



NATURAL RESOURCES
DIVISION

Arkansas Department of Agriculture Natural Resources Division

Arkansas Groundwater Protection and Management Report 2021



Arkansas Department of Agriculture Natural Resources Division

10421 West Markham Street
Little Rock, AR 72205

Asa Hutchinson
Governor

Wes Ward
Secretary of Agriculture

Chris Colclasure
Director

Ryan Benefield, P.E.
Deputy Director

COMMISSIONERS

Roy Reaves
Chairman
Russellville

Will Brewer
Vice Chairman
Paragould

Bruce Leggitt
Commissioner
Greenbrier

James Neal Anderson
Commissioner
Lonoke

Jamie Burr
Commissioner
Farmington

Eddie Glover
Commissioner
Conway

William Anderson
Commissioner
DeValls Bluff

JoAnne Bush
Commissioner
Lake Village

Bill Poynter
Commissioner
Texarkana

**Arkansas Department of Agriculture
Natural Resources Division
Groundwater Protection and Management Section Staff**

Blake Forrest, P.G.
Jacob Harvey
Jackie Broach
Mike Guess

Geology Supervisor
Water Well Inspector/Geologist
Administrative Analyst
Water Use Specialist

ACKNOWLEDGEMENTS

Special thanks to:

Chris Kelley, ADA-NRD GIS Analyst.

Anna Nottmeier and all the staff who contributed from the USGS Lower Mississippi-Gulf Water Science Center.

United States Department of Agriculture Natural Resources Conservation Service.

Report written and compiled by Blake Forrest, P.G.

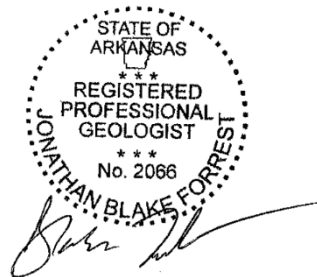


Table of Contents

ABSTRACT	I
INTRODUCTION	1
WATER POLICY	2
HYDROGEOLOGY AND WATER-LEVEL TRENDS	5
MISSISSIPPI RIVER VALLEY ALLUVIAL AQUIFER	5
Precipitation and Weather Events	9
Water Level Trends	12
SPARTA AQUIFER	48
Water Level Trends	51
GROUNDWATER USE	77
REGISTERED WELLS	77
REPORTED WATER USE	77
WATER CONSERVATION TAX INCENTIVE PROGRAM	80
SUMMARY	82
REFERENCES	85
FIGURES	
1. Arkansas Groundwater Study Areas.....	3
2. Critical Groundwater Areas	4
3. Alluvial Aquifer Water Level Altitude, Spring 2021.....	6
4. Alluvial Aquifer Depth to Water, Spring 2021.....	7
5. Percent of the Mississippi River Alluvial Aquifer Saturated at Specific Data Collection Sites, Spring 2021.....	8
6. Average Monthly Precipitation, 2020.....	10
7. Average Annual Alluvial Aquifer Groundwater Level Change vs. Average Annual Precipitation	10
8. Mississippi River Valley Alluvial Plain 2020 Total Monthly Precipitation	11
9. Alluvial Aquifer One-Year Average Water Level Change, 2020-2021	13
10. Alluvial Aquifer Five-Year Average Water Level Change, 2016-2021	14
11. Alluvial Aquifer Ten-Year Average Water Level Change, 2011-2021.....	15
12. Alluvial Aquifer Spring/Fall Change, 2021.....	16
13. Selected Water Level Hydrographs from the Mississippi River Valley Alluvial Aquifer	17
14. Cache Study Area One Year Water Level Change, Alluvial Aquifer, 2020-2021.....	36
15. Cache Study Area Five Year Water Level Change, Alluvial Aquifer, 2016-2021.....	37
16. Cache Study Area Ten Year Water Level Change, Alluvial Aquifer, 2011-2021	38
17. St. Francis Study Area One Year Water Level Change, Alluvial Aquifer, 2020-2021	39
18. St. Francis Study Area Five Year Water Level Change, Alluvial Aquifer, 2016-2021	40

19. St. Francis Study Area Ten Year Water Level Change, Alluvial Aquifer, 2011-2021	41
20. Grand Prairie Study Area One Year Water Level Change, Alluvial Aquifer, 2020-2021	42
21. Grand Prairie Study Area Five Year Water Level Change, Alluvial Aquifer, 2016-2021	43
22. Grand Prairie Study Area Ten Year Water Level Change, Alluvial Aquifer, 2011-2021.....	44
23. Boeuf-Tensas Study Area One Year Water Level Change, Alluvial Aquifer, 2020-2021.....	45
24. Boeuf-Tensas Study Area Five Year Water Level Change, Alluvial Aquifer, 2016-2021.....	46
25. Boeuf-Tensas Study Area Ten Year Water Level Change, Alluvial Aquifer, 2011-2021	47
26. Sparta Aquifer Water Level Altitude, Spring 2021	49
27. Sparta Aquifer Depth to Water, Spring 2021	50
28. Sparta Aquifer One Year Water Level Change, 2020-2021.....	52
29. Sparta Aquifer Five Year Water Level Change, 2016-2021.....	53
30. Sparta Aquifer Ten Year Water Level Change, 2011-2021	54
31. Selected Hydrographs from the Sparta Aquifer.....	55
32. Cache/St. Francis Study Area One Year Water Level Change, Sparta Aquifer, 2020-2021..	65
33. Cache/St. Francis Study Area Five Year Water Level Change, Sparta Aquifer, 2016-2021..	66
34. Cache/St. Francis Study Area Ten Year Water Level Change, Sparta Aquifer, 2011-2021 ..	67
35. Grand Prairie Study Area One Year Water Level Change, Sparta Aquifer, 2020-2021	68
36. Grand Prairie Study Area Five Year Water Level Change, Sparta Aquifer, 2016-2021	69
37. Grand Prairie Study Area Ten Year Water Level Change, Sparta Aquifer, 2011-2021	70
38. South Arkansas Study Area One Year Water Level Change, Sparta Aquifer, 2020-2021.....	71
39. South Arkansas Study Area Five Year Water Level Change, Sparta Aquifer, 2016-2021.....	72
40. South Arkansas Study Area Ten Year Water Level Change, Sparta Aquifer, 2011-2021	73
41. Boeuf-Tensas Study Area One Year Water Level Changes, Sparta Aquifer, 2020-2021	74
42. Boeuf-Tensas Study Area Five Year Water Level Changes, Sparta Aquifer, 2016-2021	75
43. Boeuf-Tensas Study Area Ten Year Water Level Changes, Sparta Aquifer, 2011-2021	76
44. Agriculture/Irrigation Groundwater Use in Eastern Arkansas 2018	79
45. Water Conservation Tax Credits Approved from 2017-2021.....	81

APPENDICES

Appendix A	Alluvial Aquifer Water Level Monitoring Data
Appendix B	Sparta/Memphis Aquifer Water Level Monitoring Data

ABSTRACT

The Arkansas Groundwater Protection and Management Report is produced annually by the Arkansas Department of Agriculture's Natural Resources Division (NRD) pursuant to the Arkansas Groundwater Protection and Management Act of 1991, Arkansas Code Annotated 15-22-906. This report provides a summary of groundwater protection and conservation programs administered by the NRD during the years 2020 and 2021, including water-level monitoring and studies of water use trends in the state.

This report focuses exclusively on two aquifers: the Mississippi River Valley Alluvial Aquifer (alluvial aquifer), the most important water resource for agricultural production in the state, and the Sparta/Memphis Aquifer (Sparta), one of the state's best sources of good quality groundwater for drinking and industrial uses. The report compares synoptic water-level data collected in the spring of 2021 to historical synoptic water level data in one, five, and ten-year intervals, as well as data collected continuously, monthly, and quarterly, to quantify the aquifers response to the stresses of the 2020 growing season. Climate and water use data are considered along with water level data to explain the water level change results.

Aquifer-wide water level data collected during the pre-irrigation period of spring 2021 had positive average change values for both the alluvial and Sparta aquifers when compared to spring data from 2020, 2016, and 2011; except for the alluvial aquifer in the spring 2020 to 2021 comparison, which yielded an average water level change of -0.64 over the one-year period. This result continues the trend of mostly positive average change values in recent years. Average water level change maps are presented in the report for the five Groundwater Study areas that better illustrate the changes in the various areas.

The general trend in Arkansas's long-term water-level change is that the groundwater levels are declining in response to continued withdrawals at rates which are not sustainable. Based on 2015 water use data, only approximately 44.2% of the current alluvial aquifer withdrawal of 7,636.08 million gallons per day, and approximately 55% percent of the Sparta/Memphis aquifer withdrawal of 160 million gallons per day are sustainable. At these pumping rates, water-level declines and the adverse impacts on the state's groundwater system will continue to be observed.

Introduction

This report is prepared to provide the State of Arkansas with a comprehensive water-quantity and water-quality document to be utilized, in accordance with the Arkansas Water Plan, as a guide for water resources conservation and protection programs. It includes data, analysis, and recommendations for the groundwater protection and management program, as well as data from the Arkansas Water Well Construction Commission.

This report focuses on the two most used aquifers in the state, the Mississippi River Valley alluvial aquifer (alluvial aquifer) and the Sparta/Memphis aquifer. Data collection for the program is dependent upon a strong partnership with other state, federal, and local water resources agencies. A monitoring schedule has been established to obtain data from the alluvial aquifer and the Sparta aquifer on an annual basis. Historically, each spring approximately 200 to 300 wells are monitored in the alluvial aquifer, and approximately 100-200 wells are monitored each year for water levels in the Sparta/Memphis aquifer. In 2021, water level data was collected from approximately 456 wells in the alluvial aquifer during the spring. In addition to the spring measurements, synoptic alluvial aquifer water level measurements are collected in the fall to gauge aquifer drawdown once irrigation has ended for the year. This fall water level collection is not as comprehensive as the spring effort, historically, but this year 370 wells were measured that shared data with wells measured in the spring. The number of wells monitored will vary from year to year depending on the resources available, well accessibility, and other factors.

There are areas of the state experiencing groundwater withdrawals of such magnitude that demand on the aquifer exceeds the sustainable yield, resulting in consistently falling groundwater levels, and the development of cones of depression. These areas occur in both the Mississippi River Valley alluvial and Sparta aquifers. Water-level declines are consistently observed in areas where water use is highest, such as portions of the Grand Prairie study area and in the Cache study area for the alluvial, and in the South Arkansas study area for the Sparta.

The USGS maintains the Arkansas Masterwell Program that supplies long term groundwater quality monitoring in 25 wells from 14 aquifers. These Masterwells are located throughout 21 counties and each year five sites are sampled for a variety of water-quality constituents. Hydrogeologic data is collected statewide; however, resources are focused on

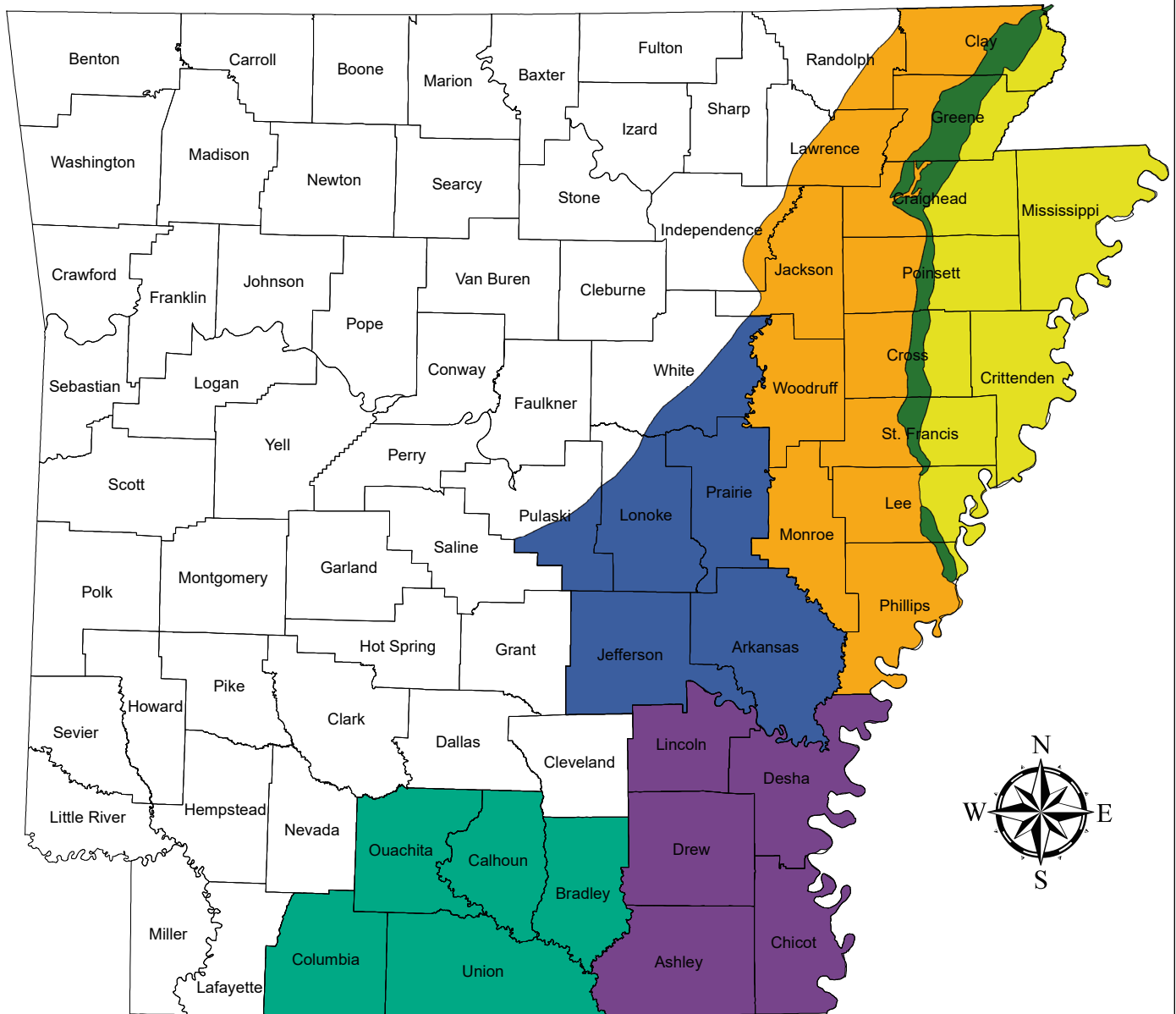
study areas where water-level declines and water-quality degradation have been observed historically.

Water Policy

Water resources policy in Arkansas was established in the Arkansas Water Plan of 1991, in which the NRD advocates conservation, education, and the conjunctive use of ground and surface water, along with the development of excess surface water to meet future water use needs. It is hoped that protection of the State's groundwater resources can be achieved through these measures rather than management strategies that may require allocation of water. If conservation and the development of excess surface water are not successfully implemented in the impaired areas in the future, the State may have to consider regulatory alternatives to preserve the aquifers at a sustainable level. All water-use strategies must consider the wise use of Arkansas's water resources while protecting the sustainable yield of our aquifers. Stream flow needs of the State's surface-water flow system must also be considered if our water resources are to be protected for future generations to utilize and enjoy. The NRD advocates that the State moves toward a sustainable yield pumping strategy through conservation and utilization of Critical Groundwater Area designation where needed to focus resources. Designation as a Critical Groundwater Area fosters conservation by offering enhanced tax credit benefits for conservation practices through the State's Water Conservation Tax Credit Program, by increasing educational outreach, and by qualifying the area for federal programs and funding. Critical Groundwater Area is a non-regulatory designation. Regulation cannot be initiated without a new process involving legal proceedings, additional notice, and public hearings. Figure 1 presents the Groundwater Study Areas while Figure 2 presents the Critical Groundwater Areas as designated.

Figure 1

Arkansas Groundwater Study Areas



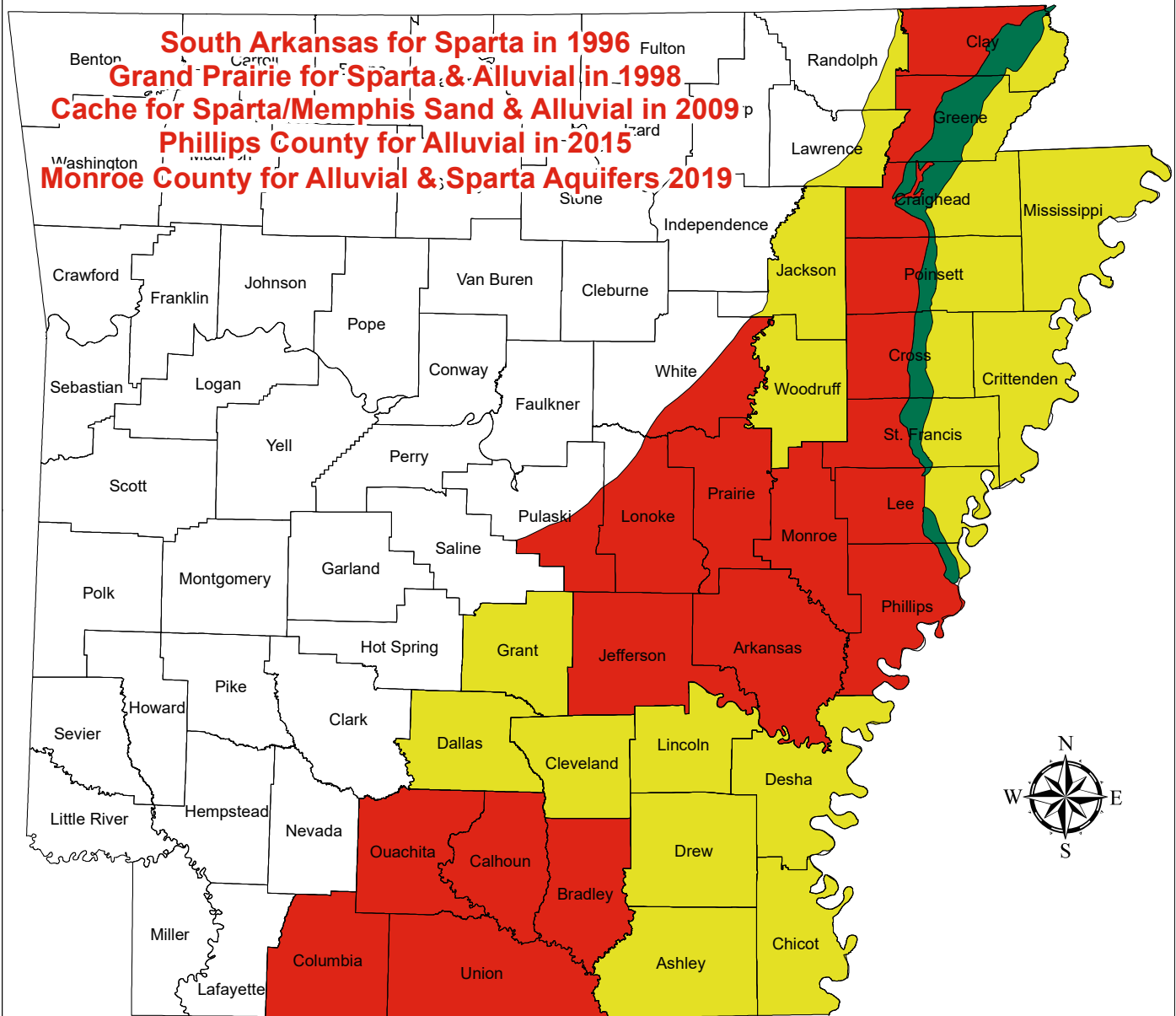
Legend

- South Arkansas
- St. Francis
- Grand Prairie
- Crowleys Ridge
- Cache
- Boeuf - Tensas

0 12.5 25 50 75 100 Miles

Figure 2

Critical Groundwater Areas



Legend

- Current Critical Areas
- Current Study Areas
- Crowleys Ridge
-

0 10 20 40 60 80 Miles

Hydrogeology and Water-Level Trends

Mississippi River Valley Alluvial Aquifer

The Mississippi River Valley alluvial aquifer, hereby referred to as the “alluvial aquifer”, is the uppermost aquifer in the Mississippi Embayment and is composed of 50 to 150 feet of sand and gravel, grading from coarse gravel at the bottom to fine sand at the top. It is generally overlain by the Mississippi River Confining Unit, which is composed of up to 50 feet of fine-grained sand, silt, and clay. For the purpose of this report, the term alluvial aquifer refers to the portion of the aquifer inside the state boundaries of Arkansas and the extent of the Mississippi River Alluvial Plain; generally, the Fall-Line or contact with outcropping Tertiary formations to the west, the Mississippi River to the east, and the state lines to the north and south. The alluvial aquifer is connected hydraulically with several rivers and drainage areas (Ackerman, 1996).

Static water level measurements were collected from 456 wells across the alluvial aquifer prior to the irrigation season in 2021, with most of the measurements being collected in April. Figure 3 presents the potentiometric surface data as altitude relative to mean sea level. Figure 4 presents the depth to water in the alluvial aquifer as feet below ground surface. Figure 5 presents the saturated thickness of the alluvial aquifer as a percentage of the total aquifer thickness. Saturated thickness values were calculated by subtracting the depth to water by the total aquifer thickness on a well-to-well basis. Aquifer thickness values were obtained from the USGS MERAS model (USGS, 2008). The areas of greatest decline continue to be the historical cones of depression in the Grand Prairie and Cache River regions.

Water Level Altitude Spring 2021

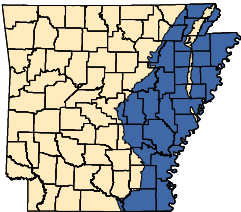


Figure 4
Alluvial Aquifer
Depth to Water
Spring 2021

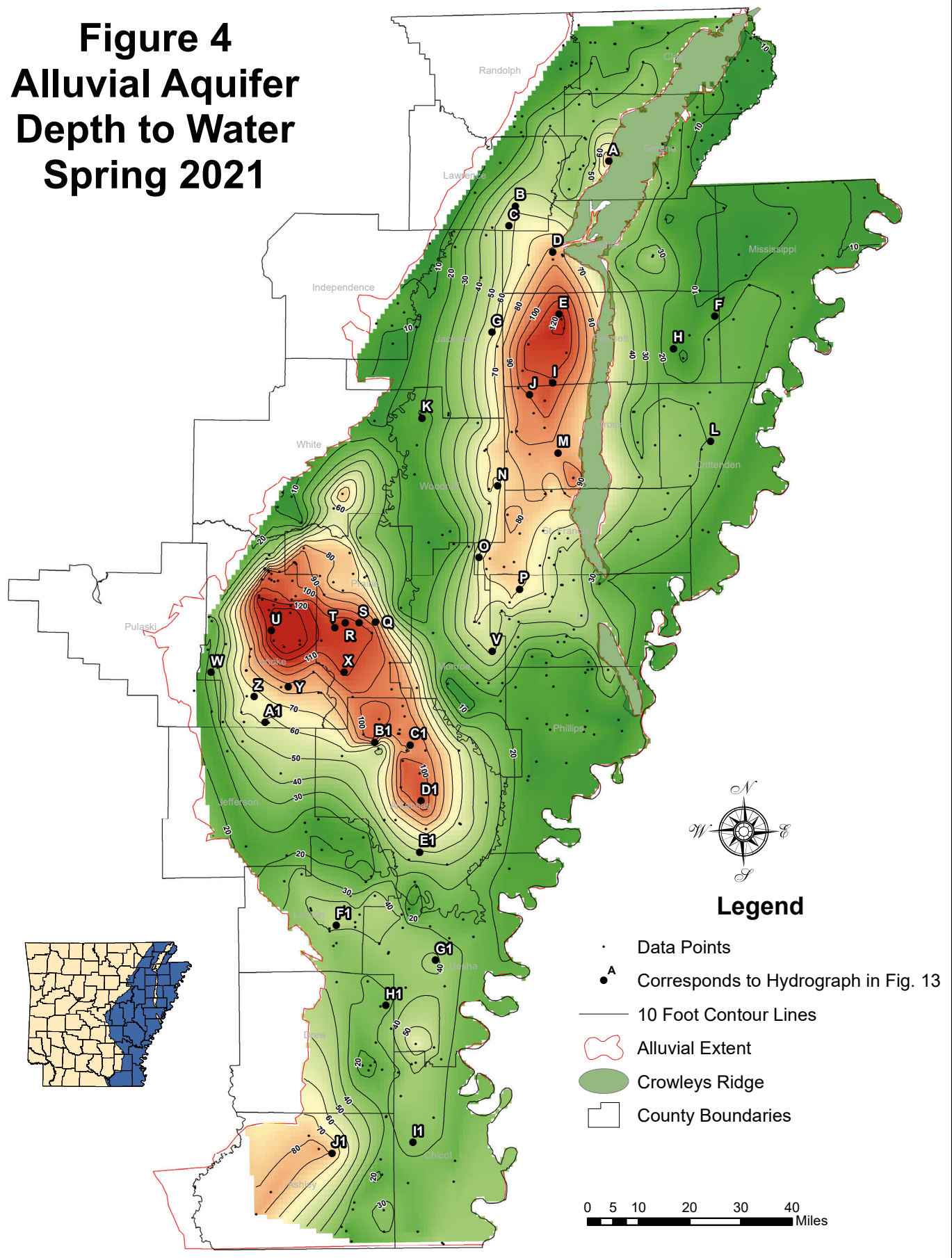
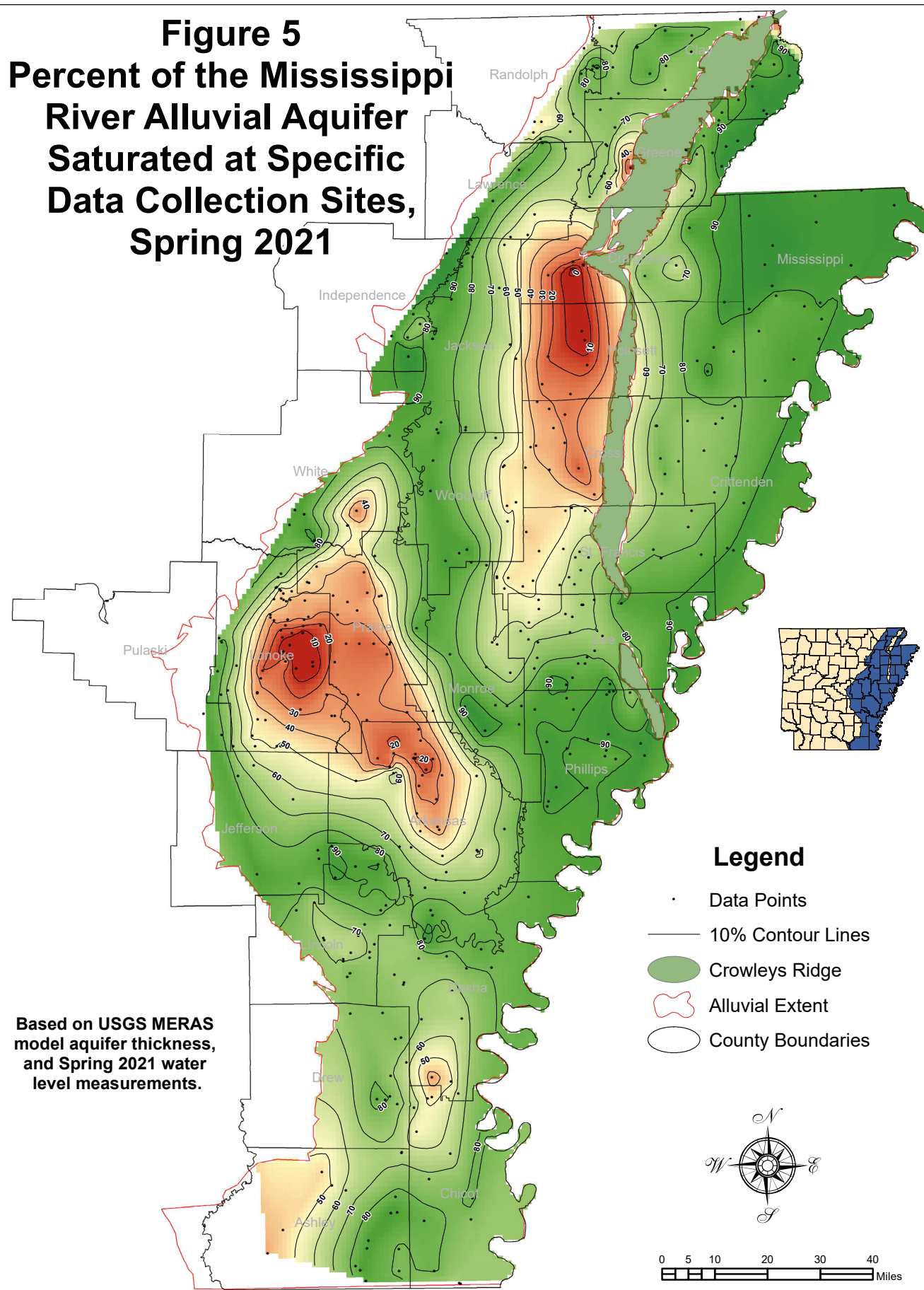


Figure 5
Percent of the Mississippi
River Alluvial Aquifer
Saturated at Specific
Data Collection Sites,
Spring 2021



Precipitation and Weather Events

The amount of rainfall is considered for comparison with the water level change during times of drought or excess rainfall. Years of abundant precipitation benefit the alluvial aquifer by increasing the ability for the aquifer to recharge naturally and by reducing the demand for groundwater, especially adequate amounts of rainfall throughout the growing season. In 2020, the total average precipitation was 63.43 inches, 13.83 inches more than the annual average. Each month of the 2020 growing season (March through September) had above average precipitation except for July, which was just below average. Figure 6 shows the statewide monthly average precipitation for 2020 compared with the normal average monthly values.

Arkansas has consistently received average to above average rainfall since 2011, except for 2012, and the average water level change across the alluvial aquifer had been trending upwards since 2012. The spring 2021 to 2020 average water level change comparison ended this trend having a negative average change value despite the past three years having significantly above average rainfall across the state. Figure 7 compares the statewide annual average precipitation to the average change in water levels in the alluvial aquifer from 1997 to 2020. Figure 8 presents data from the National Weather Service illustrating the total monthly precipitation received as a departure-from-normal value across the Mississippi River Valley Alluvial Plain for the 2020 growing season, March through September (NOAA, 2021).

Figure 6 - Average Monthly Precipitation, 2020

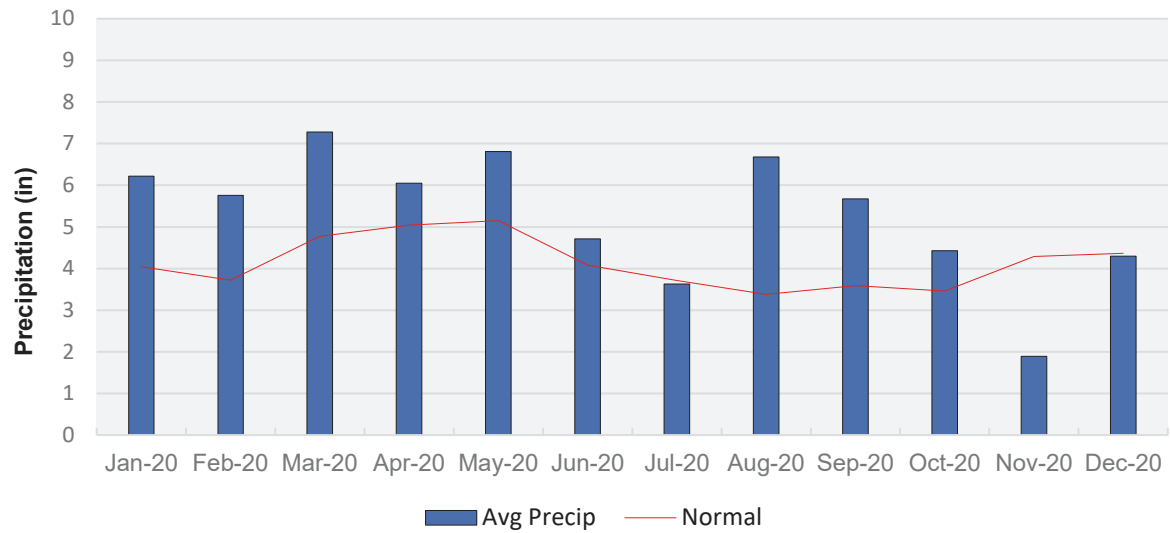
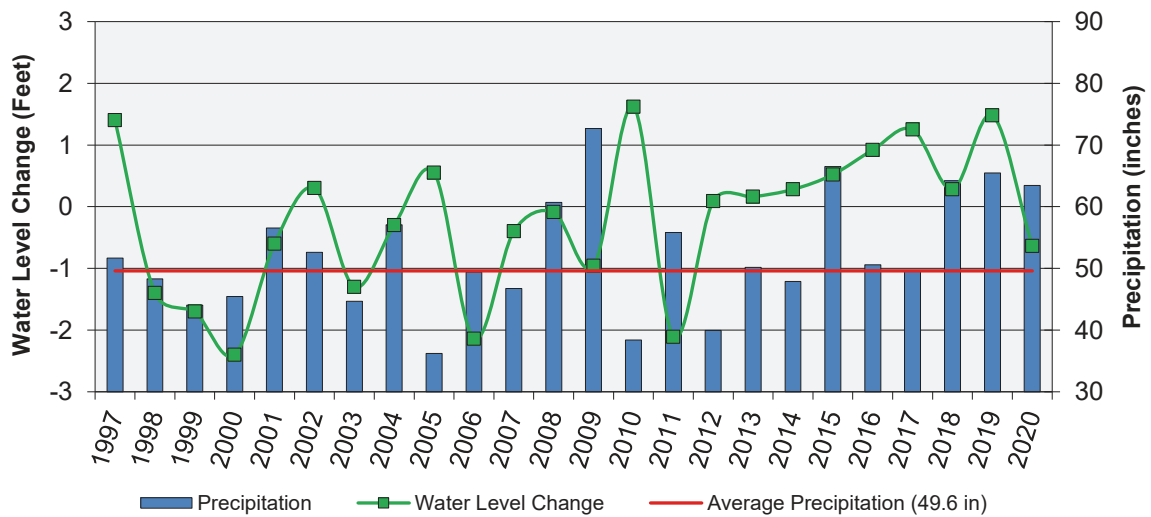
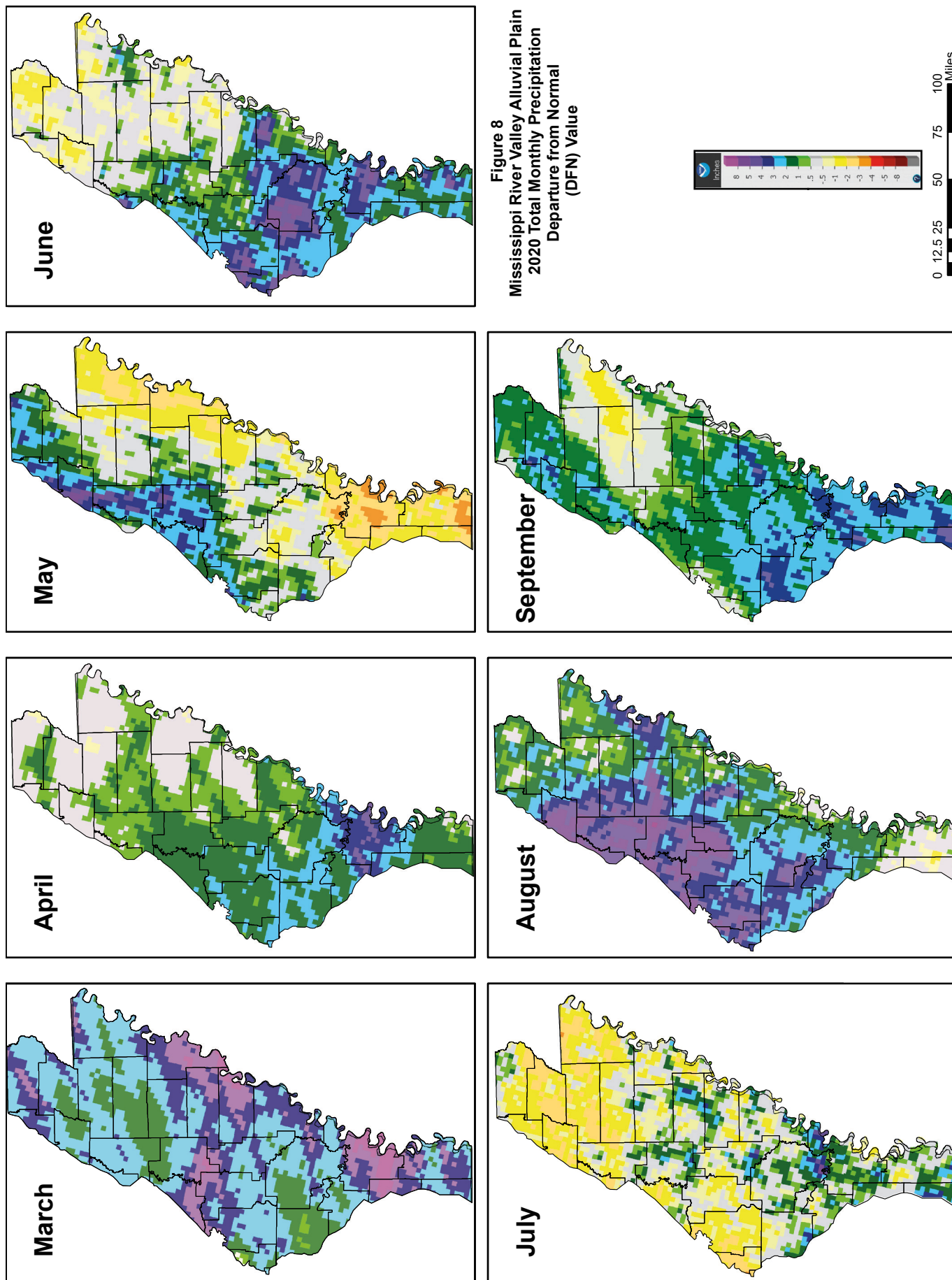


Figure 7 - One Year Average Alluvial Aquifer Ground Water Level Change Vs. Average Annual Precipitation





Water Level Trends

Water level data from the current year are compared with previous data on a well-to-well basis in one, five, and ten (10) year intervals to illustrate the water level change of the aquifer over time. For the one-year change comparison, 410 of the 456 wells measured in spring 2021 shared data with the spring 2020 dataset, and when compared, give a total average water level change of -0.64 feet. For the five-year comparison, 278 wells were identified as having data for both 2021 and 2016 giving a total average water level change of +1.43 feet with only 85 wells (30.58%) having declining static water levels. The ten-year comparison found 210 wells with water level data for the spring seasons of 2021 and 2011 and gave a total average water level change of +1.05 with 80 wells (38%) compared showing declining aquifer levels.

Aquifer-wide water level change maps were created for the different time intervals: Figure 9 presents the one-year spring 2020 to spring 2021 water level change, Figure 10 presents the five-year spring 2016 to spring 2021 water level change, and Figure 11 presents the ten-year spring 2011 to spring 2021 change data. These maps show that water level declines continue to be concentrated in the Cache and Grand Prairie areas where historical declines have been significant, particularly in the areas of the aquifer farthest from a major surface water source (e.g. the Arkansas, White, and Mississippi rivers). Conversely, the areas with increasing water level change values can generally be found along these sources. The five and ten-year change maps illustrate the movement of the existing cones of depression as Prairie and Lonoke counties continue to have declines in the Grand Prairie, and as the Cache depression continues to expand southward into Monroe and Lee counties. Some water level decline can be found in the Beouf-Tensas and St. Francis study areas in the one-year comparison, but these declines do not appear to be causing significant aquifer drawdown over time.

Approximately 495 alluvial aquifer wells were measured in the fall of 2021, and of those, 372 were found to have also been measured during the spring. When compared, the total average change for spring to fall 2020 measurements was -2.80 feet, which is consistent with the average change calculated in past years: 2018 (-3.57), 2019 (-2.90), and 2020 (-3.32). Figure 12 presents the spring to fall water level change data for the entire alluvial aquifer.

Figure 9

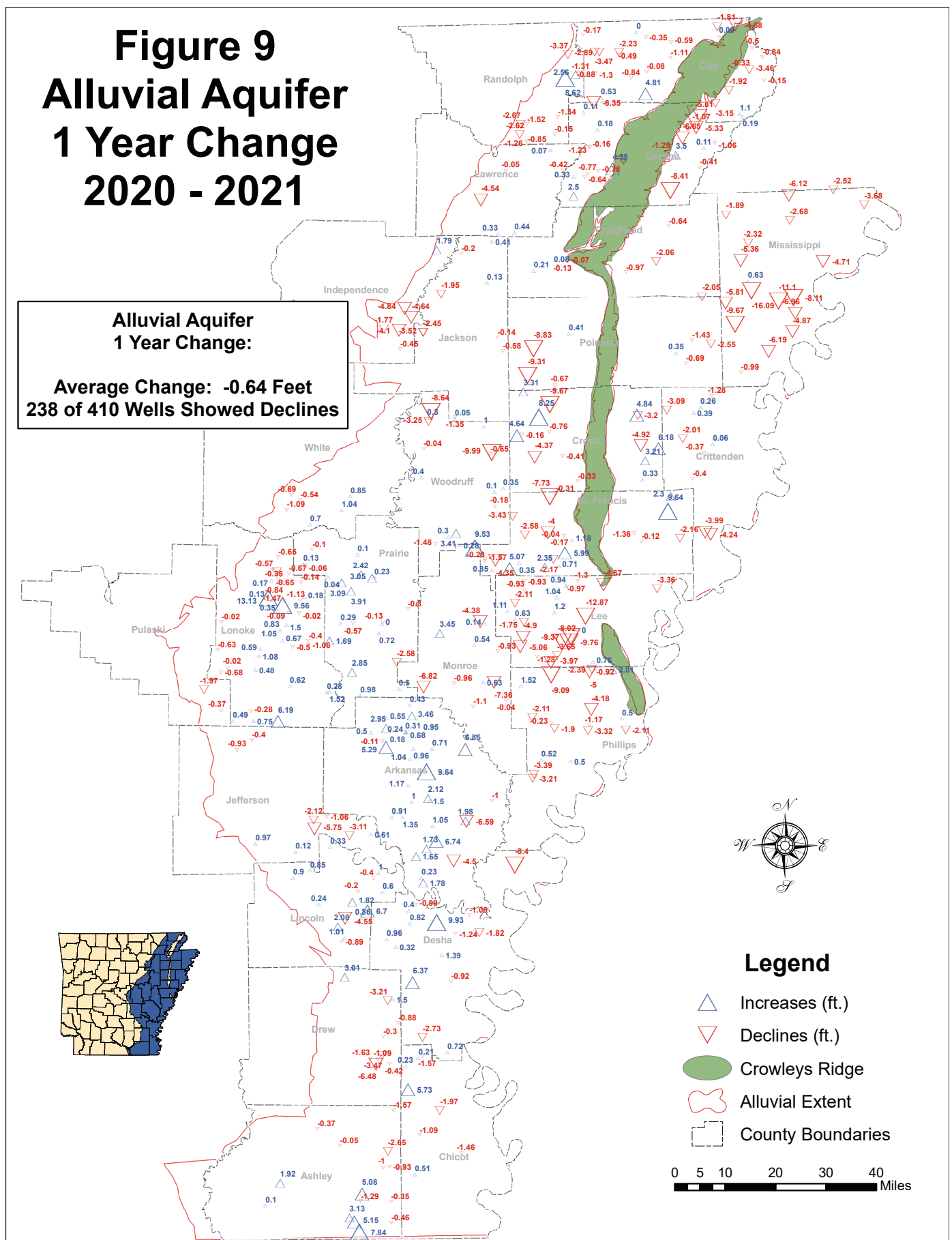
Alluvial Aquifer

1 Year Change

2020 - 2021

Alluvial Aquifer
1 Year Change:

Average Change: -0.64 Feet
238 of 410 Wells Showed Declines



**Alluvial Aquifer
5 Year Change:**

**Average Change: +1.43 Feet
85 of 278 Wells Showed Declines**



Alluvial Aquifer
10 Year Change:

Average Change: +1.05 Feet
80 of 210 Wells Showed Declines

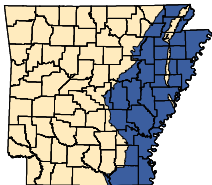


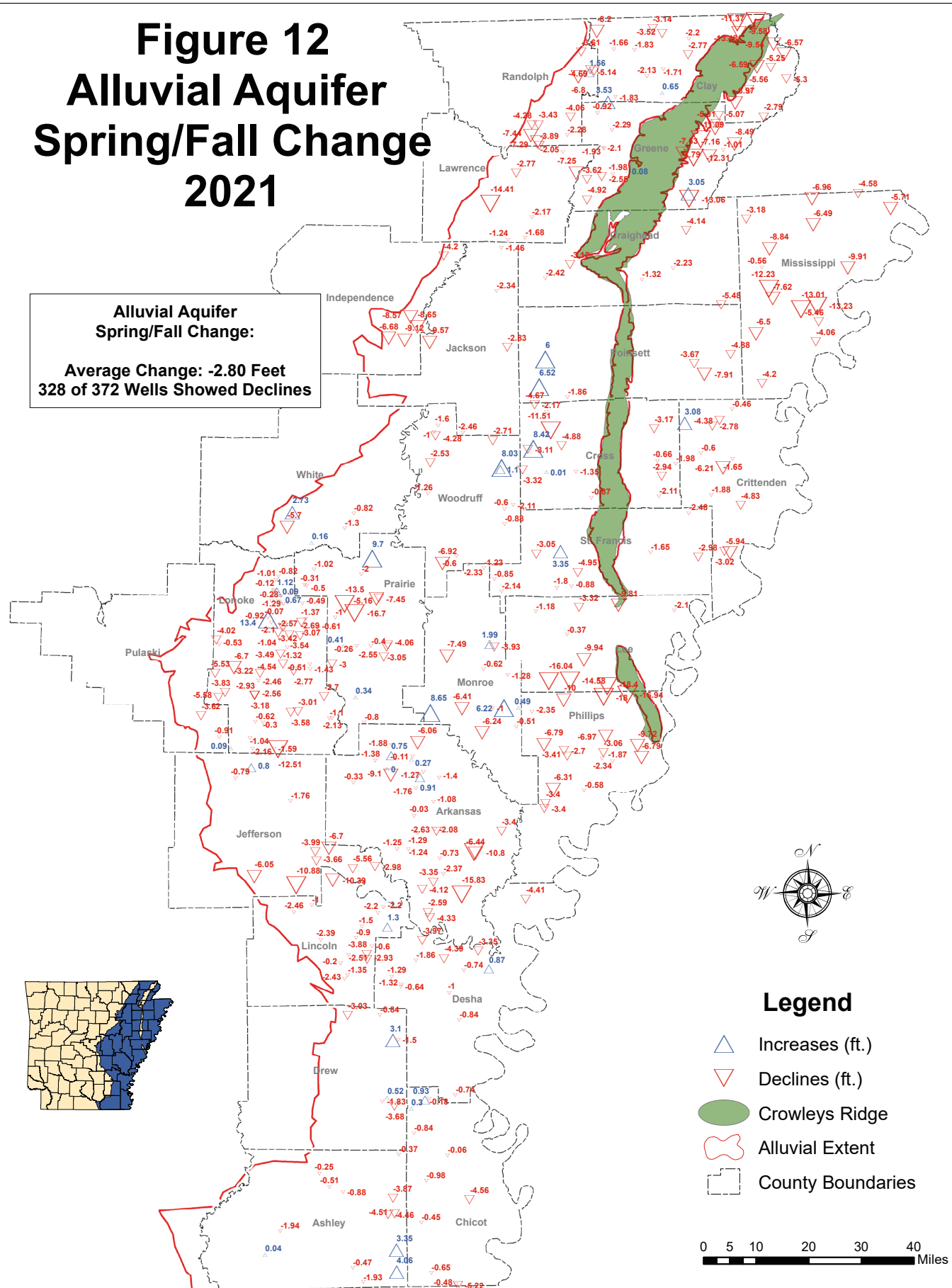
Figure 12

Alluvial Aquifer

Spring/Fall Change

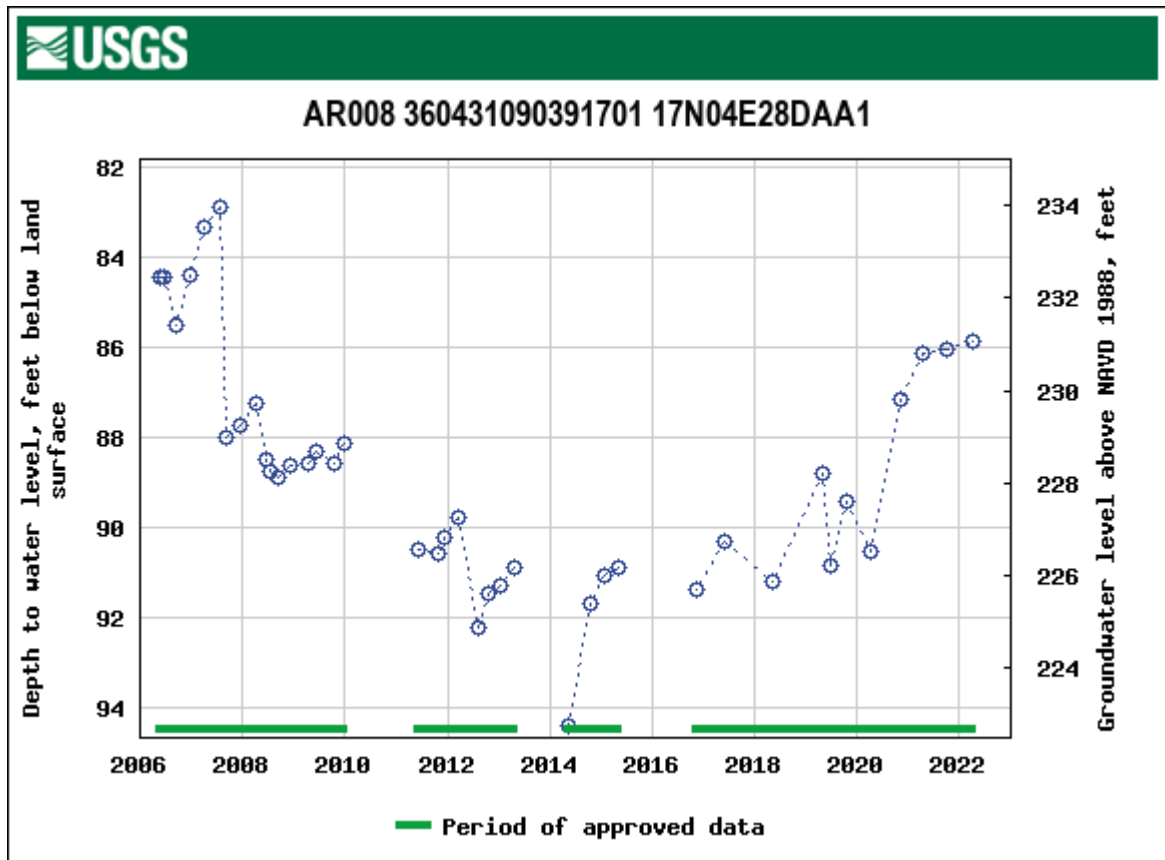
2021

Alluvial Aquifer
Spring/Fall Change:
Average Change: -2.80 Feet
328 of 372 Wells Showed Declines



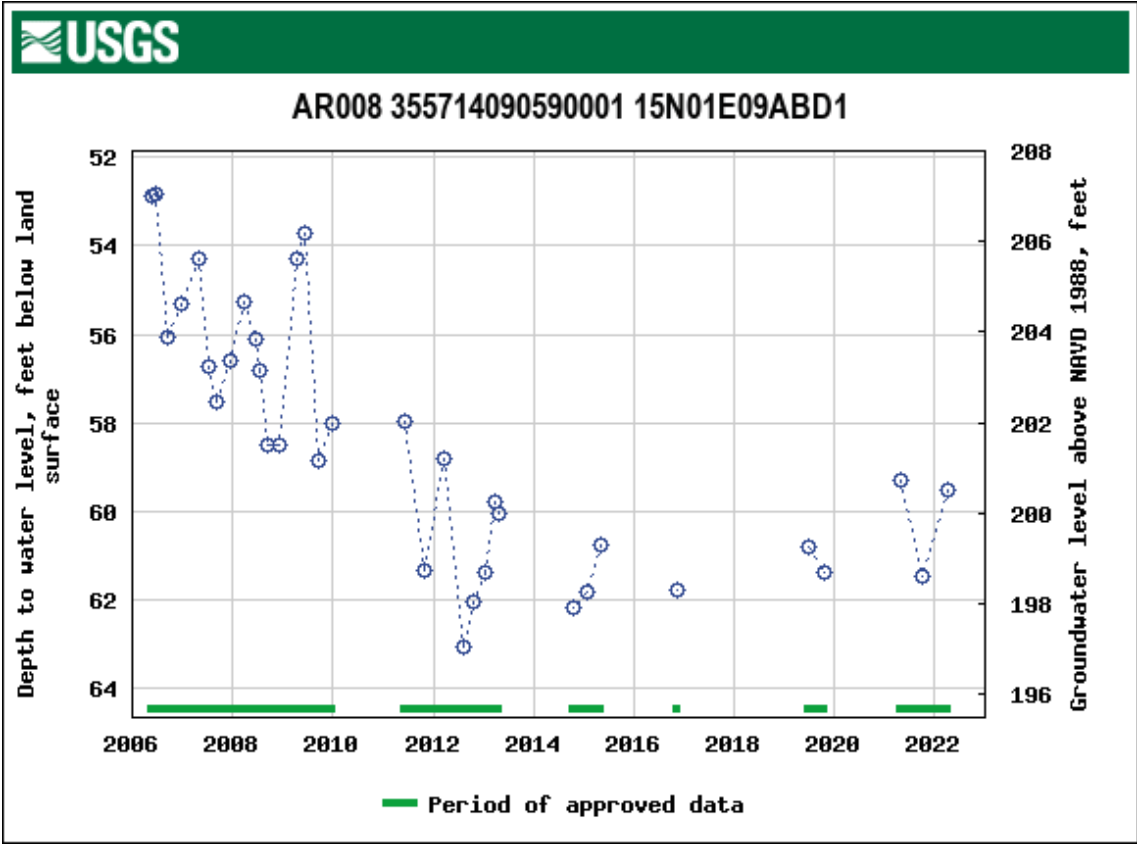
Selected water level hydrographs from the Mississippi River Valley alluvial aquifer are presented on Figure 13. The well locations are shown on Figure 4. All these hydrographs are from monitoring wells maintained by the NRD or the United States Geologic Survey and are measured semi-annually or more during the year or have real-time data loggers installed for continuous water level data.

Figure 13. Selected water level hydrographs from the Mississippi River Valley alluvial aquifer

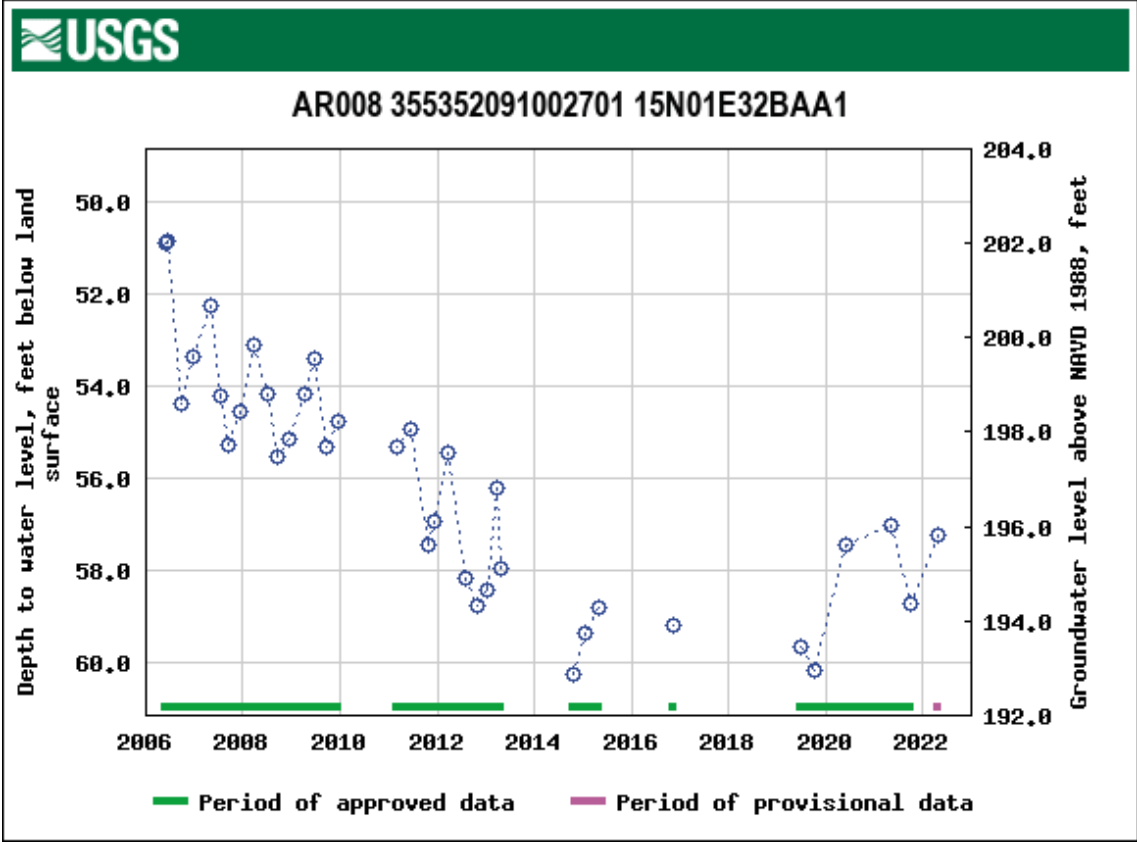


A. Greene County, Well 17N04E28DAA1

Figure 13. Selected water level hydrographs from the Mississippi River Valley alluvial aquifer

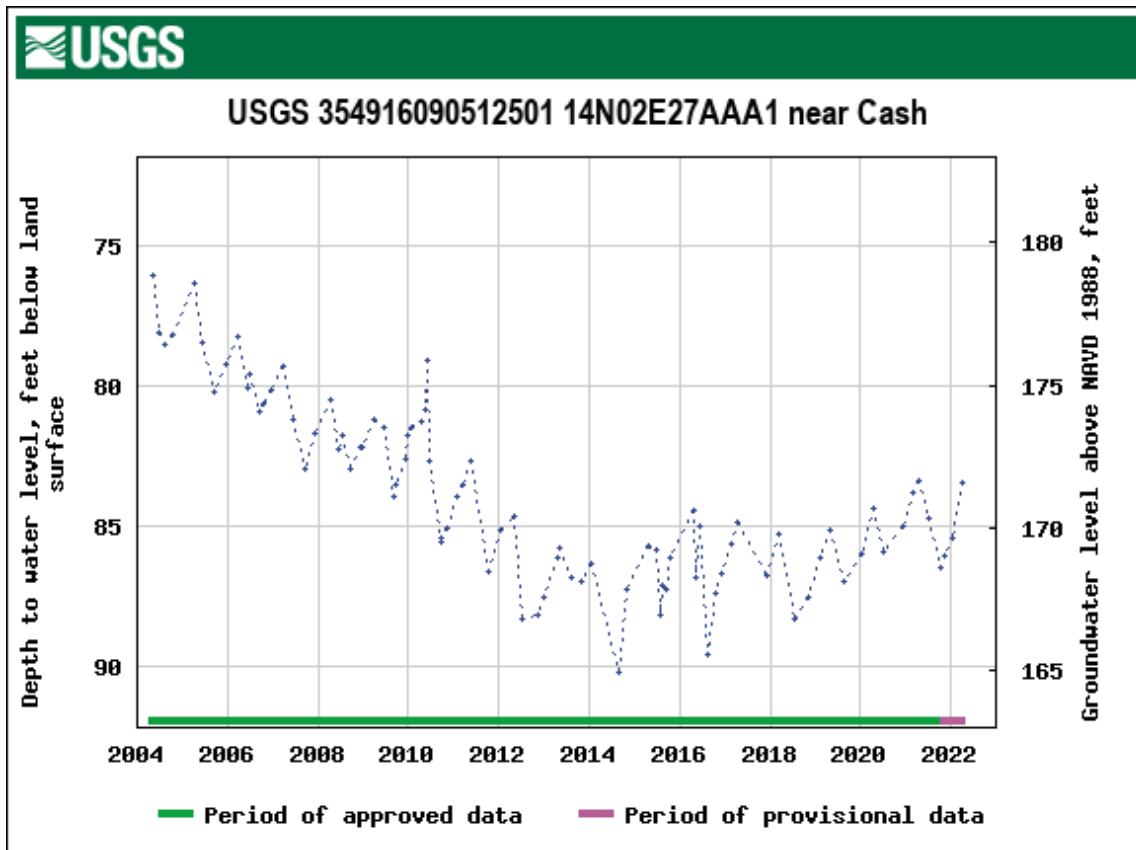


B. Lawrence County, Well 15N01E09ABD1

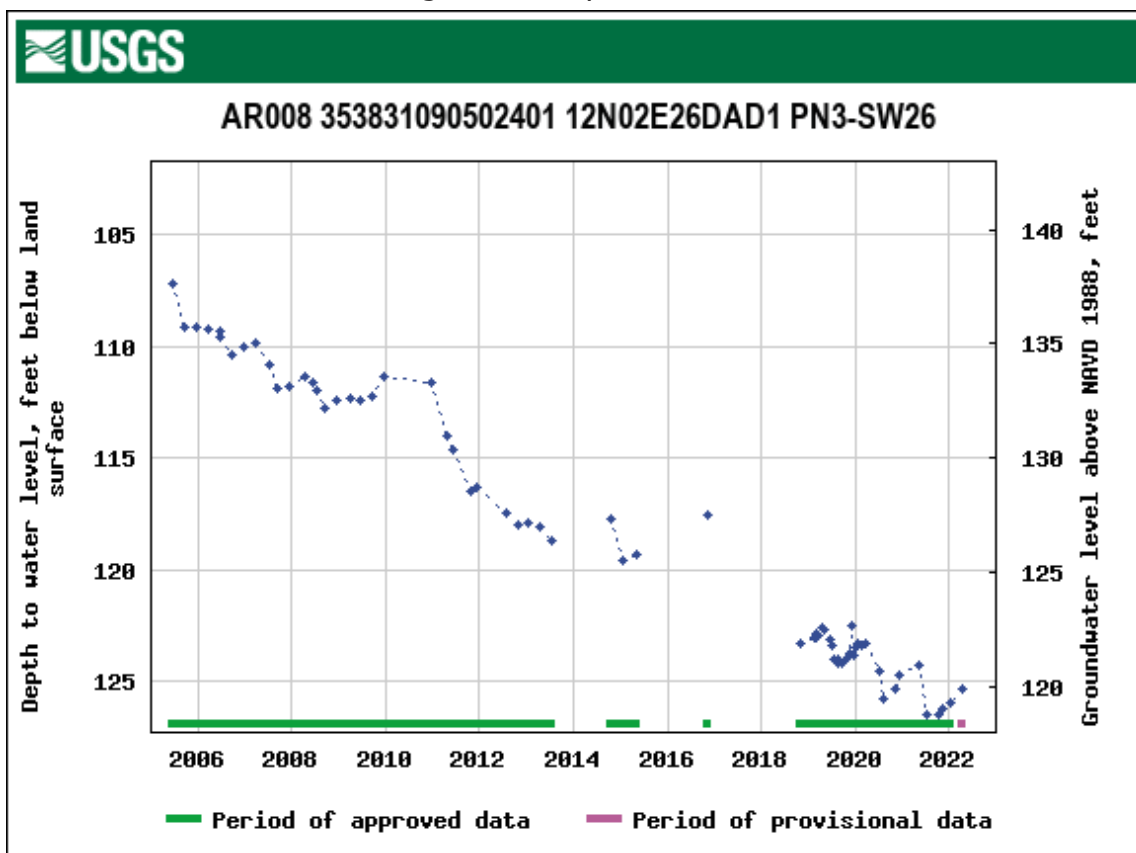


C. Lawrence County, Well 15N01E32BAA1

Figure 13. Selected water level hydrographs from the Mississippi River Valley alluvial aquifer

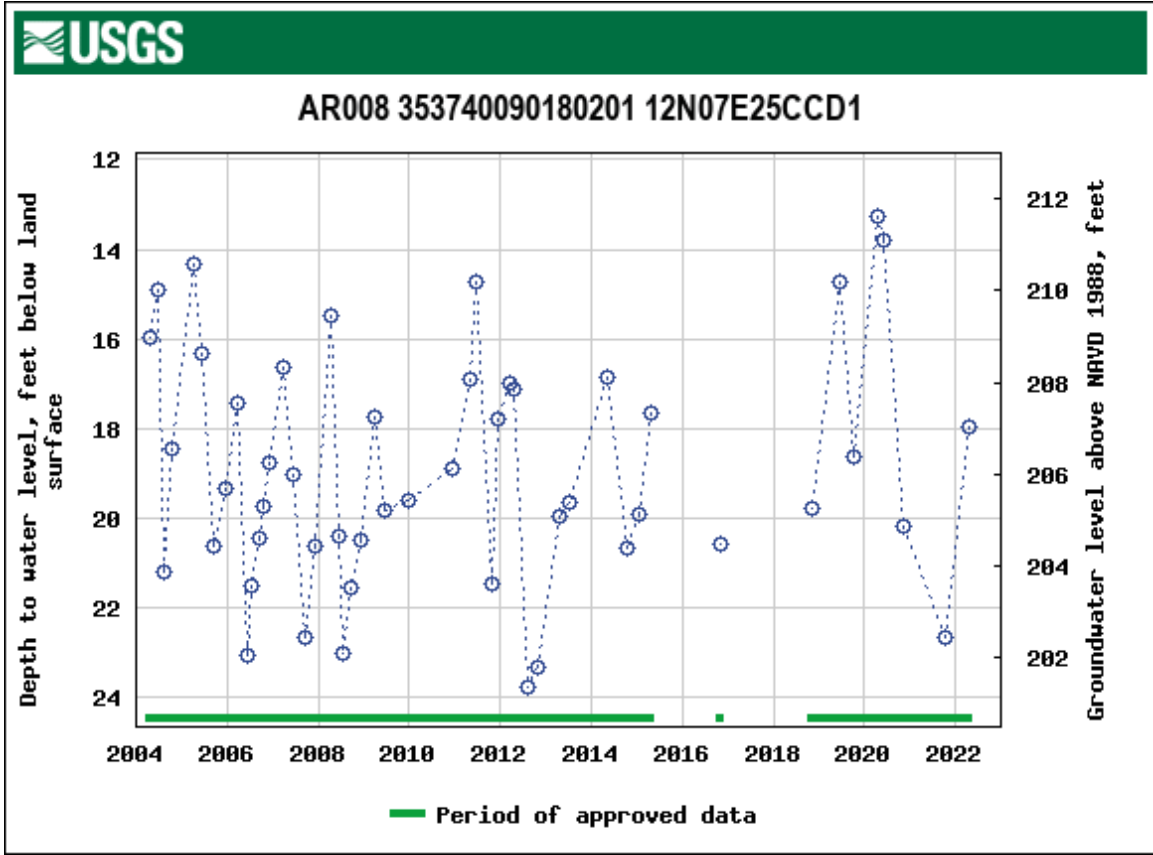


D. Craighead County, Well 14N02E27AAA1

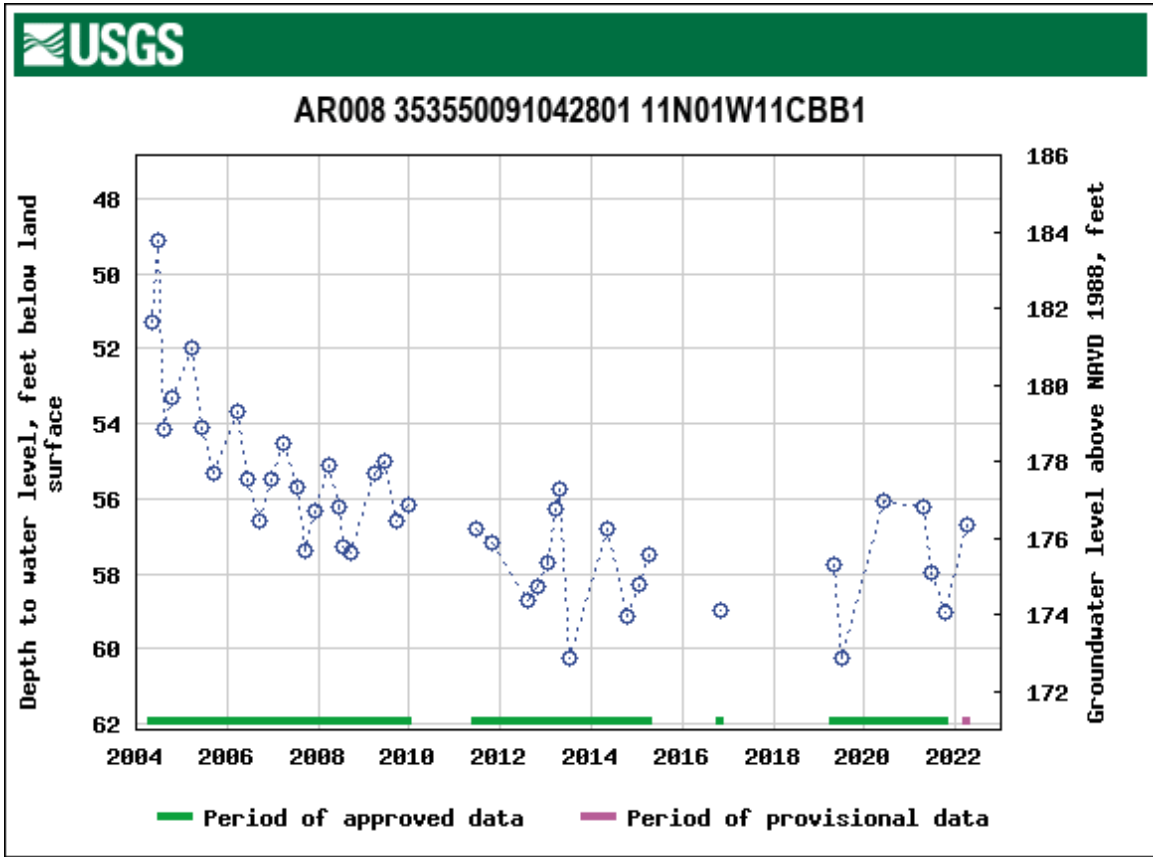


E. Poinsett County, Well 12N02E26DAD1

Figure 13. Selected water level hydrographs from the Mississippi River Valley alluvial aquifer

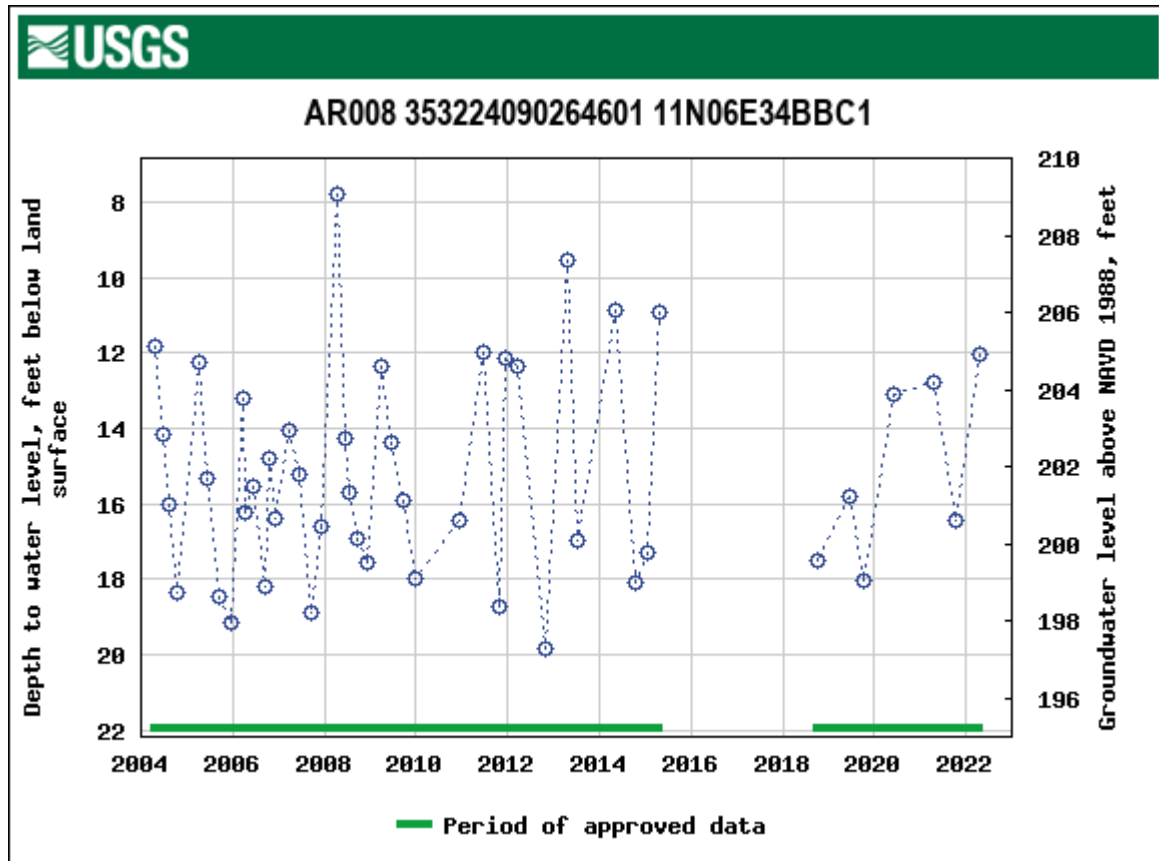


F. Poinsett County, Well 12N07E25CCD1

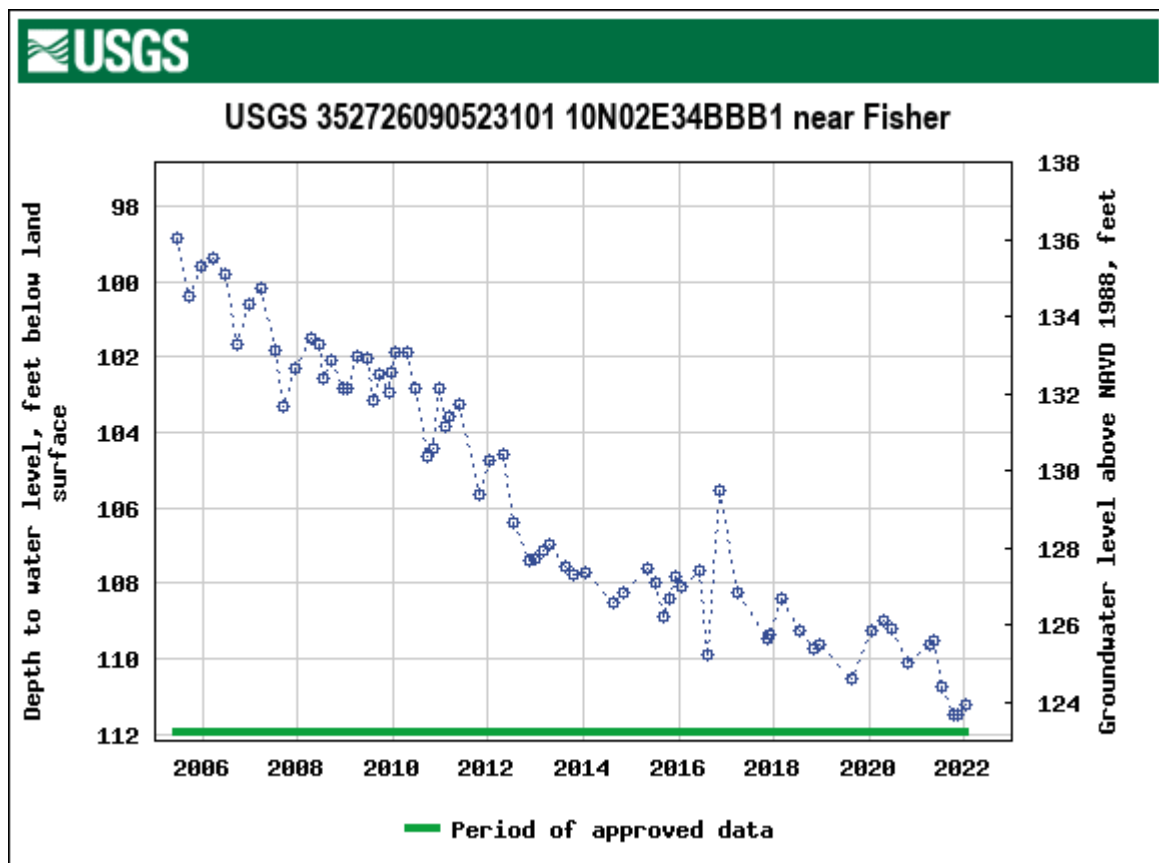


G. Jackson County, Well 11N01W11CCB1

Figure 13. Selected water level hydrographs from the Mississippi River Valley alluvial aquifer

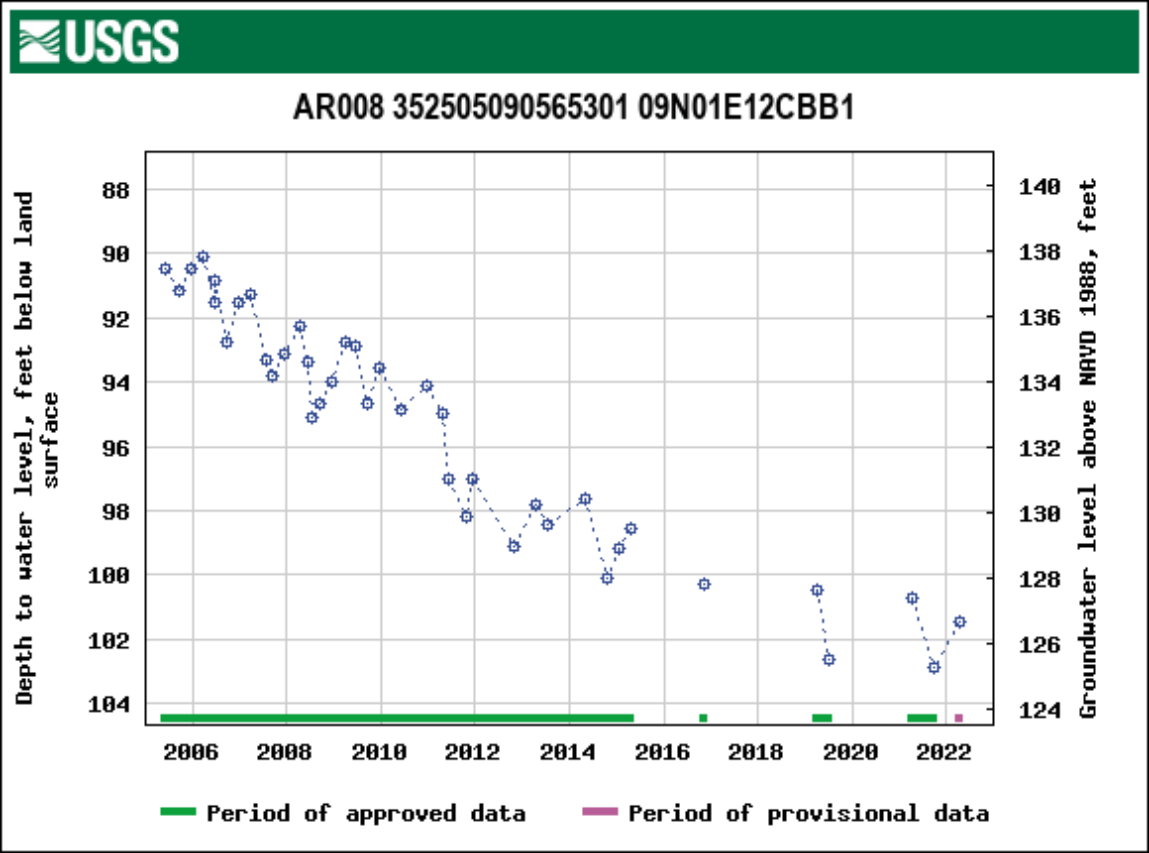


H. Poinsett County, Well 11N06E34BBC1

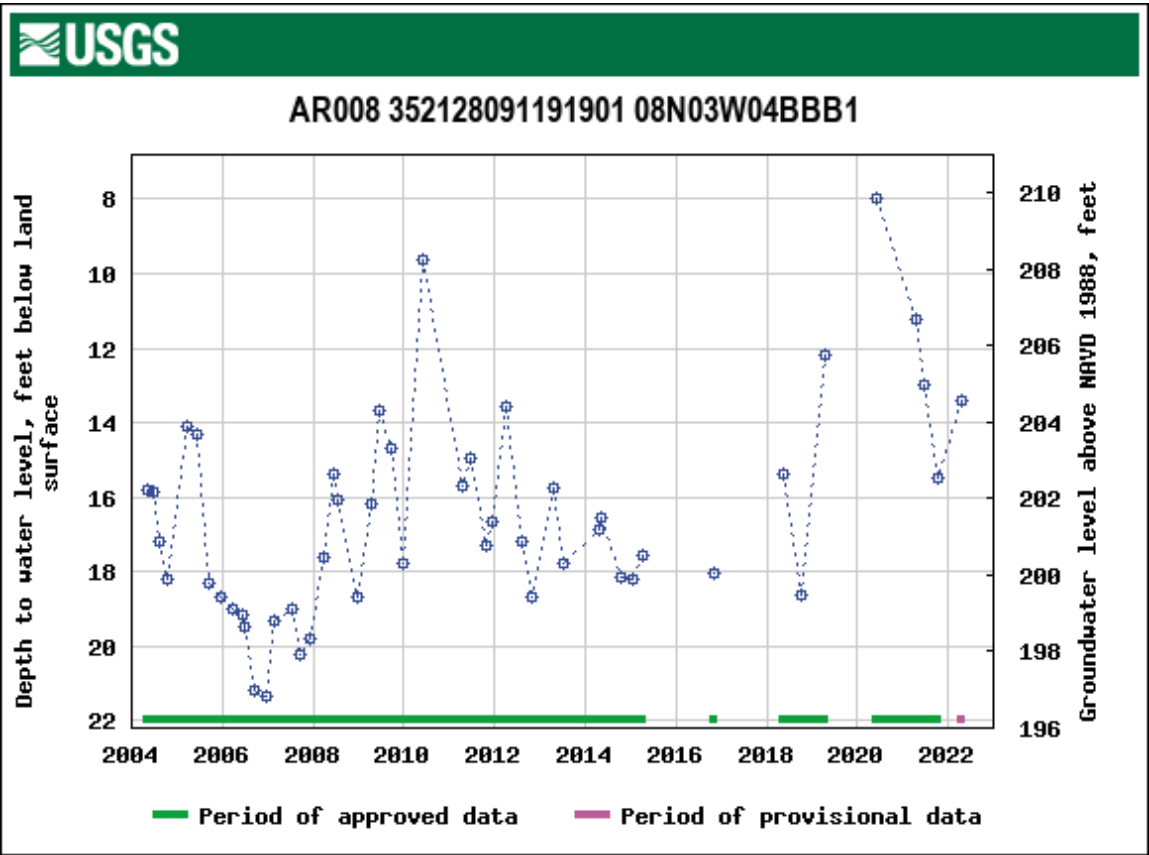


I. Poinsett County, Well 10N02E34BBB1

Figure 13. Selected water level hydrographs from the Mississippi River Valley alluvial aquifer

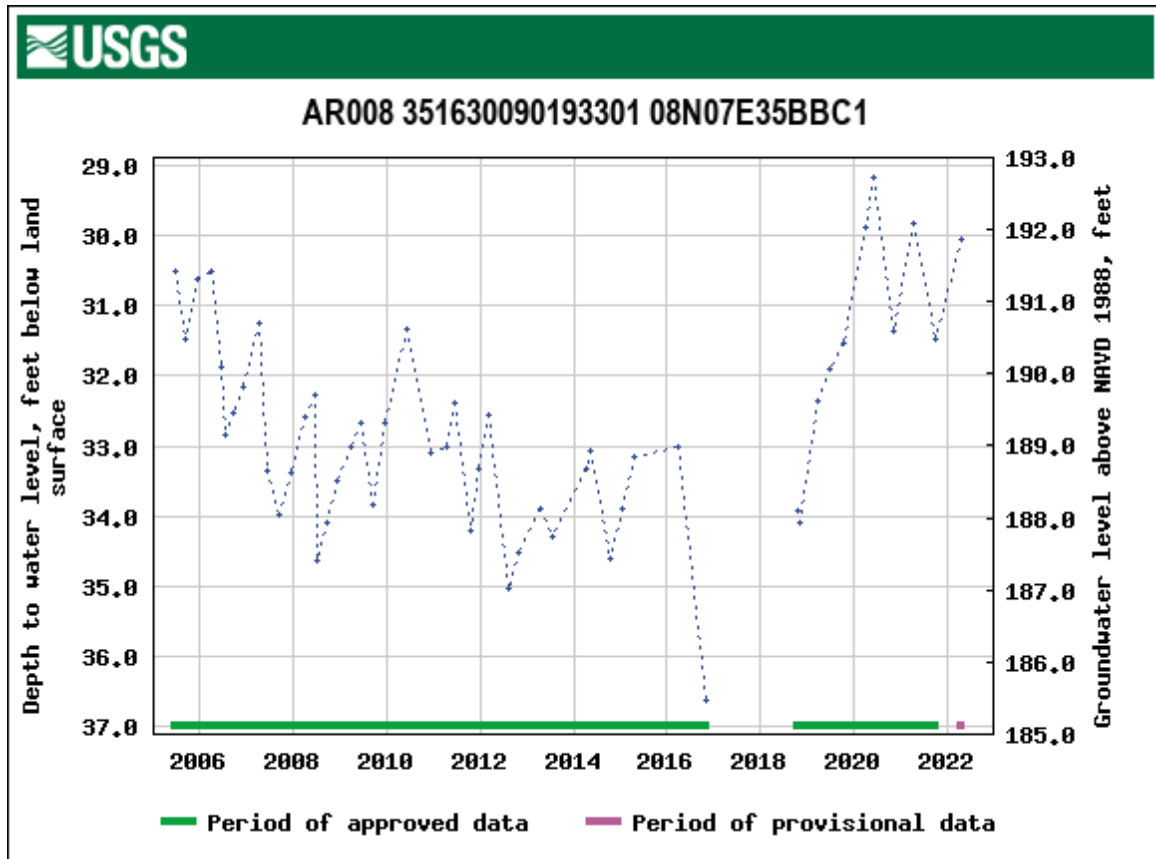


J. Cross County, Well 09N01E12CBB1

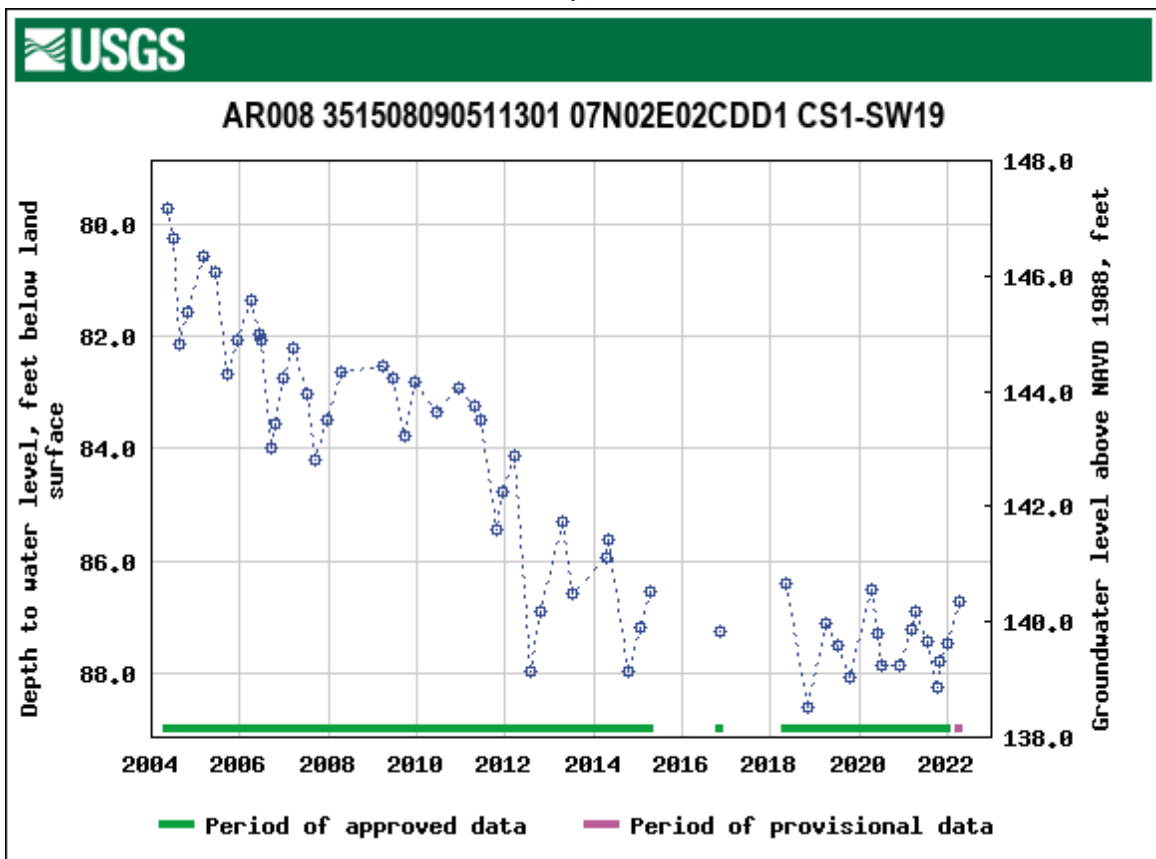


K. Woodruff County, Well 08N03W04BBB1

Figure 13. Selected water level hydrographs from the Mississippi River Valley alluvial aquifer

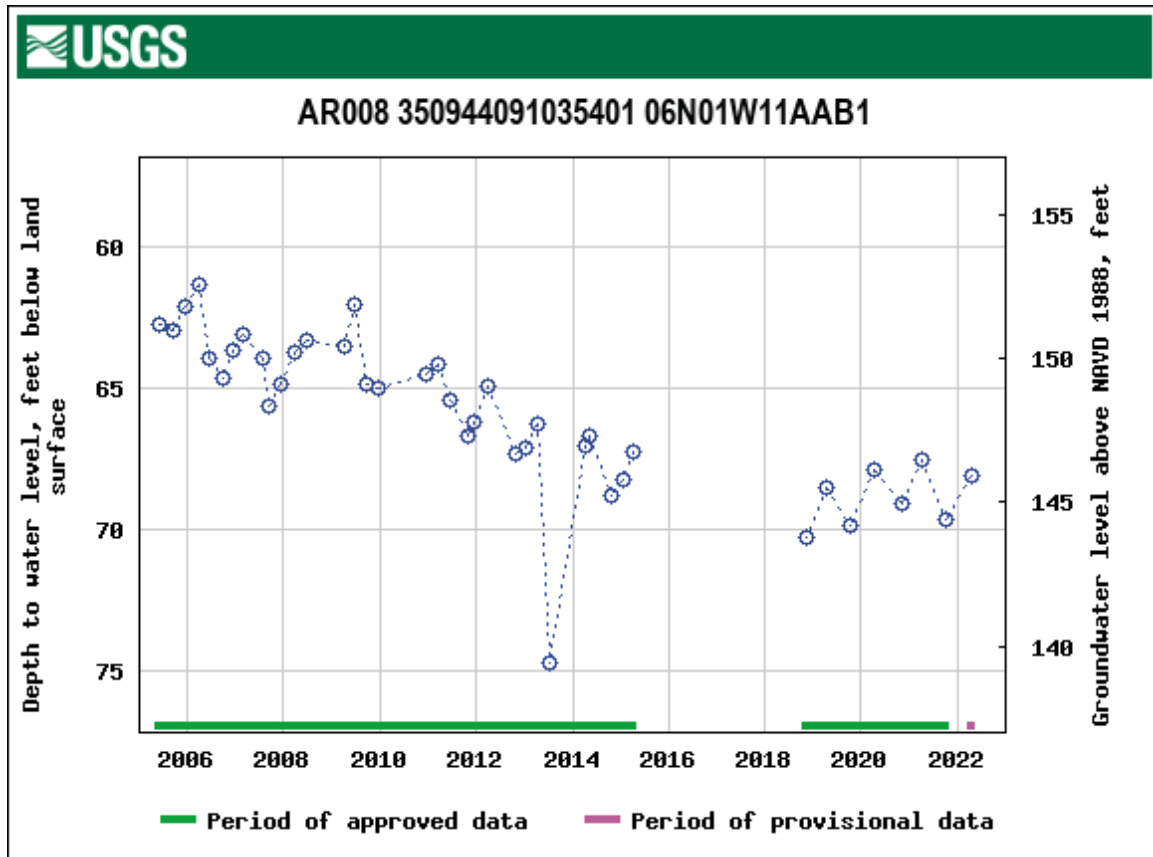


L. Crittenden County, Well 08N07E35BBC1

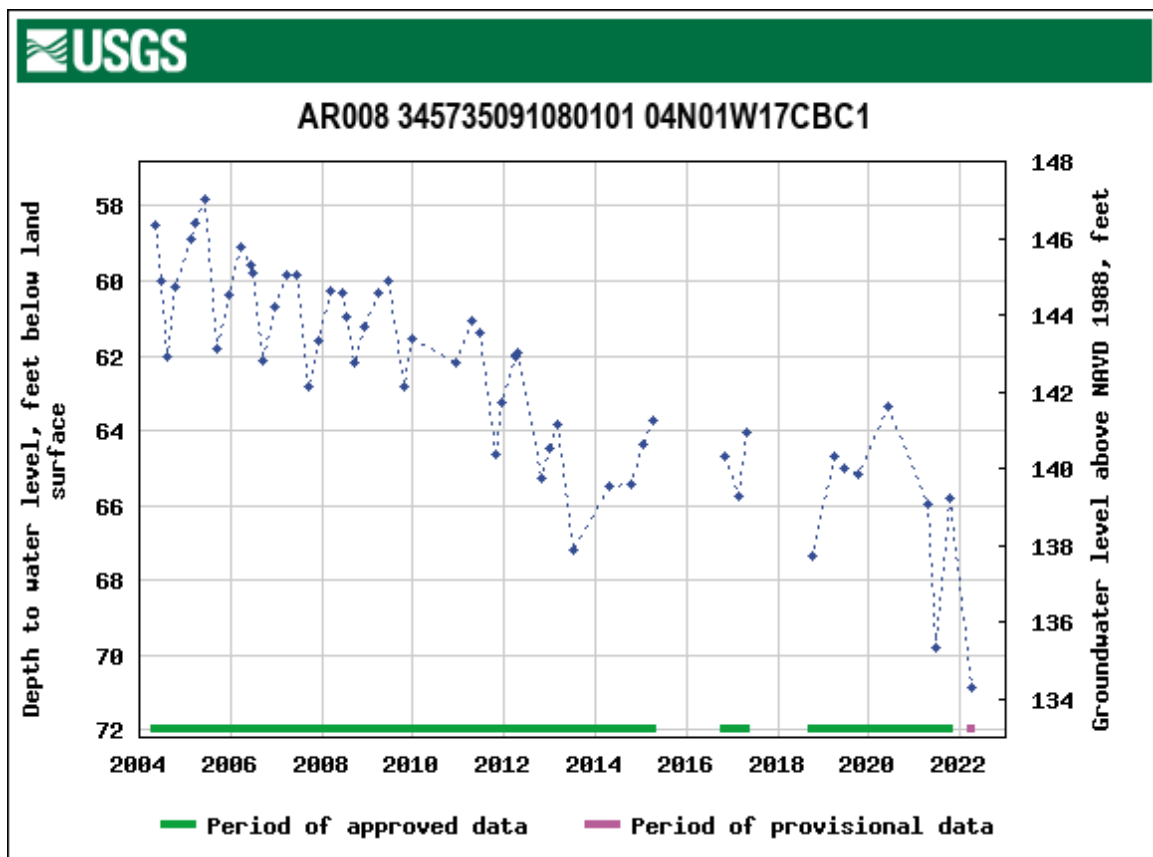


M. Cross County, Well 07N02E02CDD1 CS1-SW19

Figure 13. Selected water level hydrographs from the Mississippi River Valley alluvial aquifer

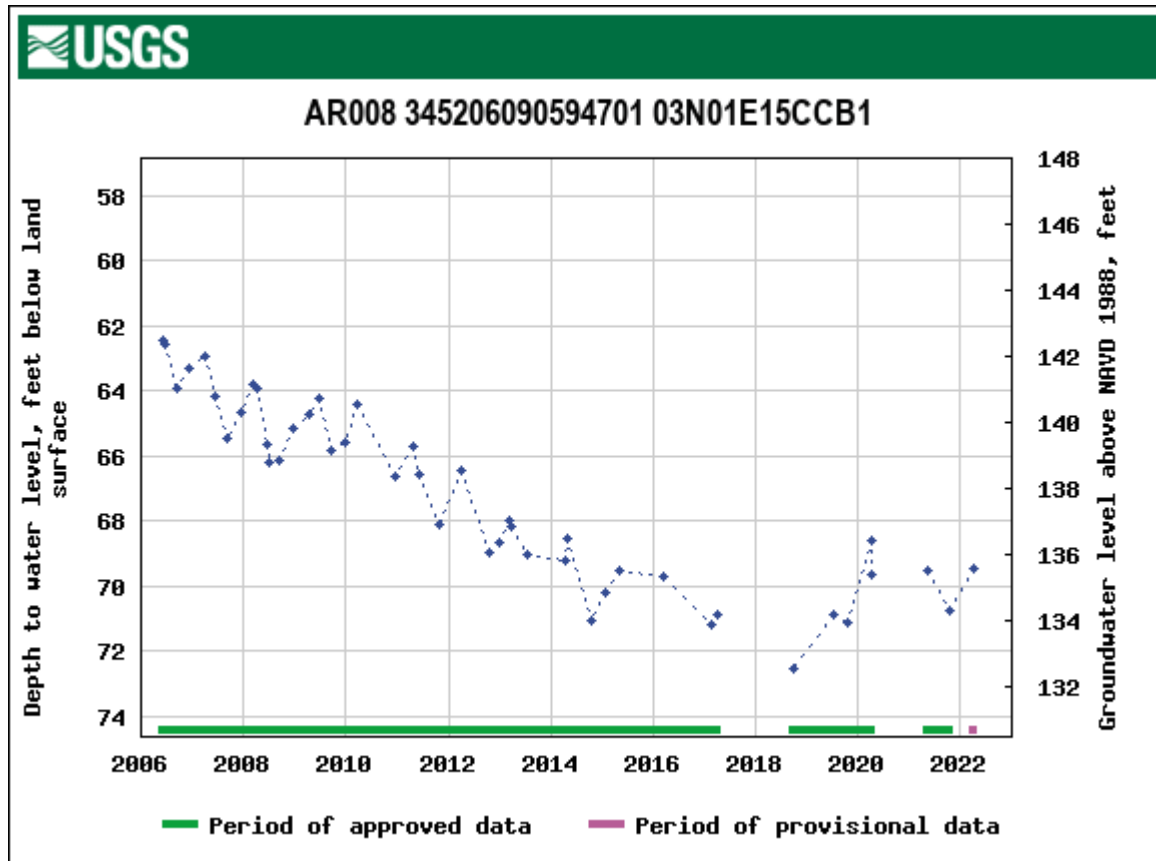


N. Woodruff County, Well 06N01W11AAB1

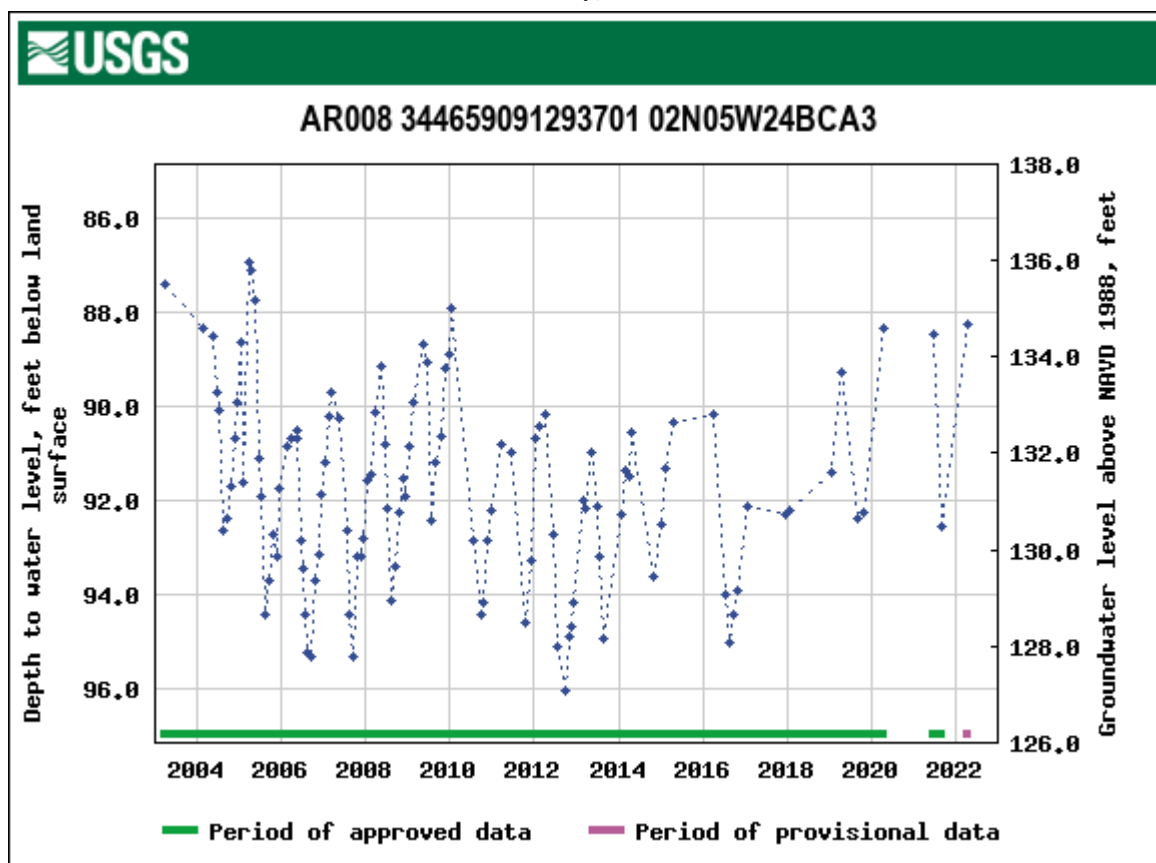


O. St. Francis County, Well 04N01W17CBC1

Figure 13. Selected water level hydrographs from the Mississippi River Valley alluvial aquifer

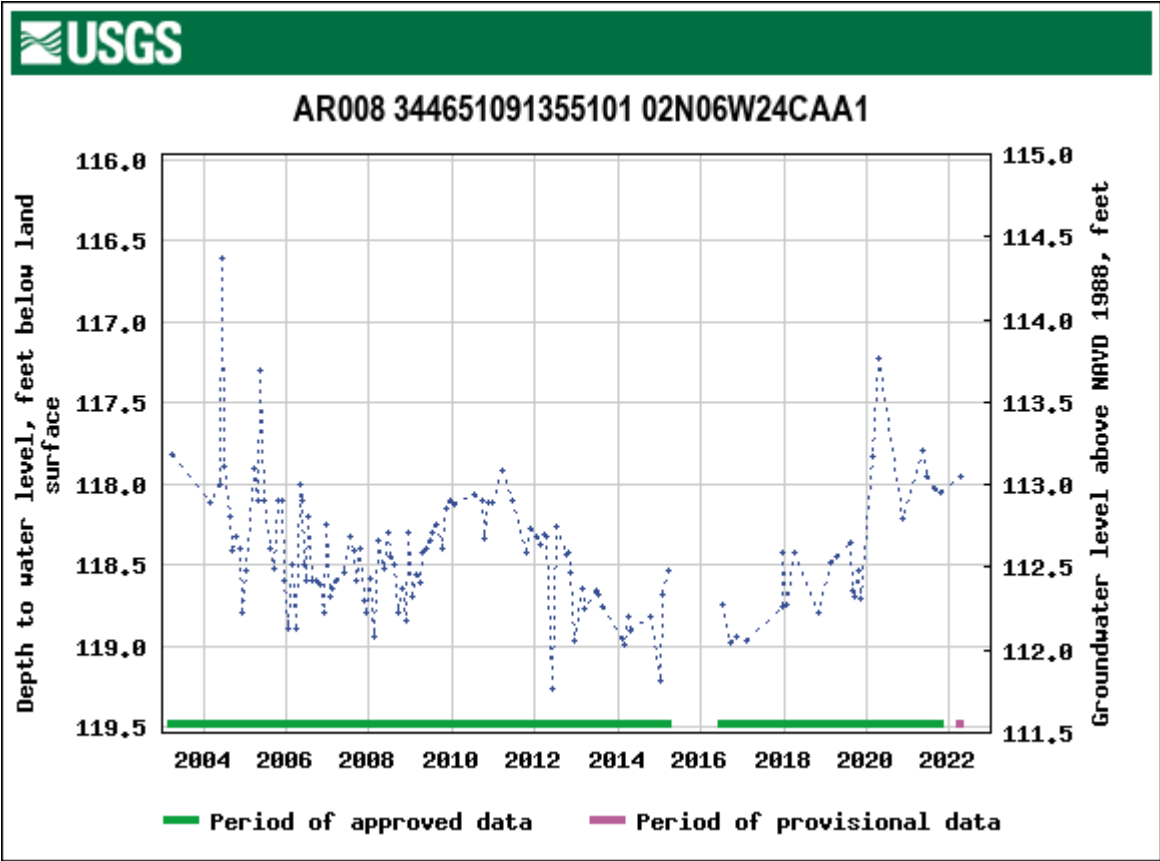


P. Lee County, Well 03N01E15CCB1

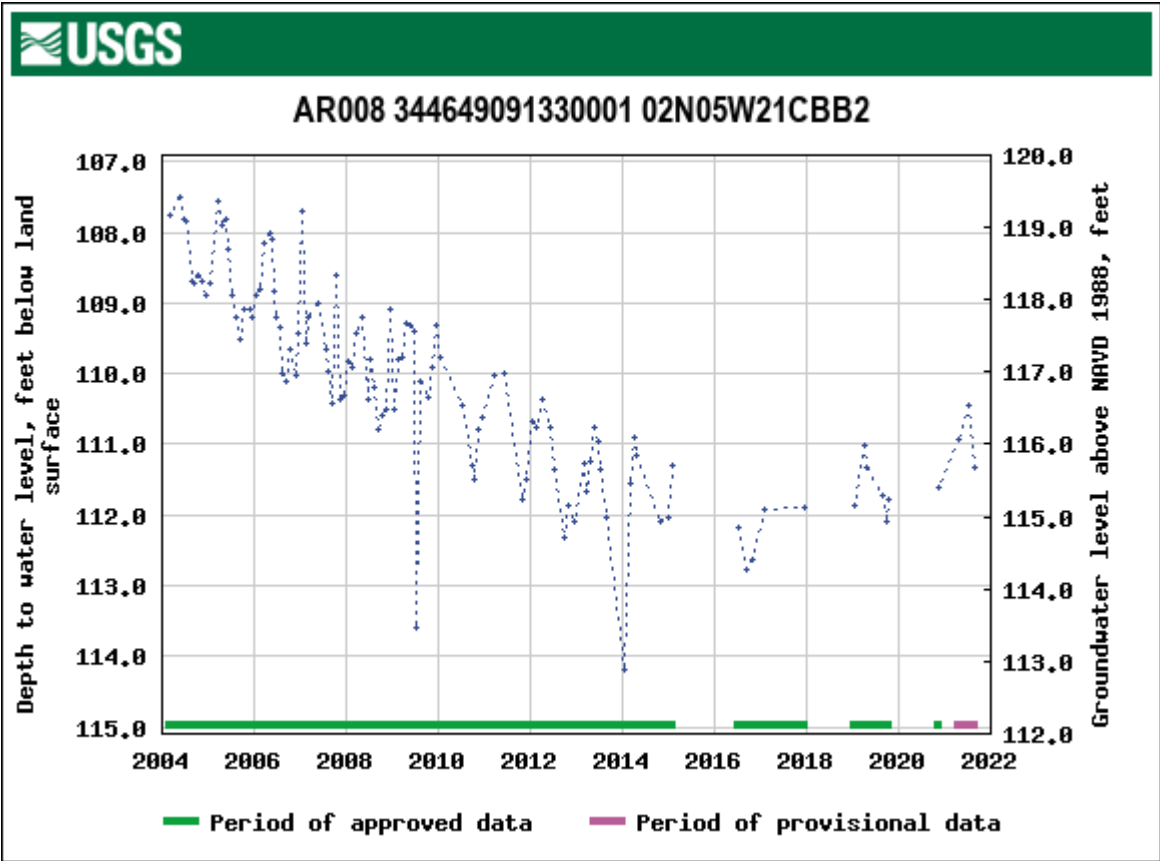


Q. Prairie County, Well 02N05W24BCA3

Figure 13. Selected water level hydrographs from the Mississippi River Valley alluvial aquifer

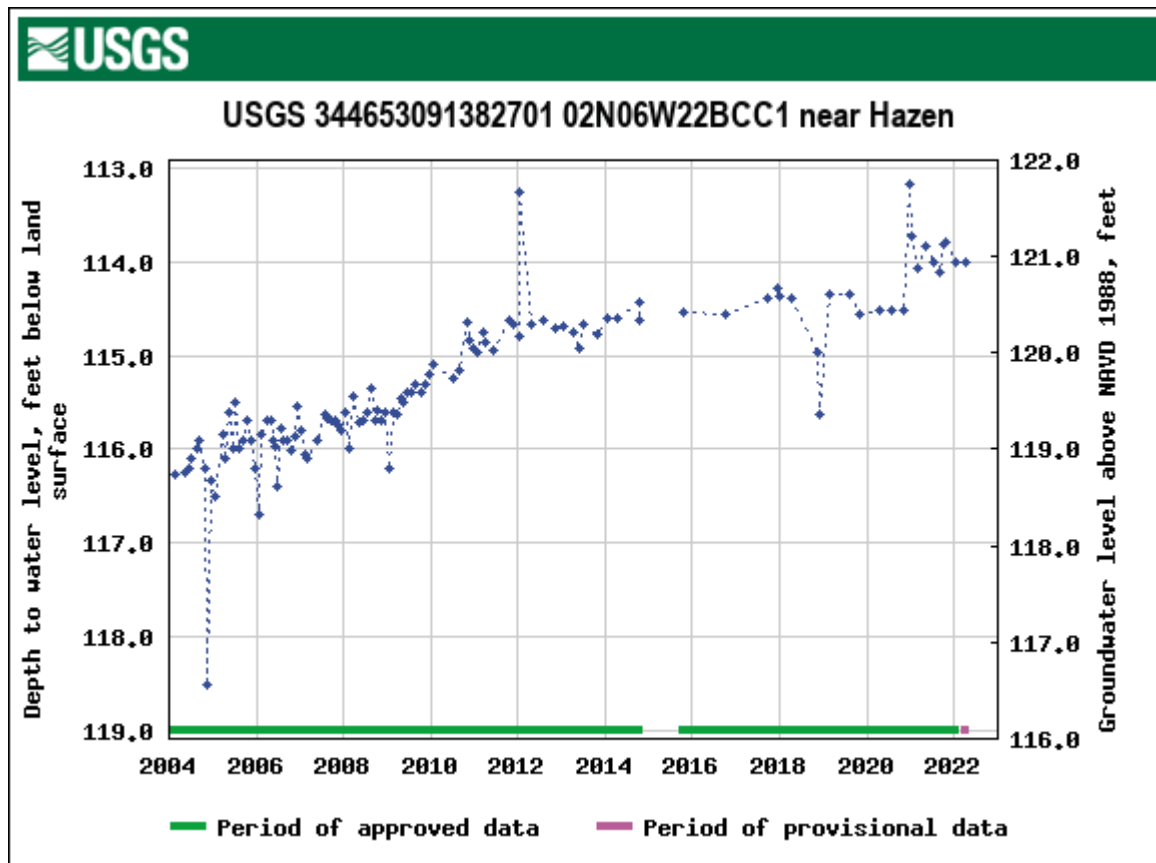


R. Prairie County, Well 02N06W24CAA1

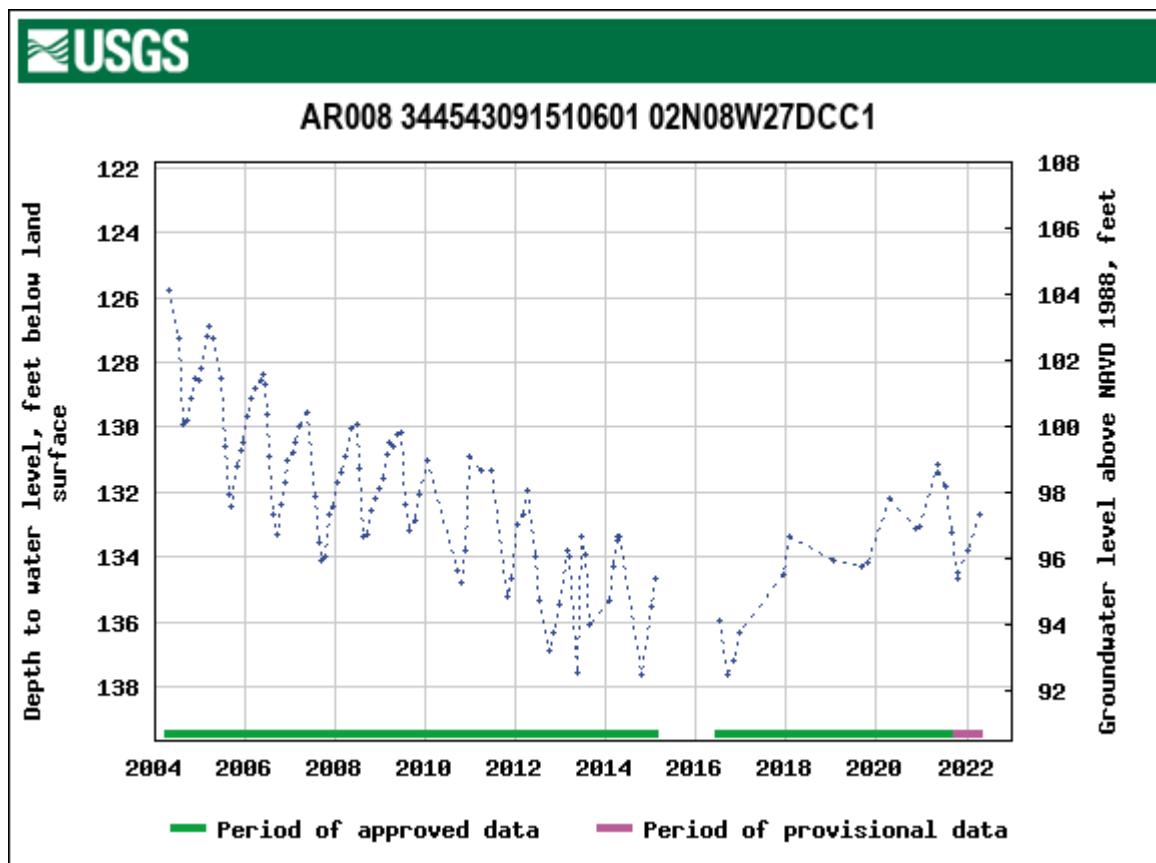


S. Prairie County, Well 02N05W21CBB2

Figure 13. Selected water level hydrographs from the Mississippi River Valley alluvial aquifer

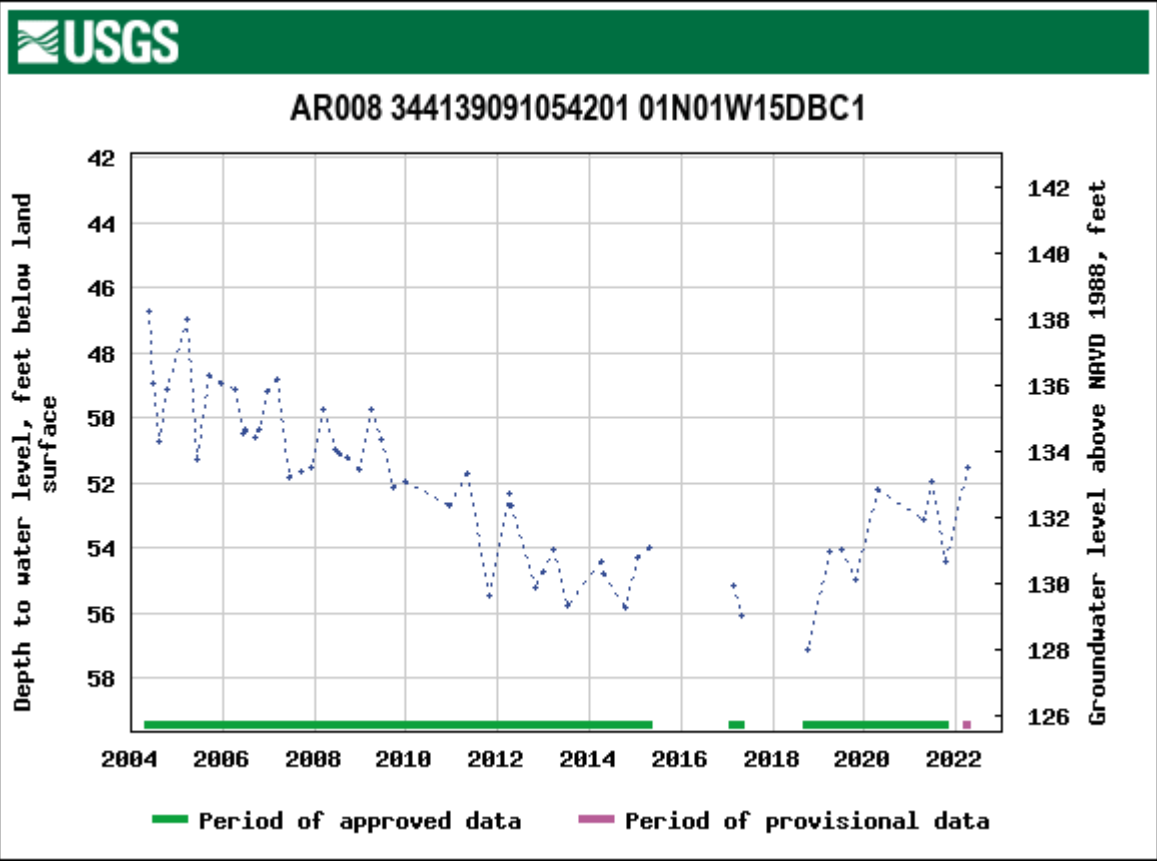


T. Prairie County, Well 02N06W22BBC1

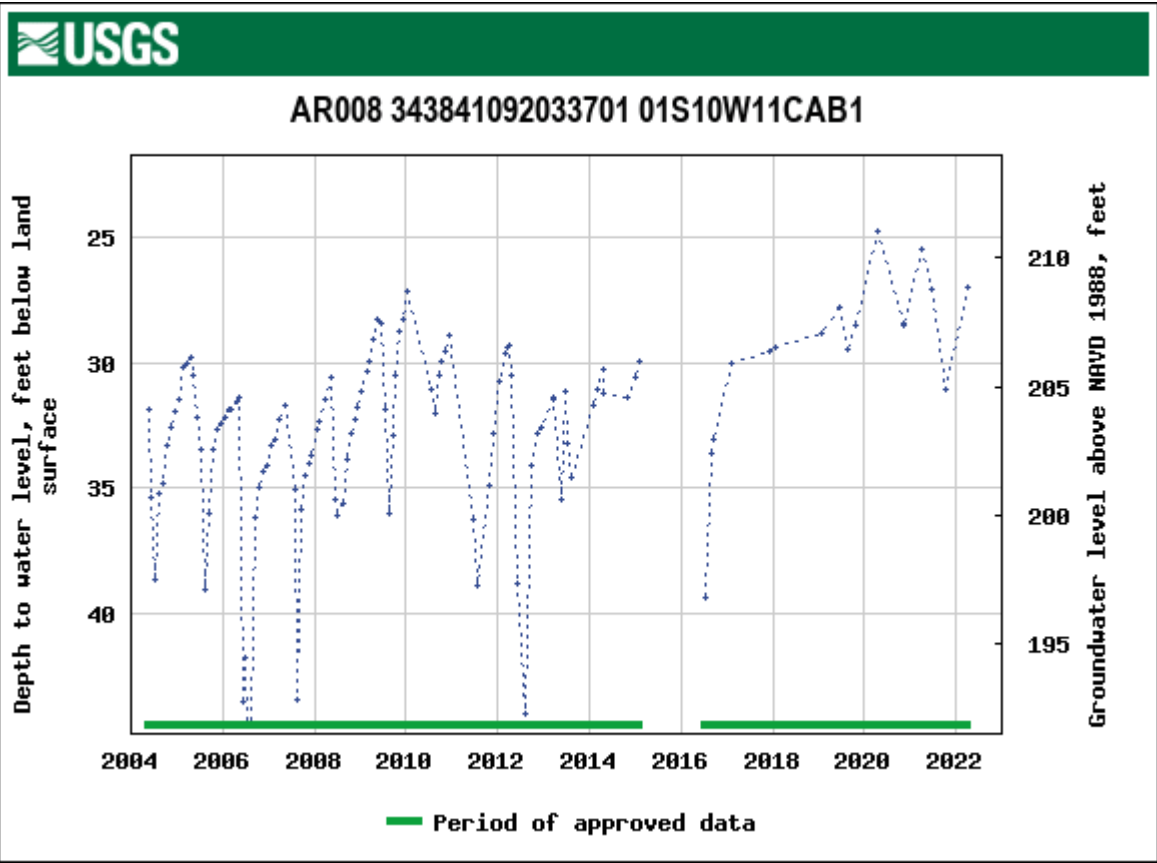


U. Lonoke County, Well 02N08W27DDC1

Figure 13. Selected water level hydrographs from the Mississippi River Valley alluvial aquifer

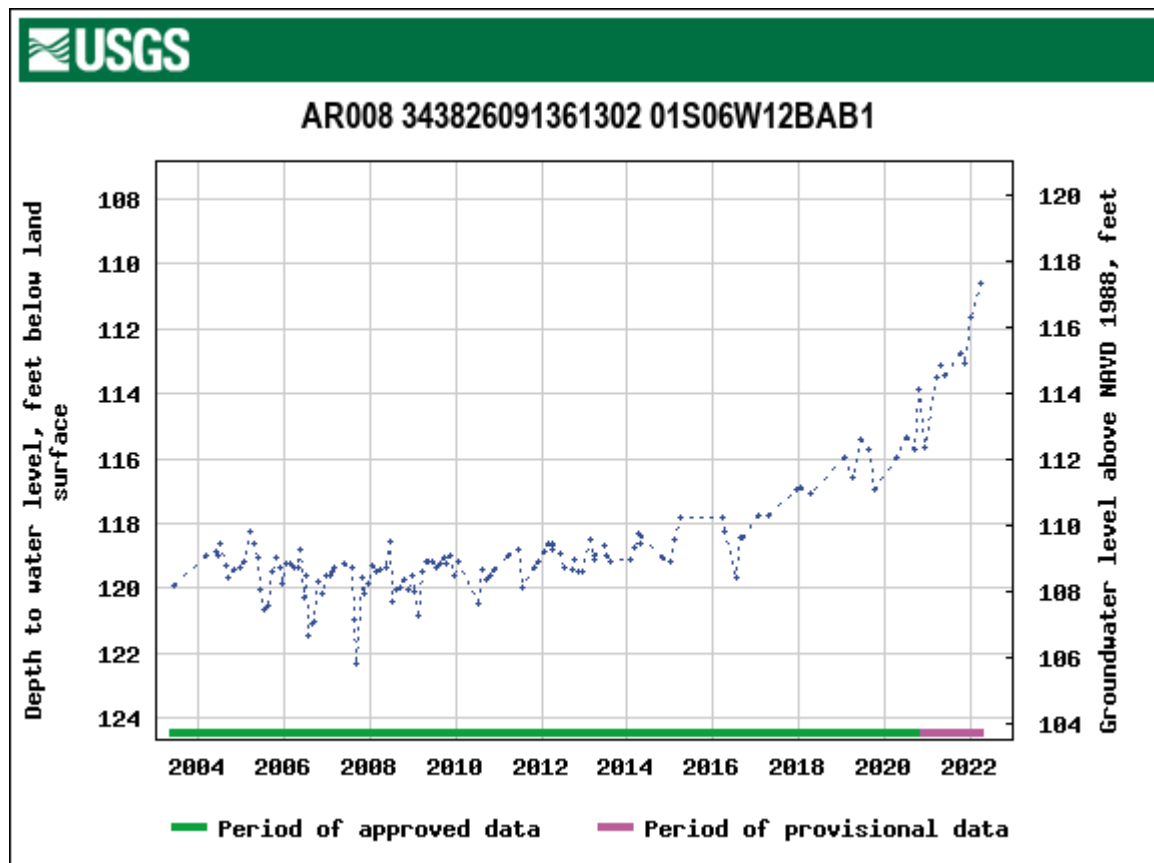


V. Monroe County, Well 01N01W15DBC1

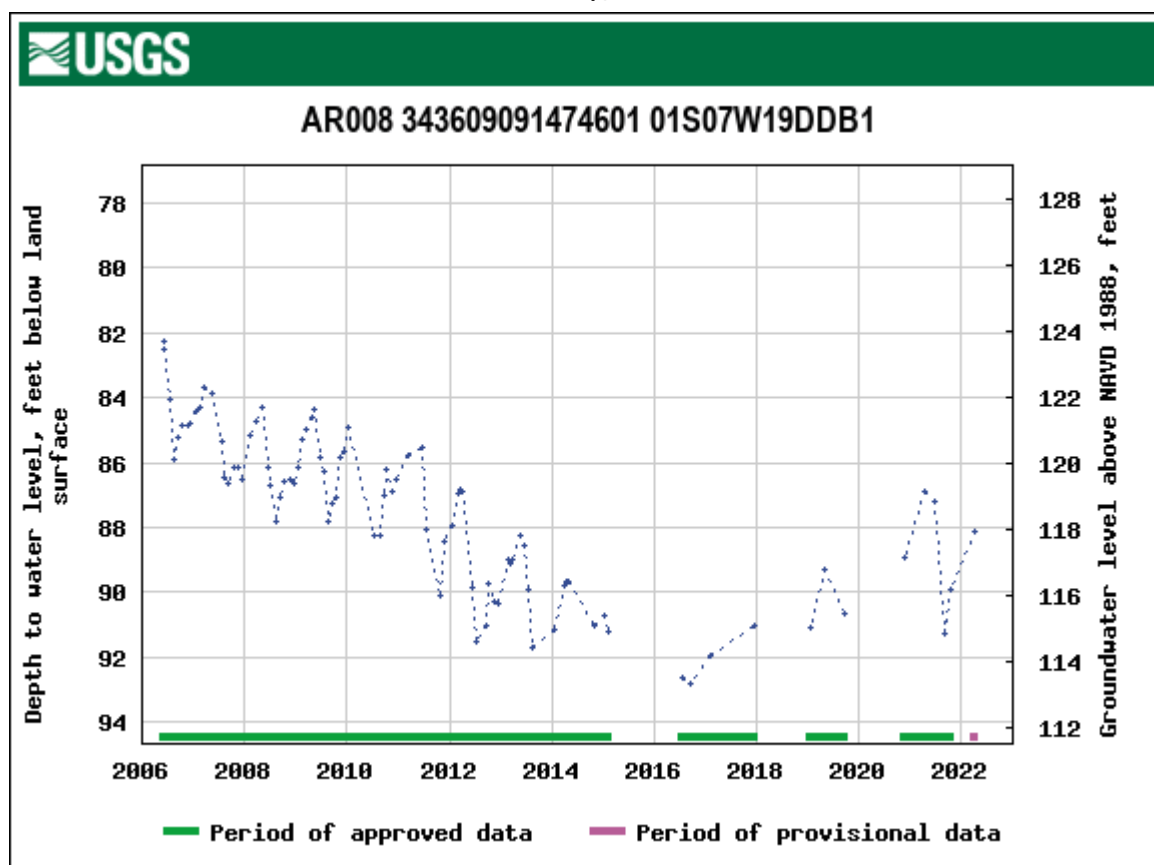


W. Lonoke County, Well 01S01W11CAB1

Figure 13. Selected water level hydrographs from the Mississippi River Valley alluvial aquifer

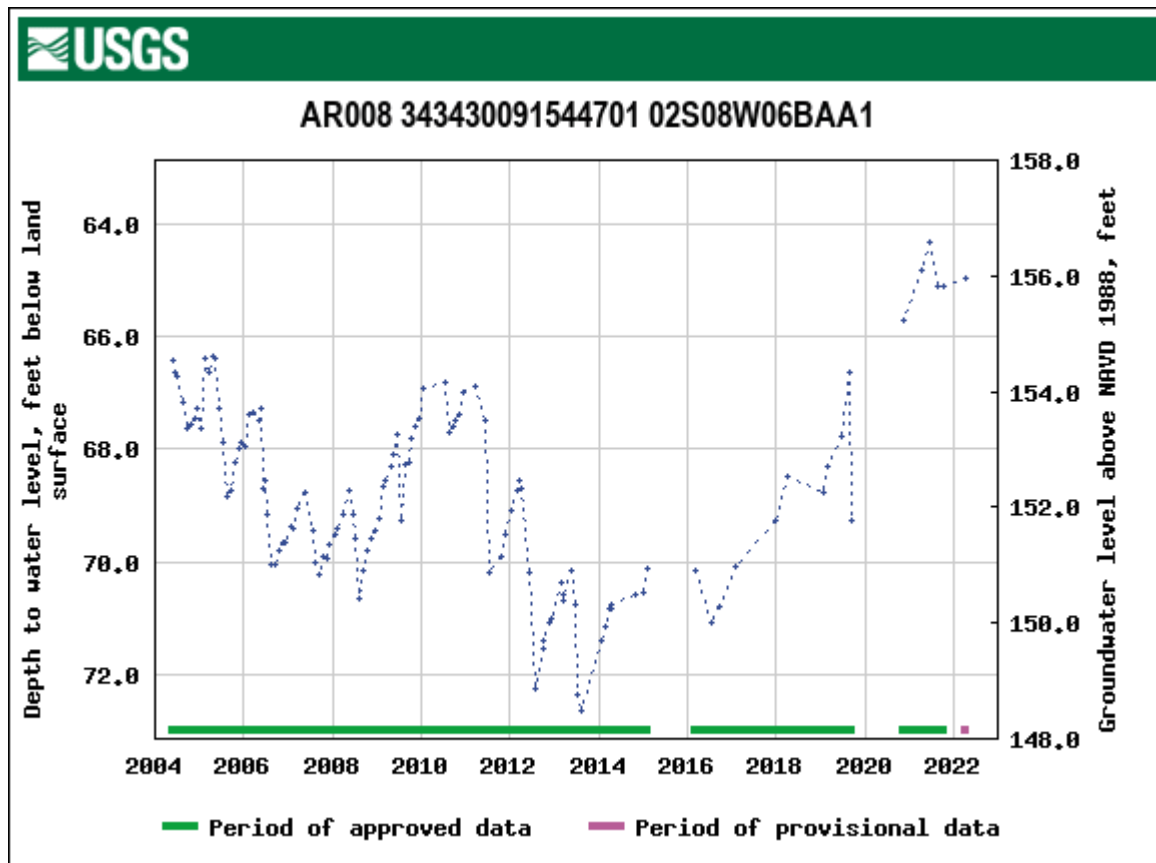


X. Prairie County, Well 01S06W12BAB1

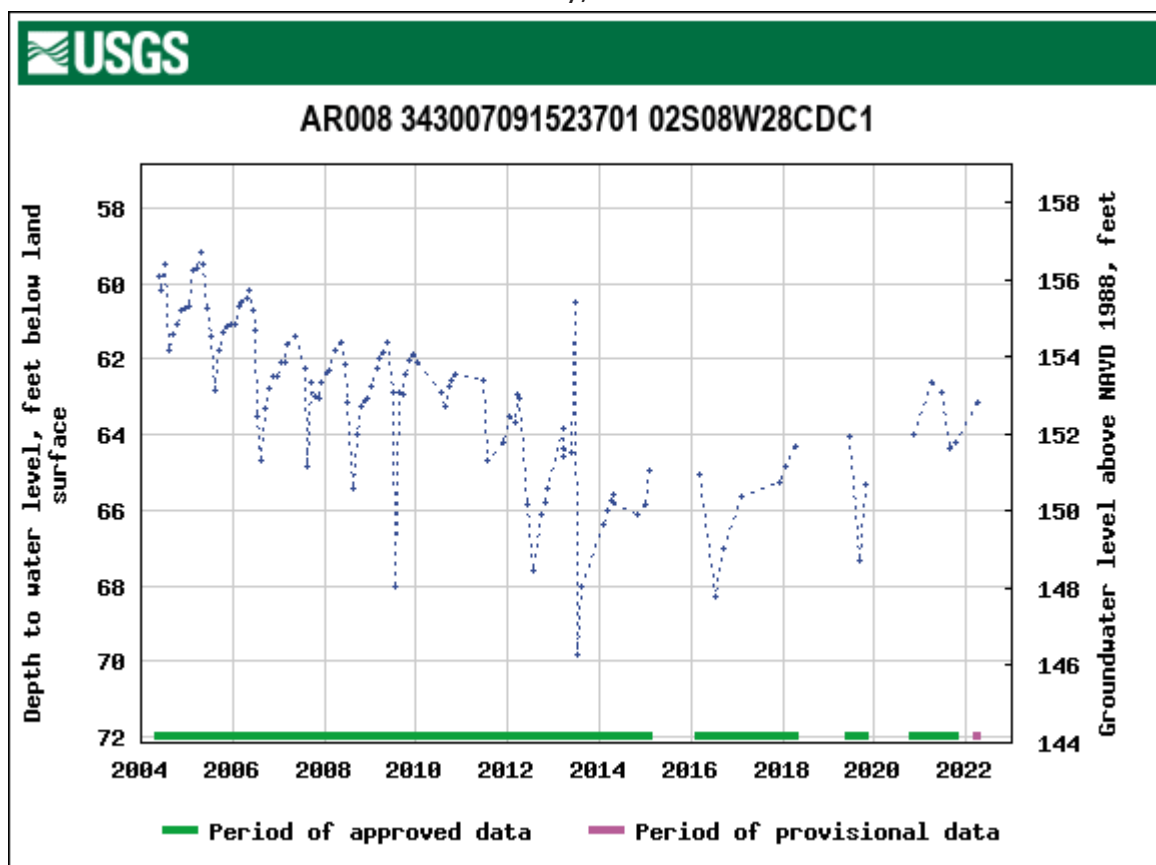


Y. Lonoke County, Well 01S07W19DDB1

Figure 13. Selected water level hydrographs from the Mississippi River Valley alluvial aquifer

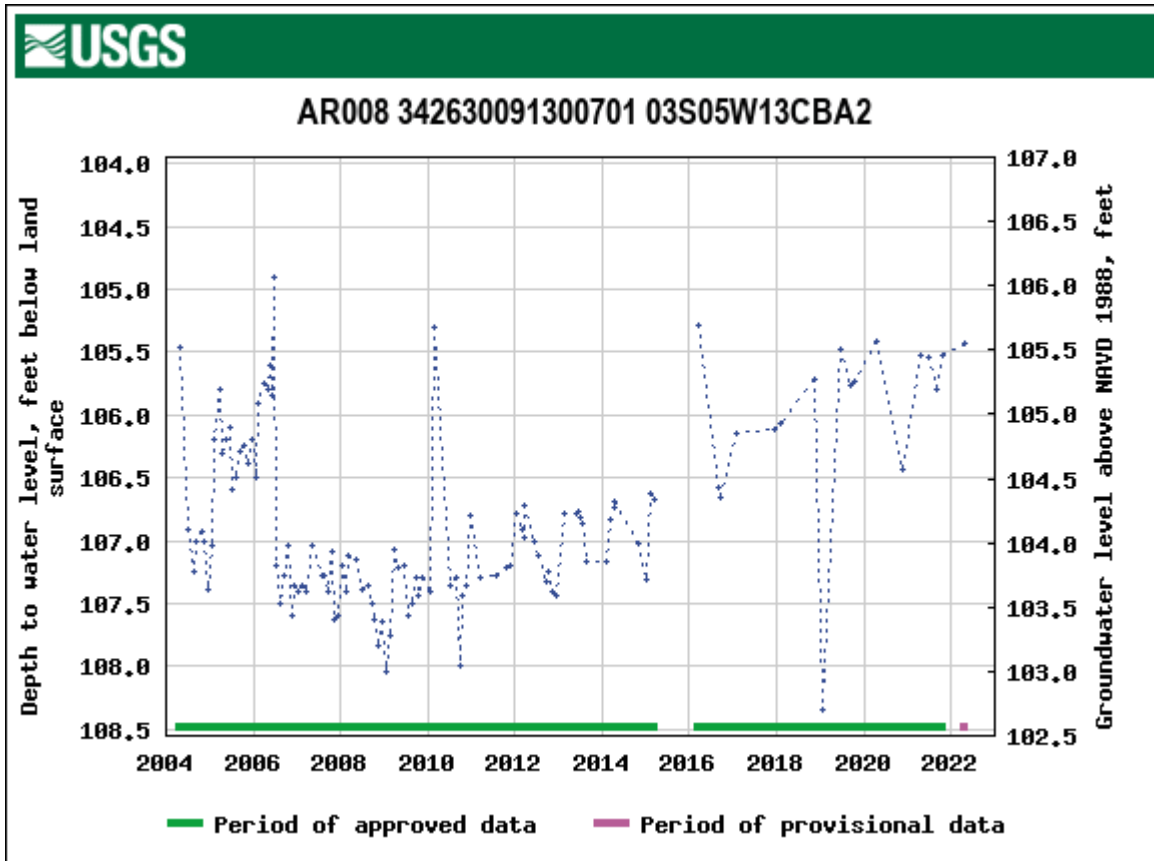


Z. Lonoke County, Well 02S08W06BAA1

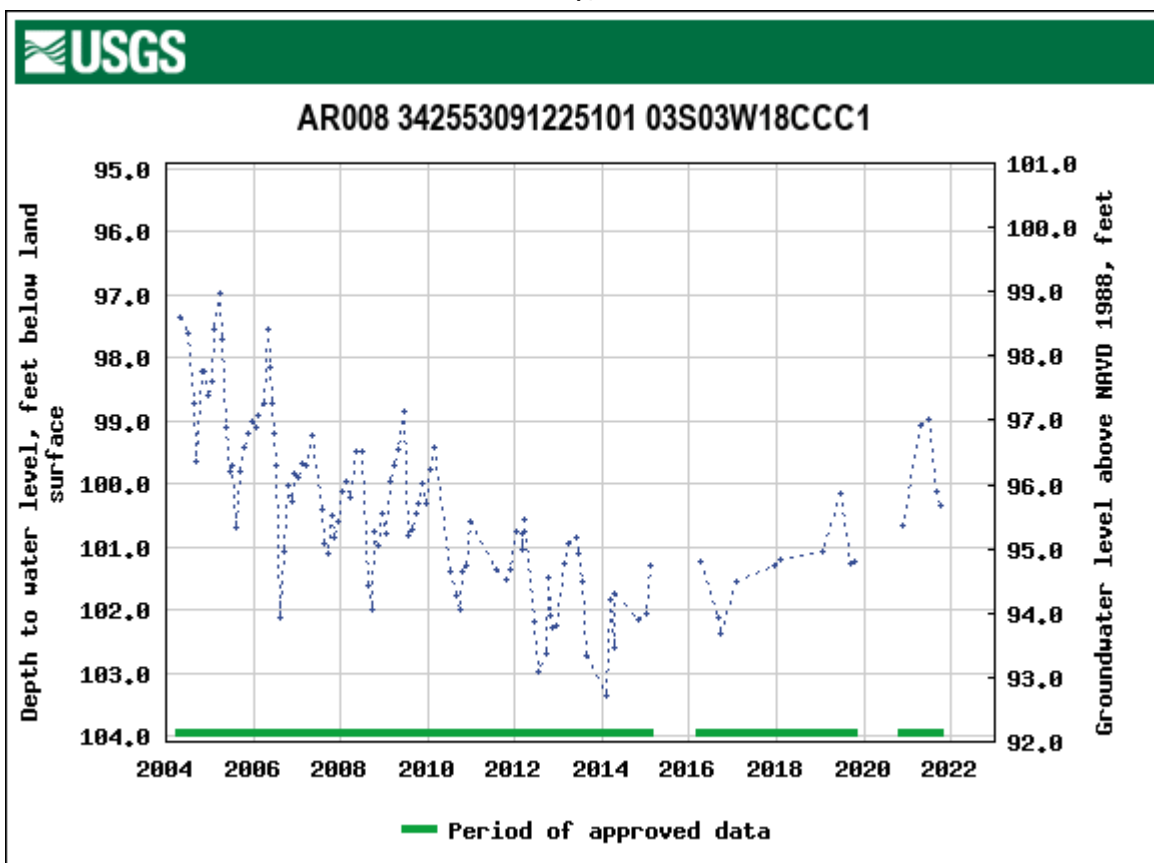


A1. Lonoke County, Well 02S08W28CDC1

Figure 13. Selected water level hydrographs from the Mississippi River Valley alluvial aquifer

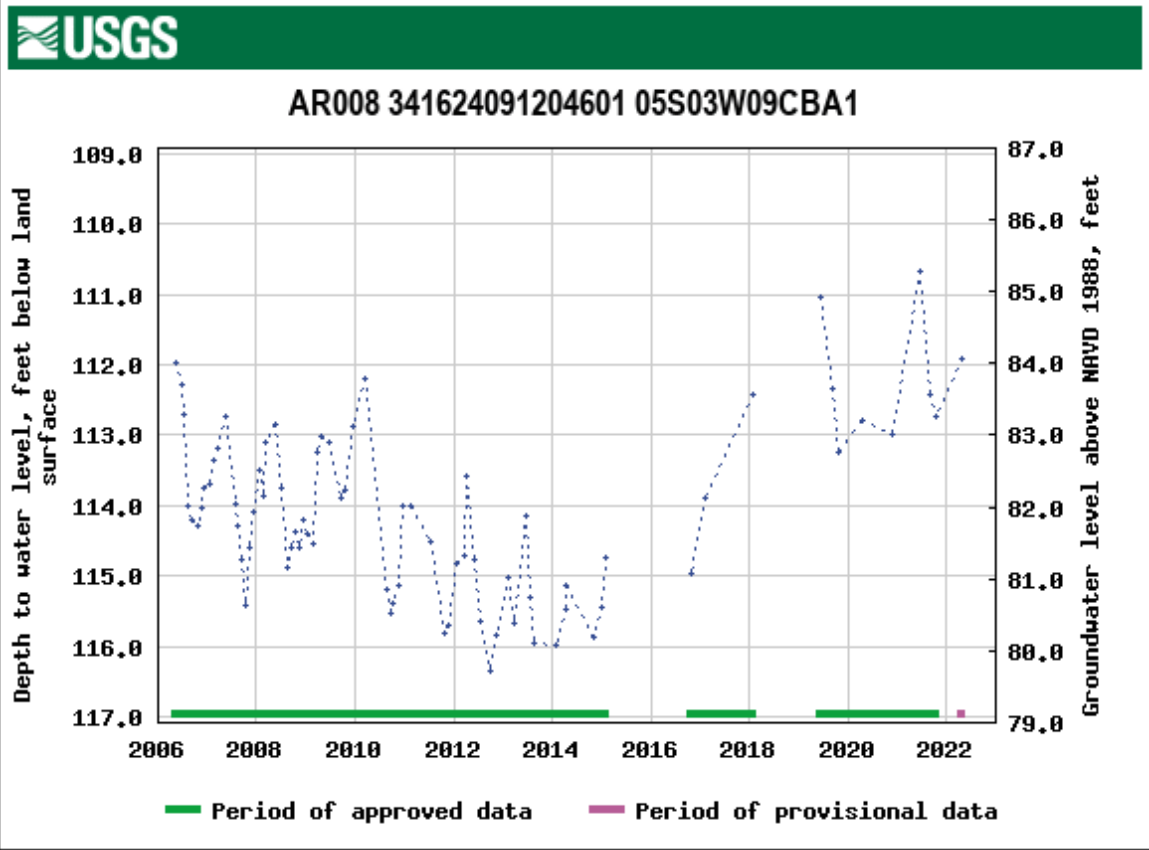


B1. Arkansas County, Well 03S05W13CBA2

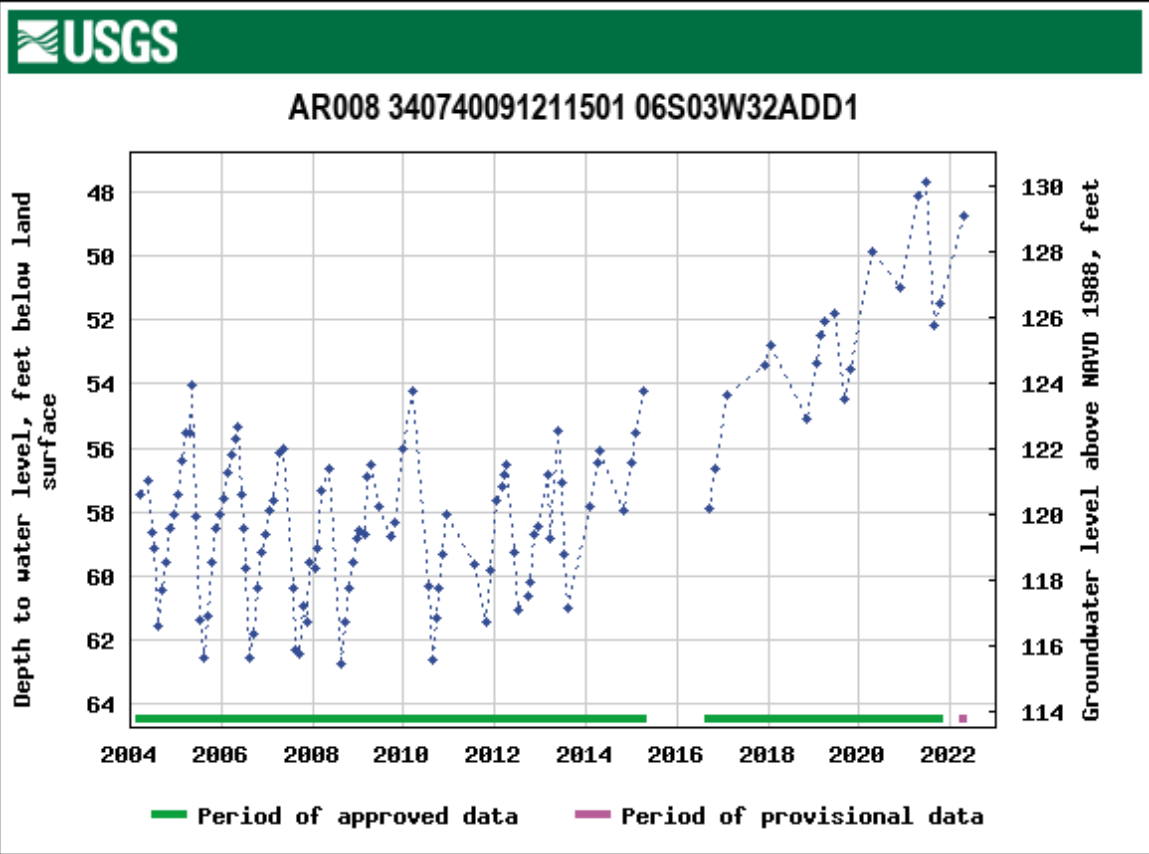


C1. Arkansas County, Well 03S03W18CCC1

Figure 13. Selected water level hydrographs from the Mississippi River Valley alluvial aquifer

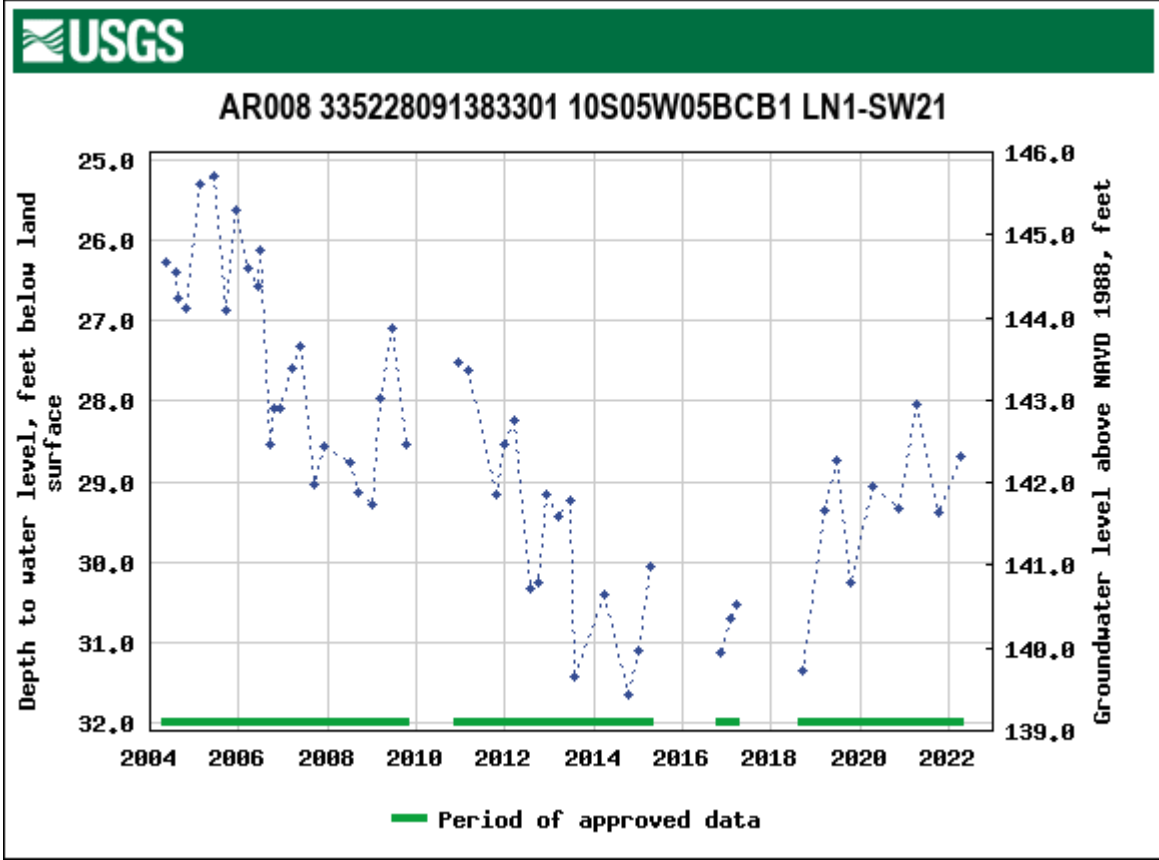


D1. Arkansas County, Well 05S03W09CBA1

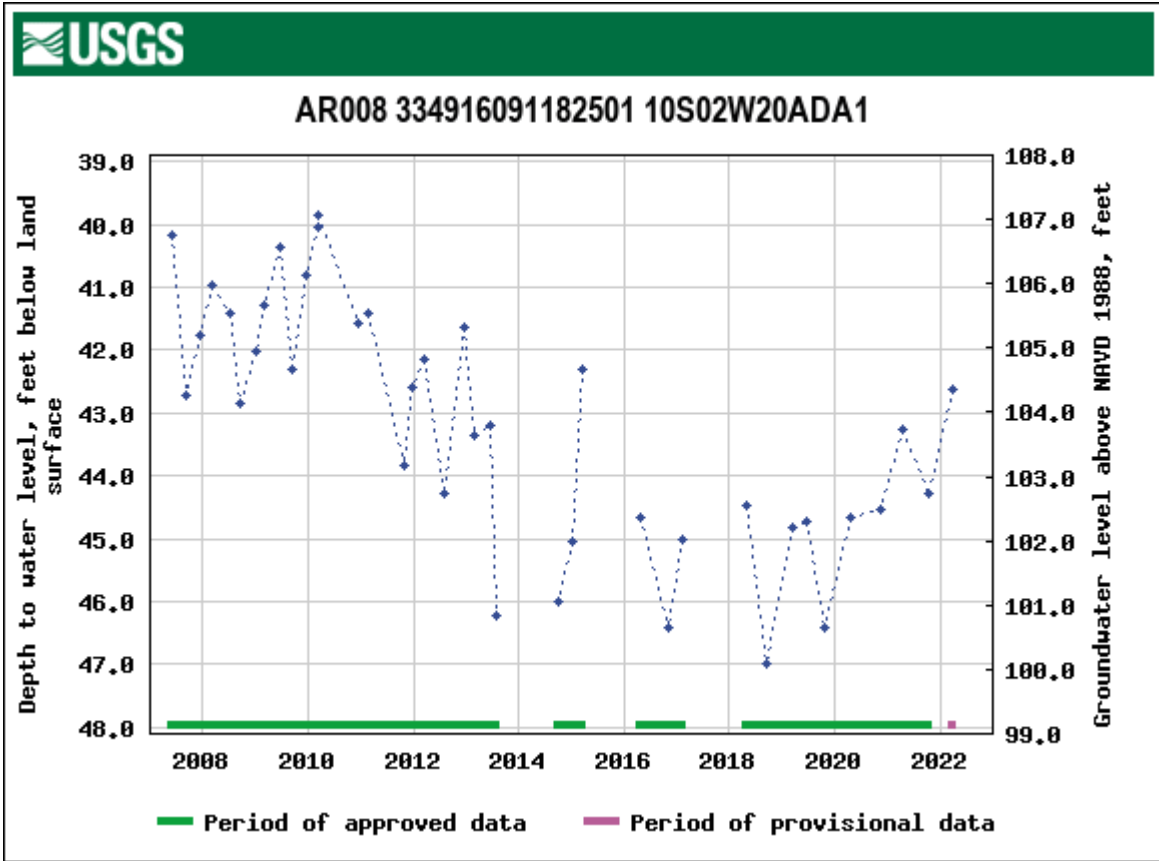


E1. Arkansas County, Well 06S03W32ADD1

Figure 13. Selected water level hydrographs from the Mississippi River Valley alluvial aquifer

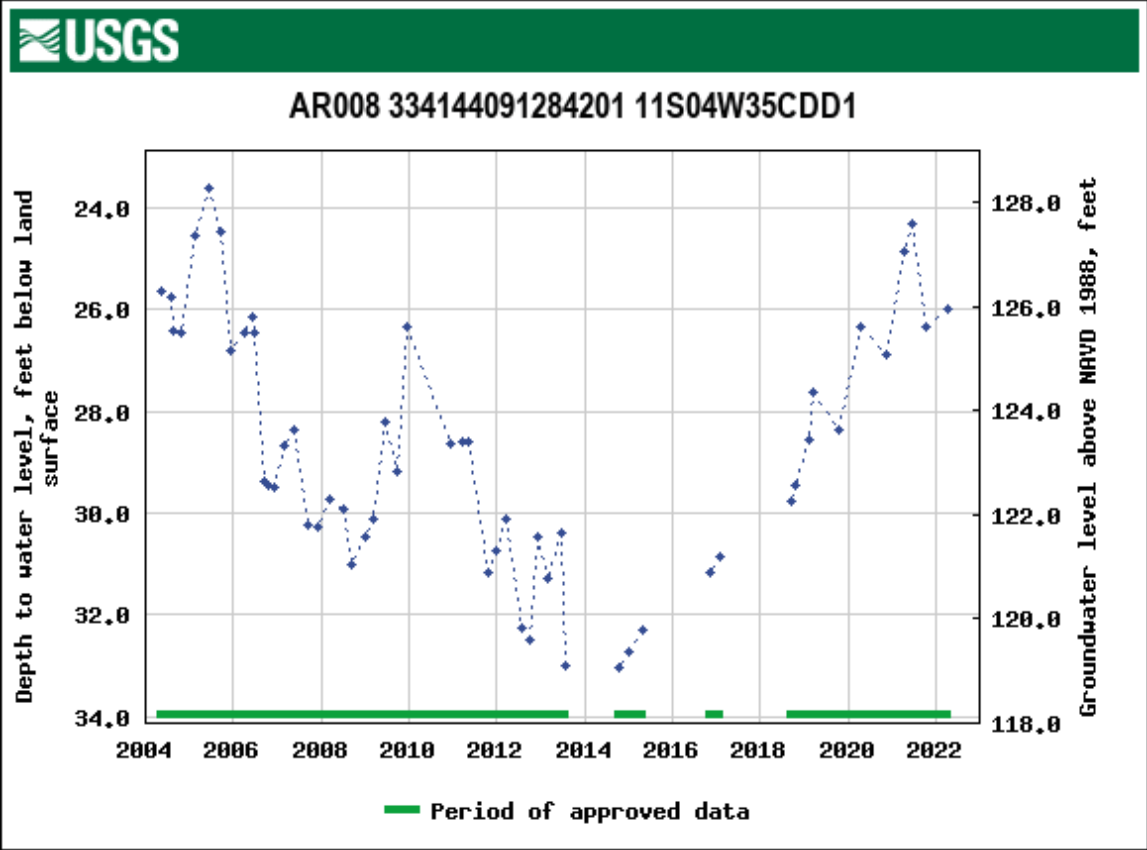


F1. Lincoln County, Well 10S05W05BCB1 LN1-

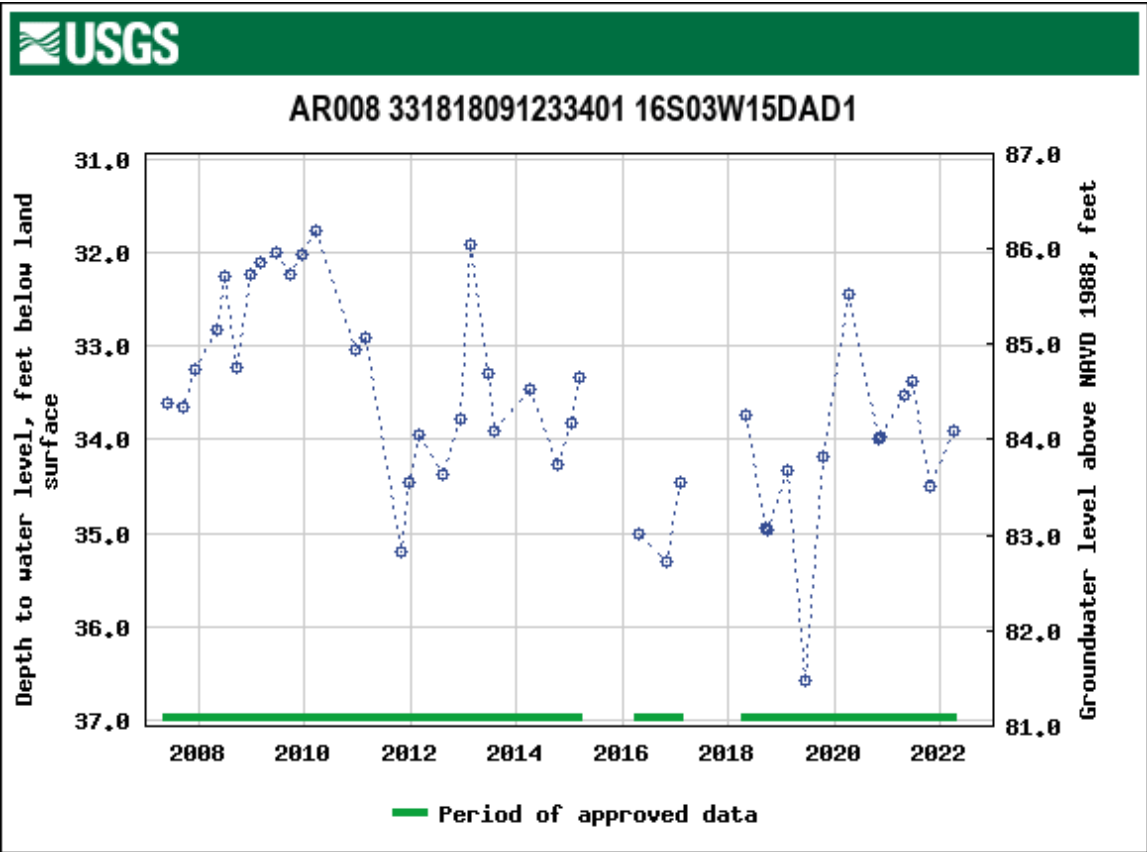


G1. Desha County, Well 10S02W20ADA1

Figure 13. Selected water level hydrographs from the Mississippi River Valley alluvial aquifer

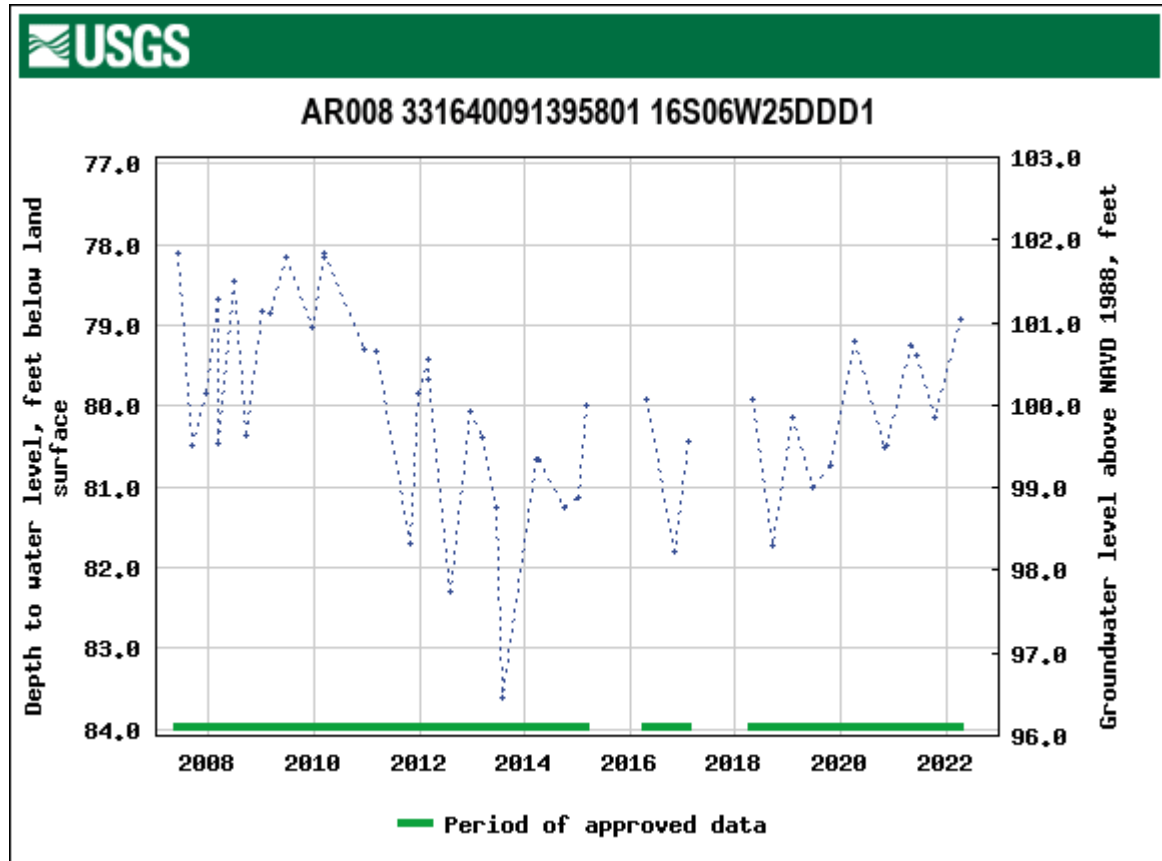


H1. Drew County, Well 11S04W35CDD1



I1. Chicot County, Well 16S03W15DAD1

Figure 13. Selected water level hydrographs from the Mississippi River Valley alluvial aquifer



J1. Ashley County, Well 16S06W25DDD1

As previously mentioned, the spring 2021 water level change values showed a negative average change of -0.64 feet for the entire aquifer in the one-year period, while the five and ten-year periods had positive average values of 1.43 and 1.05, respectively. The aquifer-wide data has been focused per the four study areas that include the alluvial aquifer, Grand Prairie, Cache, St. Francis, and Beouf-Tensas, for each period. The 2021 data shows increasing average water level changes for each study area for all time periods, except for the Cache and St. Francis one-year intervals, which have an average change of -1.17 and -2.21 feet, respectively. Figures 14 through 25 depict the spring 2021 alluvial aquifer water level change data and well locations for the four study areas over the one, five, and ten-year change intervals.

Appendix A presents the 2021 Mississippi River Valley alluvial aquifer water level data along with the 2011, 2016, and 2020 water level data for wells measured in 2021 as used in this report.

Figure 14 Cache Study Area 2020 - 2021 Water Level Changes (Alluvial Aquifer)

Cache Study Area
1 Year Change:

Average Change: -1.17 Feet
104 of 159 Wells Showed Declines

County	Avg. Change, Ft.
Clay	-0.86
Craighead	-0.40
Cross	-0.09
Greene	-0.22
Independence	-1.83
Jackson	-1.23
Lawrence	-0.72
Lee	-2.78
Monroe	-1.25
Phillips	-1.46
Poinsett	-4.60
Randolph	-0.36
St. Francis	-0.64
Woodruff	-1.31

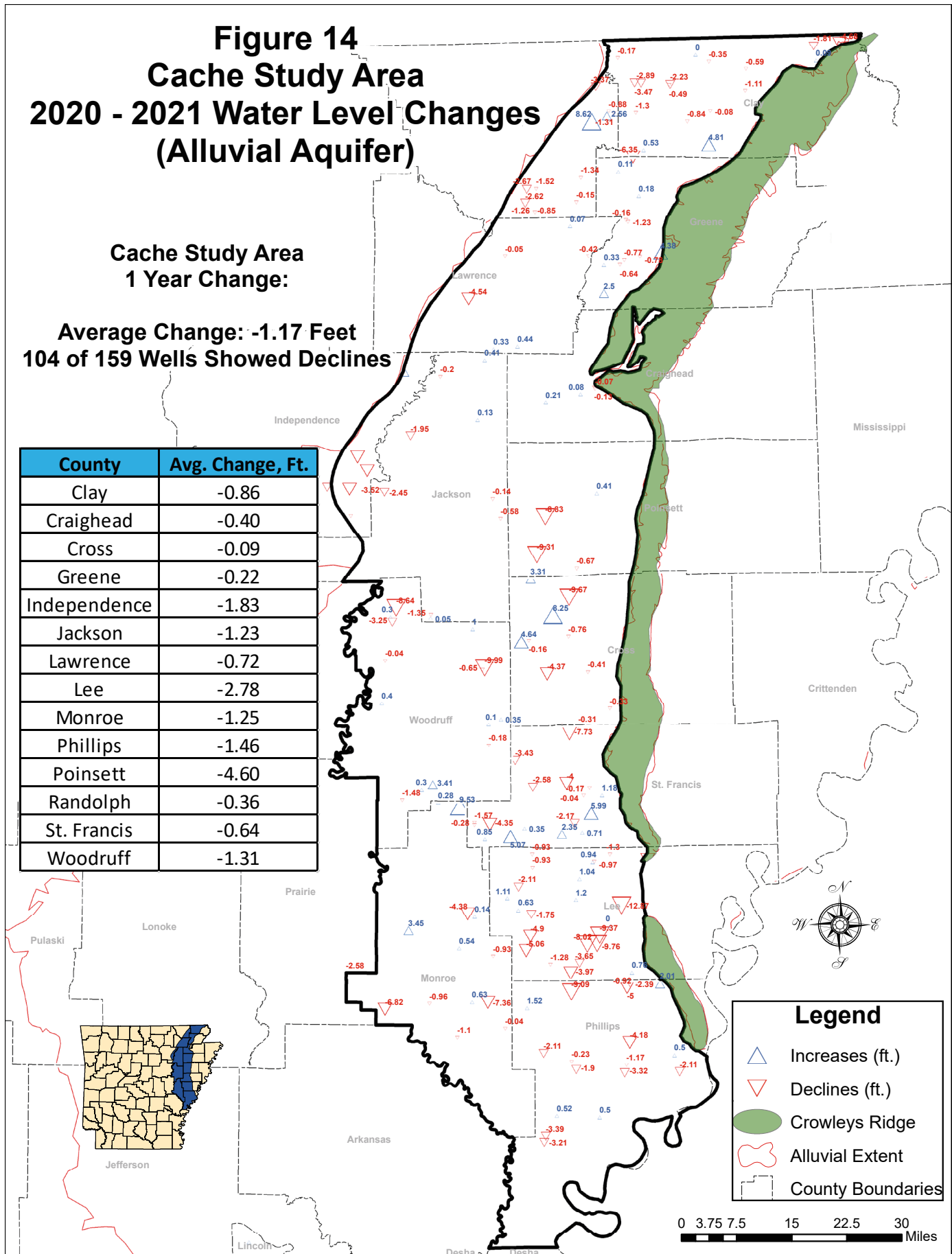


Figure 15
Cache Study Area
2016 - 2021 Water Level Changes
(Alluvial Aquifer)

Cache Study Area
5 Year Change:

Average Change: +2.10 Feet
25 of 101 Wells Showed Declines

County	Avg. Change, Ft.
Clay	+1.88
Craighead	+0.57
Greene	+0.75
Independence	-2.02
Jackson	+0.50
Lawrence	+1.47
Lee	+4.15
Monroe	+3.00
Phillips	+6.26
Poinsett	-4.16
Randolph	+1.27
St. Francis	-0.55
Woodruff	+2.17

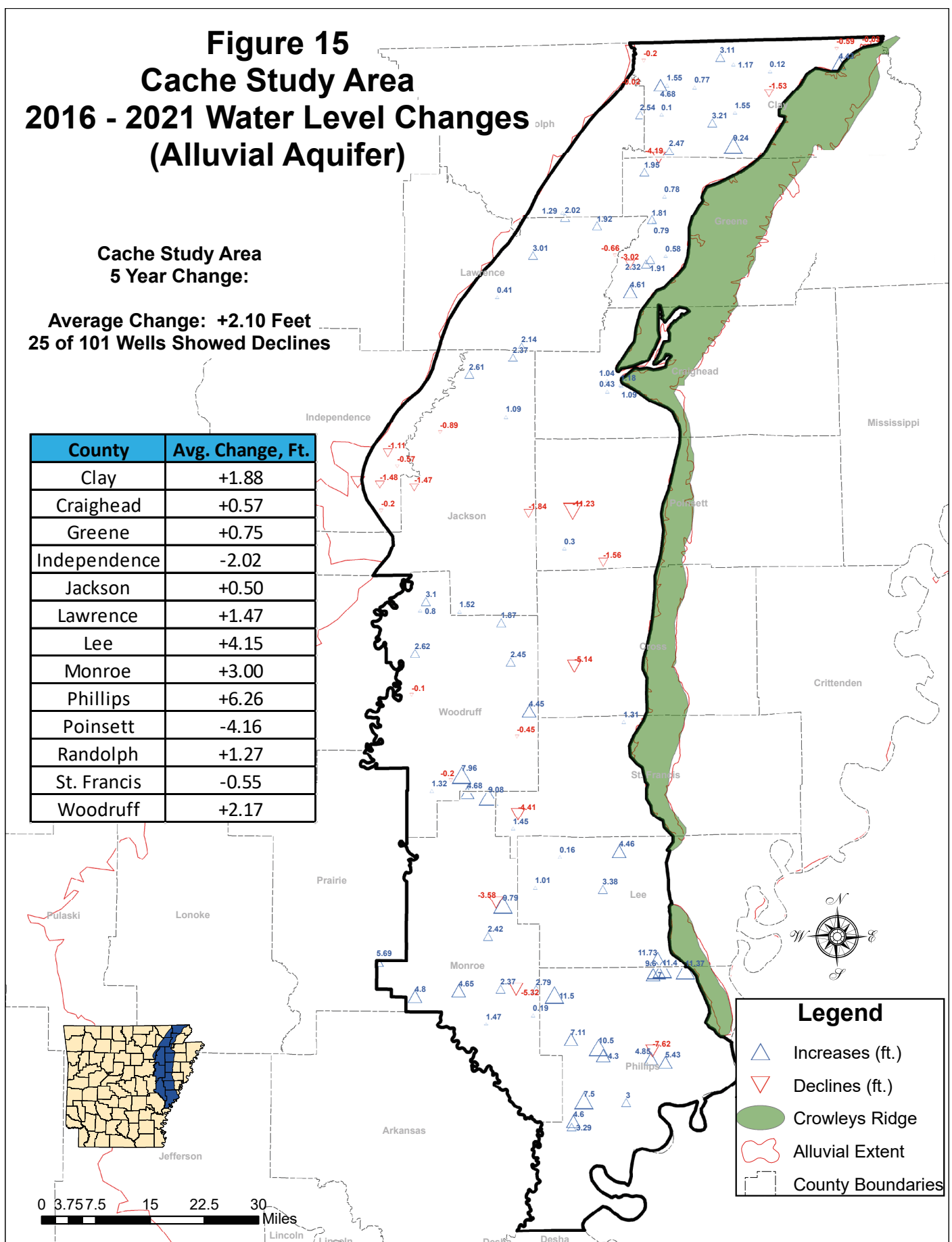


Figure 16
Cache Study Area
2021 Water Level C
(Alluvial Aquifer)

Cache Study Area 10 Year Change:

Average Change: +0.91 Feet
26 of 59 Wells Showed Declines

County	Avg. Change, Ft.
Clay	+3.32
Cross	-5.26
Greene	+0.78
Jackson	+2.07
Lawrence	-1.97
Lee	+0.70
Monroe	+1.66
Phillips	+7.28
Poinsett	-11.84
Randolph	+5.61
St. Francis	-1.89
Woodruff	+2.14

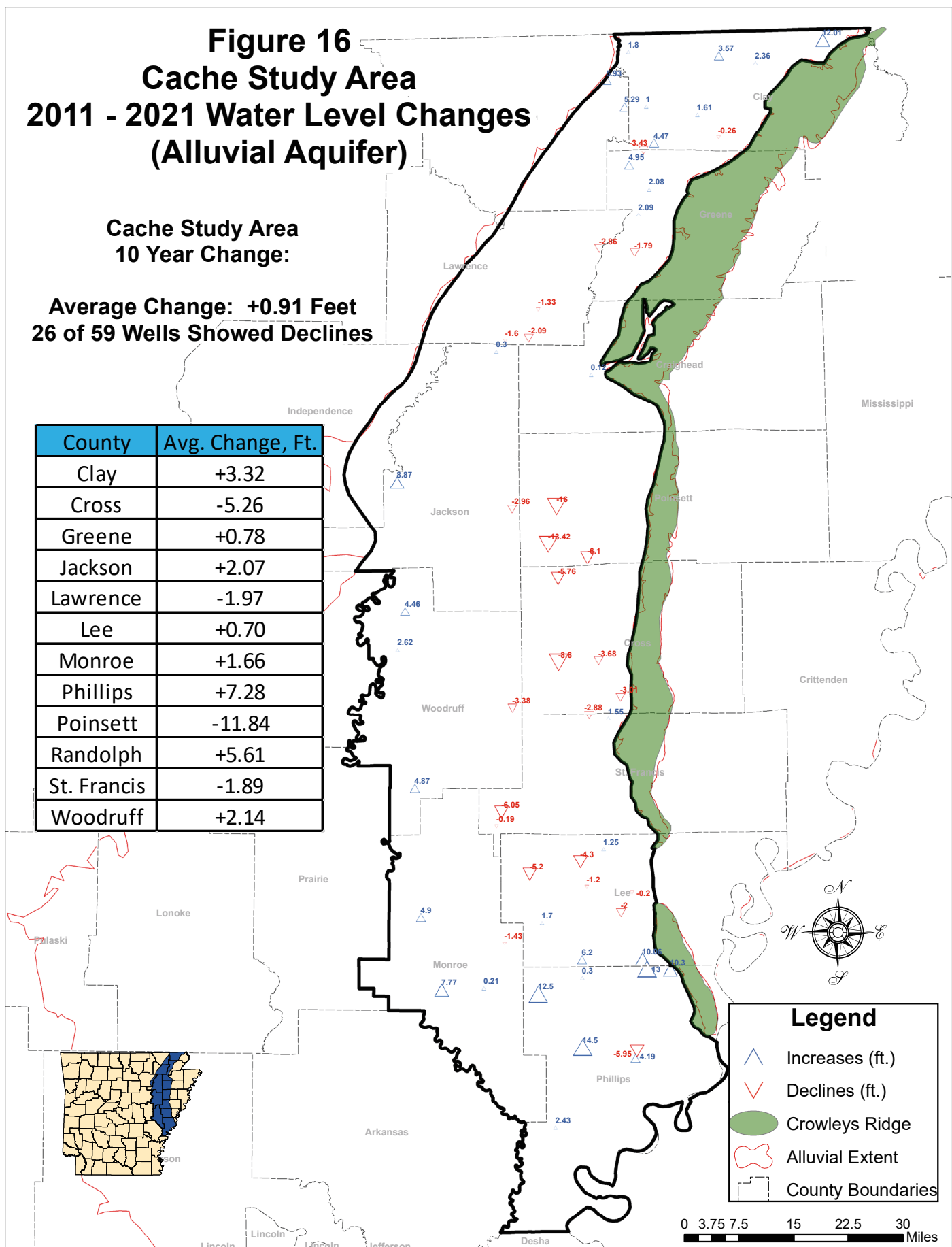


Figure 17
St. Francis Study Area
2020 - 2021 Water Level Changes
(Alluvial Aquifer)

St. Francis Study Area
1 Year Change:

Average Change: -2.21 Feet
51 of 66 Wells Showed Declines

County	Avg. Change, Ft.
Clay	-1.01
Craighead	-1.22
Crittenden	-1.47
Cross	+1.07
Greene	-2.79
Mississippi	-5.47
Poinsett	-1.27
St. Francis	+1.66

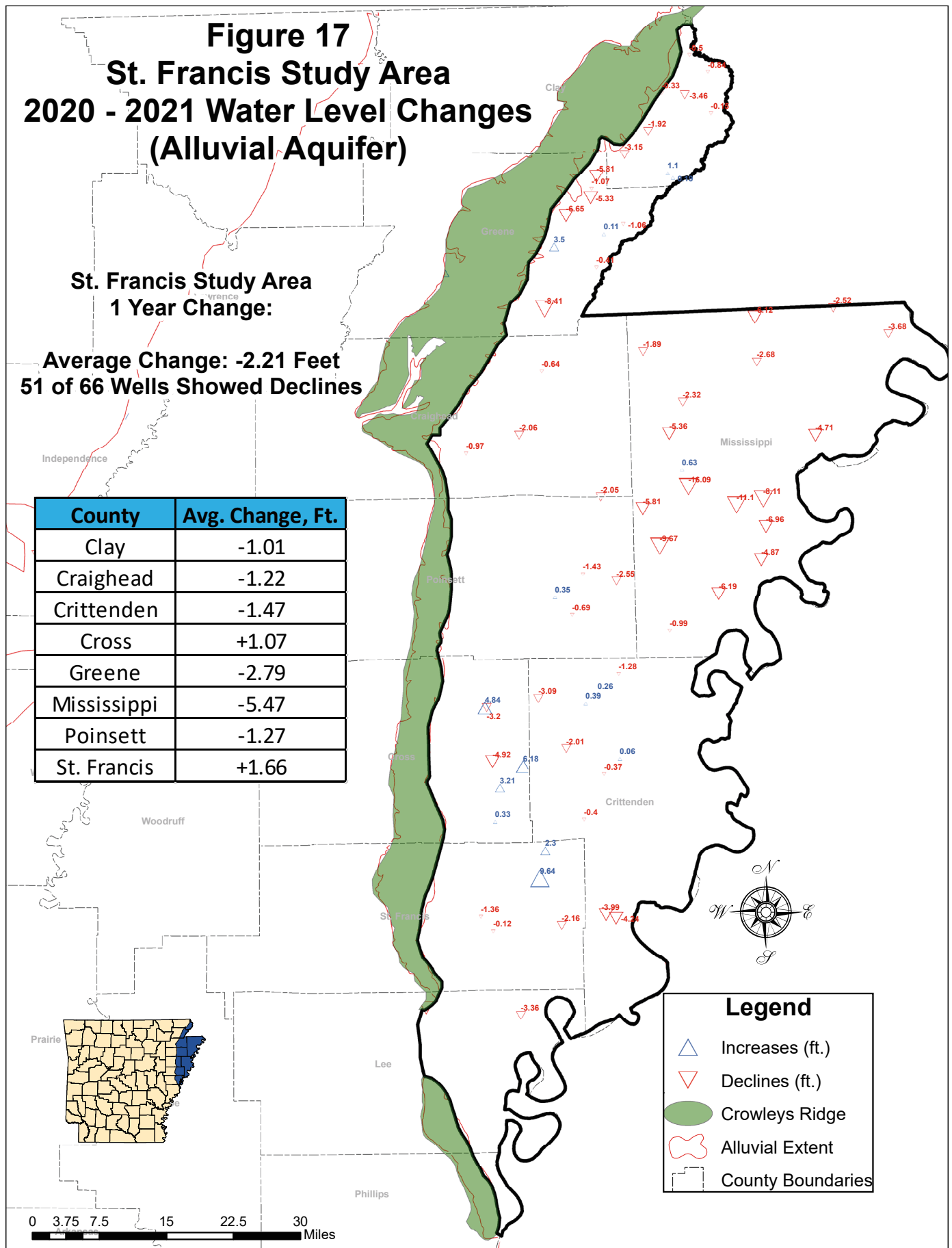


Figure 18 St. Francis Study Area 2016 - 2021 Water Level Changes (Alluvial Aquifer)

**St. Francis Study Area
5 Year Change:**

**Average Change: +0.13 Feet
19 of 45 Wells Showed Declines**

County	Avg. Change, Ft.
Clay	-0.04
Craighead	+1.52
Crittenden	+1.26
Greene	-0.33
Mississippi	-3.18
Poinsett	+0.85
St. Francis	+4.50

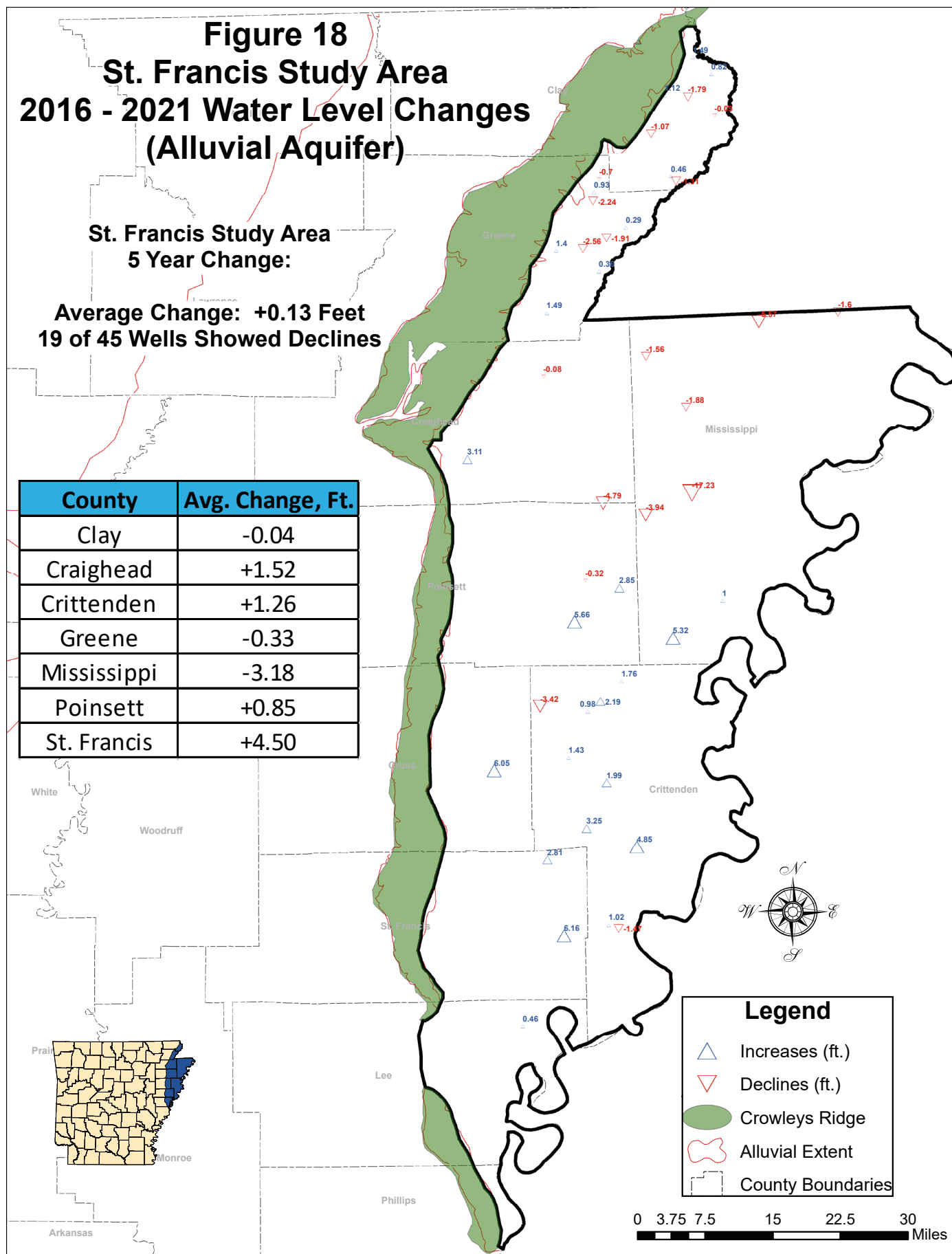


Figure 19 St. Francis Study Area 2011 - 2021 Water Level Changes (Alluvial Aquifer)

**St. Francis Study Area
10 Year Change:**

**Average Change: +2.24 Feet
2 of 28 Wells Showed Declines**

County	Avg. Change, Ft.
Clay	+2.97
Craighead	+2.39
Crittenden	2.51
Cross	+2.27
Greene	+2.32
Poinsett	-0.26
St. Francis	+3.14

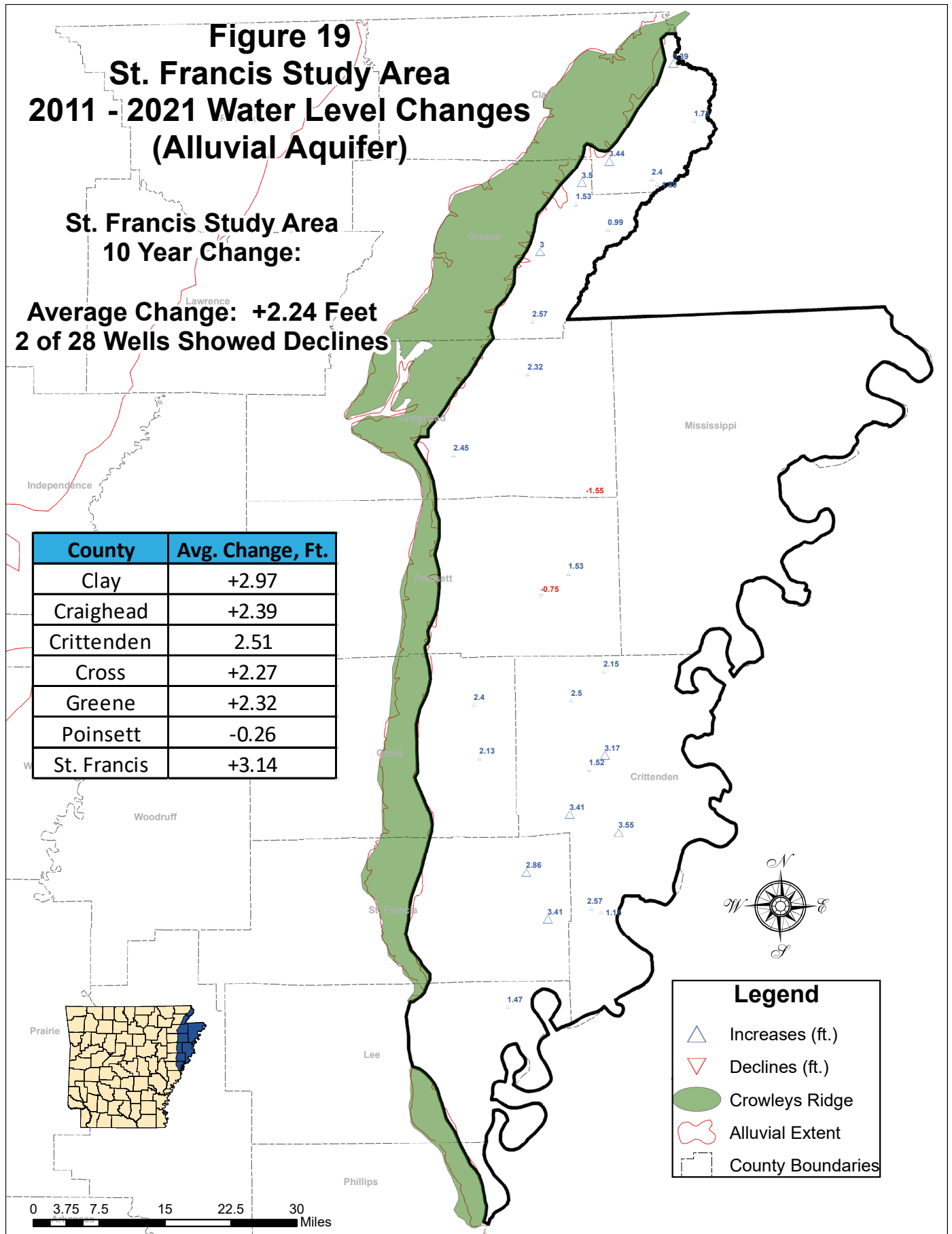


Figure 20 Grand Prairie Study Area 2020 - 2021 Water Level Changes (Alluvial Aquifer)

Grand Prairie Study Area
1 Year Change:

Average Change: +0.68 Feet
42 of 112 Wells Showed Declines

County	Avg. Change, Ft.
Arkansas	+1.39
Jefferson	-1.30
Lonoke	+0.58
Prairie	+0.92
Pulaski	-1.17
White	+0.04

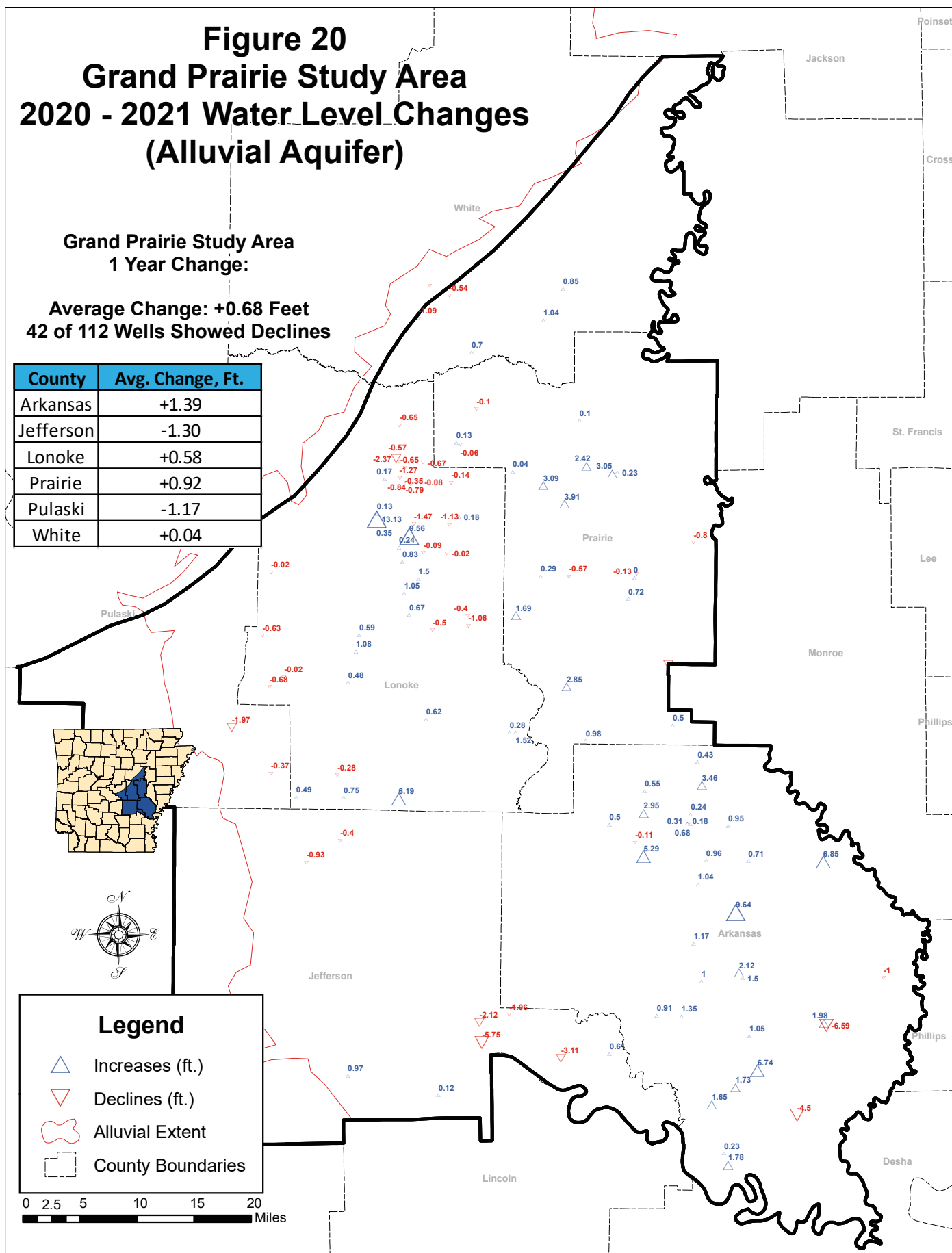


Figure 21 Grand Prairie Study Area 2016 - 2021 Water Level Changes (Alluvial Aquifer)

Grand Prairie Study Area
5 Year Change:

Average Change: +1.46 Feet
21 of 73 Wells Showed Declines

County	Avg. Change, Ft.
Arkansas	+2.47
Jefferson	+4.30
Lonoke	-0.09
Prairie	+1.38
Pulaski	+3.06
White	+1.88

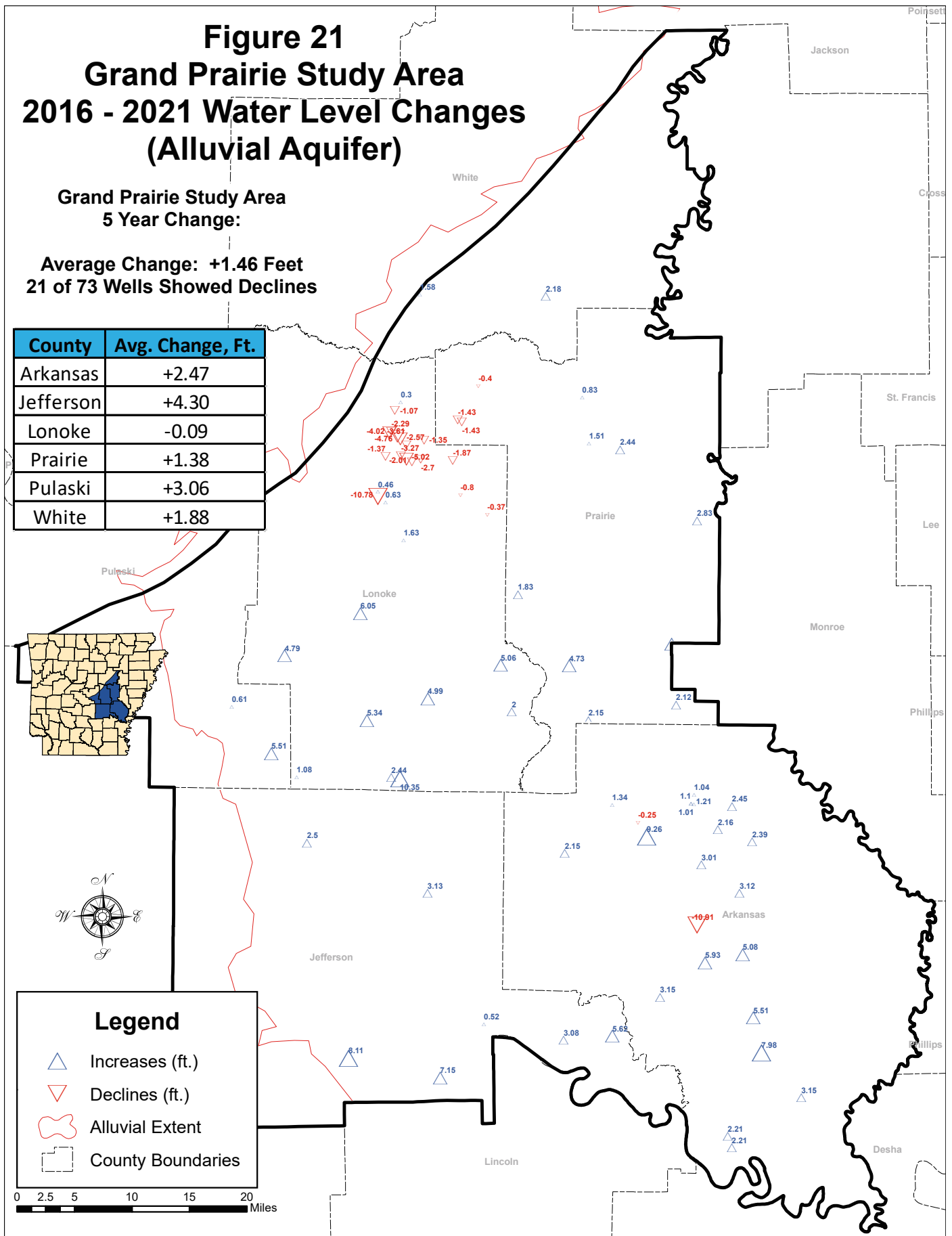


Figure 22
Grand Prairie Study Area

Grand Prairie Study Area 10 Year Change:

Average Change: +0.82 Feet
34 of 80 Wells Showed Declines

County	Avg. Change, Ft.
Arkansas	+3.61
Jefferson	+4.23
Lonoke	-1.89
Prairie	+1.56
White	+3.65

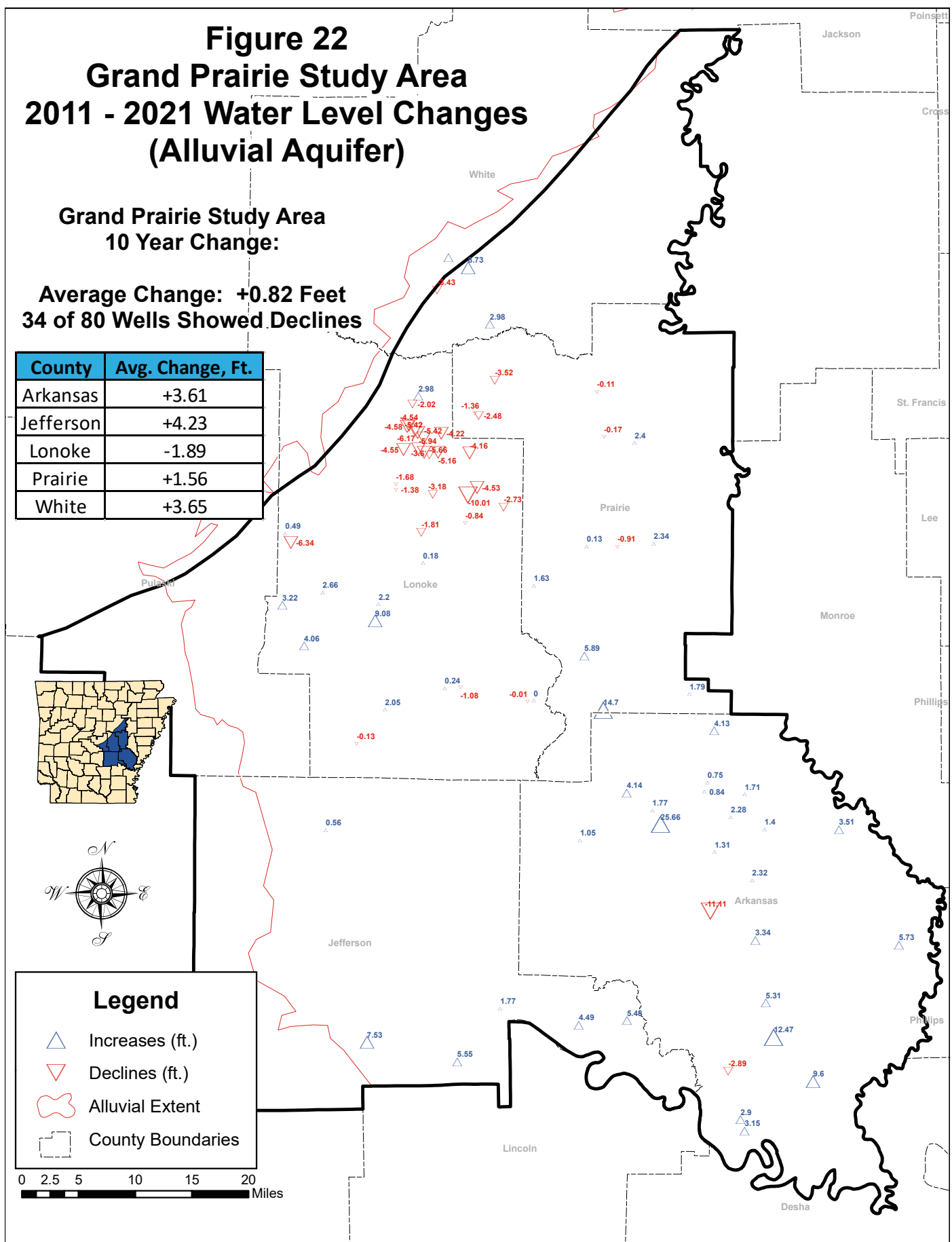


Figure 23

Boeuf-Tensas Study Area

2020 - 2021 Water Level Changes

(Alluvial Aquifer)

Boeuf-Tensas Study Area
1 Year Change:
Average Change: +0.26 Feet
32 of 63 Wells Showed Declines

County	Avg. Change, Ft.
Ashley	+0.97
Chicot	+0.07
Desha	+0.25
Drew	-1.30
Lincoln	+0.69

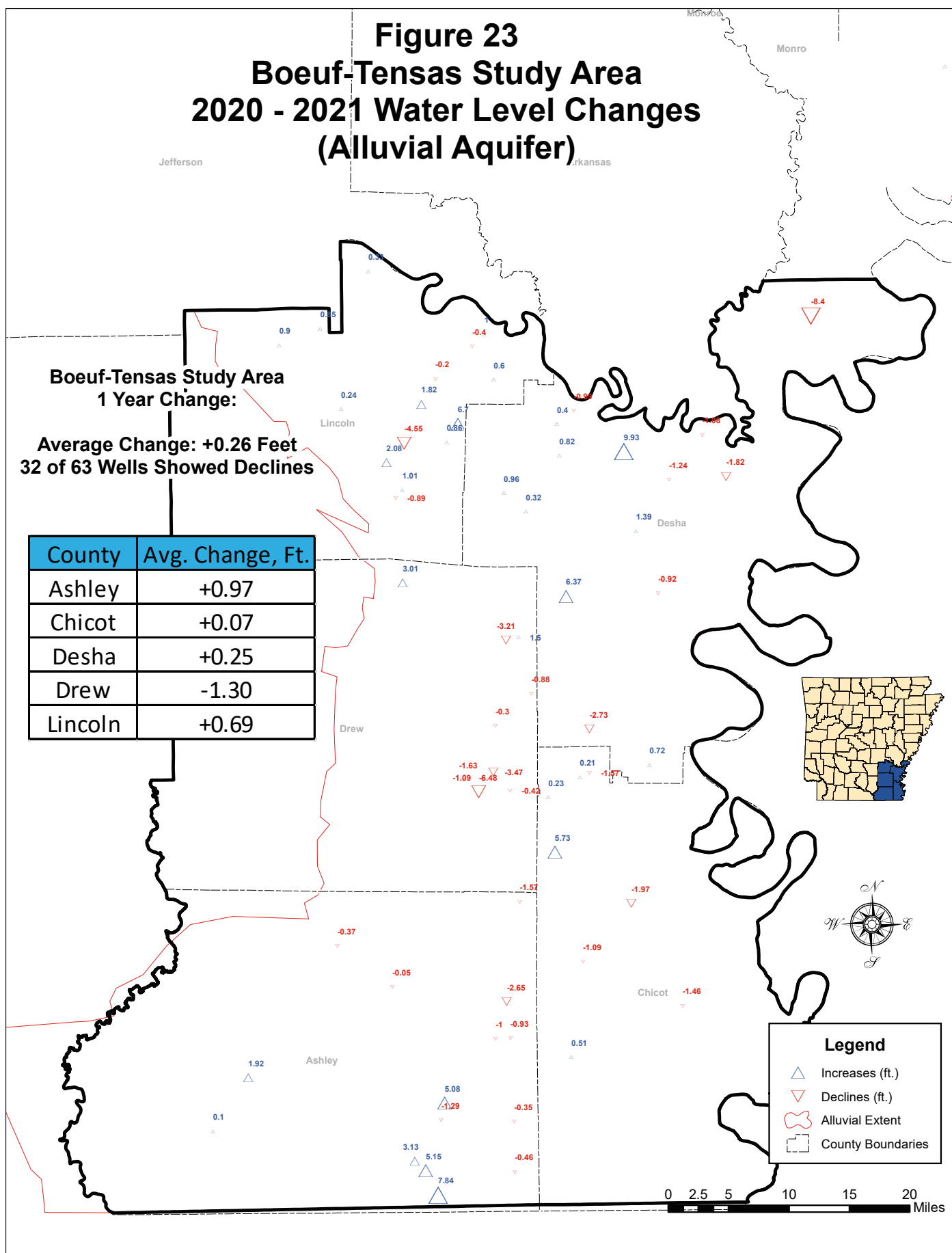


Figure 24
Boeuf - Tensas Study Area
2016 - 2021 Water Level Changes
(Alluvial Aquifer)

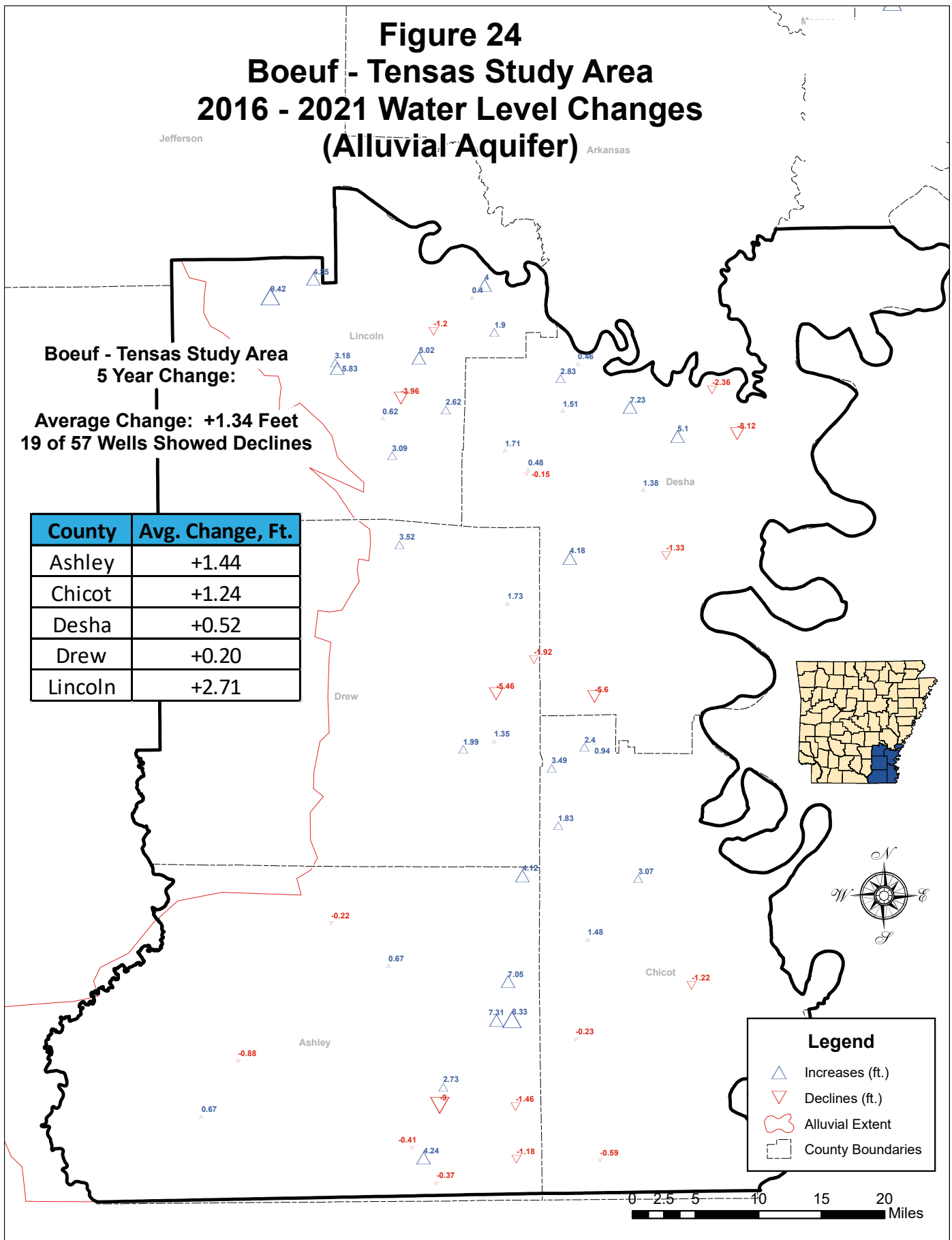
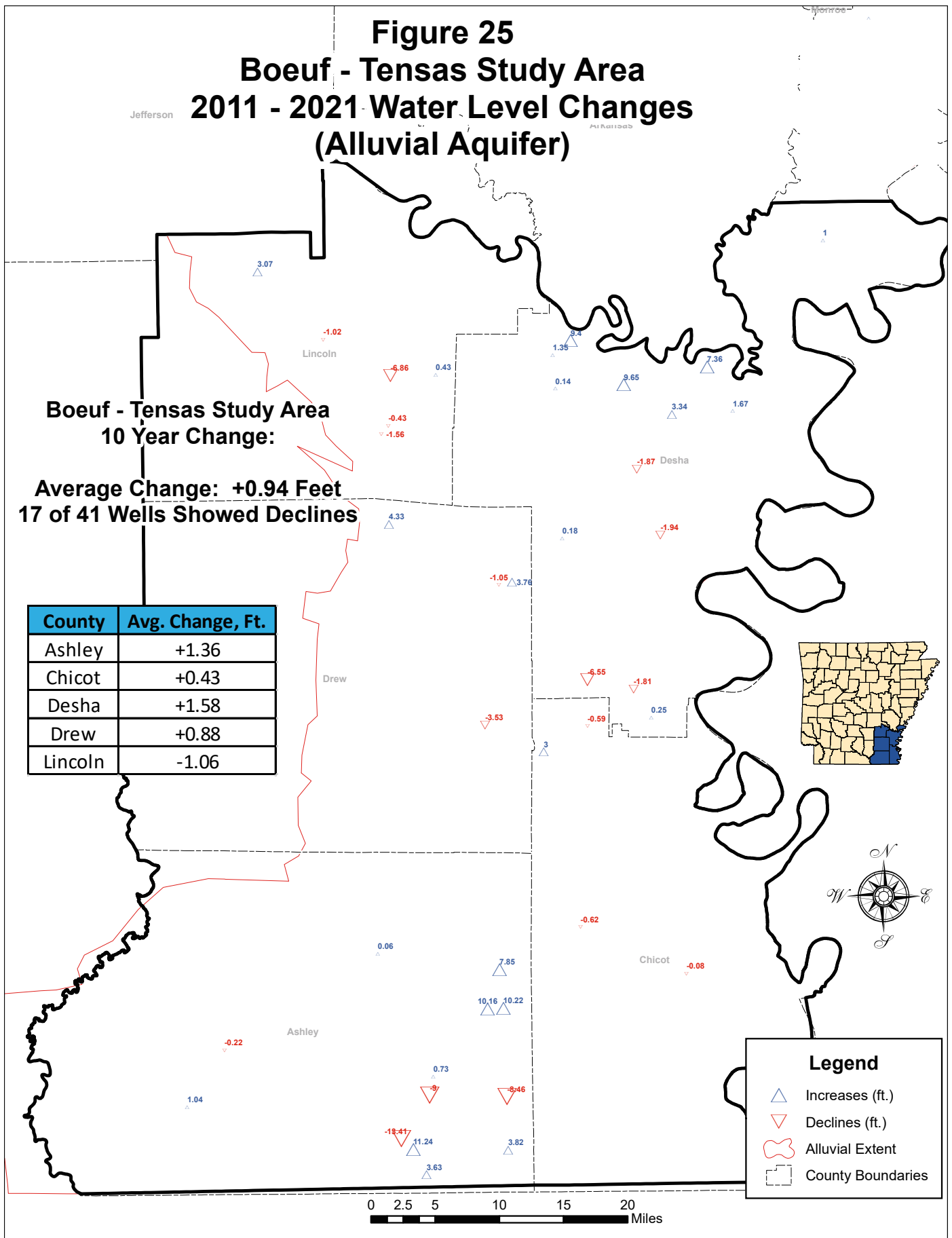


Figure 25 **Boeuf - Tensas Study Area** **2011 - 2021 Water Level Changes** **(Alluvial Aquifer)**

Boeuf - Tensas Study Area
10 Year Change:
Average Change: +0.94 Feet
17 of 41 Wells Showed Declines

County	Avg. Change, Ft.
Ashley	+1.36
Chicot	+0.43
Desha	+1.58
Drew	+0.88
Lincoln	-1.06



Sparta Aquifer

The Sparta aquifer, also known as the Sparta Sand or Memphis Sand, is a Tertiary-aged water bearing assemblage composed mainly of sand with considerable amounts of silt, clay, shale, and lignite found in lenses throughout the unit. The formation outcrops along the western edge of the Embayment in south Arkansas and is overlain by the Mississippi River Valley alluvial aquifer throughout central and northeastern Arkansas. The Sparta Sand is the thickest sand unit in the Embayment system, ranging in thickness from 0 to 200 feet along the outcrop to up to 900 ft in the southeastern part of the state. Generally, the Sparta Sand is a confined aquifer system as it is confined by the underlying Cook Mountain formation and overlying Cane River formation. Lithological differences occur in the Sparta aquifer in southern Arkansas and northeastern Arkansas. In southern Arkansas, the Sparta aquifer is divided into two units, Greensand (upper Sparta) and the El Dorado sand (lower Sparta), by a confining layer. In northeastern Arkansas, the underlying Cane River and Carrizo Sand formations become sand and are generally indistinguishable from the Sparta Sand. Because of this, the three formations are grouped together and referred to as the Memphis Sand, or the Memphis Aquifer, in this region. (Kresse, T. M., et al., 2014.)

Groundwater levels were collected from 242 water wells in the Sparta/Memphis aquifer during the spring of 2021. Figure 26 depicts the spring 2021 potentiometric surface as water level altitude in feet above mean sea level, and Figure 27 presents the depth to water as feet below ground surface for the Sparta aquifer.

Figure 26
Sparta Aquifer
Water Level Altitude
Spring 2021

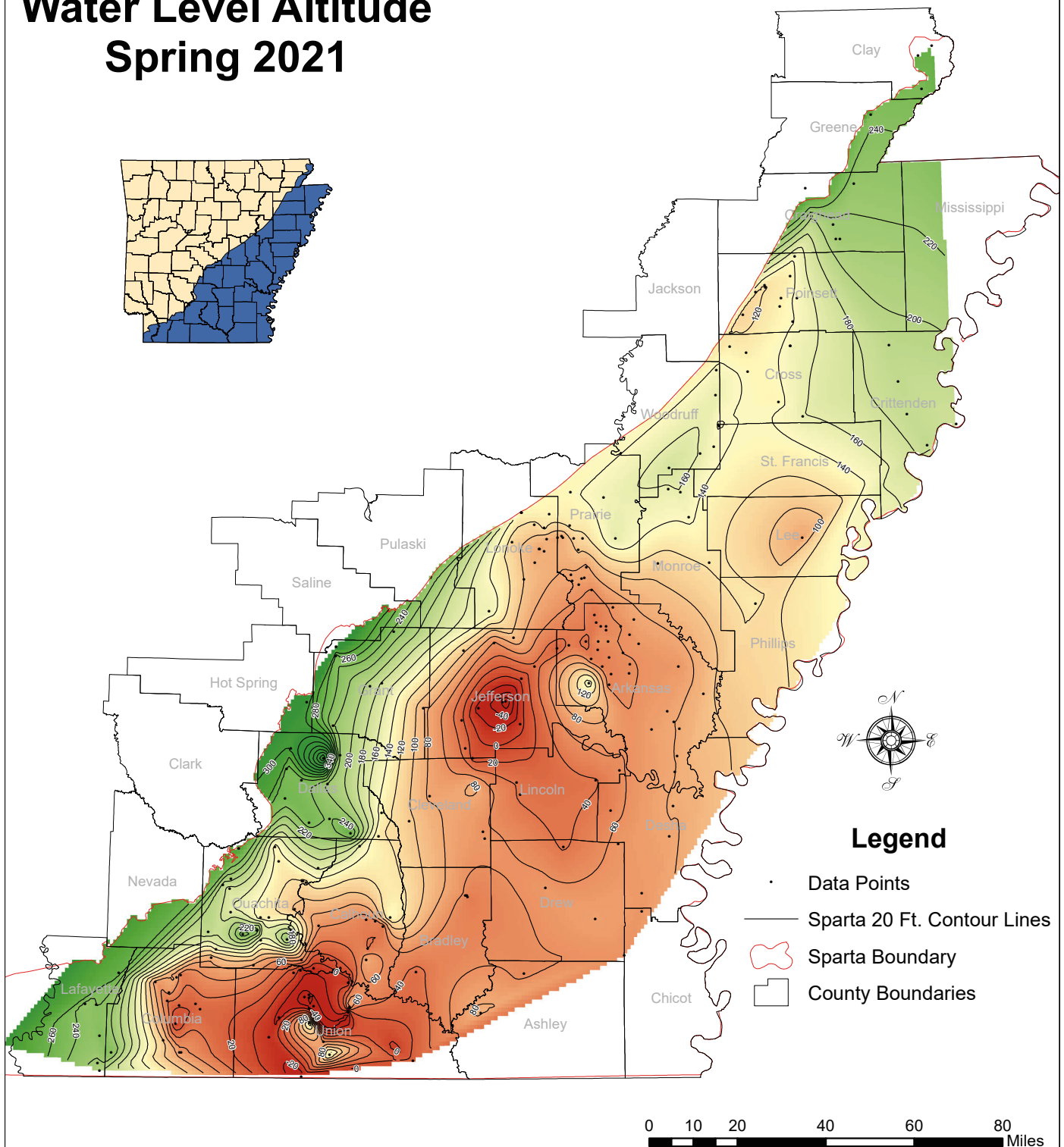
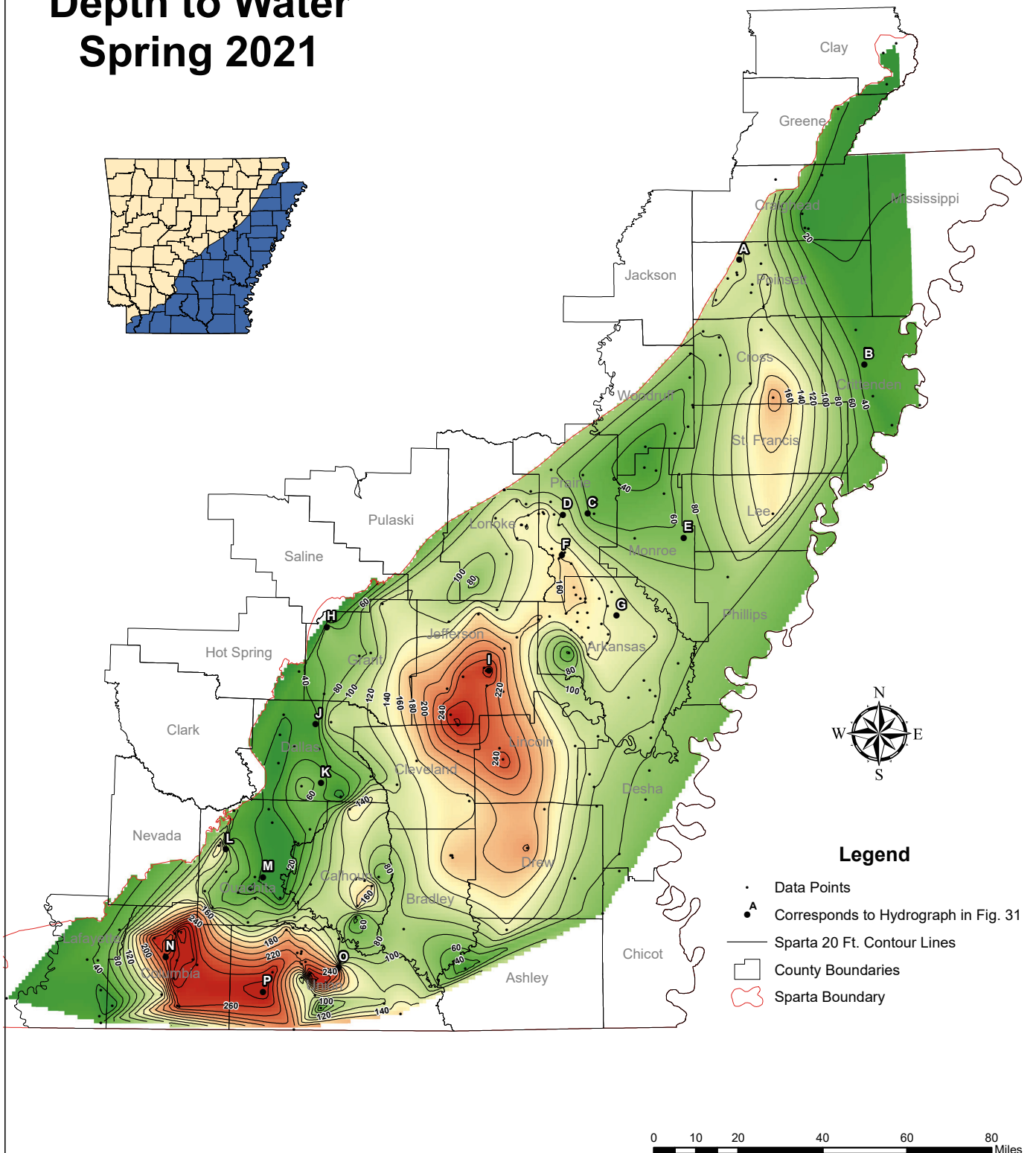


Figure 27

Sparta Aquifer

Depth to Water

Spring 2021



Water Level Trends

Water level data from the 242 wells collected in spring 2021 were compared with historical data in one, five and ten-year intervals. The one-year interval had 138 comparable wells giving a total average water level change of +0.68 feet with 63 (45%) of the wells in decline. The five-year change had data for 154 comparable wells with a total average change of +6.39 feet with 38 (24%) wells in decline. As for the ten-year interval, water level data was compared for 177 wells with total average water level change of +6.52 feet with 49 (27%) wells in decline. Aquifer-wide water level change maps were created for the one, five and ten-year periods and presented as Figure 28, Figure 29, and Figure 30, respectively.

Figure 28

Sparta Aquifer

1 Year Change

2020 - 2021

Sparta Aquifer

1 Year Change

Average Change: +0.58 Feet
63 of 139 Wells Showed Declines

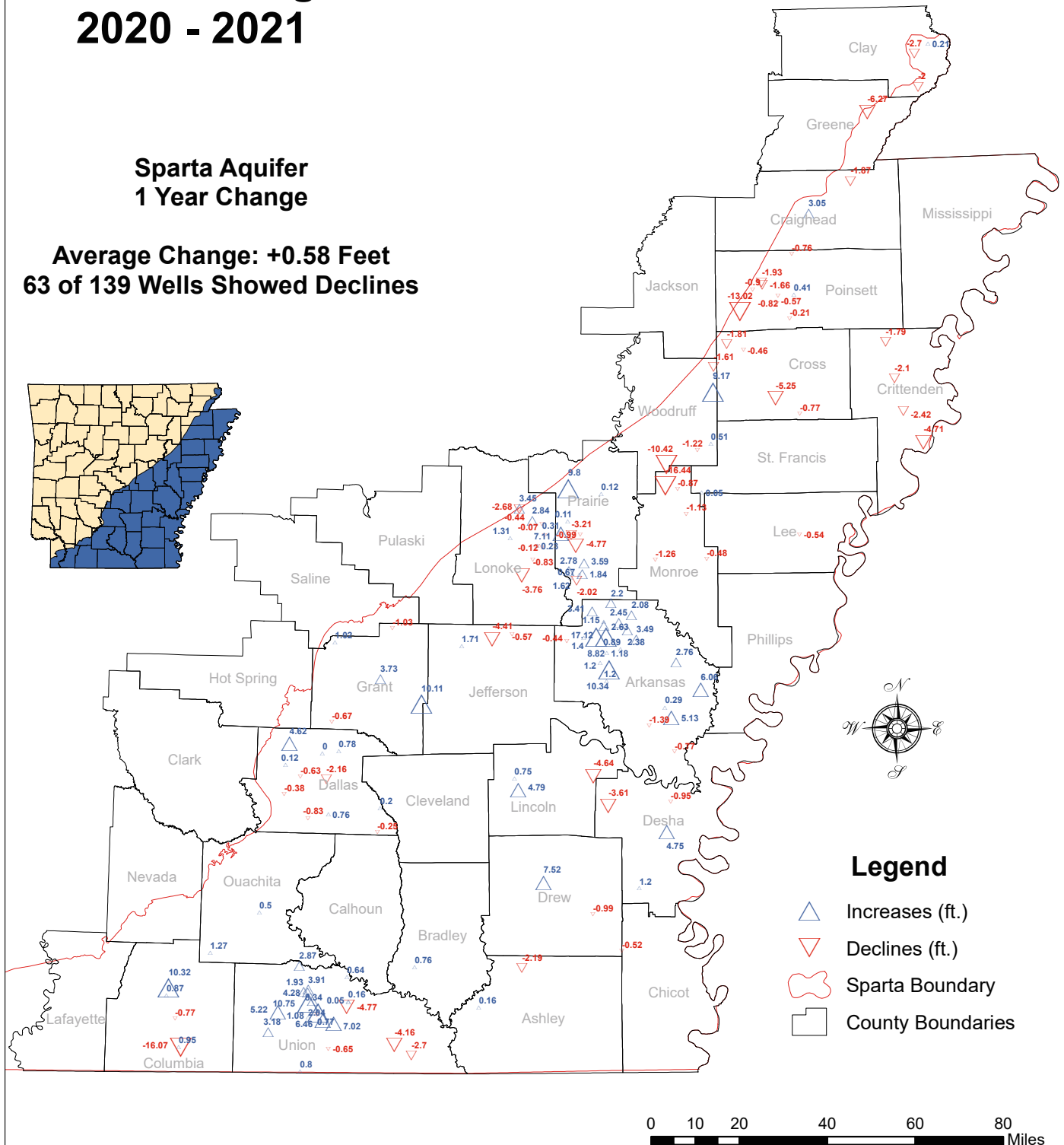


Figure 29 Sparta Aquifer 5 Year Change 2016 - 2021

**Sparta Aquifer
5 Year Change**

**Average Change: +6.55 Feet
39 of 155 Wells Showed Declines**

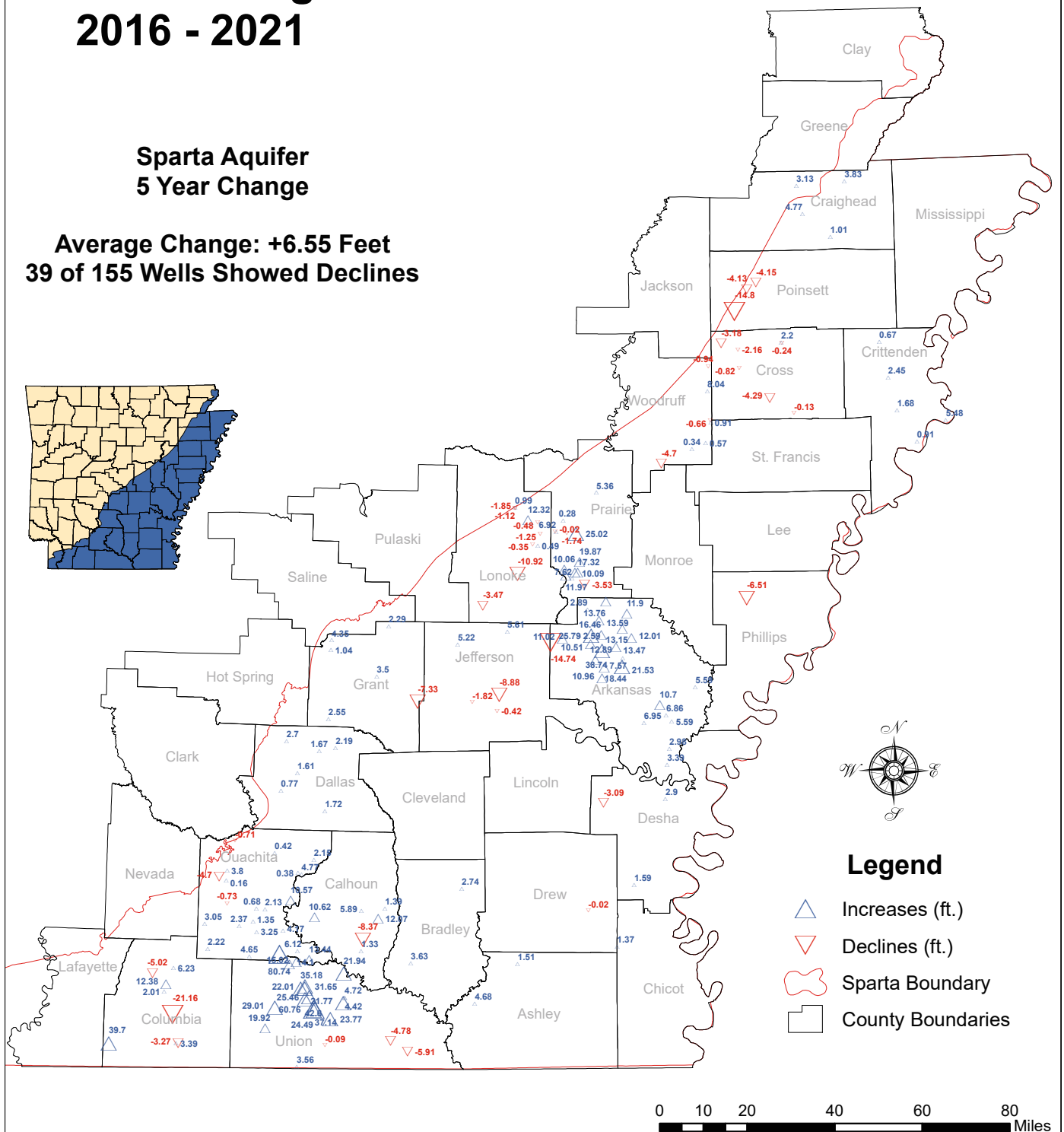


Figure 30

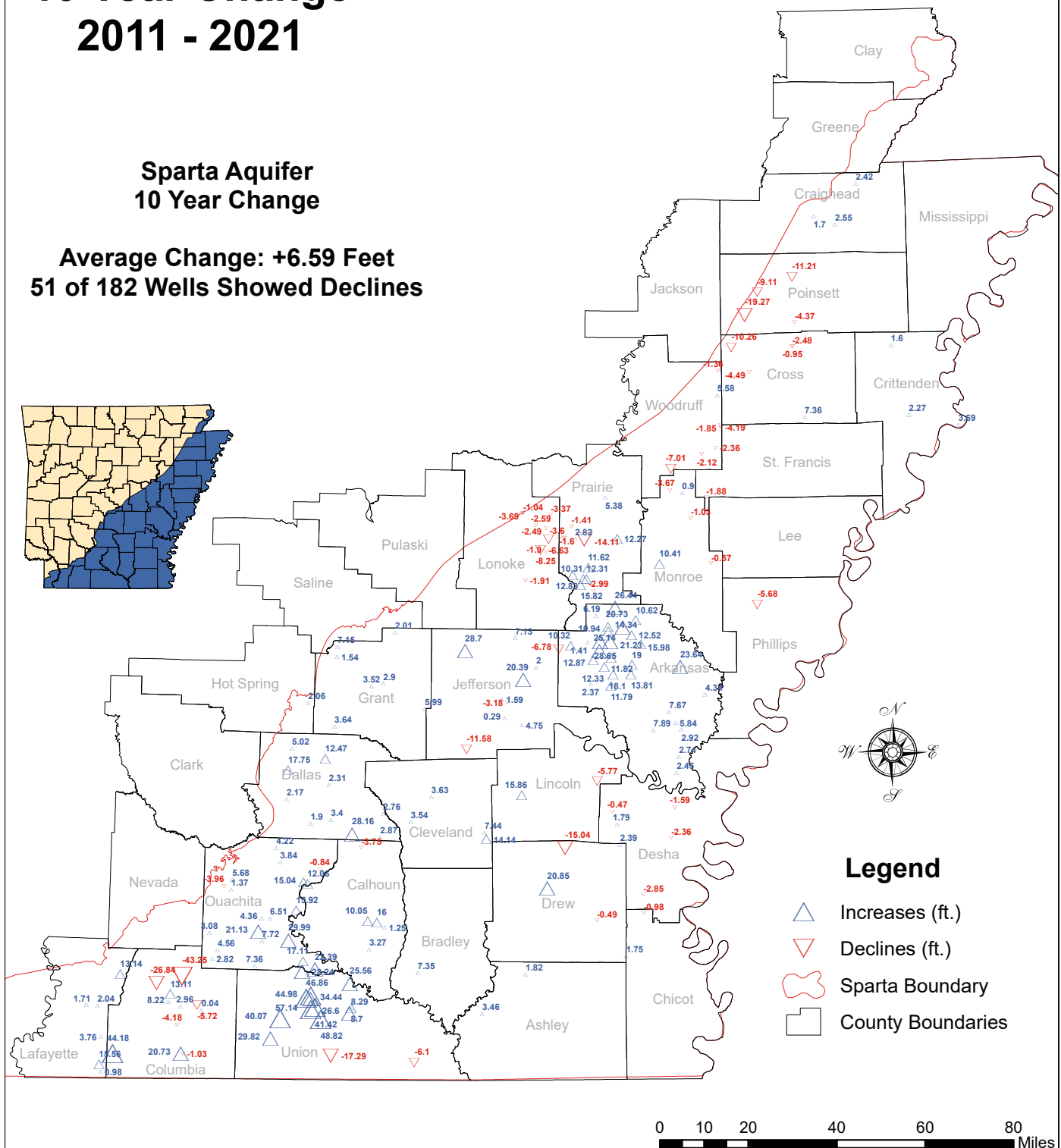
Sparta Aquifer

10 Year Change

2011 - 2021

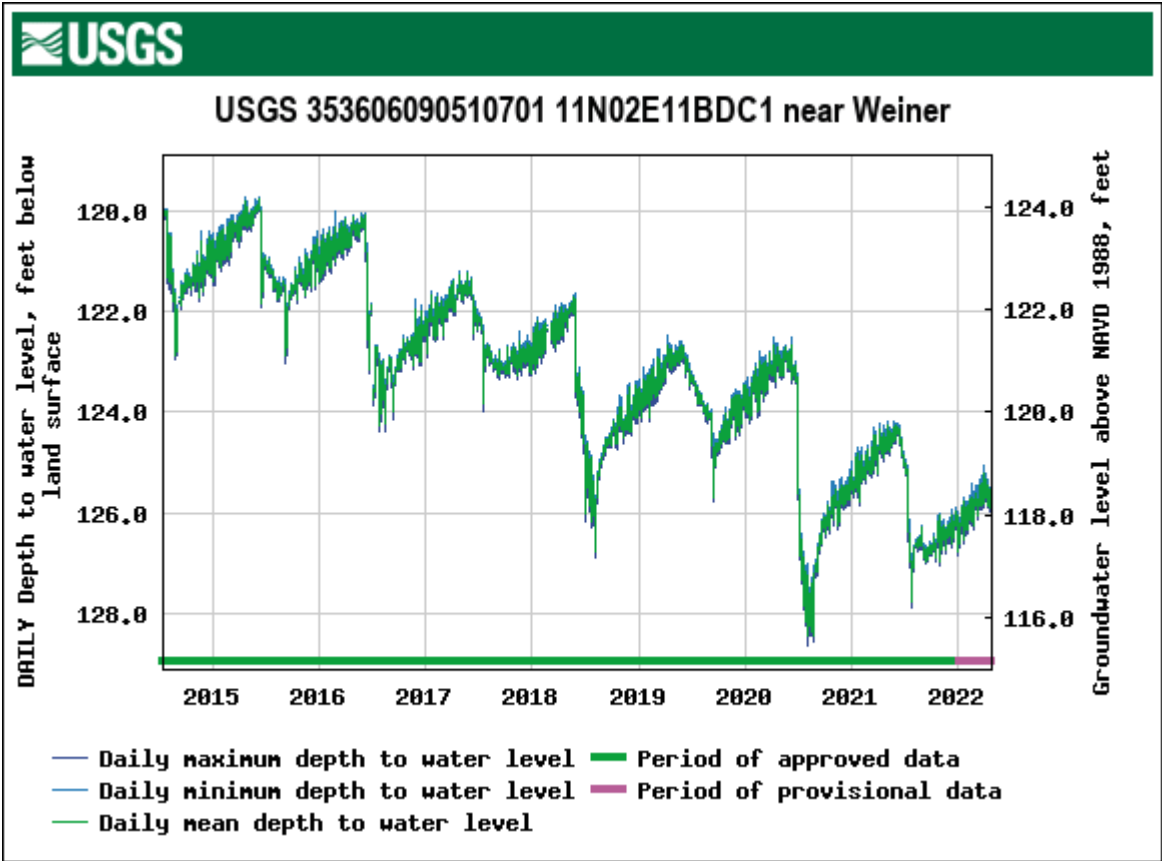
Sparta Aquifer
10 Year Change

Average Change: +6.59 Feet
51 of 182 Wells Showed Declines



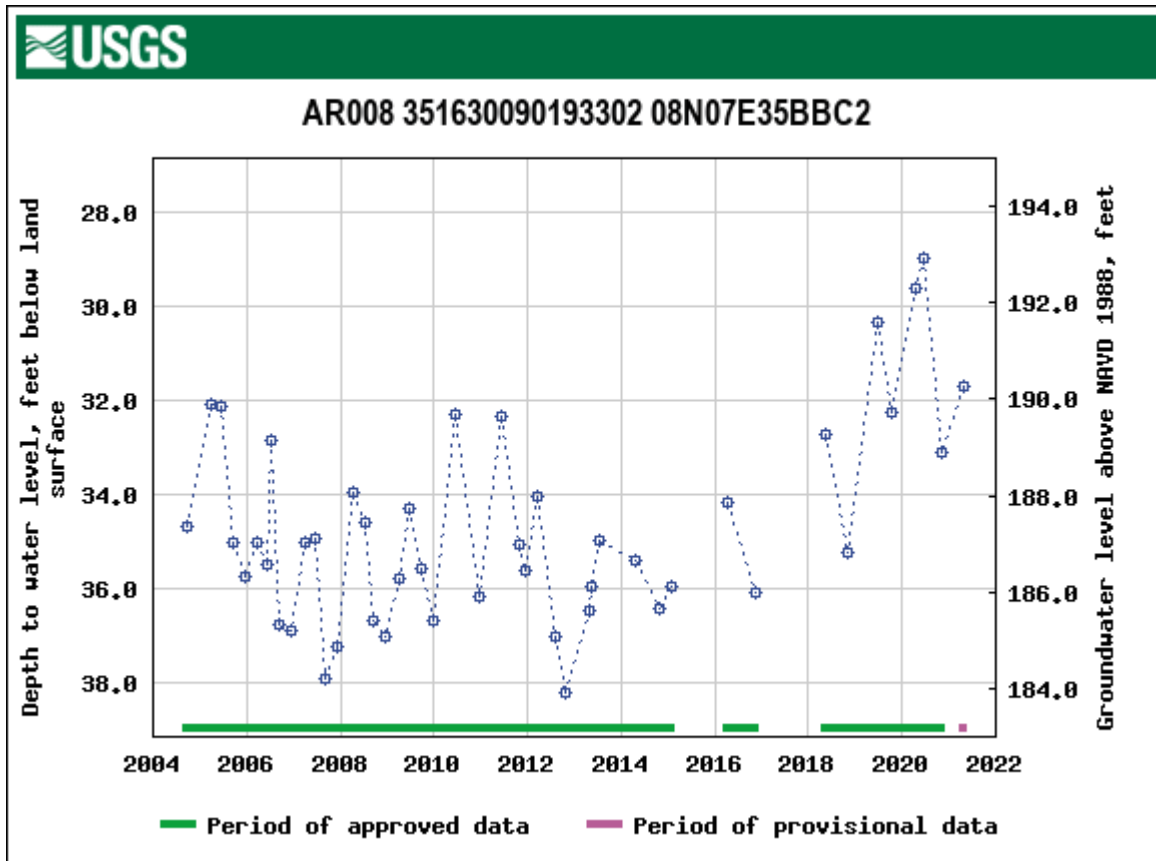
Selected water level hydrographs from the Sparta aquifer are presented in Figure 31 and illustrate the changes in water level overtime back to the early 2000s. These hydrographs correspond with the wells shown on Figure 27 – Sparta Aquifer Depth to Water Spring 2021. All the hydrographs in this figure are from monitoring wells maintained by the NRD, the Union County Water Conservation Board, or the United States Geologic Survey and are measured semi-annually or more during the year or have real-time data loggers installed for continuous water level data.

Figure 31. Selected water level hydrographs from the Sparta aquifer

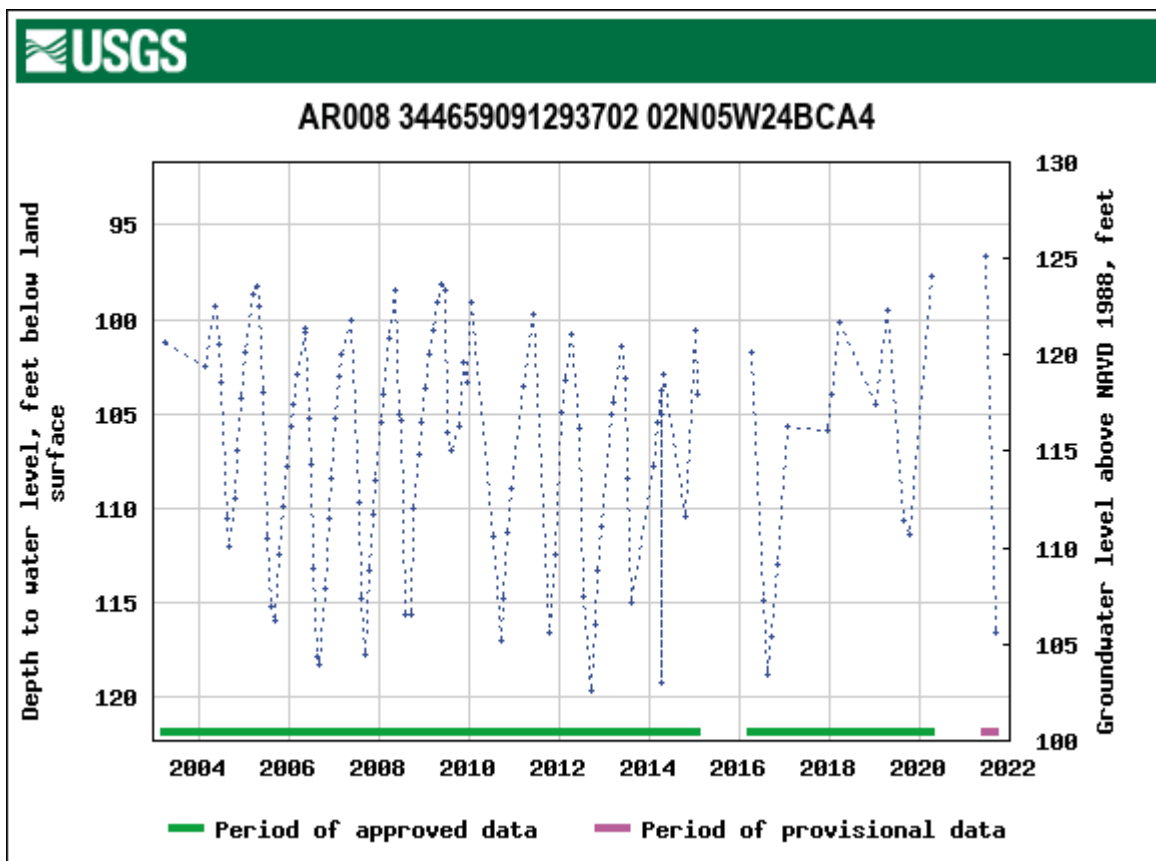


A. Poinsett County, Well 11N02E11BDC1

Figure 31. Selected water level hydrographs from the Sparta aquifer

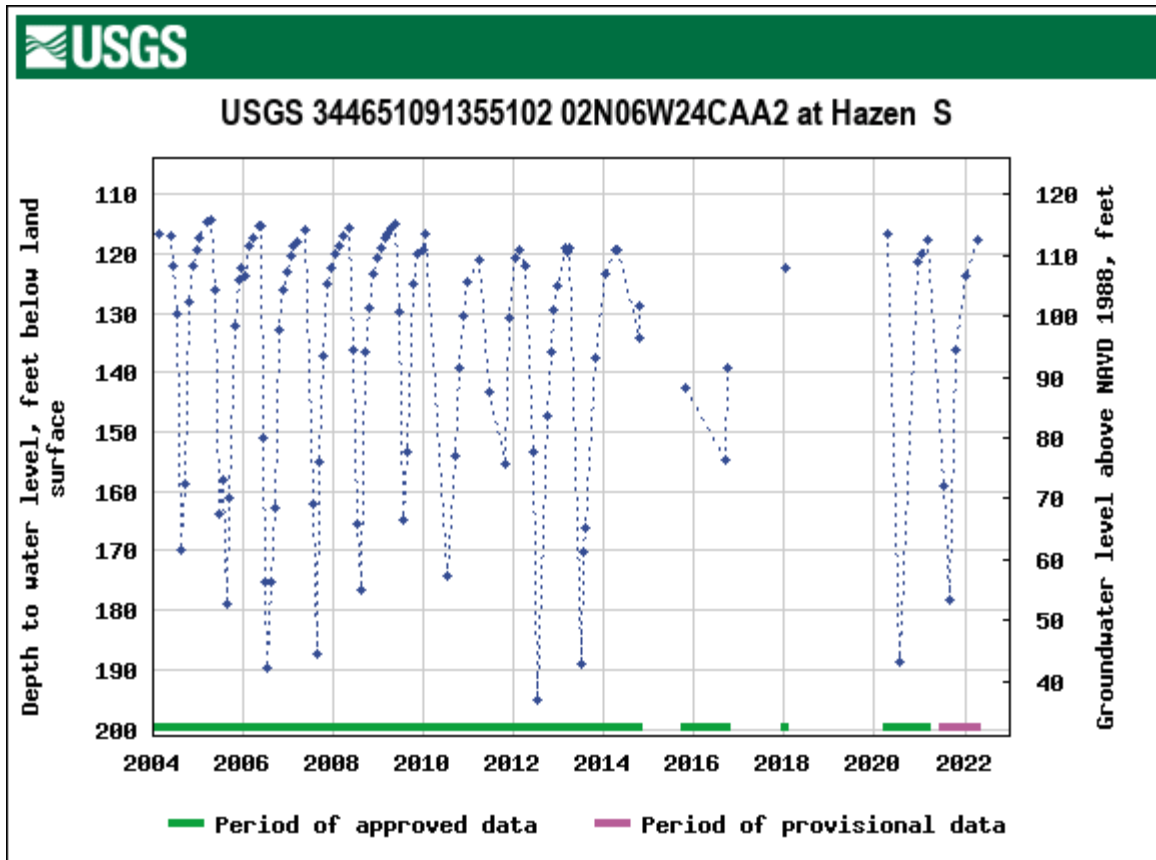


B. Crittenden County, Well 08N07E35BBC2

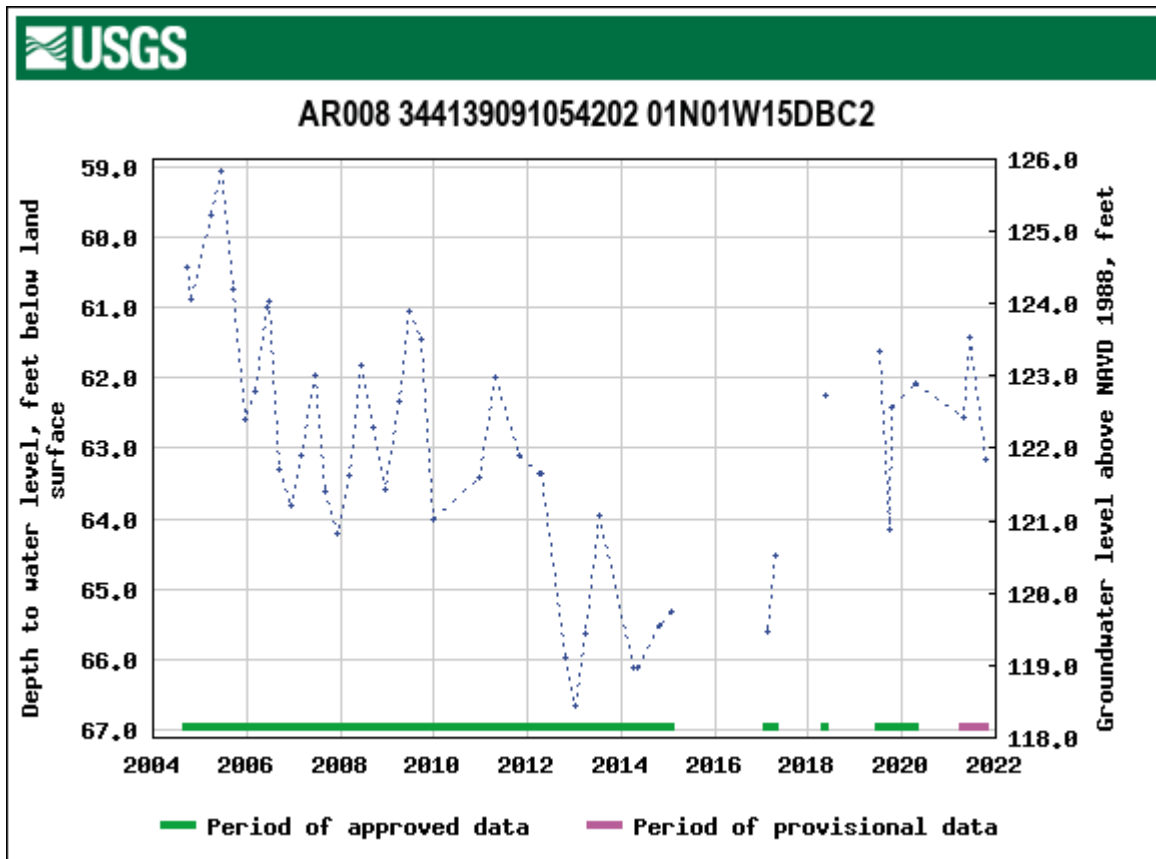


C. Prairie County, Well 02N05W24BCA4

Figure 31. Selected water level hydrographs from the Sparta aquifer

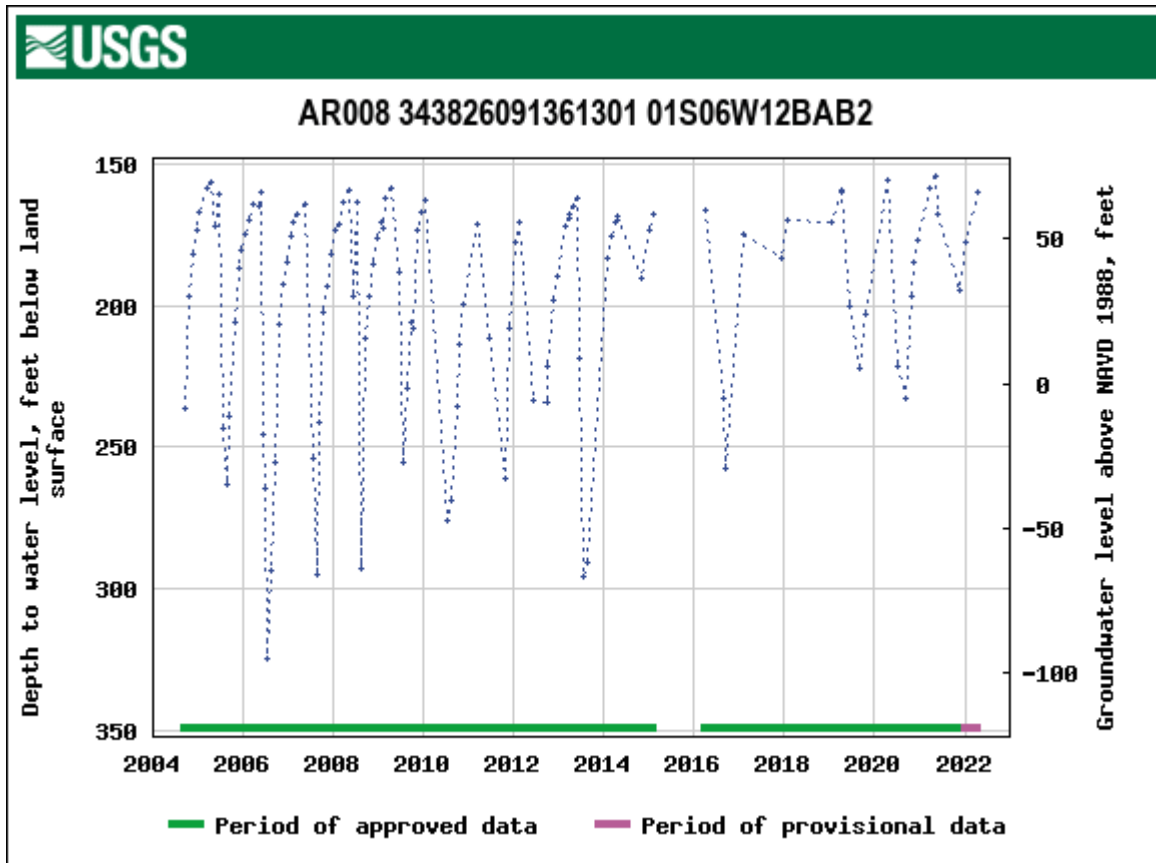


D. Prairie County, Well 02N06W24CAA2

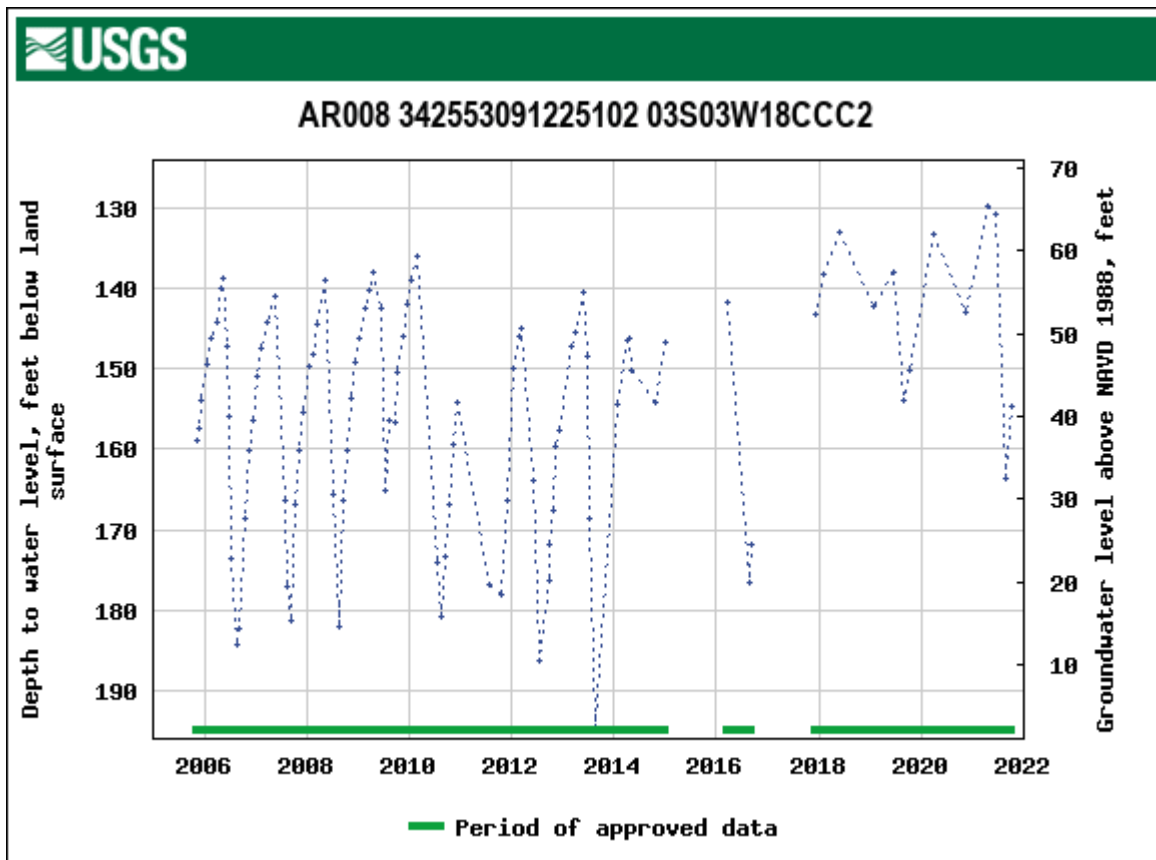


E. Monroe County, Well 01N01W15DBC2

Figure 31. Selected water level hydrographs from the Sparta aquifer

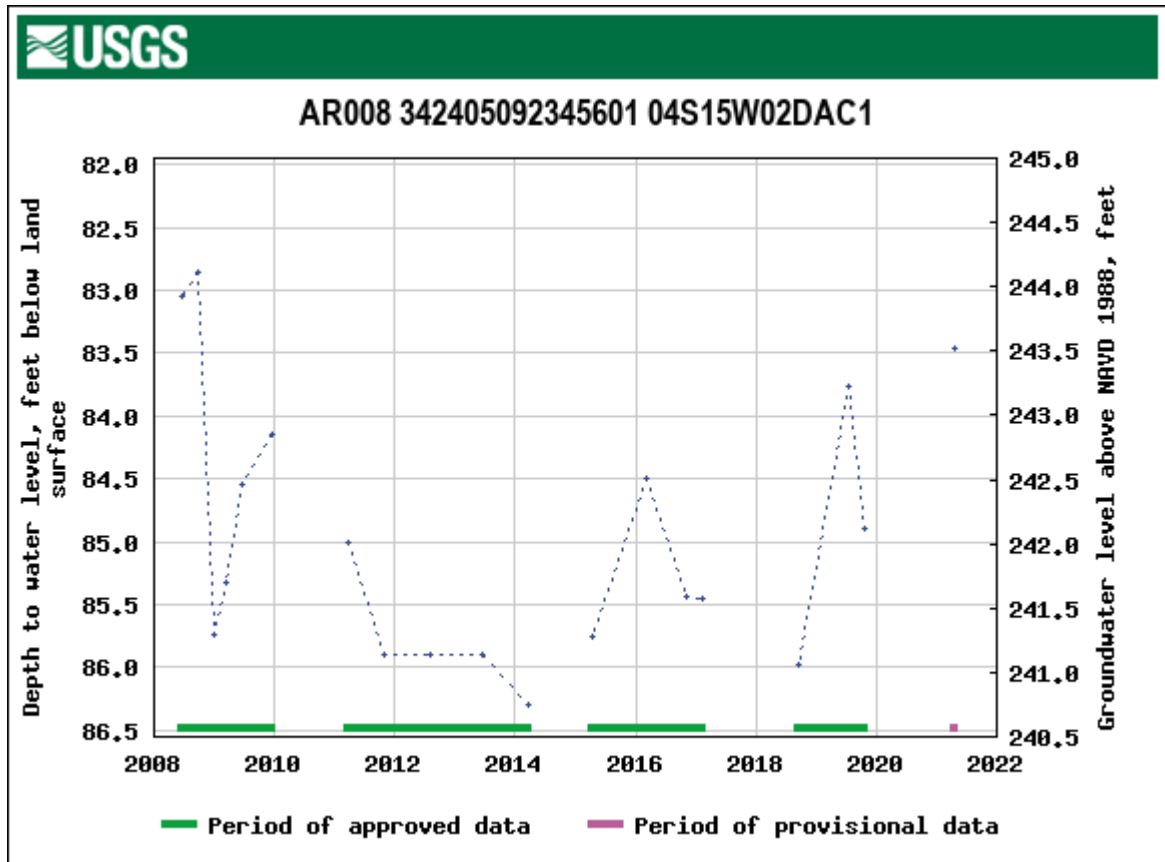


F. Prairie County, Well 01S06W12BAB2

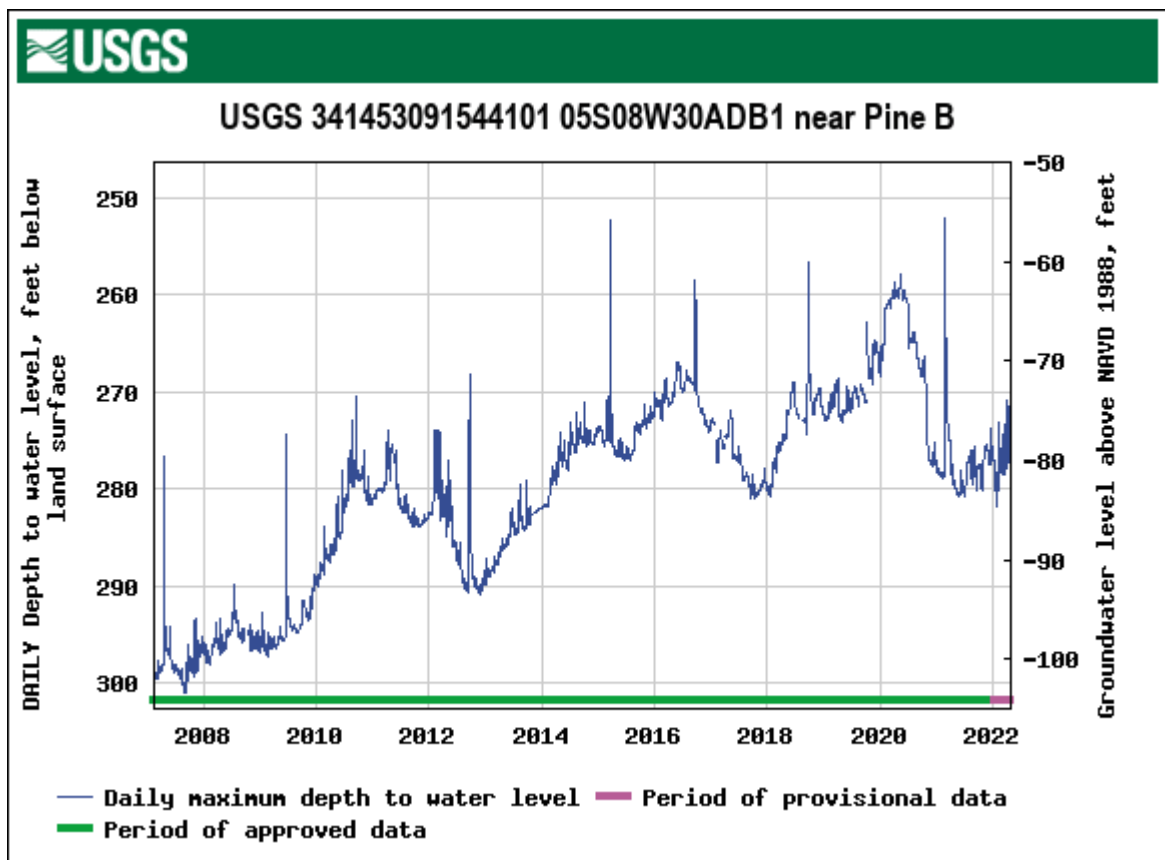


G. Arkansas County, Well 03S03W18CCC2

Figure 31. Selected water level hydrographs from the Sparta aquifer

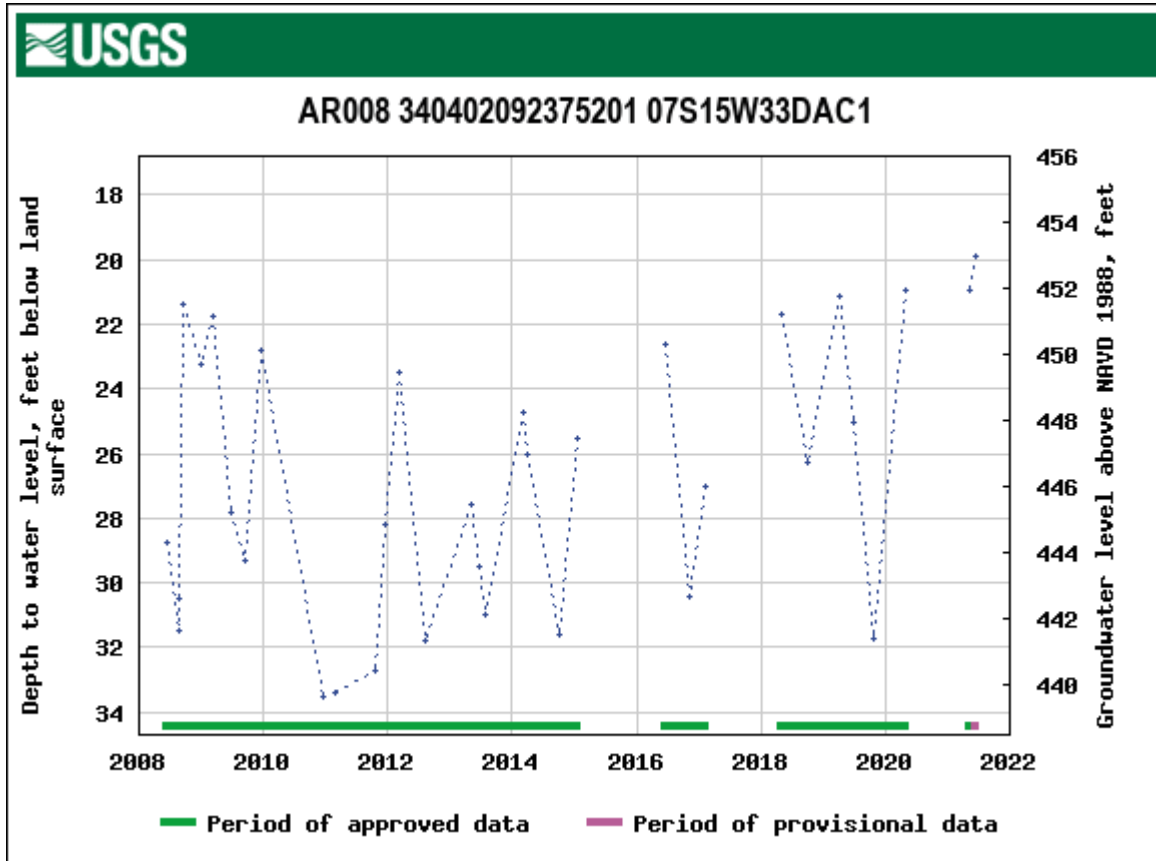


H. Grant County, Well 04S15W02DAC1

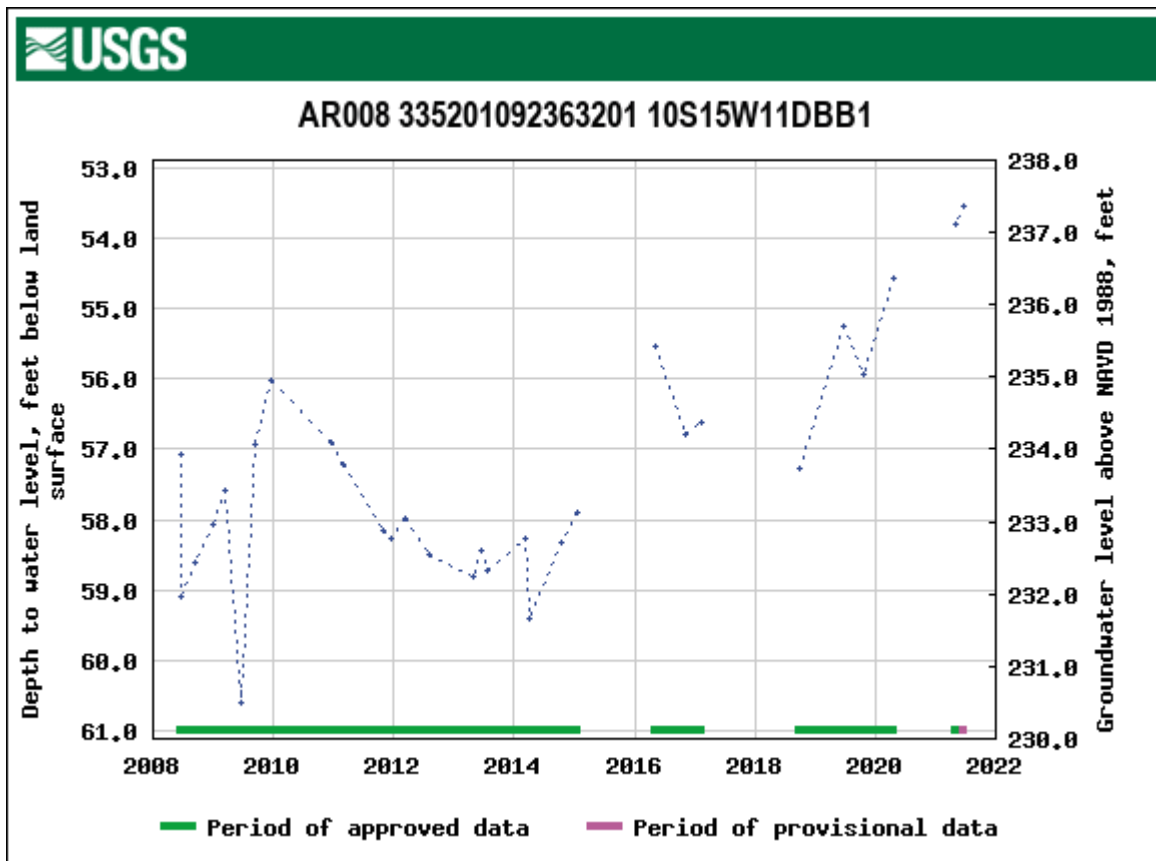


I. Jefferson County, Well 05S08W30ADB1

Figure 31. Selected water level hydrographs from the Sparta aquifer

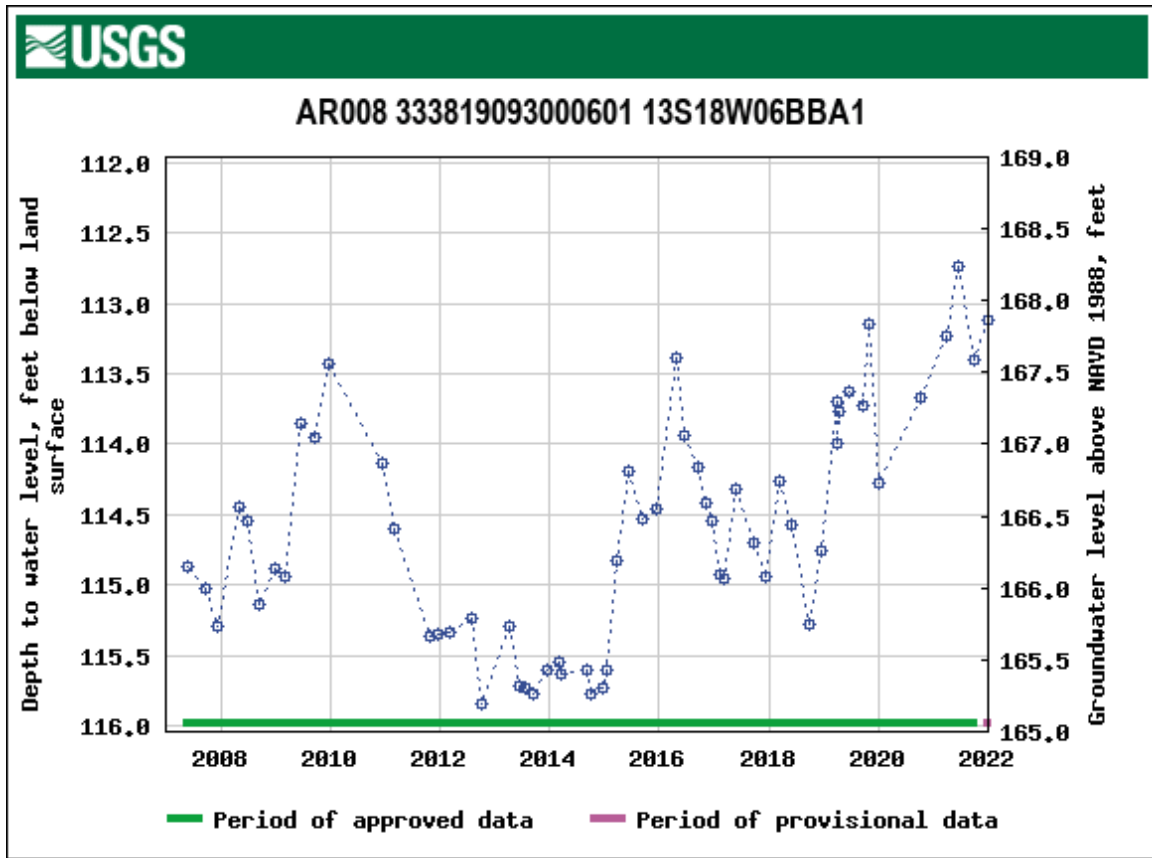


J. Dallas County, Well 07S15W33DAC1

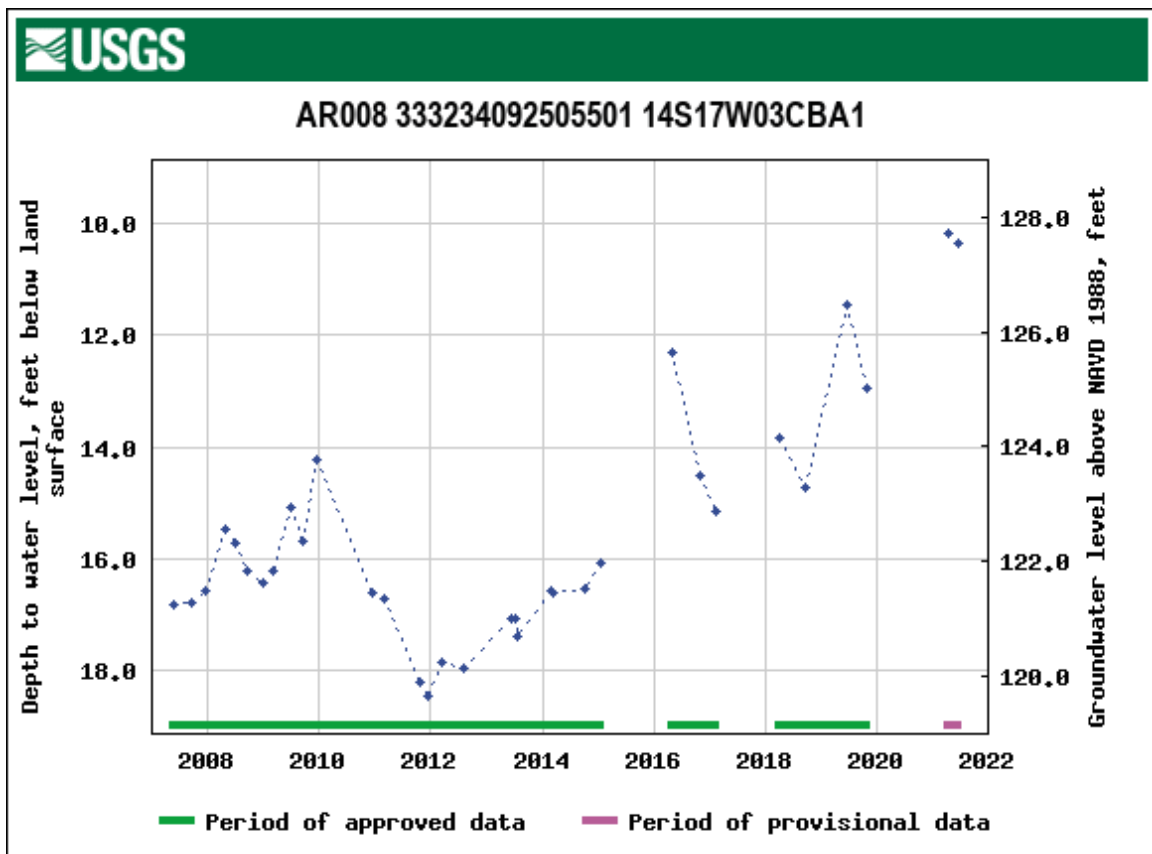


K. Dallas County, Well 10S15W11DBB1

Figure 31. Selected water level hydrographs from the Sparta aquifer

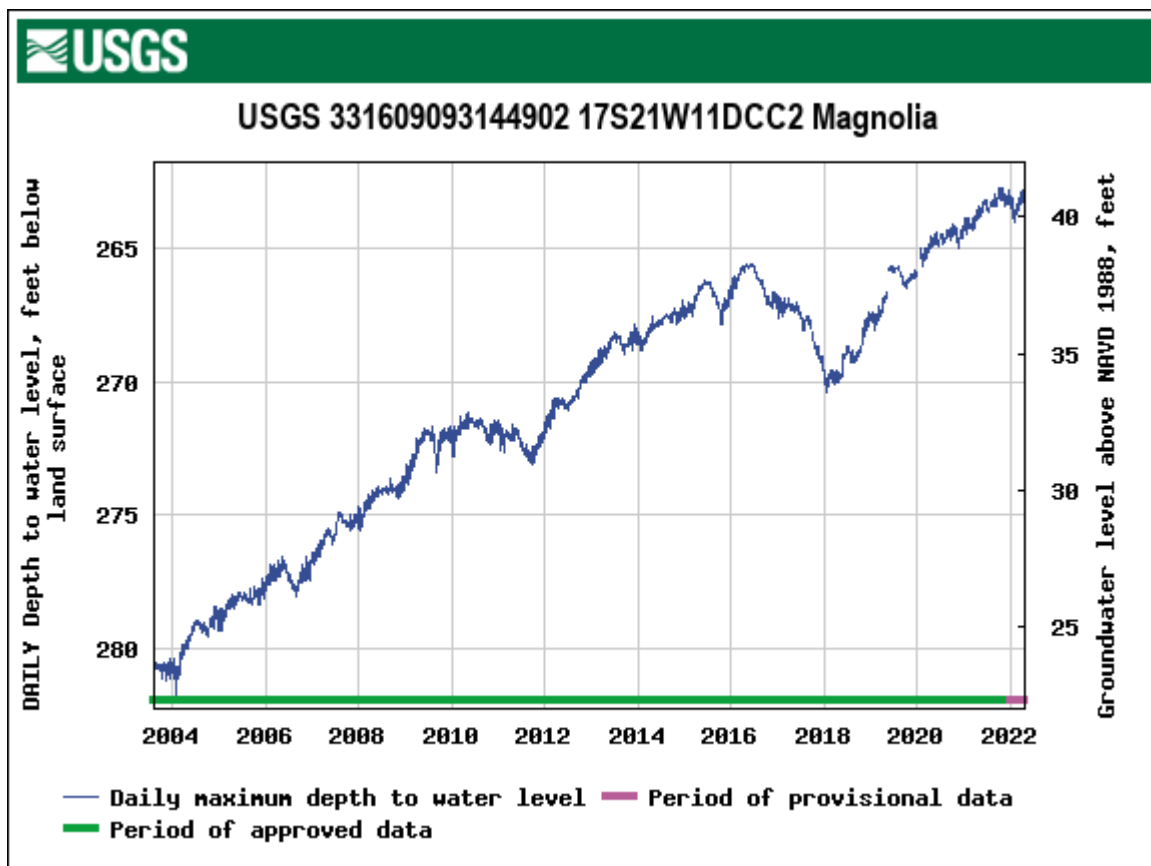


L. Ouachita County, Well 13S18W06BBA1

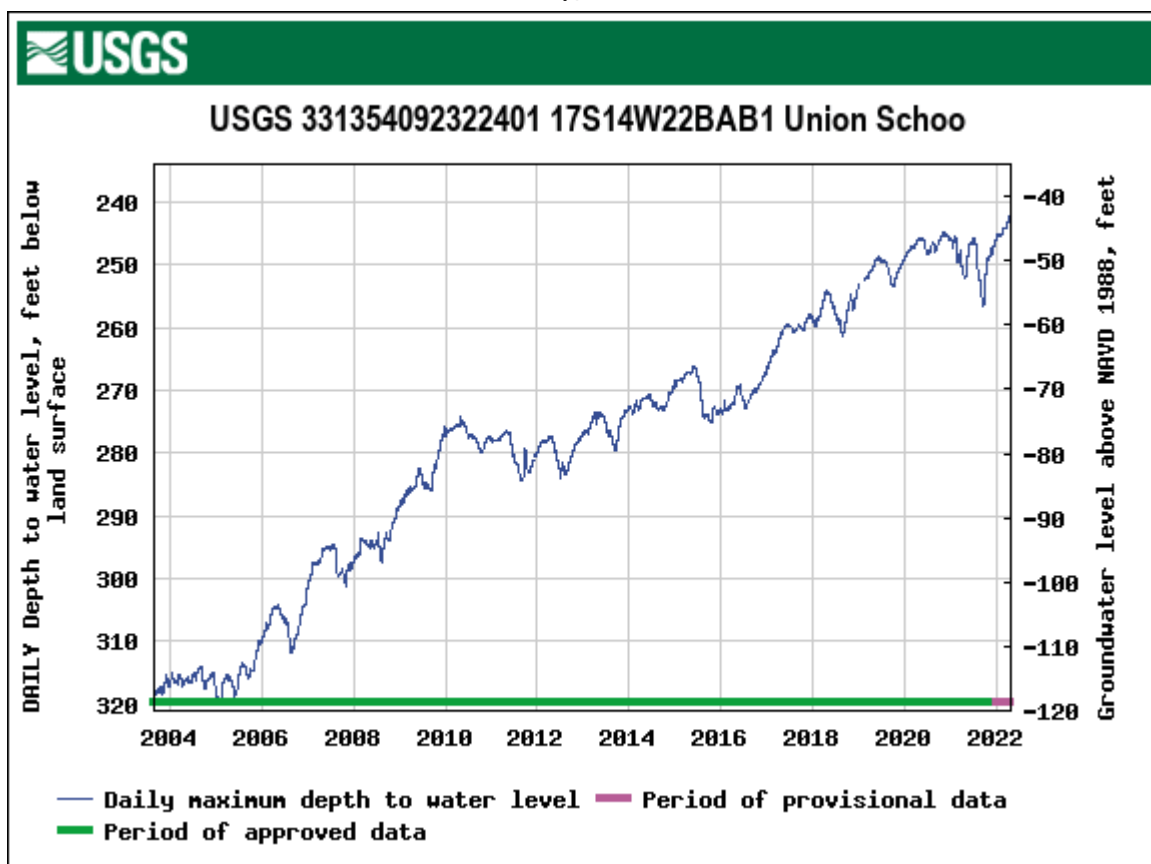


M. Ouachita County, Well 14S17W03CBA1

Figure 31. Selected water level hydrographs from the Sparta aquifer

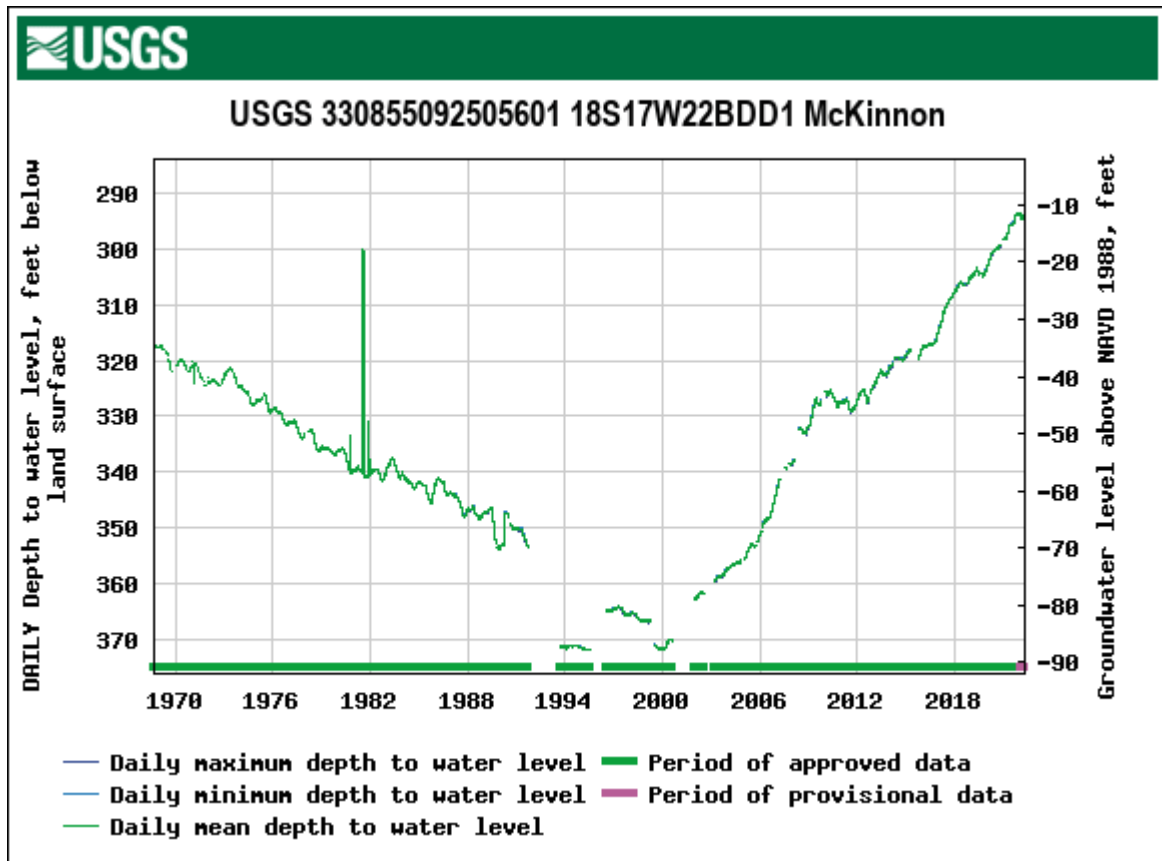


N. Columbia County, Well 17S21W11DCC2



O. Union County, Well 17S14W22BAB1

Figure 31. Selected water level hydrographs from the Sparta aquifer



P. Union County, Well 18S17W22BDD1

Data coverage has been poor in the Cache and St. Francis study areas with most of the data coming from only a few counties while other counties have no data; however, water level change values were calculated, and maps were made for each period. For the one-year water level change comparison both study area show average declines of -2.13 feet in the Cache and -1.94 feet in the St. Francis. In the five and ten-year water level change comparisons, the Cache shows average water level declines while the St. Francis shows water levels to be increasing. Figures 32, 33, and 34 illustrate the one, five, and ten year water level change data for the Cache and St. Francis study areas.

In the Grand Prairie, overall water levels in the Sparta show a study area-wide average water level changes of +1.66, +7.18, and +7.00 feet throughout the one, five and ten-year intervals, respectively. The primary areas with consistently declining water level change values are central Lonoke and Prairie counties. While central Lonoke County and west-central Prairie County have average water level declines, the southern reach of Prairie county shows significant positive change, and as with Arkansas county, appears to be an area where the

Sparta aquifer is recovering. Jefferson county shows average declines in the one and five-year comparisons and an average increase in the ten-year comparison. Data for Jefferson County is sparse compared to the other counties in the study area. Lonoke County is the only county in the study area that has declining average water level values throughout all the three time periods. Figures 35, 36, and 37 present the Grand Prairie study area data.

Overall recovery continues in the areas where historical drawdown has been the most significant in South Arkansas, with the study area having positive average water level change values of +1.48, +10.69, and +12.31 feet in the one, five and ten-year intervals, respectively (Figures 38, 39, and 40). These values are very consistent with those presented in last year's report (NRD, 2021). The area of most significant recovery continues to be Union County where several wells have positive water level change values as much as 57 feet. Data in the one-year comparison was sparse for Ouachita, Calhoun, and Bradley counties due to the lack of data collected in 2020 because of the pandemic. Figures 38, 39, and 40 present the South Arkansas water level change data.

Figures 41, 42, and 43 present the Sparta aquifer change data for the one, five, and ten-year comparisons in the Boeuf-Tensas Study Area. These maps show a positive average change value for the Study Area across the three periods with Drew and Lincoln counties having the greatest positive water level change values.

While positive average water level changes are present throughout this year's data for the Sparta, decline in the potentiometric surface in the aquifer is expected to continue due to overuse. There has been a statewide increase in water use in the Sparta from 139 million gallons per day (Mgal/d) in 1970 to approximately 160 Mgal/d in 2015. The estimated sustainable yield for the aquifer is 87 Mgal/d leaving an unmet demand of approximately 73 Mgal/d. The most recent significant increase in water use from the Sparta Aquifer has been for agriculture-irrigation in the Grand Prairie and Cache Study Areas. In 2018, it is estimated that 68 Mgal/d was used from the Sparta for irrigation. In other words, 78% of the estimated yield for the aquifer is being used for irrigation. Groundwater use will be further discussed in the Groundwater Use section below.

Appendix B presents a table of specific water-level monitoring data for the Sparta/Memphis aquifer from the 2021 monitoring period, as well as the one, five, and ten-year water level change data.

Figure 32

Cache & St. Francis Study Areas

2020 - 2021 Water Level Changes

(Sparta Aquifer)

Cache Study Area
1 Year Change:
Average Change: -2.13 Feet
20 of 24 Wells Showed Declines

St. Francis Study Area
1 Year Change:
Average Change: -1.94 Feet
9 of 11 Wells Showed Declines

County	Avg. Change, Ft.
Clay	-1.50
Craighead	+0.59
Crittenden	-2.76
Cross	-2.07
Monroe	-4.04
Poinsett	-2.16
Woodruff	+3.78

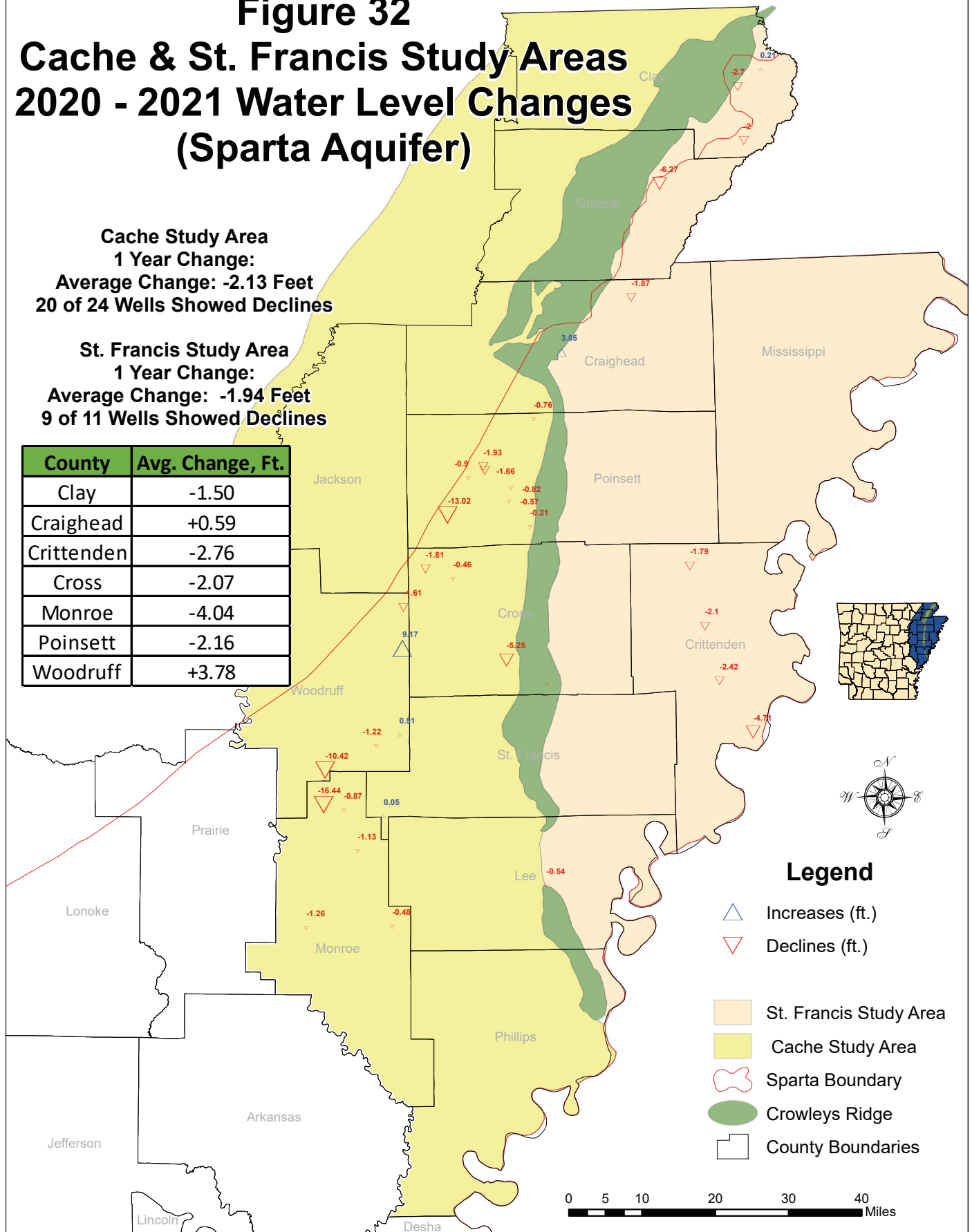


Figure 33 Cache & St. Francis Study Areas 2016 - 2021 Water Level Changes (Sparta Aquifer)

Cache Study Area
5 Year Change:
Average Change: -1.74 Feet
12 of 18 Wells Showed Declines

St. Francis Study Area
5 Year Change:
Average Change: +2.30
1 of 9 Wells Showed Declines

County	Avg. Change, Ft.
Craighead	+3.19
Crittenden	+2.24
Cross	-1.23
Poinsett	-7.69
Woodruff	+1.84

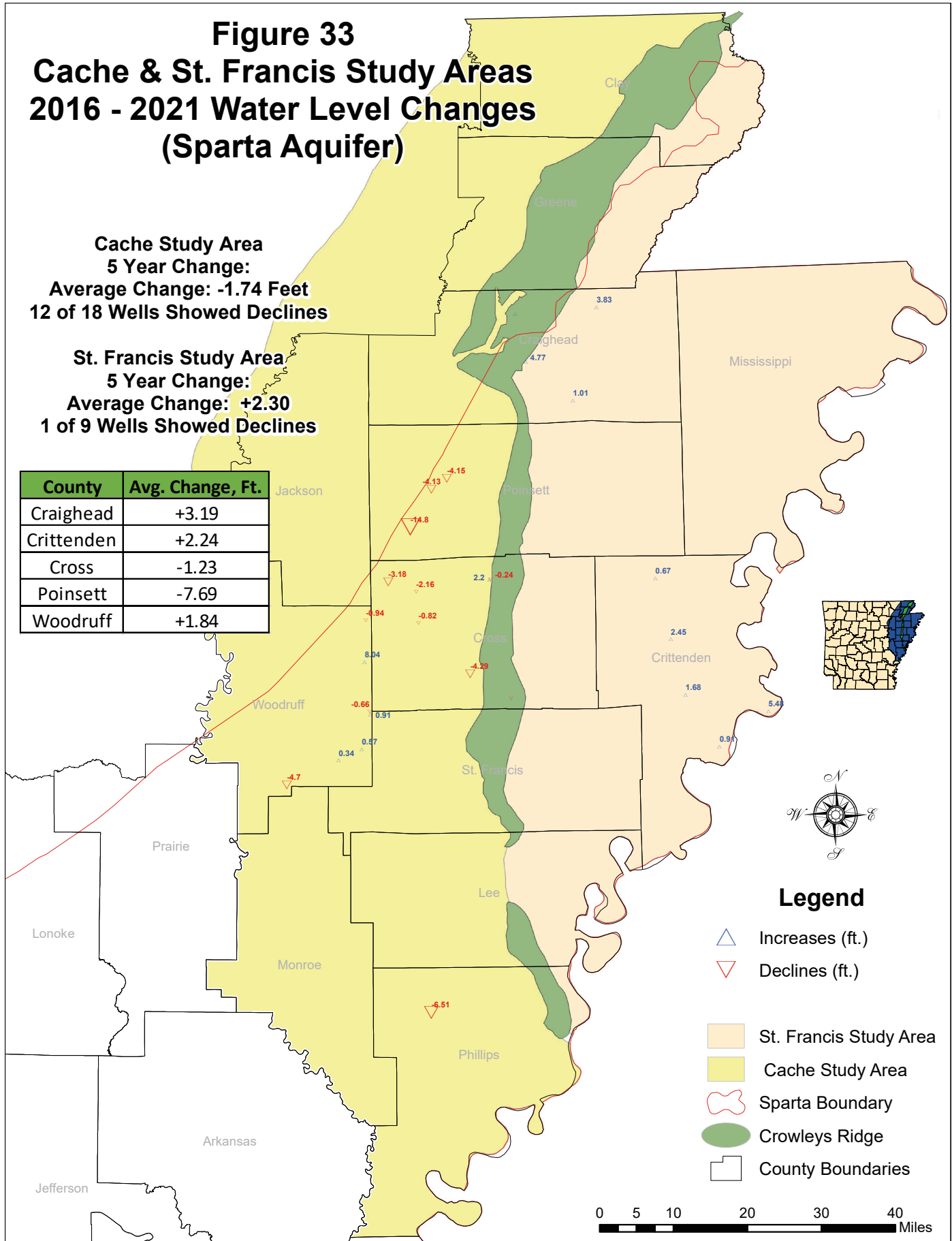


Figure 34 Cache & St. Francis Study Areas 2011 - 2021 Water Level Changes (Sparta Aquifer)

Cache Study Area
10 Year Change:
Average Change: -3.50 Feet
19 of 22 Wells Showed Declines

St. Francis Study Area
10 Year Change:
Average Change: +3.08 Feet
0 of 7 Wells Showed Declines

County	Avg. Change, Ft.
Craighead	+2.22
Crittenden	+2.52
Cross	-2.16
Monroe	+1.21
Poinsett	-10.99
Woodruff	-0.45

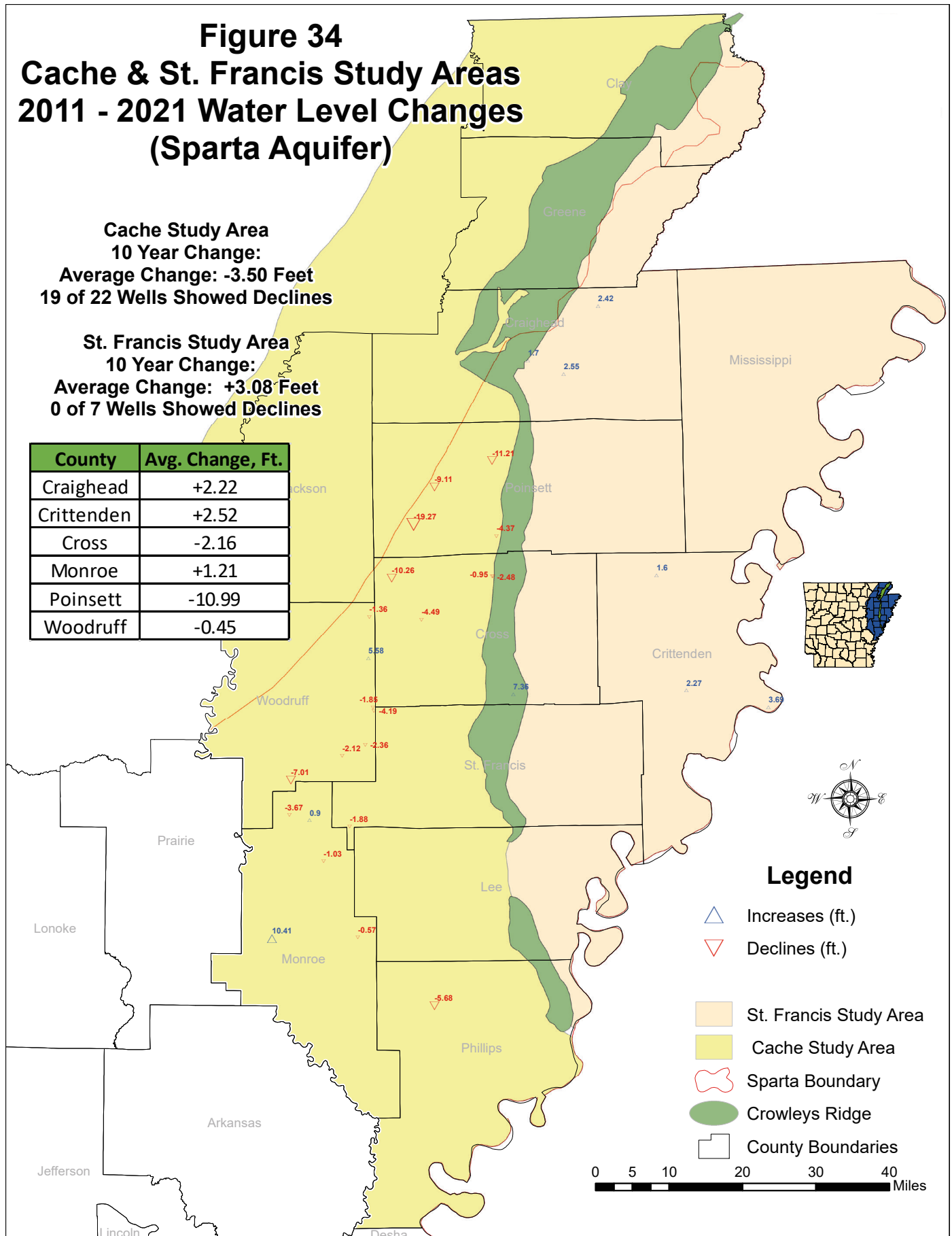


Figure 35
Grand Prairie Study Area
2000 - 2021 Water Level Changes
(Sparta Aquifer)

Grand Prairie Study Area 1 Year Change:

Average Change: +1.66 Feet
17 of 52 Wells Showed Declines

County	Avg. Change, Ft.
Arkansas	+3.20
Jefferson	-1.35
Lonoke	-0.13
Prairie	+0.55

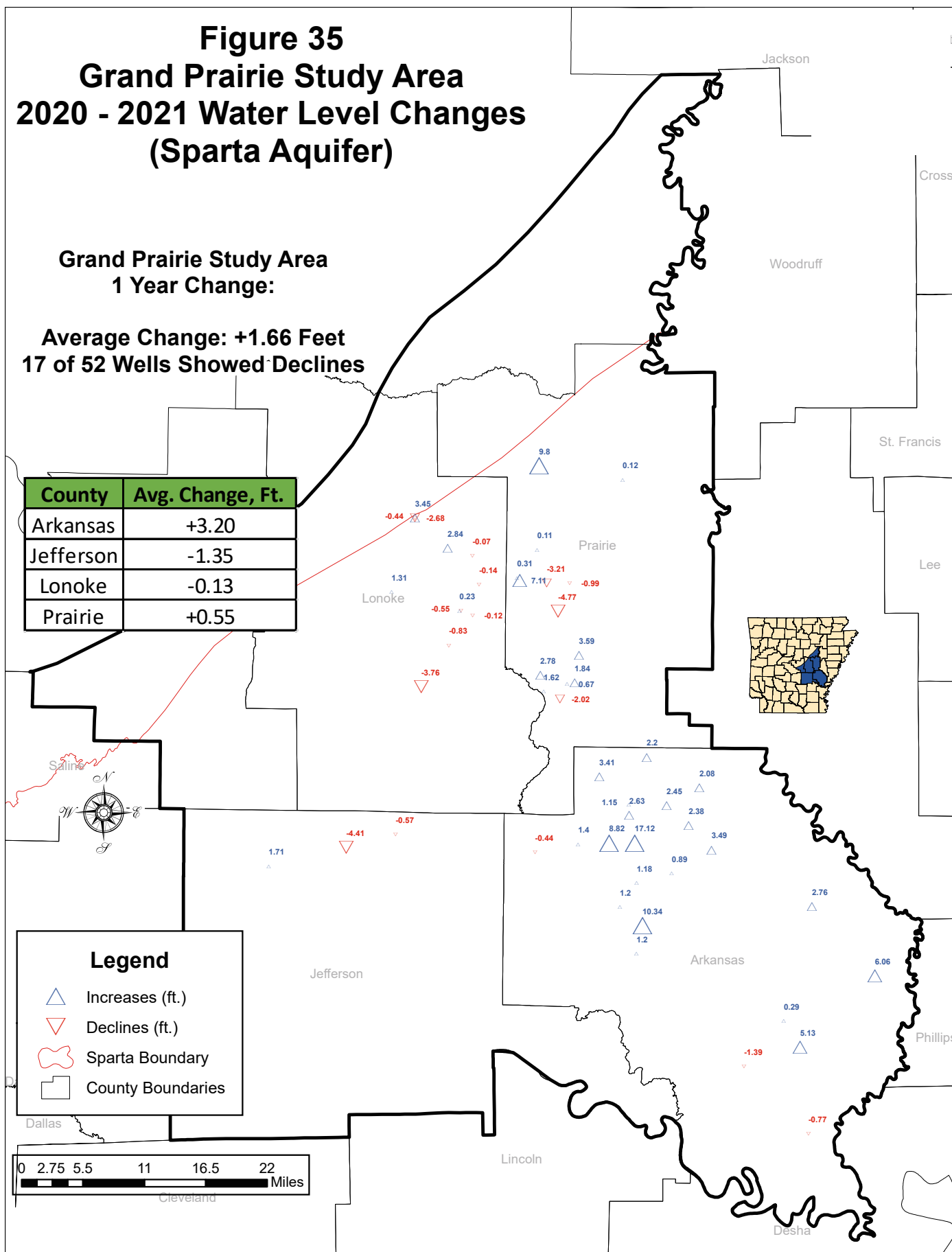


Figure 36

Grand Prairie Study Area

2016 - 2021 Water Level Changes

(Sparta Aquifer)

Grand Prairie Study Area
5 Year Change:

Average Change: +7.18 Feet
14 of 54 Wells Showed Declines

County	Avg. Change, Ft.
Arkansas	+10.95
Jefferson	-1.47
Lonoke	0.00
Prairie	+8.40

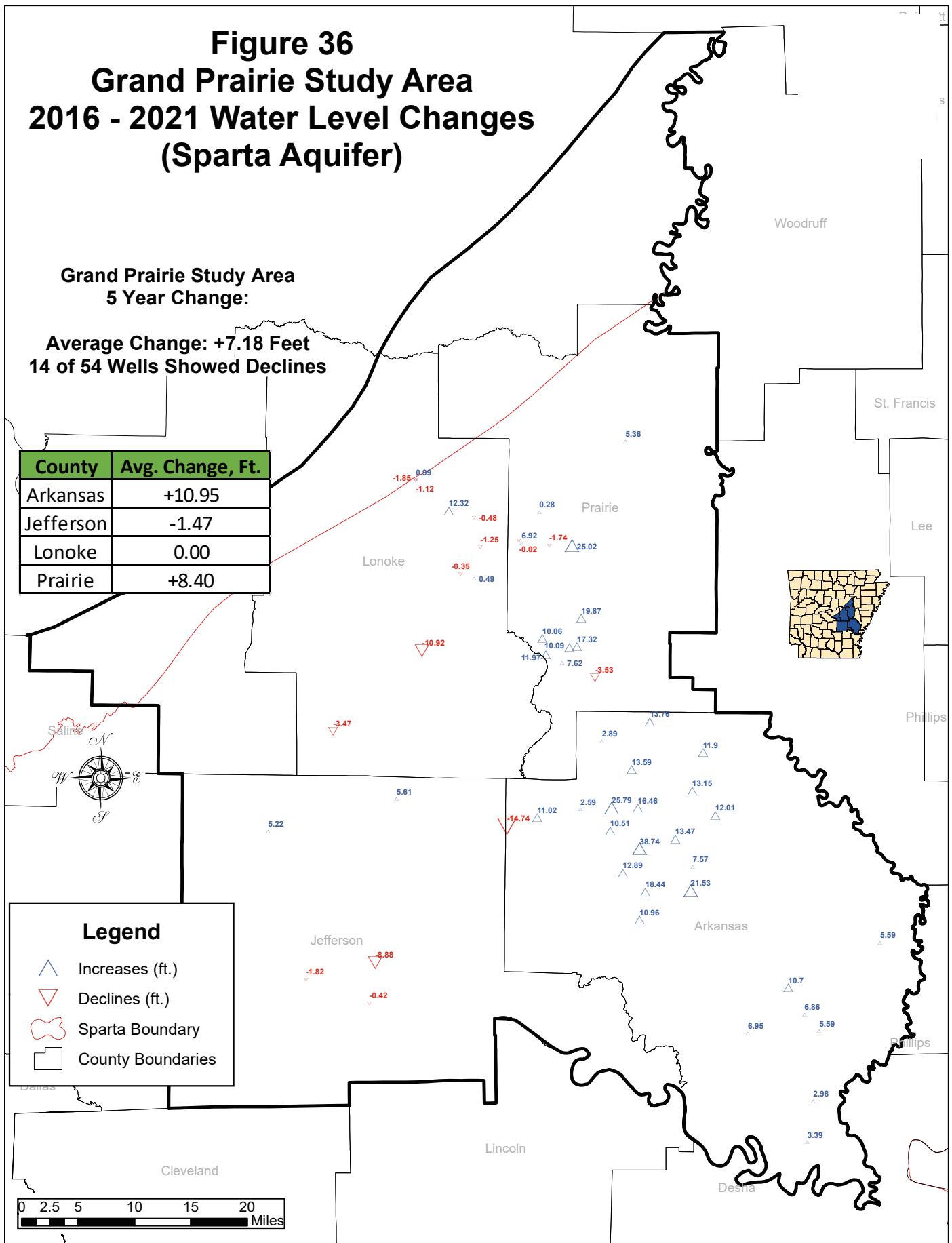


Figure 37

Grand Prairie Study Area

2011 - 2021 Water Level Changes

(Sparta Aquifer)

Grand Prairie Study Area
10 Year Change:

Average Change: +7.00 Feet
18 of 62 Wells Showed Declines

County	Avg. Change, Ft.
Arkansas	+11.91
Jefferson	+5.37
Lonoke	-2.39
Prairie	+4.45

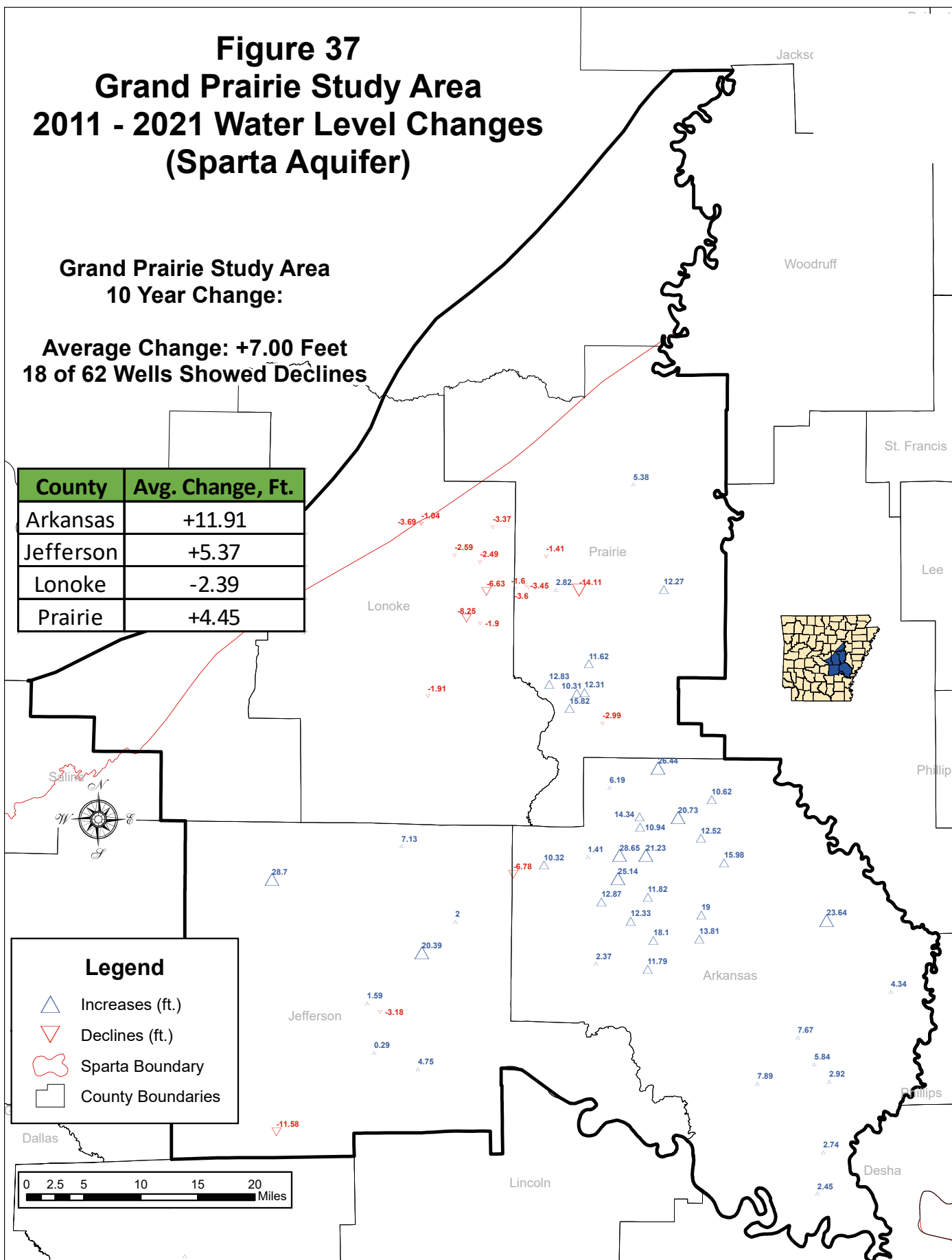
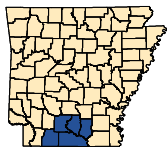
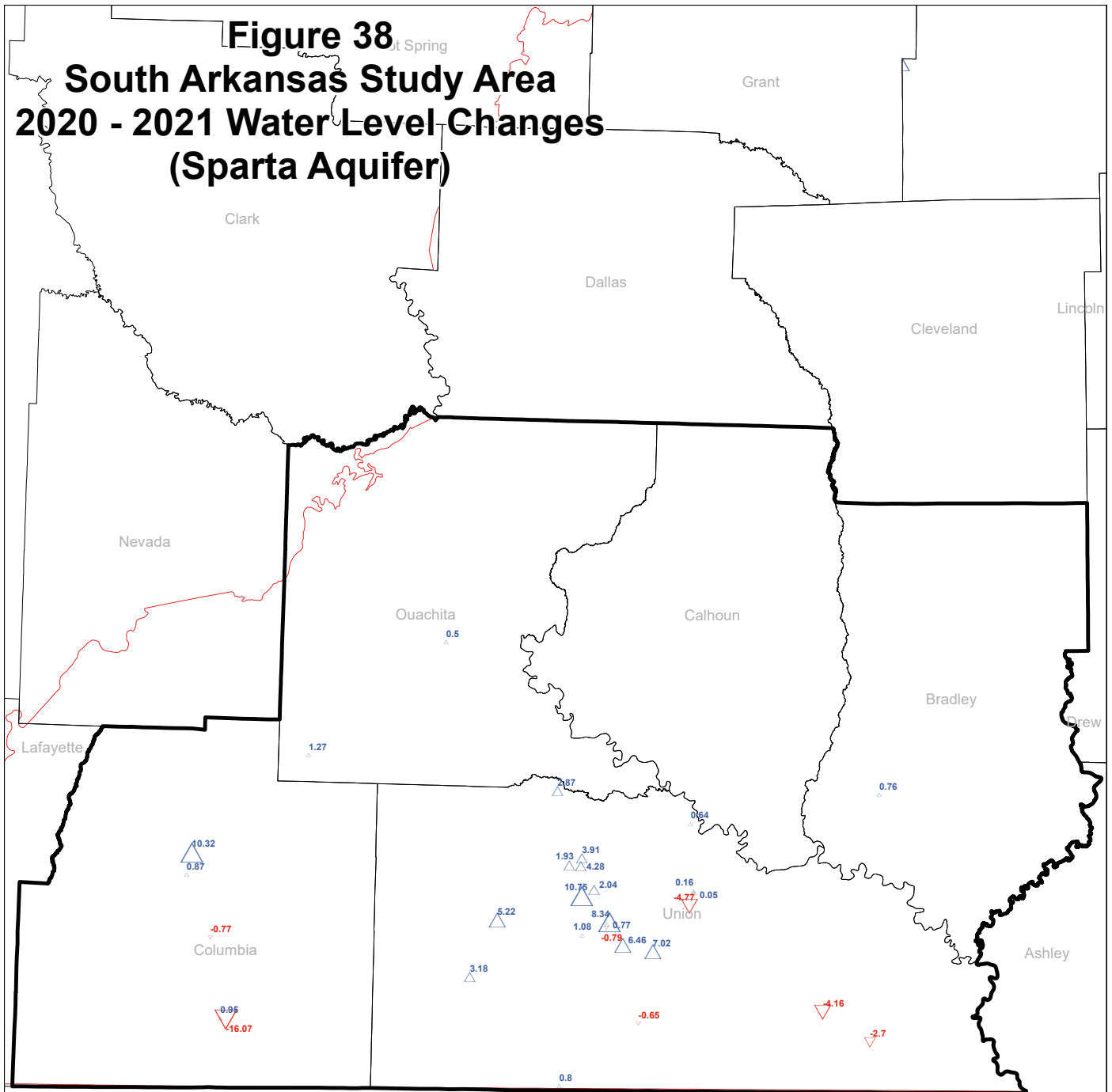


Figure 38
South Arkansas Study Area
2020 - 2021 Water Level Changes
(Sparta Aquifer)



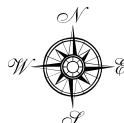
South Arkansas Study Area
1 Year Change:

Average Change: +1.48 Feet
7 of 30 Wells Showed Declines

County	Avg. Change, Ft.
Columbia	-0.94
Ouachita	+0.88
Union	+2.18

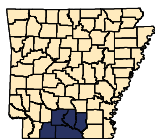
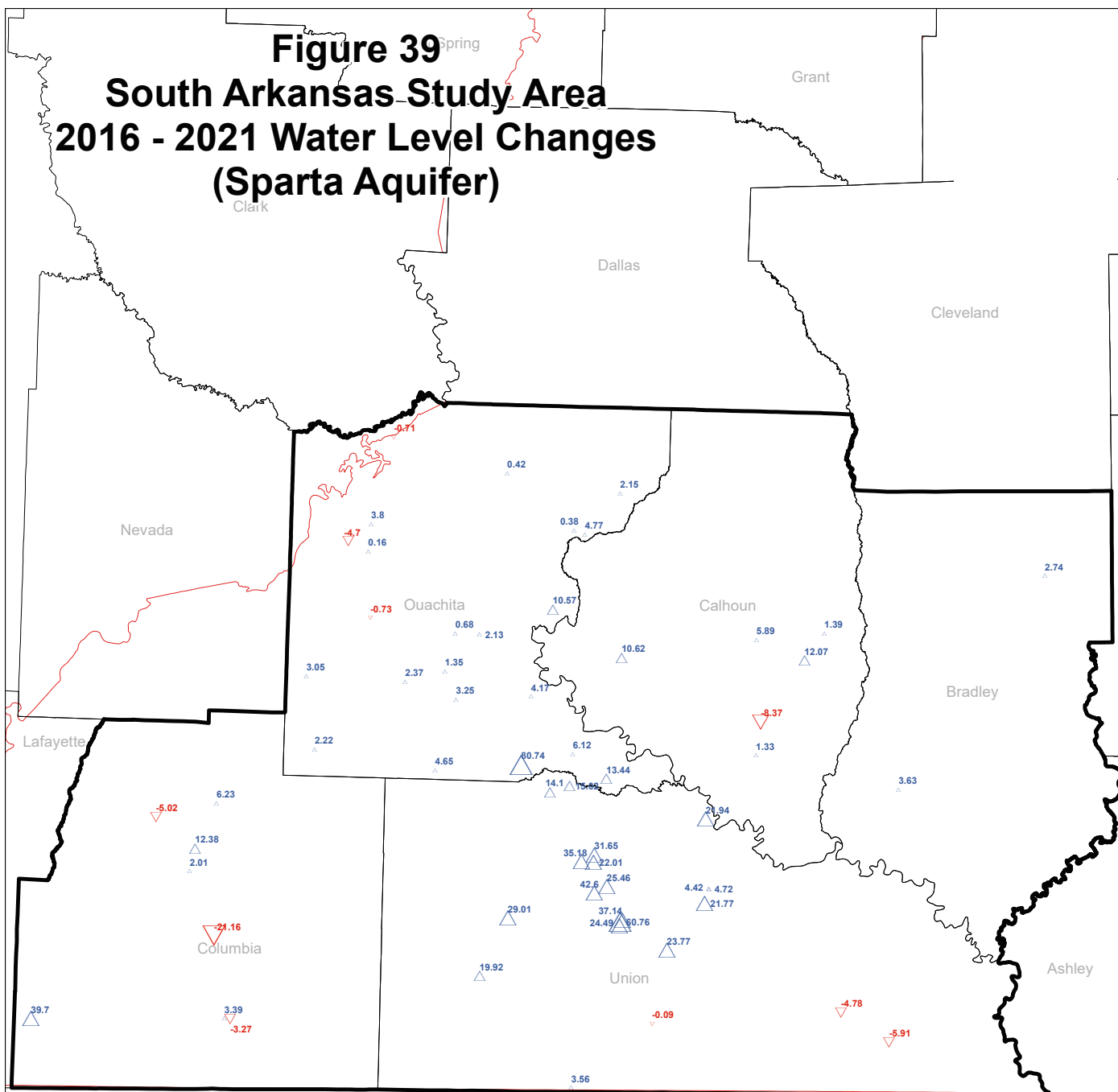
Legend

- Increases (ft.)
- Declines (ft.)
- Sparta Boundary
- County Boundaries



0 3.75 7.5 15 22.5 30 Miles

Figure 39
South Arkansas Study Area
2016 - 2021 Water Level Changes
(Sparta Aquifer)



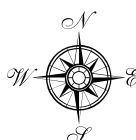
South Arkansas Study Area
5 Year Change:

Average Change: +10.69 Feet
10 of 59 Wells Showed Declines

County	Avg. Change, Ft.
Bradley	+3.19
Calhoun	+3.82
Columbia	+4.28
Ouachita	+6.38
Union	+20.24

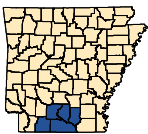
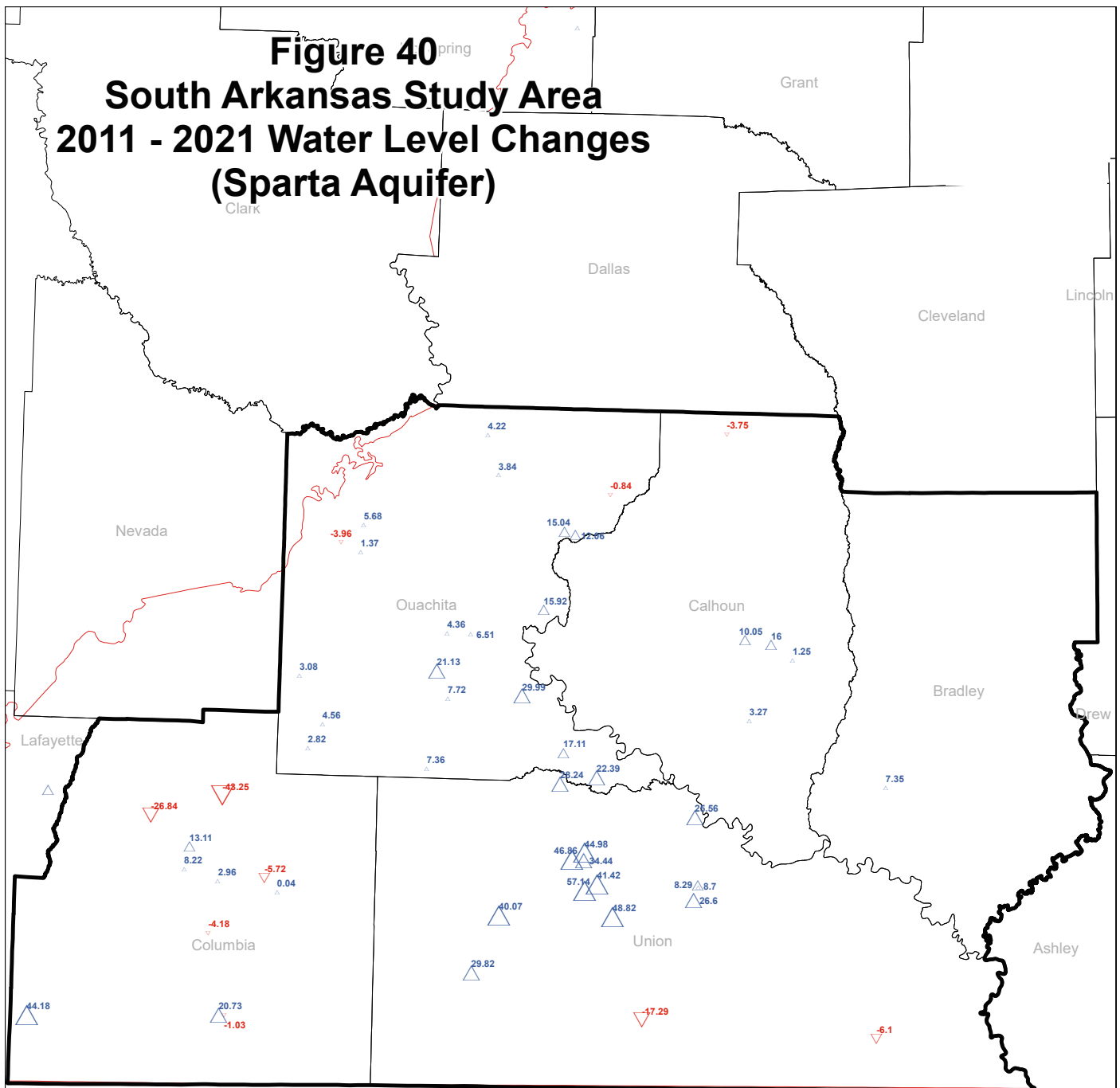
Legend

- Increases (ft.)
- Declines (ft.)
- Sparta Boundary
- County Boundaries



0 3.75 7.5 15 22.5 30
Miles

Figure 40 South Arkansas Study Area 2011 - 2021 Water Level Changes (Sparta Aquifer)

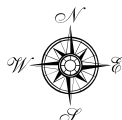


South Arkansas Study Area 10 Year Change:

Average Change: +12.31 Feet
10 of 52 Wells Showed Declines

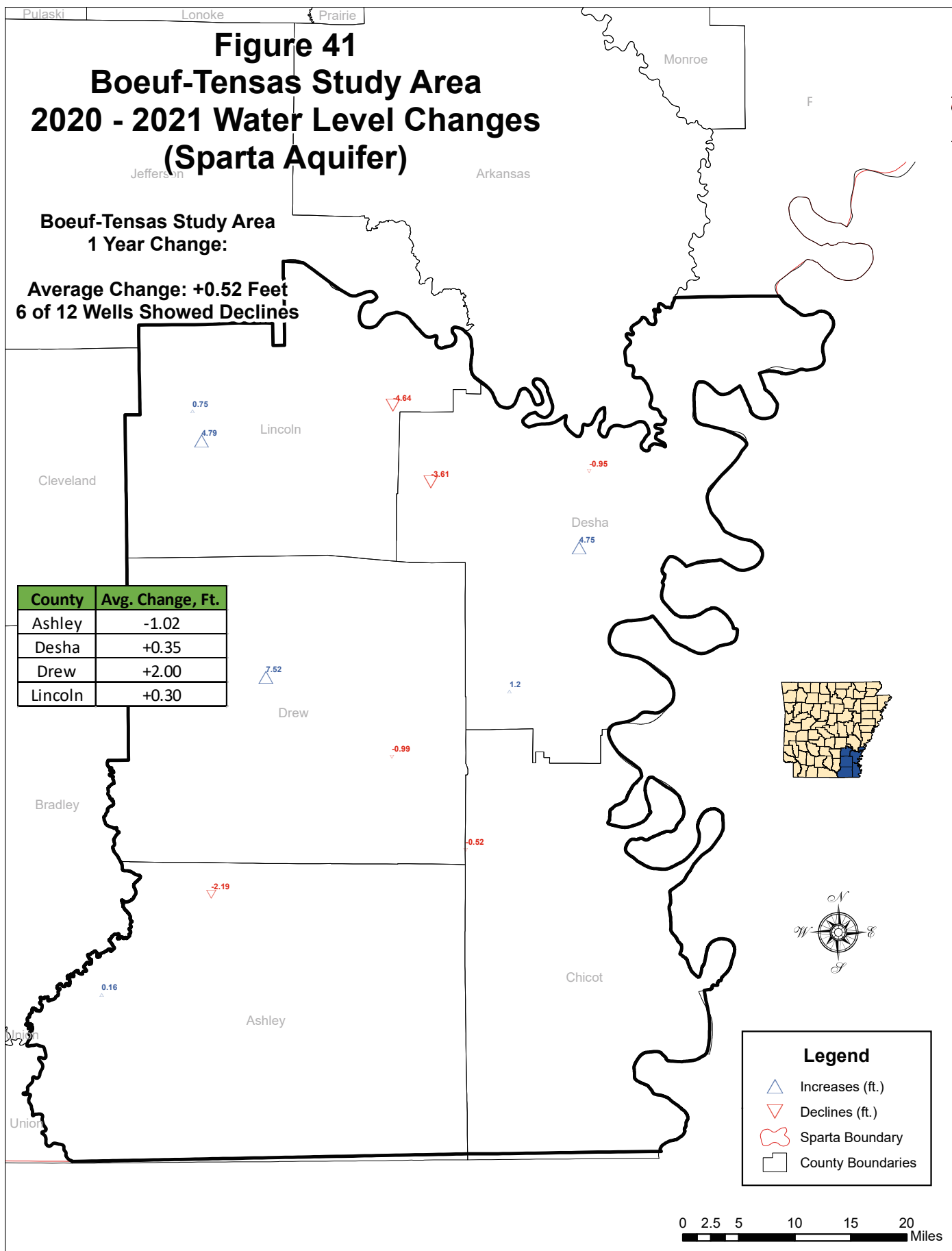
Legend

- △ Increases (ft.)
- ▽ Declines (ft.)
- Sparta Boundary
- County Boundaries



0 3.75 7.5 15 22.5 30 Miles

County	Avg. Change, Ft.
Bradley	+7.35
Calhoun	+5.36
Columbia	+0.75
Ouachita	+9.02
Union	+28.00



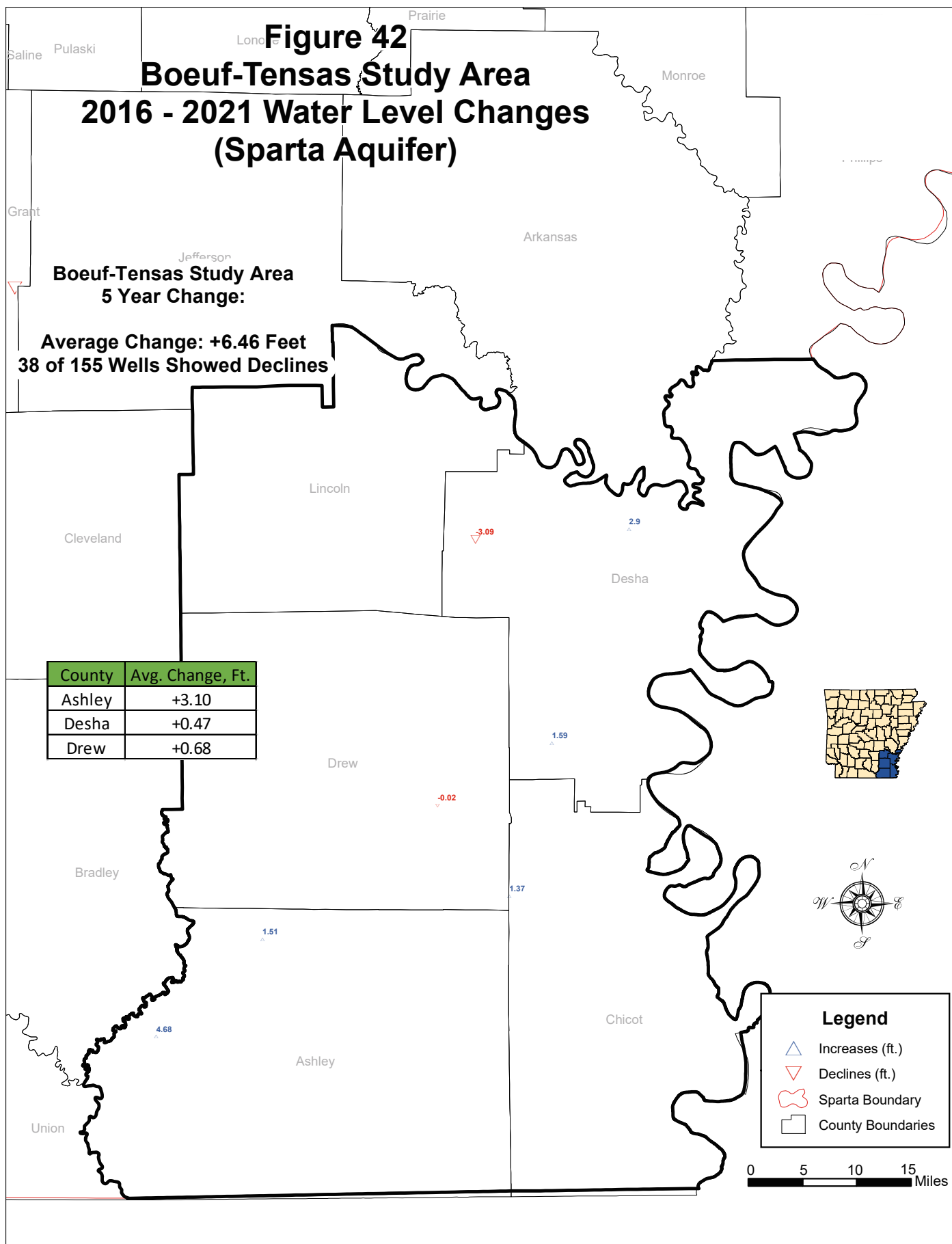
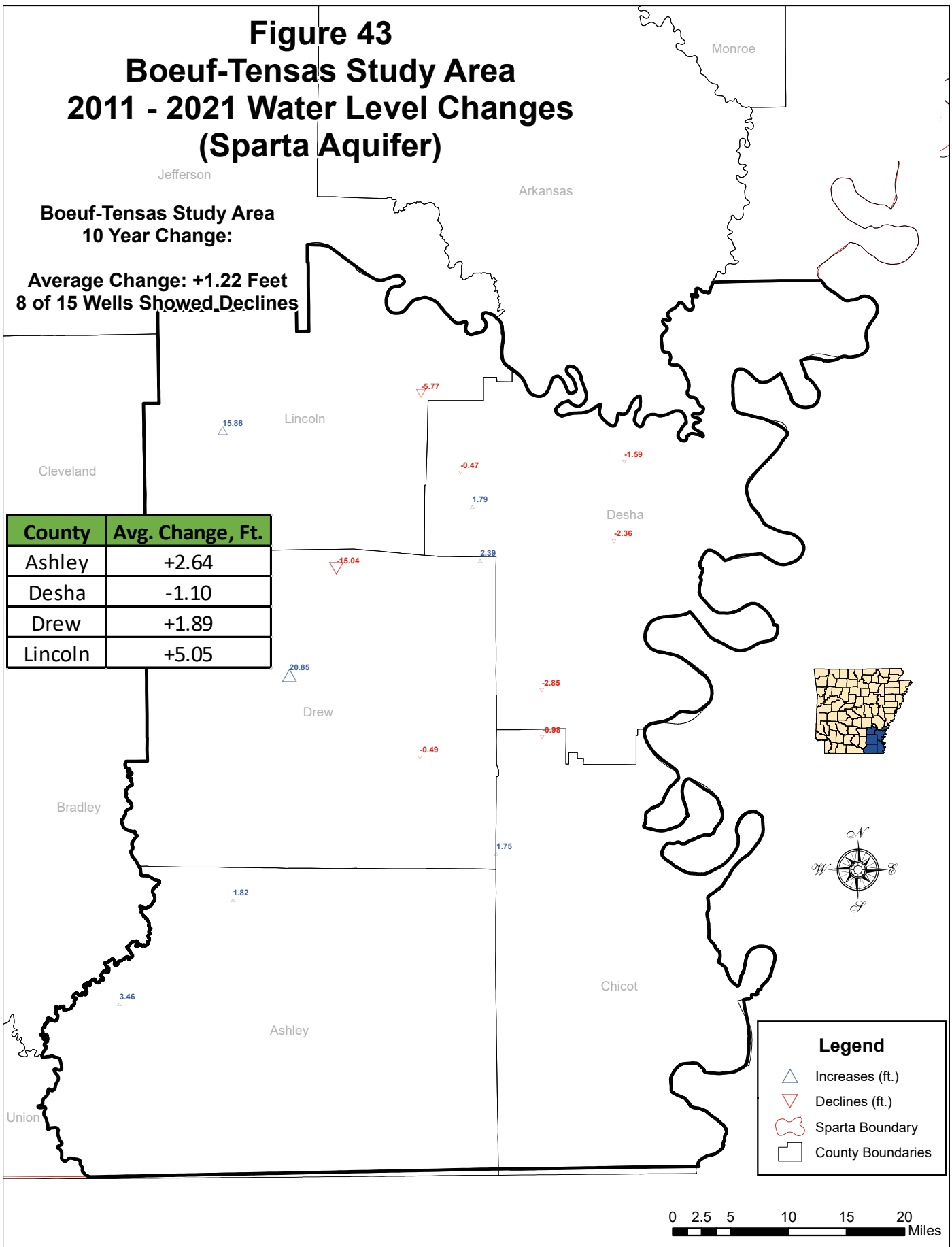


Figure 43 Boeuf-Tensas Study Area 2011 - 2021 Water Level Changes (Sparta Aquifer)

**Boeuf-Tensas Study Area
10 Year Change:**

**Average Change: +1.22 Feet
8 of 15 Wells Showed Declines**

County	Avg. Change, Ft.
Ashley	+2.64
Desha	-1.10
Drew	+1.89
Lincoln	+5.05



Groundwater Use

Registered Wells

In accordance with Act 1051 of 1985, all wells in Arkansas that have the capacity to produce 50,000 gallons per day must be registered with the NRD. Domestic wells are exempt. The quantity used must be reported by March 1st of the following year. USGS reports that there are approximately 50,000 registered wells in the State and over 97% are agricultural wells used primarily for irrigation eastern Arkansas. The remaining approximate 3% reported wells are used predominately for commercial, industrial, and public water supply purposes.

Reported Water Use

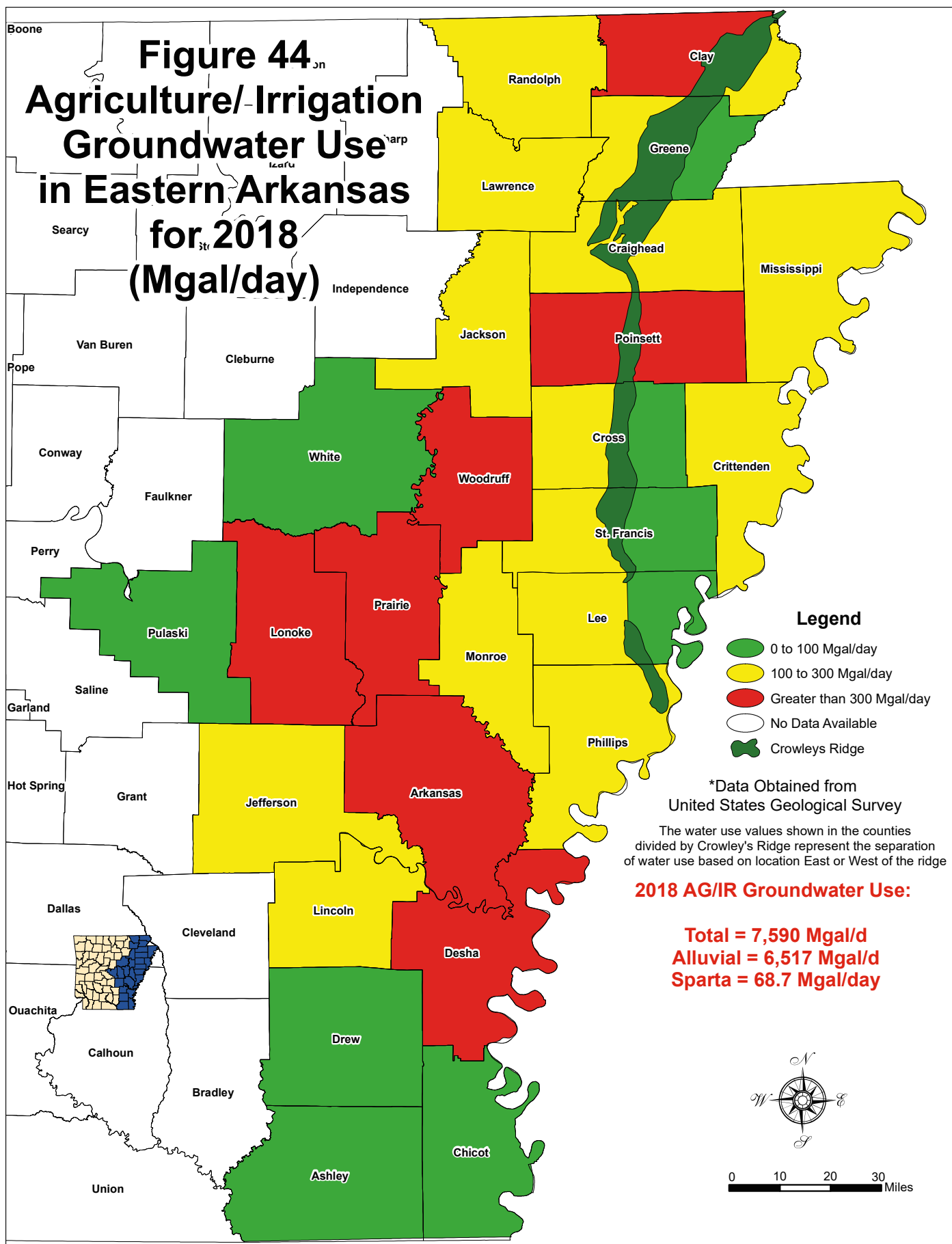
In 2015, an estimated total of 8,254.60 million gallons per day (Mgal/d) of water were reportedly withdrawn from all the state's aquifers. The greatest reported volumes are from the alluvial and Sparta aquifers, with approximately 7,636.08 Mgal/d being used from the alluvial and approximately 160 Mgal/d being used from the Sparta. The 2015 total water use data is still the most recent accurate figure for total water use across the state for various reasons. However, reported agricultural-irrigation water use numbers for 2018 have been provided by the USGS as being nearly complete, as the dataset does not contain the results of the mail-out reporting forms. The remaining water use data, non-agricultural/non-irrigation, for 2018 are still being processed.

Reported agricultural-irrigation water use in 2018 estimates that a total of 7,590 Mgal/d of groundwater was used for irrigation from all aquifer sources in eastern Arkansas, with 6,570 Mgal/d from 42,452 wells in the alluvial aquifer and 68 Mgal/d from 286 wells in the Sparta aquifer (USGS, 2019). In 2015, reported irrigation groundwater use is estimated to have been 7,434 Mgal/d from 48,410 wells in the alluvial aquifer and 66 Mgal/d from 285 wells in the Sparta aquifer. Based on these numbers, irrigation groundwater use from the alluvial aquifer in 2018 was approximately 864 Mgal/d less than in 2015 with nearly 6,000 fewer wells reported. Reported irrigation groundwater use from the Sparta aquifer in 2018 increased by 2 Mgal/d from 2015 with one more well reported. The discrepancy in the number of wells reported is due partly to the fact that mail-out report forms for 2018 have not yet been received. However, 2018 mail-out forms are expected to be fewer than 6,000 and reported agricultural-irrigation groundwater use is anticipated to be reduced from 2015 reported use.

The estimated sustainable yield of the alluvial aquifer is 3,374 Mgal/d meaning that only 51% of our estimated 2018 irrigation groundwater use is sustainable using an incomplete, conservative estimate. Regarding the Sparta aquifer, 2018 irrigation water use estimates of 68 Mgal/d would account for approximately 78% of the estimated sustainable yield of 87 Mgal/d. Total water use numbers estimate that 160 Mgal/d is being used from the Sparta aquifer, mostly for municipal and industrial purposes. Based on these figures, only 54% of the total water use from the Sparta is sustainable.

Historically, counties that report the largest groundwater withdrawals from the alluvial aquifer are the same counties with groundwater depletion issues. Based on 2018 water use numbers, Arkansas, Lonoke, Poinsett, Woodruff, Clay, Desha, and Prairie counties used the most groundwater for irrigation. This is mostly consistent with the areas of significant drawdown in the alluvial aquifer.

Figure 44 presents the 2018 agricultural-irrigation water use as reported at the time of this report.



Water Conservation Tax Incentive Program

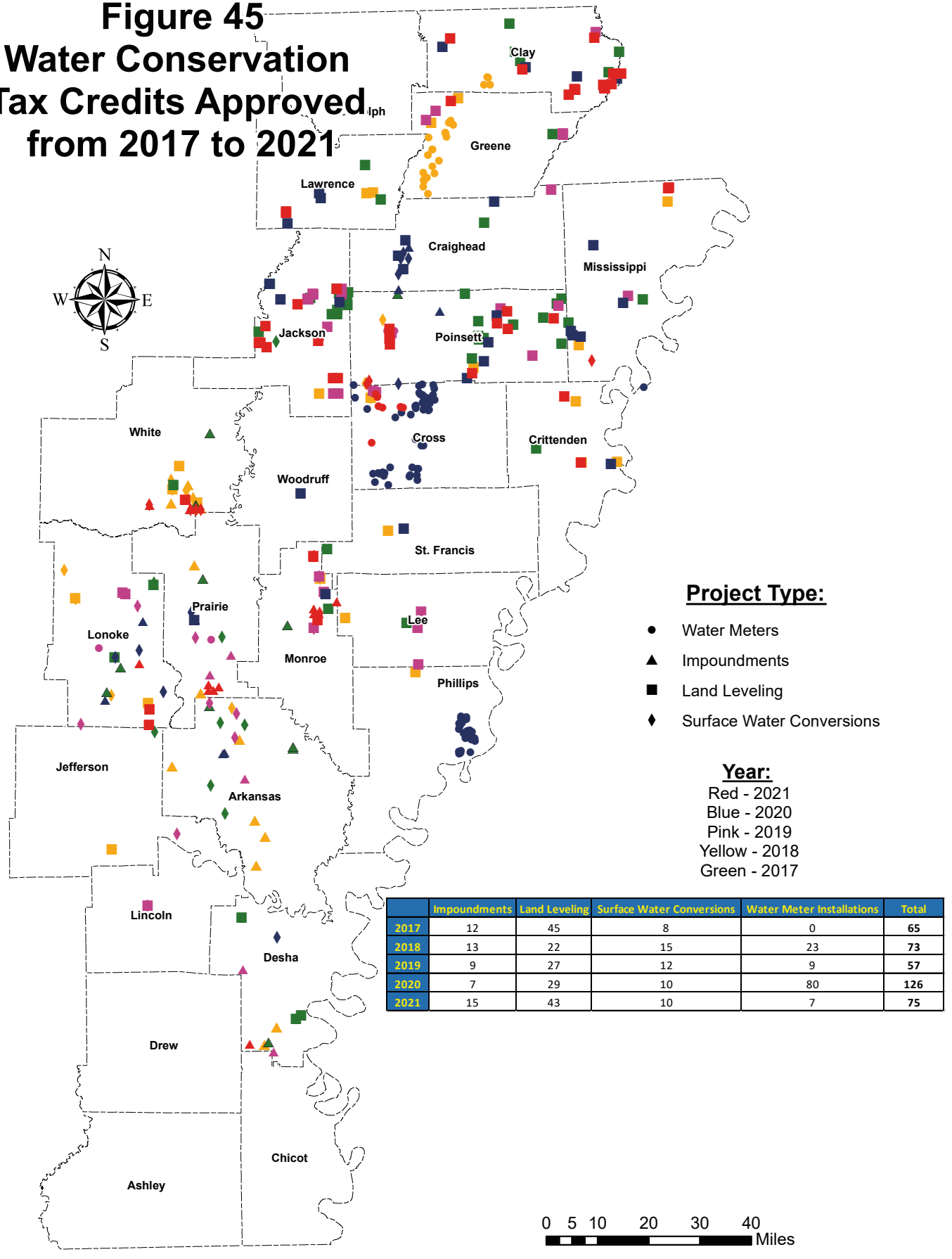
The Water Conservation Tax Incentive Program encourages water users to invest in water conservation practices by offering a tax credit equal to 10% (statewide) or 50% (in a Critical Groundwater Area) of the cost to implement the practice. The following water conservation practices are eligible for tax credits: (1) the construction of impoundments to utilize available surface water and reduce our dependence on ground water; (2) the conversion from groundwater use to surface water use when surface water is available; (3) land leveling to reduce agricultural irrigation water use; and (4) the installation of water meters to monitor ground water usage.

Figure 45 shows the locations of the water conservation projects that were approved for a tax credit for the years 2017 through 2021. A summary table of the number and types of conservation practices approved for a tax credit can be found below.

Approved Tax Credits 2017 - 2021					
Conservation Practice	Year Approved				
	2017	2018	2019	2020	2021
Water Meters	0	23	9	80	7
Impoundments	12	13	9	7	15
Land Leveling	45	22	27	29	43
Surface Water Conversions	8	15	12	10	10
Total Approved	65	73	57	126	75

Each applicant is required to list the estimated total acre-footage of groundwater used in the year prior to applying for a tax credit and the estimated total acre-footage of groundwater used after the project has been completed. The project acres and estimated volume of groundwater conserved by the 75 projects approved in 2021 has not been tabulated at this time.

Figure 45
Water Conservation
Tax Credits Approved
from 2017 to 2021



Summary

The Groundwater Protection and Management Report for 2021 is a summary of the activities and significant findings of the Arkansas Department of Agriculture Natural Resources Division (NRD) Groundwater Section staff. This report is prepared annually in response to legislative mandates that direct the NRD to study the state's groundwater resources.

The purposes of the programs outlined in this report are to monitor the condition of the state's groundwater resources and to evaluate trends in water-level and water-quality fluctuations. The NRD, the USDA-NRCS, and the USGS monitor up to approximately 1,000 water wells each year for water levels and prescribed water quality parameters. This monitoring is accomplished through a cooperative agreement with the NRD and the USGS.

In the Mississippi River Valley alluvial aquifer, 456 water wells were measured in the spring of 2021, most of which were collected during the month of April prior to irrigation stresses during the growing season. As in previous reports, the spring 2021 data was compared with historical spring data in one, five, and ten year intervals, and average water level change values were calculated to generally represent the water level trend over time. For the one-year comparison, 2020 to 2021, an average water level decline of -0.64 feet was calculated. This is the first negative change value, or declining water level value, calculated since the 2010 to 2011 comparison in the 2011 annual report. For the five-year comparison, 2016 to 2021, and the ten year comparison, 2011 to 2021, average water level declines of +1.43 feet (five year) and +1.05 feet (ten year) were calculated. The spring to fall 2021 data comparison resulted in an average water level change of -2.80 feet, which is consistent with the changes calculated in recent years. The areas with the most severe groundwater declines continue to be the Grand Prairie and Cache study areas, particularly in the areas of the aquifer farthest from a major surface water source, i.e. the Arkansas, White, and Mississippi rivers. Water level decline in the Cache study area continues to worsen in the southern part of the area moving into St. Francis, Monroe, and Lee counties. Some water level decline has been observed in the St. Francis and Beouf-Tensas study areas, but it is unclear if these declines are causing significant aquifer drawdown at this time.

These results present a shift in the one, five and ten year trends seen in recent years where the one year comparison had a positive average change, representative of an overall rebound in aquifer water level, and the five and ten year comparisons showed negative

average changes, representative of long term water level decline. These are simple comparisons of synoptic water level data from one year to another, so it is difficult to explain definitively what causes these changes in trends. As for the one year declining water level value, the 2020 to 2021 comparison is the first comparison that both years contained data from the greater effort put forth to collect measurements in the two to four week span of time when peak aquifer recharge for the year was anticipated, as identified by USGS water modeling. These datasets are also two of the larger and most expansive datasets collected, with significantly more wells measured and better data coverage than were generally measured in years prior. These dataset improvements lend to more accurate illustrations of the aquifer levels and will continue to do so for years to come as similar datasets are collected. For the five and ten year comparisons, it could be that the several years of above average precipitation and the continual expansion of water conservation practices throughout the alluvial aquifer are allowing the aquifer to recover slightly. It is important to keep in mind that this is limited data and that the year-to-year change comparisons are average numbers representing a large dataset in a complex, dynamic system.

In the Sparta aquifer, 242 synoptic water level measurements were collected for the spring 2021 dataset. When compared with historical spring data, the 2021 data shows average water level change values of +0.58, +6.55, and +6.59 feet in the one, five, and ten-year intervals, respectively. It should be noted that the spring 2020 to spring 2019 change value is only based on 89 wells due to poor data coverage in the 2019 dataset. Positive aquifer-wide average water level change values are consistent with previous, similar data comparisons. Data coverage is concentrated mostly in the Grand Prairie and South Arkansas study areas where historical declines have been the greatest. In 2021, there was a lack of data in the northern area of the South Arkansas study area, and the Boeuf-Tensas, Cache, and St. Francis study areas.

The Sparta aquifer in the South Arkansas and Grand Prairie study areas continue to see recovery where historical drawdown has been the most severe. Union County continues to experience the most recovery, having the greatest average change in the five and ten-year intervals. In the Grand Prairie, Sparta wells have measured positive average water level change values in the one, five-year, and ten year change intervals, with Lonoke and Jefferson being the only counties having average decline. The Cache study area has negative average water level change values in the one, five, and ten-year comparisons with wells in Poinsett, Cross, and Woodruff county values amounting for most of the shown decline – few data exist

outside of these counties in the study area. The St. Francis shows an average decline in the one-year comparison and positive average change values in the five and ten year comparisons. It should be noted that there is poor data coverage in this area for these time periods. The 2021 data in the Boeuf-Tensas study area resulted in positive average change values for all three historical comparisons.

While we are seeing positive average change values in the one, five and even the ten-year intervals in this report, it is important to remember that, overall, Arkansas is withdrawing groundwater from the alluvial and Sparta/Memphis aquifers in eastern and southern Arkansas at a rate far above that which is estimated to be sustainable. So long as water use from these aquifers continues to exceed sustainable yield, the resource will continue to be depleted. The NRD should continue to monitor these resources and promote conservation, education, and the conjunctive use of ground and surface-water at rates that are sustainable for current and future water use needs.

References

- Ackerman, D. J., 1996, Hydrology of the Mississippi River Valley Alluvial Aquifer, South-Central United States: U. S. Geological Survey Professional Paper 1416-D, 56 p.
- Kresse, T.M, Hays, P.D., Merriman, K.R., Gillip, J.A., Fugitt, D.T., Spellman, J.L., Nottmeier, A.M., Westerman, D.A., Blackstock, J.M., and Battreal, J.L., 2014, Aquifers of Arkansas – Protection, management, and hydrologic and geochemical characteristics of groundwater resources in Arkansas: U.S. Geological Survey Scientific Investigations Report 2014-5149, 334 p., <http://dx.doi.org/10.3133/sir20145149>
- USGS, 2008, Hart, R.M., Clark, B.R., and Bolyard, S.E., 2008, Digital surfaces and thicknesses of selected hydrogeologic units within the Mississippi Embayment Regional Aquifer Study (MERAS): U.S. Geological Survey Scientific Investigations Report 2008-5098, 33 p.). Subsurface map application: <https://www2.usgs.gov/water/lowermississippigulf/lmgweb/meras/submap.html>
- USGS, 2019, Direct correspondence with USGS Staff regarding 2018 water use, March 2019.
- NOAA, 2022., water.weather.gov/precip
- NWS, 2021., A Review of 2020 Weather and Climate Data for the State of Arkansas, National Weather Service, Little Rock, AR., Jan 4, 2021. <https://www.weather.gov/lzk/cli2020atxt.htm>

Appendix A

Alluvial Aquifer Water Level Monitoring Data

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Land Surface Altitude	Well Depth	2021 Meas. Date	Water Level Altitude (ftms)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change (21 to 20)	5 Year Change (21 to 16)	10 Year Change (21 to 11)	Spring to 2021	Aquifer Thickness (ft)	Saturated Thickness (ft)	% Saturated
Chicot	13503W34CA1	110ALVM	33.526533	-91.392728	134	75	4/20/2021	93.69	40.31	40.52	42.71	42.90	0.21	2.40	-0.59	0.93	79	39	48.97%
Chicot	13503W35BAC1	110ALVM	33.531681	-91.379314	133	90	4/20/2021	89.51	43.49	41.92	44.43	42.90	-1.57	0.94	-0.94	-0.18	79	36	44.95%
Chicot	14503W078BD1	110ALVM	33.503081	-91.438889	137	77	4/21/2021	109.4	27.6	27.83	31.09	30.60	0.23	3.49	3.00	0.30	81	53	65.93%
Chicot	14503W32CDB2	110ALVM	33.437075	-91.430958	134	90	4/23/2021	93.53	40.47	46.2	42.30	43.79	5.73	1.83	-0.84	-0.84	82	42	50.55%
Chicot	15502W20DC1	110ALVM	33.374053	-91.322175	126	85	4/22/2021	90.28	35.72	33.75	38.79	38.90	-1.97	3.07	-0.06	-0.06	100	64	64.28%
Chicot	16503W150AD1	110ALVM	33.305000	-91.392728	118	97.6	4/22/2021	84.48	33.52	32.43	35.00	32.90	-1.09	1.48	-0.62	-0.98	121.23	88	72.35%
Chicot	17501W06RCC1	110ALVM	33.250328	-91.251450	117	100	4/22/2021	94.22	22.78	21.32	21.56	22.70	-1.46	-1.22	-0.08	-4.56	139	116	83.61%
Chicot	17502W25CBA1	110ALVM	33.192089	-91.256811	131	95	4/22/2021	94.78	36.22								146	110	75.19%
Chicot	17503W28DBA1	110ALVM	33.190719	-91.411506	110	80	4/29/2021	85.53	24.47	24.98	24.24		0.51	-0.23		-0.45	154	130	84.11%
Chicot	19502W22ACC1	110ALVM	33.015981	-91.294950	129	80	4/29/2021	89.8	39.2							-5.22	136	97	71.18%
Chicot	19502W72BDB1	110ALVM	33.018089	-91.299811	132	90	4/29/2021	86.98	45.02							-0.48	136	91	66.90%
Chicot	19503W14AB81	110ALVM	33.051111	-91.380556	110	95	4/29/2021	86.67	23.33		22.74		-0.59		-0.65	-0.65	132	109	82.33%
											Wells in Decline:		4	3	3	9	Average % Saturated:		67.54%
											Total Wells:		8	9	4	11	Min % Saturated:		44.95%
											Average Change (ft):		0.07	1.24	0.43	-1.11	Max % Saturated:		84.11%
Clay	18N08E03DAB1	110ALVM	36.223119	-90.198064	258	105	5/4/2021	252.7	5.3	6.4	5.76	7.70	1.1	0.46	2.40	-2.79	131.00	126	95.93%
Clay	18N08E11BA1	112TRRC	36.214787	-90.188153	256	100	4/7/2021	249.69	6.31	6.5	5.00	8.20	0.19	-1.31	1.89	-4.79	135	129	95.93%
Clay	19N04E19BA1	110ALVM	36.280342	-90.690391	279	100	4/7/2021	258.47	20.53	21.06	23.00	25.00	0.53	2.47	4.47	-1.83	135	69	77.19%
Clay	19N05E15BBD1	112TRRC	36.287841	-90.531219	289	110	4/7/2021	251.94	37.06	41.87	46.30	36.80	4.81	9.24	-0.26	0.65	126	89	70.59%
Clay	19N07E25BCB1	112TRRC	36.255341	-90.283434	268		4/7/2021	252.44	15.56	12.41		19.00	-3.15		3.44	-6.97	114	98	86.95%
Clay	19N08E08CA1	112TRRC	36.291964	-90.234808	266		4/7/2021	261.43	4.57	2.65	3.50		-1.92	-1.07		-5.56	90	85	94.92%
Clay	20N03E25BA1	110ALVM	36.353333	-90.706944	290	108	4/7/2021	268.9	21.1	19.8	21.20	22.10	-2.3	0.10	1.00	-1.83	74	53	71.49%
Clay	20N04E02B81	110ALVM	36.407936	-90.621611	288		5/4/2021		15.55	13.32			-0.49	0.77		-1.83	84	68	81.49%
Clay	20N04E03ADA1	112TRRC	36.407006	-90.623724	287	110	4/7/2021	271.77	15.23	14.74	16.00		-0.89	0.77		-1.66	84	69	81.87%
Clay	20N04E06B81	110ALVM	36.412317	-90.692014	290		5/5/2021	270.24	19.76	16.87	21.31		-2.89	1.55		-1.71	122	92	75.37%
Clay	20N05E22CAD1	112TRRC	36.353317	-90.525189	289		4/7/2021	258.95	30.05	29.97	31.60		-0.08	1.55		-1.71	122	92	75.37%
Clay	20N05E30CAC1	110ALVM	36.334229	-90.581777	283		4/7/2021	264.91	18.09	17.25	21.30	19.70	-0.84	3.21	1.61	-2.13	145	127	78.92%
Clay	20N06E09B8A1	112TRRC	36.390894	-90.438995	290		4/7/2021	265.77	24.23	23.12	22.70		-1.11	-1.53		-2.77	105	81	86.92%
Clay	20N08E22BDC1	112TRRC	36.353164	-90.205614	276		4/7/2021	270.52	5.48	5.15	6.60		-0.33	1.12		-6.59	38	33	85.58%
Clay	20N08E24DDA1	110ALVM	36.349194	-90.159328	276	110	5/4/2021	266.94	9.06	5.6	7.27		-3.46	-1.79		-5.25	56	47	83.82%
Clay	20N09E09ABC1	112TRRC	36.385062	-90.111763	279		4/7/2021	273.92	5.08	4.24	5.90		-0.84	0.82		-6.57	86	81	94.09%
Clay	20N09E30DDC1	110ALVM	36.317841	-90.107873	270		4/7/2021	264.25	5.75	5.6	5.70		-0.15	-0.05		-5.30	105	99	94.92%
Clay	21N03E15GRC1	110ALVM	36.462500	-90.748056	291	90	4/7/2021	281.8	9.2	9.03	9.00	11.00	-0.17	-0.20	1.80	-8.20	25	16	63.20%
Clay	21N03E36CDD1	112TRRC	36.412897	-90.708047	291		4/7/2021	272.28	18.72	15.25	23.40		-3.47	4.68		-2.77	105	81	86.92%
Clay	21N05E17AB81	110ALVM	36.465408	-90.558028	298	105	5/4/2021	277.61	21.39	21.39	24.50		0	3.11		-3.14	88	67	75.69%
Clay	21N05E22BA81	110ALVM	36.451171	-90.525666	288	105	4/7/2021	282.57	5.43	5.08	6.60	9.00	-0.35	1.17	3.57	-3.52	89	84	93.90%
Clay	21N06E28B81	110ALVM	36.434700	-90.435547	290	130	5/4/2021	270.16	19.84	19.25	19.96	22.20	-0.59	0.12	2.36	-2.20	107.49	88	81.54%
Clay	21N07E01DDC1	112TRRC	36.475448	-90.268713	303	90	4/7/2021	284.41	18.59	16.78	18.00	30.60	-1.81	-0.59	12.01	-13.48	97	78	80.84%
Clay	21N08E03CDB1	112TRRC	36.480058	-90.204822	309		4/7/2021	290.07	17.93	13.25	17.90		-4.68	-0.03		-11.37	22	4	18.50%
Clay	21N08E18CC1	110ALVM	36.447472	-90.263981	324	110	5/4/2021	288.37	35.63	35.72	40.06		0.09	4.43		-9.58	111.90	76	68.16%
Clay	21N09E31BDA1	112TRRC	36.413116	-90.147597	284	100	4/7/2021	281.89	2.11	1.61	3.60	7.50	-0.5	1.49	5.39	-9.54	71	69	79.03%
											Wells in Decline:		20	8	1	21	Average % Saturated:		79.53%
											Total Wells:		26	24	13	22	Min % Saturated:		18.50%
											Average Change (ft):		-0.91	1.24	3.19	-5.06	Max % Saturated:		93.03%
Craighead	13N01E01BDC1	110ALVM	35.786361	-90.941500	250	133	4/26/2021	178.99	71.01	71.22			0.21			-2.42	93	22	23.65%
Craighead	13N03E55AA1	110ALVM	35.724800	-91.270129	237	110	4/13/2021	228.21	8.79	6.84	7.90		-1.95	-0.89		-1.32	84	75	89.54%
Craighead	13N04E12AB81	110ALVM	35.776581	-90.615389	232	110	4/12/2021	209.55	22.45	21.48	25.56		-0.97	3.11	2.45	-1.32	109.03	87	79.41%
Craighead	14N02E25DA1	110ALVM	35.8125	-90.823611	267	125	4/1/2021	180.2	86.80	86.67	87.98		-0.13	1.18		-0.06	97	10.20	10.52%
Craighead	14N02E25DD1	110ALVM	35.810056	-90.821375	269	110	4/1/2021	189.03	79.97	79.9	81.06		-0.07	1.09		-3.12	97	117.03	17.56%
Craighead	14N02E77AA1	110ALVM	35.821667	-90.856944	255	127.6	4/17/2021	171.61	83.39		84.43	83.51		1.04	0.12		108	24.61	22.99%
Craighead	14N02E35CB1	110ALVM	35.800247	-90.856989	252	125	4/1/2021	162.32	89.68	89.76	90.11		0.08	0.43		-3.12	108	6.68	0.00%
Craighead	14N03E36BBD1	110ALVM	35.804892	-90.508606	230	150	4/12/2021	188.13	41.87	39.81	7.40		-2.06	-0.08	2.32	-2.23	105	63.13	60.12%
Craighead	15N06E20DD1	110ALVM	35.907008	-90.460875	235		4/14/2021	227.52	7.48	6.84			-0.64	-0.08		-4.14	87.20	79.72	91.42%
											Wells in Decline:		6	2	0	5	Average % Saturated:		43.69%
											Total Wells:		8	7	3	5	Min % Saturated:		0.00%
											Average Change (ft):		-0.69	0.84	1.63	-2.65	Max % Saturated:		91.42%

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Land Surface Altitude	Well Depth	2021 Meas. Date	Water Level Altitude (fmsl)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change (’21 to ’20)	5 Year Change (’21 to ’16)	10 Year Change (’21 to ’11)	Spring to Fall Change 2021	Aquifer Thickness (ft)	Saturated Thickness (ft)	% Saturated	
Crittenden	05N07E28CBA1	110ALVM	35.022589	-90.361069	201	120	4/23/2021	186.62	14.38	10.39	15.40	16.95	-3.99	1.02	2.57	-3.02	133.78	119.40	89.25%	
	05N07E34AB1	110ALVM	35.016497	-90.341628	203	100	4/23/2021	191.58	11.42	7.18	9.95	12.60	-4.24	-1.47	1.18	-5.94	136.18	124.76	91.61%	
	06N07E13BA1	110ALVM	35.146667	-90.302222	207	130	4/21/2021	188.9	18.1	22.95	21.65	21.65	-0.37	4.85	3.55	-4.83	125	106.90	85.52%	
	07N07E05DAD1	110ALVM	35.251199	-90.358155	215	132	5/7/2021	185.23	29.77	29.4	31.76	31.29	-0.37	1.99	1.52	-6.21	143	113.23	79.18%	
	07N07E31CCC1	110ALVM	35.178306	-90.399714	207	110	4/21/2021	172.81	34.19	33.79	37.44	37.60	-0.4	3.25	3.41	-1.88	136.61	102.42	74.97%	
	08N06E26BA1	110ALVM	35.293611	-90.431111	211	120	4/21/2021	178.1	32.9	30.89	34.33	33.00	0.06	-2.01	1.43	-0.60	124	91.10	73.47%	
	08N07E35B8C1	100ALVM	35.275000	-90.328533	222	162	4/23/2021	192.17	29.83	29.89	31.00	31.00	-3.42	-3.42	3.17	-1.65	145	115.17	79.43%	
	09N06E30ADD1	110ALVM	35.376656	-90.484167	216	60	4/21/2021	181.58	34.42	31.33	31.00	29.30	-3.09	1.76	2.15	3.08	118	83.58	70.83%	
	09N07E10DDA1	110ALVM	35.413217	-90.325511	221	60	4/22/2021	193.85	27.15	25.87	28.91	29.30	-1.28	0.26	2.19	-0.46	124.88	97.73	78.26%	
	09N07E20DCC1	110ALVM	35.483222	-90.366111	213	114	4/22/2021	184.75	28.25	32.51	30.44	30.44	0.26	0.26	0.98	-4.38	118	89.75	76.06%	
	09N07E31BAB1	110ALVM	35.366625	-90.390714	221	110	4/22/2021	189.2	31.8	28.19	32.19	34.30	0.39	0.39	2.50	-2.78	124.70	92.90	74.50%	
											Total Wells: 10			10	8	11	Average % Saturated: 79.37%		70.83%	
											Average Change (ft):			-1.47	1.26	2.51	-2.61	Max % Saturated: 91.61%		91.61%
Cross	06N05E05AAA1	110ALVM	35.178423	-90.575661	205	130	3/22/2021	163.18	41.82	42.15			0.33			-2.11	148	106.18	71.74%	
Cross	07N01E06CAA1	112TRCC	35.258333	-91.031667	222	150	3/16/2021	142.87	79.13							-3.32	141	61.87	43.88%	
Cross	07N01E11AAA1	110ALVM	35.250347	-90.951469	217	120	4/12/2021	129.1	87.9	83.53	82.76	79.30	-4.37	-5.14	-8.60	0.01	146	58.10	39.79%	
Cross	07N02E02CDD1	110ALVM	35.252222	-90.853611	227	149.9	4/12/2021	140.1	86.9	86.49	83.22	83.22	-0.41		-3.68	-1.35	109	22.10	20.28%	
Cross	07N02E32DCD1	110ALVM	35.179247	-90.802856	251	138	4/12/2021	149.69	101.31	100.98	98.30	98.30	-0.33	100.98	-3.01	-0.87	153	51.69	33.78%	
Cross	07N05E02AAB1	110ALVM	35.266754	-90.517604	210		3/22/2021	170.95	39.05	45.23			6.18		-1.98	141	101.95	72.30%		
Cross	07N05E16ACA1	110ALVM	35.232866	-90.564550	210		3/22/2021	181.07	28.93	32.14			3.21		-2.94	157	128.07	81.57%		
Cross	08N01E16DBB1	112TRCC	35.316339	-90.994339	223	140	3/16/2021	129.26	93.74	93.58			-0.16		8.42	148	54.26	36.66%		
Cross	08N01E17CAA1	110ALVM	35.345340	-91.012898	220	3/16/2021	138.19	81.81	86.45				4.64		-3.11	145	63.19	43.58%		
Cross	08N02E17AAA1	112TRCC	35.32142	-90.898450	225		3/16/2021	131.55	93.45	92.69			-0.76		-4.88	137	43.55	31.79%		
Cross	08N05E32ADD1	110ALVM	35.275458	-90.577903	206		5/7/2021	179.88	26.12	21.2	32.17	28.25	-4.92	6.05	2.13	-0.66	138	111.88	81.07%	
Cross	09N01E04ACD1	112TRCC	35.438111	-90.987000	238	140	3/16/2021	140	98	101.31			3.31		-5.76	-2.17	148	50.00	33.78%	
Cross	09N01E12CBB1	110ALVM	35.418056	-90.948056	228		4/14/2021	127.25	100.75			94.99					147	47.25	31.93%	
Cross	09N01E36AA1	112TRCC	35.365363	-90.934840	225		3/16/2021	131.63	93.37	101.62			8.25		-11.51	-1.51	147	53.63	36.48%	
Cross	09N02E20AAA1	112TRCC	35.400640	-90.895117	231	120	3/16/2021	119.3	111.7	102.03			-9.67				150	38.30	25.53%	
Cross	09N02E32BBB1	110ALVM	35.370918	-91.229015	220		4/13/2021	191.3	28.7	27.35			1.35		135	106.30	78.74%			
Cross	09N05E32BCB1	110ALVM	35.364252	-90.590385	206		3/22/2021	179.32	26.68	31.52			4.84			104	77.32	74.35%		
Cross	09N05E32DBB1	110ALVM	35.364036	-90.586697	210		4/21/2021	182.6	27.4	24.2		29.80	-3.2		2.40	-3.17	121	93.60	77.36%	
											Wells in Decline: 1			1	4	13	Average % Saturated: 50.81%		50.81%	
											Total Wells: 16			16	2	6	15	Min % Saturated: 20.28%		20.28%
											Average Change (ft):			0.35	0.46	-2.75	-2.29	Max % Saturated: 81.57%		81.57%
												16.00	-8.4	1.00	#REF!		96	81.40	84.44%	
Desha	07S01E19ABA1	110ALVM	34.075861	-91.049250	158	120	4/13/2021	143	15	6.6			-0.98	0.46	9.40	-3.97	147	142.20	96.73%	
Desha	08S03W33ABD1	110ALVM	33.967478	-91.399399	165.04	60	4/13/2021	160.24	4.8	3.81	5.26	14.20	-1.09	0.46	9.40	-3.97	147	142.20	96.73%	
Desha	09S01W08BDA1	110ALVM	33.935439	-91.209481	156	100	4/9/2021	136.36	19.64	18.56	17.28	27.00	-0.98	-2.36	7.36	-3.35	137	117.36	85.66%	
Desha	09S02W26DDC1	110ALVM	33.882381	-91.252323	149.27	94	2/23/2021	120.8	28.2	26.96	33.30	31.54	-1.24	5.10	3.34	-0.74	138.80	110.60	79.68%	
Desha	09S03W05BAB1	110ALVM	33.951213	-91.418454	161		4/9/2021	120.15	40.85	41.25	43.68	42.20	0.4	2.83	1.35		144	103.15	71.63%	
Desha	09S03W15BAC1	110ALVM	33.931680	-91.322872	157		4/9/2021	128.05	28.95	38.88	36.18	38.60	9.93	7.23	9.65	-4.39	130	101.05	77.73%	
Desha	09S03W17DCB1	110ALVM	33.913397	-91.415739	155.08	126	4/12/2021	118.22	36.86	37.68	38.37	37.00	0.82	1.51	0.14	-1.86	137	100.14	73.09%	
Desha	10S01W23CDA1	110ALVM	33.884828	-91.175669	152	113	4/9/2021	125.87	26.13	24.31	18.01	27.80	-1.82	-8.12	1.67	0.87	140	113.87	81.34%	
Desha	10S02W20ADA1	110ALVM	33.821111	-91.306944	147	93.8	4/12/2021	103.73	43.27	44.66	44.65	41.40	1.39	1.38	-1.87	-1.00	126.26	82.99	65.73%	
Desha	10S04W03BAB1	110ALVM	33.869058	-91.496572	164	100	4/16/2021	123.83	40.17	41.13	41.88		0.96	1.71		-1.29	143	102.83	71.91%	
Desha	10S04W11DDA1	110ALVM	33.841944	-91.466944	156	100	4/19/2021	117.64	38.36	38.36	38.21				-0.64	133	94.64	71.16%		
Desha	10S04W12CCB1	110ALVM	33.846667	-91.465000	156		4/19/2021	118.56	37.46	37.76	37.92		0.32	0.48		-1.32	136	98.56	72.47%	
Desha	11S02W15AD01	110ALVM	33.746218	-91.276505	144	4/9/2021	106.66	33.42	36.42	36.01	35.40		-0.92	-1.33	-1.94		112	74.66	66.66%	
Desha	11S03W16CBA1	110ALVM	33.744274	-91.409287	143		4/9/2021	107.18	35.82	42.19	40.00		6.37	4.18			117	81.18	69.38%	
Desha	13S02W17ADA1	110ALVM	33.572500	-91.316111	140	90	4/9/2021	90.79	49.21			47.40		-1.81			93	43.79	47.09%	
Desha	13S02W27CAC1	110ALVM	33.539997	-91.292989	138	120	4/12/2021	105.13	32.87	33.59		33.12	0.72	0.25	0.25	-0.74	89	56.13	63.07%	
Desha	13S03W11CAB1	110ALVM	33.584278	-91.378174	142	86	4/9/2021	79.85	62.15	59.42	56.55		-2.73	-5.60	-6.55		93	30.85	33.17%	
											Wells in Decline: 7			7	5	4	11	Average % Saturated: 71.23%		71.23%
											Total Wells: 15			14	14	14	12	Min % Saturated: 96.73%		96.73%
											Average Change (ft):			0.25	0.52	1.58	#REF!			

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Land Surface Altitude	Well Depth	2021 Meas. Date	Water Level Altitude (fmsl)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change ('21 to '20)	5 Year Change ('21 to '16)	10 Year Change ('21 to '11)	Spring to Fall Change 2021	Aquifer Thickness (ft)	Saturated Thickness (ft)	% Saturated	
Drew	I1150AW08DD1	I10ALVM	33.636461	-91.537781	161	120	4/19/2021	132.65	28.35	26.34		28.60	1.5			-0.84	124	95.65	77.14%	
Drew	I1150AW35CD1	I10ALVM	33.695566	-91.478333	152	65.2	4/20/2021	127.16	24.84	26.34						-1.50	114	89.16	78.21%	
Drew	I1150SW08CC1	I10ALVM	33.62911	-91.643656	185	153	4/13/2021	149.23	35.77	38.78	39.29	40.10	3.01	3.52	4.33	-3.03	143	107.23	74.99%	
Drew	I1250AW50ABR1	I10ALVM	33.6296147	-91.496147	153		4/20/2021	126.21	26.79	23.58	28.52	25.74	-3.21	1.73	-1.05	3.10	114	87.21	76.50%	
Drew	I1250MWZ5DBR1	I10ALVM	33.628103	-91.460964	148	90	5/19/2021	110.08	37.92	37.04	36.00		-0.88	-1.92			104	66.08	63.54%	
Drew	I1350AW09ACD1	I10ALVM	33.589841	-91.513294	139	90	5/19/2021	109.54	29.46	29.16	24.00		-0.3	-5.46			100.60	71.14	70.77%	
Drew	I1350MWZ5BAD1	I10ALVM	33.528089	-91.513772	134	90	4/21/2021	118.82	15.18	14.09			-1.09			-1.83	87	71.82	82.55%	
Drew	I1350MW33BA1	I10ALVM	33.534914	-91.517347	138	130	4/21/2021	119.37	18.63	15.16	19.98	15.10	-0.42	1.35	-3.33	0.52	89	70.37	79.07%	
Drew	I1450AWM03DA1	I10ALVM	33.511903	-91.493486	142	100	4/21/2021	118.52	22.48	23.06			-0.47			-3.68	88	64.52	73.32%	
Drew	I1450AWM05CB1	I10ALVM	33.529601	-91.559931	131	90	5/19/2021	117.99	13.01	11.38	15.00		-1.63	1.99			86.50	73.49	84.96%	
Drew	I1450AWM05CB1	I10ALVM	33.510944	-91.538528	132	90	5/19/2021	114.45	17.55	11.07			-6.48				85	67.45	79.35%	
											Wells in Decline:								Average % Saturated: 76.39%	
											Total Wells:				10	8	2		7	
											Average Change (ft):				-1.30	0.20	0.88		Max % Saturated: 84.96%	
Greene	I16NOE03BA1	I10ALVM	36.054408	-90.754403	262	100	4/15/2021	225.71	36.29	35.65		38.61	-0.64	2.32		-4.92		124.36	88.07	70.82%
Greene	I16NOE20CDA1	I10ALVM	35.999167	-90.795000	257	150	4/14/2021	224.61	37.39	34.89	37.00		2.5	4.61			109.32	76.93	70.37%	
Greene	I16NOE21BA1	I12TRC	36.008661	-90.451494	250	130	4/14/2021	221.49	28.51	28.51	30.00		-8.41	1.49			80.35	51.84	64.52%	
Greene	I16NOE28AB1	I10ALVM	35.994441	-90.448611	250		4/16/2021	225.27	24.73			27.30				-13.06	83	58.27	70.20%	
Greene	I17NOE02BD1	I10ALVM	36.142211	-90.737042	267	115	4/15/2021	232.85	34.15	33.99	35.96		-0.16	1.81		-12.10	122	87.85	72.01%	
Greene	I17NOE02DC1	I10ALVM	36.138661	-90.732492	265	100	4/14/2021	229.79	35.21	33.98	36.00	37.30	-1.23	0.79	2.09	-1.93	135.60	100.39	74.03%	
Greene	I17NOE32CD1	I10ALVM	36.054792	-90.793171	257	100	4/14/2021	222.98	34.02	34.35	31.00		0.33	-3.02		-3.62	118.47	84.45	71.28%	
Greene	I17NOE35CB1	I10ALVM	36.063125	-90.743725	259	100	4/14/2021	221.91	37.09	36.32	39.00	35.30	-0.77	1.91	-1.79	-2.55	121.87	84.78	69.57%	
Greene	I17NOE28BD1	I10ALVM	36.057278	-90.654722	317	121.2	4/15/2021	230.85	86.15	90.53			4.38			0.08	97.10	10.95	11.28%	
Greene	I17NOE30DC1	I10ALVM	36.069564	-90.705217	267	100	4/15/2021	222.87	43.13	42.35	43.71		-0.78	0.38		-1.98	127	83.87	66.04%	
Greene	I17NOE05AB1	I10ALVM	36.120809	-90.465319	284	104	4/14/2021	279.75	4.25	3			-1.25			-7.53	134	129.75	76.83%	
Greene	I17NOE15CB1	I12TRC	36.106878	-90.429549	269	168	4/14/2021	239.4	29.6	33.1	31.00	32.60	3.5	1.40	3.00	-12.31	106.31	76.71	92.16%	
Greene	I17NOE01BB1	I10ALVM	36.142788	-90.290100	247	100	4/16/2021	242.29	4.71	3.65	5.00		-1.06	0.29		-8.49	125.17	96.24%	96.24%	
Greene	I17NOE03CC1	I12TRC	36.127083	-90.329139	245.35	87	4/14/2021	238.44	6.91	7.02	5.00		0.11	-1.91		-1.01	116	109.09	94.04%	
Greene	I17NOE18AB1	I10ALVM	36.110669	-90.376134	248		4/16/2021	236.74	11.26		8.70			-2.56		-7.79	101	89.74	88.85%	
Greene	I17NOE28CB1	I10ALVM	36.073833	-90.345833	221	120	4/14/2021	241.36	4.64	4.23	5.00		-0.41	0.36			113.59	108.95	95.92%	
Greene	I18NOE24AC1	I10ALVM	36.188678	-90.704557	276	100	4/14/2021	237.78	33.22	33.4	34.00	35.30	0.18	0.78		-2.29	133.13	101.91	75.42%	
Greene	I18NOE26CD2	I10ALVM	36.158231	-90.403750	266	180	4/16/2021	244.02	21.98	15.33			-6.65			-11.09	119	97.02	81.53%	
Greene	I18NOE05DAB1	I10ALVM	36.220967	-90.340633	261	180	4/14/2021	252.3	17.7	11.89	17.00	21.20	-5.81	-0.70	3.50	-5.07	114.02	96.32	87.43%	
Greene	I18NOE17BAB1	I12TRC	36.200769	-90.351347	270	100	4/14/2021	246.93	14.07	13	15.00		-1.07	0.93		-5.01	111.02	96.95	84.38%	
Greene	I18NOE20BBA1	I10ALVM	36.186214	-90.338675	255		4/16/2021	243.78	11.22	5.89	8.98	12.75	-5.33	-2.24	1.53	-7.16	113.12	101.90	90.08%	
Greene	I19NOE26AD1	I10ALVM	36.166867	-90.716231	281	100	5/5/2021	246.77	34.23	27.88	30.04	30.80	-6.35	-4.19	-3.43	3.53	143.03	108.80	76.07%	
Greene	I19NOE33DD1	I10ALVM	36.238419	-90.753147	278	100	4/14/2021	242.95	35.05	35.16	37.00	40.00	0.11	1.95	4.95	-0.92	143.34	108.29	75.55%	
											Wells in Decline:				14	6	10		Average % Saturated: 76.29%	
											Total Wells:				21	19	2		21	
											Average Change (ft):				-1.37	0.24	1.55		Max % Saturated: 96.83%	
Independence	I11NOEW228BA	I10ALVM	35.569167	-91.418333	233	51	4/13/2021	214.8	1.2	0.75		1.00	-0.45	-0.20		-8.55	51	49.86	97.65%	
Independence	I12NOEW14DD1	I10ALVM	35.658172	-91.376739	216	60	4/20/2021	215.86	17.14	12.5	16.57		-4.64	-0.57			60	42.86	71.43%	
Independence	I12NOEW4QCBB1	I10ALVM	35.622250	-91.420139	226		4/20/2021	211.89	14.11	10.01	12.63		-4.1	-1.48		-9.12	57	42.85	75.25%	
Independence	I12NOEW36AA1	I10ALVM	35.627233	-91.474228	239		4/13/2021	223.18	15.82	14.05	10.00		-1.77	-5.82		-6.68	43	37.18	63.21%	
Independence	I14NOEW14CB2	I10ALVM	35.851356	-91.282833	228	105	4/13/2021	231.59	0.61	2.4			1.79			0.00	37	36.39	98.35%	
											Wells in Decline:				81.18%	4	0		Average % Saturated: 81.18%	
											Total Wells:				5	4	0		3	
											Average Change (ft):				-1.83	-2.02			Max % Saturated: 93.35%	

Mississippi River Valley Alluvial Aquifer
Hydrologic Data 2021, 2020, 2016, 2011

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Land Surface Altitude	Well Depth	2021 Meas. Date	Water Level Altitude (fmsl)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change ('21 to '20)	5 Year Change ('21 to '16)	10 Year Change ('21 to '11)	Spring to Fall Change 2021	Aquifer Thickness (ft)	Saturated Thickness (ft)	% Saturated	Production History (bbls)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
																				2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1939	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928	1927	1926	1925	1924	1923	1922	1921	1920	1919	1918	1917	1916	1915	1914	1913	1912	1911	1910	1909	1908	1907	1906	1905	1904	1903	1902	1901	1900	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887	1886	1885	1884	1883	1882	1881	1880	1879	1878	1877	1876	1875	1874	1873	1872	1871	1870	1869	1868	1867	1866	1865	1864	1863	1862	1861	1860	1859	1858	1857	1856	1855	1854	1853	1852	1851	1850	1849	1848	1847	1846	1845	1844	1843	1842	1841	1840	1839	1838	1837	1836	1835	1834	1833	1832	1831	1830	1829	1828	1827	1826	1825	1824	1823	1822	1821	1820	1819	1818	1817	1816	1815	1814	1813	1812	1811	1810	1809	1808	1807	1806	1805	1804	1803	1802	1801	1800	1799	1798	1797	1796	1795	1794	1793	1792	1791	1790	1789	1788	1787	1786	1785	1784	1783	1782	1781	1780	1779	1778	1777	1776	1775	1774	1773	1772	1771	1770	1769	1768	1767	1766	1765	1764	1763	1762	1761	1760	1759	1758	1757	1756	1755	1754	1753	1752	1751	1750	1749	1748	1747	1746	1745	1744	1743	1742	1741	1740	1739	1738	1737	1736	1735	1734	1733	1732	1731	1730	1729	1728	1727	1726	1725	1724	1723	1722	1721	1720	1719	1718	1717	1716	1715	1714	1713	1712	1711	1710	1709	1708	1707	1706	1705	1704	1703	1702	1701	1700	1699	1698	1697	1696	1695	1694	1693	1692	1691	1690	1689	1688	1687	1686	1685	1684	1683	1682	1681	1680	1679	1678	1677	1676	1675	1674	1673	1672	1671	1670	1669	1668	1667	1666	1665	1664	1663	1662	1661	1660	1659	1658	1657	1656	1655	1654	1653	1652	1651	1650	1649	1648	1647	1646	1645	1644	1643	1642	1641	1640	1639	1638	1637	1636	1635	1634	1633	1632	1631	1630	1629	1628	1627	1626	1625	1624	1623	1622	1621	1620	1619	1618	1617	1616	1615	1614	1613	1612	1611	1610	1609	1608	1607	1606	1605	1604	1603	1602	1601	1600	1599	1598	1597	1596	1595	1594	1593	1592	1591	1590	1589	1588	1587	1586	1585	1584	1583	1582	1581	1580	1579	1578	1577	1576	1575	1574	1573	1572	1571	1570	1569	1568	1567	1566	1565	1564	1563	1562	1561	1560	1559	1558	1557	1556	1555	1554	1553	1552	1551	1550	1549	1548	1547	1546	1545	1544	1543	1542	1541	1540	1539	1538	1537	1536	1535	1534	1533	1532	1531	1530	1529	1528	1527	1526	1525	1524	1523	1522	1521	1520	1519	1518	1517	1516	1515	1514	1513	1512	1511	1510	1509	1508	1507	1506	1505	1504	1503	1502	1501	1500	1499	1498	1497	1496	1495	1494	1493	1492	1491	1490	1489	1488	1487	1486	1485	1484	1483	1482	1481	1480	1479	1478	1477	1476	1475	1474	1473	1472	1471	1470	1469	1468	1467	1466	1465	1464	1463	1462	1461	1460	1459	1458	1457	1456	1455	1454	1453	1452	1451	1450	1449	1448	1447	1446	1445	1444	1443	1442	1441	1440	1439	1438	1437	1436	1435	1434	1433	1432	1431	1430	1429	1428	1427	1426	1425	1424	1423	1422	1421	1420	1419	1418	1417	1416	1415	1414	1413	1412	1411	1410	1409	1408	1407	1406	1405	1404	1403	1402	1401	1400	1399	1398	1397	1396	1395	1394	1393	1392	1391	1390	1389	1388	1387	1386	1385	1384	1383	1382	1381	1380	1379	1378	1377	1376	1375	1374	1373	1372	1371	1370	1369	1368	1367	1366	1365	1364	1363	1362	1361	1360	1359	1358	1357	1356	1355	1354	1353	1352	1351	1350	1349	1348	1347	1346	1345	1344	1343	1342	1341	1340	1339	1338	1337	1336	1335	1334	1333	1332	1331	1330	1329	1328	1327	1326	1325	1324	1323	1322	1321	1320	1319	1318	1317	1316	1315	1314	1313	1312	1311	1310	1309	1308	1307	1306	1305	1304	1303	1302	1301	1300	1299	1298	1297	1296	1295	1294	1293	1292	1291	1290	1289	1288	1287	1286	1285	1284	1283	1282	1281	1280	1279	1278	1277	1276	1275	1274	1273	1272	1271	1270	1269	1268	1267	1266	1265	1264	1263	1262	1261	1260	1259	1258	1257	1256	1255	1254	1253	1252	1251	1250	1249	1248	1247	1246	1245	1244	1243	1242	1241	1240	1239	1238	1237	1236	1235	1234	1233	1232	1231	1230	1229	1228	1227	1226	1225	1224	1223	1222	1221	1220	1219	1218	1217	1216	1215	1214	1213	1212	1211	1210	1209	1208	1207	1206	1205	1204	1203	1202	1201	1200	1199	1198	1197	1196	1195	1194	1193	1192	1191	1190	1189	1188	1187	1186	1185	1184	1183	1182	1181	1180	1179	1178	1177	1176	1175	1174	1173	1172	1171	1170	1169	1168	1167	1166	1165	1164	1163	1162	1161	1160	1159	1158	1157	1156	1155	1154	1153	1152	1151	1150	1149	1148	1147	1146	1145	1144	1143	1142	1141	1140	1139	1138	1137	1136	1135	1134	1133	1132	1131	1130	1129	1128	1127	1126	1125	1124	1123	1122	1121	1120	1119	1118	1117	1116	1115	1114	1113	1112	1111	1110	1109	1108	1107	1106	1105	1104	1103	1102	1101	1100	1099	1098	1097	1096	1095	1094	1093	1092	1091	1090	1089	1088	1087	1086	1085	1084	1083	1082	1081	1080	1079	1078	1077	1076	1075	1074	1073	1072	1071	1070	1069	1068	1067	1066	1065	1064	1063	1062	1061	1060	1059	1058	1057	1056	1055	1054	1053	1052	1051	1050	1049	1048	1047	1046	1045	1044	1043	1042	1041	1040	1039	1038	1037	1036	1035	1034	1033	1032	1031	1030	1029	1028	1027	1026	1025	1024	1023	1022	1021	1020	1019	1018	1017	1016	1015	1014	1013	1012	1011	1010	1009	1008	1007	1006	1005	1004	1003	1002	1001	1000	999	998	997	996	995	994	993	992	991	990	989	988	987	986	985	984	983	982	981	980	979	978	977	976	975	974	973	972	971	970	969	968	967	966	965	964	963	962	961	960	959	958	957	956	955	954	953	952	951	950	949	948	947	946	945	944	943	942	941	940	939	938	937	936	935	934	933	932	931	930	929	928	927	926	925	924	923	922	921	920	919	918	917	916	915	914	913	912	911	910	909	908	907	906	905	904	903	902	901	900	899	898	897	896	895	894	893	892	891	890	889	888	887	886	885	884	883	882	881	880	879	878	877	876	875	874	873	872	871	870	869	868	867	866	865	864	863	862	861	860	859	858	857	856	855	854	853	852	851	850	849	848	847	846	845	844	843	842	841	840	839	838	837	836	835	834	833	832	831	830	829	828	827	826	825	824	823	822	821	820	819	818	817	816	815	814	813	812	811	810	809	808	807	806	805	804	803	802	801	800	799	798	797	796	795	794	793	792	791	790	789	788	787	786	785	784	783	782	781	780	779	778	777	776	775	774	773	772	771	770	769	768	767	766	765	764	763	762	761	760	759	758	757	756	755	754	753	752	751	750	749	748	747	746	745	744	743	742	741	740	739	738	737	736	735	734	733	732	731	730	729	728	727	726	725	724	723	722	721	720	719	718	717	716	715	714	713	712	711	710	709	708	707	706	705	704	703	702	701	700	699	698	697	696	695	694	693	692	691	690	689	688	687	686	685	684	683	682	681	680	679	678	677	676	675	674	673	672	671	670	669	668	667	666	665	664	663	662	661	660

Mississippi River Valley Alluvial Aquifer
Hydrologic Data 2021, 2020, 2016, 2011

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Land Surface Altitude	Well Depth	2021 Meas. Date	Water Level Altitude (fmsl)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change (21 to '20)	5 Year Change (21 to '16)	10 Year Change (21 to '11)	Spring to Fall Change 2021	Aquifer Thickness (ft)	Saturated Thickness (ft)	% Saturated
Lee	01N01E04AAB1	110A/LVM	34.732875	-91.004285	175	140	3/9/2021	137.7	37.3	32.4		39.00	-4.9		1.70		141	103.70	73.55%
Lee	01N01E09CC1	112TRRC	34.704265	-91.015119	182	140	3/9/2021	148.8	33.2	28.14			-5.06				141	107.80	76.45%
Lee	01N01E24CDB1	112TRRC	34.675932	-90.958172	185	140	3/9/2021	174.66	10.34	9.06			-1.28				141	130.66	92.67%
Lee	01N02E18AB1	112TRRC	34.715376	-90.869003	202	140	3/9/2021	176.4	25.6	17.58			-8.02				149	123.40	82.82%
Lee	01N02E12AB1	112TRRC	34.716111	-90.845556	207	140	3/9/2021	179.3	27.7	17.94			-9.76				150	122.30	81.53%
Lee	01N02E22CA1	110A/LVM	34.677021	-90.888087	202	150	3/9/2021	181.8	20.2	16.55			-3.65				143	122.80	85.87%
Lee	01N02E3CB1	110A/LVM	34.658250	-90.909667	184	140	3/9/2021	173.7	6.33				-3.97		6.20		142	131.70	92.75%
Lee	01N03E38BA1	110A/LVM	34.657019	-90.764017	202	120	4/23/2021	195.61	6.39	7.15	18.12	16.45	0.76	11.73	10.06	-18.40	138	131.61	95.37%
Lee	02N01E18AD1	110A/LVM	34.784652	-91.032675	185	115	3/9/2021	136.5	48.5	49.13			0.63				142	93.50	65.85%
Lee	02N01E21BA1	112TRRC	34.775930	-91.001508	185	140	3/9/2021	145.2	39.8	38.05			-1.75	1.01			142	102.20	71.97%
Lee	02N01W12BA1	110A/LVM	34.807850	-91.058208	185	95	4/21/2021	136.43	48.57	49.68	49.58		1.11				143	94.43	66.03%
Lee	02N02E09ADC1	110A/LVM	34.802039	-90.894097	205	120	4/22/2021	160	47	48.2	50.38	45.80	1.2	3.38	-1.20	-0.37	154	107.00	69.48%
Lee	02N02E60DC1	112TRRC	34.732042	-90.839003	205	140	3/9/2021	178.5	26.5	17.13			-9.37			-9.94	149	122.50	82.21%
Lee	02N03E09DD1	112TRRC	34.789819	-90.812891	220	140	3/9/2021	172.3	47.7	34.83			-12.87		-0.20		157	109.30	69.62%
Lee	02N03E29CAD1	112TRRC	34.750098	-90.828208	220	140	3/9/2021	181	39.00	39.00			0		-2.00		158	119.00	75.32%
Lee	03N01E10BB1	110A/LVM	34.894234	-90.996369	208	140	3/9/2021	132.4	75.6	74.67			-0.93				153	77.40	50.59%
Lee	03N01E15CB1	110A/LVM	34.868333	-90.996389	205	152.3	5/5/2021	135.44	69.56	68.63	69.72		-0.93	0.16		-1.18	150	80.44	53.63%
Lee	03N01E32BC1	112TRRC	34.830929	-91.030675	200	140	3/9/2021	129.8	70.2	68.09			-2.11		-5.20		157	86.80	55.29%
Lee	03N02E12CC1	112TRRC	34.877595	-90.848170	210	140	3/9/2021	163.4	46.6	45.63			-0.97				156	109.40	70.13%
Lee	03N02E18BA1	110A/LVM	34.877056	-90.852033	212	65	5/7/2021	164.25	47.75	48.69	52.21	49.00	0.94	4.46	1.25	-3.32	156	108.25	69.39%
Lee	03N02E21CR1	112TRRC	34.853151	-90.807894	208	140	3/9/2021	149.7	59.3						-4.30		153	99.70	64.24%
Lee	03N02E27BA3	110A/LVM	34.844401	-90.884504	209	140	3/9/2021	157.7	50.3	51.34			1.04				151	100.70	66.69%
Lee	03N03E03CDD1	112TRRC	34.890928	-90.810390	204	110	3/9/2021	154.7	49.3	48			-1.3		-2.40		159	109.70	68.99%
Lee	03N04E07CB1	110A/LVM	34.879261	-90.720110	200	140	3/9/2021	180.1	19.90	15.23			-4.67		-9.81		169	149.10	88.22%
Lee	03N05E14DDA1	110A/LVM	34.863356	-90.534236	195	120	4/22/2021	183.37	11.63	8.27	12.09	13.10	-3.36	0.46	1.47	-2.10	142	130.37	91.81%
													17	0	6				
													24	6	11				
													Total Wells:	0	9				
													Average Change (ft):	-2.88	3.53	0.49	-8.42		
													0.33						
Lincoln	07S06W03CA2	110A/LVM	34.137631	-91.687411	187	110	3/10/2021	177.35	9.65	9.98			0.85	4.35		-10.39	114.30	104.65	91.56%
Lincoln	07S07W36GB1	110A/LVM	34.069600	-91.757800	183	123	3/10/2021	146.35	35.65	36.5	40.00		0.85			-1.00	116.20	80.55	69.32%
Lincoln	08S04W06AB1	110A/LVM	34.060297	-91.521228	173	95	3/10/2021	135	18	19	22.00		1	4.00		-2.20	101.50	83.50	82.27%
Lincoln	08S04W29AB1	110A/LVM	34.005514	-91.508664	165	100	3/10/2021	117.9	47.1	47.7	49.00		0.6	1.90		1.30	106.90	91.90	86.42%
Lincoln	08S05W12AA1	110A/LVM	34.045808	-91.538800	173	83	3/10/2021	154.4	18.6	18.2	19.00		-0.4	0.40		-2.20	109.90	91.30	83.08%
Lincoln	08S05W21DC1	110A/LVM	34.007601	-91.592626	169	120	3/10/2021	137.8	31.2	31	30.00		-0.2	-1.20		-1.50	129.70	98.50	75.94%
Lincoln	08S05W32DC1	110A/LVM	33.976719	-91.613531	172	100	3/10/2021	126.02	45.98	47.8	51.00		1.82	5.02	3.07	-0.90	137.30	91.32	66.51%
Lincoln	08S07W05DD1	110A/LVM	34.050225	-91.817422	190	97	4/13/2021	162.57	27.43	28.33	36.85	30.50	0.9	9.42		-2.46	130.00	102.57	78.90%
Lincoln	09S04W06CB1	110A/LVM	33.953269	-91.561481	168	110	3/10/2021	126.4	41.6	48.3			6.7			-0.60	150	108.40	72.27%
Lincoln	09S05W14AA1	110A/LVM	33.917222	-91.577500	167		4/16/2021	123.85	41.15					2.62		-2.93	143	101.85	71.22%
Lincoln	09S05W14BC1	110A/LVM	33.931394	-91.577522	172.5	98	4/16/2021	129.82	42.68	43.54			0.86		0.43		148	105.32	71.16%
Lincoln	09S05W17BC1	110A/LVM	33.930997	-91.638875	175	97	3/10/2021	125.24	46.76	42.21	42.80		-4.55	-3.96	-6.86		133	86.24	64.84%
Lincoln	09S05W19CC1	110A/LVM	33.907850	-91.664700	175	110	3/10/2021	138.62	36.38	38.46	37.00		2.08	0.62	-1.02	-0.20	131.40	95.02	72.31%
Lincoln	09S06W04BC1	110A/LVM	33.972606	-91.729397	181	62.6	4/13/2021	137.68	43.32	43.56	46.50		0.24	3.18		-2.39	119	75.68	63.60%
Lincoln	09S06W04BD1	110A/LVM	33.966389	-91.726389	180	100	3/10/2021	136.83	43.17								121	77.83	63.32%
Lincoln	09S06W24DA1	110A/LVM	33.914444	-91.665000	287		5/6/2021	241.34	45.66						-0.43		131	85.34	65.15%
Lincoln	10S05W05BC1	110A/LVM	33.874444	-91.645500	171	127	4/13/2021	142.96	28.04	29.05			1.01			-1.35	133	104.96	78.92%
Lincoln	10S05W06CC1	110A/LVM	33.865361	-91.652211	173	65	4/13/2021	142.79	30.21	29.32	33.30	28.65	-0.89	3.09	-1.56	-2.43	133	102.79	77.29%
													Wells in Decline:	4	2				
													15	13	6				
													Total Wells:	15	13	6			
													Average Change (ft):	0.69	2.71	-1.06	-2.23		

Mississippi River Valley Alluvial Aquifer
Hydrologic Data 2021, 2020, 2016, 2011

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Land Surface Altitude	Well Depth	2021 Meas. Date	Water Level Altitude (fmsl)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change ('21 to '20)	5 Year Change ('21 to '16)	10 Year Change ('21 to '11)	Spring to Fall Change 2021	Aquifer Thickness (ft)	Saturated Thickness (ft)	% Saturated
Lonoke	01N07W04DD1	110ALVM	34.732489	-91.754131	225	182	4/19/2021	86.51	138.49	138.09			-0.4			-0.51	140	151	1.08%
Lonoke	01N07W09DDA1	110ALVM	34.719931	-91.753450	226.00	180	4/19/2021	91.04	134.96	133.9			-1.06			-1.43	136	104	0.76%
Lonoke	01N08W03DDA1	112TRRC	34.734350	-91.844289	232	160	4/19/2021	93.41	138.59	139.26			0.67			-4.54	201	62.41	31.05%
Lonoke	01N08W13AAD1	110ALVM	34.714631	-91.808731	225.00		4/19/2021	84.33	140.67	140.17			-0.5			-2.77	132	0.00	0.00%
Lonoke	01N09W07DAA1	110ALVM	34.725391	-92.007641	240.47	100	4/16/2021	198.13	42.34			45.00		6.05	2.66	-6.70	123	80.66	65.58%
Lonoke	01N09W13DAB1	110ALVM	34.709769	-91.921392	226	150	4/14/2021	144.7	81.3	81.89	87.35	83.50	0.59		2.20	-3.22	98	16.70	17.04%
Lonoke	01N09W25BAA1	110ALVM	34.688931	-91.926931	228	120	4/20/2021	147.08	80.92	82		90.00	1.08		9.08	-2.46	111	30.08	27.10%
Lonoke	01N10W15DCA1	110ALVM	34.709983	-92.070431	244.89	100	4/16/2021	128.11	16.78	16.15	79.59	20.00	-0.63		3.22	-5.53	124	107.22	86.47%
Lonoke	01S06W31ABB1	110ALVM	34.583164	-91.692078	203	120	4/13/2021	123.69	79.31	79.59	81.31	79.30	0.28	2.00	-0.01	-1.10	117	37.69	32.21%
Lonoke	01S06W32BBB1	110ALVM	34.583850	-91.682781	202.18		4/19/2021	123.18	79	89.11		79.00	1.52		0.00	-2.13	118	39.00	33.05%
Lonoke	01S07W12ABA1	110ALVM	34.642778	-91.708056	207	140	4/15/2021	117.89	89.11		94.17			5.06		-2.70	128	38.89	30.38%
Lonoke	01S07W19DDB1	110ALVM	34.602500	-91.796111	206	151.9	4/8/2021	119.12	86.88			85.80			-1.08	-3.01	116	29.12	25.10%
Lonoke	01S08W24CDD1	110ALVM	34.601567	-91.820103	210	127	4/15/2021	127.44	82.56	83.18	87.55	82.80	0.62	4.99	0.24	-3.58	115	32.44	28.21%
Lonoke	01S09W02DD3	110ALVM	34.649311	-91.939200	230	197	5/4/2021	151.25	78.75							-2.93	118	39.25	33.26%
Lonoke	01S09W02DD1	110ALVM	34.649081	-91.939325	231.16		4/19/2021	151.22	79.94	80.42			0.48			-2.56	118	38.06	32.25%
Lonoke	01S09W11AA1	110ALVM	34.649311	-91.939311	230	128	5/4/2021	150.61	79.39							-3.18	118	38.61	32.77%
Lonoke	01S09W36CCC1	110ALVM	34.576475	-91.938611	220	95	4/19/2021	158.92	61.08							-0.62	115	53.92	46.89%
Lonoke	01S10W01ACB1	110ALVM	34.657456	-92.037489	236	98	4/15/2021	196.56	39.44	39.42	44.23	43.50	-0.02	4.79	4.06	-3.83	120	80.56	67.13%
Lonoke	01S10W11CAB1	110ALVM	34.644722	-92.060278	236	105.5	4/8/2021	210.53	25.47	24.79			-0.68			-5.58	117	91.53	78.23%
Lonoke	02N07W05BB1	110ALVM	34.831769	-91.783739	242	261	5/4/2021	116.89	125.11								156	30.89	19.80%
Lonoke	02N07W07DAA1	112TRRC	34.812575	-91.785619	233.09		4/15/2021	95.25	137.84	137.82		137.00	-0.02		-0.84	-2.69	145	7.16	4.94%
Lonoke	02N08W10BB1	110ALVM	34.820361	-91.858850	243	180	4/15/2021	112.4	130.6	130.84			0.24			-2.57	158	27.40	17.34%
Lonoke	02N08W12CB1	110ALVM	34.813250	-91.821431	242	200	4/15/2021	105.96	136.04	135.95			-0.09		-3.54	-1.59	159	22.96	14.44%
Lonoke	02N08W16ABC1	110ALVM	34.801800	-91.853781	234	128	4/15/2021	107.84	126.16	126.99	127.79	124.35	0.83	1.63	-1.81	-1.04	143	16.84	11.78%
Lonoke	02N08W23DCA1	110ALVM	34.79528	-91.829417	231	176	5/4/2021	97.98	133.02	134.52			1.5			-1.32	130	0.00	0.00%
Lonoke	02N08W27DC1	110ALVM	34.761944	-91.851667	230	176.6	5/4/2021	98.82	131.18	132.23		131.36	1.05		0.18	-3.49	135	3.82	2.83%
Lonoke	02N10W15ACC1	112TRRC	34.801619	-92.064911	242.04	90	4/15/2021	212.53	29.51			30.00	-0.02		0.49	-4.02	129	99.49	77.12%
Lonoke	02N10W23BCA1	110ALVM	34.790347	-92.056153	241	95	5/4/2021	225.26	15.74	15.72		9.40			-6.34	-0.53	132	116.26	88.08%
Lonoke	02S08W06BAA1	110ALVM	34.575000	-91.913056	221	145.5	4/8/2021	156.18	64.82	70.16	66.87		5.34		2.05	-0.30	118	53.18	45.07%
Lonoke	02S08W28DC1	110ALVM	34.502222	-91.876944	216	114.5	4/8/2021	153.38	62.62		65.06		2.44			-1.59	119	56.38	47.38%
Lonoke	02S08W34DBB1	110ALVM	34.500822	-91.863819	214	150	4/14/2021	158.43	55.57	61.76	65.92		6.19	10.35		-12.51	119	63.43	53.30%
Lonoke	02S09W22AAA1	110ALVM	34.531811	-91.957500	227.24	162	4/19/2021	164.11	63.13	62.85		63.00	-0.28		-0.13	-0.13	119	55.87	46.95%
Lonoke	02S09W30CDD1	110ALVM	34.503983	-92.021114	228	80	4/13/2021	189.88	38.12	38.61	39.20		0.49	1.08		0.09	115	76.88	66.85%
Lonoke	02S09W35AB1	110ALVM	34.502881	-91.948200	217.69	100	4/19/2021	164.88	52.81	53.56			0.75			-2.16	116	63.19	54.47%
Lonoke	03N07W08BDB1	110ALVM	34.901839	-91.777300	250	125	4/12/2021	146.57	103.43	98.3	101.56	99.27	-0.14	-1.87	-4.16	-0.49	162	58.57	36.15%
Lonoke	03N07W29DAB1	110ALVM	34.857925	-91.766222	232	120	6/11/2021	133.88	98.12	98.3	97.32	93.59	0.18	-0.80	-4.53	-1.37	152.70	54.58	35.74%
Lonoke	03N07W29CDD1	110ALVM	34.848781	-91.780700	230	157	4/15/2021	126.99	103.01	101.88		93.00	-1.13		-10.01	-3.07	147	43.99	29.93%
Lonoke	03N07W35CDD1	110ALVM	34.832500	-91.725556	232	174	4/16/2021	111.52	120.48	120.11	120.11	117.75		-0.37	-2.73	-0.61	145	24.52	16.91%
Lonoke	03N08W03BAA1	110ALVM	34.921817	-91.848200	260	162	4/14/2021	153.8	106.2	105.55	103.63	100.78	-0.65	-2.57	-5.42	-1.29	194	87.80	45.26%
Lonoke	03N08W29BB1	110ALVM	34.908294	-91.856444	260	162	3/8/2021	146.93	113.07	112.72	109.80	107.13	-0.35	-3.27	-5.94	-0.28	180	66.93	37.18%
Lonoke	03N08W08ABA1	110ALVM	34.907494	-91.879964	258	150	4/12/2021	155.07	102.93	103.1	101.56	98.38	0.17	-1.37	-4.55	-0.44	194	91.07	46.94%
Lonoke	03N08W10DAB1	110ALVM	34.904069	-91.847983	248	150	4/12/2021	147.35	100.65	99.86	95.63	94.99	-0.79	-5.02	-5.66	0.67	180	79.35	44.08%
Lonoke	03N08W10ADB1	110ALVM	34.900294	-91.839661	248	165	4/14/2021	146.39	101.61	100.77	99.60	98.01	-0.84	-2.01	-3.60	-0.07	182	80.39	44.17%
Lonoke	03N08W11ACA1	110ALVM	34.903533	-91.826183	257	144	3/3/2021	146.99	110.01	109.93	107.31	104.85	-0.08	-2.70	-5.16	-1.57	172	61.99	36.04%
Lonoke	03N08W26CDD1	112TRRC	34.849717	-91.835489	235	150	4/19/2021	122.08	112.92							-0.58	170	57.08	33.58%
Lonoke	03N08W26CDD2	110ALVM	34.849717	-91.835489	235	226	4/19/2021	120.82	114.18	112.71		111.00	-1.47		-3.18		170	55.82	32.84%
Lonoke	03N08W29BB1	110ALVM	34.863083	-91.892447	249	152.20	4/15/2021	134.24	114.76	114.89	115.22	113.08	0.13	0.46		-1.68	188	73.24	38.96%
Lonoke	03N08W29BCC1	110ALVM	34.856947	-91.892611	249	150	3/3/2021	119.19	129.81	142.94	115.03	128.43	13.13	-10.78	-1.38	13.40	188	58.19	30.95%
Lonoke	03N08W32ABB1	110ALVM	34.849475	-91.881117	250	154	4/15/2021	128.46	121.54	121.89	122.17		0.35	0.63		-2.10	189.20	67.66	35.76%
Lonoke	03N08W34DD2	112MRVAA	34.835000	-91.842900	244	227	4/15/2021	185.83	128.62	138.18			9.56			-3.42	169	40.38	23.89%
Lonoke	04N08W15BCB2	110ALVM	34.975811	-91.855903	224	104	4/15/2021	119.33	34.17	33.52	34.47	37.15	-0.65	0.30	2.98	-0.82	144	109.83	76.27%
Lonoke	04N08W16DCC1	110ALVM	34.965833	-91.855000	234	155	6/17/2021	183.82	50.18		49.11	48.16		-1.07	-2.02	-1.01	163	112.82	69.21%
Lonoke	04N08W28CA1	110ALVM	34.938889	-91.870833	234	140.5	4/14/2021	172.29	61.71		59.42	57.17		-2.29	-4.54	-0.12	164	102.29	62.37%
Lonoke	04N08W28CC1	110ALVM	34.937381	-91.873697	237	137	4/13/2021	169.58	67.42	66.85	63.40	62.84	-0.57	-4.02	-4.58	-0.61	178	110.58	62.12%
Lonoke	04N08W33ABD1	110ALVM	34.932944	-91.861472	258.00	138	6/11/2021	160.84	97.16	94.79	92.40	90.99	-2.37	-4.76	-6.17	1.12	184	86.84	47.20%
Lonoke	04N08W33ADD1	110ALVM	34.929528	-91.857083	267	180	3/8/2021	158.34	108.66	107.39	105.05	103.24	-1.27	-3.61	-5.42	0.09	184	75.34	40.95%
Lonoke	04N08W36DBB1	110ALVM	34.927925	-91.820672	259	130	4/14/2021	159.89	99.11	98.44	97.76	94.89	-0.67	-1.35	-4.22	-0.19	184	84.89	46.14%
												Total Wells:	23	16	25	50	Average % Saturated:	38.45%	0.00%
												Average Change (ft):	0.58	-0.09	-1.89	-1.80	Min % Saturated:	3.66	88.08%

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Land Surface Altitude	Well Depth	2021 Meas. Date	Water Level Altitude (fmsl)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change (’21 to ’20)	5 Year Change (’21 to ’16)	10 Year Change (’21 to ’11)	Spring to Fall Change 2021	Aquifer Thickness (ft)	Saturated Thickness (ft)	% Saturated
Mississippi	I10N08E22ABA2	I10ALVM	35.480803	-90.220044	224	100	5/3/2021	201.08	22.92	21.93	28.24		-0.99	5.32		-4.20	153	130.08	85.02%
Mississippi	I11N09E34BBB1	I10ALVM	35.538288	-90.120881	235	94	5/3/2021	215.21	19.79	13.6	20.79		-6.19	1.00			190.78	170.99	89.63%
Mississippi	I11N09E09BCB1	I10ALVM	35.591747	-90.03978	226	110	4/15/2021	218.57	17.43	12.56			-4.87			-4.06	149	131.57	88.30%
Mississippi	I12N08EO8BCB1	I10ALVM	35.679739	-90.266458	235	120	5/6/2021	213.53	11.47	5.66	7.33		-5.81	-3.94			134.35	91.46%	87.18%
Mississippi	I12N08E28DOB1	I10ALVM	35.618681	-90.235096	225	120	4/15/2021	204.19	22.81	13.44			-9.67			-6.50	138	115.19	83.47%
Mississippi	I12N09E17ABC1	I10ALVM	35.681745	-90.080369	232	120	4/15/2021	211.19	20.81	9.71			-11.1			-13.01	151.00	130.19	86.22%
Mississippi	I12NOED0CAA1	I10ALVM	35.690735	-90.026756	233	120	4/15/2021	219.91	13.09	4.88			-8.11			91.27%	150	136.91	91.27%
Mississippi	I12NIJDE21DBA1	I10ALVM	35.645079	-90.022867	236	110	4/15/2021	217.29	18.71	11.75			-6.96			-5.46	146	127.89	87.18%
Mississippi	I13N0EE2ACAB1	I10ALVM	35.714188	-90.186762	232	120	4/15/2021	227.89	4.11	4.74			0.63			-12.23	148	143.89	97.22%
Mississippi	I13N0FE3OCDD1	I10ALVM	35.713281	-90.174619	230		5/6/2021	206.2	23.8	7.71	6.57		-16.09	-17.23		-7.62	148.24	124.44	83.95%
Mississippi	I14N08E1ZDAB1	I10ALVM	35.851158	-90.181094	236		4/13/2021	230.79	5.21	2.89	3.33		-2.32	-1.88		-8.84	166.10	160.89	96.86%
Mississippi	I14N08E26CC1	I10ALVM	35.800909	-90.209818	228	100	4/15/2021	219.57	8.43	3.07			-5.36			-0.56	150	141.57	94.38%
Mississippi	I14N1TE33CAAI	I10ALVM	35.790909	-89.918975	243	120	4/15/2021	230.14	12.86	8.15			-4.71	-1.56		-9.91	160	147.14	91.96%
Mississippi	I15N08EO8DBC2	I10ALVM	35.934611	-90.257311	238	120	4/13/2021	227.74	10.26	8.37	8.70		-1.89			-3.18	179	168.74	94.27%
Mississippi	I15NIOE21IBBD1	I10ALVM	35.913244	-90.031325	239	89	4/13/2021	229.88	9.12	6.44			-2.68			-6.49	122	112.88	92.52%
Mississippi	I15NJ2C01BCD1	I10ALVM	35.951185	-89.767026	255	100	4/15/2021	246.4	8.6	4.92			-3.68			-5.71	140	131.40	93.86%
Mississippi	I16NIOE28BBD1	I10ALVM	35.985036	-90.032231	238	120	4/15/2021	225.31	12.89	6.57	7.12		-6.12	-5.57		-6.96	138	125.31	90.80%
Mississippi	I16NIEE23AAD1	I10ALVM	35.996323	-89.875378	256		4/14/2021	244.19	11.81	9.29			-2.52	-1.60		-4.58	151	139.19	92.18%
												Total Wells:	18	8	0			Average % Saturated: 83.47%	
												Average Change (ft):	-5.47	-3.18	-1.43			Min % Saturated: 97.22%	
Monroe	O1N0IW15DBC1	I10ALVM	34.694167	-91.095000	185	126.5	4/22/2021	131.88	53.12	52.19			0.93			-7.03	149	95.88	64.35%
Monroe	O1N0ZW12CBC1	I12TRFC	34.711750	-91.175528	182	116	4/14/2021	139.29	42.71	43.25	45.13	51.69	-0.54	2.42	-1.41	-1.28	142	99.29	69.92%
Monroe	O1N0AW33BBB2	I12TRFC	34.666533	-91.446811	220	140	4/14/2021	122.25	97.75	95.17	103.44		-2.58	5.69	-0.62		154.16	56.41	36.59%
Monroe	O1SOIW13CDI1	I10ALVM	34.607778	-91.061111	175	135	4/22/2021	153.98	21.02	21.96	23.81	19.00	-7.36	2.79	0.49	0.49	144	122.98	85.40%
Monroe	O1SOIW15DOB1	I12TRFC	34.604258	-91.109009	177	100	4/13/2021	147.68	29.32	21.36	24.00	19.00	-5.32		6.22	145.37	116.05	79.83%	
Monroe	O1SOIW18BCD1	I10ALVM	34.604933	-91.147000	179	110	4/22/2021	155.96	23.04	23.67	25.41	23.25	0.63	2.37	0.21	-1.00	147	123.96	84.33%
Monroe	O1SOE09CBB1	I10ALVM	34.621869	-90.909461	185	110	4/13/2021	167.28	17.2	8.11	9.00	17.50	-9.09			-10.00	142.79	125.59	87.95%
Monroe	O1SOE20DBB1	I10ALVM	34.603528	-91.249197	171	100	4/14/2021	166.65	4.35	3.39	9.00	12.12	-0.96	4.65	7.77	-6.41	138.87	134.52	96.87%
Monroe	O2N0IW19ADB1	I12TRFC	34.773430	-91.137345	188	140	4/12/2021	128.79	59.21	59.35	69.00		0.14	9.79	-3.93	148.91	89.70	60.24%	
Monroe	O2N0IW19BBB1	I10ALVM	34.779225	-91.153461	192	75	4/21/2021	130.8	61.2	56.82	57.62		-4.38	-3.58		1.99	90.80	59.74%	1.99
Monroe	O2N0WV35BCA1	I12TRFC	34.748707	-91.295960	186	100	4/12/2021	156.19	21.1	24.55		26.00	3.45		-7.49	133.60	112.50	84.21%	
Monroe	O2SOIW10BCD1	I10ALVM	34.551488	-91.069007	176	100	4/13/2021	158.19	17.81	17.77	18.00		-0.04	0.19	-0.51	145.90	128.09	87.79%	
Monroe	O2SOZW11DAC1	I10ALVM	34.53825	-91.183494	164	110	4/22/2021	160.37	3.63	2.53	5.10		-1.1	1.47	-6.24	128	124.37	97.16%	
Monroe	O4N0ZW01BBC1	I12TRFC	34.991481	-91.167902	175	100	4/12/2021	144.08	30.92	40.45	40.00		9.53	9.08	-1.23	118.45	87.53	73.90%	
Monroe	O4N0ZW05BBB1	I12TRFC	35.000467	-91.219522	188	100	4/12/2021	174.68	13.32	13.6	18.00		0.28	4.68	-2.33	95.94	82.62	86.12%	
												Wells in Decline:	9	2	1			Average % Saturated: 75.25%	
												Total Wells:	15	13	5			Min % Saturated: 36.59%	
												Average Change (ft):	-1.25	3.00	1.66	-1.58		Max % Saturated: 97.16%	

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Land Surface Altitude	Well Depth	2021 Meas. Date	Water Level Altitude (fmsl)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change ('21 to '20)	5 Year Change ('21 to '16)	10 Year Change ('21 to '11)	Spring to Fall Change 2021	Aquifer Thickness (ft)	Saturated Thickness (ft)	% Saturated
Phillips	01501E200DB1	112TRRC	34.591488	-91.016229	184	114	4/13/2021	167.5	16.5	18.02	28.00	29.00	1.52	11.50	12.50	-2.35	154.59	138.09	89.33%
	01503E020ADD1	112TRRC	34.637321	-90.753167	202	120	4/15/2021	194.4	7.6	6.68	19.00	20.60	-0.92	11.40	13.00		129.80	122.20	94.14%
	01503E020CB81	112TRRC	34.635833	-90.767778	202	95	4/23/2021	193.4	8.6	6.21	18.20		-2.39	9.60		139	130.40	93.81%	
	01503E100AB1	112TRRC	34.628155	-90.777223	205	120	4/15/2021	193	12	7	19.00		-5	7.00		-18.00	140.80	128.80	91.48%
	01504E050CD1	112TRRC	34.633989	-90.697609	246	120	4/15/2021	204.7	41.3	43.31	52.67	51.60	2.01	11.37	10.30	-16.94	146.90	105.60	71.89%
	02501E23CA1	112TRRC	34.501139	-90.978483	177	120	4/22/2021	164.61	12.39	10.28	19.50		-2.11	7.11		-6.79	148	135.61	91.63%
	02502E29DD1	112TRRC	34.483712	-90.912337	185	125	4/13/2021	170.5	14.5	14.27	25.00	29.00	-0.23	10.50	14.50	-2.70	150.65	136.15	90.37%
	02502E33ACC1	112TRRC	34.467932	-90.901453	185	120	4/13/2021	166.3	18.7	16.8	23.00		-1.9	4.30		-3.41	151.42	132.72	87.65%
	02503E15ACD1	110ALVM	34.519433	-90.772633	174	115	4/23/2021	164.87	9.13	4.95			-4.18			-6.97	150.65	141.52	93.94%
	02503E34BCD1	110ALVM	34.478456	-90.871500	165	175	4/22/2021	149.25	15.75	14.58	8.13	9.80	-1.17	-7.62	-5.95	-3.06	122.44	106.69	87.14%
	02504E27AAC1	112TRRC	34.4697103	-90.666969	170	120	4/15/2021	175.8	4.2	4.7			0.5			-9.72	85.78	81.58	95.10%
	03503E020DD1	110ALVM	34.451127	-90.751111	184	120	4/22/2021	156.51	17.49		22.92			5.43		-1.87	116	98.51	84.92%
	03503E040AA1	110ALVM	34.459589	-90.786092	171	36	4/22/2021	154.79	16.21	12.89	21.06	20.40	-3.32	4.85	4.19	-2.34	116	99.79	86.03%
	03504E020AA1	110ALVM	34.458992	-90.655107	179	104	4/15/2021	170.8	8.2	6.09			-2.11			-6.79	121.81	113.61	93.27%
	04501E010AD1	112TRRC	34.377324	-90.950113	156	120	4/13/2021	147.5	8.5	9.02	16.00		0.52	7.50	12.19	-6.31	112.99	93.00%	
	04501E14CD1	112TRRC	34.337325	-90.970757	156	120	4/23/2021	147.6	8.4	5.01	13.00		-3.39	4.60	3.40	-3.40	117.42	109.02	92.85%
04501E23CCA1	110ALVM	34.32361	-90.981283	155	120	4/22/2021	144.71	10.29	7.08	13.58	12.72	-3.21	3.29	2.43	-3.40	117	106.71	91.21%	
04502E01DB1	112TRRC	34.373235	-90.848166	165			4/13/2021	153	12	12.5	15.00	Wells in Decline: Total Wells: 12 Wells in Decline: 1 Average Change (ft.): 1.16			-0.58	118.73	106.73	89.89%	
											Average Change (ft.): 17 Min % Saturated: 17 Max % Saturated: 16			7.28	16		Average % Saturated: 71.89%		89.87%
Poinsett	10N01E14CC1	110ALVM	35.486129	-90.970502	231	150	4/14/2021	121.31	109.69	100.38	109.99	96.27	-9.31	0.30	-13.42	6.52	150	40.31	26.87%
Poinsett	10N02E34BB81	110ALVM	35.457167	-90.875361	235	155.9	4/14/2021	125.35	109.65	108.98	108.09	103.55	-0.67	-1.56	-6.10	-1.86	149.59	39.94	26.70%
Poinsett	10N06E11AAA1	110ALVM	35.510858	-90.412817	213	108	4/21/2021	205.54	7.46	6.77	13.12		-0.69	5.66		98	90.54	92.39%	
Poinsett	11N01E26AA1	110ALVM	35.561203	-90.948144	236	140	4/18/2021	120.8	115.5	106.67	104.27	99.50	-8.83	-11.23	-16.00	143	27.50	19.23%	
Poinsett	11N02E12ADA1	110ALVM	35.604246	-90.823171	244		5/1/2021	122.04	121.96	122.37			0.41			111	0.00	0.00%	
Poinsett	11N02E36AD1	110ALVM	35.534400	-90.817600	240	150	4/12/2021	125.7	114.30							135	20.70	15.33%	
Poinsett	11N06E34BBC1	110ALVM	35.540000	-90.446111	217	115.2	4/22/2021	204.25	12.75	13.1		12.00	0.35		-0.75	93	80.25	86.29%	
Poinsett	11N07E18CAB1	110ALVM	35.576297	-90.389258	220	100	5/6/2021	207.68	12.32	10.89	12.00	13.85	-1.43	-0.32	1.53	102.40	90.08	87.97%	
Poinsett	11N07E22ADD1	110ALVM	35.563611	-90.322778	221	127	5/6/2021	198.05	22.95	20.4	25.80		-2.55		-4.88	115.90	92.95	80.20%	
Poinsett	12N03E34AD1	110ALVM	35.629631	-90.832269	248	4/12/2021	122.68	125.32								105	0	0.00%	
Poinsett	12N07E04BAA1	110ALVM	35.700542	-90.349914	218	60	5/6/2021	211.56	6.44	4.39	1.65	4.89	-2.05	-4.79	-1.55	113	106.56	94.30%	
											Wells in Decline: Total Wells: 7 Wells in Decline: 4 Average Change (ft.): 2.75			5	5		Average % Saturated: 48.12%		48.12%
											Average Change (ft.): 1.20 Min % Saturated: 1.51 Max % Saturated: 6.06			7	7		Max % Saturated: 94.00%		94.00%

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Land Surface Altitude	Well Depth	2021 Meas. Date	Water Level Altitude (fmsl)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change (7/21 to 20)	5 Year Change (7/21 to 16)	10 Year Change (7/21 to 11)	Spring to Fall Change 2021	Aquifer Thickness (ft)	Saturated Thickness (ft)	% Saturated
Prairie	021N06W05CCB1	110ALVM	34.721381	-91.680300	220	155	4/22/2021	102.78	117.22	118.91	119.05	118.85	1.69	1.83	1.63	-3.00	157.04	39.82	25.36%
Prairie	01504W28B0B1	110ALVM	34.589633	-91.441592	205	112	4/15/2021	108.89	96.11	96.61	98.23	97.90	0.5	2.12	1.79	-0.30	137.33	41.22	30.01%
Prairie	01505W31D0A1	110ALVM	34.571339	-91.575469	208	120	5/4/2021	107.95	98.05	99.03	100.20	112.75	0.98	2.15	14.70	-0.80	137.31	39.26	28.59%
Prairie	01506W12B4B1	110ALVM	34.640556	-91.603611	226	139.5	4/15/2021	114.89	113.11	115.96	117.84	119.00	2.85	4.73	5.89	0.34	156.88	43.77	27.90%
Prairie	02N04W02BCB1	110ALVM	34.821197	-91.405169	189	140	4/21/2021	176.02	12.98	12.18	15.81		-0.8	2.83		-0.91	109	96.02	88.09%
Prairie	02N05W21CB2	110ALVM	34.780278	-91.550000	227	160	4/21/2021	116.07	110.93			110.02	-0.40	-0.40	-0.40	-4.06	144	33.07	38.56%
Prairie	02N05W24BC3	110ALVM	34.783056	-91.493611	222	130	6/17/2021	133.52	88.48	88.35		90.82	-0.13		2.34	-4.06	144	55.52	32.95%
Prairie	02N05W24C6B1	110ALVM	34.777911	-91.406569	225.00	140.00	4/14/2021	126.55	98.45	98.45			0	4.55	-3.05	-3.05	144	45.55	31.63%
Prairie	02N05W35DB1		34.750711	-91.506689	220.00	165.00	4/14/2021	108.25	111.73	112.47			0.72	2.99	-2.55	-2.55	145	33.25	25.34%
Prairie	02N06W22BC1 near Hazen				235	126	4/15/2021		114.52	114.52			0.29	3.87	0.41	153.00	38.77	25.34%	
Prairie	02N06W24CA1	110ALVM	34.780833	-91.597500	231	136	5/4/2021	113.21	117.79	117.22		117.92	-0.57	0.13	-0.26	-0.26	148	30.21	20.41%
Prairie	03N05W03B0D1	110ALVM	34.912239	-91.520931	207	110	4/22/2021	145.3	61.7	61.93	64.14	64.10	0.23	2.44	2.40	-5.16	108	46.30	42.87%
Prairie	03N05W03CA1	110ALVM	34.910369	-91.528850	200.00	110.00	4/13/2021	137.85	62.15	65.2			3.05	12.85	-7.45	-7.45	115	52.85	45.96%
Prairie	03N06W06B0A1	110ALVM	34.914211	-91.682211	226		4/14/2021	141.8	84.2	84.24			0.04				134	49.80	37.16%
Prairie	03N06W10CB1	110ALVM	34.896608	-91.635400	216.00	120.00	4/13/2021	141.5	74.5	77.59			3.09		-13.50	-13.50	113	38.50	34.07%
Prairie	03N06W24DB1	110ALVM	34.872681	-91.602981	215		4/13/2021	139.93	88.07	80.96			3.91	4.93	-16.70	-16.70	117	39.95	34.15%
Prairie	04N05W07C0C1	110ALVM	34.978506	-91.578033	211	120	4/22/2021	133.29	77.71	77.81	78.54	77.60	0.1	0.83	-0.11	-2.00	112	34.29	30.62%
Prairie	04N07W031D0C1	110ALVM	34.920461	-91.568286	208	104	4/14/2021	129.45	78.55	80.97	80.06	78.38	2.42	1.51	-0.17	-0.17	111	32.45	29.23%
Prairie	04N07W03D0B1	110ALVM	34.958028	-91.736800	255	100	4/14/2021	166.28	89.72	89.62	89.32	86.20	-0.1	-0.40	-3.52	-1.02	155	65.28	42.13%
Prairie	04N07W20DDB1	110ALVM	34.925654	-91.768686	255	160	4/14/2021	158.41	105.59	105.72	104.16	104.23	0.13	-1.43	-1.36	-0.31	174.50	68.91	39.49%
Prairie	04N07W28BB1	110ALVM	34.950147	-91.762467	258	110	4/14/2021	157.92	100.08	100.02	98.65	97.60	-0.06	-1.43	-2.48	-0.50	182.73	82.65	45.23%
Prairie	05N05W28DD1	110ALVM	35.021944	-91.541111	191	85	4/15/2021	160.4	30.6							9.70	86	55.40	64.42%
Pulaski	01S10W29CC1	110ALVM	34.593828	-92.118794	239	100	4/13/2021	228.07	10.93	8.96	11.54		0.92	1.38	1.56	-2.70	102	91.07	89.28%
Pulaski	02S10W14DC1	110ALVM	34.534642	-92.059375	225	60	4/13/2021	205.52	19.48	19.11	24.99		-0.37	5.51		-0.91	109.20	89.72	82.16%

Mississippi River Valley Alluvial Aquifer
Hydrologic Data 2021, 2020, 2016, 2011

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Land Surface Altitude	Well Depth	2021 Meas. Date	Water Level Altitude (fmsl)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change ('21 to '20)	5 Year Change ('21 to '16)	10 Year Change ('21 to '11)	Spring to Fall Change 2021	Aquifer Thickness (ft)	Saturated Thickness (ft)	% Saturated
St. Francis	04N02E27AA41	112TRC	34.935203	-90.875528	211	140	4/12/2021	161.1	49.9	50.61			0.71			-0.88	155	105.10	67.81%
St. Francis	05N05E33BCC1	110ALVM	35.000744	-90.584656	199	120	4/1/2021	171.33	27.67	27.55			-0.12				138	110.33	79.95%
St. Francis	04N01W17BCB1	110ALVM	34.959722	-91.133611	205	127.7	4/1/2021	140.05	64.95	63.38			-1.57			-0.85	140	75.05	53.61%
St. Francis	04N01W20BBB1	110ALVM	34.954769	-91.133703	202	140	4/1/2021	139.35	62.65	62.37			-0.28				140	77.35	55.25%
St. Francis	04N01W22BB1	110ALVM	34.955247	-91.096244	208	130	4/1/2021	128.3	79.7	75.35	75.29	73.65	-4.35	-4.41	-6.05		146	66.30	45.41%
St. Francis	04N01W25DBD1	110ALVM	34.931264	-91.047972	209	120	4/21/2021	128.4	80.6	85.67			5.07				152	71.40	46.97%
St. Francis	04N01W28CDD1	110ALVM	34.926461	-91.109319	208	140	4/1/2021	134.16	73.84	74.69	75.29	73.65	0.85	1.45	-0.19	-2.14	154	80.16	52.05%
St. Francis	04N02E11AD1	112TRC	34.973372	-90.853533	213	120	4/1/2021	165.53	47.47	53.46			5.99			-4.95	154	106.53	69.18%
St. Francis	04N02E16DCA1	110ALVM	34.954253	-90.893131	210	100	4/1/2021	152.4	57.6	55.43			-2.17				150	92.40	61.60%
St. Francis	04N03W29BB1	110ALVM	34.933336	-90.924356	206	150	4/22/2021	144.1	61.9	64.25			2.35			-1.80	152	90.10	59.28%
St. Francis	04N10E20DA1	110ALVM	34.946197	-91.013583	204	150	4/1/2021	128.2	75.8	76.15			0.35				149	73.20	49.13%
St. Francis	05N01E06CDA1	110ALVM	35.080303	-91.032744	211		4/1/2021	127.2	83.8	80.37			-3.43				140	56.20	40.14%
St. Francis	05N01E27BBA1	110ALVM	35.026592	-90.991328	209	153	4/20/2021	130.65	78.35	75.77			-2.58			-3.05	144.55	66.20	45.80%
St. Francis	05N02E20ADC1	110ALVM	35.032472	-90.910322	211	120	4/20/2021	145.6	65.4	61.4			-4			3.35	140	74.60	53.29%
St. Francis	05N02E26AAB1	110ALVM	35.023150	-90.855792	218	120	4/1/2021	161.6	56.4	56.23			-0.17				157	100.60	64.08%
St. Francis	05N02E26CDD1	112TRC	35.008886	-90.870339	215	140	4/1/2021	159.4	55.6	55.56			-0.04				154	98.40	63.90%
St. Francis	05N03E31AB2	110ALVM	35.008386	-90.826317	221	155	4/1/2021	167.4	53.6	54.78			1.18				159	105.40	66.29%
St. Francis	05N05E19DCA1	110ALVM	35.024325	-90.608431	205	120	4/22/2021	176.27	28.73	27.37			-1.36			-1.65	140	111.27	79.48%
St. Francis	05N06E05BBB1	110ALVM	35.084867	-90.489925	201	120	4/1/2021	167.86	33.14	42.78			9.64		2.86		133	99.86	75.08%
St. Francis	05N06E34CAB1	110ALVM	35.007103	-90.449131	200	110	4/23/2021	177.26	22.74	20.58	28.90	26.15	-2.16	6.16	3.41	-2.98	136	113.26	83.28%
St. Francis	06N02E13DCA1	110ALVM	35.136667	-90.833889	232		4/12/2021	152.25	79.75				1.31		1.55		173	93.25	53.90%
St. Francis	06N02E15DD1	110ALVM	35.144975	-90.879808	214.64	75	5/7/2021	148.06	66.58	66.27			-0.31		-2.88		143	76.42	53.44%
St. Francis	06N02E16CCC1	112TRC	35.135914	-90.900950	218	120	4/1/2021	135.98	82.02	74.29			-7.73				150	67.98	45.32%
St. Francis	06N06E20AB2	110ALVM	35.129739	-90.478111	202	150	4/21/2021	168.17	33.83	36.13	36.64		2.3	2.81		-2.48	136	102.17	75.13%
													14	1	3	9	Average % Saturated:		59.97%
													23	5	6	10	Min % Saturated:		40.14%
													-0.08	1.46	-0.22	-1.74	Max % Saturated:		83.28%
													0.7		2.98	0.16	97	90.63	93.43%
													0.85			-0.82	112	30.91	27.60%
White	05N07W10CCC1	110ALVM	35.066728	-91.743333	200	80	4/16/2021	193.63	6.37	7.07			1.04	2.18		-1.30	117	60.10	51.37%
White	06N06W13BA1	110ALVM	35.146501	-91.600539	215	118	4/26/2021	133.91	81.09	81.94			-0.54				51	45.03	88.29%
White	06N06W34AAB1	112TRC	35.106547	-91.631542	212	117	4/26/2021	155.1	56.9	57.94	59.08		-0.69		8.73		50	44.91	89.82%
White	06N07W17DCC1	110ALVM	35.139575	-91.776314	218	90	4/26/2021	212.03	5.97	5.43			-1.09	1.58	-3.43	-5.70	53	45.34	85.55%
White	06N08W13ABA1	110ALVM	35.152147	-91.806769	228	60	4/23/2021	222.91	5.09	4.4			4.23				49	42.09	85.90%
White	06N08W26DD1	110ALVM	35.111125	-91.824764	226	89	4/26/2021	218.34	7.66	6.57									
White	08N05W01ABA1	110ALVM	35.351944	-91.485833	207		3/25/2021	200.09	6.91										
													3	0	1	3	Average % Saturated:		74.57%
													6	2	4	5	Min % Saturated:		27.60%
													0.04	1.88	3.65	-0.99	Max % Saturated:		93.43%

Mississippi River Valley Alluvial Aquifer
Hydrologic Data 2021, 2020, 2016, 2011

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Land Surface Altitude	Well Depth	2021 Meas. Date	Water Level Altitude (ftms)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change (21 to 20)	5 Year Change (21 to 16)	10 Year Change (21 to 11)	Spring to Fall Change 2021	Aquifer Thickness (ft)	Saturated Thickness (ft)	% Saturated
Woodruff	04N03W03A81	110ALVM	35.005814	-91.305519	190	100	4/1/2021	181.92	8.08	6.6	9.40	12.95	-1.48	1.32	4.87	-6.92	92	83.92	91.22%
Woodruff	05N02W20DC1	112TRC	35.035500	-91.232275	192	108	4/12/2021	184.23	7.77	11.18	15.73		3.41	7.96			96	88.23	91.91%
Woodruff	05N03W50DD1	112TRC	35.025975	-91.258737	190	120	4/16/2021	176.8	13.2	13.5	13.00		0.3	-0.20	-0.60	92.94	79.74	85.80%	
Woodruff	06N01W11A81	110ALVM	35.162222	-91.065000	214	150	4/12/2021	146.45	67.55	67.55	72.00	64.17	0.35	4.45	-3.38	-2.11	137	69.45	50.69%
Woodruff	06N01W11BC1	110ALVM	35.115889	-91.095122	222	80	4/16/2021	148.6	73.4	73.02			-0.60	-0.60	-0.60	133	59.60	44.81%	
Woodruff	06N01W27BC1	110ALVM	35.118952	-91.095556	202	120	4/12/2021	144.75	52.95	57.07	56.80		-0.18	-0.45	54.92%	-0.88	127	69.75	54.92%
Woodruff	07N01W04AB1	110ALVM	35.263389	-91.102000	226	120	4/22/2021	152.95	73.05	63.06			-9.99	2.45	8.03	136	62.95	46.29%	
Woodruff	07N01W04AC1	110ALVM	35.267476	-91.107344	225	125	4/16/2021	158.35	66.65	66	69.10		-0.65	1.10	127.56	92.76	90.18%		
Woodruff	07N03W18BA1	112TRC	35.197865	-91.350961	204	120	4/16/2021	193.9	10.1	10.5	10.00		0.4	-0.10	-1.26	102.86	97.91	47.73%	
Woodruff	08N01W06DD1	110ALVM	35.129078	-91.129078	218	142	4/23/2021	173.51	34.419	45.49	46.36		1	1.87	-2.71	131	86.51	66.04%	
Woodruff	08N03W04BB1	110ALVM	35.357778	-91.321944	218	110	4/23/2021	206.77	11.23	7.98		15.69	-3.25	4.46	-4.28	125	113.77	91.02%	
Woodruff	08N03W13A01	110ALVM	35.282030	-91.341239	211	110	4/21/2021	194.67	16.33	16.29	18.95	18.95	-0.04	2.62	-2.53	122	105.67	86.61%	
Woodruff	09N03W28AC1	110ALVM	35.386195	-91.316795	224	120	4/16/2021	203.1	21.9	12.26	24.00		-8.64	3.10	-1.60	131.96	111.06	84.16%	
Woodruff	09N03W32AC1	112TRC	35.386140	-91.326528	218	120	4/16/2021	196.8	20.2	21.5	22.00		0.3	0.80	-1.00	125.78	104.58	83.15%	

Water Level Measurements, Spring 2020: 555	1 Year Change (20 to 19)	5 Year Change (20 to 15)	10 Year Change (20 to 10)	Spring to Fall Change 2020	% Saturated, Spring 2020
Total Wells in Decline:	238	85	80	328	0.00%
Total Wells:	410	278	210	371	Max % Saturated: 98.35%
Percent of Total Wells in Decline:	58.05%	30.58%	38.10%	88.41%	Average % Saturated: 64.07%
Total Average Change (ft)	-0.64	1.43	1.05	-2.80	

Appendix B

Sparta/Memphis Aquifer Water Level Monitoring Data

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Surface Alt	Well Depth	2021 Meas. Date	2021 WLA (fmsl)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change ('21 to '20)	5 Year Change ('21 to '16)	10 Year Change ('21 to '11)
Arkansas	02504W06CDB1	124SPRT	34.553056	-91.480278	212	840	4/18/2021	64.31	146.69	148.89	160.45	173.13	2.2	13.76	26.44
Arkansas	02504W23DAA1	124SPRT	34.512222	-91.398333	208	790	4/20/2021	74.95	133.05	135.13	144.95	143.67	2.08	11.9	10.62
Arkansas	02504W33BBB1	124SPRT	34.489444	-91.450556	205	781	4/16/2021	59.54	145.46	147.91		166.19	2.45		20.73
Arkansas	02505W16CBB1	124SPRT	34.528767	-91.555186	216	751	4/14/2021	41.81	171.19	174.6	174.08	177.38	3.41	2.89	6.19
Arkansas	02505W28AC2	124SPRT	34.503944	-91.547833	214	677	5/4/2021	42.82	171.18						
Arkansas	02505W34ABC1	124SPRT	34.490278	-91.529722	216	758	4/16/2021	51.13	166.87						
Arkansas	02505W35AAB1	124SPRT	34.491667	-91.509444	216	761	4/16/2021	55.03	160.97	162.12	174.56	175.31	1.15	13.59	14.34
Arkansas	03503W18CC2	124SPRT	34.431389	-91.380833	196		4/20/2021	66.33	129.67	133.16	141.68	145.65	3.49	12.01	15.98
Arkansas	03504W02CCB1	124SPRT	34.463056	-91.416111	202	721	4/16/2021	62.57	139.43	141.81	152.58	151.95	2.38	13.15	12.52
Arkansas	03504W33BAAB1	124SPRT	34.401667	-91.443611	201	878	4/20/2021	60.21	140.79	141.68	154.26		0.89	13.47	
Arkansas	03505W02AAB1	124SPRT	34.478333	-91.509167	210	801	4/16/2021	51.12	158.88	161.51		169.82	2.63		10.94
Arkansas	03505W13BDC1	124SPRT	34.441944	-91.501111	210	910	4/17/2021	59.63	152.37	169.49	168.83	173.6	17.12	16.46	21.23
Arkansas	03505W15CBB1	124SPRT	34.442500	-91.541389	206	760	4/17/2021	60.91	148.09	156.91	173.88	176.74	8.82	25.79	28.65
Arkansas	03505W18CAB1	124SPRT	34.441389	-91.590000	196	819	4/16/2021	35.51	160.49	161.89	163.08	161.9	1.4	2.59	1.41
Arkansas	03505W28DAB1	124SPRT	34.413056	-91.544444	204	832	4/17/2021	47.46	156.54		167.05	181.68		10.51	25.14
Arkansas	03506W21ACB1	124SPRT	34.431667	-91.657500	195	660	4/14/2021	45.51	147.49	147.05	158.51	157.81	-0.44	11.02	10.32
Arkansas	03506W30BBD1	124SPRT	34.420833	-91.704444	191	870	4/15/2021	24.92	166.08		151.34	159.3		-14.74	-6.78
Arkansas	04504W11BCC1	124SPRT	34.365556	-91.416944	198	836	4/20/2021	57.45	142.55		150.12	161.55		7.57	19
Arkansas	04504W19CBB1	124SPRT	34.334167	-91.491111	195	1048	4/20/2021	50.61	144.39	154.73	162.83	162.49	10.34	18.44	18.1
Arkansas	04504W22DAA1	124SPRT	34.335000	-91.420833	195	800	4/20/2021	57.15	139.85		161.38	153.66		21.53	13.81
Arkansas	04505W01BAA1	124SPRT	34.389444	-91.498889	196	929	4/17/2021	50.38	148.62	149.8	187.36	160.44	1.18	38.74	11.82
Arkansas	04505W05ACC1	124SPRT	34.383889	-91.570000	186	866	4/17/2021	42.15	143.85			156.77			12.87
Arkansas	04505W15AAA1	124SPRT	34.358889	-91.525833	201	791	4/17/2021	47.89	152.11	153.31	165	164.44	1.2	12.89	12.33
Arkansas	04505W31DDA1	124SPRT	34.305278	-91.580000	184	793	4/17/2021	154.67	30.33			32.7			2.37
Arkansas	04505W36DCC1	124SPRT	34.297778	-91.500833	196	880	4/17/2021	48.82	147.18	148.38	158.14	158.97	1.2	10.96	11.79
Arkansas	05501W17BAA1	124SPRT	34.263889	-91.128333	176	635	5/4/2021	90.26	85.74	91.8	91.33	90.08	6.06	5.59	4.34
Arkansas	05503W04ADB1	124SPRT	34.355833	-91.225000	187	802	5/4/2021	66.21	123.79	126.55		147.43	2.76		23.64
Arkansas	06502W06ABB1	124SPRT	34.207500	-91.272222	181	760	5/4/2021	72.77	108.23	108.52	118.93	115.9	0.29	10.7	7.67
Arkansas	06502W22CDB1	124SPRT	34.173056	-91.247500	188	750	5/5/2021	80.34	104.66	109.79	111.52	110.5	5.13	6.86	5.84
Arkansas	06502W27BAA1	124SPRT	34.151111	-91.225278	186	670	5/5/2021	80.74	105.26		110.85	108.18		5.59	2.92
Arkansas	06503W27BAA1	124SPRT	34.149444	-91.335556	181	665	5/4/2021	71.55	109.45	108.06	116.4	117.34	-1.39	6.95	7.89
Arkansas	07502W28ABA1	124SPRT	34.060833	-91.236389	181	690	5/4/2021	81.61	99.39	98.62	102.37	102.13	-0.77	2.98	2.74
Arkansas	08502W09BCC1	124SPRT	34.008333	-91.246389	174	566	5/4/2021	78.66	95.34		98.73	97.79		3.39	2.45
											No. Wells in Decline:		3	1	1
											Total Wells:		23	26	30
											Average Change:		3.20	10.95	11.91
Ashley	15507W32CDD1	124SPRT	33.354722	-91.850278	190	1000	4/23/2021	54.41	136.59	134.4	138.1	138.41	-2.19	1.51	1.82
Ashley	17509W15ACC1	124SPRT	33.225833	-92.021111	107	600	4/30/2021	86.63	19.37	19.53	24.05	22.83	0.16	4.68	3.46
											No. Wells in Decline:		1	0	0
											Total Wells:		2	2	2
											Average Change:		-1.02	3.10	2.64

Sparta Aquifer
Hydrologic Data 2021, 2020, 2016, 2011

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Surface Alt	Well Depth	2021 Meas. Date	2021 WLA (fmsl)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change ('21 to '20)	5 Year Change ('21 to '16)	10 Year Change ('21 to '11)
Bradley	13S09W06ACA1	124SPRT	33.613056	-92.076944	201	953	5/13/2021	58.05	174.95						
Bradley	13S09W06ACB2	124SPRT	33.613056	-92.071111	208	1022	4/19/2021	46.54	161.46						
Bradley	13S09W06DBD1	124SPRT	33.606944	-92.068611	227		5/24/2021	44.31	182.69		185.43			2.74	
Bradley	15S11W31DDD1	124SPRT	33.361667	-92.272500	131		4/8/2021	33.95	95.05	95.81	98.68	102.4	0.76	3.63	7.35
											No. Wells in Decline:		0	0	0
												Total Wells:	1	2	1
												Average Change:	0.76	3.19	7.35
Calhoun	11S14W12CAC3	124SPRT	33.775000	-92.490833	313	460	4/1/2021	154.43	152.57			148.82			-3.75
Calhoun	13S12W31DAA1	124SPRT	33.542500	-92.373333	200	465	4/1/2021	144.06	55.94		57.33			1.39	
Calhoun	13S13W32CDA1	124SPRT	33.440556	-92.461389	208	450	4/1/2021	35.77	172.23		163.86	175.5		-8.37	3.27
Calhoun	14S13W03CAB1	124SPRT	33.529167	-92.430833	202		4/21/2021	48.92	153.08			169.08			16
Calhoun	14S13W05BBD1	124SPRT	33.535000	-92.466944	189	515	4/21/2021	47.63	141.37		147.26	151.42		5.89	10.05
Calhoun	14S13W12CCB1	124SPRT	33.511111	-92.400833	205	613	4/1/2021	42.07	163.93		176	165.18		12.07	1.25
Calhoun	14S15W168AA1	124SPRT	33.515278	-92.652778	146	300	4/22/2021	62.07	83.93		94.55			10.62	
Calhoun	15S13W20BDC1	124SPRT	33.402222	-92.468333	108	475	4/1/2021	87.02	22.98		24.31			1.33	
											No. Wells in Decline:		0	1	1
												Total Wells:	0	6	5
												Average Change:		3.82	5.36
Chicot	13S03W22DAD1	124SPRT	33.553333	-91.385278	135	500	4/20/2021	65.28	71.72			70.74			-0.98
Clay	19N08E34AA1	124SPRT	36.233397	-90.198154	260	166	5/4/2021	251.05	8.95	6.95			-2		
Clay	20N08E27BB1	124SPRT	36.341728	-90.209266	279	100	5/4/2021	266.65	12.35	9.65			-2.7		
Clay	20N09E19BC2	124SPRT	36.373950	-90.153153	275	100	5/4/2021	271.15	3.85	4.06			0.21		
											No. Wells in Decline:		2	0	0
												Total Wells:	3	0	0
												Average Change:	-1.50		
Cleveland	08S09W06BBA1	124SPRT	34.063611	-92.043611	300		4/20/2021	9.89	286.11						
Cleveland	09S09W048BD1	124SPRT	33.972222	-92.043333	281	725	4/20/2021	86.5	221.5						
Cleveland	09S11W11CDB1	124SPRT	33.939444	-92.213889	233	585	5/6/2021	75.99	157.01			160.64			3.63
Cleveland	10S09W23CDC1	124SPRT	33.821389	-92.005556	220	638	4/20/2021	59.6	160.4			167.84			7.44
Cleveland	10S09W35ACD1	124SPRT	33.799167	-91.999167	219	618	4/20/2021	68.18	150.82			164.96			14.14
Cleveland	10S12W12BDD1	124SPRT	33.858889	-92.295278	220	381	5/6/2021	104.71	115.29			118.83			3.54
											No. Wells in Decline:		0	0	0
												Total Wells:	0	0	4
												Average Change:			7.19

Sparta Aquifer
Hydrologic Data 2021, 2020, 2016, 2011

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Surface Area	Well Depth	2021 Meas. Date	2021 WLA (fmsl)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change ('21 to '20)	5 Year Change ('21 to '16)	10 Year Change ('21 to '11)
Columbia	16S20W08DCC1	124SPRT	33.354722	-93.194167	395	515	4/30/2021	38.72	356.28			315.03			-43.25
Columbia	16S20W18ACD1	124SPRT	33.347778	-93.210278	337	411	4/30/2021	86.03	251.97		258.2			6.23	
Columbia	16S21W20DAD1	124SPRT	33.331944	-93.293333	350	411	4/30/2021	66.73	281.27		276.25	254.43		-5.02	-26.84
Columbia	17S19W19BCA1	124SPRT	33.242222	-93.117778	301		4/12/2021	29.68	271.32			271.36			0.04
Columbia	17S20W13BCD1	124SPRT	33.259167	-93.135278	312		4/15/2021	26.26	312.74			307.02			-5.72
Columbia	17S20W17CDA1	124SPRT	33.255278	-93.200000	325.1	495	4/15/2021	22.85	302.25			305.21			2.96
Columbia	17S21W01BBC1	124SPRT	33.295278	-93.239722	305	548	4/30/2021	66.74	237.26	247.58	249.64	250.37	10.32	12.38	13.11
Columbia	17S21W11DCC2	124SPRT	33.269167	-93.246944	303	428	4/7/2021	40.25	263.75	264.62	265.76	271.97	0.87	2.01	8.22
Columbia	18S20W06DDC1	124SPRT	33.195000	-93.213333	300	502	4/15/2021	-4.76	307.76	306.99	286.6	303.58	-0.77	-21.16	-4.18
Columbia	18S21W26CC1	124SPRT	33.139444	-93.262500			4/13/2021	101.21	128.79						
Columbia	19S20W08DAB1	124SPRT	33.094444	-93.198889			4/8/2021	74.11	253.89	254.84	257.28	274.62	0.95	3.39	20.73
Columbia	19S20W09CBD1	124SPRT	33.098611	-93.191111	332	623	4/13/2021	67.45	263.55	247.48	260.28	262.52	-16.07	-3.27	-1.03
Columbia	19S23W14BAB2	124SPRT	33.098611	-93.464444	244	350	4/13/2021	243.16	0.84						44.18
											No. Wells in Decline: 2	No. Wells in Decline: 45.02	2	3	5
											Total Wells: 11	Total Wells: 40.54	5	8	11
											Average Change: -0.94	Average Change: 4.28			0.75
Craighead	13N05E16DCC2	12405MP	35.748889	-90.560556	226	485	4/30/2021	214.79	12.21						
Craighead	13N05E22BAD1	12405MP	35.746944	-90.545278	227		4/30/2021	215.01	11.99		13			1.01	
Craighead	14N04E22CBD1	12405MP	35.824722	-90.656111	256	240	4/12/2021	199.42	56.58	59.63	61.35	58.28	3.05	4.77	1.7
Craighead	14N05E34ADD1	12405MP	35.796389	-90.570278	230	452	4/12/2021	216.78	15.22			17.77			2.55
Craighead	15N04E20ADB1	12405MP	35.918333	-90.678611	438	200	4/15/2021	321.38	116.62		119.75			3.13	
Craighead	15N06E18ACA1	12405MP	35.929006	-90.482833	243	160	4/15/2021	226.21	16.79	14.92	20.62	19.21	-1.87	3.83	2.42
											No. Wells in Decline: 1	No. Wells in Decline: 19.21	1	0	0
											Total Wells: 2	Total Wells: 1	2	4	3
											Average Change: 0.59	Average Change: 3.19			2.22
Crittenden	05N08E11CCA2	12405MP	35.062222	-90.216667	211	500	4/2/2021	190.15	20.85	16.14	21.76		-4.71	0.91	
Crittenden	06N07E01DAD2	12405MP	35.166111	-90.293889	209	622	4/21/2021	187.42	21.58	19.16	23.26	23.85	-2.42	1.68	2.27
Crittenden	06N09E23AAB1	12405MP	35.128889	-90.098056	222	338	4/22/2021	179.13	42.87		48.35	46.56		5.48	3.69
Crittenden	08N07E35BBC2	12405MP	35.275000	-90.325833			4/21/2021	190.29	31.71	29.61	34.16		-2.1	2.45	
Crittenden	09N07E21BBB1	12405MP	35.394722	-90.358333	216		4/22/2021	192.48	23.52	21.73	24.19	25.12	-1.79	0.67	1.6
											No. Wells in Decline: 4	No. Wells in Decline: 24.19	4	0	0
											Total Wells: 4	Total Wells: 24.19	4	5	3
											Average Change: -2.76	Average Change: 2.24			2.52

Sparta Aquifer
Hydrologic Data 2021, 2020, 2016, 2011

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Surface Alt	Well Depth	2021 Meas. Date	2021 WLA (fmsl)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change ('21 to '20)	5 Year Change ('21 to '16)	10 Year Change ('21 to '11)
Cross	06N04E06ACA1	12405MP	35.167778	-90.710278	358	828	4/23/2021	159.53	195.47	194.7	195.34	202.83	-0.77	-0.13	7.36
Cross	07N03E17CAD1	12405MP	35.217778	-90.806111	245		4/13/2021	132.99	115.01	109.76	110.72		-5.25	-4.29	
Cross	08N02E18BDB1	12405MP	35.318889	-90.927222	225	200	5/3/2021	135.62	92.38		91.56	87.89		-0.82	-4.49
Cross	09N01E16CAC1	12405MP	35.401389	-90.997222	234	400	5/3/2021	128.94	105.06	103.25	101.88	94.8	-1.81	-3.18	-10.26
Cross	09N01E25AAD1	12405MP	35.380556	-90.931389	227	200	5/3/2021	128.2	97.8	97.34	95.64		-0.46	-2.16	
Cross	09N03E22AAB2	12405MP	35.400833	-90.755000	277		4/29/2021	143.4	132.6		134.8	130.12			-2.48
Cross	09N03E22AAD1	12405MP	35.400833	-90.753056	278	367	4/13/2021	152.5	128.5		128.26	127.55		-0.24	-0.95
											No. Wells in Decline:		4	6	4
											Total Wells:		4	7	5
											Average Change:		-2.07	-1.23	-2.16
Dallas	07S14W30DCC1	124SPRT	34.075000	-92.566389	335	142	5/4/2021	217.19	117.81	118.59	120		0.78	2.19	
Dallas	07S15W33DAC1	124SPRT	34.067222	-92.631111	475		5/5/2021	452.07	20.93	20.93	22.6	33.4	0	1.67	12.47
Dallas	07S16W20CAB1	124SPRT	34.099722	-92.761389	322	37.6	5/3/2021	301.3	20.7	25.32	23.4	25.72	4.62	2.7	5.02
Dallas	08S15W34BDC1	124SPRT	33.981389	-92.616111	240	35.5	5/5/2021	214.24	25.76	23.6		28.07	-2.16		2.31
Dallas	08S16W18ACC1	124SPRT	34.031111	-92.777500	252	23	5/3/2021	249.53	1.47	1.59		19.22	0.12		17.75
Dallas	08S16W27DDD1	124SPRT	33.993056	-92.718611	272	154	5/3/2021	249.67	30.33	29.7	31.94		-0.63	1.61	
Dallas	09S13W35CCD1	124SPRT	33.885833	-92.403611	200	401	5/6/2021	130.01	69.99	70.19		72.75	0.2		2.76
Dallas	09S16W19CAA1	124SPRT	33.934722	-92.783611	260	28.2	5/3/2021	254.77	5.23	4.85	6	7.4	-0.38	0.77	2.17
Dallas	10S13W34ACA2	124SPRT	33.808056	-92.415833	272	888	4/21/2021	123.01	148.99	148.74		151.86	-0.25		2.87
Dallas	10S14W27CDB1	124SPRT	33.818333	-92.526667	270	45	5/3/2021	268.17	2.83			30.99			28.16
Dallas	10S15W11DBB1	124SPRT	33.866944	-92.608889	291		5/5/2021	237.19	53.81	54.57	55.53	57.21	0.76	1.72	3.4
											No. Wells in Decline:		4	0	0
											Total Wells:		10	6	9
											Average Change:		0.31	1.78	8.55
Dallas	10S15W18BCC1	124SPRT	33.855278	-92.688889	328	167	5/3/2021	253.72	74.28	73.45		76.18	-0.83		1.9
Desha	09S02W26AAC1	124SPRT	33.896111	-91.255556	153	626	5/5/2021	83.91	69.09	68.14	71.99	67.5	-0.95	2.9	-1.59
Desha	09S04W28DDD1	124SPRT	33.885833	-91.501667	165	902	4/16/2021	47.99	117.01	113.4	113.92	116.54	-3.61	-3.09	-0.47
Desha	10S02W26CCC2	124SPRT	33.797222	-91.273056	148	785	4/12/2021	75.57	72.43	77.18		70.07	4.75		-2.36
Desha	10S04W11C8C1	124SPRT	33.842778	-91.484722	161	830	4/19/2021	61.26	99.74			101.53			1.79
Desha	12S03W34DAD1	124SPRT	33.611944	-91.384722	147	796	5/5/2021	66.84	80.16	81.36	81.75	77.31	1.2	1.59	-2.85
											No. Wells in Decline:		3	1	4
											Total Wells:		5	3	6
											Average Change:		0.11	0.47	-0.60
Drew	11S04W02ACA2	124SPRT	33.775556	-91.473889	153		4/19/2021	64.93	91.07			93.46			2.39
Drew	11S06W11DBC1	124SPRT	33.768333	-91.689444	203	864	4/13/2021	37.42	165.58			150.54			-15.04
Drew	12S06W308BD1	124SPRT	33.635278	-91.761944	257	779	5/5/2021	67.05	203.95	211.47		224.8	7.52		20.85
Drew	13S05W36ACB1	124SPRT	33.530556	-91.568611	169	692	4/21/2021	72.78	92.22	91.23	92.2	91.73	-0.99	-0.02	-0.49
Drew	15S04W12DDA1	124SPRT	33.408056	-91.456389	125	760	4/23/2021	62.83	62.17	61.65	63.54	63.92	-0.52	1.37	1.75
											No. Wells in Decline:		2	1	2
											Total Wells:		3	2	5
											Average Change:		2.00	0.68	1.89

Sparta Aquifer
Hydrologic Data 2021, 2020, 2016, 2011

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Surface Area	Well Depth	2021 Meas. Date	2021 WLA (fmsl)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change ('21 to '20)	5 Year Change ('21 to '16)	10 Year Change ('21 to '11)
Grant	03513W12AAA1	124SPRT	34.479444	-92.351667	361	200	4/15/2021	234.22	127.78	126.75	130.07	129.79	-1.03	2.29	2.01
Grant	03515W26DDAA1	124SPRT	34.433333	-92.579722	337	95	4/15/2021	333.25	3.75	4.77	8.1	10.9	1.02	4.35	7.15
Grant	04515W02DAC1	124SPRT	34.401389	-92.582222	322		4/15/2021	243.54	83.46		84.5	85		1.04	1.54
Grant	05513W03CAA1	124SPRT	34.312214	-92.400131	260	569	5/5/2021	178.11	80.89	84.62	84.39	83.79	3.73	3.5	2.9
Grant	05513W07ADB1	124SPRT	34.302778	-92.446944	258		4/16/2021	193.76	76.24			79.76			3.52
Grant	06511W05ACD1	124SPRT	34.228056	-92.237222	280	1081	4/16/2021	85.97	183.03	193.14	175.7	189.02	10.11	-7.33	5.99
Grant	06515W26ACA1	124SPRT	34.172500	-92.593611	280	172	5/4/2021	220	60	59.33	62.55	63.64	-0.67	2.55	3.64
											No. Wells in Decline:		2	1	0
											Total Wells:		5	6	7
											Average Change:		2.63	1.07	3.82
Greene	18N06E35BC1	12405MP	36.153664	-90.407208	266	180	4/16/2021	242.96	23.04	16.77			-6.27		
Hot Spring	05516W35ACA1	124SPRT	34.249722	-92.697500	342	54.5	5/5/2021	308.68	33.32			35.38			2.06
Jefferson	03509W238BD1	124SPRT	34.440556	-91.953611	222		4/15/2021	55.89	168.11	163.7			-4.41		
Jefferson	03510W27AAD1	124SPRT	34.417222	-92.075556	222	679	4/13/2021	104.87	117.13	118.84	122.35	145.83	1.71	5.22	28.7
Jefferson	04507W17BC1	124SPRT	34.361111	-91.794722	200	756	4/20/2021	35.71	164.29			166.29			2
Jefferson	04508W358BD1	124SPRT	34.321667	-91.846944	200	1011	4/20/2021	4.99	195.01			215.4			20.39
Jefferson	05508W30ADB1 near Pine B	124SPRT	34.248056	-91.911389	197	753	4/26/2021	-82.61	279.61		270.73	276.43		-8.88	-3.18
Jefferson	05508W30CBA1	124SPRT	34.246111	-91.923889	207.46	874	5/4/2021	-64.5	271.96						
Jefferson	05509W24DBD1	124SPRT	34.258333	-91.931667	208.17	830	5/4/2021	-49.98	258.15			259.74			1.59
Jefferson	05509W31DDC1	124SPRT	34.226667	-92.019167	227		4/20/2021	-32.12	258.12			256.3		-1.82	
Jefferson	06508W16CC1	124SPRT	34.195278	-91.921389	202.42	1104	4/13/2021	-36.5	238.92		238.5	239.21		-0.42	0.29
Jefferson	06508W25ADC1	124SPRT	34.173889	-91.854444	203.48	987	4/13/2021	-6.86	210.34			215.09			4.75
Jefferson	06510W23ACD1	124SPRT	34.187500	-92.085278	232	766	4/20/2021	25.56	207.44						
Jefferson	07510W24CAC1	124SPRT	34.096389	-92.072222	311	836	4/20/2021	34.59	276.41			264.83			-11.58
											No. Wells in Decline:		1	3	2
											Total Wells:		2	4	8
											Average Change:		-1.35	-1.47	5.37
Lafayette	16S23W12CAD1	124SPRT	33.361111	-93.436389	322	242	4/14/2021	270.65	48.35			61.49			13.14
Lafayette	17S23W19ACC1	124SPRT	33.255278	-93.524167	291	228	4/14/2021	239.77	51.23			53.27			2.04
Lafayette	17S24W238BD1	124SPRT	33.257222	-93.567222	261	203	4/14/2021	229.1	31.9			33.61			1.71
Lafayette	18S23W29ACC1	124SPRT	33.153056	-93.510556	255	160	4/13/2021	241.27	13.73			17.49			3.76
Lafayette	19S23W298DB1	124SPRT	33.064167	-93.517500	250	250	4/13/2021	214.6	24.4			39.96			15.56
											No. Wells in Decline:		0	0	0
											Total Wells:		0	0	5
											Average Change:				7.24
Lafayette	20S23W05ADB1	124SPRT	33.039722	-93.510000	242	231	4/14/2021	205.42	36.58			37.56			0.98

Sparta Aquifer
Hydrologic Data 2021, 2020, 2016, 2011

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Surface Al	Well Depth	2021 Meas. Date	2021 WLA (fmsl)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change ('21 to '20)	5 Year Change ('21 to '16)	10 Year Change ('21 to '11)
Lincoln	08S04W22AAA1	124SPRT	34.017778	-91.464444	167	812	5/4/2021	58.08	108.92						
Lincoln	08S05W35ACC1	124SPRT	33.985278	-91.559167	165	836	5/5/2021	38.21	127.79	123.15	122.02		-4.64		-5.77
Lincoln	08S08W35DCB1	124SPRT	33.980556	-91.871389	265	1062	5/3/2021	38.55	231.45	232.2			0.75		
Lincoln	09S07W07DAD1	124SPRT	33.942500	-91.857778	300	1052	5/3/2021	37.12	258.88	263.67	274.74		4.79		15.86
											No. Wells in Decline:		1	0	1
											Total Wells:		3	0	2
											Average Change:		0.30		5.05
Lonoke	01N07W03BCC1	124SPRT	34.740278	-91.750833	223	285	4/22/2021	85.9	138.1	137.98	138.59	136.2	-0.12	0.49	-1.9
Lonoke	01N07W04BBB1	124SPRT	34.746531	-91.768969	224	280	4/19/2021	78.85	146.15	145.6			-0.55		
Lonoke	01N07W17CCC1	124SPRT	34.702169	-91.788961	228	240	4/19/2021	84.12	143.88	143.05			-0.83		
Lonoke	01S08W02DBD1	124SPRT	34.648333	-91.833056	210	450	4/21/2021	99.68	110.32	106.56	99.4	108.41	-3.76	-10.92	-1.91
Lonoke	02N07W06ACD1	124SPRT	34.827778	-91.789167	241	243	4/21/2021	114.9	127.1	129.94	139.42	124.51	2.84	12.32	-2.59
Lonoke	02N07W09AAA1	124SPRT	34.818450	-91.750083	232	568	4/16/2021	126.74	105.26	105.19	104.78	102.77	-0.07	-0.48	-2.49
Lonoke	02N07W22DBA1	124SPRT	34.780833	-91.740278	227	250	5/4/2021	84.92	142.08	141.94	140.83	135.45	-0.14	-1.25	-6.63
Lonoke	02N07W23BAA1	124SPRT	34.769167	-90.722778	236	276	4/16/2021	77.89	157.11	156.57			-0.54		-1.6
Lonoke	02N07W24DAD1	124SPRT	34.783889	-91.696944	231	321	5/4/2021	78.46	152.54		150.94				-8.25
Lonoke	02N07W32DD1	124SPRT	34.746667	-91.771667	226	277	4/22/2021	77.01	147.99	148.22	147.64	139.74	0.23	-0.35	
Lonoke	02N08W28BC2	124SPRT	34.772189	-91.878231	233	182	5/4/2021	108.24	124.76	126.07			1.31		
Lonoke	02S08W16BDA1	124SPRT	34.457500	-91.875833	216	542	5/3/2021	96.73	119.27	118.7	124.88	126.4	-0.57	5.61	7.13
Lonoke	02S09W158BB2	124SPRT	34.546111	-91.973056	226	401	5/3/2021	155	72		68.53			-3.47	
Lonoke	03N07W23CCC1	12405MP	34.862500	-91.729722	228	250	4/21/2021	132.34	95.66			92.29			-3.37
Lonoke	03N08W22DAD1	12405MP	34.868100	-91.839894	223	319	5/4/2021	134.97	100.03	103.48	101.02	98.99	3.45	0.99	-1.04
Lonoke	03N08W22DAD2	12405MP	34.868056	-91.840000	233	310	4/15/2021	131.65	103.35	100.67	101.5	99.66	-2.68	-1.85	-3.69
Lonoke	03N08W22DAD3	12405MP	34.867778	-91.840000			4/15/2021	132.48	102.52	102.08	101.4		-0.44	-1.12	
											No. Wells in Decline:		10	7	10
											Total Wells:		14	11	11
											Average Change:		-0.13	0.00	-2.39
Miller	19S27W10BBA1	124SPRT	33.121944	-93.895556	320		4/12/2021	308.89	14.11			17.17			3.06
Monroe	01N01W15DBC2	124SPRT	34.694167	-91.095000	185		4/22/2021	122.43	62.57	62.09		62	-0.48		-0.57
Monroe	01N03W14CCB1	124SPRT	34.695278	-91.300278	172	595	4/15/2021	109.11	63.89	62.63		74.3	-1.26		10.41
Monroe	03N02W26DAB1	124SPRT	34.845278	-91.173889	192	400	4/21/2021	144.43	50.57	49.44		49.54	-1.13		-1.03
Monroe	04N02W28DD4	124SPRT	34.926389	-91.205833	192	408	4/12/2021	159.17	31.83	30.96		32.73	-0.87		0.9
Monroe	04N02W30BAD1	124SPRT	34.938056	-91.253889	182	285	4/12/2021	156.35	24.65	8.21		20.98	-16.44		-3.67
											No. Wells in Decline:		5	0	3
											Total Wells:		5	0	5
											Average Change:		-4.04		1.21

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Surface Alt	Well Depth	2021 Meas. Date	2021 WLA (ftmsl)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change ('21 to '20)	5 Year Change ('21 to '16)	10 Year Change ('21 to '11)
Quachita	11S17W14CAC1	124SPRT	33.775278	-92.824167	146	71	4/30/2021	129.32	15.68			19.9			4.22
Quachita	11S17W36CCA1	124SPRT	33.728333	-92.809722	133	40	4/30/2021	128.9	4.1			7.94		0.42	3.84
Quachita	11S18W20AAA1	124SPRT	33.770556	-92.966389	301	55.8	3/26/2021	289.43	43.57			42.86		-0.71	-0.84
Quachita	12S15W09BBA1	124SPRT	33.705000	-92.653889	213	290	3/18/2021	164.33	48.67			50.82		2.15	
Quachita	12S16W25BDA1	124SPRT	33.650677	-92.714444	137	182	3/24/2021	99.9	38.1						
Quachita	12S16W25BDC1	124SPRT	33.658056	-92.702778	140		4/30/2021	116.81	23.19			27.96		4.77	12.06
Quachita	12S16W26ABD1	124SPRT	33.662500	-92.717778	134	250	3/24/2021	119.81	17.19			17.57		0.38	15.04
Quachita	12S18W19COC1	124SPRT	33.670278	-92.997500	235	155	3/26/2021	208.1	26.9			30.7		3.8	5.68
Quachita	12S19W35BD1	124SPRT	33.650278	-93.029167	350	175	3/26/2021	189.35	160.65			155.95		-4.7	-3.96
Quachita	13S16W28ADD1	124SPRT	33.571111	-92.747222	106	190	3/18/2021	94.52	11.48			22.05		10.57	15.92
Quachita	13S18W06BBA1	124SPRT	33.638611	-93.001667	283		3/26/2021	167.77	113.23			113.39		0.16	1.37
Quachita	13S18W31BD1	124SPRT	33.561944	-92.998889	242	228	4/30/2021	162.16	68.84			68.11		-0.73	29.99
Quachita	14S16W32BD1	124SPRT	33.470833	-92.777500	231	69	3/18/2021	230.71	8.29			12.46		4.17	29.99
Quachita	14S17W03CBA1	124SPRT	33.542778	-92.848611	140		4/16/2021	127.81	10.19			12.32		2.13	6.51
Quachita	14S17W05CAD1	124SPRT	33.543889	-92.881667	157	233	4/8/2021	125.34	33.66	34.16		34.34		0.68	4.36
Quachita	14S17W19DBB1	124SPRT	33.500611	-92.895956	259	99	4/16/2021	250.43	8.57			9.92		29.7	21.13
Quachita	14S17W32CAD1	124SPRT	33.467778	-92.880833	220	301	3/24/2021	148.68	71.32			74.57		79.04	7.72
Quachita	14S18W27BDC1	124SPRT	33.488056	-92.950833	309	55	4/12/2021	256.88	40.12			42.49		2.37	
Quachita	14S19W29ABB1	124SPRT	33.495000	-93.086944	280	250	4/14/2021	194.7	85.3			88.35		3.05	3.08
Quachita	15S15W32DBB2	124SPRT	33.375833	-92.674167	119	500	3/12/2021	-15.78	136.78			150.22		159.17	22.39
Quachita	15S16W23DAC1	124SPRT	33.404167	-92.720278	170	493	3/18/2021	60.9	109.1			115.22		6.12	17.11
Quachita	15S18W36ADD1	124SPRT	33.386111	-92.910000	160	220	4/12/2021	76.22	83.78			88.43		91.14	7.36
Quachita	15S19W10DCC1	124SPRT	33.438333	-93.055000	210	375	4/12/2021	143.73	65.27			69.83			4.56
Quachita	15S19W21CD2	124SPRT	33.410278	-93.075278	280	300	5/3/2021	83.82	185.18	186.45		187.4		2.22	2.82
Quachita	15S16W30DBD1	124SPRT	33.392222	-92.791389	137		3/18/2021	34.46	102.54			183.28		80.74	
												No. Wells in Decline:	0	3	2
												Total Wells:	2	22	20
												Average Change:	0.88	6.38	9.02
Phillips	01S02E32DDC1	124SPRT	34.556667	-90.915278	211	689	4/22/2021	127.51	83.49			76.98		-6.51	-5.68
Poinsett	10N01E12BDC1	12405MP	35.507222	-90.941389	234	285	4/14/2021	110.33	123.67	110.65		108.87		104.4	-19.27
Poinsett	10N03E23CAC1	12405MP	35.480278	-90.742222	258	194	4/29/2021	138.36	119.64	119.43				115.27	-4.37
Poinsett	10N03E05AC1	124SPRT	35.531356	-90.792958	241	200	5/5/2021	131.34	109.66	109.09				-0.57	
Poinsett	11N02E11BDC1	12405MP	35.601389	-90.851944	244		5/5/2021	119.27	124.73	122.8		120.58		-1.93	-4.15
Poinsett	11N02E11CA1 A-4	124SPRT	35.593831	-90.849189	243	223	4/12/2021	118.84	124.16	122.5				-1.66	
Poinsett	11N02E16CC1	12405MP	35.580000	-90.889167	243	313	5/1/2021	117.24	122.76	121.86		118.63		113.65	-9.11
Poinsett	11N03E25BDD1 W4	12405MP	35.557817	-90.723050	273	228	4/13/2021	144.59	128.41	128.82				0.41	
Poinsett	11N03E29DB1	124SPRT	35.557197	-90.787156	243	240	5/5/2021	129.02	113.98	113.16				-0.82	
Poinsett	12N03E12BBB1	12405MP	35.693611	-90.727778	246	240	4/13/2021	142.04	105.96	105.2				-0.76	
Poinsett	12N03E35BCC1	12405MP	35.628889	-90.748611	244	240	4/13/2021	129.81	114.19					102.98	-11.21
												No. Wells in Decline:	8	3	4
												Total Wells:	9	3	4
												Average Change:	-2.16	-7.69	-10.99

Sparta Aquifer
Hydrologic Data 2021, 2020, 2016, 2011

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Surface Alt	Well Depth	2021 Meas. Date	2021 WLA (fmsl)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change ('21 to '20)	5 Year Change ('21 to '16)	10 Year Change ('21 to '11)
Prairie	01N05W19CDC1	124SPRT	34.686944	-91.584444	212	522	4/21/2021	75.15	134.85	138.44	154.72	146.47	3.59	19.87	11.62
Prairie	01N06W02ABB1	124SPRT	34.744444	-91.616111	223	431	4/14/2021	104.87	118.15	113.38			-4.77		
Prairie	01N06W34CBB1	124SPRT	34.661944	-91.645833	226	500	4/21/2021	76.96	150.04	152.82	160.1	162.87	2.78	10.06	12.83
Prairie	01S05W068CB1	124SPRT	34.650833	-91.591944	220	616	5/4/2021	75.92	145.08	146.92	162.4	157.39	1.84	17.32	12.31
Prairie	01S05W20ABB1	124SPRT	34.610833	-91.564444	220	632	4/15/2021	58.39	161.61	158.08	158.62		-3.53		-2.99
Prairie	01S06W01BDD2	124SPRT	34.649722	-91.603611	226	609	4/15/2021	73.58	152.42	153.09	162.51	162.73	0.67	10.09	10.31
Prairie	01S06W11DBD1	124SPRT	34.630275	-91.615067	226	618	4/15/2021	68.1	161.9	159.88	169.52	177.72	-2.02	7.62	15.82
Prairie	01S06W12BAB2	124SPRT	34.640556	-91.640556	228		5/4/2021	74.28	153.72	155.34	165.69		1.62	11.97	
Prairie	02N04W19ACB1	124SPRT	34.780308	-91.467100	211	482	4/21/2021	160.45	48.55			60.82			12.27
Prairie	02N06W04DBB1	124SPRT	34.824444	-91.647778	235		4/21/2021	126.54	107.46	107.57	107.74	106.05	0.11	0.28	-1.41
Prairie	02N06W19AAB	124SPRT	34.788333	-91.680278	236	260	5/4/2021	81.86	156.14	156.45	156.12	152.69	0.31	-0.02	-3.45
Prairie	02N06W20BCB1	124SPRT	34.785158	-91.675825	236	330	4/22/2021	85.16	152.84	159.95	159.76	149.24	7.11	6.92	-3.6
Prairie	02N06W22BDD1	124SPRT	34.781389	-91.633333	233	451	4/22/2021	107.38	127.62	124.41	125.88	130.44	-3.21	-1.74	2.82
Prairie	02N06W24CAA2	124SPRT	34.780833	-91.597500	233		3/4/2021	113.31	117.69	116.7	142.71	103.58	-0.99	25.02	-14.11
Prairie	03N05W03ADA2	124SPRT	34.914167	-91.511667	205	178	4/22/2021	150.3	55.7	55.82	61.06	61.08	0.12	5.36	5.38
											No. Wells in Decline:			4	3
											Total Wells:			13	13
											Average Change:			0.55	8.40
Union	16S15W31ACC1	124SPRT	33.288056	-92.691111	168	630	3/12/2021	-42.09	210.09	214	241.74	255.07	3.91	31.65	44.98
Union	16S16W02ABC1	124SPRT	33.368056	-92.725000	116	552	4/7/2021	-16.03	130.03	132.9	145.05	158.27	2.87	15.02	28.24
Union	16S16W03CBC1	124SPRT	33.360556	-92.751944	200	560	3/12/2021	10.79	191.21		205.31			14.1	
Union	17S14W10DCC1	124SPRT	33.248889	-92.534167	180	300	3/12/2021	96.92	85.08	85.24	89.8	93.78	0.16	4.72	8.7
Union	17S14W15ABA1	124SPRT	33.247222	-92.533611	180	250	3/12/2021	83.55	85.45	85.5	89.87	93.74	0.05	4.42	8.29
Union	17S14W22BAB1	124SPRT	33.231667	-92.540000	201	607.2	4/6/2021	-50.32	250.32	245.55	272.09	276.92	-4.77	21.77	26.6
Union	17S15W06BAA1	124SPRT	33.279167	-92.692500	168	630	3/12/2021	-18.61	188.61	192.89	210.62	223.05	4.28	22.01	34.44
Union	17S15W08CDD1	124SPRT	33.251389	-92.674167	174.92	667	3/12/2021	-54.02	228.94	230.98	254.4	270.36	2.04	25.46	41.42
Union	17S15W18DBB1	124SPRT	33.243889	-92.691389	182.93	540	4/22/2021	-46.77	229.7	240.45	272.3	286.84	10.75	42.6	57.14
Union	17S15W28DBA1	124SPRT	33.212778	-92.652500	235	668	4/6/2021	-47.95	278.95	287.29	316.09	327.77	8.34	37.14	48.82
Union	17S15W28DCC1	124SPRT	33.210278	-92.655833	285	754	3/12/2021	-63.03	337.03	337.8	397.79		0.77	60.76	
Union	17S15W31DCB1	124SPRT	33.196958	-92.690836	258		4/22/2021	161.76	96.24	97.32			1.08		
Union	17S15W33ABB1	124SPRT	33.206389	-92.656944	267		3/12/2021	-62.3	330	329.21	354.49		-0.79	24.49	
Union	17S16W01BAA1	124SPRT	33.280278	-92.708889	157		3/12/2021	-58.79	215.79	217.72	250.97	262.65	1.93	35.18	46.86
Union	17S17W25DBA2	124SPRT	33.215556	-92.810278	250	648	4/22/2021	-30.51	280.51	285.73	309.52	320.58	5.22	29.01	40.07
Union	18S12W33CBC1	124SPRT	33.105000	-92.353611	112		4/8/2021	-7.82	117.82	113.66	113.04		-4.16	-4.78	
Union	18S14W06CCD1	124SPRT	33.177778	-92.591944	225	783	3/12/2021	-40.15	273.15	280.17	296.92		7.02	23.77	
Union	18S15W03DAB2 Welcome Cen		33.185278	-92.633889	240		4/6/2021	-48.82	288.82	295.28			6.46		
Union	18S15W22DCC1	124SPRT	33.135410	-92.636266	188		4/29/2021	59.93	128.07						
Union	18S17W22BDD1	124SPRT	33.148611	-92.848889	285	705	4/7/2021	-14.47	297.47	300.65	317.39	327.29	3.18	19.92	29.82
Union	19S12W13AAA1	124SPRT	33.069722	-92.287778	180	339	4/23/2021	25.24	165.76	163.06	159.85	159.66	-2.7	-5.91	-6.1
Union	19S15W01CCA1	124SPRT	33.092778	-92.612500	182	318	3/12/2021	158.37	31.63	30.98	31.54	14.34	-0.65	-0.09	-17.29
Union	19S16W35DDC1	124SPRT	33.019167	-92.723611	175	601	3/12/2021	-34.45	207.45	208.25	211.01		0.8	3.56	
											No. Wells in Decline:			5	3
											Total Wells:			21	20
											Average Change:			2.18	20.24

Sparta Aquifer
Hydrologic Data 2021, 2020, 2016, 2011

County	Local Well ID Number	Aquifer Code	Latitude	Longitude	Surface Alt	Well Depth	2021 Meas. Date	2021 WLA (fmsl)	2021 DTW (ft bgs)	2020 DTW (ft bgs)	2016 DTW (ft bgs)	2011 DTW (ft bgs)	1 Year Change ('21 to '20)	5 Year Change ('21 to '16)	10 Year Change ('21 to '11)
Woodruff	06N01W13ABA1	12405MP	35.147500	-91.048056	212	270	5/6/2021	136.64	75.36		74.7	73.51		-0.66	-1.85
Woodruff	06N01W13ADC1	12405MP	35.140833	-91.046111	212	270	5/6/2021	139.7	74.3		75.21	70.11		0.91	-4.19
Woodruff	07N01W12BCB1	12405MP	35.244722	-91.057222	222	180	4/22/2021	159.15	62.85	72.02	70.89	68.43	9.17	8.04	5.58
Woodruff	08N01W12CDA1	12405MP	35.326111	-91.052778	225	190	5/5/2021	145.75	79.25	77.64	78.31	77.89	-1.61	-0.94	-1.36
											No. Wells in Decline:		1		
											Total Wells:		2	4	4
											Average Change:		3.78	1.84	-0.45

Water Level Measurements, Spring 2021 : 242						1 Year Change ('20 to '21)	5 Year Change ('16 to '21)	10 Year Change ('11 to '21)
Total Wells in Decline:						64	39	51
Total Wells:						139	155	182
Percent of Total Wells in Decline:						46.04%	25.16%	28.02%
Total Average Change:						0.58	6.55	6.59



**NATURAL RESOURCES
DIVISION**

agriculture.arkansas.gov

Arkansas Department of Agriculture
Natural Resources Division
10421 West Markham Street Little Rock, AR 72205
(501) 682-3904 | agriculture.arkansas.gov