

Arkansas Groundwater Protection and Management Report for 2016



**To manage and protect groundwater
resources in Arkansas for human,
environmental, and economic benefits.**

STATE OF ARKANSAS

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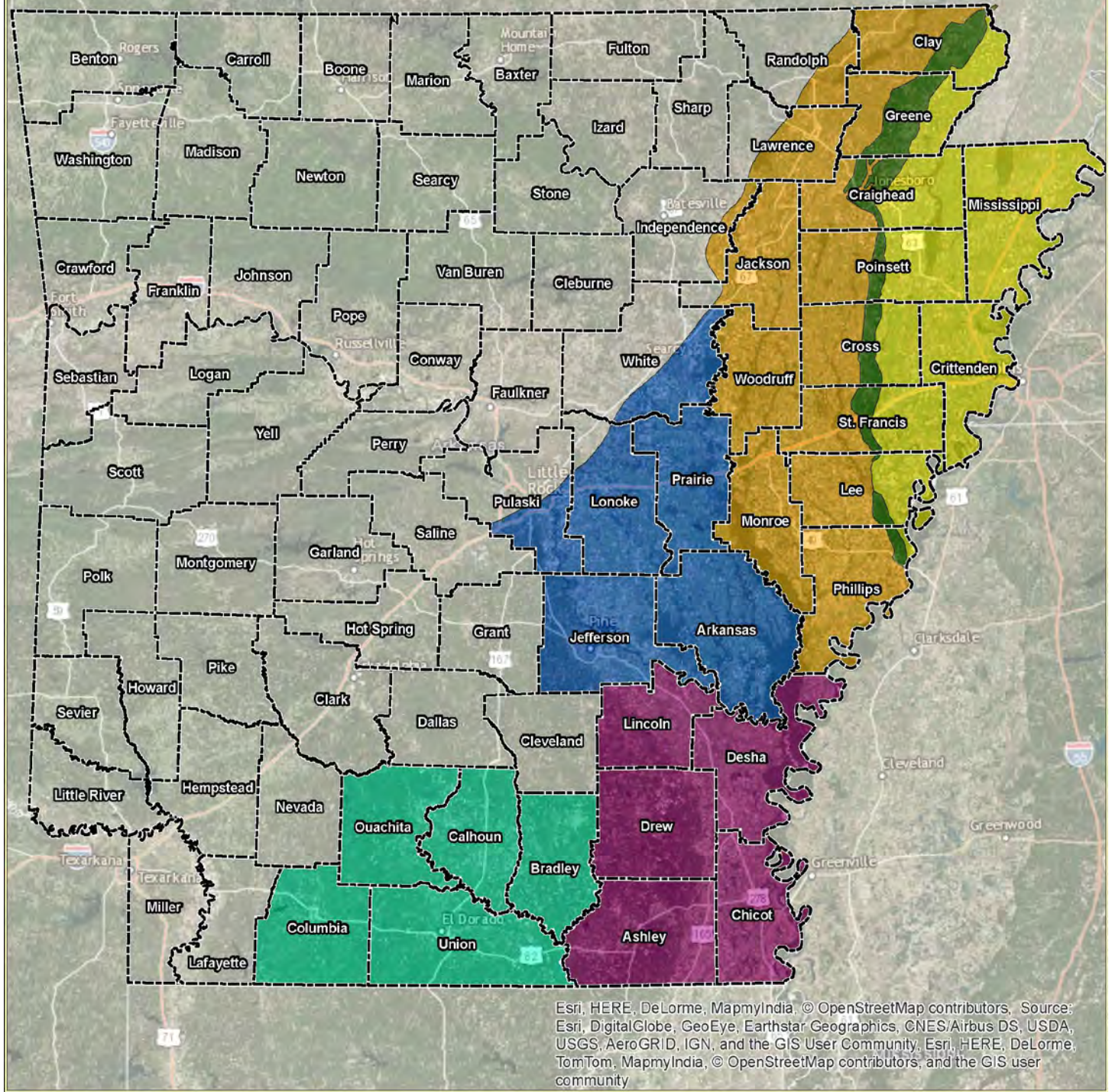
ABSTRACT

The Arkansas Groundwater Protection and Management Report is produced annually by the Arkansas Natural Resources Commission (ANRC) pursuant to the Arkansas Ground Water 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 ANRC during the year 2016, including water-level monitoring and studies of water use trends in the state. This report covers water-level data from the spring of 2015 to the spring of 2016. This monitoring period consisted of above average precipitation with an average of 64.03 inches of rainfall, and as a result, short-term water-level comparisons for the state's aquifers showed more increases due to the decrease in need of pumping the aquifer. The general trend in Arkansas's long-term water-level change is that the groundwater levels are declining in response to continued withdrawals at a rate which is not sustainable. Based on 2015 water use data, only approximately 44.2 percent 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 is sustainable. At these pumping rates, water-level declines and the adverse impacts on the state's ground-water system will continue to be observed. As the competition for ground water becomes more intense, the challenge before Arkansas' water resources users, scientists, and conservationists, is to continue to work toward conservation, education, and the conjunctive use of groundwater and excess surface water in a manner that brings about the wise and sustainable use of our valuable water resources.

INTRODUCTION

This annual groundwater 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.

Arkansas Ground Water Study Areas



Legend

- Boeuf - Tensas
- Cache
- Grand Prairie
- South Arkansas
- St. Francis
- Crowley's Ridge
- County Boundaries



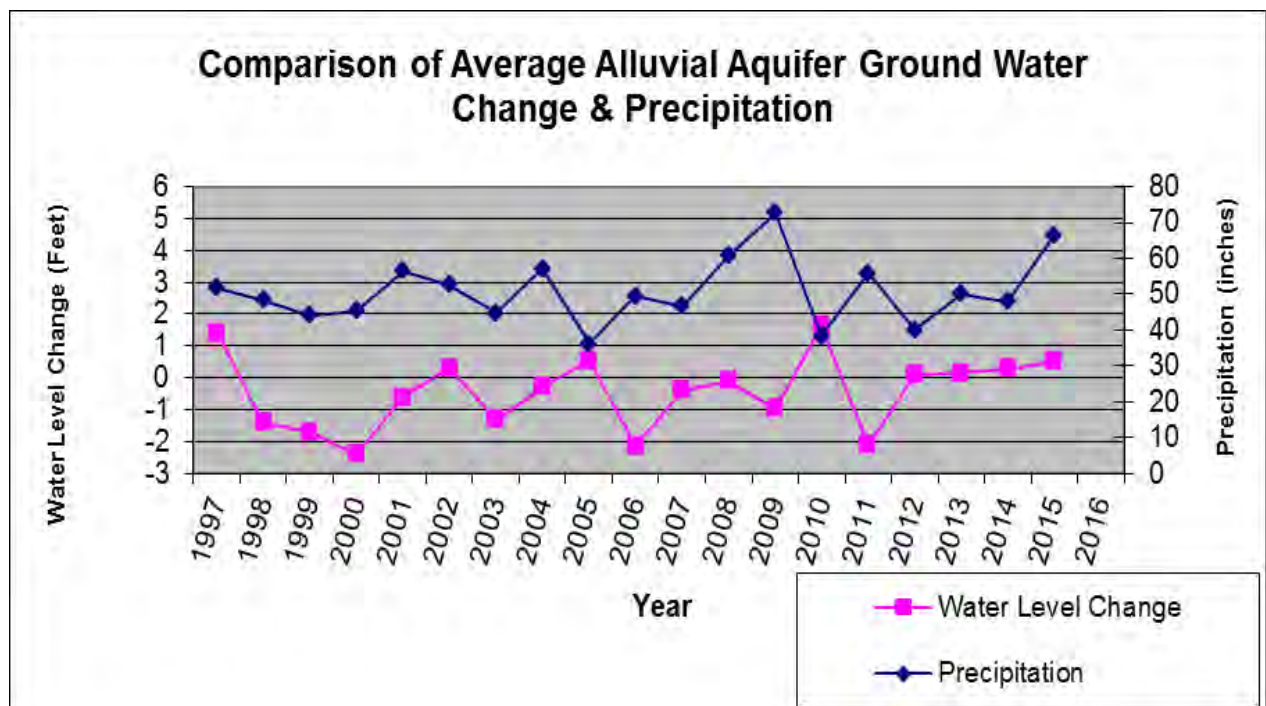
0 12.5 25 50 75 100 Miles



Fig. 1

This report is built on a strong cooperative program with other appropriate state, federal, and local water resources agencies. Each spring approximately 600 wells are monitored in the alluvial aquifer resulting in the largest number of water-level measurements for any one aquifer in the state. This number will vary from year to year depending on the resources available. There are approximately 200-300 wells that are monitored each year for water levels in the Sparta/Memphis aquifer. A monitoring schedule has been established to obtain data from the alluvial aquifer and the Sparta/Memphis aquifer on an annual basis. These measurements are taken each spring so as to be the least affected by seasonal pumping for irrigation. The drawdown that results from seasonal pumping is also determined by the NRCS and ANRC taking measurements of the alluvial aquifer in both the spring and fall. The USGS also 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 5 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.

The amount of rainfall is taken into account each monitoring period to observe the change of water levels during times of drought or excess rainfall. The monitoring period which covers the calendar year of 2016 for static water level change in the alluvial aquifer was completed in the spring. The data for 2015-2016 indicates a decline in 133 of 227 wells, with an aquifer-wide average change of +0.52 feet in water levels during this time.



There are areas of the state experiencing ground-water withdrawals of such magnitude that demand on the aquifer exceeds the sustainable yield, resulting in consistently falling ground-water levels and the development of cones of depression. These areas occur in both the alluvial and Sparta/Memphis 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 west of Crowley's Ridge.

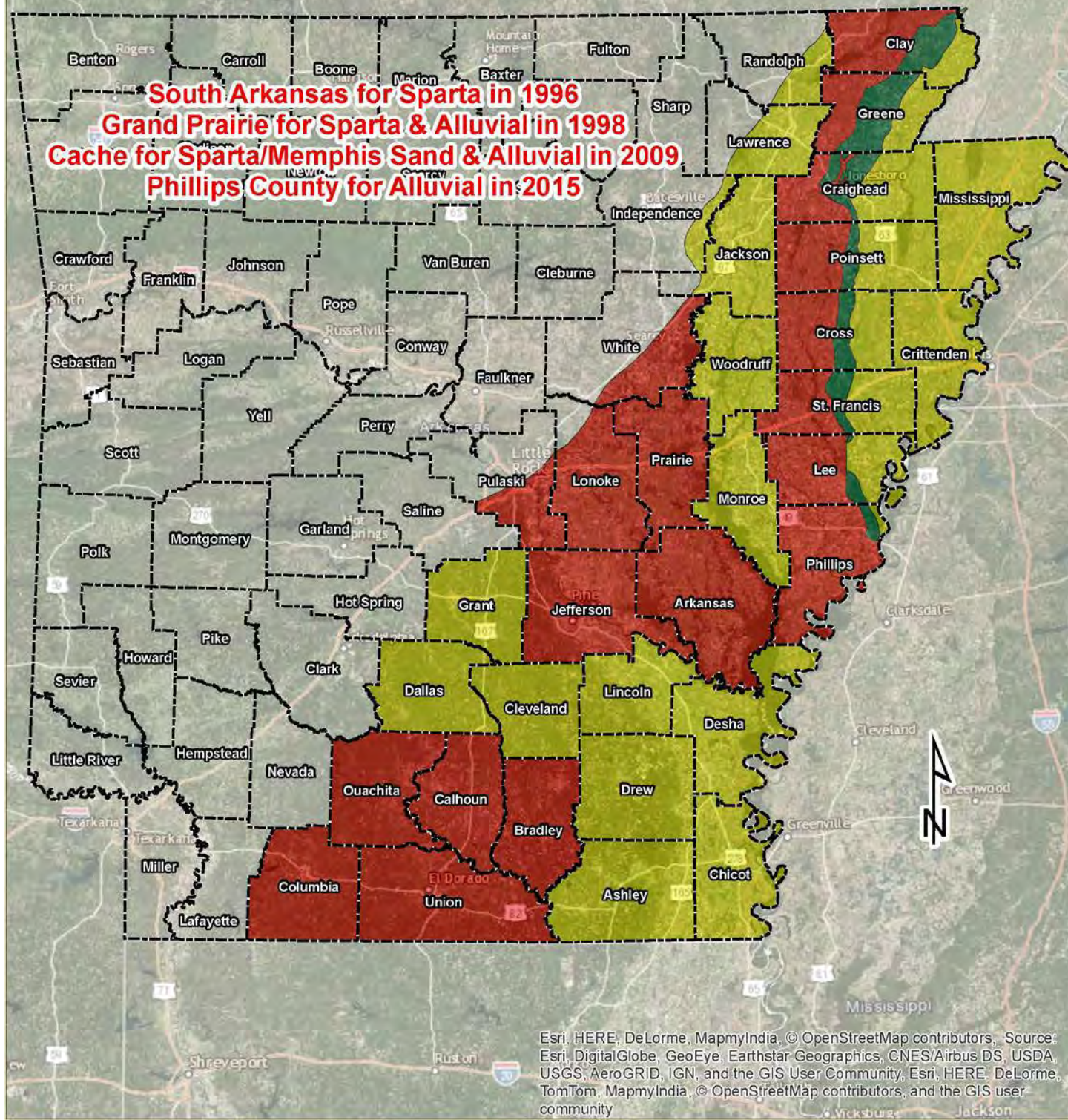
Water quality data collected by the USGS shows wells with an increased specific conductance ($\geq 1,000$ microsiemens/cm) in the alluvial aquifer in Arkansas, Cross, Desha, Greene, Lincoln, Prairie and Chicot counties. (Schrader, T.P., 2010) An increase in the level of specific conductance indicates an increased level of dissolved solids in the groundwater. In certain areas these dissolved solids are chlorides leading to the groundwater becoming unsuitable for particular irrigation purposes.

WATER POLICY

Water-resources policy in Arkansas was established in the Arkansas Water Plan in 1991, in which the ANRC 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 will have to consider regulatory alternatives to preserve the aquifers at a sustainable level. All water-use strategies must consider the wise use of our State's water resources while protecting the sustainable yield of the State's aquifers. Stream flow needs of the State's surface-water flow system must also be taken into account if our water resources are to be protected for future generations to utilize and enjoy. The ANRC advocates that the State move toward a sustainable yield pumping strategy through conservation, and utilizing Critical Groundwater Area designation wherever needed to focus resources. Designation as a Critical Groundwater Area brings about enhanced tax credits for conservation activities, educational programs, and sets the area as a priority for possible federal programs and funding. This is a non-regulatory designation. Regulation cannot be initiated without a new process involving legal proceedings, additional notice, and public hearings. Designation as a Critical Groundwater Area allows for programs that include tax incentives for the instillation of water conservation practices.

Critical Groundwater Areas

South Arkansas for Sparta in 1996
Grand Prairie for Sparta & Alluvial in 1998
Cache for Sparta/Memphis Sand & Alluvial in 2009
Phillips County for Alluvial in 2015



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Legend

- Current Critical Areas
- Current Study Areas
- Crowley's Ridge
- County Boundaries

0 10 20 40 60 80 Miles



Fig. 2

Hydrogeology and Statewide Water-Level Trends

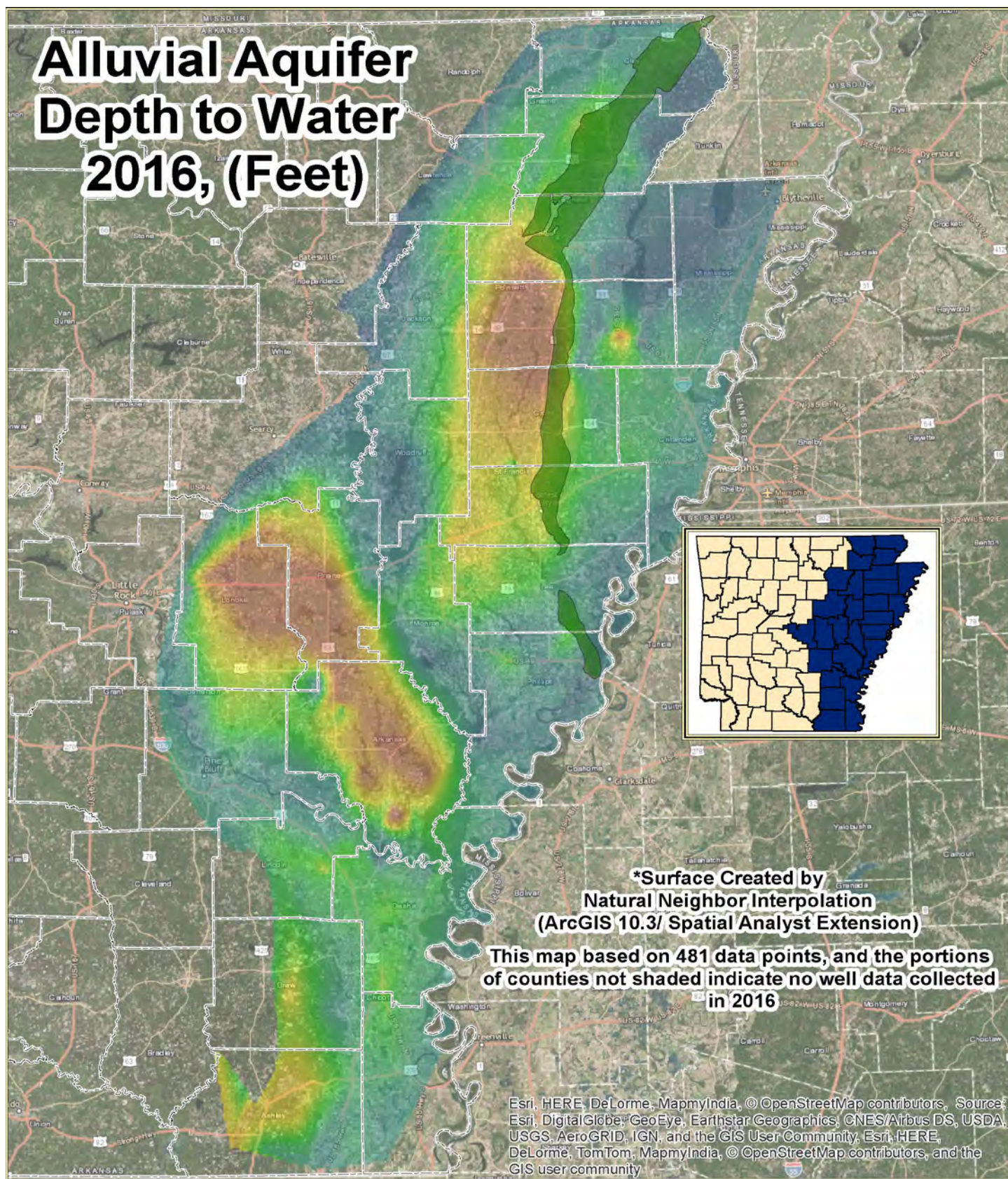
Alluvial Aquifer

The Mississippi River Valley alluvial aquifer extends north from Arkansas into Missouri, south into Louisiana, and under the Mississippi River into Tennessee and Mississippi. For the purpose of this report, the term alluvial aquifer refers to the portion of the aquifer inside the state boundaries of Arkansas. This area generally is bounded by 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 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 generally is overlain by the Mississippi River Confining Unit, which is composed of 0 to 50 feet of fine-grained sand, silt, and clay. The alluvial aquifer is underlain by confining units composed of aquifers and confining units of the Mississippi Embayment, which are less permeable than the alluvial aquifer. The alluvial aquifer is connected hydraulically with several rivers and drainage areas. (Ackerman, 1996)

Due mostly to the use of groundwater for agriculture in the region, the aquifer has been pumped in ever-increasing amounts since records were kept from the early 1900's. In 2015 Arkansas had groundwater withdrawals estimated to be 8264.60 million gallons per day (Mgal/d). That is approximately a 552% increase from the amount used in 1965. (Holland, T.W. 2005)

In 2015 there was 7636.08 Mgal/d pumped from the alluvial aquifer. The estimated sustainable yield for the alluvial aquifer is 3374.33 Mgal/d, leaving an unmet demand of 4261.75 Mgal/d (55.8%). Ground water furnishes 63% of the state's total consumption of water, and 95% of the ground water used comes from the alluvial aquifer. Agriculture accounts for 98% of the total water that is pumped from the alluvial aquifer. Figure 3 is an illustration of the 2016 depth to water. Increased pumping from this aquifer has resulted in decreased outflow to rivers, increased inflow from rivers, increased inflow from the overlying confining unit, regional changes in ground-water flow, regional water level declines, reduction of aquifer storage, and decreases in well yields.

Alluvial Aquifer Depth to Water 2016, (Feet)



Legend

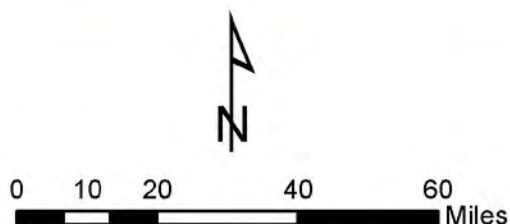


Fig. 3

Percent of the Mississippi River Alluvial Aquifer Saturated at Specific Data Collection Sites, Spring 2016

Based on USGS MERAS model aquifer thickness, and Spring 2016 water level measurements.



Legend

- 10 Foot Contour
- 0 to 10%
- 10 to 20%
- 20 to 30%
- 30 to 40%
- 40 to 50%
- 50 to 60%
- 60 to 70%
- 70 to 80%
- 80 to 90%
- 90 to 100%

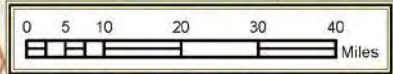
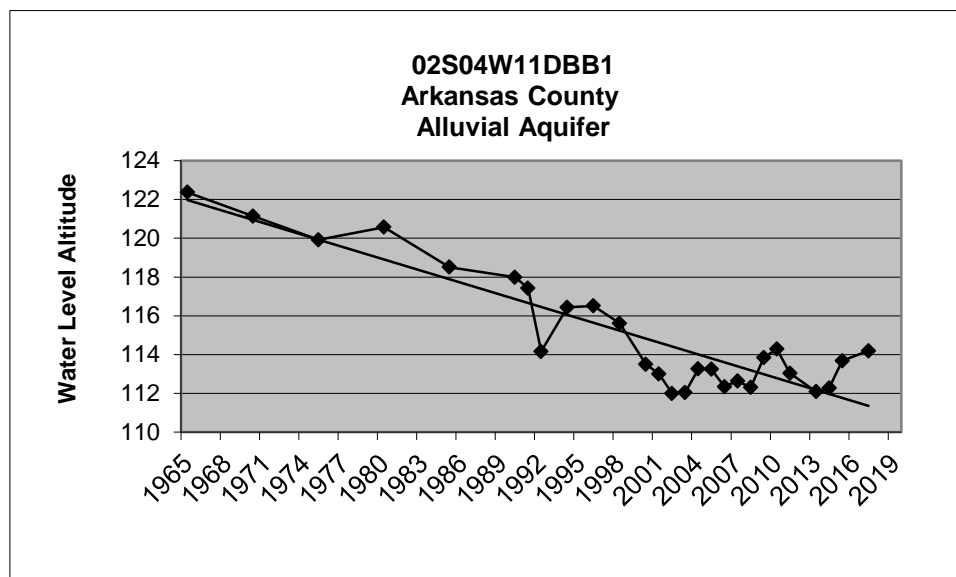


Fig. 4

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

There were 227 alluvial aquifer wells monitored for water-level change in both 2015 and 2016, out of these 133 (58.6%) had a decline in the static water level. The overall aquifer water-level average change was +0.52 ft. The 2015-16 average precipitation for Arkansas from March to March was approximately 64.03 inches, which is above the statewide average of 49.19 inches. Of 308 alluvial aquifer wells monitored in both 2011 and 2016, 173 (56.2%) of these had declining static water levels. Over a 10-year period of time from 2006 to 2016, 250 of 394 wells (63.5%) monitored showed declines in the alluvial aquifer. The average change over the entire aquifer during the 2015-2016 monitoring period was +0.52 feet, the 5-year average change was -0.17 feet, and the 10-year average change was -1.70 feet respectively. There are still significant cones of depression in the alluvial aquifer, especially in the Grand Prairie and in the Cache Study Area west of Crowley's Ridge. (Fig. 3) The data in this year's report shows near stable water levels in all study areas for the one year averages, however declines due to over-use still exist and are apparent in the 10-year averages as well as the period of record. Appendix A is a table of specific water level monitoring data for the alluvial aquifer. The one year water-level change data reflects the higher than normal rainfall during the period of spring 2015 to spring 2016. During such years, ground-water withdrawals are reduced, while recharge is typically greater.

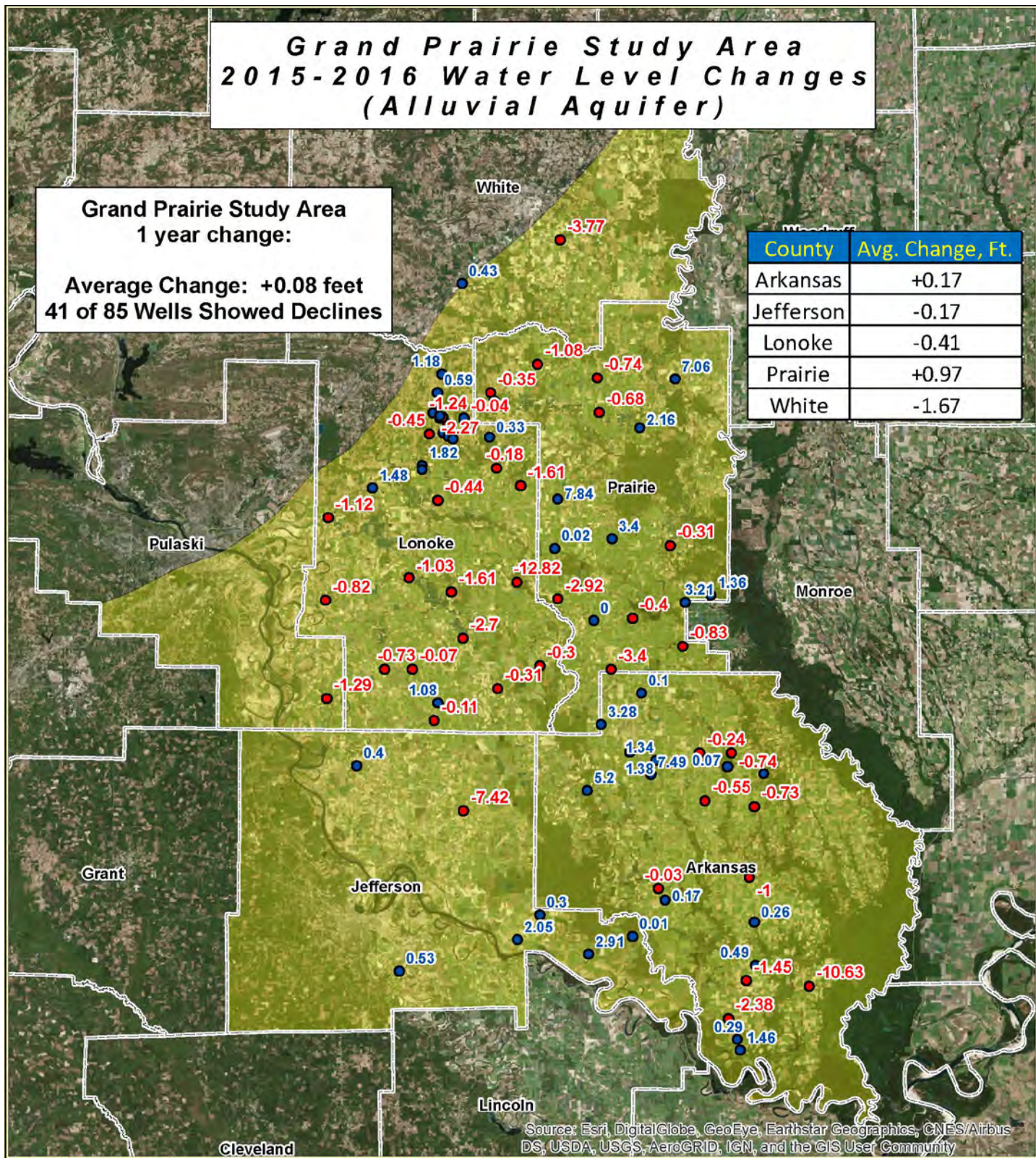


Grand Prairie Study Area 2015-2016 Water Level Changes (Alluvial Aquifer)

Grand Prairie Study Area
1 year change:

Average Change: +0.08 feet
41 of 85 Wells Showed Declines

County	Avg. Change, Ft.
Arkansas	+0.17
Jefferson	-0.17
Lonoke	-0.41
Prairie	+0.97
White	-1.67



Legend

- Wells with No Change or Increases
- Wells with Declines
- Grand Prairie Study Area



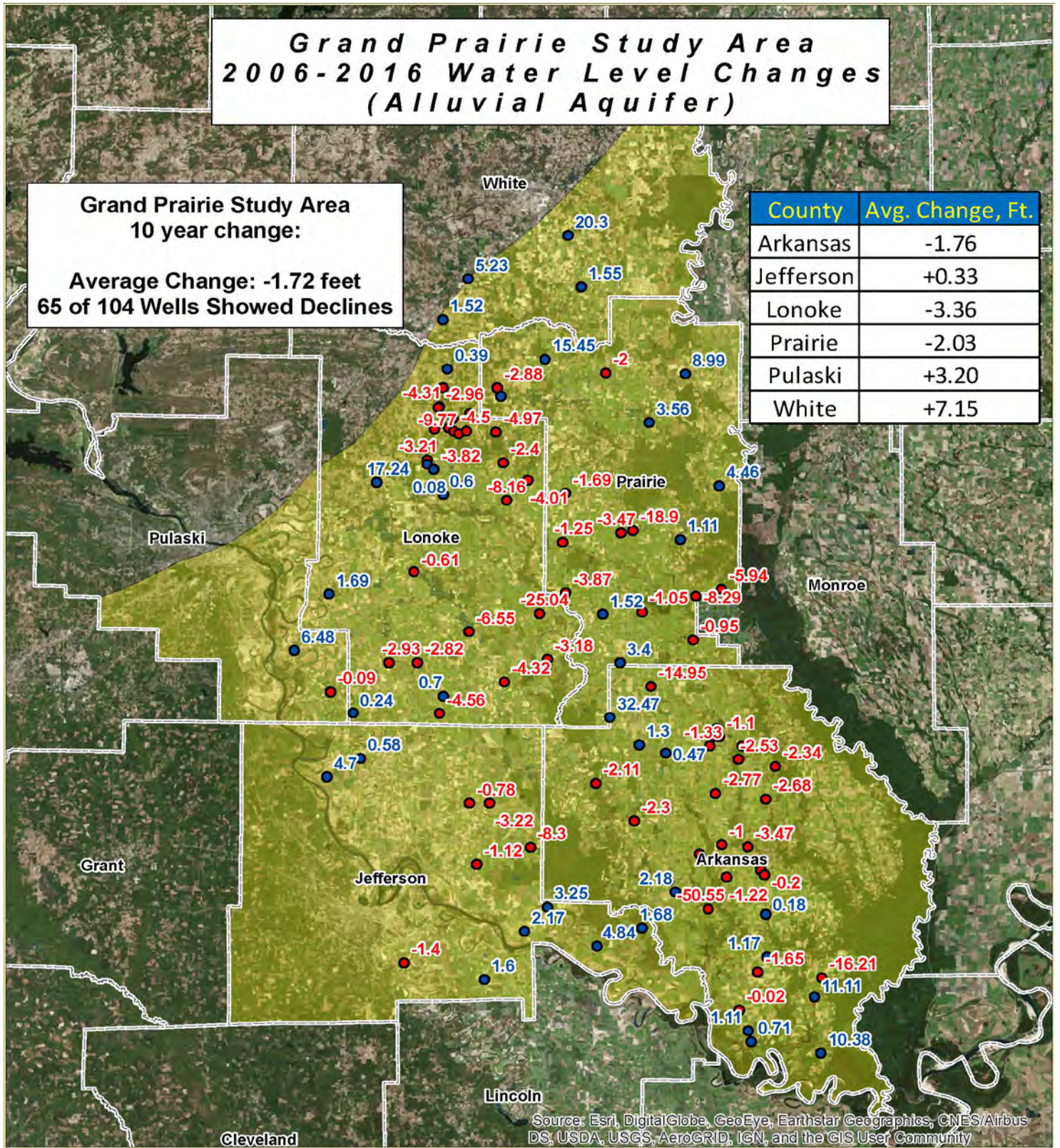
Fig. 5

Grand Prairie Study Area 2006-2016 Water Level Changes (Alluvial Aquifer)

Grand Prairie Study Area
10 year change:

Average Change: -1.72 feet
65 of 104 Wells Showed Declines

County	Avg. Change, Ft.
Arkansas	-1.76
Jefferson	+0.33
Lonoke	-3.36
Prairie	-2.03
Pulaski	+3.20
White	+7.15



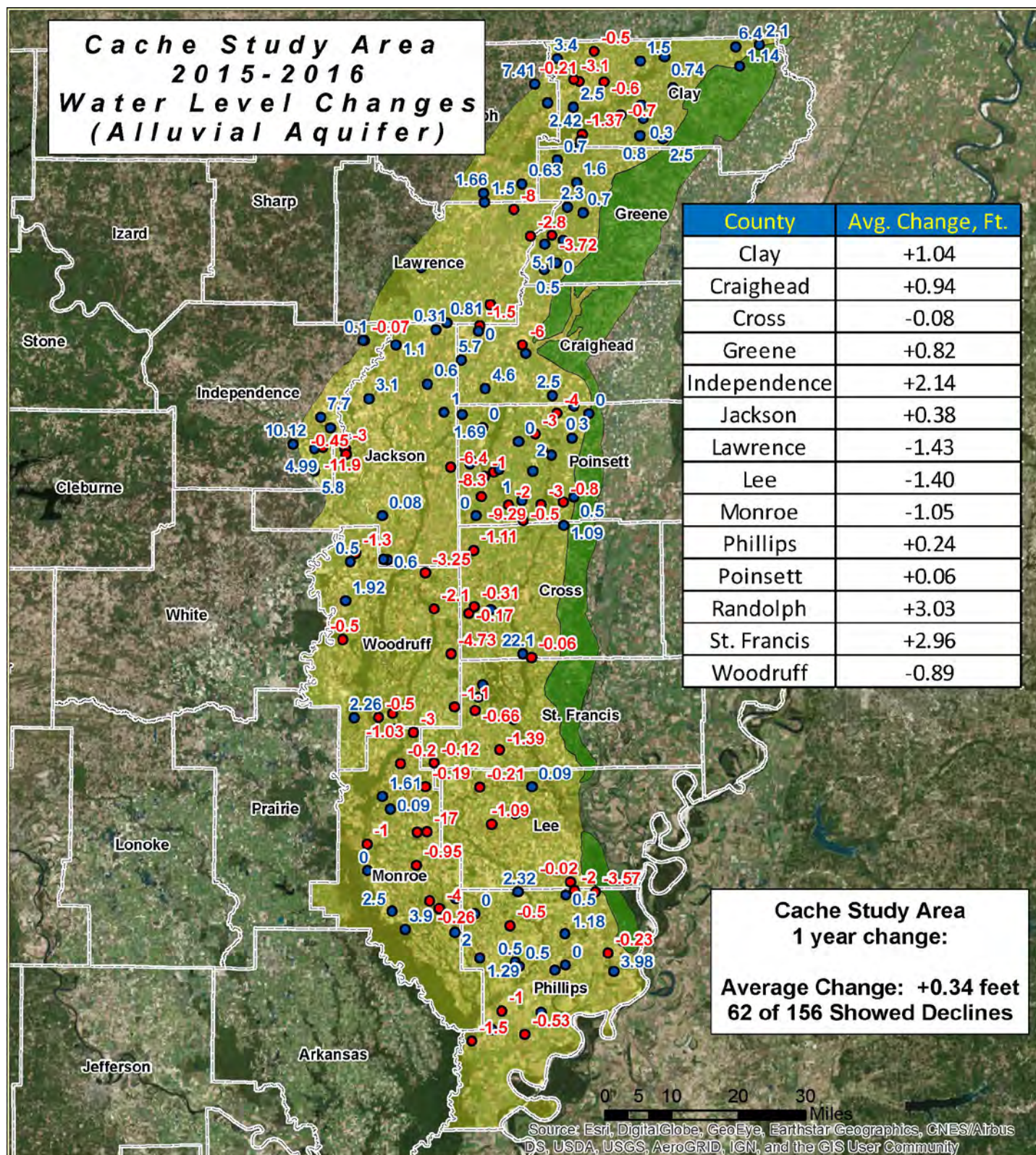
Legend

- Wells with Increases
- Wells with Declines
- Grand Prairie Study Area

0 5 10 20 30 Miles



Fig. 6



Legend

- Wells with No Change or Increases
- Wells with Declines
- Crowleys Ridge
- Cache Study Area

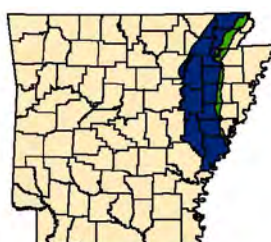
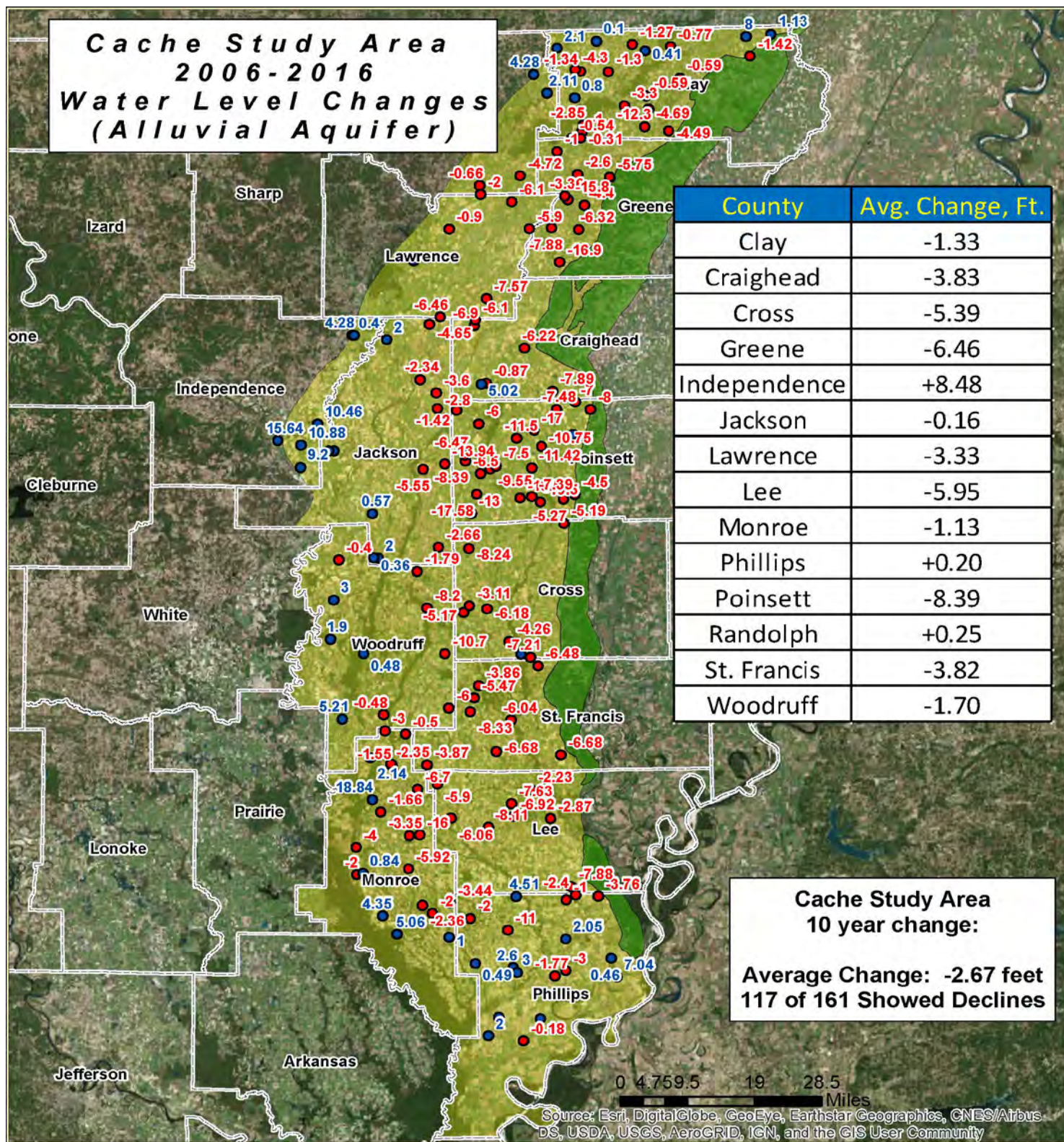


Fig. 7



Legend

- Well with No Change or Increases
- Wells with Declines
- Crowley's Ridge
- Cache Study Area

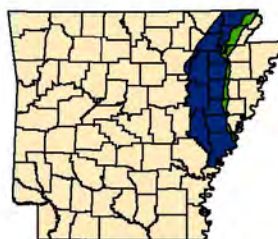


Fig. 8

Boeuf-Tensas Study Area 2015-2016 Water Level Changes (Alluvial Aquifer)

County	Avg. Change, Ft.
Ashley	+0.79
Chicot	+0.49
Desha	+0.21
Drew	-2.91
Lincoln	-2.67

Boeuf-Tensas Study Area 1 Year Change:

Average Change: -0.36 feet
13 of 25 Wells Showed Declines

7 of 25 Wells Had Average Declines
of 1 ft. per Year or Greater

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

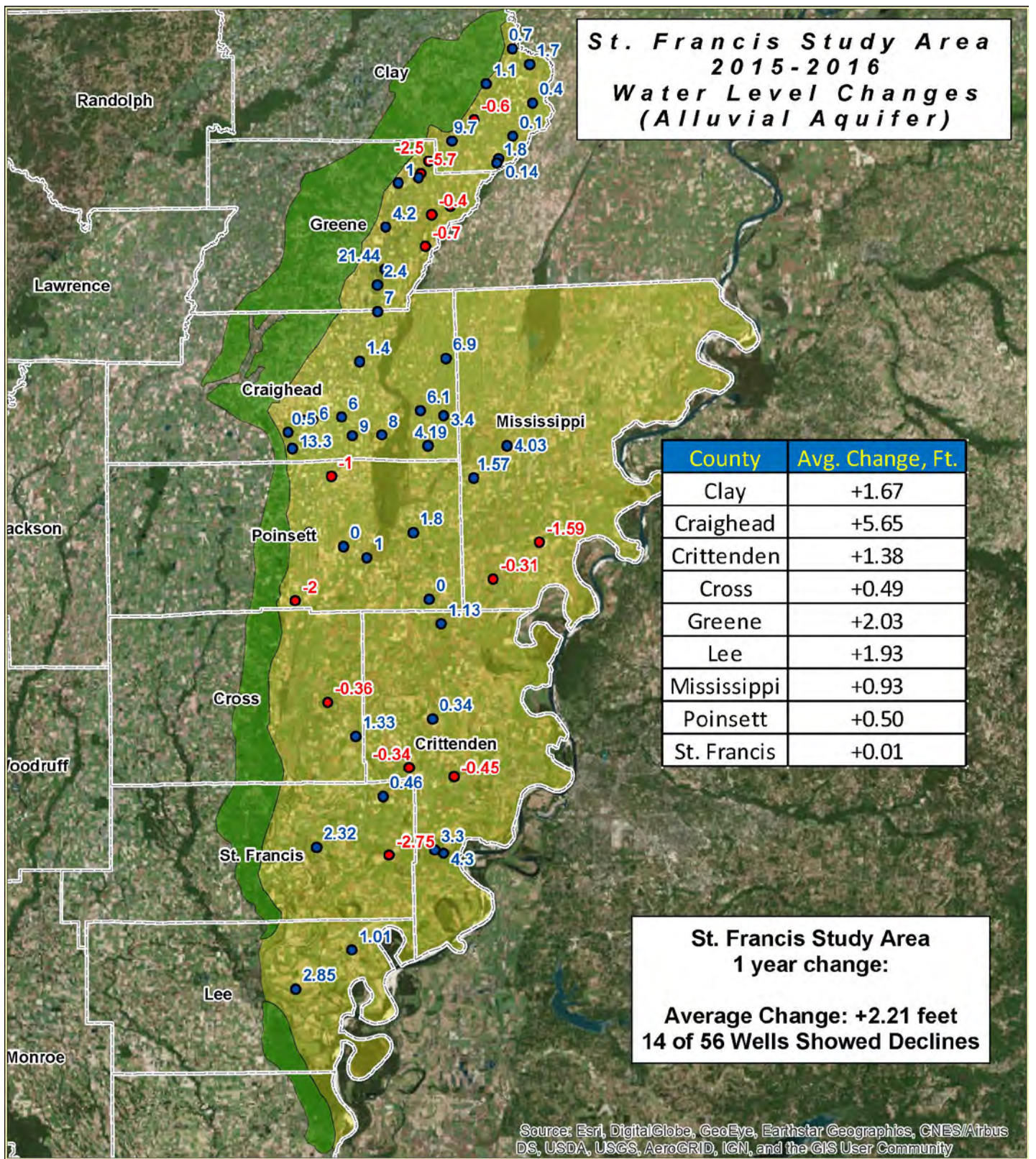
Legend

0 4.5 9 18 27 Miles

- Wells with Increases
- Wells with Declines
- Boeuf-Tensas Study Area



Fig. 9



Legend

- Wells with No Change or Increases
- Wells with Declines
- Crowleys Ridge
- St. Francis Study Area

0 4.5 9 18 27 Miles

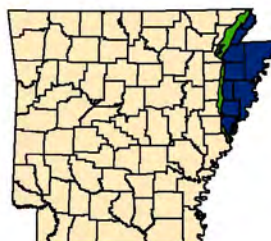
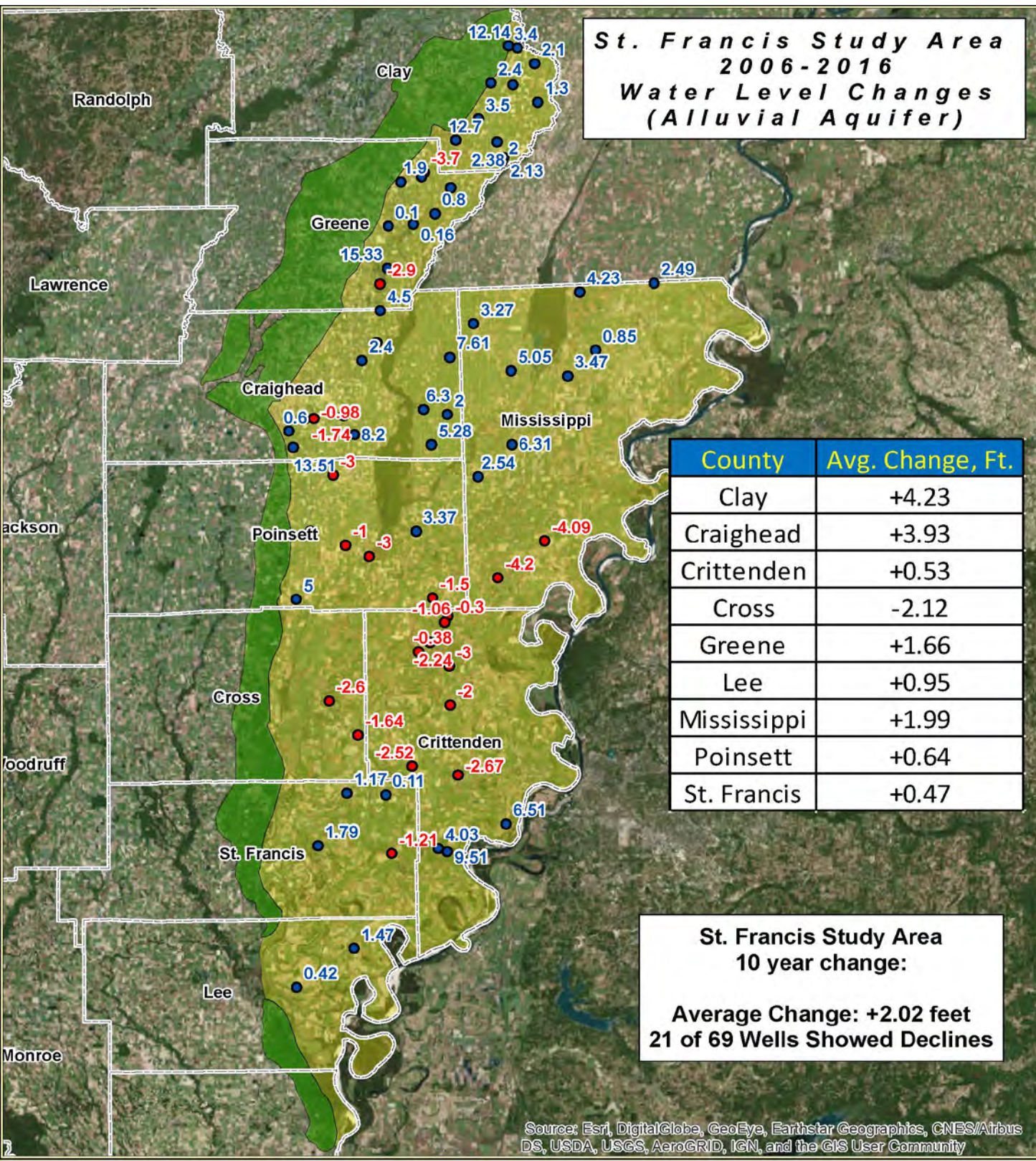


Fig. 11



Legend

- Wells with No Change or Increases
- Wells with Declines
- Crowleys Ridge
- St. Francis Study Area

Fig. 12

Sparta/Memphis Aquifer

The Sparta/Memphis aquifer of Tertiary Age is located in the south, southeast, and east regions of Arkansas, as well as portions of Texas, Louisiana, and Mississippi. The aquifer outcrops in Dallas, Hot Spring, Saline, Grant, Nevada, Columbia, and Ouachita counties throughout the state. The Sparta/Memphis Sand aquifer thickness averages approximately 600 feet, ranging from a thickness of approximately 200 to 300 feet thick in the outcrop area to about 900 feet thick in the southeastern part of the state. The majority of the area discussed in this report is a confined aquifer underlain by the Cane River Formation and overlain by the Cook Mountain Formation, both of which are effective confining units.

The Sparta aquifer in south Arkansas consists of two units, separated by the confining unit located between them: the upper Greensand aquifer and the lower El Dorado aquifer. The Sparta is composed mainly of sand with considerable amounts of silt, clay, shale, and lignite, which are found in lenses throughout the unit. Lithologically, it varies considerably both vertically and laterally. Glauconite, a green hydrous potassium iron silicate mineral, is sometimes found in sand lenses in the upper levels of the aquifer, hence the name "Greensand".

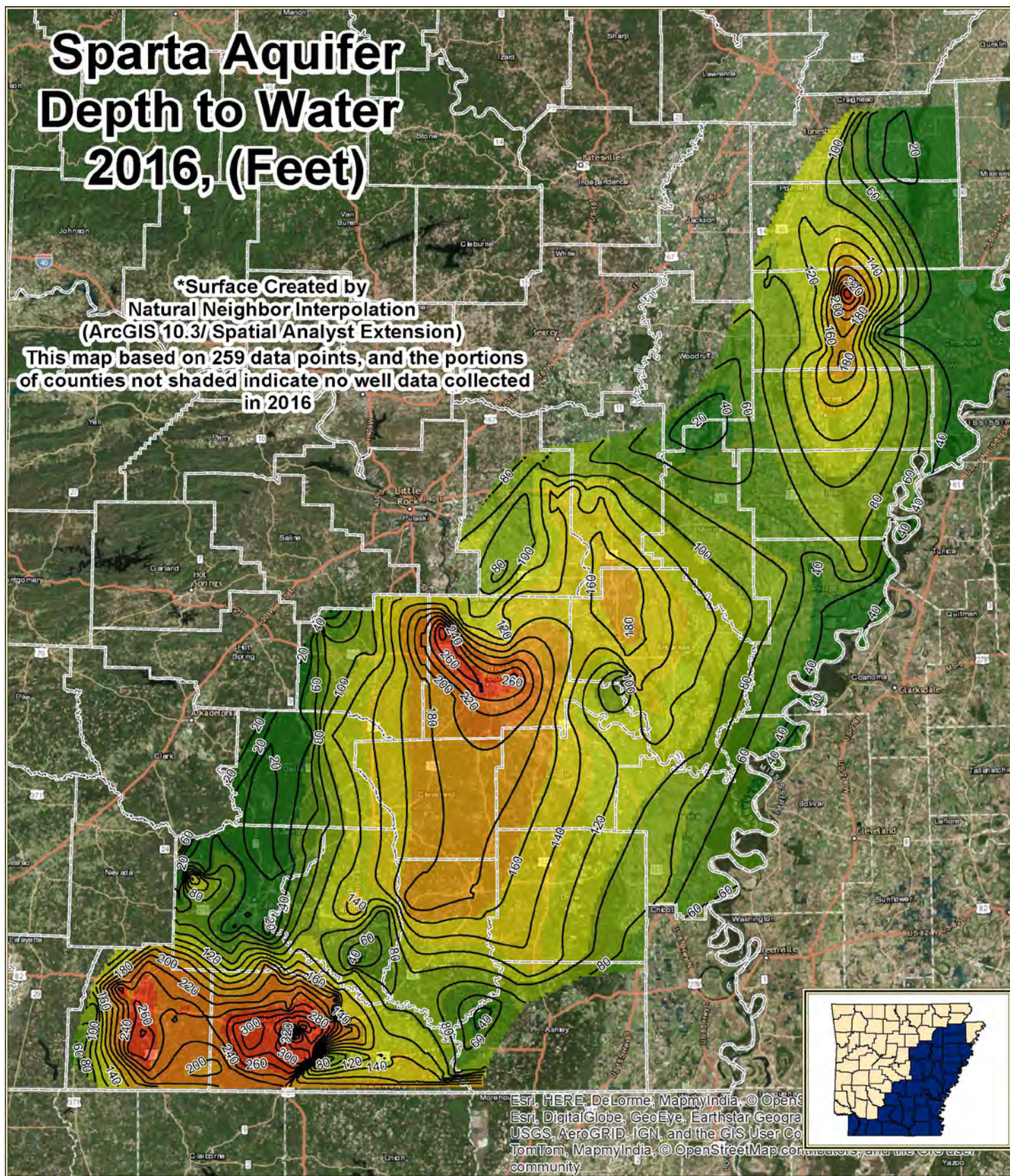
The Memphis Sand aquifer in eastern Arkansas is part of a thick sand section in the middle and lower portions of the Claiborne Group. It includes the Sparta Sand, the predominantly sandy facies of the Cane River, and the Carrizo Sand. The Memphis aquifer is the major source of quality drinking water in the area.

Groundwater levels were collected from 163 water wells in the Sparta/Memphis aquifer throughout the south and east portions of Arkansas in 2015 and 2016. Seventy-nine of the wells monitored (48.5%) showed declines in the static water level. The average change over the entire aquifer during the 2015-2016 monitoring period was -0.59 feet. During the monitoring period from 2011 to 2016, 194 wells were monitored for water-level change, with 83 of these wells (42.8%) showing a decline in static water levels. During the 10-year monitoring period, 168 wells were monitored with 64 (38.1%) of these wells showing declines. Appendix B is a table of specific water-level monitoring data for the Sparta/Memphis aquifer. The USGS Conjunctive Use Optimization Model estimates that only 55% percent of the withdrawal average of 160 Mgal/d is sustainable for the Sparta/Memphis aquifer. (Czarnecki, Clark, and Stanton, 2003)

Sparta Aquifer Depth to Water 2016, (Feet)

*Surface Created by
Natural Neighbor Interpolation
(ArcGIS 10.3/ Spatial Analyst Extension)

This map based on 259 data points, and the portions
of counties not shaded indicate no well data collected
in 2016



* Contour lines are at 20 foot intervals

Legend

Depth to Water	46.00 ft. to 75.95 ft.	132.31 ft. to 163.91 ft.
Feet	75.96 ft. to 103.63 ft.	163.92 ft. to 202.18 ft.
	103.64 ft. to 132.30 ft.	202.19 ft. to 249.04 ft.
	249.05 ft. to 372.46 ft.	
	County Boundaries	



0 10 20 40 60 Miles



Fig. 13

Data beginning in 1965 has been plotted as hydrographs for selected wells throughout the study area. Trend line analysis indicates that the general trend for most wells included in this study is that of a lowered potentiometric surface. This decline in potentiometric surface in the aquifer can be attributed to a statewide increase in water use from 139 million gallons per day (Mgal/d) in 1970 to 159.45 Mgal/d in 2014. The estimated sustainable yield for the aquifer is 87 Mgal/d leaving an unmet demand of 72.45 Mgal/d. The most recent significant increase in water use from the Sparta/Memphis aquifer has been for agricultural supply in the Grand Prairie and Cache Study Areas.

The exception to this rule is the data from the South Arkansas Study Area, where local education, conservation, and the use of excess surface water has led to significantly fewer declines as well as some rebound in water levels in some areas. The potentiometric surface in five wells has actually risen over 90 feet respectively, over a 16-year period from 2000 to 2016. Union County alone has seen an average change in water level of +26.91 feet from 2006 to 2016. The surrounding counties in the South Arkansas Study Area have also all seen an average rise in water levels during this time with Calhoun County having an average change of +14.62, Columbia +4.51, and Ouachita +7.92 feet respectively. (Fig.15)

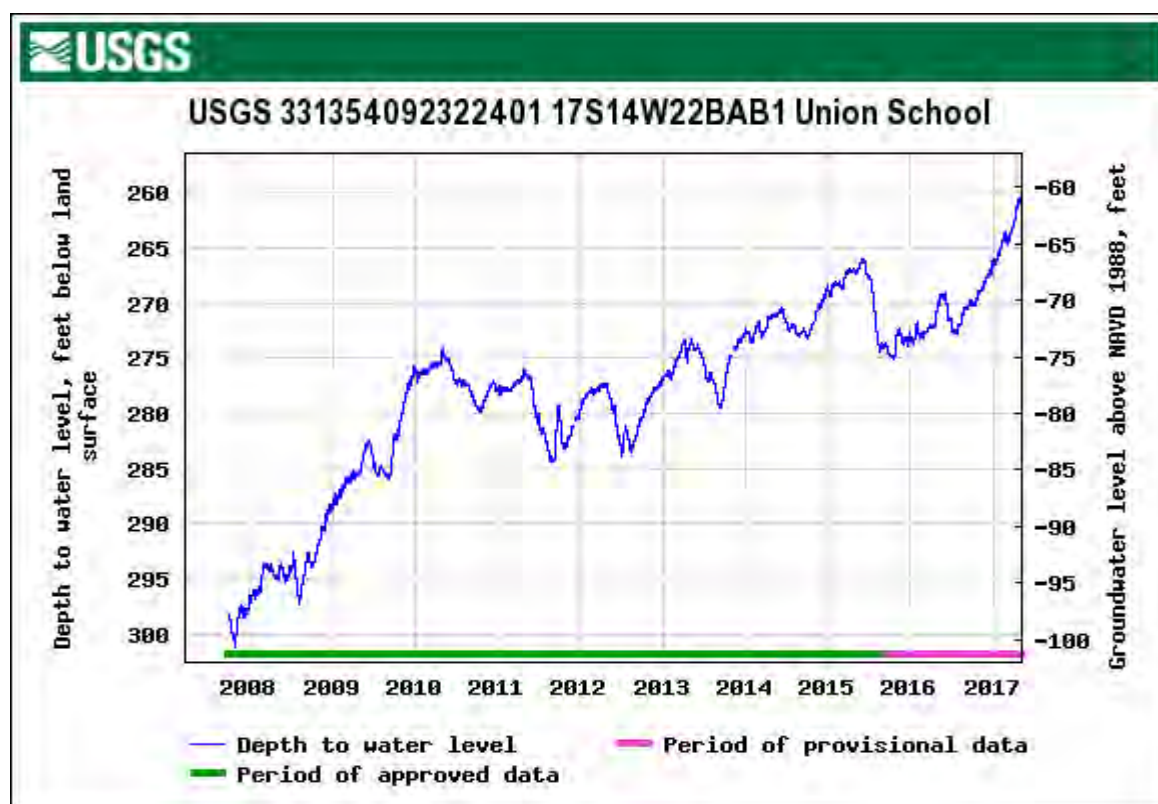
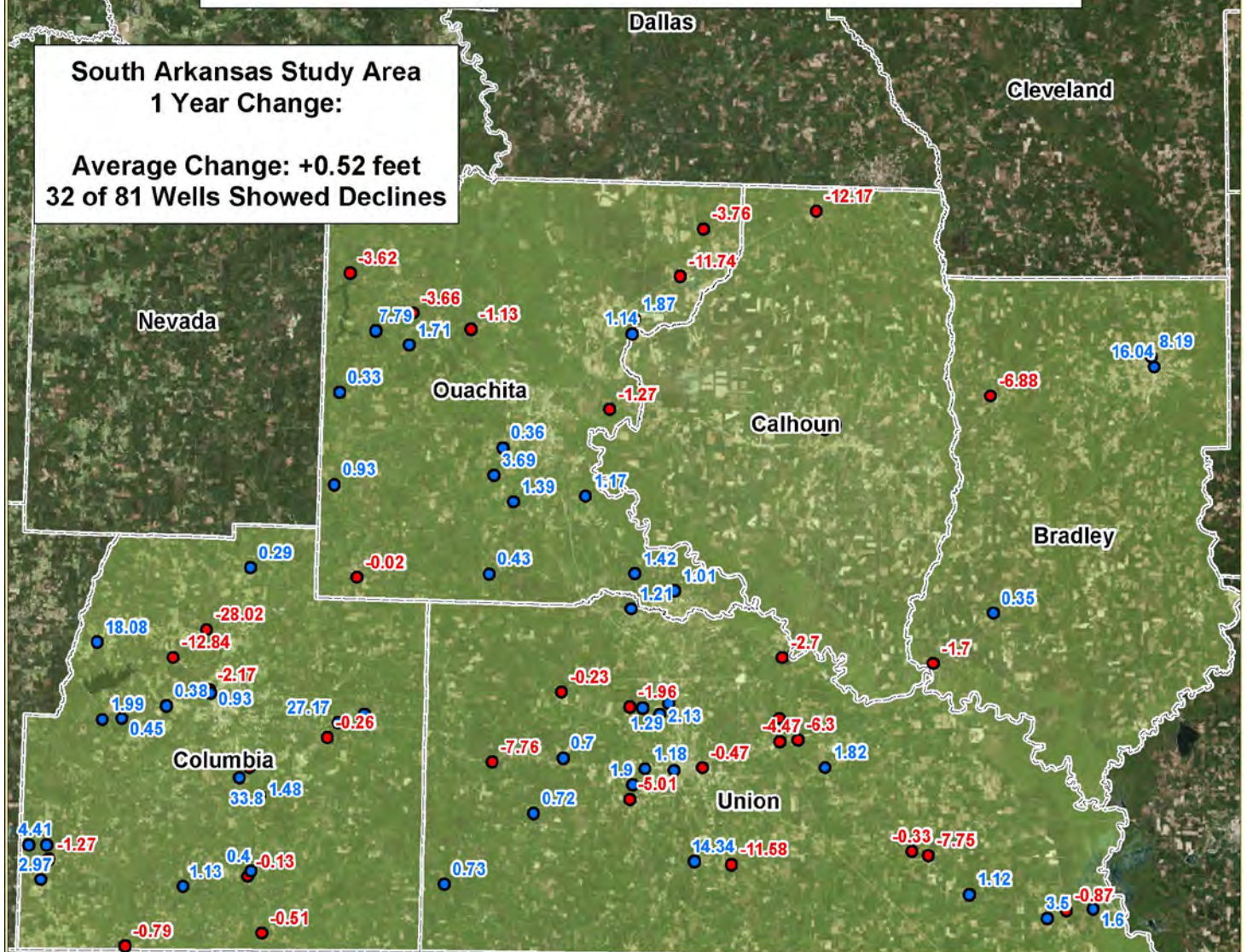


Table 3

South Arkansas Study Area 2015-2016 Water Level Changes (Sparta Aquifer)

South Arkansas Study Area
1 Year Change:

Average Change: +0.52 feet
32 of 81 Wells Showed Declines



County	Avg. Change, FT
Bradley	+ 3.20
Calhoun	-1.12
Columbia	+1.85
Ouachita	-0.10
Union	-0.63

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

- Wells With Increases
- Wells With Declines
- South Arkansas Study Area

0 4.5 9 18 27 Miles

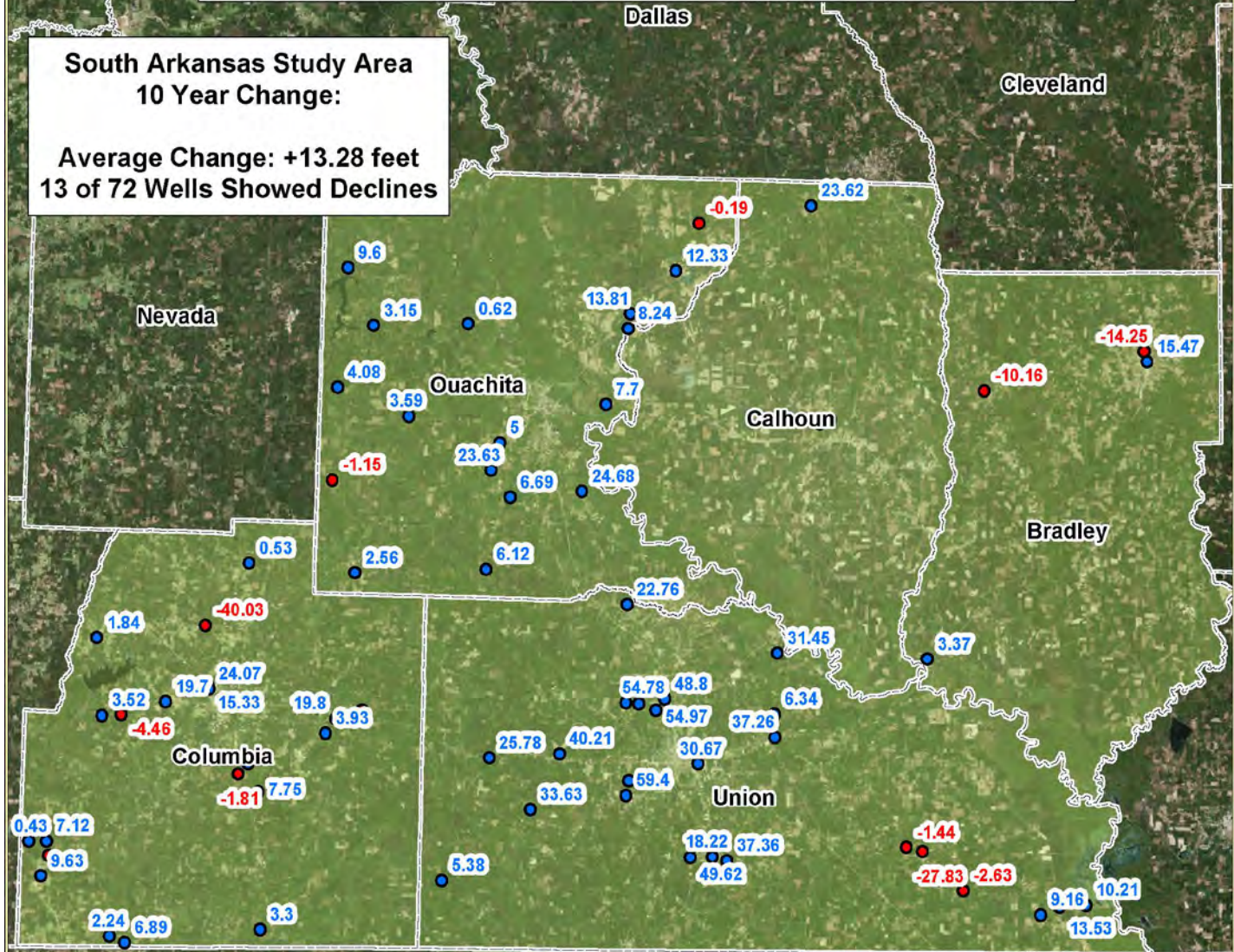


Fig. 14

South Arkansas Study Area 2006-2016 Water Level Changes (Sparta Aquifer)

South Arkansas Study Area
10 Year Change:

Average Change: +13.28 feet
13 of 72 Wells Showed Declines



County	Avg. Change, Ft.
Bradley	-1.39
Calhoun	+14.62
Columbia	+4.51
Ouachita	+7.92
Union	+26.91

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

0 4.5 9 18 27 Miles

● Wells With Increases

● Wells With Declines



South Arkansas Study Area



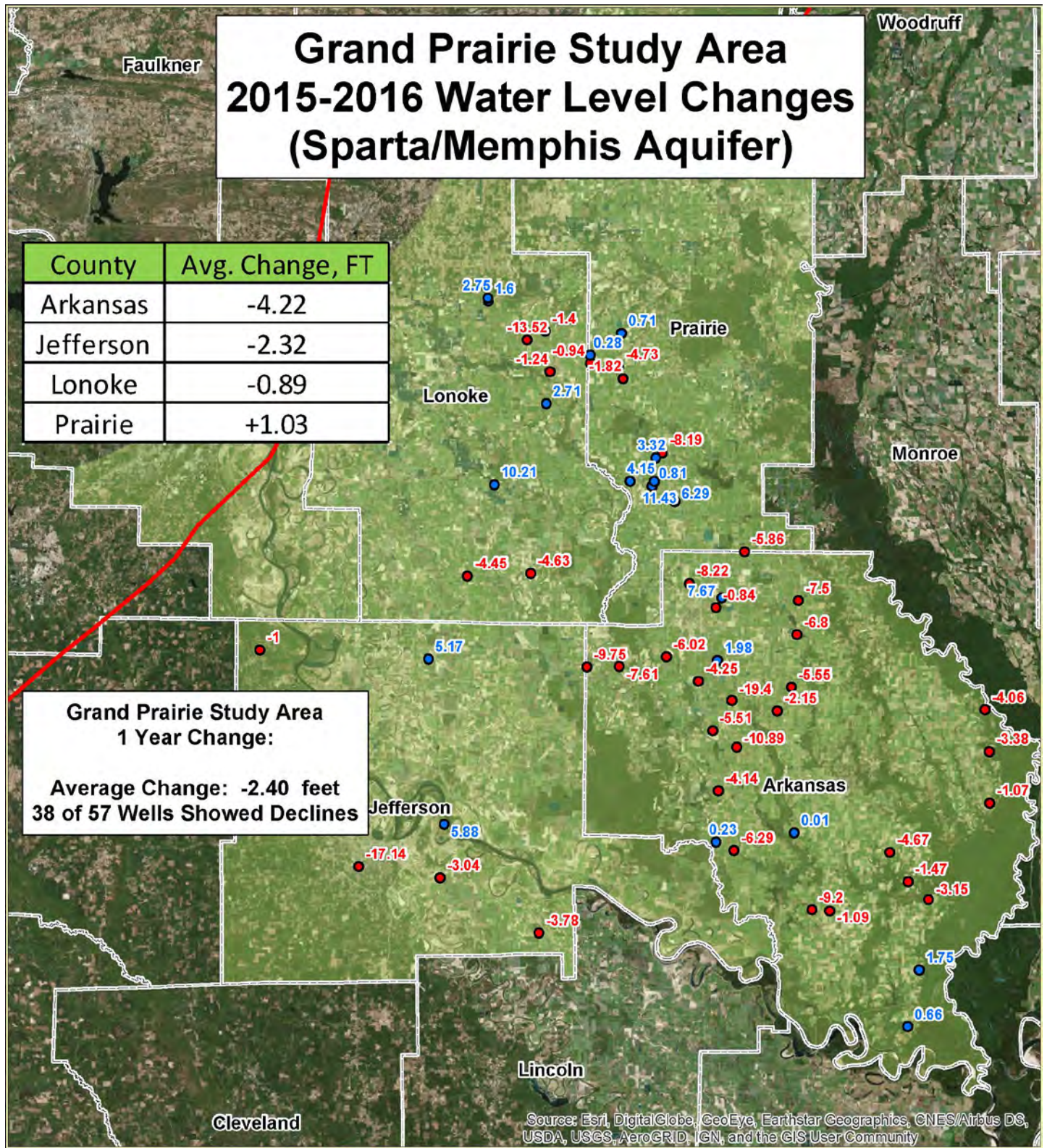
Fig. 15

Grand Prairie Study Area 2015-2016 Water Level Changes (Sparta/Memphis Aquifer)

County	Avg. Change, FT
Arkansas	-4.22
Jefferson	-2.32
Lonoke	-0.89
Prairie	+1.03

**Grand Prairie Study Area
1 Year Change:**

Average Change: -2.40 feet
38 of 57 Wells Showed Declines



Legend

- Wells With Increases
- Wells With Declines
- Sparta Boundary
- Grand Prairie Study Area

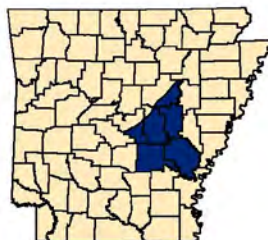


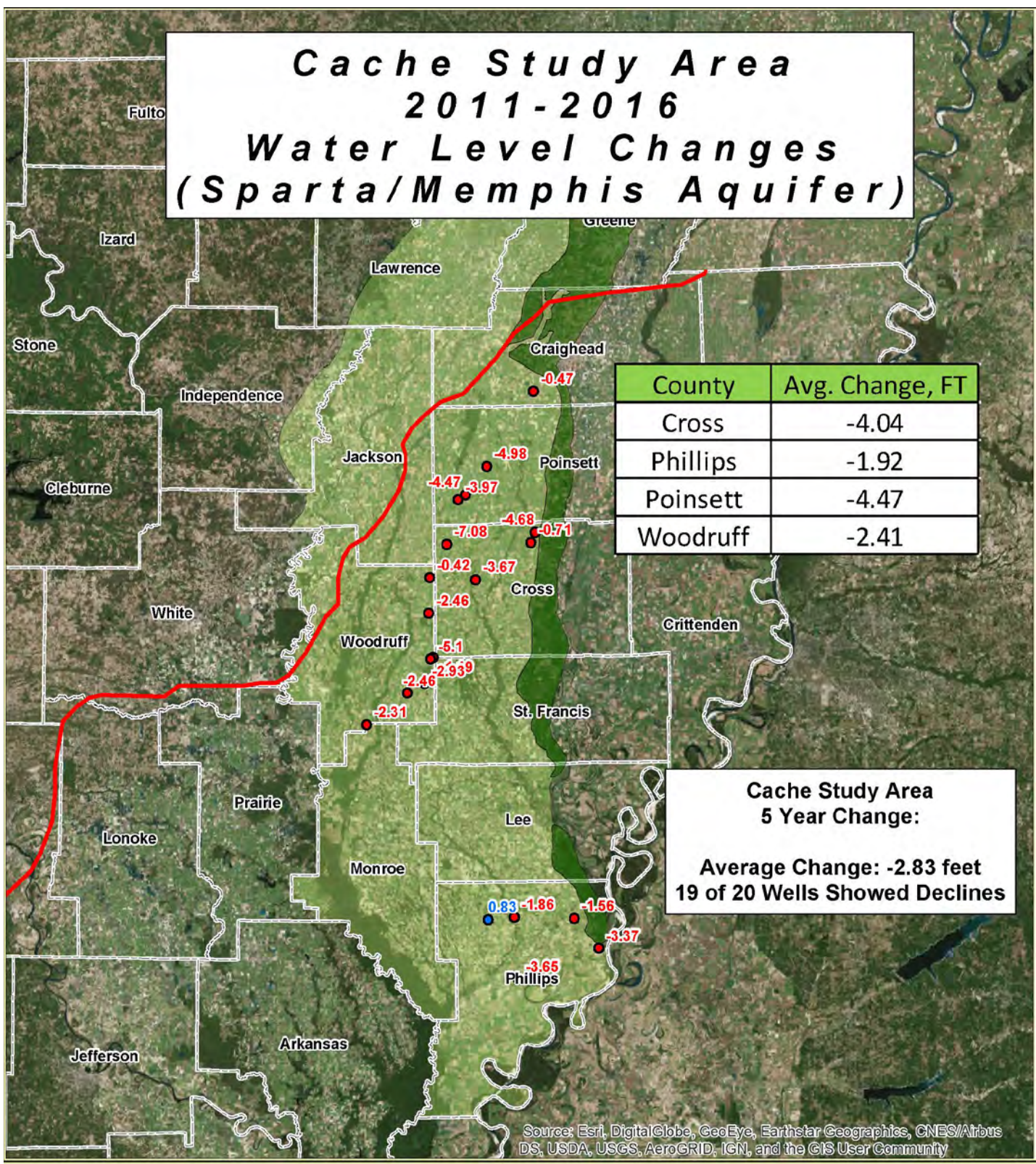
Fig. 16

Cache Study Area 2011-2016 Water Level Changes (Sparta/Memphis Aquifer)

County	Avg. Change, FT
Cross	-4.04
Phillips	-1.92
Poinsett	-4.47
Woodruff	-2.41

**Cache Study Area
5 Year Change:**

**Average Change: -2.83 feet
19 of 20 Wells Showed Declines**



Legend

- Wells With Increases
- Wells With Declines
- Sparta Boundary
- Cache Study Area

0 5 10 20 30 Miles

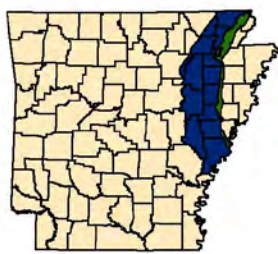
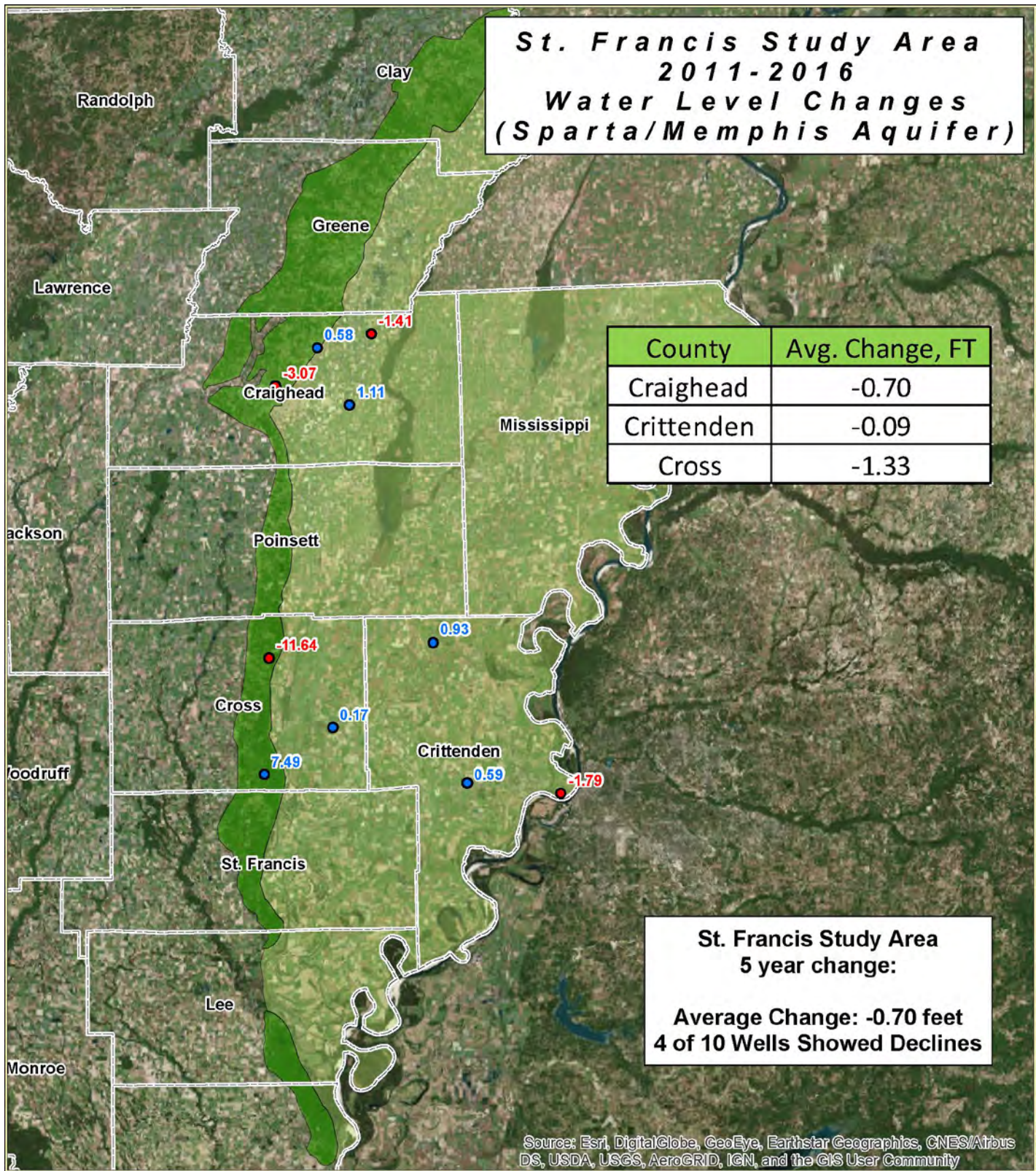


Fig.17



Legend

- Wells With Increases
- Wells With Declines
- Crowley's Ridge
- St. Francis Study Area

0 4.5 9 18 27 Miles

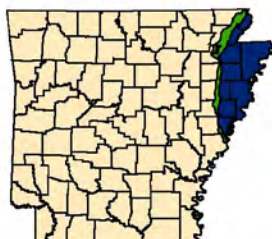
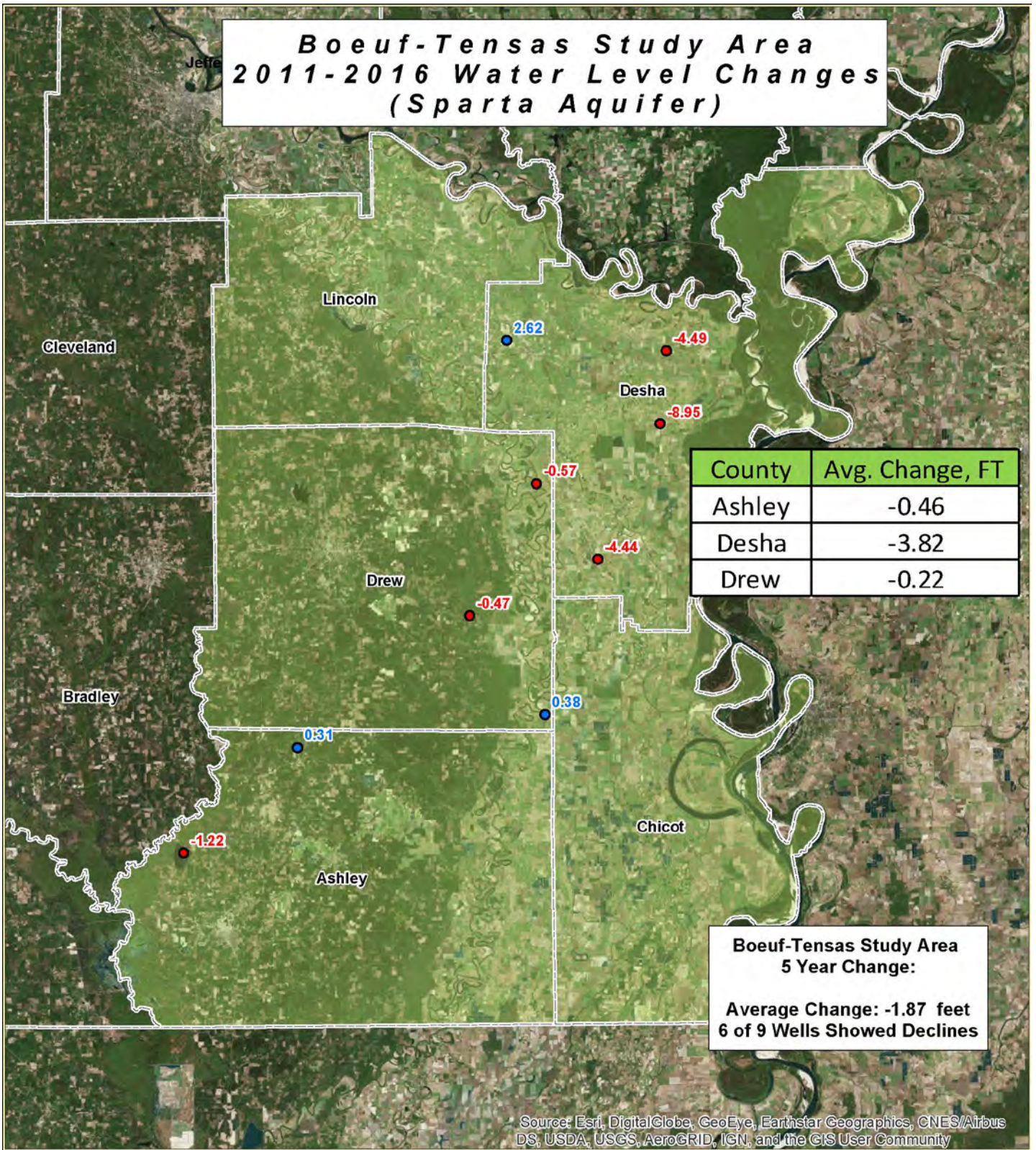


Fig. 18

Boeuf-Tensas Study Area 2011-2016 Water Level Changes (Sparta Aquifer)



Legend

0 4.5 9 18 27 Miles

- Wells With Increases
- Wells With Declines
- + Boeuf-Tensas Study Area



Fig. 19

GROUND WATER USE

REGISTERED WELLS

In accordance with Act 1051 of 1985, all wells in Arkansas that have the capacity to produce fifty thousand (50,000) gallons per day must be registered with the ANRC. Domestic wells are exempt. The quantity used must be reported by March 1st of the following year. USGS reports show there are approximately 50,000 registered wells reported in the State, of which over 97% are agricultural wells, most of which are irrigation wells located primarily in 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 8254.60 million gallons per day (Mgal/d) of water were reported to be withdrawn from the State's aquifers. The greatest reported volume was pumped from the alluvial aquifer and used primarily for irrigation. There was 7636.08 Mgal/d reported pumped from the alluvial aquifer in 2015, 98% of which was used for irrigation of crops. Historically counties that report the largest groundwater withdrawals from the alluvial aquifer are; Poinsett, Cross, Jackson, Arkansas, and Clay. The reported total estimated groundwater use from the alluvial aquifer during 2015 was 7636.08 Mgal/d.

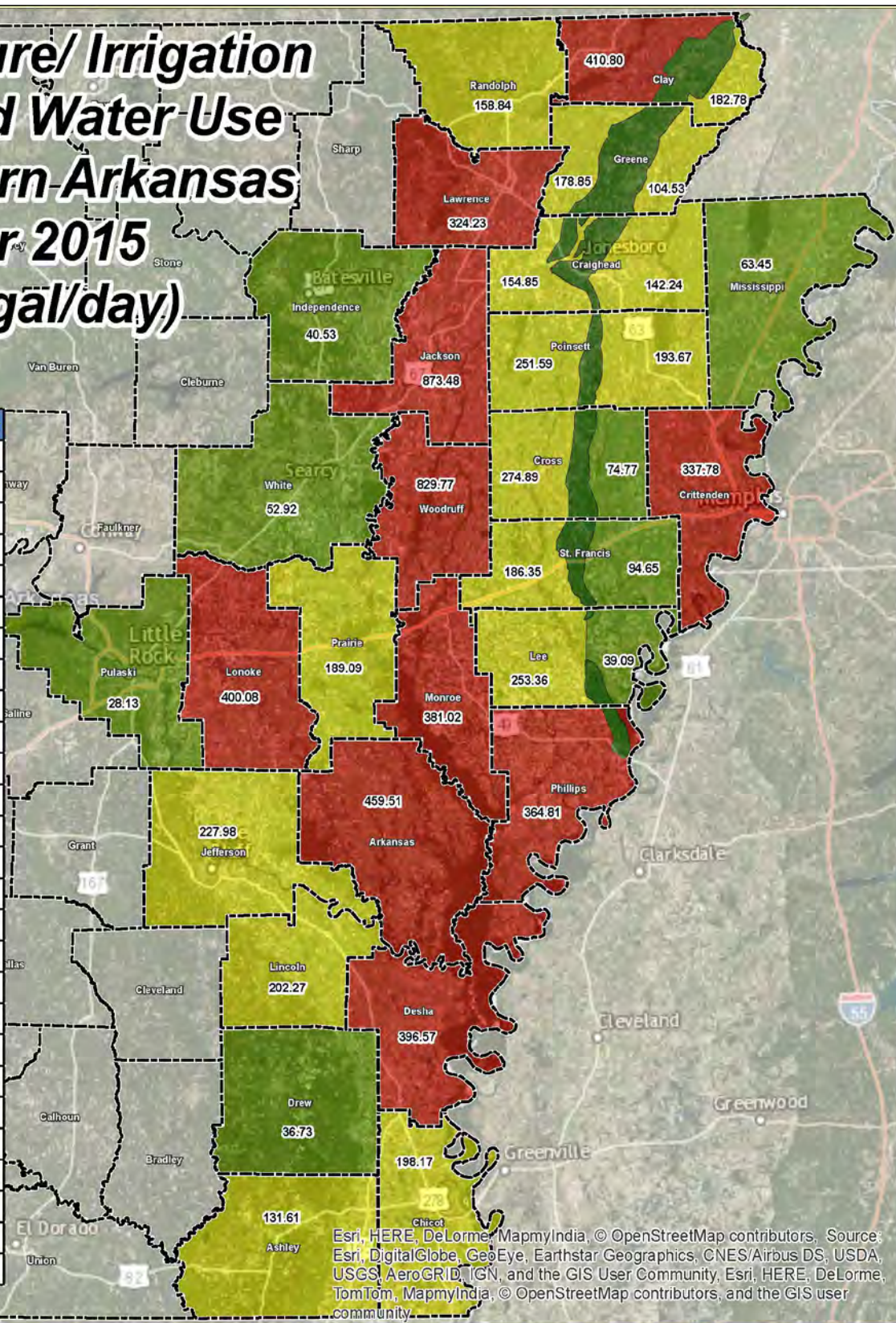
The Sparta/Memphis aquifer is the second largest aquifer in terms of withdrawals. The reported groundwater use from the Sparta/Memphis aquifer for 2012 was 159.45 Mgal/d, mostly used for municipal and industrial purposes. Jefferson County was the largest user of Sparta/Memphis water of all the counties, with an average withdrawal rate of 42.29 Mgal/d, followed by Arkansas County with a rate of 26.90 Mgal/d.

Table 4 contains the reported groundwater use for irrigation by county in Arkansas for 2015. This is the most recent information as supplied to the ANRC by the USGS.

The Sparta/Memphis aquifer had a reported average withdrawal of 159.45 Mgal/d during the 2012 reporting period. It is important to note that mainly due to increases in the Sparta/Memphis aquifer for irrigation in the area, Arkansas County is now the second largest user of this aquifer's resources, with a withdrawal of 26.90 Mgal/d. Jefferson County is the largest user of Sparta/Memphis ground-water, with a withdrawal of 42.29 Mgal/d.

Agriculture/ Irrigation Ground Water Use in Eastern Arkansas for 2015 (Mgal/day)

County	Mgal/day
Arkansas	459.51
Ashley	131.61
Chicot	198.17
Clay	593.58
Craighead	297.09
Crittenden	337.78
Cross	349.65
Desha	396.57
Drew	36.73
Greene	283.38
Independence	40.53
Jackson	873.48
Jefferson	227.98
Lawrence	324.23
Lee	292.45
Lincoln	202.27
Lonoke	400.08
Mississippi	63.45
Monroe	381.02
Phillips	364.81
Poinsett	445.26
Prairie	189.09
Pulaski	28.13
Randolph	158.84
St. Francis	281
White	52.92
Woodruff	829.77



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Legend

- Greater than 10 - 100 Mgal/day
- Greater than 100 - 300 Mgal/day
- Greater than 300 - 873 Mgal/day
- No Data Available
- Crowleys Ridge

Total Use (Mgal/day): 8,239.40

***Data Obtained from United States Geological Survey**

The water use values shown in the counties divided by Crowley's Ridge represent the separation of water use based on location East or West of the ridge.



Fig. 20

SUMMARY

The Ground Water Protection and Management Report for 2016 is a summary of the activities and significant findings of the Arkansas Natural Resources Commission (ANRC). This report is prepared annually in response to legislative mandates that direct the ANRC 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 ANRC, the NRCS, and the USGS monitor over 1,000 water wells each year for water levels and prescribed water quality parameters. This monitoring is accomplished through a cooperative agreement with the ANRC and the USGS.

Spring water-level measurements from 2015 to 2016 provided short term data indicating an overall average increase in water levels. The overall change in the alluvial aquifer for spring 2015 to spring 2016 was +0.52 feet with 58.6 percent of measured wells showing a water-level decline.

In the Sparta/Memphis aquifer 48.5% of the wells measures from 2015 to 2016 showed declines, with the aquifer average change being -0.59 feet. The water levels in the Cache Study area had an average change of -3.94 feet in the Sparta/Memphis Aquifer from 2006 to 2016. The areas of heightened concern due to water-level decline continue to be in the Grand Prairie, South Arkansas, and Cache Study Areas. Fluctuations may be observed in ground-water levels over a short time period, however long term records illustrate the seriousness of the declines in groundwater levels as illustrated by the long term change maps.

Arkansas is withdrawing ground water from the alluvial and Sparta/Memphis aquifers in eastern and southern Arkansas at a rate which is far above sustainable. With this in mind, the ANRC should continue to promote conservation, education, and the conjunctive use of ground and surface-water at rates that are sustainable for current and future water use needs.

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Appendix A

Alluvial Aquifer Water Level Monitoring Data

2006/2011/2015

Page 1

2016 Alluvial WL Change Percent Saturated

2006/2011/2015

County	Station ID	Latitude	Longitude	USGS LSA	Date	2016 DTW	Aquifer Thick.	Sat. ft.	% Sat.	2015 DTW	2011 DTW	2006 DTW	15-16 Change	11-16 Change	06-16 Change
Ashley	16S06W27BAB1	331729	914240	183.20	4/12/2016	86.53				85.80	85.20	83.84	(0.73)	(1.33)	(2.69)
Ashley	17S04W03ABB1	331528	913010	123.36	4/27/2016	32.60	159.24	126.64	79.53	34.30	33.40	30.22	1.70	0.80	(2.38)
Ashley	17S04W15DDC1	331252.48	912954.09	113.94	4/12/2016	28.66	185.83	157.17	84.58	30.60	30.55	26.50	1.94	1.89	(2.16)
Ashley	17S04W21ABA1	331252	913108	118.08	4/12/2016	24.15	189.30	165.15	87.24	25.45	27.00	23.56	1.30	2.85	(0.59)
Ashley	17S06W35CAC1	33.1803994	-91.6933459	178.87	4/27/2016	73.24				73.00	73.16	72.62	(0.24)	(0.08)	(0.62)
Ashley	18S04W23DDD1	33.1162337	-91.48234087	103.00	4/6/2016	32.00	155.20	123.20	79.38		25.00			(7.00)	
Ashley	18S05W11CCD	33.1448455	-91.59401094	118.00	4/6/2016	27.00					25.01	22.66		(1.99)	(4.34)
Ashley	18S05W22DDA1	33.12012301	-91.59873305	125.00	4/6/2016	19.00					19.00	21.00		0.00	2.00
Ashley	18S08W01AAB1	331014.97	915225.12	177.33	4/12/2016	85.54				90.12	86.20	86.63	4.58	0.66	1.09
Ashley	18S08W28DDD2	330624.8	915528.46	161.71	4/12/2016	84.89				84.40	85.26	84.96	(0.49)	0.37	0.07
Ashley	19S04W14BBB1	33.0529021	-91.48706264	107.00	4/6/2016	30.00	142.60	112.60	78.96		35.00			5.00	
Ashley	19S05W08ACA1	33.08818026	-91.63762251	111.00	4/6/2016	29.00					16.00	17.25		(13.00)	(11.75)
Ashley	19S05W16ABB1	33.05651385	-91.62178862	116.00	4/6/2016	18.00	141.10	123.10	87.24		25.00	24.00		7.00	6.00
Ashley	19S05W22DCD1	33.0276257	-91.60428785	107.00	4/6/2016	17.00	126.60	109.60	86.57		21.00	23.16		4.00	6.16
Ashley	19S06W07BCC1	330403.56	914607.92	117.16	4/27/2016	30.57				31.00	31.00	31.04	0.43	0.43	0.47
Chicot	13S03W34CAA1	33.5265333	-91.39327778	132.00	4/27/2016	42.71	78.50	35.79	45.59			37.08			(5.63)
Chicot	13S03W34BAA1	33.51127222	-91.38820833	133.00	4/27/2016	44.90	74.00	29.10	39.32		44.00	40.32		(0.90)	(4.58)
Chicot	13S03W35BAC1	333154.05	912245.53	129.82	4/11/2016	44.43	75.62	31.19	41.24	44.70	42.90	41.50	0.27	(1.53)	(2.93)
Chicot	14S03W07BBD1	333011.09	912620	135.17	4/11/2016	31.09	79.63	48.54	60.96	36.52	31.40	26.56	5.43	0.31	(4.53)
Chicot	14S03W32CDB2	33.437075	-91.43095833	134.00	4/27/2016	42.30	87.40	45.10	51.60			34.86			(7.44)
Chicot	15S02W20DDC1	332226.59	911919.83	121.10	4/26/2016	38.79	93.55	54.76	58.53	36.70		27.91	(2.09)		(10.88)
Chicot	16S03W15DAD1	331818	912334	118.31	4/26/2016	35.00	121.23	86.23	71.13	33.34	32.85		(1.66)	(2.15)	
Chicot	17S01W06BCC1	33.25032778	-91.25145	115.00	4/26/2016	21.56	139.30	117.74	84.52		22.70	21.03		1.14	(0.53)
Chicot	17S03W28DBA1	33.19071944	-91.41150556	110.00	4/12/2016	24.24	156.80	132.56	84.54			24.33			0.09
Chicot	19S03W14ABB1	33.05124167	-91.38074722	111.00	4/13/2016	22.74	141.80	119.06	83.96			23.74			1.00
Clay	18N08E03DAB1	361323.23	901153.03	258.07	3/17/2016	5.76	130.23	124.47	95.58	5.90	7.70	7.89	0.14	1.94	2.13
Clay	18N08E11BAA1	361253	901117	256.43	5/2/2016	5.00	135.48	130.48	96.31	6.80	8.20	7.00	1.80	3.20	2.00
Clay	19N04E19BAA1	361649	904125	276.87	4/26/2016	23.00	135.02	112.02	82.97	24.20	25.00	22.00	1.20	2.00	1.00
Clay	19N05E15BBD1	361716	903152	289.53	4/26/2016	46.30	130.50	84.20	64.52	47.10	36.80	34.00	0.80	(9.50)	(12.30)
Clay	19N06E18DBC1	361642	902815	290.55	4/26/2016	41.50				44.00	40.30	37.01	2.50	(1.20)	(4.49)
Clay	19N08E27DA1	36.25006354	-90.1964869	261.00	5/4/2016	2.82	116.30	113.48	97.58			5.20			2.38
Clay	20N03E25BAA1	362112	904225	287.60	4/26/2016	21.20	141.05	119.85	84.97	23.70	22.10	22.00	2.50	0.90	0.80
Clay	20N04E02BB/C1	36.4078391	-90.61983502	285.00	5/4/2016	17.00	126.30	109.30	86.54			15.70			(1.30)
Clay	20N04E06BB1	362444.34	904131.25	290.19	3/18/2016	21.31	137.24	115.93	84.47	21.10		19.97	(0.21)		(1.34)
Clay	20N05E30CAC1	362003	903454	279.30	4/26/2016	21.30	121.20	99.90	82.43	20.60	19.70	18.00	(0.70)	(1.60)	(3.30)

2016 Alluvial WL Change Percent Saturated
2006/2011/2015

County	Station ID	Latitude	Longitude	USGS LSA	Date	2016 DTW	Aquifer Thick.	Sat. ft.	% Sat.	2015 DTW	2011 DTW	2006 DTW	15-16 Change	11-16 Change	06-16 Change
Clay	20N08E24DDA1	36.34919444	-90.15932778	276.00	5/17/2016	7.27	56.80	49.53	87.20			9.75			2.48
Clay	20N09E33DDC1	361904	900628	269.69	5/2/2016	5.70	106.34	100.64	94.64	6.10	7.50	7.00	0.40	1.80	1.30
Clay	21N03E15CBC1	362738	904453	290.65	4/26/2016	9.00	141.25	132.25	93.63	12.40	11.00	11.10	3.40	2.00	2.10
Clay	21N05E17ABB1	36.46540833	-90.55802778	298.00	3/17/2016	24.50	127.00	102.50	80.71			23.23			(1.27)
Clay	21N05E22BAB1	362704	903132	284.42	4/26/2016	6.60	109.83	103.23	93.99	8.10	9.00	7.01	1.50	2.40	0.41
Clay	21N06E28BB1	362604.92	902607.97	289.76	3/17/2016	19.96	107.49	87.53	81.43	20.70	22.20	19.19	0.74	2.24	(0.77)
Clay	21N07E01DDC1	36.4764481	-90.268713	302.33	5/2/2016	18.00	95.60	77.60	81.17	24.40	30.60	26.00	6.40	12.60	8.00
Clay	21N08E18CCC1	362650.9	901550.33	387.37	3/17/2016	40.06	111.90	71.84	64.20	41.20		38.64	1.14		(1.42)
Clay	21N08E36ABB1	36.4172556	-90.16700833	283.00	3/17/2016	24.50	62.40	37.90	60.74			36.64			12.14
Clay	21N09E31BDA1	362447	900851	282.05	5/2/2016	3.60	69.38	65.78	94.81	4.30	7.50	7.00	0.70	3.90	3.40
Clay	19N03E24AAA1	361654.99	904157.11	274.38	3/17/2016	22.97	131.22	108.25	82.50	21.60	22.90	20.12	(1.37)	(0.07)	(2.85)
Clay	19N04E19AAA1	361654.4	904049.99	280.05	3/17/2016	31.38	139.50	108.12	77.50	32.50	32.75	31.07	1.12	1.37	(0.31)
Clay	19N07E25BCB1	361519	901700	271.42	5/2/2016	5.30	113.01	107.71	95.31	15.00		18.00	9.70		12.70
Clay	19N08E08DCA1	361729	901402	264.04	5/2/2016	3.50	88.42	84.92	96.04	2.90	6.20	7.00	(0.60)	2.70	3.50
Clay	19N09E19CDC1	361539	900908	261.88	5/2/2016	5.70	132.13	126.43	95.69	5.80			0.10		
Clay	20N04E03ADA1	362425	903725	287.34	4/26/2016	16.00	128.66	112.66	87.56	15.40			(0.60)		(0.59)
Clay	20N05E22CAD1	362118	903132	289.80	4/26/2016	31.60	122.82	91.22	74.27	33.20	30.10	31.01	1.60	(1.50)	(4.69)
Clay	20N05E34DBA1	361939.31	903117.17	285.27	3/17/2016	34.00	121.53	87.53	72.02	34.30		29.31	0.30		(0.59)
Clay	20N06E09BBA1	362327	902620	286.98	4/26/2016	22.70	103.34	80.64	78.03	24.60	23.50	22.11	1.90	0.80	(0.59)
Clay	20N08E22BDC1	362111	901220	277.30	5/2/2016	6.60	37.06	30.46	82.19	7.70	10.80	9.00	1.10	4.20	2.40
Clay	20N09E09ABC1	362306	900642	279.13	5/2/2016	5.90	87.08	81.18	93.22	7.60	9.60	8.00	1.70	3.70	2.10
Clay	21N03E36CDD1	362450	904214	289.40	4/26/2016	23.40	138.22	114.82	83.07	20.30	20.10	19.10	(3.10)	(3.30)	(4.30)
Clay	21N04E09DBC1	362828	903853	290.19	4/26/2016	13.00	128.87	115.87	89.91	12.50	13.10	13.10	(0.50)	0.10	0.10
Clay	21N08E03CDB1	362848	901217	307.94	5/2/2016	17.90				20.00	27.90	19.03	2.10	10.00	1.13
Craighead	13N01E23CAB1	354430	905736	242.09	4/6/2016	66.00	97.42	31.42	32.25	70.60	71.00	71.02	4.60	5.00	5.02
Craighead	13N01E23DAA	35.74316667	-90.94769167	242.09	3/23/2016	71.89	92.70	20.81	22.45			71.02			(0.87)
Craighead	13N04E12ABB1	354635	903656	232.05	3/25/2016	25.56	109.03	83.47	76.56	25.80	24.90	23.82	0.24	(0.66)	(1.74)
Craighead	13N05E24BAC1	354451	903045	224.87	4/6/2016	4.00	102.66	98.66	96.10	13.00	8.30	12.20	9.00	4.30	8.20
Craighead	13N06E21AAA1	354450	902701	222.90	4/6/2016	6.00	102.82	96.82	94.16	14.00	5.70		8.00	(0.30)	
Craighead	13N07E02CAB1	354642	901901	225.79	4/6/2016	3.00	121.64	118.64	97.53	6.40	10.90	5.00	3.40	7.90	2.00
Craighead	13N07E05ABB1	354716	902158	226.67	4/6/2016	6.00	109.24	103.24	94.51	12.10	7.80	12.30	6.10	1.80	6.30
Craighead	14N01E10BAB1	355204	905828	250.33	4/6/2016	58.00	105.11	47.11	44.82	58.00	56.10	51.10	0.00	(1.90)	(6.90)
Craighead	14N02E27AAA1	354915.7	905124.5	255.28	4/19/2016	84.43	92.46	8.03	8.68	85.74	83.51	78.21	1.31	(0.92)	(6.22)
Craighead	15N06E20DDD1	35.90700833	-90.460875	234.00	3/25/2016	7.40	87.20	79.80	91.51		9.80	11.22		2.40	3.82
Craighead	14N06E06BAA1	355234	902934	241.90	4/6/2016	20.00	101.65	81.65	80.32	21.40	21.30	22.40	1.40	1.30	2.40
Craighead	15N06E04BAD1	355744	902706	238.98	4/6/2016	11.00	77.87	66.87	85.87	18.00	17.80	15.50	7.00	6.80	4.50
Craighead	13N03E28CDB1	354321	904652	250.30	4/6/2016	117.00				119.50	123.00	109.11	2.50	6.00	(7.89)
Craighead	13N04E15DBA1	354521	903857	230.84	4/6/2016	26.00	80.98	54.98	67.89	26.50	25.30	26.60	0.50	(0.70)	0.60
Craighead	13N04E26BCC1	354340	903829	227.43	4/6/2016	13.00	78.79	65.79	83.50	26.30	25.50	26.51	13.30	12.50	13.51
Craighead	13N05E02CCC1	354648	903202	228.44	4/6/2016	12.00	107.70	95.70	88.86	18.00	12.20	12.90	6.00	0.20	0.90

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County	Station ID	Latitude	Longitude	USGS LSA	Date	2016 DTW	Aquifer Thick.	Sat. ft.	% Sat.	2015 DTW	2011 DTW	2006 DTW	15-16 Change	11-16 Change	06-16 Change
Desha	08S03W33ABD1	33.9674778	-91.393939	168.37	3/23/2016	5.26	153.21	147.95	96.57	8.21	14.20	7.24	2.95	8.94	1.98
Desha	09S01W08DBA1	33.93565972	-91.20955938	156.00	3/8/2016	17.28	137.80	120.52	87.46						
Desha	09S01W15CBB1	33.91704945	-91.18205837	152.00	3/8/2016	41.59	138.80	97.21	70.04						
Desha	09S02W26DDC1	33.5256.57	911528.64	149.27	4/26/2016	33.30	138.80	105.50	76.01	33.82	31.54	29.33	0.52	(1.76)	(3.97)
Desha	09S03W05BAC1	33.95121331	-91.4184544	161.00	3/8/2016	43.68	146.50	102.82	70.18		42.20			(1.48)	
Desha	09S03W13BAB1	33.91677013	91.32289603		3/8/2016	36.18					38.60			2.42	
Desha	09S03W17DCB1	33.9133972	-91.415739	154.66	3/23/2016	38.37	139.33	100.96	72.46	38.22	37.00	32.95	(0.15)	(1.37)	(5.42)
Desha	09S04W06CBB1	33.94141667	-91.54905556	162.00	4/18/2016	48.00	148.00	100.00	67.57		49.00		1.00		
Desha	10S01W23CDA	33.884827.97	-91.17566907		3/8/2016	18.01					28.70			10.69	
Desha	10S02W02CAA1	33.86055556	-91.26277778		4/28/2016	34.82									
Desha	10S02W11ADD1	33.84593859	-91.25483805	146.00	3/8/2016	34.00	128.20	94.20	73.48		29.00	28.00		(5.00)	(6.00)
Desha	10S02W20ADA1	33.8211111	-91.306944	146.59	4/28/2016	44.65	126.26	81.61	64.64	42.32	41.40		(2.33)	(3.25)	
Desha	10S03W26CAA1	33.80166667	-91.362375	155.00	4/28/2016	52.27	131.80	79.53	60.34			44.80			(7.47)
Desha	10S03W26CCB1	33.79972222	-91.37638889	150.00	3/11/2016	49.90	126.80	76.90	60.65			40.90			(9.00)
Desha	10S04W03BAB1	33.86905833	-91.49657222		3/23/2016	41.88						35.09			(6.79)
Desha	10S04W11DDA1	33.84203611	-91.46713333		3/23/2016	38.21						31.50			(6.71)
Desha	10S04W12CCB1	33.5048	912754	156.00	3/23/2016	37.92	136.40	98.48	72.20	38.00	35.01		0.08	(2.91)	
Desha	11S03W16CBA1	33.74427352	-91.40928726	155.00	3/8/2016	40.00	125.90	85.90	68.23		36.00			(4.00)	
Desha	11S03W31BBA1	33.70783889	-91.44752778		4/27/2016	36.66						35.14			(1.52)
Desha	11S02W15ADD1	33.74621834	-91.27650487	144.00	3/8/2016	36.01	120.90	84.89	70.22		35.40			(0.61)	
Desha	13S03W11CAB1	33.58427754	-91.37817425	142.00	3/8/2016	56.55	96.40	39.85	41.34			51.00			(5.55)
Drew	11S04W08DBA1	33.75888333	-91.52672222	160.00	4/5/2016	37.48	129.50	92.02	71.06			25.14			(12.34)
Drew	11S05W08CCC1	33.5456.48	913837.16	184.88	4/28/2016	39.29	149.10	109.81	73.65	26.20	40.10	36.48	(13.09)	0.81	(2.81)
Drew	11S05W12BA1	33.76388889	-91.5677778		3/10/2016	32.60									
Drew	12S04W03ABB1	33.4133.92	912946.13	154.40	4/5/2016	28.52	119.96	91.44	76.23	29.60	25.74	24.23	1.08	(2.78)	(4.29)
Drew	12S04W25DBB1	33.62760957	-91.46067742	149.00	4/6/2016	36.00	108.00	72.00	66.67		31.50	30.00		(4.50)	(6.00)
Drew	13S04W09ACD1	33.58677711	-91.50956777	145.00	4/6/2016	24.00	100.60	76.60	76.14						
Drew	13S04W28CDD1	33.53513056	-91.516175		4/4/2016	20.49						17.63			(2.86)
Drew	13S04W39BAA1	33.5351306	-91.516175	138.32	4/28/2016	19.98	90.65	70.67	77.96	23.25	15.10	18.14	3.27	(4.88)	(1.84)
Drew	13S05W29ADA1	33.54673056	-91.62980833	185.00	4/28/2016	46.91						40.50			(6.41)
Drew	13S06W21DAA1	33.55677716	-91.71623926	207.00	4/6/2016	77.00						74.00			(3.00)
Drew	14S04W01BA1	33.51944444	-91.46583333		3/10/2016	32.43									
Drew	14S04W03ADD1	33.51400118	-91.49151137		4/6/2016	30.00					40.00	27.00		10.00	(3.00)
Drew	14S04W03DB1	33.51083333	-91.49555556		3/10/2016	28.00									
Drew	14S04W05CBA1	33.51316772	-91.53845703	131.00	4/6/2016	15.00	86.50	71.50	82.66			14.00			(1.00)

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2016 Alluvial WL Change Percent Saturated
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County	Station ID	Latitude	Longitude	USGS LSA	Date	2016 DTW	Aquifer Thick.	Sat. ft.	% Sat.	2015 DTW	2011 DTW	2006 DTW	15-16 Change	11-16 Change	06-16 Change
Londke	01N07W27AAD1	344103.48	914410.4	200.49	3/3/2016	145.32				132.50	134.85		(12.82)	(10.47)	
Londke	01N08W26CCB1	344034.61	915043.43	209.61	3/2/2016	109.00				107.39	104.88		(1.61)	(4.12)	
Londke	01N09W13DAB1	344235.17	915517.01	222.11	3/2/2016	87.35	103.12	15.77	15.29	86.32	83.50	86.74	(1.03)	(3.85)	(0.61)
Londke	01S06W31ABB1	343459.39	914731.48	197.54	3/3/2016	81.31	118.67	37.36	31.48	81.01	79.30	78.13	(0.30)	(2.01)	(3.18)
Londke	01S07W04DD1	34.64703783	-91.75513372	198.70	4/8/2016	105.55	114.60	9.05	7.90						
Londke	01S07W12ABA1	34.64286389	-91.70828889		3/3/2016	94.17						69.13			(25.04)
Londke	01S08W24CDD1	343605.64	914912.37	205.71	3/2/2016	87.55	111.20	23.65	21.27	84.85	82.80	81.00	(2.70)	(4.75)	(6.55)
Londke	01S09W36CCC1	343435.31	915618.98	224.48	3/2/2016	65.44	118.00	52.56	44.54	64.71	61.93	62.51	(0.73)	(3.51)	(2.93)
Londke	01S10W01ACB1	343926.84	920214.96	234.88	3/2/2016	44.23	117.65	73.42	62.41	43.41	43.50	45.92	(0.82)	(0.73)	1.69
Londke	02N08W16ABC1	344806.48	915113.61	239.34	3/2/2016	127.79	160.07	32.28	20.17	127.35	124.35	128.39	(0.44)	(3.44)	0.60
Londke	02N10W23BCA1	344725.25	920322.15	240.35	3/2/2016	13.57	132.33	118.76	89.75	12.45	9.40		(1.12)	(4.17)	
Londke	02S07W10CCB1	343246.45	914524.67	196.75	3/3/2016	66.71	109.34	42.63	38.99	66.40	61.70	62.39	(0.31)	(5.01)	(4.32)
Londke	02S07W16BAB1	34.8042222	-91.76097222	240.00	3/3/2016	145.80	150.70	4.90	3.25			137.64			(8.16)
Londke	02S08W06BAA1	3434300	915447	220.64	3/2/2016	70.16	119.82	49.66	41.45	70.09	66.87	67.34	(0.07)	(3.29)	(2.82)
Londke	02S08W28CDC1	3433007	915237	216.60	3/3/2016	65.06	121.86	56.80	46.61	64.95	62.57	60.50	(0.11)	(2.49)	(4.56)
Londke	02S08W34DBB1	343002.96	915149.75	215.65	3/3/2016	65.92	119.74	53.82	44.95	67.00		66.62	1.08		0.70
Londke	02N09W02BDB	34.8319611	-91.978036	258.46	3/2/2016	108.80	167.07	58.27	34.88	110.28		126.04	1.48		17.24
Londke	02N09W17CBC2	34.79754167	-92.0027	255.00	3/25/2016	80.34	151.30	70.96	46.90						
Londke	02N09W17CBC3	34.79625833	-92.00208333	255.00	3/25/2016	80.24	151.30	71.06	46.97						
Londke	02S09W30CDD1	34.50398333	-92.02111389	226.00	2/29/2016	39.20	116.90	77.70	66.47			39.44			0.24
Londke	03N07W08BDB1	34.90183389	-91.7773		4/5/2016	101.56				101.89	99.27	96.59	0.33	(2.29)	(4.97)
Londke	03N07W29ADA1	34.857925	-91.76622222	234.00	4/5/2016	97.32	152.70	55.38	36.27	97.14	93.59	94.92	(0.18)	(3.73)	(2.40)
Londke	03N07W35CDC2	34.83254444	-91.72558611	232.00	3/3/2016	120.11	144.60	24.49	16.94	118.50	117.75	116.10	(1.61)	(2.36)	(4.01)
Londke	03N08W03BAA1	34.92181667	-91.8482		4/5/2016	103.63				103.57	100.78	94.85	(0.06)	(2.85)	(8.78)
Londke	03N08W03CCC1	34.90829444	-91.85644444		3/30/2016	109.80				111.81	107.13	102.29	2.01	(2.67)	(7.51)
Londke	03N08W08ABA1	34.90749444	-91.87996389		3/29/2016	101.56				101.11	98.38	92.19	(0.45)	(3.18)	(9.37)
Londke	03N08W10ACB1	34.90406944	-91.84798333		4/5/2016	95.63				97.70	94.99	91.13	2.07	(0.64)	(4.50)
Londke	03N08W10ADD1	34.90029444	-91.83966111		3/30/2016	99.60				100.98	98.01	89.83	1.38	(1.59)	(9.77)
Londke	03N08W11ACA1	34.90353333	-91.82618333		4/7/2016	107.31					104.85	99.77		(2.46)	(7.54)
Londke	03N08W29BBB1	34.86308333	-91.89244722		3/29/2016	115.22				117.04	113.08	112.01	1.82	(2.14)	(3.21)
Londke	03N08W29BCC1	34.85694722	-91.89261111		3/29/2016	119.03				131.89	128.43	128.60	12.86	9.40	9.57
Londke	03N08W32ABB1	34.849475	-91.88111667	250.00	4/14/2016	122.17	189.20	67.03	35.43			118.35			(3.82)
Londke	03N08W32ABB3	34.84941944	-91.88211111	250.00	5/5/2016	56.38	189.20	132.82	70.20			56.46		0.37	0.08
Londke	04N08W15BCB2	345832.92	915121.25	214.96	5/5/2016	34.47	136.65	102.18	74.77	35.65	37.15	34.86	1.18	2.68	0.39
Londke	04N08W16DCC1	34.96590556	-91.86500556		3/29/2016	49.11				49.70	48.16	46.06	0.59	(0.95)	(3.05)
Londke	04N08W28CAC1	34.93896389	-91.87105		3/29/2016	59.42				57.15	57.17	55.11	(2.27)	(2.25)	(4.31)
Londke	04N08W28CCC1	34.93738056	-91.87369722		3/29/2016	63.40				66.88	62.84	60.44	3.48	(0.56)	(2.96)
Londke	04N08W33ABD1	34.93294444	-91.86147222		4/7/2016	92.40				93.00			0.60		
Londke	04N08W33ACD	34.92969444	-91.86136111		4/7/2016	110.76				95.79	92.93		(14.97)	(17.83)	
Londke	04N08W33ADB1	34.93127778	-91.85694444		4/7/2016	103.75				102.51	104.04		(1.24)	0.29	
Londke	04N08W33ADD	34.92952778	-91.82067222		4/7/2016	105.05				105.49	103.24		0.44	(1.81)	
Londke	04N08W36DBB1	34.927925	-91.82067222		4/8/2016	97.76				97.72	94.89	94.09	(0.04)	(2.87)	(3.67)
						Avg. % Saturated:			40.77			Declines/Wells:	20/33	28/32	24/32
												Average Change:	(0.41)	(2.67)	(3.36)

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2016 Alluvial WL Change Percent Saturated
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County	Station ID	Latitude	Longitude	USGS LSA	Date	2016 DTW	Aquifer Thick.	Sat. ft.	% Sat.	2015 DTW	2011 DTW	2006 DTW	15-16 Change	11-16 Change	06-16 Change
Phillips	01S03E02CB1	34.63583333	-90.7677778		4/2/2016	18.20									
Phillips	01S03E10ABB	34.6281549	-90.776223	202.95	3/22/2016	19.00	140.80	121.80	86.51	19.50	25.00	18.00	0.50	6.00	(1.00)
Phillips	01S03E26BB1	34.5877778	-90.75305556		4/2/2016	37.55									
Phillips	01S02E32BCC	34.5639886	-90.924004	211.55	3/22/2016	48.00	180.13	132.13	73.35	47.50		37.00	(0.50)		(11.00)
Phillips	01S02E09CBB1	34.3718.73	905434.06	184.28	4/6/2016	9.78	142.79	133.01	93.15	12.10	17.00	14.29	2.32	7.22	4.51
Phillips	01S04E05DCD1	34.63398865	-90.69760938	185.00	3/17/2016	52.67	146.90	94.23	64.15	49.10	51.60	48.91	(3.57)	(1.07)	(3.76)
Phillips	02S04E27AAC1	34.2931.57	904001.09	176.87	4/5/2016	8.13	85.78	77.65	90.52	7.90	9.80	8.59	(0.23)	1.67	0.46
Phillips	03S03E02ADD1	34.45240556	-90.75074167	175.00	4/2/2016	22.92	120.60	97.68	81.00		21.70			(1.22)	
Phillips	03S03E04DAA1	34.2734.52	904709.93	164.90	4/5/2016	21.06	120.17	99.11	82.47	21.50	20.40	19.29	0.44	(0.66)	(1.77)
Phillips	03S04E02CAA1	34.2732	903918	178.77	4/5/2016	9.12	121.81	112.69	92.51	13.10	15.00	16.16	3.98	5.88	7.04
Phillips	02S01E23CA1	34.50113889	-90.97848333		4/2/2016	19.50					19.70			0.20	
Phillips	02S01E28CCB1	34.2916.37	910058.18	174.74	4/5/2016	17.46	143.50	126.04	87.83	18.75	18.10	17.95	1.29	0.64	0.49
Phillips	02S03E15ACD1	34.3109.96	904621.48	201.64	4/19/2016	11.73	150.65	138.92	92.21	12.91		13.78	1.18		2.05
Phillips	02S02E29DD1	34.4837119	-90.912337	182.91	3/21/2016	25.00	150.65	125.65	83.41	25.50	29.00	27.60	0.50	4.00	2.60
Phillips	02S02E33ACC	34.4734343	-90.903447	184.51	3/21/2016	23.00	151.42	128.42	84.81	23.50	30.00	26.00	0.50	7.00	3.00
Phillips	02S03E34BCD	34.4745459	-90.7815	173.79	3/23/2016	21.00	122.44	101.44	82.85	21.00	19.00	18.00	0.00	(2.00)	(3.00)
Phillips	04S01E01AAD	34.3773243	-90.950113	159.88	3/22/2016	16.00	121.49	105.49	86.83	15.00	15.00	22.00	(1.00)	(1.00)	6.00
Phillips	04S01E23CCA	34.3253611	-90.891283	159.28	4/5/2016	13.58	117.24	103.66	88.42	13.05	12.72	13.40	(0.53)	(0.86)	(0.18)
Phillips	04S01E29CDC	34.3123245	-91.030114	149.61	4/4/2016	7.00	113.11	106.11	93.81	5.50	9.00		(1.50)	2.00	
Phillips	04S01E14CDD	34.3373246	-90.977057	155.58	3/22/2016	13.00	117.42	104.42	88.93	15.00		15.00	2.00		2.00
Phillips	04S02E01DBB	34.372325	-90.848166	159.81	3/21/2016	15.00	118.73	103.73	87.37	16.20		15.60	1.20		0.60
Poinsett	10N01E02AAA	35.5348033	-90.488452	218.34	4/6/2016	101.00	101.31	0.31	0.30	102.00		98.00	1.00		(3.00)
Poinsett	10N01E14CC1	35.2909.77	905813.38	223.95	3/24/2016	109.99	143.14	33.15	23.16	100.70	96.27	92.41	(9.29)	(13.72)	(17.58)
Poinsett	10N01E33ACB	35.4628604	-90.992064	220.87	4/6/2016	90.00	143.32	53.32	37.20	90.00	82.00	77.00	0.00	(8.00)	(13.00)
Poinsett	10N01E32CBB	35.49924.96	-91.014842	222.00	4/6/2016	80.00	145.00	65.00	44.83	80.00		74.00	0.00		(6.00)
Poinsett	10N02E13BCC1	35.49681111	-90.84063611	237.00	5/4/2016	110.63	143.10	32.47	22.69			103.24			(7.39)
Poinsett	10N02E15CAA	35.4945264	-90.869283	235.17	4/6/2016	115.00	146.91	31.91	21.72	119.00	107.00	104.50	4.00	(8.00)	(10.50)
Poinsett	10N02E20BAB	35.48500822	-90.905117	231.89	4/5/2016	112.00	148.19	36.19	24.42	110.00	107.50		(2.00)	(4.50)	
Poinsett	10N02E34BBB1	35.2725.8	905231.3	235.17	1/27/2016	108.09	149.59	41.50	27.74	107.59	103.55		(0.50)	(4.54)	
Poinsett	10N03E13BCB	35.499525	-90.731222	272.11	4/6/2016	146.50				147.00	141.50	142.00	0.50	(5.00)	(4.50)
Poinsett	10N03E14DAB1	35.2947.21	904404.93	240.26	3/24/2016	123.90	133.24	9.34	7.01	123.10	119.10	118.63	(0.80)	(4.80)	(5.27)
Poinsett	10N03E19BCB	35.4848004	-90.818726	238.02	4/6/2016	110.00	143.26	33.26	23.22	107.00	102.00	99.50	(3.00)	(8.00)	(10.50)
Poinsett	10N03E35CDD1	35.2656.17	90435.97	251.87	4/29/2016	129.62				130.71	126.10	124.43	1.09	(3.52)	(5.19)
Poinsett	10N04E35BBA	35.4625829	-90.642054	210.79	4/6/2016	16.00	112.48	96.48	85.77	14.00		21.00	(2.00)		5.00
Poinsett	10N06E11AAA1	35.51258212	-90.41704643	212.00	4/23/2016	13.12	97.90	84.78	86.60		13.40			0.28	
Poinsett	10N07E28CBB	35.4592501	-90.357878	220.67	4/5/2016	30.00	110.59	80.59	72.87	30.00	30.50	28.50	0.00	0.50	(1.50)
Poinsett	11N04E13DDA	35.5806359	-90.60872	210.30	4/5/2016	15.00	67.97	52.97	77.93	15.00	16.00	15.00	0.00	1.00	0.00
Poinsett	11N01E17DDC1	35.5770247	-91.004287	230.22	4/5/2016	87.00	142.52	55.52	38.96	87.00	82.10	78.61	0.00	(4.90)	(8.39)
Poinsett	11N01E26AA1	35.3340.33	905653.32	231.27	4/4/2016	104.27	140.02	35.75	25.53	97.87	99.50	94.72	(6.40)	(4.77)	(9.55)
Poinsett	11N01E34AAA	35.5489697	-90.966508	229.92	4/6/2016	95.00	142.48	47.48	33.32	94.00		88.50	(1.00)		(6.50)

2016 Alluvial WL Change Percent Saturated

2006/2011/2015

County	Station ID	Latitude	Longitude	USGS LSA	Date	2016 DTW	Aquifer Thick.	Sat. ft.	% Sat.	2015 DTW	2011 DTW	2006 DTW	15-16 Change	11-16 Change	06-16 Change
Poinsett	11N02E26AAB1	353350.31	905034.19	239.11	5/4/2016	118.97	140.25	21.28	15.17	135.00	99.50	107.55	16.03	(19.47)	(11.42)
Poinsett	11N02E30BBB	35.5645249	-90.927896	240.03	4/6/2016	110.00	144.81	34.81	24.04	111.00	108.50	102.50	1.00	(1.50)	(7.50)
Poinsett	11N03E10DDA1	353545.69	904456.54	243.00	3/24/2016	111.53				111.50	108.00	104.78	(0.03)	(3.53)	(6.75)
Poinsett	11N03E17AAB	35.5931354	-90.787336	236.35	4/6/2016	138.00				140.00			2.00		
Poinsett	11N03E18BAB1	353537.76	904852.42	243.86	5/4/2016	116.09				117.50		105.34	1.41		(10.75)
Poinsett	11N07E22ADD	35.5636921	-90.32287684	218.00	4/13/2016	25.80	115.90	90.10	77.74		25.50			(0.30)	
Poinsett	11N05E26BDB	35.555081	-90.537051	213.68	4/5/2016	13.00	91.95	78.95	85.86	13.00	12.75	12.00	0.00	(0.25)	(1.00)
Poinsett	11N07E18CAB1	353435	902320	212.14	5/4/2016	12.00	102.40	90.40	88.28	13.80	13.85	15.37	1.80	1.85	3.37
Poinsett	12N01E07CDA1	354053.69	910141.25	240.22	3/23/2016	55.39	123.17	67.78	55.03	57.08	56.15	53.97	1.69	0.76	(1.42)
Poinsett	12N01E22DAB	35.6561897	-90.969286	235.37	4/5/2016	80.00	117.00	37.00	31.63	80.00	78.00	74.00	0.00	(2.00)	(6.00)
Poinsett	12N02E25DCC	35.6389679	-90.829004	245.24	4/6/2016	129.00				126.00	126.00	112.00	(3.00)	(3.00)	(17.00)
Poinsett	12N02E34CCC	35.6234126	-90.875117	243.67	4/6/2016	124.00				124.00		112.50	0.00		(11.50)
Poinsett	12N03E01CBD	35.6984111	-90.724835	247.05	4/5/2016	100.00				100.00	97.00	93.00	0.00	(3.00)	(7.00)
Poinsett	12N04E08CDA	35.6814671	-90.686778	260.37	4/5/2016	96.00				96.00		88.00	0.00		(8.00)
Poinsett	12N05E16ABA	35.6775783	-90.559274	218.24	4/6/2016	15.00	86.23	71.23	82.61	14.00	13.00	12.00	(1.00)	(2.00)	(3.00)
Poinsett	12N05E34ABA1	353805.38	903230.45	215.00	5/4/2016	16.62	84.50	67.88	80.33	11.20		10.65	(5.42)		(5.97)
Poinsett	12N03E35AD	35.6292459	-90.731501	246.78	4/5/2016	103.00				106.00	106.50	103.00	3.00	3.50	0.00
Poinsett	12N07E04BAA1	354201.95	902059.69	221.13	5/4/2016	1.65	112.80	111.15	98.54	5.84	4.86	6.93	4.19	3.21	5.28
Poinsett	11N01E17DDD1	353436.83	910013.21	230.31	5/4/2016	85.08	139.56	54.48	39.04	85.82	82.10	78.61	0.74	(2.98)	(6.47)
Poinsett	12N03E04DAD1	354158.01	904600.16	250.26	4/5/2016	111.00				107.00		103.52	(4.00)		(7.48)
Prairie	01N06W05CCB1	344352.97	914049.08	215.62	3/3/2016	119.05	157.04	37.99	24.19	119.07	97.90	117.80	0.02	(21.15)	(1.25)
Prairie	01N06W26CDD1	344014.88	913707.61	215.29	3/16/2016	103.62	142.97	39.35	27.52	110.30	106.40	63.78	6.68	2.78	(39.84)
Prairie	01S04W28BDB1	343522.68	912629.73	202.03	3/15/2016	98.23	137.33	39.10	28.47	97.40	97.90	97.28	(0.83)	(0.33)	(0.95)
Prairie	01S05W14BBC1	343721.96	913108.76	215.35	3/16/2016	109.20	150.17	40.97	27.28	108.80		108.15	(0.40)		(1.05)
Prairie	01S05W31DDA	34.5713389	-91.575469	205.58	3/15/2016	100.20	137.31	37.11	27.03	96.80	112.75	103.60	(3.40)	12.55	3.40
Prairie	01N06W29DDD	34.6715389	-91.664294	224.11	3/16/2016	120.42	151.40	30.98	20.46	117.50	118.55	116.55	(2.92)	(1.87)	(3.87)
Prairie	01S06W12BAB1	343826	913613	227.92	3/16/2016	117.84	156.88	39.04	24.89	117.84	119.00	119.36	0.00	1.16	1.52
Prairie	02N04W02BCB1	34.82119722	-91.40516944	188.00	3/15/2016	15.81	114.90	99.09	86.24			20.27			4.46
Prairie	02N04W32CCB1	344436.43	912737.79	217.91	3/15/2016	83.61	145.40	61.79	42.49	83.30	83.45	84.72	(0.31)	(0.16)	1.11
Prairie	02N05W29DB2	344545.22	913308.75	216.21	3/8/2016	122.31	139.29	16.98	12.19	125.71	121.35	118.84	3.40	(0.96)	(3.47)
Prairie	02N05W32AA1	34.75928889	-91.55125833	225.00	3/26/2016	148.80	147.80					129.90			(18.90)
Prairie	02N06W17ABB1	344809.48	913959.44	231.73	3/3/2016	125.95	144.76	18.81	12.99	133.79	124.70	124.26	7.84	(1.25)	(1.69)
Prairie	03S05W03BDD2	34.9122389	-91.520931	206.50	3/8/2016	64.14	113.22	49.08	43.35	66.30	64.10	67.70	2.16	(0.04)	3.56
Prairie	04S04W07ADC	34.9806417	-91.459186	195.01	3/15/2016	17.74	99.21	81.47	82.12	24.80	24.80	26.73	7.06	7.06	8.99
Prairie	04N05W07CDC1	345842.62	913440.92	204.13	3/8/2016	78.54	108.97	30.43	27.92	77.80	77.60	76.54	(0.74)	(0.94)	(2.00)
Prairie	04N05W31DDC1	345513.66	913405.83	210.01	3/8/2016	80.06	115.94	35.88	30.95	79.38	78.38		(0.68)	(1.68)	
Prairie	04N06W05CCC1	345933.76	914017.96	201.35	3/8/2016	62.90	113.18	50.28	44.43	61.82	61.20	78.35	(1.08)	(1.70)	15.45
Prairie	04N07W03DCB1	345942.1	914412.48	230.31	3/8/2016	89.32	146.78	57.46	39.15	89.46	86.20	87.33	0.14	(3.12)	(1.99)
Prairie	04N07W20DD1	34.95256389	-91.76868611	255.00	3/8/2016	104.16	174.50	70.34	40.31	105.02	102.77	104.93	0.86	(1.39)	0.77
Prairie	04N07W28BBA1	345700.53	914544.88	262.89	3/8/2016	98.65	182.73	84.08	46.01	98.30	97.60	95.77	(0.35)	(1.05)	(2.88)

2006/2011/2015

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2006/2011/2015

County	Station ID	Latitude	Longitude	USGS LSA	Date	2016 DTW	Aquifer Thick.	Sat. ft.	% Sat.	2015 DTW	2011 DTW	2006 DTW	15-16 Change	11-16 Change	06-16 Change
Woodruff	04N03W03AB1	350020.93	911819.87	178.77	4/5/2016	9.40	82.05	72.65	88.54	11.66	12.95	14.61	2.26	3.55	5.21
Woodruff	05N03W25DDB	35.0259249	-91.258737	190.52	5/13/2016	13.00	92.94	79.94	86.01	12.50			(0.50)		
Woodruff	06N01W11AAB1	350944	910354	215.09	5/14/2016	72.00	137.58	65.58	47.67	67.27	64.17	61.30	(4.73)	(7.83)	(10.70)
Woodruff	06N01W27BCC	35.11138889	-91.09555556		4/6/2016	56.80									
Woodruff	06N01W28DAD	35.10805556	-91.09691667		4/6/2016	58.64									
Woodruff	06N03W12BAA	350955	911607	185.00	4/7/2016	5.57	92.30	86.73	93.97		6.71	6.05		1.14	0.48
Woodruff	07N01W04ACB1	351541	910626	212.27	4/5/2016	69.10	127.56	58.46	45.83	67.00	64.00	60.90	(2.10)	(5.10)	(8.20)
Woodruff	08N01W06DDD1	352028	910747	218.04	4/5/2016	46.36	135.40	89.04	65.76	43.11	48.20	44.57	(3.25)	1.84	(1.79)
Woodruff	08N03W31AAD1	351655	912028	211.58	4/4/2016	18.95	119.99	101.04	84.21	20.87	18.95	21.95	1.92	0.00	3.00
Woodruff	09N03W28ABB1	352310	911845	220.18	5/13/2016	24.00	131.96	107.96	81.81	22.70	15.50		(1.30)	(8.50)	
Woodruff	05N01W13CDC1	350244	910331	210.07	4/7/2016	80.60	140.48	59.88	42.63	79.50	78.26	74.60	(1.10)	(2.34)	(6.00)
Woodruff	05N02W20DCB1	350207.8	911356.19	189.37	4/5/2016	15.73	96.99	81.26	83.78	14.70	14.10	15.25	(1.03)	(1.63)	(0.48)
Woodruff	07N03W31BBA1	351152	912103	196.88	5/13/2016	10.00	102.86	92.86	90.28	9.50		11.90	(0.50)		1.90
Woodruff	09N03W32ACA1	352205	911936	215.12	5/13/2016	22.00	125.78	103.78	82.51	22.50		21.60	0.50		(0.40)
						Avg. % Saturated:			74.42	Declines/Wells:			8/11	5/9	6/10
										Average Change:			(0.89)	(2.10)	(1.70)
										Declines/Wells:			133/227	173/308	250/394
										Total Percent Decline:			58.59	56.17	63.45
										Total Average Change:			0.52	(-0.17)	(-1.70)

Appendix B

Sparta/Memphis Aquifer Water Level Monitoring Data

2016 Sparta WL Change

2006/2011/2015

County	Station	Latitude	Longitude	LSA	Date Measured	2016 DTW	2015 DTW	2011 DTW	2006 DTW	15-16 WL Change	11-16 WL Change	06-16 WL Change
Arkansas	02S04W06CDB1	343311.54	912849.29	212.00	3/15/2016	160.45	154.59	173.13	160.20	(5.86)	12.68	(0.25)
Arkansas	02S04W23DAA1	343044.22	912354.53	208.00	3/17/2016	144.95	137.45	143.67	148.50	(7.50)	(1.28)	3.55
Arkansas	02S05W16CBC1	343143	913318	216.00	3/17/2016	174.08	165.86	177.38	173.80	(8.22)	3.30	(0.28)
Arkansas	02S05W34BDA1	342924.58	913148.02	216.00	3/15/2016	179.94	179.10	186.45	178.20	(0.84)	6.51	(1.74)
Arkansas	02S05W35AAB1	342929.98	913035.31	216.00	3/15/2016	174.56	182.23	175.31	173.40	7.67	0.75	(1.16)
Arkansas	03S04W02CCB1	342747.58	912458.04	202.00	3/25/2016	152.58	145.78	151.95	151.50	(6.80)	(0.63)	(1.08)
Arkansas	03S05W13BDC1	342631.15	913004.57	210.00	3/16/2016	168.83	170.81	173.60		1.98	4.77	
Arkansas	03S05W15CBB1	342633.21	913229.33	206.00	3/16/2016	173.88		176.74	171.60		2.86	(2.28)
Arkansas	03S05W18CAB1	342633	913523	196.00	3/15/2016	163.08	157.06	161.90	163.40	(6.02)	(1.18)	0.32
Arkansas	03S06W21ACB1	342554	913927	200.00	3/15/2016	158.51	150.90	157.81	159.95	(7.61)	(0.70)	1.44
Arkansas	03S06W30BBB1	342515.54	914216.15	191.00	3/15/2016	151.34	141.59	159.30	162.00	(9.75)	7.96	10.66
Arkansas	04S04W11BCC1	342156.96	912501.52	198.00	3/25/2016	150.12	147.97	161.55	152.40	(2.15)	11.43	2.28
Arkansas	04S04W22DAA1	342006.89	912515.15	195.00	3/25/2016	161.38		153.66	154.50		(7.72)	(6.88)
Arkansas	04S05W01BAA1	342322.23	912956.46	196.00	3/16/2016	187.36	167.96	160.44	173.50	(19.40)	(26.92)	(13.86)
Arkansas	04S05W15AAA1	342132.16	913133.29	201.00	3/16/2016	165.00	159.49	164.44	165.85	(5.51)	(0.56)	0.85
Arkansas	04S05W36DCC1	341752.00	913003.63	196.00	3/25/2016	158.14	154.00	158.97	159.95	(4.14)	0.83	1.81
Arkansas	05S04W26ACA1	341358	912435	188.00	3/25/2016	132.00	132.01	136.58	139.00	0.01	4.58	7.00
Arkansas	05S05W26CDD1	341324	913119	188.00	3/25/2016	34.57	34.80	35.99	37.45	0.23	1.42	2.88
Arkansas	05S05W36DAA	341247	912946	180.00	3/25/2016	143.53	137.24	141.61	142.00	(6.29)	(1.92)	(1.53)
Arkansas	06S02W22CDB1	340904	911331.06	186.00	3/30/2016	110.85	107.70	108.18	110.00	(3.15)	(2.67)	(0.85)
Arkansas	06S03W27BAA1	340859.22	912008.98	181.00	3/29/2016	116.40	115.31	117.34	118.70	(1.09)	0.94	2.30
Arkansas	07S02W28ABA1	340339.67	911411.01	181.00	3/30/2016	102.37	104.12	102.13	104.90	1.75	(0.24)	2.53
Arkansas	07S03W06ABC1	340701.89	912247.68	185.00	3/29/2016	135.29	126.09	129.53	126.30	(9.20)	(5.76)	(8.99)
Arkansas	08S02W09BCC1	340031.06	911447.66	174.00	3/30/2016	98.73	99.39	97.79	100.20	0.66	(0.94)	1.47
Arkansas	03S03W18CCC2	342553	912251	196.00	3/25/2016	141.68		145.65	144.20		3.97	2.52
Arkansas	03S04W26CDA1	342416	912437	203.00	3/25/2016	140.24	134.69	142.52		(5.55)	2.28	
Arkansas	03S05W28DAB1	342447	913238	204.00	3/16/2016	167.05	162.80	181.68		(4.25)	14.63	
Arkansas	04S01W04CBD1	342226	910758	196.00	3/30/2016	113.55	109.49	110.13	110.81	(4.06)	(3.42)	(2.74)
Arkansas	04S01W28BAA1	341929	910739	190.00	3/30/2016	105.73	102.35	102.71	104.30	(3.38)	(3.02)	(1.43)
Arkansas	04S04W19CBB1	342005	912926	195.00	3/16/2016	162.83	151.94	162.49		(10.89)	(0.34)	
Arkansas	05S01W17BAA1	341550	910742	176.00	3/30/2016	91.33	90.26	90.08	91.80	(1.07)	(1.25)	0.47
Arkansas	06S02W06ABB1	341228	911622	181.00	3/29/2016	118.93	114.26	115.90	117.50	(4.67)	(3.03)	(1.43)

County	Station	Latitude	Longitude	LSA	Date	2016	2015	2011	2006	15-16 WL	11-16 WL	06-16 WL
					Measured	DTW	DTW	DTW	DTW	Change	Change	Change
Arkansas	06S02W17ADA1	341023	911451	188.00	3/29/2016	111.52	110.05	110.50	112.70	(1.47)	(1.02)	1.18
Arkansas	03S04W33BAA1	342416	912645		3/25/2016	154.26						
							Declines/Wells:			24/30	18/33	14/29
							Average Change:			(4.22)	0.49	(0.11)
Ashley	15S07W32CDD1	332117.77	915101.06	190.00	2/9/2016	138.10		138.41	138.70		0.31	0.60
Ashley	17S09W15AOC1	331333.66	920116.44	100.00	3/4/2016	24.05	22.05	22.83	20.30	(2.00)	(1.22)	(3.75)
							Declines/Wells:				1/2	1/2
							Average Change:				(0.46)	(1.58)
Bradley	12S09W31CCB1	333711.24	920444.21	231.00	7/5/2016	189.10	197.29	184.12	174.85	8.19	(4.98)	(14.25)
Bradley	13S09W06ACB3	333647	920407	208.00	7/5/2016	147.93	163.97	168.24	163.40	16.04	20.31	15.47
Bradley	13S11W17BCD1	333453.65	921607.25	250.00	7/5/2016	201.36	194.48	191.89	191.20	(6.88)	(9.47)	(10.16)
Bradley	16S12W21CAA1	331839	922052	100.00	7/5/2016	75.43	73.73	78.36	78.80	(1.70)	2.93	3.37
Bradley	15S11W31DDD1	332142	921621	131.00	7/14/2016	98.68	99.03	102.40		0.35	3.72	
Bradley	13S09W06DBD1	333625	920407		7/5/2016	185.43						
							Declines/Wells:			2/5	2/5	2/4
							Average Change:			3.20	2.50	(1.39)
Calhoun	13S13W32CDA1	333226.81	922741.66	208.00	7/5/2016	163.86	176.69	175.50	185.75	12.83	11.64	21.89
Calhoun	14S13W05BBB1	333206.66	922801.55	189.00	3/1/2016	147.26	147.53	151.42	159.20	0.27	4.16	11.94
Calhoun	14S13W12CCB1	333040.05	922403.54	205.00	7/5/2016	176.00	170.58	165.18	177.04	(5.42)	(10.82)	1.04
Calhoun	11S14W12CAC3	334630	922927	313.00	7/5/2016	106.60	94.43	148.82	130.22	(12.17)	42.22	23.62
Calhoun	13S12W31DAA1	333233	922224		7/5/2016	57.33						
Calhoun	14S15W16BAA1	333055	923910		3/1/2016	94.55						
Calhoun	15S13W20BDC1	332407	922810		3/2/2016	24.31						
Calhoun	15S13W32BCA1	332230	922821		3/2/2016	113.02						
							Declines/Wells:			2/4	1/4	0/4
							Average Change:			(1.12)	11.80	14.62
Columbia	15S20W20CCB1	332453.37	931215.01	372.00	4/7/2016	216.22	216.51	215.70	216.75	0.29	(0.52)	0.53
Columbia	16S21W14CBB1	332049	931516	281.00	4/7/2016	221.18	193.16	200.04	181.15	(28.02)	(21.14)	(40.03)
Columbia	16S21W20DAD1	331955.06	931736.47	350.00	3/15/2016	276.25	263.41	254.43		(12.84)	(21.82)	
Columbia	16S22W22CCD1	331947.61	932224.89	340.00	4/7/2016	132.36	150.44	132.97	134.20	18.08	0.61	1.84

2016 Sparta WL Change
2006/2011/2015

[illegible]

2016 Sparta WL Change
2006/2011/2015

County	Station	Latitude	Longitude	LSA	Date Measured	2016 DTW	2015 DTW	2011 DTW	2006 DTW	15-16 WL Change	11-16 WL Change	06-16 WL Change
Craighead	15N06E29DDBB1	355359.83	903432.73	258.00	5/25/2016	25.37		25.95			0.58	
Craighead	15N06E18ACA1	355544.42	902858.20	230.00	5/25/2016	20.62		19.21	19.50	(1.41)	(1.12)	
Craighead	13N03E29AAA1	354402	904712		3/23/2016	116.10						
Craighead	13N05E22BAD1	354449	903243		3/25/2016	13.00						
Craighead	15N04E20ADB1	355508	904045		5/25/2016	119.75						
							Declines/Wells:				3/5	3/4
							Average Change:			(0.65)	(2.00)	
Crittenden	06N07E01DAD2	350958.04	901738.42	209.00	4/6/2016	23.26		23.85	26.60		0.59	3.34
Crittenden	07N09E14BAC1	351348.14	900628.23	217.00	3/27/2016	30.90			32.20			1.30
Crittenden	06N09E23AAB1	350744	900556	222.00	4/4/2016	48.35		46.56		(1.79)		
Crittenden	09N07E21BBB1	352341	902131	216.00	4/18/2016	24.19	25.18	25.12		0.99	0.93	
Crittenden	05N08E11CCA2	350344	901300		3/28/2016	21.76						
Crittenden	08N07E35BBC2	351630	901933		4/6/2016	34.16						
							Declines/Wells:				1/3	0/3
							Average Change:			(0.09)	2.32	
Cross	06N04E06ACA1	351004.29	904237.72	358.00	4/28/2016	195.34	197.06	202.83		1.72	7.49	
Cross	07N05E04ADD1	351538.11	903329.85	209.00	4/28/2016	33.26	35.03	33.43	34.70	1.77	0.17	1.44
Cross	08N02E18bdb1	351908	905538	228.00	4/27/2016	91.56		87.89	89.00	(3.67)	(2.56)	
Cross	09N01E16CAC1	352405.00	905950.75	234.00	4/28/2016	101.88		94.80	90.00	(7.08)	(11.88)	
Cross	09N03E22AAB2	352403.82	904518.39	277.00	4/28/2016	134.80	133.70	130.12	127.60	(1.10)	(4.68)	(7.20)
Cross	09N03E22AAD1	352403.2	904511.77	278.00	4/28/2016	128.26		127.55	127.60	(0.71)	(0.66)	
Cross	09N04E30DCA1	352231	904215	419.32	4/28/2016	288.27	265.84	276.63	279.20	(22.43)	(11.64)	(9.07)
Cross	07N03E17CAD1	351304	904822		4/28/2016	110.72						
Cross	09N01E25AAD1	352250	905553		4/27/2016	95.64						
							Declines/Wells:					
							Average Change:			2/4	5/7	5/6
							(5.01)		(2.87)	(4.99)		
Dallas	07S16W20CAB1	340559	924541	322.00	4/13/2016	23.40		25.72	26.40		2.32	3.00
Dallas	09S16W19CAA1	335605.48	924701.17	260.00	4/12/2016	6.00	6.14	7.40	11.00	0.14	1.40	5.00

2016 Sparta WL Change
2006/2011/2015

County	Station	Latitude	Longitude	LSA	Date Measured	2016 DTW	2015 DTW	2011 DTW	2006 DTW	15-16 WL Change	11-16 WL Change	06-16 WL Change
Dallas	07S15W33DAC1	340402	923752	475.00	6/14/2016	22.60	25.53	33.40		2.93	10.80	
Dallas	10S145W11DBB1	335201	923632	295.00	5/12/2016	55.53	57.89	57.21		2.36	1.68	
Dallas	07S14W30DCC1	340430	923400		4/12/2016	120.00						
Dallas	08S16W27DDD1	335935	924307		5/12/2016	31.94						
							Declines/Wells:			0/3	0/4	0/2
							Average Change:			1.81	4.05	4.00
Desha	09S02W26AAC1	335346.00	911520.82	153.00	2/16/2016	71.99		67.50	73.40		(4.49)	1.41
Desha	09S04W28DDD1	335309.60	913006.71	165.00	2/16/2016	113.92		116.54	112.50		2.62	(1.42)
Desha	11S02W03CCA1	334615.78	911711.03	139.00	2/16/2016	71.49	68.33	62.54	70.50	(3.16)	(8.95)	(0.99)
Desha	12S03W34DAD1	333643.44	912305.04	147.00	2/16/2016	81.75		77.31	89.10		(4.44)	7.35
							Declines/Wells:				3/4	2/4
							Average Change:				(3.82)	1.59
Drew	11S04W25CB2	334249.46	912706.98	148.00	3/2/2016	88.38	85.43	87.81	98.40	(2.95)	(0.57)	10.02
Drew	13S05W36ACB1	333150.88	913407.59	169.00	3/2/2016	92.20	92.12	91.73	89.50	(0.08)	(0.47)	(2.70)
Drew	15S04W12DDA1	332429.38	912723.69	125.00	3/2/2016	63.54	64.00	63.92	63.20	0.46	0.38	(0.34)
Drew	11S04W02ACA1	334636	912832		3/2/2016	96.09						
							Declines/Wells:			2/3	2/3	2/3
							Average Change:			(0.86)	(0.22)	2.33
Grant	03S13W12AAA1	342845.65	922106.24	361.00	5/12/2016	130.07	128.88	129.79	132.00	(1.19)	(0.28)	1.93
Grant	03S15W26DAA1	342600.52	923447.01	337.00	4/12/2016	8.10	5.03	10.90	8.10	(3.07)	2.80	0.00
Grant	05S13W03CAA1	341843.97	922400.47	260.00	5/4/2016	84.39	84.53	83.79	87.80	0.14	(0.60)	3.41
Grant	05S13W03CDA4	341837.64	922401.95	281.00	5/4/2016	106.95	113.10	105.17	111.10	6.15	(1.78)	4.15
Grant	05S14W06DCC1	341842.5	923326.69	293.00	4/5/2016	82.30		85.47	87.40		3.17	5.10
Grant	05S15W05ABD1	341923.78	923826.87	236.00	5/31/2016	10.00	11.69	14.47	14.50	1.69	4.47	4.50
Grant	06S11W05ACD1	341340.82	921413.01	269.00	5/12/2016	175.70	186.09	189.02	196.10	10.39	13.32	20.40
Grant	06S15W26ACA1	341021.99	923537.59	280.00	4/14/2016	62.55	62.38	63.64	67.20	(0.17)	1.09	4.65
Grant	04S15W02DAC1	342405	923456	322.00	3/1/2016	84.50	85.75	85.00		1.25	0.50	

2016 Sparta WL Change
2006/2011/2015

County	Station	Latitude	Longitude	LSA	Date Measured	2016 DTW	2015 DTW	2011 DTW	2006 DTW	15-16 WL Change	11-16 WL Change	06-16 WL Change
							Declines/Wells:			3/8	3/9	0/8
							Average Change:			1.90	2.52	5.52
Jefferson	03S08W19BBD1	342628.36	915504.54	215.00	3/24/2016	161.19	166.36	162.78	172.80	5.17	1.59	11.61
Jefferson	03S10W27AAD1	342502.05	920433.81	222.00	3/24/2016	122.35			125.80			3.45
Jefferson	03S11W22ABC1	342650.81	921058.27	310.00	3/23/2016	171.10	170.10	170.37		(1.00)	(0.73)	
Jefferson	04S11W14BAD1	342219.74	921000.07	400.00	3/23/2016	300.00						
Jefferson	06S08W16CCC1	341143.07	915517.06	202.42	3/1/2016	238.50	235.46	239.21	257.60	(3.04)	0.71	19.10
Jefferson	06S10W23ACA2	341123.09	920503.93	235.00	3/31/2016	203.29						
Jefferson	07S07W24BAB1	340632.68	914522.99	188.00	3/31/2016	161.05	157.27	160.68	161.00	(3.78)	(0.37)	(0.05)
Jefferson	04S09W11BAA1	342309	915702	210.00	3/29/2016	108.85						
Jefferson	05S08W30ADB1	341453	915441	221.00	4/27/2016	270.73	276.61	276.43		5.88	5.70	
Jefferson	06S09W17CAD1	341158	920206	233.00	3/31/2016	263.82	246.68	255.30	282.60	(17.14)	(8.52)	18.78
Jefferson	05S09W31DDC1	341336	920109		3/31/2016	256.30						
Jefferson	05S10W16DBD1	341634	920534		3/23/2016	276.81						
							Declines/Wells:			4/6	3/6	1/5
							Average Change:			(2.32)	(0.27)	10.58
Lonoke	01N07W03BCC1	344425.34	914503.28	223.00	4/12/2016	138.59	141.30	136.20	129.50	2.71	(2.39)	(9.09)
Lonoke	02N07W06ACD1	344939.05	914737.03	241.00	4/13/2016	139.42	125.90	124.51		(13.52)	(14.91)	
Lonoke	02N07W09AAA1	344906.42	914500.30	232.00	4/15/2016	104.78	103.38	102.77	100.30	(1.40)	(2.01)	(4.48)
Lonoke	02N07W22DBA1	344651.49	914425.68	227.00	4/12/2016	140.83	139.59	135.45	129.85	(1.24)	(5.38)	(10.98)
Lonoke	02N07W32DDD1	344448	914618	226.00	4/12/2016	147.64		139.74	132.80		(7.90)	(14.84)
Lonoke	01S08W02DBD1	343853	915002	210.00	4/12/2016	99.40	109.61	108.41	112.75	10.21	9.01	13.35
Lonoke	02S07W08DCC1	343235	914700	202.00	4/12/2016	131.28	126.65	141.71		(4.63)	10.43	
Lonoke	02S08W16BDA1	343227	915227	216.00	4/12/2016	124.88	120.43	126.40		(4.45)	1.52	
Lonoke	03N08W22DAD1	345152	915024	235.00	4/13/2016	101.02	102.62	98.99		1.60	(2.03)	
Lonoke	03N08W22DAD2	345205	915024	233.00	3/31/2016	101.50	104.25	99.66		2.75	(1.84)	
Lonoke	02S09W15BBB2	343246	915823		4/12/2016	68.53						
Lonoke	03N08W22DAD3	345204	915024		3/29/2016	101.40						
							Declines/Wells:			5/9	7/10	4/5
							Average Change:			(0.89)	(1.55)	(5.21)

2016 Sparta WL Change
2006/2011/2015

County	Station	Latitude	Longitude	LSA	Date	2016	2015	2011	2006	15-16 WL	11-16 WL	06-16 WL
					Measured	DTW	DTW	DTW	DTW	Change	Change	Change
Ouachita	11S15W27ABD1	334440.87	923725.58	200.00	6/21/2016	72.39	68.63	69.72	72.20	(3.76)	(2.67)	(0.19)
Ouachita	11S17W36CCA1	334341.11	924834.21	133.00	4/25/2016	4.52		7.94			3.42	
Ouachita	12S15W09BBA1	334223.32	923922.44	213.00	6/21/2016	50.82	39.08	47.83	63.15	(11.74)	(2.99)	12.33
Ouachita	12S16W25BDC1	333929.4	924210.82	140.00	6/21/2016	27.96	29.10	35.25	36.20	1.14	7.29	8.24
Ouachita	12S16W26ABD1	333945.55	924304.12	137.00	4/21/2016	17.57	19.44	32.23	31.38	1.87	14.66	13.81
Ouachita	12S18W19CDC1	334018	925948	235.00	4/12/2016	30.70	27.04	32.58	27.40	(3.66)	1.88	(3.30)
Ouachita	12S18W25CAB1	333937.19	925441.87	187.00	6/21/2016	78.78	77.65	78.51	79.40	(1.13)	(0.27)	0.62
Ouachita	12S19W09BAB1	334251.46	930351.94	290.00	4/12/2016	8.70	5.08	14.79	18.30	(3.62)	6.09	9.60
Ouachita	12S19W35BDD1	333901.13	930145.97	350.00	4/15/2016	155.95	163.74	156.69	159.10	7.79	0.74	3.15
Ouachita	13S16W28ADD1	333416.22	924450.63	106.00	6/21/2016	22.05	20.78	27.4	29.75	(1.27)	5.35	7.70
Ouachita	13S19W28BCD1	333433.86	930417.81	230.00	4/25/2016	35.72	36.05	37.55	39.80	0.33	1.83	4.08
Ouachita	14S16W32BDB1	332815.62	924639.52	231.00	4/26/2016	12.46	13.63	38.28	37.14	1.17	25.82	24.68
Ouachita	14S17W05CAD1	333238.01	925254.64	157.00	4/6/2016	34.34	34.70	38.02	39.34	0.36	3.68	5.00
Ouachita	14S17W19DBB1	333002.20	925345.44	259.00	4/21/2016	9.92	13.61	38.20	33.55	3.69	28.28	23.63
Ouachita	14S17W32CAD1	332803.41	925251.18	220.00	4/25/2016	74.57	75.96	79.04	81.26	1.39	4.47	6.69
Ouachita	14S19W29ABB1	332941.45	930513.43	280.00	4/25/2016	88.35	89.28	88.38	87.20	0.93	0.03	(1.15)
Ouachita	15S15W32DBB2	332233.72	924027.13	119.00	4/26/2016	150.22	151.23	159.17	173.50	1.01	8.95	23.28
Ouachita	15S18W36ADD1	332310.75	925436.06	160.00	4/25/2016	88.43	88.86	91.14	94.55	0.43	2.71	6.12
Ouachita	15S19W21CDD2	332438.02	930431.9	272.00	4/6/2016	187.40	187.38	188.00	189.96	(0.02)	0.60	2.56
Ouachita	13S18W06BBA1	333819	930006	282.00	4/25/2016	113.39	115.10			1.71		
Ouachita	14S17W03CBA1	333234	925055	140.00	4/26/2016	12.32						
Ouachita	15S16W23DAC1	332415	924313	170.00	4/26/2016	115.22	116.64			1.42		
Ouachita	13S18W31BDD1	333340	925958	242.00	4/25/2016	68.11			71.70			3.59
Ouachita	11S18W20AAA1	334614	925759		6/21/2016	42.86						
Ouachita	13S18W06CBB1	333758	930012		6/21/2016	113.94						
Ouachita	14S17W02ABB1	333252	924926		6/22/2016	26.60						
Ouachita	14S18W27BDC1	332918	925703		9/14/2016	42.49						
Ouachita	15S16W30DBD1	332330	924717		6/22/2016	183.28						
							Declines/Wells:			7/20	3/19	3/19
							Average Change:			(0.10)	5.78	7.92
Phillips	01S02E32DDC1	343324.32	905455.41	211.00	3/23/2016	76.98	77.46	77.81	76.30	0.48	0.83	(0.68)
Phillips	02S02E01ADC1	343323.48	905056.27	176.00	3/23/2016	34.68	35.73	32.82	31.00	1.05	(1.86)	(3.68)

2016 Sparta WL Change
2006/2011/2015

County	Station	Latitude	Longitude	LSA	Date Measured	2016 DTW	2015 DTW	2011 DTW	2006 DTW	15-16 WL Change	11-16 WL Change	06-16 WL Change
Phillips	02S04E02DBA1	343242.87	903906.98	250.00	3/23/2016	93.39	98.54	91.83	105.30	5.15	(1.56)	11.91
Phillips	02S05E29CCC1	342850.81	903635.44	179.00	3/22/2016	18.43	20.71	15.06	26.75	2.28	(3.37)	8.32
Phillips	03S03E30DAA1	342402.88	904914.59	172.00	3/23/2016	40.93	42.64	37.28	41.90	1.71	(3.65)	0.97
Phillips	02S05E16BCB1	343110	903525		3/22/2016	29.13						
							Declines/Wells:			0/5	4/5	2/5
							Average Change:			2.13	(1.92)	3.37
Poinsett	10N01E12BDC1	353026.35	905629.57	234.00	4/26/2016	108.87		104.40	97.50		(4.47)	(11.37)
Poinsett	10N01E15DBB1	352930.54	905825.14	232.00	4/26/2016	100.11		96.14	95.90		(3.97)	(4.21)
Poinsett	11N02E16CCC1	353448.21	905321.22	243.00	4/26/2016	118.63		113.65	107.30		(4.98)	(11.33)
Poinsett	11N02E11BDC1	353606	905107		4/18/2016	120.58						
							Declines/Wells:				3/3	3/3
							Average Change:				(4.47)	(8.97)
Prairie	01N05W19CDC1	344113.1	913505.27	212.00	4/5/2016	154.72	146.53	146.47	150.20	(8.19)	(8.25)	(4.52)
Prairie	01N06W34CBB1	343943.01	913846.17	226.00	4/5/2016	160.10	164.25	162.87	163.65	4.15	2.77	3.55
Prairie	01S05W06BCB1	343903.98	913531.63	220.00	4/6/2016	162.40	165.72	157.39	155.55	3.32	(5.01)	(6.85)
Prairie	01S05W20ABB1	343639.91	913351.89	220.00	4/5/2016	158.08	164.37	158.62	167.00	6.29	0.54	8.92
Prairie	01S06W11DBD1	343748.99	913654.24	226.00	4/6/2016	169.52	170.33	177.72	170.50	0.81	8.20	0.98
Prairie	02N06W19AAB1	344718.24	914049.95	236.00	4/13/2016	156.12	155.18	152.69	150.07	(0.94)	(3.43)	(6.05)
Prairie	02N06W20BCB1	344706.57	914032.97	236.00	4/7/2016	159.76	160.04	149.24	157.80	0.28	(10.52)	(1.96)
Prairie	02N06W21DAD1	344644.15	913829.47	232.00	4/7/2016	125.67	123.85	128.86	122.00	(1.82)	3.19	(3.67)
Prairie	02N06W22BDD1	344653.66	913800.68	233.00	4/7/2016	125.88	121.15	130.44		(4.73)	4.56	
Prairie	03N05W03ADA2	345451.65	913042.51	205.00	4/5/2016	61.06		61.08	74.20		0.02	13.14
Prairie	03N06W20CDD1	345140.24	914003.93	225.00	4/15/2016	91.52		85.70	85.72		(5.82)	(5.80)
Prairie	02N06W24CAA2	344651	913551	233.00	10/5/2016	142.71						
Prairie	01S06W01BDD2	343859	913613	226.00	4/5/2016	162.51	173.94	162.73	161.34	11.43	0.22	(1.17)
Prairie	02N06W04DBB1	344928	913852		4/5/2016	107.74	108.45	106.05		0.71	(1.69)	
Prairie	01S06W12BAB2	343826	913613		4/5/2016	165.69						
Prairie	02N05W24BCA4	344659	912937		4/6/2016	101.72						
							Declines/Wells:			4/11	6/13	7/11
							Average Change:			1.03	(1.17)	(0.31)

2016 Sparta WL Change
2006/2011/2015

County	Station	Latitude	Longitude	LSA	Date Measured	2016 DTW	2015 DTW	2011 DTW	2006 DTW	15-16 WL Change	11-16 WL Change	06-16 WL Change
Union	16S14W15CAB1	331944.03	923218.09	94.00	3/2/2016	129.94	127.24	133.56	161.39	(2.70)	3.62	31.45
Union	16S16W02ABC1	332205	924330	116.00	4/7/2016	145.05	146.26	158.27	167.81	1.21	13.22	22.76
Union	17S13W31BAC1	331200.17	922915.7	216.00	7/20/2016	202.38	204.20			1.82		
Union	17S14W10DCC1	331456.79	923203.26	182.00	7/20/2016	89.80	87.25	93.78	96.14	(2.55)	3.98	6.34
Union	17S14W15ABA1	331451.3	923159.8	169.00	7/20/2016	89.87	83.57	93.74		(6.30)	3.87	
Union	17S15W06BAA1	331645.6	924133.99	170.00	5/31/2016	210.62	212.07		250.50	1.45		39.88
Union	17S15W08CDD1	331504.77	924027.41	174.92	5/31/2016	254.40	255.69	270.36	303.20	1.29	15.96	48.80
Union	17S15W18DBB1	331438.96	924129.21	182.93	1/19/2016	272.30	274.43	286.84	327.27	2.13	14.54	54.97
Union	17S15W28DBA1	331246.08	923909.78	230.00	1/20/2016	316.09	316.74	327.77		0.65	11.68	
Union	17S15W31DDA1	331143.75	924104.87	261.00	4/21/2016	359.34	360.52	374.10		1.18	14.76	
Union	17S16W01BAA1	331649.04	924232.96	188.84	5/31/2016	250.97	249.01	262.65	305.75	(1.96)	11.68	54.78
Union	17S17W25DBA2	331256	924837	250.00	1/19/2016	309.52	310.22	320.58	349.73	0.70	11.06	40.21
Union	17S17W30DCD1	331257.41	925355.54	280.00	3/8/2016	285.92	278.16	303.86	311.70	(7.76)	17.94	25.78
Union	18S12W33CBC1	330650.66	922119.92	112.00	3/2/2016	113.04	112.71		111.60	(0.33)		(1.44)
Union	18S15W03DAB1	331103.78	923802.12	240.00	4/6/2016	319.06	318.59	328.10	349.73	(0.47)	9.04	30.67
Union	18S15W33ADA1	330659.32	923858.48	253.00	4/5/2016	324.77	339.11	332.36	374.39	14.34	7.59	49.62
Union	18S15W35DAC1	330635	923707	201.00	3/8/2016	274.75		261.91	292.97		(12.84)	18.22
Union	18S16W11DAC1	331011.23	924316.37	272.00	5/31/2016	362.00	356.99	367.36	421.40	(5.01)	5.36	59.40
Union	18S16W10CDD1	331000.38	924445.32	182.00	3/8/2016	274.35		272.75			(1.60)	
Union	18S16W12ACB1	331028.75	924231.85	302.00	3/8/2016	387.06	388.96	399.92	435.35	1.90	12.86	48.29
Union	18S17W22BDD1	330855.91	925056.48	285.00	4/6/2016	317.39	318.11	327.29	351.02	0.72	9.90	33.63
Union	19S10W16CBC1	330329	920903	82.00	4/28/2016	80.30	81.90	86.55	90.51	1.60	6.25	10.21
Union	19S11W25AAA1	330217.84	921113.03	135.00	4/28/2016	139.73	138.86	145.49	153.26	(0.87)	5.76	13.53
Union	19S12W13AAA1	330411.26	921716.78	191.00	1/28/2016	159.85	160.97	159.66	157.22	1.12	(0.19)	(2.63)
Union	19S15W01CCA1	330534.81	923645.01	192.00	4/28/2016	31.54	19.96	14.34	68.90	(11.58)	(17.20)	37.36
Union	19S18W14ADA1	330451.70	925607.90	243.00	5/31/2016	187.62	188.35	190.81	193.00	0.73	3.19	5.38
Union	16S17W36DCC1	331700	924842	180.00	4/28/2016	215.76	215.53	225.84		(0.23)	10.08	
Union	19S11W23ACA1	330255	921229	142.00	4/28/2016	144.85	148.35	151.17	154.01	3.50	6.32	9.16
Union	17S14W22BAB1	331354	923224	201.00	4/6/2016	272.09	267.62	276.92	309.35	(4.47)	4.83	37.26
Union	18S12W33BBB1	330651	922120	112.00	4/5/2016	139.43	131.68	138.40	111.60	(7.75)	(1.03)	(27.83)
Union	16S14W34CBC1	331701	923223		8/24/2016	258.73						
Union	16S15W20DAA1	331900	923956		7/26/2016	239.27						
Union	16S15W31ACC1	331717	924128		5/31/2016	241.74						
Union	16S16W02ABC1	332205	924330		4/7/2016	145.05						

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