JANUARY & FEBRUARY 2023

BIG CYPRESS BASIN HYDROLOGIC REPORT



SUMMARY OF HYDROLOGIC CONDITIONS IN THE BIG CYPRESS BASIN

January & February 2023

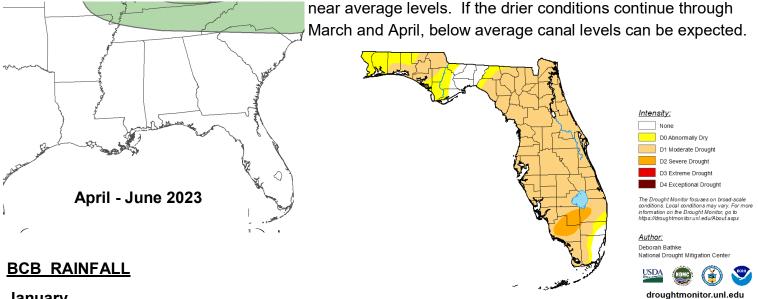
SUMMARY

A pattern of drier-than-normal weather persisted over the Basin during the months of January and February. A rare three year long La Nina event, which has been partially responsible for the drier climatological conditions for the past 3 winters, ended in early March and neutral conditions are expected to remain in place through early summer.



Long range precipitation outlooks have transitioned from drier than normal to equal chances of above, normal, or below normal rainfall. Long range temperature outlooks remain consistently above average for Florida.

A majority of Collier County is now designated with severe drought conditions (below). Given the extremely dry winter, water levels in the region are receding quicker due to the dry conditions but remain at



January

As measured by twenty-four (23) reporting stations (ref. Figures 1, 2, Table 1), the basin-wide January monthly average was 0.5 inches (25% of normal), which is below the average 2.1 inches typically collected.

Based on collected gauge and radar data, the rainfall distribution across the Basin was fairly uniform. Figure 3a shows the average rainfall for each of the Basin's watersheds based on gauge adjusted radar. The Freedom Park basin received the highest rainfall with about **0.41 inch** areal average across the watershed and the lowest was the Fakahatchee basin with about 0.18 inches. The Basin's total areal weighted average rainfall was **0.50 inches**. The month's lowest gauge total was collected at the Fakahatchee Strand North End (Site R-16), which received **0.10 inches**. This month's highest rainfall was recorded at FPWX (Site R-23), which received 0.97 inches. The rainfall totals and their distribution across the BCB/Lower West Coast are shown on Figure 3, 3a and 4.

February

As measured by twenty-three (23) reporting stations (ref. **Figures 1, 2, Table 1**), the basin-wide February monthly average was **0.09 inches (5% of normal)**, which is below the average 1.68 inches typically collected.

Based on collected gauge and radar data, the rainfall distribution across the Basin was very uniform. Figure 3a shows the average rainfall for each of the Basin's watersheds based on gauge adjusted radar. The Barron River basin received the highest rainfall with about 0.15 inch areal average across the watershed and the lowest was East Naples and Freedom Park basin with 0.0 inches. The Basin's total areal weighted average rainfall was 0.06 inches. The month's highest gauge total was collected at COCO#1 (Site R-17), which received 0.62 inches. There were multiples sites with no recorded rainfall for February (COCO#3, Rookery Bay, and Freedom Park). The rainfall totals and their distribution across the BCB/Lower West Coast are shown on Figure 3, 3a and 4.

BCB CANAL SYSTEMS

All of the BCB canals were maintained in water conservation mode, but with the very dry conditions for the last couple months water levels in the canals are no longer able to be held as high as desirable as February ended. Canal levels were generally above normal for January and the first half of February but as evapotranspiration and water use increased, canal levels started to decline to at or just below average (**Figure 4a**).

GOLDEN GATE SYSTEM

Control structures in the Golden Gate Main canal system were operated in water conservation mode. All water control structures have remained fully closed since the beginning of the year in an effort to maintain water levels as high as possible. Water levels continued to recede as the dry season continues. Back-pumping operations were stopped in Airport and 951 canals the beginning of February as there was no longer any excess water in the system (ref **Figure 5A & 5B**).

COCOHATCHEE SYSTEM

All portions of the Cocohatchee system remain in water conservation mode and fully closed throughout January and February. With the drier-than-normal conditions water levels continued to recede but remained at or slightly below normal as the month ended (ref **Figure 6A, 6B, 6C, & 6D**).

FAKA UNION SYSTEM

All areas of Faka Union continue on water conservation operations with all structures fully closed for the entire month. Water levels continued to recede due to the dry conditions but remain at normal conditions with the exception of FU4S which is approaching the 25th percentile for early March (ref **Figure 7A & 7B**).

HENDERSON CREEK SYSTEM

Both control structures in Henderson Creek remained fully closed since October 2022. No discharges were made to Rookery Bay from HC1 while water levels remain around median levels for January and February (ref **Figure 8A & 8B**).

CORKSCREW SWAMP

Figure 10 shows the historical trends for Corkscrew, Bird Rookery, and the Cork 3 structure and the 2023 corresponding levels. All three sites experienced a slightly quicker recession rate due to drier conditions and remain slightly below the 50th percentile through the end of February. As the month ended, operations continued in the Corkscrew Canal to maintain levels near or above historical maximums to conserve water. Water levels at Lake Trafford are shown in **Figure 11**, which show lake levels receding and slightly below the 50th percentile as the month ended.

BIG CYPRESS BASIN & LOWER WEST COAST GROUNDWATER LEVELS

The current reporting (03/06/2023) for the Lower West Coast [LWC] indicate decreasing trends for January & February. By the end of the month all but two reporting wells (C-1004R and L-2194) remain in the normal condition indictor (green color) (ref. **Table 2**). All reported wells in **Table 2** show an average decrease of 1.6 feet. L-2194 and L-738 recorded the highest decrease of 2.56 feet, and C-948R had the smallest decrease of 0.12 feet (ref. **Table 2**, **Figure 9**).

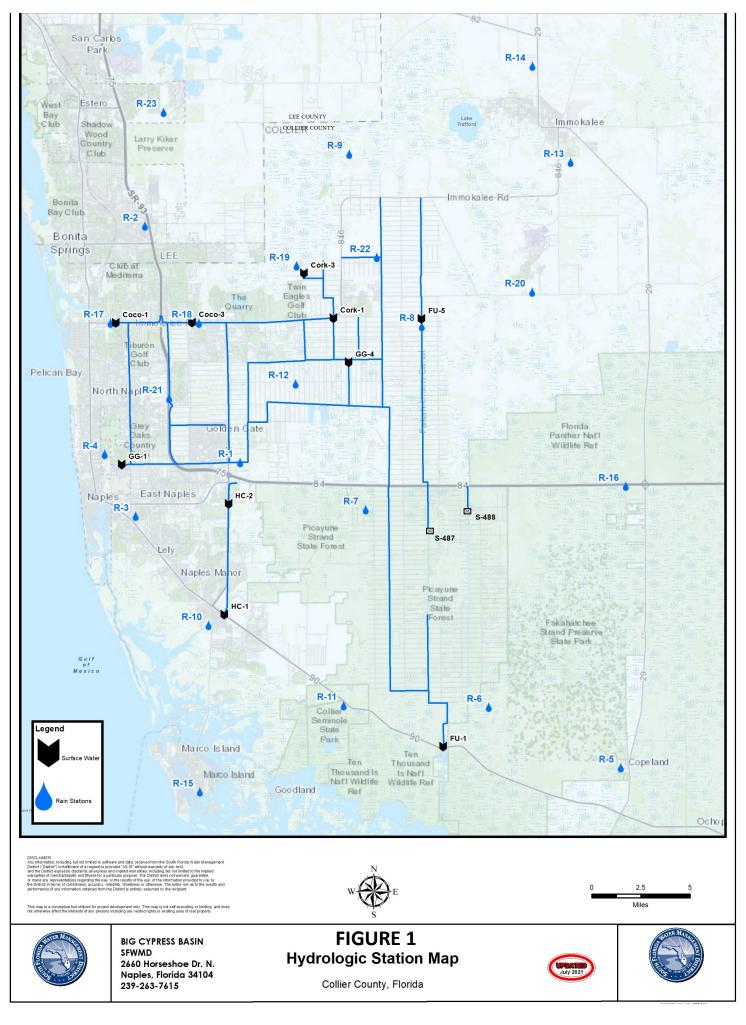


TABLE 1 RAINFALL REPORT - JANUARY 2023 DISTRICT/BASIN RAINFALL STATIONS

(ALL NUMBERS ARE IN INCHES)

| STATION INDEX NO. | STATION NAME | JANUARY 2023 | LONG TERM MONTHLY AVERAGE | MONTHLY DIFFERENCE | CALENDAR YEAR 2023 CUMULATIVE TOTAL | AVERAGE CALENDAR YEAR TO DATE | YEAR TO DATE DIFFERENCE |
|----------------------|------------------------------------|-----------------|------------------------------------|-----------------------|--|--|-------------------------------|
| R-1 | GG#3 | 0.61 | 2.94 | -2.33 | 0.61 | 2.94 | -2.33 |
| R-2 | BONITA SPRINGS WATER PLANT | 0.71 | 2.01 | -1.30 | 0.71 | 2.01 | -1.30 |
| R-3 | COLLIER COUNTY COURTHOUSE | 0.82 | 1.92 | -1.10 | 0.82 | 1.92 | -1.10 |
| R-4 | FREEDOM PARK | 0.95 | 2.81 | -1.86 | 0.95 | 2.81 | -1.86 |
| R-5 | FAKAHATCHEE STRAND HQ | 0.23 | 1.80 | -1.57 | 0.23 | 1.80 | -1.57 |
| R-6 | DAN HOUSE PRAIRIE | 0.19 | 1.60 | -1.41 | 0.19 | 1.60 | -1.41 |
| R-7 | SGGE WEATHER STATION | 0.25 | 1.81 | -1.56 | 0.25 | 1.81 | -1.56 |
| R-8 | FAKA UNION #5 | 0.59 | 3.10 | -2.51 | 0.59 | 3.10 | -2.51 |
| R-9 | CORKSCREW SWAMP NORTH END | 0.71 | 1.92 | -1.21 | 0.71 | 1.92 | -1.21 |
| R-10 | ROOKERY BAY HQ | 0.26 | 2.11 | -1.85 | 0.26 | 2.11 | -1.85 |
| R-11 | COLLIER SEMINOLE STATE PARK | 0.14 | 1.88 | -1.74 | 0.14 | 1.88 | -1.74 |
| R-12 | G.G. FIRE STATION | 0.84 | 2.01 | -1.17 | 0.84 | 2.01 | -1.17 |
| R-13 | IMMOKALEE LANDFILL | 0.37 | 2.21 | -1.84 | 0.37 2.21 | | -1.84 |
| R-14 | IFAS | 0.56 | 1.99 | -1.43 | 0.56 | 1.99 | -1.43 |
| R-15 | MARCO R.O. PLANT | 0.24 | 2.49 | -2.25 | 0.24 | 0.24 2.49 | |
| R-16 | FAKAHATCHEE STRAND NORTH END | 0.10 | 2.42 | -2.32 | 0.10 | 2.42 | -2.32 |
| R-17 | COCO#1 | 0.55 | 1.82 | -1.27 | 0.55 | 1.82 | -1.27 |
| R-18 | COCO#3 | 0.51 | 1.76 | -1.25 | 0.51 | 1.76 | -1.25 |
| R-19 | BIRD ROOKERY | 0.60 | 1.67 | -1.07 | 0.60 | 1.67 | -1.07 |
| R-20 | AVE MARIA | 0.31 | 2.24 | -1.93 | 0.31 | 2.24 | -1.93 |
| R-21 | 175W2 | 0.83 | 1.64 | -0.81 | 0.83 | 1.64 | -0.81 |
| R-22 | GG#7 | 0.63 | 1.55 | -0.92 | 0.63 | 1.55 | -0.92 |
| R-23 | FPWX | 0.97 | 1.88 | -0.91 | 0.97 | 1.88 | -0.91 |
| R-24 | DSOTO10 | 0.24 | New Site | New Site | New Site No Histor | | orical Data |
| | AVERAGES | 0.51 | 2.07 | -1.56 | 0.52 | 2.07 | -1.55 |

TABLE 1 RAINFALL REPORT - FEBRUARY 2023 DISTRICT/BASIN RAINFALL STATIONS

(ALL NUMBERS ARE IN INCHES)

| STATION INDEX NO. | STATION NAME | FEBRUARY 2023 | LONG TERM MONTHLY AVERAGE | MONTHLY DIFFERENCE | CALENDAR YEAR 2023 CUMULATIVE TOTAL | AVERAGE CALENDAR YEAR TO DATE | YEAR TO DATE DIFFERENCE |
|----------------------|--|------------------|------------------------------------|-----------------------|--|--|-------------------------------|
| R-1 | GG#3 | 0.03 | 1.22 | -1.19 | 0.64 | 4.16 | -3.52 |
| R-2 | BONITA SPRINGS WATER PLANT | 0.02 | 1.94 | -1.92 | 0.73 | 3.95 | -3.22 |
| R-3 | COLLIER COUNTY COURTHOUSE | 0.02 | 1.92 | -1.90 | 0.84 | 0.84 3.84 | |
| R-4 | FREEDOM PARK | 0.00 | 1.22 | -1.22 | 0.95 | 4.03 | -3.08 |
| R-5 | FAKAHATCHEE STRAND HQ | 0.05 | 1.89 | -1.84 | 0.28 | 3.68 | -3.40 |
| R-6 | DAN HOUSE PRAIRIE | 0.05 | 1.48 | -1.43 | 0.24 | 3.08 | -2.84 |
| R-7 | SGGE WEATHER STATION | 80.0 | 1.59 | -1.51 | 0.33 | 3.40 | -3.07 |
| R-8 | FAKA UNION #5 | 0.15 | 1.76 | -1.61 | 0.74 | 4.87 | -4.13 |
| R-9 | CORKSCREW SWAMP NORTH END | 0.11 | 1.69 | -1.58 | 0.82 | 3.61 | -2.79 |
| R-10 | ROOKERY BAY HQ | 0.00 | 1.73 | -1.73 | 0.26 | 3.84 | -3.58 |
| R-11 | COLLIER SEMINOLE STATE PARK | 0.07 | 1.64 | -1.57 | 0.21 | 3.52 | -3.31 |
| R-12 | G.G. FIRE STATION | 0.09 | 1.82 | -1.73 | 0.93 | 3.83 | -2.90 |
| R-13 | IMMOKALEE LANDFILL | 0.19 | 1.82 | -1.63 | 0.56 | 4.04 | -3.48 |
| R-14 | IFAS | 0.20 | 2.03 | -1.83 | 0.76 | 4.01 | -3.25 |
| R-15 | MARCO R.O. PLANT | 0.02 | 1.93 | -1.91 | 0.26 | 4.42 | -4.16 |
| R-16 | FAKAHATCHEE STRAND NORTH END | 0.03 | 2.12 | -2.09 | 0.13 | 4.54 | -4.41 |
| R-17 | COCO#1 | 0.62 | 1.85 | -1.23 | 1.17 | 3.67 | -2.50 |
| R-18 | COCO#3 | 0.00 | 1.92 | -1.92 | 0.51 | 3.67 | -3.16 |
| R-19 | BIRD ROOKERY | 0.13 | 1.14 | -1.01 | 0.73 2.81 | | -2.08 |
| R-20 | AVE MARIA | 0.06 | 1.78 | -1.72 | 0.37 | 4.02 | -3.65 |
| R-21 | 175W2 | 0.05 | 1.18 | -1.13 | 0.88 | 2.82 | -1.94 |
| R-22 | GG#7 | 0.12 | 1.24 | -1.12 | 0.75 | 2.79 | -2.04 |
| R-23 | FPWX | 0.13 | 1.75 | -1.62 | 1.10 | 3.63 | -2.53 |
| R-24 | DSOTO10 0.14 New Site New Site New Site No Historical Data | | | | | | ricai Data |
| | AVERAGES | 0.10 | 1.68 | -1.58 | 0.62 | 3.75 | -3.13 |

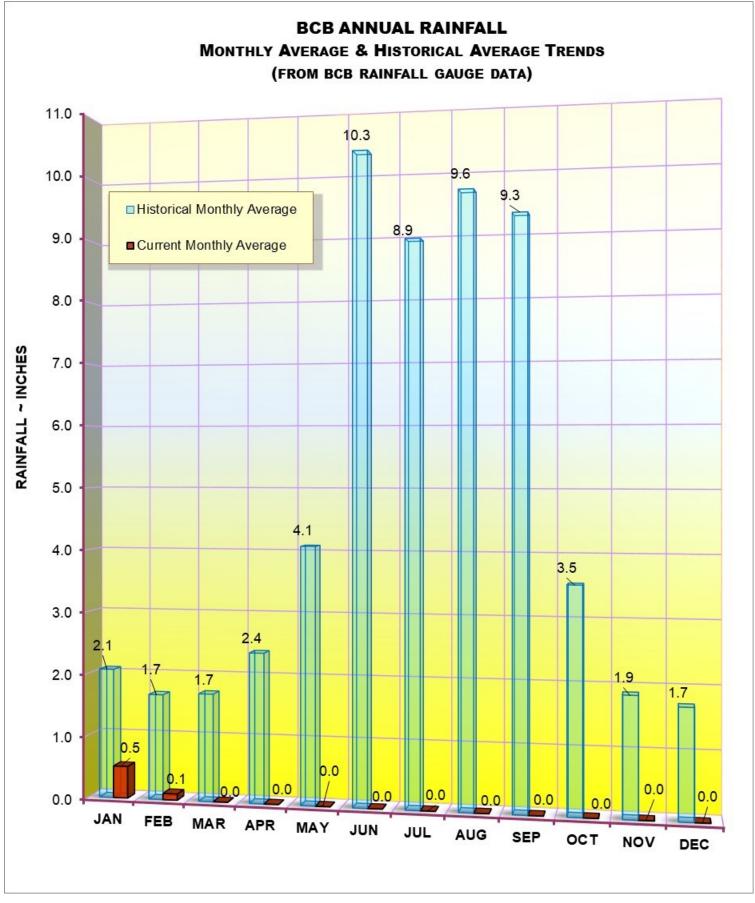


FIGURE 2
BCB GAUGE RAINFALL
MONTHLY AVERAGES THROUGH FEBRUARY 2023

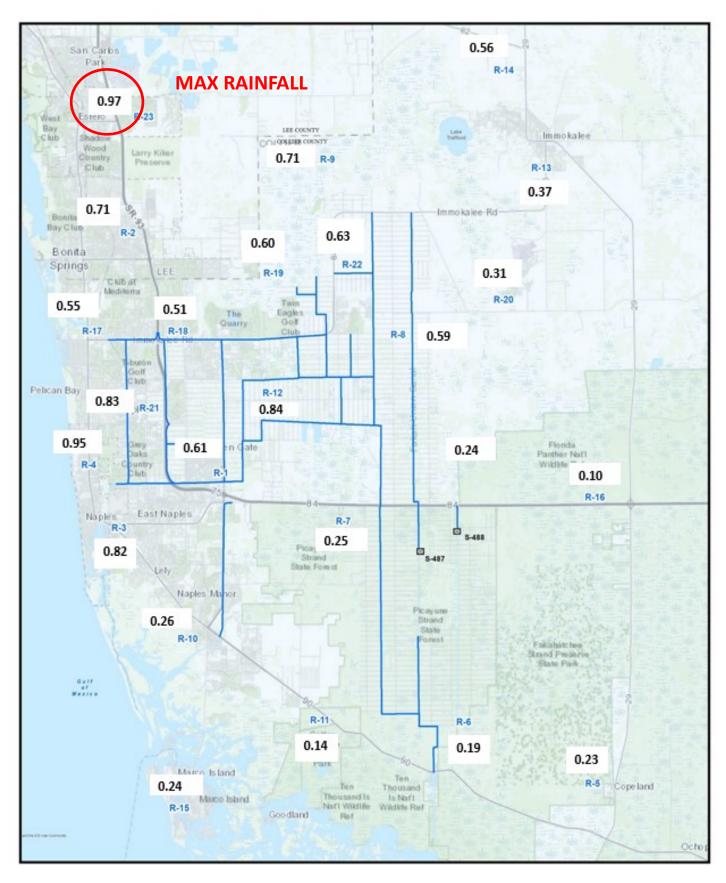


FIGURE 3
BCB RAINFALL DISTRIBUTION
JANUARY 2023

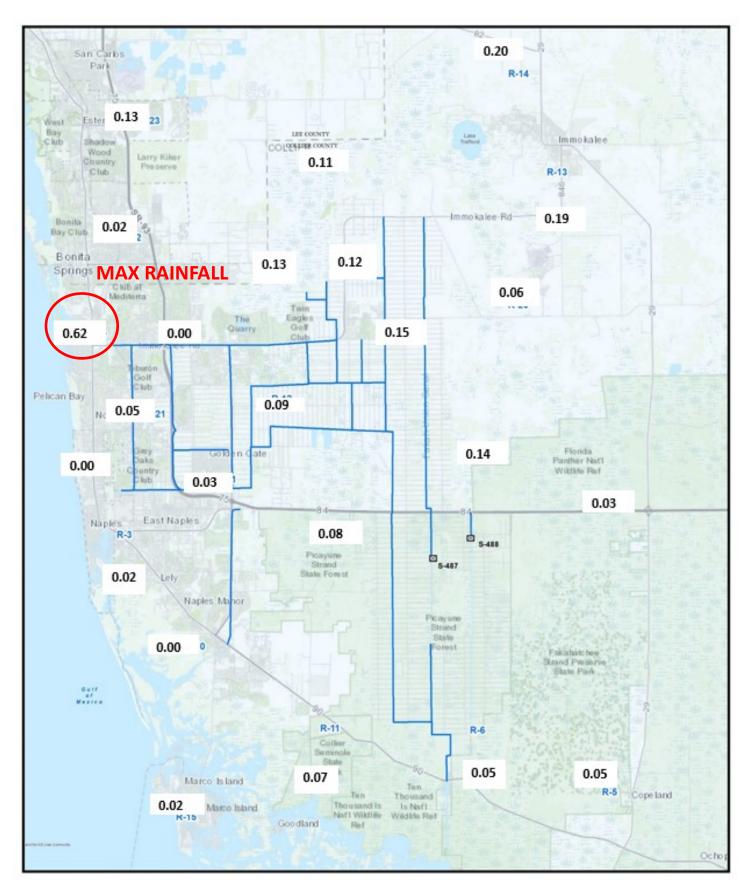
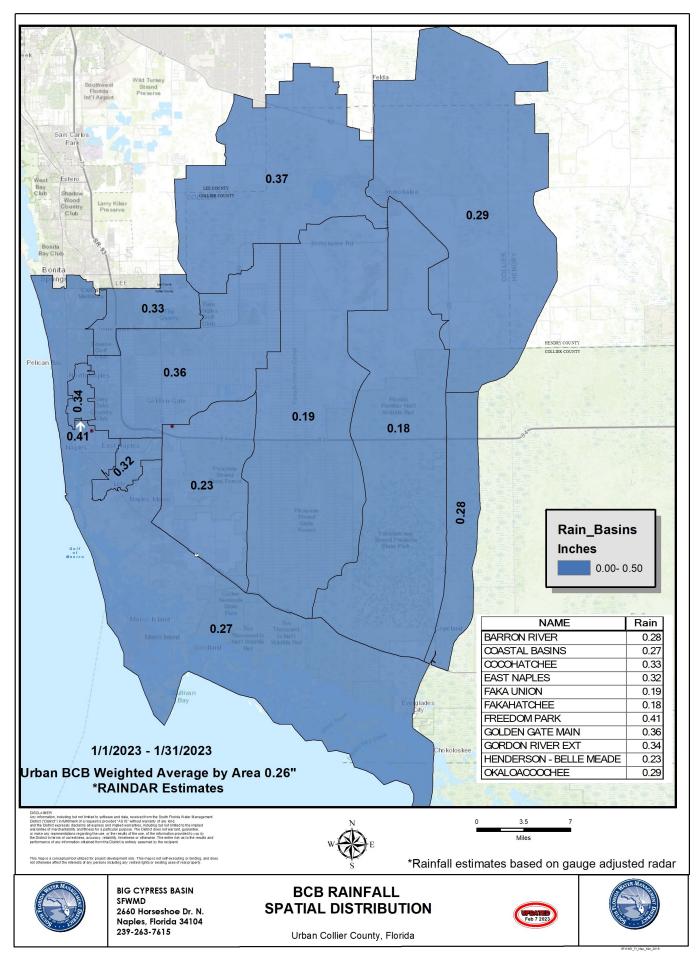
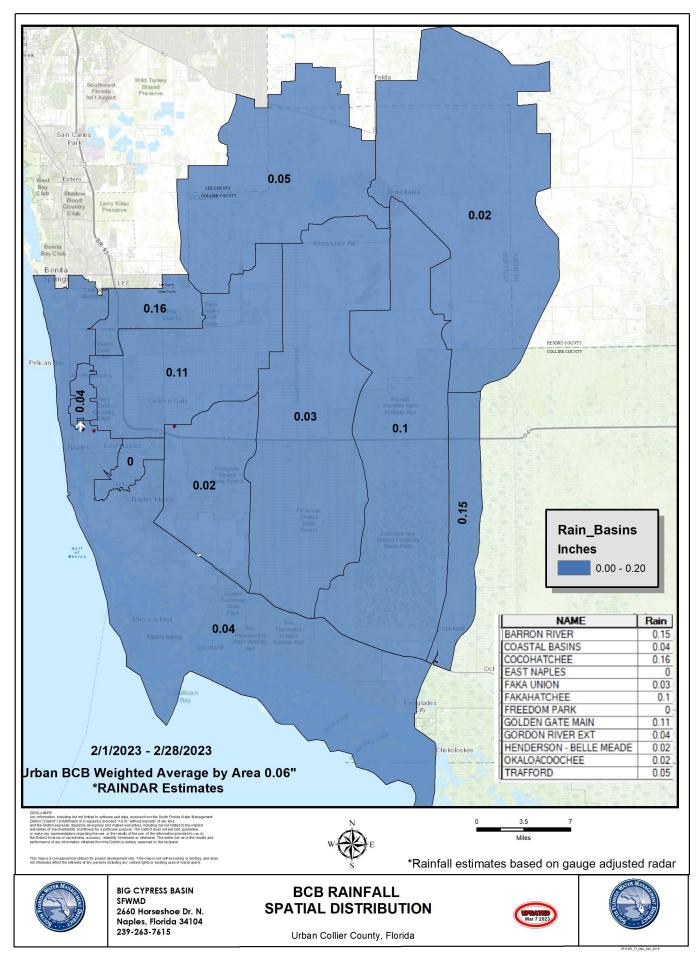


FIGURE 3
BCB RAINFALL DISTRIBUTION
FEBRUARY 2023





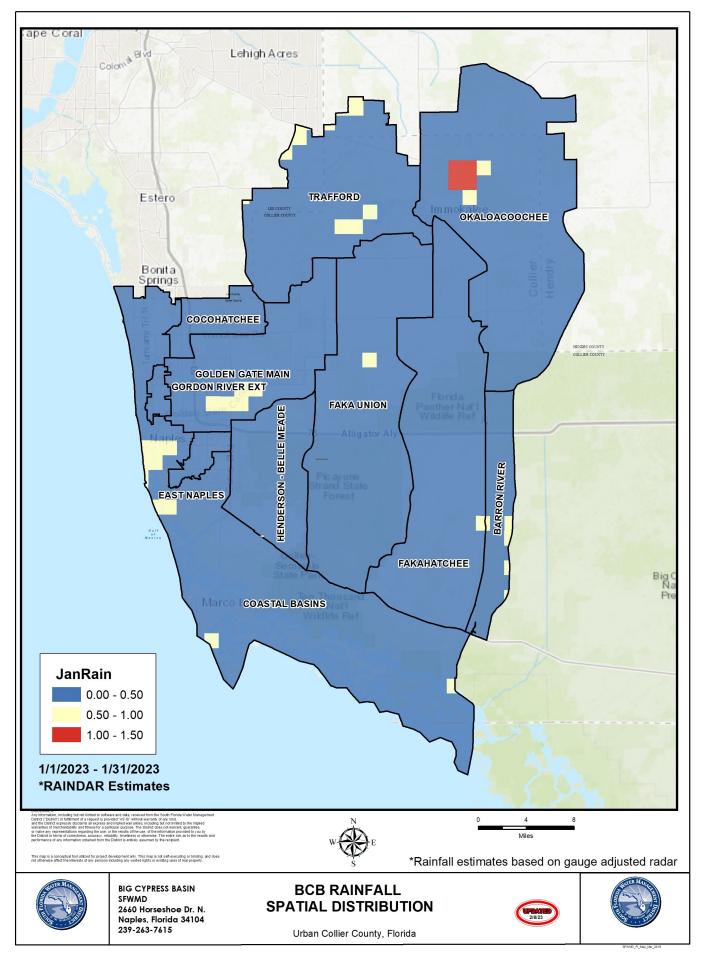


FIGURE 4 - JANUARY 2023

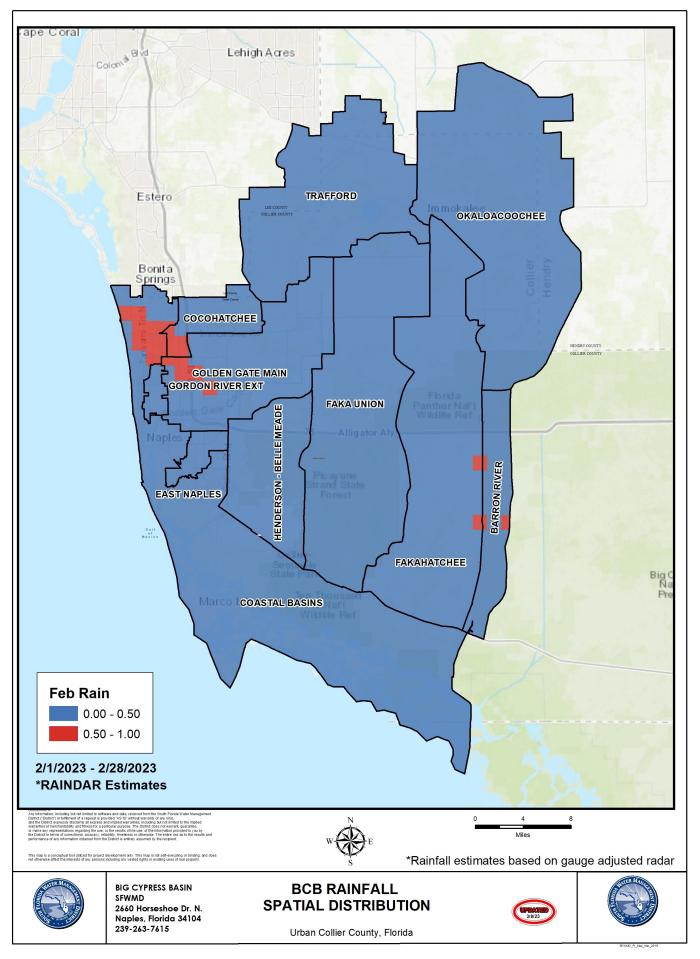
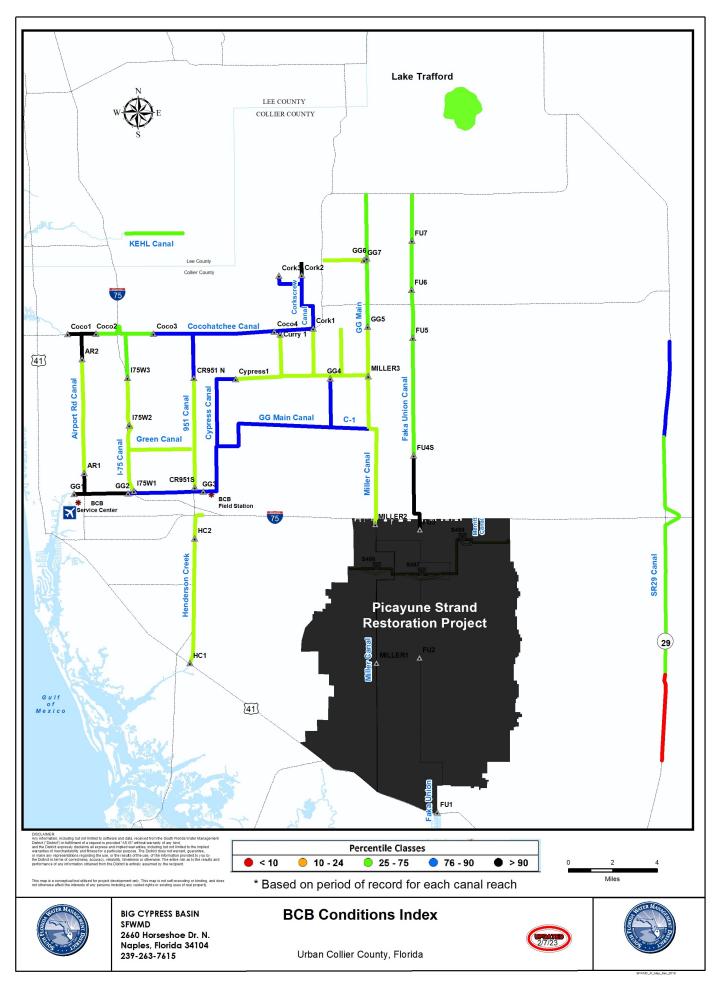


FIGURE 4 - FEBRUARY 2023



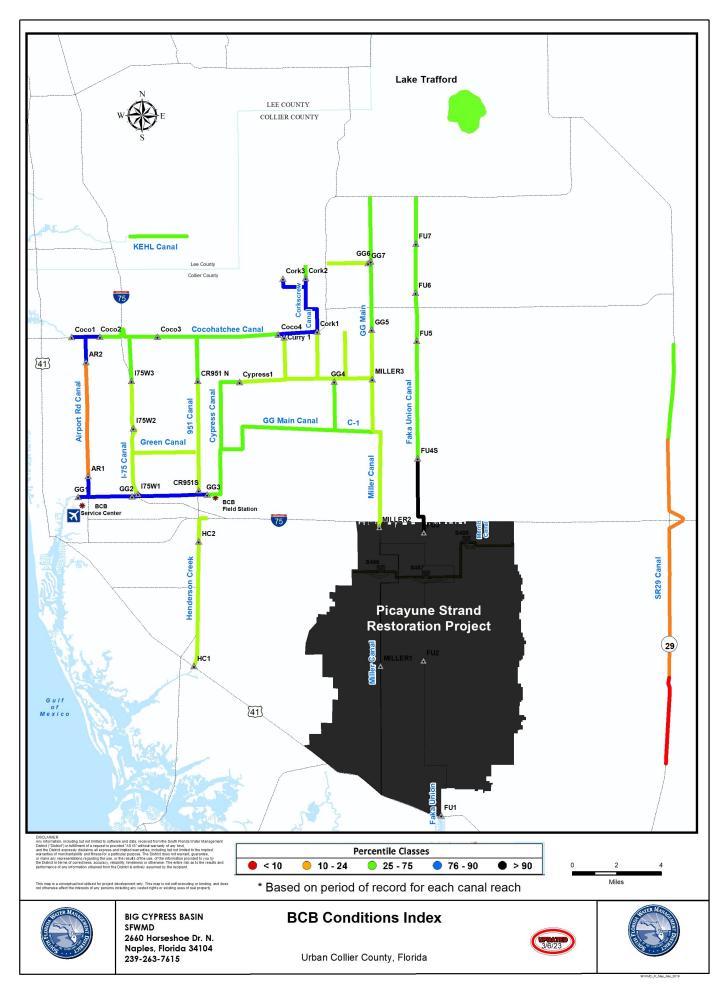
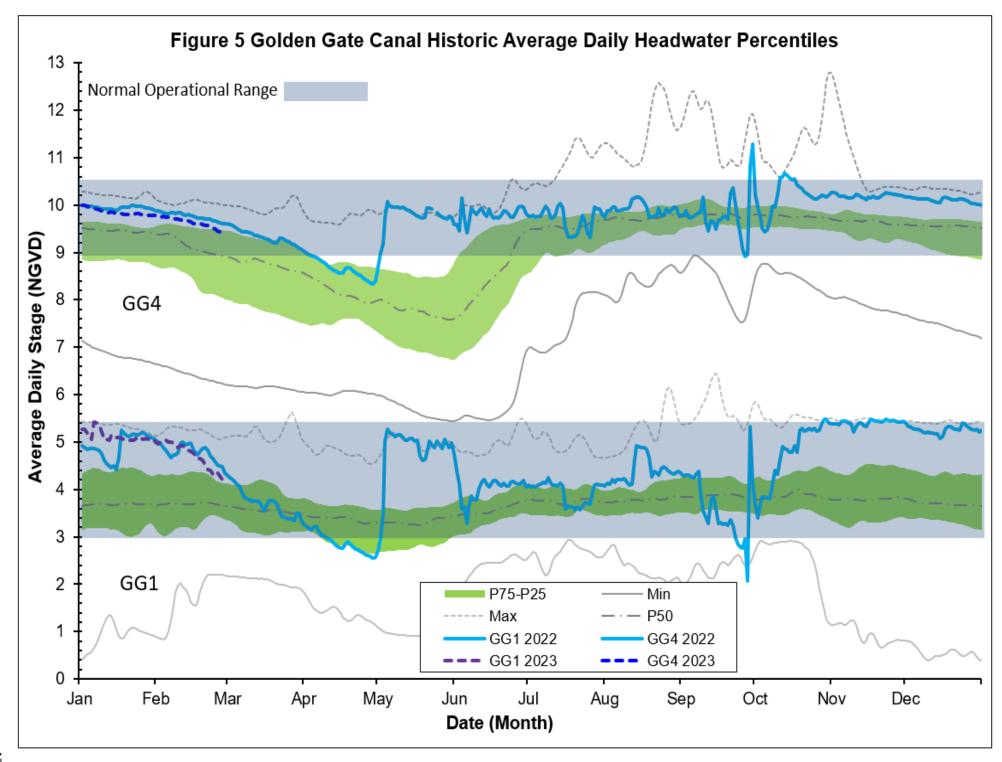
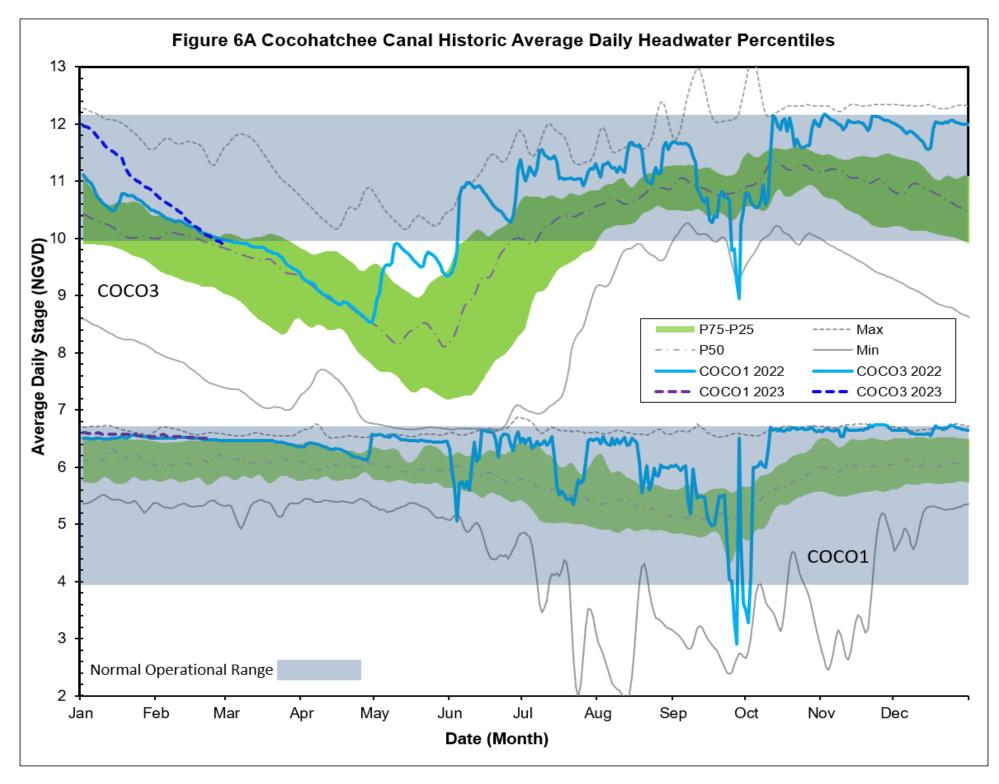
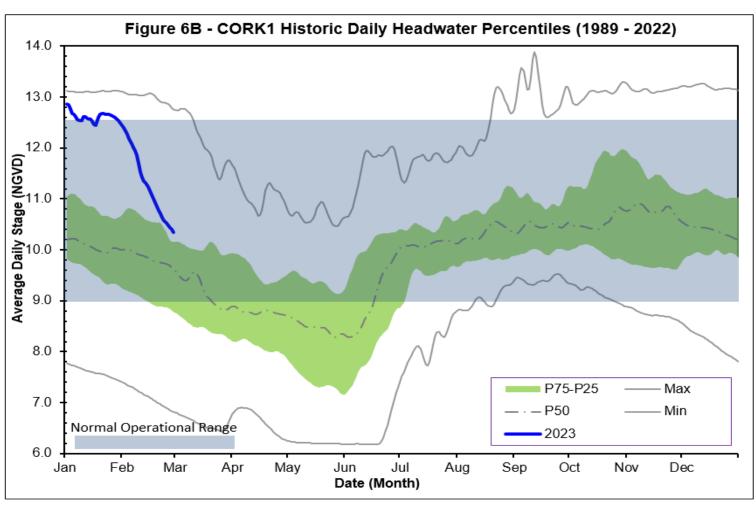
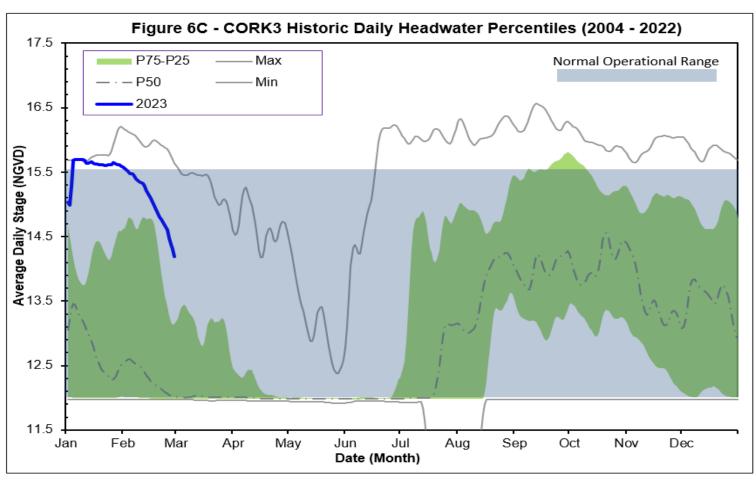


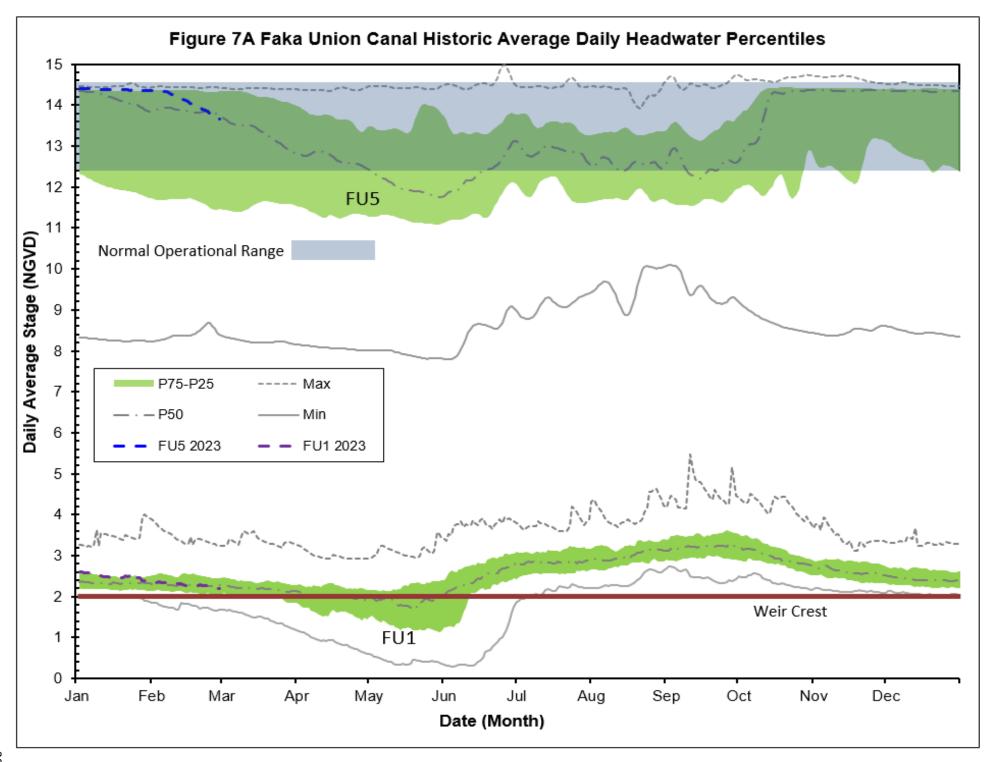
FIGURE 4A - FEBRUARY 2023

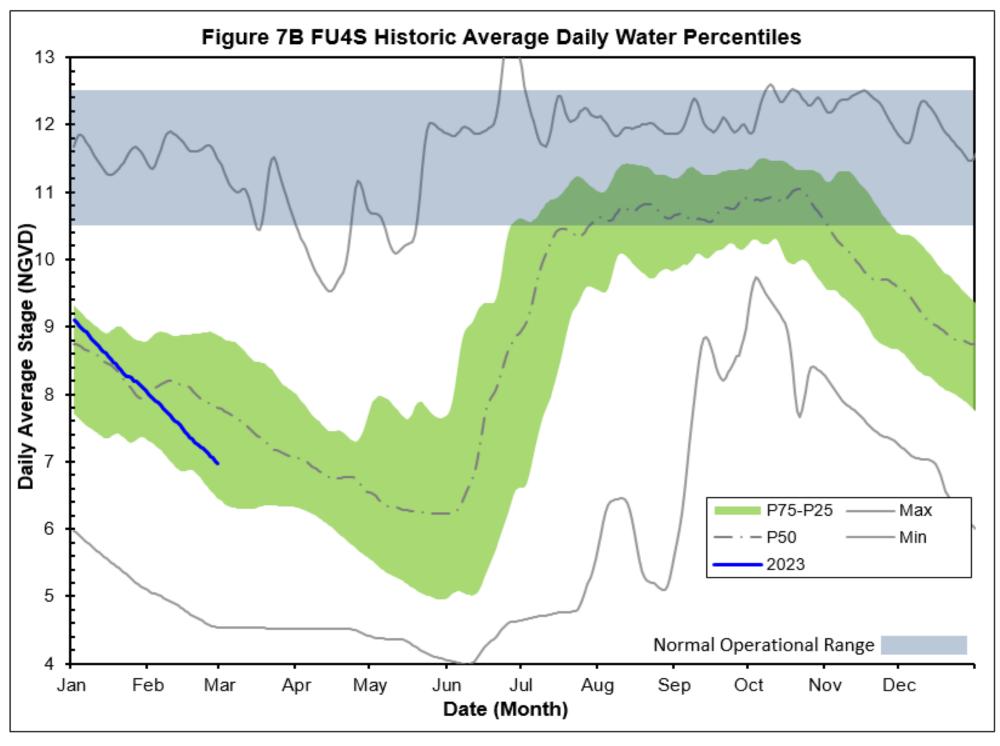


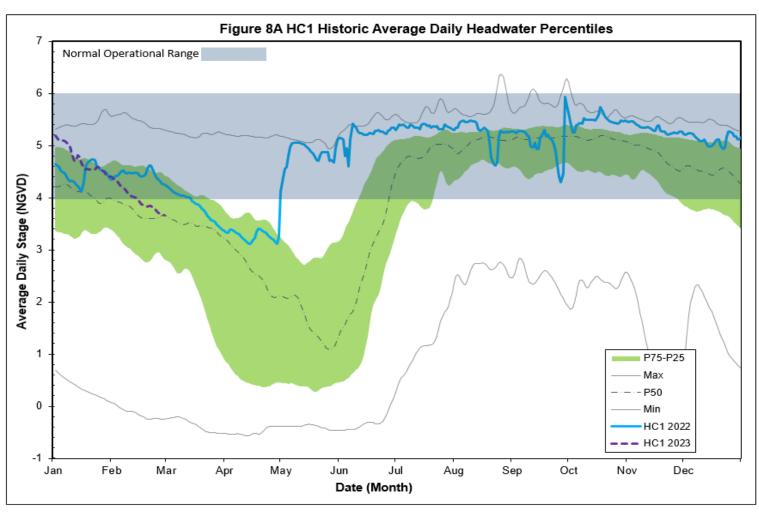


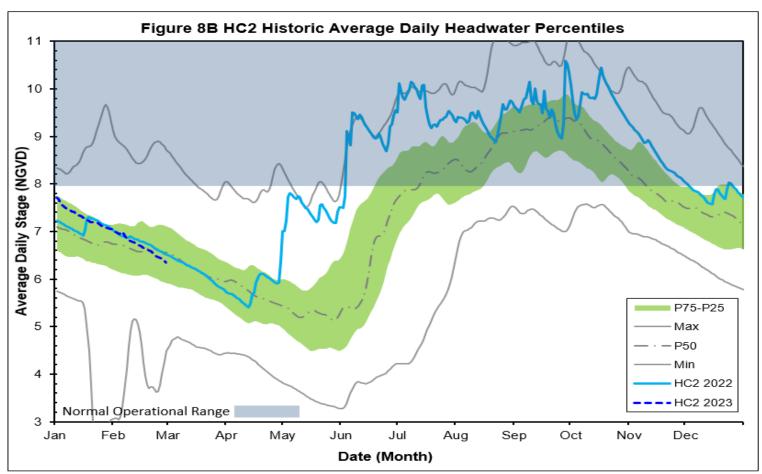












WATER CONDITIONS SUMMARY - January 2023 SELECTED STATIONS for BCB AREA / SW FLORIDA

| Last Readi | ing Date : | December 31, 2022 | | | | | | | |
|-------------------------------|------------------|--------------------------|--------------------------------------|-------------------|-----------------------|------------------------|----------------------|--|--|
| Previous Period Reading Date: | | January 31, 2023 | | | | | | | |
| STATION INDEX NO. | WELL LOCATION | WELL / AQUIFER - TYPE | CHANGE (from previous date) | PREVIOUS LEVEL | CURRENT LEVEL (ft) | DIRECTION OF CHANGE | CONCERN INDICATOR | | |
| ALL INDICA | TOR LEVELS SHOWN | I IN FT-NGVD | | | | | | | |
| C-462 | Immokalee | Lower Tamiami Aquifer | -0.78 | 31.52 | 30.74 | \downarrow | GREEN | | |
| C-1004R | Naples | Lower Tamiami Aquifer | -1.47 | 3.62 | 2.15 | \downarrow | YELLOW | | |
| C-1224 | Marco Lakes | Lower Tamiami Aquifer | -0.68 | 4.17 | 3.49 | \downarrow | GREEN | | |
| C-948R | Golden Gate | Mid Hawthorn Aquifer | -1.84 | 32.59 | 30.75 | \downarrow | | | |
| C-951R | Golden Gate | Lower Tamiami Aquifer | -0.18 | 3.54 | 3.36 | \downarrow | | | |
| L-2194 | Bonita Springs | Sandstone Aquifer | -2.12 | 5.39 | 3.27 | \ | GREEN | | |
| L-2195 | Bonita Springs | Surficial Aquifer System | -0.71 | 10.58 | 9.87 | ↓ | GREEN | | |
| L-738 | Bonita Springs | Lower Tamiami Aquifer | -0.98 | 0.92 | -0.06 | \ | GREEN | | |

TABLE 2 BCB WATER CONDITIONS SUMMARY JANUARY 2023

WATER CONDITIONS SUMMARY - February 2023 SELECTED STATIONS for BCB AREA / SW FLORIDA

| Last Readi | ng Date : | January 31, 2023 | | | | | | | |
|-------------------------------|------------------|--------------------------|--------------------------------------|-------------------|-----------------------|------------------------|----------------------|--|--|
| Previous Period Reading Date: | | March 7, 2023 | | | | | | | |
| STATION INDEX NO. | WELL LOCATION | WELL / AQUIFER - TYPE | CHANGE (from previous date) | PREVIOUS LEVEL | CURRENT LEVEL (ft) | DIRECTION OF CHANGE | CONCERN INDICATOR | | |
| ALL INDICA | TOR LEVELS SHOWN | I IN FT-NGVD | | | | | | | |
| C-462 | Immokalee | Lower Tamiami Aquifer | -1.42 | 30.74 | 29.32 | \downarrow | GREEN | | |
| C-1004R | Naples | Lower Tamiami Aquifer | -2.38 | 2.15 | -0.23 | \downarrow | YELLOW | | |
| C-1224 | Marco Lakes | Lower Tamiami Aquifer | -0.89 | 3.49 | 2.60 | \downarrow | GREEN | | |
| C-948R | Golden Gate | Mid Hawthorn Aquifer | -0.12 | 30.75 | 30.63 | \downarrow | | | |
| C-951R | Golden Gate | Lower Tamiami Aquifer | -1.64 | 3.36 | 1.72 | \downarrow | | | |
| L-2194 | Bonita Springs | Sandstone Aquifer | -2.56 | 3.27 | 0.71 | \downarrow | YELLOW | | |
| L-2195 | Bonita Springs | Surficial Aquifer System | -1.03 | 9.87 | 8.84 | \downarrow | GREEN | | |
| L-738 | Bonita Springs | Lower Tamiami Aquifer | -2.56 | -0.06 | -2.62 | \downarrow | GREEN | | |

TABLE 2 BCB WATER CONDITIONS SUMMARY FEBRUARY 2023

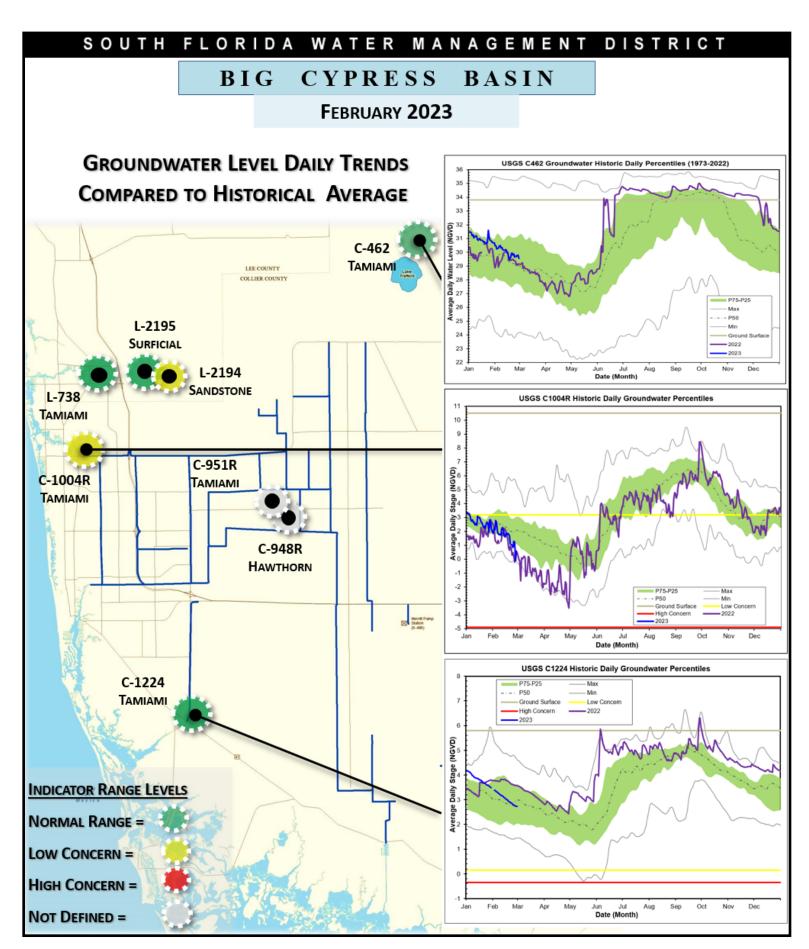


FIGURE 9 - JANUARY AND FEBRUARY 2023



