Hydrologic Conditions

for the month of

June 2019

Prepared by the

Hydrologic Data Section

Data Collection Bureau

Southwest Florida Water Management District

July 23, 2019

http://www.watermatters.org

ACKNOWLEDGMENTS

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Data Collection:	Terry Burrell, Dave Goldberg-Dunnett, Don Everson, George Prine, James Ferrell, Greg Johnston, Everett Eldridge, Robert Noland, Aaron Cronk, James Thomas and Grayson Conklin.
QA/QC and Reporting:	Margit Crowell, Steve DeSmith, Asmita Shukla, Hannah Kolb and Joey Fogel.
Administrative Support/ Document Preparation:	Karen Diez, Lora Caruso and Shelley Browning.

TABLE OF CONTENTS

Introduction 1
Executive Summary – Provisional..... 2
Executive Summary 3
Regional Overview 4
Rainfall ..... 5 - 12
Surface Water
- Lakes..... 13 - 20
- Streams..... 21 - 25
- Springs..... 26 - 29

Ground Water
- Description of Groundwater Monitoring..... 30
- Surficial Aquifer ..... 31 - 32
- Intermediate and Floridan Aquifers ..... 33 - 43
- Public Supply Wellfields ..... 44 - 45
- Aquifer Resource..... 46 - 47

Water Demand
- Description of Public Supply Surface Water Reservoirs..... 48 - 49
- Reservoirs..... 50 - 55

Appendices
- Rainfall Percentiles by Intervals & Region..... 56 - 57
- Rainfall Grid (NEXRAD)..... 58
- Lake Monitoring Stations..... 59 - 64
- Stream Monitoring Stations..... 65 - 66
- Description of Stream Monitoring Stations ..... 67 - 70
- Springs Monitoring Stations ..... 71 - 72
- Description of Springs Monitoring Stations..... 73 - 74
- Surficial Aquifer Monitoring Stations..... 75 - 76
- Groundwater & Aquifer Resource Monitoring Stations..... 77 - 78
- Wellfield Groundwater Monitoring Stations ..... 79 - 81
- Reservoir Locations..... 82

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.

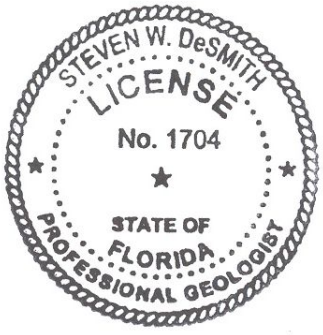
The Hydrologic Data Section is responsible for the implementation and maintenance of a network of observation and monitoring stations used to track changes in various hydrologic parameters over time. Data collected are used by the regulatory, technical, and analytical sections of the District. Data recently collected and maintained by the section include: station and basin rainfall totals, stream and spring discharge measurements, and surface and ground water levels. Frequency of data collection ranges from hourly to monthly readings. All data collected are processed and analyzed, then uploaded into the Water Management Data Base for general access by the District. The Water Management Data Base is also periodically augmented from the United States Geological Survey's hydrologic data network.

The data presented in this report are monthly rainfall totals, streamflow, springflow, surface and ground water levels, reservoir levels and the Aquifer Resource Index. Associated maps of station locations are at the end of the report in the Appendices. Also reported herein are levels of public supply surface water reservoirs supplemented by various regional utilities. The data contained in this report was 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 Granville Kinsman, Manager of the Hydrologic Data Section at (352) 796-7211 or (800) 423-1476, extension 4284.

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

Steven W. DeSmith 07/18/2019

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 and activities. Anyone requiring reasonable accommodation as provided for in the Americans with Disabilities Act should contact the District's Human Resources Bureau Chief, 2379 Broad Street, Brooksville, Florida 34604-6899; telephone (352) 796-7211 or 1-800-423-1476 (FL only), ext. 4703; or email **ADACoordinator@swfwmd.state.fl.us**. 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).

EXECUTIVE SUMMARY

Provisional Hydrologic Conditions as of July 18, 2019

Provisional rainfall totals are provided for the period of July 1, 2019 through July 18, 2019. The northern region has received an average of 5.23 inches, while the historic mean for the northern region for the month of July is 8.20 inches. The central region has received an average of 4.39 inches, while the historic mean for the central region for July is 8.29 inches. The southern region has received an average of 3.88 inches, while the historic mean for the southern region for July is 8.16 inches. District-wide, rainfall has averaged 4.45 inches, while the historic mean for the District for July is 8.21 inches.

Provisional lake level data indicate that during the first 16 days of July, regional water levels have increased in all four lake regions of the District. Average lake levels in the Northern region increased an average of 0.20 foot and were 0.12 foot above the base of the normal range. Average lake levels in the Tampa Bay region increased 0.16 foot and were 1.12 feet above the base of the normal range. Lake levels in the Polk Uplands region increased 0.14 foot and were 1.79 feet above the base of the normal range. The Lake Wales Ridge region posted an average increase of 0.11 foot and was 0.60 foot below the base of the normal range.

As of July 15, 2019, provisional streamflow data indicates, based on the three regional index rivers indicated below, that average streamflow has increased in all three regions of the District, compared to last month's data. Normal streamflow is flow that falls on or between the 25th and 75th percentiles. In the northern region, the average streamflow for the Withlacoochee River near Holder was within the normal range at the 64th percentile. In the central region, the average streamflow for the Hillsborough River near Zephyrhills was within the normal range at the 56th percentile. In the southern region, the average streamflow in the Peace River at Arcadia was within the normal range at the 48th percentile.

Provisional groundwater data, as of July 17, 2019, indicate that levels in the intermediate and Floridan aquifers have increased in all three regions of the District, compared to last month’s data. Normal aquifer levels are levels that fall on or between the 25th and 75th percentiles. Aquifer levels for the northern region were above normal at the 80th percentile. Levels for the central and region were within the normal range at the

EXECUTIVE SUMMARY

Hydrologic Conditions for June 2019

In June, average rainfall totals were above normal in the northern and central regions of the District, and within the normal range in the southern region. The normal range for rainfall is defined by totals that fall on or between the 25th to 75th percentiles of the historical monthly accumulation for each region and where the 50th percentile represents the historical mean. The northern region received an average of 9.54 inches of rainfall, equivalent to the 85th percentile of the historical June record. The central region received an average of 9.10 inches of rainfall, equivalent to the 82nd percentile, and the southern region received an average of 7.75 inches of rainfall, equivalent to the 57th percentile of the historical June record. The District-wide rainfall average of 8.75inches was equivalent to the 76th percentile of the historical June record.

During the 12-month period from July 1, 2018 through June 30, 2019, the average rainfall totals in the northern region were classified as "wetter than normal," while the central and southern regions were classified as "normal." The northern region received an average of 59.90 inches of rainfall, equivalent to the 80th percentile of the historical annual record. The central region received an average of 55.84 inches of rainfall, equivalent to the 69th percentile, while the southern region received an average of 50.93 inches of rainfall, equivalent to the 46th percentile. The District-wide rainfall average of 55.26 inches was equivalent to the 66th percentile of the historical annual record.

Average lake levels in June ended the month within the annual normal range in the Tampa Bay and Polk Uplands regions of the District, while average levels were below the normal range in the Northern 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. Lake levels in the Northern region increased by an average of 0.41 foot and were 0.08 foot below the base of the annual normal range. Lake levels in the Tampa Bay region increased an average of 0.43 foot and were 0.96 foot above the base of the annual normal range. Lake levels in the Polk Uplands region increased 0.41 foot and were 1.65 feet above the base of the annual normal range. Average lake levels in the Lake Wales Ridge region increased 0.20 foot and ended the month 0.71 foot below the base of the annual normal range.

Total streamflow in June, based on three regional index streams, ended the month within the normal range in the northern and southern regions, and above normal in the central region. Normal streamflow is defined as the flow that falls on or between the 25th and 75th percentiles. Streamflow measured at the Withlacoochee River near Holder station in the northern region was at the 53rd percentile. Streamflow in the Hillsborough River near Zephyrhills station in the central region was at the 76th percentile, while total streamflow measured at the Peace River at Arcadia station in the southern region was at the 69th percentile.

In June, groundwater data showed that levels in the intermediate and Floridan aquifers increased in all three regions of the District. Average groundwater levels were above normal in the northern and central regions, and within the normal range in the southern region. The normal range is defined as the level that falls on or between the 25th and 75th percentiles. The groundwater level in the northern, central and southern regions were in the 81st, 78th and 53rd percentiles, respectively.

REGIONAL OVERVIEW OF HYDROLOGIC CONDITIONS

JUNE 2019

Northern Region

In June, the northern region received an average of 9.54 inches of rainfall, equivalent to the 85th percentile of the historical June readings, which is considered "wetter than normal." Average lake levels increased in the northern region and ended the month an average of 0.08 foot below the base of the annual normal range. Total streamflow measured in the Withlacoochee River near Holder station increased and was in the 53rd percentile. Regional groundwater levels indicated average surficial aquifer water levels increased and were in the 57th percentile, while levels in the intermediate and Floridan aquifer increased and were in the 81st percentile.

Central Region

In June, the central region received an average of 9.10 inches of rainfall, equivalent to the 82nd percentile of historical June readings, which is considered "wetter than normal." Average lake levels increased in the Tampa Bay and Polk Uplands regions, ending the month 0.96 foot and 1.65 feet, respectively, above the base of the annual normal range. Total streamflow measured at the Hillsborough River near Zephyrhills station increased and was in the 76th percentile. Regional groundwater levels indicated average surficial aquifer water levels increased and were in the 66th percentile, while levels in the intermediate and Floridan aquifer increased and were in the 78th percentile.

Southern Region

In June, the southern region received an average of 7.75 inches of rainfall, equivalent to the 57th percentile of historical June readings, which is considered "normal." Average lake levels increased in the Lake Wales Ridge region and ended the month 0.71 foot below the base of the annual normal range. Total streamflow measured at the Peace River at Arcadia station increased and was in the 69th percentile. Regional groundwater levels indicated average surficial aquifer water levels increased and were in the 62nd percentile, while levels in the intermediate and Floridan aquifer decreased and were in the 53rd 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 highly accurate cell-based rainfall data representative of conditions over the entire District, including those portions where rainfall data collection would otherwise be limited due to gaps in the gauging network.

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 equivalent to the 90th percentile is equal to or greater than 90 percent of the rainfall totals recorded for this month during all years that totals have been recorded.

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

Characterization ranges were established for each region, and for the whole District, with breaks at the 10th (P10), the 25th (P25), the 75th (P75) and the 90th (P90) percentiles. The rainfall in inches for each percentile break, by rainfall interval and by region and the characterization ranges are summarized in the Appendix.

In June, rainfall totals were above normal in the northern and central regions of the District, while they were within the normal range in the southern region. The normal range is defined by the totals that fall on or between the 25th to 75th percentiles of the historical monthly average for each region and where the 50th percentile represents the historical mean. The northern region received an average of 9.54 inches of rainfall, equivalent to the 85th percentile of the historical June record. The central region received an average of 9.10 inches, equivalent to the 82nd percentile. The southern region received an average of 7.75 inches, equivalent to the 57th percentile. District-wide, rainfall averaged 8.75 inches, which is equivalent to the 76th percentile of the historical June record.

During the 12-month period from July 1, 2018 through June 30, 2019, the average rainfall totals in the northern region were classified as “wetter than normal,” while those in the central and southern regions of the District were classified as “normal.” The northern region received an average of 59.90 inches of rainfall, equivalent to the 80th percentile of the historical record. The central region received an average of 55.84 inches of rainfall, equivalent to the 69th percentile. The southern region received an average of 50.93 inches of rainfall, equivalent to the 46th percentile. The District-wide rainfall average was 55.26 inches, which is equivalent to the 66th percentile of the historical annual record.

Tampa Monthly Climate Summary for June 2019

According to the National Weather Service, the monthly average temperature (°F) for Tampa was 83.8 degrees, which was 1.6 degrees above normal. The highest temperature recorded during the month was 98.0 degrees, while the lowest temperature recorded during the month was 71.0 degrees. The June 2019 monthly average temperature of 83.8 ranks as the third warmest June since records began in 1890. The warmest June had an average temperature of 85.6 degrees, which occurred in 1998.

Temperature and Precipitation Outlook

The Climate Prediction Center's (CPC) three-month weather forecast, as of July 18, 2019, indicates equal chances for below-normal, normal or above-normal rainfall throughout the District during the composite 3-month period of August through October 2019. The temperature forecast for the same time-period indicates above-normal temperatures in all three regions of the District.

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

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

RELATIONSHIP OF JUNE 2019 RAINFALL TO HISTORICAL RAINFALL AVERAGES

Regional Summary:

Region	*JUN 2019 Average Rainfall*	*Historical Average for JUN*	*Departure from Historical Average*	*Calendar Year 2019 Cumulative Rainfall JAN-JUN*	*Calendar Year Historical Cumulative Rainfall JAN-JUN*	*Departure from Historical Cumulative JUN 2019*	*Cumulative 12-month Rainfall JUL 2018-JUN 2019*	*Historical 12-month Cumulative Rainfall*	*Departure from Historical 12-month Cumulative*
Northern Counties	9.54	7.53	2.01	22.45	23.55	-1.10	59.90	53.57	6.33
Central Counties	9.10	7.15	1.95	21.66	21.78	-0.12	55.84	52.40	3.44
Southern Counties	7.75	8.00	-0.25	20.23	21.94	-1.71	50.93	52.44	-1.51
District All Counties	8.75	7.55	1.20	21.39	22.33	-0.94	55.26	52.74	2.52

Regional Counties Summary:

NORTHERN COUNTIES	*JUN 2019 Average Rainfall*	*Historical Average for JUN*	*Departure from Historical Average*	*Calendar Year 2019 Cumulative Rainfall JAN-JUN*	*Calendar Year Historical Cumulative Rainfall JAN-JUN*	*Departure from Historical Cumulative JUN 2019*	*Cumulative 12-month Rainfall JUL 2018-JUN 2019*	*Historical 12-month Cumulative Rainfall*	*Departure from Historical 12-month Cumulative*
Levy County	8.67	6.90	1.77	22.56	23.48	-0.92	65.78	53.95	11.83
Marion Count	8.18	7.50	0.68	22.43	24.16	-1.73	61.84	54.32	7.52
Citrus Count	10.31	7.77	2.54	23.27	23.71	-0.44	62.02	54.06	7.96
Sumter Count	9.54	7.50	2.04	22.11	23.29	-1.18	55.29	51.93	3.36
Hernando Count	10.79	7.79	3.00	21.94	23.78	-1.84	57.40	55.01	2.39
CENTRAL COUNTIES									
Pasco Count	10.50	7.55	2.95	22.46	23.11	-0.65	57.68	54.06	3.62
Pinellas Count	8.46	6.15	2.31	22.53	20.17	2.36	55.69	51.68	4.01
Hillsborough Count	8.87	7.57	1.30	21.67	22.22	-0.55	57.51	52.66	4.85
Polk Count	8.71	7.99	0.72	21.10	23.08	-1.98	53.85	52.01	1.84
SOUTHERN COUNTIES									
Manatee Count	7.23	7.72	-0.49	18.25	21.53	-3.28	53.34	53.46	-0.12
Hardee Count	8.71	8.43	0.28	21.38	22.57	-1.19	51.84	52.16	-0.32
Highlands Count	9.69	8.33	1.36	23.37	22.36	1.01	45.16	52.05	-6.89
Sarasota Count	7.56	7.66	-0.10	18.17	20.98	-2.81	52.98	52.72	0.26
DeSoto Count	6.76	8.45	-1.69	21.24	21.99	-0.75	48.64	51.92	-3.28
Charlotte Count	7.38	8.60	-1.22	20.77	21.45	-0.68	50.54	52.62	-2.08

JUNE 2019 RAINFALL CHARACTERIZATION

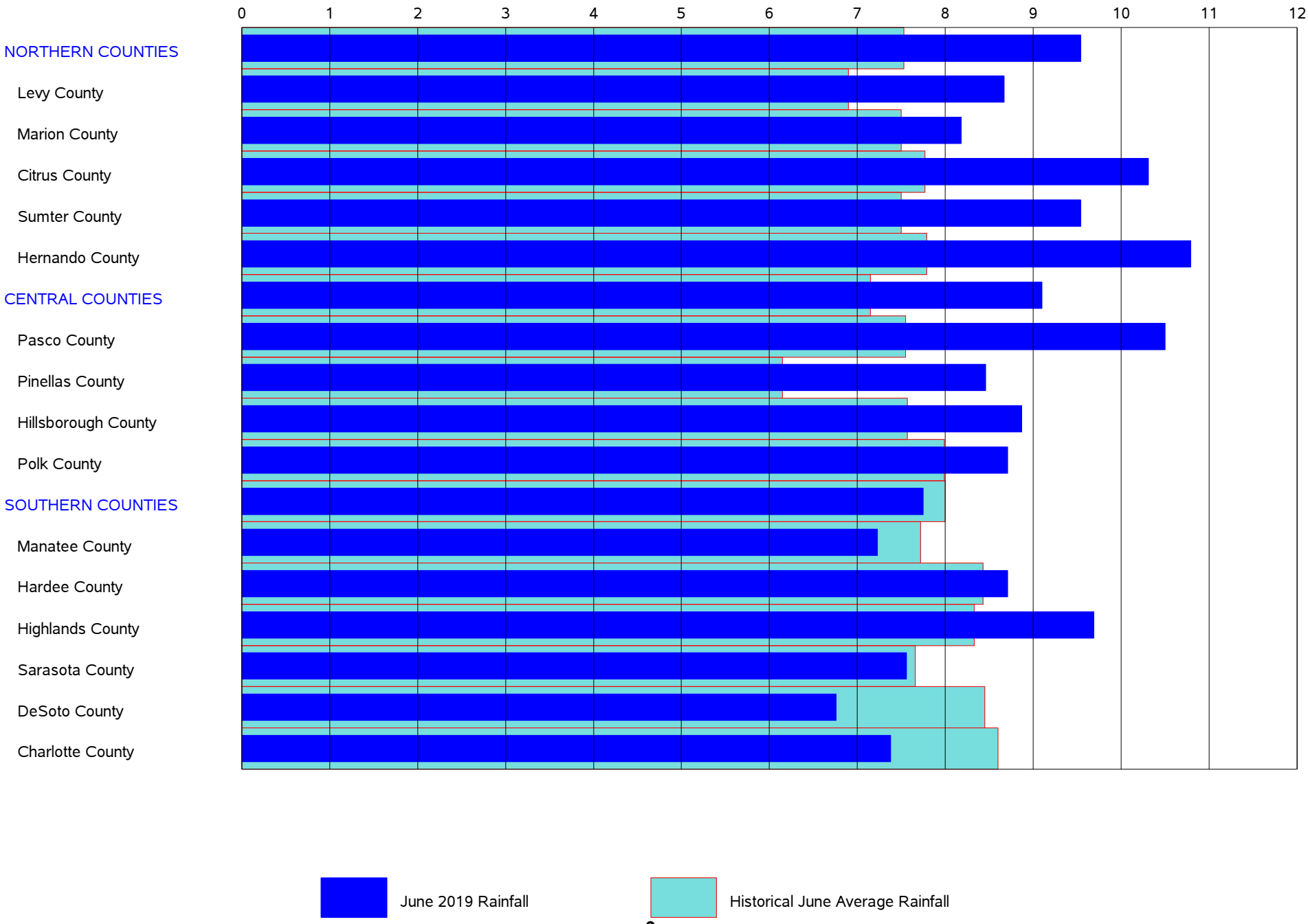
Regional Characterization:

Region	*JUN 2019 Average Rainfall*	*Historical JUN Percentile*	*JUN Rainfall Characterization*	*Cumulative 12-month Rainfall JUL 2018-JUN 2019*	*Historical 12-month Cumulative Percentile*	*12-month Cumulative Rainfall Characterization*
Northern Counties	9.54	85	Wetter than normal	59.90	80	Wetter than normal
Central Counties	9.10	82	Wetter than normal	55.84	69	Normal
Southern Counties	7.75	57	Normal	50.93	46	Normal
District Counties	8.75	76	Wetter than normal	55.26	66	Normal

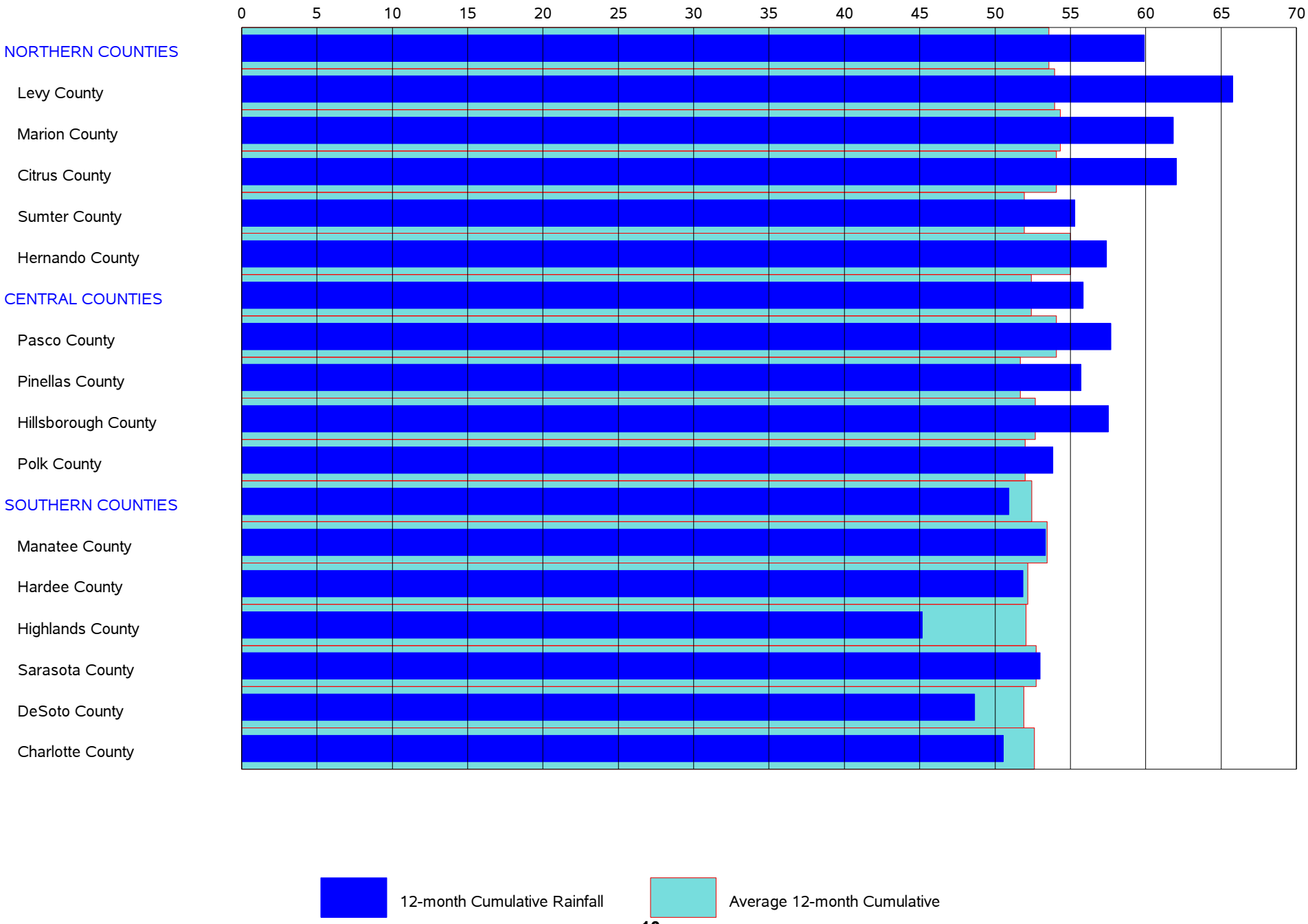
Regional Counties Characterization:

NORTHERN COUNTIES	*JUN 2019 Average Rainfall*	*Historical JUN Percentile*	*JUN Rainfall Characterization*	*Cumulative 12-month Rainfall JUL 2018-JUN 2019*	*Historical 12-month Cumulative Percentile*	*12-month Cumulative Rainfall Characterization*
Levy County	8.67	77	Wetter than normal	65.78	90	Wetter than normal
Marion County	8.18	67	Normal	61.84	82	Wetter than normal
Citrus County	10.31	85	Wetter than normal	62.02	83	Wetter than normal
Sumter County	9.54	79	Wetter than normal	55.29	67	Normal
Hernando County	10.79	85	Wetter than normal	57.40	63	Normal
CENTRAL COUNTIES						
Pasco County	10.50	89	Wetter than normal	57.68	67	Normal
Pinellas County	8.46	83	Wetter than normal	55.69	68	Normal
Hillsborough County	8.87	75	Normal	57.51	76	Wetter than normal
Polk County	8.71	65	Normal	53.85	61	Normal
SOUTHERN COUNTIES						
Manatee County	7.23	51	Normal	53.34	53	Normal
Hardee County	8.71	58	Normal	51.84	52	Normal
Highlands County	9.69	78	Wetter than normal	45.16	23	Drier than normal
Sarasota County	7.56	58	Normal	52.98	57	Normal
DeSoto County	6.76	44	Normal	48.64	42	Normal
Charlotte County	7.38	47	Normal	50.54	46	Normal

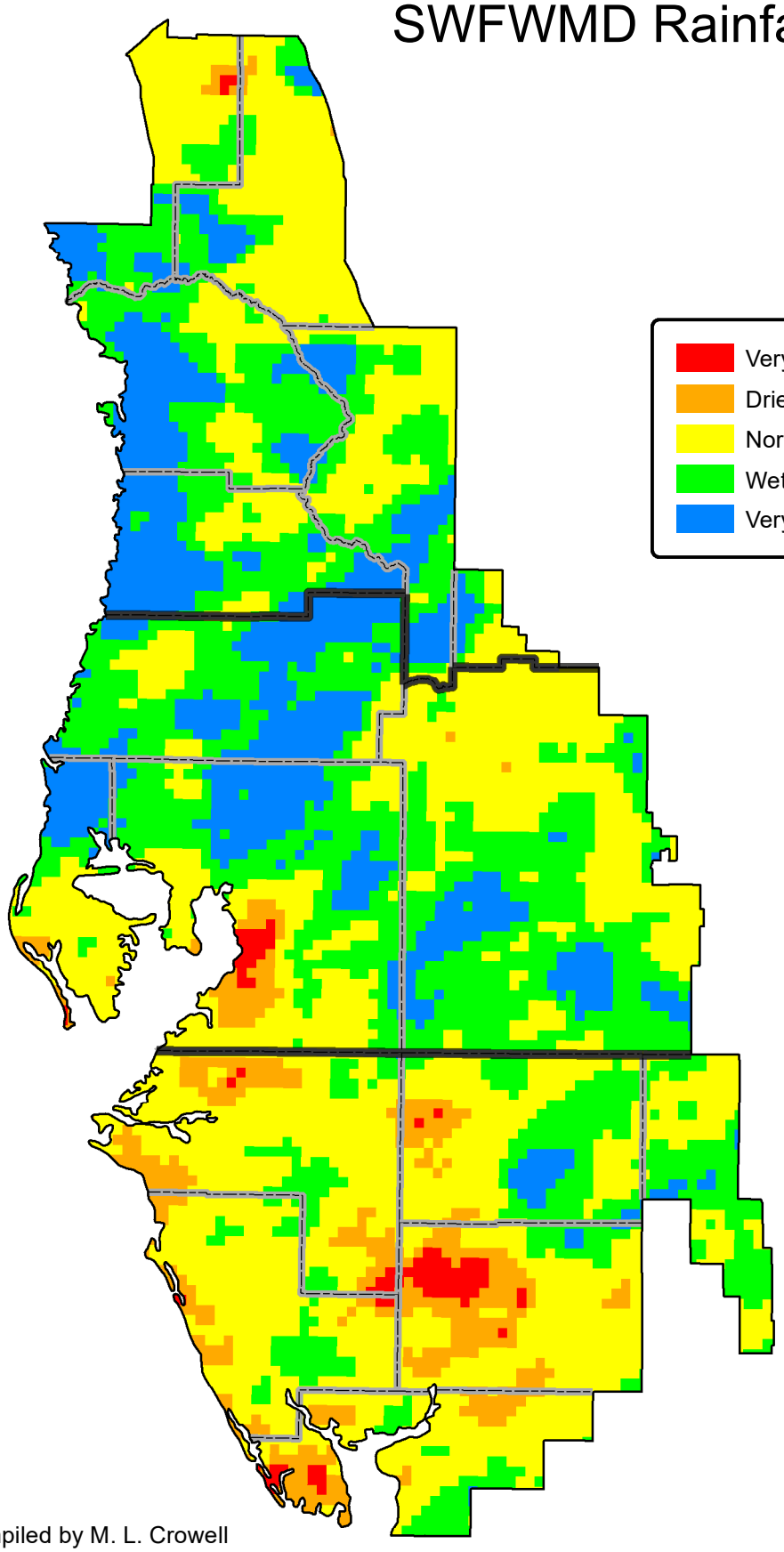
JUNE 2019 RAINFALL HISTORIC AVERAGE VS HISTORICAL JUNE AVERAGE (INCHES)



JUNE 2019 12-MONTH CUMULATIVE RAINFALL VS AVERAGE ANNUAL CUMULATIVE (INCHES)



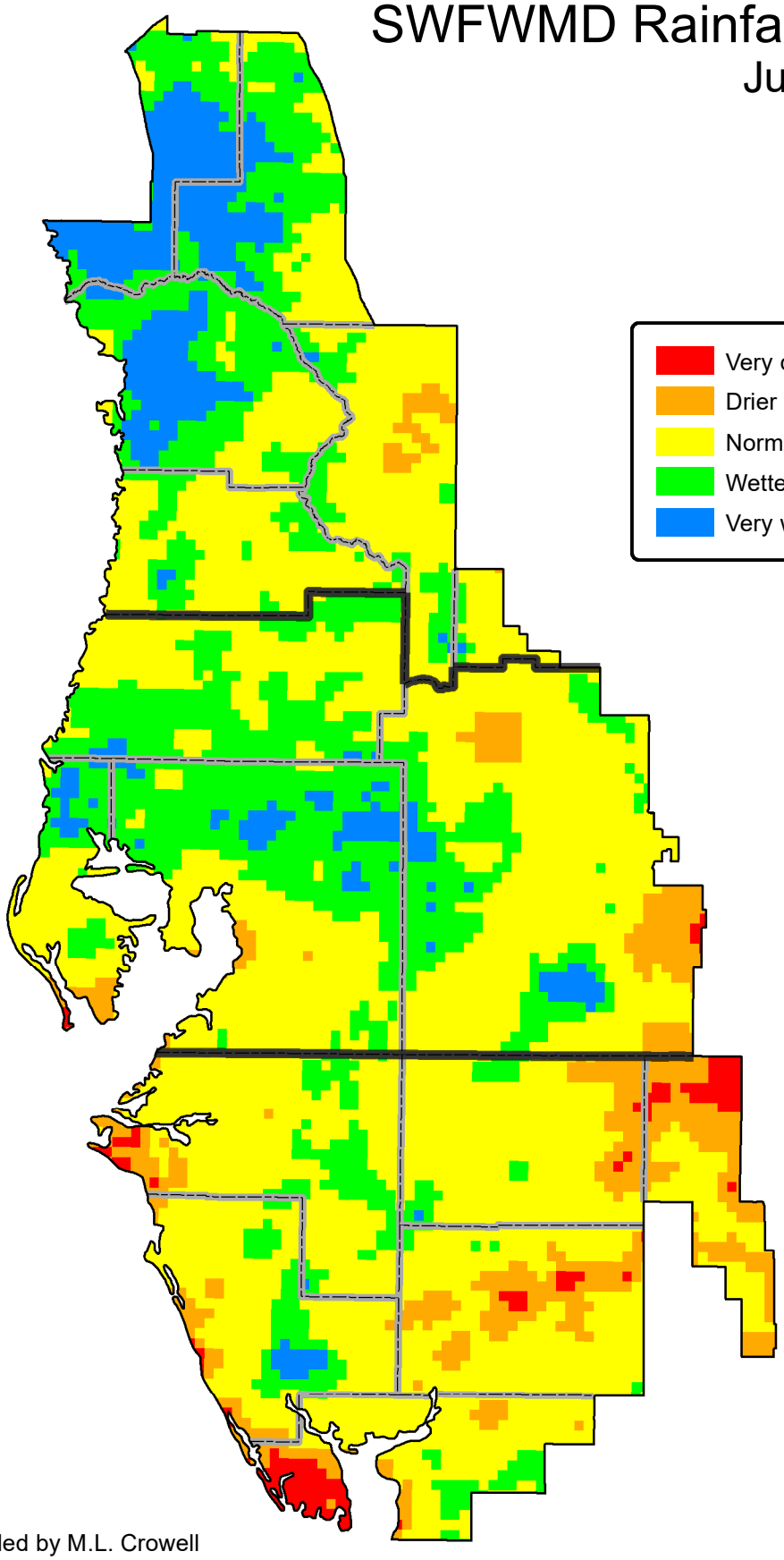
SWFWMD Rainfall Distribution
June 2019



Compiled by M. L. Crowell
Data source: Vieux, Inc.

Southwest Florida Water Management District

SWFWMD Rainfall Distribution
July 2018 through June 2019



Compiled by M.L. Crowell
Data source: Vieux, Inc.

Southwest Florida Water Management District

SURFACE WATER

Lakes

Across the District, 76 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 76 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.

During June, 70 of the 76 lakes monitored for this report recorded water level increases, compared to last month. Water levels increased in the Northern, Tampa Bay, Polk Uplands and Lake Wales Ridge regions by 0.41, 0.43, 0.41 and 0.20 foot, respectively. District-wide, average water levels increased by 0.39 foot, compared to last month.

In June, 42 of the 76 lakes monitored for this report recorded water level increases, compared to last year's levels. In the Northern, Tampa Bay, and Polk Uplands regions, average lake levels were higher by 0.41, 0.07, and 0.02 foot, respectively. The Lake Wales Region average lake levels were lower by 1.21 feet. District-wide, average lake levels were lower by 0.03 foot, compared to last year's levels.

Water levels in 59 of the 76 lakes were above the base of the annual normal range. Lake levels in the Northern and Lake Wales Ridge regions average 0.08 and 0.71 foot, respectively, below the base of the annual normal range, while levels in the Tampa Bay and Polk Uplands regions averaged 0.96 foot and 1.65 feet, respectively, above the annual normal range. District-wide, lake levels averaged 0.73 foot above the base of the annual normal range. Water levels in 71 of the 76 lakes were above the drought year levels.

SUMMARY OF LAKE ELEVATIONS OF REGIONAL LAKES (feet)

NORTHERN LAKES

Lake Name	County	Beginning of Record	MAY 2019	JUN 2019	JUN 2018	Change from MAY 2019	Change from JUN 2018	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
Big Fish Lake	Pasco	1980	73.48	73.91	73.45	0.43	0.46	2.16	71.75	73.05	76.05	65.45	JUN 1997	77.40	SEP 2004
Crews Lake	Pasco	1986	51.26	51.14	51.38	-0.12	-0.24	1.14	50.00	52.00	55.00	42.63	APR 2001	54.92	MAR 1998
Hancock Lake	Pasco	1978	100.38	100.88	99.58	0.50	1.30	-1.12	102.00	104.00	106.50	90.00	MAR 2009	108.90	MAR 1998
Hunters Lake	Hernando	1965	17.27	17.99	16.53	0.72	1.46	1.99	16.00	17.50	20.50	11.70	JUN 2001	20.50	MAR 1970
Lake Iola	Pasco	1965	139.57	140.56	138.80	0.99	1.76	-1.94	142.50	145.00	147.50	128.96	MAY 2012	148.70	JAN 1989
Lake Lindsey	Hernando	1982	65.47	65.67	65.65	0.20	0.02	1.17	64.50	66.00	69.00	59.38	MAY 2012	69.47	MAR 1998
Little Lake (Consu	Citrus	1985	38.20	38.68	39.74	0.48	-1.06	1.43	37.25	39.00	41.50	31.10	MAY 2001	42.84	SEP 2004
Lake Miona	Sumter	1978	53.37	53.59	52.99	0.22	0.60	2.59	51.00	53.00	55.00	47.88	AUG 1992	56.60	OCT 1982
Moon Lake	Pasco	1990	39.46	39.78	39.38	0.32	0.40	4.28	35.50	37.50	40.50	32.98	APR 2009	41.26	SEP 2004
Lake Panasoffkee	Sumter	1955	39.65	40.40	40.27	0.75	0.13	1.90	38.50	39.50	42.50	36.92	JUN 2007	44.28	APR 1960
Lake Pasadena	Pasco	1984	91.41	91.83	90.26	0.42	1.57	1.83	90.00	91.50	94.50	81.56	MAY 2001	94.86	OCT 2004
Spring Lake	Hernando	1965	180.65	181.05	180.33	0.40	0.72	2.80	178.25	181.25	184.25	174.85	JUN 1965	183.57	OCT 1984
Floral City Pool	Citrus	1957	40.06	40.31	40.78	0.25	-0.47	2.06	38.25	40.25	42.50	30.35	JUN 2001	44.22	MAR 1960
Inverness Pool	Citrus	1958	38.97	39.25	39.70	0.28	-0.45	3.00	36.25	38.25	40.50	31.46	MAY 2001	42.94	APR 1960
Hernando Pool	Citrus	1958	38.02	38.34	38.35	0.32	-0.01	3.59	34.75	36.75	39.00	31.09	JUL 2001	41.74	APR 1960

TAMPA BAY LAKES

Lake Name	County	Beginning of Record	MAY 2019	JUN 2019	JUN 2018	Change from MAY 2019	Change from JUN 2018	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	1971	40.21	40.81	39.46	0.60	1.35	3.31	37.50	40.25	42.25	33.24	MAY 2002	42.42	SEP 2004
Lake Ann-Parker	Pasco	1969	46.78	47.31	46.67	0.53	0.64	2.31	45.00	45.75	48.75	43.28	JUN 2002	49.29	SEP 1979
Bay Lake	Hillsborough	1982	43.91	45.08	45.73	1.17	-0.65	2.58	42.50	44.00	46.75	41.86	APR 1985	46.46	DEC 1997
Lake Brant	Hillsborough	1971	57.36	57.42	57.79	0.06	-0.37	2.92	54.50	56.50	58.75	51.65	JUN 1994	60.04	AUG 1979
Brooker Lake	Hillsborough	1977	62.26	62.65	62.53	0.39	0.12	3.65	59.00	61.00	64.25	56.49	MAY 2002	64.08	DEC 1997
Calm Lake	Hillsborough	1965	49.48	49.84	49.04	0.36	0.80	4.84	45.00	47.50	50.50	41.88	JUN 2002	51.04	JUL 2015
Camp Lake	Pasco	1968	61.60	61.36	62.59	-0.24	-1.23	2.36	59.00	61.75	64.00	50.82	MAY 2002	64.05	JUL 2015
Carlton Lake	Hillsborough	1976	91.01	91.19	91.87	0.18	-0.68	3.19	88.00	90.50	93.50	86.82	MAY 2001	94.60	FEB 1998
Lake Carroll	Hillsborough	1985	35.72	36.34	35.77	0.62	0.57	3.84	32.50	34.50	37.00	30.87	MAY 2002	38.06	DEC 1997
Church Lake	Hillsborough	1931	34.74	35.25	35.00	0.51	0.25	3.75	31.50	34.00	36.25	27.94	MAY 2002	38.60	FEB 1936
Lake Cooper	Hillsborough	1946	59.46	59.76	59.68	0.30	0.08	2.76	57.00	59.75	61.75	55.60	JUN 2001	62.54	SEP 1947
Crescent Lake	Hillsborough	1981	41.44	41.89	41.83	0.45	0.06	3.39	38.50	40.00	42.50	35.34	JUN 2001	42.89	SEP 2017
Deer Lake	Hillsborough	1977	65.88	66.20	65.40	0.32	0.80	3.70	62.50	64.50	67.25	60.72	MAY 2002	67.42	DEC 1997
Egypt Lake	Hillsborough	1978	36.18	36.48	36.18	0.30	0.30	3.98	32.50	35.00	37.50	33.06	MAY 2000	38.15	SEP 1985
Gornto Lake	Hillsborough	1979	36.29	36.49	36.25	0.20	0.24	2.49	34.00	36.00	38.50	29.86	MAR 1979	39.48	FEB 1998
Lake Harvey	Hillsborough	1970	60.36	60.60	61.03	0.24	-0.43	2.60	58.00	60.25	62.50	53.94	MAY 2002	63.90	DEC 1997
Lake Hiawatha	Hillsborough	1981	49.74	50.25	49.60	0.51	0.65	5.25	45.00	48.00	50.50	46.14	JUN 2000	51.12	APR 2010
Horse Lake	Hillsborough	1930	45.63	46.11	45.53	0.48	0.58	4.11	42.00	44.00	46.50	36.33	JUN 2002	50.00	AUG 1959
Lake Keene	Hillsborough	1948	61.59	62.21	62.20	0.62	0.01	3.21	59.00	60.50	63.00	56.92	MAY 1994	63.69	SEP 2017
Keystone Lake	Hillsborough	1984	40.72	40.95	41.46	0.23	-0.51	1.95	39.00	39.75	42.00	37.89	JUN 1994	43.64	AUG 2015
King Lake	Pasco	1983	101.90	102.28	101.73	0.38	0.55	2.28	100.00	102.50	105.25	94.20	APR 2009	104.80	MAR 1987
Lake Leclare	Hillsborough	1977	50.66	51.20	51.57	0.54	-0.37	4.20	47.00	49.50	52.00	44.95	JUN 2001	52.99	JUL 2015
Lake Linda	Pasco	1969	64.85	64.85	65.58	0.00	-0.73	2.85	62.00	64.00	66.75	60.07	MAY 2001	67.17	SEP 2017
Little Lake	Hillsborough	1931	44.79	45.32	45.49	0.53	-0.17	3.32	42.00	43.50	46.50	38.06	JUN 1994	48.65	AUG 1960
Long Pond	Hillsborough	1978	45.00	45.14	45.57	0.14	-0.43	3.14	42.00	44.00	46.50	36.33	MAY 1979	48.27	SEP 1998
Mud (Walden) Lake	Hillsborough	1978	112.69	112.85	113.26	0.16	-0.41	2.35	110.50	112.50	115.00	111.45	MAY 2017	114.42	MAR 1978
Lake Padgett	Pasco	1965	68.74	69.52	69.56	0.78	-0.04	2.02	67.50	69.00	71.25	66.27	JUN 2001	71.90	SEP 1988
Platt Lake	Hillsborough	1946	48.74	49.21	49.14	0.47	0.07	3.21	46.00	47.75	50.50	42.53	JUN 2001	51.88	SEP 1979
Rainbow Lake	Hillsborough	1971	38.62	39.08	38.34	0.46	0.74	4.08	35.00	37.50	40.50	29.82	JUN 2002	40.95	JUL 2015
Lake Stemper	Hillsborough	1946	59.98	60.73	60.29	0.75	0.44	2.73	58.00	59.50	62.00	53.36	JUN 2001	62.30	MAR 1960
Lake Thomas	Hillsborough	1971	62.32	62.52	62.42	0.20	0.10	3.27	59.25	61.25	63.50	56.48	JUN 2002	64.48	SEP 1979
Turkey Ford Lake	Hillsborough	1970	50.23	51.19	51.49	0.96	-0.30	1.19	50.00	51.50	54.00	48.07	JUN 1985	55.28	SEP 1988
Lake Wimauma	Hillsborough	1985	77.77	78.70	78.47	0.93	0.23	-2.30	81.00	83.00	86.75	70.12	MAY 2001	84.38	MAR 1998

NOTE: M='no data' or 'not determined'

All elevations are referenced to NGVD 1929 datum. Report compiled by Hannah Kolb

SUMMARY OF LAKE ELEVATIONS OF REGIONAL LAKES (feet)

POLK UPLANDS LAKES

Lake Name	County	Beginning of Record	MAY 2019	JUN 2019	JUN 2018	Change from MAY 2019	Change from JUN 2018	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	1961	129.36	129.60	129.23	0.24	0.37	3.35	126.25	128.25	130.75	122.40	MAY 1977	132.76	MAR 1998
Lake Ariana	Polk	1945	136.17	137.50	136.79	1.33	0.71	5.00	132.50	134.50	137.00	131.28	MAY 1976	137.90	AUG 1946
Lake Arietta	Polk	1970	141.77	141.95	142.37	0.18	-0.42	3.95	138.00	141.00	144.00	136.50	MAY 1977	144.12	SEP 2004
Blue Lake South	Polk	1986	111.97	112.32	113.51	0.35	-1.19	-0.18	112.50	114.00	117.00	103.38	FEB 1991	119.19	DEC 2005
Lake Bonny	Polk	1954	129.65	130.62	131.40	0.97	-0.78	4.62	126.00	128.00	130.50	122.34	MAY 2009	133.08	SEP 2004
Lake Buffum	Polk	1972	131.00	131.79	131.51	0.79	0.28	5.04	126.75	129.25	132.25	123.90	JUN 1991	133.00	JUN 2005
Clearwater Lake	Polk	1979	143.14	143.10	143.96	-0.04	-0.86	4.10	139.00	141.00	143.50	137.93	MAY 2001	146.06	AUG 1984
Lake Conine	Polk	1989	127.92	128.35	128.20	0.43	0.15	3.85	124.50	126.50	128.75	123.83	NOV 2009	129.95	SEP 2004
Eagle Lake	Polk	1965	129.05	129.35	128.96	0.30	0.39	2.85	126.50	128.50	130.75	118.76	MAY 1976	131.50	SEP 1996
Lake Fannie	Polk	1967	124.69	125.29	124.28	0.60	1.01	5.29	120.00	123.50	125.75	118.67	MAY 1977	127.51	SEP 2004
Lake Garfield	Polk	1969	101.55	102.07	102.58	0.52	-0.51	2.07	100.00	101.00	104.75	97.38	JUN 2001	105.91	SEP 1979
Lake Hamilton	Polk	1945	120.37	120.69	119.73	0.32	0.96	3.44	117.25	119.00	121.50	116.61	JUN 2001	124.34	OCT 1948
Lake Helene	Polk	1961	145.17	145.11	145.79	-0.06	-0.68	6.11	139.00	141.00	144.00	134.06	JUN 2008	146.71	OCT 2017
Lake Howard	Polk	1987	131.11	131.56	131.20	0.45	0.36	4.56	127.00	129.50	132.00	127.69	MAY 2001	133.08	SEP 2004
Lake Juliana	Polk	1961	132.23	132.41	132.32	0.18	0.09	4.91	127.50	130.00	132.50	126.20	MAY 1976	134.10	MAR 1998
Lake Mcleod	Polk	1965	129.23	129.44	128.86	0.21	0.58	1.44	128.00	129.50	132.00	115.11	MAY 1976	131.98	SEP 1998
Lake Otis	Polk	1954	126.65	127.00	126.21	0.35	0.79	4.00	123.00	125.00	128.00	119.58	MAY 1976	129.12	SEP 1960
Lake Ruby	Polk	1971	124.40	124.79	124.85	0.39	-0.06	3.79	121.00	123.00	125.25	117.41	MAY 1976	125.98	SEP 2004
Lake Gibson	Polk	1969	142.28	142.47	143.26	0.19	-0.79	0.97	141.50	141.50	143.50	140.21	MAY 2009	145.40	SEP 1988

LK WALES RIDGE LAKES

Lake Name	County	Beginning of Record	MAY 2019	JUN 2019	JUN 2018	Change from MAY 2019	Change from JUN 2018	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	1970	115.17	115.18	114.97	0.01	0.21	1.18	114.00	116.00	119.00	108.36	JUN 1990	117.56	OCT 2005
Lake Clay	Highlands	1983	77.39	78.03	78.04	0.64	-0.01	3.03	75.00	76.00	78.75	74.34	MAY 2001	78.82	JUN 2013
Crooked Lake	Polk	1945	117.77	118.11	118.39	0.34	-0.28	1.11	117.00	118.50	122.00	106.10	MAY 1991	123.98	OCT 1948
Lake Jackson	Highlands	1945	101.23	101.55	102.73	0.32	-1.18	3.55	98.00	100.00	103.00	96.47	JUN 2008	103.76	SEP 1947
Lake Letta	Highlands	1951	96.95	97.05	99.29	0.10	-2.24	2.05	95.00	97.00	100.00	90.27	JUN 2008	101.38	OCT 1953
Lake Lotela	Highlands	1950	104.98	105.24	107.95	0.26	-2.71	1.24	104.00	105.00	108.50	96.63	JUN 2008	109.38	JUL 1954
Lake Placid	Highlands	1984	91.50	91.14	93.17	-0.36	-2.03	1.14	90.00	91.50	94.50	88.08	JUN 2008	94.24	SEP 2003
Starr Lake	Polk	1983	103.51	103.60	104.16	0.09	-0.56	-4.40	108.00	110.00	113.00	96.23	JUL 2001	109.80	DEC 2005
Trout Lake	Highlands	1981	95.24	95.67	97.78	0.43	-2.11	0.67	95.00	98.00	101.00	87.15	MAY 2001	99.89	SEP 2016

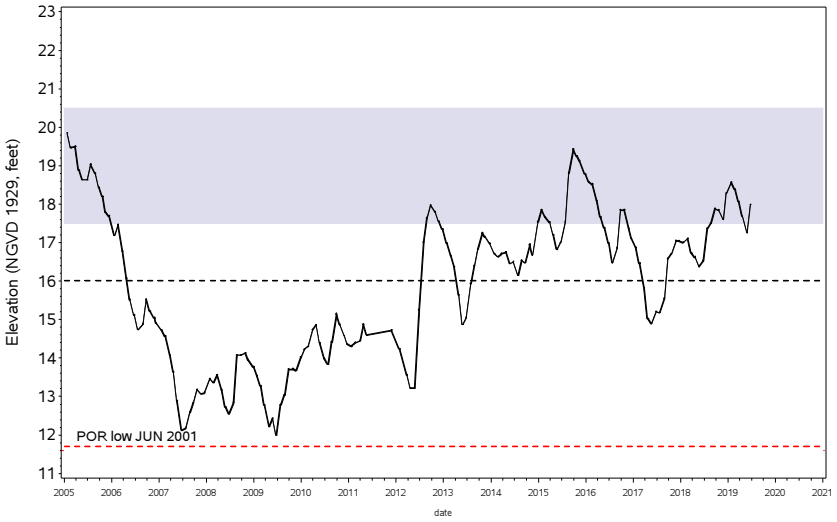
NOTE: M='no data' or 'not determined'

All elevations are referenced to NGVD 1929 datum. Report compiled by Hannah Kolb

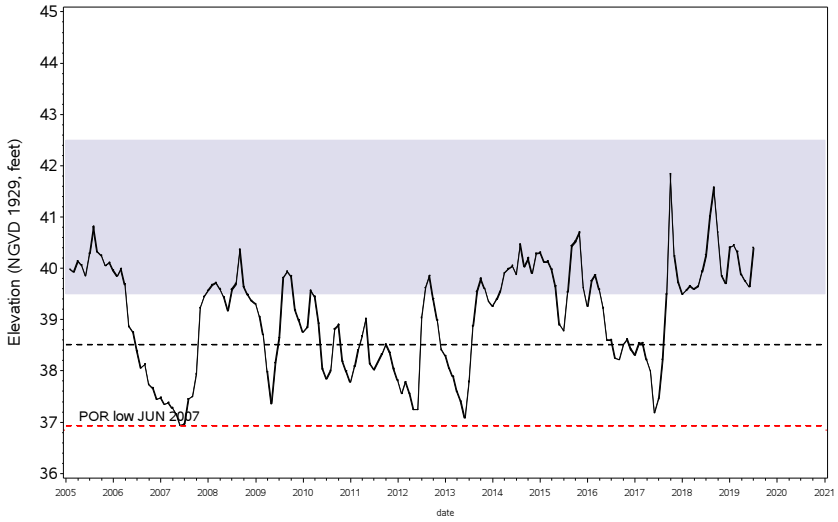
HYDROGRAPHS OF REGIONAL LAKES

15-yr Period of Record

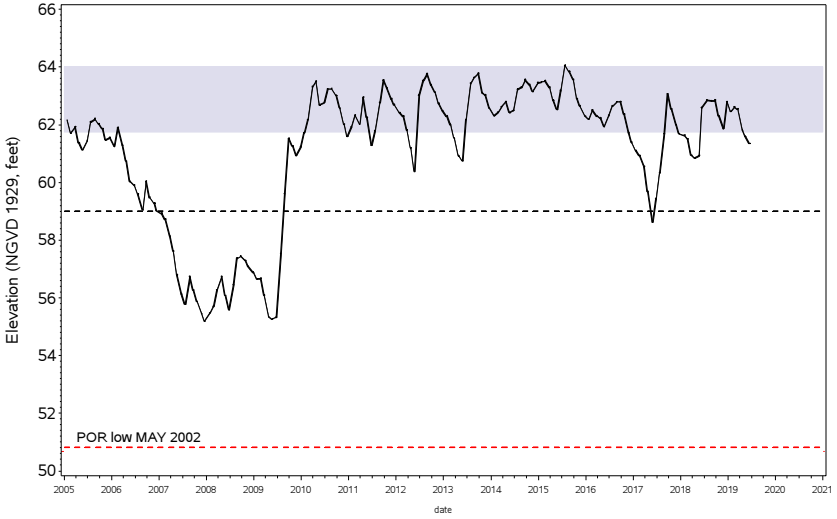
Hunters Lake
Northern Lakes



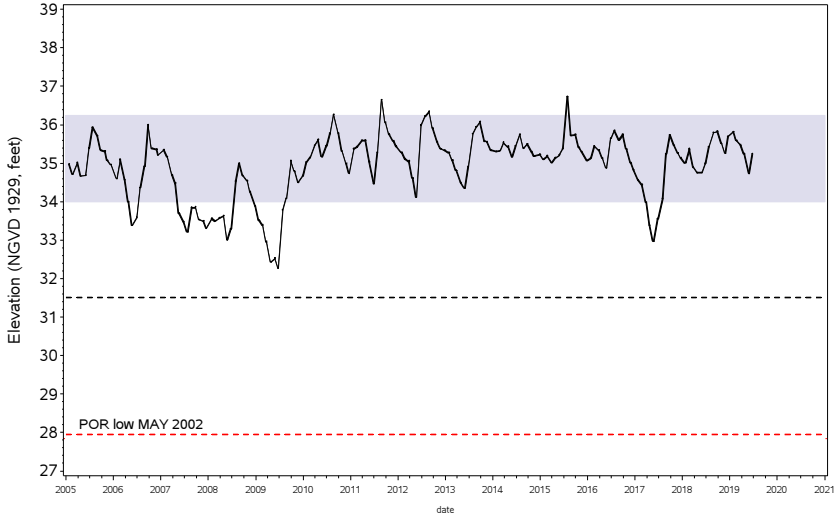
Lake Panasoffkee
Northern Lakes



Camp Lake
Tampa Bay Lakes



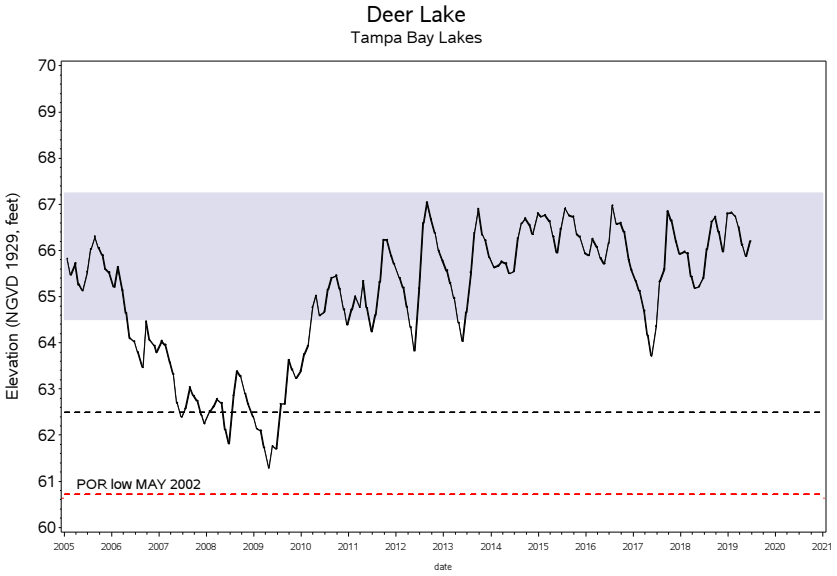
Church Lake
Tampa Bay Lakes

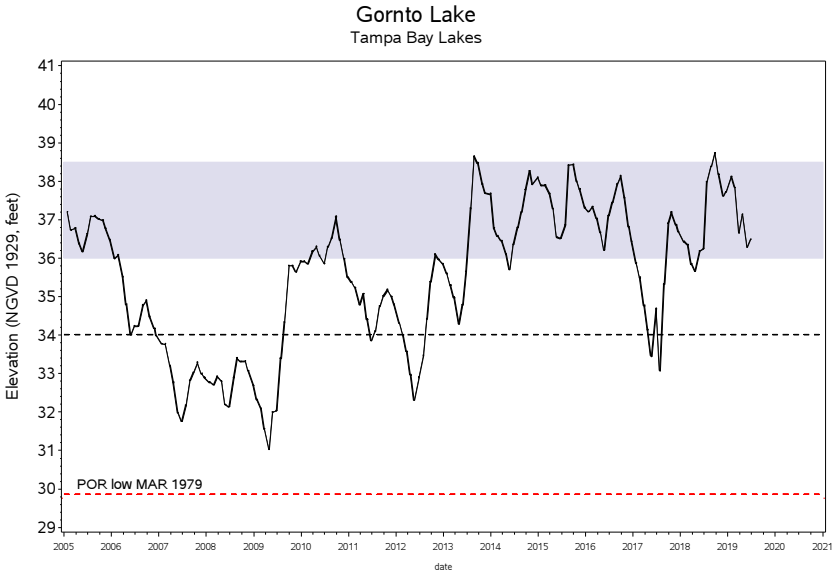


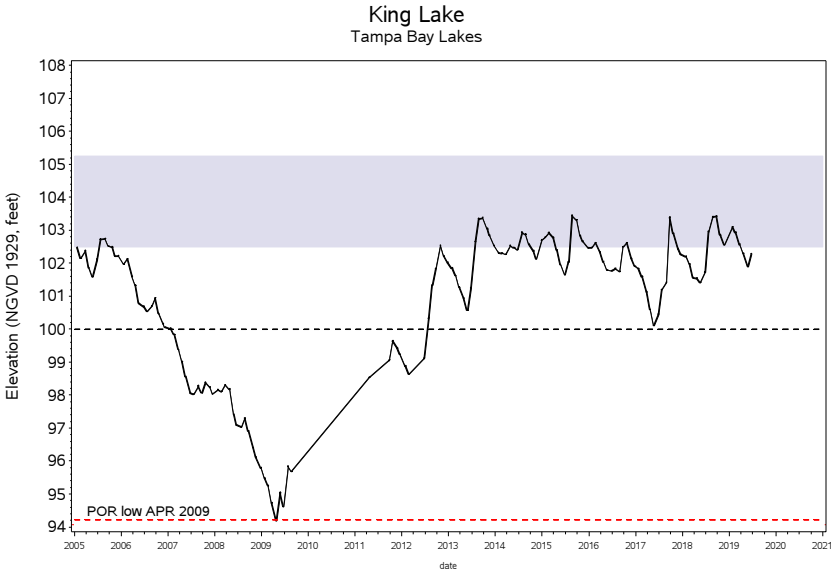
Monthly Mean Elevation **Drought Year Low** **Normal Range**

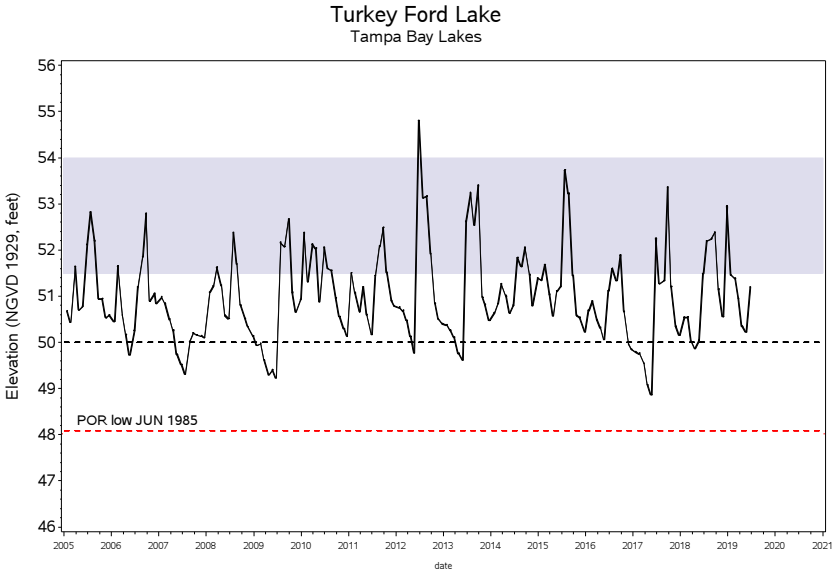
HYDROGRAPHS OF REGIONAL LAKES

15-yr Period of Record









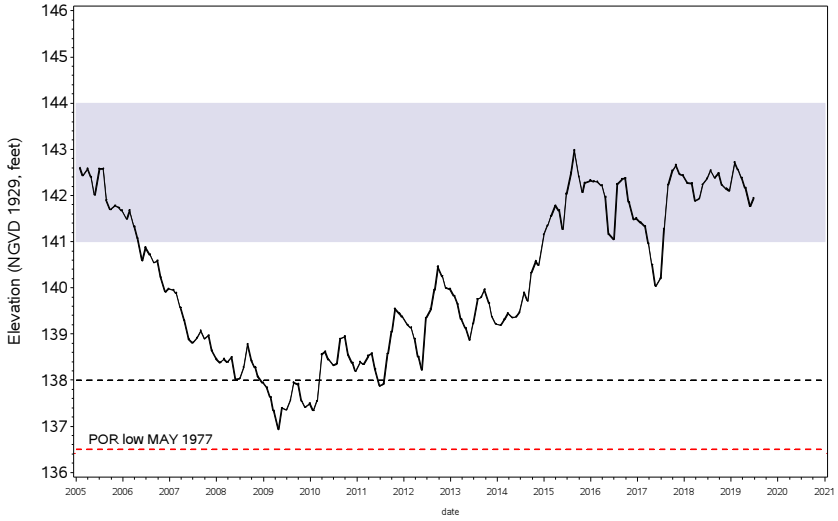
Monthly Mean Elevation Drought Year Low Normal Range

HYDROGRAPHS OF REGIONAL LAKES

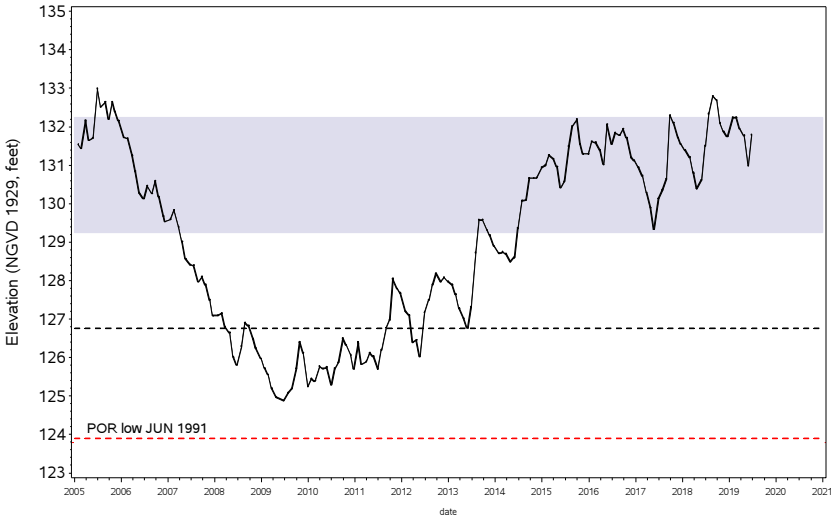
15-yr Period of Record

Lake Wimauma
Tampa Bay Lakes

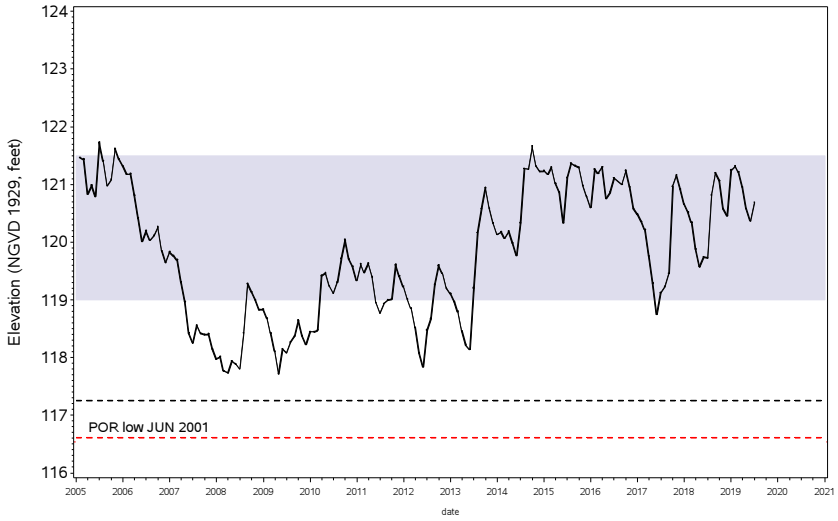
Lake Arietta
Polk Uplands Lakes



Lake Buffum
Polk Uplands Lakes



Lake Hamilton
Polk Uplands Lakes



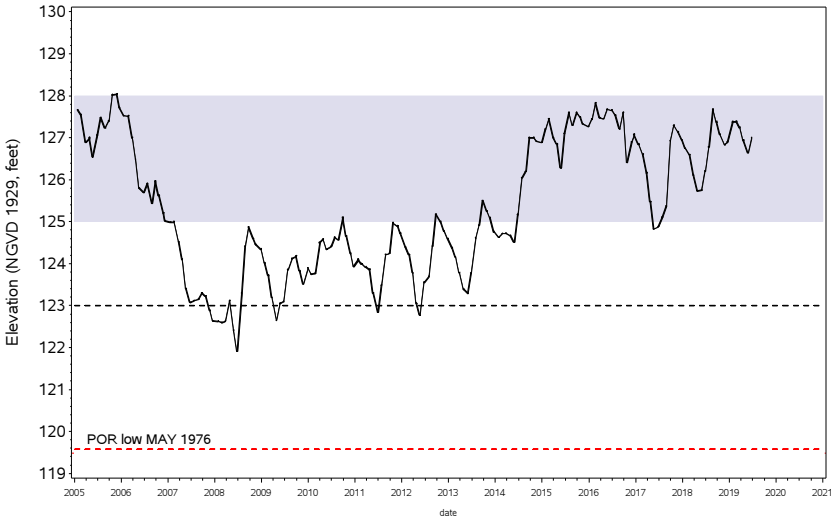
Monthly Mean Elevation **Drought Year Low** **Normal Range**

HYDROGRAPHS OF REGIONAL LAKES

15-yr Period of Record

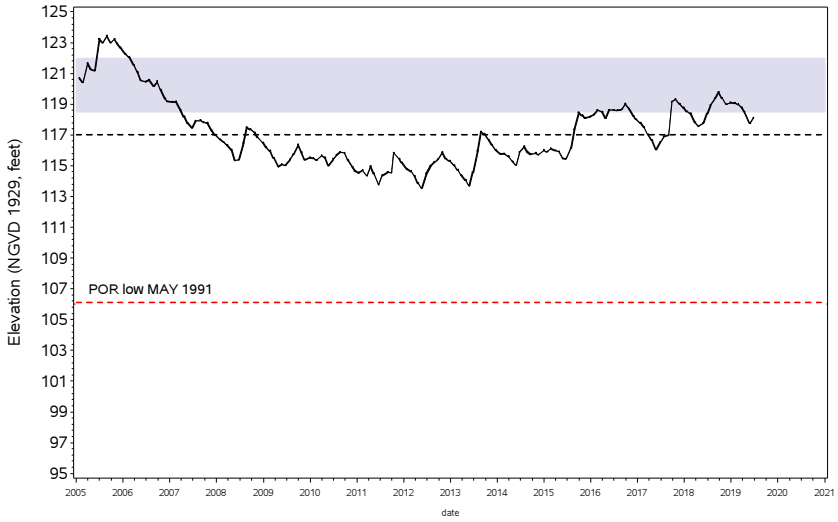
Lake Otis

Polk Uplands Lakes



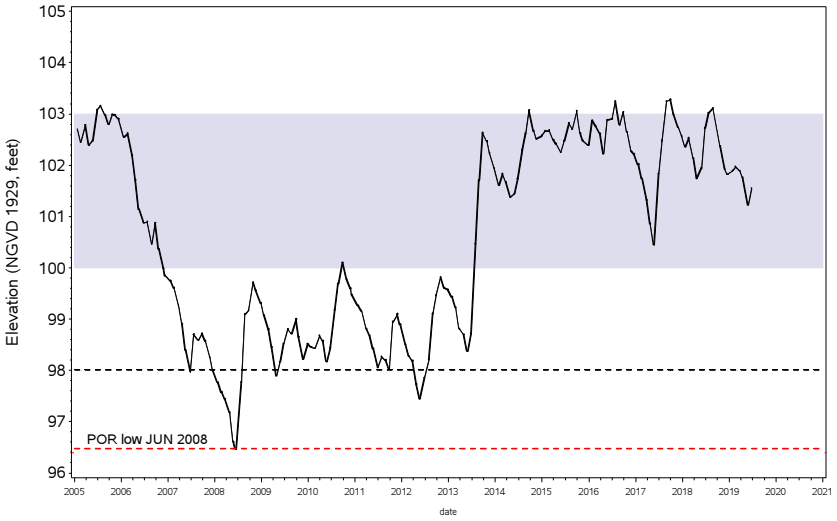
Crooked Lake

Lake Wales Ridge Lakes



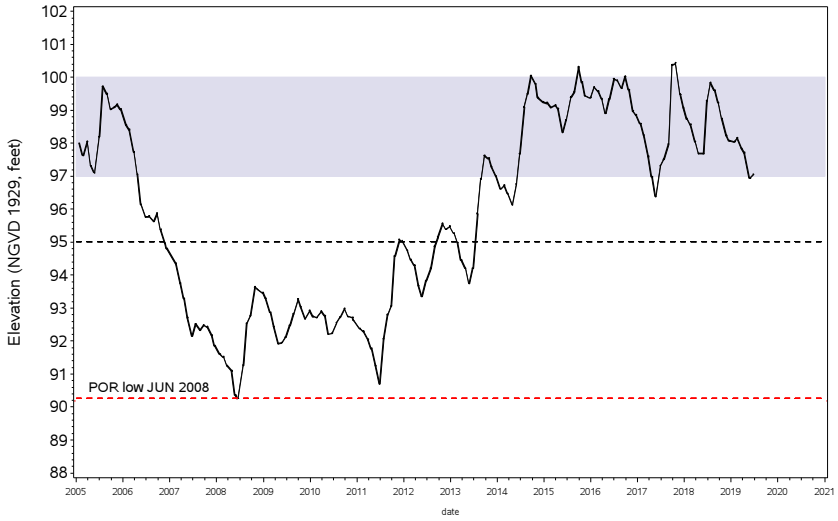
Lake Jackson

Lake Wales Ridge Lakes



Lake Letta

Lake Wales Ridge Lakes



Monthly Mean Elevation 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 mean. The current year's data are provisional, and are subject to revision. Revised data are used for all calculations, as they become available.

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

During June, all 12 stations monitored for this report had increased streamflow, compared to last month. Total streamflow increased in the northern, central and southern regions of the District by 27.3 cfs (17.6 mgd), 715.8 cfs (462.49 mgd) and 787.5 cfs (508.7 mgd), respectively. District-wide, total streamflow decreased by an average of 1530.6 cfs (988.8 mgd).

In June, 9 of the 12 stations recorded lower streamflow than in June 2018. Streamflow was lower in the northern, central and southern regions by 19.3 cfs (124.7 mgd), 1,117.7 cfs (722.0 mgd) and 2,183.1 cfs (1,140.3 mgd), respectively. District-wide, total streamflow was lower, on average, by 3,493.8 cfs (2,257.0 mgd), than the June 2018 average.

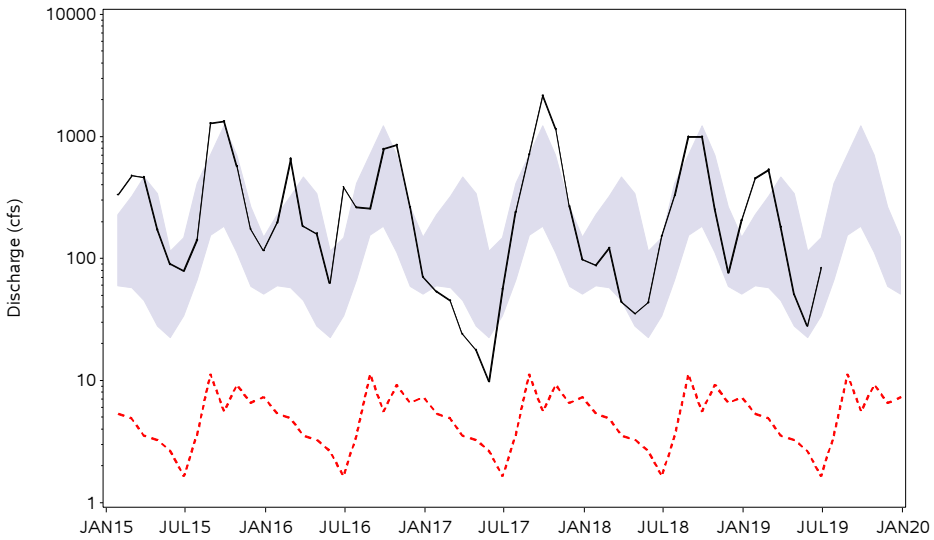
Compared to historical June discharge values, Withlacoochee River streamflow, measured at the Trilby station and the Holder station averaged in the 61st and 53rd percentiles, respectively. Streamflow measured at the stations on the Anclote, Pithlachascotee and Hillsborough Rivers averaged in the 92nd, 89th and 76th percentiles of respective historical June readings. Streamflow measured at the Alafia River, Little Manatee River and Peace River at Bartow stations averaged in the 78th, 73rd and 74th percentiles of respective historical June readings. Additionally, streamflow measured at the Josephine Creek, Manatee River, Myakka River and Peace River at Arcadia stations averaged in the 63rd, 48th, 56th and 69th percentiles of respective historical June readings.

SUMMARY OF STREAM DISCHARGE FROM MAJOR STREAMS (CFS), JUNE 2019

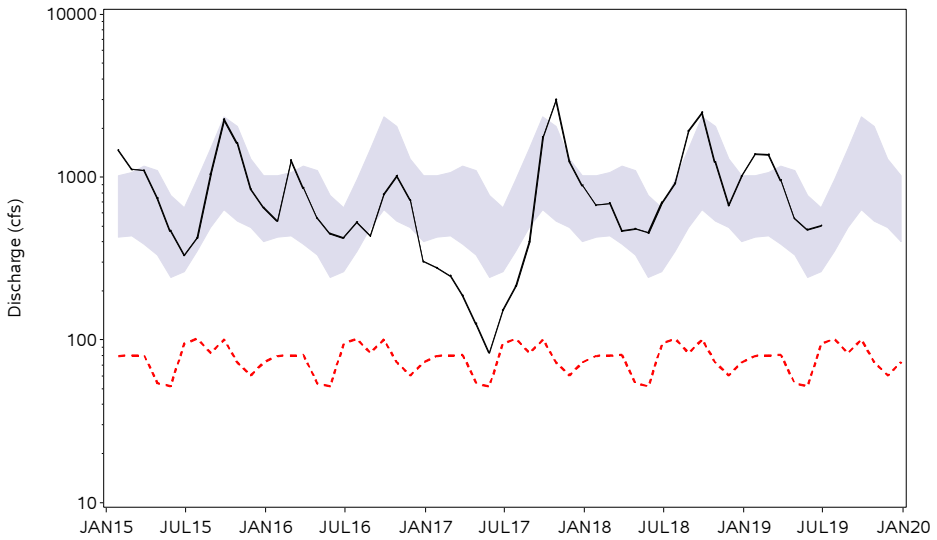
NORTHERN COUNTIES	*Beginning Year of Record*	*Mean Discharge JUN 2019*	*Mean Discharge MAY 2019*	*Mean Discharge JUN 2018*	*Change from MAY 2019*	*Change from JUN 2018*	*JUN 2019 Percentile Rank*	*Period of Record Low*	*Record Low Date*	*Period of Record High*	*Record High Date*
Withlacoochee R at Trilby	1928	83.3	28.1	152.8	55.2	-69.5	61%	0.1	JUN2000	8840	JUN1934
Withlacoochee R near Holder	1928	505.1	477.8	698.1	27.3	-193.0	53%	33.0	MAR2001	8660	APR1960
CENTRAL COUNTIES											
Anclote River near Elfers	1946	63.0	6.9	129.9	56.1	-66.9	92%	0.8	MAY1962	3710	JUL1960
Pithlachascotee R near New	1963	10.9	3.8	47.7	7.1	-36.8	89%	0.0	MAY2013	2180	JUN2012
Hillsborough R near Zephyrh	1939	195.3	73.6	358.6	121.7	-163.3	76%	27.0	MAY2001	12300	MAR1960
Alafia River at Lithia	1932	399.8	93.6	885.7	306.2	-485.9	78%	4.1	JUN2000	40800	SEP1933
Little Manatee R near Wimau	1939	167.3	54.8	294.4	112.5	-127.1	73%	0.9	DEC1976	11100	SEP1960
Peace River at Bartow	1939	160.3	48.1	398.0	112.2	-237.7	74%	0.0	MAY2009	4100	SEP1947
SOUTHERN COUNTIES											
Josephine Cr near DeSoto Ci	1946	45.5	11.8	129.6	33.7	-84.1	63%	0.5	MAY1956	1680	SEP1948
Manatee River near Myakka H	1966	39.2	20.8	160.6	18.4	-121.4	48%	0.1	MAY1975	6440	JUN2003
Myakka River near Sarasota	1936	88.7	22.7	578.7	66.0	-490.0	56%	0.0	JUN2012	10800	JUN2003
Peace River at Arcadia	1931	856.1	186.7	2343.7	669.4	-1487.6	69%	5.6	MAY2000	34700	SEP1933

HYDROGRAPHS OF MAJOR STREAMS
JANUARY 2015 TO JUNE 2019

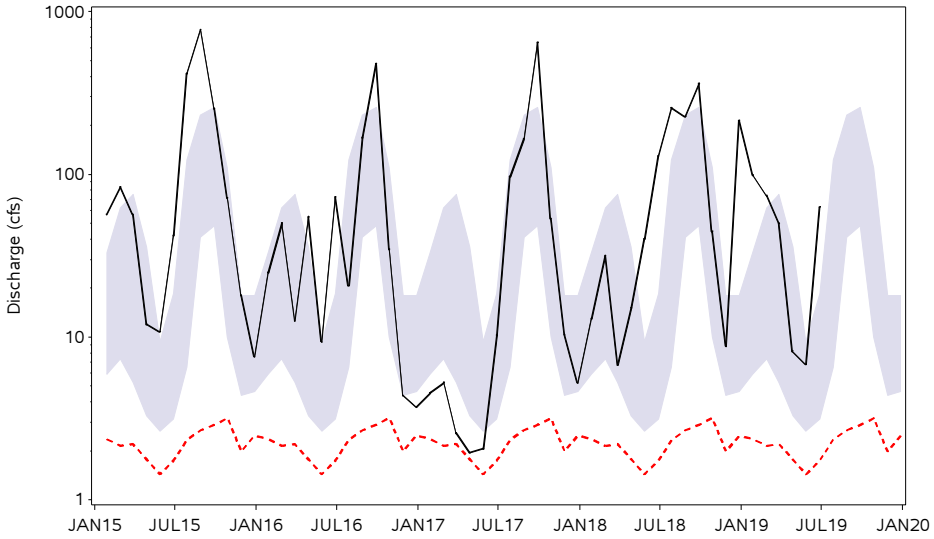
Withlacoochee R at Trilby
Northern Counties



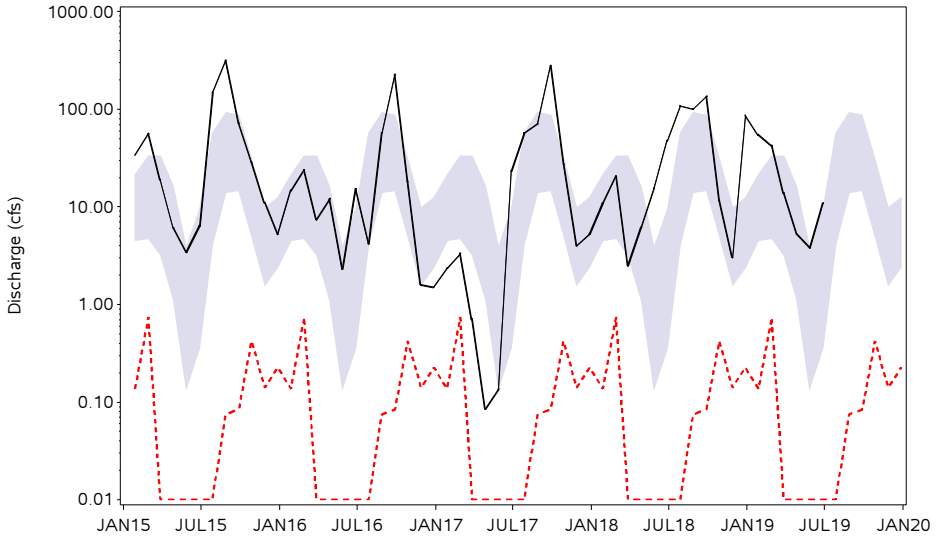
Withlacoochee R near Holder
Northern Counties



Anclote River near Elfers
Central Counties



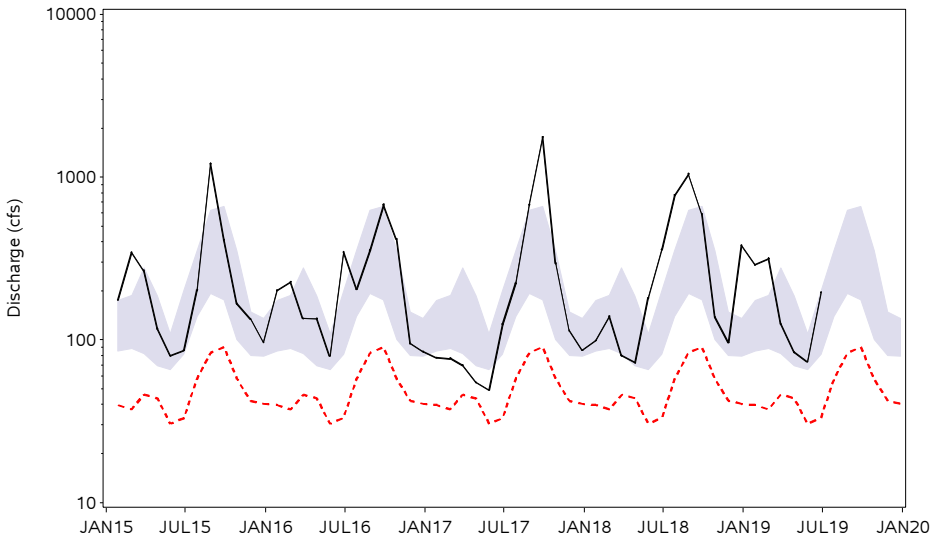
Pithlachascotee R near New
Central Counties



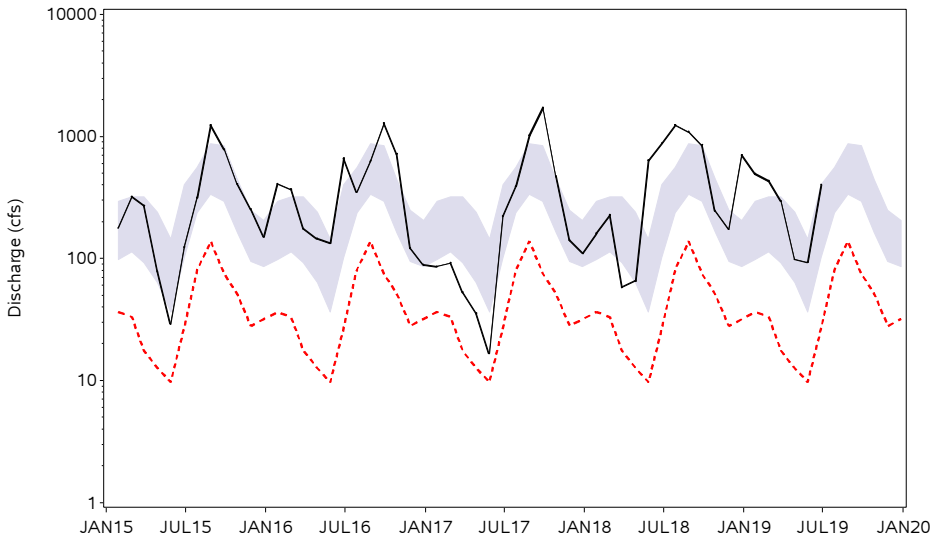
Monthly Mean Discharge POR Monthly Low Normal Range

HYDROGRAPHS OF MAJOR STREAMS
JANUARY 2015 TO JUNE 2019

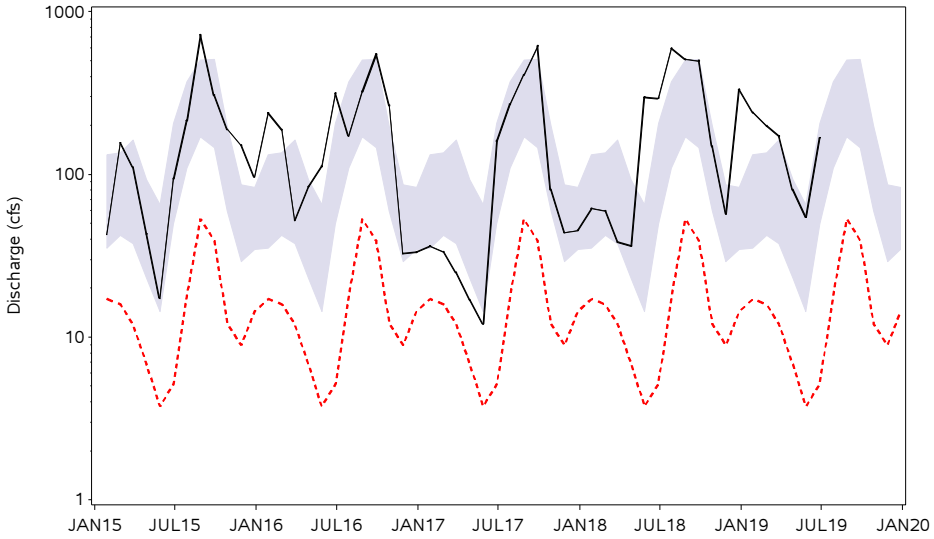
Hillsborough R near Zephyrh
Central Counties



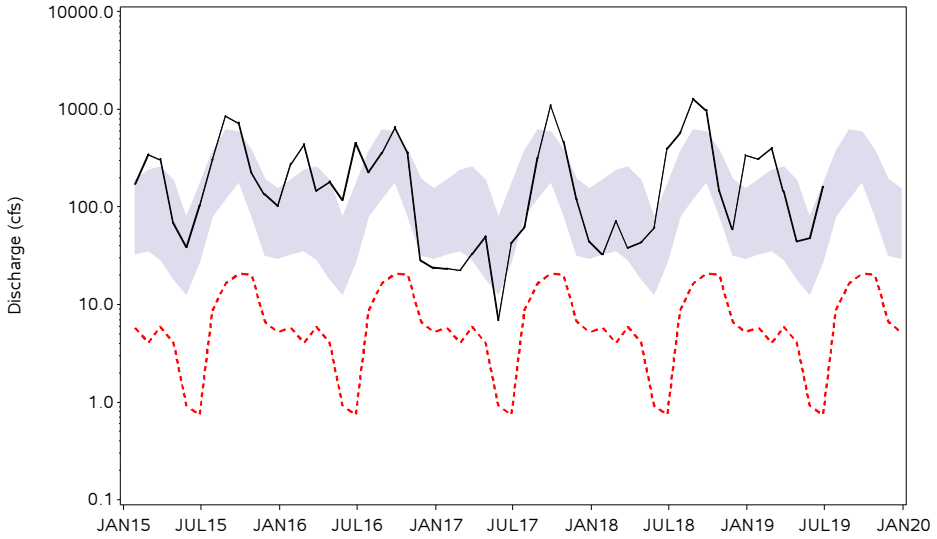
Alafia River at Lithia
Central Counties



Little Manatee R near Wimau
Central Counties



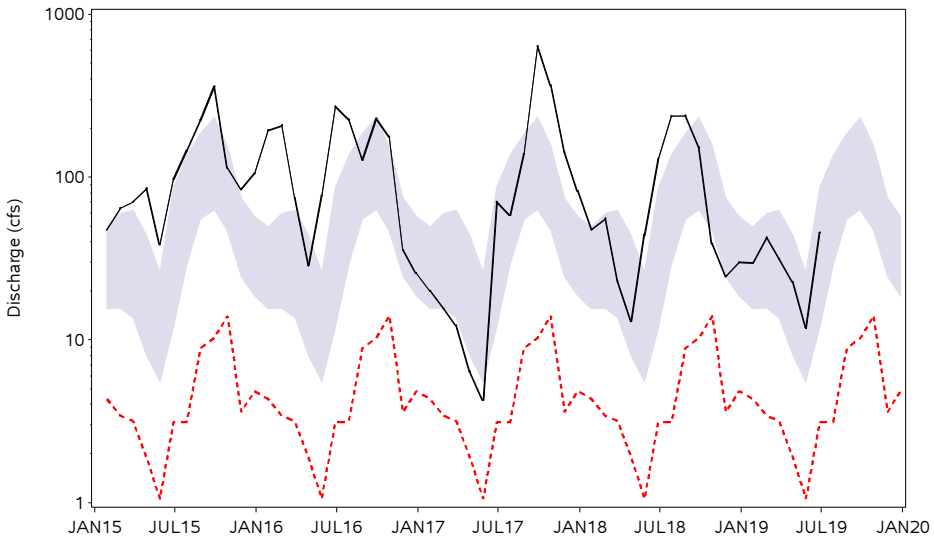
Peace River at Bartow
Central Counties



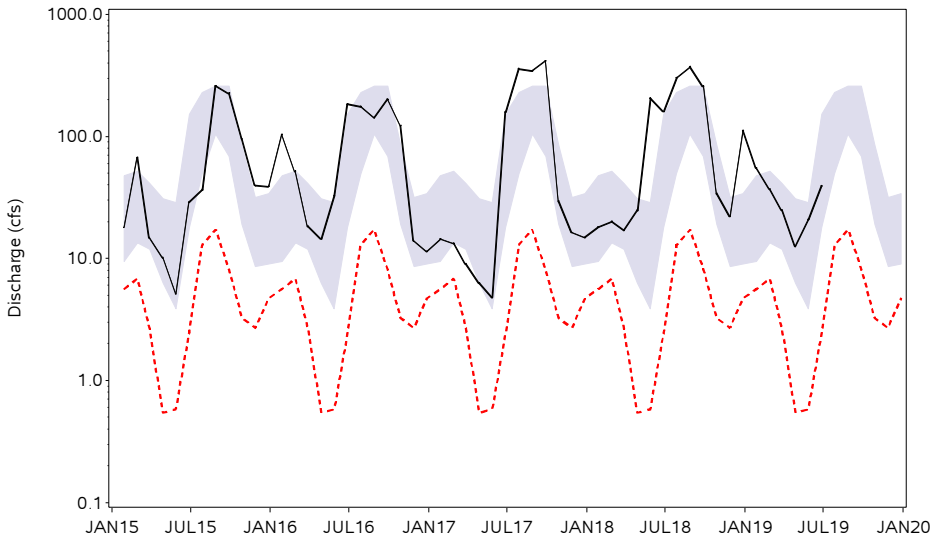
Monthly Mean Discharge
POR Monthly Low
Normal Range

HYDROGRAPHS OF MAJOR STREAMS
JANUARY 2015 TO JUNE 2019

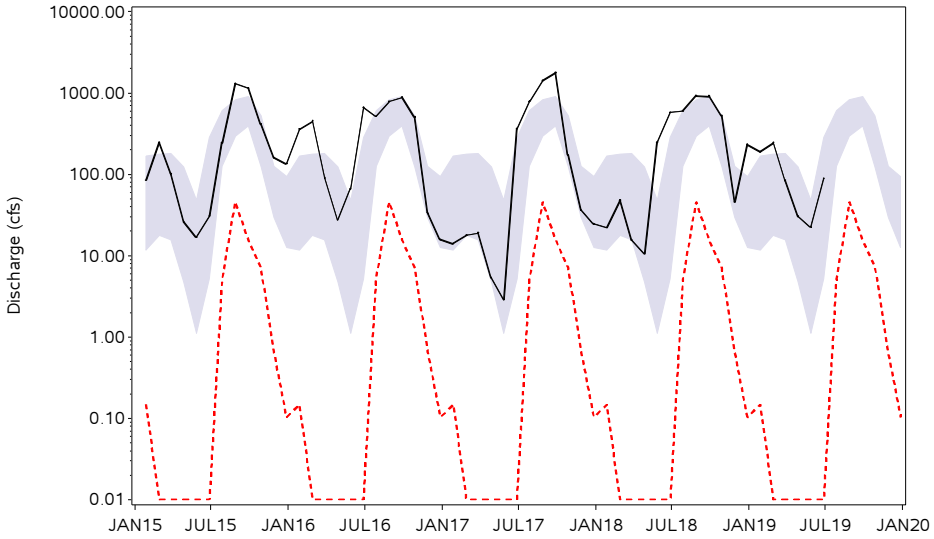
Josephine Cr near DeSoto Ci
Southern Counties



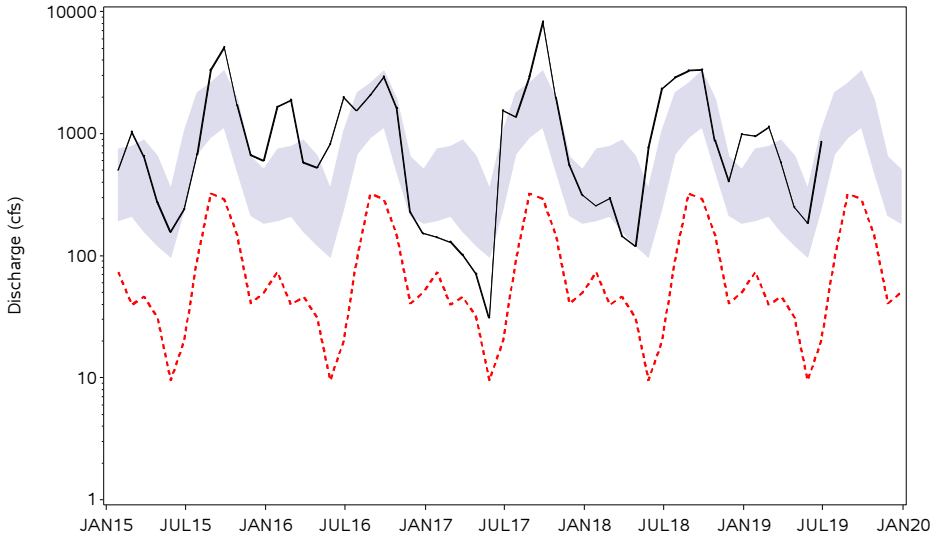
Manatee River near Myakka H
Southern Counties



Myakka River near Sarasota
Southern Counties



Peace River at Arcadia
Southern Counties



Monthly Mean 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 that indicates the percent of period-of-record values that are above, equal to or below the median (50th percentile) for the current month. The values reported are provisional and are subject to revision at the end of the water year. Revised USGS springflow data are loaded into the District's WMIS when they become available.

Hydrographs are produced for the seven-springflow stations, and current values are compared to respective 25th and 75th percentiles that are calculated from historical data. The 25th and 75th percentiles are calculated using the SAS™ software system for data analysis using period-of-record monthly theoretical means for each springflow station analyzed.

During June, four of the six stations reported decreased springflow, compared to the previous month. Total springflow decreased in the northern region by 60.0 cfs (32.3 mgd) and increased in the central region by 2.5 cfs (1.4 mgd), respectively. District-wide, springflow decreased by 57.4 cfs (30.9 mgd).

In June, total springflow recorded at four of the six stations was below last year's flows. Total springflow for the northern and central regions was lower by 81.3 cfs (43.8 mgd) and 17.4 cfs (9.4 mgd), respectively. June 2018 discharge at the Lithia Springs station exceeded the measurement range and values are not available for comparison. District-wide, springflow was lower by 98.7 cfs (53.1 mgd), compared to June 2018 rates.

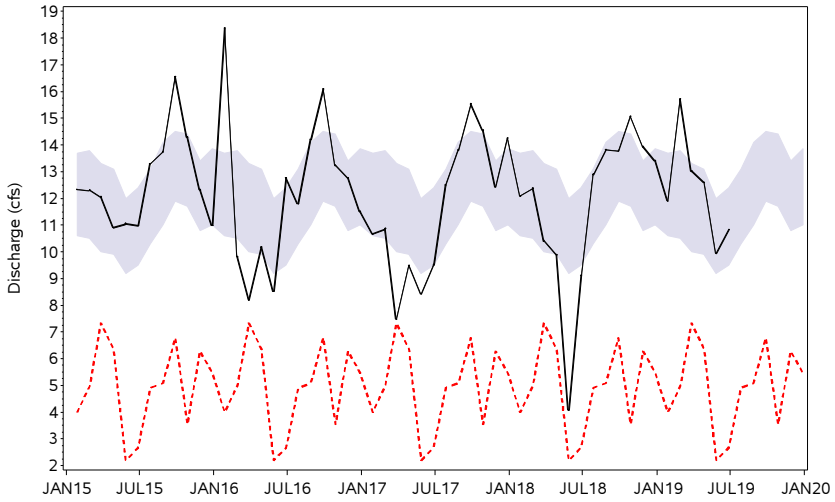
Compared to historical period-of-record values for June, total springflow measured in Rainbow, Silver and Weeki Wachee Springs, in the northern region, was in the 67th, 62nd and 78th percentiles of respective historical readings. Springflow measured in Sulphur, Buckhorn and Lithia Springs, in the central region, was in the 25th, 14th and 87th percentiles, respectively, of historical June readings.

SUMMARY OF SPRINGS DISCHARGE FROM MAJOR SPRINGS (CFS), JUNE 2019

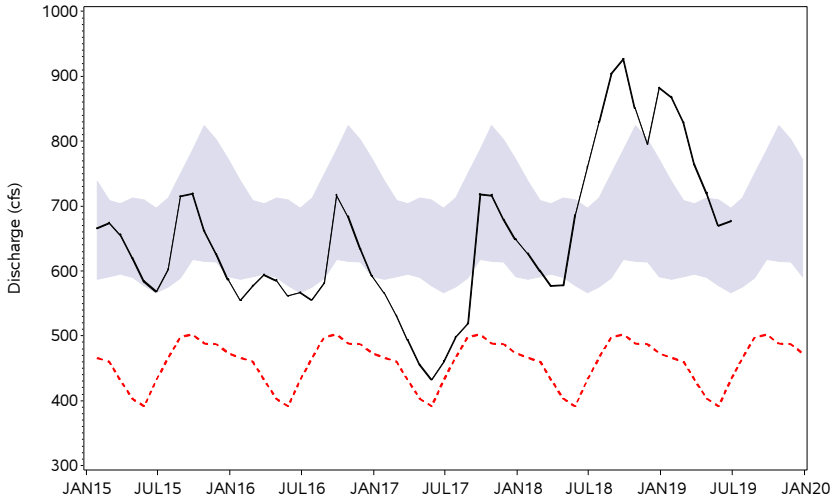
NORTHERN COUNTIES	*JUN 2019 Discharge*	*MAY 2019 Discharge*	*JUN 2018 Discharge*	*Change From MAY 2019*	*Change From JUN 2018*	*JUN 2019 Percentile Rank*	*Period of Record Low*	*Record Low Date*	*Period of Record High*	*Record High Date*
Rainbow Springs	674.9	697.3	735.7	-22.4	-60.8	67%	391.0	MAY2012	1060.0	SEP1988
Silver Springs	769.9	810.5	792.8	-40.6	-22.9	62%	141.0	JUN2012	1290.0	OCT1960
Weeki Wachee Springs	164.8	161.8	162.4	3.0	2.4	78%	101.0	JUN1994	257.0	OCT2004
CENTRAL COUNTIES										
Sulphur Springs	13.0	0.0	28.0	13.0	-15.0	25%	0.0	JUN1994	145.0	MAR1960
Buckhorn Springs	8.8	11.6	11.2	-2.8	-2.4	14%	2.2	MAY2006	32.7	AUG2004
Lithia Springs	38.0	45.7	M	-7.7	M	87%	5.4	JUN1985	91.5	NOV2004

HYDROGRAPHS OF REGIONAL SPRINGS
JANUARY 2015 TO JUNE 2019

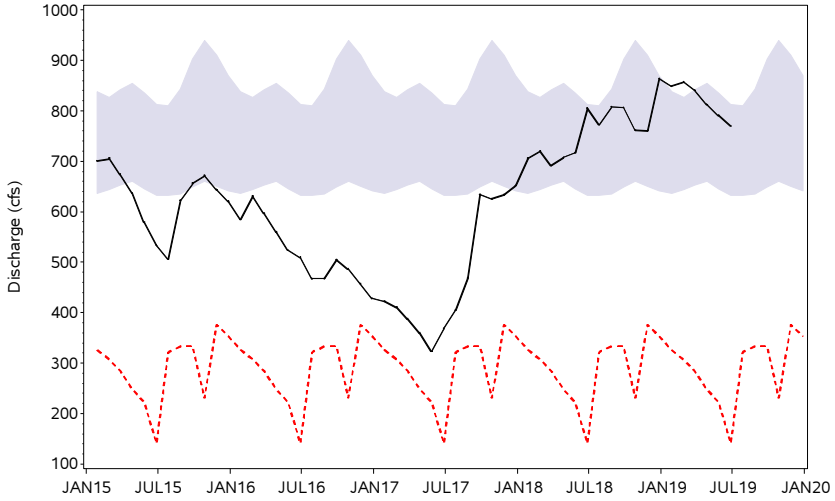
Buckhorn Main Spring
Central Counties



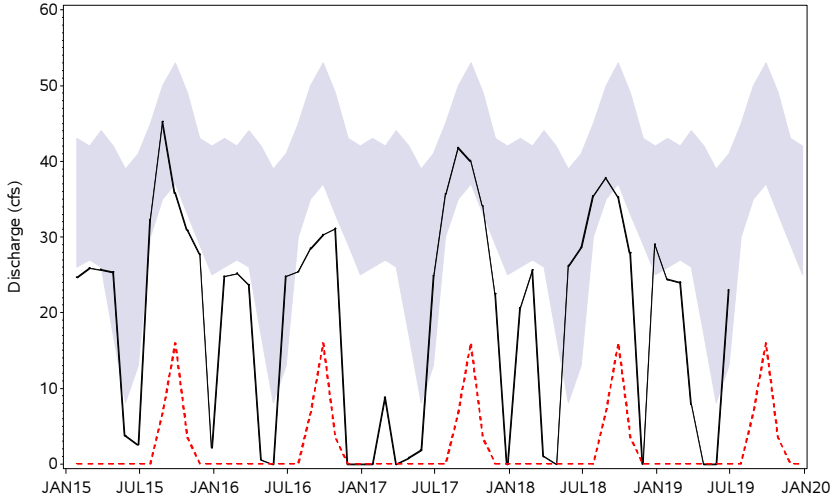
Rainbow River at Dunnellon
Northern Counties



Silver River nr Ocala
Northern Counties



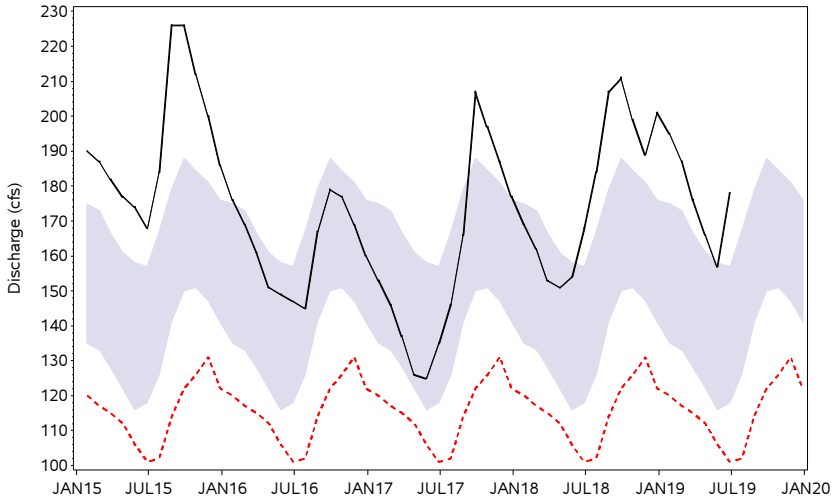
Sulphur Springs (Pool) at Sulphur Springs
Central Counties



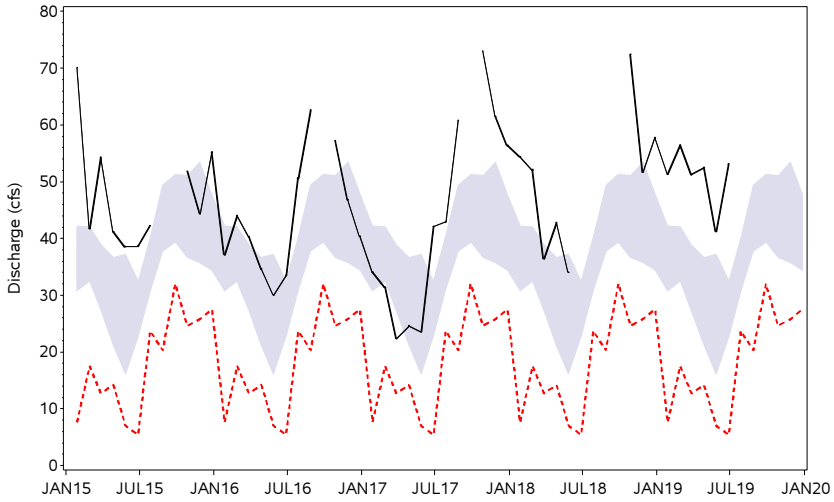
Monthly Discharge
POR Monthly Low
Normal Range

HYDROGRAPHS OF REGIONAL SPRINGS
JANUARY 2015 TO JUNE 2019

Weeki Wachee River nr Brooksville
Northern Counties



Lithia Springs
Central Counties



Monthly Discharge POR Monthly Low Normal Range

GROUND WATER

The ground-water section of this report provides ground-water level information within the District based on geographically delineated areas (regions) within the District. For this report, the District has been divided into three geographical regions that are defined by county boundaries (see index maps in the Appendix). 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, where the Floridan aquifer is generally unconfined and at or near land surface, allowing rainfall to easily recharge (replenish) the aquifer system. The central region includes the counties of Hillsborough, Pasco, Pinellas and Polk, where the Floridan aquifer can be unconfined, semi-confined or confined (overlain by thick clays). Where the Floridan aquifer is confined, recharge to the aquifer from rainfall is low. The southern region includes the counties of Charlotte, DeSoto, Hardee, Highlands, Manatee and Sarasota, where the Floridan aquifer is confined.

Twelve surficial aquifer (shallow, non-artesian) monitor wells and 82 intermediate and Floridan aquifer (deep) monitor wells are measured for this report to determine the relative health of ground-water levels District-wide. Only monitor wells with an adequate and reliable period-of-record water level measurements were selected for the network. For each well, the 25th and 75th percentiles ("low normal" and "high normal," respectively) were calculated for each week of the year using the period-of-record data. The 25th and 75th percentiles are used to represent the lower and upper limits of the normal range, as they are considered a reliable and robust measure of the normal range and are less affected by extremes in the data record. The end-of month water-level readings measured for this report are compared to their corresponding normal ranges. Trend data from 16 intermediate and Floridan aquifer wells are shown in hydrographs to compare current water levels to the low normal and high normal levels.

Data from these wells are further compiled into regional statistics for the three regions of the District. Wells in the northern counties are unconfined and non-artesian, while those in the southern counties are confined and artesian. Wells included in the central counties vary between confined and unconfined conditions due to the transitional nature of geology in this area. The potentiometric levels of representative Floridan aquifer wells are used to produce the potentiometric surface maps presented in this report.

Surficial Aquifer

In June, monthly analysis indicates 11 of the 12 surficial aquifer wells recorded water level increases, compared to last month. Regionally, average surficial aquifer water levels increased in the northern, central and southern regions of the District by 1.20, 0.23 and 0.73 foot, respectively. District-wide, average surficial aquifer water levels increased by 0.52 foot.

During June, annual analysis indicates average water levels in 8 of the 12 surficial aquifer wells were lower than June 2018 levels. Average surficial aquifer water levels were higher in the northern region by 0.21 foot and lower in the central and southern regions by 0.62 foot and 0.83 foot, respectively. District-wide, average water levels in surficial wells were 0.53 foot lower than June 2018 levels.

For June, water levels were above the low normal level in all 12 surficial wells. Average surficial aquifer water levels in the northern, central and southern regions were 1.86, 1.98 and 1.09 feet, respectively, above the low normal level. District-wide, the average water level in surficial wells was 1.74 feet above the low normal level.

SUMMARY OF SURFICIAL AQUIFER LEVELS IN REPRESENTATIVE WELLS, JUNE 2019

NORTHERN COUNTIES	*JUN 2019 Elev*	*MAY 2019 Elev*	*JUN 2018 Elev*	*Change From MAY 2019*	*Change From JUN 2018*	*JUN Historical Low Normal*	*JUN Historical High Normal*	*Departure From Low Normal*	*Period of Record Low*	*Record Low Date*	*Period of Record High*	*Record High Date*
Green Swamp	91.10	89.00	91.08	2.10	0.02	89.01	91.38	2.09	82.95	MAY2000	93.07	SEP1985
Lecanto 2	8.62	8.32	8.22	0.30	0.40	6.98	8.52	1.64	5.76	MAY2001	13.92	SEP1974
CENTRAL COUNTIES												
Loughman	90.91	90.71	91.48	0.20	-0.57	90.27	91.74	0.64	88.40	JUN2001	96.31	SEP2017
Lutz-Lake Fern	57.28	56.76	58.04	0.51	-0.77	55.45	57.47	1.83	52.64	NOV2009	61.10	SEP1986
ROMP 50 Shallow	41.80	41.59	42.17	0.21	-0.37	41.18	42.08	0.62	38.01	OCT2010	44.05	SEP2001
SR 33 & Combee Road	134.20	135.65	136.16	-1.45	-1.96	133.21	134.73	0.99	129.16	FEB2001	136.97	OCT1995
SR 577 Shallow	121.86	121.22	121.55	0.64	0.31	116.99	123.36	4.87	109.99	JAN2000	129.26	SEP2013
Tarpon Road Shallow	12.68	11.40	11.68	1.28	1.00	10.40	12.43	2.28	9.22	MAY2017	17.25	AUG2015
USGS P-48	100.76	100.51	102.73	0.25	-1.97	98.12	100.36	2.64	96.07	JUN2001	105.84	SEP2017
SOUTHERN COUNTIES												
Edgeville 4 Shallow	67.69	66.28	68.63	1.41	-0.94	66.87	68.63	0.82	63.76	MAY2012	69.87	SEP1994
ROMP 26 Shallow	69.01	69.00	70.05	0.01	-1.04	67.57	69.84	1.44	64.32	JUN1999	75.30	SEP2017
SR 74	16.06	15.30	16.57	0.76	-0.51	15.06	16.59	1.00	12.66	MAY2000	18.78	AUG2013

Intermediate and Floridan Aquifers

In June, monthly analysis indicates that 73 of the 82 intermediate and Floridan aquifer wells monitored for this report recorded water level increases, compared to last month. On an average, water levels increased in the northern, central, and southern regions by 0.76 foot, 2.27 feet and 3.21 feet, respectively. District-wide, the average water level in the intermediate and Floridan aquifer decreased by 2.25 feet.

During June, annual analysis indicates that 57 of the 82 intermediate and Floridan aquifer wells monitored for this report recorded water level decreases, compared to levels measured in June 2018. The mean water levels in the northern region were 0.26 foot higher than June 2018 levels. The central and southern regions were lower by 0.40 and 2.18 feet, respectively. District-wide, average water levels in intermediate and Floridan aquifer wells were 0.89 feet lower than June 2018 levels.

For June, 78 of the 82 intermediate and Floridan aquifer wells had levels above the low normal level, compared to historical monthly levels. Average water levels in the northern, central and southern regions were 3.33, 6.79 and 3.47 feet, respectively, above the low normal level. District-wide, the average water level in intermediate and Floridan aquifer wells was 4.77 feet above the low normal level.

SUMMARY OF INTERMEDIATE AND FLORIDAN AQUIFER LEVELS IN REPRESENTATIVE WELLS, JUNE 2019

Regional Summary:

Region	JUN 2019 Mean Elevation	JUN 2019 Relation to POR Median	JUN 2019 Relation to 25th Percentile	JUN 2019 Mean Percentile Rank	MAY 2019 Mean Percentile Rank	JUN 2018 Mean Percentile Rank
Northern Counties	39.17	1.98	3.31	81%	71%	80%
Central Counties	59.66	2.92	5.95	78%	71%	79%
Southern Counties	31.06	0.29	2.94	53%	62%	78%

Regional Wells Summary:

NORTHERN COUNTIES	JUN 2019 Elev	MAY 2019 Elev	JUN 2018 Elev	Change From MAY 2019	Change From JUN 2018	JUN Historical Low Normal	JUN Historical High Normal	Departure From Low Normal	JUN 2019 Percentile Rank	Period of Record Low	Record Low Date	Period of Record High	Record High Date
CE 14 Dunnellon Deep	.	42.79	42.86	.	.	36.73	41.31	.	.	31.94	MAY2012	60.24	MAR1966
Chassahowitzka 1 Deep	7.09	6.41	6.86	0.68	0.23	5.86	6.61	1.23	84%	4.80	JUN2001	9.75	SEP2004
Inverness Dot Fldn	30.49	30.36	30.06	0.13	0.43	27.04	30.37	3.45	78%	21.70	JUN2001	37.80	OCT1982
Mascotte Deep	99.86	98.72	100.97	1.14	-1.11	98.81	100.57	1.05	60%	93.94	JUN2000	102.66	SEP1988
North Locanto Deep	5.28	4.66	4.76	0.62	0.52	4.02	5.25	1.26	77%	2.94	MAY2001	8.10	OCT1982
ROMP 103 Suwannee/Ocala	41.39	41.57	41.48	-0.18	-0.09	37.12	41.13	4.27	79%	33.75	MAY2009	51.03	OCT2004
ROMP 107 Ocala/Avon Park	12.65	12.85	12.09	-0.20	0.56	10.57	12.77	2.08	74%	8.08	AUG2007	19.78	NOV1982
ROMP 111 Ocala/Avon Park	50.05	48.75	50.24	1.30	-0.19	48.29	49.66	1.76	80%	44.23	JUL1992	53.36	SEP2004
ROMP 116 Avon Park	33.35	32.66	33.36	0.69	-0.01	31.38	33.00	1.97	85%	29.24	MAY2012	39.28	OCT2004
ROMP 119 Avon Park	45.77	45.94	46.61	-0.17	-0.84	42.00	44.96	3.77	89%	39.86	MAY2012	52.20	MAR1998
ROMP 120 Avon Park	46.25	46.45	46.18	-0.20	0.07	41.22	44.71	5.03	87%	38.71	MAY2012	52.24	MAR1998
ROMP 134 Ocala/Avon Park	51.78	52.51	49.60	-0.73	2.18	42.71	47.37	9.07	97%	37.80	JUN2012	57.35	APR1998
ROMP 89 Ocala	92.56	89.16	91.82	3.40	0.74	88.52	92.41	4.05	80%	82.44	JUN2000	94.93	DEC1997
ROMP 97 Avon Park	19.51	18.32	18.40	1.19	1.11	14.59	18.66	4.92	81%	11.84	MAY2009	26.24	SEP2004
ROMP TR 124 Avon Park	3.86	3.14	3.73	0.72	0.13	2.37	3.29	1.49	91%	0.77	SEP2004	8.06	SEP2016
ROMP TR 21-2 Ocala/Avpk	3.46	3.22	3.57	0.24	-0.11	2.47	3.21	0.99	87%	-0.06	DEC1990	6.12	OCT1995
Sumter 13 JC 59 Up Fldn	42.47	41.41	43.35	1.06	-0.88	39.34	42.60	3.13	73%	36.52	MAY2012	47.01	JUN2003
Tidewater 1 FLDN	56.21	55.85	56.15	0.36	0.06	51.98	56.05	4.23	77%	47.94	JUN2012	61.81	SEP1982
Webster City Fldn	84.57	81.66	83.04	2.91	1.53	78.90	82.96	5.67	90%	74.16	MAY2012	88.77	SEP2005
Weeki Wachee Deep Repl	17.05	15.56	16.41	1.49	0.64	13.29	16.98	3.77	76%	10.37	MAY2009	23.61	AUG1984

All elevations are referenced to NGVD 1929 datum

Regional Wells Summary (continued):

CENTRAL COUNTIES	*JUN 2019 Elev*	*MAY 2019 Elev*	*JUN 2018 Elev*	*Change From MAY 2019*	*Change From JUN 2018*	*JUN Historical Low Normal*	*JUN Historical High Normal*	*Departure From Low Normal*	*JUN 2019 Percentile Rank*	*Period of Record Low*	*Record Low Date*	*Period of Record High*	*Record High Date*
Bexley 2 Fldn	62.29	60.32	62.71	1.97	-0.42	59.34	61.90	2.95	87%	56.08	JUN2000	64.50	SEP2017
Coley Deep	84.70	78.91	86.03	5.79	-1.33	78.57	86.19	6.13	69%	60.77	JAN2010	94.17	SEP1949
Debuel Road Deep	56.35	54.43	55.54	1.92	0.81	51.72	55.62	4.63	94%	46.48	JUN2002	60.13	SEP1979
Hills State Park Deep	41.20	37.49	40.28	3.71	0.92	36.78	38.83	4.42	93%	35.35	JUN2000	47.42	DEC1997
Lk Alftred Deep	128.76	127.14	128.62	1.62	0.14	125.84	128.12	2.92	88%	119.85	MAY1974	131.62	OCT1960
Loughman Deep	89.52	88.46	89.23	1.06	0.29	89.34	91.02	0.18	29%	85.90	MAY2001	93.23	OCT1979
Lykes Pasco Fldn	67.52	66.80	66.14	0.72	1.38	61.87	66.04	5.65	87%	56.94	JUN2000	75.78	OCT2004
Masaryktown Deep	35.29	36.06	33.50	-0.77	1.79	26.37	35.35	8.92	75%	21.89	AUG1994	50.32	SEP1984
Moon Lake Deep	31.73	30.98	31.39	0.75	0.34	28.91	31.13	2.82	89%	26.10	JUN2000	38.78	DEC1997
Pasco 13 nr Drexel Fldn	72.73	70.77	72.70	1.96	0.03	71.04	73.28	1.69	58%	68.00	JUN2001	77.14	JUL1960
Pinellas 665 Fldn	9.44	8.94	8.89	0.50	0.55	8.70	10.16	0.74	60%	6.70	MAY2006	14.79	SEP1959
ROMP 123 Hawthorn/Ocala	14.24	3.31	16.72	10.93	-2.48	6.55	15.27	7.69	66%	-29.47	MAY2000	33.56	FEB1998
ROMP 40 Swnn/AvPk	40.28	36.37	44.65	3.91	-4.37	26.37	37.21	13.91	87%	-4.15	JUN2000	57.37	FEB1998
ROMP 45 Avon Park	72.99	70.60	73.94	2.39	-0.95	54.59	65.52	18.40	93%	31.75	MAY1981	84.44	OCT2004
ROMP 48 Tampa/Suwannee	34.68	30.80	38.22	3.88	-3.54	20.87	32.99	13.81	85%	-9.39	JUN2000	52.64	AUG1982
ROMP 50 Avon Park	5.87	4.84	4.70	1.03	1.17	-2.52	4.09	8.39	89%	-32.77	FEB2004	14.95	AUG1982
ROMP 58 Ocala	103.47	100.51	102.64	2.96	0.83	96.08	102.62	7.39	83%	84.03	JUN2000	111.01	DEC2005
ROMP 59 Swnn/AvPk	73.95	71.82	74.85	2.13	-0.90	55.02	66.00	18.93	93%	33.33	MAY1981	85.92	OCT2004
ROMP 60 Ocala/Avon Park	73.53	71.56	73.76	1.97	-0.23	51.62	66.21	21.91	91%	51.29	MAY2012	83.25	SEP2018
ROMP 66 Tampa	18.98	16.89	18.17	2.09	0.81	16.01	18.21	2.97	87%	12.04	JUN1977	25.47	AUG2015
ROMP 76 U Fldn	129.27	128.13	130.56	1.14	-1.29	126.62	128.66	2.65	79%	119.37	MAY1981	132.92	SEP2004
ROMP 87 Avon Park	101.88	101.17	103.29	0.71	-1.41	99.99	103.30	1.89	50%	94.88	JUN2000	106.30	FEB1998
ROMP 88 Avon Park	104.24	102.31	104.74	1.93	-0.50	100.97	105.47	3.27	56%	97.42	JUN2000	107.21	SEP2017
ROMP 93 Swnn/AvPk	73.66	71.87	73.70	1.79	-0.04	64.81	71.96	8.85	89%	59.03	JUN2001	76.60	SEP1982
ROMP DV-1 Suwannee	59.47	52.59	60.36	6.88	-0.89	50.99	58.13	8.48	92%	12.06	JAN2010	65.72	FEB1998
ROMP TR 10-2 Tampa	9.96	9.09	10.60	0.87	-0.64	7.96	9.93	2.00	77%	0.22	MAY1981	14.90	SEP2004
ROMP TR 13-3 Avon Park	15.63	14.44	16.83	1.19	-1.20	14.57	16.06	1.06	60%	10.95	JUL1987	18.79	AUG2015
SR 52 And CR581 Deep	73.72	71.48	75.01	2.24	-1.29	64.90	73.86	8.82	73%	56.96	JUN2001	79.44	AUG1965
SR 52 Deep W nr Fivay Jct	52.94	52.30	53.46	0.64	-0.52	51.28	52.97	1.66	74%	48.08	JUN2000	59.53	AUG2010
SR 577 Deep	90.31	88.59	90.56	1.72	-0.25	82.53	89.80	7.78	79%	72.76	JUN2000	98.51	MAR1998
Sanlon Ranch Fldn	96.99	95.81	97.34	1.18	-0.35	81.77	90.50	15.22	95%	66.38	MAY1975	105.27	OCT2004
Tarpon Rd Deep	10.65	8.75	9.93	1.90	0.72	9.38	10.39	1.27	85%	-4.43	MAY2018	13.48	AUG2015

All elevations are referenced to NGVD 1929 datum

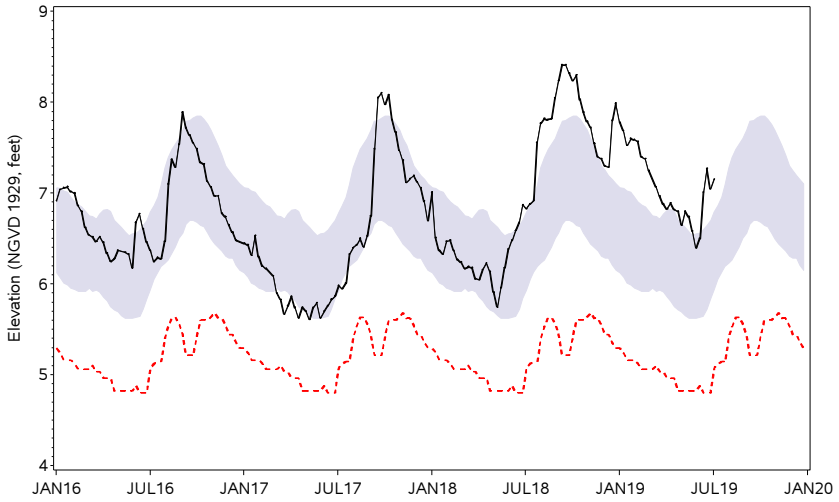
Regional Wells Summary (continued):

SOUTHERN COUNTIES	*JUN 2019 Elev*	*MAY 2019 Elev*	*JUN 2018 Elev*	*Change From MAY 2019*	*Change From JUN 2018*	*JUN Historical Low Normal*	*JUN Historical High Normal*	*Departure From Low Normal*	*JUN 2019 Percentile Rank*	*Period of Record Low*	*Record Low Date*	*Period of Record High*	*Record High Date*
Big Slough Deep	31.21	31.53	33.67	-0.32	-2.46	30.54	32.57	0.68	33%	26.85	MAY2006	36.59	JAN1983
Cargill FA-1 Fldn	70.98	68.39	72.15	2.59	-1.17	54.38	65.76	16.60	90%	30.50	MAY1981	82.95	OCT2004
Edgeville 3 Deep	26.78	21.04	30.18	5.74	-3.40	23.99	32.53	2.79	42%	1.13	MAY2000	46.40	OCT1965
Englewood 14 Deep	4.45	4.00	7.83	0.45	-3.38	2.20	5.66	2.25	59%	-0.97	FEB2001	11.37	SEP1974
Florida Pwr @ Piney Point	16.24	14.12	17.09	2.12	-0.85	11.62	15.96	4.62	81%	-4.84	MAY1989	21.53	SEP2018
Kibler Deep	9.60	-3.67	13.37	13.27	-3.77	4.80	14.08	4.80	48%	-29.95	MAY2000	29.30	AUG1978
Manasota 14 Deep	17.38	17.23	17.94	0.15	-0.56	18.36	20.72	-0.98	9%	15.46	MAY2017	22.70	NOV1971
Marshell Deep	40.75	36.39	44.50	4.36	-3.75	36.39	42.61	4.36	55%	8.96	JUN2000	55.24	MAR1964
ROMP 16 Ocala	46.84	42.72	48.15	4.12	-1.31	46.54	48.37	0.30	35%	28.94	JAN2001	51.21	SEP1995
ROMP 17 Up Fldn	44.67	42.00	46.93	2.67	-2.26	43.77	46.01	0.90	35%	31.89	JUN2000	51.64	OCT1994
ROMP 19 West UFA Swnn	26.74	24.99	27.04	1.75	-0.30	22.46	27.39	4.29	71%	10.99	JUN2000	33.80	SEP2017
ROMP 19X UFA (SWNN)	32.11	30.41	34.56	1.70	-2.45	29.56	33.34	2.55	55%	19.28	JUN2000	40.19	JAN1984
ROMP 20 UFA (SWNN)	20.03	18.32	21.47	1.71	-1.44	17.43	21.31	2.60	56%	11.99	MAY2007	26.66	SEP2017
ROMP 22 UFA (SWNN)	17.15	11.84	19.88	5.31	-2.73	11.42	18.47	5.74	58%	-3.88	MAY2000	30.18	FEB1998
ROMP 26 Swnn/AvPk	44.27	38.91	46.59	5.36	-2.32	42.35	46.04	1.92	54%	19.48	JAN2010	53.18	OCT1979
ROMP 28X Swnn/AvPk	70.41	66.92	71.47	3.49	-1.06	67.23	70.16	3.18	81%	57.24	JAN2010	74.68	OCT1995
ROMP 30 Swnn/AvPk	44.59	38.58	49.33	6.01	-4.74	33.96	43.91	10.63	79%	-0.20	JUN2000	60.52	MAR1998
ROMP 31 Swnn/AvPk	39.73	35.02	44.76	4.71	-5.03	28.60	39.51	11.13	77%	-8.20	JUN2000	57.92	MAR1998
ROMP 32 Low Ocala/Avpk	24.85	18.62	30.43	6.23	-5.58	16.03	25.29	8.82	72%	-17.74	JUN2000	51.65	OCT1987
ROMP 43XX Avon Park	88.84	84.48	91.03	4.36	-2.19	84.93	88.86	3.91	75%	70.93	JAN2010	94.60	MAR1998
ROMP 9 UFA (SWNN)	41.57	40.93	42.72	0.64	-1.15	40.69	42.42	0.88	41%	36.20	MAY2000	46.35	SEP2006
ROMP TR 1-2 Up Fldn	44.86	44.31	45.40	0.55	-0.54	44.28	45.43	0.58	38%	40.72	JUN2000	47.22	SEP2015
ROMP TR 3-1 Up Fldn	33.64	33.25	34.39	0.39	-0.75	32.87	33.99	0.77	63%	29.04	JUN2000	35.98	SEP2017
ROMP TR 5-1 Suwannee	17.81	17.20	18.76	0.61	-0.95	17.60	19.27	0.21	27%	13.26	JUN2000	23.00	SEP1983
ROMP TR 5-2 UFA (SWNN)	23.00	22.21	25.22	0.79	-2.22	21.65	25.06	1.35	40%	13.75	MAY2006	31.26	OCT1994
ROMP TR 7-1 Tampa	18.15	17.42	18.88	0.73	-0.73	16.40	18.33	1.75	68%	10.01	JUN2000	24.23	SEP2017
ROMP TR 7-4 Swnn/Ocala	.	9.38	15.17	.	.	10.05	14.56	.	.	-3.55	MAY2000	24.20	SEP2017
Romp TR SA-1 UFS (SWNN)	9.13	8.58	10.34	0.55	-1.21	9.71	13.56	-0.58	17%	2.89	MAY2017	24.52	SEP1979
Sarasota Office Up Floridan	13.67	10.42	15.53	3.25	-1.86	13.23	24.98	0.44	27%	-3.24	JUN2000	35.21	MAR1931
Verna T 0-1	14.78	4.87	17.87	9.91	-3.09	10.50	19.68	4.28	47%	-15.73	MAY2000	33.32	JAN1984

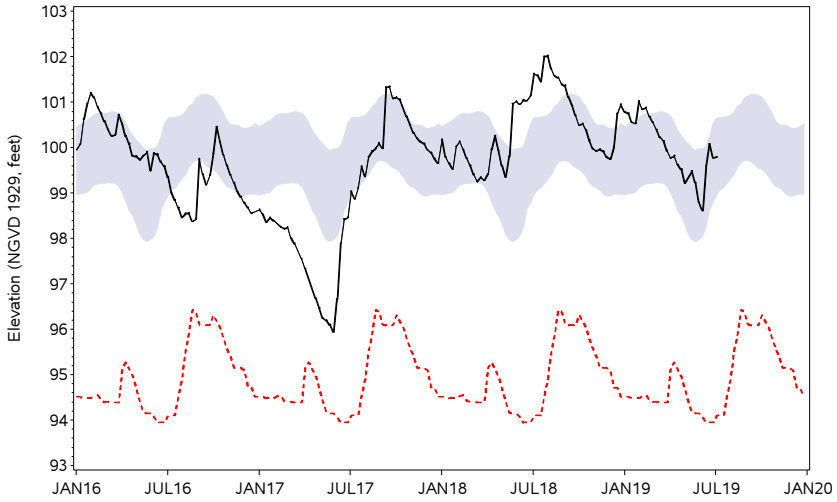
All elevations are referenced to NGVD 1929 datum

HYDROGRAPHS OF REPRESENTATIVE INTERMEDIATE AND FLORIDAN AQUIFER WELLS
JANUARY 2016 TO JUNE 2019

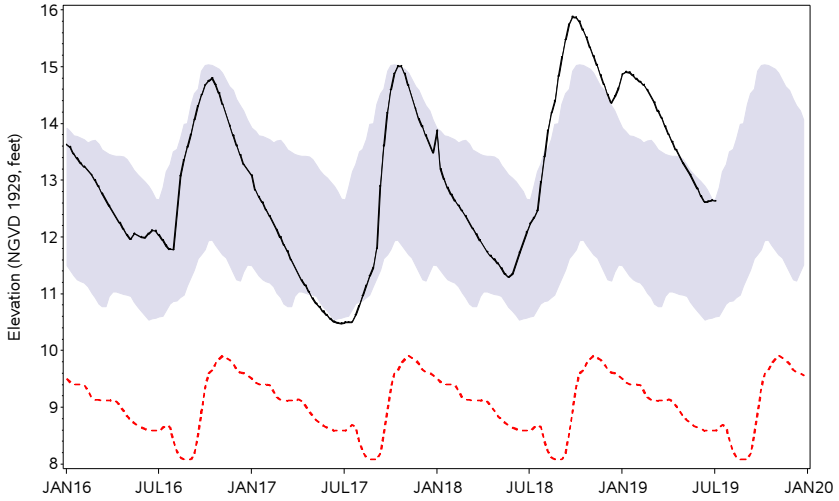
Chassahowitzka #1
Northern Region



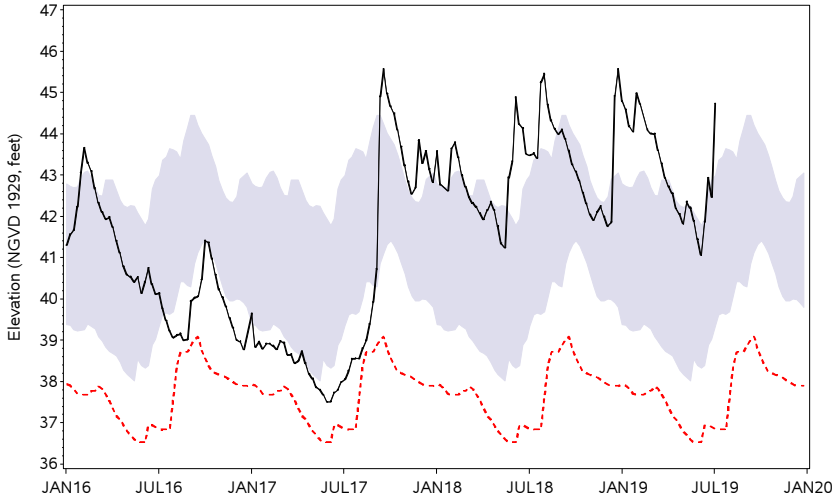
Mascotte Deep
Northern Region



ROMP 107 Ocala/Avon Park
Northern Region



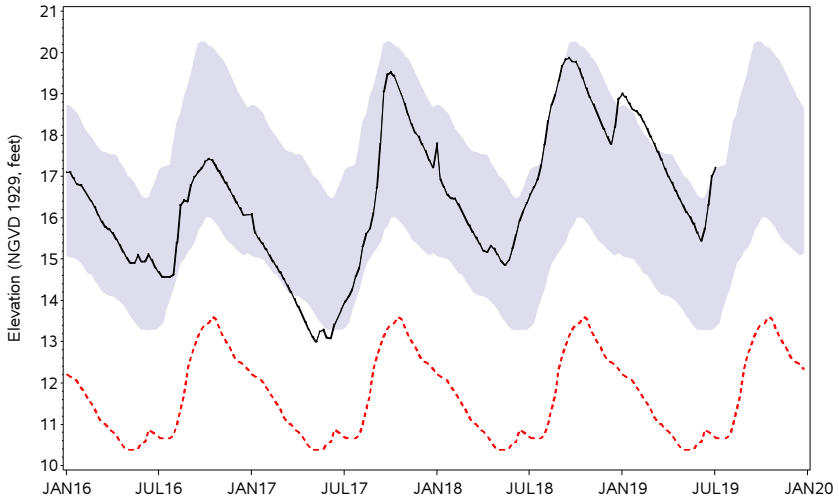
Sumter 13 Upper Fldn
Northern Region



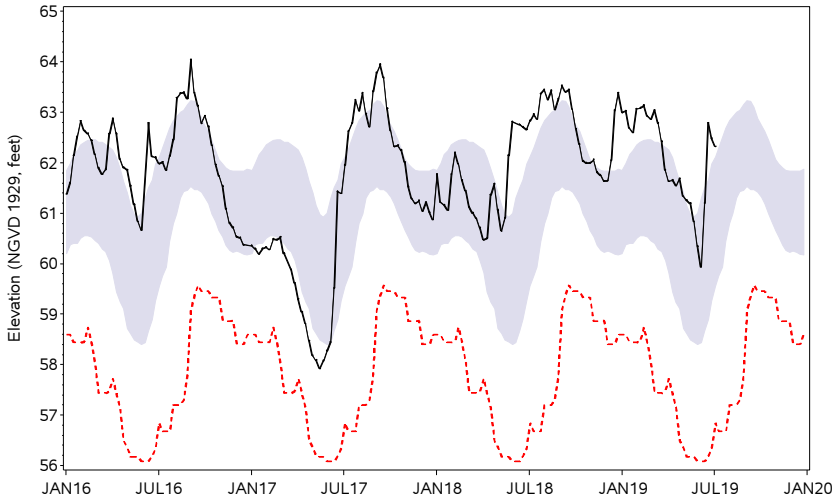
Average Weekly Elevation
POR Weekly Low
Normal Range

HYDROGRAPHS OF REPRESENTATIVE INTERMEDIATE AND FLORIDAN AQUIFER WELLS
JANUARY 2016 TO JUNE 2019

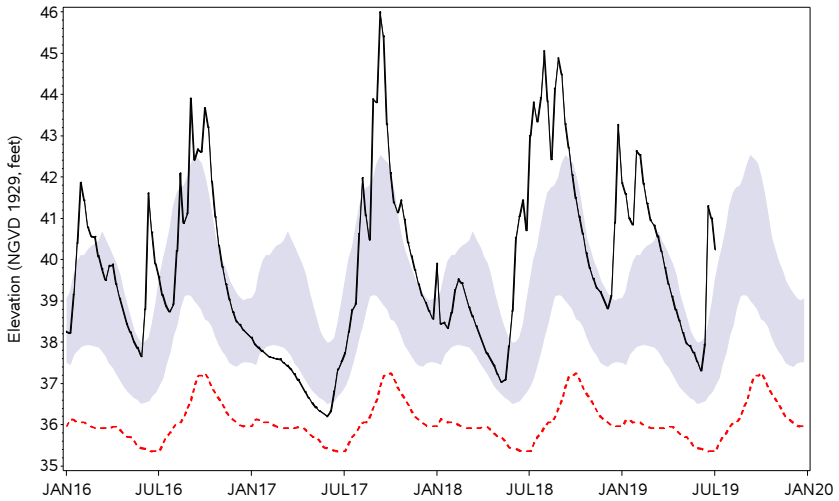
Weeki Wachee Deep
Northern Region



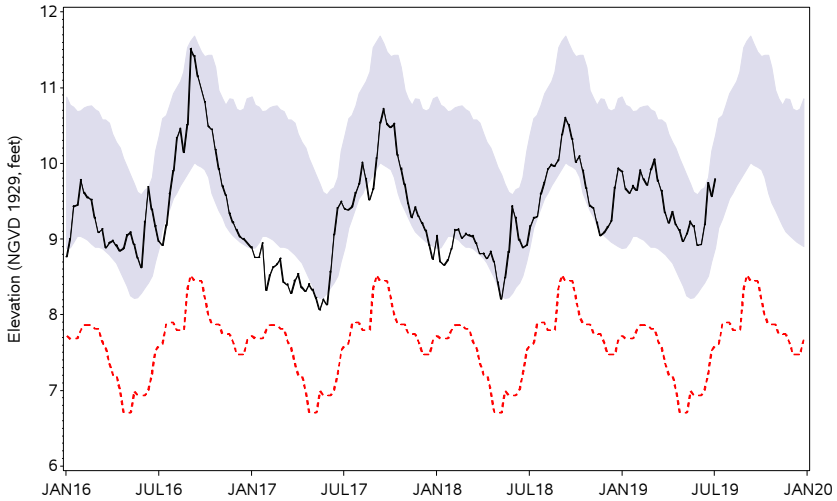
Bexley Well 2
Central Region



Hillsborough St Park Deep
Central Region



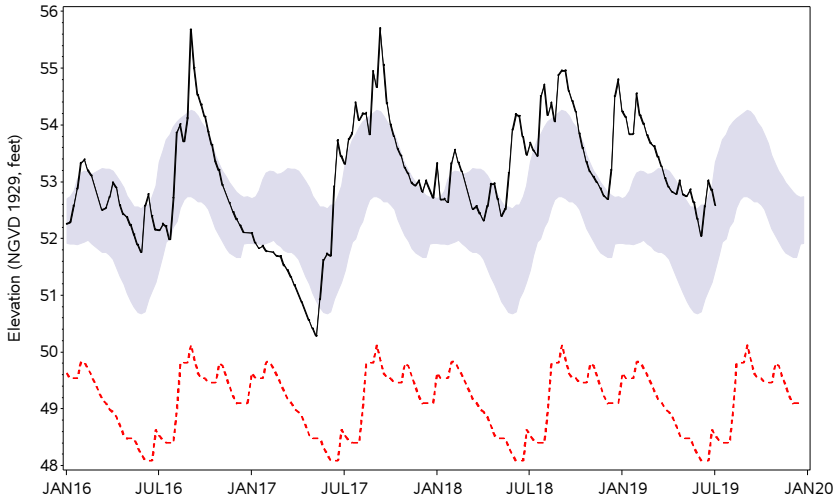
Pinellas 665
Central Region



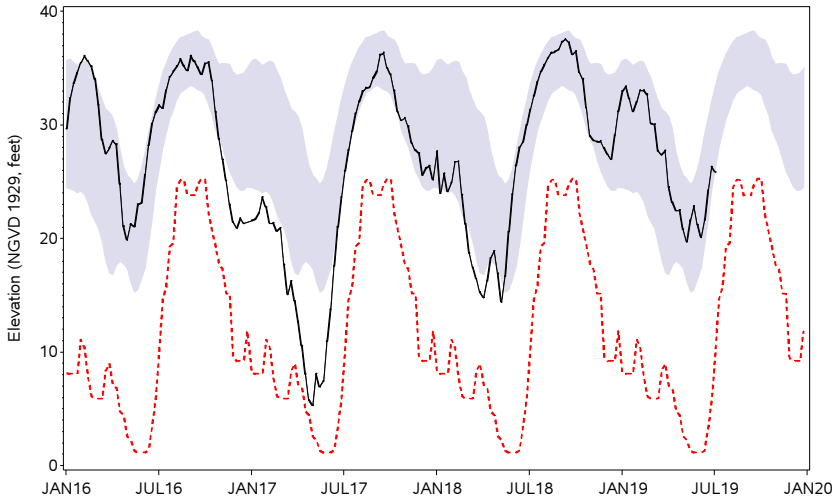
Average Weekly Elevation POR Weekly Low Normal Range

HYDROGRAPHS OF REPRESENTATIVE INTERMEDIATE AND FLORIDAN AQUIFER WELLS
JANUARY 2016 TO JUNE 2019

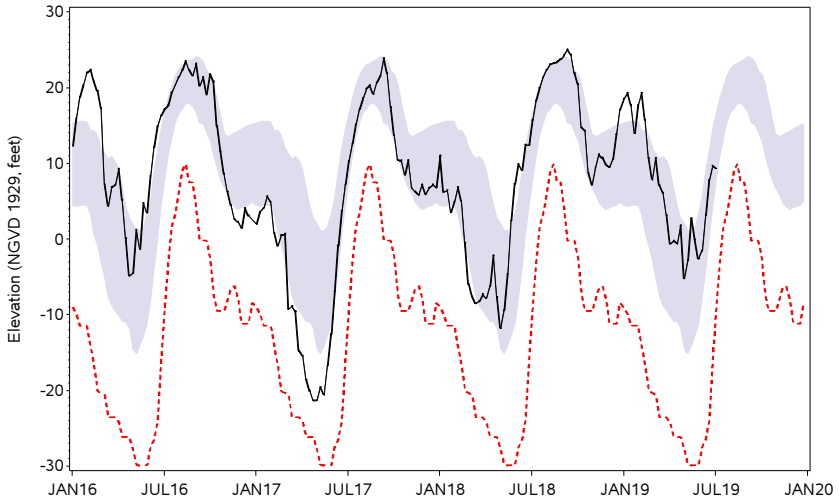
SR 52 Deep (West) near Fivay
Central Region



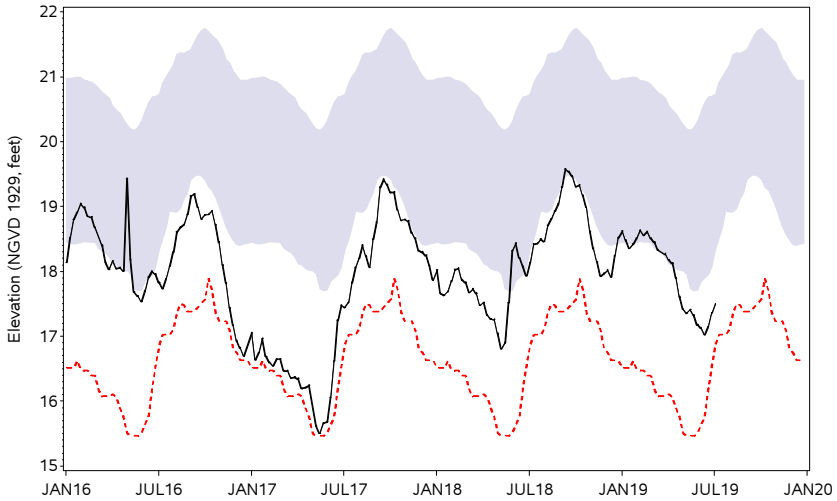
Edgeville 3 Deep
Southern Region



Kibler Deep
Southern Region



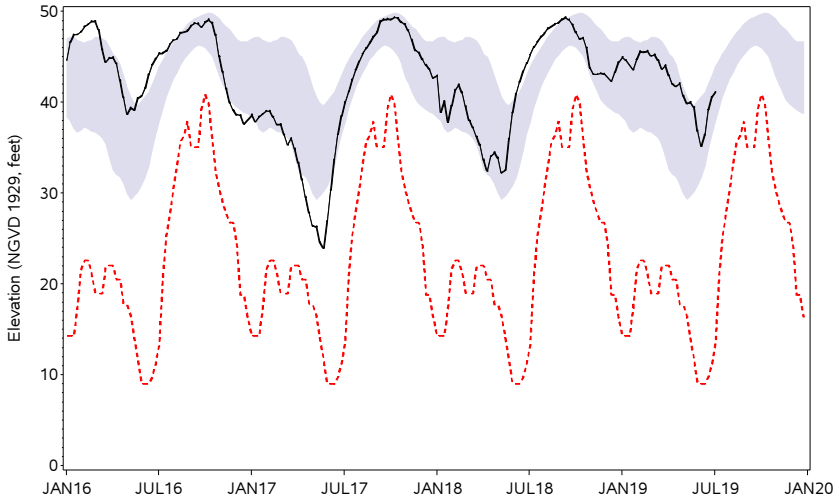
Manasota 14 Deep
Southern Region



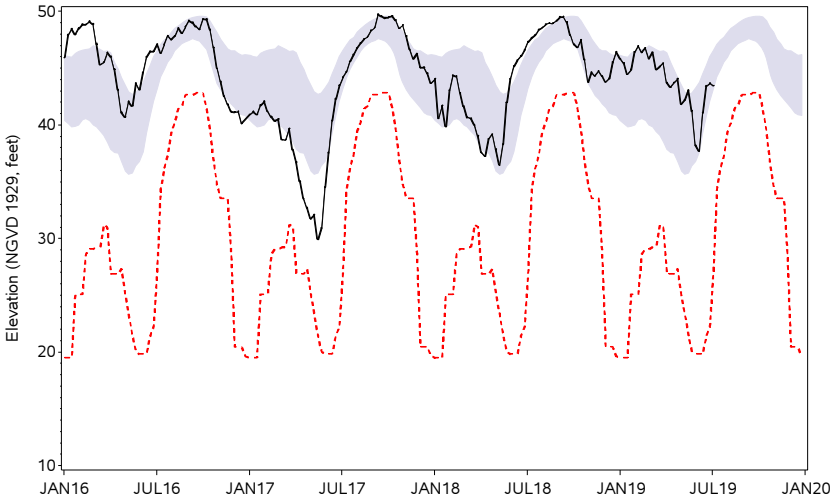
Average Weekly Elevation POR Weekly Low Normal Range

HYDROGRAPHS OF REPRESENTATIVE INTERMEDIATE AND FLORIDAN AQUIFER WELLS
JANUARY 2016 TO JUNE 2019

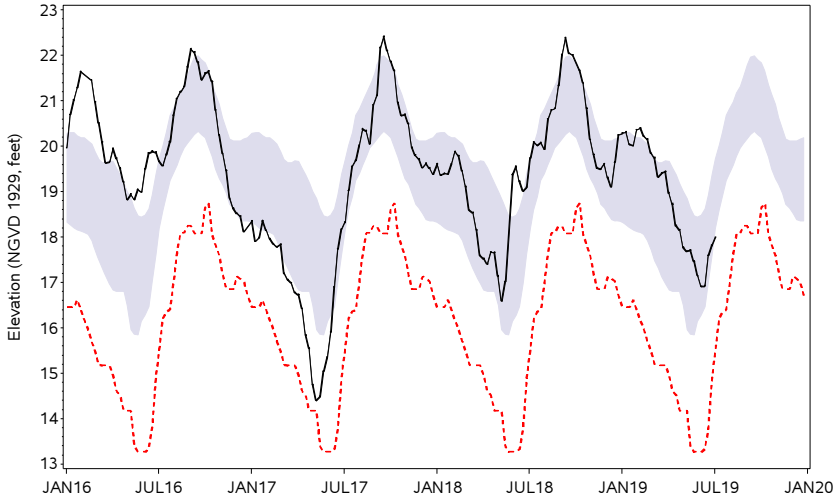
Marshall Deep
Southern Region



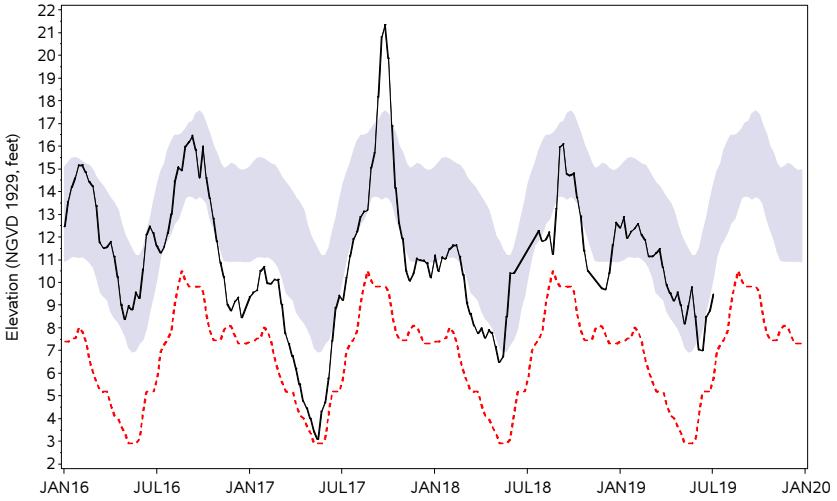
ROMP 26 Suwannee/Avon Park
Southern Region



ROMP TR 5-1 Suwannee
Southern Region



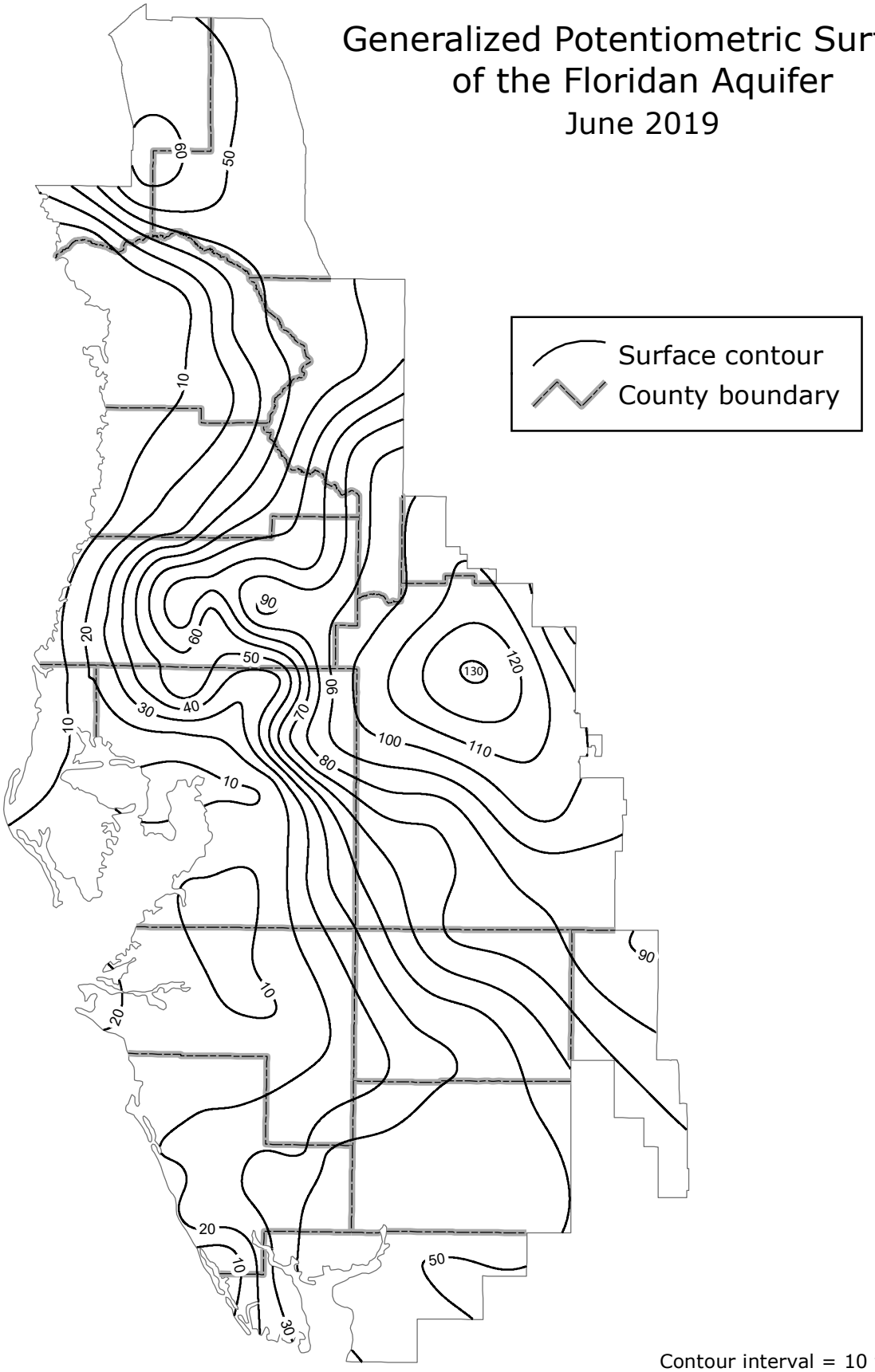
Romp TR SA-1
Southern Region



Average Weekly Elevation POR Weekly Low Normal Range

Generalized Potentiometric Surface of the Floridan Aquifer

June 2019

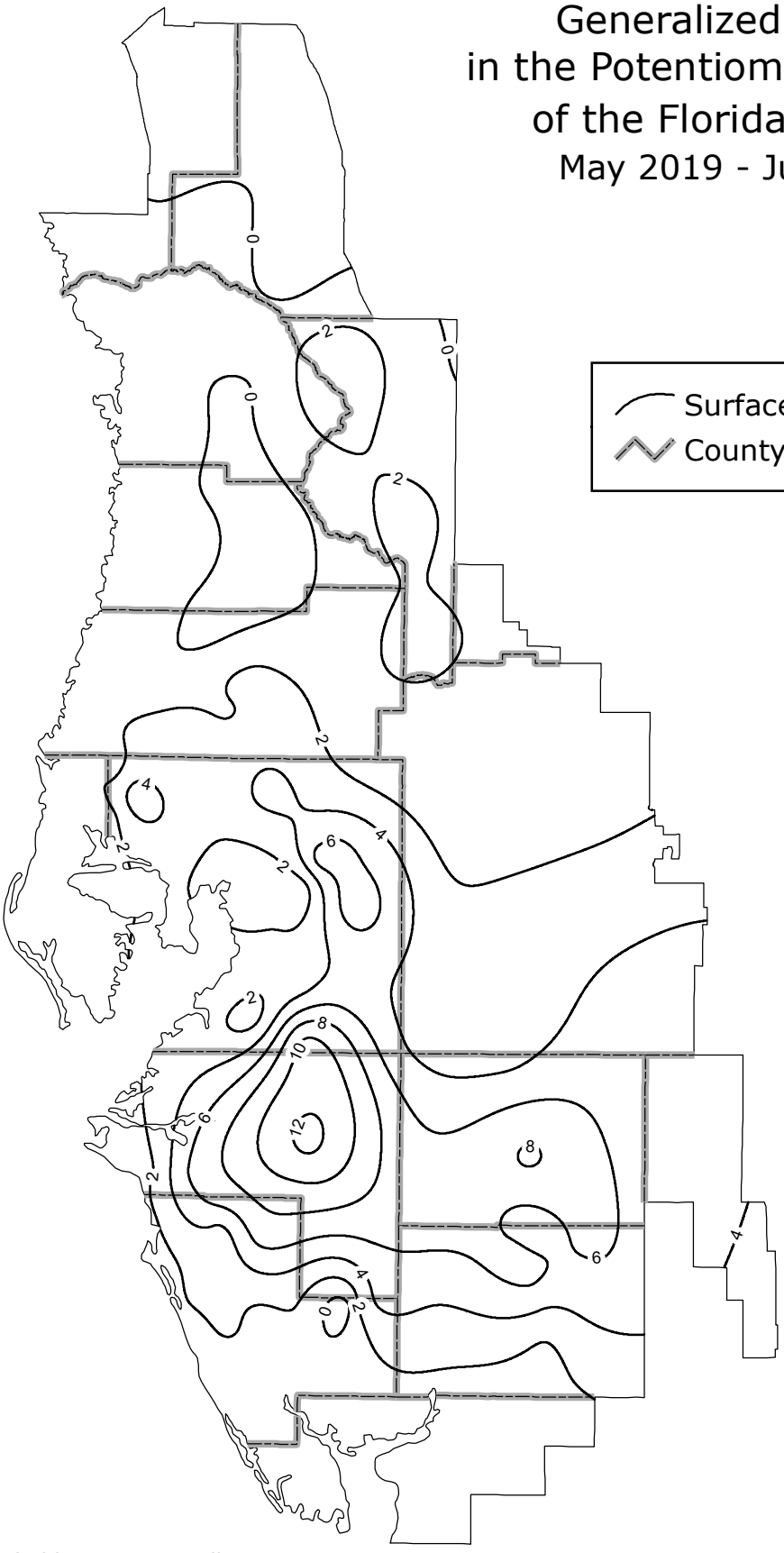


Compiled by M.L. Crowell

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

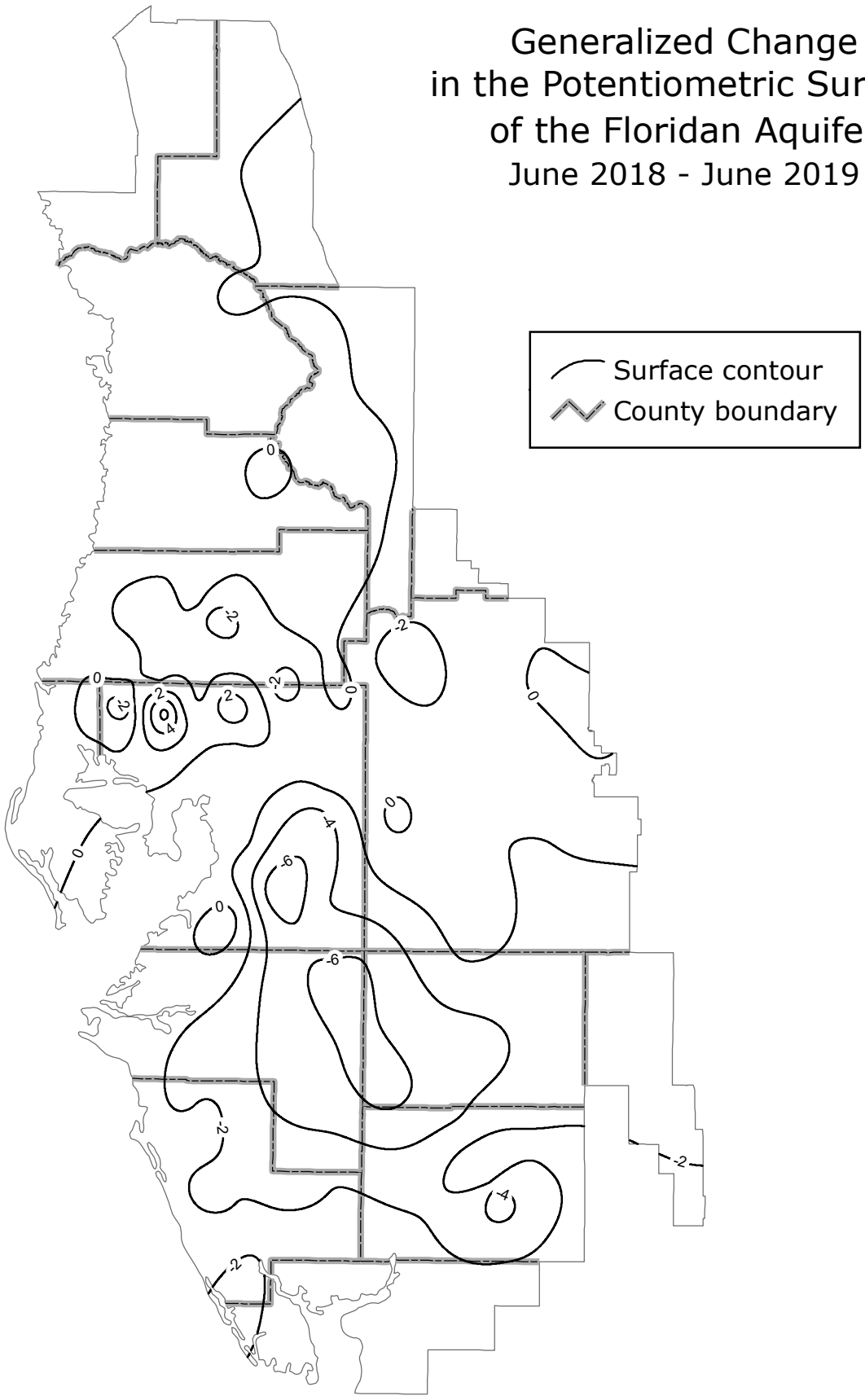
Generalized Change in the Potentiometric Surface of the Floridan Aquifer

May 2019 - June 2019



Compiled by M.L. Crowell

Contour interval = 2 feet


Generalized Change
in the Potentiometric Surface
of the Floridan Aquifer
June 2018 - June 2019
Surface contour
County boundary
0
-2
-4
-6
Compiled by M.L. Crowell
Contour interval = 3 feet

Public Supply Wellfields

Water levels are measured in 21 monitor wells (9 surficial, 12 intermediate and Floridan aquifer wells) located at nine public supply wellfields in the District. Thirteen of the 21 monitor wells have water levels measured monthly, two biweekly, and six weekly. Monthly data are tabulated to compare recent water levels to historical means.

In June, monthly analysis indicates that average water levels increased in 6 of the 12 intermediate and Floridan wells and in 6 of the 9 surficial wells. Average water levels measured in the intermediate and Floridan wells increased 1.33 feet, while levels measured in surficial wells increased 0.73 foot.

During June, annual analysis indicates average water levels in 12 of the 12 intermediate and Floridan wells and 9 of the 9 surficial wells were above last year's levels. Water levels measured in the intermediate and Floridan wells averaged 1.68 feet above last year's levels, while surficial water levels averaged 0.84 foot above June 2018 levels.

For June, average water levels in all 12 intermediate and Floridan wells and all 9 surficial wells were above the low normal level, compared to historical monthly levels. Water levels measured in the intermediate and Floridan wells averaged 9.26 feet above the low normal level, while levels in the surficial wells averaged 6.75 feet above the low normal level.

SUMMARY OF GROUNDWATER LEVELS IN REPRESENTATIVE WELLFIELD WELLS, JUNE 2019

INT/FLORIDAN WELLS	*JUN 2019 Elev*	*MAY 2019 Elev*	*JUN 2018 Elev*	*Change From MAY 2019*	*Change From JUN 2018*	*JUN Historical Low Normal*	*JUN Historical High Normal*	*Departure From Low Normal*	*Period of Record Low*	*Record Low Date*	*Period of Record High*	*Record High Date*
Cosme-Odessa Cosme No. 3	24.99	24.01	27.51	0.98	-2.52	20.99	26.02	4.00	11.58	JUN2000	33.84	AUG2012
Cross Bar WRW	51.35	51.86	50.54	-0.51	0.81	39.32	50.24	12.03	33.94	JAN1994	61.65	AUG1984
Cypress Crk TMR-1 Deep	60.73	60.83	65.36	-0.10	-4.62	48.74	59.49	11.99	36.93	FEB2001	70.87	JUN1976
Cypress Crk TMR-3 Deep	59.54	59.84	62.65	-0.30	-3.10	45.72	57.42	13.82	34.22	FEB2001	68.74	JUL1976
Eldridge-Wilde 11 Deep	20.46	19.19	21.22	1.27	-0.76	9.29	17.66	11.17	0.31	SEP1990	64.70	NOV2009
Eldridge-Wilde 2S	19.22	19.56	20.90	-0.34	-1.68	7.95	17.43	11.27	-1.05	JUN2000	25.44	SEP2013
Morris Bridge 3A Deep	32.28	26.61	31.85	5.67	0.43	24.13	29.66	8.15	17.02	MAY2009	42.53	AUG2013
Section 21 Hills 13 Deep	43.09	41.91	38.99	1.18	4.10	33.69	44.58	9.40	21.54	JUN2002	52.08	JUL1944
South Pasco 42	46.74	47.66	48.17	-0.91	-1.43	39.52	47.02	7.22	27.98	MAY2002	58.65	SEP2017
South Pasco SR 54 Deep	50.53	51.03	51.99	-0.50	-1.46	43.91	51.53	6.62	33.49	MAY2002	59.26	AUG2012
Starkey Regional	34.64	34.36	34.98	0.29	-0.34	28.84	33.75	5.80	25.03	JUN2000	38.37	AUG2015
Verna 08	11.74	2.57	14.52	9.17	-2.78	2.06	12.56	9.68	-24.32	MAY1989	26.68	FEB1998
SURFICIAL WELLS												
Cosme-Odessa IC-6	36.91	36.41	37.29	0.49	-0.39	35.08	37.34	1.83	31.91	JUL1973	42.95	AUG2015
Cross Bar SERW	69.34	68.23	70.51	1.11	-1.17	58.15	67.14	11.19	53.08	JUL1994	72.53	JUL1984
Cypress Crk TMR-1 Shallow	60.81	60.97	65.75	-0.16	-4.94	54.63	61.65	6.18	39.89	DEC2000	69.24	AUG2018
Cypress Crk TMR-3 Shallow	58.58	58.80	62.69	-0.22	-4.12	53.89	57.53	4.69	53.55	MAY1997	64.80	JUN2003
Eldridge-Wilde 11 Shallow	28.34	26.90	26.61	1.44	1.73	15.81	24.82	12.53	10.28	MAY1991	31.72	JUL2015
Morris Bridge 3A Shallow	35.36	31.58	34.64	3.78	0.72	29.59	34.06	5.77	24.86	MAY2009	39.20	DEC1997
Section 21 Hills 13 Shallow	50.78	50.43	50.63	0.35	0.15	39.60	50.32	11.18	33.81	MAY2001	53.82	AUG2012
South Pasco SR 54 Shallow	57.93	58.43	58.50	-0.50	-0.57	55.71	58.17	2.22	54.43	OCT1980	60.49	SEP1998
Starkey 707	30.58	30.28	30.29	0.30	0.29	25.42	29.71	5.16	22.70	JUN2000	34.18	AUG2015

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 Aquifer Resource Index (ARI) was created to provide information to the media, residents, local governments and other interested parties about current ground-water conditions and how they compare to historical records. The underlying purpose of this index is to provide the public with a gauge of ground-water conditions in their area, so they can develop an understanding of the severity and cycles of drought and recovery

This ARI report has been modified to now reflect 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 levels for this time of year were higher and half were lower than the current level.

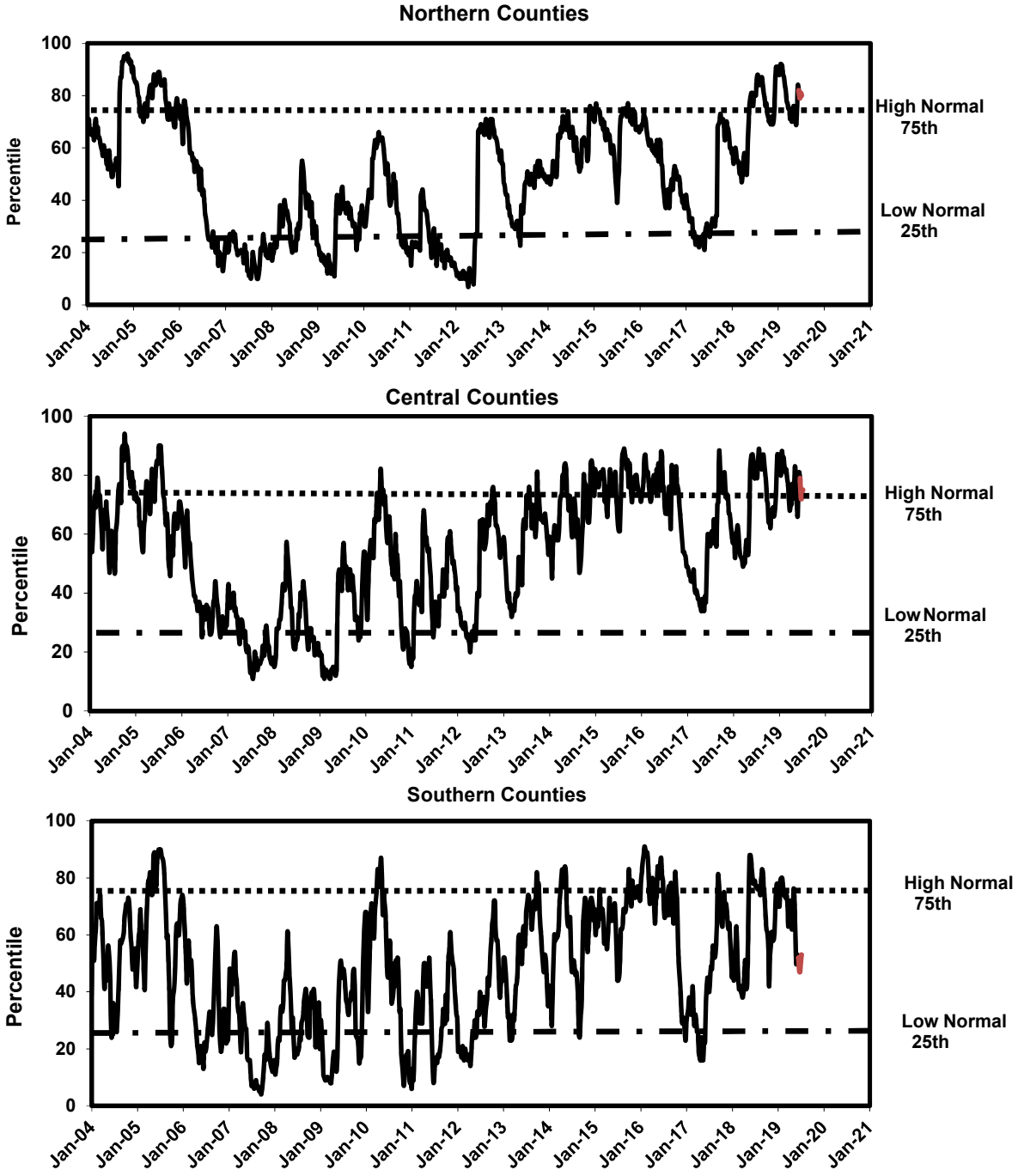
To determine the ARI percentile value for each geographic region (indicated below), the percentile values of the monitor wells located within that region are averaged. Monitor wells with an adequate and reliable period-of-record to calculate weekly percentiles were selected for the network. There are 20 wells located in the northern region, 32 wells located in the central region and 30 wells located in the southern region, that are currently used for determining the regional percentiles. A total of 82 wells District-wide are used for the ARI Network (see index map in Appendix).

Weekly Aquifer Resource Index Level (Percentile)

Report Date	Northern Region	Central Region	Southern Region
06/05/2019	69	65	50
06/12/2019	77	76	53
06/19/2019	84	81	53
06/26/2019	81	78	53
06/30/2019	79	72	46

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

AQUIFER RESOURCE INDEX*
June 2019



*Average Groundwater Level Relative to Low Normal, NGVD 29

Compiled By Hannah Kolb

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.

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 June, four of the seven reservoirs monitored for this report recorded water-level increases, compared to last month. The Evers, Hillsborough River, Peace River No. 1 and Shell Creek reservoirs posted water level increases of 0.33 foot, 1.59 feet, 1.10 feet and 0.30 foot, respectively, compared to last month. The Lake Manatee, Bill Young and Peace River No. 2 reservoirs posted water level decreases of 1.07, 2.92 and 3.70 feet, respectively, compared to last month.

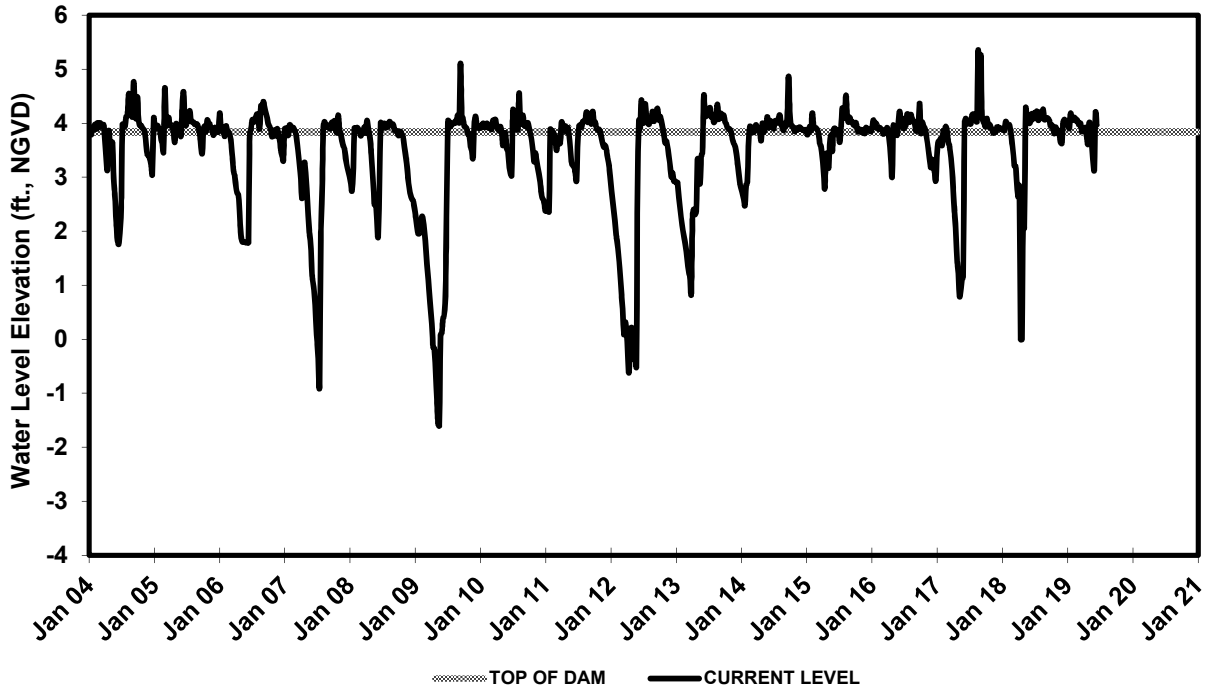
SUMMARY OF WATER LEVELS IN WATER SUPPLY RESERVOIRS (ELEVATION IN FEET, NGVD 29)

RESERVOIR	2019 May	2019 June	2018 June	Change from Prior Month	Change from Prior Year
Evers					
City of Bradenton	3.64	3.97	4.18	0.33	-0.21
Hillsborough					
City of Tampa	21.11	22.70	22.55	1.59	0.15
Lake Manatee					
Manatee County	39.04	37.97	38.11	-1.07	-0.14
C.W. Bill Young Regional					
Tampa Bay Water	131.78	128.86	126.99	-2.92	1.87
Peace River					
PRMRWSA Reservoir #1	24.30	25.40	24.60	1.10	0.80
PRMRWSA Reservoir #2	57.30	53.60	56.10	-3.70	-2.50
Shell Creek					
City of Punta Gorda	5.07	5.37	5.84	0.30	-0.47

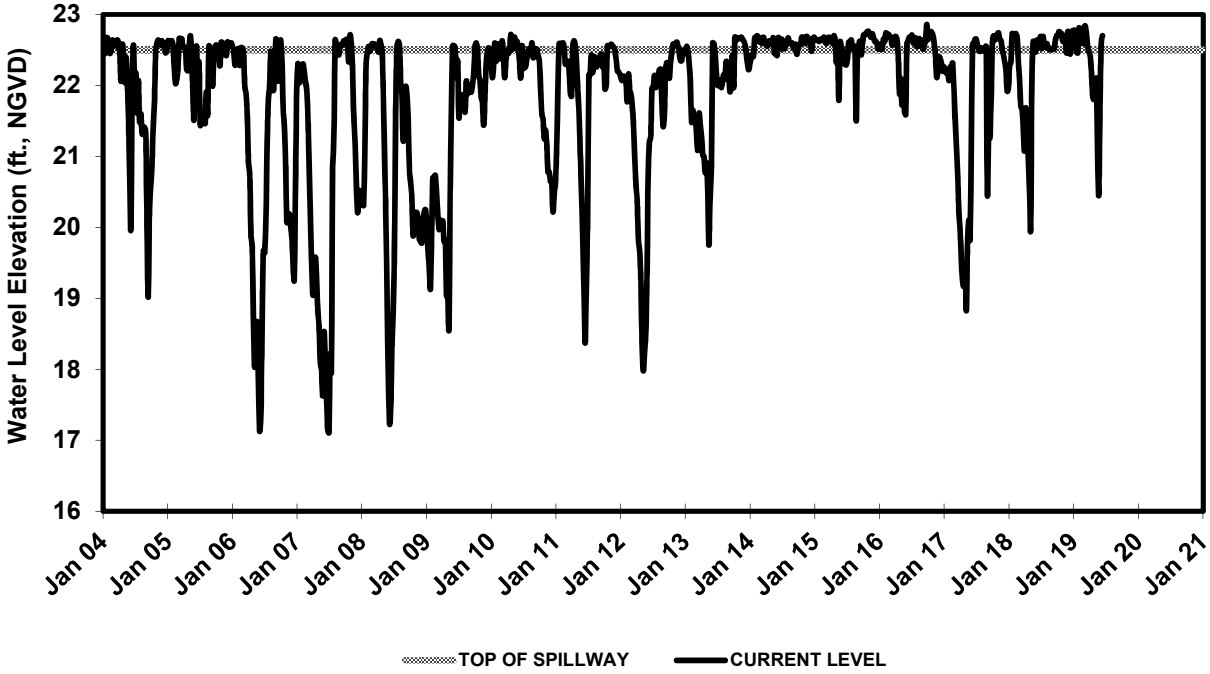
NGVD - National Geodetic Vertical Datum

Reported data are provisional and subject to revision.

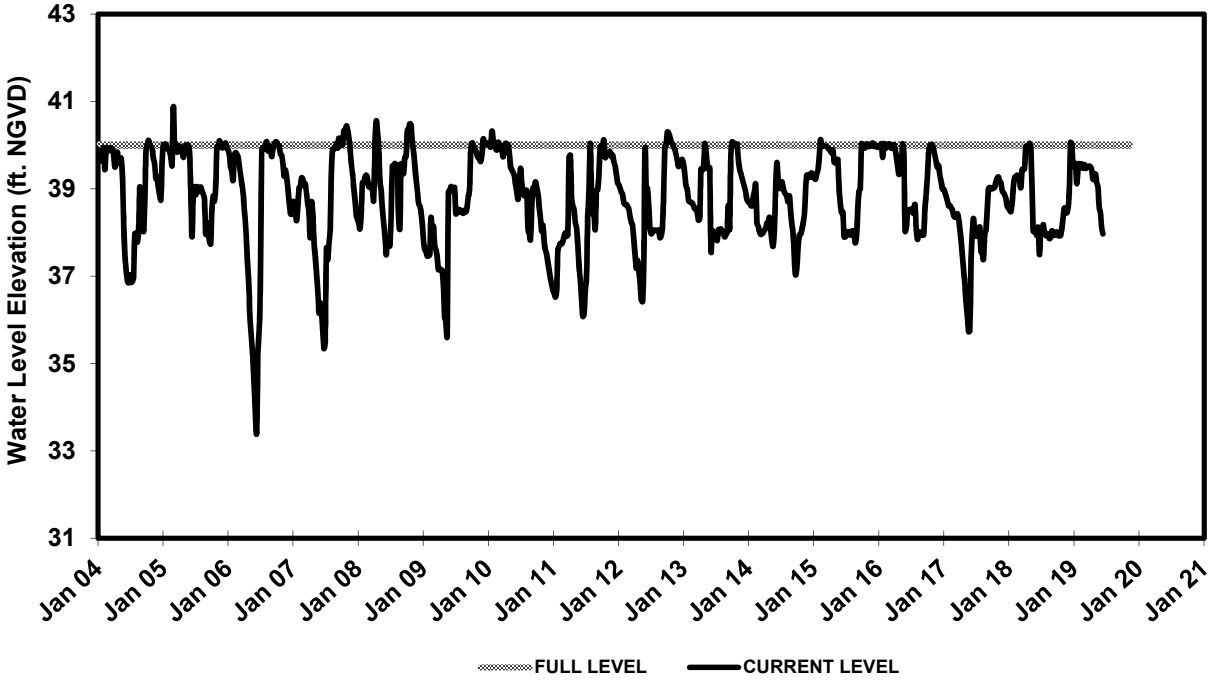
EVERS RESERVOIR
City of Bradenton



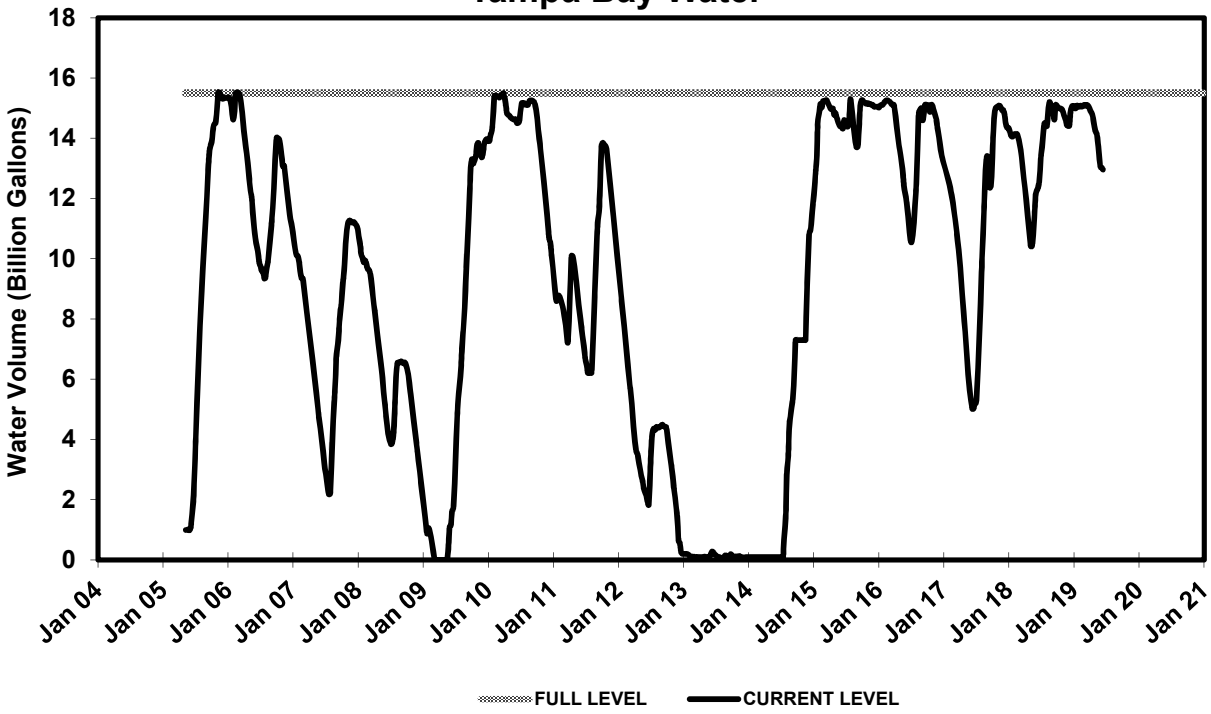
HILLSBOROUGH RESERVOIR
City of Tampa



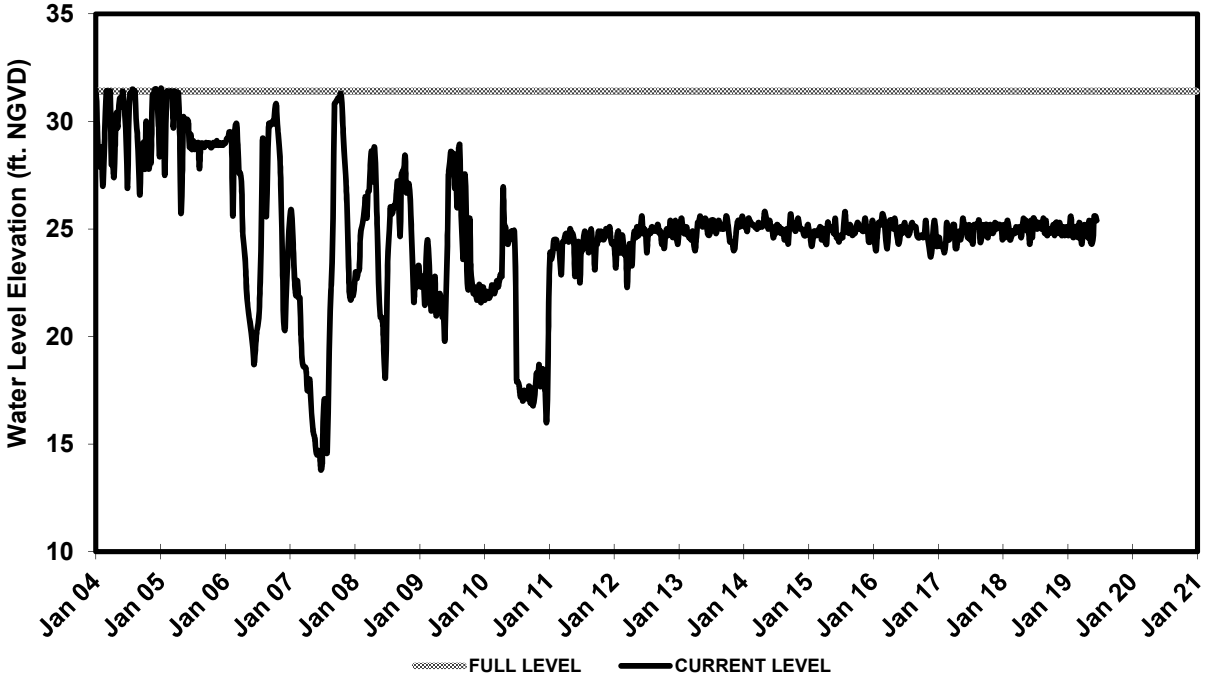
LAKE MANATEE RESERVOIR
Manatee County



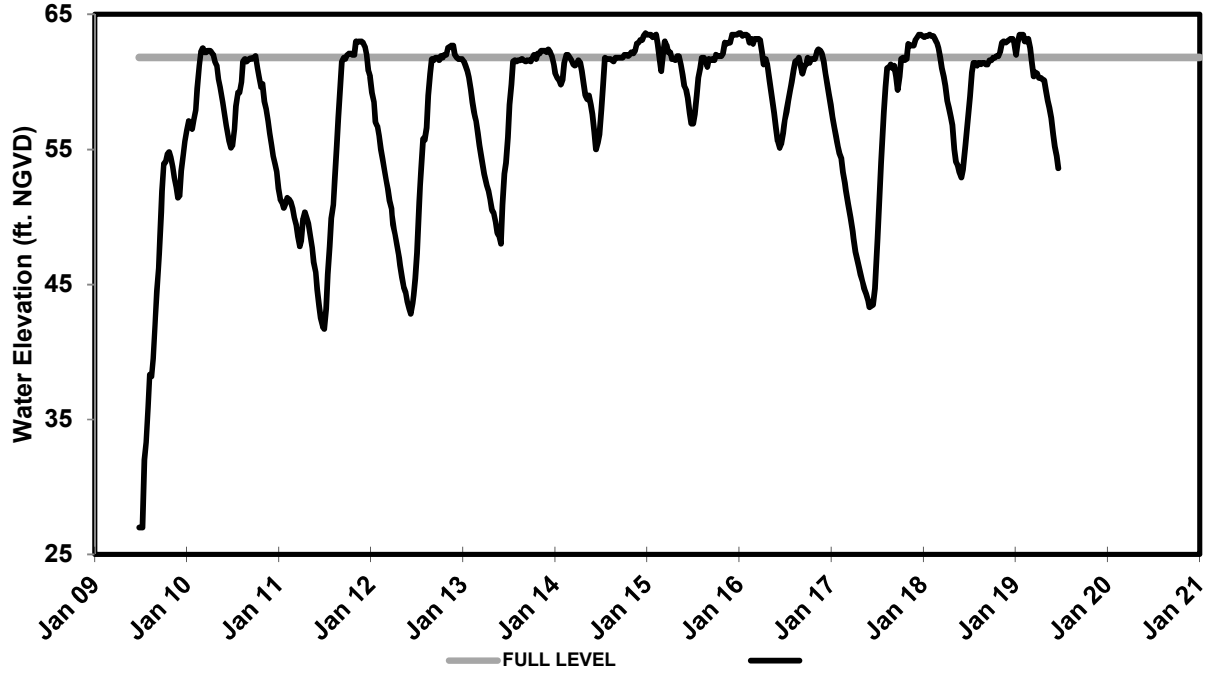
C.W. BILL YOUNG REGIONAL RESERVOIR
Tampa Bay Water

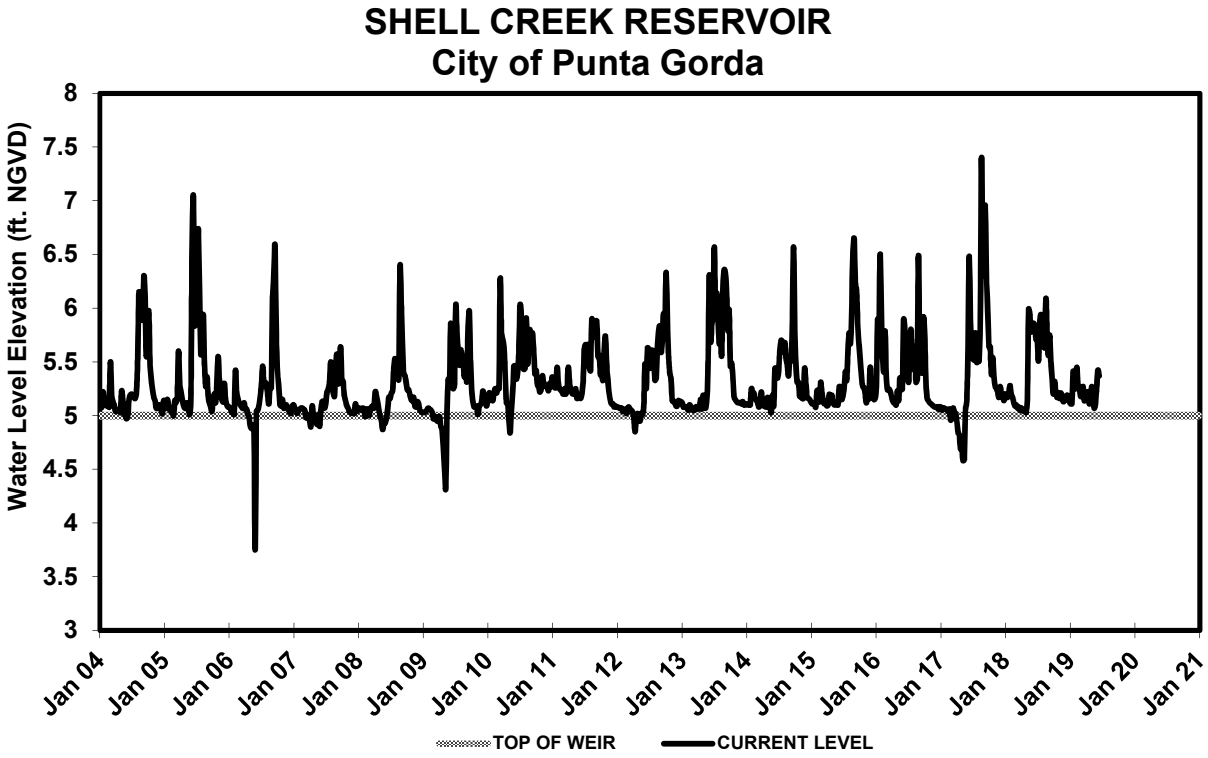


PEACE RIVER RESERVOIR No. 1
Peace/Manasota Reg. Water Supply



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




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

APPENDICES

Rainfall percentiles by interval and region, inches.

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

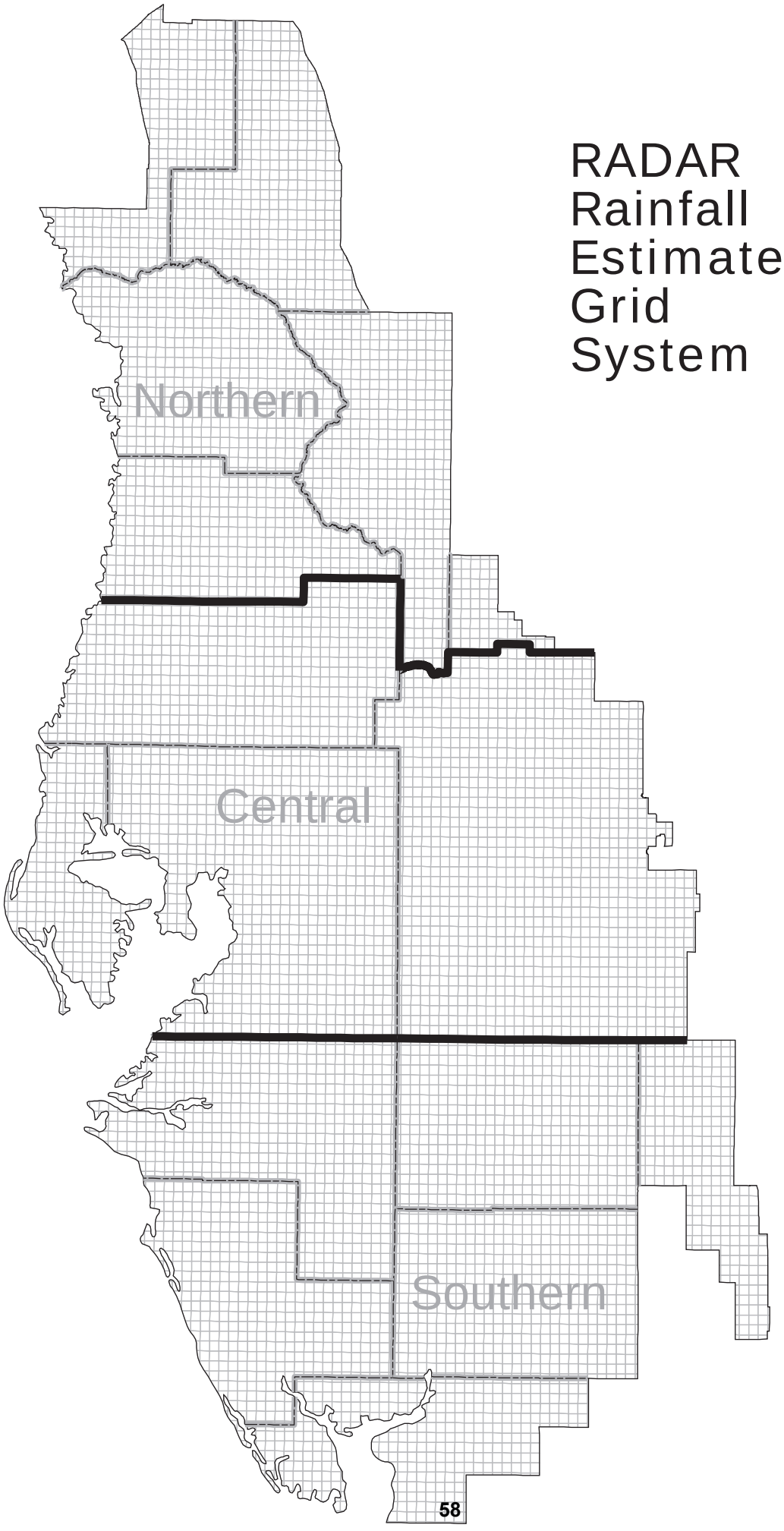
Rainfall percentiles by interval and region, inches (continued).

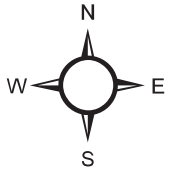
Rainfall Interval	Region	10TH Percentile (P10)	25th Percentile (P25)	50th Percentile (P50)	75th Percentile (P75)	90th Percentile (P90)
November total	*Northern*	0.38	0.71	1.63	2.88	4.56
November total	*Central*	0.25	0.47	1.42	2.82	4.33
November total	*Southern*	0.40	0.64	1.46	2.56	3.82
November total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

Rainfall characterization ranges

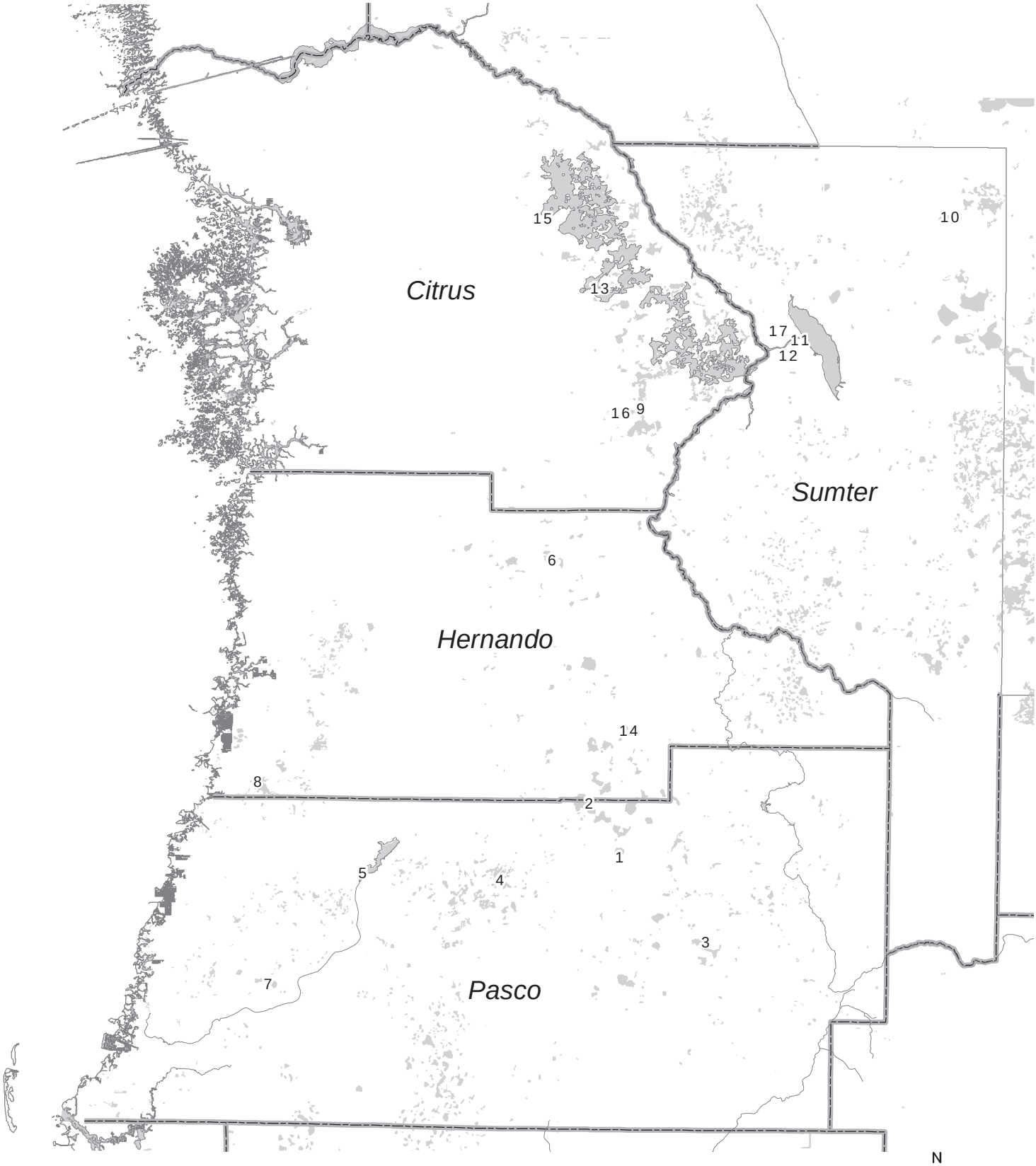
Characterization	Range	Corresponding Rainfall Percent of Normal (approximate)
Very dry	Less than the P10 rainfall	Less than 80 percent of normal
Drier than normal	P10 to P24 rainfall	80 to 90 percent of normal
Normal	P25 to P75 rainfall	90 to 110 percent of normal
Wetter than normal	P76 to P90 rainfall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

RADAR Rainfall Estimate Grid System

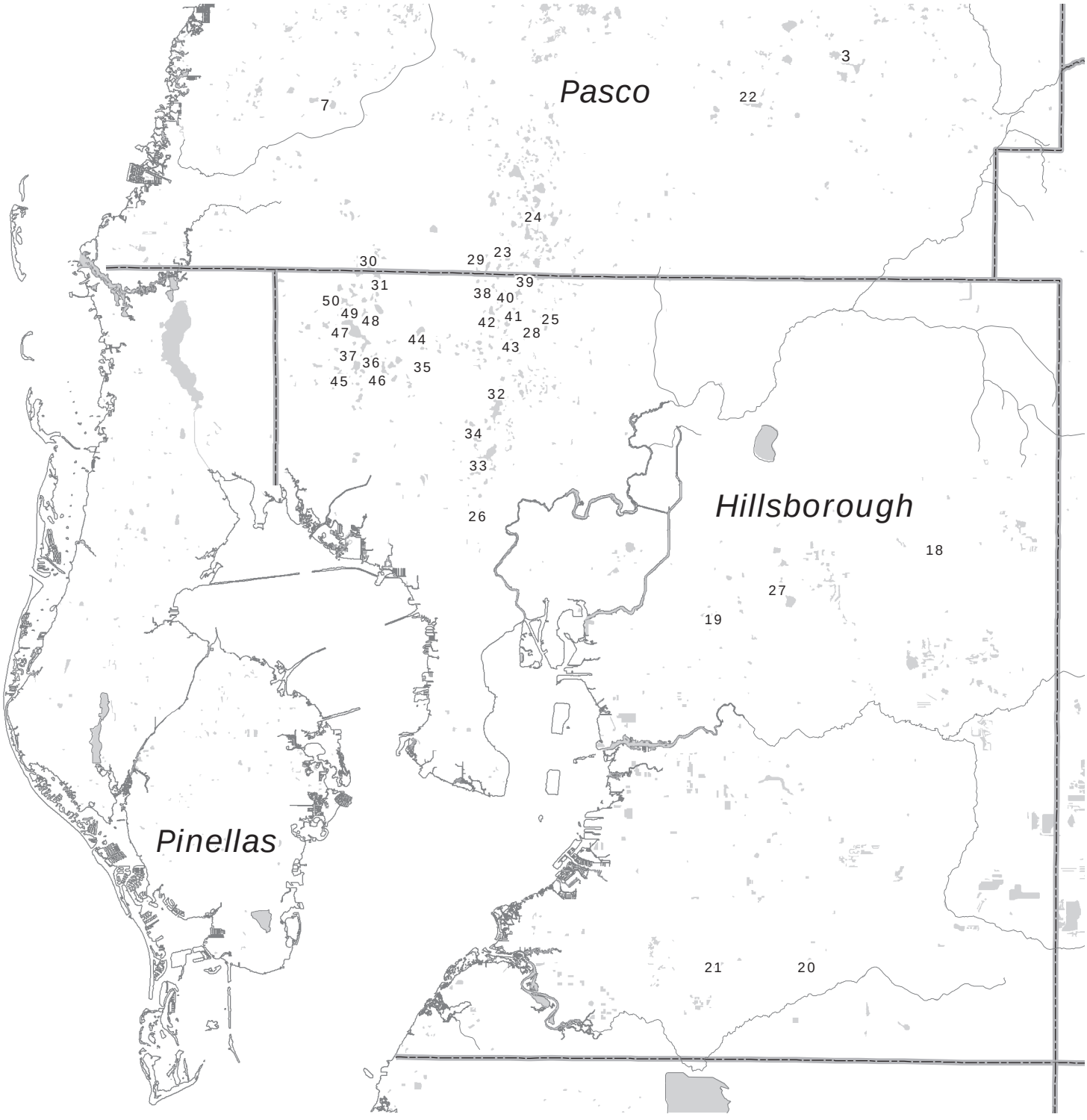




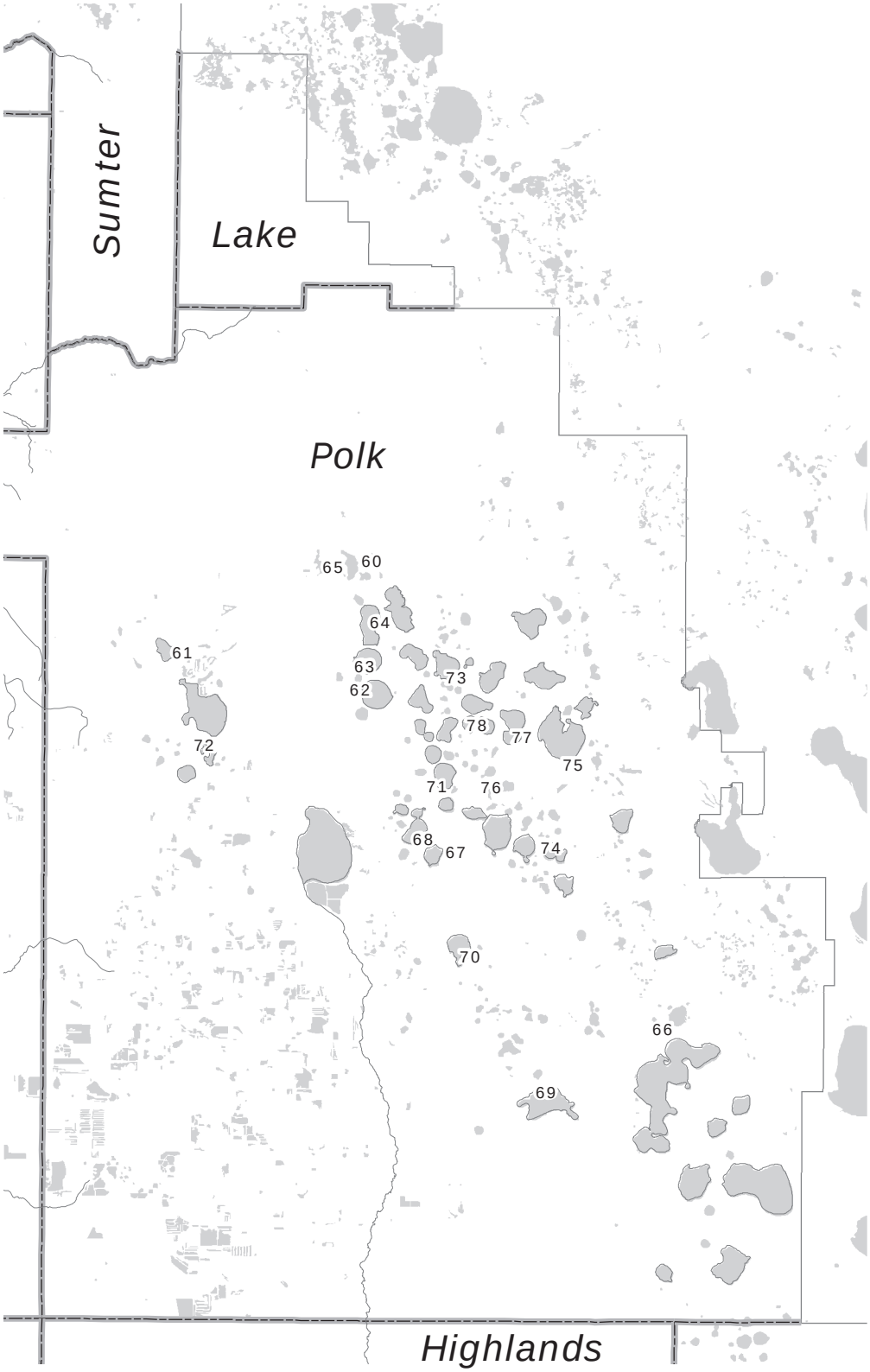
Selected Lake Monitoring Stations
Northern Region



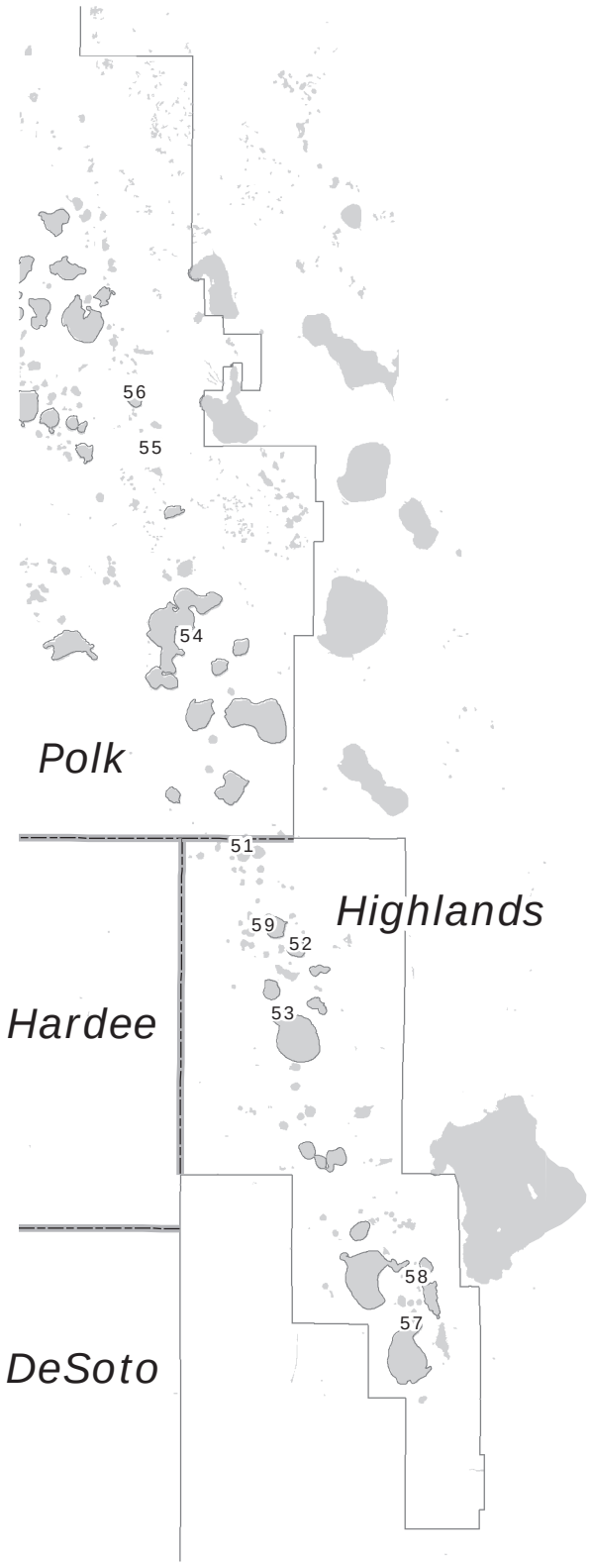
Selected Lake Monitoring Stations
Tampa Bay Region

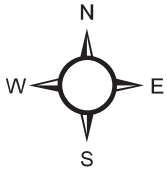


Selected Lake Monitoring Stations
Polk Uplands Region



Selected Lake Monitoring Stations
Lake Wales Ridge Region





Selected Lake Monitoring Stations

Northern Region

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

Tampa Bay Region

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

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

Selected Lake Monitoring Stations

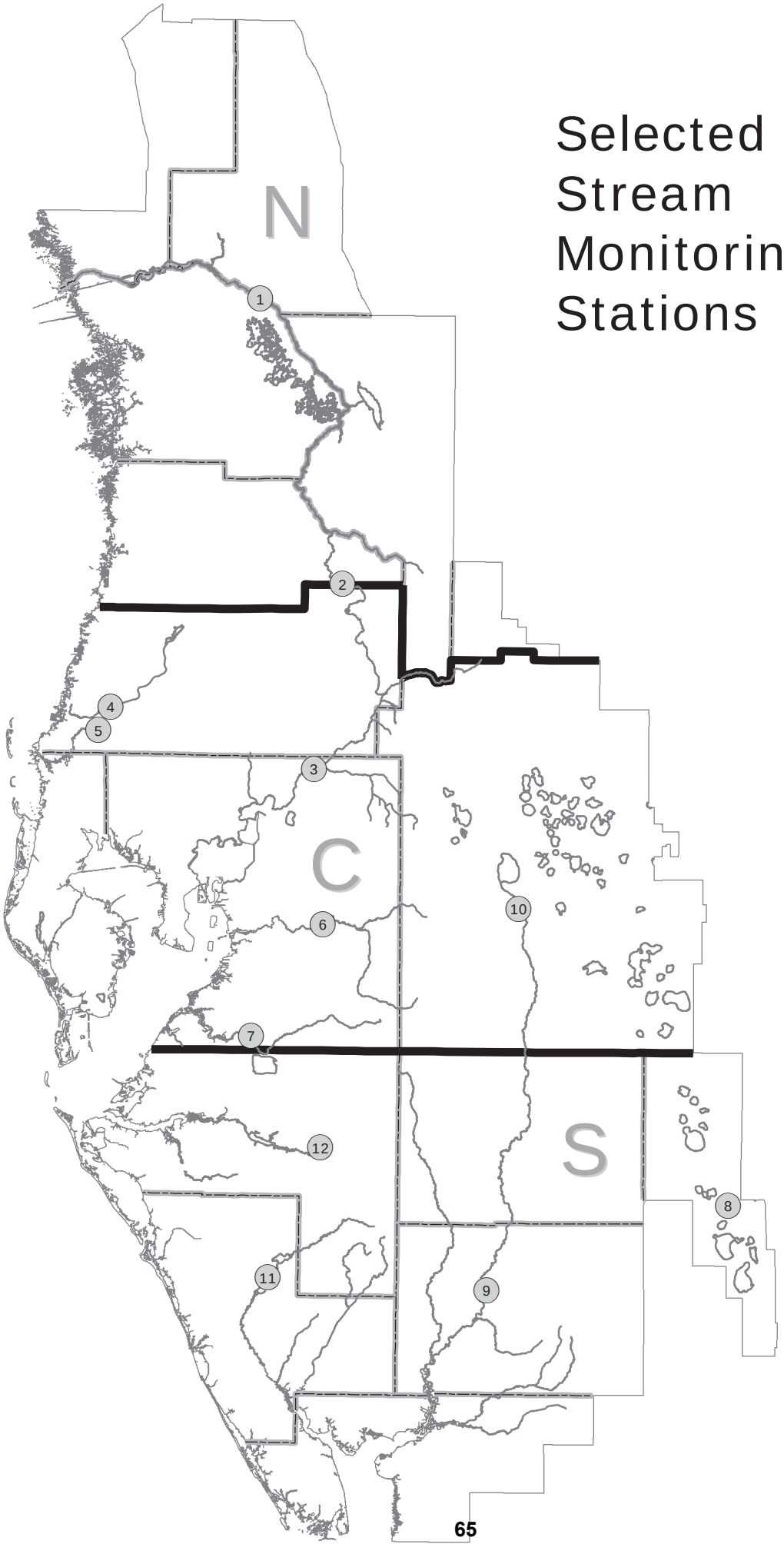
Lake Wales Ridge Region

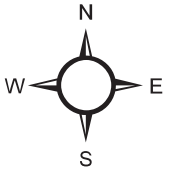
Map ID	Site Name
51	Trout Lake
52	Lake Letta
53	Lake Jackson at Sebring
54	Crooked Lake near Babson Park
55	Lake Starr
56	Lake Annie
57	Lake Placid
58	Lake Clay
59	Lake Lotela

Polk Uplands Region

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

Selected Stream Monitoring Stations





02/2009

Selected Stream Monitoring Stations

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

STREAM MONITORING STATIONS

WITHLACOOCHEE RIVER (Northern Region)

Total length:	157 miles
Headwaters:	NW Polk and southern Sumter Counties
Elevation:	135 feet
Tributaries:	Little Withlacoochee, Big Gant Canal, Jumper Creek, Shady Brook, Outlet River of Lake Panasoffkee, Leslie Heifner Canal, Orange State Canal, Tsala Apopka Outfall Canal and Rainbow Springs.
Mouth:	Gulf of Mexico, Citrus County
Average fall:	0.9 feet/mile
Drainage area:	2000 square miles

Holder Station

County:	Marion
Period-of-record:	1928
Location:	38 miles upstream from mouth
Avg daily discharge:	1036.3 cfs
Runoff per year:	10.36 inches
Max of monthly avg discharge:	7096.3 cfs in 04/1960
Min of monthly avg discharge:	111.8 cfs in 07/1992
Drainage area:	1825 square miles

Trilby Station

County:	Hernando
Period-of-record:	1928
Location:	93 miles upstream from mouth
Avg daily discharge:	336.3 cfs
Runoff per year:	6.73 inches
Max of monthly avg discharge:	4254.7 cfs in 09/1933
Min of monthly avg discharge:	6.1 cfs in 07/1992
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
Average fall:	2.4 feet/mile
Drainage area:	113 square miles

Elfers Station

County:	Pasco
Period-of-record:	1946
Location:	16 miles upstream from mouth
Avg daily discharge:	65.1 cfs
Runoff per year:	12.20 inches
Max of monthly avg discharge:	633.8 cfs in 09/1988
Min of monthly avg discharge:	1.4 cfs in 05/1981
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
Average fall:	1.4 feet/mile
Drainage area:	690 square miles

Zephyrhills Station

County:	Hillsborough
Period-of-record:	1939
Location:	40 miles upstream from mouth
Avg daily discharge:	244.2 cfs
Runoff per year:	15.05 inches
Max of monthly avg discharge:	2284.5 cfs in 12/1997
Min of monthly avg discharge:	47.1 cfs in 05/1994
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
Average fall:	2.9 feet/mile
Drainage area:	191 square miles

New Port Richey Station:

County:	Pasco
Period-of-record:	1963
Location:	10.5 miles upstream from mouth
Avg daily discharge:	27.9 cfs
Runoff per year:	2.11 inches
Max of monthly avg discharge:	329.4 cfs in 09/1988
Min of monthly avg discharge:	0.0 cfs
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
Average fall:	1.5 feet/mile
Drainage area:	420 square miles

Lithia Station:

County:	Hillsborough
Period-of-record:	1932
Location:	16 miles upstream from mouth
Avg daily discharge:	339.7 cfs
Runoff per year:	13.59 inches
Max of monthly avg discharge:	4185.4 cfs in 09/1933
Min of monthly avg discharge:	13.0 cfs in 05/1945
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
Average fall:	3.4 feet/mile
Drainage area:	225 square miles

Wimauma Station:

County:	Hillsborough
Period-of-record:	1939
Location:	15 miles upstream from mouth
Avg daily discharge:	171.4 cfs
Runoff per year:	15.68 inches
Max of monthly avg discharge:	1443.7 cfs in 07/1945
Min of monthly avg discharge:	3.8 cfs in 05/45
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
Average fall:	3.5 feet/mile
Drainage area:	143 square miles

DeSoto City Station:

County:	Highlands
Period-of-record:	1946
Location:	4.9 miles upstream of mouth
Avg daily discharge:	74.2 cfs
Runoff per year:	8.90 inches
Max of monthly avg discharge:	769.9 cfs in 09/1960
Min of monthly avg discharge:	1.1 cfs in 05/56
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
Average fall:	2.9 feet/mile
Drainage area:	330 square miles

Myakka Head Station:

County:	Manatee
Period-of-record:	1966
Location:	36 miles upstream from mouth
Avg daily discharge:	69.6 cfs
Runoff per year:	14.62 inches
Max of monthly avg discharge:	529.7 cfs in 09/1994
Min of monthly avg discharge:	0.5 cfs in 04/75
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
Average fall:	1.9 feet/mile
Drainage area:	540 square miles

Sarasota Station:

County:	Sarasota
Period-of-record:	1936
Location:	36 miles upstream from mouth
Avg daily discharge:	250.5 cfs
Runoff per year:	15.03 inches
Max of monthly avg discharge:	2467.2 cfs in 09/1947
Min of monthly avg discharge:	0.0 cfs numerous times
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
Average fall:	1 feet/mile
Drainage area:	2300 square miles

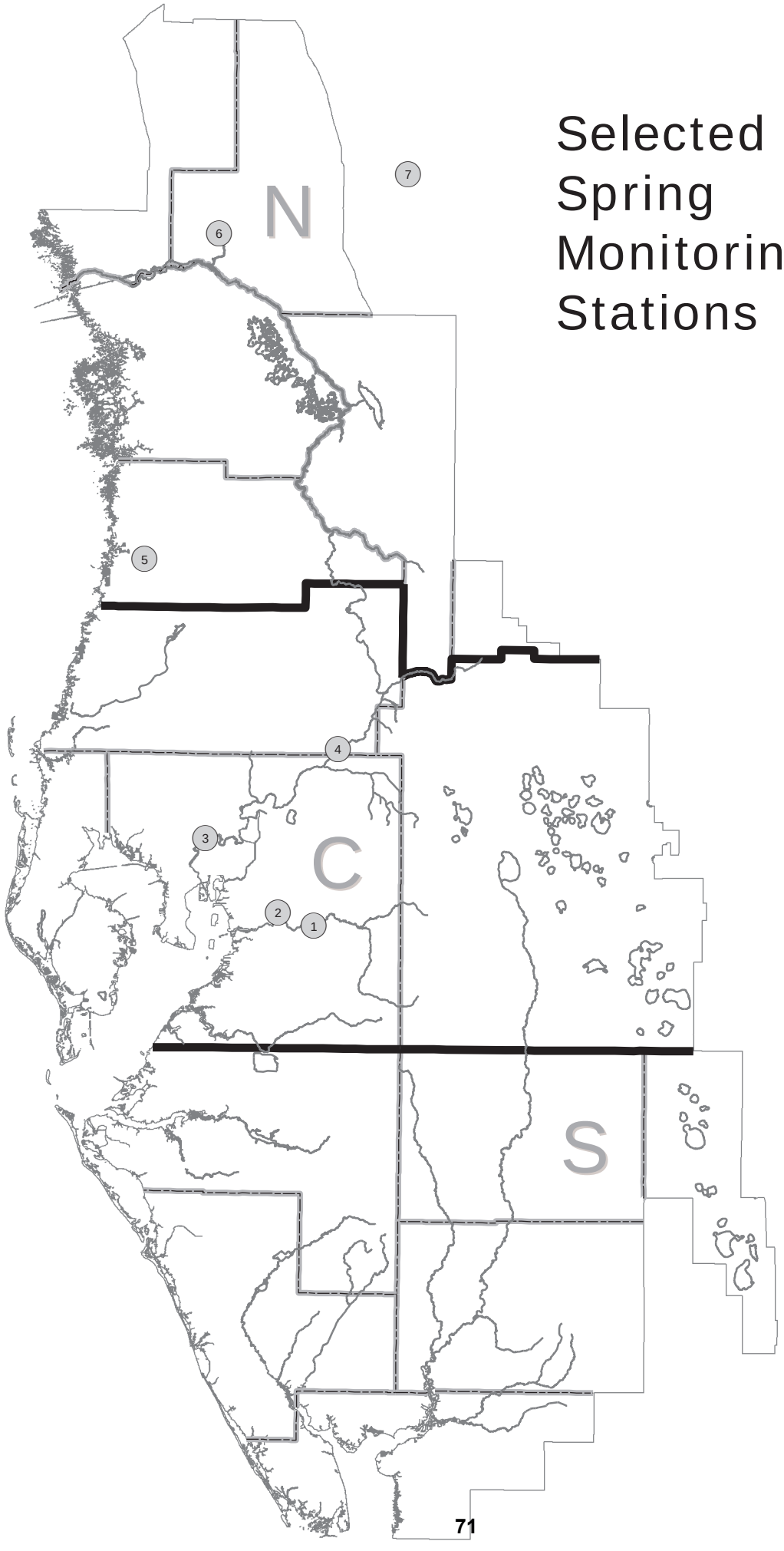
Arcadia Station (Southern Region):

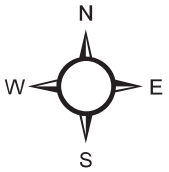
County:	Desoto
Period-of-record:	1931
Location:	36 miles upstream from mouth
Avg daily discharge:	1078.9 cfs
Runoff per year:	10.79 inches
Max of monthly avg discharge:	9876.0 cfs in 09/1933
Min of monthly avg discharge:	51.6 cfs 05/85
Drainage area:	1367 square miles

Bartow Station (Central Region):

County:	Polk
Period-of-record:	1939
Location:	105 miles upstream from mouth
Avg daily discharge:	224.1 cfs
Runoff per year:	6.72 inches
Max of monthly avg discharge:	2261.5 cfs in 09/1960
Min of monthly avg discharge:	6.4 cfs 05/90
Drainage area:	390 square miles

Selected Spring Monitoring Stations





02/2009

Selected Spring Monitoring Stations

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

SPRINGS MONITORING STATIONS

RAINBOW SPRINGS (Northern Region)

County:	Marion
Basin:	Withlacoochee River
Magnitude:	1st
Discharge measurement location:	5 mi downstream from head of springs
Discharge contributes to:	Rainbow River, Withlacoochee River
Public Access:	Yes
Period-of-record:	1965
Gage:	Non-recording gage
Maximum daily mean:	1061 cfs in 09/1988
Minimum daily mean:	489 cfs in 06/2000

SILVER SPRINGS (Northern Region)

County:	Marion
Basin:	Ocklawaha River
Magnitude:	1st
Discharge measurement location:	4 to 5 mi downstream from head of springs
Discharge contributes to:	Silver Springs River, Ocklawaha River, St. Johns River
Public Access:	Yes
Period-of-record:	1932
Gage:	Water-stage recorder
Maximum daily mean:	1290 cfs in 10/1960
Minimum daily mean:	432 cfs in 07/2000

WEEKI WACHEE SPRINGS (Northern Region)

County:	Hernando
Basin:	Coastal Rivers
Magnitude:	1st
Discharge measurement location:	1 mi downstream from head of springs
Discharge contributes to:	Weeki Wachee River
Public Access:	Yes
Period-of-record:	1993
Gage:	Water-stage
Maximum daily mean:	229 cfs in 03/1998
Minimum daily mean:	101 cfs in 06/1994

CRYSTAL SPRINGS (Central Region)

County:	Pasco
Basin:	Hillsborough River
Magnitude:	2nd
Discharge measurement location:	Difference between discharge measurements of Hillsborough River made upstream from and downstream from Crystal Springs
Discharge contributes to:	Hillsborough River
Public Access:	No
Period-of-record:	1923
Gage:	Non-recording gage
Maximum daily mean:	147 cfs in 07/1941
Minimum daily mean:	22 cfs in 08/1986

SULPHUR SPRINGS (Central Region)

County:	Hillsborough
Basin:	Hillsborough River
Magnitude:	2nd
Discharge measurement location:	300 ft downstream from gage
Discharge contributes to:	Hillsborough River
Public Access:	Yes
Period-of-record:	1956
Gage:	Water-stage recorder
Maximum daily mean:	145 cfs in 03/1960
Minimum daily mean:	0 cfs for various days throughout the period-of-record

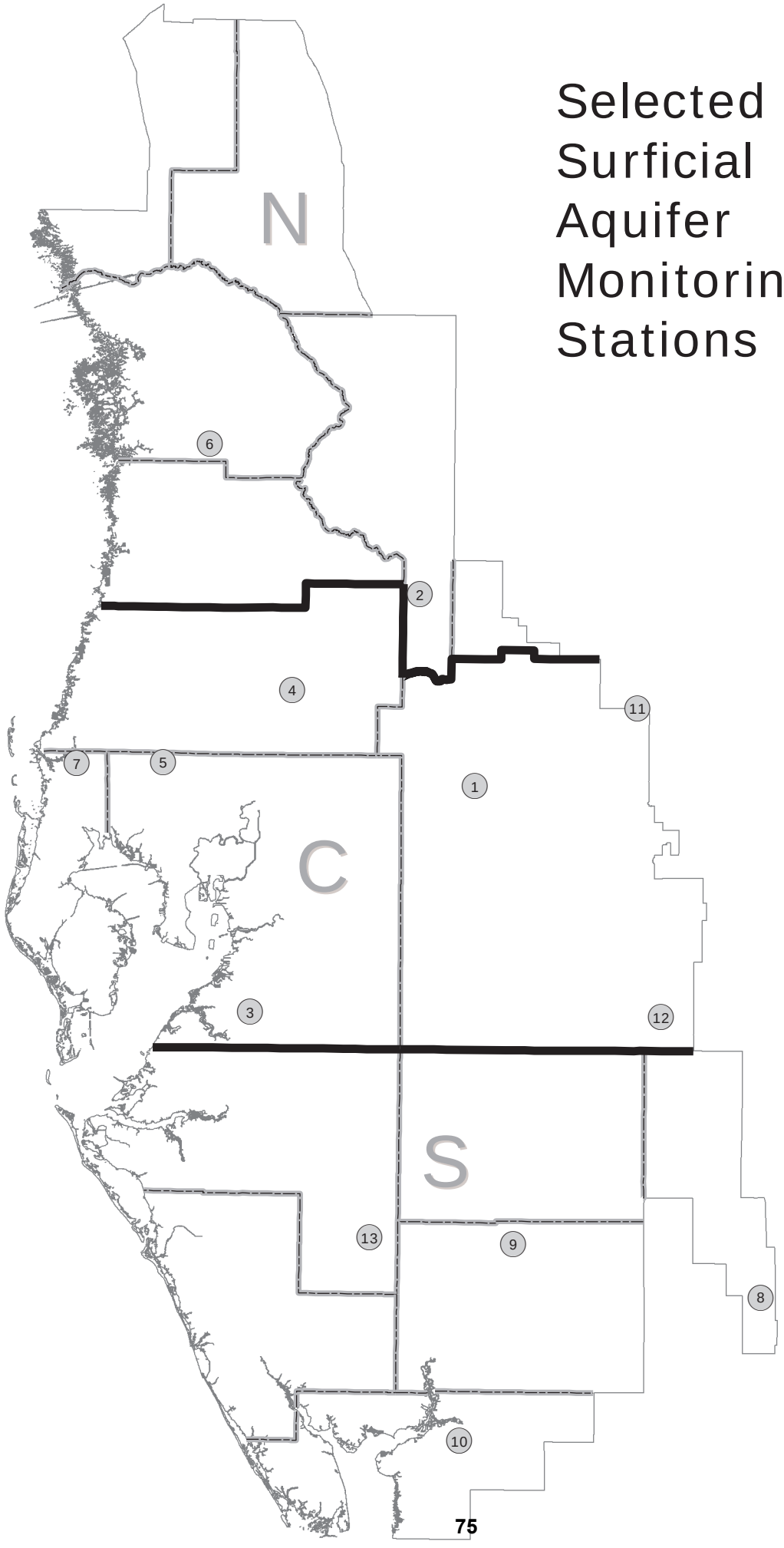
BUCKHORN SPRINGS (Central Region)

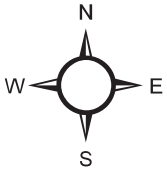
County:	Hillsborough
Basin:	Alafia River
Magnitude:	2nd
Discharge measurement location:	Difference between discharge measurements of Buckhorn Creek made 25 ft upstream from and 100 ft downstream from Buckhorn Springs
Discharge contributes to:	Buckhorn Creek, Alafia River
Public Access:	No
Period-of-record:	1987
Gage:	Water-stage recorder
Maximum daily mean:	21.9 cfs in 02/1989
Minimum daily mean:	2.7 cfs in 06/1987

LITHIA SPRINGS: (Central Region)

County:	Hillsborough
Basin:	Alafia River
Magnitude:	2nd
Discharge measurement location:	50 feet downstream from main pool
Discharge contributes to:	Alafia River
Public Access:	Yes
Period-of-record:	1934
Gage:	Water-stage recorder
Maximum daily mean:	83.4 cfs in 10/1967
Minimum daily mean:	6.3 cfs in 02/1989

Selected Surficial Aquifer Monitoring Stations





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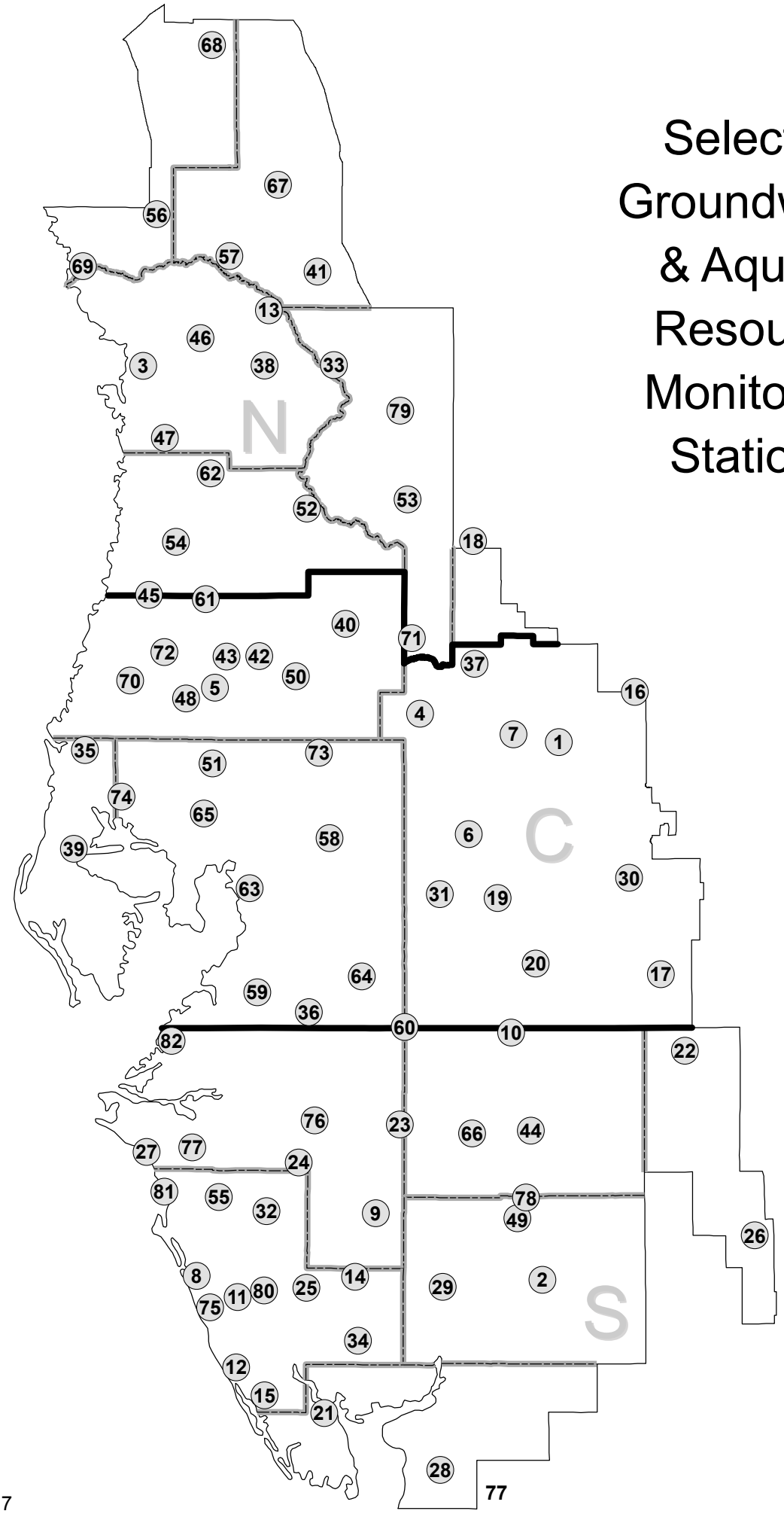
Selected Surficial Aquifer Monitoring Stations

Map ID	Site Name
1	State Road 33/Combee Road Shallow
2	Green Swamp L12B Shallow
3	ROMP 50 Surficial
4	State Road 577 Shallow
5	Lutz-Lake Fern Shallow
6	Lecanto 2 Shallow
7	Tarpon Road Shallow
~~8~~	~~Bairs Den Surficial~~
9	ROMP 26 Surficial
10	State Road 74 (77-Foot) Shallow
11	Loughman Shallow
12	USGS P-48 Shallow
13	Edgeville 4 Shallow

Selected Groundwater & Aquifer Resource Monitoring Stations



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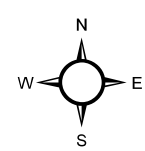
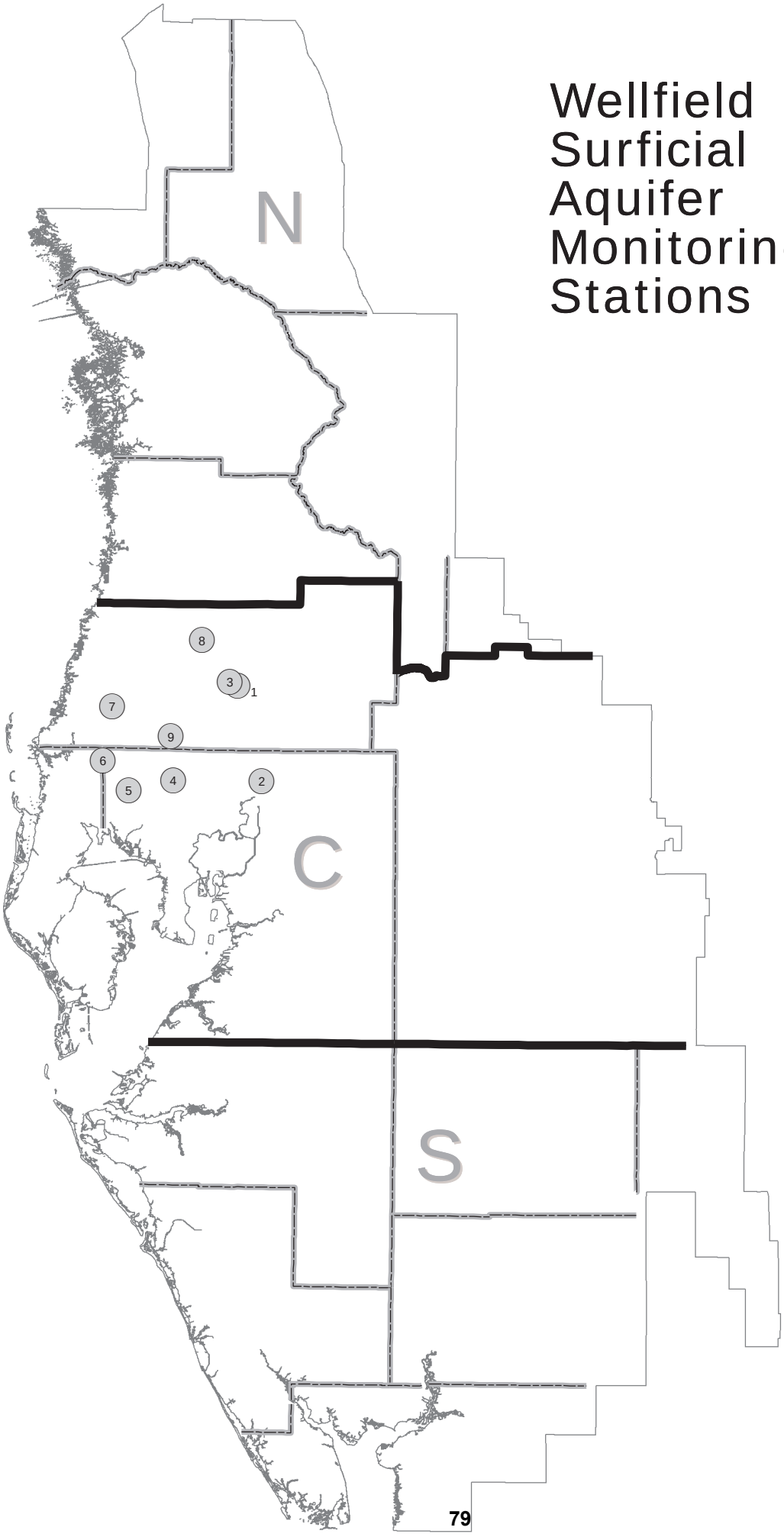
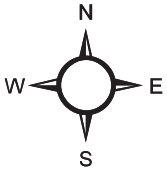


Select Groundwater & Aquifer Resource Monitoring Stations

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

Wellfield Surficial Aquifer Monitoring Stations





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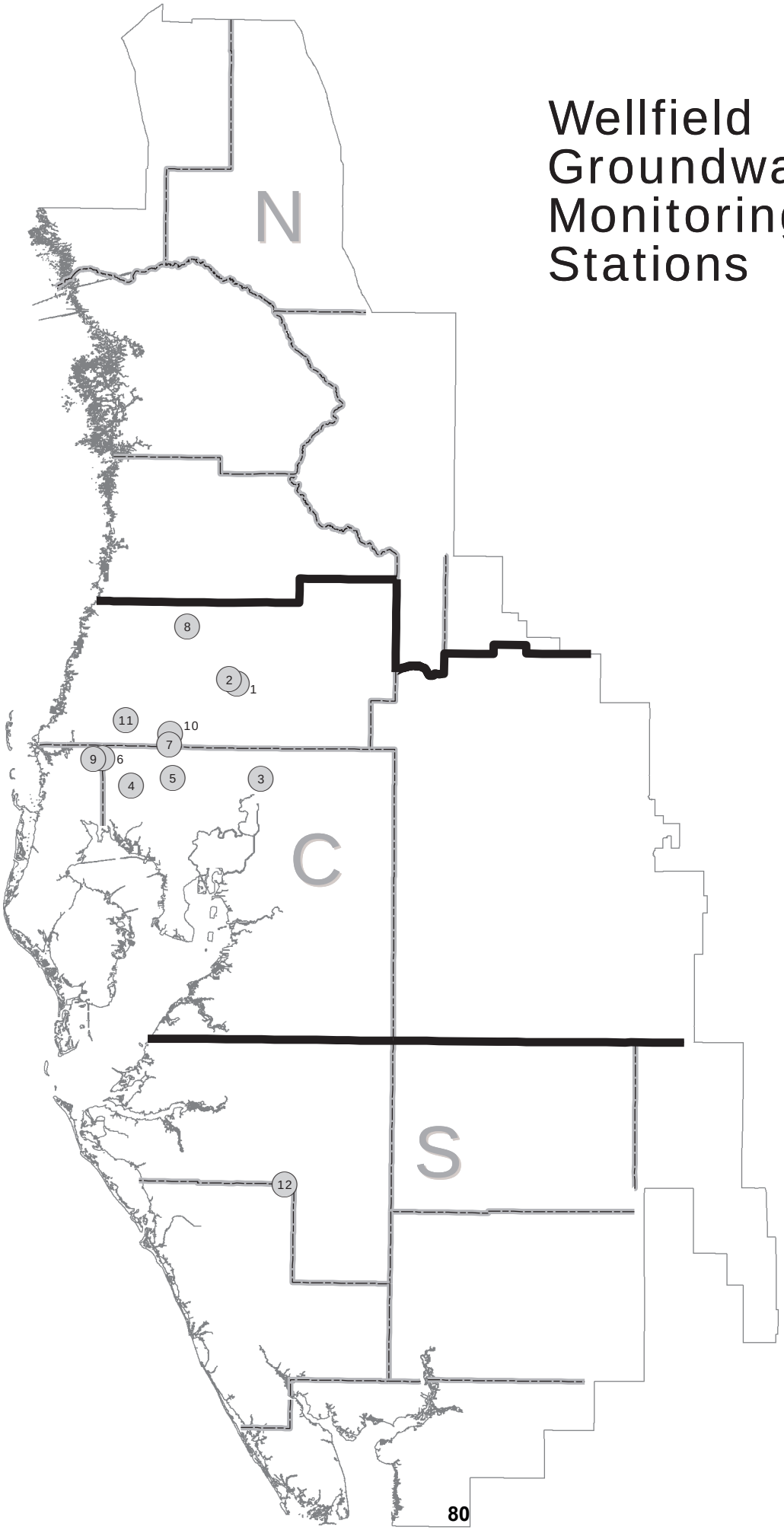
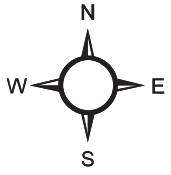
Wellfield Groundwater Monitoring Stations





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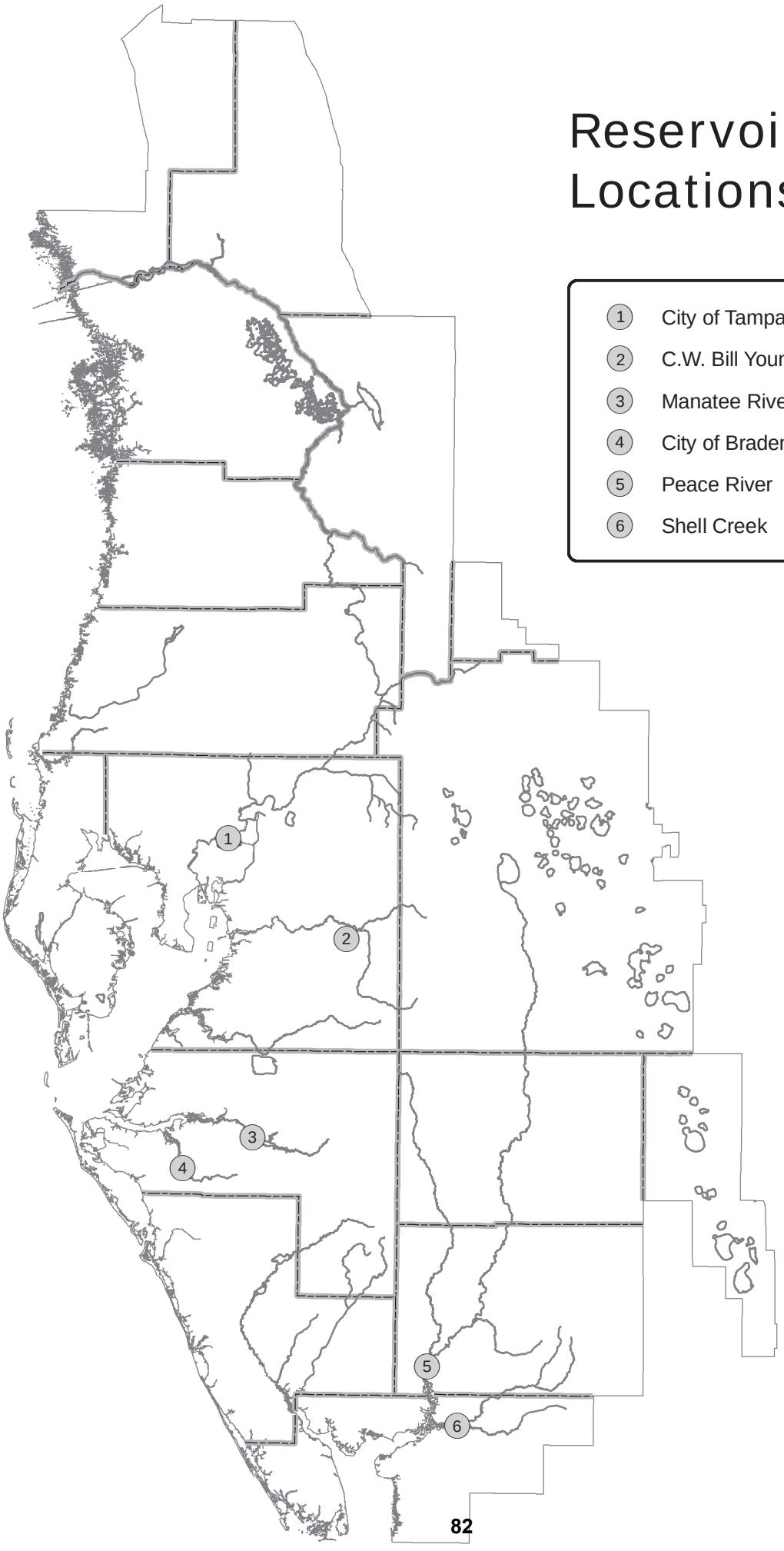
Wellfield Groundwater Monitoring Stations

Map ID	Site Name
1	Cypress Creek TMR-1 Deep
2	Cypress Creek TMR-3 Deep
3	Morris Bridge 3A Floridan
4	Cosme 3 Floridan
5	St. Pete Hillsboro 13 Deep
6	Eldridge-Wilde 11 Floridan
7	St. Pete 42 Deep
8	Cross Bar WRW Floridan
9	Eldridge-Wilde 2S Deep
10	State Road 54 Deep
11	Starkey Regional Floridan
12	Verna 08 Deep

Wellfield Surficial Aquifer Monitoring Stations

Map ID	Site Name
1	Cypress Creek TMR-1 Shallow
2	Morris Bridge 3A Surficial
3	Cypress Creek TMR-3 Shallow
4	St. Pete Hillsboro 13 Shallow
5	St. Pete IC-6 Shallow
6	Eldridge-Wilde 11 Surficial
7	Starkey 707 Shallow
8	Cross Bar SERW Shallow
9	State Road 54 Shallow

Reservoir Locations



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

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