

# Hydrologic Conditions

for the month of

## December 2023

Prepared by the  
**Hydrologic Data Section**  
Data Collection Bureau



January 23, 2024

<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, Erin Walters and Casie Cutman.

Administrative Support/  
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## INTRODUCTION

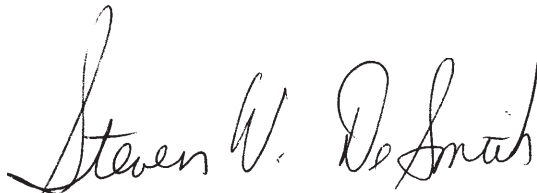
The Hydrologic Conditions Report is generated monthly by the Hydrologic Data Section, Data Collection Bureau, of the Southwest Florida Water Management District. This report provides an end-of-month analytical summary of regional and temporal variations in the hydrologic conditions across the District's 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.

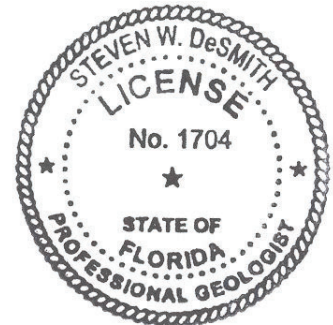
Any questions about the significance, accuracy, or interpretation of these data should be referred to Tamera McBride, Manager of the Hydrologic Data Section at (352) 796-7211 or (800) 423-1476.

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.



01/18/2024

Registration #PG-1704



### Americans with Disabilities Act (ADA)

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](mailto: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](http://WaterMatters.org/ADA).

## EXECUTIVE SUMMARY

### Hydrologic Conditions for December 2023

In December, average rainfall totals were above normal in the northern counties of the District, while within the normal range in the central and southern counties. The normal range for rainfall is defined by totals that fall on or between the 25<sup>th</sup> to 75<sup>th</sup> percentiles of the historical monthly accumulation for each region and where the 50<sup>th</sup> percentile represents the historical mean. The northern counties received an average of 4.97 inches of rainfall, equivalent to the 88<sup>th</sup> percentile of the historical December record. The central counties received an average of 3.25 inches of rainfall, equivalent to the 72<sup>nd</sup> percentile, while the southern counties received an average of 3.12 inches of rainfall, equivalent to the 71<sup>st</sup> percentile of the historical December record. The Districtwide rainfall average of 3.67 inches was equivalent to the 76<sup>th</sup> percentile of the historical December record.

During the 12-month period from January 1, 2023, through December 31, 2023, the average rainfall totals in the northern counties was classified as “drier than normal,” while the central and southern counties were classified as “very dry.” The northern counties received an average of 48.00 inches of rainfall, equivalent to the 22<sup>nd</sup> percentile of the historical annual record. The central counties received an average of 42.23 inches of rainfall, equivalent to the 7<sup>th</sup> percentile, while the southern counties received an average of 40.82 inches of rainfall, equivalent to the 7<sup>th</sup> percentile. The Districtwide rainfall average of 43.31 inches was equivalent to the 10<sup>th</sup> percentile of the historical annual record.

Average regional lake levels in December were below normal in the Northern and Tampa Bay regions of the District, while they were within the normal range in the 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. Average regional lake levels in the Northern region increased 0.14 foot, ending the month 1.86 feet below the base level of the annual normal range. Average lake levels in the Tampa Bay region decreased 0.01 foot, ending the month 0.40 foot below the base of the annual normal range. Average lake levels in the Polk Uplands region decreased 0.01 foot, ending the month 1.55 feet above the base of the annual normal range. Average lake levels in the Lake Wales Ridge region decreased 0.18 foot, ending the month 0.36 foot above the base level of the annual normal range.

Total streamflow in December, based on three regional index rivers, was within the normal range in all three regions of the District. Normal streamflow is defined as the flow that falls on or between the 25<sup>th</sup> and 75<sup>th</sup> percentiles. Streamflow measured at the Withlacoochee River near Holder station in the northern counties increased and was at the 33<sup>rd</sup> percentile. Streamflow at the Hillsborough River near Zephyrhills station in the central counties increased and was at the 58<sup>th</sup> percentile, while total streamflow measured at the Peace River at Arcadia station in the southern counties decreased and was at the 46<sup>th</sup> percentile during December.

In December, regional groundwater level percentiles indicated that average Upper Floridan aquifer water levels were within their normal historical ranges in the northern, central and southern counties of the District. The normal range is defined as levels that fall on or between the 25<sup>th</sup> and 75<sup>th</sup> percentiles. The average regional groundwater level in the northern, central and southern counties ended the month at the 50<sup>th</sup>, 55<sup>th</sup> and 55<sup>th</sup> percentiles, respectively.

## REGIONAL OVERVIEW OF HYDROLOGIC CONDITIONS

### DECEMBER 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 December, the northern region received an average of 4.97 inches of rainfall, equivalent to the 88<sup>th</sup> percentile of the historical December readings, which is considered "wetter than normal." Average lake levels increased in the Northern region by 0.14 foot, ending the month at 1.86 feet below the base of the annual normal range. Total streamflow measured in the Withlacoochee River near Holder station increased and was in the 33<sup>rd</sup> percentile. Regional groundwater level percentiles indicated Upper Floridan aquifer water levels increased during December, ending the month at the 50<sup>th</sup> percentile.

#### **Central Region**

In December, the central region received an average of 3.25 inches of rainfall, equivalent to the 72<sup>nd</sup> percentile of historical December readings, which is considered "normal." Average lake levels decreased in the Tampa Bay region by 0.01 foot, ending the month at 0.40 foot below the base of the annual normal range; while levels decreased in the Polk Uplands regions by 0.01 foot, ending the month at 1.55 feet above the base of the annual normal range. Total streamflow measured at the Hillsborough River near Zephyrhills station increased and was in the 58<sup>th</sup> percentile. Regional groundwater level percentiles indicated Upper Floridan aquifer water levels increased during December, ending the month at the 55<sup>th</sup> percentile.

#### **Southern Region**

In December, the southern region received an average of 2.12 inches of rainfall, equivalent to the 71<sup>st</sup> percentile of historical December readings, which is considered "normal." Average lake levels decreased in the Lake Wales Ridge region by 0.18 foot, ending the month at 0.36 foot above the base of the annual normal range. Total streamflow measured at the Peace River at Arcadia station decreased and was in the 46<sup>th</sup> percentile. Regional groundwater level percentiles indicated Upper Floridan aquifer water levels increased during December, ending the month at the 55<sup>th</sup> 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 90<sup>th</sup> 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 10<sup>th</sup> (P10), the 25<sup>th</sup> (P25), the 75<sup>th</sup> (P75) and the 90<sup>th</sup> (P90) percentiles. The normal range for rainfall is defined by totals that fall on or between the 25<sup>th</sup> to 75<sup>th</sup> percentiles of the historical monthly average for each region and where the 50<sup>th</sup> percentile represents the historical median. The zero percentile indicates a new period-of-record low and the 100<sup>th</sup> 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.

In December, rainfall totals were above normal in the northern region of the District, while they were within the normal range in the central and southern regions. The normal range for rainfall is defined by totals that fall on or between the 25<sup>th</sup> to 75<sup>th</sup> percentiles of the historical monthly average for each region and where the 50<sup>th</sup> percentile represents the historical median. The northern counties received an average of 4.97 inches of rainfall, equivalent to the 88<sup>th</sup> percentile of the historical December record. The central counties received an average of 3.25 inches, equivalent to the 72<sup>nd</sup> percentile of the historical December record, while the southern counties received an average of 3.12 inches, equivalent to the 71<sup>st</sup> percentile. Districtwide, rainfall averaged 3.67 inches, which is equivalent to the 76<sup>th</sup> percentile.

During the 12-month period from January 1, 2023, through December 31, 2023, the average rainfall totals in the northern counties were classified as "drier than normal," while the central and southern counties were classified as "very dry." The northern counties received an average of 48.00 inches of rainfall, equivalent to the 22<sup>nd</sup> percentile of the historical record. The central counties received an average of 42.23 inches of rainfall,

equivalent to the 7<sup>th</sup> percentile. The southern counties received an average of 40.82 inches of rainfall, equivalent to the 7<sup>th</sup> percentile. The Districtwide rainfall average was 43.31 inches, which is equivalent to the 10<sup>th</sup> percentile of the historical annual record.

### **Tampa Monthly Climate Summary for December 2023**

According to the National Weather Service (NWS), the monthly average temperature (°F) for Tampa was 64.9 degrees, which is the same as (and equal to) the historical average monthly temperature for December. The highest temperature recorded during the month was 82.0 degrees, while the lowest temperature recorded during the month was 46.0 degrees. The December 2023 monthly average temperature of 64.9 degrees ranks as the 32<sup>nd</sup> warmest December since records began in 1890. The warmest December had an average monthly temperature of 73.4 degrees, which occurred in 2015.

### **Temperature and Precipitation Outlook**

The Climate Prediction Center's (CPC) three-month weather forecast, as of January 18, 2024, indicates above-normal chances for rainfall in all three regions of the District, during the composite 3-month period from January through March 2024. The temperature forecast for this same time-period indicates "near normal" temperatures are expected throughout the District.

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

[http://www.cpc.ncep.noaa.gov/products/OUTLOOKS\\_index.html](http://www.cpc.ncep.noaa.gov/products/OUTLOOKS_index.html)

## RELATIONSHIP OF DECEMBER 2023 TO HISTORICAL RAINFALL AVERAGES

All units in inches.

### Regional Summary

Region	DEC 2023 Average Rainfall	Historic Average for DEC	Departure from Historical Average	Calendar Year 2023 Cumulative Rainfall JAN-DEC	Calendar Year Historical 2023 Cumulative Rainfall JAN-DEC	Departure from Historical Cumulative DEC 2023	Cumulative 12-Month Rainfall JAN 2023-DEC 2023	Historical 12-month Cumulative Rainfall	Departure from Historical 12-month Cumulative
Northern Counties	4.97	2.59	2.38	48.00	53.53	-5.53	48.00	53.53	-5.53
Central Counties	3.25	2.38	0.87	42.23	52.34	-10.11	42.23	52.34	-10.11
Southern Counties	3.12	1.93	1.19	40.82	52.34	-11.52	40.82	52.34	-11.52
District All Counties	3.67	2.23	1.45	43.31	52.74	-9.43	43.31	52.74	-9.43

### Counties by Region

	DEC 2023 Average Rainfall	Historic Average for DEC	Departure from Historical Average	Calendar Year 2023 Cumulative Rainfall JAN-DEC	Calendar Year Historical 2023 Cumulative Rainfall JAN-DEC	Departure from Historical Cumulative DEC 2023	Cumulative 12-Month Rainfall JAN 2023-DEC 2023	Historical 12-month Cumulative Rainfall	Departure from Historical 12-month Cumulative
<b>NORTHERN COUNTIES</b>									
Levy	5.48	2.92	2.55	52.74	53.94	-1.20	52.74	53.94	-1.20
Marion	5.84	2.75	3.09	56.86	54.26	2.61	56.86	54.26	2.61
Citrus	4.75	2.60	2.15	43.41	54.00	-10.59	43.41	54.00	-10.59
Sumter	4.88	2.48	2.40	46.54	51.91	-5.37	46.54	51.91	-5.37
Hernando	4.15	2.58	1.57	42.34	54.88	-12.54	42.34	54.88	-12.54
Lake	4.38	2.40	1.98	47.65	51.90	-4.25	47.65	51.90	-4.25
<b>CENTRAL COUNTIES</b>									
Pasco	3.78	2.45	1.33	40.92	53.92	-13.00	40.92	53.92	-13.00
Pinellas	3.87	2.48	1.39	30.96	51.51	-20.55	30.96	51.51	-20.55
Hillsborough	3.24	2.26	0.98	39.83	52.54	-12.71	39.83	52.54	-12.71
Polk	2.89	2.11	0.78	46.55	52.04	-5.49	46.55	52.04	-5.49
<b>SOUTHERN COUNTIES</b>									
Manatee	2.78	2.05	0.72	34.82	53.28	-18.46	34.82	53.28	-18.46
Hardee	2.74	1.85	0.89	42.40	52.13	-9.73	42.40	52.13	-9.73
Highlands	2.97	1.68	1.29	48.25	52.08	-3.83	48.25	52.08	-3.83
Sarasota	2.77	1.98	0.79	35.56	52.53	-16.98	35.56	52.53	-16.98
DeSoto	3.27	1.77	1.51	44.22	51.83	-7.61	44.22	51.83	-7.61
Charlotte	4.56	1.78	2.78	44.77	52.47	-7.70	44.77	52.47	-7.70



## DECEMBER 2023 RAINFALL CHARACTERIZATION

All units in inches.

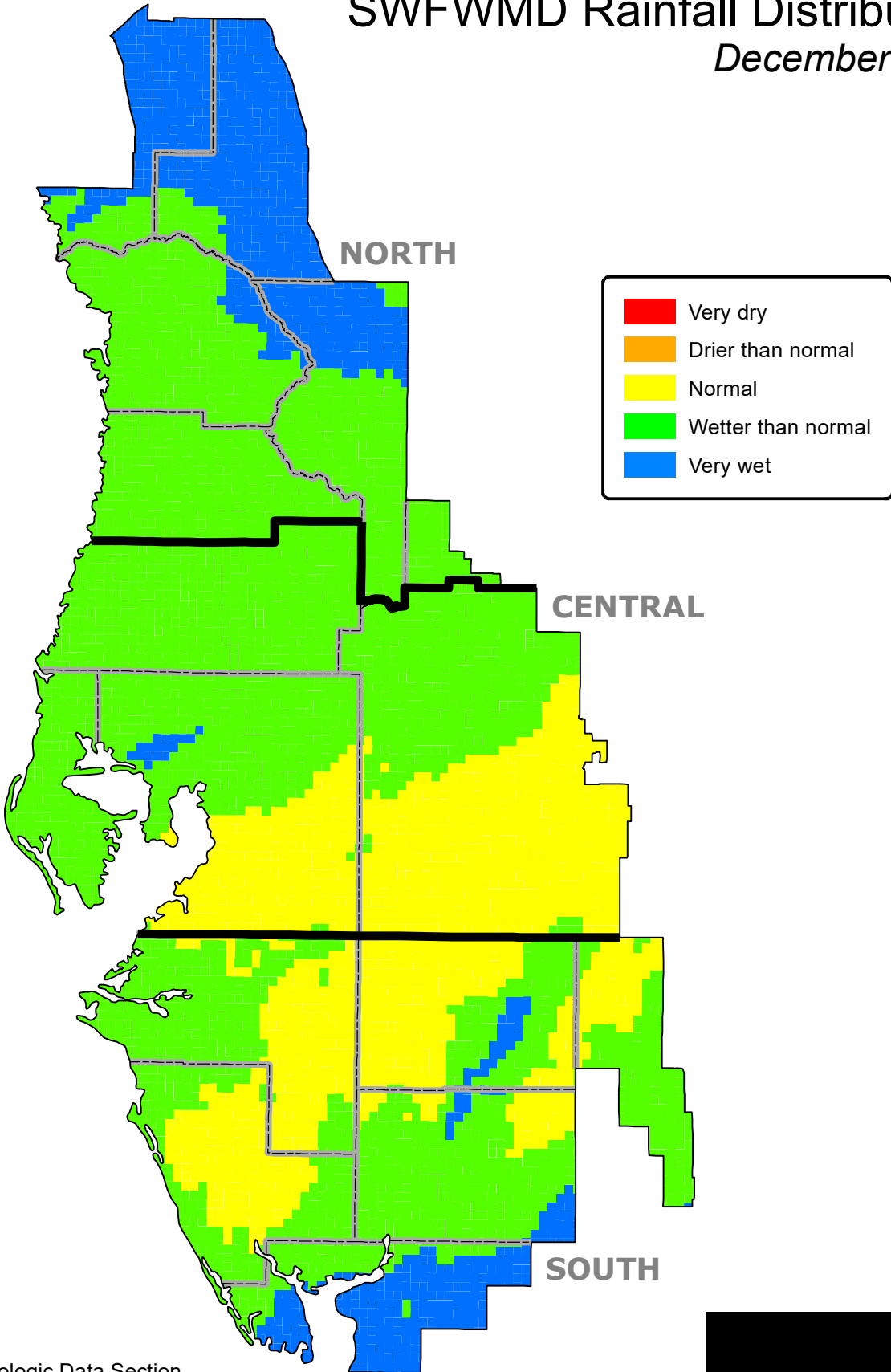
### Regional Summary

<i>Region</i>	<i>DEC 2023 Average Rainfall</i>	<i>Historical DEC Percentile</i>	<i>DEC Rainfall Characterization</i>	<i>Cumulative 12-Month Rainfall JAN 2023-DEC 2023</i>	<i>Historical 12-month Cumulative Percentile</i>	<i>12-month Cumulative Rainfall Characterization</i>
Northern Counties	4.97	88	Wetter than normal	48.00	22	Drier than normal
Central Counties	3.25	72	Normal	42.23	7	Very dry
Southern Counties	3.12	71	Normal	40.82	7	Very dry
District All Counties	3.67	76	Wetter than normal	43.31	10	Drier than normal

### Counties by Region

<i>NORTHERN COUNTIES</i>	<i>DEC 2023 Average Rainfall</i>	<i>Historical DEC Percentile</i>	<i>DEC Rainfall Characterization</i>	<i>Cumulative 12-Month Rainfall JAN 2023-DEC 2023</i>	<i>Historical 12-month Cumulative Percentile</i>	<i>12-month Cumulative Rainfall Characterization</i>
Levy	5.48	87	Wetter than normal	52.74	48	Normal
Marion	5.84	90	Wetter than normal	56.86	63	Normal
Citrus	4.75	89	Wetter than normal	43.41	12	Drier than normal
Sumter	4.88	89	Wetter than normal	46.54	24	Drier than normal
Hernando	4.15	83	Wetter than normal	42.34	6	Very dry
Lake	4.38	88	Wetter than normal	47.65	30	Normal
<i>CENTRAL COUNTIES</i>						
Pasco	3.78	80	Wetter than normal	40.92	3	Very dry
Pinellas	3.87	83	Wetter than normal	30.96	1	Very dry
Hillsborough	3.24	80	Wetter than normal	39.83	5	Very dry
Polk	2.89	76	Wetter than normal	46.55	28	Normal
<i>SOUTHERN COUNTIES</i>						
Manatee	2.78	75	Normal	34.82	1	Very dry
Hardee	2.74	80	Wetter than normal	42.40	13	Drier than normal
Highlands	2.97	81	Wetter than normal	48.25	34	Normal
Sarasota	2.77	77	Wetter than normal	35.56	2	Very dry
DeSoto	3.27	84	Wetter than normal	44.22	22	Drier than normal
Charlotte	4.56	94	Wetter than normal	44.77	20	Drier than normal

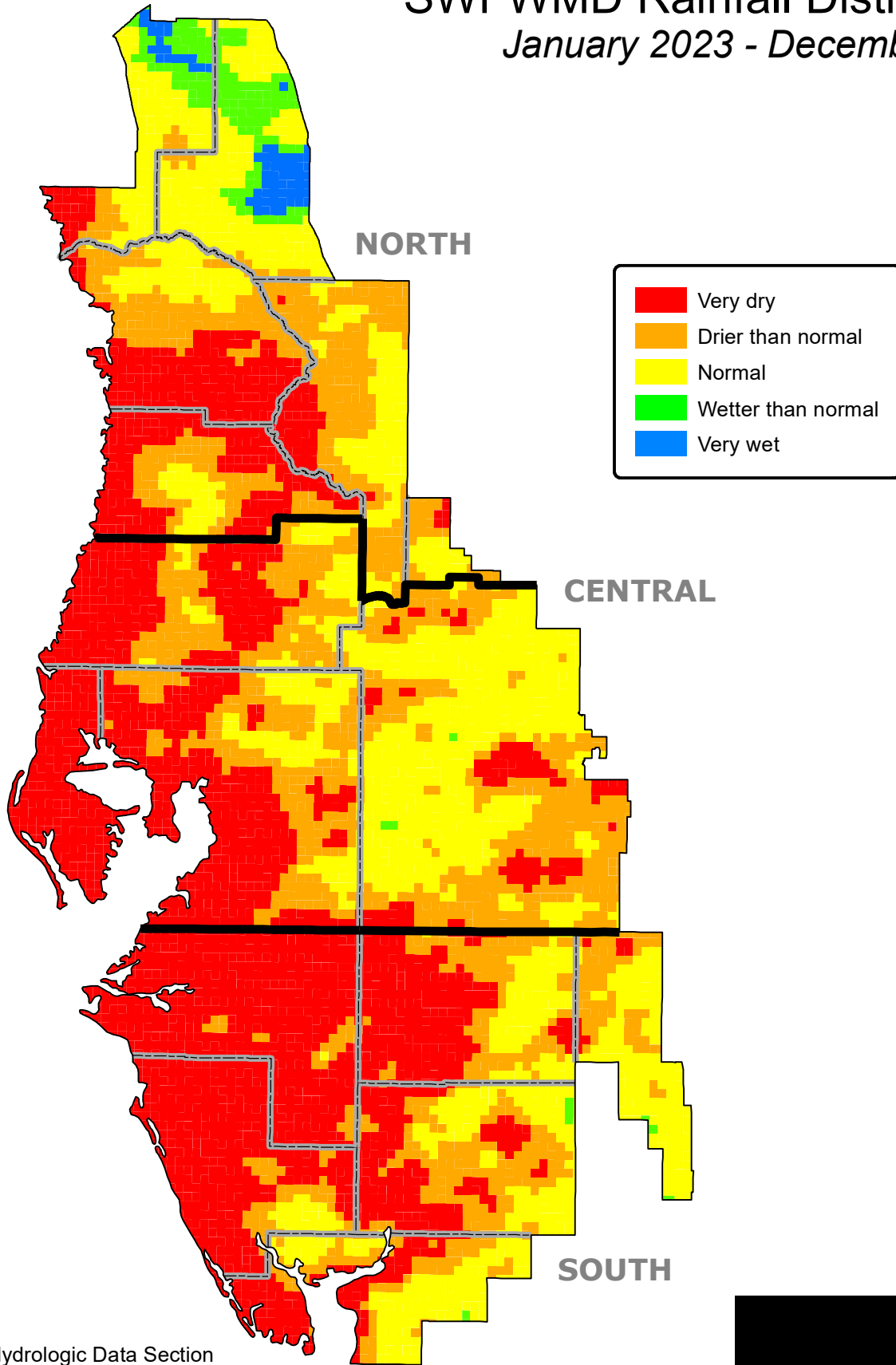
# SWFWMD Rainfall Distribution December 2023



Hydrologic Data Section  
Data source: Vieux, Inc.

# SWFWMD Rainfall Distribution

*January 2023 - December 2023*



Hydrologic Data Section  
Data source: Vieux, Inc.



## 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 November data, 41 of the 75 lakes monitored for this report recorded water level decreases, while 32 recorded increases. Lake level data for Deer and Egypt Lakes were unavailable. The regional average water level in the Northern region increased by 0.14 foot, while it decreased in the Tampa Bay, Polk Uplands and Lake Wales Ridge regions by 0.01, 0.01 and 0.18 foot, respectively. Districtwide, the overall average lake level did not change (i.e. 0.00 foot), compared to last month.

Compared to December 2022 data, 69 of the 75 lakes monitored for this report recorded water level decreases, while five recorded increases. Lake level data for Deer Lake was unavailable. In the Northern, Tampa Bay, Polk Uplands and Lake Wales Ridge regions, average levels were lower by 2.29 feet, 1.59 feet, 0.69 foot and 0.87 foot, respectively. Districtwide, average lake levels were lower by 1.40 feet, compared to last year's levels.

In December 2023, water levels in 64 of the 75 lakes were within the annual normal range, while 10 were below. Lake level data for Deer was unavailable. Lake levels in the Northern and Tampa Bay regions averaged 1.86 feet and 0.40 foot, respectively, below the base of the annual normal range. Lake levels in the Polk Uplands and Lake Wales Ridge regions averaged 1.55 feet and 0.36 foot, respectively, above the base of the annual normal range. Districtwide, average lake levels were 0.09 foot below the base of the annual normal range. Water levels in 64 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	NOV 2023	DEC 2023	DEC 2022	Change from NOV 2023	Change from DEC 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	47.66	47.36	51.28	-0.30	-3.92	-2.64	50.00	52.00	55.00	42.63	APR 2001	54.92	MAR 1998
Floral City Pool	Citrus	1981	39.56	40.10	41.13	0.54	-1.03	1.85	38.25	40.25	42.50	30.35	JUN 2001	42.66	SEP 2004
Hancock Lake	Pasco	1978	98.26	97.90	101.67	-0.36	-3.77	-4.10	102.00	104.00	106.50	90.00	MAR 2009	108.90	MAR 1998
Hernando Pool	Citrus	1985	37.30	37.58	38.59	0.28	-1.01	2.83	34.75	36.75	39.00	31.08	JUL 2001	40.17	FEB 1998
Hunters Lake	Hernando	1967	12.71	14.09	17.63	1.38	-3.54	-1.91	16.00	17.50	20.50	11.70	JUN 2001	20.50	MAR 1970
Inverness Pool	Citrus	1985	37.94	38.21	39.73	0.27	-1.52	1.96	36.25	38.25	40.50	31.45	MAY 2001	40.89	OCT 2004
Lake Lola	Pasco	1984	141.77	141.55	143.57	-0.22	-2.02	-0.95	142.50	145.00	147.50	128.96	MAY 2012	148.70	JAN 1989
Lake Lindsey	Hernando	1982	65.46	65.64	67.63	0.18	-1.99	1.14	64.50	66.00	69.00	59.38	MAY 2012	69.47	MAR 1998
Little Lake (Consuella)	Citrus	1985	36.58	36.68	41.06	0.10	-4.38	-0.57	37.25	39.00	41.50	31.10	MAY 2001	42.84	SEP 2004
Lake Miona	Sumter	1985	52.59	53.03	54.65	0.44	-1.62	2.03	51.00	53.00	55.00	47.88	MAY 2002	55.47	OCT 2019
Moon Lake	Pasco	1990	37.16	36.96	40.00	-0.20	-3.04	1.46	35.50	37.50	40.50	32.98	APR 2009	41.26	SEP 2004
Lake Panasoffkee	Sumter	1962	39.99	40.36	39.92	0.37	0.44	1.86	38.50	39.50	42.50	36.87	JUN 2007	43.04	OCT 2004
Lake Pasadena	Pasco	1984	88.77	88.55	90.93	-0.22	-2.38	-1.45	90.00	91.50	94.50	81.56	MAY 2001	94.86	OCT 2004
Spring Lake	Hernando	1965	177.75	177.44	179.65	-0.31	-2.21	-0.81	178.25	181.25	184.25	174.85	JUN 1965	183.57	OCT 1984

### TAMPA BAY LAKES

Lake Name	County	Beginning of Record	NOV 2023	DEC 2023	DEC 2022	Change from NOV 2023	Change from DEC 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	38.49	38.31	40.81	-0.18	-2.50	0.81	37.50	40.25	42.25	33.24	MAY 2002	42.42	SEP 2004
Lake Ann-Parker	Pasco	1983	45.77	45.89	47.57	0.12	-1.68	0.89	45.00	45.75	48.75	43.28	JUN 2001	49.29	AUG 2015
Bay Lake	Hillsborough	1982	45.33	45.78	45.86	0.45	-0.08	3.28	42.50	44.00	46.75	41.86	APR 1985	46.47	DEC 1997
Lake Brant	Hillsborough	1981	55.31	55.04	57.78	-0.27	-2.74	0.54	54.50	56.50	58.75	51.65	JUN 1994	59.57	AUG 2015
Brooker Lake	Hillsborough	1977	61.52	61.30	62.84	-0.22	-1.54	2.30	59.00	61.00	64.25	56.49	MAY 2002	64.08	DEC 1997
Calm Lake	Hillsborough	1982	47.20	46.96	49.24	-0.24	-2.28	1.96	45.00	47.50	50.50	41.88	JUN 2002	51.04	JUL 2015
Camp Lake	Pasco	1983	60.22	59.98	62.45	-0.24	-2.47	0.98	59.00	61.75	64.00	50.82	MAY 2002	64.05	JUL 2015
Carlton Lake	Hillsborough	1976	89.36	89.49	90.72	0.13	-1.23	1.49	88.00	90.50	93.50	86.82	MAY 2001	94.60	FEB 1998
Lake Carroll	Hillsborough	1985	34.56	34.71	36.60	0.15	-1.89	2.21	32.50	34.50	37.00	30.87	MAY 2002	37.87	AUG 2015
Church Lake	Hillsborough	1983	33.49	33.29	35.51	-0.20	-2.22	1.79	31.50	34.00	36.25	27.94	MAY 2002	36.90	JUL 1987
Lake Cooper	Hillsborough	1980	58.72	58.58	59.94	-0.14	-1.36	1.58	57.00	59.75	61.75	55.60	JUN 2001	62.44	AUG 2015
Crescent Lake	Hillsborough	1981	40.60	40.59	41.93	-0.01	-1.34	2.09	38.50	40.00	42.50	35.34	JUN 2001	43.42	AUG 2015
Deer Lake	Hillsborough	1977	M	M	65.97	M	M	M	62.50	64.50	67.25	60.72	MAY 2002	67.42	DEC 1997
Egypt Lake	Hillsborough	1978	M	36.46	36.70	M	-0.24	3.96	32.50	35.00	37.50	33.06	MAY 2000	38.15	SEP 1985
Gornito Lake	Hillsborough	1979	36.03	36.27	37.65	0.24	-1.38	2.27	34.00	36.00	38.50	29.86	MAR 1979	39.48	FEB 1998
Lake Harvey	Hillsborough	1970	59.69	59.47	61.27	-0.22	-1.80	1.47	58.00	60.25	62.50	53.94	MAY 2002	63.90	DEC 1997
Lake Hiawatha	Hillsborough	1981	49.19	49.01	50.29	-0.18	-1.28	4.01	45.00	48.00	50.50	46.14	JUN 2000	51.16	JUL 2019
Horse Lake	Hillsborough	1930	42.06	42.15	45.00	0.09	-2.85	0.15	42.00	44.00	46.50	36.33	JUN 2002	50.00	AUG 1959
Lake Keene	Hillsborough	1981	60.76	60.70	61.89	-0.06	-1.19	1.70	59.00	60.50	63.00	56.12	JUN 2002	63.69	SEP 2017
Keystone Lake	Hillsborough	1984	40.74	40.88	41.55	0.14	-0.67	1.88	39.00	39.75	42.00	37.84	JUN 2000	43.64	AUG 2015
King Lake	Pasco	1983	102.26	102.11	103.21	-0.15	-1.10	2.11	100.00	102.50	105.25	94.20	APR 2009	104.80	MAR 1987
Lake Leclare	Hillsborough	1977	49.87	49.69	52.40	-0.18	-2.71	2.69	47.00	49.50	52.00	44.95	JUN 2001	52.99	JUL 2015
Lake Linda	Pasco	1983	63.88	63.67	65.73	-0.21	-2.06	1.67	62.00	64.00	66.75	60.07	MAY 2001	67.17	SEP 2017
Little Lake	Hillsborough	1979	43.91	43.81	45.45	-0.10	-1.64	1.81	42.00	43.50	46.50	38.06	JUN 1994	48.55	JUN 2017
Long Pond	Hillsborough	1978	43.34	43.55	45.13	0.21	-1.58	1.55	42.00	44.00	46.50	36.33	MAY 1979	48.27	SEP 1998
Mud (Walden) Lake	Hillsborough	1978	112.75	112.85	112.88	0.10	-0.03	2.35	110.50	112.50	115.00	111.45	MAY 2017	114.42	MAR 1978
Lake Padgett	Pasco	1965	68.78	68.61	69.74	-0.17	-1.13	1.11	67.50	69.00	71.25	66.27	JUN 2001	71.90	SEP 1988
Platt Lake	Hillsborough	1981	48.12	48.22	49.62	0.10	-1.40	2.22	46.00	47.75	50.50	42.53	JUN 2001	51.61	AUG 2015
Rainbow Lake	Hillsborough	1981	35.98	36.94	38.55	0.96	-1.61	1.94	35.00	37.50	40.50	29.82	JUN 2002	40.95	JUL 2015
Lake Stemper	Hillsborough	1983	58.31	58.33	60.66	0.02	-2.33	0.33	58.00	59.50	62.00	53.36	JUN 2001	61.68	SEP 2004
Lake Thomas	Hillsborough	1981	60.78	60.58	62.60	-0.20	-2.02	1.33	59.25	61.25	63.50	56.48	JUN 2002	64.13	AUG 2015
Turkey Ford Lake	Hillsborough	1970	49.97	49.82	51.15	-0.15	-1.33	-0.18	50.00	51.50	54.00	48.07	JUN 1985	55.28	SEP 1988
Lake Wimauma	Hillsborough	1985	78.36	78.54	79.59	0.18	-1.05	-2.46	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	NOV 2023	DEC 2023	DEC 2022	Change from NOV 2023	Change from DEC 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	131.47	131.45	131.85	-0.02	-0.40	5.20	126.25	128.25	130.75	124.17	MAY 2013	132.77	DEC 2020
Lake Ariana	Polk	1984	136.39	136.42	136.67	0.03	-0.25	3.92	132.50	134.50	137.00	131.68	MAY 2009	137.66	JAN 2016
Lake Arietta	Polk	1970	142.16	142.20	142.48	0.04	-0.28	4.20	138.00	141.00	144.00	136.50	MAY 1977	144.33	OCT 2004
Blue Lake South	Polk	1986	114.59	114.51	115.39	-0.08	-0.88	2.01	112.50	114.00	117.00	103.38	FEB 1991	119.19	DEC 2005
Lake Bonny	Polk	1954	130.17	130.09	130.75	-0.08	-0.66	4.09	126.00	128.00	130.50	122.34	MAY 2009	133.08	SEP 2004
Lake Buffum	Polk	1982	130.46	130.52	132.08	0.06	-1.56	3.77	126.75	129.25	132.25	123.90	JUN 1991	133.00	JUN 2005
Clearwater Lake	Polk	1979	142.88	142.75	143.76	-0.13	-1.01	3.75	139.00	141.00	143.50	137.93	MAY 2001	146.06	AUG 1984
Lake Conine	Polk	1989	128.50	128.52	128.49	0.02	0.03	4.02	124.50	126.50	128.75	123.83	NOV 2009	129.95	SEP 2004
Eagle Lake	Polk	1965	128.64	128.65	129.76	0.01	-1.11	2.15	126.50	128.50	130.75	120.87	MAY 1967	131.50	SEP 1996
Lake Fannie	Polk	1967	125.60	125.63	125.56	0.03	0.07	5.63	120.00	123.50	125.75	118.67	MAY 1977	127.51	SEP 2004
Lake Garfield	Polk	1982	102.16	101.94	102.64	-0.22	-0.70	1.94	100.00	101.00	104.75	97.38	JUN 2001	105.70	FEB 1998
Lake Gibson	Polk	1984	142.61	142.86	142.89	0.25	-0.03	1.36	141.50	141.50	143.50	140.21	MAY 2009	145.40	SEP 1988
Lake Hamilton	Polk	1962	121.23	121.36	121.40	0.13	-0.04	4.11	117.25	119.00	121.50	116.61	JUN 2001	123.96	OCT 2004
Lake Helene	Polk	1961	142.71	142.59	143.15	-0.12	-0.56	3.59	139.00	141.00	144.00	134.06	JUN 2008	146.71	OCT 2017
Lake Howard	Polk	1987	131.51	131.43	131.95	-0.08	-0.52	4.43	127.00	129.50	132.00	127.69	MAY 2001	133.08	SEP 2004
Lake Juliana	Polk	1984	132.98	133.09	133.79	0.11	-0.70	5.59	127.50	130.00	132.50	127.40	NOV 2009	134.14	OCT 2022
Lake Mcleod	Polk	1983	128.65	128.72	131.05	0.07	-2.33	0.72	128.00	129.50	132.00	120.76	JUL 1985	131.98	SEP 1998
Lake Otis	Polk	1954	126.52	126.39	127.70	-0.13	-1.31	3.39	123.00	125.00	128.00	119.58	MAY 1976	129.12	SEP 1960
Lake Ruby	Polk	1974	124.35	124.31	125.15	-0.04	-0.84	3.31	121.00	123.00	125.25	120.68	JUN 1974	125.98	SEP 2004

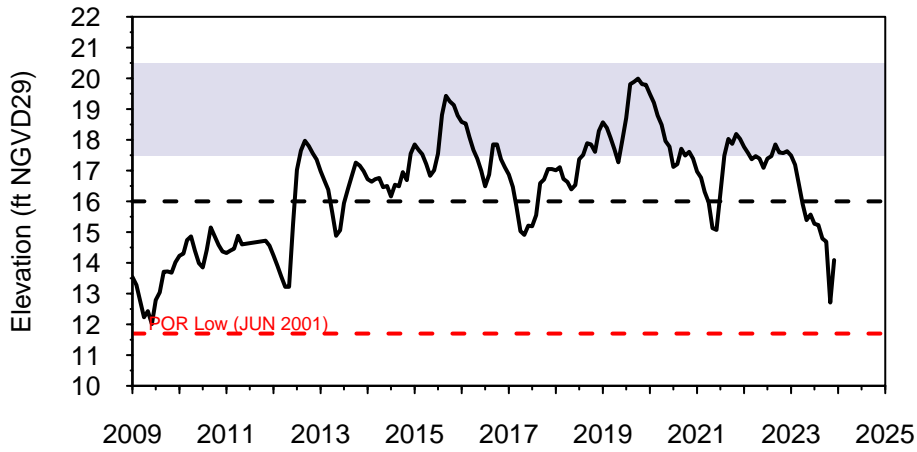
### LAKE WALES RIDGE LAKES

Lake Name	County	Beginning of Record	NOV 2023	DEC 2023	DEC 2022	Change from NOV 2023	Change from DEC 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	116.53	116.33	117.96	-0.20	-1.63	2.33	114.00	116.00	119.00	108.36	JUN 1990	118.15	NOV 2020
Lake Clay	Highlands	1983	77.89	77.91	77.83	0.02	0.08	2.91	75.00	76.00	78.75	74.34	MAY 2001	78.82	JUN 2013
Crooked Lake	Polk	1982	118.65	118.45	120.39	-0.20	-1.94	1.45	117.00	118.50	122.00	106.28	APR 1991	123.44	AUG 2005
Lake Jackson	Highlands	1984	102.45	102.25	102.67	-0.20	-0.42	4.25	98.00	100.00	103.00	96.47	JUN 2008	103.75	SEP 2017
Lake Letta	Highlands	1981	99.13	98.89	100.31	-0.24	-1.42	3.89	95.00	97.00	100.00	90.27	JUN 2008	100.85	NOV 2022
Lake Lotela	Highlands	1989	106.84	106.58	107.48	-0.26	-0.90	2.58	104.00	105.00	108.50	96.63	JUN 2008	109.13	SEP 2017
Lake Placid	Highlands	1984	93.28	93.08	92.90	-0.20	0.18	3.08	90.00	91.50	94.50	88.08	JUN 2008	94.24	SEP 2003
Starr Lake	Polk	1983	105.71	105.52	106.03	-0.19	-0.51	-2.48	108.00	110.00	113.00	96.23	JUL 2001	109.80	DEC 2005
Trout Lake	Highlands	1981	96.32	96.21	97.51	-0.11	-1.30	1.21	95.00	98.00	101.00	87.15	MAY 2001	99.89	SEP 2016

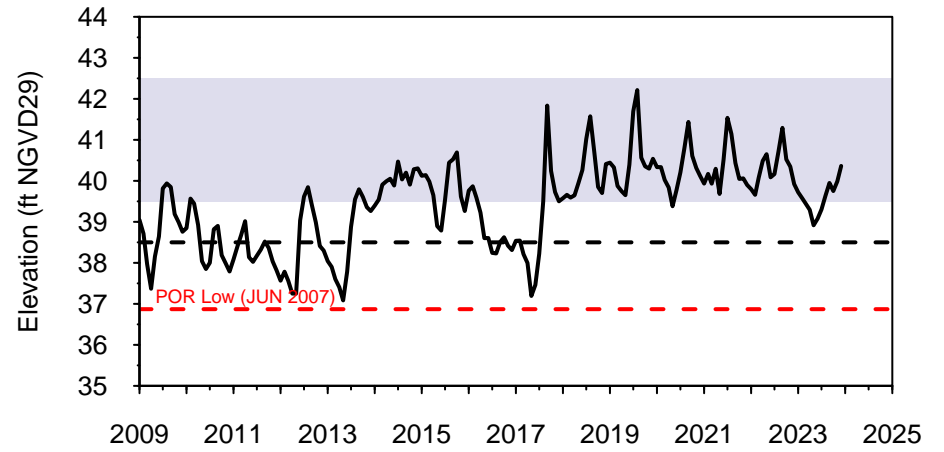
# HYDROGRAPHS OF REGIONAL LAKES

15-Year Period of Record

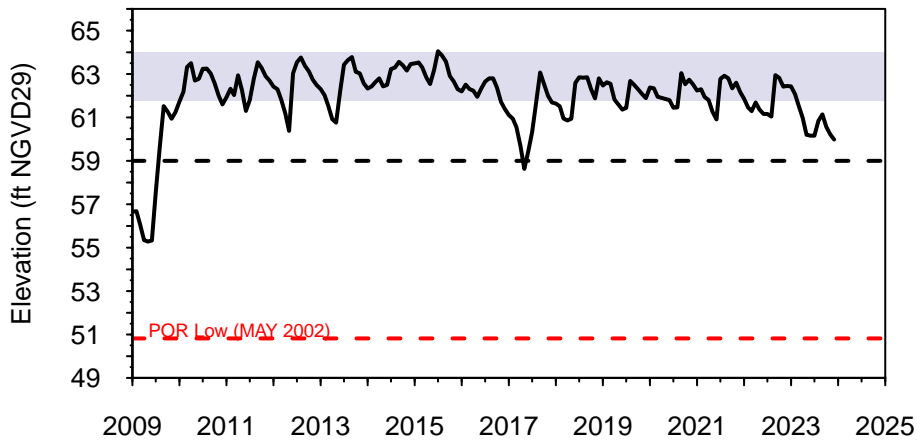
**Hunters Lake**  
Northern Lakes



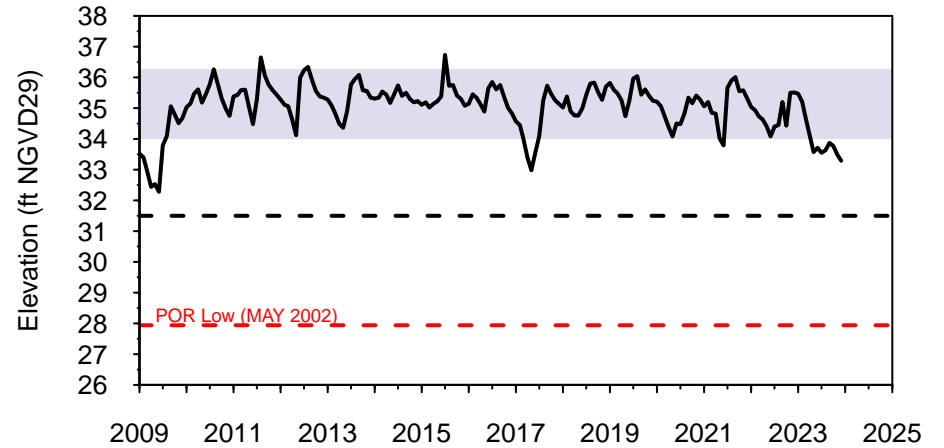
**Lake Panasoffkee**  
Northern Lakes



**Camp Lake**  
Tampa Bay Lakes



**Church Lake**  
Tampa Bay Lakes



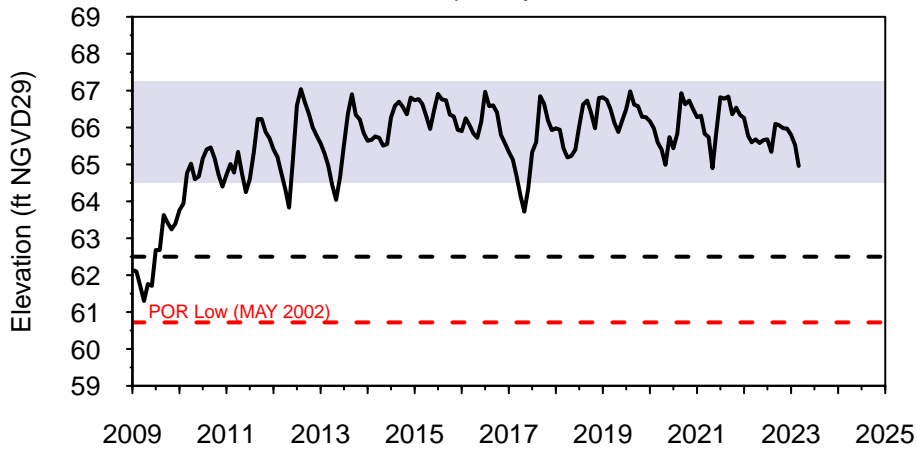
— Water Level    - - Drought-Year Low    ■ Normal Range



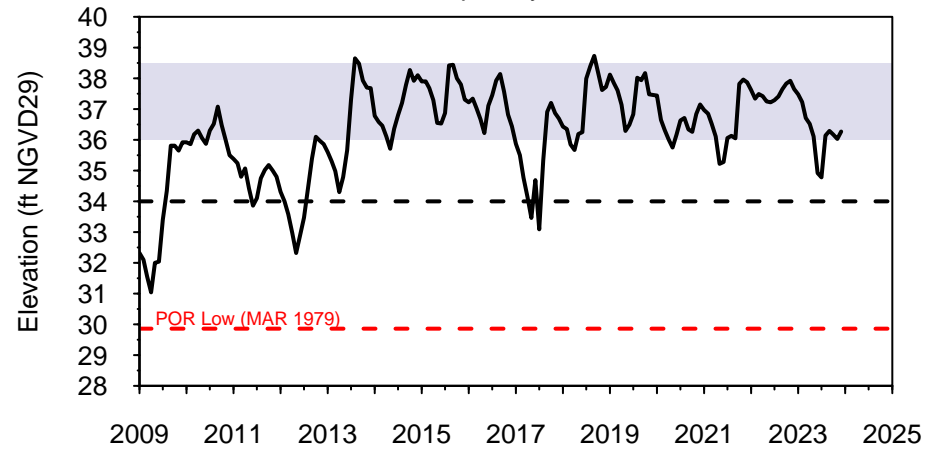
# HYDROGRAPHS OF REGIONAL LAKES

15-Year Period of Record

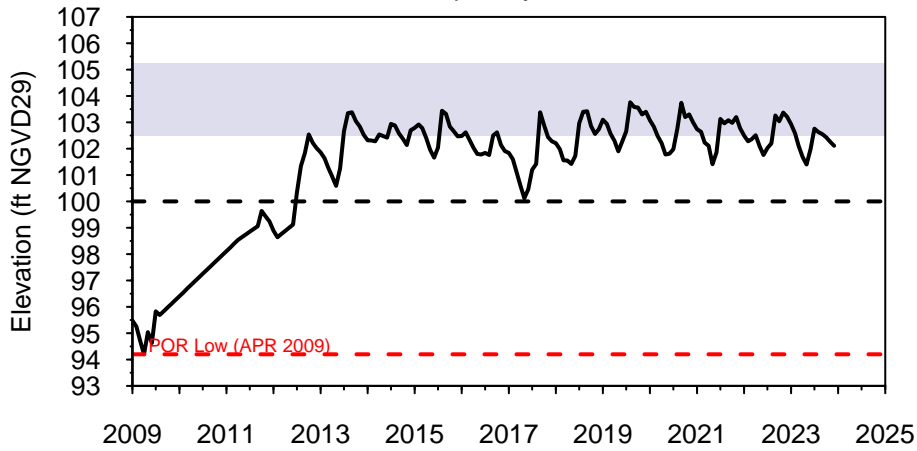
**Deer Lake**  
Tampa Bay Lakes



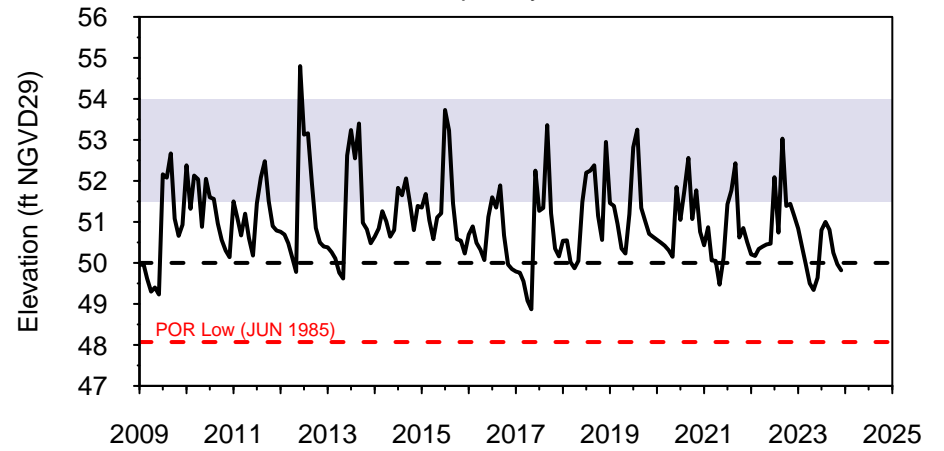
**Gornto Lake**  
Tampa Bay Lakes



**King Lake**  
Tampa Bay Lakes



**Turkey Ford Lake**  
Tampa Bay Lakes



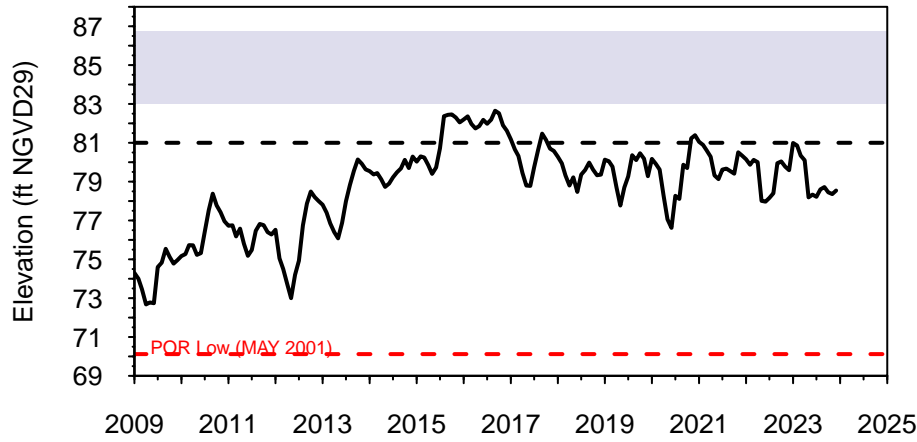
— Water Level      - - Drought-Year Low      ■ Normal Range

# HYDROGRAPHS OF REGIONAL LAKES

15-Year Period of Record

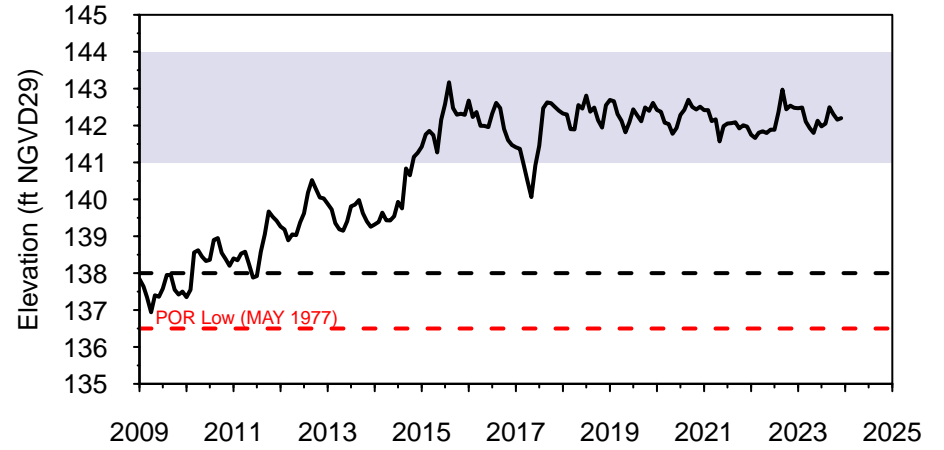
### Lake Wimauma

Tampa Bay Lakes



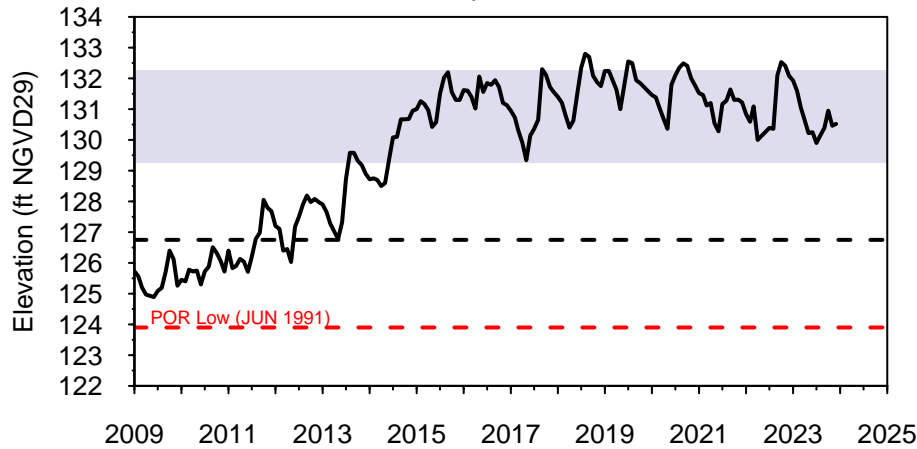
### Lake Arietta

Polk Uplands Lakes



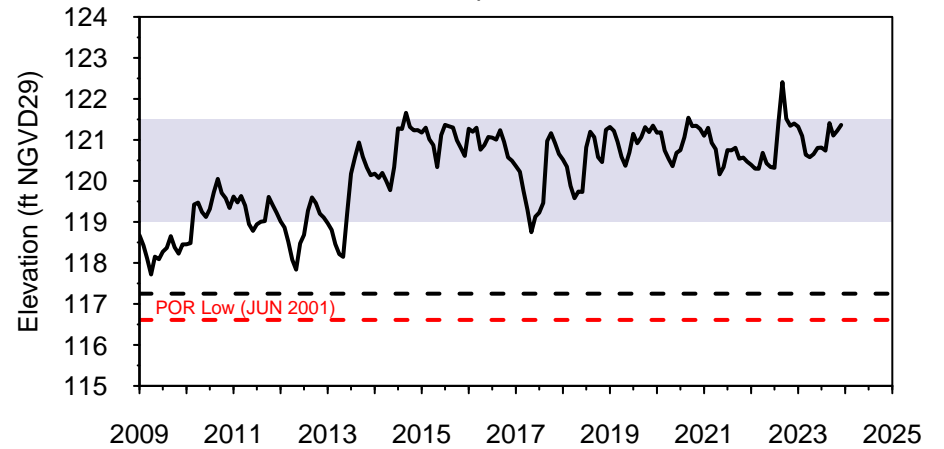
### Lake Buffum

Polk Uplands Lakes



### Lake Hamilton

Polk Uplands Lakes

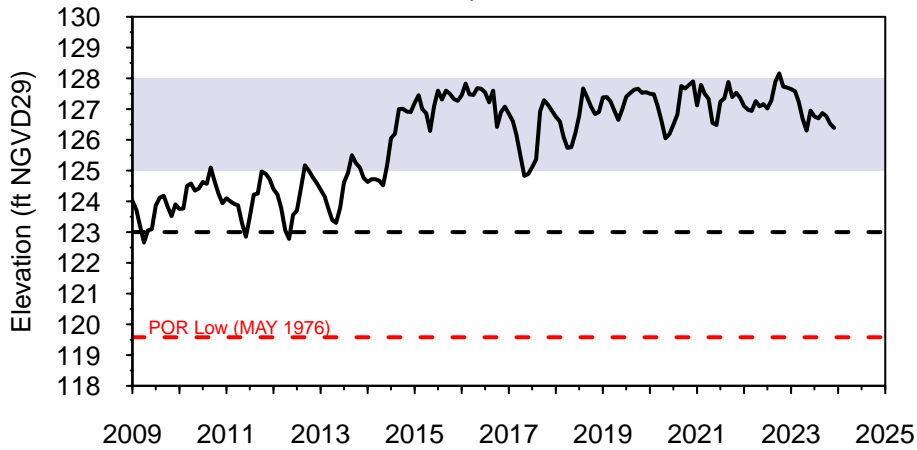


— Water Level    - - Drought-Year Low    ■ Normal Range

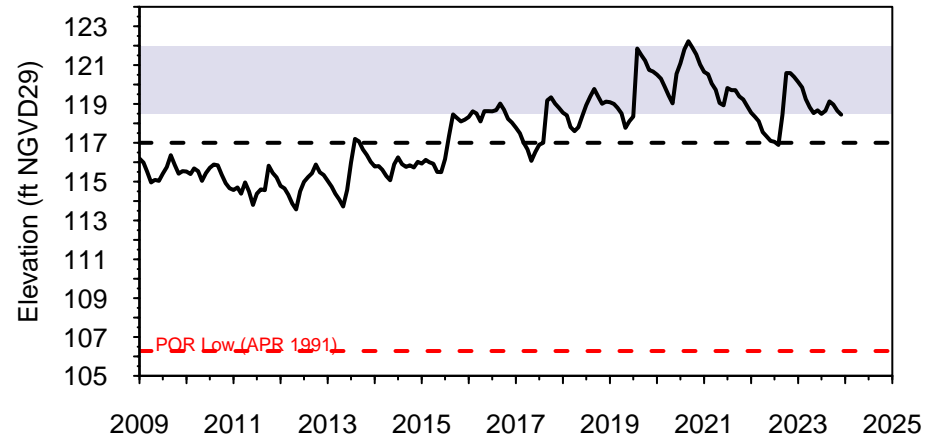
# HYDROGRAPHS OF REGIONAL LAKES

15-Year Period of Record

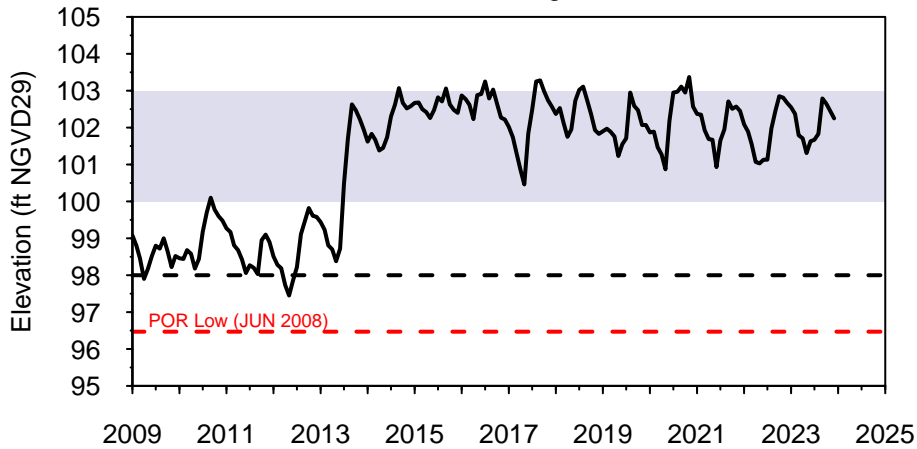
**Lake Otis**  
Polk Uplands Lakes



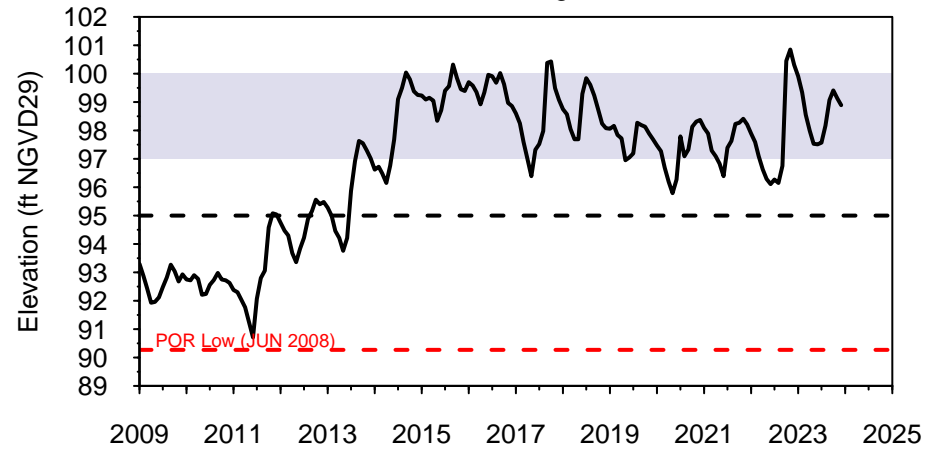
**Crooked Lake**  
Lake Wales Ridge Lakes



**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 100<sup>th</sup> 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 the respective 25<sup>th</sup> and 75<sup>th</sup> percentiles of the period-of-record monthly means, reflecting the normal range of readings for the month.

Compared to November data, eight of the 12 stations monitored for this report recorded increased streamflow, while four recorded decreased streamflow.

Compared to December 2022 data, all 12 stations recorded streamflow decreases.

Compared to historical December discharge values, Withlacoochee River streamflow, measured at the Trilby station and the Holder station averaged in the 31<sup>st</sup> and 33<sup>rd</sup> percentiles, respectively. Streamflow measured at the stations on the Alafia, Anclote and Hillsborough Rivers averaged in the 42<sup>nd</sup>, 46<sup>th</sup> and 58<sup>th</sup> percentiles of respective historical December readings. Streamflow measured at the Little Manatee River, Peace River at Bartow and Pithlachascotee River stations averaged in the 53<sup>rd</sup>, 36<sup>th</sup> and 54<sup>th</sup> percentiles of respective historical December readings. Additionally, streamflow measured at the Josephine Creek, Manatee River, Myakka River and Peace River at Arcadia stations averaged in the 69<sup>th</sup>, 67<sup>th</sup>, 42<sup>nd</sup> and 46<sup>th</sup> percentiles of respective historical December readings.

## SUMMARY OF STREAM DISCHARGE FROM MAJOR STREAMS, DECEMBER 2023

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

### Northern Counties

<i>Stream Name</i>	<i>Beginning Year of Record</i>	<i>DEC 2023 Discharge</i>	<i>NOV 2023 Discharge</i>	<i>DEC 2022 Discharge</i>	<i>Change from NOV 2023</i>	<i>Change from DEC 2022</i>	<i>DEC 2023 Percentile Rank</i>	<i>Period of Record Low</i>	<i>Record Low Date</i>	<i>Period of Record High</i>	<i>Record High Date</i>
Withlacoochee R at Trilby	1928	62.7	27.3	455.4	35.4	-392.7	31	0.1	JUN 2000	8840.0	JUN 1934
Withlacoochee R nr Holder	1928	489.1	380.5	1168.1	108.6	-679.0	33	33.0	MAR 2001	8660.0	APR 1960

### Central Counties

<i>Stream Name</i>	<i>Beginning Year of Record</i>	<i>DEC 2023 Discharge</i>	<i>NOV 2023 Discharge</i>	<i>DEC 2022 Discharge</i>	<i>Change from NOV 2023</i>	<i>Change from DEC 2022</i>	<i>DEC 2023 Percentile Rank</i>	<i>Period of Record Low</i>	<i>Record Low Date</i>	<i>Period of Record High</i>	<i>Record High Date</i>
Alafia R at Lithia	1932	129.3	115.7	234.5	13.6	-105.2	42	4.1	MAY 2000	40800.0	SEP 1933
Anclote R nr Elfers	1946	8.0	2.9	74.4	5.1	-66.4	46	0.8	MAY 1962	3710.0	JUL 1960
Hillsborough R nr Zephyrhills	1939	110.4	93.3	204.5	17.1	-94.1	58	27.0	JUN 2000	12300.0	MAR 1960
Little Manatee R nr Wim.	1939	49.4	34.1	102.5	15.3	-53.1	53	0.9	DEC 1976	11100.0	SEP 1960
Peace R at Bartow	1939	46.0	47.6	221.9	-1.6	-175.9	36	0.0	MAY 2000	4100.0	SEP 1947
Pithlachascotee R nr NPR	1963	7.0	1.4	23.4	5.6	-16.4	54	0.0	MAY 1981	2180.0	JUN 2012

### Southern Counties

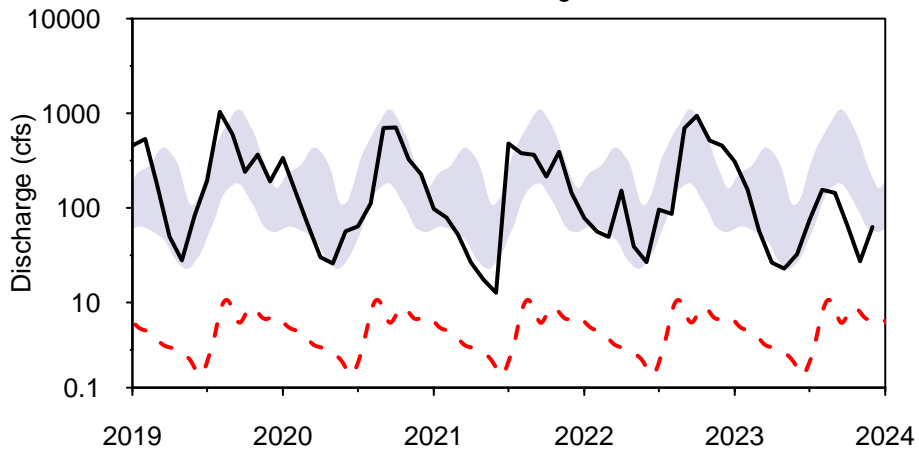
<i>Stream Name</i>	<i>Beginning Year of Record</i>	<i>DEC 2023 Discharge</i>	<i>NOV 2023 Discharge</i>	<i>DEC 2022 Discharge</i>	<i>Change from NOV 2023</i>	<i>Change from DEC 2022</i>	<i>DEC 2023 Percentile Rank</i>	<i>Period of Record Low</i>	<i>Record Low Date</i>	<i>Period of Record High</i>	<i>Record High Date</i>
Josephine Cr nr DeSoto C.	1946	50.2	51.9	57.9	-1.7	-7.7	69	0.5	MAY 1956	1680.0	SEP 1948
Manatee R nr Myakka Hd.	1966	24.4	15.6	43.1	8.8	-18.7	67	0.1	MAY 1975	6440.0	JUN 2003
Myakka R nr Sarasota	1936	23.1	40.9	148.7	-17.8	-125.6	42	0.0	MAR 1938	12600.0	OCT 2022
Peace R at Arcadia	1931	282.2	309.6	1020.3	-27.4	-738.1	46	5.6	MAY 2000	49900.0	OCT 2022

# HYDROGRAPHS OF MAJOR STREAMS

JANUARY 2019 to DECEMBER 2023

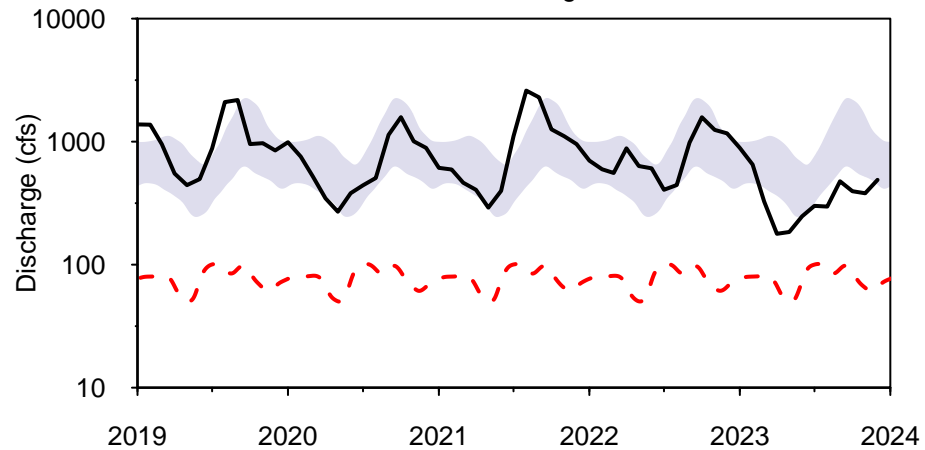
### Withlacoochee R at Trilby

Northern Region



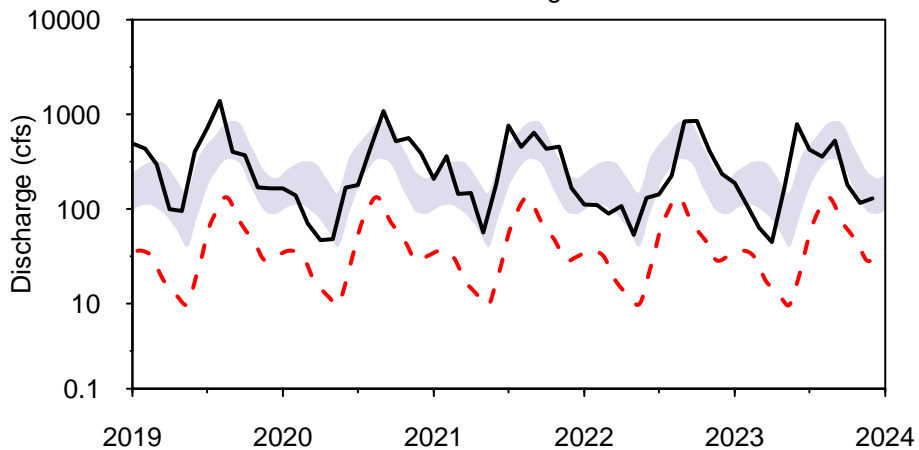
### Withlacoochee R nr Holder

Northern Region



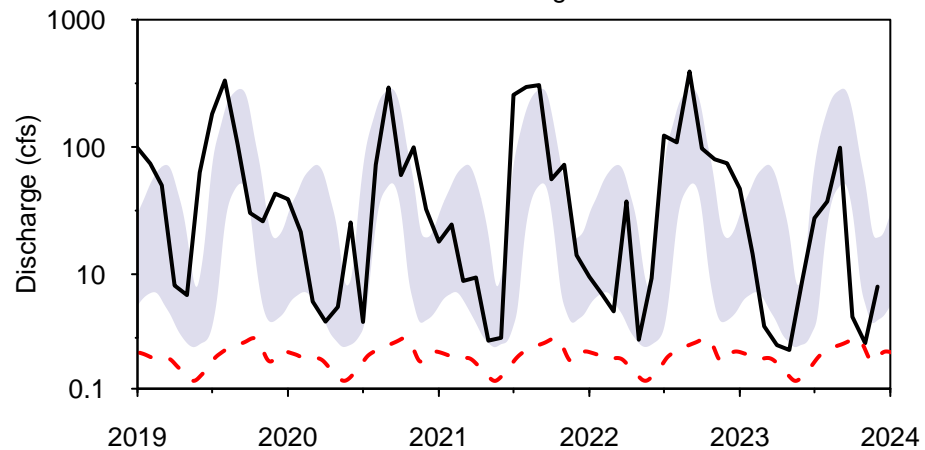
### Alafia R at Lithia

Central Region



### Anclothe R nr Elfers

Central Region

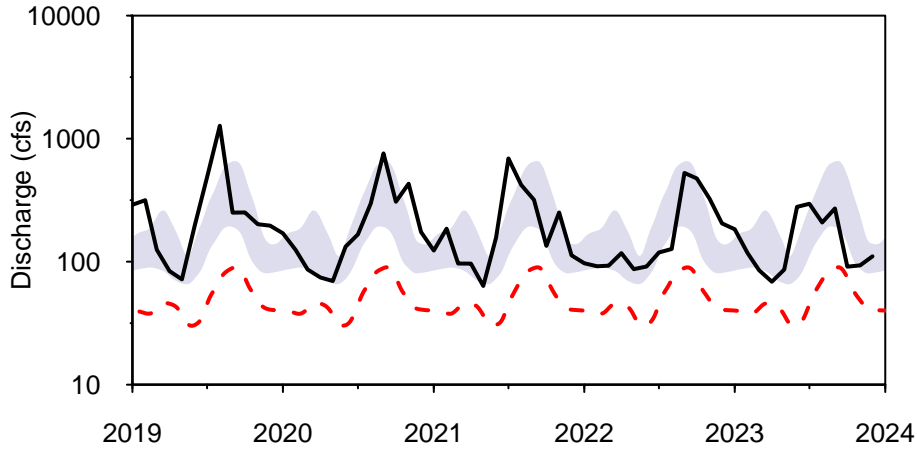


— Monthly Discharge    - - - POR Monthly Low    ■ Normal Range

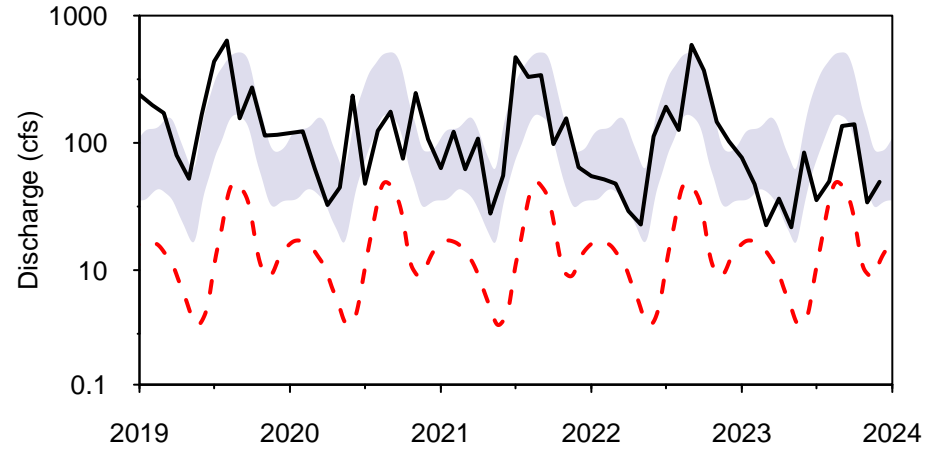
# HYDROGRAPHS OF MAJOR STREAMS

JANUARY 2019 to DECEMBER 2023

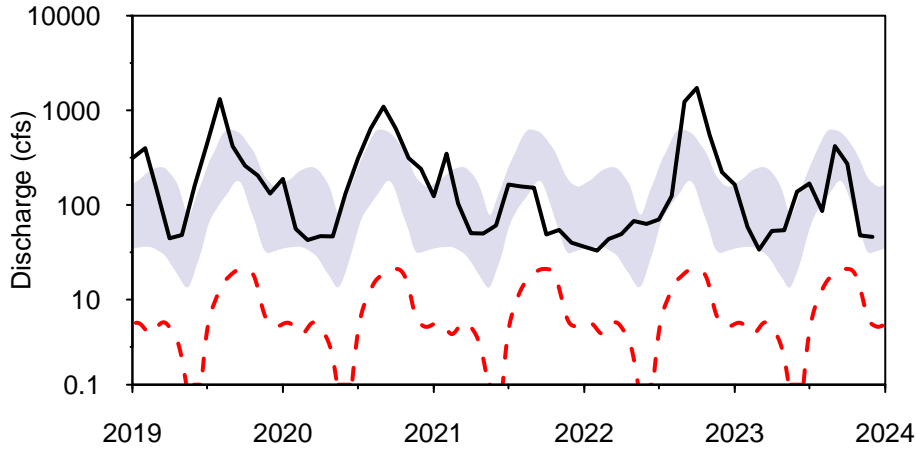
### Hillsborough R nr Zephyrhills Central Region



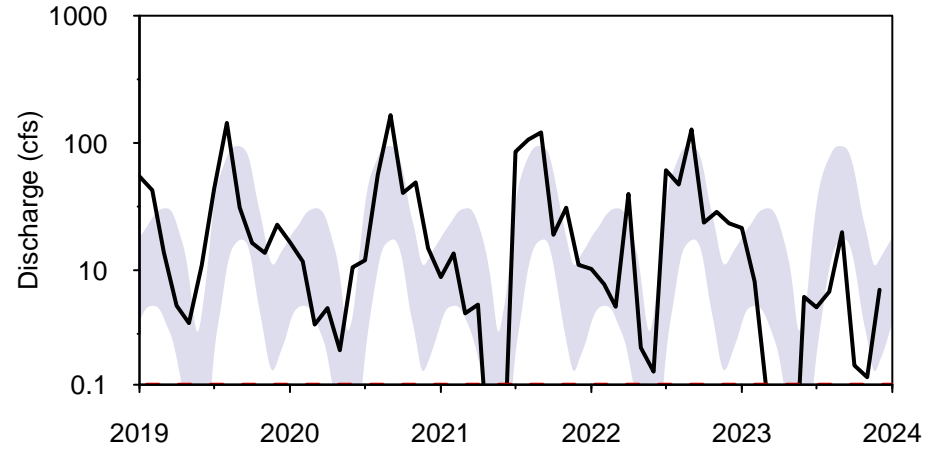
### Little Manatee R nr Wim. Central Region



### Peace R at Bartow Central Region



### Pithlachascotee R nr NPR Central Region

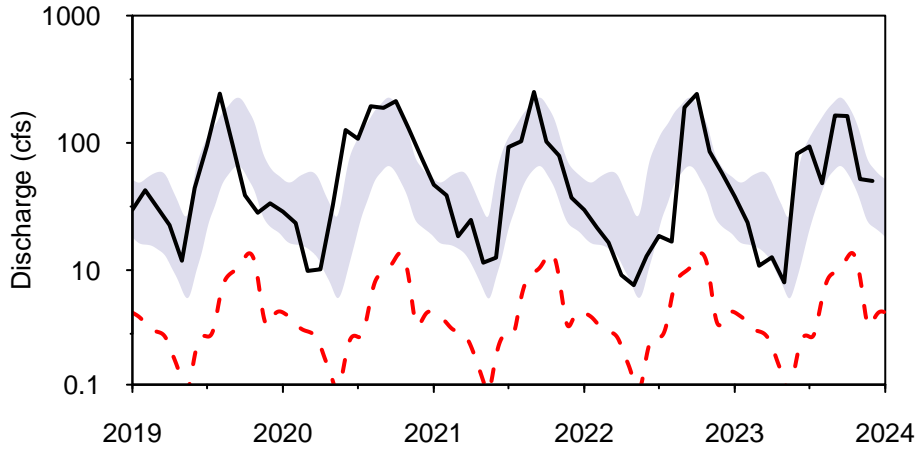


— Monthly Discharge    - - - POR Monthly Low    ■ Normal Range

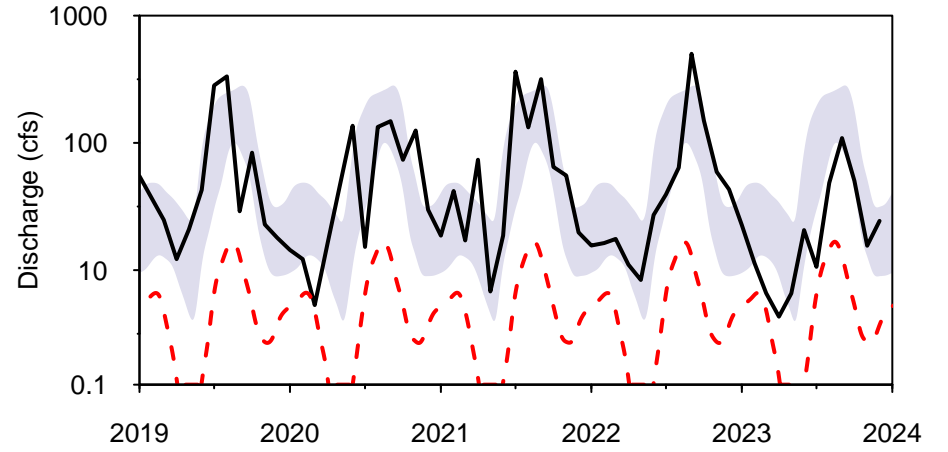
# HYDROGRAPHS OF MAJOR STREAMS

JANUARY 2019 to DECEMBER 2023

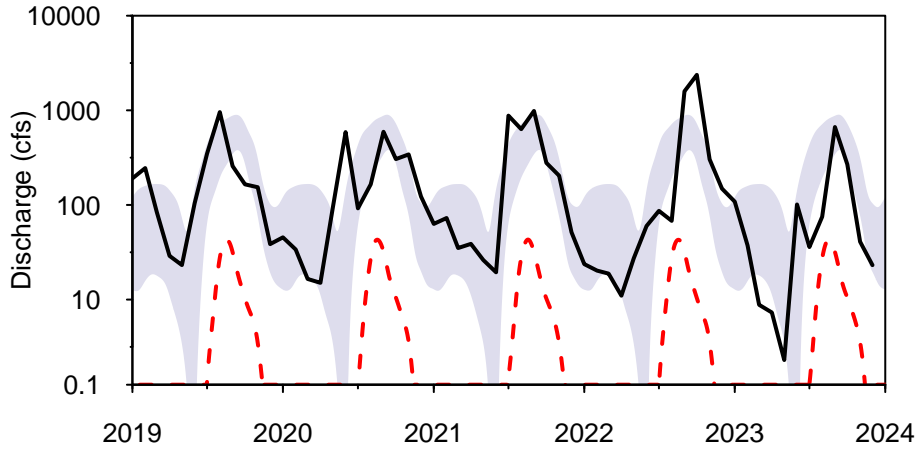
### Josephine Cr nr DeSoto C. Southern Region



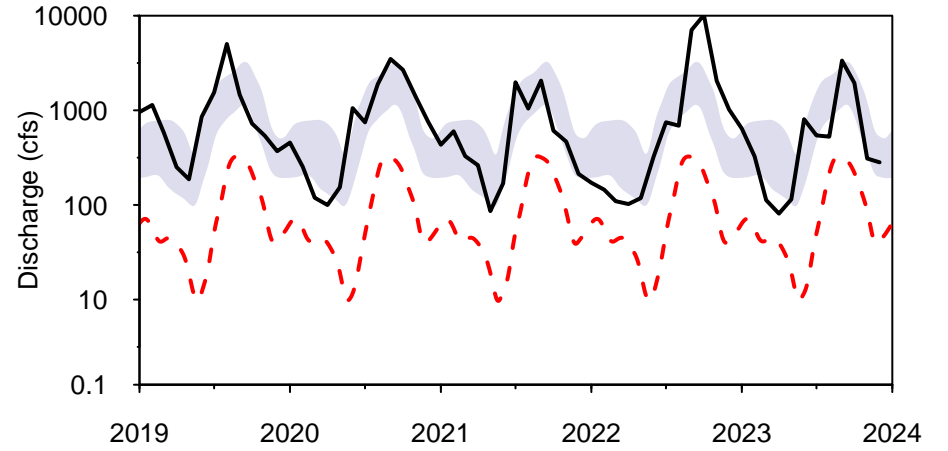
### Manatee R nr Myakka Hd. Southern Region



### Myakka R nr Sarasota Southern Region



### Peace R at Arcadia Southern Region



— 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 25<sup>th</sup> to 75<sup>th</sup> percentiles. The zero percentile indicates a new period-of-record low and the 100<sup>th</sup> 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 November data, three stations monitored for this report recorded increased springflow, while three stations recorded decreased flow.

Compared to December 2022 data, five stations recorded decreased springflow, while one recorded increased flow.

Compared to historical period-of-record values for December, total springflow measured in Rainbow, Silver and Weeki Wachee Springs, in the northern region, was in the 41<sup>st</sup>, 39<sup>th</sup> and 10<sup>th</sup> percentiles, respectively. Springflow measured in Buckhorn, Lithia and Sulphur Springs, in the central region, was in the 18<sup>th</sup>, 50<sup>th</sup> and 8<sup>th</sup> percentiles, respectively, of historical December readings.

## SUMMARY OF SPRING DISCHARGE FROM MAJOR SPRINGS, DECEMBER 2023

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

### Northern Counties

Spring Name	DEC 2023 Discharge	NOV 2023 Discharge	DEC 2022 Discharge	Change from NOV 2023	Change from DEC 2022	DEC 2023 Percentile Rank	Period of Record Low	Record Low Date	Period of Record High	Record High Date
Rainbow Springs	658.2	663.8	672.1	-5.6	-13.9	41	391.0	MAY 2012	1060.0	SEP 1988
Silver Springs	697.5	660.5	647.3	37.0	50.2	39	141.0	JUN 2012	1290.0	OCT 1960
Weeki Wachee Springs	135.9	140.2	174.3	-4.3	-38.4	10	101.0	JUN 1994	257.0	OCT 2004

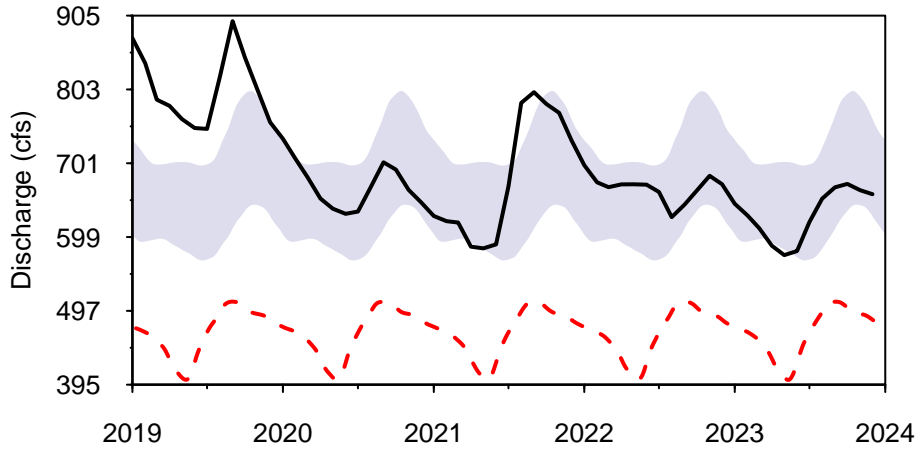
### Central Counties

Spring Name	DEC 2023 Discharge	NOV 2023 Discharge	DEC 2022 Discharge	Change from NOV 2023	Change from DEC 2022	DEC 2023 Percentile Rank	Period of Record Low	Record Low Date	Period of Record High	Record High Date
Buckhorn Springs	10.7	9.5	11.7	1.2	-1.0	18	2.2	MAY 2006	50.5	FEB 2015
Lithia Springs	46.1	46.2	55.6	-0.1	-9.5	50	9.1	MAY 2000	91.5	NOV 2004
Sulphur Springs	9.6	0.0	28.8	9.6	-19.2	8	0.0	JUN 1994	145.0	MAR 1960

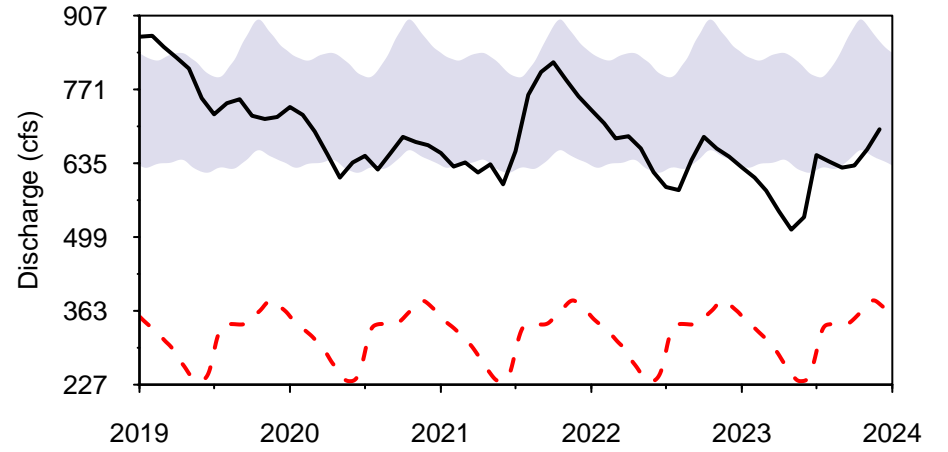
# HYDROGRAPHS OF REGIONAL SPRINGS

JANUARY 2019 to DECEMBER 2023

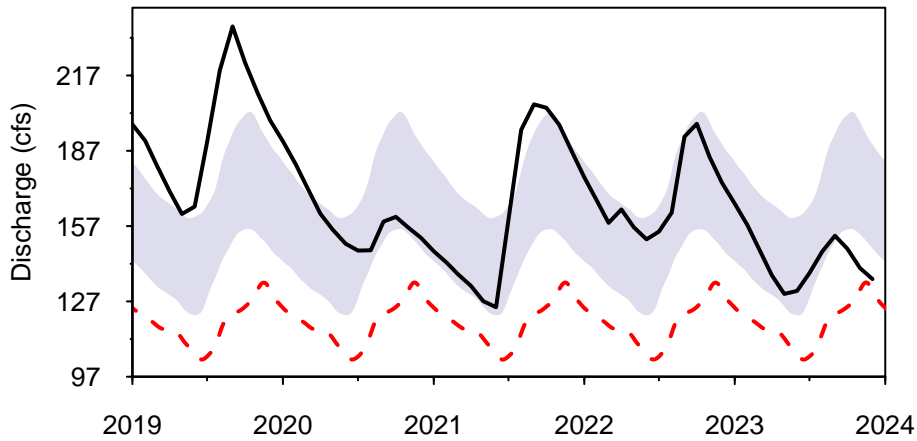
### Rainbow Springs Northern Region



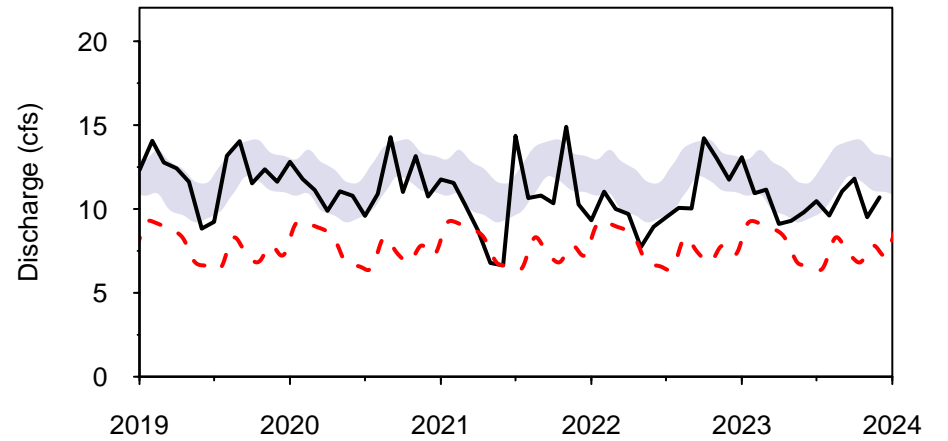
### Silver Springs Northern Region



### Weeki Wachee Springs Northern Region



### Buckhorn Springs Central Region

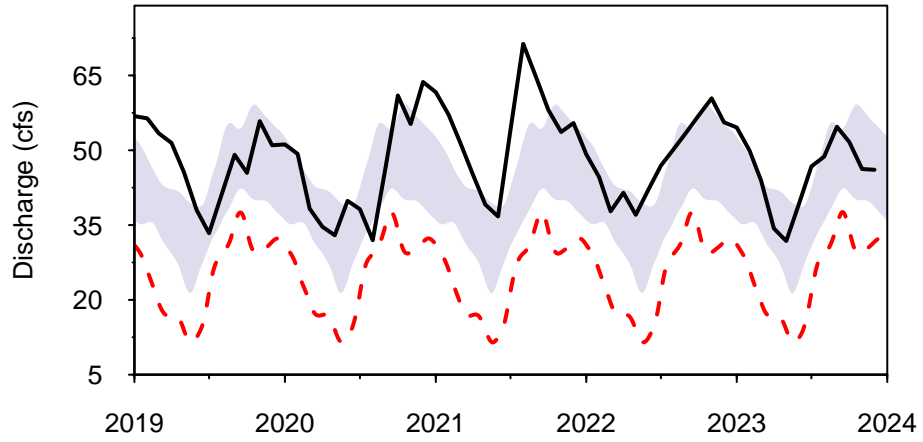


— Monthly Discharge    - - - POR Monthly Low    ■ Normal Range

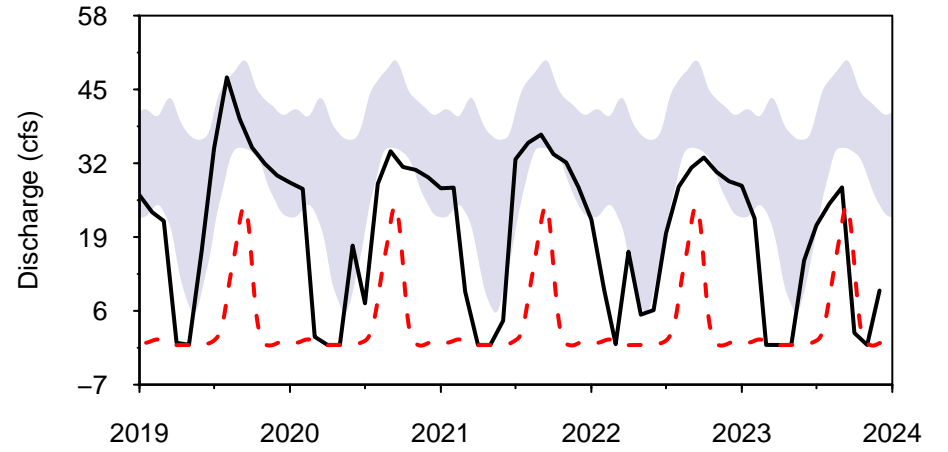
# HYDROGRAPHS OF REGIONAL SPRINGS

JANUARY 2019 to DECEMBER 2023

### Lithia Springs Central Region



### Sulphur Springs Central Region



— 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 25<sup>th</sup> and 75<sup>th</sup> percentiles ("low normal" and "high normal," respectively) were calculated for each week of the year using the period-of-record data. The 25<sup>th</sup> and 75<sup>th</sup> 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

Compared to November data, 72 of the 82 wells monitored for this report recorded water level increases, nine recorded decreases, while data was unavailable for the Kibler Deep well. Regionally, average water levels increased in the northern, central and southern counties by 0.40 foot, 1.09 feet and 2.21 feet, respectively. Districtwide, the average water level in the UFA increased by 1.32 feet.

Compared to December 2022 data, 71 of the 82 wells monitored for this report recorded water level decreases, while nine recorded increases and one was unchanged. Regionally, the mean water level in the northern, central and southern counties was lower by 0.99 foot, 2.72 feet and 2.85 feet, respectively. Districtwide, average water levels in UFA wells were 2.34 feet lower than December 2022 levels.

In December, UFA groundwater data showed that average regional percentile levels increased in all three regions of the District, The average regional percentile level in the northern, central and southern counties ended the month at the 50<sup>th</sup>, 55<sup>th</sup> and 55<sup>th</sup> percentiles, respectively.

## SUMMARY OF UPPER FLORIDAN AQUIFER LEVELS IN REPRESENTATIVE WELLS, JANUARY 2024

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

### Regional Summary

Region	DEC 2023 Elevation	DEC 2023 vs. Historic DEC Median	DEC 2023 vs. Historic DEC 25th Percentile	DEC 2023 Percentile Rank	NOV 2023 Percentile Rank	DEC 2022 Percentile Rank
Northern	37.84	-0.18	1.05	50	38	63
Central	60.77	1.17	3.50	55	43	83
Southern	33.91	0.65	2.92	55	31	85

### Regional Wells Summary

	DEC 2023 Elev	NOV 2023 Elev	DEC 2022 Elev	Change from NOV 2023	Change from DEC 2022	DEC Historical Low Normal	DEC Historical High Normal	Departure from Low Normal	DEC 2023 Percentile Rank	Period of Record Low	Record Low Date	Period of Record High	Record High Date
<b>NORTHERN COUNTIES</b>													
CE 14 Dunnellon Deep	38.30	37.83	38.91	0.47	-0.61	37.03	42.33	1.27	41%	31.94	MAY 2012	50.74	MAR 1998
Chassahowitzka 1 Deep	6.00	5.84	6.68	0.16	-0.68	5.89	7.04	0.11	34%	4.72	JUN 2001	9.75	SEP 2021
Inverness DOT	27.23	26.82	31.71	0.41	-4.48	28.44	31.74	-1.21	20%	21.70	JUN 2001	37.80	OCT 1982
Mascotte Deep (L-0062)	100.57	100.15	100.89	0.42	-0.32	98.88	100.48	1.69	78%	93.94	JUN 2000	102.66	SEP 1988
North Lecanto Deep	4.29	4.20	4.56	0.09	-0.27	4.26	5.40	0.03	31%	2.94	MAY 2001	8.10	OCT 1982
ROMP 103	37.80	37.85	42.01	-0.05	-4.21	41.91	42.85	-4.11	0%	37.53	JUN 2017	46.62	SEP 2018
ROMP 107	10.24	10.36	12.91	-0.12	-2.67	11.50	14.52	-1.26	5%	8.08	AUG 2007	19.78	NOV 1982
ROMP 111	51.00	50.33	50.43	0.67	0.57	48.34	50.17	2.66	97%	44.22	JUL 1992	53.33	SEP 2004
ROMP 116	32.64	31.91	34.19	0.73	-1.55	31.58	34.27	1.06	39%	29.24	MAY 2012	39.28	OCT 2004
ROMP 119 Sulfate	45.25	44.87	44.14	0.38	1.11	43.06	45.76	2.19	63%	39.86	MAY 2012	50.98	OCT 2004
ROMP 120	44.91	44.52	43.95	0.39	0.96	42.01	45.47	2.90	64%	38.71	MAY 2012	52.24	MAR 1998
ROMP 134 (Ocal-Avpk-Oldm)	48.67	48.33	49.09	0.34	-0.42	43.59	48.78	5.08	73%	37.80	JUN 2012	57.35	APR 1998
ROMP 89	92.64	91.74	92.82	0.90	-0.18	90.47	91.40	2.17	86%	82.46	JUN 2000	94.93	DEC 1997
ROMP 97	15.01	14.99	19.03	0.02	-4.02	15.41	19.63	-0.40	19%	11.84	MAY 2009	26.24	SEP 2004
ROMP TR 124 (Avpk) 2	3.26	2.68	3.14	0.58	0.12	2.50	3.23	0.76	76%	0.77	SEP 2004	5.66	DEC 2018
ROMP TR 21-2 Chloride	3.08	3.04	3.21	0.04	-0.13	2.49	3.18	0.59	70%	1.25	MAR 1991	6.12	OCT 1995
Sumter 13 JC 59 U Repl	42.49	40.90	41.91	1.59	0.58	40.20	43.02	2.29	62%	36.52	MAY 2012	47.36	AUG 2021
Tidewater 1	54.58	53.95	54.58	0.63	0.00	53.05	56.49	1.53	44%	48.05	JUN 2012	61.81	SEP 1982
Webster City	84.90	84.25	85.78	0.65	-0.88	79.80	83.71	5.10	80%	74.16	MAY 2012	88.77	SEP 2005
Weeki Wachee Repl	13.84	14.06	16.65	-0.22	-2.81	15.21	18.56	-1.37	14%	10.37	MAY 2009	23.61	AUG 1984

**Regional Wells Summary (continued)**

<i>CENTRAL COUNTIES</i>	<i>DEC 2023 Elev</i>	<i>NOV 2023 Elev</i>	<i>DEC 2022 Elev</i>	<i>Change from NOV 2023</i>	<i>Change from DEC 2022</i>	<i>DEC Historical Low Normal</i>	<i>DEC Historical High Normal</i>	<i>Departure from Low Normal</i>	<i>DEC 2023 Percentile Rank</i>	<i>Period of Record Low</i>	<i>Record Low Date</i>	<i>Period of Record High</i>	<i>Record High Date</i>
Bexley 2	61.37	60.57	62.73	0.80	-1.36	60.20	61.88	1.17	55%	56.08	JUN 2000	64.50	SEP 2017
Coley Deep	86.86	84.50	86.78	2.36	0.08	79.68	85.01	7.18	91%	60.77	JAN 2010	90.99	OCT 2004
Cross Bar 2SW CSX (CB-2SW)	66.46	66.06	67.58	0.40	-1.12	65.81	67.10	0.65	47%	61.00	JAN 2008	70.30	JAN 1998
Debuel Road Deep	51.40	50.85	54.42	0.55	-3.02	53.40	55.53	-2.00	9%	46.48	APR 2002	60.13	SEP 1979
DV-1 (Swnn)	56.06	53.00	56.31	3.06	-0.25	53.50	57.61	2.56	58%	12.06	JAN 2010	65.72	FEB 1998
Hillsborough RSPPL Deep	38.94	38.08	41.08	0.86	-2.14	37.74	39.33	1.20	69%	35.35	JUN 2000	47.42	DEC 1997
Lake Alfred Deep nr Lake Alfred	129.32	129.11	129.56	0.21	-0.24	126.62	128.51	2.70	89%	119.85	MAY 1974	131.18	MAR 1998
Loughman Deep	90.48	90.63	91.36	-0.15	-0.88	89.36	91.21	1.12	53%	85.90	MAY 2001	93.60	OCT 2022
Lykes Pasco	65.63	65.53	69.13	0.10	-3.50	63.58	68.35	2.05	48%	56.94	JUN 2000	75.78	OCT 2004
Masaryktown Deep	29.51	30.18	35.65	-0.67	-6.14	29.01	37.79	0.50	29%	21.89	AUG 1994	50.09	OCT 1982
Moon Lake Deep	29.37	29.66	31.54	-0.29	-2.17	30.24	31.88	-0.87	8%	26.15	JUN 2000	34.89	AUG 2015
Pasco 13 nr Drexel	71.65	71.03	72.75	0.62	-1.10	71.52	73.31	0.13	30%	68.00	JUN 2001	77.14	JUL 1960
Pinellas 665	9.22	8.59	9.56	0.63	-0.34	8.87	10.53	0.35	36%	6.70	MAY 2006	14.79	SEP 1959
ROMP 123 Htrn AS/U Aq	16.84	10.10	26.07	6.74	-9.23	4.37	14.80	12.47	80%	-29.47	MAY 2000	33.56	FEB 1998
ROMP 40	43.33	38.62	48.50	4.71	-5.17	35.82	45.17	7.51	69%	-4.15	JUN 2000	57.37	FEB 1998
ROMP 45 (Avpk)	75.82	74.25	80.04	1.57	-4.22	67.20	76.60	8.62	70%	33.90	JUN 2000	84.44	OCT 2004
ROMP 48 (Tmpa-Swnn)	38.12	34.14	45.50	3.98	-7.38	29.65	40.28	8.47	67%	-7.87	MAY 2000	52.64	FEB 1998
ROMP 50 (Avpk) Chloride	7.29	6.29	11.10	1.00	-3.81	3.38	7.63	3.91	71%	-17.42	FEB 2018	14.95	AUG 1982
ROMP 58	101.61	103.58	105.37	-1.97	-3.76	99.76	105.08	1.85	38%	89.38	JAN 2010	111.01	DEC 2005
ROMP 59 Interface	76.42	75.06	80.82	1.36	-4.40	61.10	75.29	15.32	78%	33.33	MAY 1981	85.92	OCT 2004
ROMP 60 (Avpk) Repl	76.16	74.69	80.40	1.47	-4.24	71.87	78.49	4.29	54%	51.29	MAY 2012	83.25	SEP 2018
ROMP 66	17.92	16.70	19.89	1.22	-1.97	17.43	19.17	0.49	41%	13.02	JUN 2000	25.47	AUG 2015
ROMP 76	130.25	129.80	130.71	0.45	-0.46	126.70	130.08	3.55	80%	121.88	JAN 2010	132.92	SEP 2004
ROMP 87 (Avpk)	102.94	101.73	104.16	1.21	-1.22	101.36	103.38	1.58	70%	94.90	JUN 2000	109.95	JUN 2023
ROMP 88 (Avpk)	105.21	103.80	105.62	1.41	-0.41	102.46	104.72	2.75	79%	92.37	APR 2023	107.21	SEP 2017
ROMP 93	71.50	70.87	74.68	0.63	-3.18	66.72	73.07	4.78	56%	59.03	JUN 2001	76.56	AUG 2018
ROMP TR 10-2	12.11	11.61	12.93	0.50	-0.82	9.15	10.46	2.96	100%	6.25	MAY 2000	14.18	OCT 2022
ROMP TR 13-3	14.98	14.45	15.51	0.53	-0.53	14.86	16.30	0.12	29%	10.95	JUL 1987	18.79	AUG 2015
Sanlon Ranch	98.05	97.24	101.31	0.81	-3.26	87.25	97.28	10.80	78%	66.38	MAY 1975	105.27	OCT 2004
SR 52 and CR 581 Deep	71.98	71.60	76.31	0.38	-4.33	68.26	75.00	3.72	43%	56.96	JUN 2001	81.22	JUN 2023
SR 577 Deep	88.83	88.94	93.88	-0.11	-5.05	86.02	92.20	2.81	40%	72.76	JUN 2000	98.51	MAR 1998
Tarpon Road Deep	8.90	8.31	10.28	0.59	-1.38	9.66	10.63	-0.76	0%	7.50	JUN 2006	13.48	AUG 2015

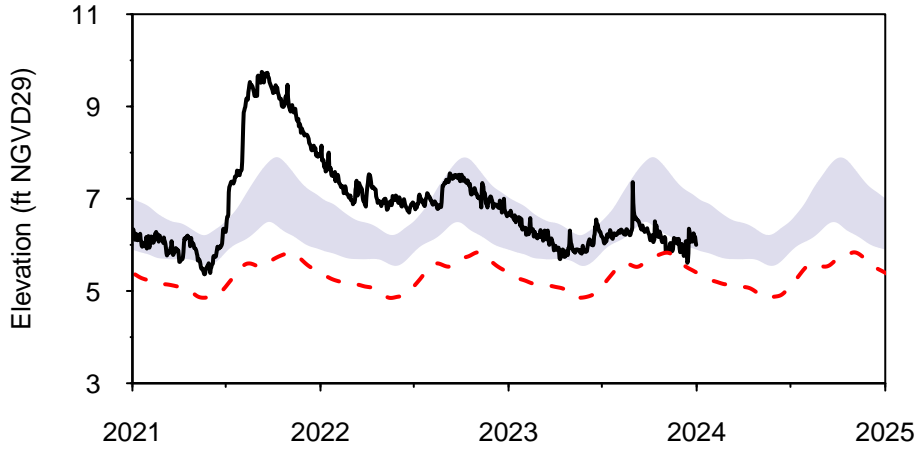
**Regional Wells Summary (continued)**

<i>SOUTHERN COUNTIES</i>	<i>DEC 2023 Elev</i>	<i>NOV 2023 Elev</i>	<i>DEC 2022 Elev</i>	<i>Change from NOV 2023</i>	<i>Change from DEC 2022</i>	<i>DEC Historical Low Normal</i>	<i>DEC Historical High Normal</i>	<i>Departure from Low Normal</i>	<i>DEC 2023 Percentile Rank</i>	<i>Period of Record Low</i>	<i>Record Low Date</i>	<i>Period of Record High</i>	<i>Record High Date</i>
Big Slough Deep	32.62	32.72	34.31	-0.10	-1.69	31.98	33.41	0.64	45%	26.85	MAY 2006	37.41	SEP 2022
Cargill FA-1	74.25	72.43	78.45	1.82	-4.20	62.47	73.48	11.78	77%	30.50	MAY 1981	82.95	OCT 2004
Edgeville 3 Deep Dstr	28.48	25.35	32.94	3.13	-4.46	24.86	33.97	3.62	50%	1.13	MAY 2000	41.26	OCT 1979
Englewood 14 Deep	5.25	1.40	7.12	3.85	-1.87	4.23	5.94	1.02	46%	-0.97	FEB 2001	11.64	SEP 2022
Kibler Deep	M	M	22.50	NA	NA	5.61	16.17	NA	M%	-29.95	MAY 2000	35.91	JUL 2022
Manasota 14 Deep	17.60	17.29	18.89	0.31	-1.29	18.44	20.77	-0.84	7%	15.46	MAY 2017	22.70	NOV 1971
Marshall Deep (USGS)	44.64	43.01	45.70	1.63	-1.06	38.75	46.64	5.89	62%	8.96	JUN 2000	55.24	MAR 1964
ROMP 16	48.12	46.34	47.99	1.78	0.13	45.27	47.57	2.85	87%	28.94	JAN 2001	51.21	SEP 1995
ROMP 17 (Swnn)	46.31	45.11	46.72	1.20	-0.41	43.82	46.11	2.49	77%	31.89	JUN 2000	51.64	OCT 1994
ROMP 19 (Swnn)	23.79	21.04	29.56	2.75	-5.77	24.30	29.15	-0.51	24%	10.99	JUN 2000	33.80	SEP 2017
ROMP 19X (Swnn)	32.42	31.02	36.52	1.40	-4.10	30.92	34.80	1.50	46%	19.28	JUN 2000	39.92	OCT 1994
ROMP 20 (Swnn)	19.66	17.55	24.74	2.11	-5.08	19.80	22.96	-0.14	22%	11.99	MAY 2007	26.66	SEP 2017
ROMP 22 (Swnn)	18.91	14.93	25.02	3.98	-6.11	15.11	21.25	3.80	58%	-3.71	MAY 2000	30.18	FEB 1998
ROMP 26	46.67	44.31	46.99	2.36	-0.32	41.41	45.82	5.26	84%	19.48	JAN 2010	51.28	OCT 1979
ROMP 28X	72.64	71.24	71.40	1.40	1.24	68.82	70.61	3.82	100%	57.24	JAN 2010	74.68	OCT 1995
ROMP 30	50.61	47.34	53.12	3.27	-2.51	41.23	51.49	9.38	71%	-0.20	JUN 2000	60.52	MAR 1998
ROMP 31	45.50	42.12	49.73	3.38	-4.23	36.78	47.78	8.72	70%	-6.22	JUN 2000	57.92	MAR 1998
ROMP 32 (Avpk)	30.30	26.28	35.63	4.02	-5.33	21.02	29.96	9.28	76%	-17.74	JUN 2000	44.73	FEB 1998
ROMP 43XX	90.94	88.18	90.93	2.76	0.01	84.78	90.14	6.16	95%	70.93	JAN 2010	94.60	MAR 1998
ROMP 9 (Swnn)	42.15	41.64	43.06	0.51	-0.91	41.18	42.83	0.97	54%	37.00	JAN 2001	46.35	SEP 2006
ROMP TR 1-2	45.40	45.22	45.79	0.18	-0.39	44.40	45.40	1.00	75%	40.72	JUN 2000	47.55	SEP 2022
ROMP TR 3-1	34.45	34.23	34.75	0.22	-0.30	32.96	34.38	1.49	82%	29.04	JUN 2000	36.52	SEP 2022
ROMP TR 5-1 Sulfate	18.05	16.96	20.59	1.09	-2.54	18.12	19.97	-0.07	20%	13.26	JUN 2000	22.56	SEP 2017
ROMP TR 5-2 (Swnn)	23.54	21.60	27.70	1.94	-4.16	23.31	26.78	0.23	26%	13.75	MAY 2006	31.10	OCT 1994
ROMP TR 7-1 (L Arca Aq Int)	18.92	16.79	21.33	2.13	-2.41	17.32	20.15	1.60	64%	10.01	JUN 2000	24.23	SEP 2017
ROMP TR 7-4 (Swnn)	13.38	11.07	20.17	2.31	-6.79	12.11	17.15	1.27	37%	-3.55	MAY 2000	24.35	AUG 2019
ROMP TR 8-1 (Swnn)	18.94	17.02	20.86	1.92	-1.92	16.02	19.14	2.92	70%	6.60	MAY 2000	23.21	AUG 2019
ROMP TR SA-1 (Swnn)	8.42	6.09	12.13	2.33	-3.71	10.01	12.16	-1.59	6%	2.89	MAY 2017	22.04	SEP 1999
Sarasota Service Office	14.13	9.98	20.52	4.15	-6.39	16.39	28.17	-2.26	15%	-3.24	JUN 2000	35.21	MAR 1931
Verna Test 0-1	17.32	11.03	23.52	6.29	-6.20	12.91	21.27	4.41	50%	-15.73	MAY 2000	33.32	JAN 1984

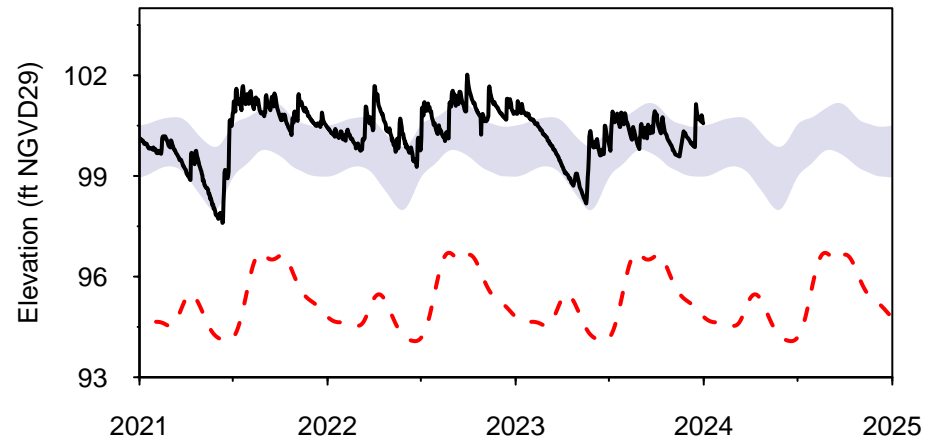


**HYDROGRAPHS OF REPRESENTATIVE UPPER FLORIDAN AQUIFER WELLS**  
**JANUARY 2021 TO JANUARY 2024**

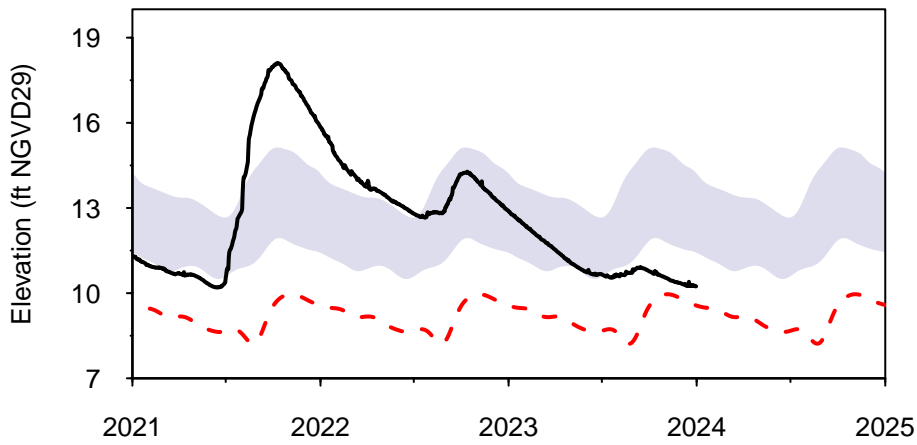
**Chassahowitzka 1 Deep**  
 Northern Region



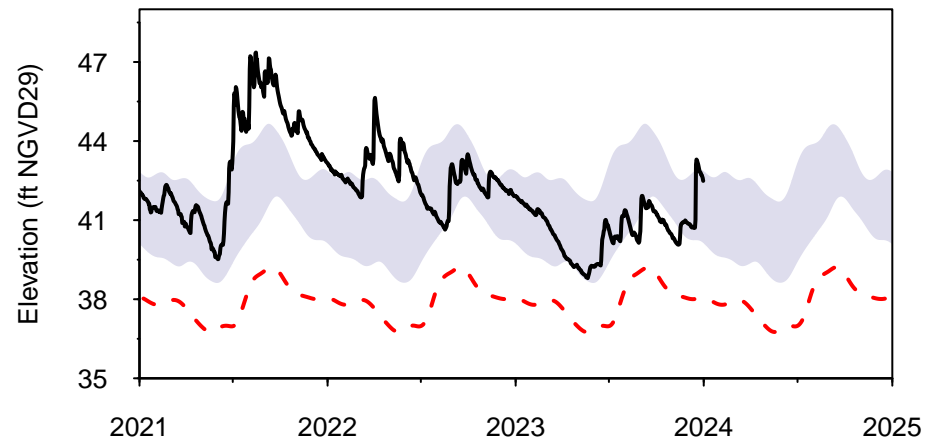
**Mascotte Deep (L-0062)**  
 Northern Region



**ROMP 107**  
 Northern Region



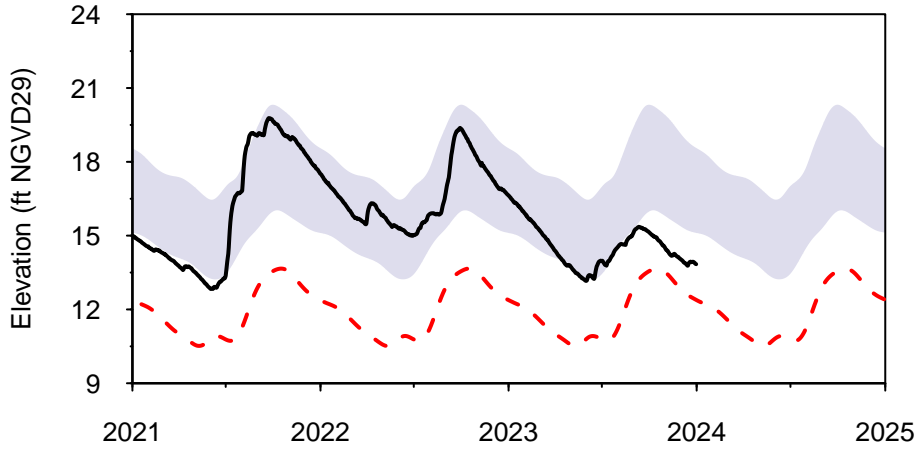
**Sumter 13 JC 59 U Repl**  
 Northern Region



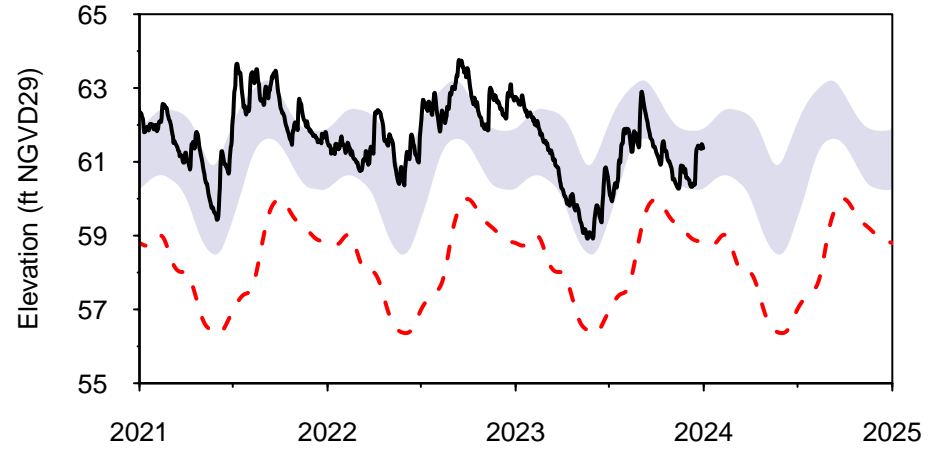
Water Level    
  POR Daily Low    
  Normal Range

**HYDROGRAPHS OF REPRESENTATIVE UPPER FLORIDAN AQUIFER WELLS**  
**JANUARY 2021 TO JANUARY 2024**

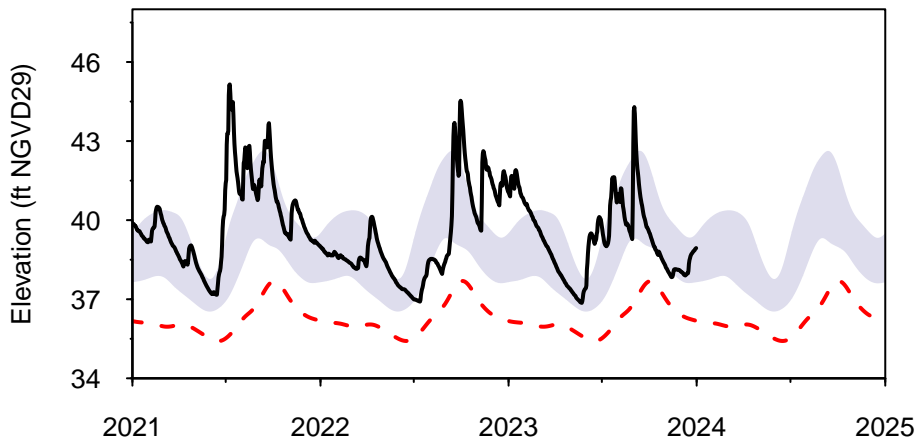
**Weeki Wachee Repl**  
 Northern Region



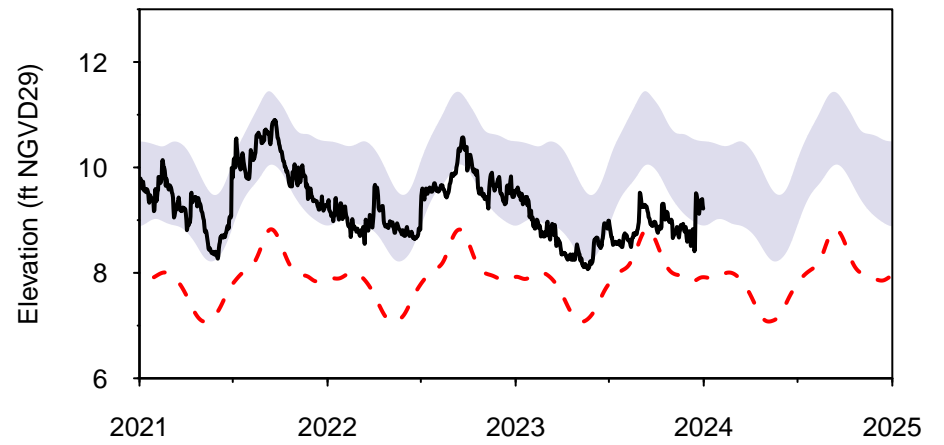
**Bexley 2**  
 Central Region



**Hillsborough RSPPL Deep**  
 Central Region



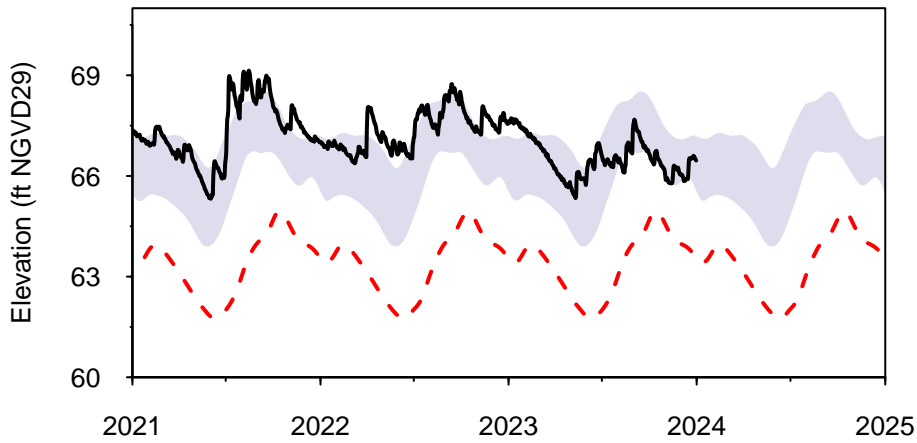
**Pinellas 665**  
 Central Region



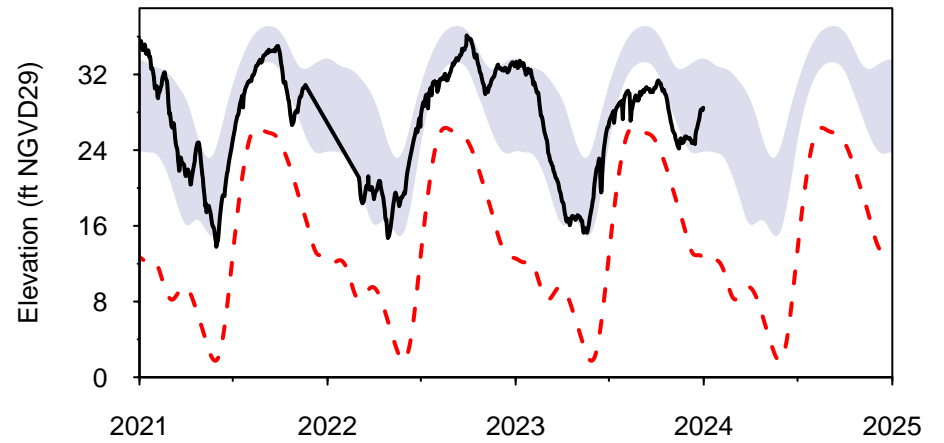
Water Level    
  POR Daily Low    
  Normal Range

**HYDROGRAPHS OF REPRESENTATIVE UPPER FLORIDAN AQUIFER WELLS**  
**JANUARY 2021 TO JANUARY 2024**

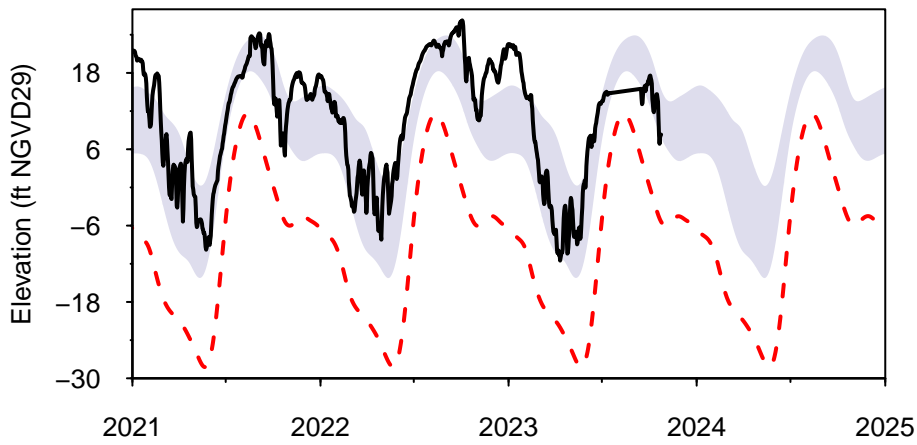
**Cross Bar 2SW CSX (CB-2SW)**  
 Central Region



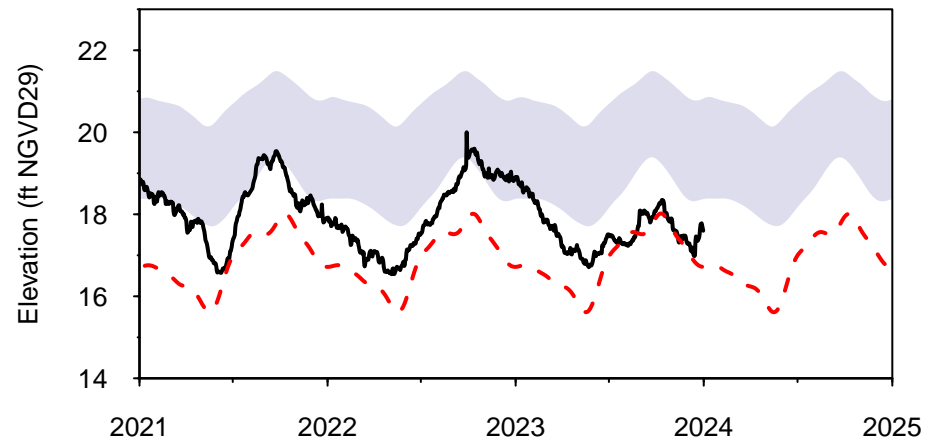
**Edgeville 3 Deep Dstr**  
 Southern Region



**Kibler Deep**  
 Southern Region



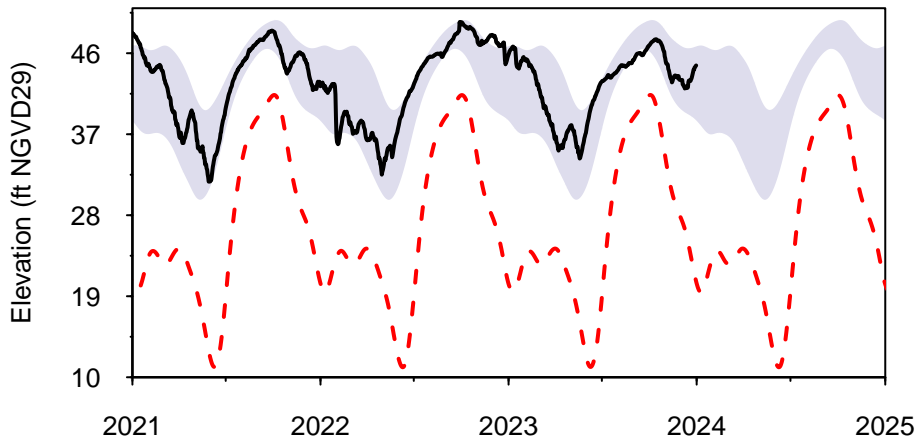
**Manasota 14 Deep**  
 Southern Region



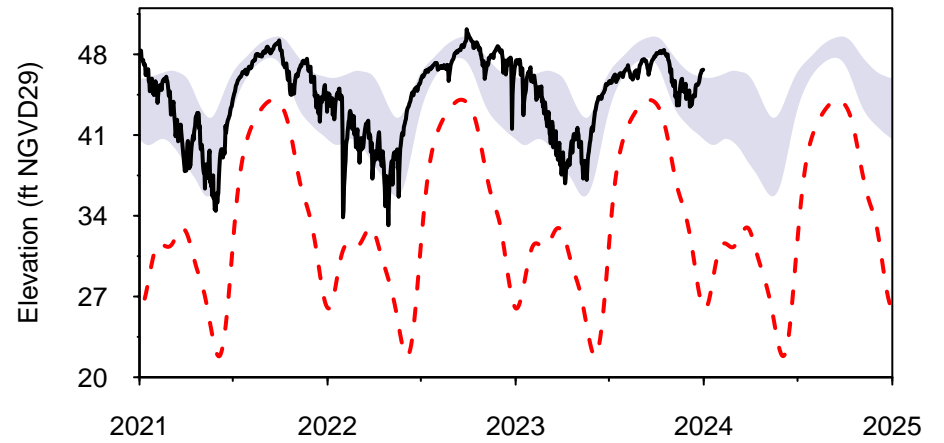
— Water Level    - - - - POR Daily Low    ■ Normal Range

HYDROGRAPHS OF REPRESENTATIVE UPPER FLORIDAN AQUIFER WELLS  
JANUARY 2021 TO JANUARY 2024

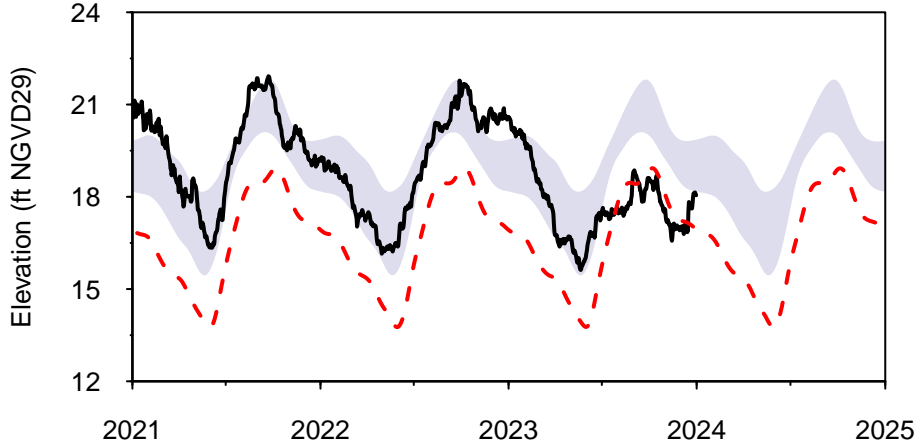
**Marshall Deep (USGS)**  
Southern Region



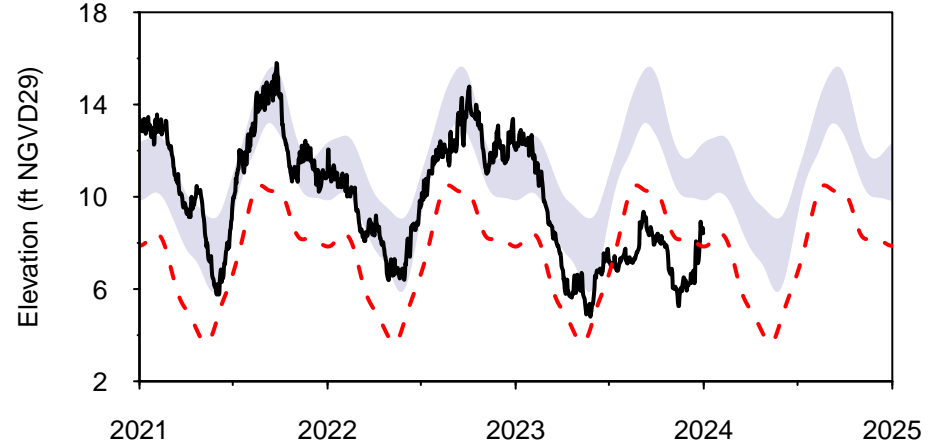
**ROMP 26**  
Southern Region



**ROMP TR 5-1 Sulfate**  
Southern Region

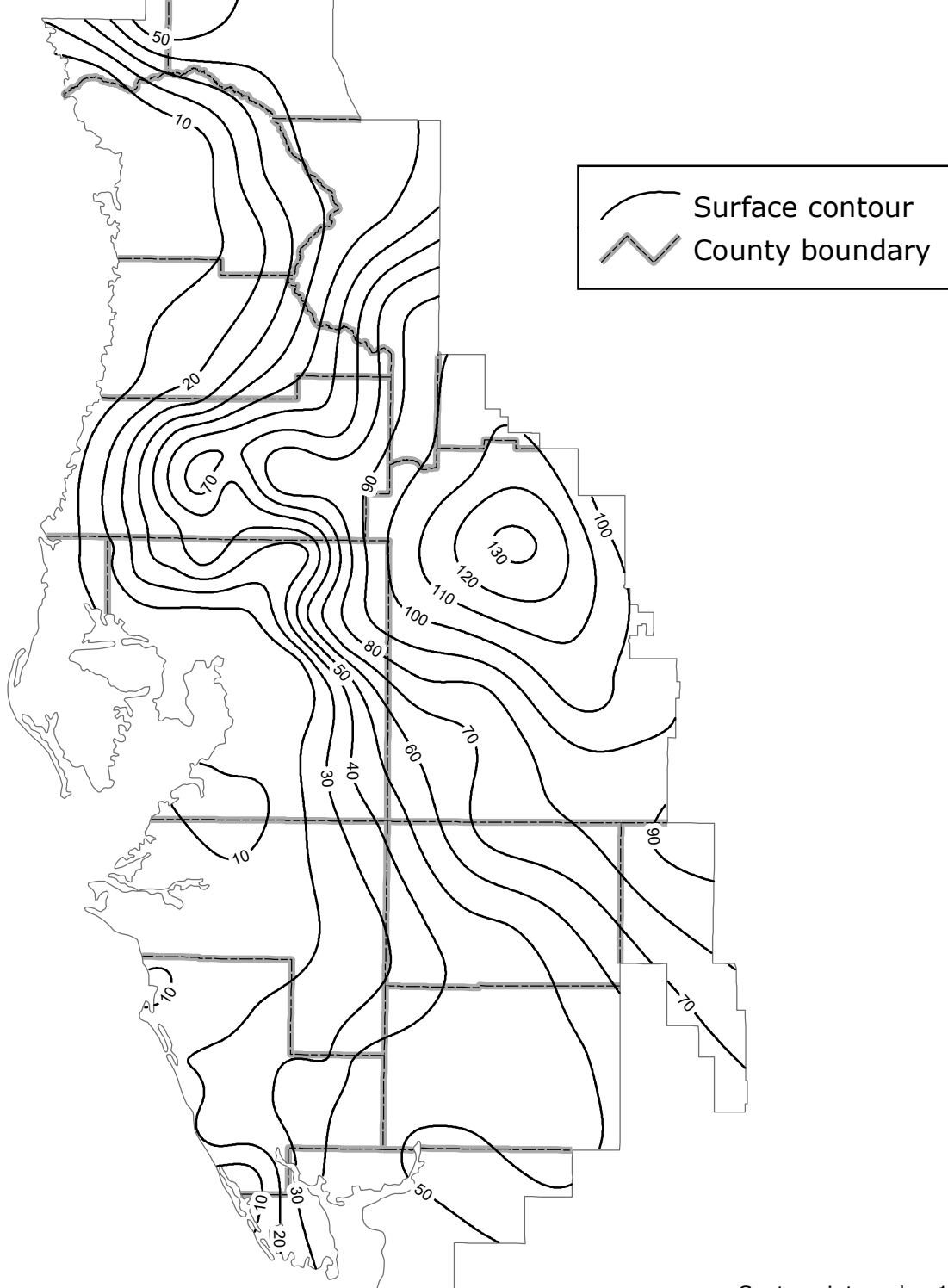


**ROMP TR SA-1 (Swnn)**  
Southern Region



— Water Level    - - - POR Daily Low    ■ Normal Range

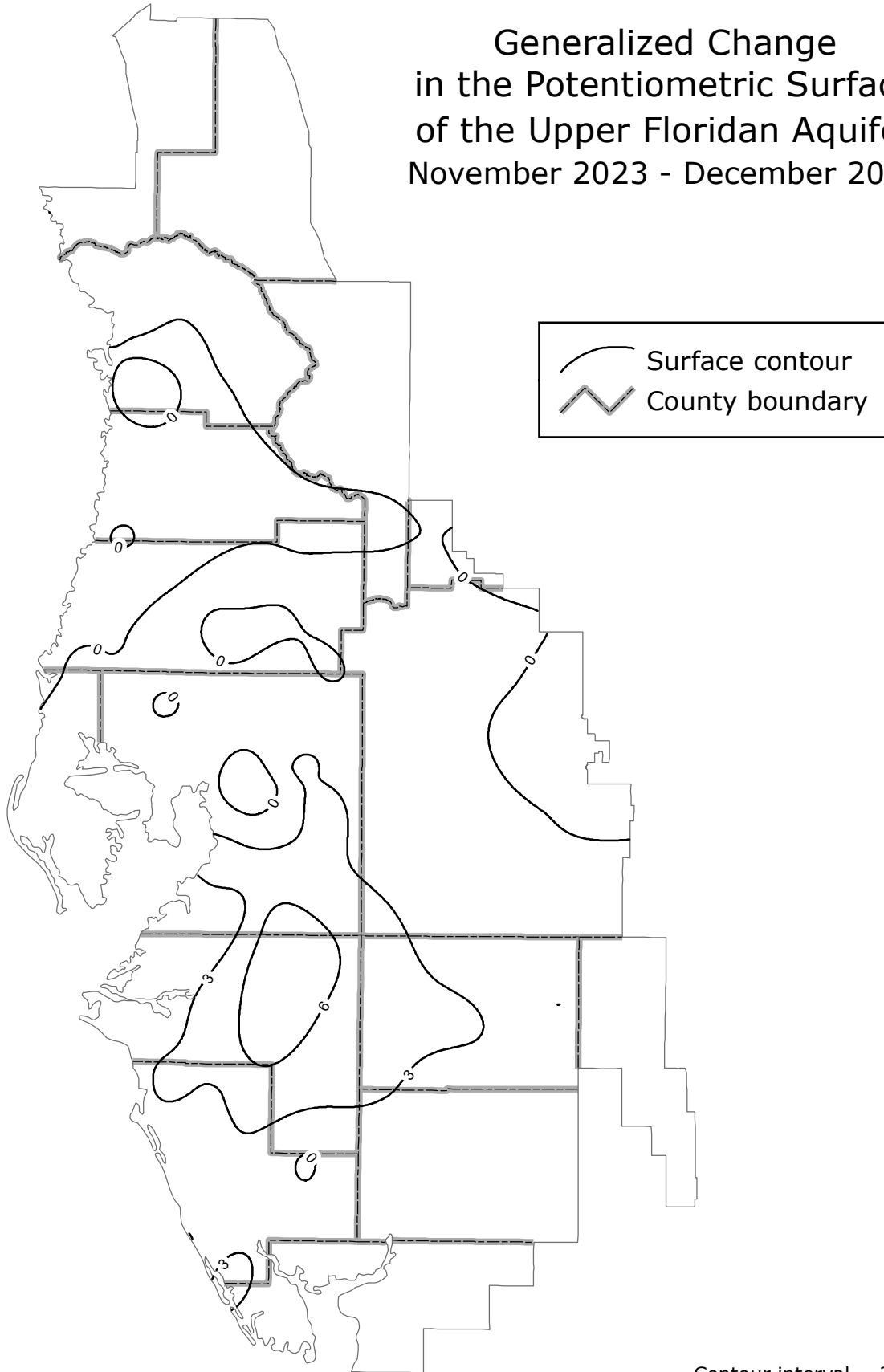
# Generalized Potentiometric Surface of the Upper Floridan Aquifer December 2023



Compiled by Hydrologic Data Section

Contour interval = 10 feet  
Water levels are in feet relative to NGVD29

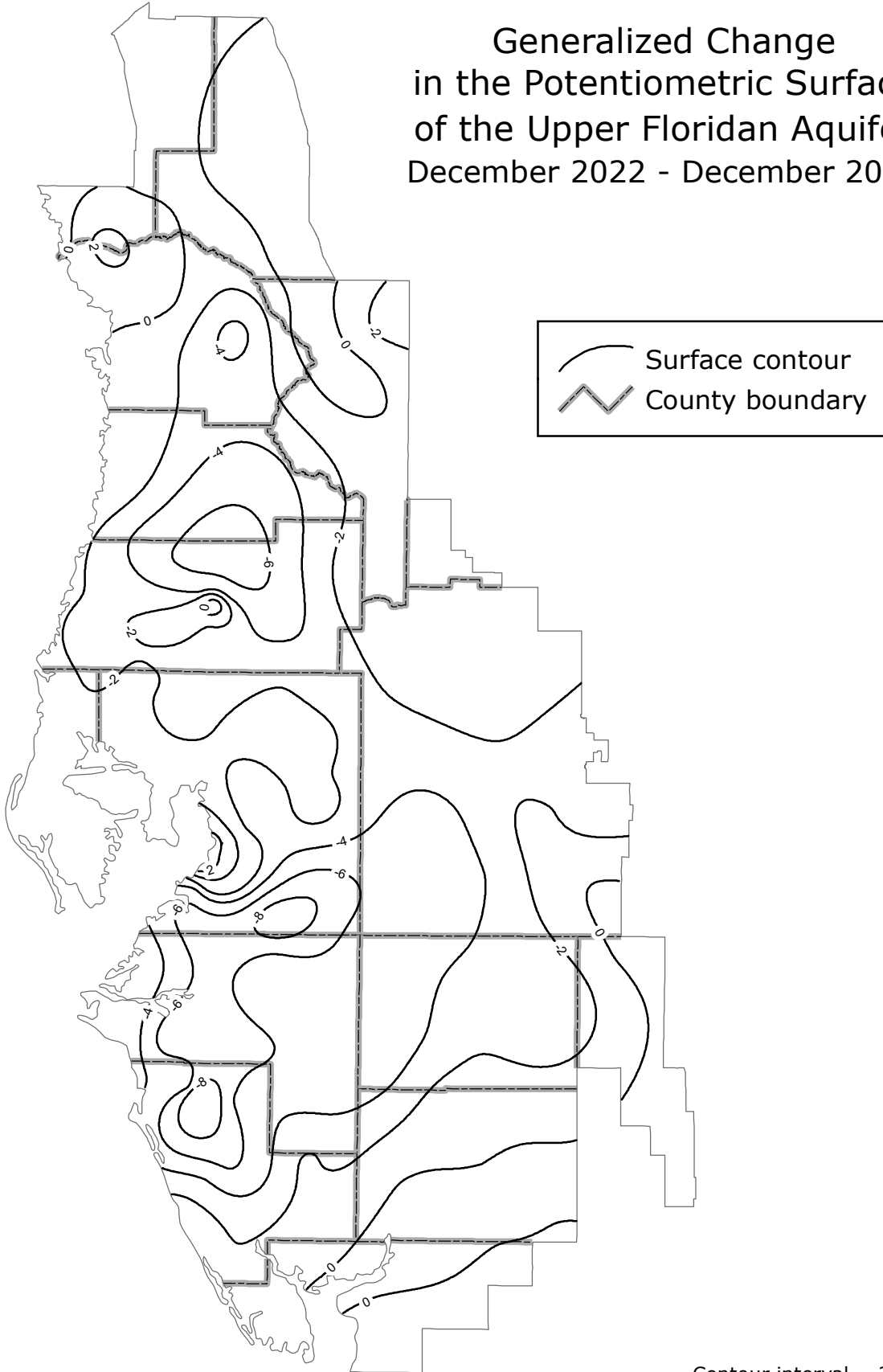
# Generalized Change in the Potentiometric Surface of the Upper Floridan Aquifer November 2023 - December 2023



Compiled by Hydrologic Data Section

Contour interval = 3 feet  
Water levels are in feet relative to NGVD29

# Generalized Change in the Potentiometric Surface of the Upper Floridan Aquifer December 2022 - December 2023



Compiled by Hydrologic Data Section

## **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 82 wells Districtwide are used for the ARI Network (see index map in Appendix).

### **Weekly Aquifer Resource Index Level (Percentile)**

<b>Report Date</b>	<b>Northern Counties</b>	<b>Central Counties</b>	<b>Southern Counties</b>
12/03/2023	44	46	35
12/10/2023	42	45	38
12/17/2023	54	53	50
12/24/2023	50	55	48
12/31/2023	53	59	58

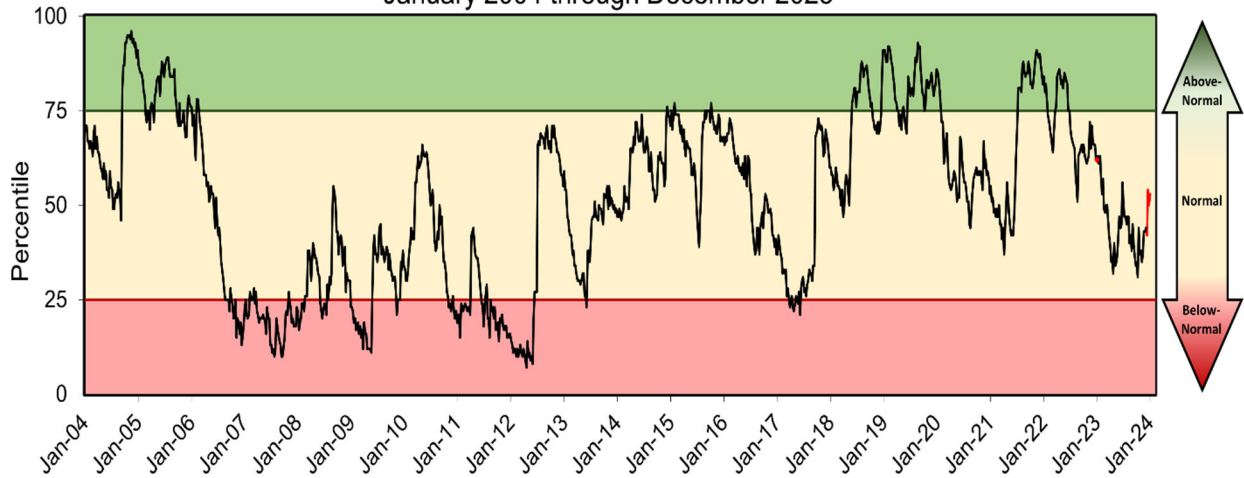
Note: Any regional percentile value that falls on or between the 25<sup>th</sup> and 75<sup>th</sup> percentile is considered “normal.” Less than the 25<sup>th</sup> would be considered “below-normal,” while above the 75<sup>th</sup> would be considered “above-normal.”



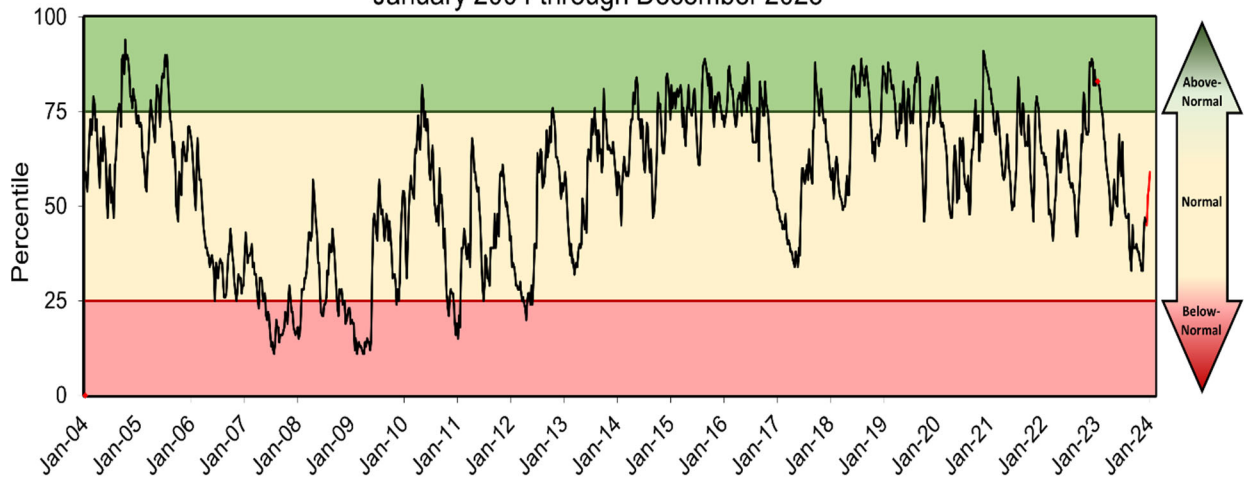
# REGIONAL AQUIFER RESOURCE INDEX

## December 2023

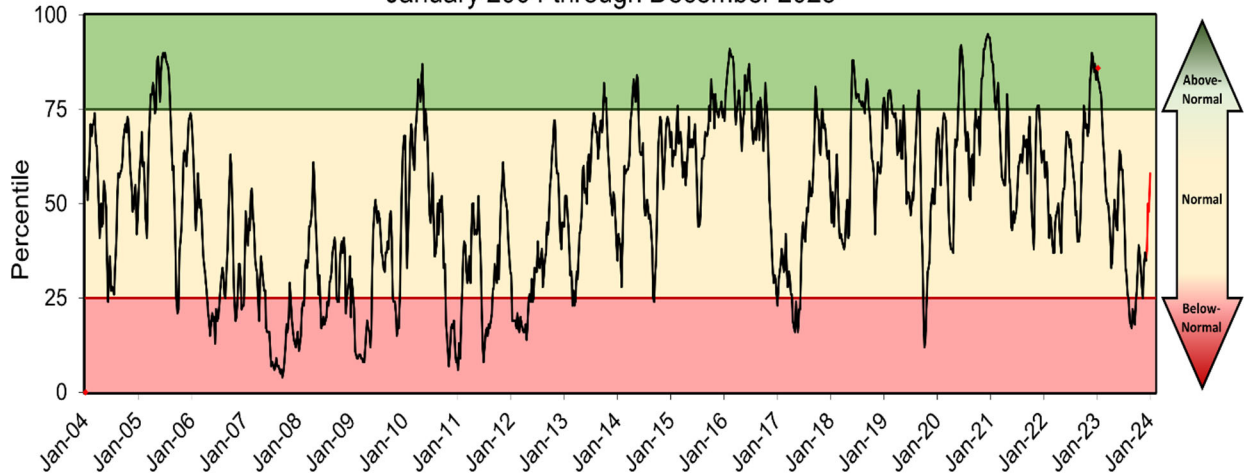
Groundwater Levels: Northern Counties  
January 2004 through December 2023



Groundwater Levels: Central Counties  
January 2004 through December 2023



Groundwater Levels: Southern Counties  
January 2004 through December 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 December, three of the seven reservoirs monitored for this report recorded water-level decreases, while three recorded increases and one was unchanged, compared to last month. The Evers, Hillsborough and Peace River No. 2 reservoirs posted water level increases of 0.95, 0.43 and 0.60 foot, respectively. The Lake Manatee, Bill Young and Shell Creek reservoirs posted water level decreases of 0.09 foot, 5.15 feet and 0.01 foot, respectively. The water level in the Peace River No. 1 reservoir remained unchanged, compared to last month.

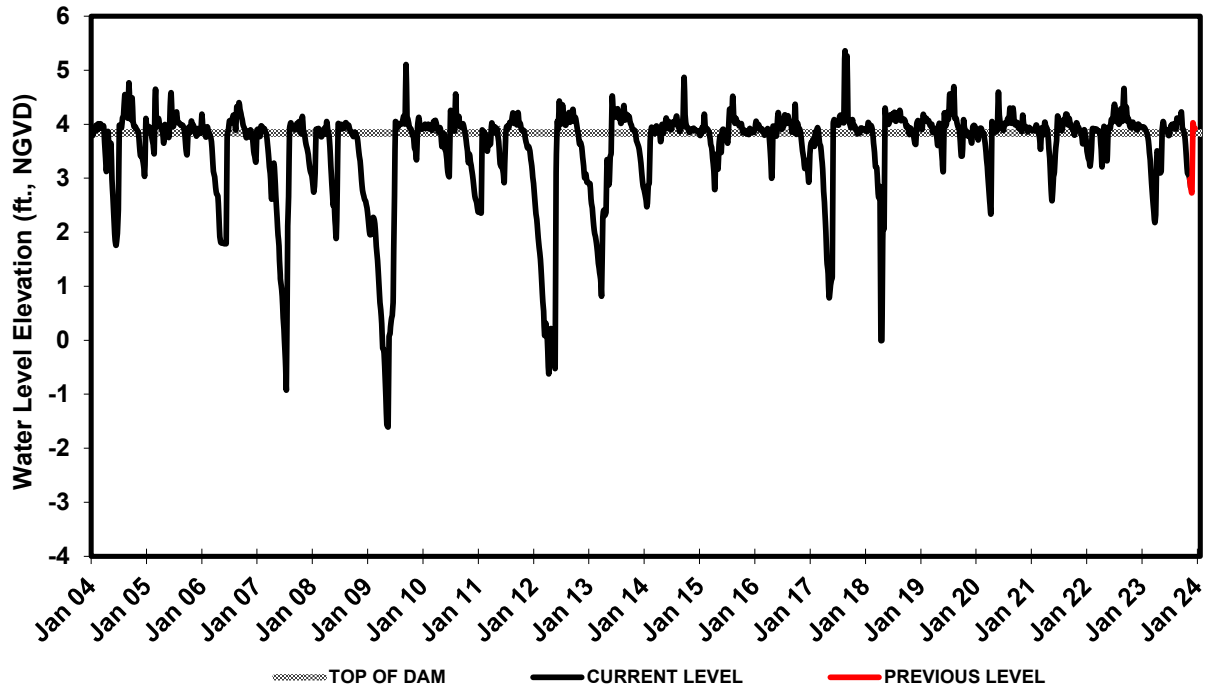
**SUMMARY OF WATER LEVELS IN WATER SUPPLY RESERVOIRS (GAGE LEVEL, IN FEET)**

<b>RESERVOIR</b>	<b>2023 November</b>	<b>2023 December</b>	<b>2022 December</b>	<b>Change from Prior Month</b>	<b>Change from Prior Year</b>
<b>Evers</b>					
City of Bradenton	2.98	3.93	3.99	0.95	-0.06
<b>Hillsborough</b>					
City of Tampa	22.29	22.72	22.76	0.43	-0.04
<b>Lake Manatee</b>					
Manatee County	37.86	37.77	40.68	-0.09	-2.91
<b>C.W. Bill Young Regional</b>					
Tampa Bay Water	117.90	112.75	136.27	-5.15	-23.52
<b>Peace River</b>					
PRMRWSA Reservoir #1	25.00	25.00	25.20	0.00	-0.20
PRMRWSA Reservoir #2	62.70	63.30	63.40	0.60	-0.10
<b>Shell Creek</b>					
City of Punta Gorda	5.12	5.11	5.26	-0.01	-0.15

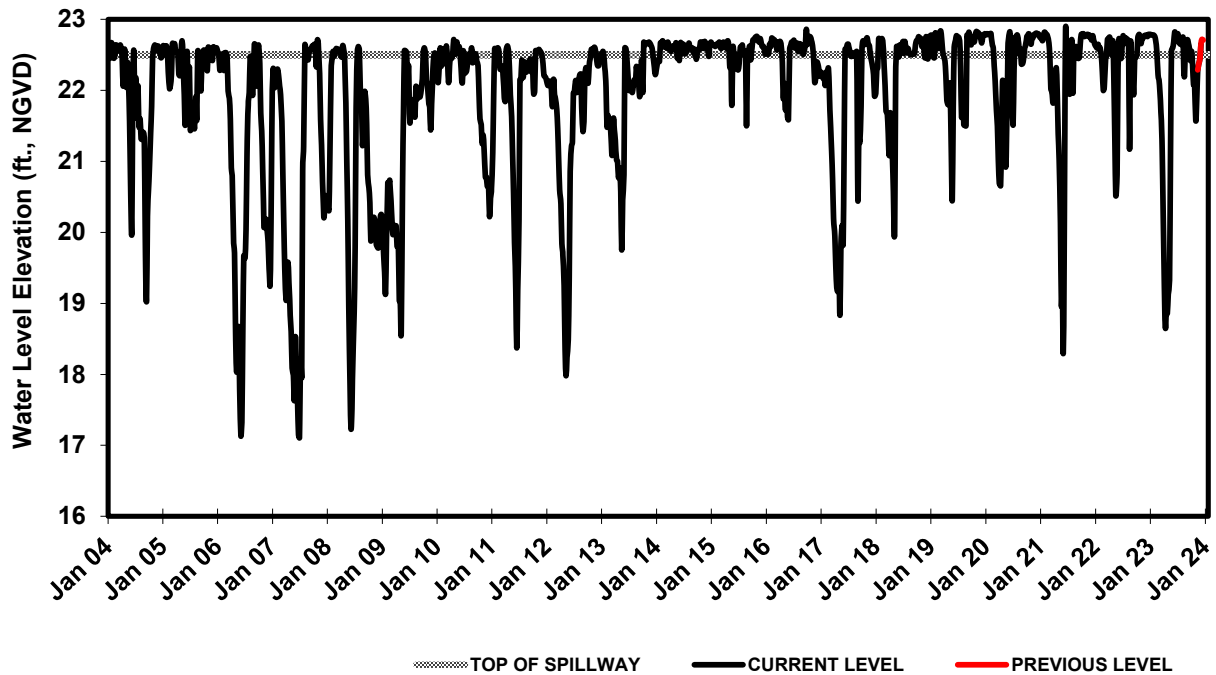
Reported data are provisional and subject to revision.

e = Estimated

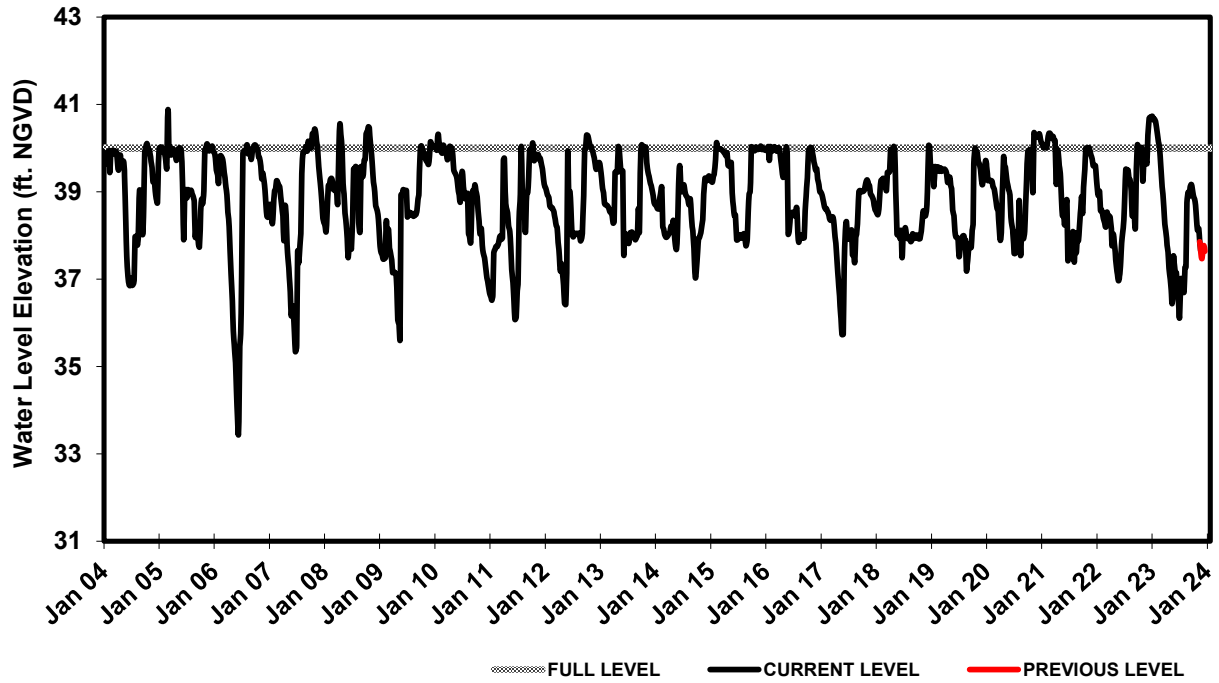
### EVERS RESERVOIR City of Bradenton



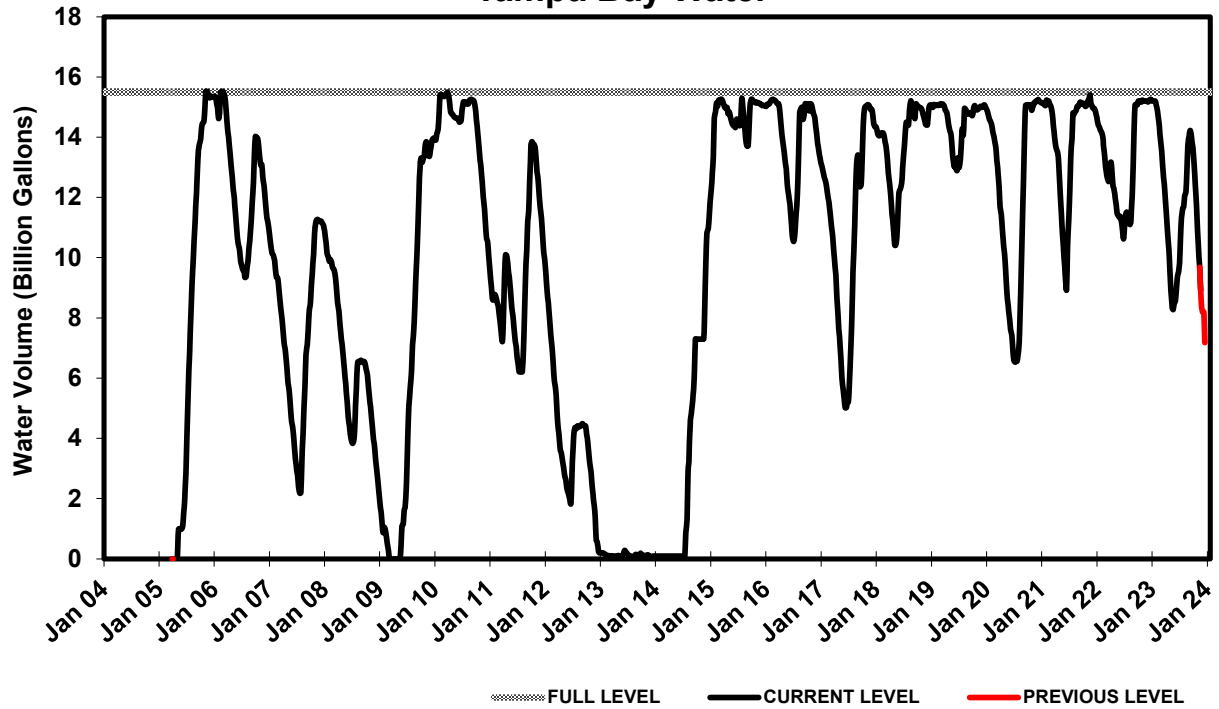
### HILLSBOROUGH RESERVOIR City of Tampa



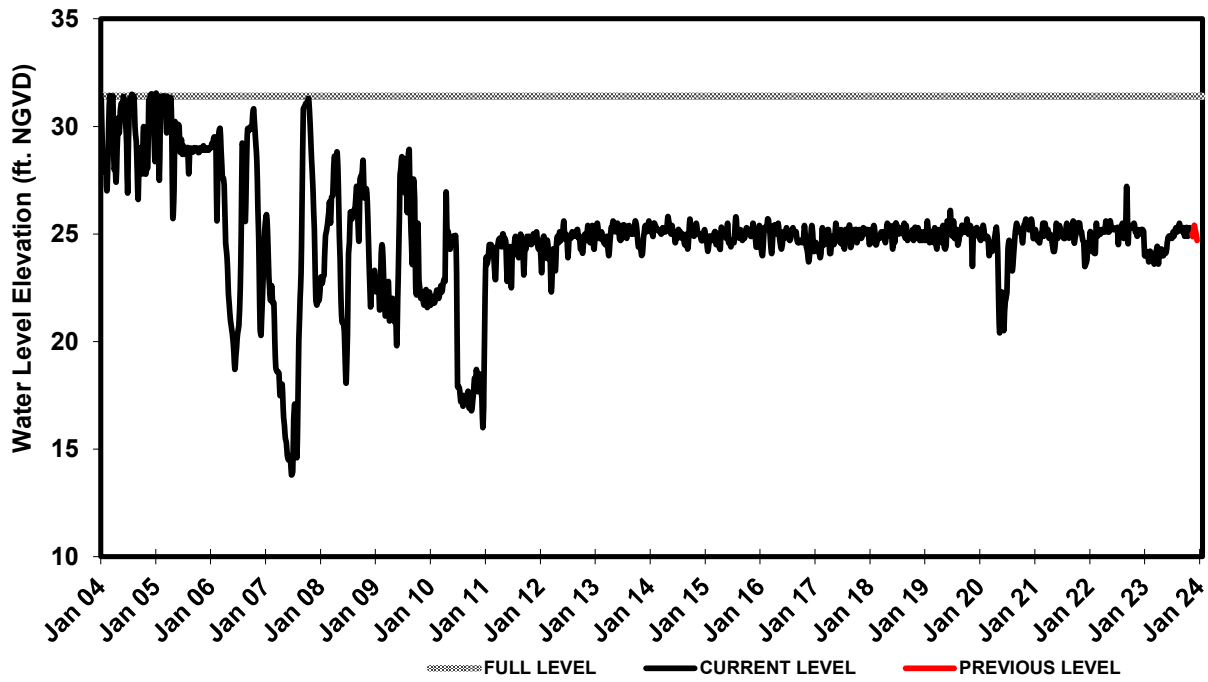
## LAKE MANATEE RESERVOIR Manatee County



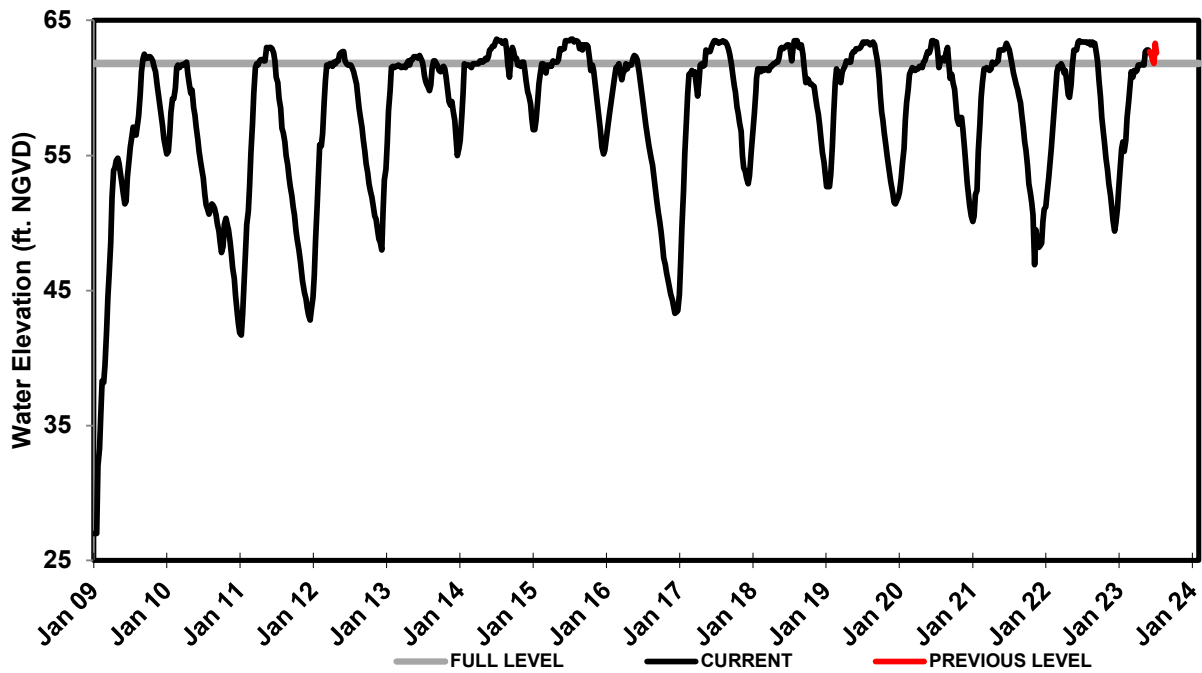
## C.W. BILL YOUNG REGIONAL RESERVOIR Tampa Bay Water



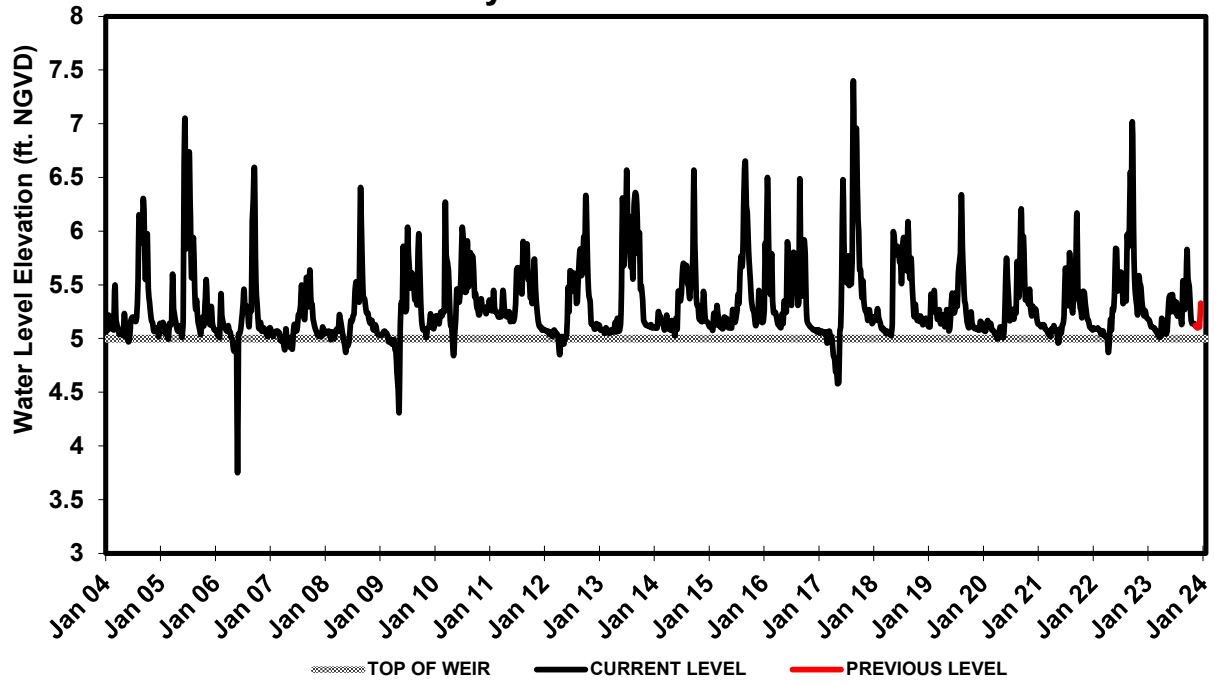
**PEACE RIVER RESERVOIR No. 1**  
Peace/Manasota Reg. Water Supply



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



# SHELL CREEK RESERVOIR City of Punta Gorda



# **APPENDICES**



Rainfall percentiles by interval and region, inches.

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

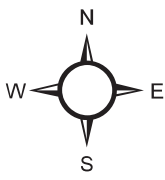
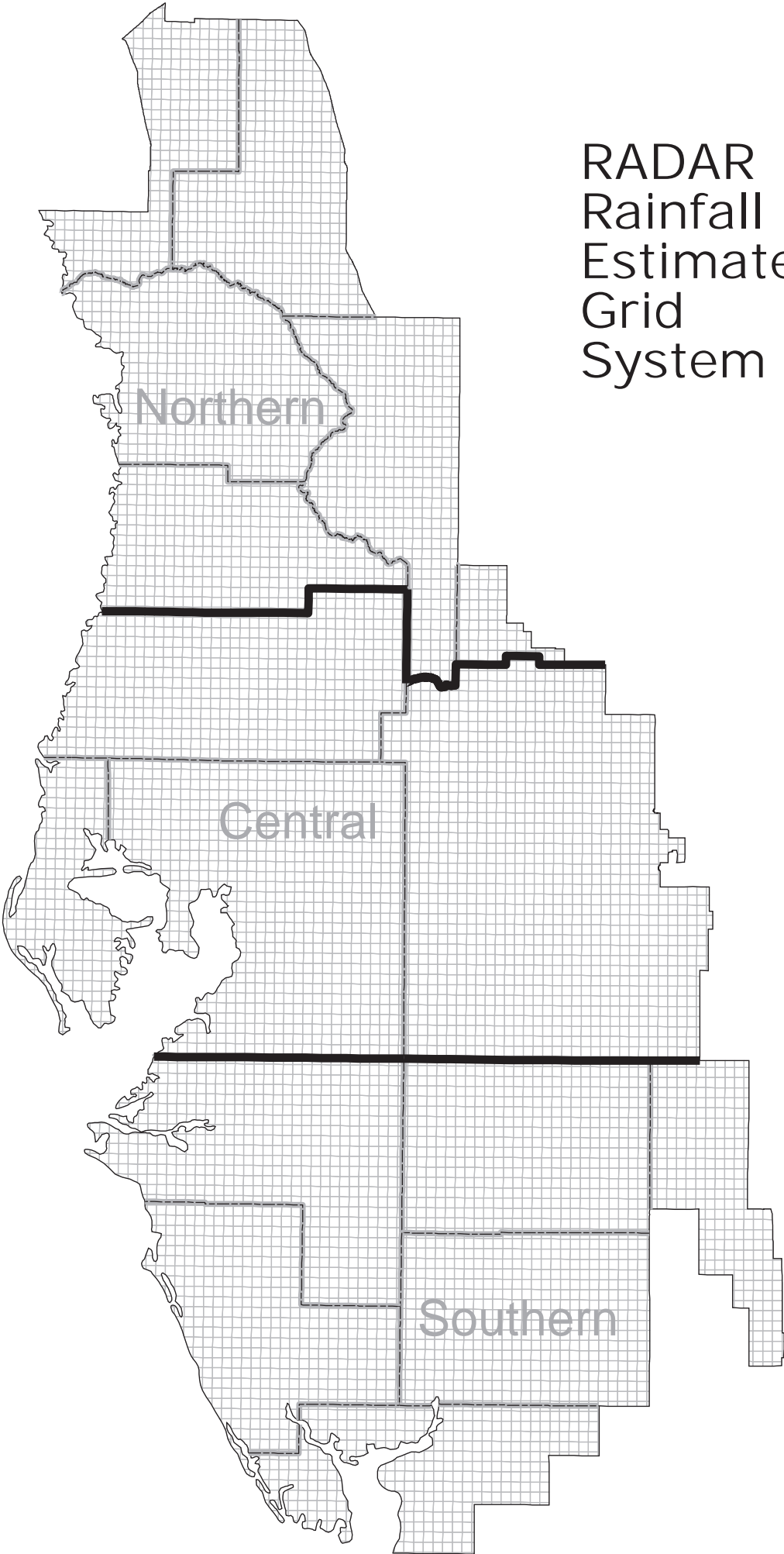
Rainfall percentiles by interval and region, inches (continued).

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

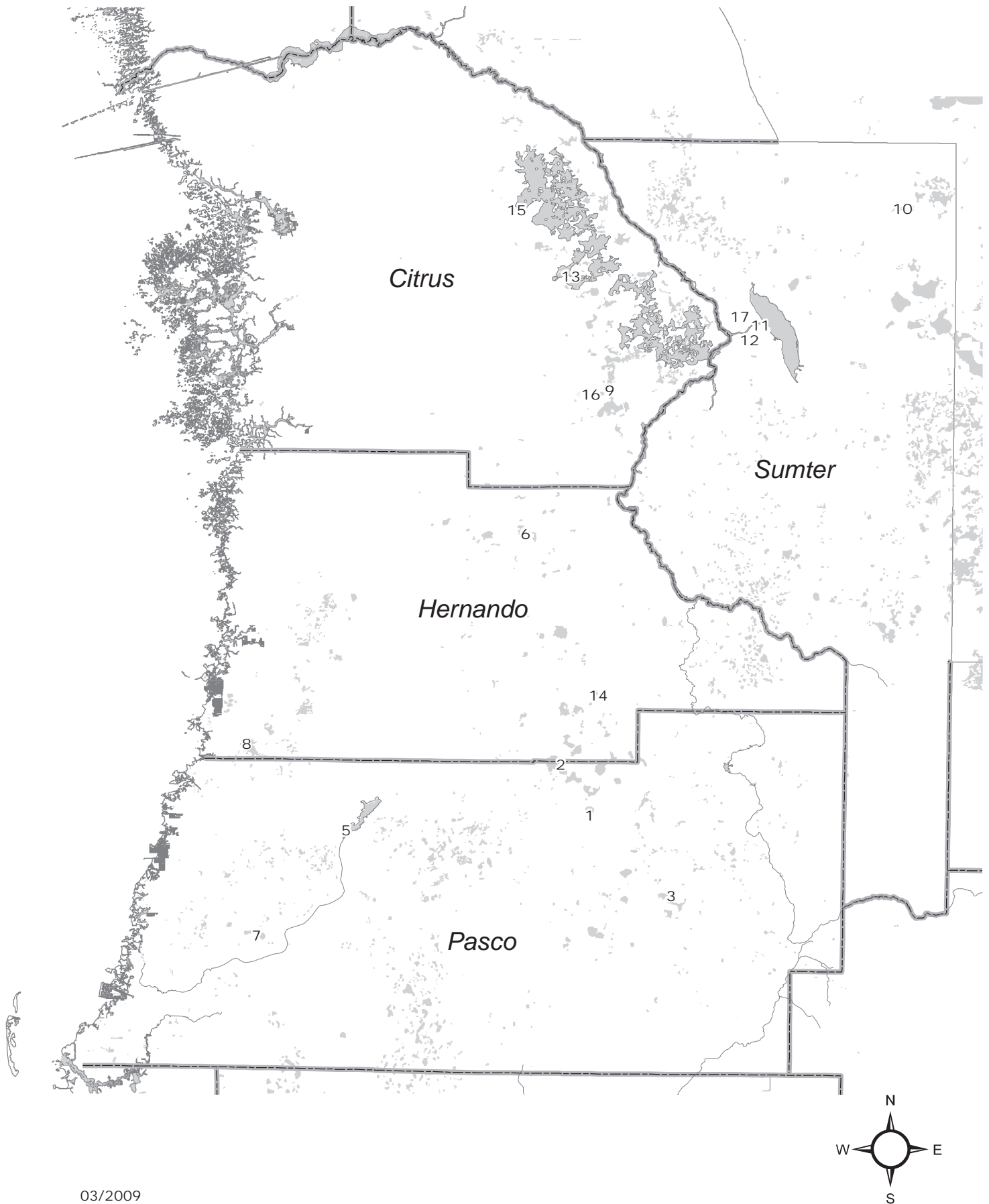
Rainfall characterization ranges

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

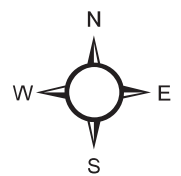
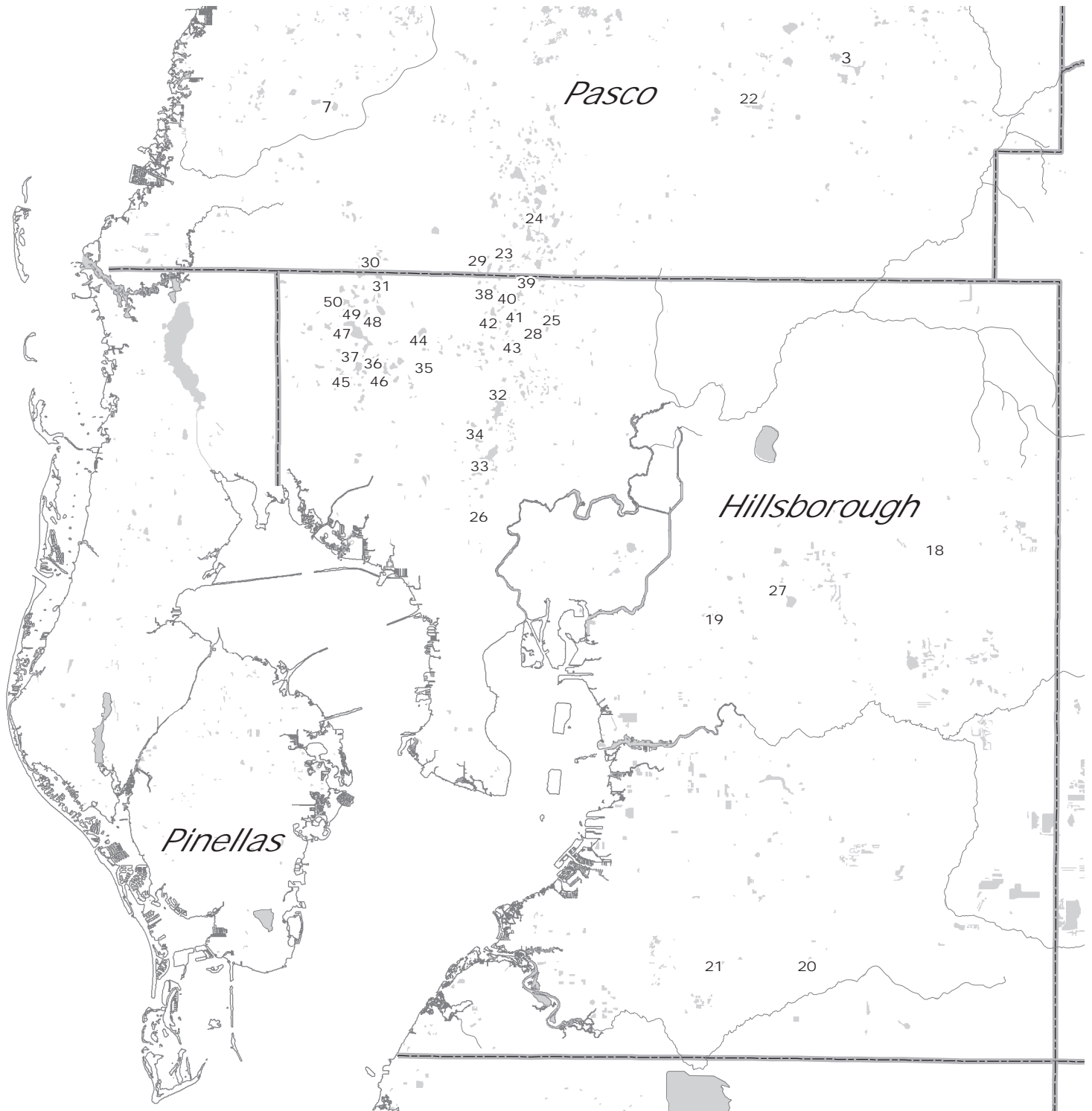
# RADAR Rainfall Estimate Grid System



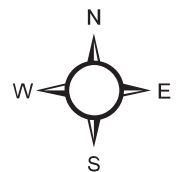
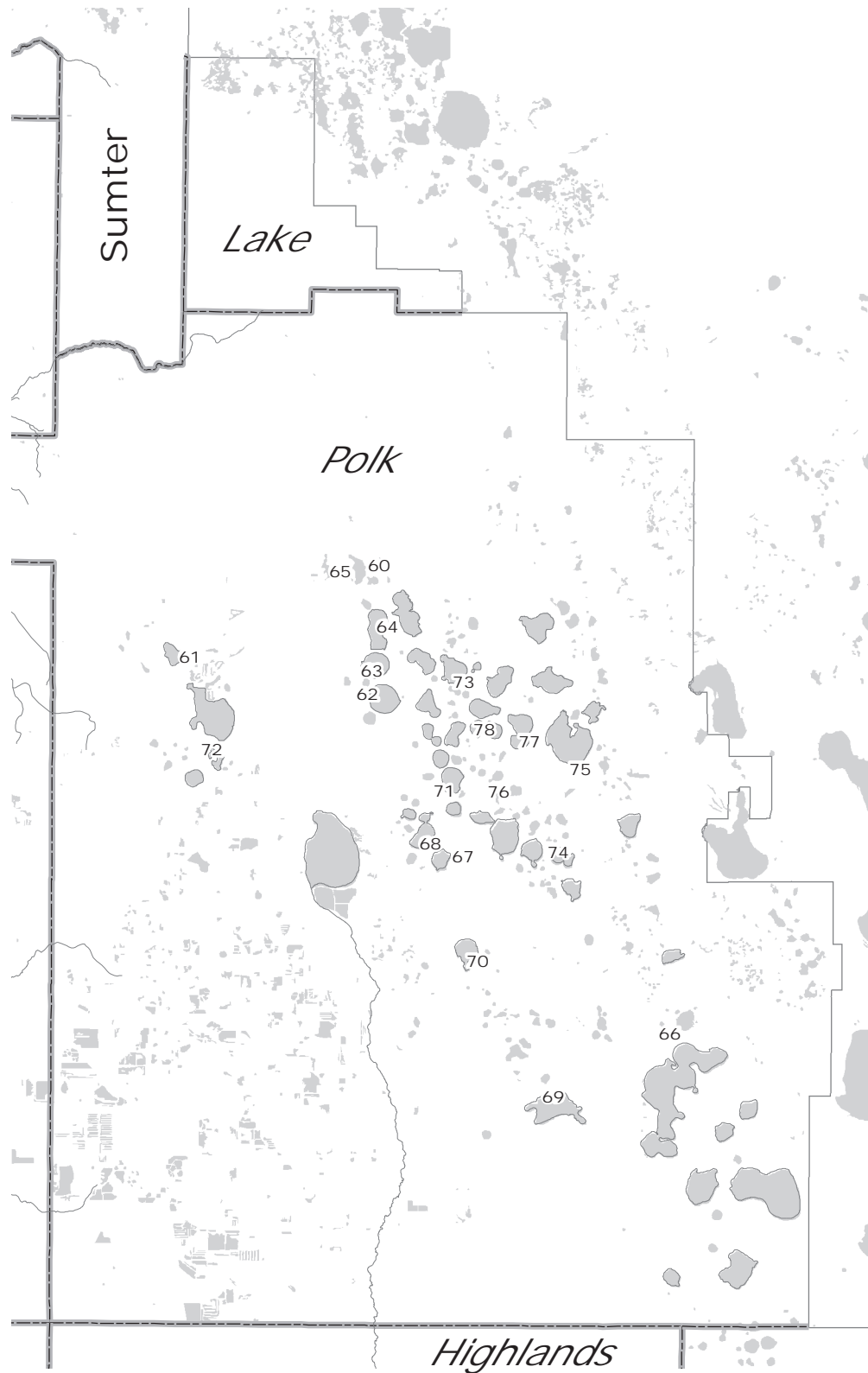
# Selected Lake Monitoring Stations Northern Region



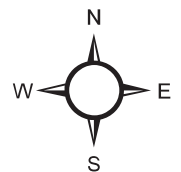
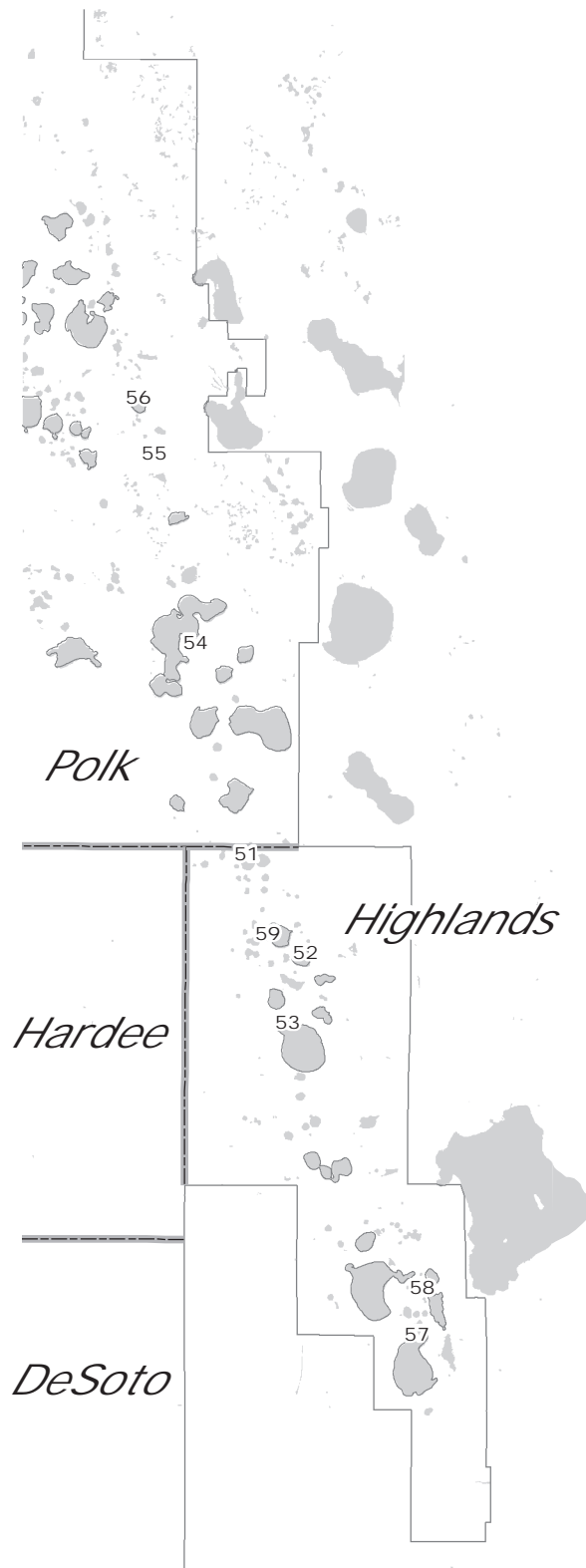
# Selected Lake Monitoring Stations Tampa Bay Region



# Selected Lake Monitoring Stations Polk Uplands Region



# Selected Lake Monitoring Stations Lake Wales Ridge Region



## Selected Lake Monitoring Stations

### Northern Region

<u>Map ID</u>	<u>Site Name</u>
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

<u>Map ID</u>	<u>Site Name</u>	<u>Map ID</u>	<u>Site Name</u>
18	Mud (Walden) Lake	40	Lake Brooker
19	Gornto Lake	41	Cooper Lake
20	Carlton Lake	42	Lake Thomas
21	Lake Wimauma	43	Brant Lake
22	King Lake near San Antonio	44	Turkey Ford Lake
23	Lake Linda	45	Church Lake
24	Lake Padgett	46	Horse Lake
25	Keene Lake	47	Lake Alice
26	Egypt Lake	48	Lake Calm
27	Long Pond	49	Keystone Lake
28	Lake Stemper	50	Crescent Lake
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		



## Selected Lake Monitoring Stations

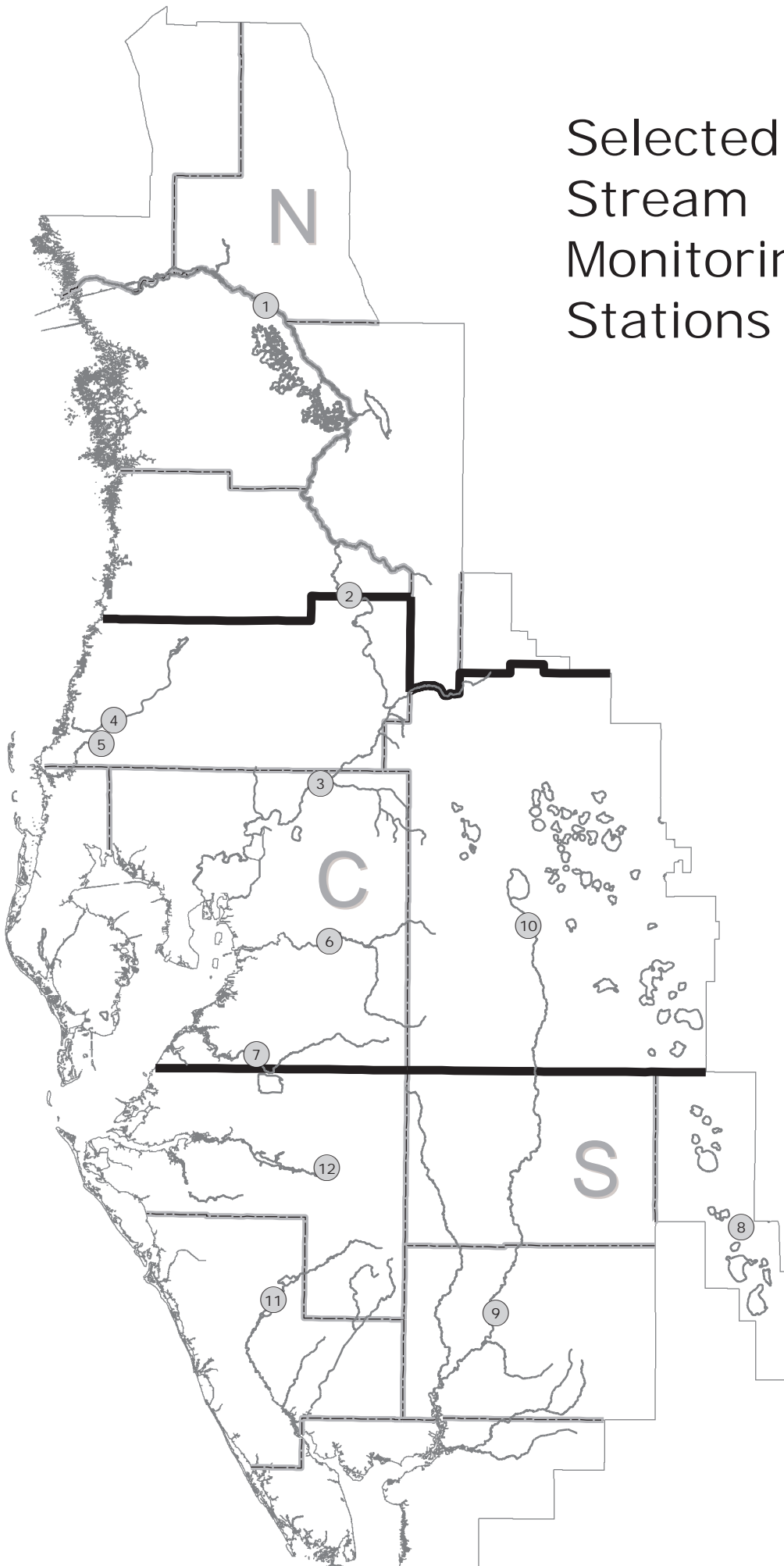
### **Lake Wales Ridge Region**

<u>Map ID</u>	<u>Site Name</u>
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**

<u>Map ID</u>	<u>Site Name</u>
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



## Selected Stream Monitoring Stations

<u>Map ID</u>	<u>Site Name</u>
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

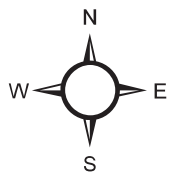
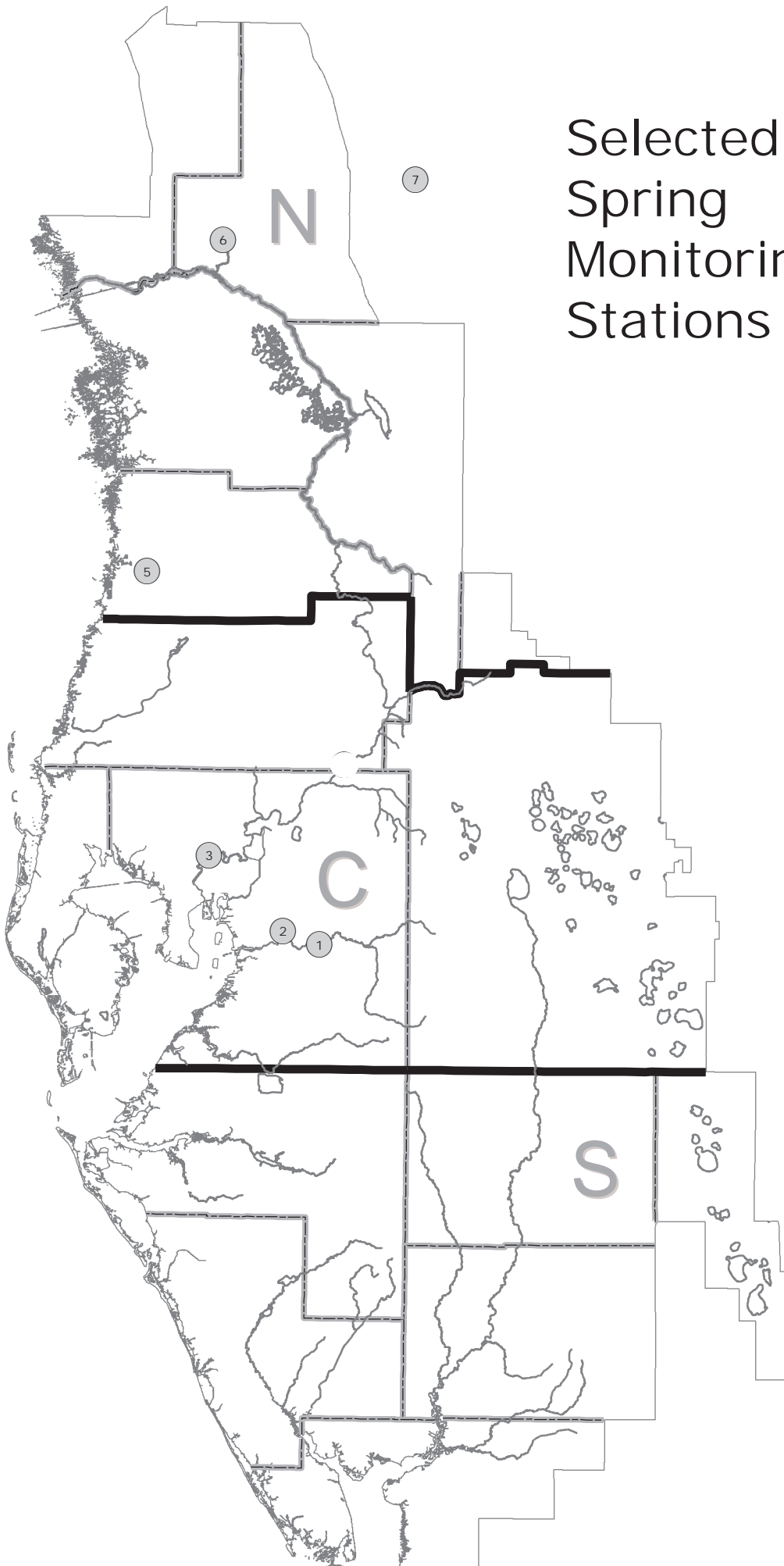
**Arcadia Station (Southern Region):**

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



## Selected Spring Monitoring Stations

<u>Map ID</u>	<u>Site Name</u>
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:	1 <sup>st</sup>
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:	1 <sup>st</sup>
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:	1 <sup>st</sup>
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:	2 <sup>nd</sup>
Discharge measurement location:	300 ft downstream from gage
Discharge contributes to:	Hillsborough River
Public Access:	Yes
Period-of-record:	1956
Gage:	Water-stage recorder

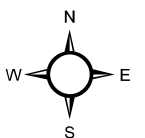
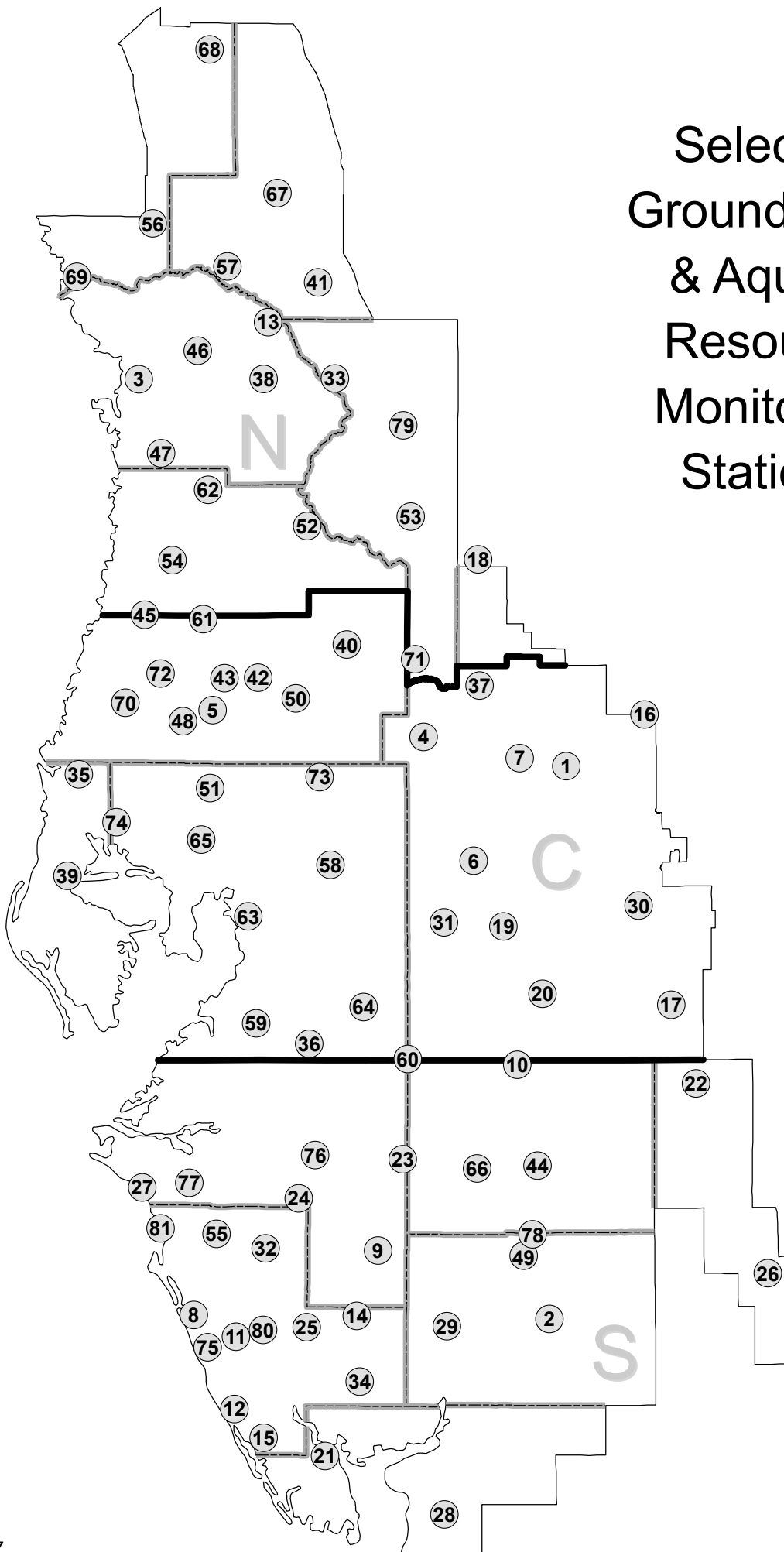
**BUCKHORN SPRINGS (Central Region)**

County:	Hillsborough
Basin:	Alafia River
Magnitude:	2 <sup>nd</sup>
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:	2 <sup>nd</sup>
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

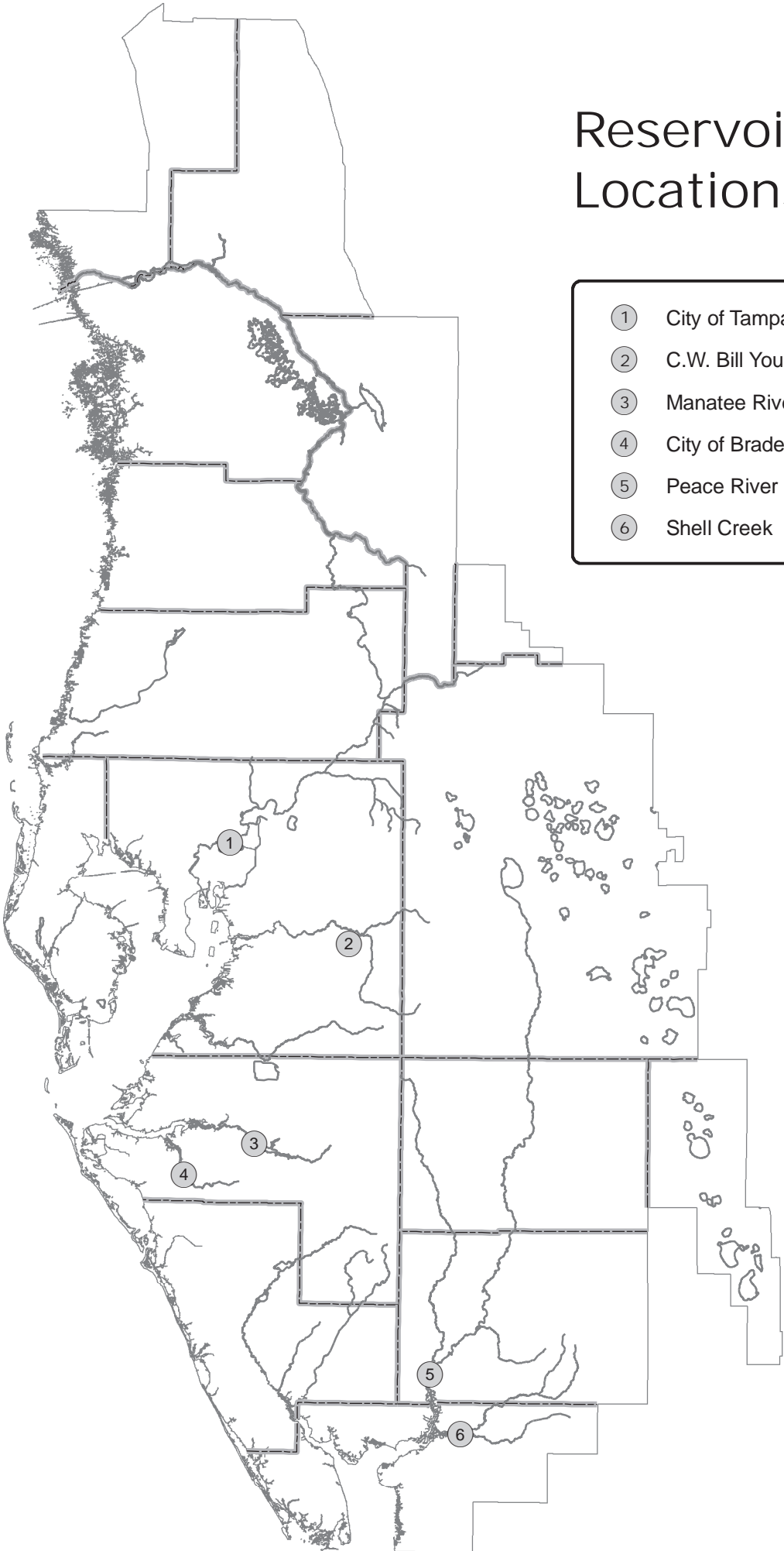
# Selected Groundwater & Aquifer Resource Monitoring Stations



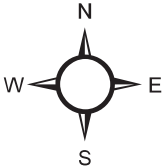
## Select Groundwater & Aquifer Resource Monitoring Stations

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

# 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



## **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.