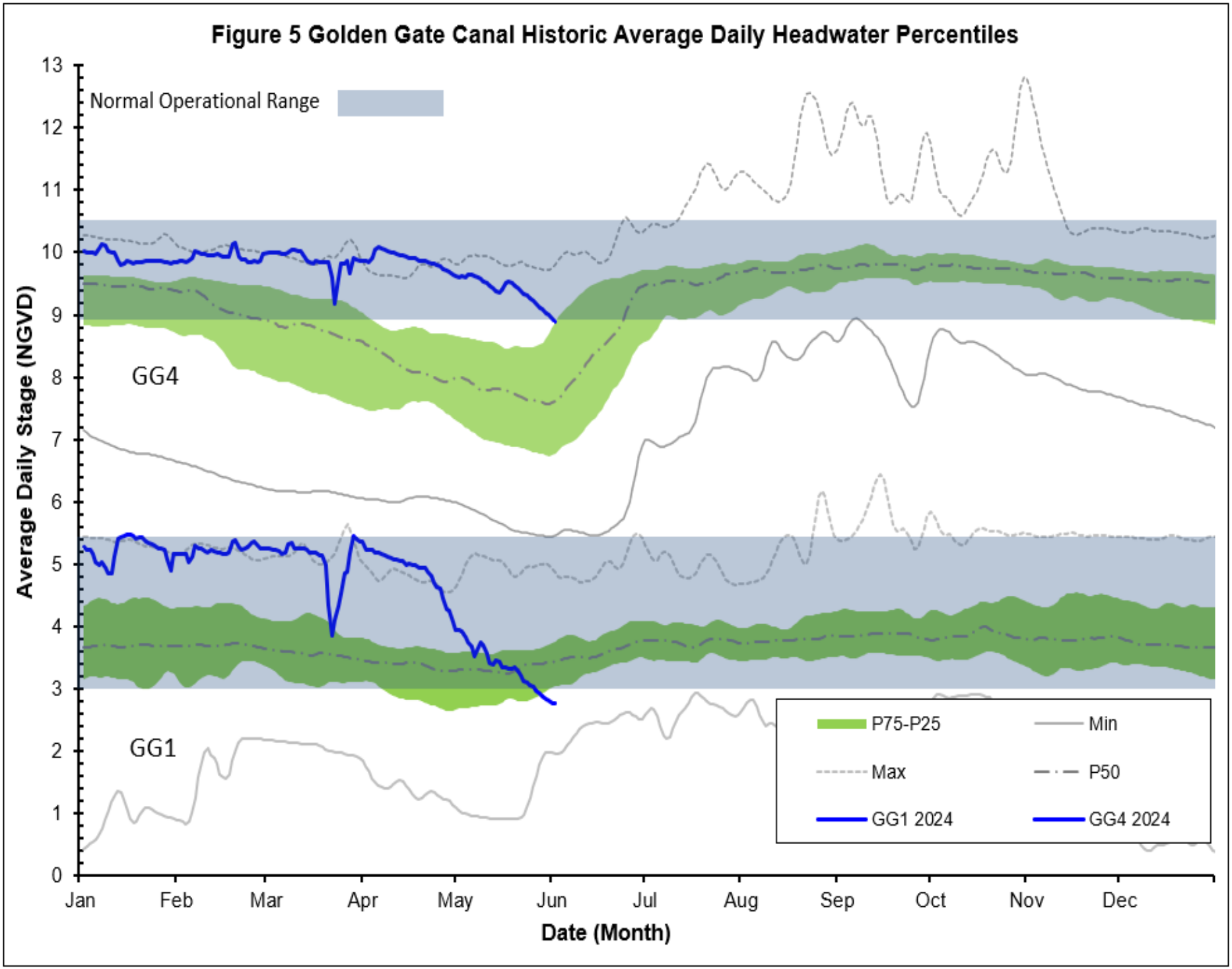


Figure 5 Golden Gate Canal Historic Average Daily Headwater Percentiles
Normal Operational Range
GG4
GG1
Average Daily Stage (NGVD)
Date (Month)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
0
1
2
3
4
5
6
7
8
9
10
11
12
13
P75-P25
Min
Max
P50
GG1 2024
GG4 2024

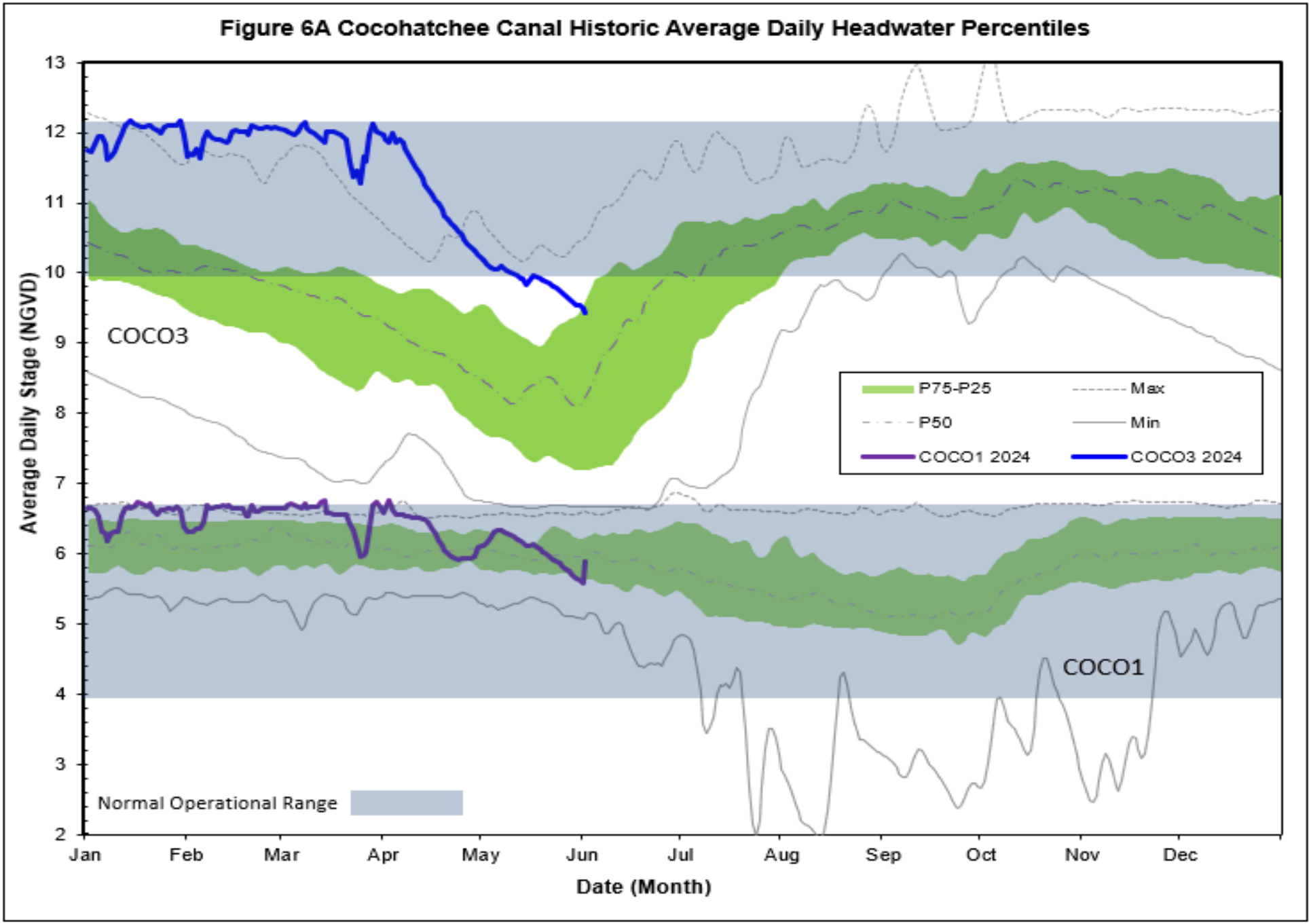


Figure 6A Cocohatchee Canal Historic Average Daily Headwater Percentiles
Average Daily Stage (NGVD)
13
12
11
10
9
8
7
6
5
4
3
2
COCO3
COCO1
P75-P25
Max
P50
Min
COCO1 2024
COCO3 2024
Normal Operational Range
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Date (Month)

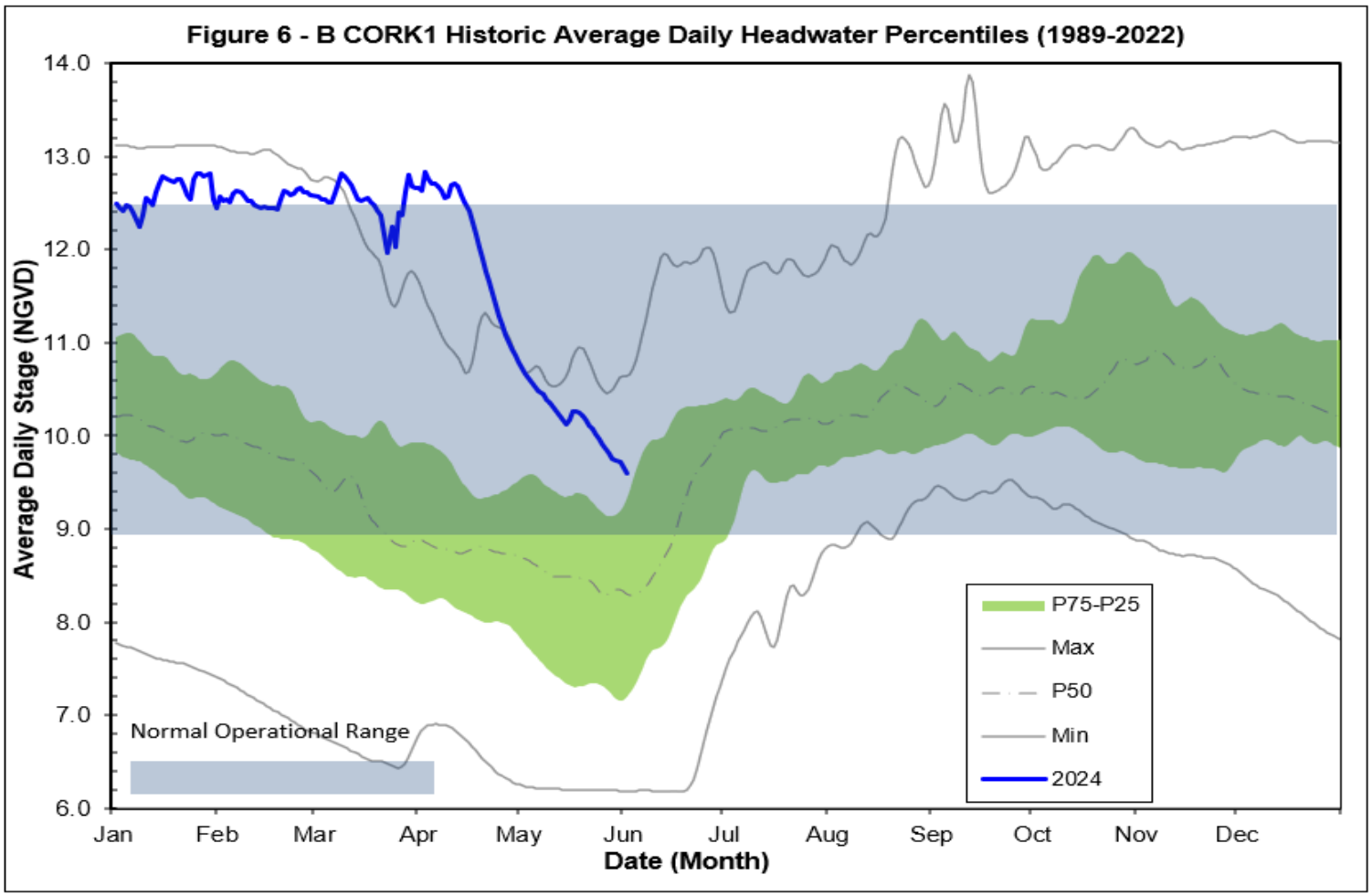


Figure 6 - B CORK1 Historic Average Daily Headwater Percentiles (1989-2022)
Average Daily Stage (NGVD)
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
Normal Operational Range
P75-P25
Max
P50
Min
2024
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Date (Month)

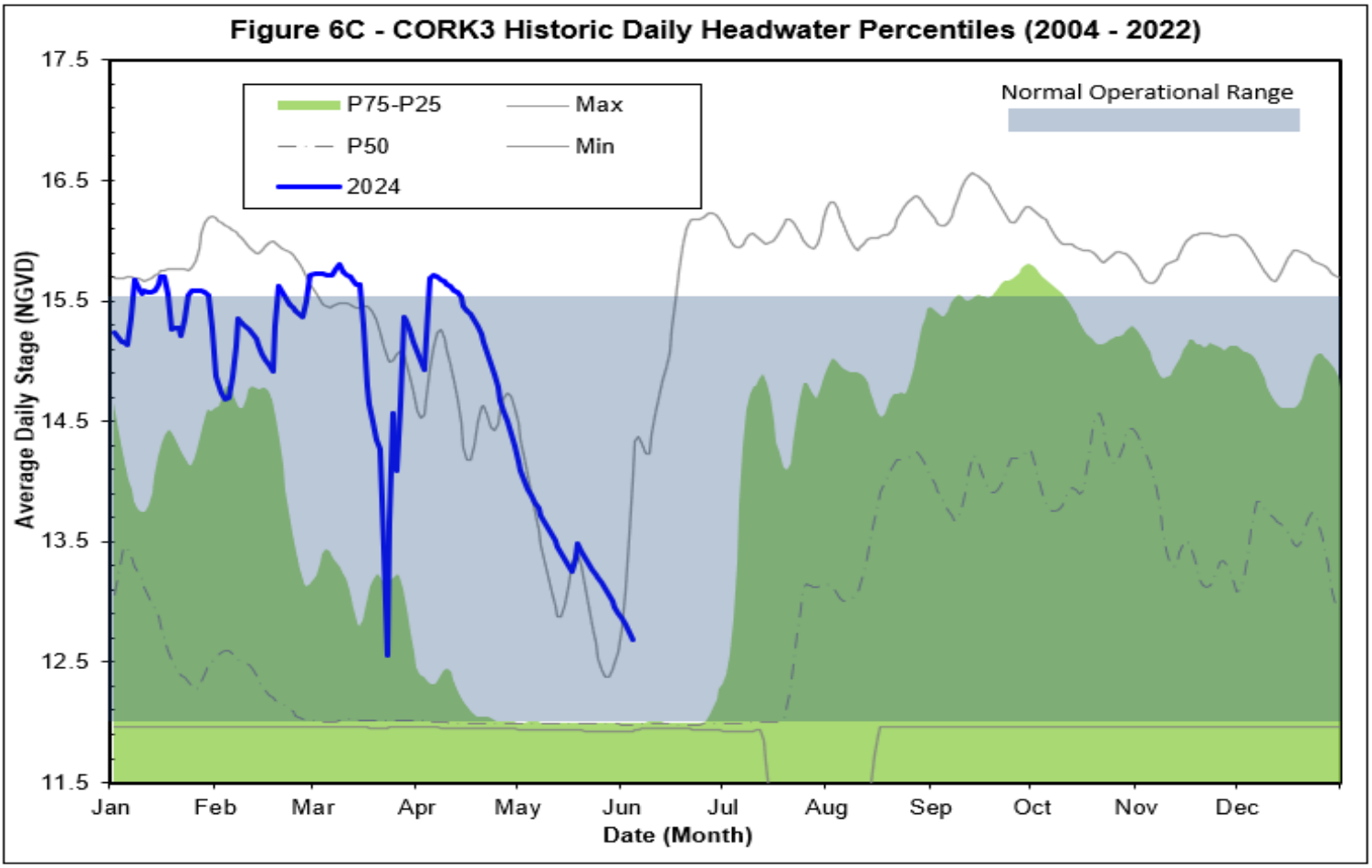


Figure 6C - CORK3 Historic Daily Headwater Percentiles (2004 - 2022)
Average Daily Stage (NGVD)
17.5
16.5
15.5
14.5
13.5
12.5
11.5
P75-P25
Max
P50
Min
2024
Normal Operational Range
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Date (Month)

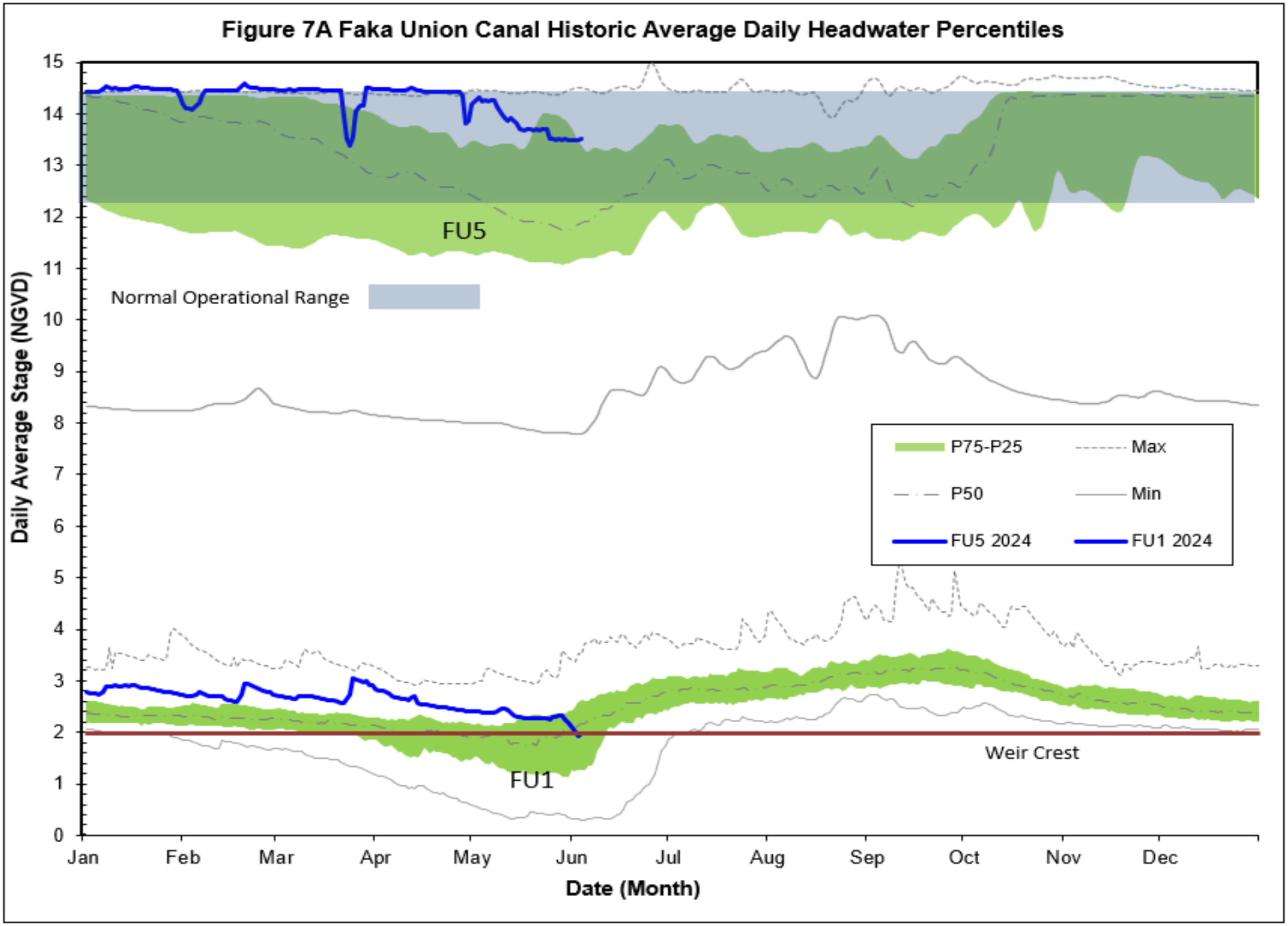


Figure 7A Faka Union Canal Historic Average Daily Headwater Percentiles
Daily Average Stage (NGVD)
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
FU5
Normal Operational Range
P75-P25
Max
P50
Min
FU5 2024
FU1 2024
FU1
Weir Crest
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Date (Month)

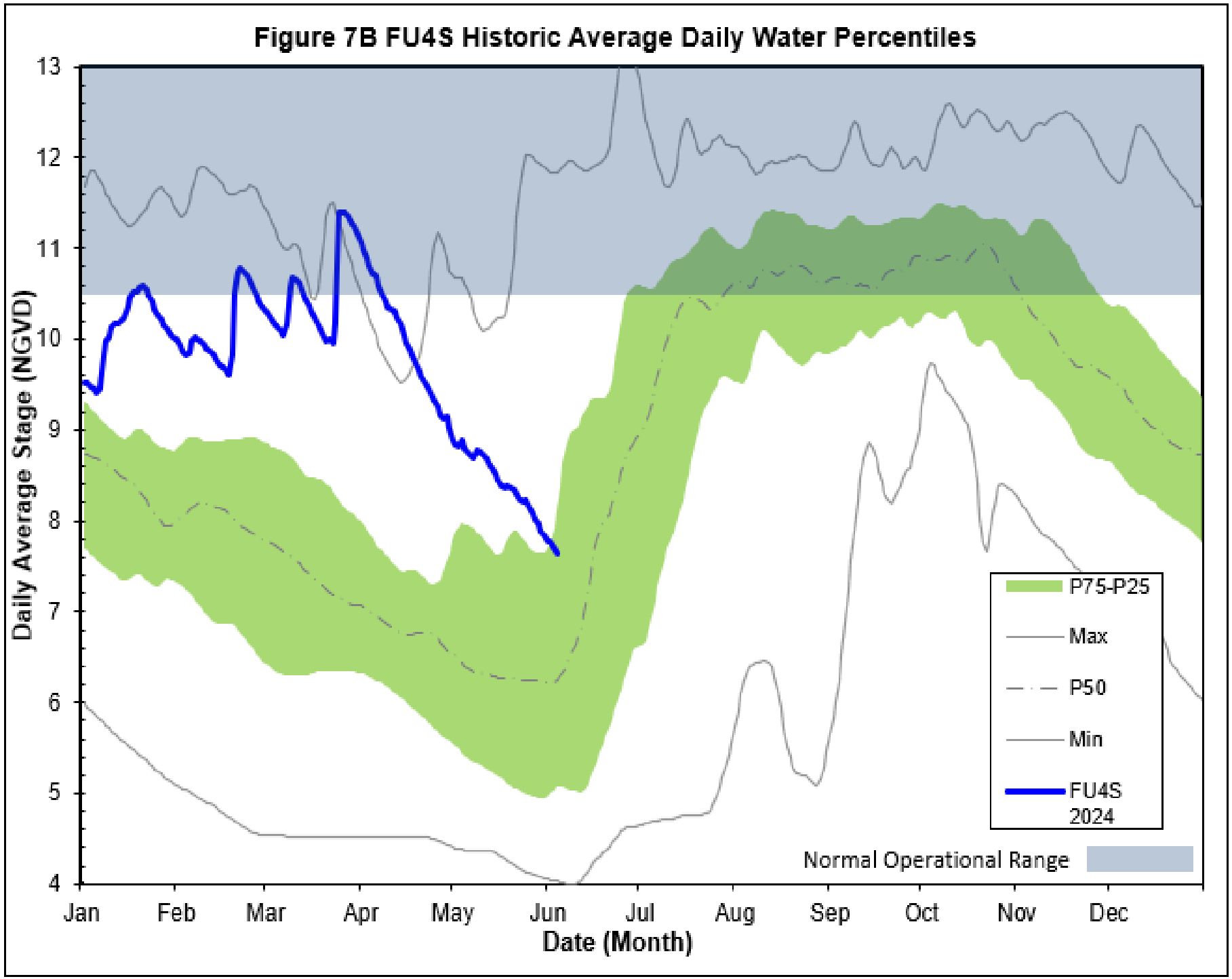


Figure 7B FU4S Historic Average Daily Water Percentiles
Daily Average Stage (NGVD)
13
12
11
10
9
8
7
6
5
4
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Date (Month)
P75-P25
Max
P50
Min
FU4S 2024
Normal Operational Range

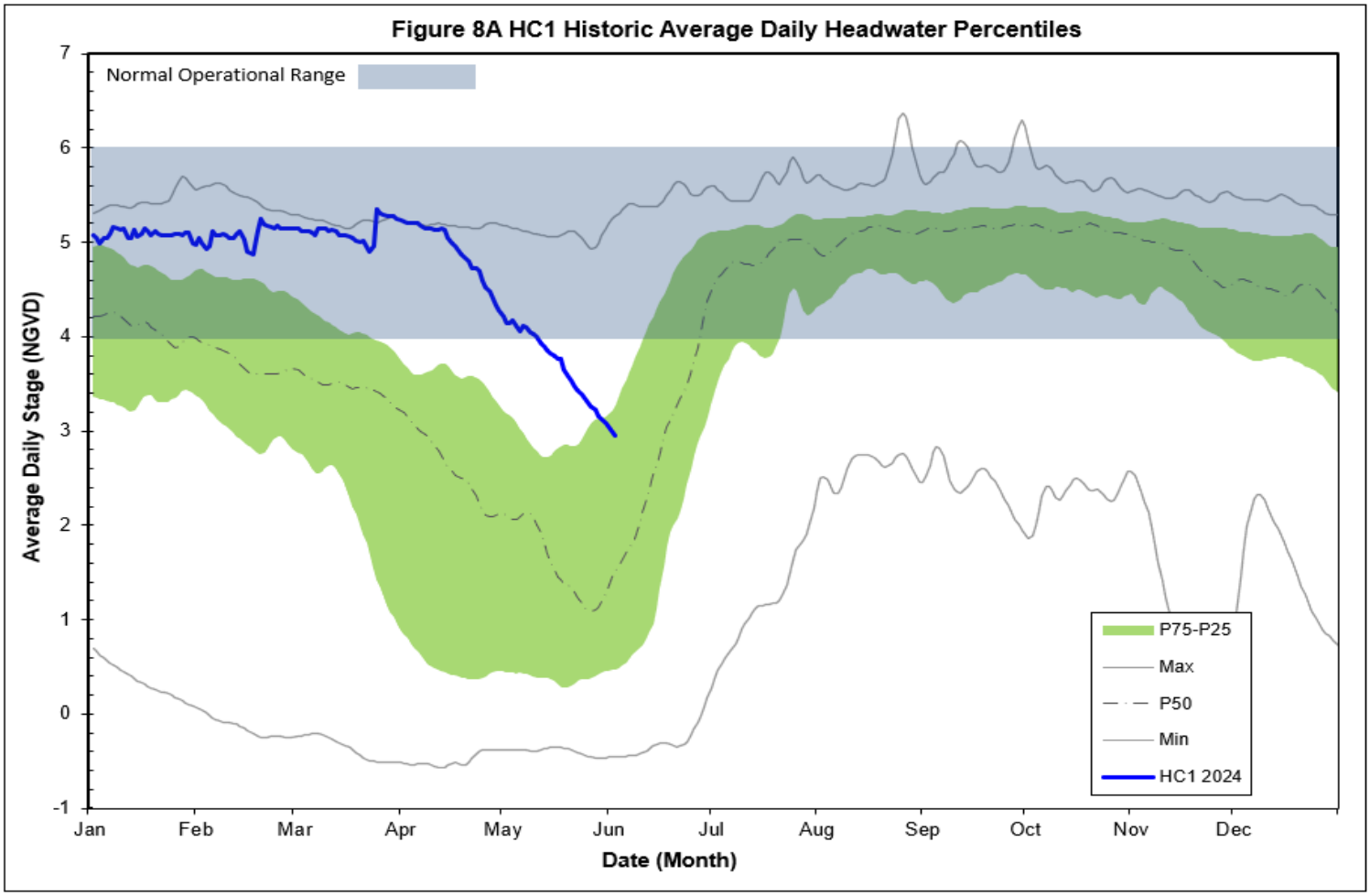


Figure 8A HC1 Historic Average Daily Headwater Percentiles
Normal Operational Range
Average Daily Stage (NGVD)
7
6
5
4
3
2
1
0
-1
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Date (Month)
P75-P25
Max
P50
Min
HC1 2024

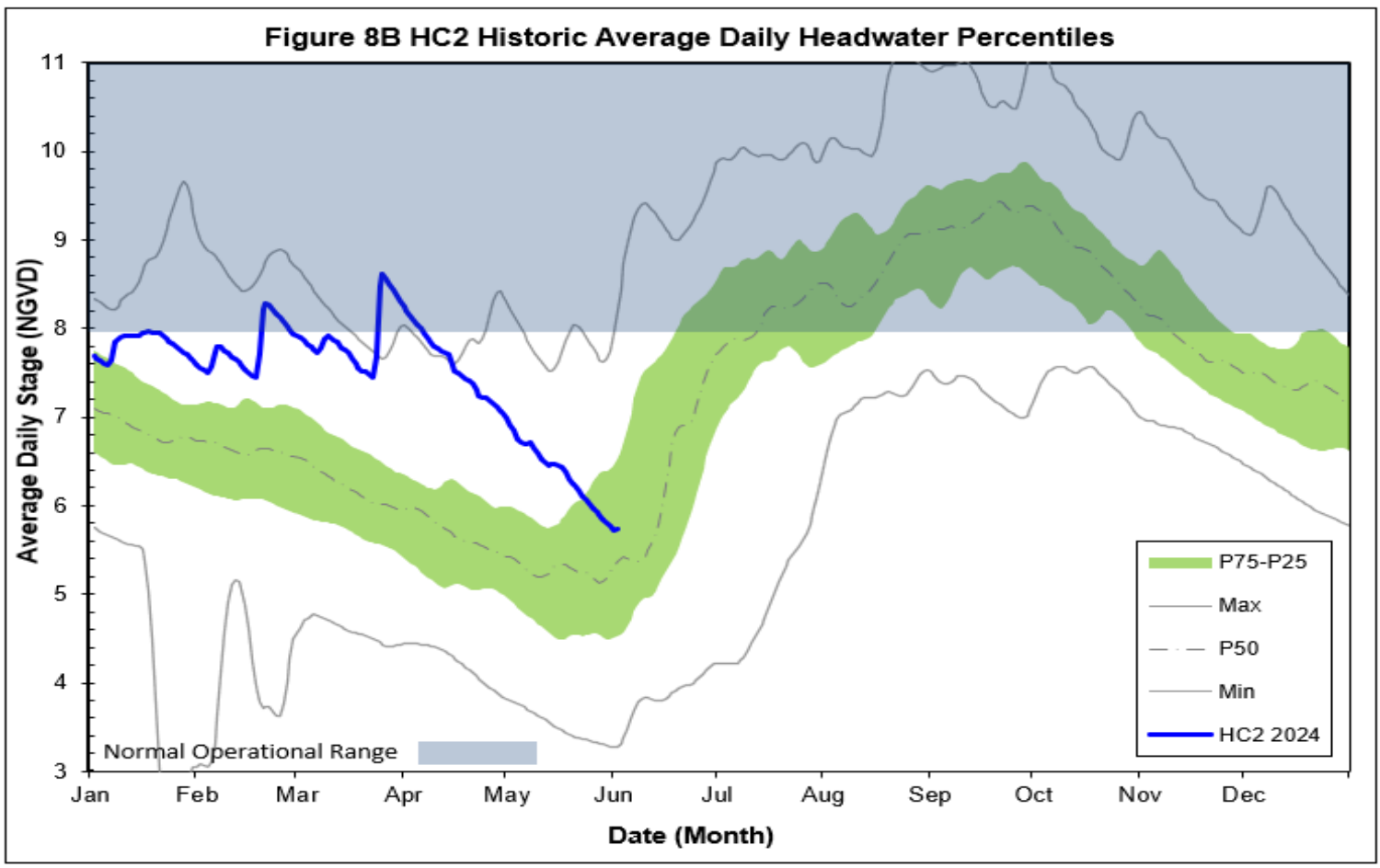


Figure 8B HC2 Historic Average Daily Headwater Percentiles
Average Daily Stage (NGVD)
11
10
9
8
7
6
5
4
3
Normal Operational Range
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Date (Month)
P75-P25
Max
P50
Min
HC2 2024

WATER CONDITIONS SUMMARY - May 2024

SELECTED STATIONS for BCB AREA / SW FLORIDA

Last Reading Date :		June 1, 2023					
Previous Period Reading Date:		May 1, 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	-3.88	33.71	29.83	↓	GREEN
C-1004R	Naples	Lower Tamiami Aquifer	-2.69	-0.32	-3.01	↓	YELLOW
C-1224	Marco Lakes	Lower Tamiami Aquifer	-1.07	3.66	2.59	↓	GREEN
C-948R	Golden Gate	Mid Hawthorn Aquifer	-0.46	28.65	28.19	↓	
C-951R	Golden Gate	Lower Tamiami Aquifer	-0.80	2.33	1.53	↓	
L-2194	Bonita Springs	Sandstone Aquifer	-1.56	1.68	0.12	↓	YELLOW
L-2195	Bonita Springs	Surficial Aquifer System	-0.93	9.58	8.65	↓	GREEN
L-738	Bonita Springs	Lower Tamiami Aquifer	-1.71	-3.44	-5.15	↓	YELLOW

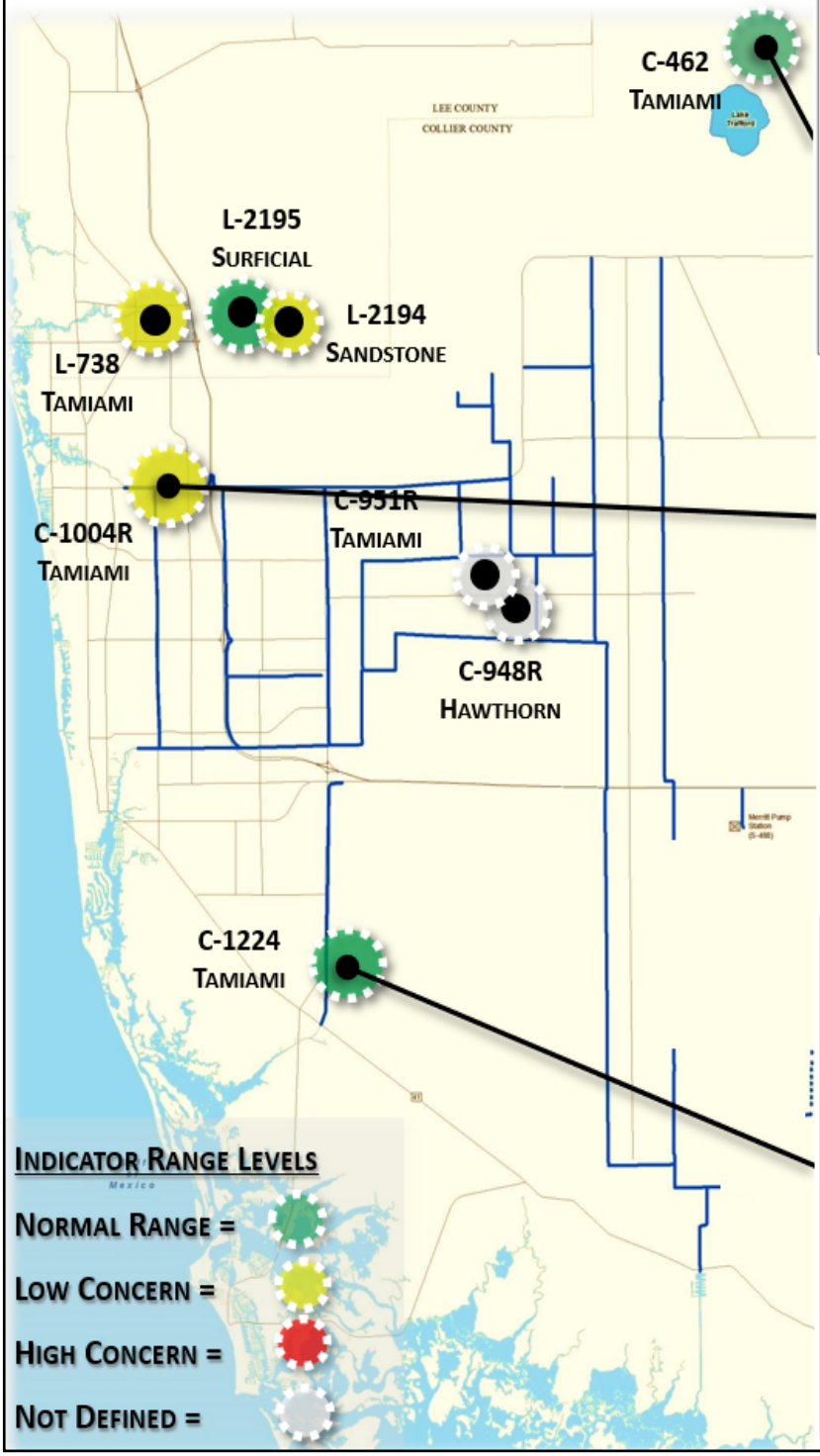
TABLE 2
BCB WATER CONDITIONS SUMMARY
MAY 2024

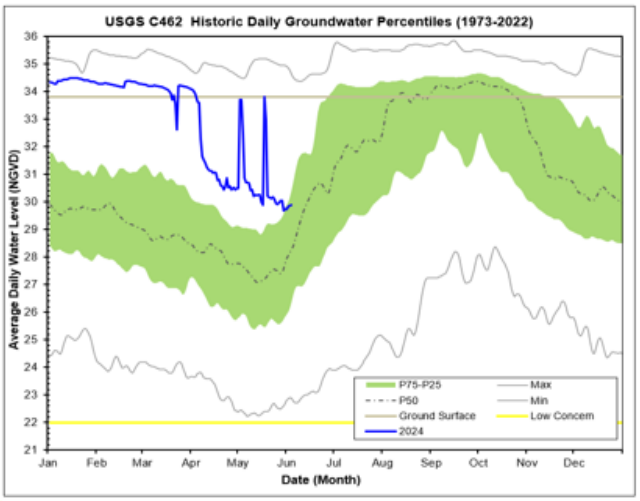
SOUTH FLORIDA WATER MANAGEMENT DISTRICT

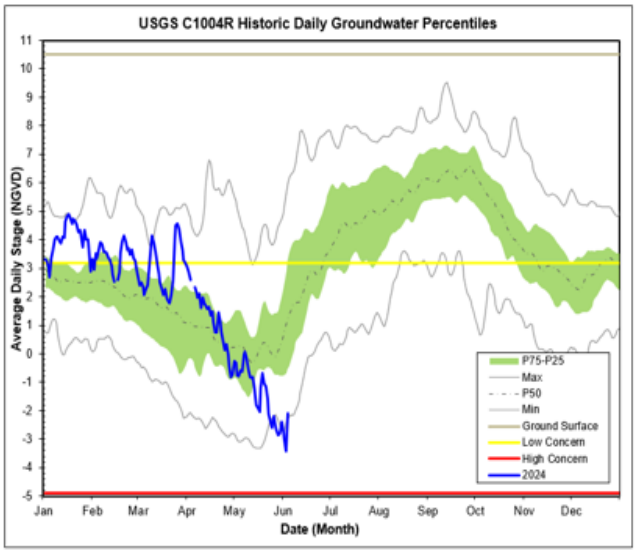
BIG CYPRESS BASIN

MAY 2024

GROUNDWATER LEVEL DAILY TRENDS COMPARED TO HISTORICAL AVERAGE







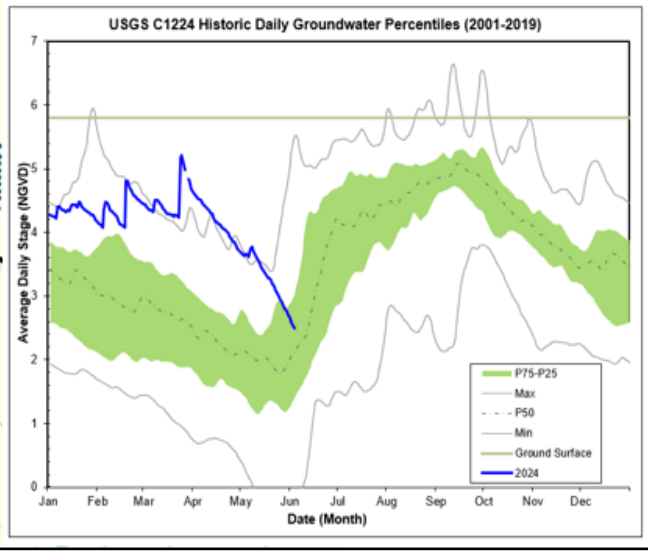


FIGURE 9

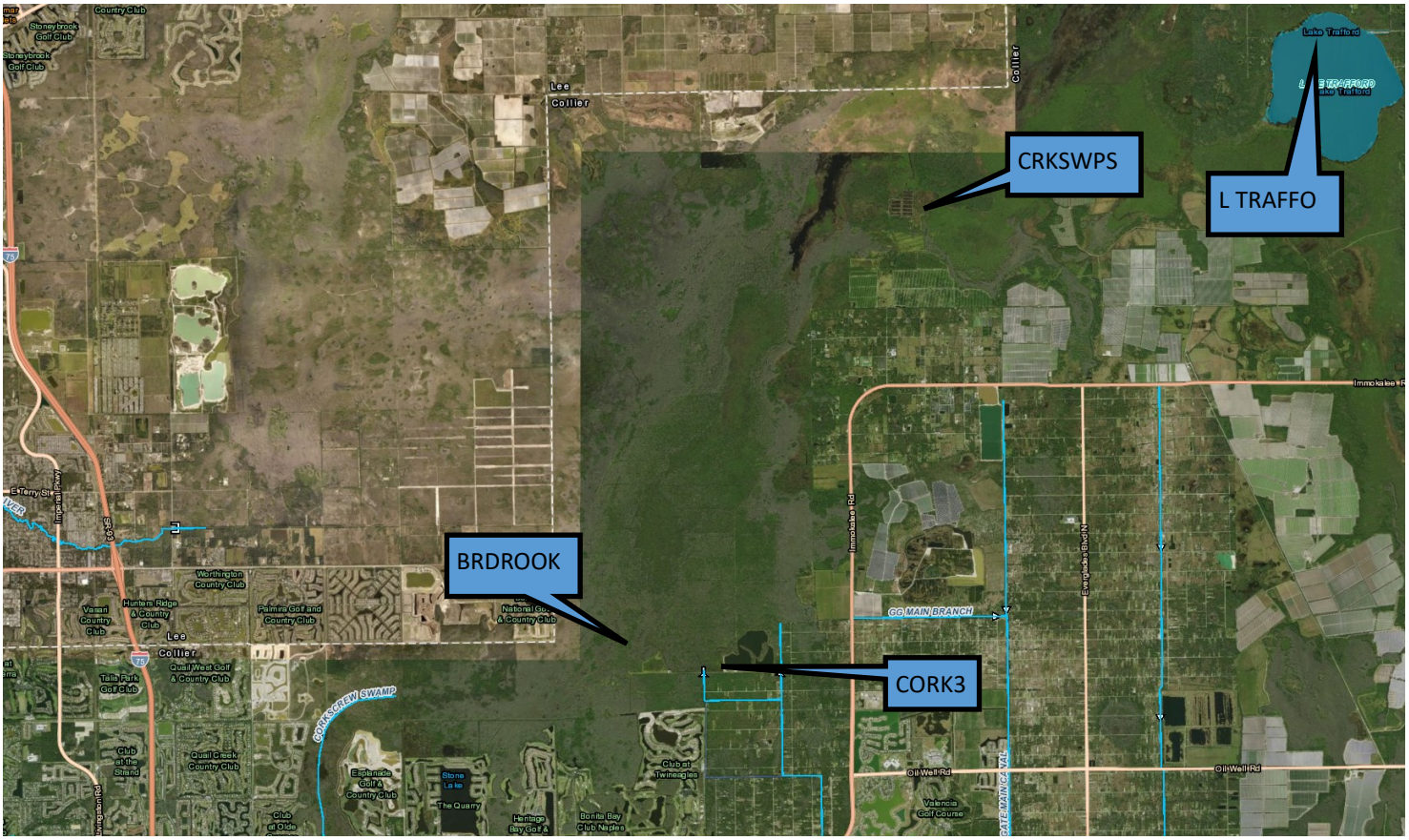
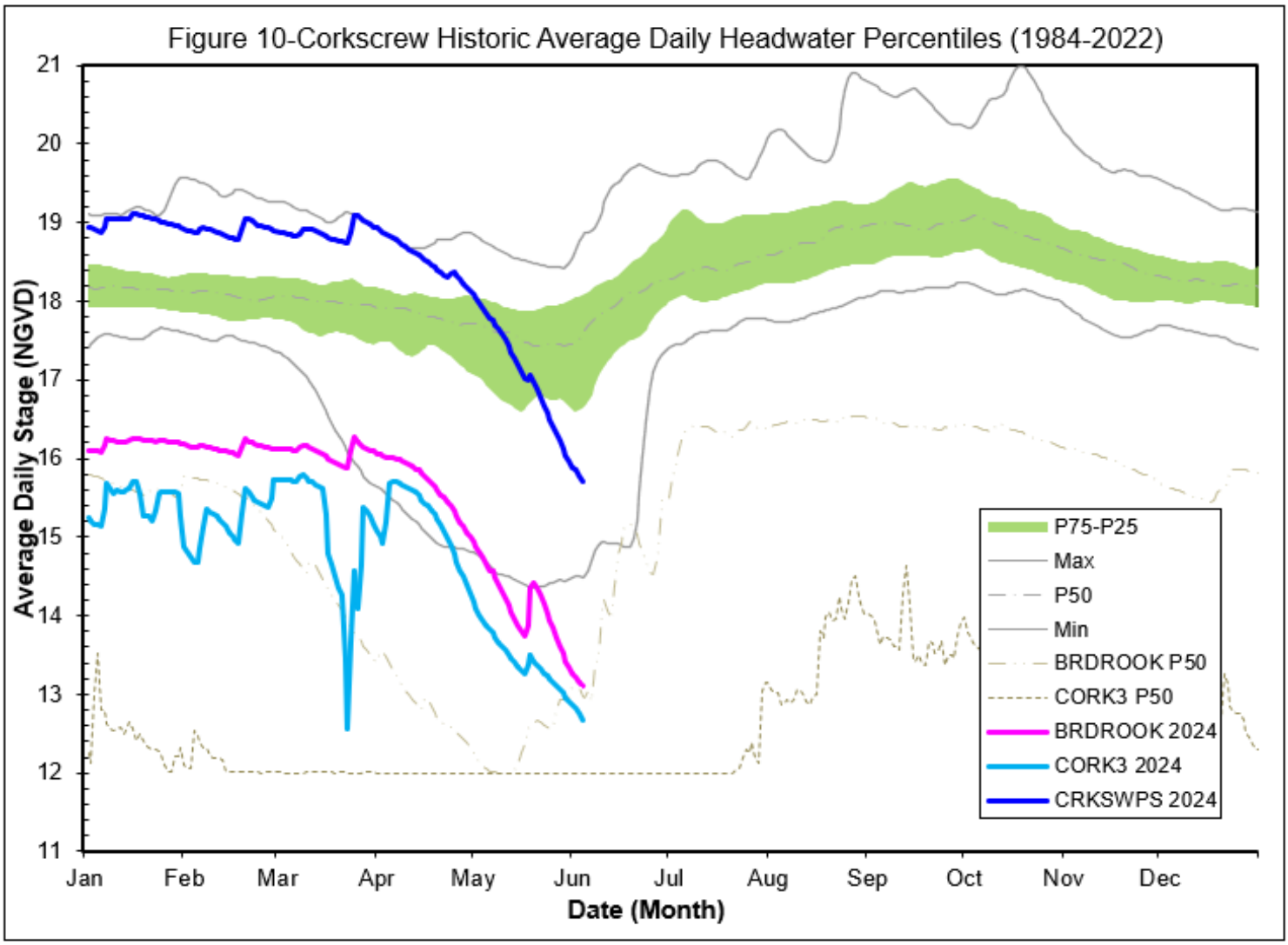


Figure 10-Corkscrew Historic Average Daily Headwater Percentiles (1984-2022)



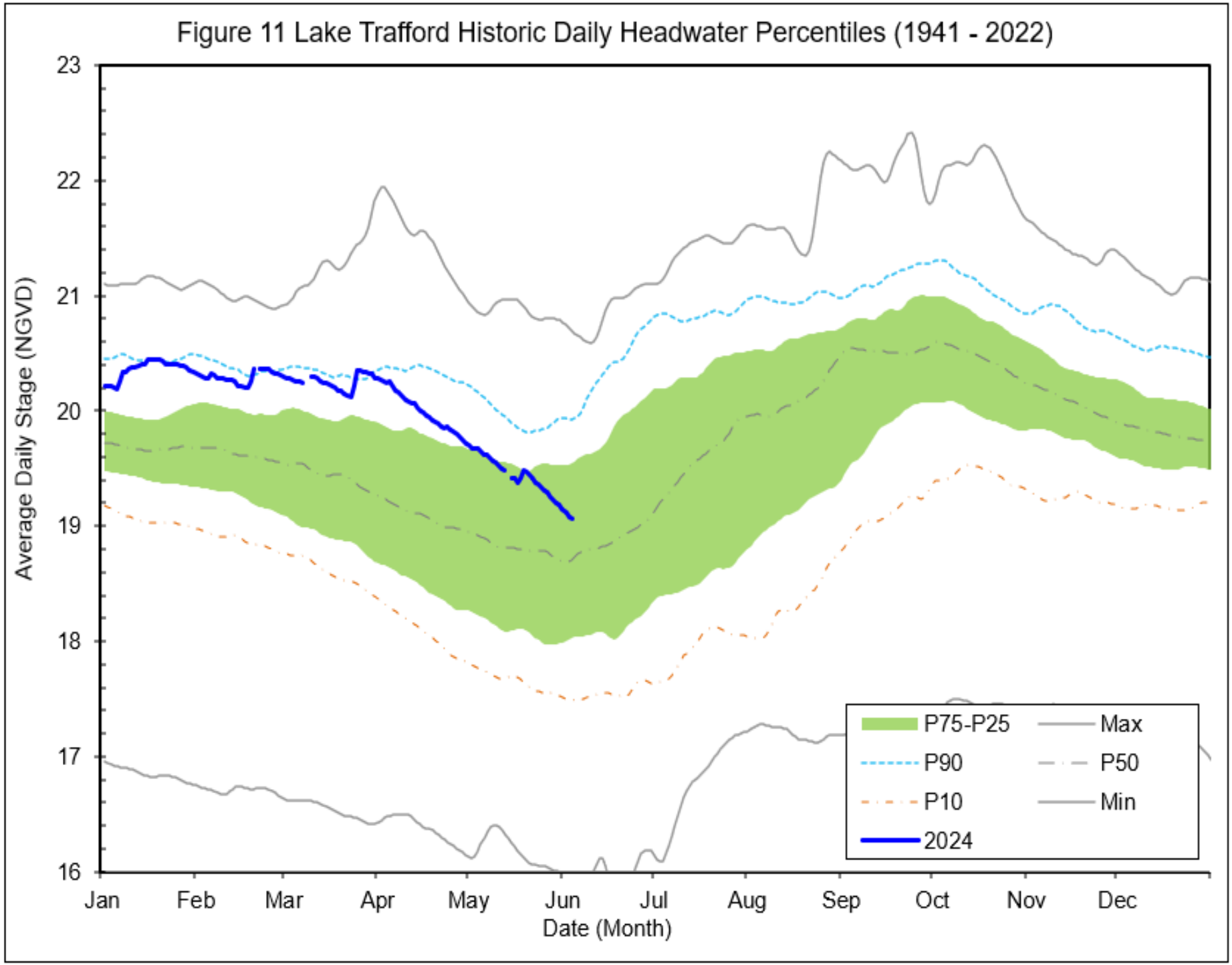


Figure 11 Lake Trafford Historic Daily Headwater Percentiles (1941 - 2022)
Average Daily Stage (NGVD)
23
22
21
20
19
18
17
16
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Date (Month)
P75-P25
Max
P90
P50
P10
Min
2024

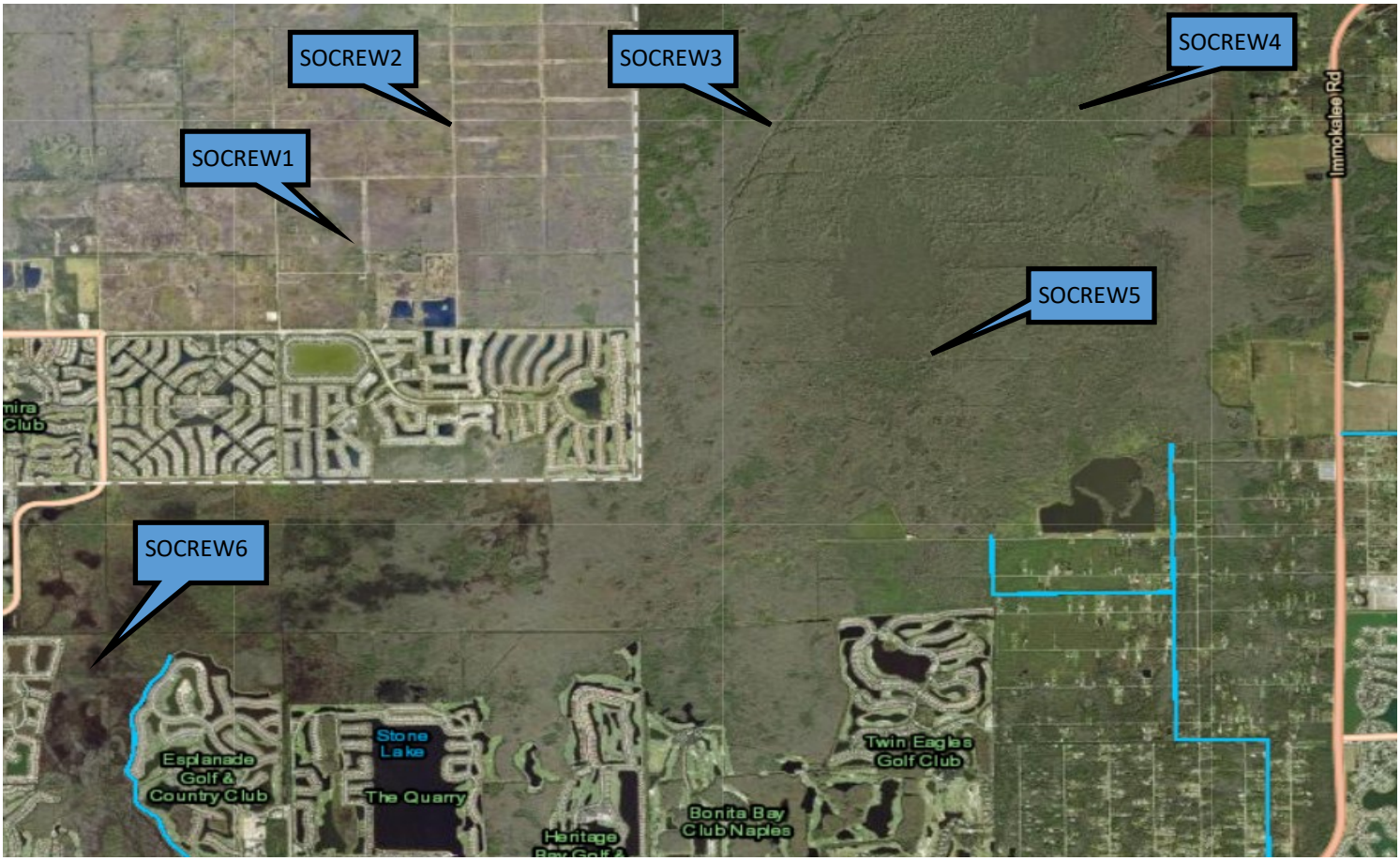
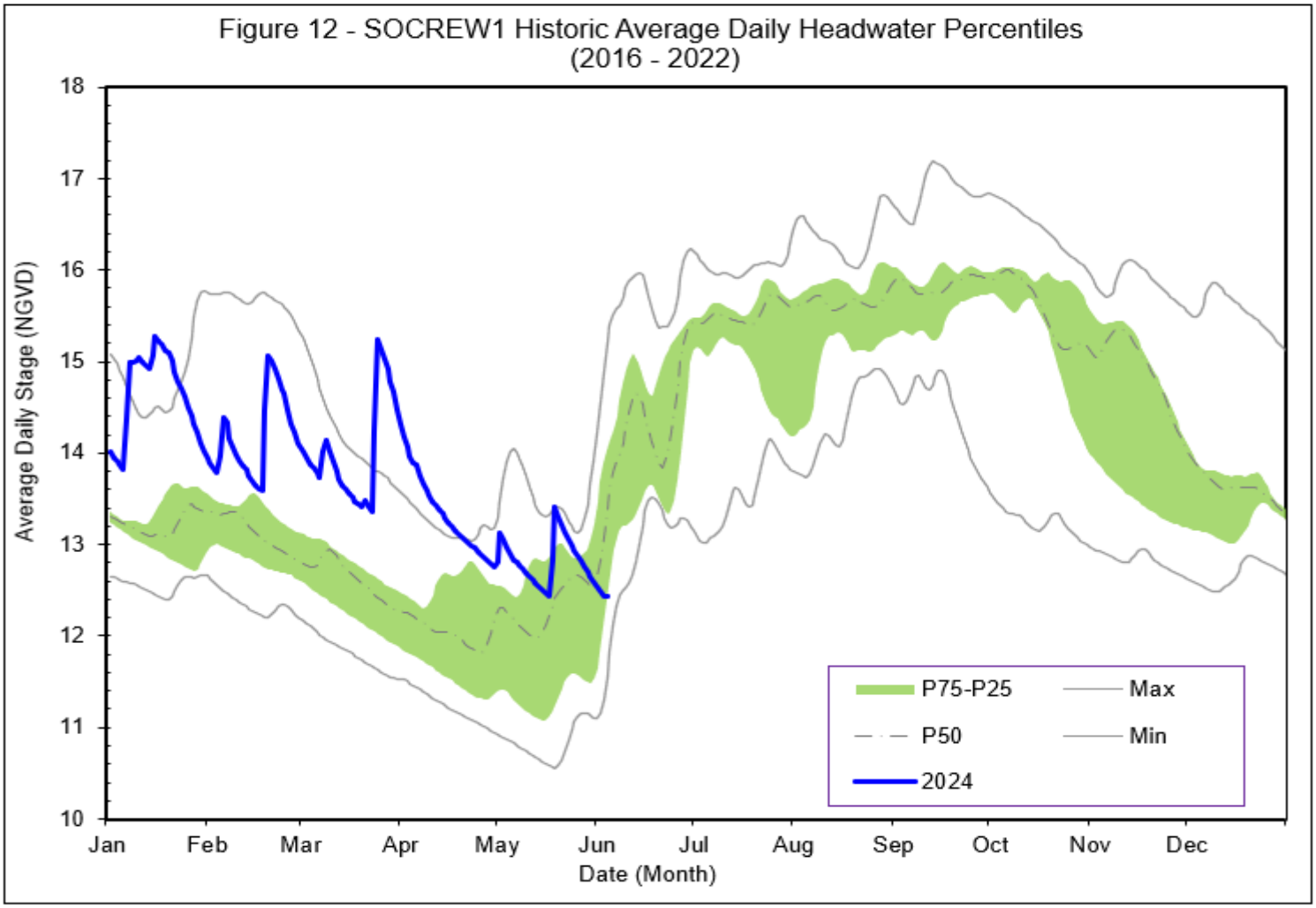


Figure 12 - SOCREW1 Historic Average Daily Headwater Percentiles (2016 - 2022)



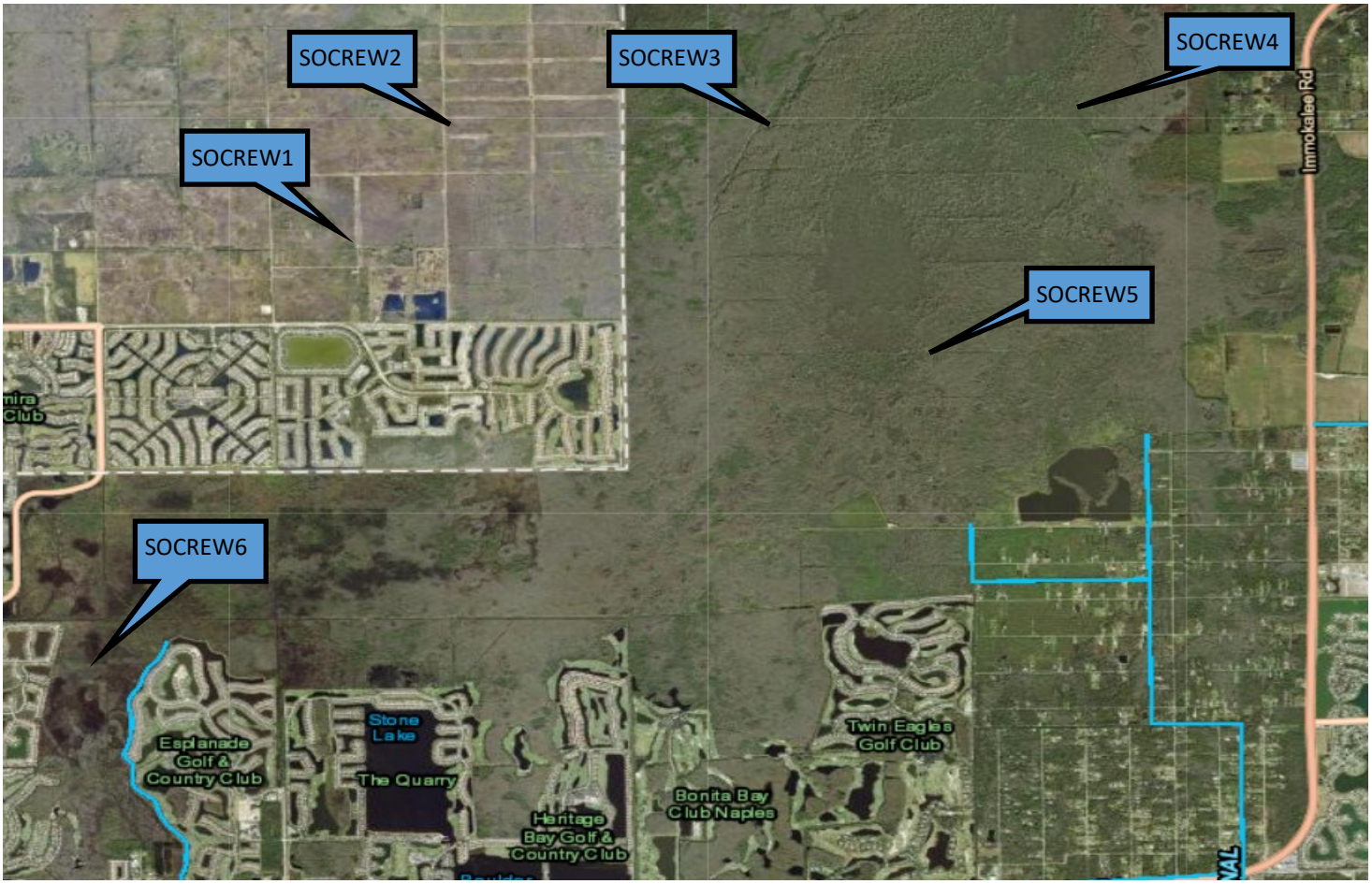


Figure 13 SOCREW2 Historic Average Daily Headwater Percentiles (2016 - 2022)