

FEBRUARY 2021

# BIG CYPRESS BASIN HYDROLOGIC REPORT

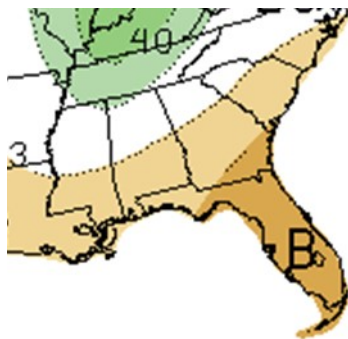


# SUMMARY OF HYDROLOGIC CONDITIONS IN THE BIG CYPRESS BASIN

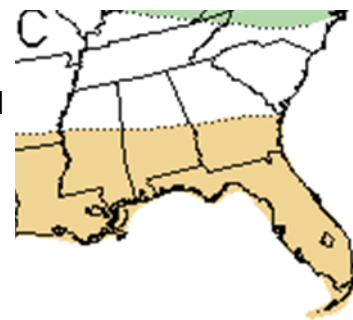
February 2021

## SUMMARY

A drier than average winter season pattern remained in place over the Basin during February. A series of cold fronts made their way through the region but brought little rainfall. As the month ended, water levels throughout the region still remain well above normal for this time of year and are in a good position to weather the height of the dry season.



Looking forward, the 30 day forecast for March (left) shows above average chances for below average rainfall. The 3-month outlook (right) for April, May, and June continues to show an above average chance for below normal rainfall.



## BCB RAINFALL

Rainfall in February was below normal partially due to the continued La Nina conditions in the Pacific Ocean, which usually suggest warmer and drier than average conditions for South Florida during the winter and spring. As measured by twenty-two (22) reporting stations (ref. **Figures 1, 2, Table 1**), the basin-wide monthly average was **1.42 inches (76% of normal)**, which is below the average 1.85 inches typically collected.

Based on collected gauge data, the rainfall distribution across the Basin was fairly uniform across except for a strip of slightly heavier rainfall across the Henderson Creek/Bell Meade that received 2-3 inches of rainfall. **Figure 3a** shows the average rainfall for each of the Basin's watersheds based on gauge adjusted radar. The Henderson Creek/Bell Meade basin received the highest rainfall with a **2.29 inch** areal average across the watershed and the lowest was the Barron River basin with about **0.31 inches**. The Basin's total areal weighted average rainfall was **0.97 inches**. The month's highest gauge total was collected at the Faka Union #4 (Site R-8), which received **3.03 inches**. This month's lowest rainfall was recorded at Fakahatchee Strand HQ (Site R-5), which received **0.23 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. As the month ended, almost all canal levels were above the 75th percentile for the end of February (**Figure 4a**).

- **GOLDEN GATE SYSTEM**

The Golden Gate Main canal system was operated in water conservation mode and continued to be maintained in dry season operational ranges but limited water is now available from upstream to maintain water levels in canals. Canal water levels in most areas of the Golden Gate system were held between the 75th and 90th percentile (ref **Figure 5A & 5B**). Back-pumping operations continued in the Airport Road canal and the CR 951 Canal to maintain dry season levels and reduce water losses out of the system.

- **COCOHATCHEE SYSTEM**

The entire Cocohatchee system was operated to conserve water and discharges to tide ceased but levels remain well above normal for this time of year. (ref **Figure 6A, 6B, 6C, & 6D**). The Curry structure continues to be a success which allows water levels in eastern Cocohatchee and Corkscrew canal to be held significantly higher than historical levels promoting groundwater recharge throughout the area and helping to slow the natural dry season recession in the upstream natural areas.

- **FAKA UNION SYSTEM**

The entire Faka Union system was operated for water conservation with no water being released south of FU4S. As the month ended, levels continued their annual recession in response to dry conditions, but remain above normal levels for this time of year (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 remain almost equal to the 75th percentile as the month came to a close (ref **Figure 8A & 8B**).

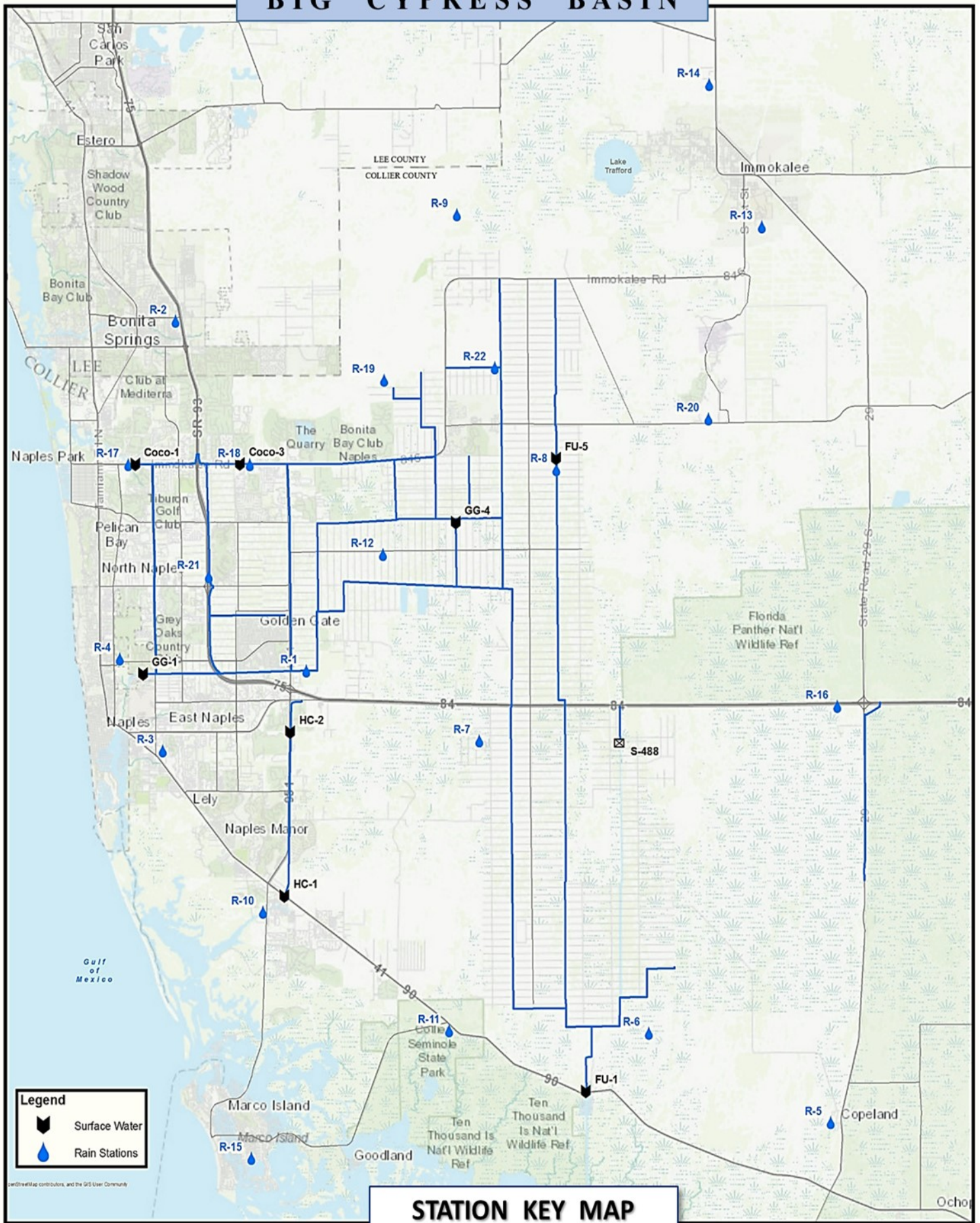
- **CORKSCREW SWAMP**

**Figure 10** shows the historical trends for Corkscrew, Bird Rookery, and the Cork 3 structure and the 2021 corresponding levels. All three sites continue a slow recession as the rainfall amounts remain low. CRKSWPS, CORK3, and Lake Trafford are all above the 75th percentile for this time of year. As the month ended, operations continued in the Corkscrew Canal to maintain levels to near or above historical maximums to conserve water. Water levels at Lake Trafford are shown in **Figure 10A**, which show lake levels continuing a recession but still above the 75th percentile as the month ended.

### **BIG CYPRESS BASIN & LOWER WEST COAST GROUNDWATER LEVELS**

The current reporting (03/08/2021) for the Lower West Coast [LWC] indicate mostly decreasing groundwater levels for February. All but one reported wells decreased since the beginning of the month and all but two remain above the 25th percentile for this time of year (L-738 and C-1004R). By the end of the month, all but one (C-1004R) reporting wells remain in the normal condition indicator (green color) (ref. **Table 2**). All reported wells in **Table 2** show an average decrease of 0.9 feet. C-1004R recorded the highest decrease of 1.8 feet, and C-1224 increased slightly by 0.30 feet (ref. **Table 2, Figure 9**).

BIG CYPRESS BASIN



STATION KEY MAP

FIGURE 1

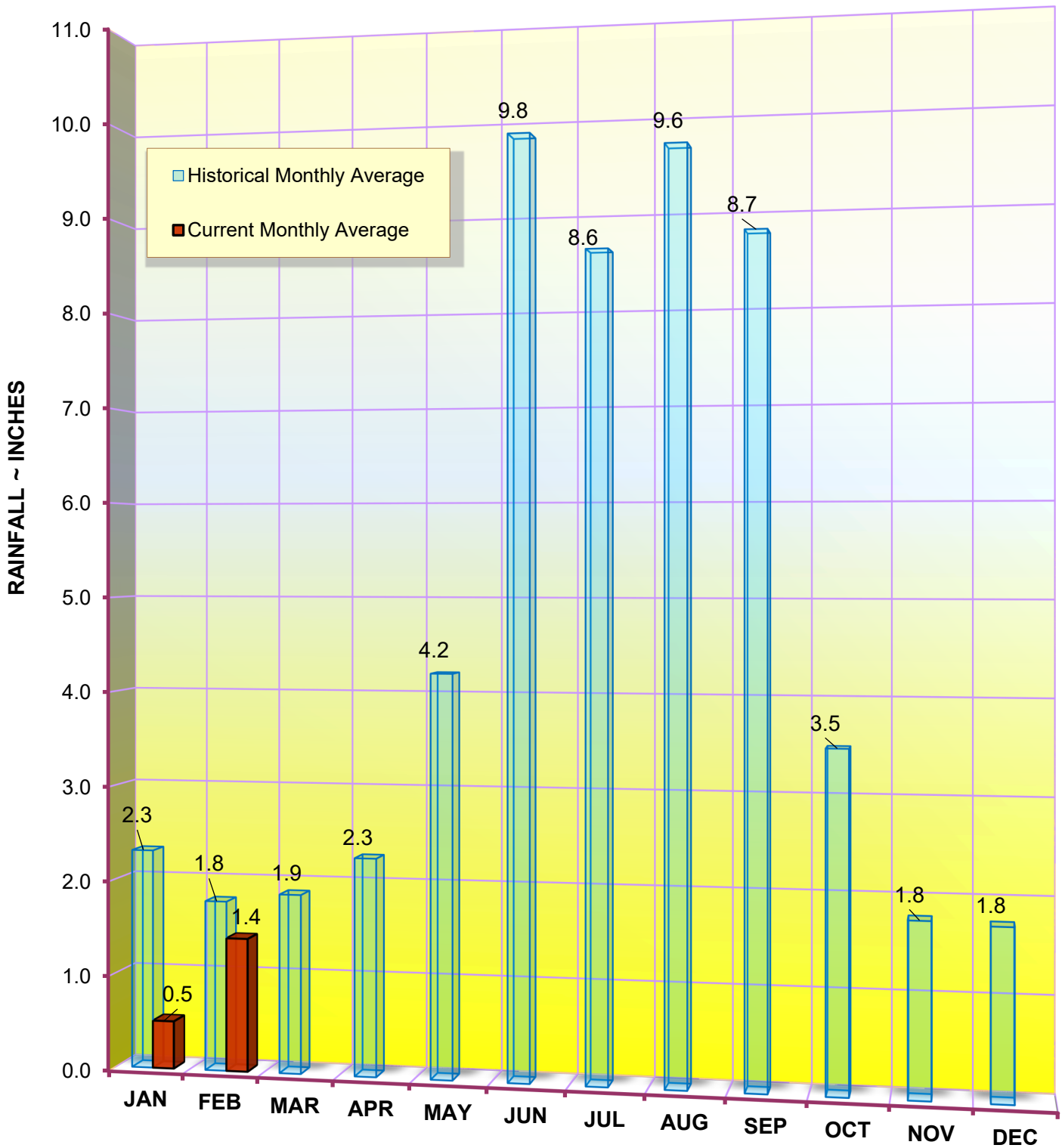
**TABLE 1**  
**RAINFALL REPORT - FEBRUARY 2021**  
**DISTRICT/BASIN RAINFALL STATIONS**

(ALL NUMBERS ARE IN INCHES)

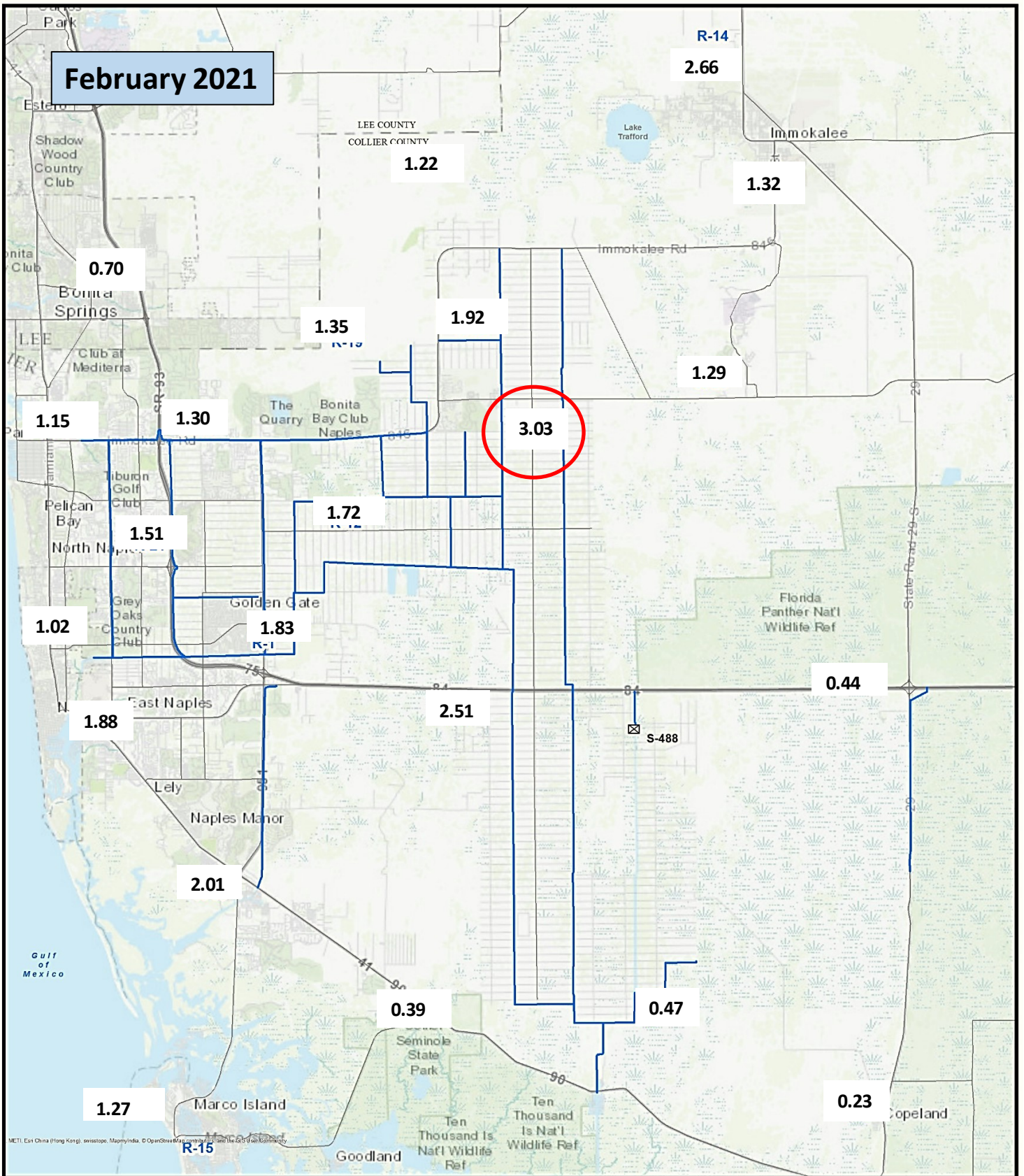
<b>STATION INDEX NO.</b>	<b>STATION NAME</b>	<b>FEBRUARY 2021</b>	<b>LONG TERM AVERAGE FOR THIS MONTH</b>	<b>MONTHLY DIFFERENCE</b>	<b>CALENDAR YEAR 2021 CUMULATIVE TOTAL</b>	<b>AVERAGE CALENDAR YEAR TO DATE</b>	<b>YEAR TO DATE DIFFERENCE</b>
R-1	GOLDEN GATE #3	1.83	1.22	0.61	2.32	4.97	-2.65
R-2	BONITA SPRINGS WATER PLANT	0.70	2.00	-1.30	1.11	4.06	-2.95
R-3	COLLIER COUNTY COURTHOUSE	1.88	1.95	-0.07	2.48	3.92	-1.44
R-4	FREEDOM PARK	1.02	1.34	-0.32	1.57	4.66	-3.09
R-5	FAKAHATCHEE STRAND HQ	0.23	1.92	-1.69	0.73	3.74	-3.01
R-6	DAN HOUSE PRAIRIE	0.47	1.55	-1.08	1.06	3.24	-2.18
R-7	SGGE WEATHER STATION	2.51	1.52	0.99	3.14	3.41	-0.27
R-8	FAKA UNION #5	3.03	1.56	1.47	3.59	5.30	-1.71
R-9	CORKSCREW SWAMP NORTH END	1.22	1.76	-0.54	1.61	3.78	-2.17
R-10	ROOKERY BAY HQ	2.01	1.78	0.23	2.59	3.99	-1.40
R-11	COLLIER SEMINOLE STATE PARK	0.39	1.70	-1.31	1.03	3.64	-2.61
R-12	G.G. FIRE STATION	1.72	1.85	-0.13	2.11	3.92	-1.81
R-13	IMMOKALEE LANDFILL	1.32	1.88	-0.56	1.75	4.13	-2.38
R-14	IFAS	2.66	2.04	0.62	2.97	4.07	-1.10
R-15	MARCO R.O. PLANT	1.27	1.98	-0.71	1.99	4.56	-2.57
R-16	FAKAHATCHEE STRAND NORTH END	0.44	2.15	-1.71	1.14	4.65	-3.51
R-17	COCO#1	1.15	1.90	-0.75	1.55	3.74	-2.19
R-18	COCO#3	1.30	2.03	-0.73	1.68	3.89	-2.21
R-19	BIRD ROOKERY	1.35		New Site	1.79	No Historical Data	
R-20	AVE MARIA	1.29	1.81	-0.52	1.67	4.12	-2.45
R-21	I75W2	1.51		New Site	1.93	No Historical Data	
R-22	GG#7	1.92		New Site	2.32	No Historical Data	

AVERAGES	1.42	1.85	-0.43	1.92	4.09	-2.18
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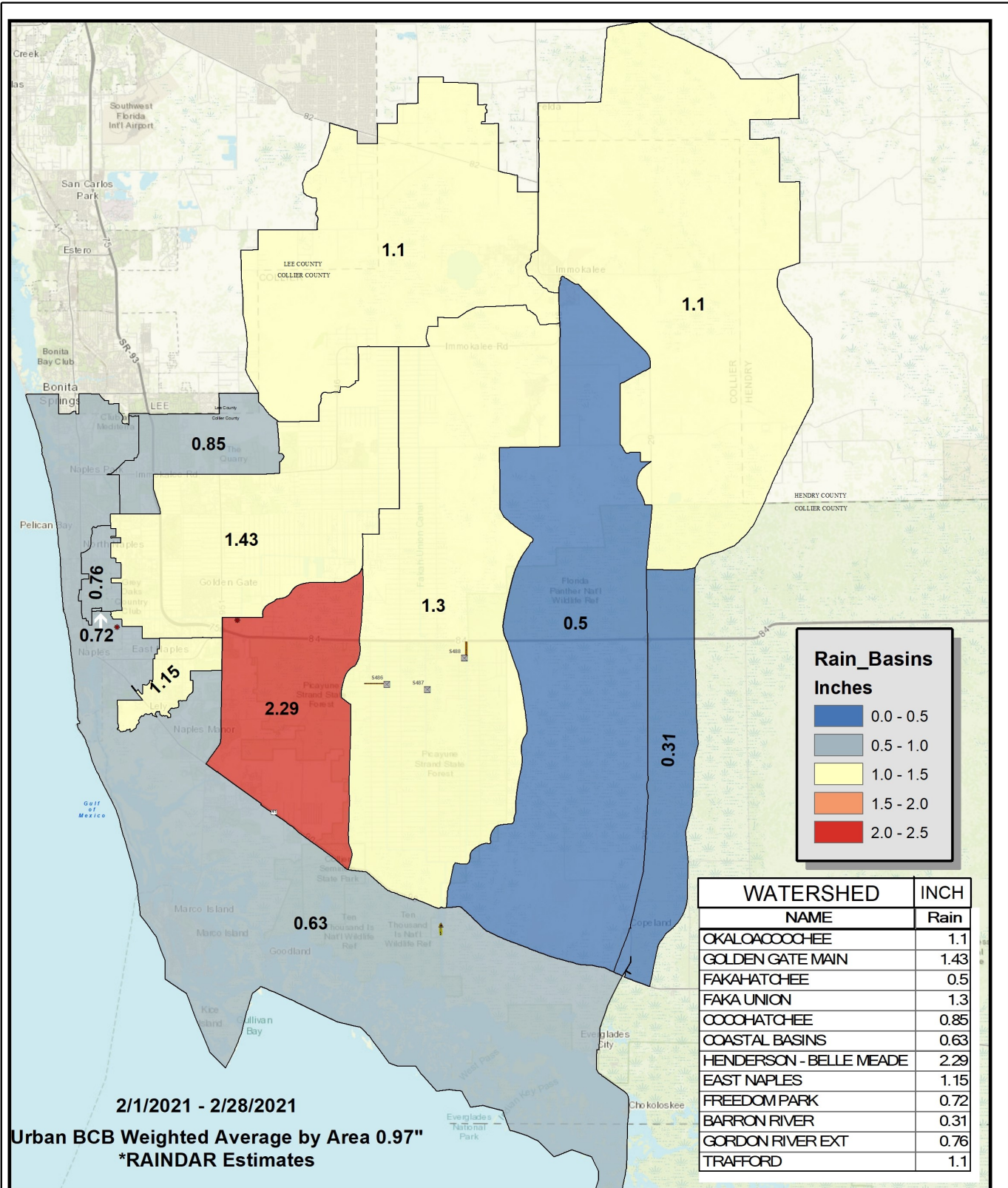
**BCB ANNUAL RAINFALL  
MONTHLY AVERAGE & HISTORICAL AVERAGE TRENDS  
(FROM BCB RAINFALL GAUGE DATA)**



**FIGURE 2  
BCB GAUGE RAINFALL  
MONTHLY AVERAGES THROUGH FEBRUARY 2021**

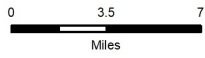


**FIGURE 3**  
**BCB RAINFALL DISTRIBUTION**  
**FEBRUARY 2021**



2/1/2021 - 2/28/2021  
**Urban BCB Weighted Average by Area 0.97"**  
**\*RAINDAR Estimates**

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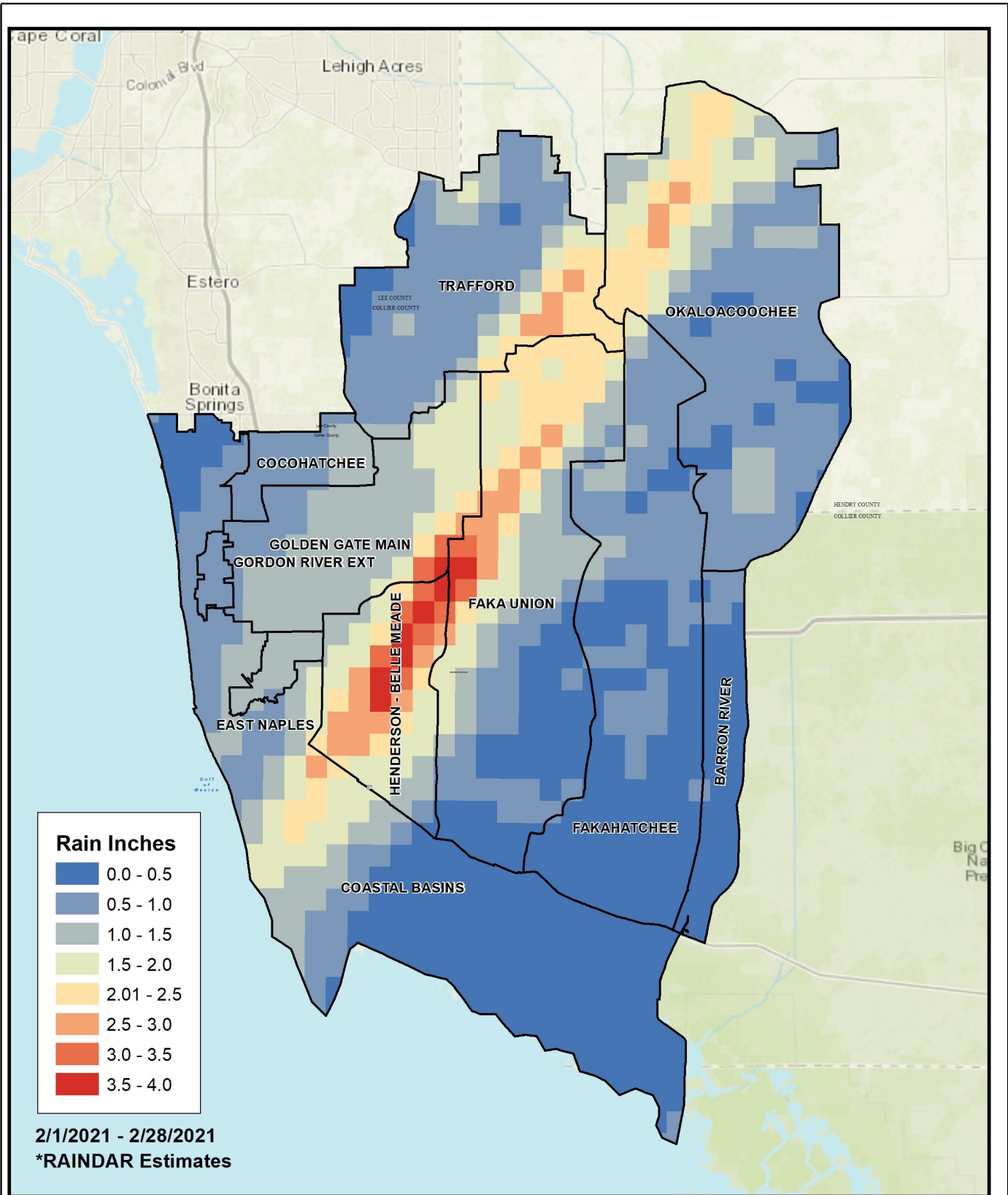


\*Rainfall estimates based on gauge adjusted radar

	<p><b>BIG CYPRESS BASIN</b>  <b>SFWM D</b>  <b>2660 Horseshoe Dr. N.</b>  <b>Naples, Florida 34104</b>  <b>239-263-7615</b></p>	<p align="center"><b>BCB RAINFALL</b>  <b>SPATIAL DISTRIBUTION</b></p> <p align="center">Urban Collier County, Florida</p>		
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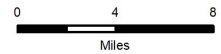
**FIGURE 3a**





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\*Rainfall estimates based on gauge adjusted radar



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

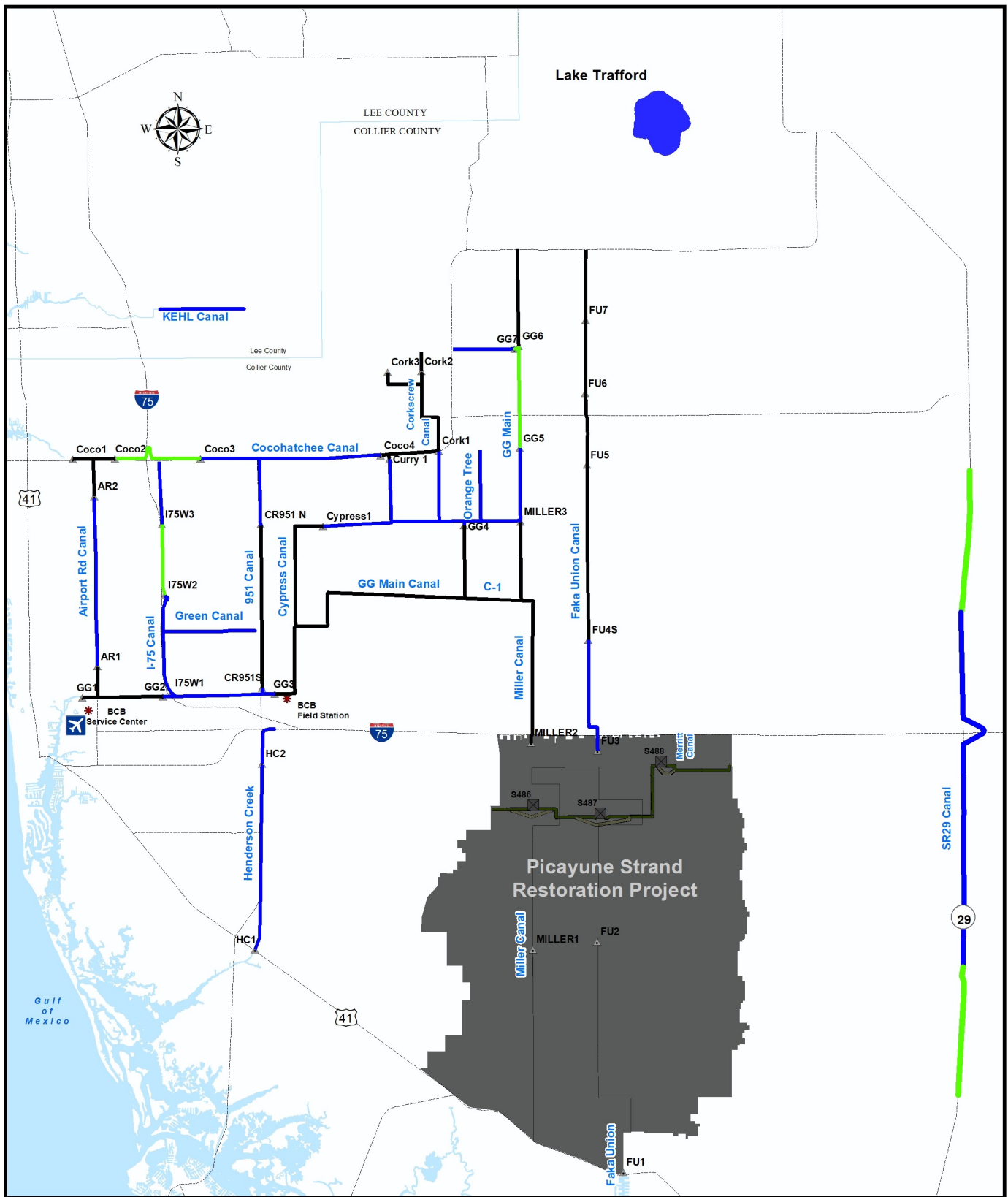
**BCB RAINFALL  
 SPATIAL DISTRIBUTION**

Urban Collier County, Florida



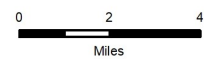
SFWMD\_21\_046\_Am\_2019

**FIGURE 4**






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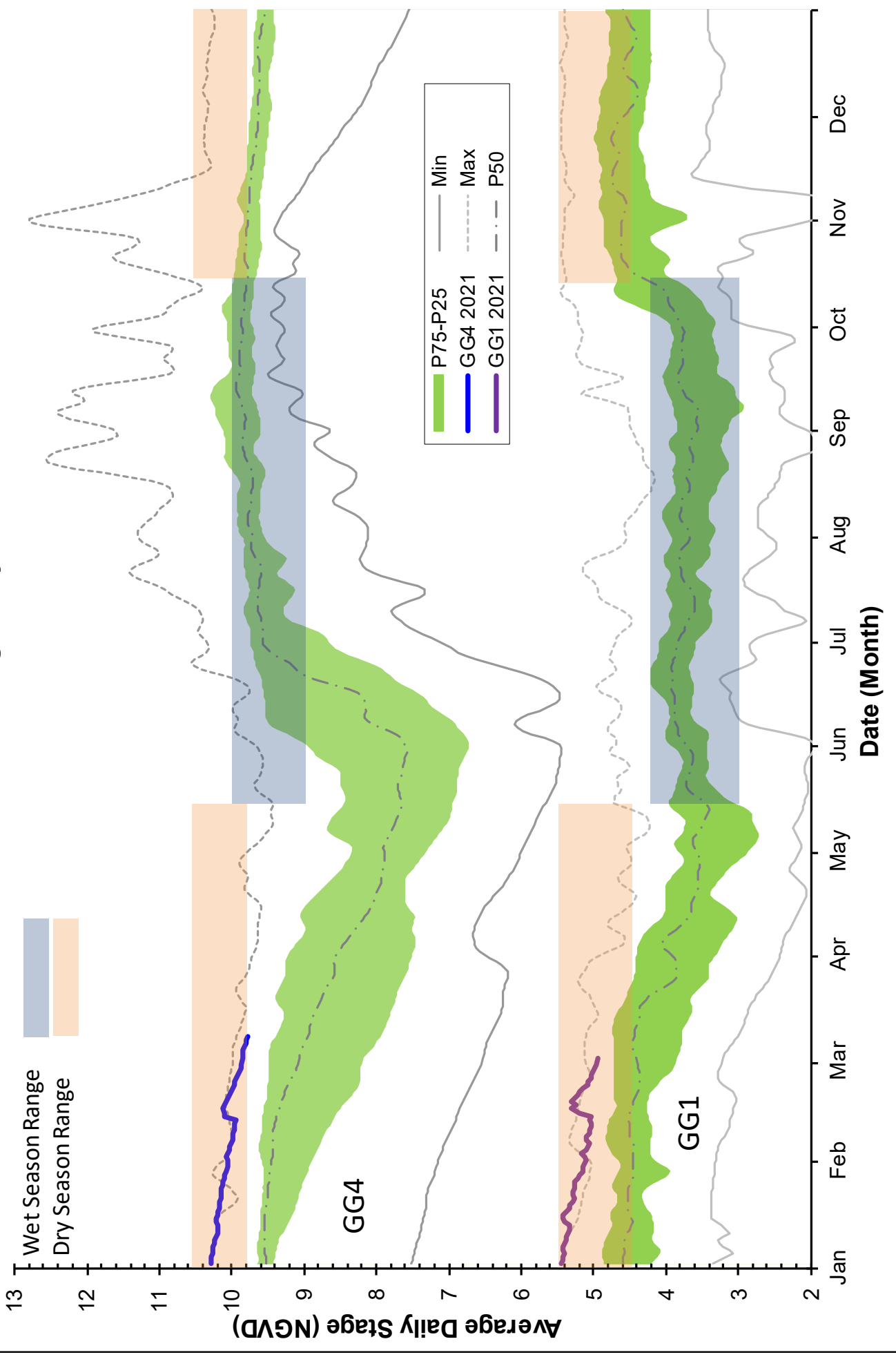


\* Based on period of record for each canal reach

	<b>BIG CYPRESS BASIN</b> <b>SFWMD</b> 2660 Horseshoe Dr. N. Naples, Florida 34104 239-263-7615	<b>BCB Conditions Index</b> <b>3/1/21</b> Urban Collier County, Florida	 
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**FIGURE 4A**

# Golden Gate Canal Historic Average Daily Headwater Percentiles



# Cocohatchee Canal Historic Average Daily Headwater Percentiles

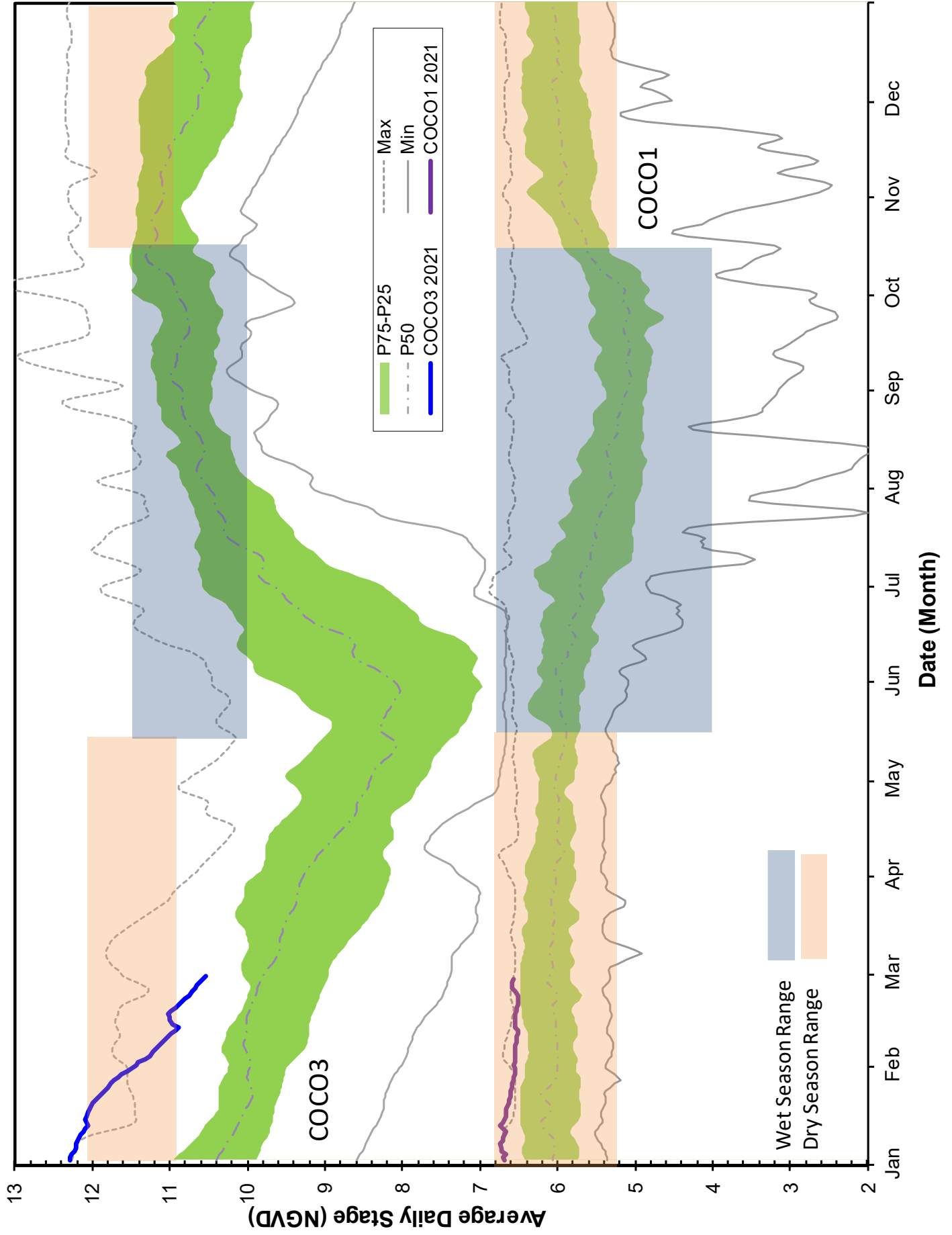


Figure 6C - CORK1 Historic Average Daily Headwater Percentiles (1989-2020)

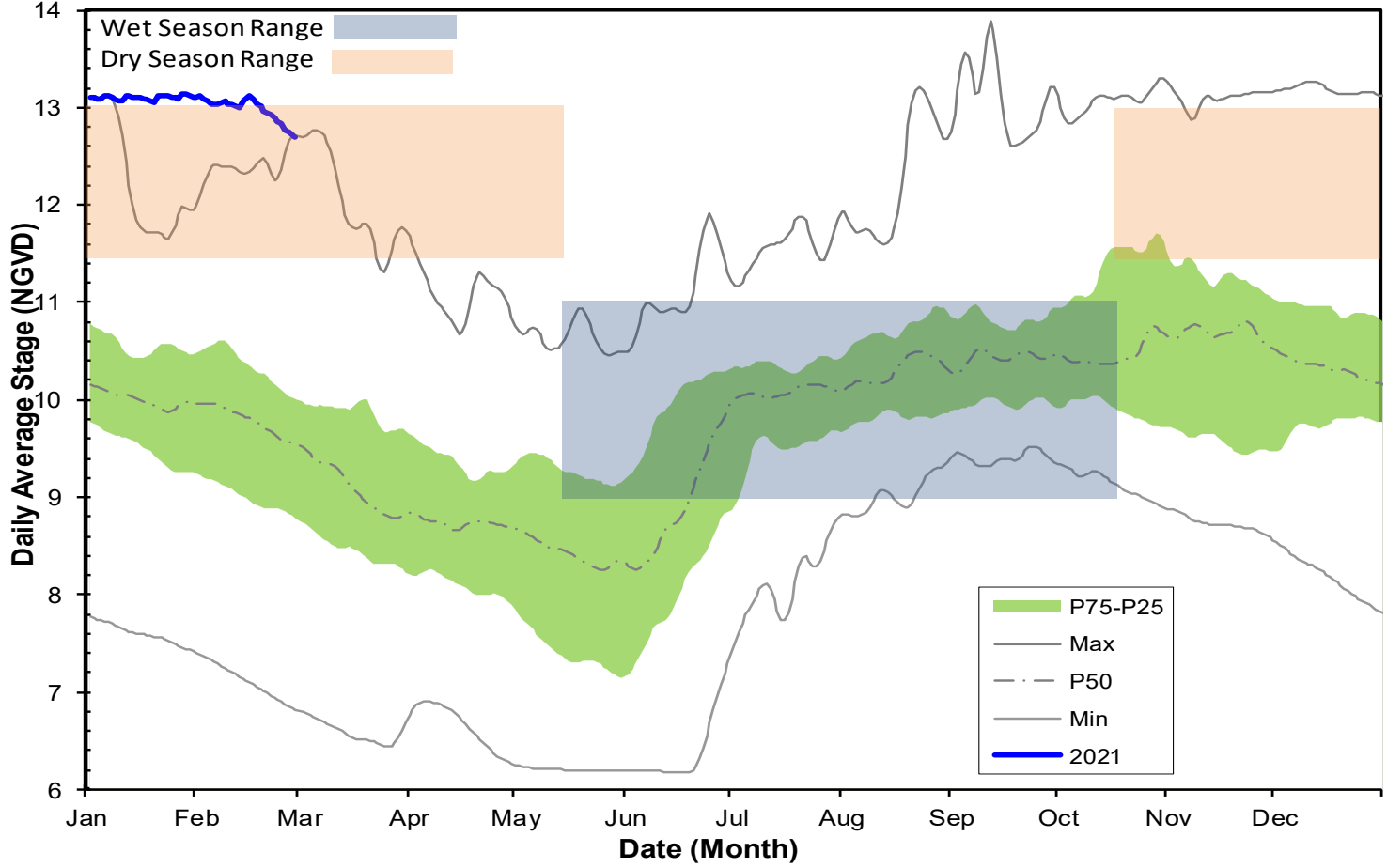
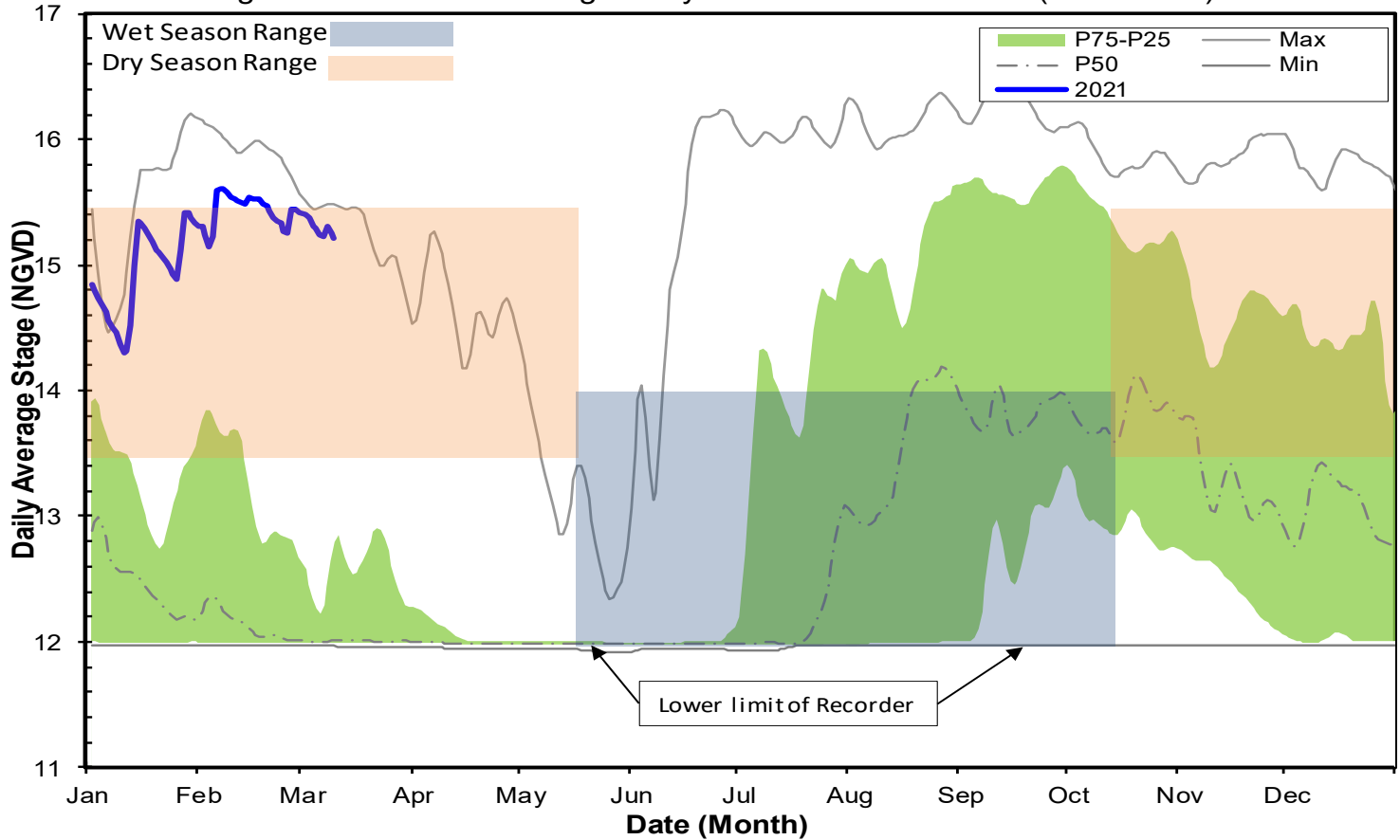
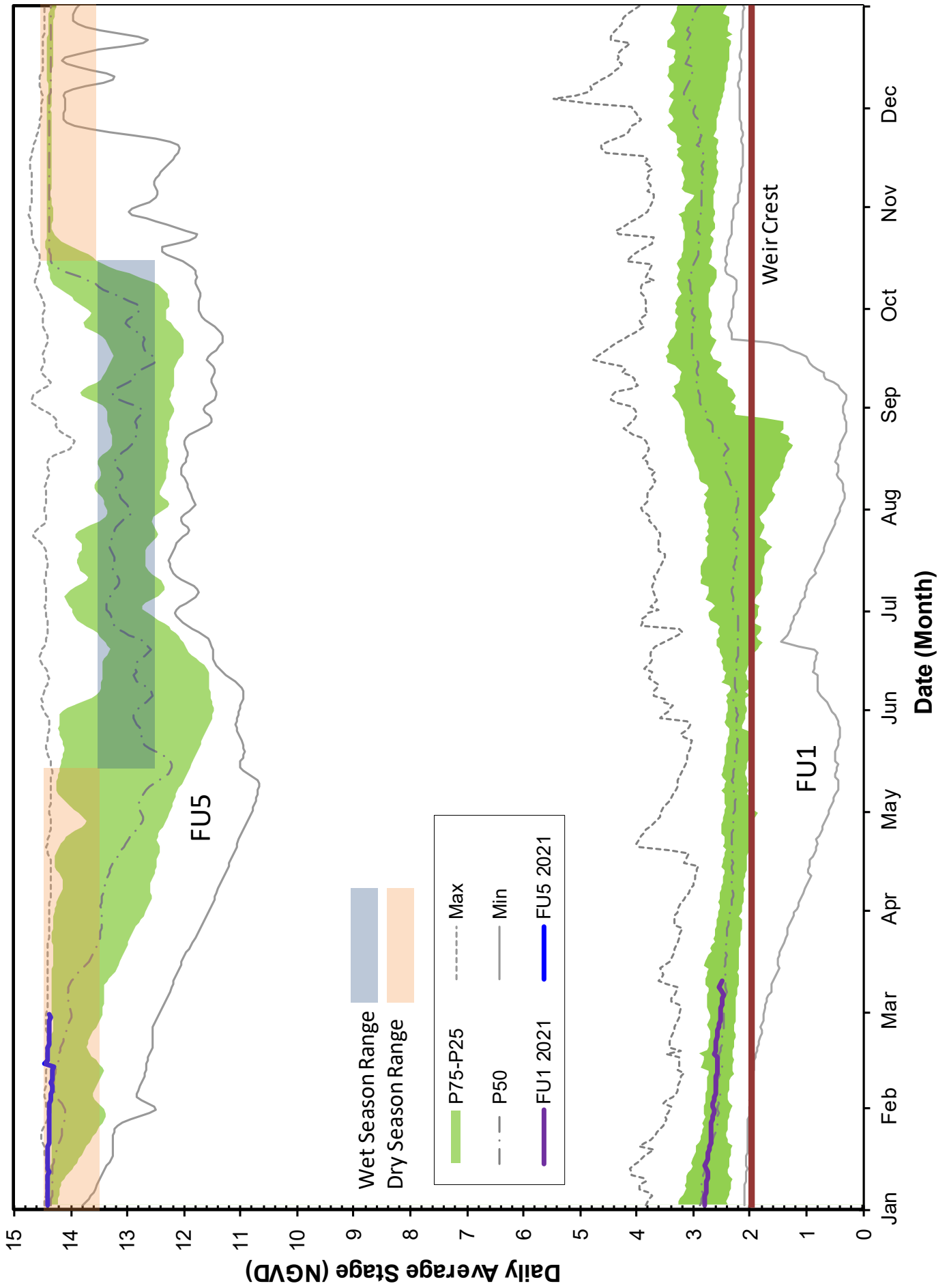
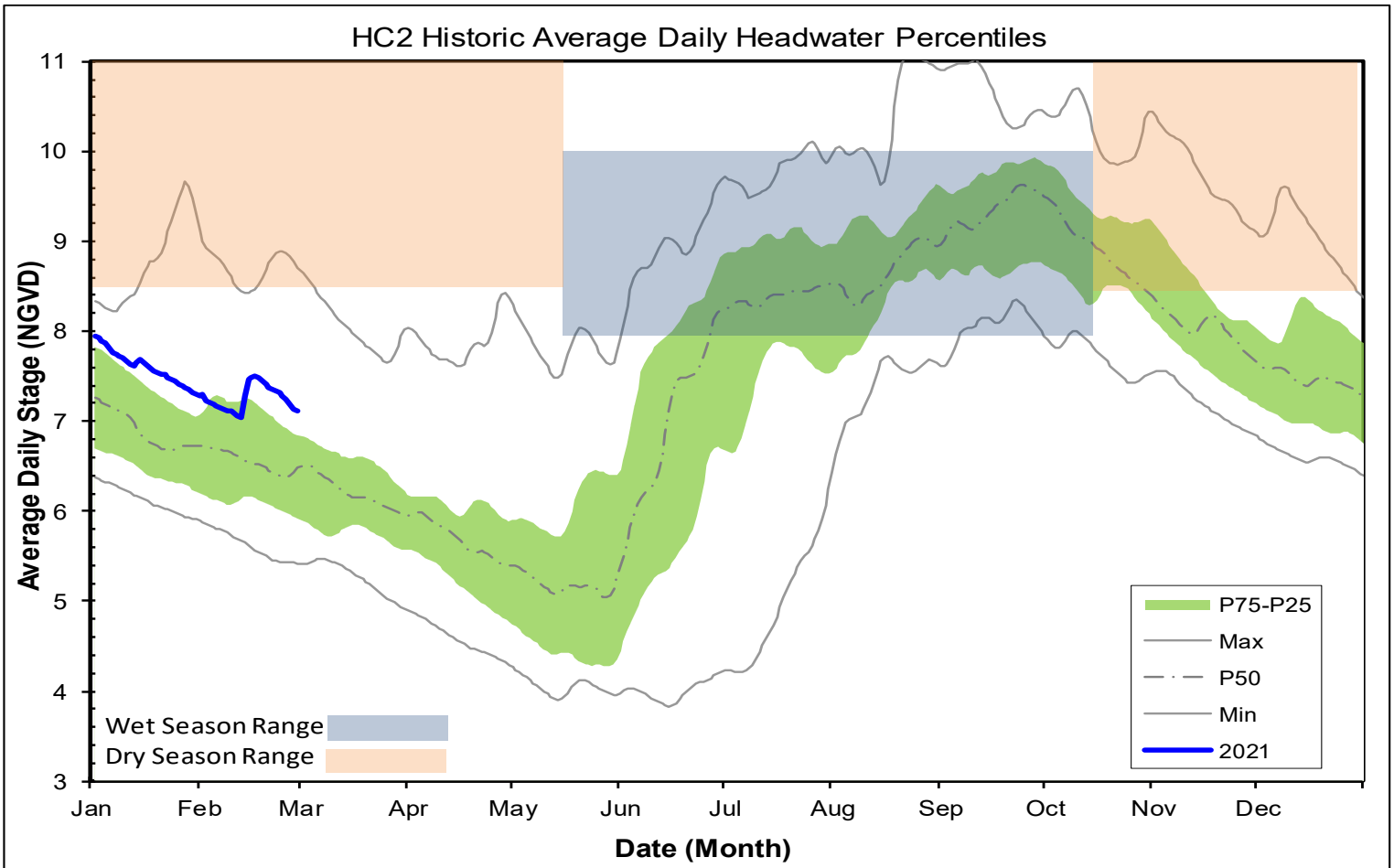
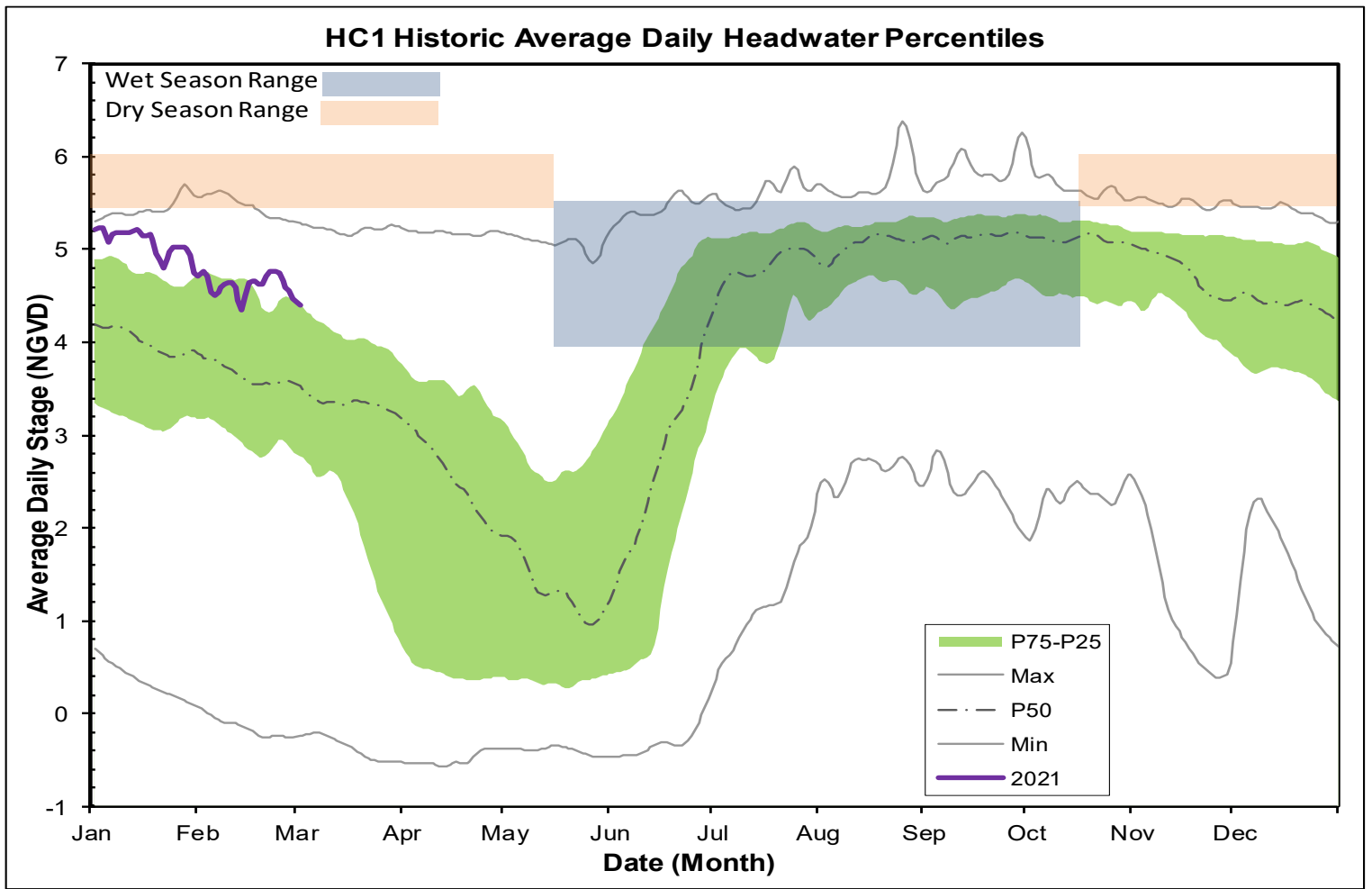


Figure 6D - CORK3 Average Daily Headwater Percentiles (2004-2020)



# Faka Union Canal Historic Average Daily Headwater Percentiles





**WATER CONDITIONS SUMMARY - February 2021**

**SELECTED STATIONS for BCB AREA / SW FLORIDA**

Last Reading Date :		March 8, 2021					
Previous Period Reading Date:		February 1, 2021					
<b>STATION INDEX NO.</b>	<b>WELL LOCATION</b>	<b>WELL / AQUIFER - TYPE</b>	<b>CHANGE (from previous date)</b>	<b>PREVIOUS LEVEL</b>	<b>CURRENT LEVEL (ft)</b>	<b>DIRECTION OF CHANGE</b>	<b>CONCERN INDICATOR</b>
ALL INDICATOR LEVELS SHOWN IN FT-NGVD							
C-462	Immokalee	Lower Tamiami Aquifer	-0.26	30.45	30.19	↓	GREEN
C-1004R	Naples	Lower Tamiami Aquifer	-1.77	1.92	0.15	↓	YELLOW
C-1224	Marco Lakes	Lower Tamiami Aquifer	0.30	3.32	3.62	↑	GREEN
L-2194	Bonita Springs	Sandstone Aquifer	-1.39	3.91	2.52	↓	GREEN
L-2195	Bonita Springs	Surficial Aquifer System	-0.95	10.67	9.72	↓	GREEN
L-738	Bonita Springs	Lower Tamiami Aquifer	-1.04	-0.32	-1.36	↓	GREEN

**TABLE 2  
BCB WATER CONDITIONS SUMMARY  
FEBRUARY 2021**



BIG CYPRESS BASIN

FEBRUARY 2021

GROUNDWATER LEVEL DAILY TRENDS COMPARED TO HISTORICAL AVERAGE

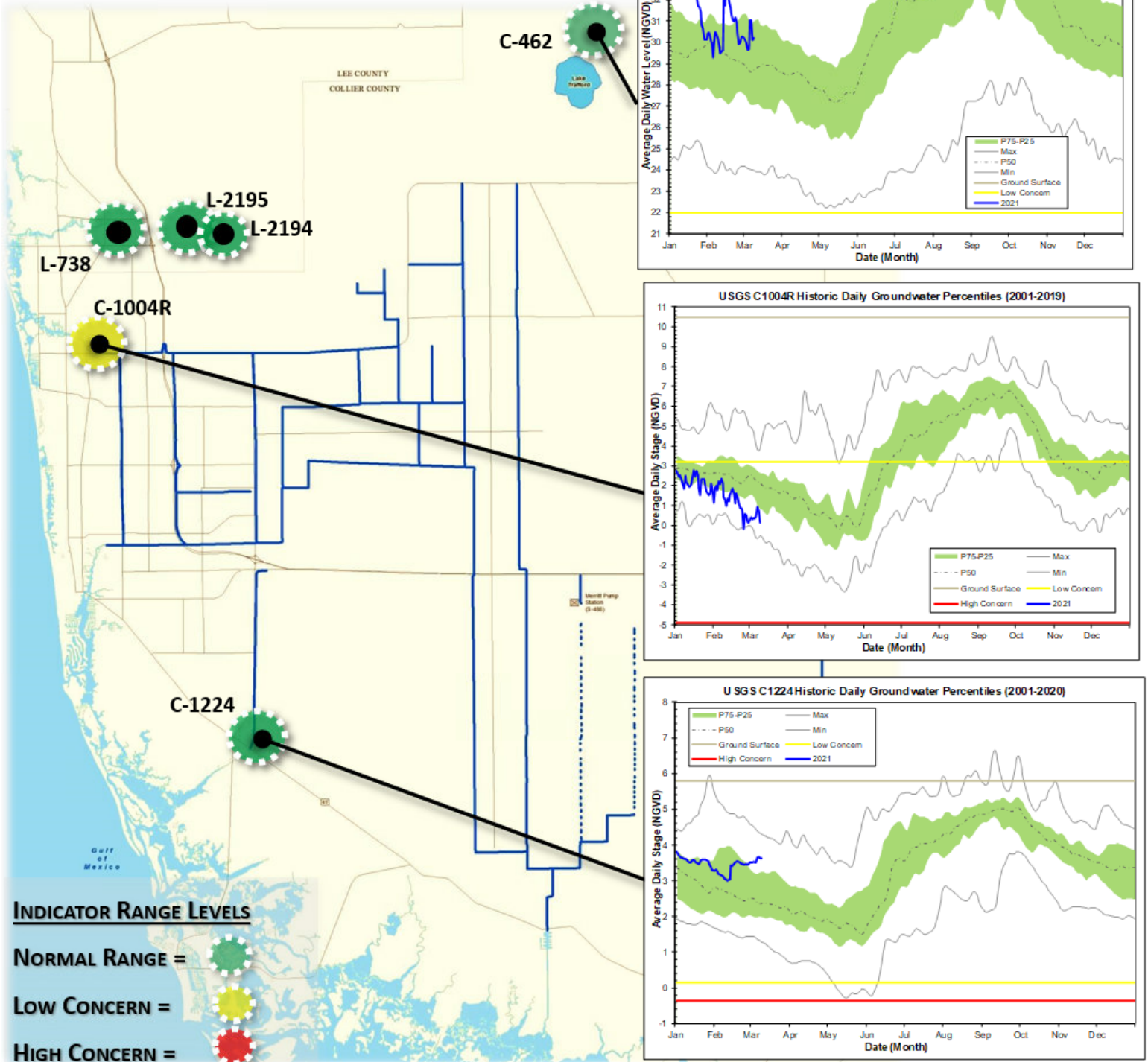


FIGURE 9

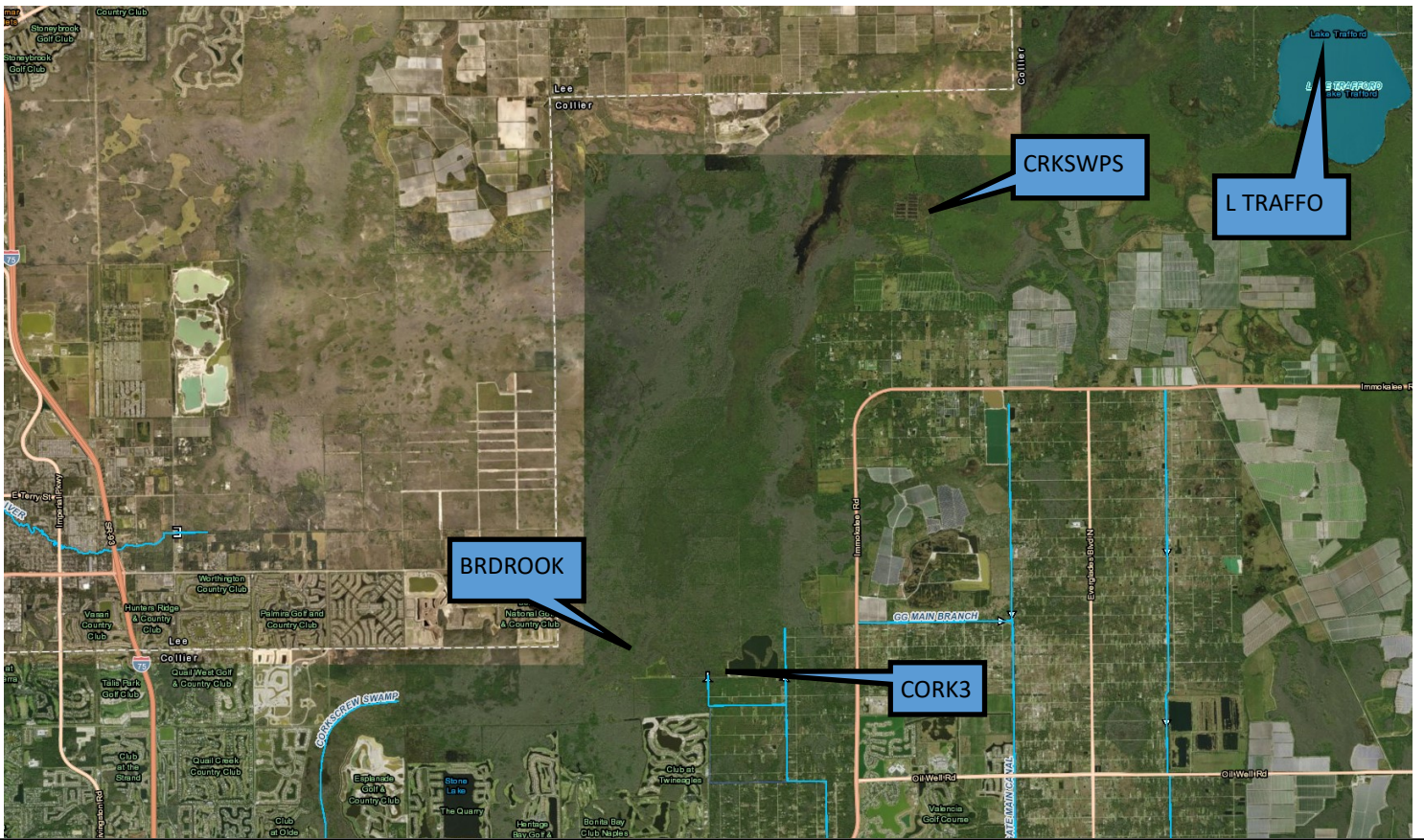


Figure 10-Corkscrew Historic Average Daily Headwater Percentiles(1984-2019)

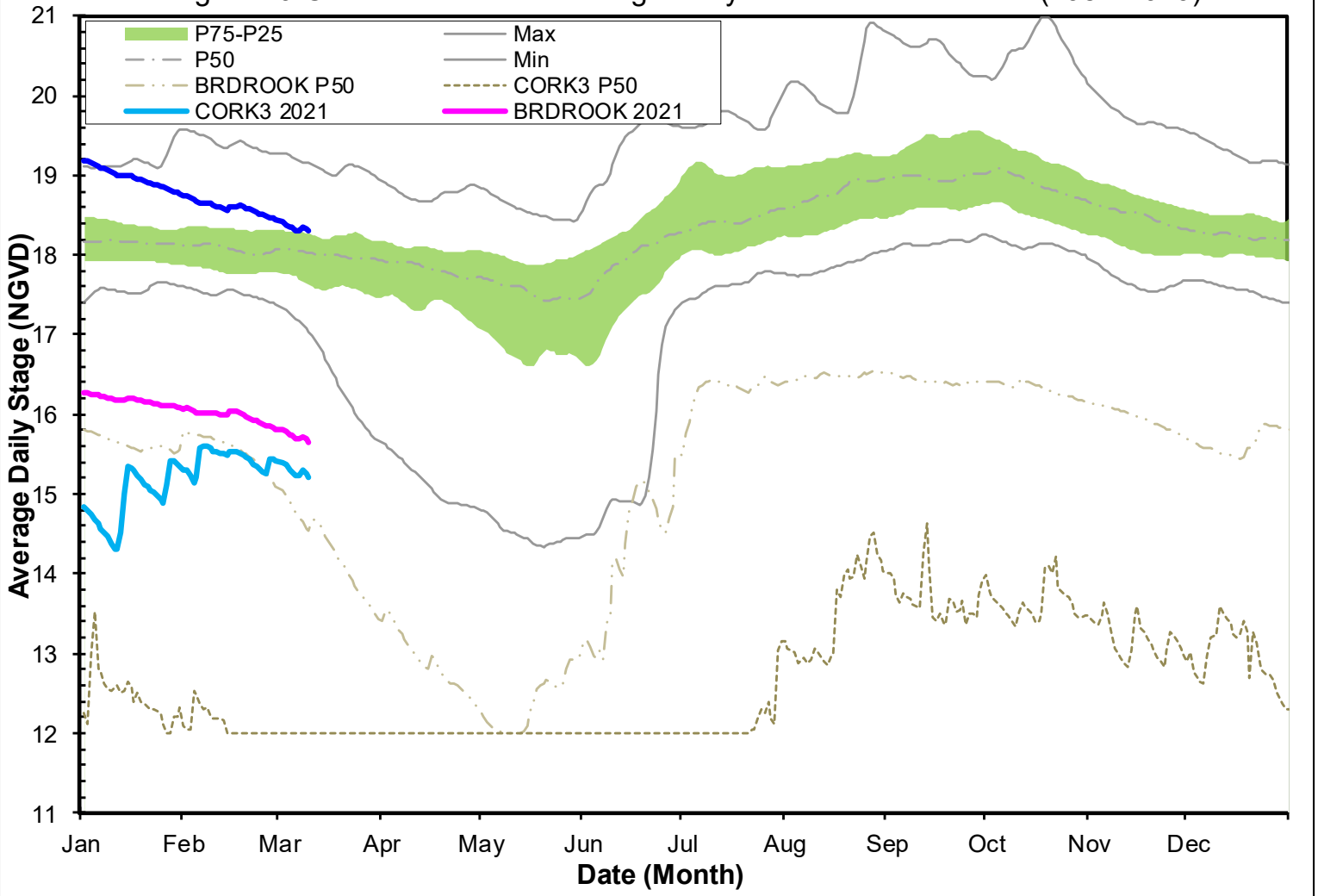


Fig 10A Lake Trafford Historic Daily Water Level Percentiles (1941-2019)

