

NOVEMBER 2019

# BIG CYPRESS BASIN HYDROLOGIC REPORT



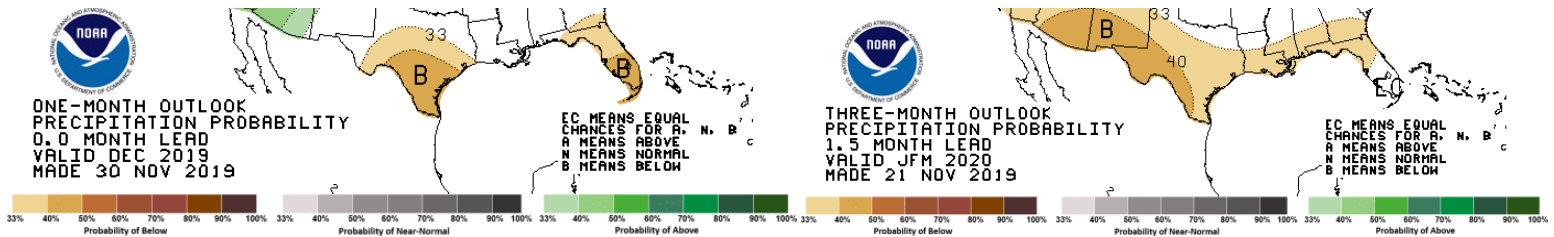
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# SUMMARY OF HYDROLOGIC CONDITIONS IN THE BIG CYPRESS BASIN

November 2019

## SUMMARY

November was a typical dry season month with mostly pleasant dry weather patterns. The small amount of rain that did fall was a result of passing cold fronts. Looking further ahead into the dry season, the 30 day outlook is calling for below average rainfall and the 3 month outlook for January, February, and March is indicating equal chances for above, average, or below normal rainfall.



## BCB RAINFALL

November continued the mostly average rainfall pattern and ended the month at 88% of normal. As measured by twenty-two (22) reporting stations (ref. **Figures 1, 2, Table 1**), the basin-wide monthly average was **1.4 inches**, which is just below the average 1.6 inches typically collected.

Based on collected gauge data, rainfall distribution across the area was variable and sporadic across the region without one region having received a consistent rainfall. The month's highest total was collected at Bonita Springs Water Plant (Site R-2), which received **2.25 inches**. The lowest rainfall was recorded at Rookery Bay HQ (Site R-10) with **0.60 inches**. The rainfall totals and their locality distribution across the BCB/ Lower West Coast are shown on **Figure 3**.

## BCB CANAL SYSTEMS

All of the canals were maintained in dry season operations and all were operated to maintain the highest levels possible. Canal levels have started their dry season decline as the Basin continues with a dry weather pattern. Canal levels are expected to continue declining, as the system is completely reliant on local rainfall to maintain canal stages. Minimal releases were made out of the system into the Cocohatchee River, Naples Bay, and Rookery Bay.

- **GOLDEN GATE SYSTEM**

The Golden Gate Main canal system was operated in dry season mode and continue to be maintained as high as possible to retain as much water as possible. Back-pumping operations continued in Airport and CR951 Canals from Golden Gate Main to maintain dry season levels and promote aquifer recharge. (ref **Figure 5A & 5B**).

- **COCOCHATCHEE SYSTEM**

The Cocohatchee system continued in dry season operations given the early start to the dry season. Similar to last dry season, the new Curry structure is allowing levels to be held almost 2 feet higher than historic levels and to assist in maintaining canal levels upstream of COCO3, but with the lack of significant rainfall canal levels are starting to decline throughout the basin (ref **Figure 6A, 6B, 6C, & 6D**).

- **FAKA UNION SYSTEM**

Dry season operations continued in the Faka Union system. All operable structures remain closed and levels are starting to decrease. FU1 and FU5 are both right on the 50th percentile line, while FU4S is approaching the 25th percentile (ref **Figure 7A, 7B, & 7C**).

- **HENDERSON CREEK SYSTEM**

The Henderson Creek system also continued dry season operations. Levels downstream (HC1) are slowly declining near the 75th percentile while upstream levels (HC2) continue a downward trend near the 25th percentile (ref **Figure 8A & 8B**).

- **CORKSCREW SWAMP**

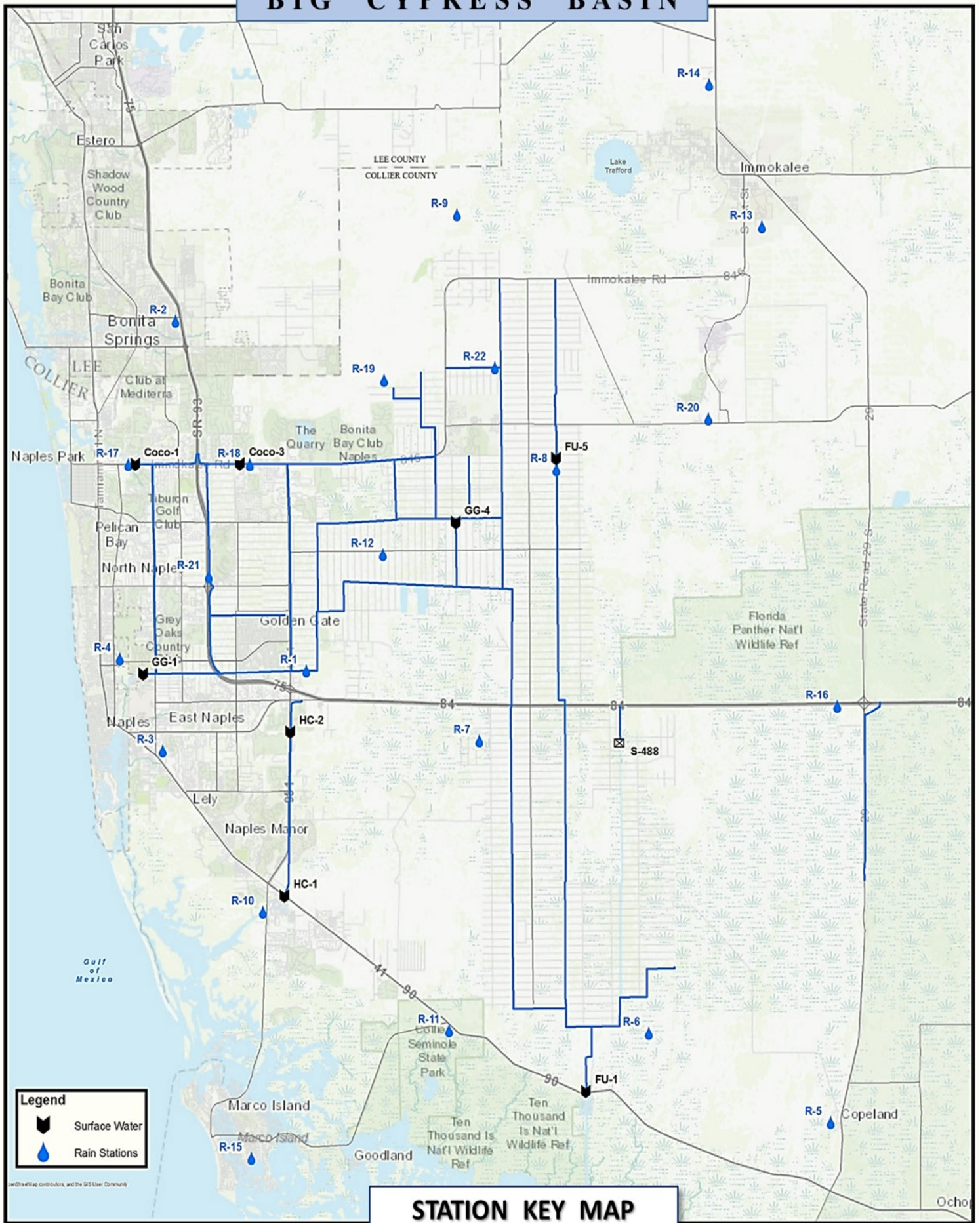
**Figure 10** shows the historical trends for Corkscrew, Bird Rookery, and Cork 3 structure and the 2019 corresponding levels which continue to decline. All are below the 25th percentile line and all water control structures remain fully closed.

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

The current reporting (12/01/2019) for the Lower West Coast [LWC] notes that all groundwater levels have decreased. By the end of November, five of the six reporting wells are still in the green concern indicator (green color). One well, C-1004R, remains in the yellow concern indicator (ref. **Table 2**).

All reported wells in **Table 2** show an average decrease of  $-0.93$  feet. L-2194 recorded the highest decrease of  $-1.37$  feet, and C-462 had the smallest decrease of  $-0.64$  feet. The Collier County sites (C-462, C-1004R, and C-1224) finished the month almost right at the 25th percentile (ref. **Table 2, Figure 9**).

BIG CYPRESS BASIN



STATION KEY MAP

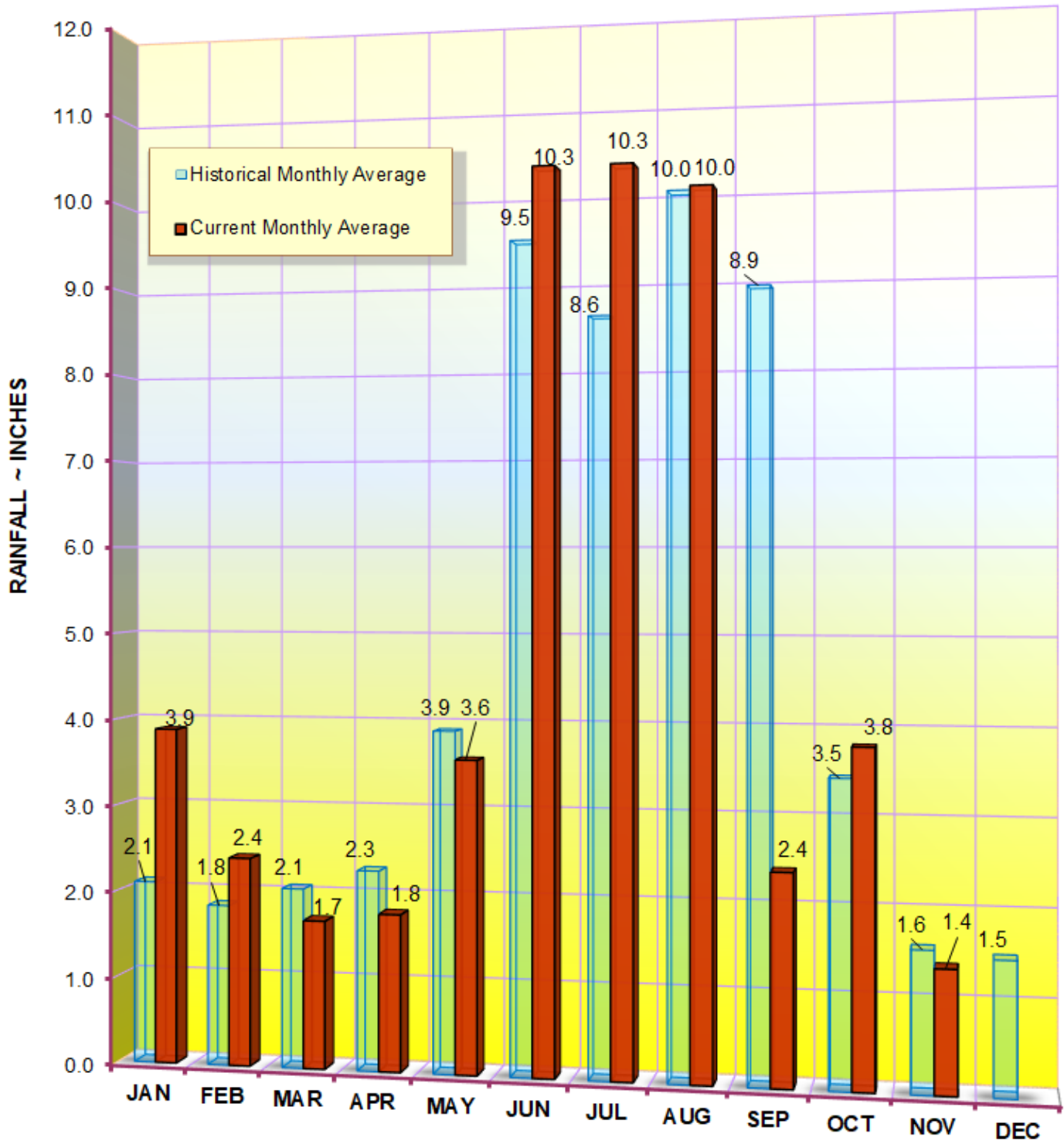
FIGURE 1

**TABLE 1**  
**RAINFALL REPORT - NOVEMBER 2019**  
**DISTRICT/BASIN RAINFALL STATIONS**

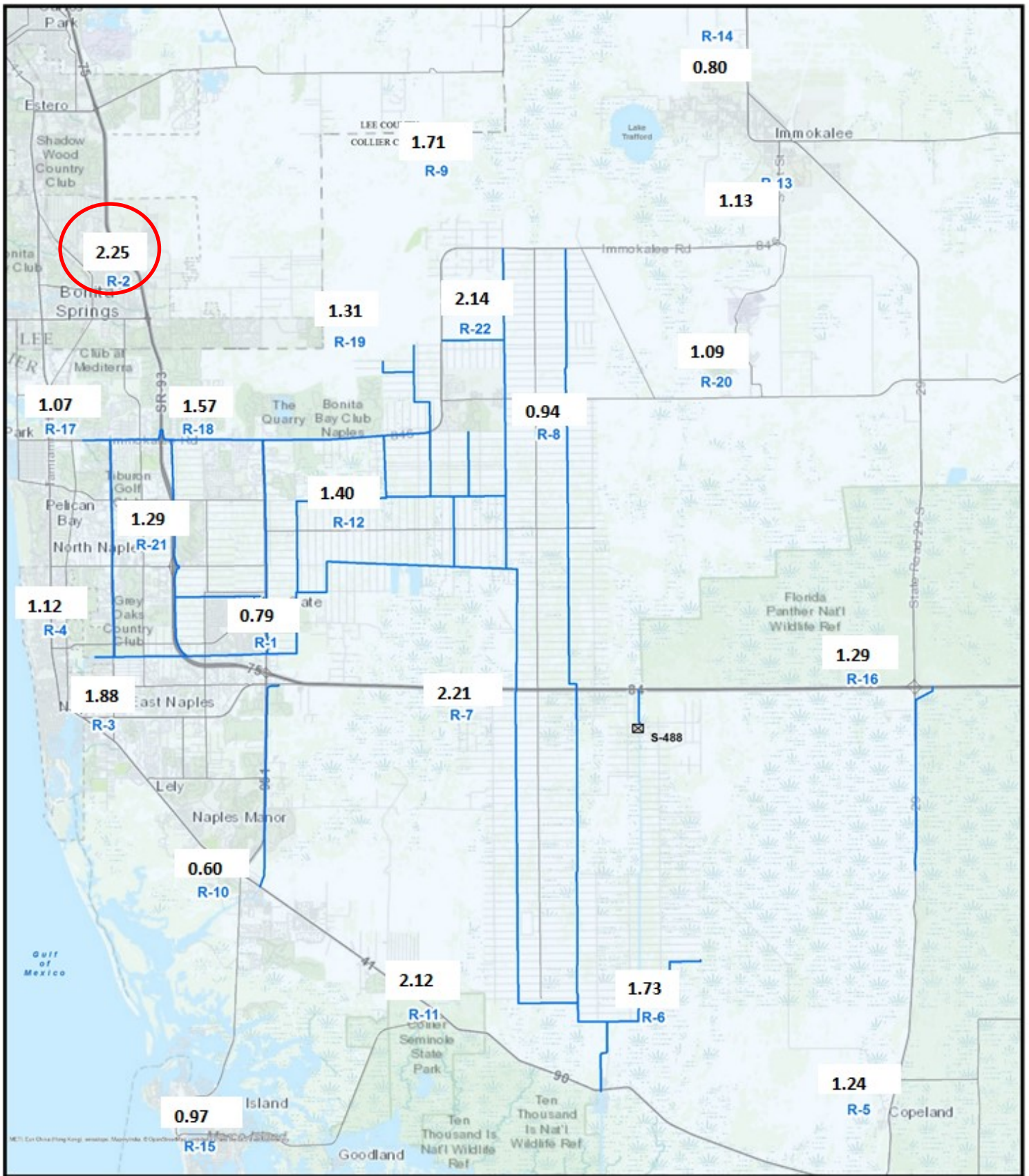
(ALL NUMBERS ARE IN INCHES)

<b>STATION INDEX NO.</b>	<b>STATION NAME</b>	<b>NOVEMBER 2019</b>	<b>LONG TERM AVERAGE FOR THIS MONTH</b>	<b>MONTHLY DIFFERENCE</b>	<b>CALENDAR YEAR 2019 CUMULATIVE TOTAL</b>	<b>AVERAGE CALENDAR YEAR TO DATE</b>	<b>YEAR TO DATE DIFFERENCE</b>
R-1	GOLDEN GATE #3	0.79	1.69	-0.90	53.83	65.01	-11.18
R-2	BONITA SPRINGS WATER PLANT	2.25	1.60	0.65	51.57	50.46	1.11
R-3	COLLIER COUNTY COURTHOUSE	1.88	1.84	0.04	60.60	51.13	9.47
R-4	FREEDOM PARK	1.12	1.27	-0.15	51.26	59.37	-8.11
R-5	FAKAHATCHEE STRAND HQ	1.24	1.74	-0.50	41.27	58.74	-17.47
R-6	DAN HOUSE PRAIRIE	1.73	1.86	-0.13	46.22	50.75	-4.53
R-7	SGGE WEATHER STATION	2.21	1.35	0.86	59.98	59.56	0.42
R-8	FAKA UNION #5	0.94	1.14	-0.20	49.76	65.04	-15.28
R-9	CORKSCREW SWAMP NORTH END	1.71	1.04	0.67	45.49	49.54	-4.05
R-10	ROOKERY BAY HQ	0.60	1.44	-0.84	54.48	54.23	0.25
R-11	COLLIER SEMINOLE STATE PARK	2.12	2.17	-0.05	58.66	55.46	3.20
R-12	G.G. FIRE STATION	1.40	1.57	-0.17	51.10	57.55	-6.45
R-13	IMMOKALEE LANDFILL	1.13	1.63	-0.50	45.28	50.72	-5.44
R-14	IFAS	0.80	1.55	-0.75	50.25	48.49	1.76
R-15	MARCO R.O. PLANT	0.97	2.07	-1.10	51.83	51.87	-0.04
R-16	FAKAHATCHEE STRAND NORTH END	1.29	1.82	-0.53	49.11	58.79	-9.68
R-17	COCO#1	1.07	1.58	-0.51	53.37	48.02	5.35
R-18	COCO#3	1.57	1.12	0.45	53.34	55.68	-2.34
R-19	BIRD ROOKERY	1.31		New Site	55.69	No Historical Data	
R-20	AVE MARIA	1.09	1.75	-0.66	54.10	52.86	1.24
R-21	I75W2	1.29		New Site	48.51	No Historical Data	
R-22	GG#7	2.14		New Site	47.99	No Historical Data	
AVERAGES		1.39	1.59	-0.20	51.53	54.91	-3.38

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

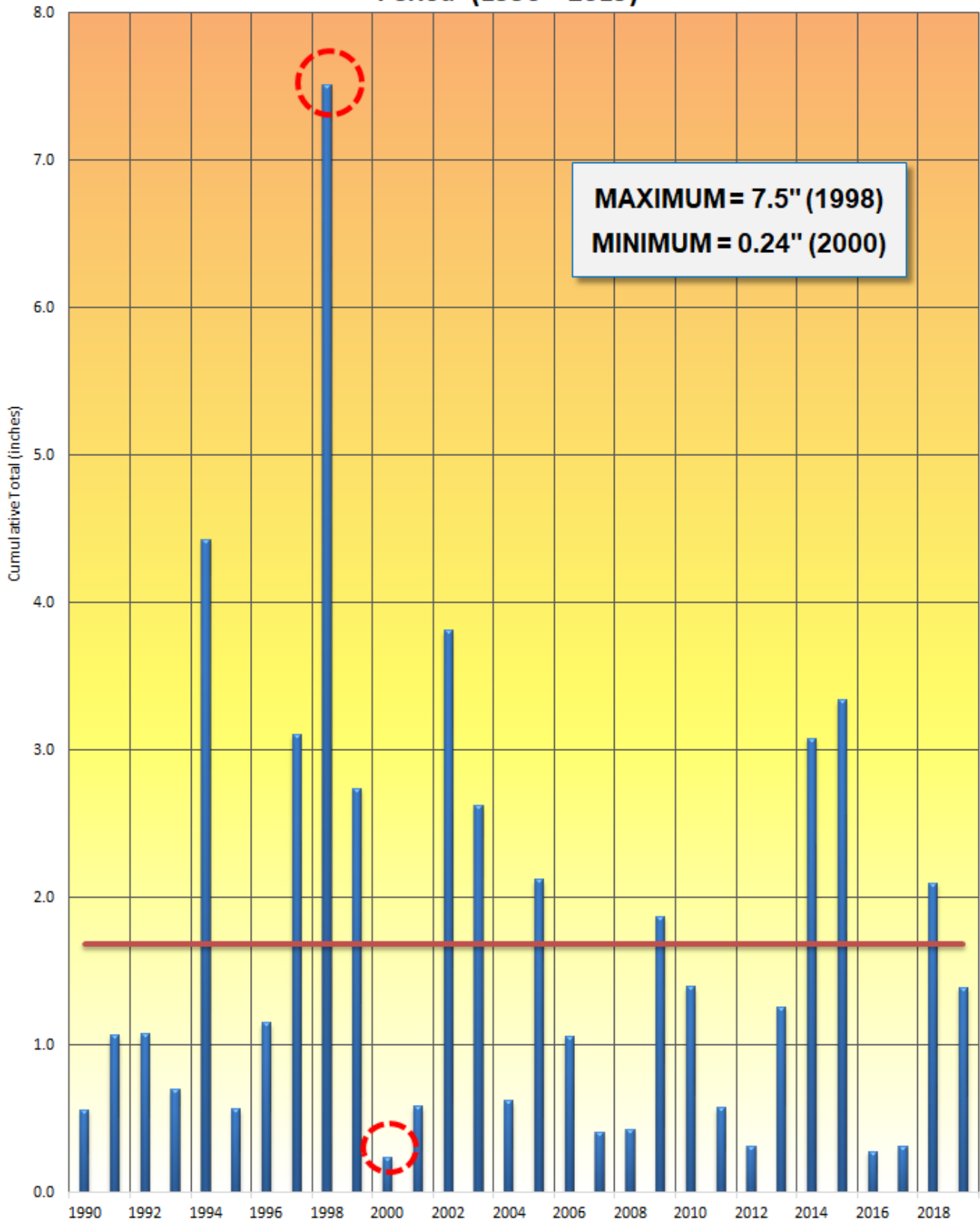


**FIGURE 2**  
**BCB GAUGE RAINFALL**  
**MONTHLY AVERAGES THROUGH NOVEMBER 2019**



**FIGURE 3**  
**BCB RAINFALL DISTRIBUTION**  
**NOVEMBER 2019**

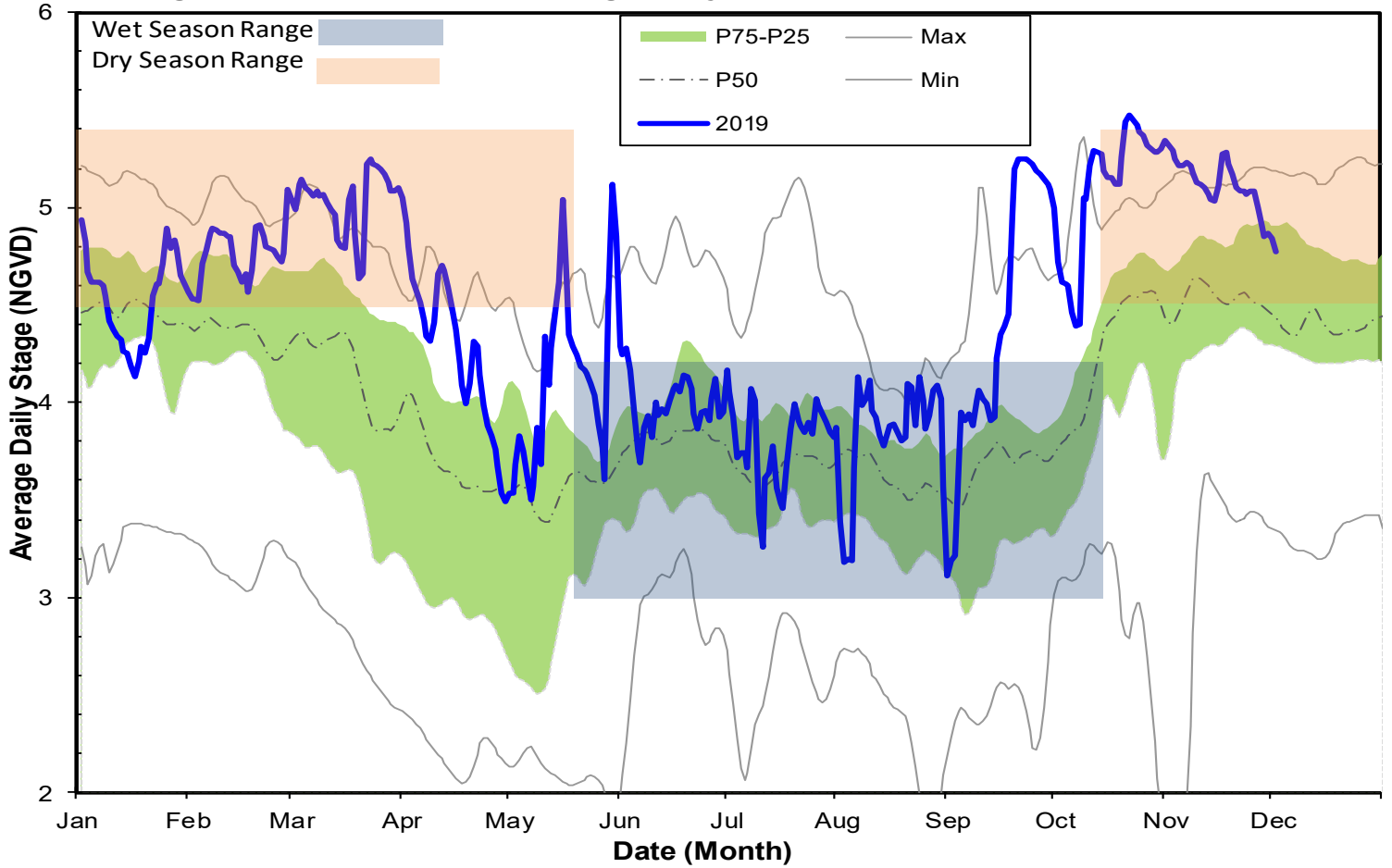
**BCB NOVEMBER RAINFALL**  
**Period (1990 ~ 2019)**



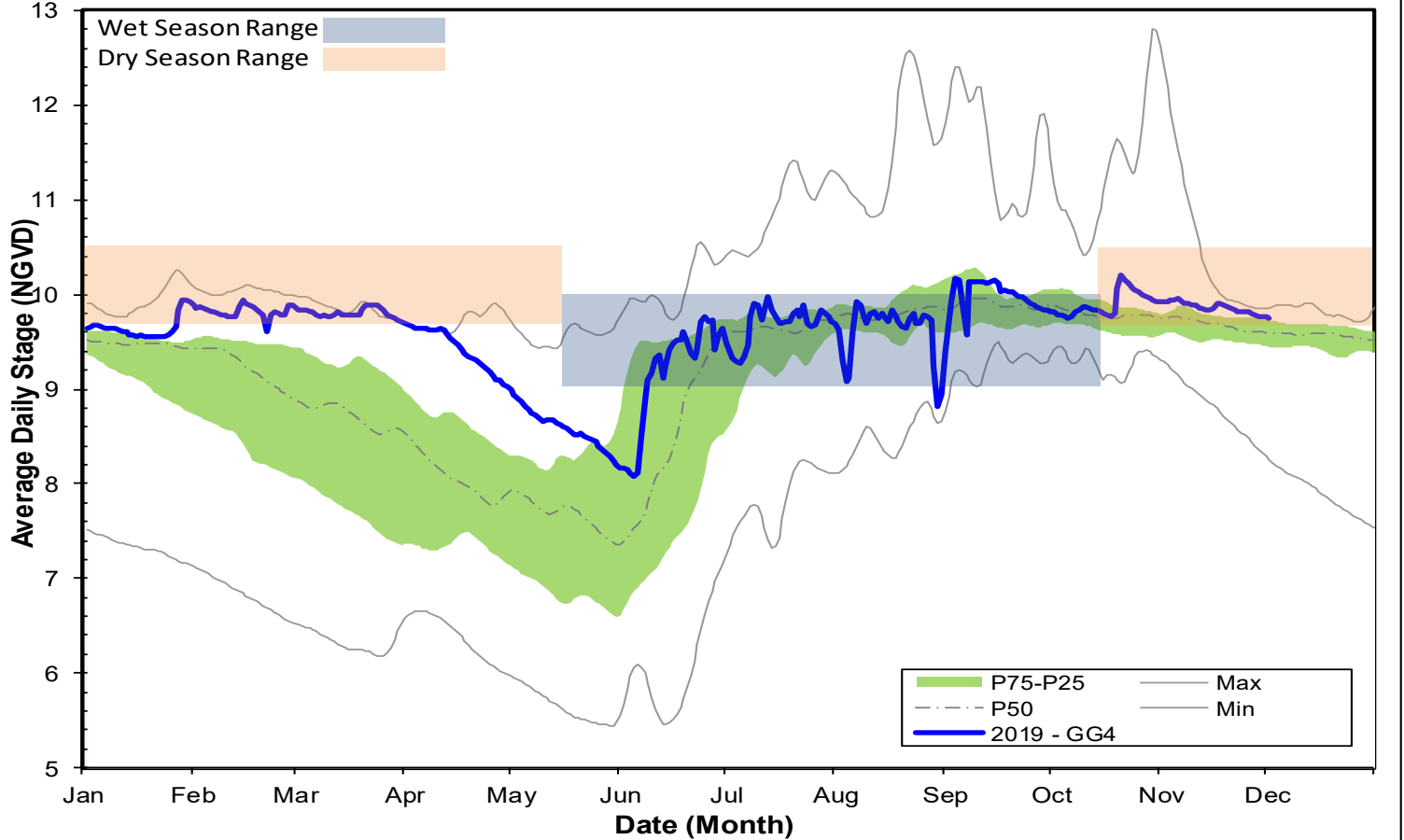
**FIGURE 4**  
**HISTORICAL TRENDS**  
**(PERIOD OF RECORD: 1990—2019)**



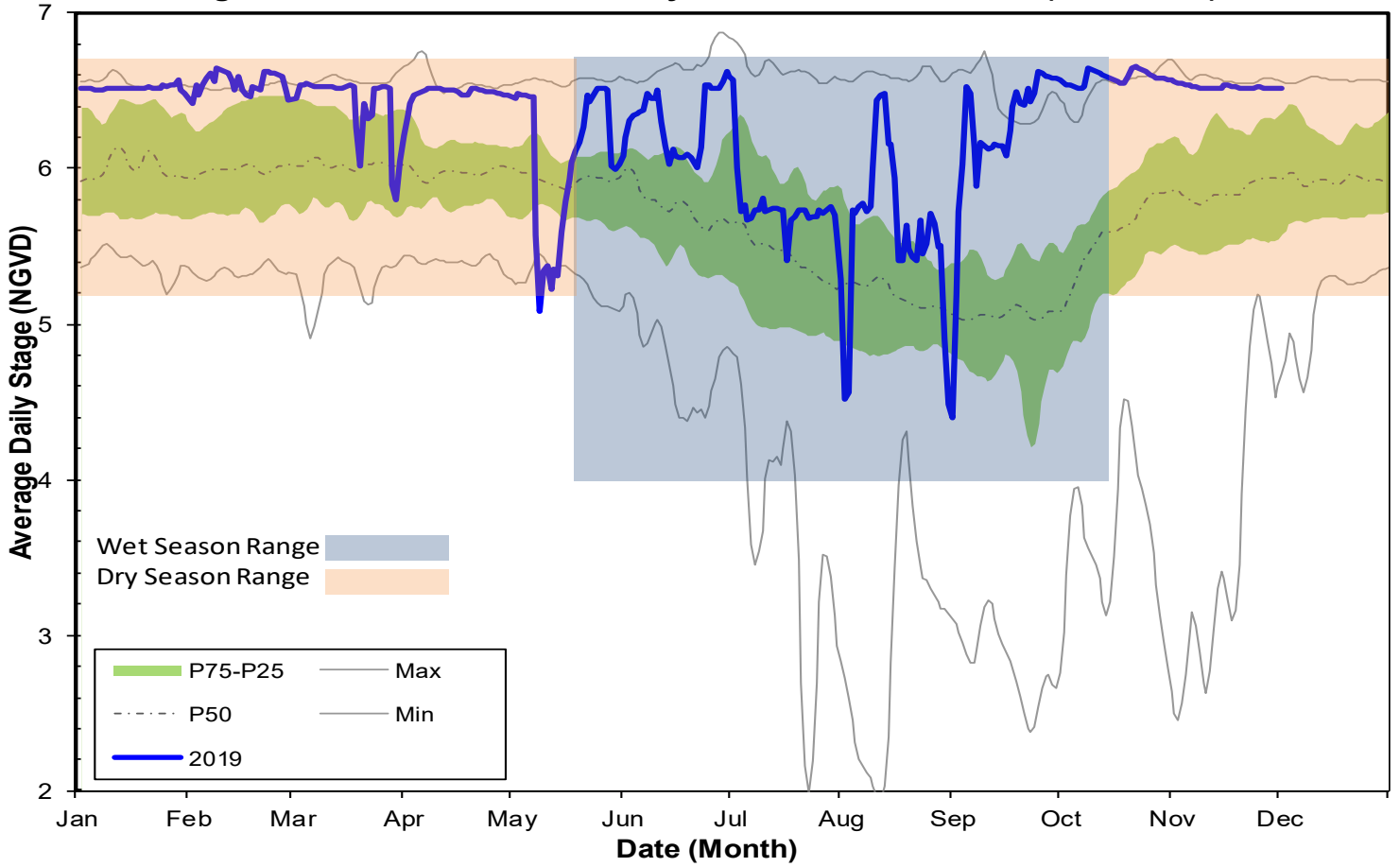
**Figure 5A - GG1 Historic Average Daily Headwater Percentiles (2004-2018)**



**Figure 5B - GG4 Historic Average Daily Headwater Percentiles (1994-2017)**



**Figure 6A - COCO1 Historic Daily Headwater Percentiles (1994-2018)**



**Figure 6B - COCO3 Historic Average Headwater Percentiles (2000-2018)**

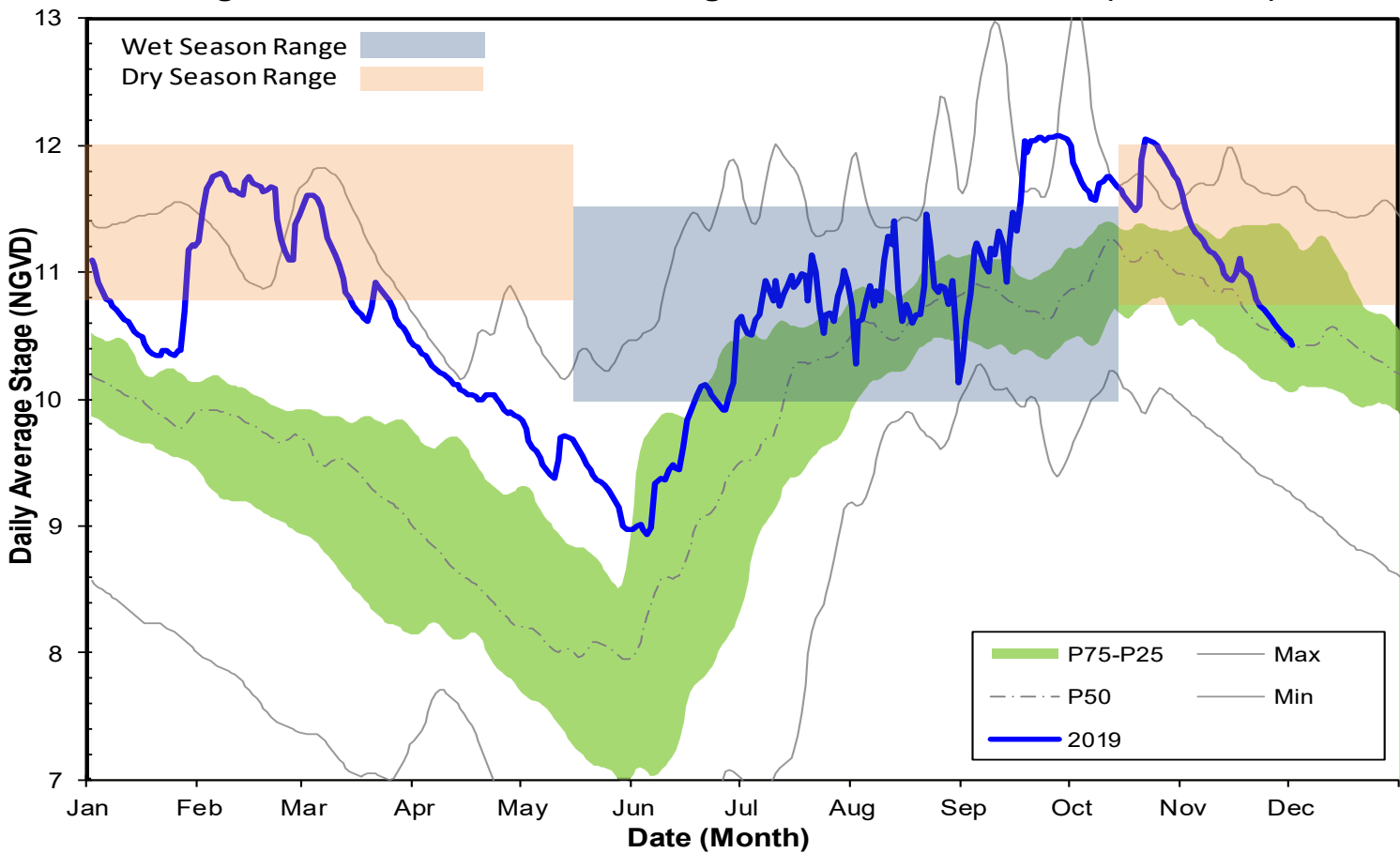


Figure 6C - CORK1 Historic Average Daily Headwater Percentiles (1989-2018)

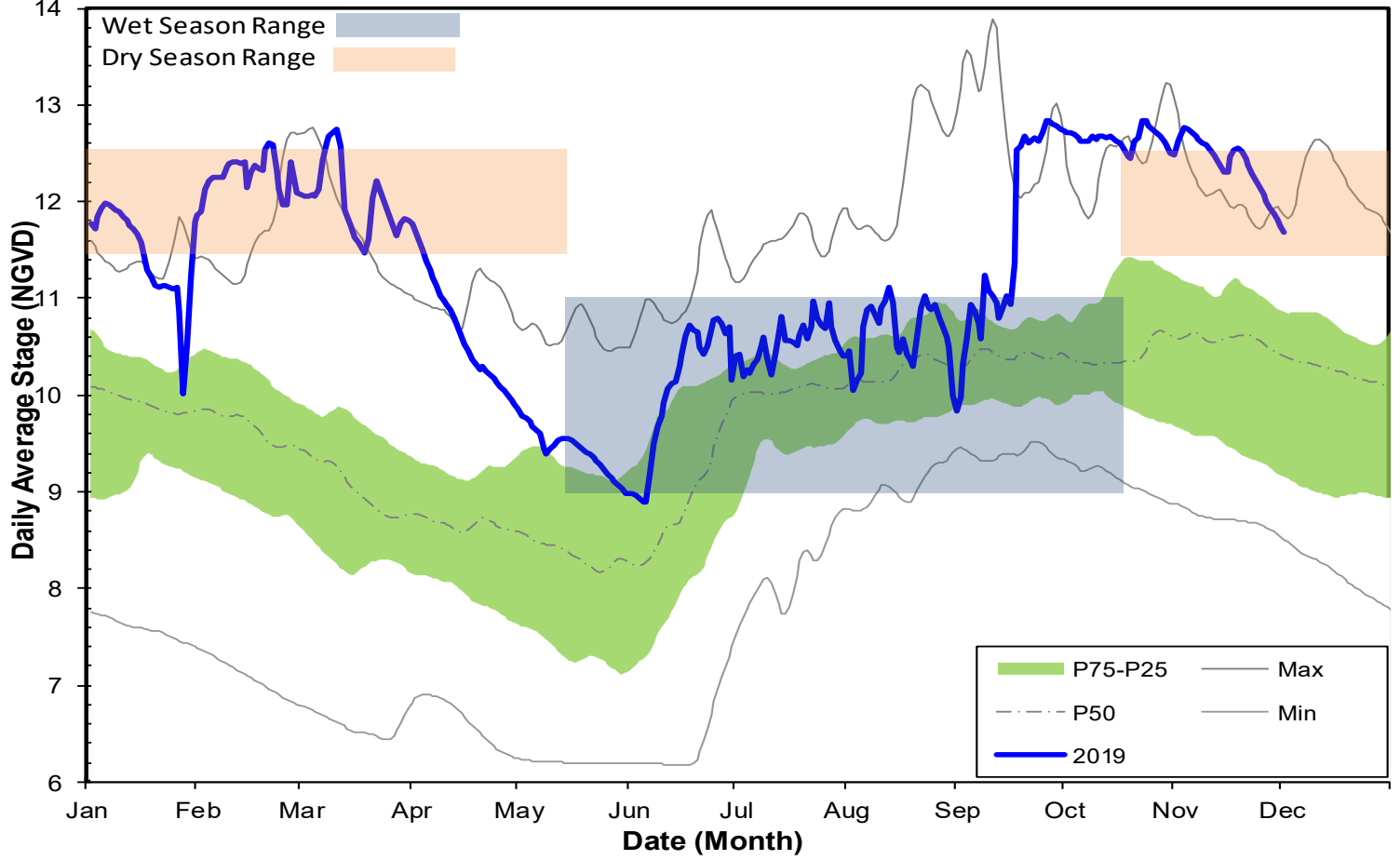
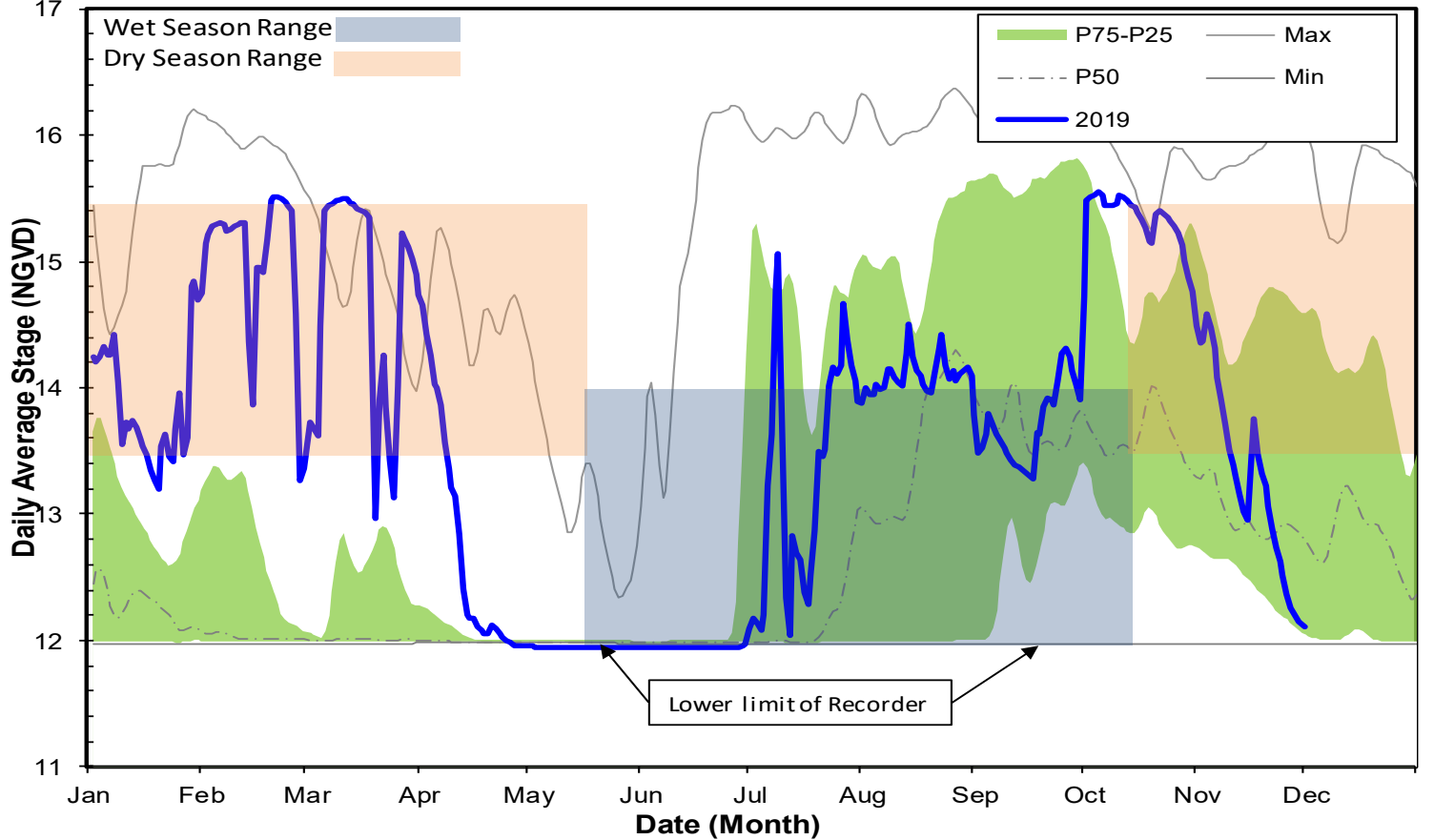
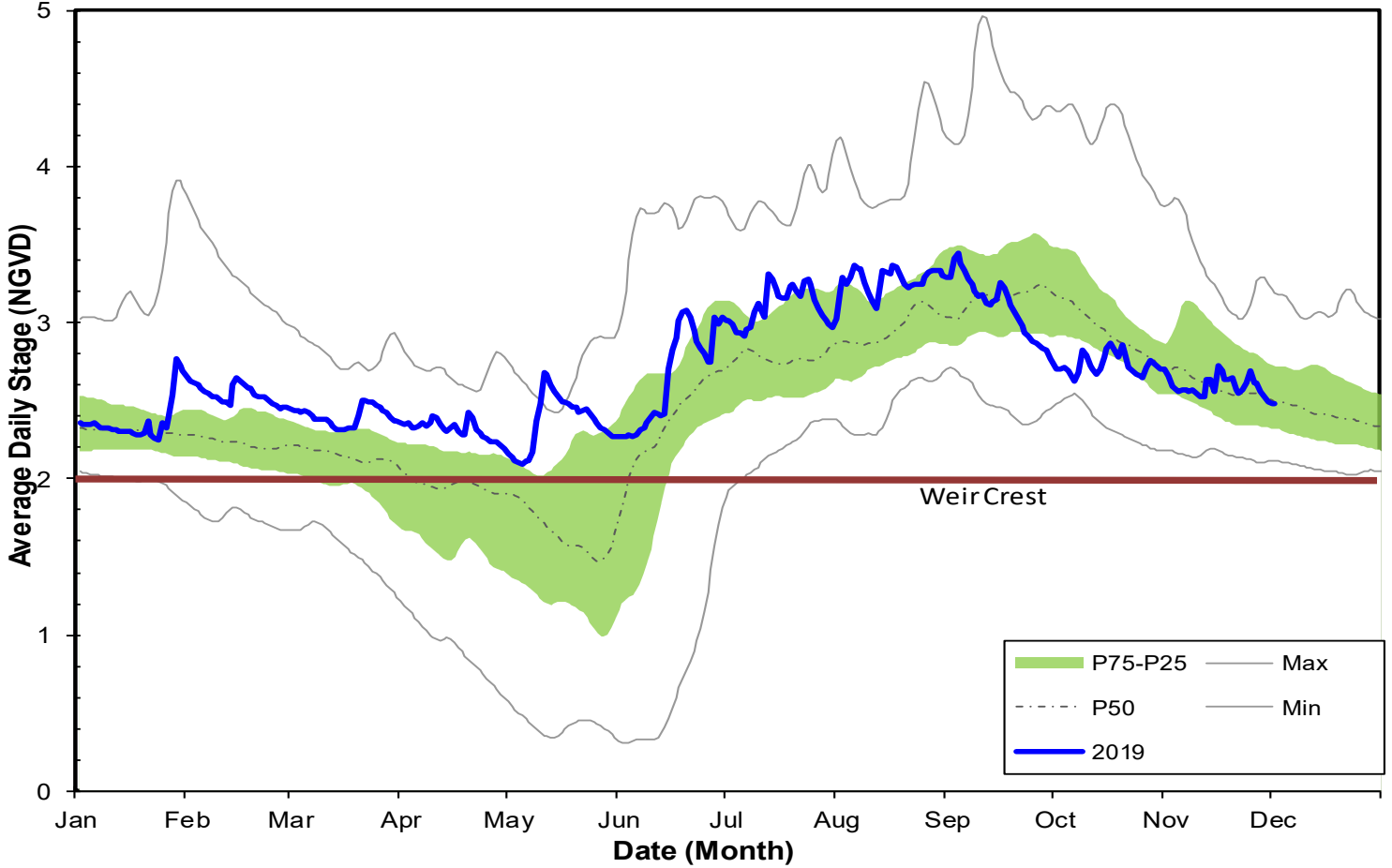


Figure 6D - CORK3 Average Daily Headwater Percentiles (2004-2018)



**Figure 7A - FU1 Historic Average Daily Headwater Percentiles (1984-2018)**



**Figure 7B-FU5 Historic Average Daily Headwater Percentiles (2003-2018)**

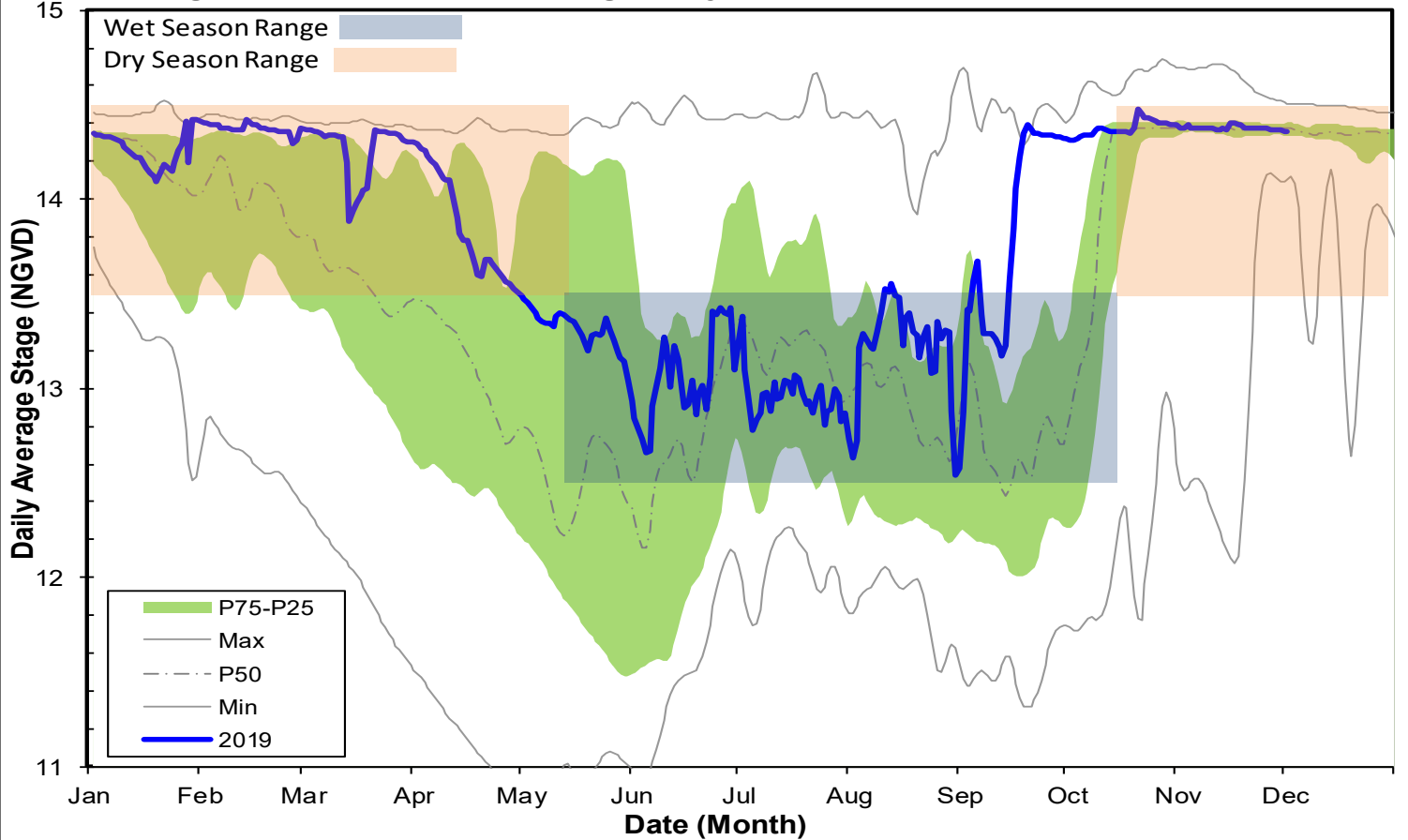
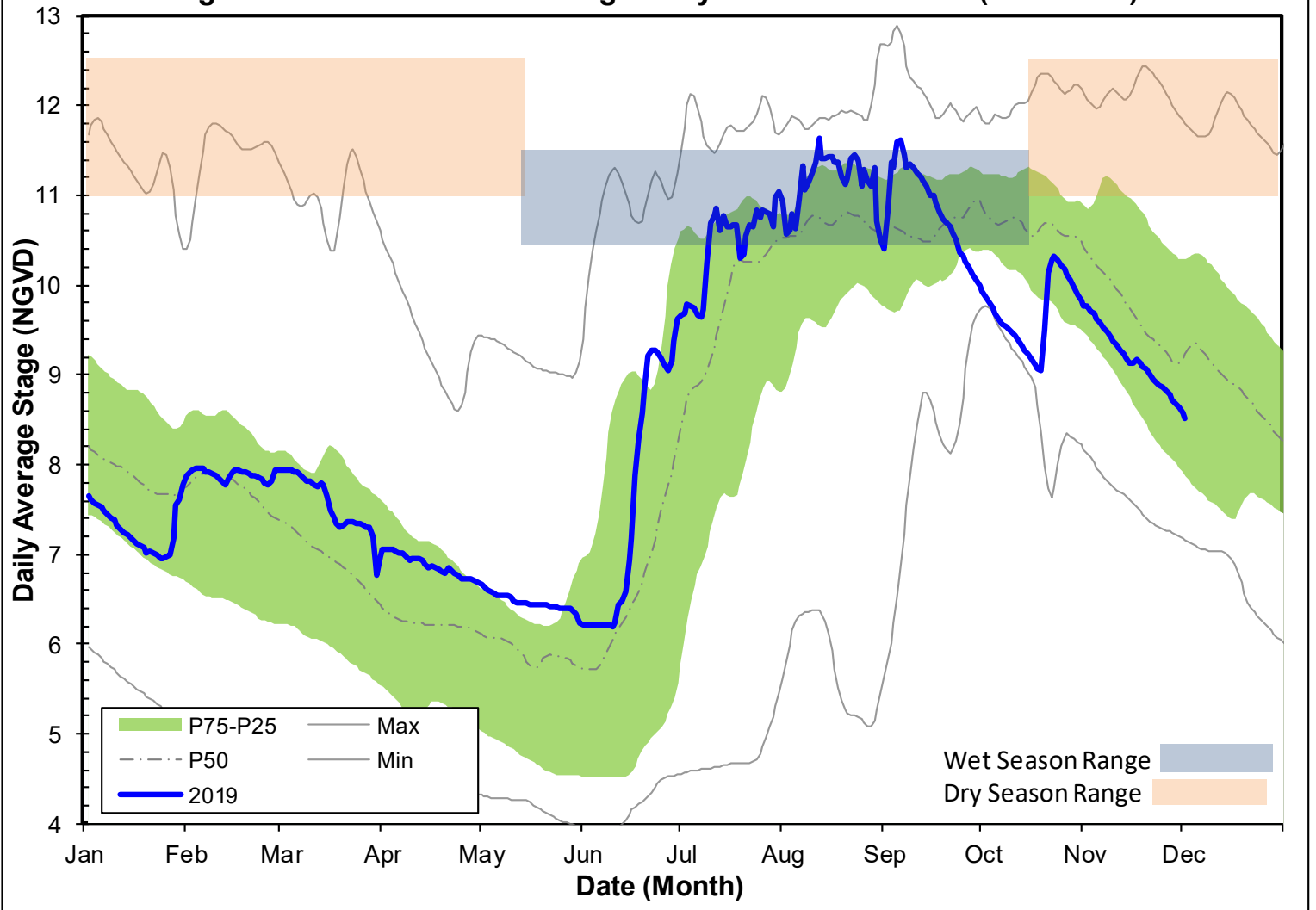
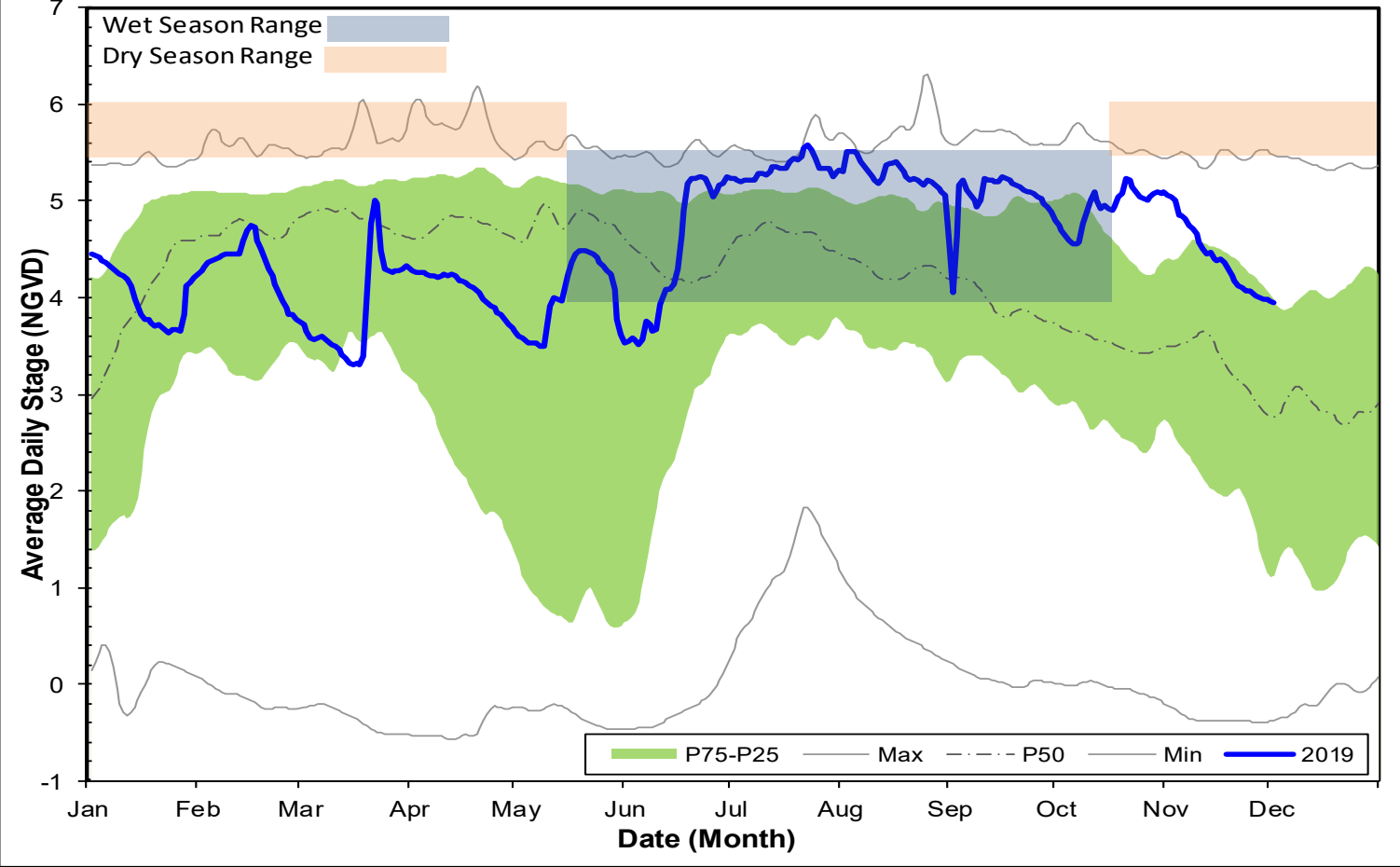


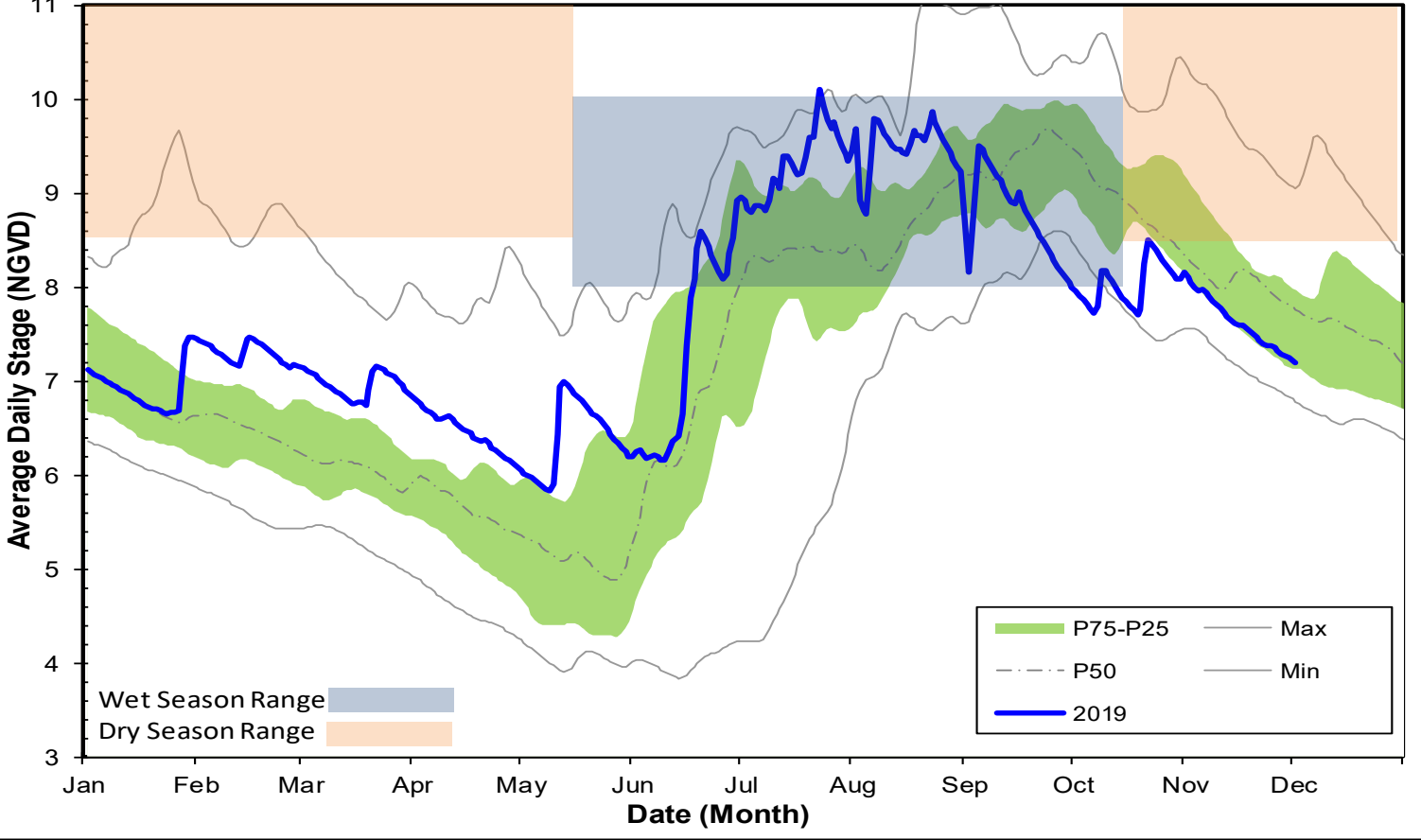
Figure 7C-FU4S Historic Average Daily Water Percentiles (2003-2018)



**Figure 8A - HC1 Historic Average Daily Headwater Percentiles (1997-2018)**



**Figure 8B - HC2 Historic Average Daily Headwater Percentiles (2005-2018)**



**WATER CONDITIONS SUMMARY - November 2019**  
**SELECTED STATIONS for BCB AREA / SW FLORIDA**

Last Reading Date :		December 1, 2019					
Previous Period Reading Date:		November 1, 2019					
<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	-0.64	29.83	29.19	↓	GREEN
C-1004R	Naples	Lower Tamiami Aquifer	-1.01	2.61	1.60	↓	YELLOW
C-1224	Marco Lakes	Lower Tamiami Aquifer	-0.90	4.07	3.17	↓	GREEN
L-2194	Bonita Springs	Sandstone Aquifer	-1.37	4.46	3.09	↓	GREEN
L-2195	Bonita Springs	Surficial Aquifer System	-0.66	10.22	9.56	↓	GREEN
L-738	Bonita Springs	Lower Tamiami Aquifer	-1.02	1.04	0.02	↓	GREEN

**TABLE 2**  
**BCB WATER CONDITIONS SUMMARY**  
**NOVEMBER 2019**

BIG CYPRESS BASIN

NOVEMBER 2019

GROUNDWATER LEVEL DAILY TRENDS COMPARED TO HISTORICAL AVERAGE

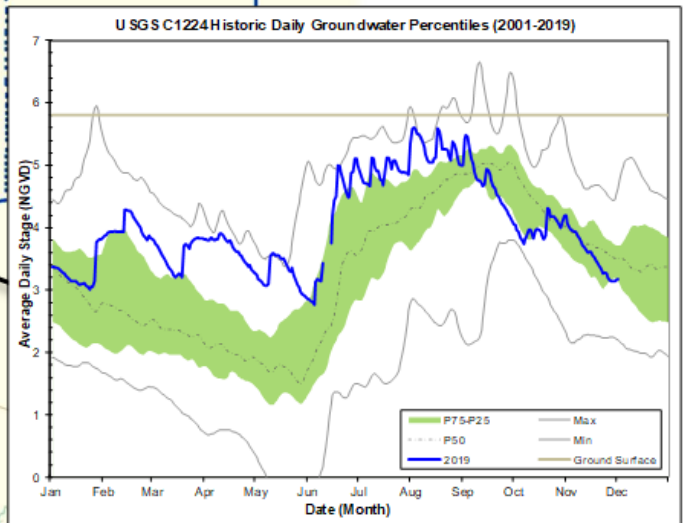
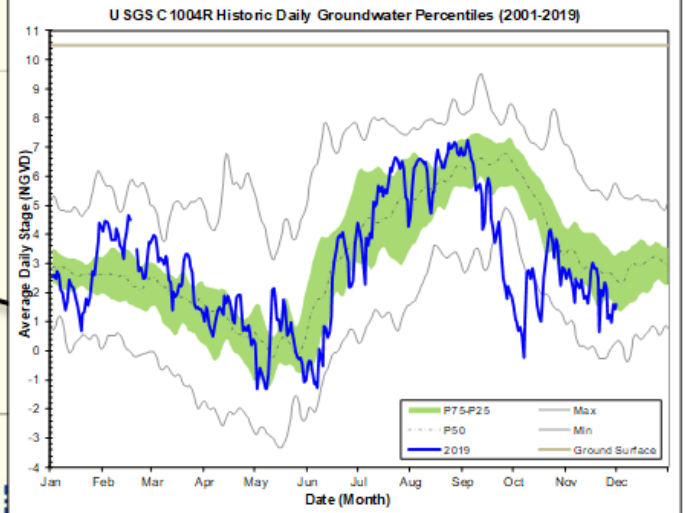
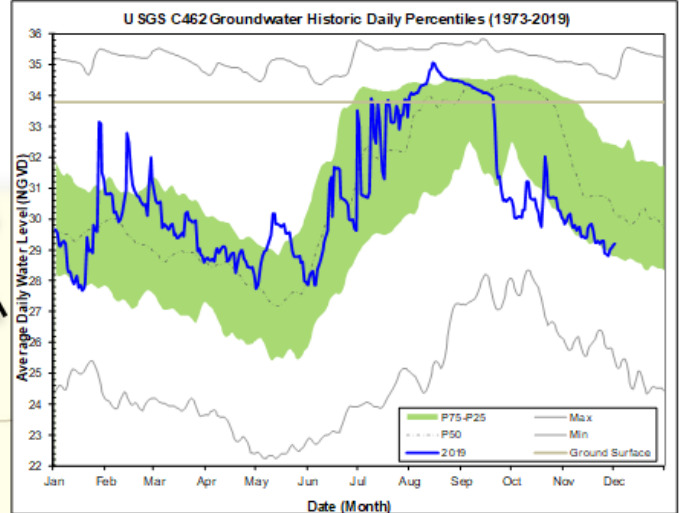
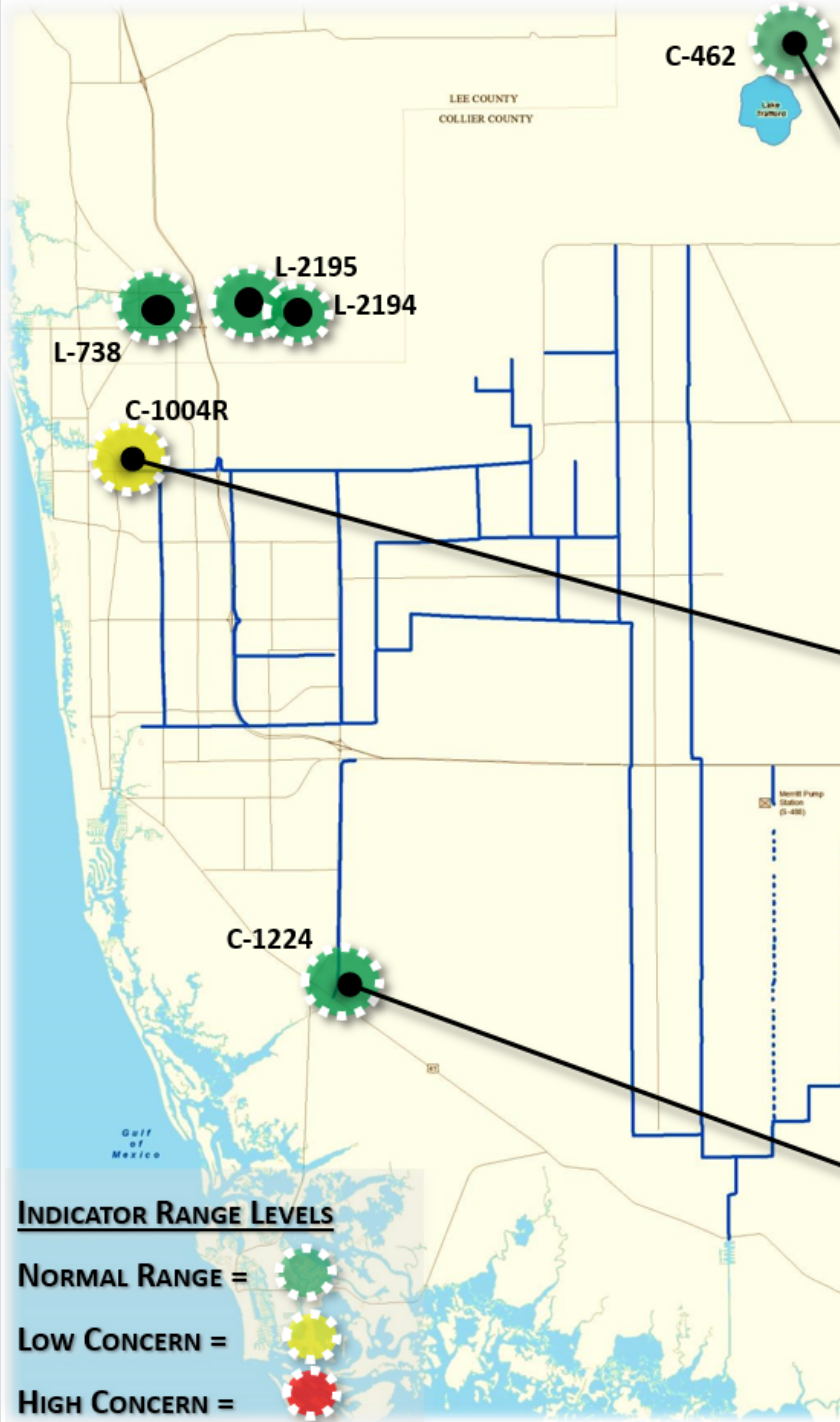


FIGURE 9



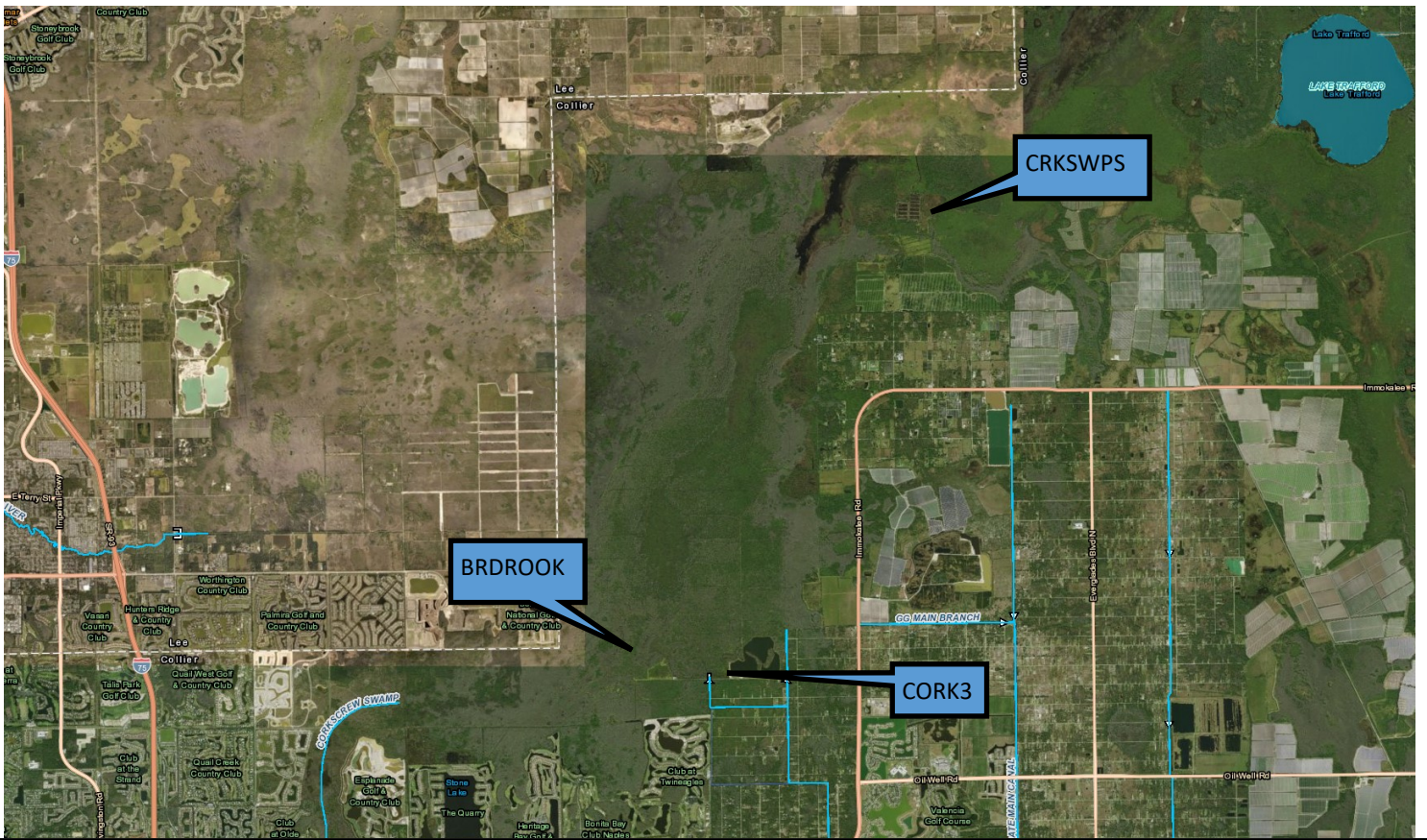


Figure 10-Corkscrew Historic Average Daily Headwater Percentiles(1984-2018)

