Hydrologic Conditions

for the month of

March 2023

Prepared by the

Hydrologic Data Section

Data Collection Bureau

Southwest Florida Water Management District

April 25, 2023

http://www.watermatters.org

ACKNOWLEDGMENTS

The Hydrologic Conditions Report is a monthly effort of the Data Collection Bureau's Hydrologic Data Section. Acknowledgment is made to the following staff for their significant contributions, hard work and dedication to the timely production of this report:

Data Collection:	Terry Burrell, Don Everson, George Prine, James Ferrell, Greg Johnston, Everett Eldridge, Robert Noland, James Thomas, Ernesto Mangual, Patrick Hunt and Joshua Payne.
QA/QC and Reporting:	Steve DeSmith, Joey Fogel, Jason Patterson and Erin Walters.
Administrative Support/ Document Préparation :	Karen Diez and Shelley Browning.

INTRODUCTION

The Hydrologic Conditions Report is generated monthly by the Hydrologic Data Section, Data Collection Bureau, of the Southwest Florida Water Management District. This report provides an end-of-month analytical summary of regional and temporal variations in the hydrologic conditions across the District's 16-county area for planning and regulatory purposes. In addition, it provides an excellent historical record for long-term local and regional hydrologic analysis.

The Hydrologic Data Section is responsible for the implementation and maintenance of a network of observation and monitoring stations used to track changes in various hydrologic parameters over time. Data collected are used by the regulatory, technical, and analytical sections of the District. All data collected are processed and analyzed, uploaded into a centralized data base maintained by the District and then made available to the public through the District's Environmental Data Portal. The District's data collection program is augmented with data collected by the United States Geological Survey (USGS) through a cooperative joint funding agreement. Data derived from both District and USGS sources are used in this report.

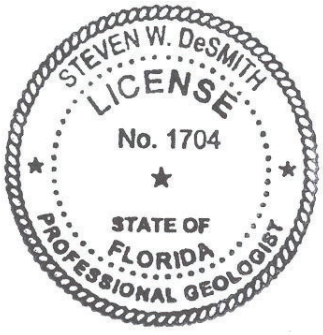
The data contained in this report were collected and analyzed in accordance with generally accepted procedures consistent with applicable scientific and technical standards of practice. The data presented are considered to be the best available at the time of publication and are subject to revision.

Any questions about the significance, accuracy, or interpretation of these data should be referred to Tamera McBride, Manager of the Hydrologic Data Section at (352) 796-7211 or (800) 423-1476.

The data evaluation, analyses and interpretation contained within this report have been prepared or approved by a certified Professional Geologist in accordance with Chapter 492, Florida Statutes.

Steven W. DeSmith 04/21/2023

Registration #PG-1704



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The Southwest Florida Water Management District (District) does not discriminate on the basis of disability. This nondiscrimination policy involves every aspect of the District's functions, including access to and participation in the District's programs, services and activities. Anyone requiring reasonable accommodation, or who would like information as to the existence and location of accessible services, activities, and facilities, as provided for in the Americans with Disabilities Act, should contact the Human Resources Office Chief, at 2379 Broad St., Brooksville, FL 34604-6899; telephone (352) 796-7211 or 1-800-423-1476 (FL only), or email **ADACoordinator@WaterMatters.org**. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1-800-955-8771 (TDD) or 1-800-955-8770 (Voice). If requested, appropriate auxiliary aids and services will be provided at any public meeting, forum, or event of the District. In the event of a complaint, please follow the grievance procedure located at **WaterMatters.org/ADA**.

EXECUTIVE SUMMARY

Hydrologic Conditions for March 2023

In March, average rainfall totals were significantly below normal in all three regions of the District. The normal range for rainfall is defined by totals that fall on or between the 25th to 75th percentiles of the historical monthly accumulation for each region and where the 50th percentile represents the historical mean. The northern region received an average of 0.92 inch of rainfall, equivalent to the 10th percentile of the historical March record. The central region received an average of 0.45 inch of rainfall, equivalent to the 4th percentile, while the southern region received an average of 0.34 inch of rainfall, equivalent to the 3rd percentile of the historical March record. The Districtwide rainfall average of 0.54 inch was equivalent to the 4th percentile of the historical March record.

During the 12-month period from April 1, 2022, through March 31, 2023, the average rainfall totals in the northern counties was classified as “drier than normal,” while the central counties were classified as “normal” and the southern counties were classified as “wetter than normal.” The northern counties received an average of 44.77 inches of rainfall, equivalent to the 17th percentile of the historical annual record. The central counties received an average of 52.17 inches of rainfall, equivalent to the 49th percentile, while the southern counties received an average of 58.90 inches of rainfall, equivalent to the 78th percentile. The Districtwide rainfall average of 52.51 inches was equivalent to the 51st percentile of the historical annual record.

Average lake levels in March were below normal in the Northern region, while they were within the normal range in the Tampa Bay, Polk Uplands and Lake Wales Ridge regions. Normal lake levels are defined as levels that fall between the minimum low management level and the minimum flood level. The regional lake level in the Northern region decreased by an average of 0.55 foot and was 0.56 foot below the base level of the annual normal range. The regional lake level in the Tampa Bay region decreased by an average of 0.52 foot and was 0.35 foot above the base of the annual normal range. The regional lake level in the Polk Uplands region decreased by an average of 0.41 foot and were 1.60 feet above the base of the annual normal range. The regional lake level in the Lake Wales Ridge region decreased by an average of 0.58 foot and ended the month 0.15 foot above the base level of the annual normal range.

Total streamflow in March, based on three regional index rivers, was “below normal” in the northern and southern counties of the District, while it was within the normal range in the central counties. Normal streamflow is defined as the flow that falls on or between the 25th and 75th percentiles. Streamflow measured at the Withlacoochee River near Holder station in the northern counties decreased and was in the 18th percentile. Streamflow at the Hillsborough River near Zephyrhills station in the central counties decreased and was in the 45th percentile, while total streamflow measured at the Peace River at Arcadia station in the southern counties decreased and was in the 16th percentile during March.

In March, groundwater data showed that the average regional aquifer level percentiles regarding the Upper Floridan aquifer were within the normal range in all three regions of the District. The normal range is defined as levels that fall on or between the 25th and 75th percentiles. The average regional groundwater level in the northern, central and southern counties were at the 34th, 50th and 39th percentiles, respectively.

REGIONAL OVERVIEW OF HYDROLOGIC CONDITIONS

MARCH 2023

For this report, the District has been divided into three geographical regions that are defined by county boundaries, unless otherwise indicated. Each regional area includes all or part of each county that is located within that region and that is also within the District's jurisdictional boundaries. The northern region includes the counties of Citrus, Hernando, Lake, Levy, Marion and Sumter; the central region includes the counties of Hillsborough, Pasco, Pinellas and Polk; while the southern region includes the counties of Charlotte, DeSoto, Hardee, Highlands, Manatee and Sarasota.

Northern Region

In March, the northern counties received an average of 0.92 inch of rainfall, equivalent to the 10th percentile of the historical March readings, which is considered "drier than normal." The average regional lake level in the northern region decreased, ending the month 0.56 foot below the base of the annual normal range. Total streamflow measured in the Withlacoochee River near Holder station decreased and was in the 18th percentile. Regional groundwater level percentiles indicated Upper Floridan aquifer water levels decreased and were in the 34th percentile.

Central Region

In March, the central counties received an average of 0.45 inch of rainfall, equivalent to the 4th percentile of historical March readings, which is considered "very dry." The average regional lake level in the Tampa Bay and Polk Uplands regions decreased, ending the month at 0.35 foot and 1.60 feet, respectively, above the base of the annual normal range. Total streamflow measured at the Hillsborough River near Zephyrhills station decreased and was in the 45th percentile. Regional groundwater level percentiles indicated Upper Floridan aquifer water levels decreased and were in the 50th percentile.

Southern Region

In March, the southern counties received an average of 0.34 inch of rainfall, equivalent to the 3rd percentile of historical March readings, which is considered "very dry." The average regional lake level in the Lake Wales Ridge region decreased, ending the month 0.15 foot above the base of the annual normal range. Total streamflow measured at the Peace River at Arcadia station decreased and was in the 16th percentile. Regional groundwater level percentiles indicated Upper Floridan aquifer water levels decreased and were in the 39th percentile.

RAINFALL

The rainfall data used for all tabulations in this report are provided to the District under contract with an external vendor. These data are created by enhancing contractor-developed NEXRAD radar rainfall imagery with 15-minute rainfall data collected from the District's network of real-time gauges. This process results in rainfall estimates for every 1.5 square-miles over the entire District, filling in those portions where rainfall data collection would otherwise be limited due to gaps in the gauging network.

Rainfall data are evaluated by using the current values to calculate percentiles in order to determine how normal or abnormal they are. As defined by the United States Geological Survey (USGS, a percentile is a value on a scale of one hundred that indicates the percent of a distribution that is equal to or below it. For example, a rainfall total that is calculated to be equivalent to the 90th percentile indicates that it is higher than 90 percent of the rainfall totals ever recorded for this month during all years that rainfall has been measured.

Percentiles for rainfall were calculated from the historical record by region, and by specific interval. The "wet season" total is the sum of the rainfall from June through September. The "dry season" total is the sum of the rainfall from October through May. The annual total characterization was calculated from a dataset of moving 12-month rainfall sum for the same period (1915 through the most recent completed year). The moving 12-month rainfall sum was used for annual statistics because it provided a much larger dataset, and therefore a better estimate of the true percentiles. The historical 12-month cumulative average is updated monthly.

Characterization ranges were established for each region, and for the whole District, with breaks at the 10th (P10), the 25th (P25), the 75th (P75) and the 90th (P90) percentiles. The normal range for rainfall is defined by totals that fall on or between the 25th to 75th percentiles of the historical monthly average for each region and where the 50th percentile represents the historical median. The zero percentile indicates a new period-of-record low and the 100th percentile is a new record high. The rainfall in inches for each percentile break, by rainfall interval and by region and the characterization ranges are summarized in the Appendix.

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During the 12-month period from April 1, 2022, through March 31, 2023, the average rainfall totals in the northern counties were classified as “drier than normal,” while the central counties were classified as “normal” and the southern counties were classified as “wetter than normal.” The northern counties received an average of 44.77 inches of rainfall, equivalent to the 17th percentile of the historical record. The central counties received an average of 52.17 inches of rainfall, equivalent to the 49th percentile. The

southern counties received an average of 58.90 inches of rainfall, equivalent to the 78th percentile. The Districtwide rainfall average was 52.51 inches, which is equivalent to the 51st percentile of the historical annual record.

Tampa Monthly Climate Summary for March 2023

According to the National Weather Service (NWS), the monthly average temperature (°F) for Tampa was 72.3 degrees, which was 3.7 degrees above normal. The highest temperature recorded during the month was 88.0 degrees, while the lowest temperature recorded during the month was 47.0 degrees. March 2023 monthly average temperature of 72.3 degrees ranks as the 7th warmest March since records began in 1890. The warmest March had an average monthly temperature of 74.4 degrees, which occurred in 2012.

Temperature and Precipitation Outlook

The Climate Prediction Center's (CPC) three-month weather forecast, as of April 20, 2023, indicates above-normal chances for rainfall in all three regions of the District, during the composite 3-month period of May through July 2023. The temperature forecast for this same time-period indicates above-normal temperatures throughout the District.

For more information log on to the CPC's website at:

http://www.cpc.ncep.noaa.gov/products/OUTLOOKS_index.html

RELATIONSHIP OF MARCH 2023 TO HISTORICAL RAINFALL AVERAGES

All units in inches.

Regional Summary

Region	*MAR 2023 Average Rainfall*	*Historic Average for MAR*	*Depature from Historical Average*	*Calendar Year 2023 Cumulative Rainfall JAN-MAR*	*Calendar Year Historical 2023 Cumulative Rainfall JAN-MAR*	*Departure from Historical Cumulative MAR 2023*	*Cumulative 12-Month Rainfall MAY 2022-MAR 2023*	*Historical 12-month Cumulative Rainfall*	*Departure from Historical 12-month Cumulative*
Northern Counties	0.92	3.77	-2.85	3.33	9.46	-6.13	44.77	53.55	-8.78
Central Counties	0.45	3.35	-2.90	2.57	8.60	-6.03	52.17	52.35	-0.17
Southern Counties	0.34	2.88	-2.54	1.67	7.59	-5.91	58.90	52.35	6.55
District All Counties	0.54	3.25	-2.71	2.46	8.38	-5.92	52.51	52.75	-0.23

Counties by Region

NORTHERN COUNTIES	*MAR 2023 Average Rainfall*	*Historic Average for MAR*	*Depature from Historical Average*	*Calendar Year 2023 Cumulative Rainfall JAN-MAR*	*Calendar Year Historical 2023 Cumulative Rainfall JAN-MAR*	*Departure from Historical Cumulative MAR 2023*	*Cumulative 12-Month Rainfall MAY 2022-MAR 2023*	*Historical 12-month Cumulative Rainfall*	*Departure from Historical 12-month Cumulative*
Levy	2.01	3.86	-1.85	4.97	10.22	-5.25	45.18	53.92	-8.74
Marion	1.91	3.82	-1.91	4.57	9.84	-5.26	43.19	54.21	-11.03
Citrus	0.44	3.87	-3.42	2.70	9.52	-6.82	41.47	54.10	-12.63
Sumter	0.50	3.72	-3.22	2.46	9.19	-6.73	46.65	51.94	-5.29
Hernando	0.25	3.80	-3.55	2.72	9.37	-6.65	46.63	54.93	-8.29
Lake	0.39	3.49	-3.11	2.47	8.71	-6.24	52.14	51.91	0.24
CENTRAL COUNTIES									
Pasco	0.27	3.66	-3.39	2.38	9.14	-6.75	49.51	53.96	-4.45
Pinellas	0.15	3.23	-3.08	1.82	8.56	-6.74	43.94	51.61	-7.67
Hillsborough	0.40	3.23	-2.83	2.47	8.43	-5.95	49.97	52.57	-2.60
Polk	0.64	3.18	-2.54	2.86	8.14	-5.29	56.45	52.00	4.44
SOUTHERN COUNTIES									
Manatee	0.16	2.94	-2.78	1.57	7.93	-6.35	53.69	53.32	0.38
Hardee	0.22	2.78	-2.56	1.53	7.38	-5.85	63.47	52.12	11.35
Highlands	0.62	2.75	-2.13	1.80	7.15	-5.35	55.26	52.02	3.24
Sarasota	0.30	2.84	-2.53	1.71	7.58	-5.87	58.72	52.59	6.13
DeSoto	0.32	2.73	-2.41	1.73	7.08	-5.35	62.71	51.82	10.89
Charlotte	0.65	2.58	-1.93	1.82	6.86	-5.04	58.72	52.50	6.22

MARCH 2023 RAINFALL CHARACTERIZATION

All units in inches.

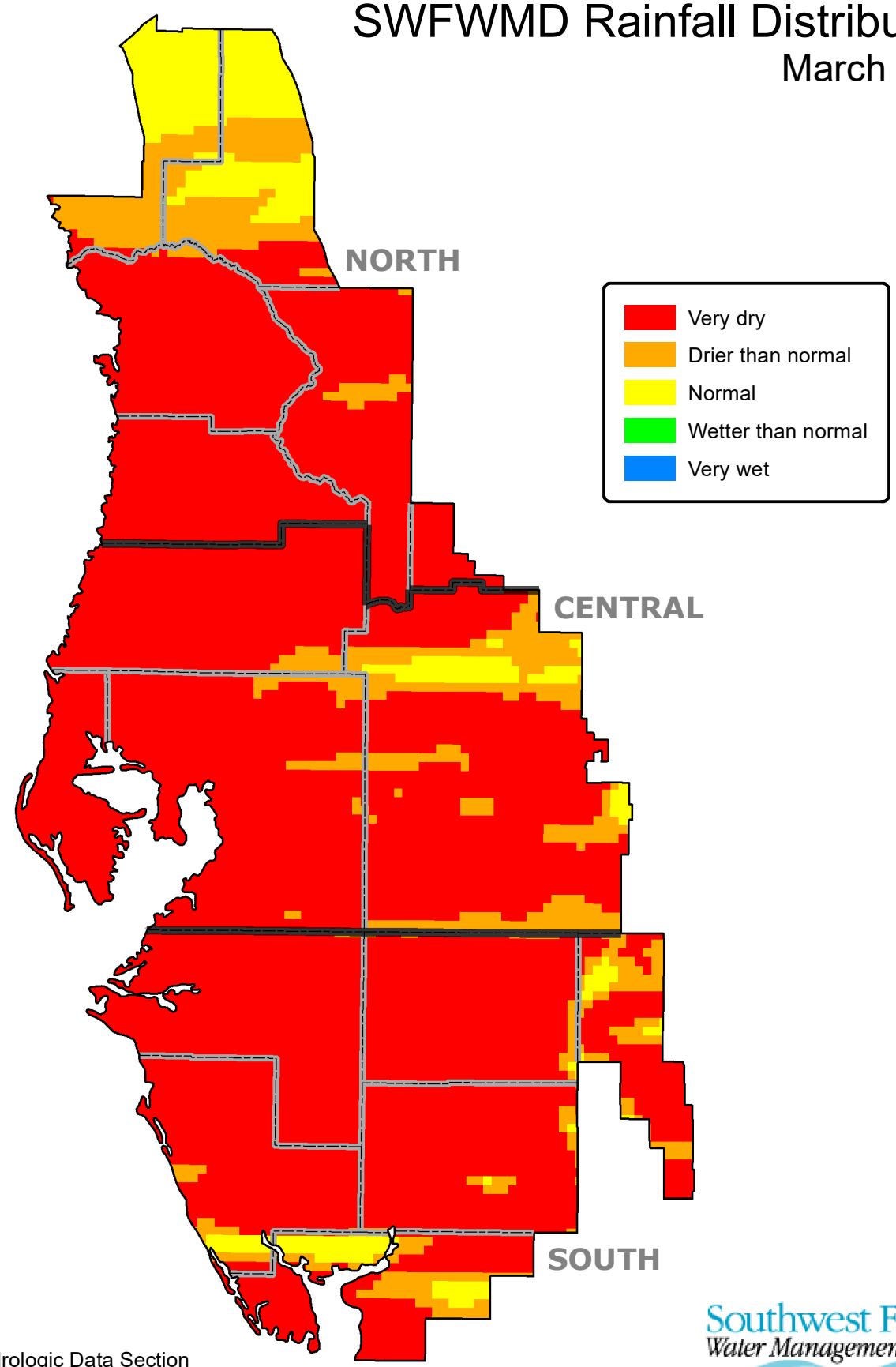
Regional Summary

Region	*MAR 2023 Average Rainfall*	*Historical MAR Percentile*	*MAR Rainfall Characterization*	*Cumulative 12-Month Rainfall MAY 2022-MAR 2023*	*Historical 12-month Cumulative Percentile*	*12-month Cumulative Rainfall Characterization*
Northern Counties	0.92	10	Drier than normal	44.77	17	Drier than normal
Central Counties	0.45	4	Very dry	52.17	49	Normal
Southern Counties	0.34	3	Very dry	58.90	78	Wetter than normal
District All Counties	0.54	4	Very dry	52.51	51	Normal

Counties by Region

NORTHERN COUNTIES	*MAR 2023 Average Rainfall*	*Historical MAR Percentile*	*MAR Rainfall Characterization*	*Cumulative 12-Month Rainfall MAY 2022-MAR 2023*	*Historical 12-month Cumulative Percentile*	*12-month Cumulative Rainfall Characterization*
Levy	2.01	29	Normal	45.18	18	Drier than normal
Marion	1.91	23	Drier than normal	43.19	13	Drier than normal
Citrus	0.44	6	Very dry	41.47	8	Very dry
Sumter	0.50	5	Very dry	46.65	29	Normal
Hernando	0.25	5	Very dry	46.63	19	Drier than normal
Lake	0.39	5	Very dry	52.14	56	Normal
CENTRAL COUNTIES						
Pasco	0.27	5	Very dry	49.51	30	Normal
Pinellas	0.15	2	Very dry	43.94	20	Drier than normal
Hillsborough	0.40	5	Very dry	49.97	42	Normal
Polk	0.64	6	Very dry	56.45	69	Normal
SOUTHERN COUNTIES						
Manatee	0.16	3	Very dry	53.69	56	Normal
Hardee	0.22	2	Very dry	63.47	88	Wetter than normal
Highlands	0.62	9	Very dry	55.26	64	Normal
Sarasota	0.30	6	Very dry	58.72	72	Normal
DeSoto	0.32	5	Very dry	62.71	86	Wetter than normal
Charlotte	0.65	21	Drier than normal	58.72	74	Normal

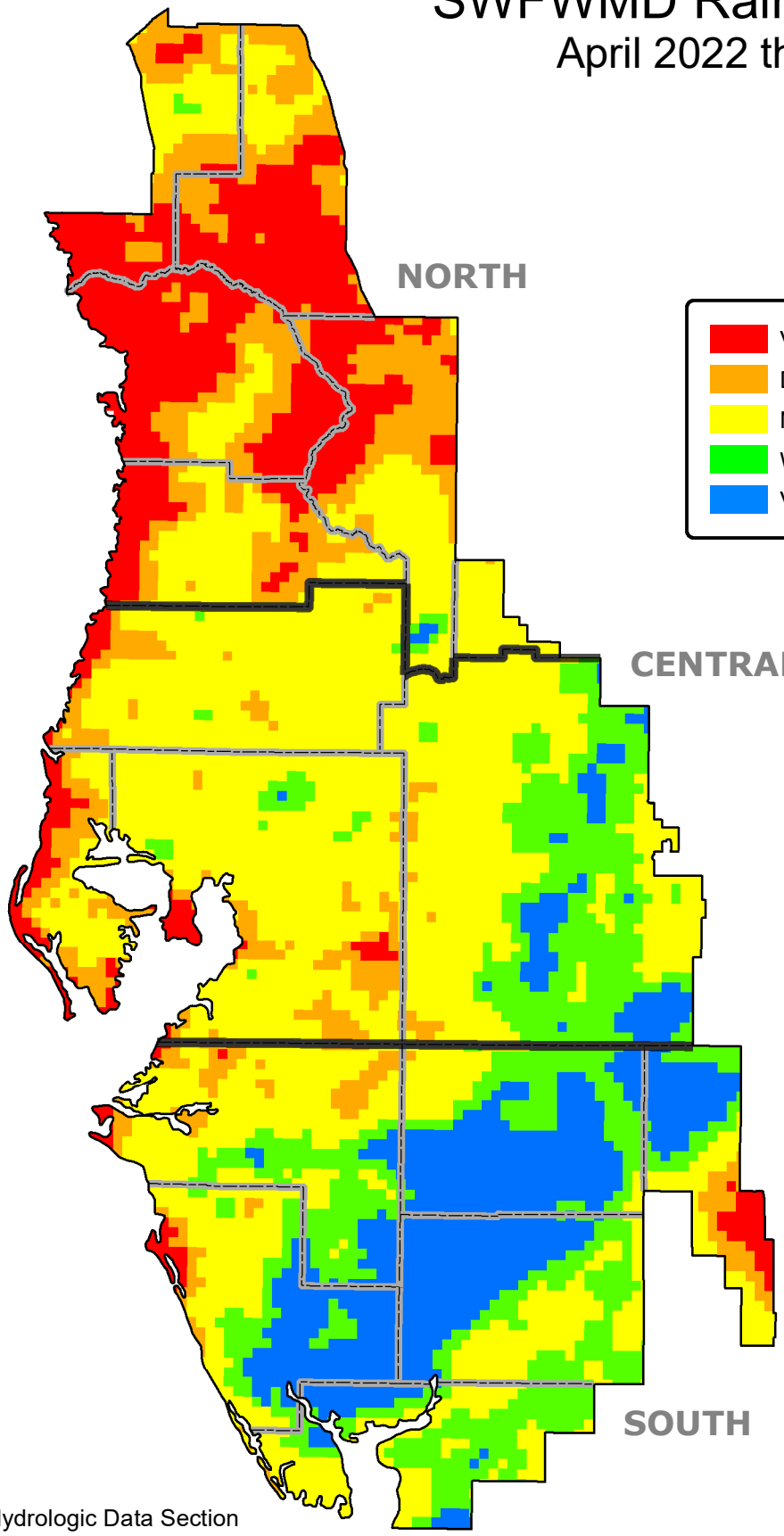
SWFWMD Rainfall Distribution
March 2023



Hydrologic Data Section
Data source: Vieux, Inc.

Southwest Florida Water Management District

SWFWMD Rainfall Distribution
April 2022 through March 2023



Hydrologic Data Section
Data source: Vieux, Inc.

Southwest Florida Water Management District

SURFACE WATER

Lakes

Across the District, 75 lakes have been selected as excellent indicators of current surface water conditions (see index map in Appendix). Water levels of these lakes are read monthly. In general, these lakes are concentrated in four regions, the northern region of Citrus, Hernando, and Sumter Counties, the Tampa Bay region of Hillsborough and Pasco Counties, the Polk Uplands region of northern Polk County, and the Lake Wales Ridge region of Polk and Highlands Counties. In this report, current monthly lake levels are tabulated and compared with previous records as well as District-established management levels. In addition, lake-level data representative of the four regions are presented in hydrographs showing a 15-year history of water levels, as a general indicator of surface-water conditions in that region.

The District's Governing Board (the Board) has established lake management levels for approximately 410 lakes within District boundaries, which are specified in Chapter 40D-8, Florida Administrative Code (F.A.C.). Management levels help protect the water resources of the District and the ecology of the lake or water-body for which it was established. In this report, the following three management levels are used to indicate normal and low lake levels: the Minimum Flood (MF) level, the Minimum Low Management (MLM) level, and the Minimum Extreme Low Management (MELM) level. In general, the MF level corresponds to the normal high level, the MLM to the normal low level, and the MELM to a drought-year low. These levels were derived from various sources, including technical publications, topographic maps, Water Resource Data Reports of the USGS, and other studies. Field investigations are also used to determine past surface levels from water marks, wetland vegetation, dry land vegetation, and to establish the elevation of septic tanks, docks, sea walls, roads and floor slabs.

During a normal year, each of the indicator lakes should reach both the designated normal high (MF) and the normal low (MLM) levels. In addition, it is generally beneficial for lakes to reach the adopted drought year low (MELM) level every four to six years for a short period of time for the biological health of the lake. In this report, hydrographs of representative lakes compare current and recent water levels against **"normal ranges"** defined by the adopted MF and MLM levels.

Of the 75 lakes presented in this report, 17 have water-control structures. These structures are used for water conservation and do not generally influence the water levels with regard to meteorologically wet or dry conditions. During periods of extreme high water, the structures may be operated to minimize flooding.

Compared to February data, 74 of the 75 lakes monitored for this report recorded water level decreases. Water level data was missing for Lake Annie located in the Lake Wales Ridge region. Average water levels decreased in the Northern, Tampa Bay, Polk Uplands and Lake Wales Ridge regions by 0.55, 0.52, 0.41 and 0.58 foot, respectively. Districtwide, average water levels decreased by 0.50 foot, compared to last month.

Compared to March 2022 data, 45 of the 75 lakes monitored for this report recorded water level decreases, while 28 recorded increases and one saw no change in water level. Water level data was missing for Lake Annie. In the Northern and Tampa Bay regions, average lake levels were lower by 0.56 and 0.30 foot, respectively, while in the Polk Uplands and Lake Wales Ridge regions, average levels were higher by 0.45 and 0.76 foot, respectively. Districtwide, average lake levels were lower by 0.04 foot, compared to last year's levels.

In March 2023, water levels in 55 of the 75 lakes were above the base of the annual normal range, while 19 were below the base level. Water level data was missing for Lake Annie. Lake levels in the Northern region averaged 0.56 foot below the base of the annual normal range, while water levels in the Tampa Bay, Polk Uplands and Lake Wales Ridge regions averaged 0.35 foot, 1.60 feet, and 0.15 foot, respectively, above the base of the annual normal range. Districtwide, average lake levels were 0.48 foot above the base of the annual normal range. Water levels in 68 of the 75 lakes were above the drought year levels.

SUMMARY OF LAKE ELEVATIONS OF REGIONAL LAKES (feet)

All elevations are referenced to the NGVD29 datum. "M" indicates missing or undetermined value.

NORTHERN LAKES

Lake Name	County	Beginning of Record	FEB 2023	MAR 2023	MAR 2022	Change from FEB 2023	Change from MAR 2022	Diff from MELM	(MELM) Drought Year Low	(MLM) Normal Year Low	(MF) Normal Year High	Period of Record Low	Record Low Date	Period of Record High	Record High Date
Crews Lake	Pasco	1986	50.80	50.00	51.08	-0.80	-1.08	0.00	50.00	52.00	55.00	42.63	APR 2001	54.92	MAR 1998
Floral City Pool	Citrus	1981	40.48	39.88	40.75	-0.60	-0.87	1.63	38.25	40.25	42.50	30.35	JUN 2001	42.66	SEP 2004
Hancock Lake	Pasco	1978	101.12	100.46	100.16	-0.66	0.30	-1.54	102.00	104.00	106.50	90.00	MAR 2009	108.90	MAR 1998
Hernando Pool	Citrus	1985	38.18	37.66	38.49	-0.52	-0.83	2.91	34.75	36.75	39.00	31.08	JUL 2001	40.17	FEB 1998
Hunters Lake	Hernando	1967	17.19	16.59	17.37	-0.60	-0.78	0.59	16.00	17.50	20.50	11.70	JUN 2001	20.50	MAR 1970
Inverness Pool	Citrus	1985	39.24	38.71	39.84	-0.53	-1.13	2.46	36.25	38.25	40.50	31.45	MAY 2001	40.89	OCT 2004
Lake Iola	Pasco	1984	143.34	142.92	141.91	-0.42	1.01	0.42	142.50	145.00	147.50	128.96	MAY 2012	148.70	JAN 1989
Lake Lindsey	Hernando	1982	67.25	66.73	67.61	-0.52	-0.88	2.23	64.50	66.00	69.00	59.38	MAY 2012	69.47	MAR 1998
Little Lake (Consuella)	Citrus	1985	40.39	39.69	40.70	-0.70	-1.01	2.44	37.25	39.00	41.50	31.10	MAY 2001	42.84	SEP 2004
Lake Miona	Sumter	1985	54.24	53.65	54.49	-0.59	-0.84	2.65	51.00	53.00	55.00	47.88	MAY 2002	55.47	OCT 2019
Moon Lake	Pasco	1990	39.68	39.10	38.49	-0.58	0.61	3.60	35.50	37.50	40.50	32.98	APR 2009	41.26	SEP 2004
Lake Panasoffkee	Sumter	1962	39.58	39.44	40.08	-0.14	-0.64	0.94	38.50	39.50	42.50	36.87	JUN 2007	43.04	OCT 2004
Lake Pasadena	Pasco	1984	90.52	89.87	90.46	-0.65	-0.59	-0.13	90.00	91.50	94.50	81.56	MAY 2001	94.86	OCT 2004
Spring Lake	Hernando	1965	179.31	178.89	180.01	-0.42	-1.12	0.64	178.25	181.25	184.25	174.85	JUN 1965	183.57	OCT 1984

TAMPA BAY LAKES

Lake Name	County	Beginning of Record	FEB 2023	MAR 2023	MAR 2022	Change from FEB 2023	Change from MAR 2022	Diff from MELM	(MELM) Drought Year Low	(MLM) Normal Year Low	(MF) Normal Year High	Period of Record Low	Record Low Date	Period of Record High	Record High Date
Lake Alice	Hillsborough	1981	40.55	39.97	39.93	-0.58	0.04	2.47	37.50	40.25	42.25	33.24	MAY 2002	42.42	SEP 2004
Lake Ann-Parker	Pasco	1983	47.25	46.76	46.67	-0.49	0.09	1.76	45.00	45.75	48.75	43.28	JUN 2001	49.29	AUG 2015
Bay Lake	Hillsborough	1982	45.65	45.25	45.67	-0.40	-0.42	2.75	42.50	44.00	46.75	41.86	APR 1985	46.47	DEC 1997
Lake Brant	Hillsborough	1981	57.52	57.02	57.10	-0.50	-0.08	2.52	54.50	56.50	58.75	51.65	JUN 1994	59.57	AUG 2015
Brooker Lake	Hillsborough	1977	62.51	62.18	62.48	-0.33	-0.30	3.18	59.00	61.00	64.25	56.49	MAY 2002	64.08	DEC 1997
Calm Lake	Hillsborough	1982	48.94	48.34	48.85	-0.60	-0.51	3.34	45.00	47.50	50.50	41.88	JUN 2002	51.04	JUL 2015
Camp Lake	Pasco	1983	62.07	61.54	61.29	-0.53	0.25	2.54	59.00	61.75	64.00	50.82	MAY 2002	64.05	JUL 2015
Carlton Lake	Hillsborough	1976	90.51	89.58	91.20	-0.93	-1.62	1.58	88.00	90.50	93.50	86.82	MAY 2001	94.60	FEB 1998
Lake Carroll	Hillsborough	1985	36.49	35.92	35.90	-0.57	0.02	3.42	32.50	34.50	37.00	30.87	MAY 2002	37.87	AUG 2015
Church Lake	Hillsborough	1983	35.21	34.67	34.74	-0.54	-0.07	3.17	31.50	34.00	36.25	27.94	MAY 2002	36.90	JUL 1987
Lake Cooper	Hillsborough	1980	59.69	59.34	59.60	-0.35	-0.26	2.34	57.00	59.75	61.75	55.60	JUN 2001	62.44	AUG 2015
Crescent Lake	Hillsborough	1981	41.73	41.03	40.87	-0.70	0.16	2.53	38.50	40.00	42.50	35.34	JUN 2001	43.42	AUG 2015
Deer Lake	Hillsborough	1977	65.53	64.96	65.60	-0.57	-0.64	2.46	62.50	64.50	67.25	60.72	MAY 2002	67.42	DEC 1997
Egypt Lake	Hillsborough	1978	36.38	36.00	36.02	-0.38	-0.02	3.50	32.50	35.00	37.50	33.06	MAY 2000	38.15	SEP 1985
Gornto Lake	Hillsborough	1979	37.23	36.71	37.49	-0.52	-0.78	2.71	34.00	36.00	38.50	29.86	MAR 1979	39.48	FEB 1998
Lake Harvey	Hillsborough	1970	60.79	60.43	60.31	-0.36	0.12	2.43	58.00	60.25	62.50	53.94	MAY 2002	63.90	DEC 1997
Lake Hiawatha	Hillsborough	1981	50.01	49.53	49.43	-0.48	0.10	4.53	45.00	48.00	50.50	46.14	JUN 2000	51.16	JUL 2019
Horse Lake	Hillsborough	1930	44.47	43.79	44.97	-0.68	-1.18	1.79	42.00	44.00	46.50	36.33	JUN 2002	50.00	AUG 1959
Lake Keene	Hillsborough	1981	61.64	61.11	61.88	-0.53	-0.77	2.11	59.00	60.50	63.00	56.12	JUN 2002	63.69	SEP 2017
Keystone Lake	Hillsborough	1984	41.41	40.93	41.12	-0.48	-0.19	1.93	39.00	39.75	42.00	37.84	JUN 2000	43.64	AUG 2015
King Lake	Pasco	1983	102.58	102.10	102.36	-0.48	-0.26	2.10	100.00	102.50	105.25	94.20	APR 2009	104.80	MAR 1987
Lake Leclare	Hillsborough	1977	50.93	50.27	50.43	-0.66	-0.16	3.27	47.00	49.50	52.00	44.95	JUN 2001	52.99	JUL 2015
Lake Linda	Pasco	1983	65.36	64.85	64.92	-0.51	-0.07	2.85	62.00	64.00	66.75	60.07	MAY 2001	67.17	SEP 2017
Little Lake	Hillsborough	1979	45.17	44.57	44.99	-0.60	-0.42	2.57	42.00	43.50	46.50	38.06	JUN 1994	48.55	JUN 2017
Long Pond	Hillsborough	1978	44.62	44.11	45.00	-0.51	-0.89	2.11	42.00	44.00	46.50	36.33	MAY 1979	48.27	SEP 1998
Mud (Walden) Lake	Hillsborough	1978	112.75	112.52	112.73	-0.23	-0.21	2.02	110.50	112.50	115.00	111.45	MAY 2017	114.42	MAR 1978
Lake Padgett	Pasco	1965	69.18	68.74	69.02	-0.44	-0.28	1.24	67.50	69.00	71.25	66.27	JUN 2001	71.90	SEP 1988
Platt Lake	Hillsborough	1981	49.18	48.70	49.04	-0.48	-0.34	2.70	46.00	47.75	50.50	42.53	JUN 2001	51.61	AUG 2015
Rainbow Lake	Hillsborough	1981	38.26	37.58	38.19	-0.68	-0.61	2.58	35.00	37.50	40.50	29.82	JUN 2002	40.95	JUL 2015
Lake Stemper	Hillsborough	1983	60.39	59.95	60.02	-0.44	-0.07	1.95	58.00	59.50	62.00	53.36	JUN 2001	61.68	SEP 2004
Lake Thomas	Hillsborough	1981	62.30	61.78	62.16	-0.52	-0.38	2.53	59.25	61.25	63.50	56.48	JUN 2002	64.13	AUG 2015
Turkey Ford Lake	Hillsborough	1970	50.38	49.97	50.34	-0.41	-0.37	-0.03	50.00	51.50	54.00	48.07	JUN 1985	55.28	SEP 1988
Lake Wimauma	Hillsborough	1985	80.86	80.34	80.12	-0.52	0.22	-0.66	81.00	83.00	86.75	70.12	MAY 2001	84.38	MAR 1998

SUMMARY OF LAKE ELEVATIONS OF REGIONAL LAKES (feet), continued

All elevations are referenced to the NGVD29 datum. "M" indicates missing or undetermined value.

POLK UPLANDS LAKES

Lake Name	County	Beginning of Record	FEB 2023	MAR 2023	MAR 2022	Change from FEB 2023	Change from MAR 2022	Diff from MELM	(MELM) Drought Year Low	(MLM) Normal Year Low	(MF) Normal Year High	Period of Record Low	Record Low Date	Period of Record High	Record High Date
Lake Alfred	Polk	1990	131.67	131.22	130.73	-0.45	0.49	4.97	126.25	128.25	130.75	124.17	MAY 2013	132.77	DEC 2020
Lake Ariana	Polk	1984	136.65	136.31	136.34	-0.34	-0.03	3.81	132.50	134.50	137.00	131.68	MAY 2009	137.66	JAN 2016
Lake Arietta	Polk	1970	142.49	142.11	141.80	-0.38	0.31	4.11	138.00	141.00	144.00	136.50	MAY 1977	144.33	OCT 2004
Blue Lake South	Polk	1986	115.17	114.65	113.31	-0.52	1.34	2.15	112.50	114.00	117.00	103.38	FEB 1991	119.19	DEC 2005
Lake Bonny	Polk	1954	130.51	130.20	129.29	-0.31	0.91	4.20	126.00	128.00	130.50	122.34	MAY 2009	133.08	SEP 2004
Lake Buffum	Polk	1982	131.59	131.07	131.09	-0.52	-0.02	4.32	126.75	129.25	132.25	123.90	JUN 1991	133.00	JUN 2005
Clearwater Lake	Polk	1979	143.66	143.33	140.44	-0.33	2.89	4.33	139.00	141.00	143.50	137.93	MAY 2001	146.06	AUG 1984
Lake Conine	Polk	1989	128.51	128.19	128.32	-0.32	-0.13	3.69	124.50	126.50	128.75	123.83	NOV 2009	129.95	SEP 2004
Eagle Lake	Polk	1965	129.45	129.06	128.98	-0.39	0.08	2.56	126.50	128.50	130.75	120.87	MAY 1967	131.50	SEP 1996
Lake Fannie	Polk	1967	125.38	124.88	124.91	-0.50	-0.03	4.88	120.00	123.50	125.75	118.67	MAY 1977	127.51	SEP 2004
Lake Garfield	Polk	1982	102.04	101.55	101.78	-0.49	-0.23	1.55	100.00	101.00	104.75	97.38	JUN 2001	105.70	FEB 1998
Lake Gibson	Polk	1984	142.68	142.23	142.33	-0.45	-0.10	0.73	141.50	141.50	143.50	140.21	MAY 2009	145.40	SEP 1988
Lake Hamilton	Polk	1962	121.10	120.64	120.30	-0.46	0.34	3.39	117.25	119.00	121.50	111.25	MAR 2008	123.96	OCT 2004
Lake Helene	Polk	1961	142.98	142.73	141.55	-0.25	1.18	3.73	139.00	141.00	144.00	134.06	JUN 2008	146.71	OCT 2017
Lake Howard	Polk	1987	131.69	131.21	131.21	-0.48	0.00	4.21	127.00	129.50	132.00	127.69	MAY 2001	133.08	SEP 2004
Lake Juliana	Polk	1984	133.50	133.17	132.65	-0.33	0.52	5.67	127.50	130.00	132.50	127.40	NOV 2009	134.14	OCT 2022
Lake Mcleod	Polk	1983	130.54	130.13	129.12	-0.41	1.01	2.13	128.00	129.50	132.00	120.76	JUL 1985	131.98	SEP 1998
Lake Otis	Polk	1954	127.58	127.24	126.94	-0.34	0.30	4.24	123.00	125.00	128.00	119.58	MAY 1976	129.12	SEP 1960
Lake Ruby	Polk	1974	124.87	124.42	124.74	-0.45	-0.32	3.42	121.00	123.00	125.25	120.68	JUN 1974	125.98	SEP 2004

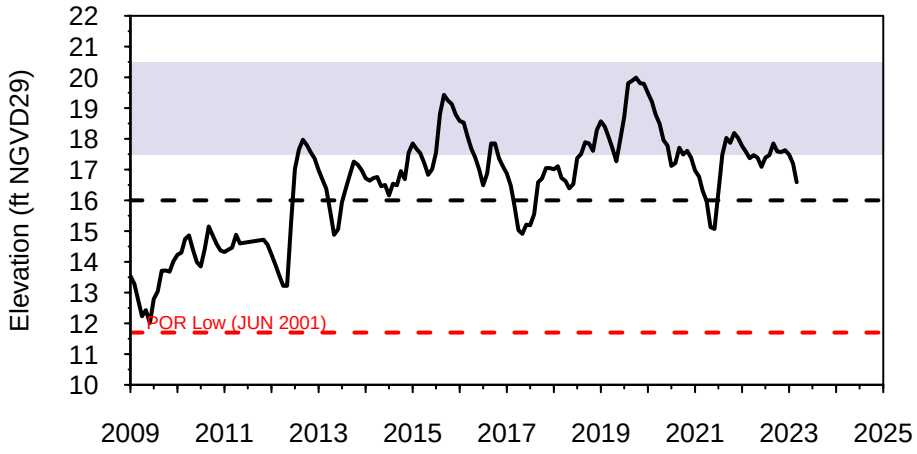
LAKE WALES RIDGE LAKES

Lake Name	County	Beginning of Record	FEB 2023	MAR 2023	MAR 2022	Change from FEB 2023	Change from MAR 2022	Diff from MELM	(MELM) Drought Year Low	(MLM) Normal Year Low	(MF) Normal Year High	Period of Record Low	Record Low Date	Period of Record High	Record High Date
Lake Annie	Polk	1983	M	M	116.41	M	M	M	114.00	116.00	119.00	108.36	JUN 1990	118.15	NOV 2020
Lake Clay	Highlands	1983	77.53	77.01	77.51	-0.52	-0.50	2.01	75.00	76.00	78.75	74.34	MAY 2001	78.82	JUN 2013
Crooked Lake	Polk	1982	119.85	119.25	118.11	-0.60	1.14	2.25	117.00	118.50	122.00	106.28	APR 1991	123.44	AUG 2005
Lake Jackson	Highlands	1984	102.37	101.79	101.55	-0.58	0.24	3.79	98.00	100.00	103.00	96.47	JUN 2008	103.75	SEP 2017
Lake Letta	Highlands	1981	99.34	98.55	97.09	-0.79	1.46	3.55	95.00	97.00	100.00	90.27	JUN 2008	100.85	NOV 2022
Lake Lotela	Highlands	1989	107.04	106.68	105.38	-0.36	1.30	2.68	104.00	105.00	108.50	96.63	JUN 2008	109.13	SEP 2017
Lake Placid	Highlands	1984	92.40	91.84	92.12	-0.56	-0.28	1.84	90.00	91.50	94.50	88.08	JUN 2008	94.24	SEP 2003
Starr Lake	Polk	1983	105.78	105.60	104.18	-0.18	1.42	-2.40	108.00	110.00	113.00	96.23	JUL 2001	109.80	DEC 2005
Trout Lake	Highlands	1981	97.51	96.49	95.15	-1.02	1.34	1.49	95.00	98.00	101.00	87.15	MAY 2001	99.89	SEP 2016

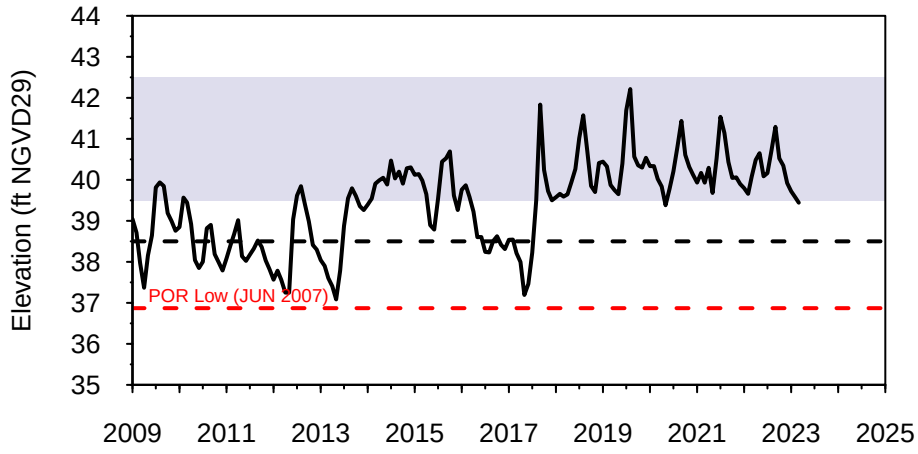
HYDROGRAPHS OF REGIONAL LAKES

15-Year Period of Record

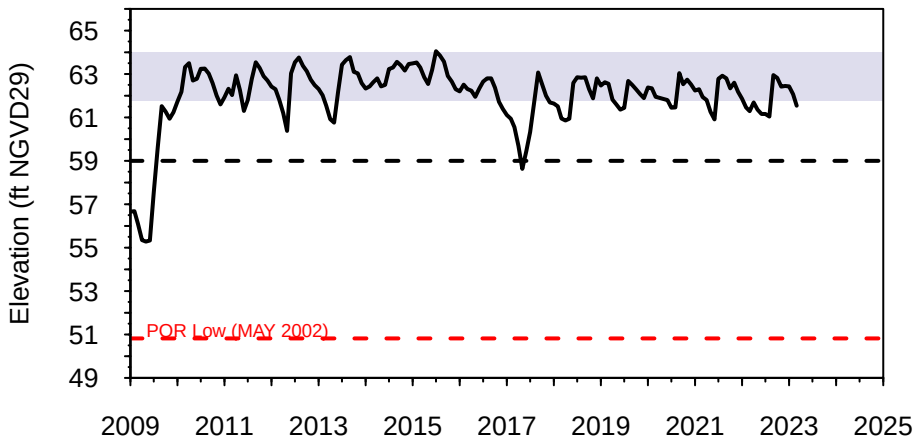
Hunters Lake
Northern Lakes



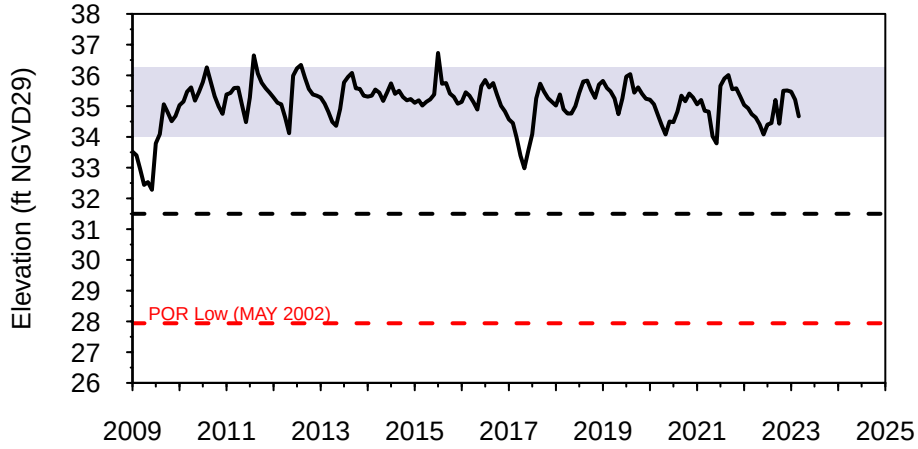
Lake Panasoffkee
Northern Lakes



Camp Lake
Tampa Bay Lakes



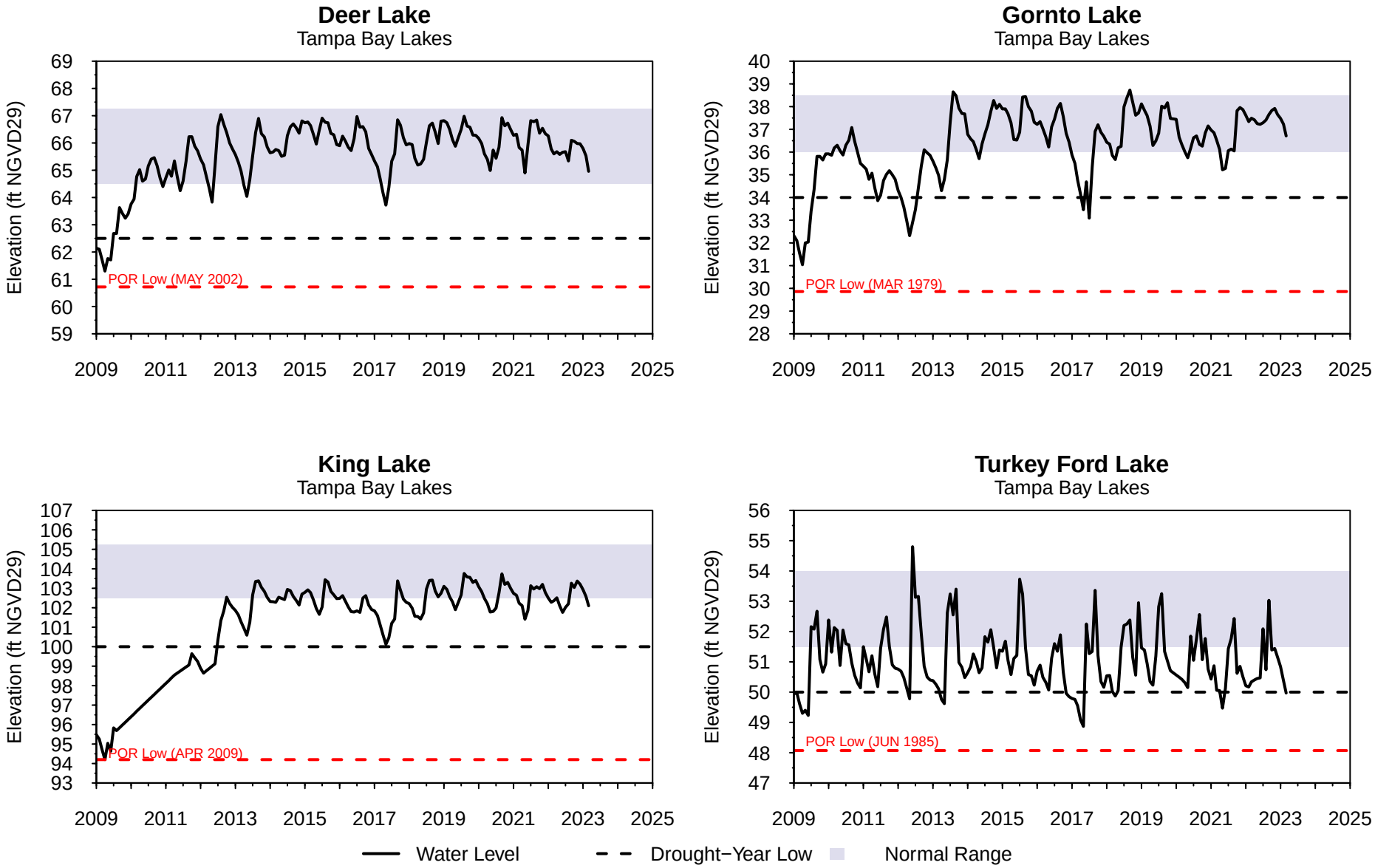
Church Lake
Tampa Bay Lakes



Water Level Drought−Year Low Normal Range

HYDROGRAPHS OF REGIONAL LAKES

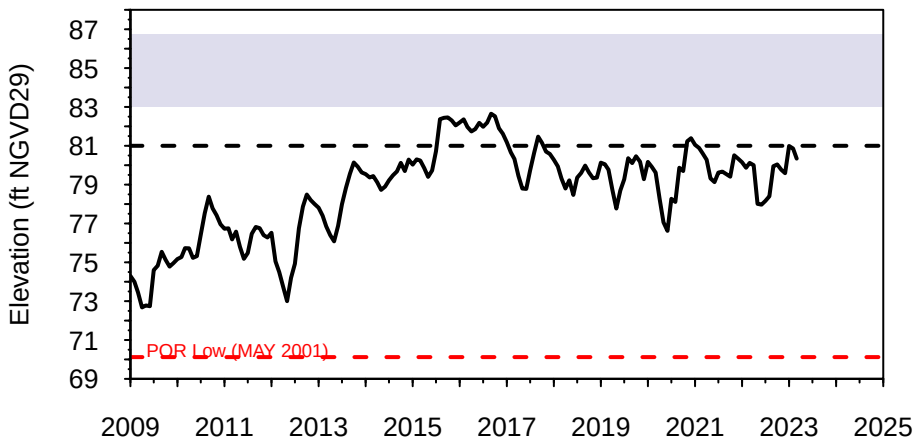
15-Year Period of Record



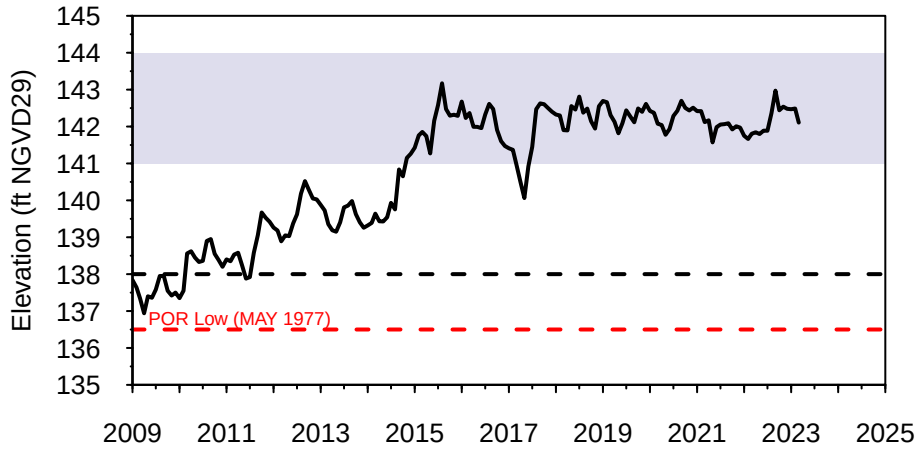
HYDROGRAPHS OF REGIONAL LAKES

15-Year Period of Record

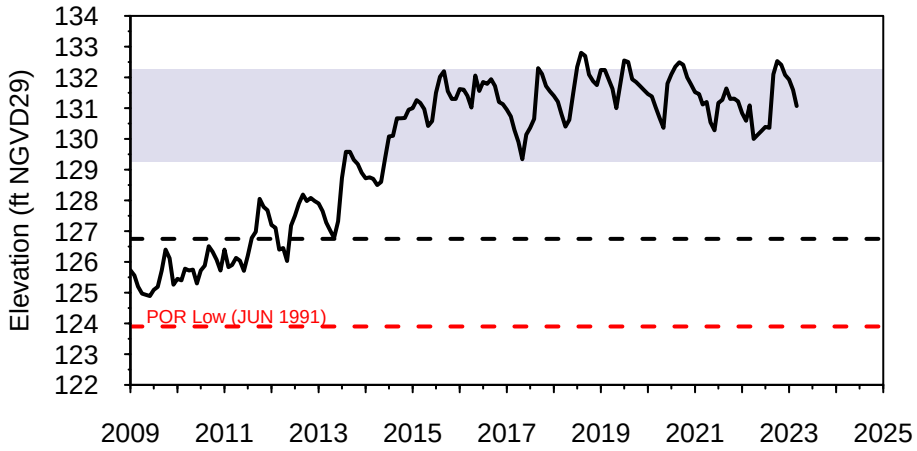
Lake Wimauma
Tampa Bay Lakes



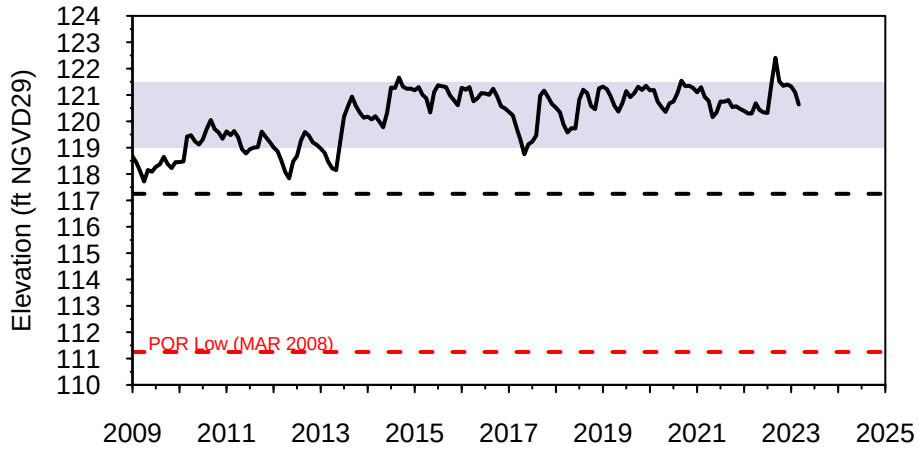
Lake Arietta
Polk Uplands Lakes



Lake Buffum
Polk Uplands Lakes



Lake Hamilton
Polk Uplands Lakes

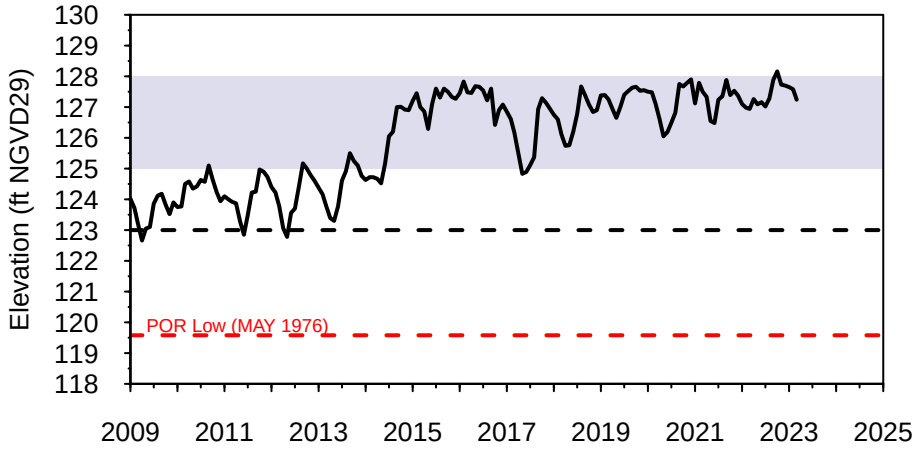


Water Level Drought−Year Low Normal Range

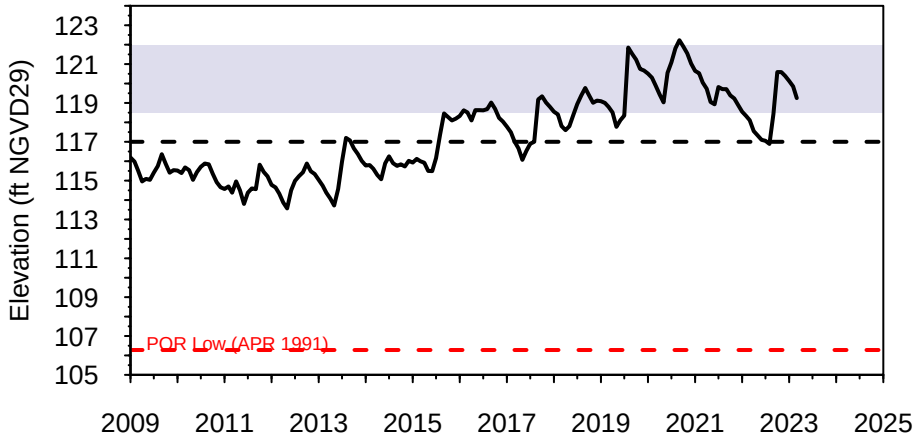
HYDROGRAPHS OF REGIONAL LAKES

15-Year Period of Record

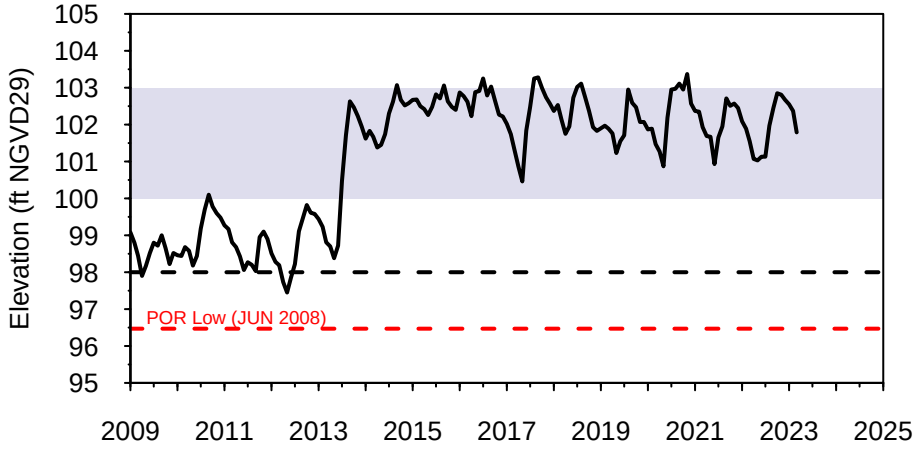
Lake Otis
Polk Uplands Lakes



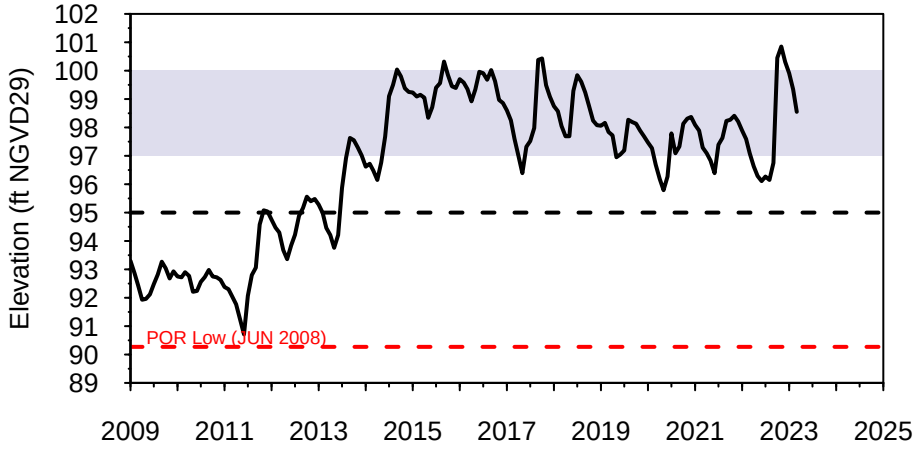
Crooked Lake
Lake Wales Ridge Lakes



Lake Jackson
Lake Wales Ridge Lakes



Lake Letta
Lake Wales Ridge Lakes



Water Level Drought−Year Low Normal Range

Streams

The District processes streamflow data collected by the U.S. Geological Survey (USGS) under a cooperatively funded program between the District and the USGS. Streamflow is recorded daily as water elevations at 12 gauging stations in three regions of the District (see index map in the Appendix). The USGS uses rating curves developed from water level elevations to calculate streamflow discharge in units of cubic feet per second (cfs). For this report, the reported streamflow values are the means of the daily discharge volumes for the current month. The period-of-record high and low values correspond to monthly means and not to peak events. Percentile values are calculated from the monthly means for the period of record, for each station. The percentile is the monthly mean statistically ranked on a scale of zero to 100 that indicates the percent of the period-of-record monthly means that are at or above the present monthly median. The zero percentile indicates a new period-of-record low and the 100th percentile is a new record high level. The current year's data are provisional and are subject to revision. Revised data are used for all calculations, as they become available.

Hydrographs are produced for each of the stream stations. Current monthly means for each station are compared to respective 25th and 75th percentiles of the period-of-record monthly means, reflecting the normal range of readings for the month.

Compared to February data, all 12 stations monitored for this report recorded decreased streamflow.

Compared to March 2022 data, nine of the 12 stations recorded streamflow decreases, while three recorded streamflow increases.

Compared to historical March discharge values, Withlacoochee River streamflow, measured at the Trilby station and the Holder station averaged in the 29th and 18th percentiles, respectively. Streamflow measured at the stations on the Anclote, Pithlachascotee and Hillsborough Rivers averaged in the 6th, 12th and 45th percentiles of respective historical March readings. Streamflow measured at the Alafia River, Little Manatee River and Peace River at Bartow stations averaged in the 12th, 26th and 29th percentiles of respective historical March readings. Additionally, streamflow measured at the Josephine Creek, Manatee River, Myakka River and Peace River at Arcadia stations averaged in the 16th, 14th, 18th and 16th percentiles of respective historical March readings.

SUMMARY OF STREAM DISCHARGE FROM MAJOR STREAMS, MARCH 2023

All units in cubic feet per second (cfs). "M" indicates missing or undetermined value.

Northern Counties

Stream Name	*Beginning Year of Record*	*MAR 2023 Discharge*	*FEB 2023 Discharge*	*MAR 2022 Discharge*	*Change from FEB 2023*	*Change from MAR 2022*	*MAR 2023 Percentile Rank*	*Period of Record Low*	*Record Low Date*	*Period of Record High*	*Record High Date*
Withlacoochee R at Trilby	1928	52.3	156.4	49.4	-104.1	2.9	29	0.1	JUN 2000	8840.0	JUN 1934
Withlacoochee R nr Holder	1928	322.5	651.3	556.2	-328.8	-233.7	18	33.0	MAR 2001	8660.0	APR 1960

Central Counties

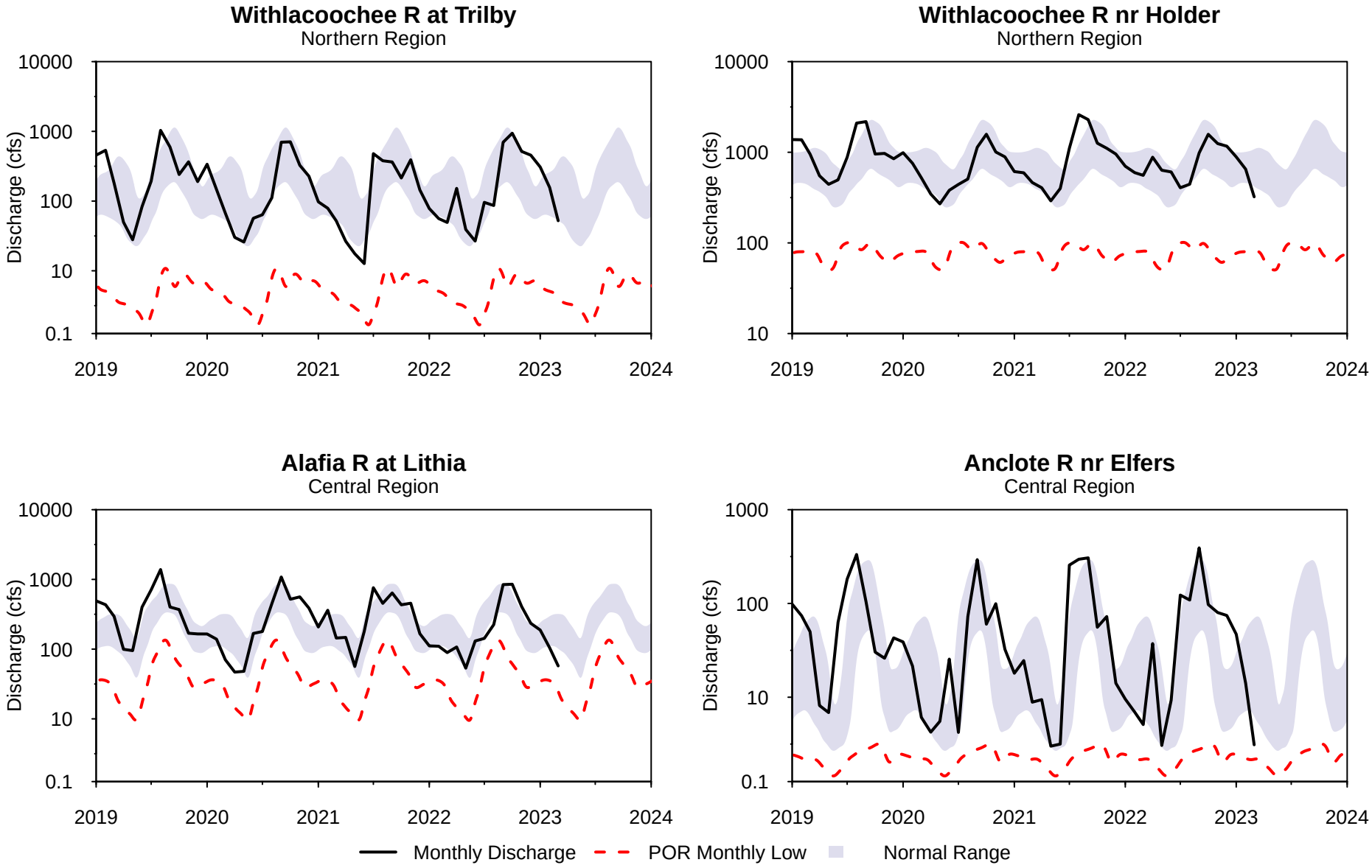
Stream Name	*Beginning Year of Record*	*MAR 2023 Discharge*	*FEB 2023 Discharge*	*MAR 2022 Discharge*	*Change from FEB 2023*	*Change from MAR 2022*	*MAR 2023 Percentile Rank*	*Period of Record Low*	*Record Low Date*	*Period of Record High*	*Record High Date*
Alafia R at Lithia	1932	57.5	104.3	89.1	-46.8	-31.6	12	4.1	MAY 2000	40800.0	SEP 1933
Anclote R nr Elfers	1946	3.1	14.1	5.1	-11.0	-2.0	6	0.8	MAY 1962	3710.0	JUL 1960
Hillsborough R nr Zephyrhills	1939	108.8	143.4	92.7	-34.6	16.1	45	27.0	JUN 2000	12300.0	MAR 1960
Little Manatee R nr Wim.	1939	38.1	60.9	47.8	-22.8	-9.7	26	0.9	DEC 1976	11100.0	SEP 1960
Peace R at Bartow	1939	33.7	58.4	43.7	-24.7	-10.0	29	0.0	MAY 2000	4100.0	SEP 1947
Pithlachascotee R nr NPR	1963	1.2	8.0	5.2	-6.8	-4.0	12	0.0	MAY 1981	2180.0	JUN 2012

Southern Counties

Stream Name	*Beginning Year of Record*	*MAR 2023 Discharge*	*FEB 2023 Discharge*	*MAR 2022 Discharge*	*Change from FEB 2023*	*Change from MAR 2022*	*MAR 2023 Percentile Rank*	*Period of Record Low*	*Record Low Date*	*Period of Record High*	*Record High Date*
Josephine Cr nr DeSoto C.	1946	9.2	22.9	16.5	-13.7	-7.3	16	0.5	MAY 1956	1680.0	SEP 1948
Manatee R nr Myakka Hd.	1966	7.2	12.4	17.6	-5.2	-10.4	14	0.1	MAY 1975	6440.0	JUN 2003
Myakka R nr Sarasota	1936	10.3	37.9	18.8	-27.6	-8.5	18	0.0	MAR 1938	12600.0	OCT 2022
Peace R at Arcadia	1931	112.3	325.8	109.6	-213.5	2.7	16	5.6	MAY 2000	49900.0	OCT 2022

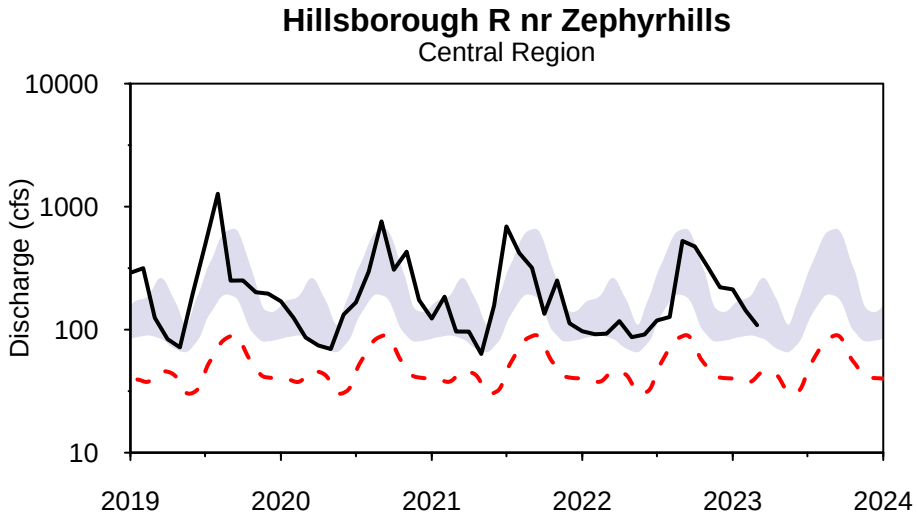
HYDROGRAPHS OF MAJOR STREAMS

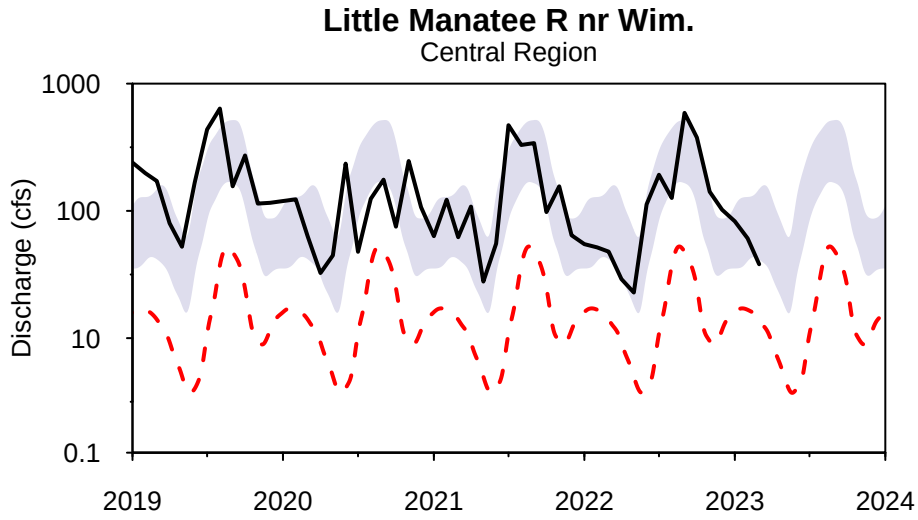
JANUARY 2019 to MARCH 2023

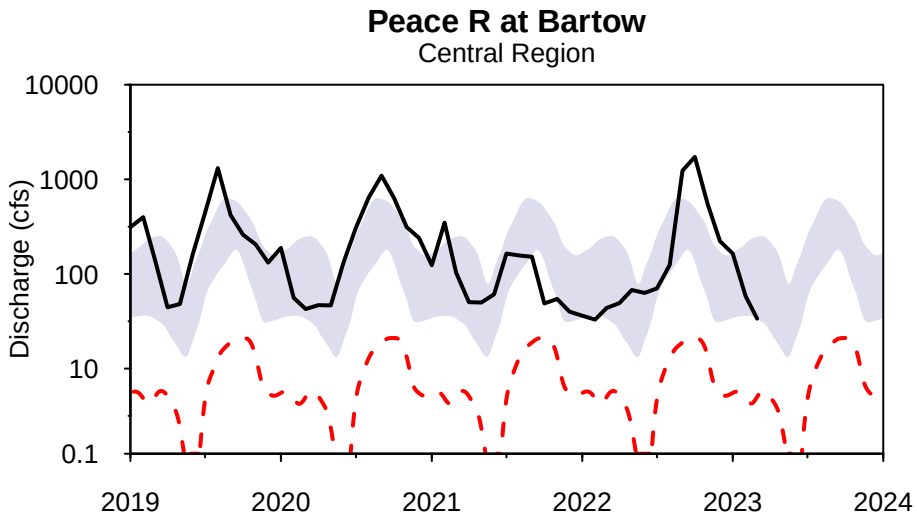


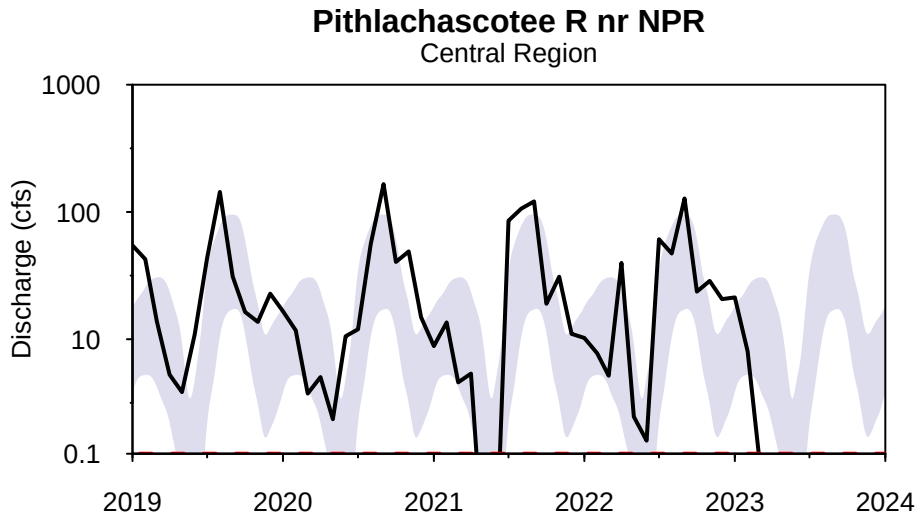
HYDROGRAPHS OF MAJOR STREAMS

JANUARY 2019 to MARCH 2023





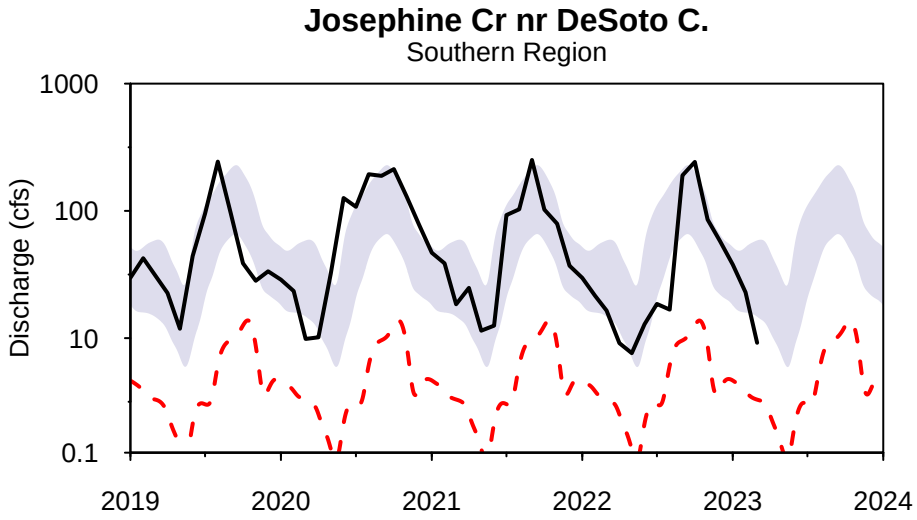


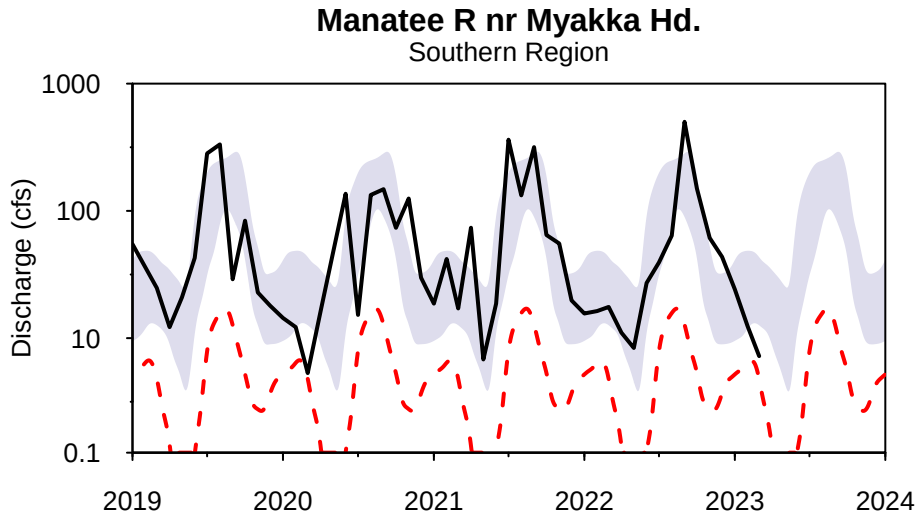


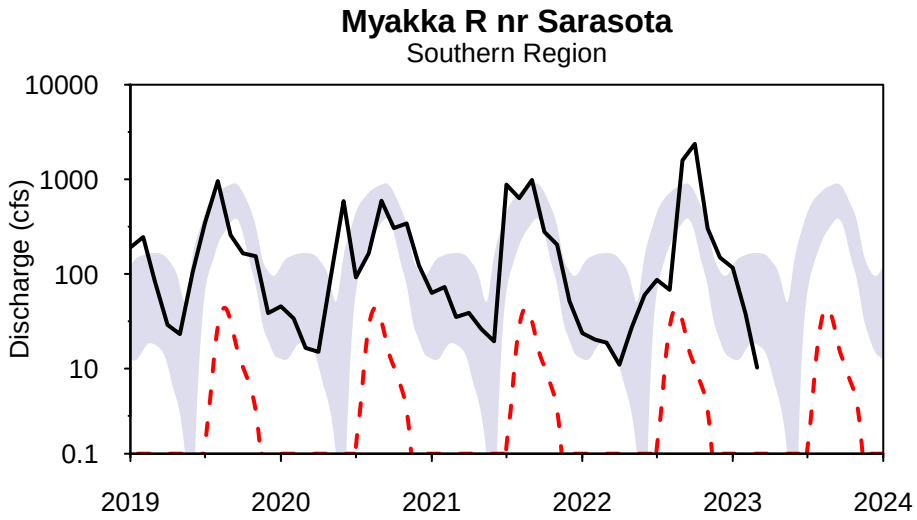
Monthly Discharge — POR Monthly Low — Normal Range

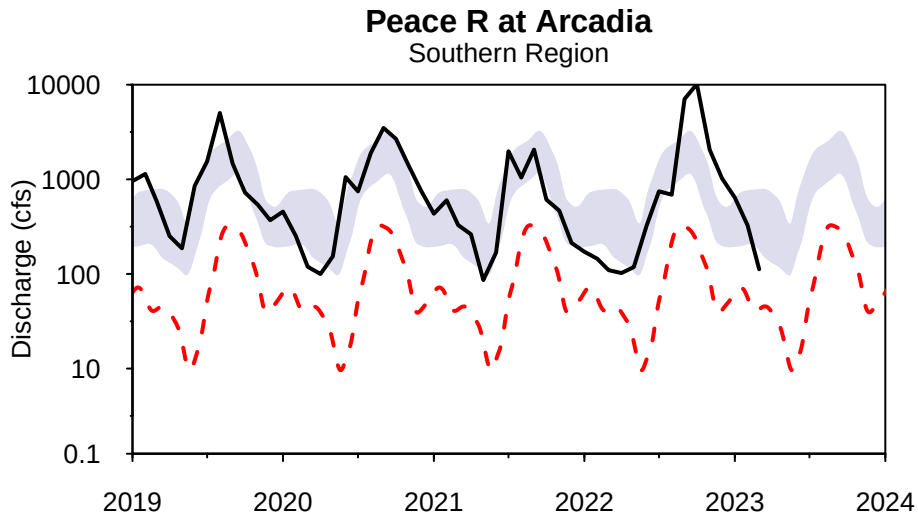
HYDROGRAPHS OF MAJOR STREAMS

JANUARY 2019 to MARCH 2023









Monthly Discharge — POR Monthly Low — Normal Range

Springs

The District processes springflow data collected by Tampa Bay Water through a mutual agreement and by the U.S. Geological Survey (USGS) under a cooperatively funded program between the District and the USGS. Springflow is monitored at six gauging stations in two regions of the District (see index map in the Appendix). Springflow data for Rainbow, Silver and Sulphur Springs are recorded as daily water levels. The USGS uses rating curves developed for these springs from historical water level elevations to calculate springflow discharge in units of cubic feet per second (cfs). Weeki Wachee Springs discharge (cfs) is provided as an instantaneous reading calculated by the USGS. Buckhorn and Lithia Springs discharge is obtained from Tampa Bay Water biweekly and weekly, respectively. Period-of-record high and low values correspond to monthly theoretical means and not to peak events. Values are reported as percentiles calculated from an analysis of historical monthly means recorded during a given month. The percentile is the monthly mean ranked on a scale of zero to 100, where the normal range is defined by flows between the 25th to 75th percentiles. The zero percentile indicates a new period-of-record low and the 100th percentile is a new record high. The values reported are provisional and are subject to revision at the end of the water year.

Compared to February data, five of the six stations monitored for this report recorded decreased springflow, while one recorded increased springflow.

Compared to March 2022 data, four of the six stations recorded decreased springflow, while two recorded increased springflow.

Compared to historical period-of-record values for March, total springflow measured in Rainbow, Silver and Weeki Wachee Springs, in the northern region, was in the 17th, 20th and 47th percentiles, respectively, of historical March readings. Springflow measured in Buckhorn, Lithia and Sulphur Springs, in the central region, was in the 53rd, 75th and 2nd percentiles, respectively, of historical March readings.

SUMMARY OF SPRING DISCHARGE FROM MAJOR SPRINGS, MARCH 2023

All units in cubic feet per second (cfs). "M" indicates missing or undetermined value.

Northern Counties

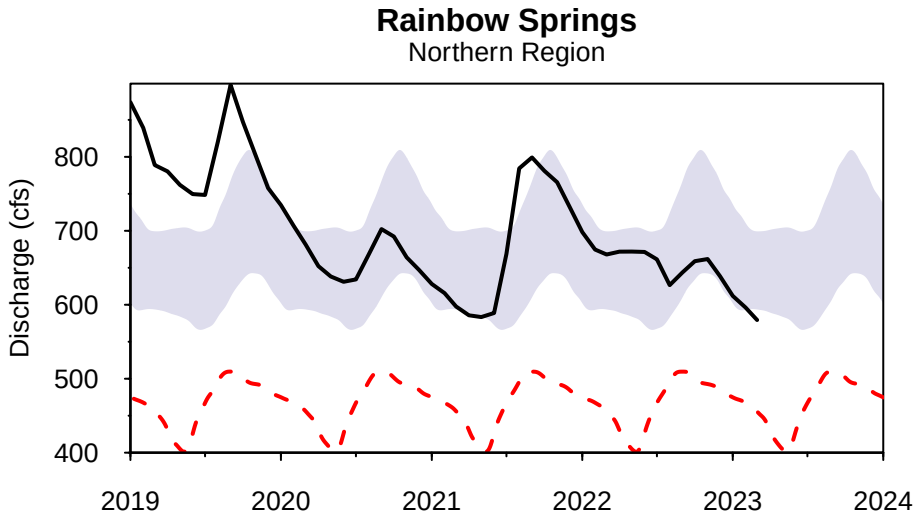
Spring Name	*MAR 2023 Discharge*	*FEB 2023 Discharge*	*MAR 2022 Discharge*	*Change from FEB 2023*	*Change from MAR 2022*	*MAR 2023 Percentile Rank*	*Period of Record Low*	*Record Low Date*	*Period of Record High*	*Record High Date*
Rainbow Springs	579.3	596.2	667.9	-16.9	-88.6	17	391.0	MAY 2012	1060.0	SEP 1988
Silver Springs	584.6	608.6	680.8	-24.0	-96.2	20	141.0	JUN 2012	1290.0	OCT 1960
Weeki Wachee Springs	147.8	157.3	158.3	-9.5	-10.5	47	101.0	JUN 1994	257.0	OCT 2004

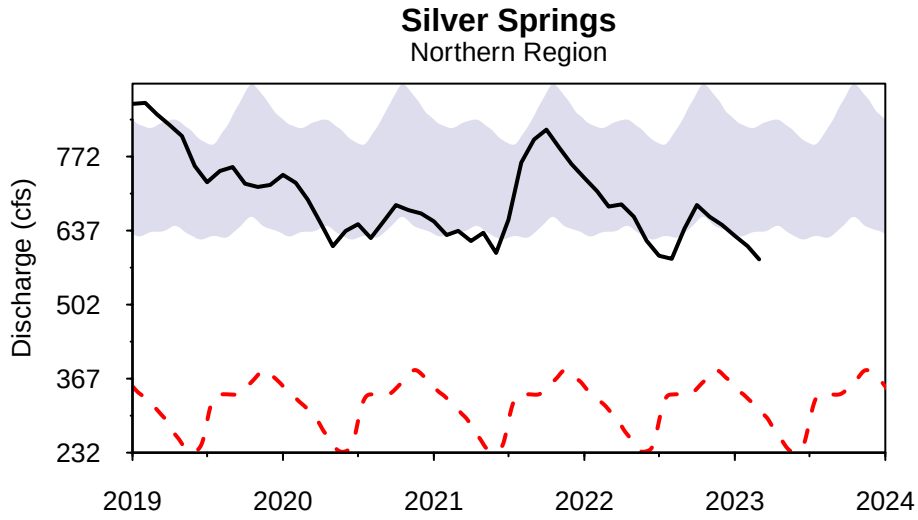
Central Counties

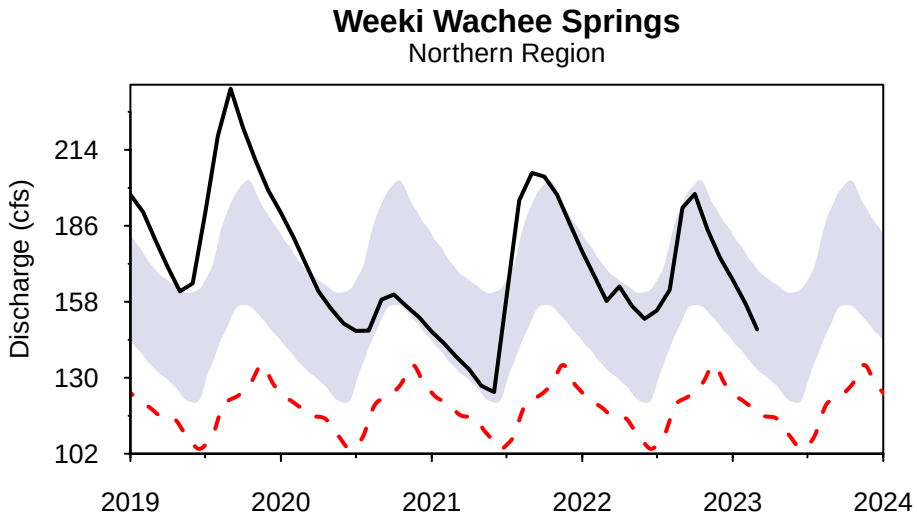
Spring Name	*MAR 2023 Discharge*	*FEB 2023 Discharge*	*MAR 2022 Discharge*	*Change from FEB 2023*	*Change from MAR 2022*	*MAR 2023 Percentile Rank*	*Period of Record Low*	*Record Low Date*	*Period of Record High*	*Record High Date*
Buckhorn Springs	11.2	10.9	10.0	0.3	1.2	53	2.2	MAY 2006	50.5	FEB 2015
Lithia Springs	43.9	49.9	37.8	-6.0	6.1	75	9.1	MAY 2000	91.5	NOV 2004
Sulphur Springs	0.0	22.3	0.1	-22.3	-0.1	2	0.0	JUN 1994	145.0	MAR 1960

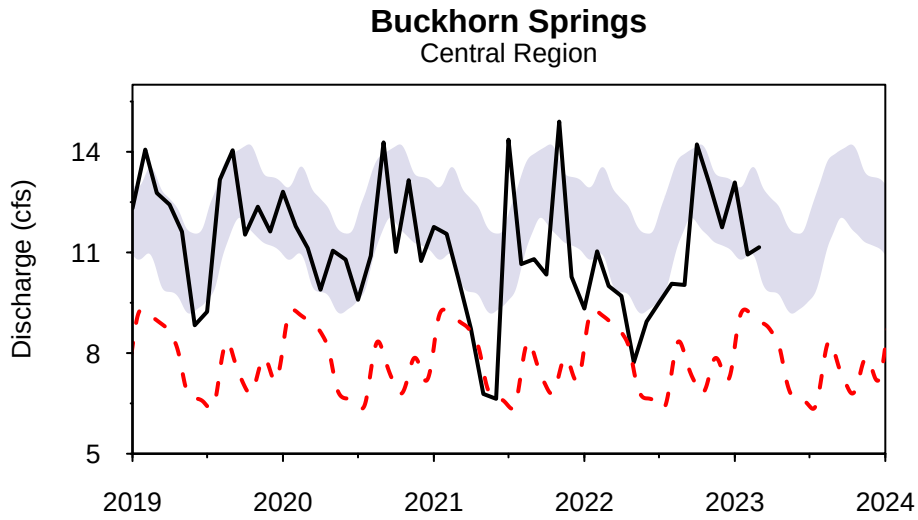
HYDROGRAPHS OF REGIONAL SPRINGS

JANUARY 2019 to MARCH 2023





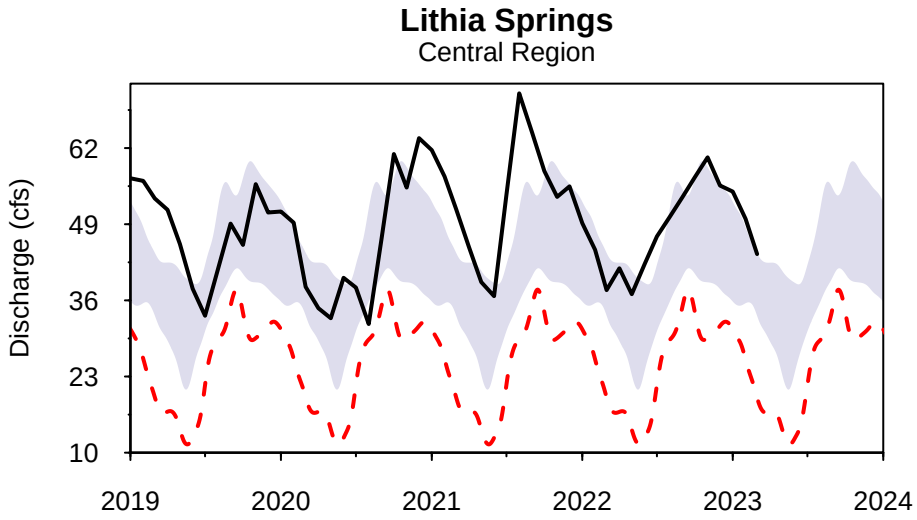


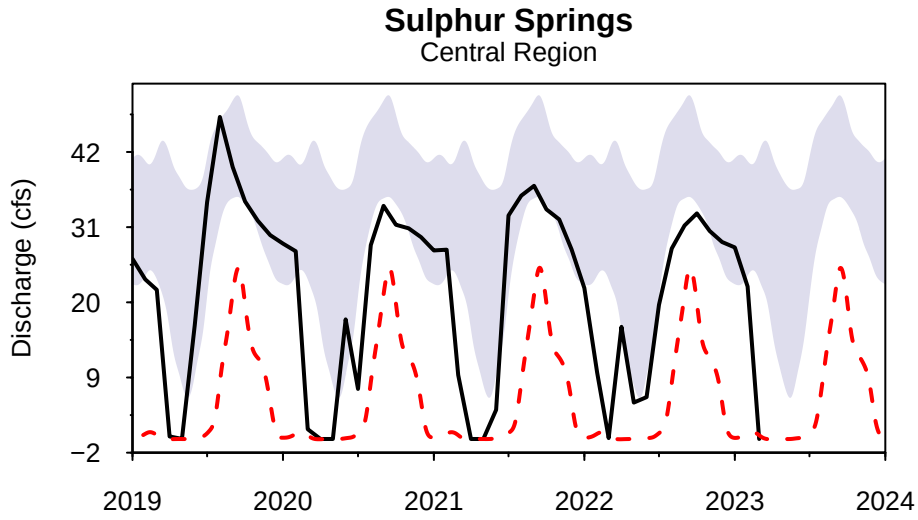


Monthly Discharge — POR Monthly Low — Normal Range

HYDROGRAPHS OF REGIONAL SPRINGS

JANUARY 2019 to MARCH 2023





Monthly Discharge — POR Monthly Low — Normal Range

GROUNDWATER

The groundwater section of this report provides groundwater level information for the Upper Floridan Aquifer (UFA) located within the District. As earlier indicated, the District is divided into three geographical regions defined by county boundaries (see index maps in the Appendix). In the northern counties, the UFA is generally at or near land surface, allowing rainfall to easily recharge (replenish) the aquifer system. In the central counties, the UFA can be unconfined or confined (overlain by thick clays). Where the UFA is confined, recharge to the aquifer from rainfall is low. In the southern counties, the UFA is confined.

Eighty-two UFA monitor wells are measured for this report to determine the relative health of groundwater levels Districtwide. Only monitor wells with an adequate and reliable period-of-record of water level measurements were selected for the network. For each well, the 25th and 75th percentiles ("low normal" and "high normal," respectively) were calculated for each week of the year using the period-of-record data. The 25th and 75th percentiles are used to represent the lower and upper limits of the normal range, as they are considered a reliable and robust measure of the normal range and are less affected by extremes in the data record. The end-of month water-level readings measured for this report are compared to their corresponding normal ranges. Trend data from 16 wells are shown in hydrographs to compare current water levels to the low normal and high normal levels. Data from all 82 wells is further compiled into regional statistics for the three regions of the District. There are 20 wells located in the northern counties, 32 wells located in the central counties and 30 wells located in the southern counties, that are currently used for determining the regional percentiles. The potentiometric levels of representative Floridan aquifer wells are used to produce the potentiometric surface maps presented in this report.

Upper Floridan Aquifer

Since February, 81 of the 82 wells monitored for this report recorded water level decreases, while one recorded an increase. Regionally, average water levels decreased in the northern, central and southern counties by 0.75 foot, 2.33 feet and 4.05 feet, respectively. Districtwide, the average water level in the UFA decreased by 2.57 feet.

Compared to March 2022 data, 58 of the 82 wells monitored for this report recorded water level decreases, while 24 recorded increases. Regionally, the mean water level in the northern and southern counties were lower by 2.07 feet and 0.42 foot, respectively, while the central counties were higher by 0.20 foot. Districtwide, average water levels in UFA wells were 0.58 foot lower than March 2022 levels.

In March, groundwater data showed that the monthly average regional aquifer percentile levels in the UFA ended the month within the normal range in all three regions of the District. The groundwater level in the northern, central and southern counties ended the month at the 34th, 50th and 39th percentiles, respectively.

SUMMARY OF UPPER FLORIDAN AQUIFER LEVELS IN REPRESENTATIVE WELLS, MARCH 2023

All elevations are referenced to the NGVD29 datum (feet). "M" indicates missing or undetermined value.

Regional Summary

Region	*MAR 2023 Elevation*	*MAR 2023 vs. Historic MAR Median*	*MAR 2023 vs. Historic MAR 25th Percentile*	*MAR 2023 Percentile Rank*	*FEB 2023 Percentile Rank*	*MAR 2022 Percentile Rank*
Northern	37.12	-0.61	0.62	34	50	78
Central	58.91	1.09	4.18	50	63	52
Southern	28.00	-1.53	2.38	39	53	44

Regional Wells Summary

NORTHERN COUNTIES	*MAR 2023 Elev*	*FEB 2023 Elev*	*MAR 2022 Elev*	*Change from FEB 2023*	*Change from MAR 2022*	*MAR Historical Low Normal*	*MAR Historical High Normal*	*Departure from Low Normal*	*MAR 2023 Percentile Rank*	*Period of Record Low*	*Record Low Date*	*Period of Record High*	*Record High Date*
CE 14 Dunnellon Deep	36.42	37.16	42.78	-0.74	-6.36	36.77	41.97	-0.35	20%	31.94	MAY 2012	50.74	MAR 1998
Chassahowitzka 1 Deep	5.89	6.20	7.02	-0.31	-1.13	5.84	6.50	0.05	28%	4.72	JUN 2001	9.75	SEP 2021
Inverness DOT	29.52	30.45	33.68	-0.93	-4.16	28.22	30.65	1.30	48%	21.70	JUN 2001	37.80	OCT 1982
Mascotte Deep (L-0062)	99.35	100.18	100.40	-0.83	-1.05	99.14	100.78	0.21	33%	93.94	JUN 2000	102.66	SEP 1988
North Lecanto Deep	3.93	4.12	5.40	-0.19	-1.47	4.01	4.91	-0.08	19%	2.94	MAY 2001	8.10	OCT 1982
ROMP 103	40.10	40.88	41.14	-0.78	-1.04	40.23	41.85	-0.13	18%	37.53	JUN 2017	46.62	SEP 2018
ROMP 107	11.55	12.00	13.75	-0.45	-2.20	10.89	13.38	0.66	34%	8.08	AUG 2007	19.78	NOV 1982
ROMP 111	49.07	49.66	50.59	-0.59	-1.52	48.21	49.88	0.86	48%	44.22	JUL 1992	53.33	SEP 2004
ROMP 116	31.24	33.00	34.16	-1.76	-2.92	31.57	33.97	-0.33	21%	29.24	MAY 2012	39.28	OCT 2004
ROMP 119 Sulfate	42.78	43.26	44.21	-0.48	-1.43	42.15	45.00	0.63	32%	39.86	MAY 2012	50.98	OCT 2004
ROMP 120	42.53	42.99	44.10	-0.46	-1.57	41.41	44.91	1.12	31%	38.71	MAY 2012	52.24	MAR 1998
ROMP 134 (Ocal-Avpk-Oldm)	47.11	47.72	50.32	-0.61	-3.21	43.59	47.72	3.52	61%	37.80	JUN 2012	57.35	APR 1998
ROMP 89	90.14	91.59	91.25	-1.45	-1.11	89.92	91.97	0.22	28%	82.46	JUN 2000	94.93	DEC 1997
ROMP 97	17.05	17.89	18.10	-0.84	-1.05	14.47	19.17	2.58	56%	11.84	MAY 2009	26.24	SEP 2004
ROMP TR 124 (Avpk) 2	2.51	2.85	4.39	-0.34	-1.88	2.60	3.45	-0.09	21%	0.77	SEP 2004	5.66	DEC 2018
ROMP TR 21-2 Chloride	2.79	3.04	3.88	-0.25	-1.09	2.57	3.18	0.22	46%	1.25	MAR 1991	6.12	OCT 1995
Sumter 13 JC 59 U Repl	39.90	41.05	43.33	-1.15	-3.43	39.75	42.80	0.15	25%	36.52	MAY 2012	47.36	AUG 2021
Tidewater 1	52.92	53.65	55.37	-0.73	-2.45	53.61	55.63	-0.69	22%	48.05	JUN 2012	61.81	SEP 1982
Webster City	83.10	84.35	84.41	-1.25	-1.31	80.89	83.89	2.20	68%	74.16	MAY 2012	88.77	SEP 2005
Weeki Wachee Repl	14.41	15.27	15.48	-0.86	-1.07	14.09	17.43	0.32	31%	10.37	MAY 2009	23.61	AUG 1984

Regional Wells Summary (continued)

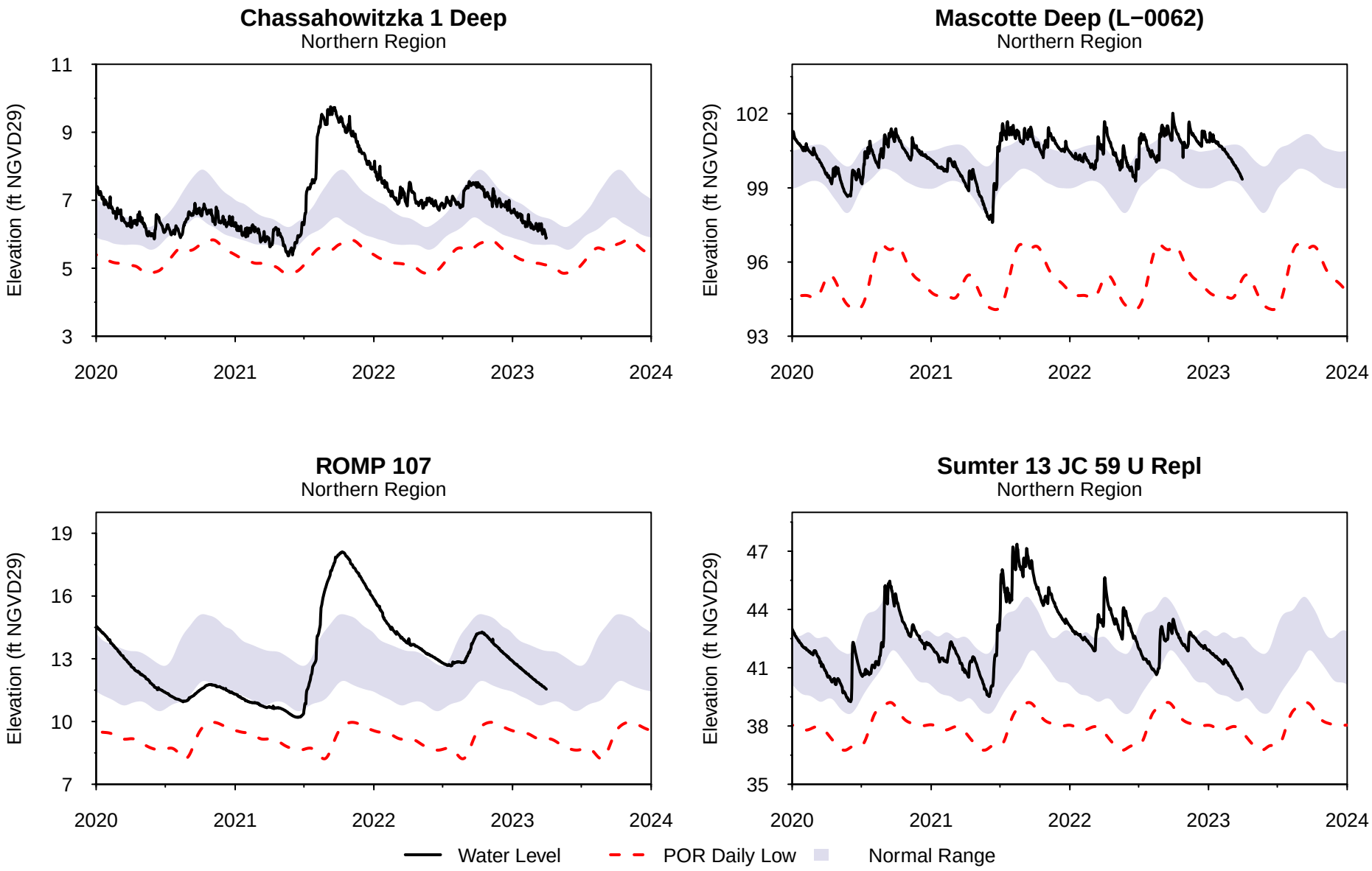
CENTRAL COUNTIES	MAR 2023 Elev	FEB 2023 Elev	MAR 2022 Elev	Change from FEB 2023	Change from MAR 2022	MAR Historical Low Normal	MAR Historical High Normal	Departure from Low Normal	MAR 2023 Percentile Rank	Period of Record Low	Record Low Date	Period of Record High	Record High Date
Bexley 2	60.28	61.57	61.22	-1.29	-0.94	60.07	62.24	0.21	29%	56.08	JUN 2000	64.50	SEP 2017
Coley Deep	80.83	83.14	81.41	-2.31	-0.58	76.30	83.88	4.53	60%	60.77	JAN 2010	90.99	OCT 2004
Cross Bar 2SW CSX (CB-2SW)	66.21	66.99	66.56	-0.78	-0.35	64.95	67.35	1.26	47%	61.00	JAN 2008	70.30	JAN 1998
Debuel Road Deep	51.83	53.23	53.29	-1.40	-1.46	52.39	55.64	-0.56	14%	46.48	APR 2002	60.13	SEP 1979
DV-1 (Swnn)	50.72	52.90	52.41	-2.18	-1.69	48.19	57.13	2.53	39%	12.06	JAN 2010	65.72	FEB 1998
Hillsborough RSPPL Deep	38.40	39.69	38.25	-1.29	0.15	37.35	40.01	1.05	46%	35.35	JUN 2000	47.42	DEC 1997
Lake Alfred Deep nr Lake Alfred	128.13	128.99	127.88	-0.86	0.25	125.38	128.40	2.75	67%	119.85	MAY 1974	131.18	MAR 1998
Loughman Deep	89.65	90.52	89.08	-0.87	0.57	89.18	91.09	0.47	37%	85.90	MAY 2001	93.60	OCT 2022
Lykes Pasco	67.07	68.06	66.48	-0.99	0.59	62.80	67.76	4.27	67%	56.94	JUN 2000	75.78	OCT 2004
Masaryktown Deep	33.38	34.34	34.18	-0.96	-0.80	27.19	35.90	6.19	59%	21.89	AUG 1994	50.09	OCT 1982
Moon Lake Deep	30.21	30.78	30.32	-0.57	-0.11	29.70	31.39	0.51	31%	26.15	JUN 2000	34.89	AUG 2015
Pasco 13 nr Drexel	70.85	71.62	71.15	-0.77	-0.30	71.29	73.76	-0.44	16%	68.00	JUN 2001	77.14	JUL 1960
Pinellas 665	8.35	8.77	9.08	-0.42	-0.73	8.77	10.48	-0.42	9%	6.70	MAY 2006	14.79	SEP 1959
ROMP 123 Htrn AS/U Aq	-0.36	8.30	2.82	-8.66	-3.18	-8.30	7.73	7.93	55%	-29.47	MAY 2000	33.56	FEB 1998
ROMP 40	37.13	44.04	34.36	-6.91	2.77	25.78	41.49	11.35	57%	-4.15	JUN 2000	57.37	FEB 1998
ROMP 45 (Avpk)	71.93	76.62	69.17	-4.69	2.76	60.82	72.10	11.11	71%	33.90	JUN 2000	84.44	OCT 2004
ROMP 48 (Tmpa-Swnn)	33.36	40.59	29.78	-7.23	3.58	20.30	36.14	13.06	66%	-7.87	MAY 2000	52.64	FEB 1998
ROMP 50 (Avpk) Chloride	6.31	9.23	6.21	-2.92	0.10	-1.05	6.32	7.36	75%	-17.42	FEB 2018	14.95	AUG 1982
ROMP 58	101.43	103.96	97.35	-2.53	4.08	98.56	102.27	2.87	71%	89.38	JAN 2010	111.01	DEC 2005
ROMP 59 Interface	73.01	77.54	70.27	-4.53	2.74	56.62	72.17	16.39	82%	33.33	MAY 1981	85.92	OCT 2004
ROMP 60 (Avpk) Repl	72.48	77.21	69.78	-4.73	2.70	67.48	74.82	5.00	55%	51.29	MAY 2012	83.25	SEP 2018
ROMP 66	16.96	18.83	17.01	-1.87	-0.05	15.82	18.88	1.14	43%	13.02	JUN 2000	25.47	AUG 2015
ROMP 76	128.98	130.03	128.03	-1.05	0.95	125.94	129.49	3.04	66%	121.88	JAN 2010	132.92	SEP 2004
ROMP 87 (Avpk)	101.29	102.97	101.97	-1.68	-0.68	99.55	103.64	1.74	41%	94.90	JUN 2000	106.30	FEB 1998
ROMP 88 (Avpk)	102.55	104.51	103.56	-1.96	-1.01	101.96	105.37	0.59	33%	97.42	JUN 2000	107.21	SEP 2017
ROMP 93	72.09	73.38	73.49	-1.29	-1.40	66.01	72.01	6.08	77%	59.03	JUN 2001	76.56	AUG 2018
ROMP TR 10-2	10.76	11.89	11.27	-1.13	-0.51	7.90	9.96	2.86	93%	6.25	MAY 2000	14.18	OCT 2022
ROMP TR 13-3	13.78	14.80	14.84	-1.02	-1.06	14.54	16.22	-0.77	7%	10.95	JUL 1987	18.79	AUG 2015
Sanlon Ranch	95.55	98.95	94.40	-3.40	1.15	84.21	95.38	11.34	76%	66.38	MAY 1975	105.27	OCT 2004
SR 52 and CR 581 Deep	73.16	74.84	73.85	-1.68	-0.69	67.10	75.00	6.06	53%	56.96	JUN 2001	79.44	AUG 1965
SR 577 Deep	89.98	91.91	89.89	-1.93	0.09	85.16	91.81	4.82	53%	72.76	JUN 2000	98.51	MAR 1998
Tarpon Road Deep	8.79	9.57	9.37	-0.78	-0.58	9.40	10.55	-0.61	3%	7.50	JUN 2006	13.48	AUG 2015

Regional Wells Summary (continued)

SOUTHERN COUNTIES	MAR 2023 Elev	FEB 2023 Elev	MAR 2022 Elev	Change from FEB 2023	Change from MAR 2022	MAR Historical Low Normal	MAR Historical High Normal	Departure from Low Normal	MAR 2023 Percentile Rank	Period of Record Low	Record Low Date	Period of Record High	Record High Date
Big Slough Deep	31.38	32.78	31.08	-1.40	0.30	31.12	33.57	0.26	35%	26.85	MAY 2006	37.41	SEP 2022
Cargill FA-1	70.06	74.93	66.96	-4.87	3.10	54.07	70.79	15.99	67%	30.50	MAY 1981	82.95	OCT 2004
Edgeville 3 Deep Dstr	18.87	25.53	19.28	-6.66	-0.41	15.19	30.11	3.68	34%	1.13	MAY 2000	41.26	OCT 1979
Englewood 14 Deep	4.23	3.26	1.20	0.97	3.03	2.66	5.04	1.57	59%	-0.97	FEB 2001	11.64	SEP 2022
Kibler Deep	-7.35	3.24	-4.00	-10.59	-3.35	-10.11	11.18	2.76	36%	-29.95	MAY 2000	35.91	JUL 2022
Manasota 14 Deep	17.23	17.87	17.09	-0.64	0.14	18.14	20.68	-0.91	11%	15.46	MAY 2017	22.70	NOV 1971
Marshall Deep (USGS)	36.54	42.39	36.49	-5.85	0.05	33.90	45.02	2.64	32%	8.96	JUN 2000	55.24	MAR 1964
ROMP 16	42.26	44.92	41.50	-2.66	0.76	43.14	47.47	-0.88	4%	28.94	JAN 2001	51.21	SEP 1995
ROMP 17 (Swnn)	42.03	44.39	42.64	-2.36	-0.61	41.03	45.41	1.00	35%	31.89	JUN 2000	51.64	OCT 1994
ROMP 19 (Swnn)	23.53	25.63	25.47	-2.10	-1.94	21.74	27.75	1.79	41%	10.99	JUN 2000	33.80	SEP 2017
ROMP 19X (Swnn)	29.79	33.09	30.80	-3.30	-1.01	26.44	33.01	3.35	50%	19.28	JUN 2000	39.92	OCT 1994
ROMP 20 (Swnn)	19.37	22.73	20.36	-3.36	-0.99	17.69	21.73	1.68	49%	11.99	MAY 2007	26.66	SEP 2017
ROMP 22 (Swnn)	9.90	17.41	12.17	-7.51	-2.27	7.43	16.62	2.47	48%	-3.71	MAY 2000	30.18	FEB 1998
ROMP 26	37.57	43.28	38.45	-5.71	-0.88	37.43	46.36	0.14	26%	19.48	JAN 2010	51.28	OCT 1979
ROMP 28X	67.77	69.52	68.72	-1.75	-0.95	65.37	68.94	2.40	61%	57.24	JAN 2010	74.68	OCT 1995
ROMP 30	40.30	48.39	38.47	-8.09	1.83	34.44	48.78	5.85	49%	-0.20	JUN 2000	60.52	MAR 1998
ROMP 31	37.37	45.12	33.98	-7.75	3.39	28.85	45.09	8.52	54%	-6.22	JUN 2000	57.92	MAR 1998
ROMP 32 (Avpk)	20.61	28.96	17.39	-8.35	3.22	9.14	24.39	11.47	52%	-17.74	JUN 2000	44.73	FEB 1998
ROMP 43XX	86.32	87.14	85.05	-0.82	1.27	82.43	88.63	3.89	67%	70.93	JAN 2010	94.60	MAR 1998
ROMP 9 (Swnn)	40.22	41.51	40.79	-1.29	-0.57	39.99	42.30	0.23	32%	37.00	JAN 2001	46.35	SEP 2006
ROMP TR 1-2	44.17	45.07	44.56	-0.90	-0.39	43.94	44.99	0.23	37%	40.72	JUN 2000	47.55	SEP 2022
ROMP TR 3-1	32.80	33.71	33.36	-0.91	-0.56	32.52	33.80	0.28	34%	29.04	JUN 2000	36.52	SEP 2022
ROMP TR 5-1 Sulfate	16.86	18.57	17.38	-1.71	-0.52	16.60	19.10	0.26	33%	13.26	JUN 2000	22.56	SEP 2017
ROMP TR 5-2 (Swnn)	19.25	24.53	22.63	-5.28	-3.38	20.38	25.63	-1.13	13%	13.75	MAY 2006	31.10	OCT 1994
ROMP TR 7-1 (L Arca Aq Int)	17.46	19.62	18.48	-2.16	-1.02	15.20	18.89	2.26	58%	10.01	JUN 2000	24.23	SEP 2017
ROMP TR 7-4 (Swnn)	8.80	14.56	11.38	-5.76	-2.58	6.40	13.71	2.40	50%	-3.55	MAY 2000	24.35	AUG 2019
ROMP TR 8-1 (Swnn)	16.19	18.01	17.66	-1.82	-1.47	13.60	17.85	2.59	58%	6.60	MAY 2000	23.21	AUG 2019
ROMP TR SA-1 (Swnn)	7.00	9.65	8.55	-2.65	-1.55	7.78	10.22	-0.78	12%	2.89	MAY 2017	22.04	SEP 1999
Sarasota Service Office	9.12	15.21	10.60	-6.09	-1.48	11.73	28.16	-2.61	20%	-3.24	JUN 2000	35.21	MAR 1931
Verna Test 0-1	0.47	10.56	4.32	-10.09	-3.85	0.54	17.92	-0.08	25%	-15.73	MAY 2000	33.32	JAN 1984

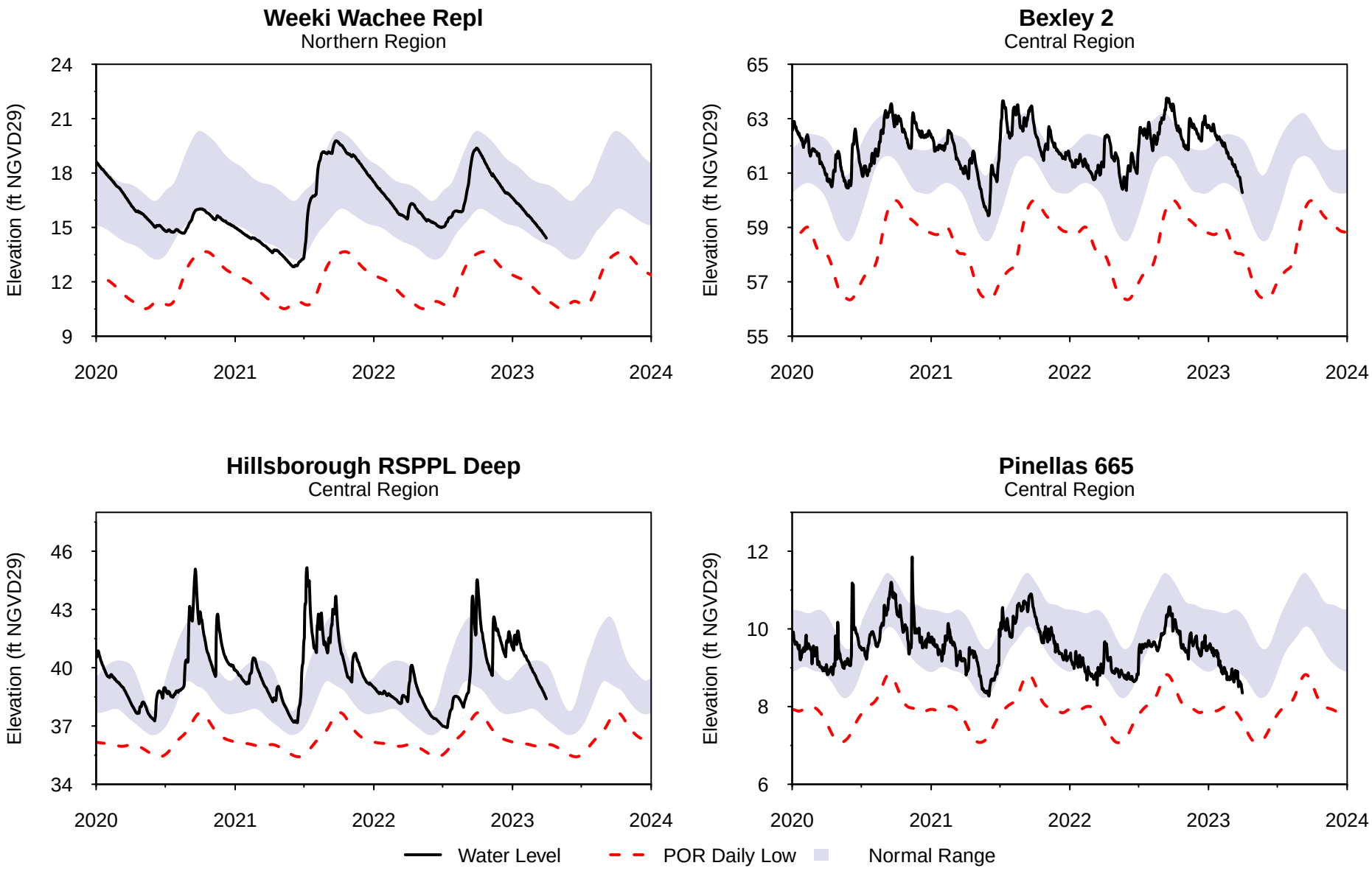
HYDROGRAPHS OF REPRESENTATIVE UPPER FLORIDAN AQUIFER WELLS

JANUARY 2020 TO MARCH 2023



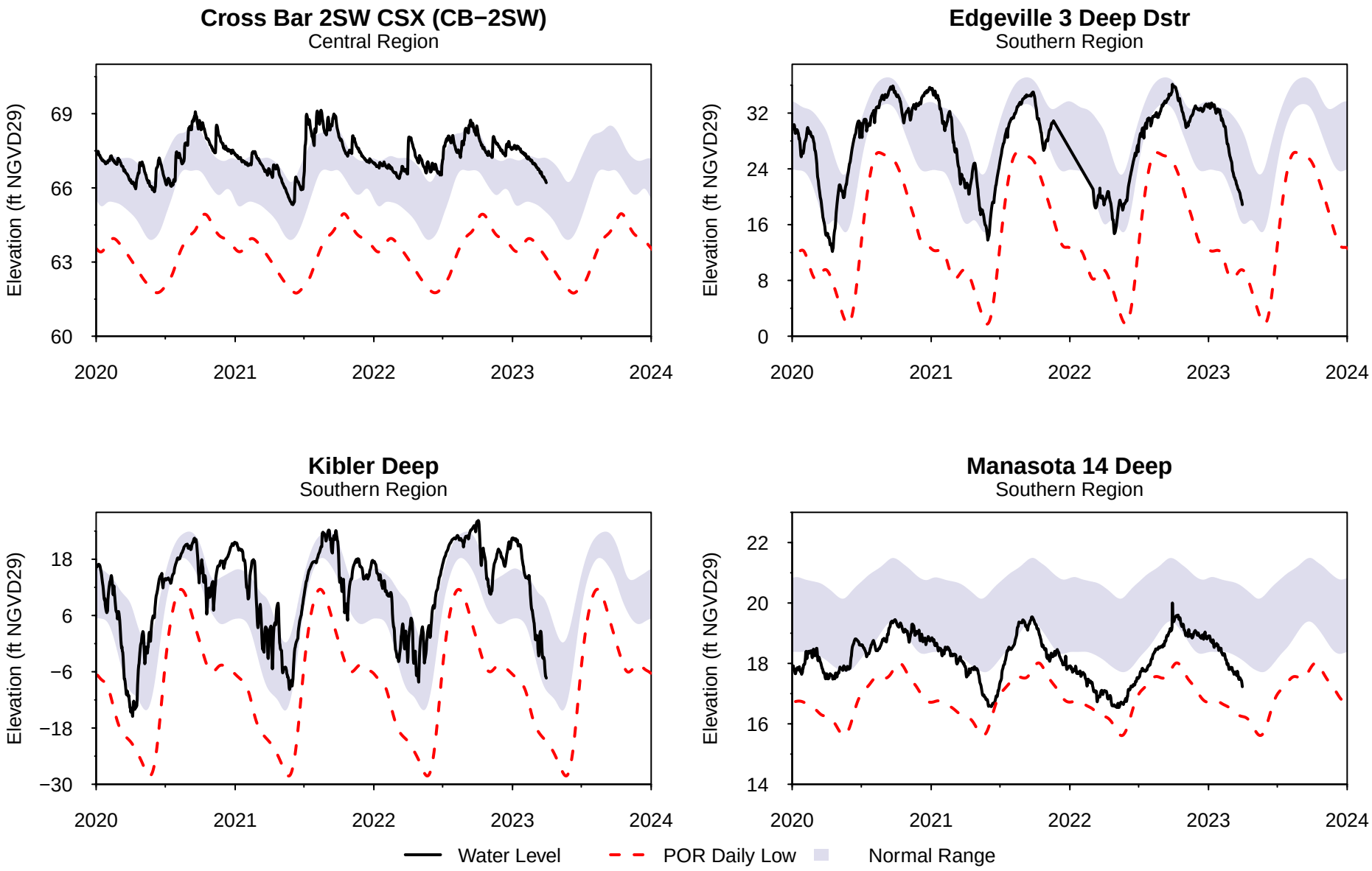
HYDROGRAPHS OF REPRESENTATIVE UPPER FLORIDAN AQUIFER WELLS

JANUARY 2020 TO MARCH 2023



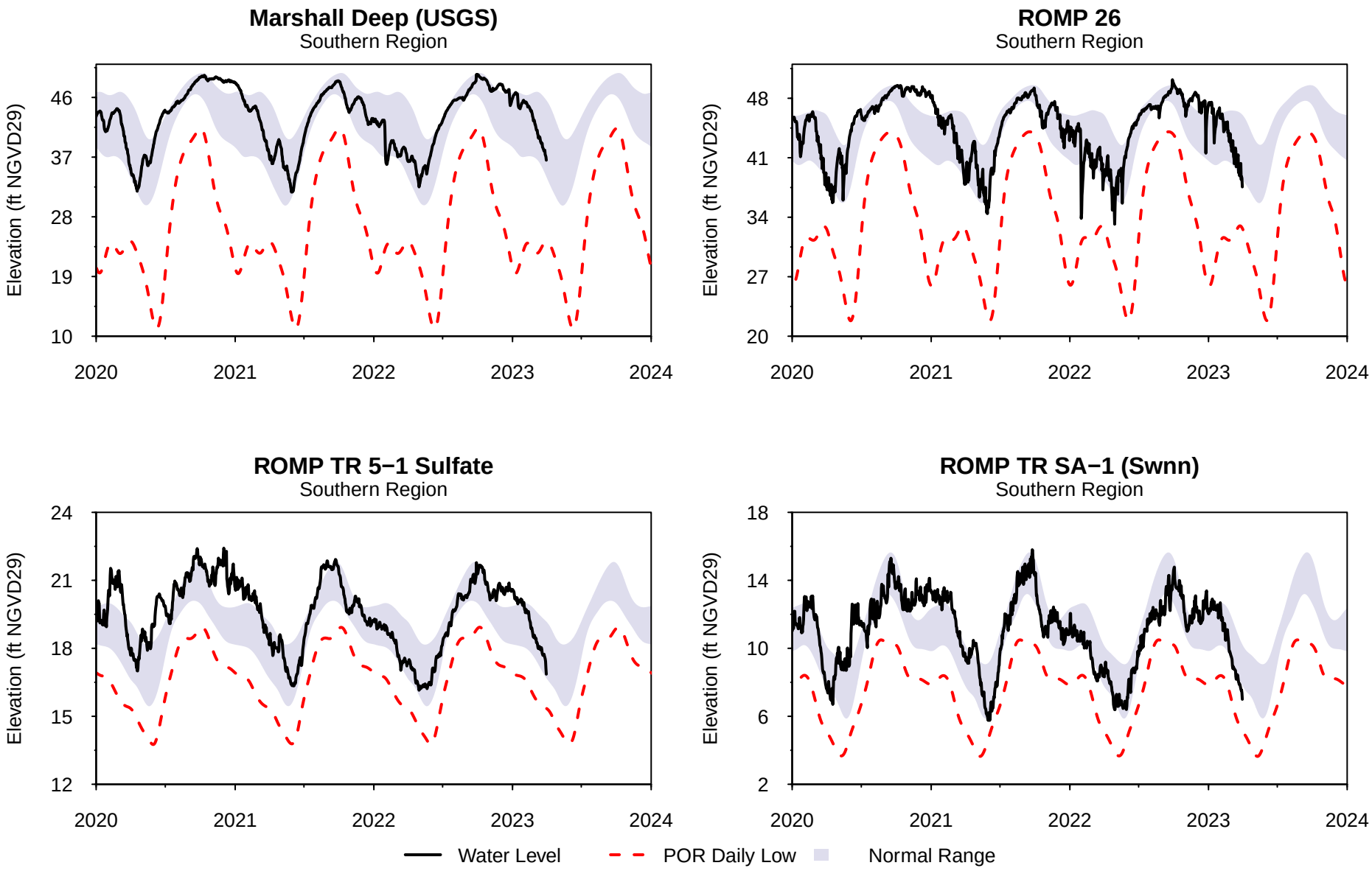
HYDROGRAPHS OF REPRESENTATIVE UPPER FLORIDAN AQUIFER WELLS

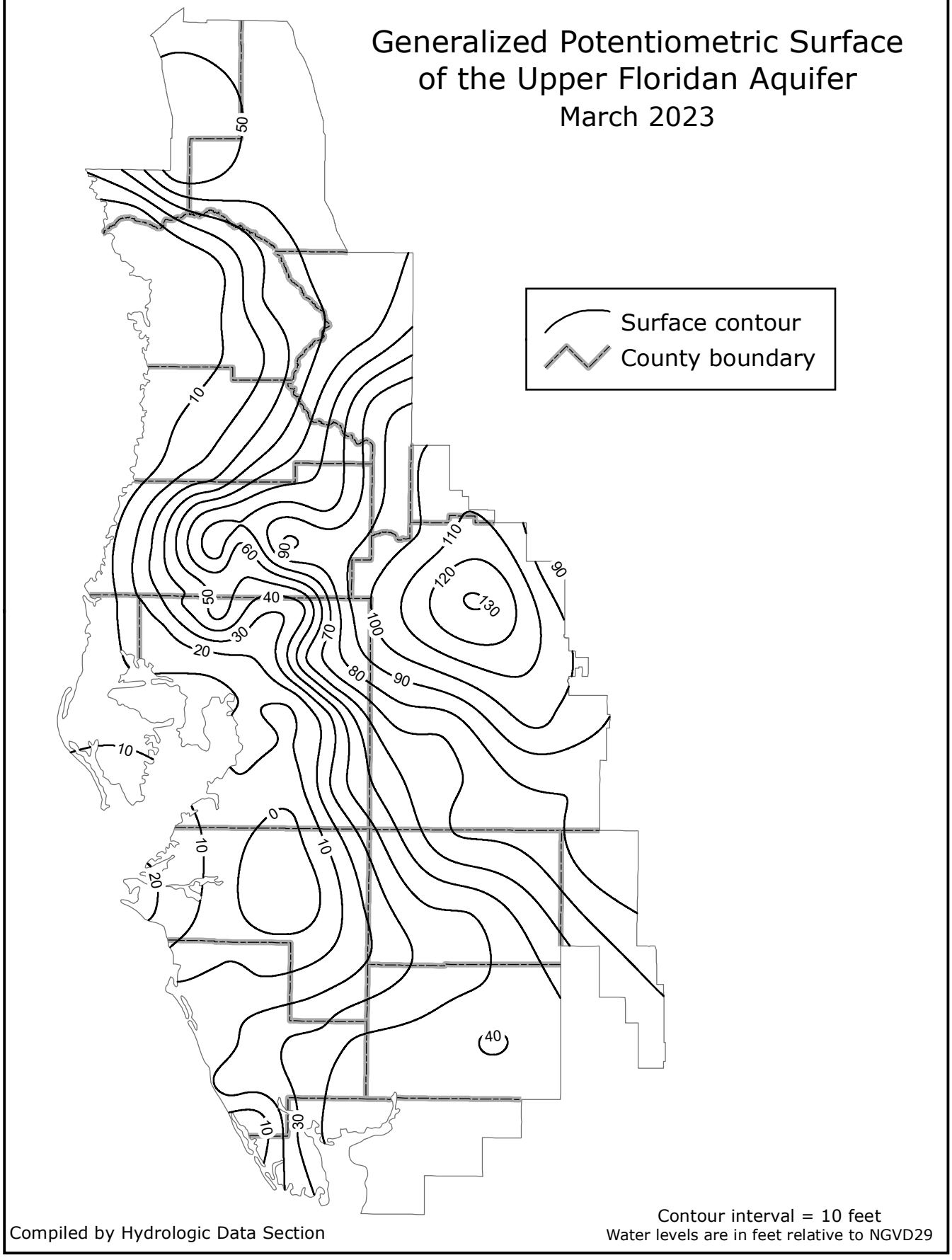
JANUARY 2020 TO MARCH 2023



HYDROGRAPHS OF REPRESENTATIVE UPPER FLORIDAN AQUIFER WELLS

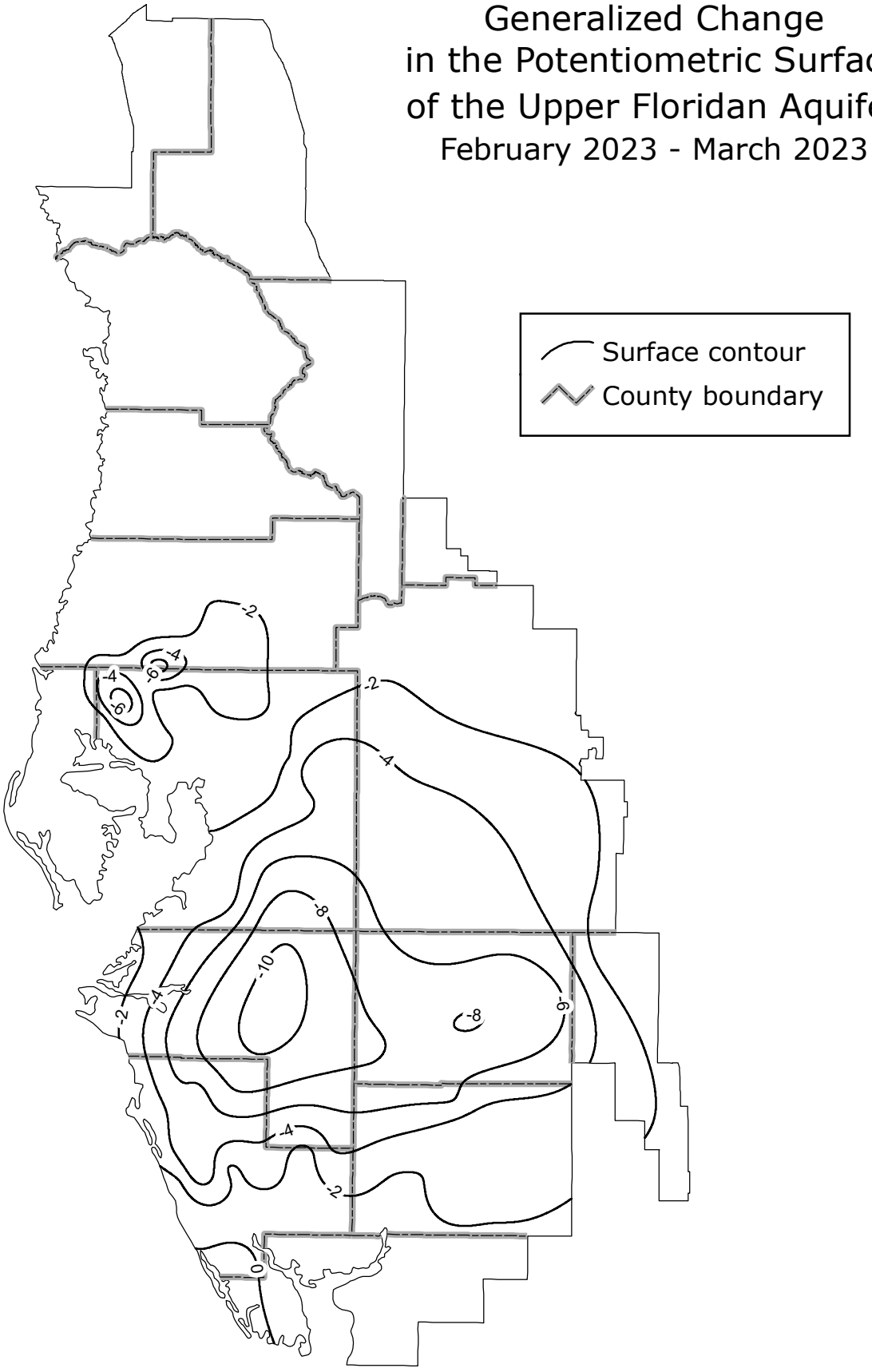
JANUARY 2020 TO MARCH 2023




Generalized Potentiometric Surface
of the Upper Floridan Aquifer
March 2023
Surface contour
County boundary
50
10
60
50
40
30
20
70
80
90
100
110
120
130
90
10
0
10
10
20
40
10
30
Compiled by Hydrologic Data Section
Contour interval = 10 feet
Water levels are in feet relative to NGVD29

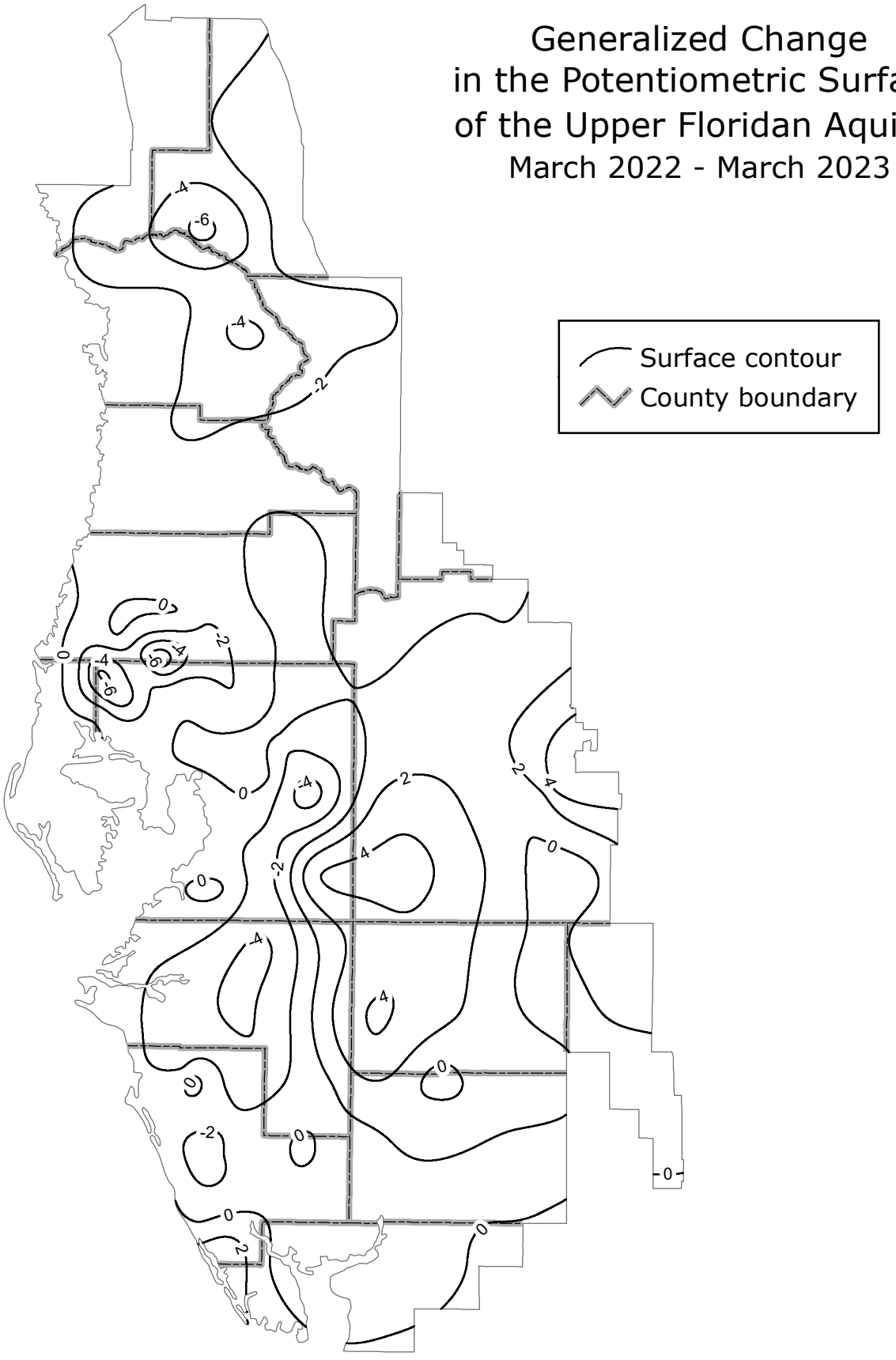
Generalized Change in the Potentiometric Surface of the Upper Floridan Aquifer

February 2023 - March 2023



Compiled by Hydrologic Data Section

Contour interval = 2 feet


Generalized Change
in the Potentiometric Surface
of the Upper Floridan Aquifer
March 2022 - March 2023
Surface contour
County boundary
Compiled by Hydrologic Data Section
Contour interval = 2 feet

Regional Aquifer Resource Index

Aquifers are underground layers of rock and sand that hold water. In southwest Florida, more than 80 percent of the water supply comes from aquifers. The Regional Aquifer Resource Index (ARI) was created to provide information to the media, residents, local governments and other interested parties about current groundwater conditions and how they compare to historical records. The underlying purpose of this index is to provide the public with a gauge of groundwater conditions in their area, so they can develop an understanding of the severity and cycles of drought and recovery.

This ARI report reflects percentile values to compare current aquifer levels to historical levels during the same time of year on a scale of 0-100. For example, if the regional groundwater level is at the 50th percentile, it means that half of the historical groundwater levels for this time of year were higher and half were lower than the current level.

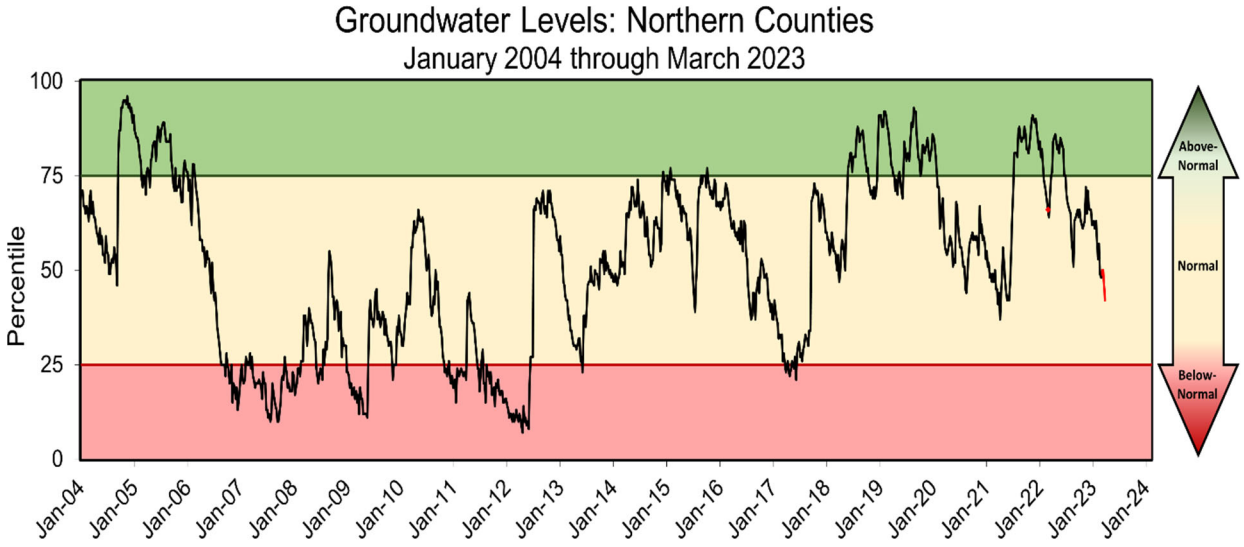
To determine the ARI percentile value for each geographic region (indicated below), the percentile values of the monitor wells located within that region are averaged. Monitor wells with an adequate and reliable period-of-record to calculate weekly percentiles were selected for the network. A total of 81 wells Districtwide are used for the ARI Network (see index map in Appendix).

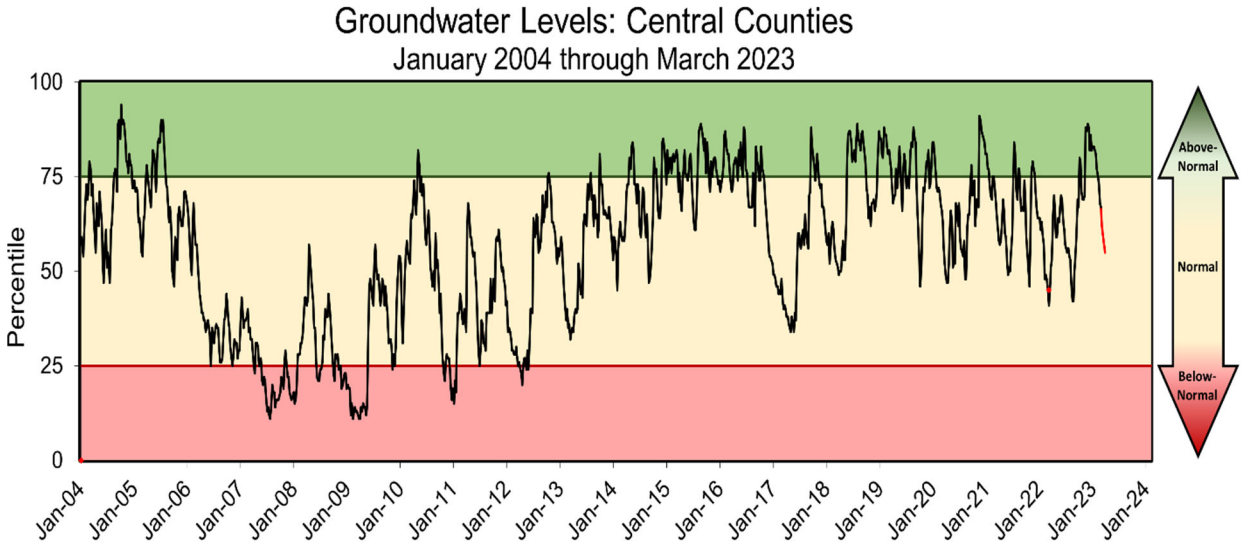
Weekly Aquifer Resource Index Level (Percentile)

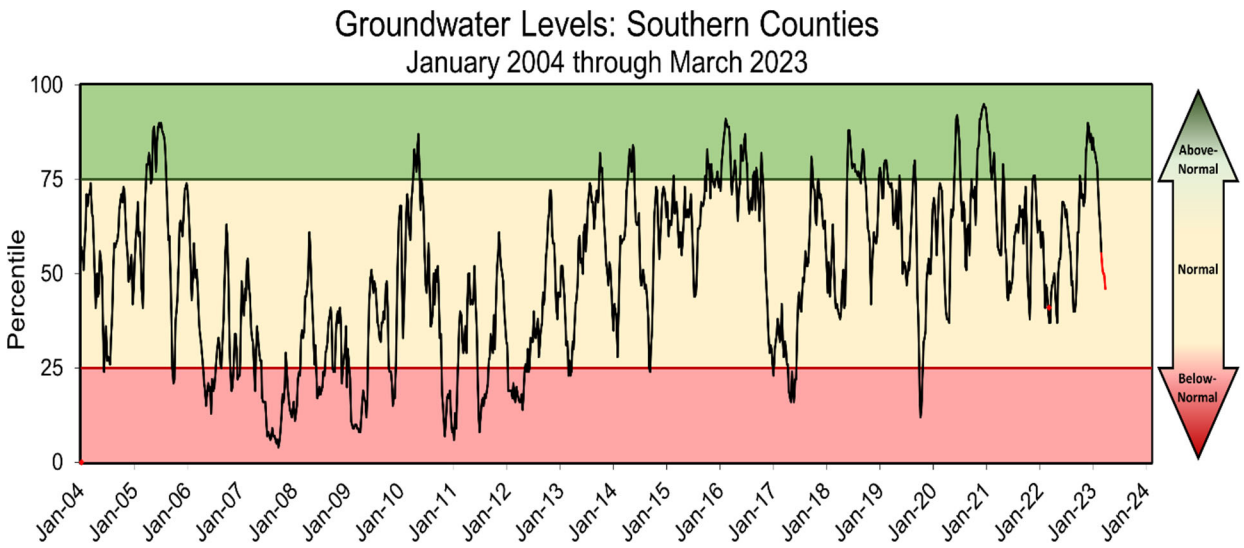
Report Date	Northern Counties	Central Counties	Southern Counties
03/01/2023	48	64	53
03/08/2023	48	59	49
03/15/2023	45	57	47
03/22/2023	42	53	44
03/29/2023	38	52	42

Note: Any regional percentile value that falls on or between the 25th and 75th percentile is considered “normal.” Less than the 25th would be considered” below normal,” while above the 75th would be considered “above normal.”

REGIONAL AQUIFER RESOURCE INDEX
March 2023







Reservoirs

Water-level data for the seven reservoirs are obtained weekly from the USGS, Manatee County Utilities Department, Peace River/Manasota Regional Water Supply Authority, or Tampa Bay Water. The last weekly water-level value of the month is indicated in this report. The values reported are provisional and subject to revision.

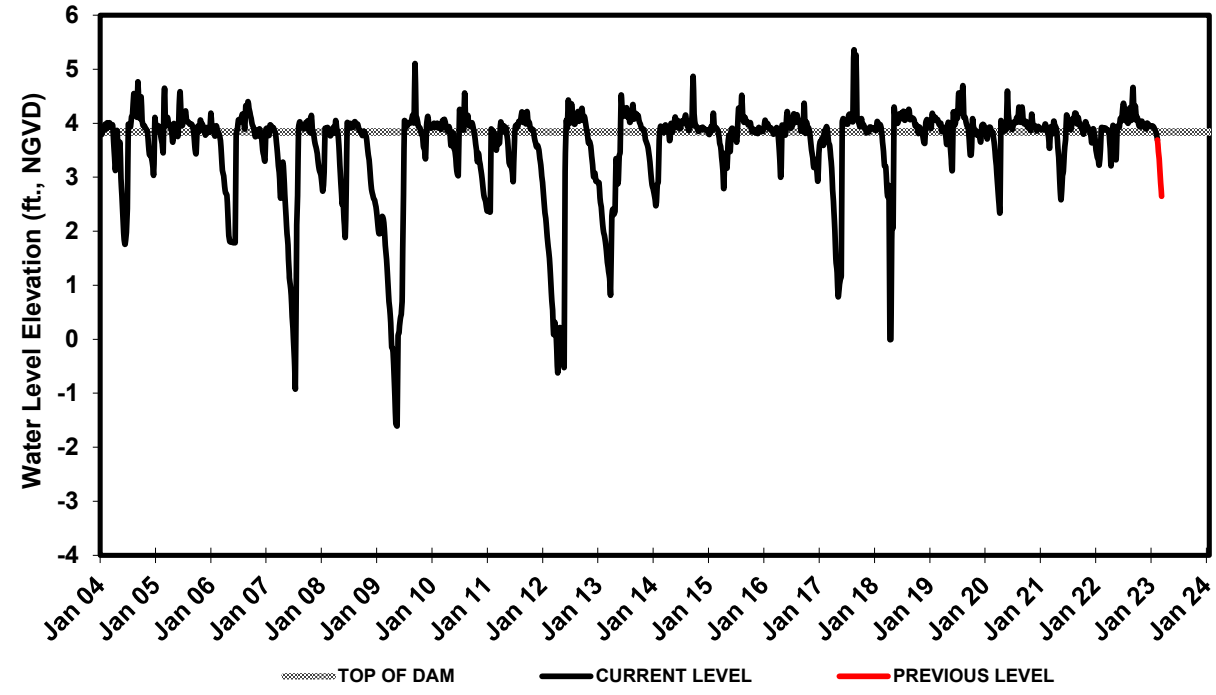
In March, six of the seven reservoirs monitored for this report recorded water-level decreases, while one recorded and unchanged water level, compared to last month. The Evers, Hillsborough, Lake Manatee, Bill Young, Peace River No. 2 and Shell Creek reservoirs posted water level decreases of 1.04 feet, 0.87 foot, 1.19 feet, 5.09 feet, 4.00 feet and 0.07 foot, respectively, compared to the previous month. The water level for the Peace River No. 1 reservoir remained unchanged from the previous month.

SUMMARY OF WATER LEVELS IN WATER SUPPLY RESERVOIRS (GAGE LEVEL, IN FEET)

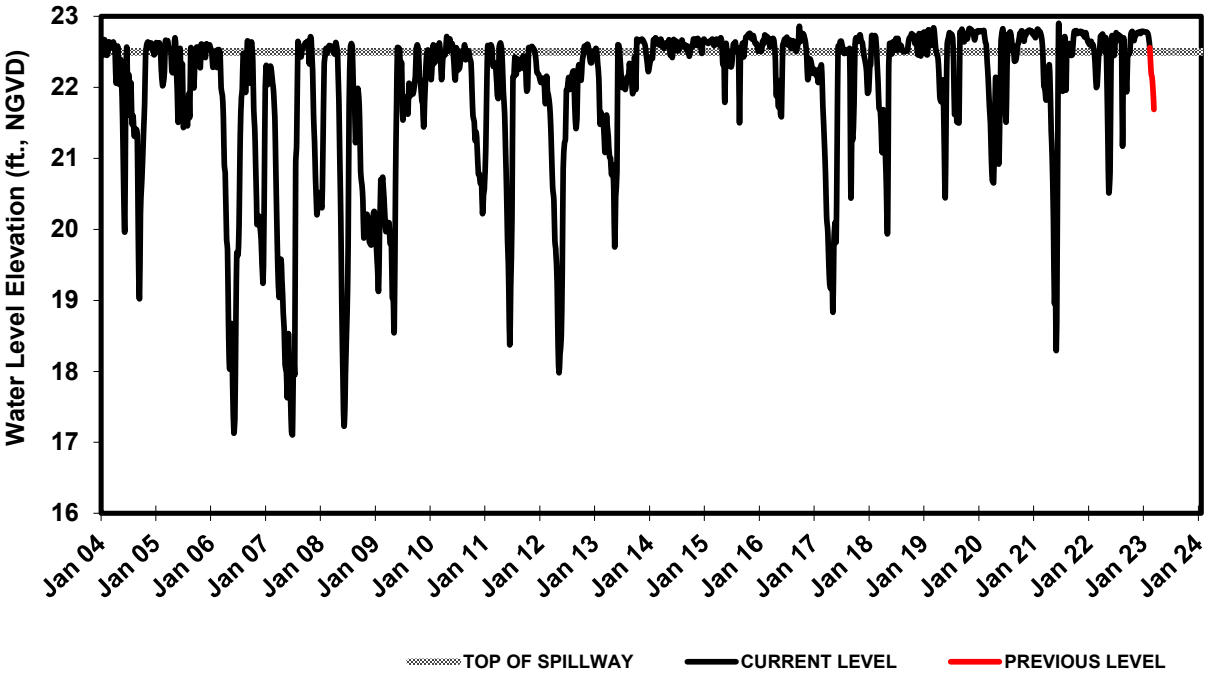
RESERVOIR	2023 February	2023 March	2022 March	Change from Prior Month	Change from Prior Year
Evers					
City of Bradenton	3.69	2.65	3.88	-1.04	-1.23
Hillsborough					
City of Tampa	22.56	21.69	22.49	-0.87	-0.80
Lake Manatee					
Manatee County	40.14	38.95	38.42	-1.19	0.53
C.W. Bill Young Regional					
Tampa Bay Water	134.35	129.26	127.87	-5.09	1.39
Peace River					
PRMRWSA Reservoir #1	24.00	24.00	25.00	0.00	-1.00
PRMRWSA Reservoir #2	63.30	59.30	54.20	-4.00	5.10
Shell Creek					
City of Punta Gorda	5.10	5.03	5.03	-0.07	0.00

Reported data are provisional and subject to revision.
e = Estimated

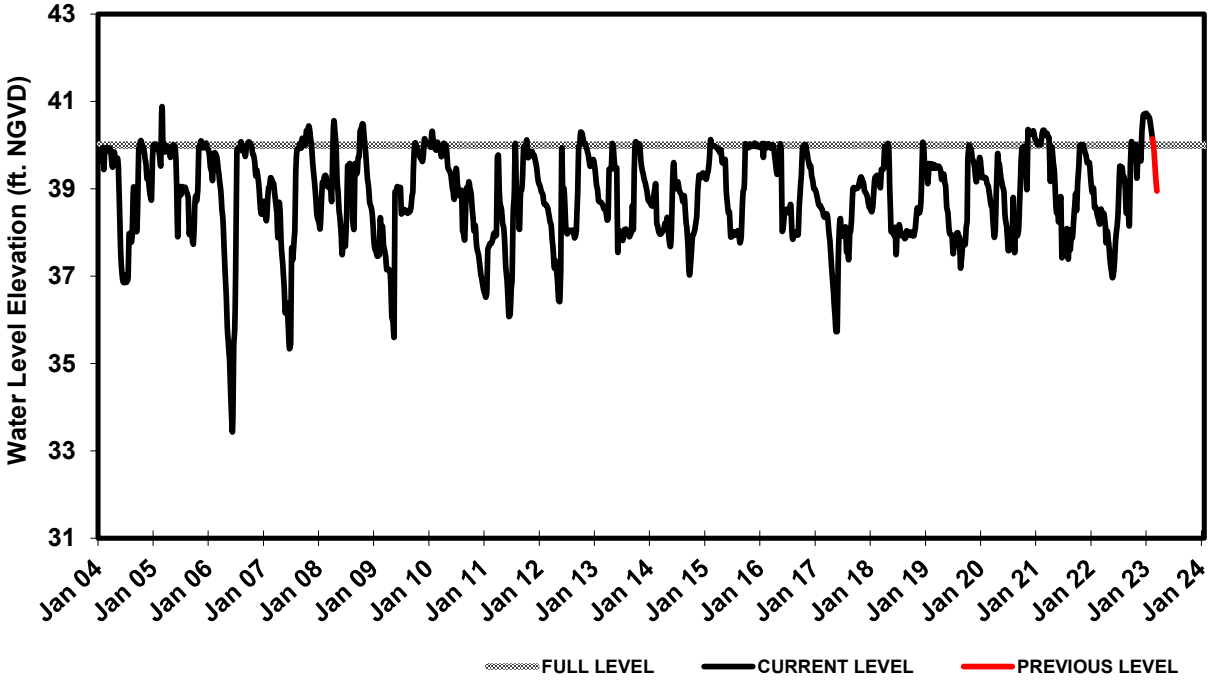
EVERS RESERVOIR
City of Bradenton



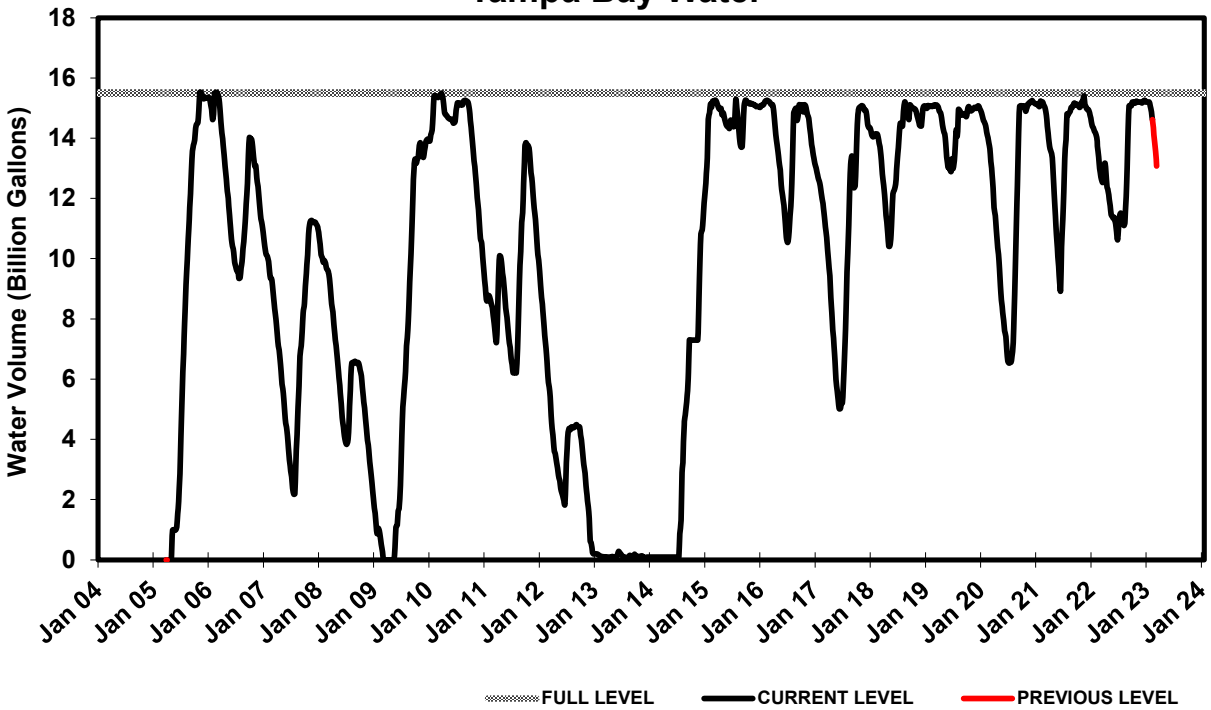
HILLSBOROUGH RESERVOIR
City of Tampa



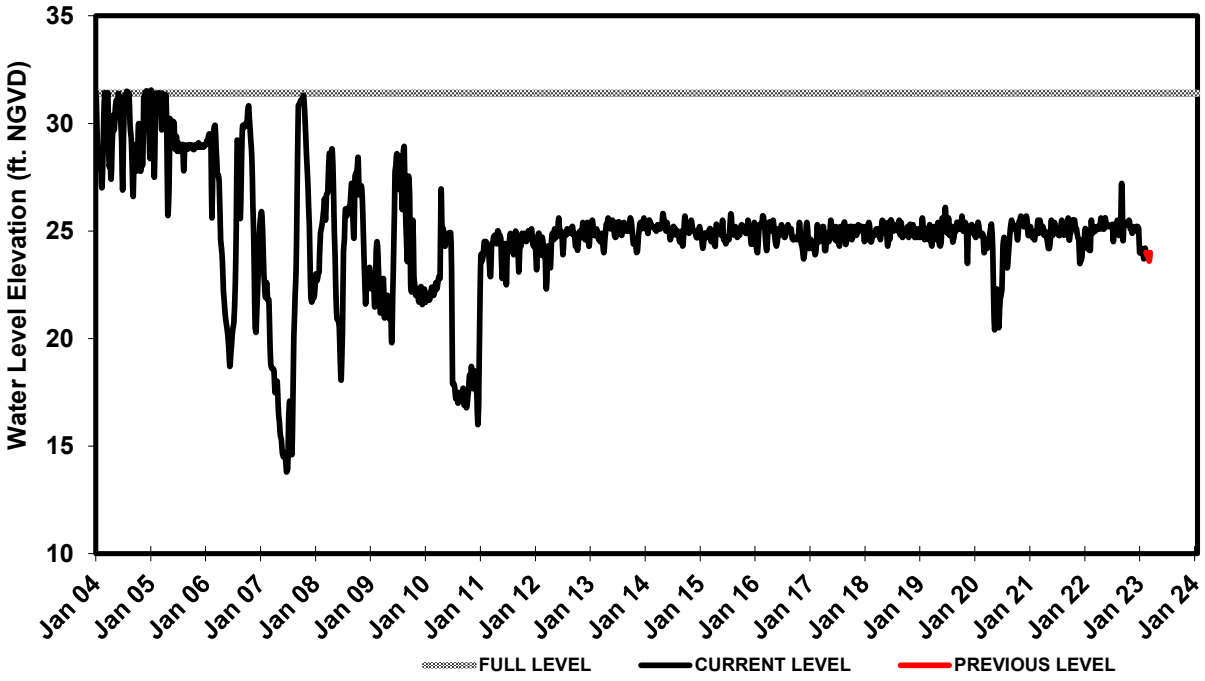
LAKE MANATEE RESERVOIR
Manatee County



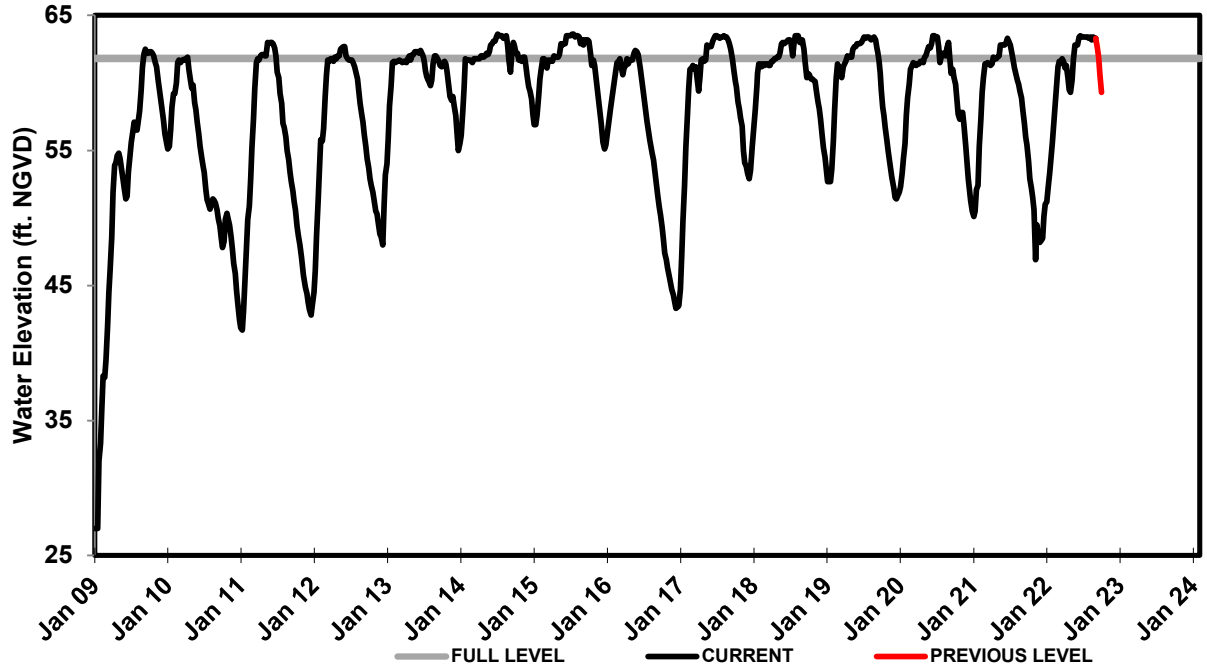
C.W. BILL YOUNG REGIONAL RESERVOIR
Tampa Bay Water

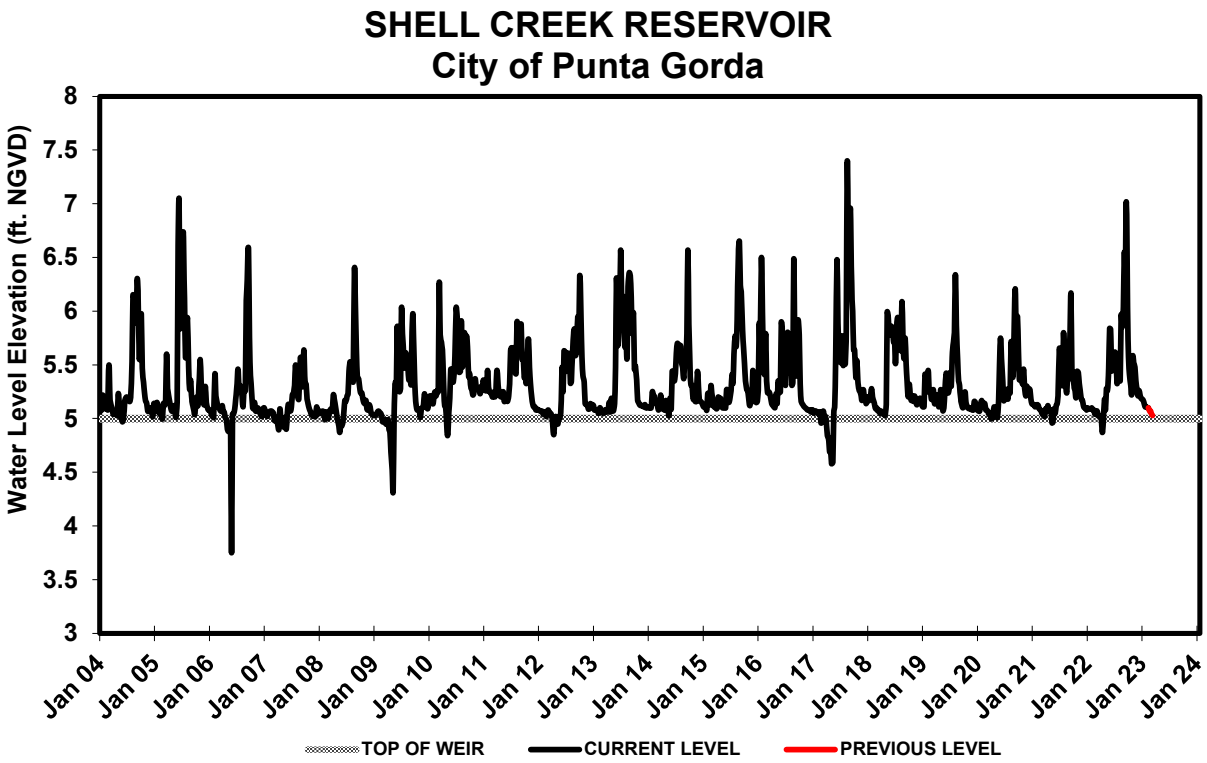


PEACE RIVER RESERVOIR No. 1
Peace/Manasota Reg. Water Supply



PEACE RIVER RESERVOIR No. 2
Peace/Manasota Reg. Water Supply




SHELL CREEK RESERVOIR
City of Punta Gorda
Water Level Elevation (ft. NGVD)
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
Jan 04
Jan 05
Jan 06
Jan 07
Jan 08
Jan 09
Jan 10
Jan 11
Jan 12
Jan 13
Jan 14
Jan 15
Jan 16
Jan 17
Jan 18
Jan 19
Jan 20
Jan 21
Jan 22
Jan 23
Jan 24
TOP OF WEIR
CURRENT LEVEL
PREVIOUS LEVEL

APPENDICES

Rainfall percentiles by interval and region, inches.

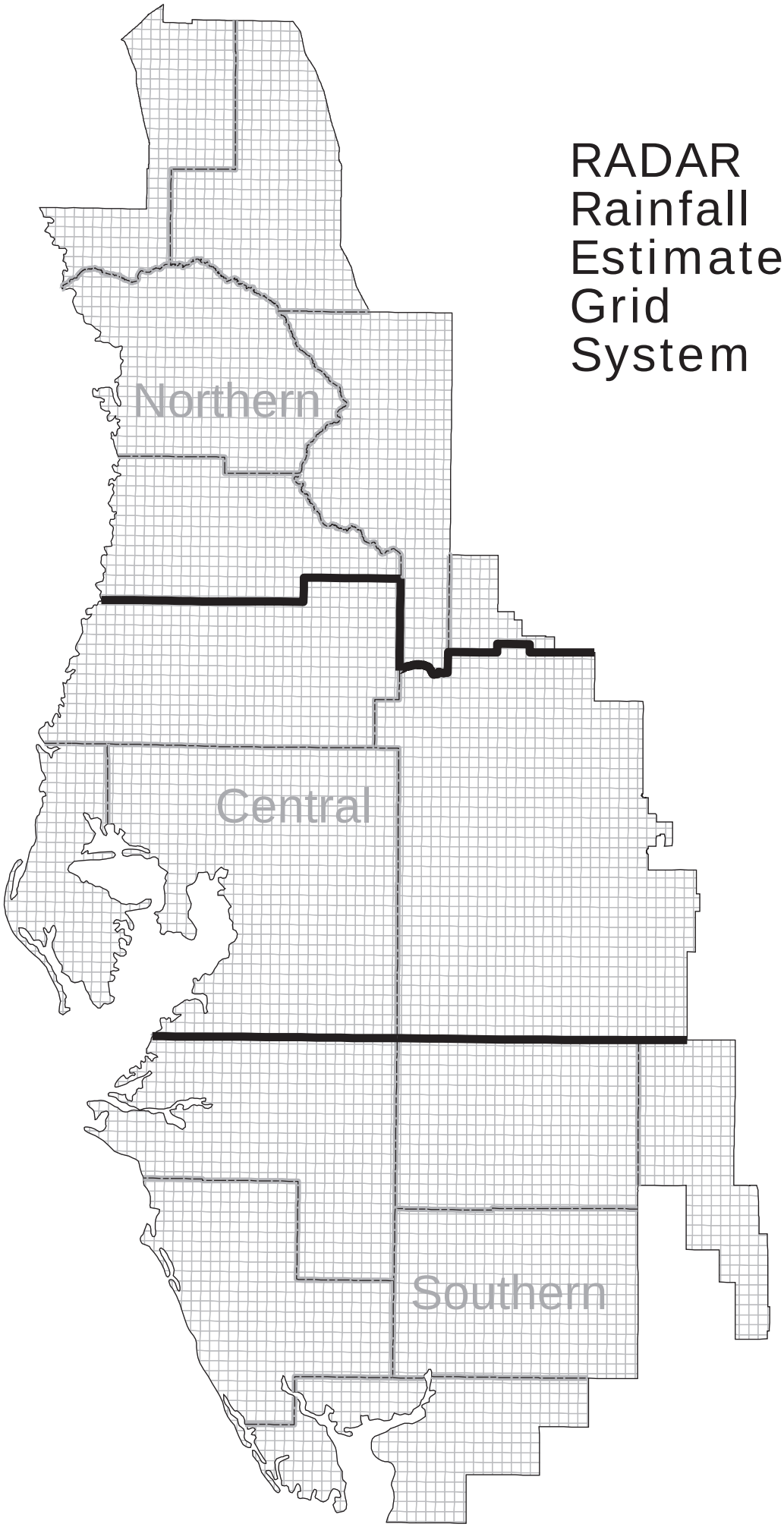
Rainfall Interval	Region	10TH Percentile (P10)	25th Percentile (P25)	50th Percentile (P50)	75th Percentile (P75)	90th Percentile (P90)
Annual total	*Northern*	43.19	48.35	54.01	58.86	63.46
Annual total	*Central*	41.45	46.10	52.16	57.28	63.82
Annual total	*Southern*	42.05	46.25	52.19	57.82	63.43
Annual total	*District*	43.12	47.22	52.99	57.46	62.83
Dry season total	*Northern*	15.27	18.42	23.79	28.72	32.10
Dry season total	*Central*	13.32	16.48	21.59	26.86	30.83
Dry season total	*Southern*	12.35	15.68	21.24	26.23	30.01
Dry season total	*District*	13.71	16.79	22.02	27.22	29.70
Wet season total	*Northern*	22.79	25.44	29.45	33.43	38.16
Wet season total	*Central*	23.22	25.79	29.71	34.86	39.22
Wet season total	*Southern*	24.37	27.37	30.58	35.88	41.68
Wet season total	*District*	23.92	27.16	29.97	34.71	38.93
January total	*Northern*	0.73	1.50	2.45	4.00	5.30
January total	*Central*	0.72	1.21	2.23	3.72	4.60
January total	*Southern*	0.39	0.93	1.88	3.31	4.93
January total	*District*	0.65	1.17	2.10	3.55	4.90
February total	*Northern*	0.82	1.42	2.82	4.08	5.76
February total	*Central*	0.60	1.12	2.38	4.17	5.50
February total	*Southern*	0.36	1.26	2.21	3.63	4.93
February total	*District*	0.73	1.32	2.38	3.94	5.12
March total	*Northern*	1.00	2.06	3.15	5.43	7.21
March total	*Central*	0.97	1.66	2.96	4.95	6.44
March total	*Southern*	0.81	1.28	2.56	4.29	6.68
March total	*District*	1.09	1.64	3.04	4.86	6.92
April total	*Northern*	0.65	1.33	2.38	3.95	5.52
April total	*Central*	0.51	0.96	1.87	3.44	5.59
April total	*Southern*	0.48	1.19	2.04	3.75	4.66
April total	*District*	0.65	1.20	2.24	3.72	5.12
May total	*Northern*	1.18	1.95	3.21	4.67	6.92
May total	*Central*	0.87	1.64	2.73	4.58	5.75
May total	*Southern*	1.17	1.91	3.36	5.22	6.75
May total	*District*	1.23	2.04	3.24	4.87	6.29
June total	*Northern*	4.60	5.47	7.27	8.63	10.16
June total	*Central*	3.65	4.79	6.46	8.27	9.48
June total	*Southern*	4.22	5.63	7.44	9.06	12.06
June total	*District*	4.55	5.46	7.24	8.60	10.99
July total	*Northern*	5.36	6.75	8.29	9.16	11.52
July total	*Central*	4.89	5.98	8.35	10.05	11.44
July total	*Southern*	5.68	6.94	8.11	9.50	10.99
July total	*District*	5.60	6.83	8.19	9.57	10.58
August total	*Northern*	5.44	6.30	7.31	9.72	11.33
August total	*Central*	5.52	6.55	7.90	9.62	12.03
August total	*Southern*	5.55	6.22	7.70	8.97	10.49
August total	*District*	5.65	6.52	7.70	9.37	10.67
September total	*Northern*	2.79	4.18	5.84	8.04	11.35
September total	*Central*	3.19	5.11	6.46	8.50	11.69
September total	*Southern*	4.30	5.46	6.94	9.33	11.85
September total	*District*	3.85	5.21	6.53	8.62	11.65
October total	*Northern*	0.63	1.27	2.46	4.40	6.15
October total	*Central*	0.69	1.39	2.61	4.03	6.13
October total	*Southern*	0.92	1.78	2.73	4.27	6.04
October total	*District*	1.06	1.57	2.80	4.15	5.79

Rainfall percentiles by interval and region, inches (continued).

Rainfall Interval	Region	10TH Percentile (P10)	25th Percentile (P25)	50th Percentile (P50)	75th Percentile (P75)	90th Percentile (P90)
November total	*Northern*	0.38	0.71	1.63	2.88	4.56
November total	*Central*	0.25	0.47	1.42	2.82	4.33
November total	*Southern*	0.40	0.64	1.46	2.56	3.82
November total	*District*	0.37	0.63	1.53	2.73	4.39
December total	*Northern*	0.54	1.06	2.06	3.71	5.19
December total	*Central*	0.48	0.84	1.89	3.03	4.87
December total	*Southern*	0.45	0.77	1.56	2.63	4.18
December total	*District*	0.54	0.89	1.86	2.92	4.34

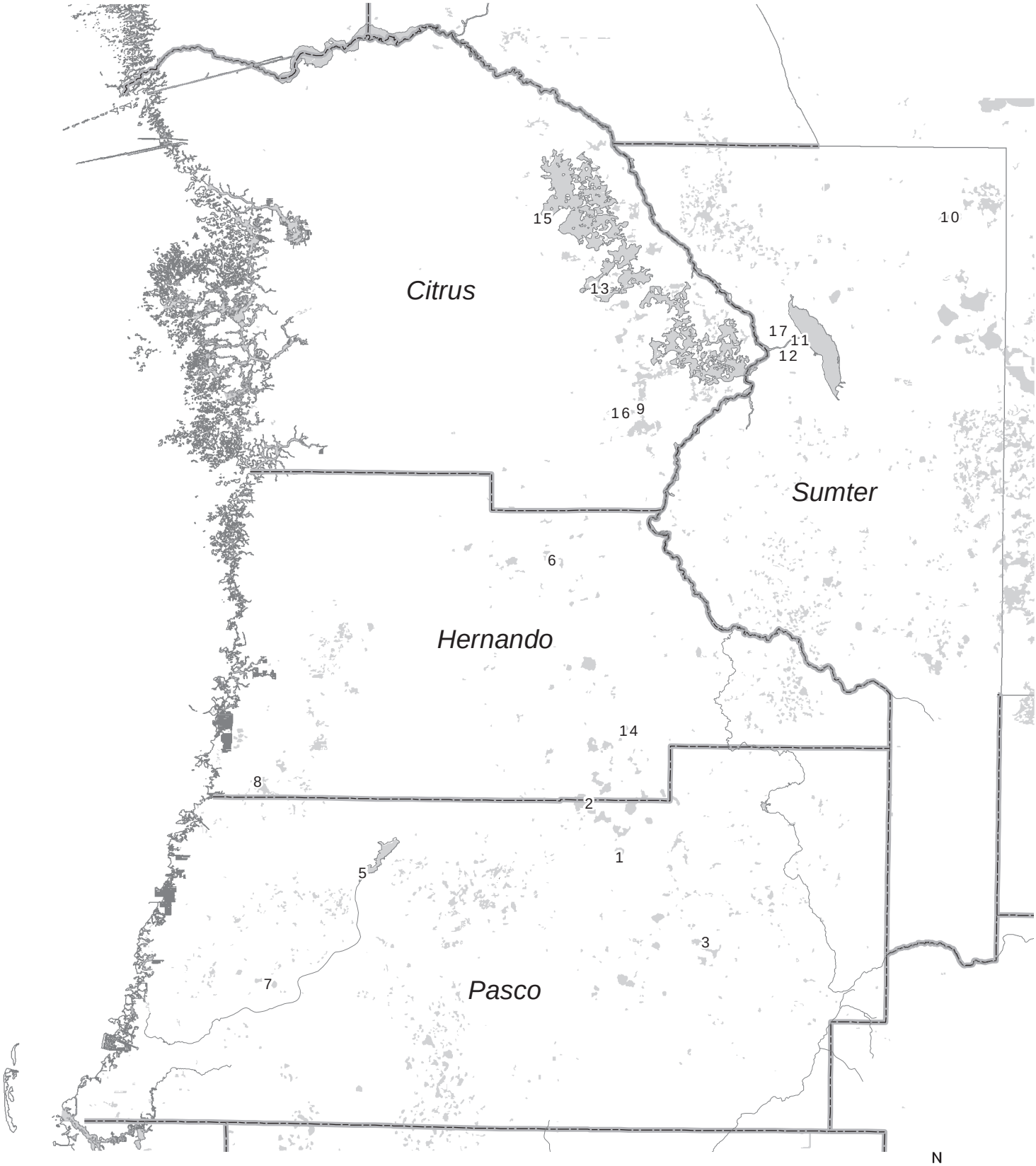
Rainfall characterization ranges

Characterization	Range	Corresponding Rainfall Percent of Normal (approximate)
Very dry	Less than the P10 rainfall	Less than 80 percent of normal
Drier than normal	P10 to P24 rainfall	80 to 90 percent of normal
Normal	P25 to P75 rainfall	90 to 110 percent of normal
Wetter than normal	P76 to P90 rainfall	110 to 120 percent of normal
Very Wet	Greater than the P90 rainfall	Greater than 120 percent of normal


RADAR
Rainfall
Estimate
Grid
System
Northern
Central
Southern
N
W
E
S

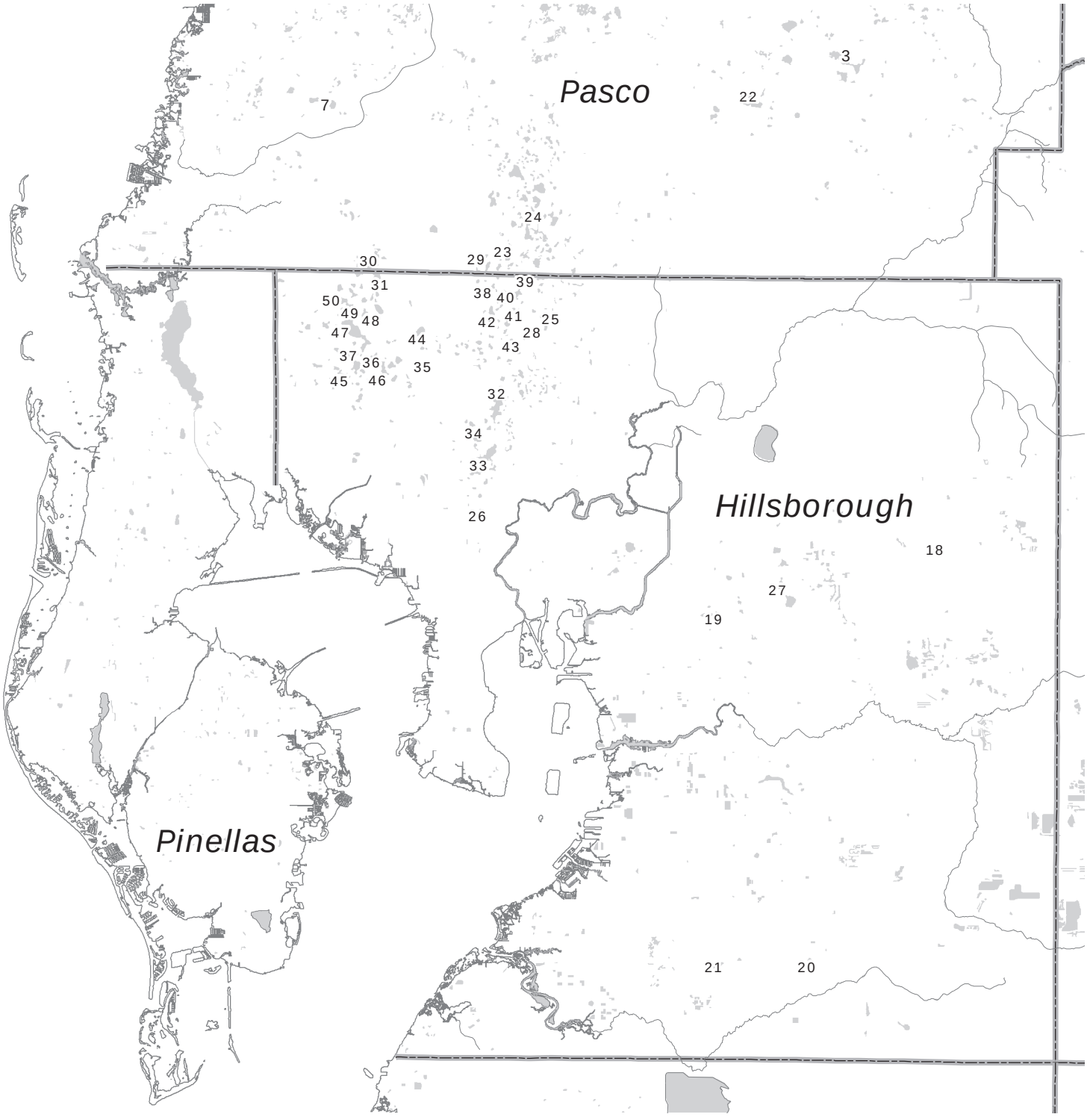
02/2009

Selected Lake Monitoring Stations
Northern Region



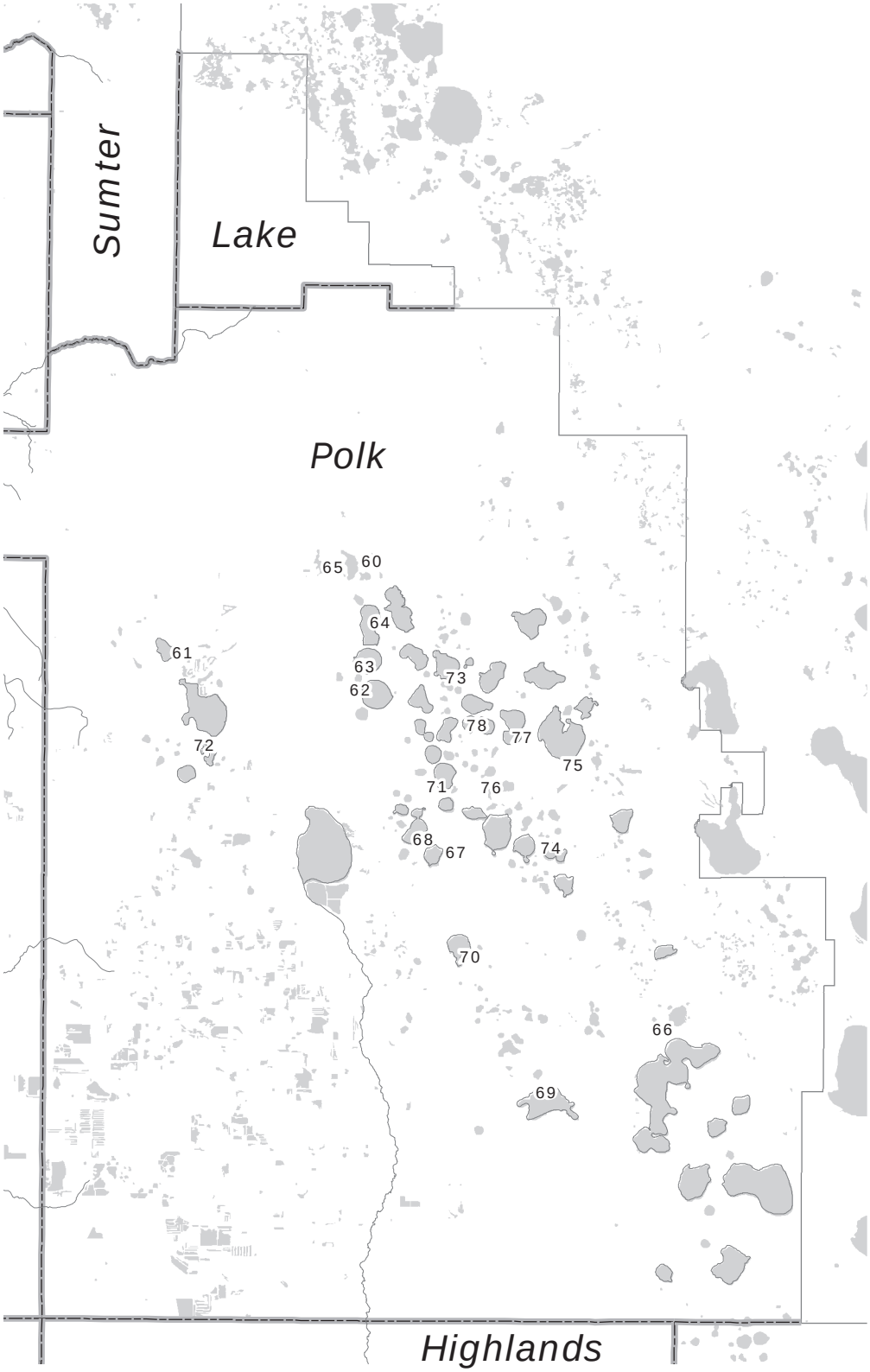
03/2009

Selected Lake Monitoring Stations
Tampa Bay Region



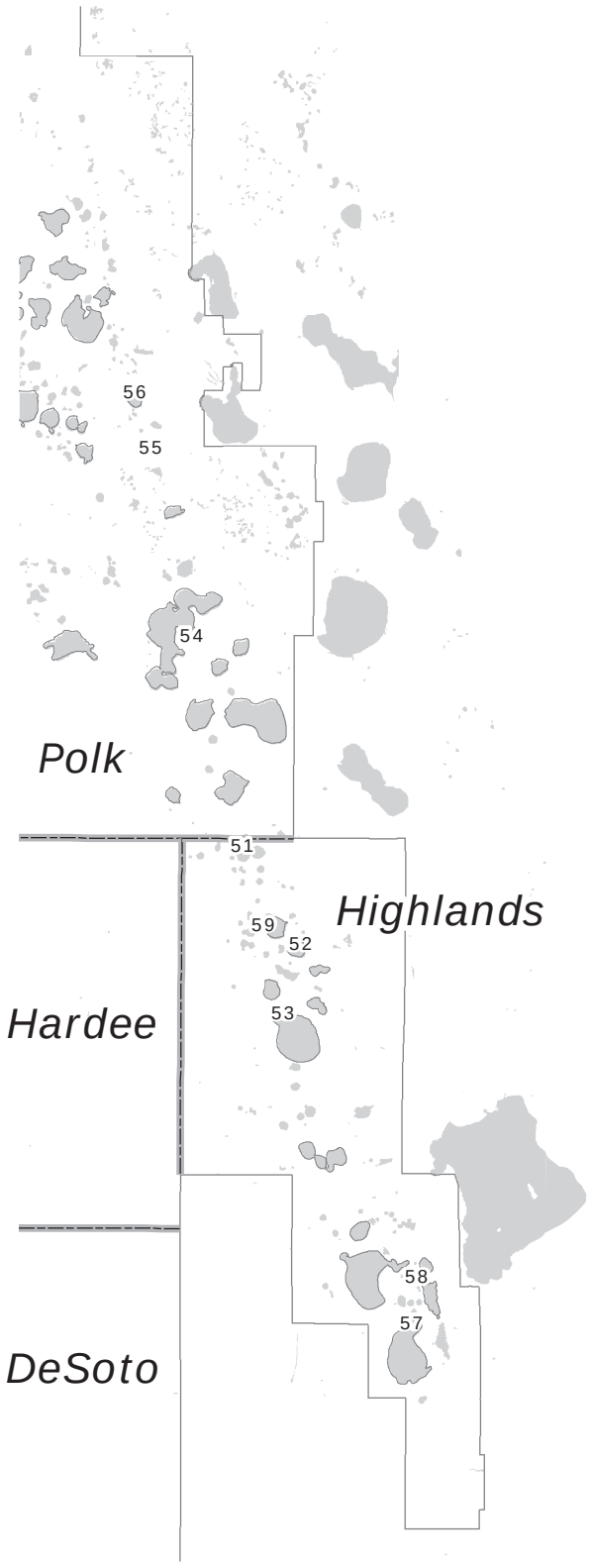
03/2009

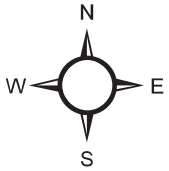
Selected Lake Monitoring Stations
Polk Uplands Region



03/2009

Selected Lake Monitoring Stations
Lake Wales Ridge Region





03/2009

Selected Lake Monitoring Stations

Northern Region

Map ID	Site Name
1	Lake Iola
2	Hancock Lake
3	Lake Pasadena
5	Crews Lake
6	Lake Lindsey
7	Moon Lake
8	Hunters Lake
9	Tsala Apopka at Floral City
10	Lake Miona
11	Pana Vista Outlet River
12	Outlet River at Panacoochee
13	Tsala Apopka at Inverness
14	Spring Lake
15	Tsala Apopka at Hernando
16	Little Lake (Consuella)
17	Lake Panasoffkee

Tampa Bay Region

Map ID	Site Name
18	Mud (Walden) Lake
19	Gornto Lake
20	Carlton Lake
21	Lake Wimauma
22	King Lake near San Antonio
23	Lake Linda
24	Lake Padgett
25	Keene Lake
26	Egypt Lake
27	Long Pond
28	Lake Stemper
29	Camp Lake
30	Lake Ann (Parker)
31	Lake Hiawatha
32	Platt Lake
33	Lake Carroll
34	Bay Lake
35	Lake LeClare
36	Little Lake
37	Rainbow Lake
38	Lake Harvey
39	Deer Lake

Map ID	Site Name
40	Lake Brooker
41	Cooper Lake
42	Lake Thomas
43	Brant Lake
44	Turkey Ford Lake
45	Church Lake
46	Horse Lake
47	Lake Alice
48	Lake Calm
49	Keystone Lake
50	Crescent Lake

Selected Lake Monitoring Stations

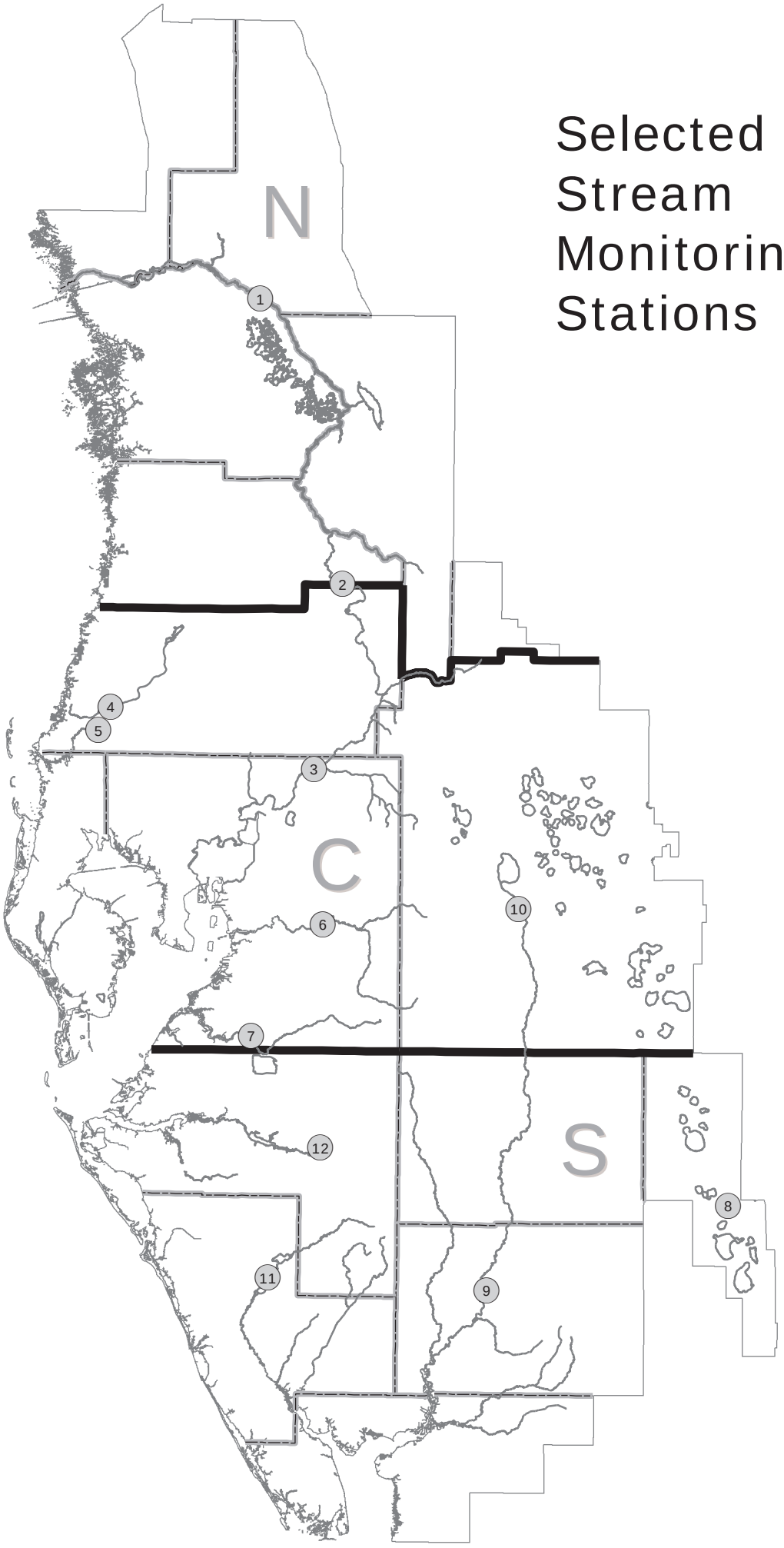
Lake Wales Ridge Region

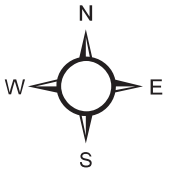
Map ID	Site Name
51	Trout Lake
52	Lake Letta
53	Lake Jackson at Sebring
54	Crooked Lake near Babson Park
55	Lake Starr
56	Lake Annie
57	Lake Placid
58	Lake Clay
59	Lake Lotela

Polk Uplands Region

Map ID	Site Name
60	Lake Helene
61	Lake Gibson
62	Lake Ariana
63	Lake Arietta
64	Lake Juliana
65	Clearwater Lake
66	Blue Lake South
67	Lake McLeod
68	Eagle Lake
69	Lake Buffum
70	Lake Garfield
71	Lake Howard
72	Lake Bonny
73	Lake Alfred
74	Lake Ruby
75	Lake Hamilton
76	Lake Otis
77	Lake Fannie
78	Lake Conine

Selected Stream Monitoring Stations





02/2009

Selected Stream Monitoring Stations

Map ID	Site Name
1	Withlacoochee River near Holder
2	Withlacoochee River at Trilby
3	Hillsborough River near Zephyrhills
4	Pithlachascotee River near New Port Richey
5	Anclote River near Elfers
6	Alafia River at Lithia
7	Little Manatee River near Wimauma
8	Josephine Creek near DeSoto City
9	Peace River at Arcadia
10	Peace River at Bartow
11	Myakka River near Sarasota
12	Manatee River near Myakka Head

STREAM MONITORING STATIONS

WITHLACOOCHEE RIVER (Northern Region)

Total length:	157 miles
Headwaters:	NW Polk and southern Sumter Counties
Elevation:	135 feet
Tributaries:	Little Withlacoochee, Big Gant Canal, Jumper Creek, Shady Brook, Outlet River of Lake Panasoffkee, Leslie Heifner Canal, Orange State Canal, Tsala Apopka Outfall Canal and Rainbow Springs.
Mouth:	Gulf of Mexico, Citrus County
Drainage area:	2000 square miles

Holder Station

County:	Marion
Period-of-record:	1928
Location:	38 miles upstream from mouth
Drainage area:	1825 square miles

Trilby Station

County:	Hernando
Period-of-record:	1928
Location:	93 miles upstream from mouth
Drainage area:	570 square miles

ANCLOTE RIVER (Central Region)

Total length:	27.5 miles
Headwaters:	South-central Pasco County, west of Land O Lakes
Elevation:	65 feet
Tributaries:	South Branch and Hollin Creek
Mouth:	Gulf of Mexico, Pasco County
Drainage area:	113 square miles

Elfers Station

County:	Pasco
Period-of-record:	1946
Location:	16 miles upstream from mouth
Drainage area:	72.5 square miles

HILLSBOROUGH RIVER (Central Region)

Total length:	55 miles
Headwaters:	Southeast Pasco County
Elevation:	77 feet
Tributaries:	Crystal Springs, Blackwater Creek, Flint Creek, Trout Creek, Cypress Creek, Curiosity Creek and Sulphur Springs
Mouth:	Hillsborough Bay
Drainage area:	690 square miles

Zephyrhills Station

County:	Hillsborough
Period-of-record:	1939
Location:	40 miles upstream from mouth
Drainage area:	200 square miles

PITHLACHASCOTEE RIVER (Central Region)

Total length: 41 miles
Headwaters: Crews Lake and Masaryktown area in central Pasco and southern Hernando Counties
Elevation: 120 feet
Mouth: Gulf of Mexico
Drainage area: 191 square miles

New Port Richey Station:

County: Pasco
Period-of-record: 1963
Location: 10.5 miles upstream from mouth
Drainage area: 180 square miles

ALAFIA RIVER (Central Region)

Total length: 24 miles
Headwaters: Western Polk and eastern Hillsborough Counties
Tributaries: North and South Prongs, Lithia Springs, and Buckhorn Creek.
Elevation: 30 feet
Mouth: Tampa Bay
Drainage area: 420 square miles

Lithia Station:

County: Hillsborough
Period-of-record: 1932
Location: 16 miles upstream from mouth
Drainage area: 335 square miles

LITTLE MANATEE RIVER (Central Region)

Total length: 39 miles
Headwaters: Southeast Hillsborough County
Tributaries: Carlton Branch, the South Fork, Dug Creek and Cypress Creek.
Elevation: 130 feet
Mouth: Tampa Bay
Drainage area: 225 square miles

Wimauma Station:

County: Hillsborough
Period-of-record: 1939
Location: 15 miles upstream from mouth
Drainage area: 149 square miles

JOSEPHINE CREEK (Southern Region)

Total length: 12 miles
Headwaters: Lake Josephine in central Highlands County
Elevation: 80 feet
Mouth: Lake Istokpoga in Highlands County
Drainage area: 143 square miles

DeSoto City Station:

County: Highlands
Period-of-record: 1946
Location: 4.9 miles upstream of mouth
Drainage area: 109 square miles

MANATEE RIVER (Southern Region)

Total length: 45 miles
Headwaters: Four corners area Hillsborough, Polk, Hardee and manatee Counties.
Elevation: 130 feet
Mouth: Tampa Bay
Drainage area: 330 square miles

Myakka Head Station:

County: Manatee
Period-of-record: 1966
Location: 36 miles upstream from mouth
Drainage area: 65.3 square miles

MYAKKA RIVER (Southern Region)

Total length: 54.1 miles
Headwaters: Western Hardee and Eastern Manatee Counties
Tributaries: Howard Creek, Deer Prairie, and Big Slough Canal
Elevation: 105 feet
Mouth: Charlotte Harbor
Drainage area: 540 square miles

Sarasota Station:

County: Sarasota
Period-of-record: 1936
Location: 36 miles upstream from mouth
Drainage area: 229 square miles

PEACE RIVER (Central and Southern Region)

Total length: 120 miles
Headwaters: Green Swamp in northern Polk County through Lake Hancock, Winter Haven chain of lakes, and Lake Hamilton.
Tributaries: Peace Creek Canal, Saddle Creek, Charlie Creek, Prairie Creek, Horse Creek, Joshua Creek and Shell Creek. Elevation: 110 feet
Mouth: Charlotte Harbor
Drainage area: 2300 square miles

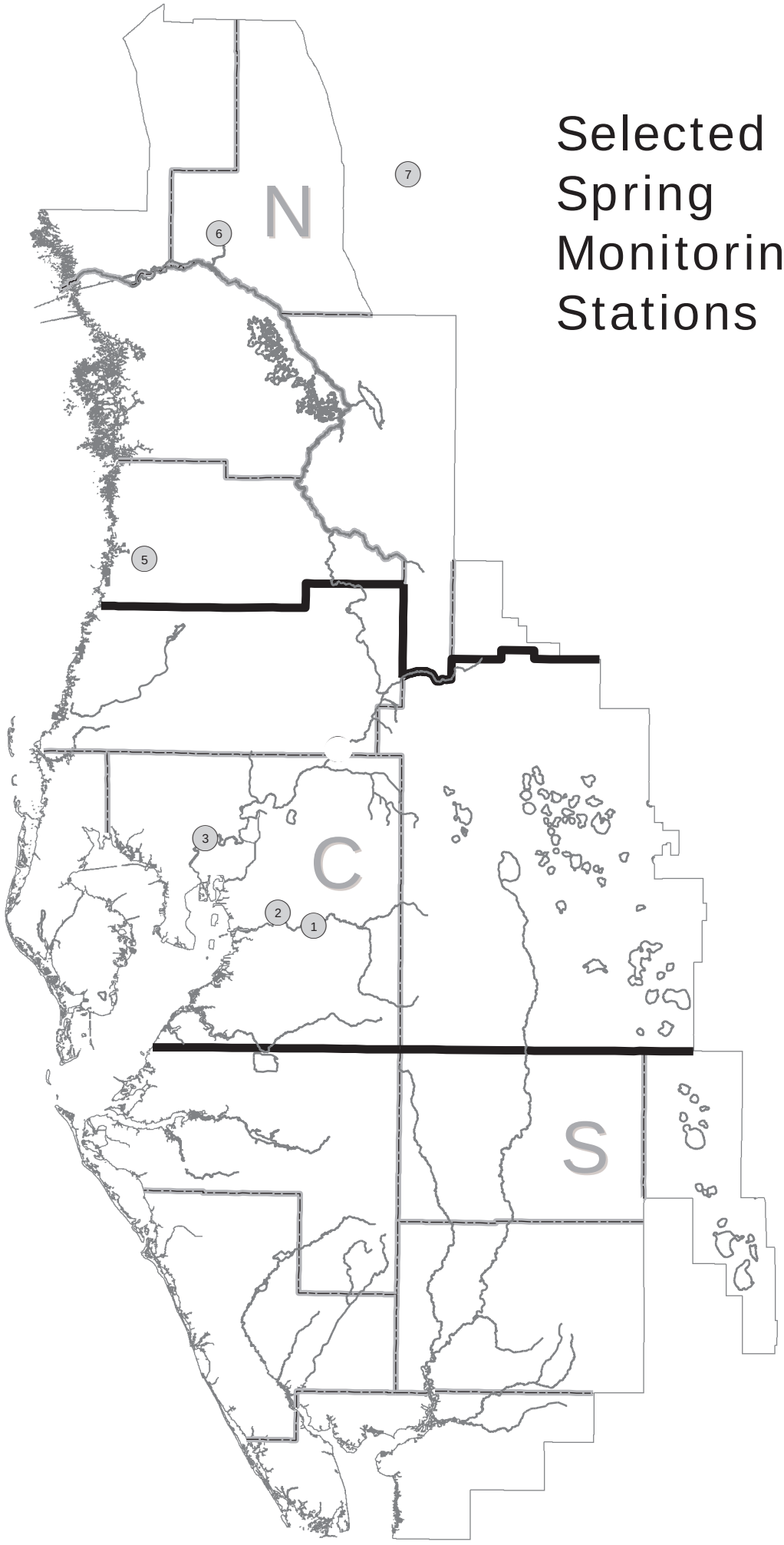
Arcadia Station (Southern Region):

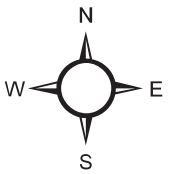
County: Desoto
Period-of-record: 1931
Location: 36 miles upstream from mouth
Drainage area: 1367 square miles

Bartow Station (Central Region):

County: Polk
Period-of-record: 1939
Location: 105 miles upstream from mouth
Drainage area: 390 square miles

Selected Spring Monitoring Stations





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Selected Spring Monitoring Stations

Map ID	Site Name
1	Lithia Main Spring
2	Buckhorn Main Spring
3	Sulphur Springs at Sulphur Springs
5	Weeki Wachee River near Brooksville
6	Rainbow Springs near Dunnellon
7	Silver Springs near Ocala

SPRINGS MONITORING STATIONS

RAINBOW SPRINGS (Northern Region)

County:	Marion
Basin:	Withlacoochee River
Magnitude:	1st
Discharge measurement location:	5 mi downstream from head of springs
Discharge contributes to:	Rainbow River, Withlacoochee River
Public Access:	Yes
Period-of-record:	1965
Gage:	Non-recording gage

SILVER SPRINGS (Northern Region)

County:	Marion
Basin:	Ocklawaha River
Magnitude:	1st
Discharge measurement location:	4 to 5 mi downstream from head of springs
Discharge contributes to:	Silver Springs River, Ocklawaha River, St. Johns River
Public Access:	Yes
Period-of-record:	1932
Gage:	Water-stage recorder

WEEKI WACHEE SPRINGS (Northern Region)

County:	Hernando
Basin:	Coastal Rivers
Magnitude:	1st
Discharge measurement location:	1 mi downstream from head of springs
Discharge contributes to:	Weeki Wachee River
Public Access:	Yes
Period-of-record:	1993
Gage:	Water-stage

SULPHUR SPRINGS (Central Region)

County:	Hillsborough
Basin:	Hillsborough River
Magnitude:	2nd
Discharge measurement location:	300 ft downstream from gage
Discharge contributes to:	Hillsborough River
Public Access:	Yes
Period-of-record:	1956
Gage:	Water-stage recorder

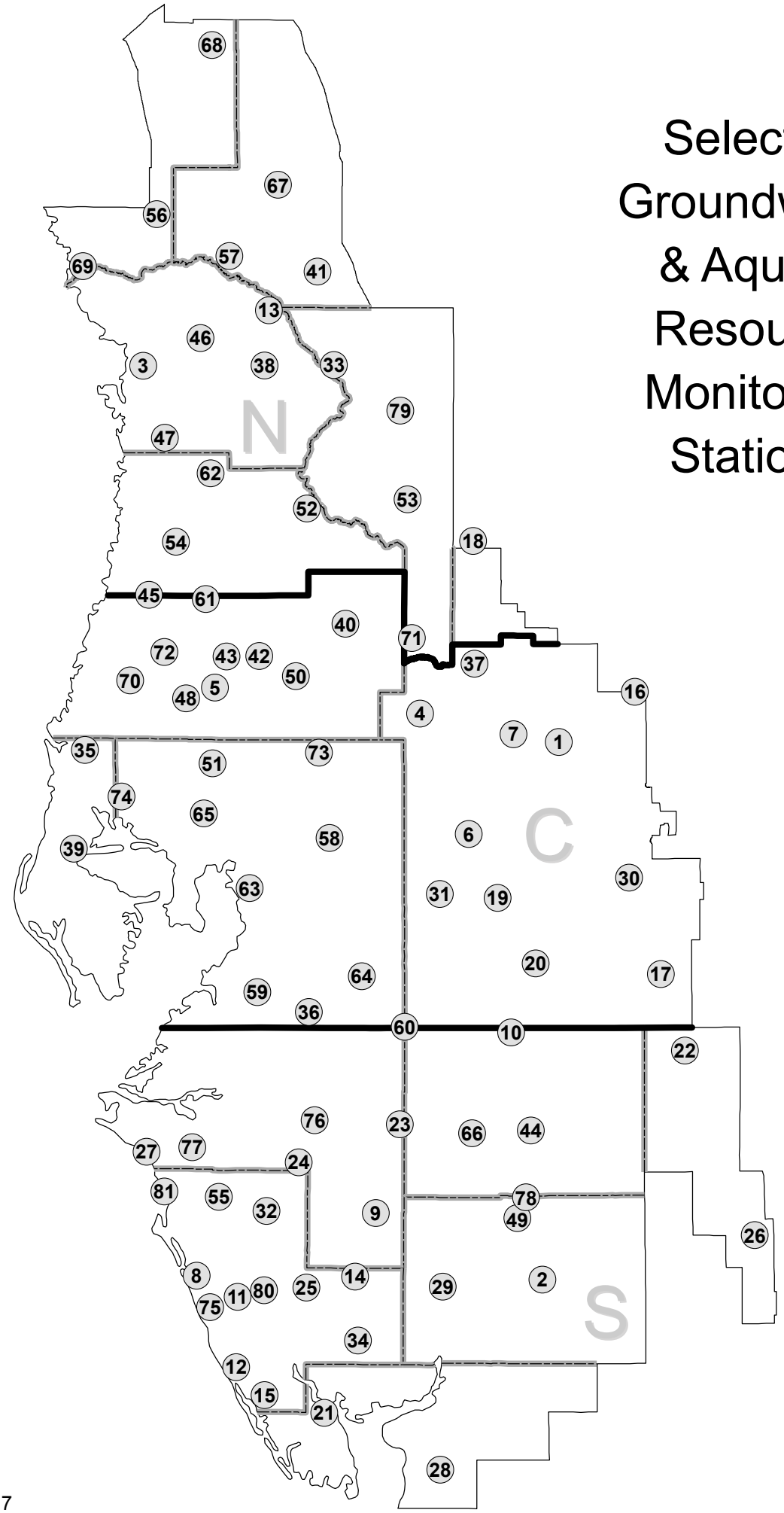
BUCKHORN SPRINGS (Central Region)

County:	Hillsborough
Basin:	Alafia River
Magnitude:	2nd
Discharge measurement location:	Difference between discharge measurements of Buckhorn Creek made 25 ft upstream from and 100 ft downstream from Buckhorn Springs
Discharge contributes to:	Buckhorn Creek, Alafia River
Public Access:	No
Period-of-record:	1987
Gage:	Water-stage recorder

LITHIA SPRINGS: (Central Region)

County:	Hillsborough
Basin:	Alafia River
Magnitude:	2nd
Discharge measurement location:	50 feet downstream from main pool
Discharge contributes to:	Alafia River
Public Access:	Yes
Period-of-record:	1934
Gage:	Water-stage recorder

Selected Groundwater & Aquifer Resource Monitoring Stations



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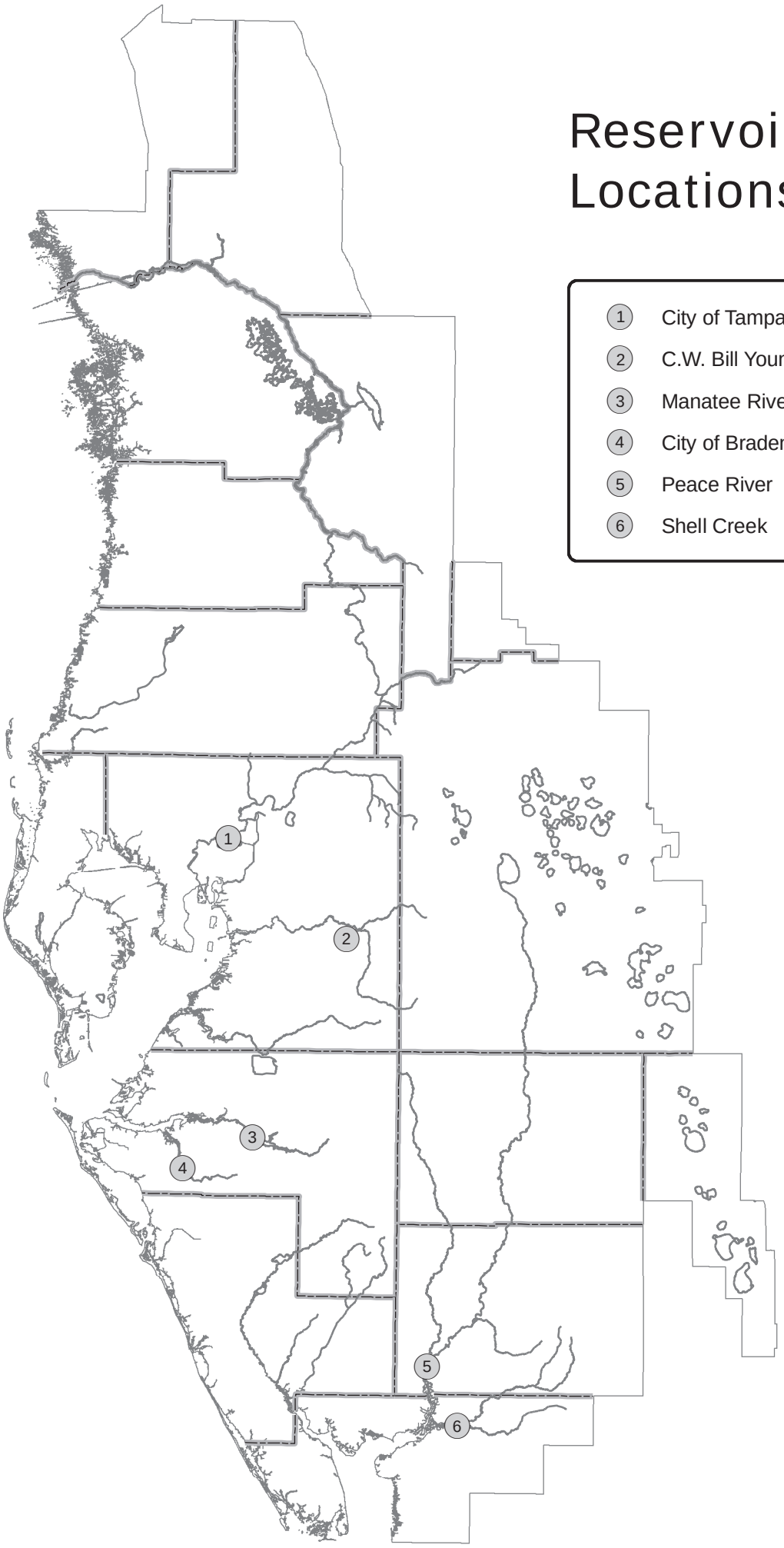
Select Groundwater & Aquifer Resource Monitoring Stations

Map ID	Site Name
1	Lake Alfred Deep nr Lake Alfred
2	ROMP 16 U Fldn Aq Monitor
3	ROMP TR 21-2 U Fldn Aq Chloride Monitor
4	ROMP 87 U Fldn Aq (Avpk) Monitor
5	Pasco 13 nr Drexel Fldn
6	Sanlon Ranch Fldn
7	ROMP 76 U Fldn Aq Monitor
8	ROMP 20 U Fldn Aq (Swnn) Monitor
9	Edgeville 3 Deep
10	Cargill FA-1 Fldn
11	ROMP TR 5-2 U Fldn Aq (Swnn) Monitor
12	Manasota 14 Deep
13	ROMP 116 U Fldn Aq Monitor
14	Big Slough Deep
15	Englewood 14 Deep
16	Loughman Deep
17	Coley Deep
18	Mascotte Deep (L-0062)
19	ROMP 59 U Fldn Aq Interface Monitor
20	ROMP 45 U Fldn Aq (Avpk) Monitor
21	ROMP TR 3-1 U Fldn Aq Monitor
22	ROMP 43XX U Fldn Aq Monitor
23	ROMP 32 U Fldn Aq (Avpk) Monitor
24	Verna Test 0-1
25	ROMP 19X U Fldn Aq (Swnn) Monitor
26	ROMP 28X U Fldn Aq Monitor
27	ROMP TR 7-1 L Arca Aq Interface Monitor
28	ROMP TR 1-2 U Fldn Aq Monitor
29	ROMP 17 U Fldn Aq (Swnn) Monitor
30	ROMP 58 U Fldn Aq Monitor
31	ROMP 60 U Fldn Aq (Avpk) Monitor Repl
32	ROMP 22 U Fldn Aq (Swnn) Monitor
33	Sumter 13 JC 59 Up Fldn Repl
34	ROMP 9 U Fldn Aq (Swnn) Monitor
35	Tarpon Road Deep
36	ROMP 123 Htrn As/U Fldn Aq Monitor
37	ROMP 88 U Fldn Aq Monitor
38	Inverness DOT Fldn
39	Pinellas 665 Fldn
40	Lykes Pasco Fldn
41	ROMP 119 U Fldn Aq Sulfate Monitor
42	SR 52 And CR 581 Deep
43	ROMP 93 U Fldn Aq Monitor
44	ROMP 30 U Fldn Aq Monitor
45	ROMP 97 U Fldn Aq Monitor
46	North Lecanto Deep
47	Chassahowitzka 1 Deep
48	Bexley 2 Fldn
49	ROMP 26 U Fldn Aq Monitor
50	SR 577 Deep
51	Debuel Road Deep
52	ROMP 103 U Fldn Aq Monitor
53	Webster City Fldn
54	Weeki Wachee Fldn Repl
55	Sarasota Service Office U Fldn Aq Monitor
56	Tidewater 1 Fldn
57	CE 14 Dunnellon Deep
58	DV-1 U Fldn Aq (Swnn) Monitor
59	ROMP 50 U Fldn Aq (Avpk) Chloride Monitor
60	ROMP 40 U Fldn Aq Monitor
61	Masaryktown Deep
62	ROMP 107 U Fldn Aq Monitor
63	ROMP TR 10-2 U Fldn Aq Monitor
64	ROMP 48 U Fldn Aq (Tmpa/Swnn) Monitor
65	ROMP 66 U Fldn Aq Monitor
66	ROMP 31 U Fldn Aq Monitor
67	ROMP 120 U Fldn Aq Monitor
68	ROMP 134 U Fldn Aq (Ocal-Avpk-Oldm) Monitor
69	ROMP TR 124 U Fldn Aq Monitor (Avpk) 2
70	Moon Lake Deep
71	ROMP 89 U Fldn Aq Monitor
72	SR 52 Deep West nr Fivay Junction
73	Hillsborough River State Park Parking Lot Deep
74	ROMP TR 13-3 U Fldn Aq Monitor
75	ROMP TR 5-1 U Fldn Aq Sulfate Monitor
76	Kibler Deep
77	ROMP TR 7-4 U Fldn Aq (Swnn) Monitor
78	Marshall Deep (USGS)
79	ROMP 111 U Fldn Aq Monitor
80	ROMP 19 U Fldn Aq (Swnn) Monitor
81	ROMP TR SA-1 U Fldn Aq (Swnn) Monitor

Reservoir Locations



1. City of Tampa
2. C.W. Bill Young Regional
3. Manatee River
4. City of Bradenton (Evers)
5. Peace River
6. Shell Creek

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DESCRIPTION OF PUBLIC SUPPLY SURFACE WATER RESERVOIRS

CITY OF TAMPA RESERVOIR (Hillsborough River Basin): Constructed in 1924, it is located on the Hillsborough River in Hillsborough County. It is the fourth largest public supply surface water facility in the District. It is the main water supply for the City of Tampa and has a total storage capacity of 1.7 billion gallons (bg). The total usable volume is 1.4 bg, when the reservoir elevation is 22.5 feet NGVD. It is an in-stream reservoir with a depth that ranges between nine and 22 feet. Given this amount of water, it is estimated that a 15-day supply of water is available from this facility over an extended dry period. During periods of low water due to drought conditions, the facility is permitted to pump water from two alternate sources. The first of these two sources is the Tampa Bypass Canal. Water is pumped over the water control structure at S-161 into the Hillsborough River above the dam. The second source is Sulphur Springs, just downstream from the dam, where water is captured at the spring and pumped back behind the dam. Withdrawals from both sources are in strict accordance with pumpage schedules as outlined in the facility's water use permit. When water levels fall below 12 feet NGVD, water cannot be withdrawn because the reservoir level is below the intake pipes. The permitted average daily withdrawal for this facility is 82 mgd, with a permitted maximum daily withdrawal of 104 mgd. Currently, ground water wells are not used to augment this facility. The minimum producible level is 9.00 feet.

PEACE RIVER RESERVOIRS - PEACE RIVER/MANASOTA REGIONAL WATER SUPPLY AUTHORITY (Peace River Basin): The Peace River reservoirs are located in southwestern DeSoto County. They are an off-stream reservoir system consisting of two reservoirs that store surface water captured from the Peace River during wet periods. The first reservoir, Reservoir 1, was built in 1980 and encompasses approximately 85 acres, has a water depth of approximately 31 feet, and has a total storage capacity of approximately 625 million gallons. The second reservoir, Reservoir 2, was built in 2009, covers about 616 acres, has a water depth of approximately 35 feet, and has a total storage capacity of about 6.0 billion gallons. The PRMRWSA facility ranks as the third largest in the District for total volume storage and supplies water to Charlotte, DeSoto, Manatee and Sarasota counties and to the City of North Port. The facility also uses an aquifer storage recovery (ASR) system for storing treated water pumped from the river. The minimum producible level at Reservoir 1 is Elevation 8.0 feet, while Reservoir 2 is Elevation 27.0 feet.

MANATEE RESERVOIR (Manasota Basin): Completed in 1967 by the damming of the Manatee River, the Manatee Reservoir is the second largest of the six surface-water public supply facilities within the District. Located in Manatee County, this in-stream facility has a storage capacity of 7.5 bg. The service area of the Manatee reservoir is the unincorporated portions of Manatee County, the City of Palmetto and Anna Maria Island, and also the Sarasota SUD#1. This reservoir provides essentially all public supply for Manatee County, with the exception of the City of Bradenton. The total size of this reservoir is 1800 acres with an average depth of 15 feet. With the reservoir full, the

facility has approximately 220 days of available water supply. When the surface-water elevation drops below 21.0 feet, water cannot be withdrawn because levels are below the facility's intakes. The permitted average daily withdrawal for this facility is 34.9 mgd, with a permitted peak monthly quantity of 41.9 mgd. The minimum producible level is 21.00 feet.

EVERS RESERVOIR (Manasota Basin): Constructed in 1935 and expanded in 1985, it is located on the Braden River in Manatee County. This is the fifth largest public supply reservoir in the District. Its main service area is the City of Bradenton and approximately 500 customers outside the city. It has a total storage capacity of 1.5 bg. The total size of the facility is 300 acres with an average depth of 12 feet. Water ceases to flow over the dam when the level falls below 3.84 feet NGVD. During the 1985 drought, while expansion of the facility was taking place, the water level dropped to one foot below sea level and demand was still met. Given a completely full reservoir, with no water going over the spillway, it is estimated the facility could supply water for approximately 260 days, with no input from rainfall. The permitted average daily withdrawal for this facility is 6.95 mgd, with a permitted peak monthly quantity of 8.13 mgd. Currently, ground-water wells are not used to augment this facility.

SHELL CREEK RESERVOIR (Peace River Basin): Shell Creek Reservoir, located in Charlotte County, is the sixth largest surface water system within the District. This system was built in 1964 and services the City of Punta Gorda as well as unincorporated areas surrounding the city limits. The Shell Creek Reservoir is fed by two primary tributaries, Shell Creek from the east and Prairie Creek from the northwest. The total drainage area at Hendrickson Dam is 373 square miles. It has a surface area of 800 acres and depths of 10 to 12 feet. Total storage capacity is 765 mg. Even with this low volume of water, personnel at this facility estimate they have approximately 125 days of available supply with no input from rainfall. Water ceases to flow across the weir when surface elevations drop below 5.0 feet NGVD, and at 3.7 feet NGVD water quality becomes a major concern. When surface elevations drop below 1.75 feet NGVD, the water is below the intakes and withdrawal of water is not possible. The permitted average daily withdrawal by this facility is 5.358 mgd, with a permitted peak monthly quantity of 6.901 mgd. The minimum producible level is 1.70 feet.

C.W. BILL YOUNG REGIONAL RESERVOIR - TAMPA BAY WATER (Alafia River Basin): Constructed in early 2005, it is the largest public supply surface water facility in the District. Located in southern Hillsborough County, it is an off-stream reservoir that stores surface water skimmed from the Tampa Bypass Canal and Alafia and Hillsborough Rivers. It services the Tampa Bay region through the Tampa Bay Water regional public supply water distribution system. The reservoir has an estimated storage capacity of 15.0 bg when the water level elevation is 136.5 feet NGVD. The reservoir is approximately 45 feet deep, two miles long and one mile wide, and encompasses a land area of approximately 1,100 acres. It reportedly has the capacity to provide 25 percent of the Tampa Bay region's public supply needs for six months and can supply the Tampa Bay regional surface water treatment plant at full capacity for 227 days.