

OCTOBER 2019

# BIG CYPRESS BASIN HYDROLOGIC REPORT



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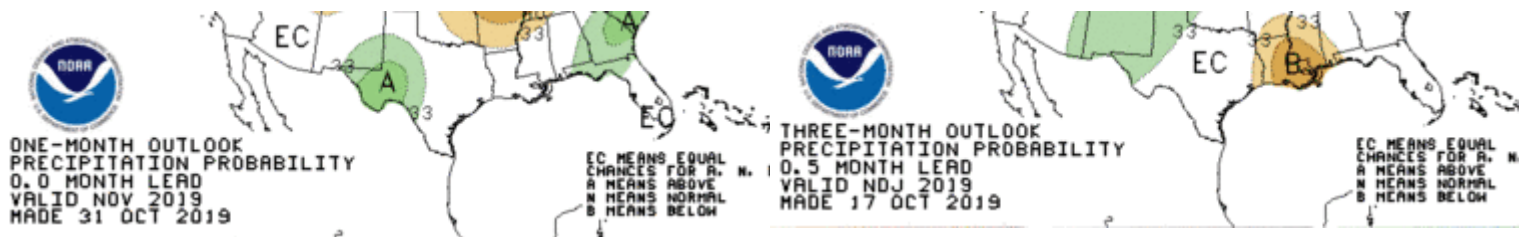
# SUMMARY OF HYDROLOGIC CONDITIONS IN THE BIG CYPRESS BASIN

October 2019

## SUMMARY

October was a transition month in terms of weather for the Basin. There were 3 notable wet periods associated with some wet season and dry season style events during October. First, was a stalled front that brought enhanced rainfall in early October. Second was Tropical Storm Nestor which came ashore mid-month in the panhandle. Nestor did bring beneficial rain to the Basin. Lastly, there was a late season tropical wave that enhanced rainfall at the end of the month. The month concluded with just above average rainfall.

Looking forward, meteorologists are forecasting an equal chances for above average, average, or below average rainfall for south Florida for the next 30 days and 90 days (see below).



## BCB RAINFALL

October was a fairly average month for rainfall and ended the month at 108% of normal. As measured by twenty-two (22) reporting stations (ref. **Figures 1, 2, Table 1**), the basin-wide monthly average was **3.8 inches**, which is just above the average 3.5 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 Collier County Courthouse (Site R-3), which received **5.89 inches**. The lowest rainfall was recorded at Bonita Springs Water Plant (Site R-2) with **2.45 inches**. The rainfall totals and their locality distribution across the BCB/ Lower West Coast are shown on **Figure 3**.

**Figure 10** shows the historical trends for Corkscrew, Bird Rookery, and Cork 3 structure and the 2019 corresponding levels which have crossed below the 50th percentile line, with the exception of Cork 3. This structure was closed earlier than normal for water conservation which resulted in higher levels.

## BCB CANAL SYSTEMS

All of the canals were maintained in dry season operations and some were operated slightly higher than normal operations given the early start to the dry season in September. Structures were operated to retain as much of the October rainfall as possible, 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 levels maintained dry season levels and continue to be maintained at the top of range to retain as much water as possible. Back-pumping operations commenced in Airport and CR951 Canals from Golden Gate Main to maintain dry season levels and promote aquifer recharge. (ref **Figure 5A & 5B**).

- **COCOATCHEE SYSTEM**

The Cocohatchee system continued in dry season operations given the early start to the dry season. Similarly 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. (ref **Figure 6A, 6B, 6C, & 6D**).

- **FAKA UNION SYSTEM**

Operations in the Faka Union system continued in dry season operations. All operable structures remain closed and levels are starting to decrease. FU1 is approaching the 25th percentile while the remaining operable structures are closed for water conservation. It is notable that FU4S was approaching record lows, but recent rainfall allowed the reach to recover somewhat. (ref **Figure 7A, 7B, & 7C**).

- **HENDERSON CREEK SYSTEM**

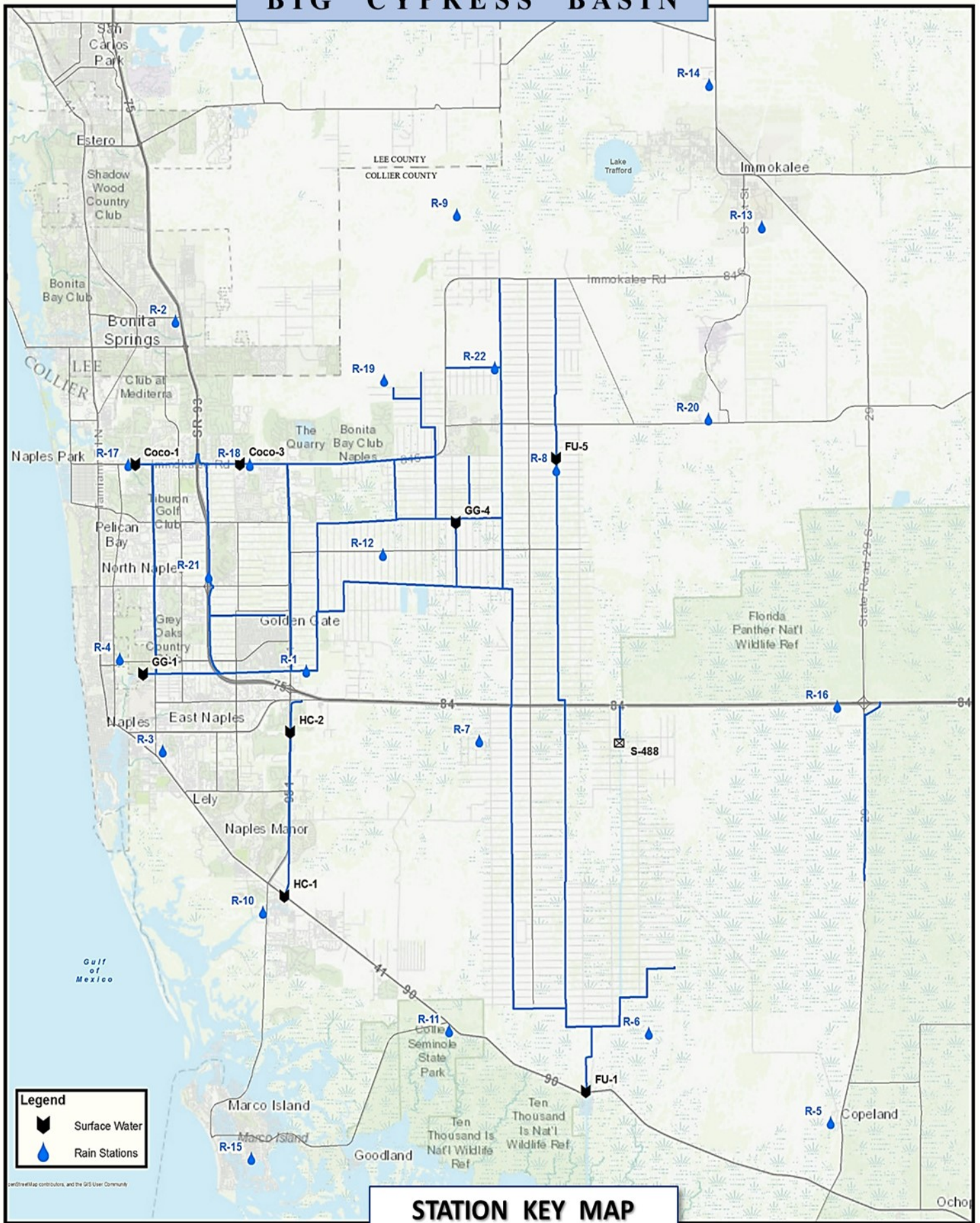
The Henderson Creek system also continued dry season operations. Levels downstream are slowly declining while upstream levels have taken a sharp downward turn. Levels at HC2 were at record lows and even recent rainfall only brought levels up to around the 25th percentile. (ref **Figure 8A & 8B**).

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

The current reporting (11/04/2019) for the Lower West Coast [LWC] notes that groundwater wells have mixed trends with 3 decreasing and 3 increasing. By the end of October, five of the six reporting wells are still in the green concern indicator (green color), but starting to decrease after recovering some from recent rainfall. One well, C-1004R, remains in the yellow concern indicator (ref. **Table 2**).

All reported wells in **Table 2** show an average decrease of -0.20 feet. L-2194 recorded the highest decrease of -1.48 feet, and C-1004R had the a largest increase of 1.09 feet. The Collier County sites (C-462, C-1004R, and C-1224) finished the month between the 50th and 25th percentile (ref. **Table 2, Figure 9**).

BIG CYPRESS BASIN



STATION KEY MAP

FIGURE 1

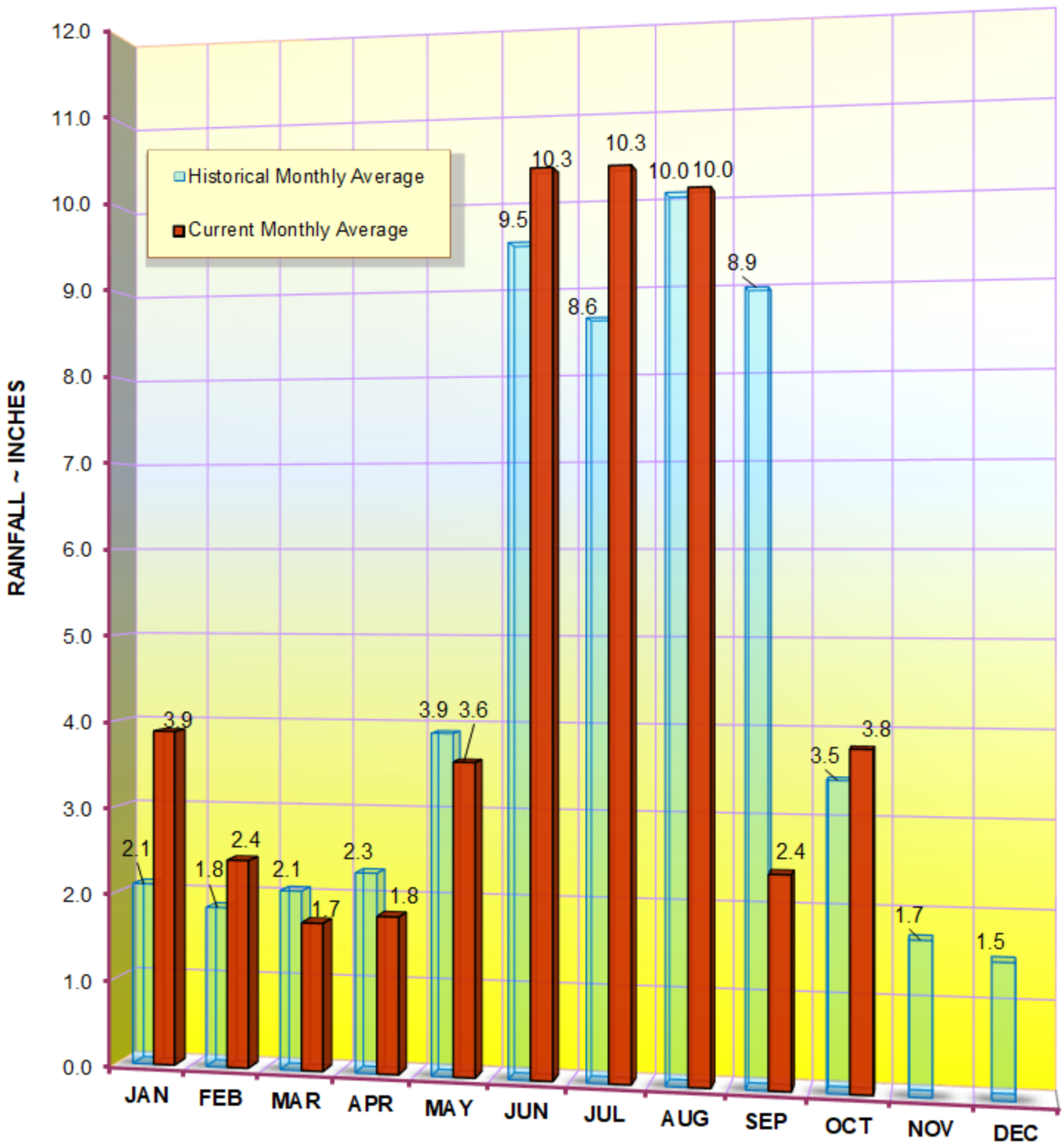


**TABLE 1**  
**RAINFALL REPORT - OCTOBER 2019**  
**DISTRICT/BASIN RAINFALL STATIONS**

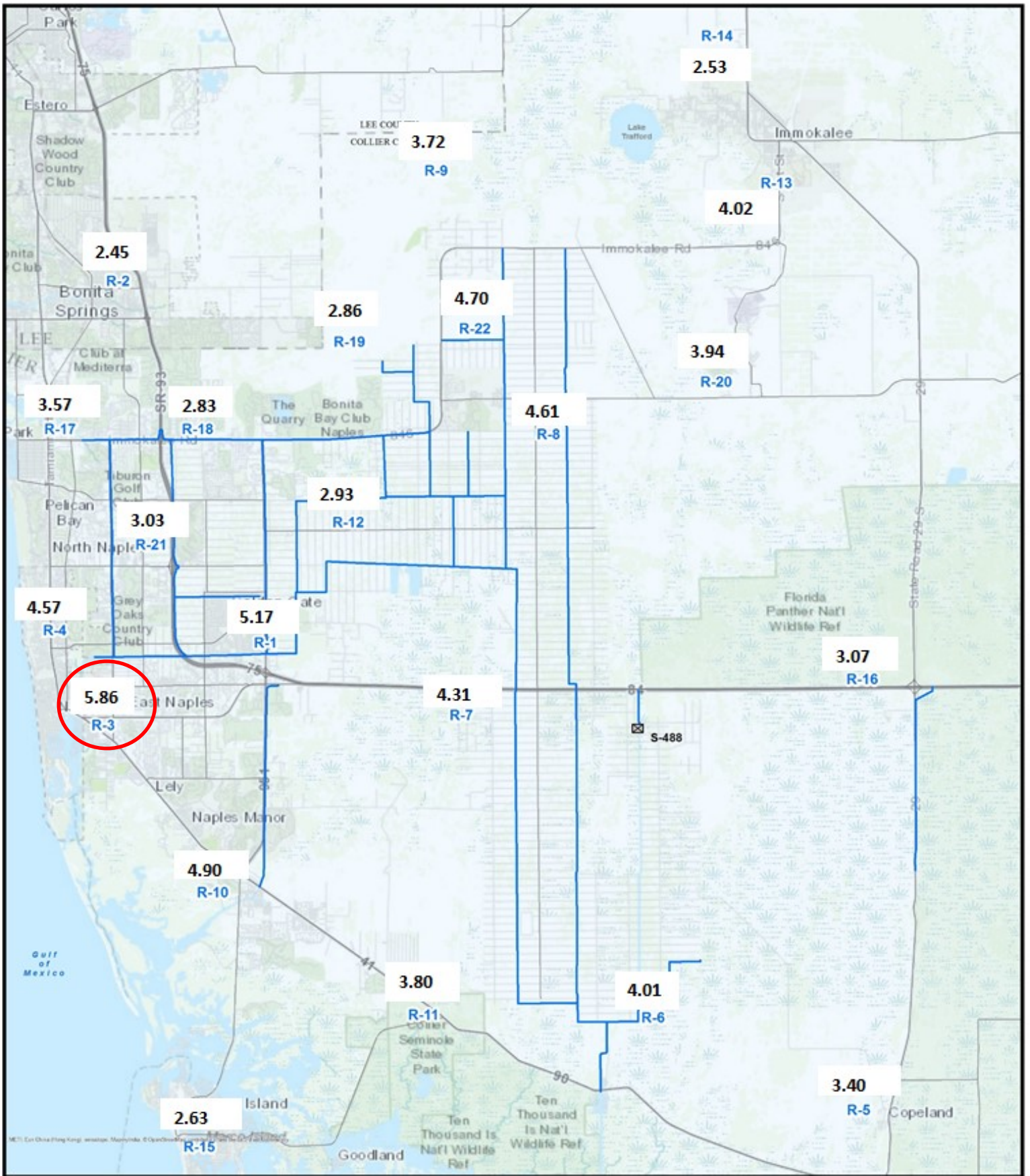
(ALL NUMBERS ARE IN INCHES)

<b>STATION INDEX NO.</b>	<b>STATION NAME</b>	<b>OCTOBER 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	5.17	3.38	1.79	53.04	63.32	-10.28
R-2	BONITA SPRINGS WATER PLANT	2.45	3.52	-1.07	49.32	48.86	0.46
R-3	COLLIER COUNTY COURTHOUSE	5.86	3.47	2.39	58.72	49.29	9.43
R-4	FREEDOM PARK	4.57	4.06	0.51	50.14	58.10	-7.96
R-5	FAKAHATCHEE STRAND HQ	3.40	3.25	0.15	40.03	57.00	-16.97
R-6	DAN HOUSE PRAIRIE	4.01	3.16	0.85	44.49	48.89	-4.40
R-7	SGGE WEATHER STATION	4.31	3.08	1.23	57.77	58.21	-0.44
R-8	FAKA UNION #5	4.61		New Site	48.82	No Historical Data	
R-9	CORKSCREW SWAMP NORTH END	3.72	3.00	0.72	43.78	48.50	-4.72
R-10	ROOKERY BAY HQ	4.90	3.52	1.38	53.88	52.79	1.09
R-11	COLLIER SEMINOLE STATE PARK	3.80	3.58	0.22	56.54	53.29	3.25
R-12	G.G. FIRE STATION	2.93	3.52	-0.59	49.70	55.98	-6.28
R-13	IMMOKALEE LANDFILL	4.02	3.45	0.57	44.15	49.09	-4.94
R-14	IFAS	2.53	2.99	-0.46	49.45	46.94	2.51
R-15	MARCO R.O. PLANT	2.63	3.77	-1.14	50.86	49.80	1.06
R-16	FAKAHATCHEE STRAND NORTH END	3.07	3.57	-0.50	47.82	56.97	-9.15
R-17	COCO#1	3.57	3.85	-0.28	52.30	46.44	5.86
R-18	COCO#3	2.83	3.77	-0.94	51.77	54.56	-2.79
R-19	BIRD ROOKERY	2.86		New Site	54.38	No Historical Data	
R-20	AVE MARIA	3.94	3.27	0.67	53.01	51.11	1.90
R-21	I75W2	3.03		New Site	47.22	No Historical Data	
R-22	GG#7	4.70		New Site	45.85	No Historical Data	
<b>AVERAGES</b>		<b>3.77</b>	<b>3.46</b>	<b>0.31</b>	<b>50.14</b>	<b>52.11</b>	<b>-1.97</b>

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

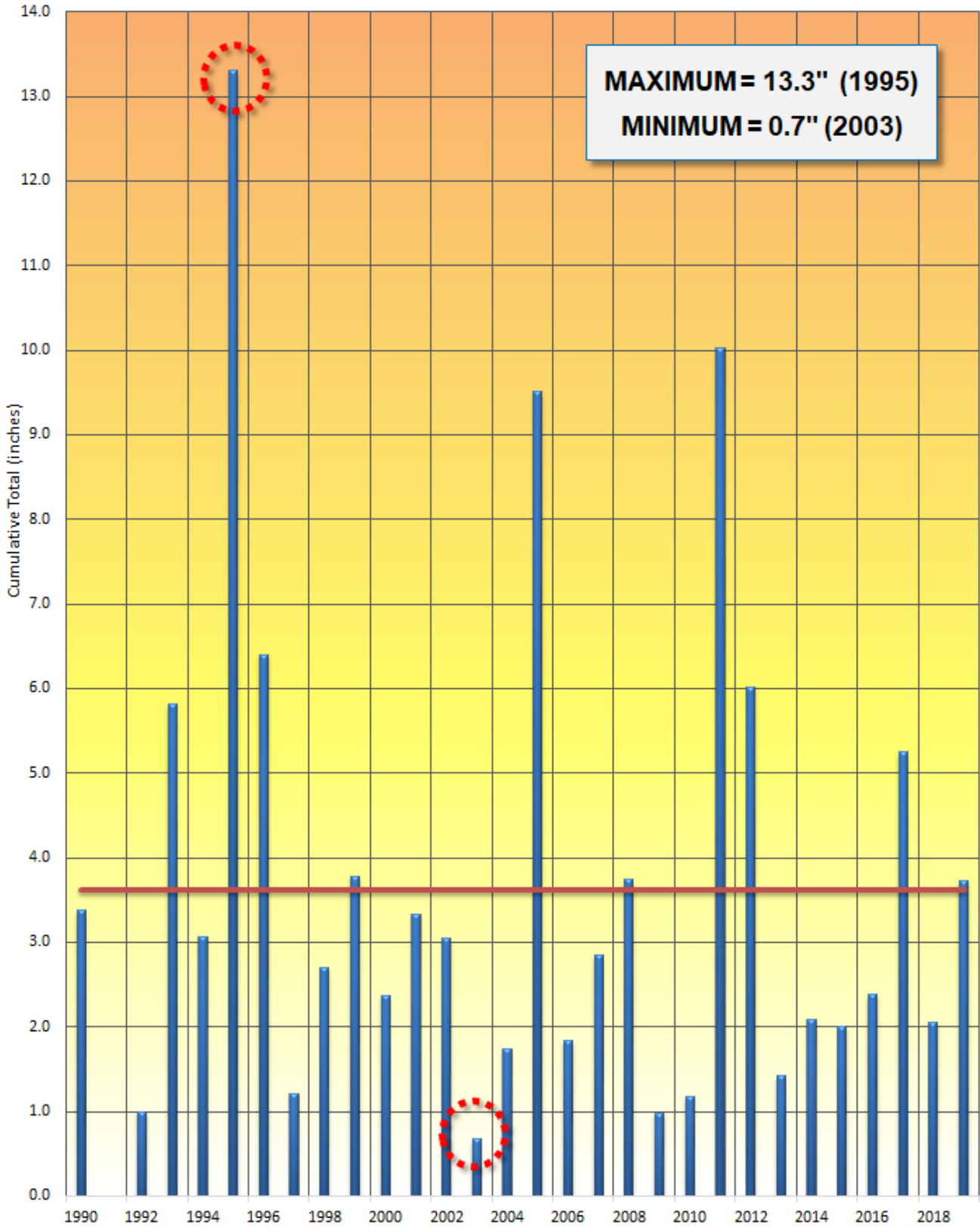


**FIGURE 2**  
**BCB GAUGE RAINFALL**  
**MONTHLY AVERAGES THROUGH OCTOBER 2019**



**FIGURE 3**  
**BCB RAINFALL DISTRIBUTION**  
**OCTOBER 2019**

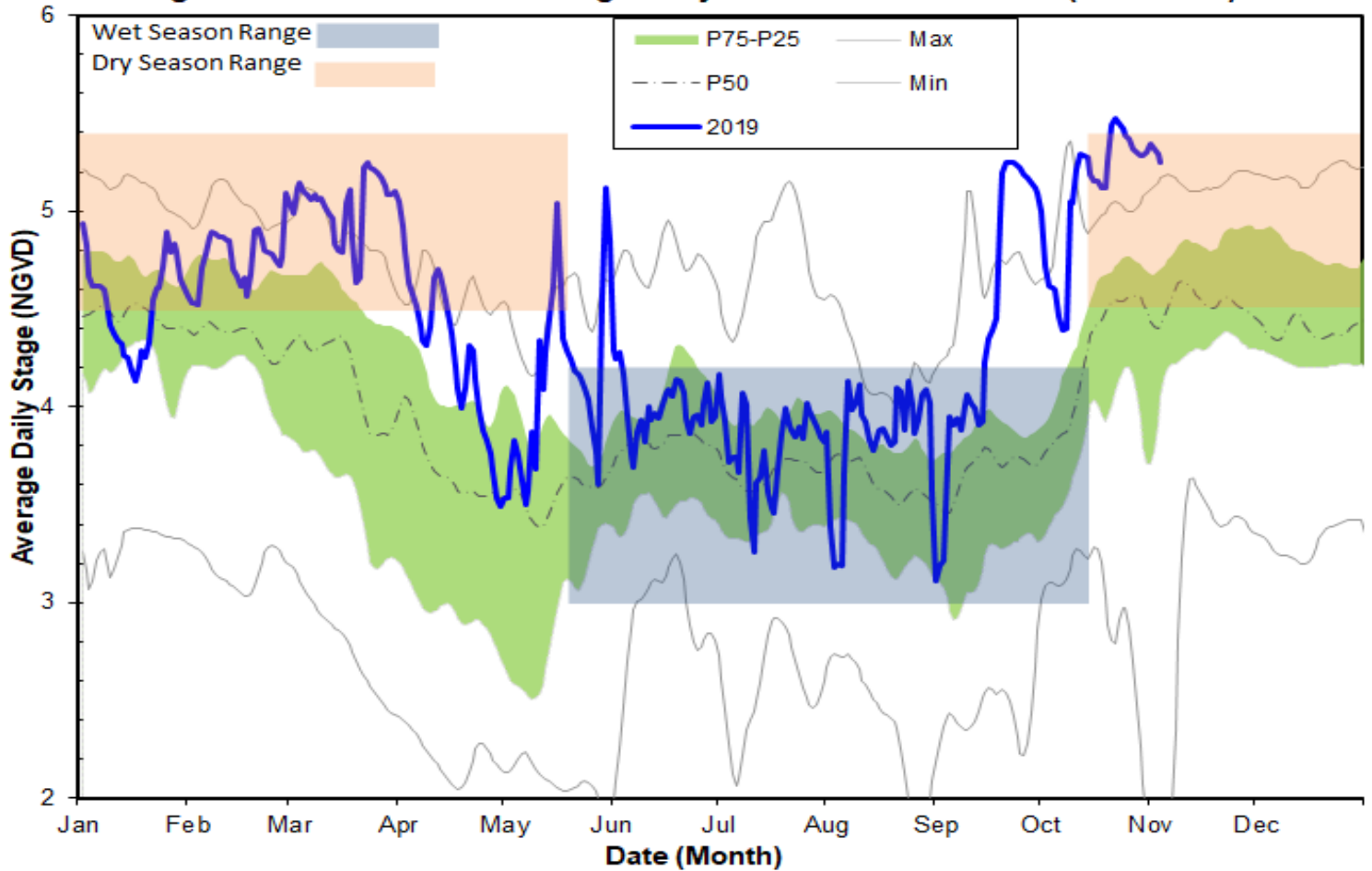
**BCB OCTOBER RAINFALL**  
**Period (1990 ~ 2019)**



**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)**

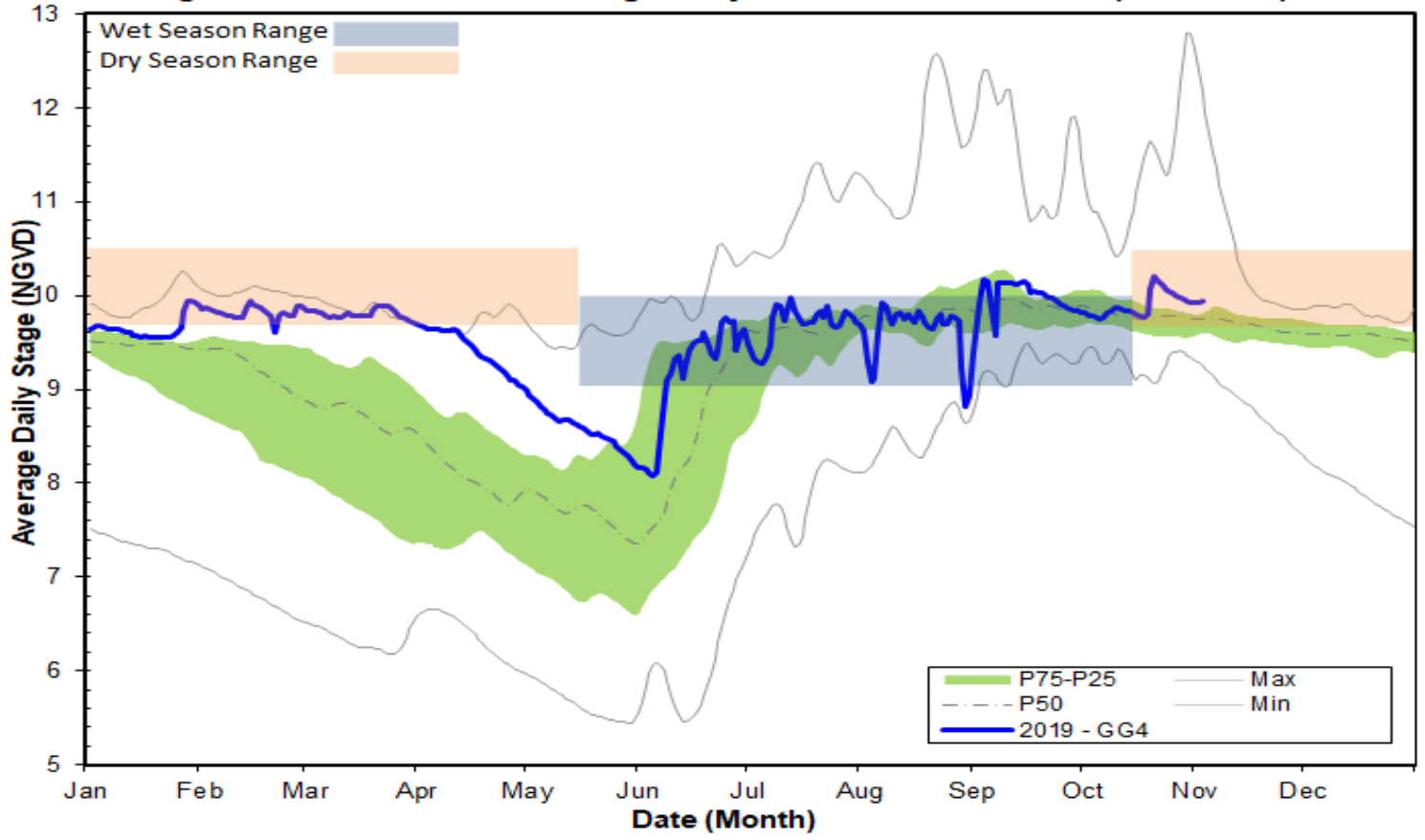


Figure 6A - COCO1 Historic Daily Headwater Percentiles (1994-2018)

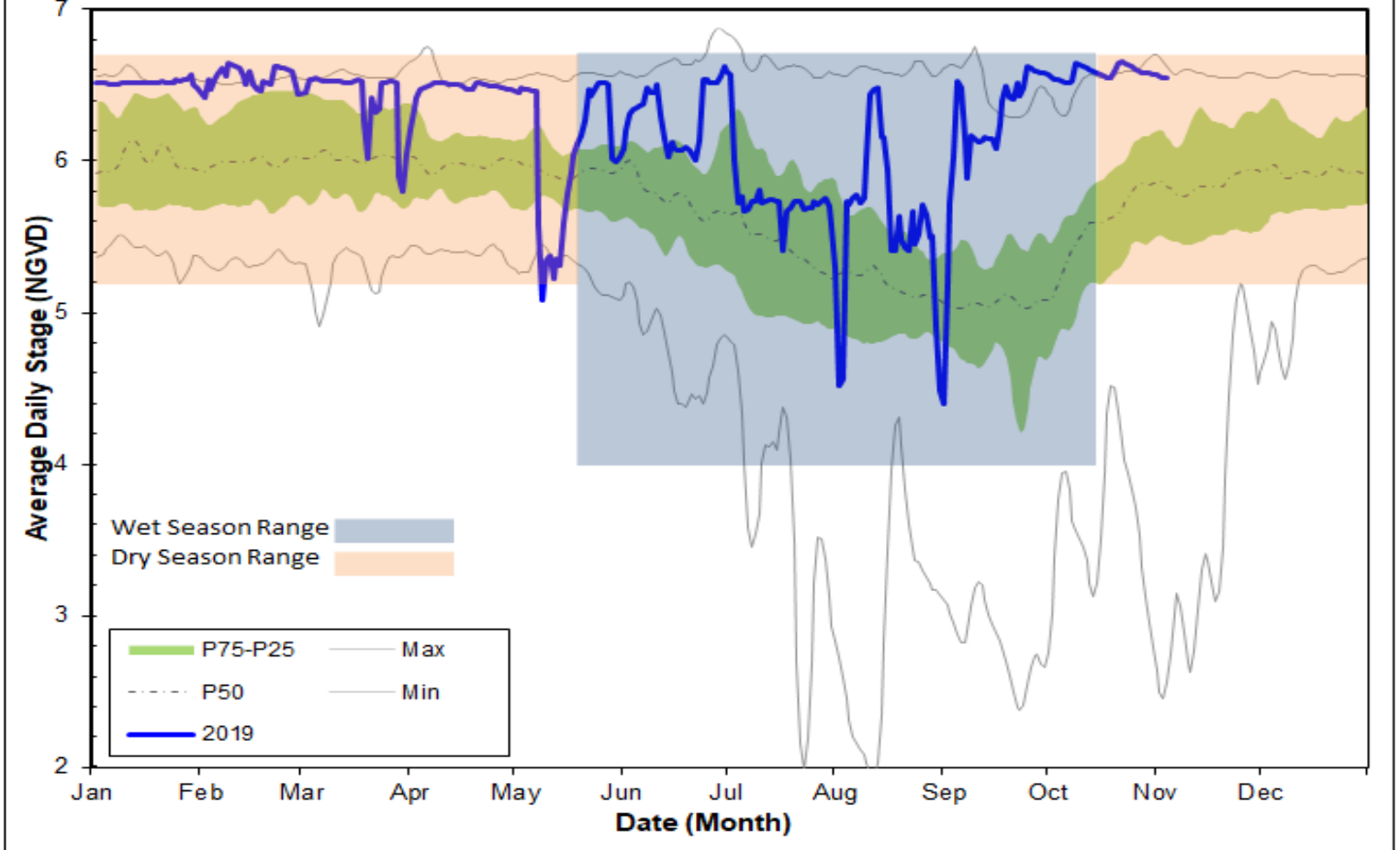


Figure 6B - COCO3 Historic Average Headwater Percentiles (2000-2018)

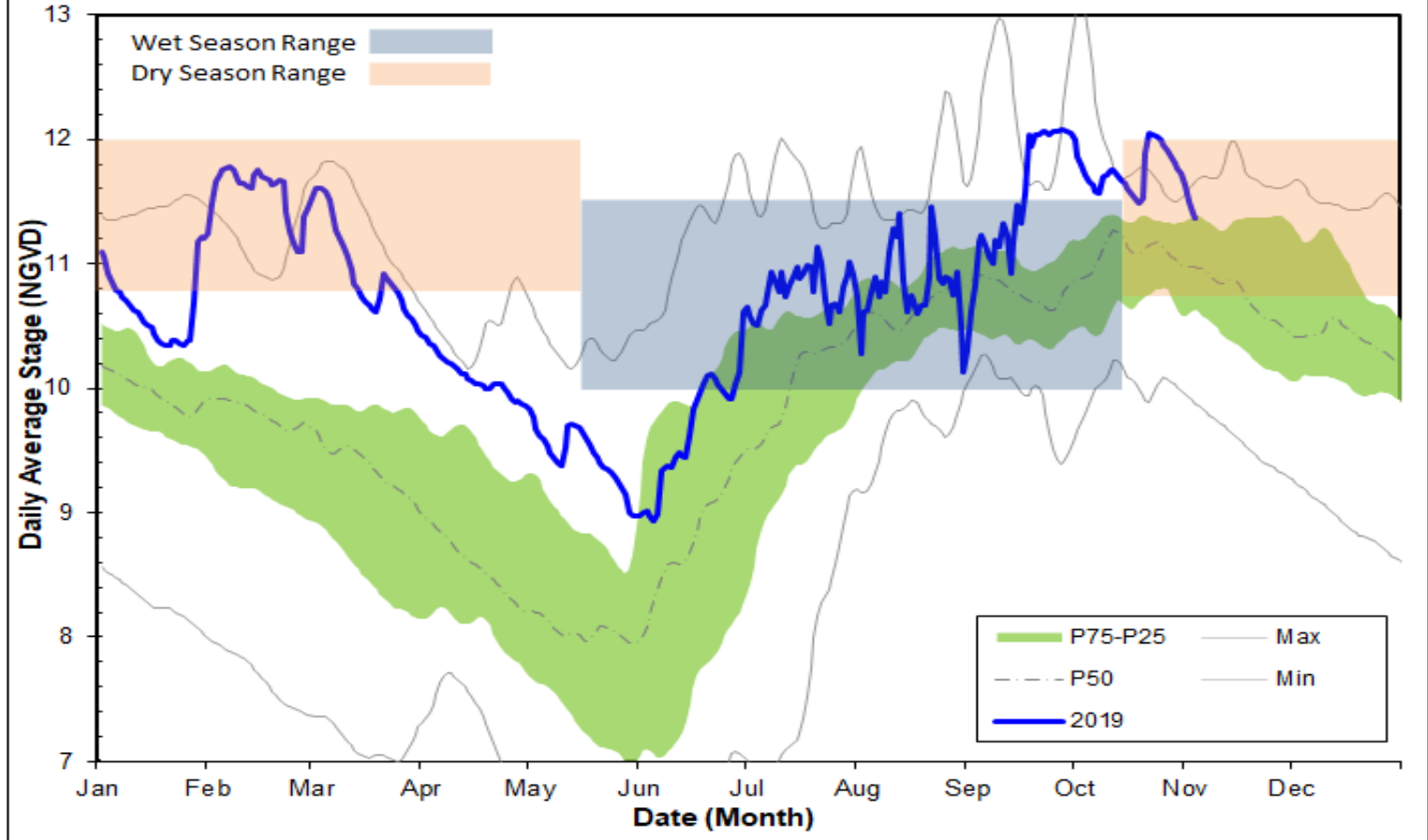




Figure 6C - CORK1 Historic Average Daily Headwater Percentiles (1989-2018)

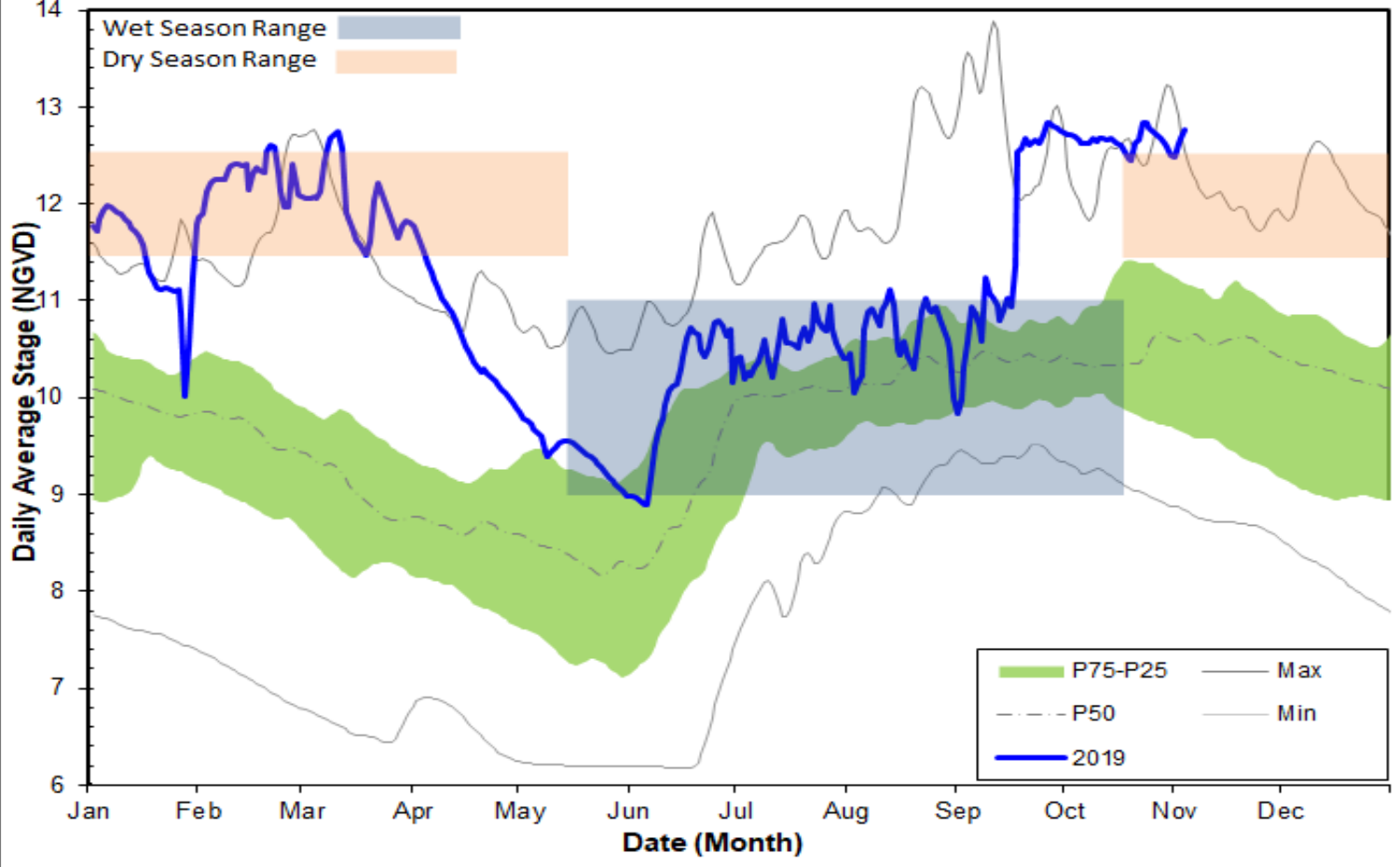
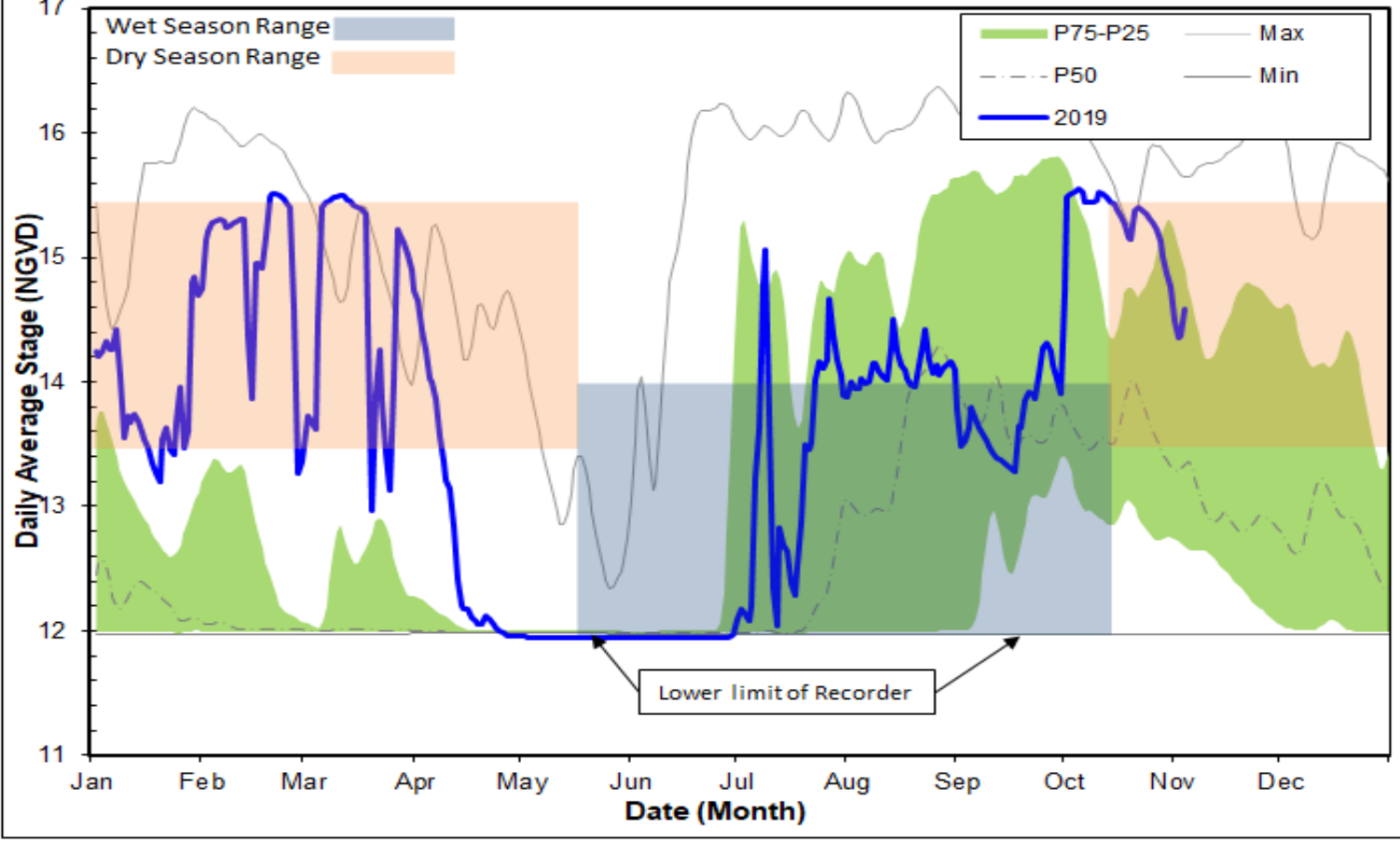
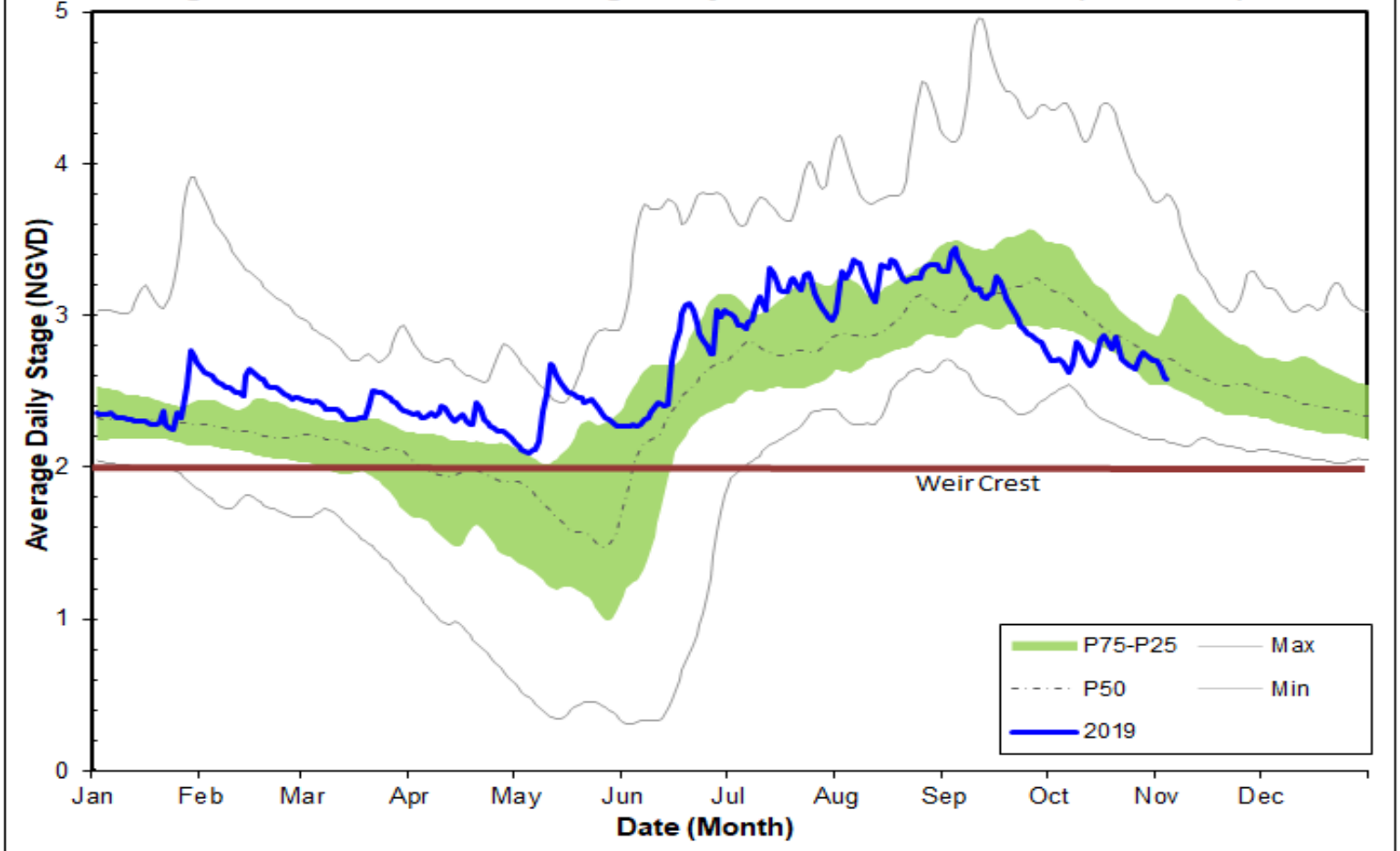


Figure 6D - CORK3 Average Daily Headwater Percentiles (2004-2018)



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



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

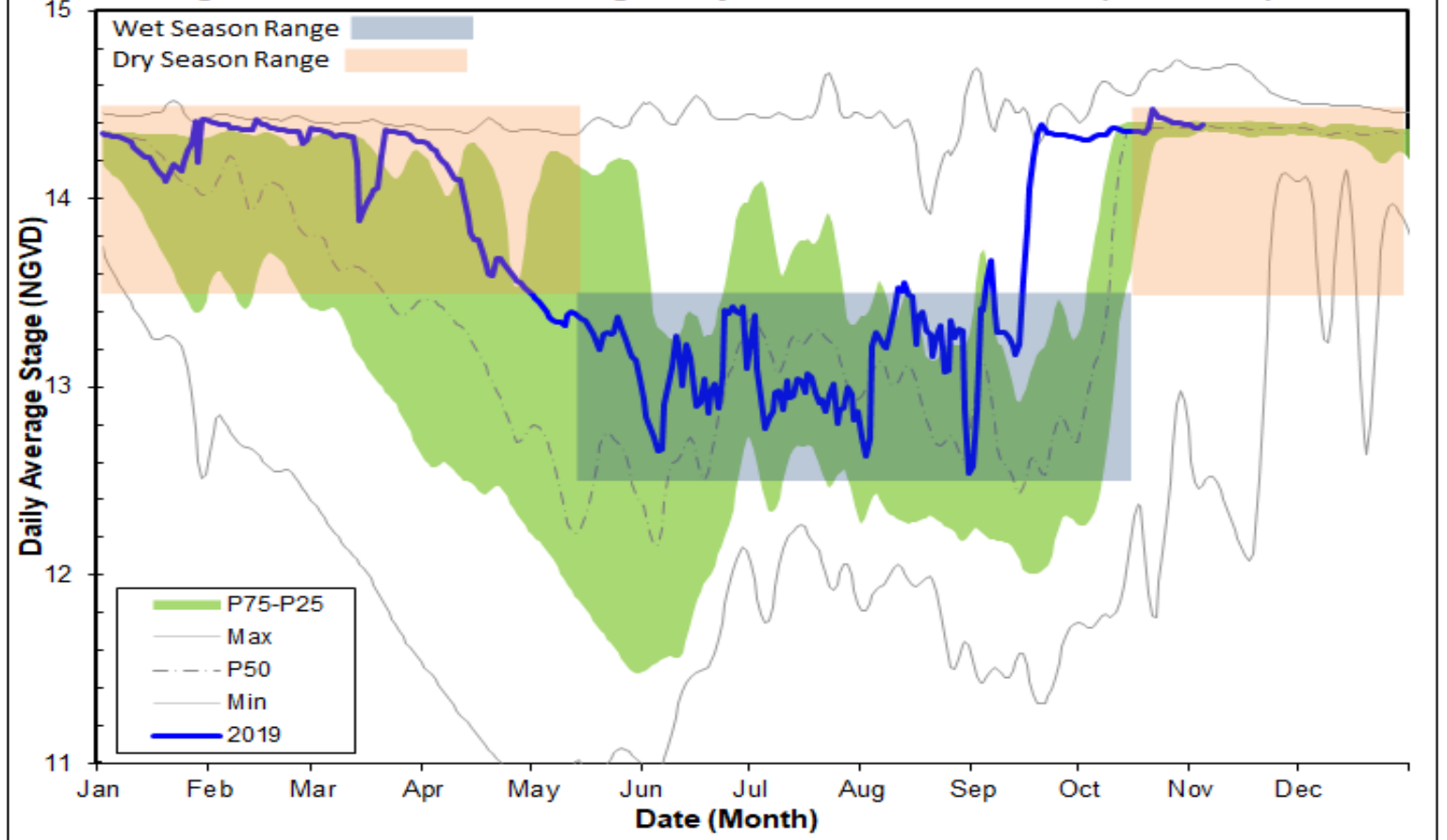




Figure 7C-FU4S Historic Average Daily Water Percentiles (2003-2018)

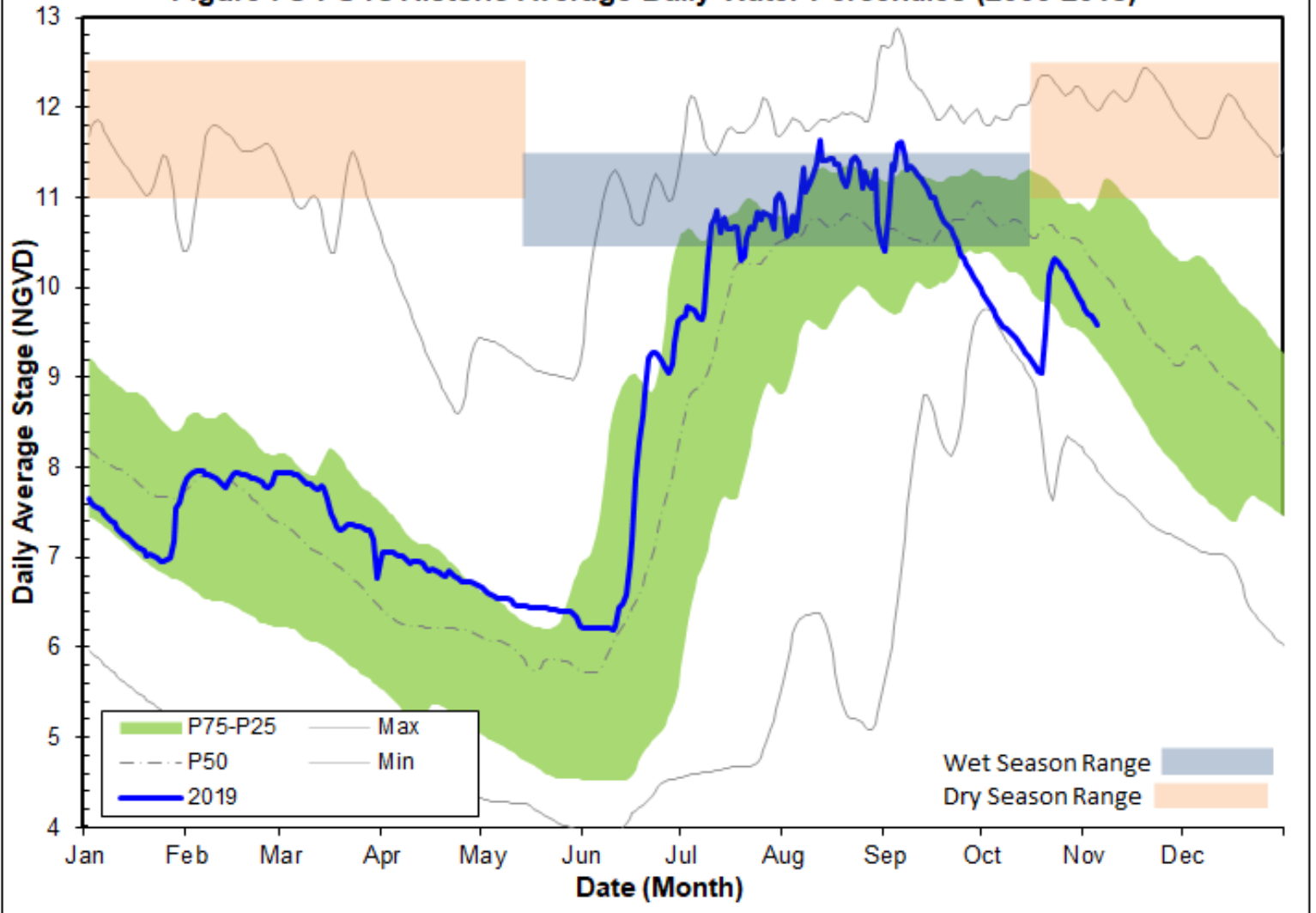


Figure 8A - HC1 Historic Average Daily Headwater Percentiles (1997-2018)

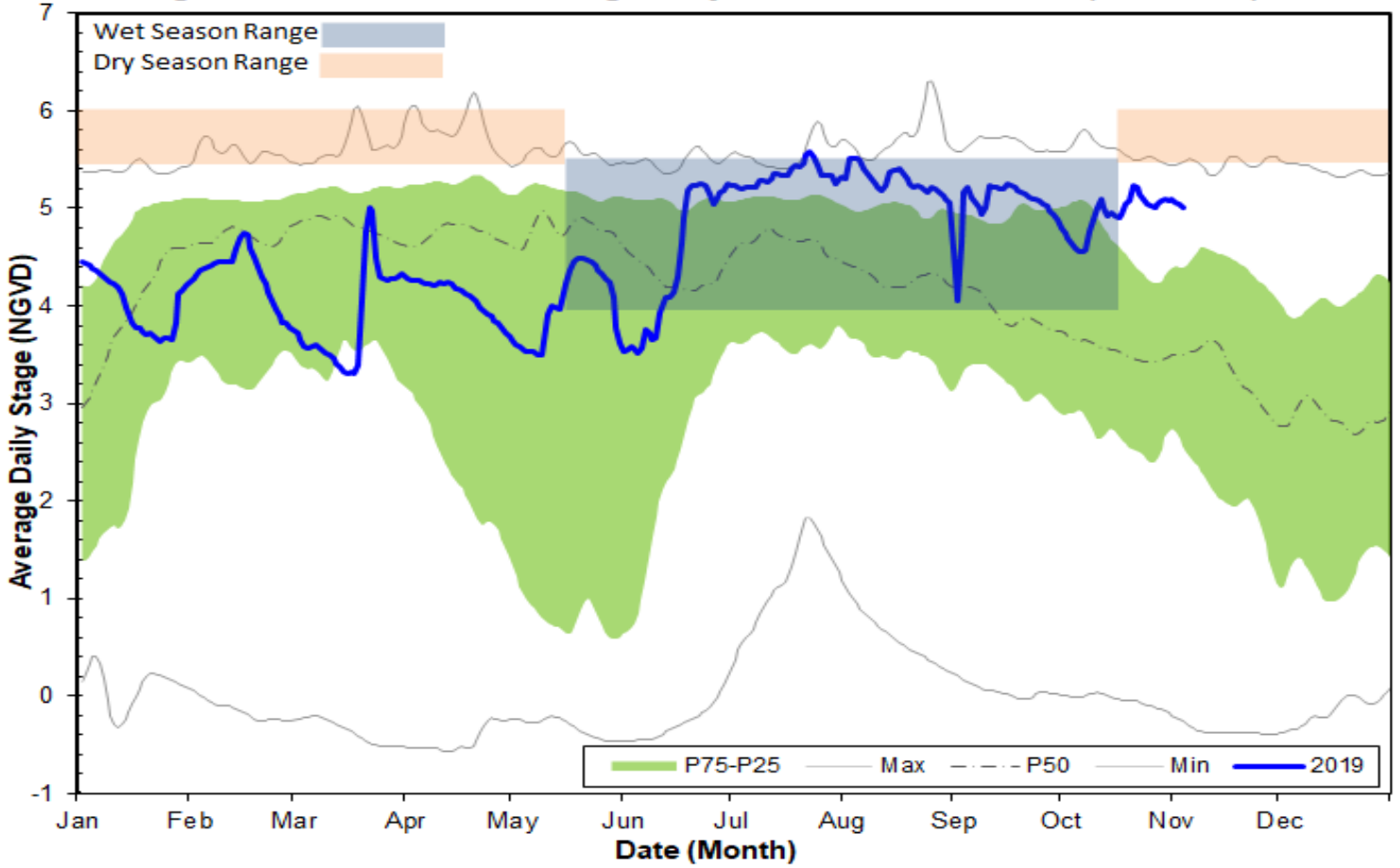
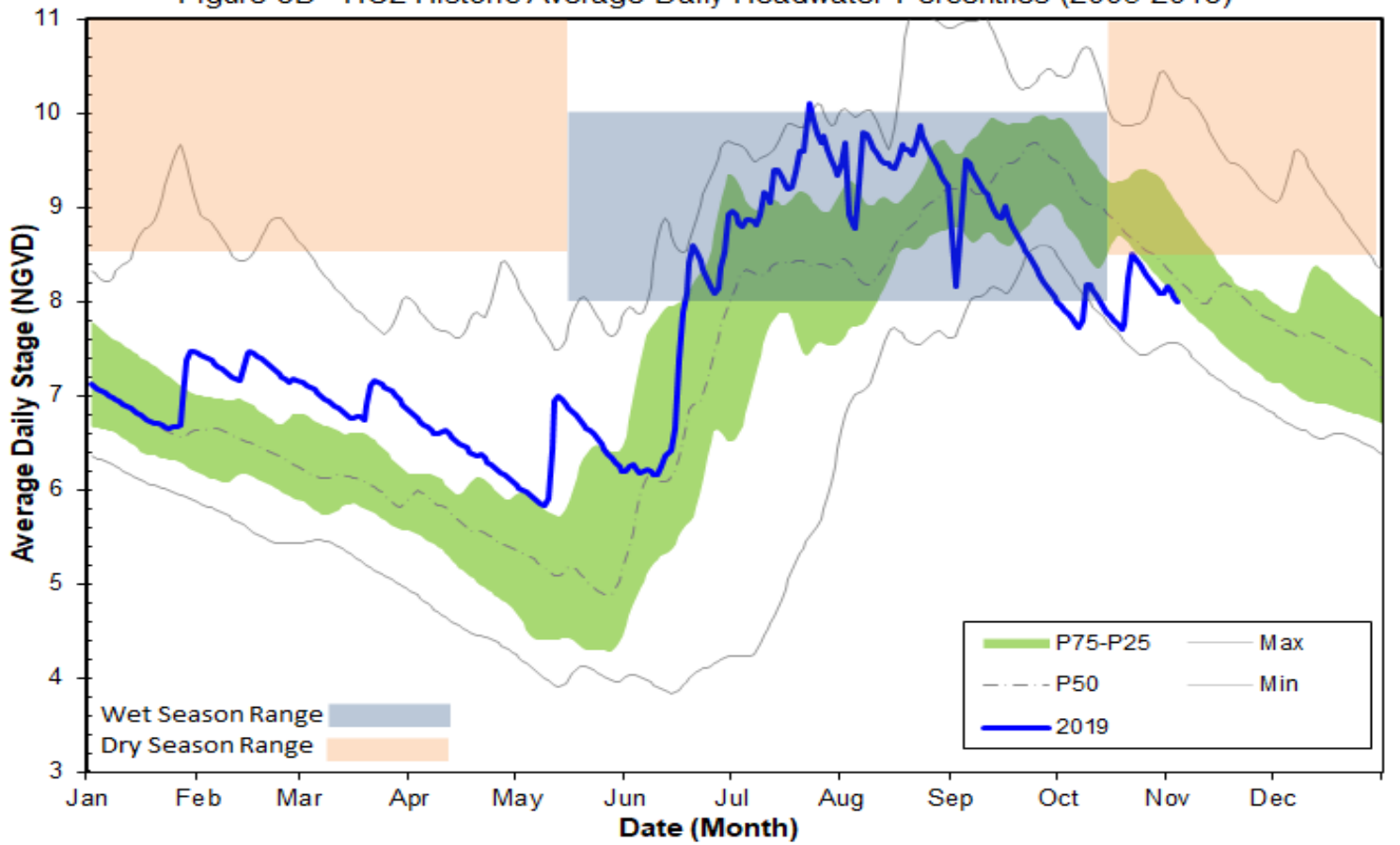


Figure 8B - HC2 Historic Average Daily Headwater Percentiles (2005-2018)





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

Last Reading Date :		November 4, 2019					
Previous Period Reading Date:		October 1, 2019					
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	-0.21	30.38	30.17	↓	GREEN
C-1004R	Naples	Lower Tamiami Aquifer	1.09	1.09	2.18	↑	YELLOW
C-1224	Marco Lakes	Lower Tamiami Aquifer	0.11	3.84	3.95	↑	GREEN
L-2194	Bonita Springs	Sandstone Aquifer	-1.48	5.29	3.81	↓	GREEN
L-2195	Bonita Springs	Surficial Aquifer System	-0.99	11.15	10.16	↓	GREEN
L-738	Bonita Springs	Lower Tamiami Aquifer	0.27	0.26	0.53	↑	GREEN

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

BIG CYPRESS BASIN

OCTOBER 2019

GROUNDWATER LEVEL DAILY TRENDS COMPARED TO HISTORICAL AVERAGE

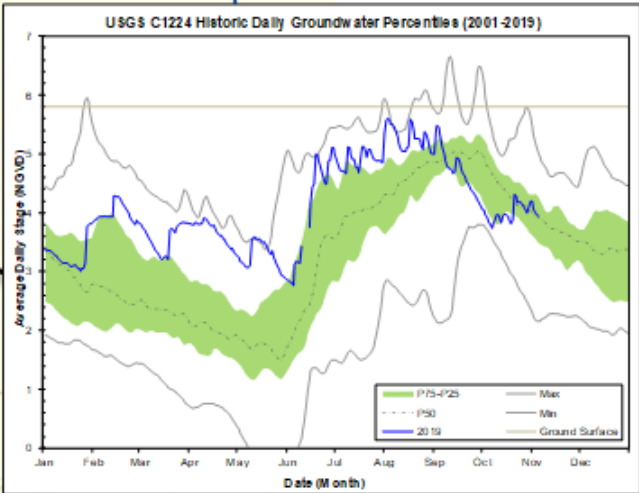
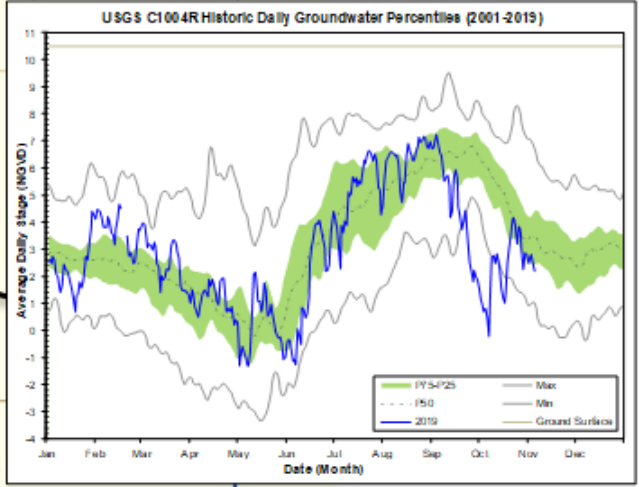
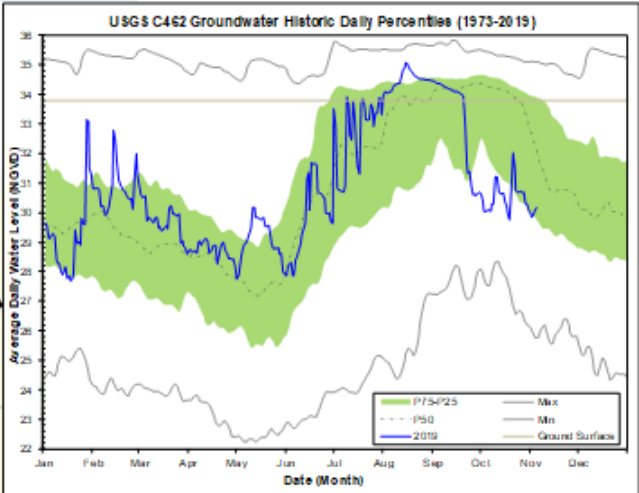
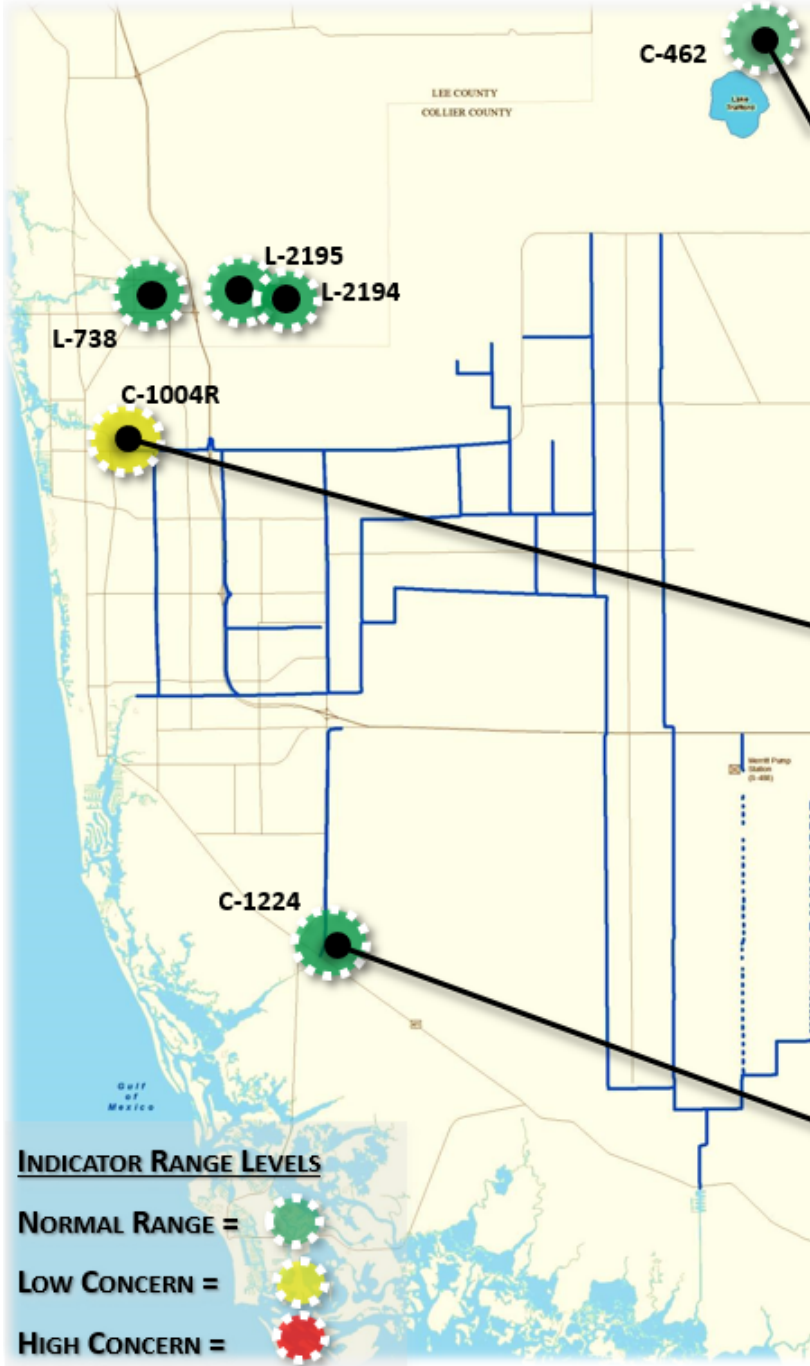


FIGURE 9



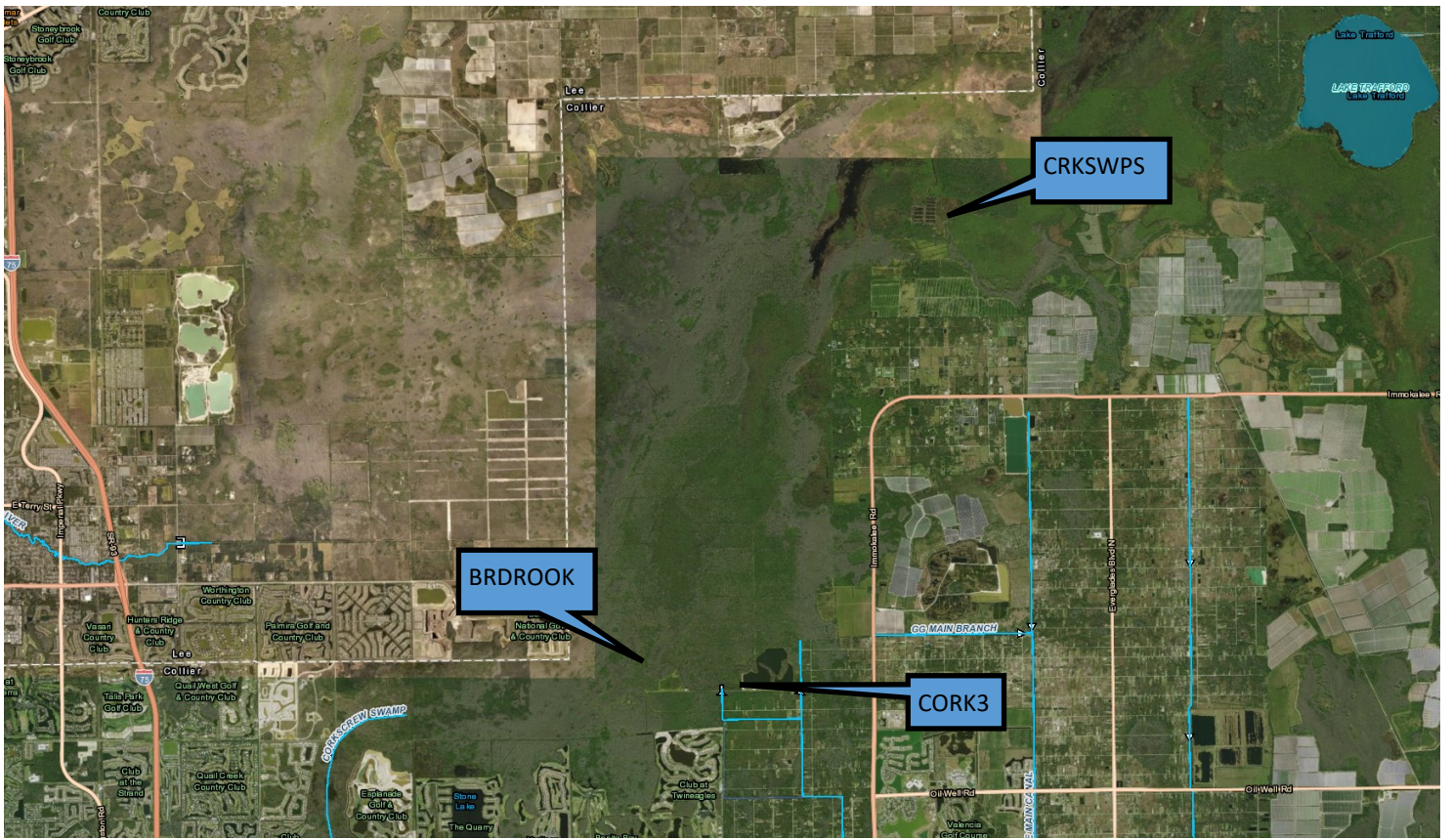


Figure 10-Corkscrew Historic Average Daily Headwater Percentiles(1984-2018)

