Arkansas Ground Water Protection and Management Report for 2008

January 2009

STATE OF ARKANSAS

ARKANSAS NATURAL RESOURCES COMMISSION
101 EAST CAPITOL, SUITE 350
LITTLE ROCK, ARKANSAS 72201

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ABSTRACT

The Arkansas Ground Water 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 ground-water protection and conservation programs administered by the ANRC during the year 2008; including water-level monitoring, the development of water-quality standards, studies of water use trends, and administration of the Arkansas Water Well Construction Commission program. This report covers water level data from the spring of 2007 to the spring of 2008, as well as other ground-water activities through the end of 2008. The general trend in Arkansas' long-term water-level change is that the ground-water levels are declining in response to continued withdrawals at a rate which is not sustainable. Based on 2006 water use data, approximately 46 percent of the current alluvial aquifer withdrawal of 6505 million gallons per day, and 55 percent of the Sparta/Memphis aquifer withdrawal of 159 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 ground water and excess surface water in a manner that brings about the wise and sustainable use of our valuable water resources.

INTRODUCTION

This annual ground-water 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 ground-water protection and management program, water-quality standards activities,

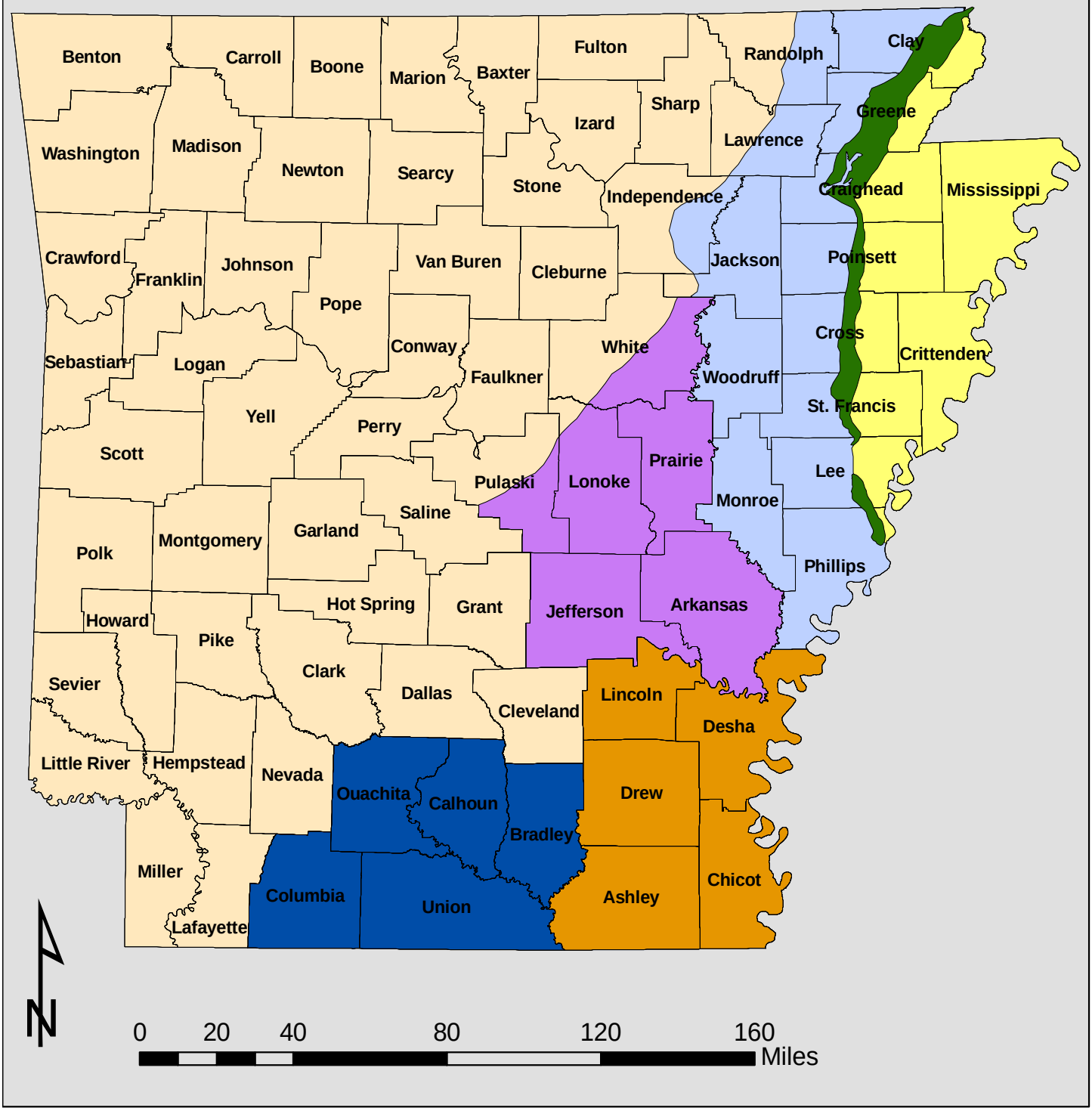
the Arkansas Water Well Construction Commission administrative program, and water use studies. This report and all programs described herein are built on a strong cooperative program with other appropriate State, Federal, and local water resources agencies. Some of the programs described in this report are partially funded through federal grants from Region VI of the Environmental Protection Agency.

Each spring approximately 700 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 350 wells that are monitored 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. Hydrologic 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 rainfall total for this monitoring period was 46.72 inches, almost the yearly average of 49 inches statewide.

Long-term water-level data collected over a 25-year period indicate a statewide decline of 0.8 feet per year in the Sparta-Memphis aquifer (USGS, 2004-5055), and 0.3 feet per year in the alluvial aquifer over a 24 year period (USGS, 2006-5128). Such long-term data is valuable in revealing water-level change trends that can be masked by short-term climate variations and local pumping rates. 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 are depressions in the

Arkansas Ground Water Study Areas

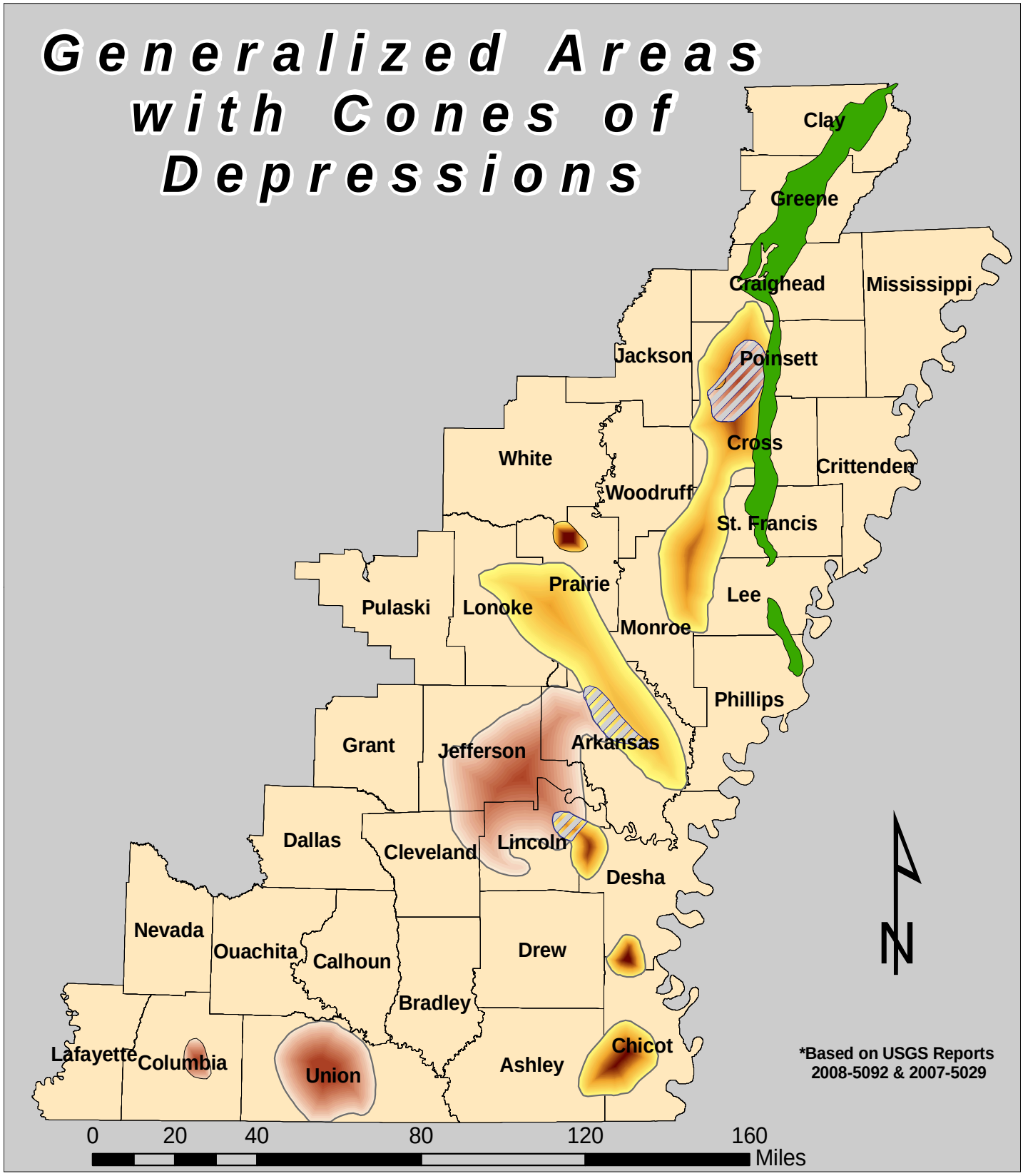


Legend

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

Fig. 1

Generalized Areas with Cones of Depressions



*Based on USGS Reports 2008-5092 & 2007-5029

Legend

- Crowleys Ridge
- Intersection of the two cones
- Cones of Depression in the Alluvial Aquifer
- Cones of Depression in the Sparta Aquifer
- County Boundaries

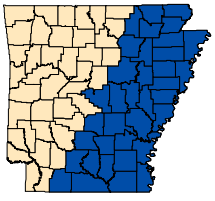


Fig. 2

potentiometric surface, and occur in both the alluvial and Sparta/Memphis aquifers. (Fig. 2) Water- level declines are consistently observed in areas where water use is highest, such as portions of the Grand Prairie area, and in the Cache study area west of Crowley's Ridge.

Other programs are focused on the core Nonpoint Source Water-Quality Program, the Section 106 water-quality data management and GIS activities, and the administration of the Arkansas Water Well Construction Commission Program.

Water quality data collected by the USGS in 2006 showed wells with an increased specific conductance (>/= 1,000 microsiemens/cm) in the alluvial aquifer in Arkansas, Prairie, Craighead, and Chicot Counties. (Schrader, T.P., 2006) An increase in the level of specific conductance indicates an increased level of dissolved solids in the ground water. In certain areas these dissolved solids are chlorides leading to the ground-water becoming unsuitable for particular irrigation purposes. This trend may indicate saline water encroachment associated with the development of cones of depression.

During 2007, the ANRC staff continued to work on statewide water quality standards. This task will build on the State's existing water resources programs and agency infrastructure of Federal and State agencies. Early emphasis is on coordination between agencies and programs concerning data as well as agency infrastructure, considerations on the variability of water-quality within aquifers over distance, and aquifer classification and water use trends.

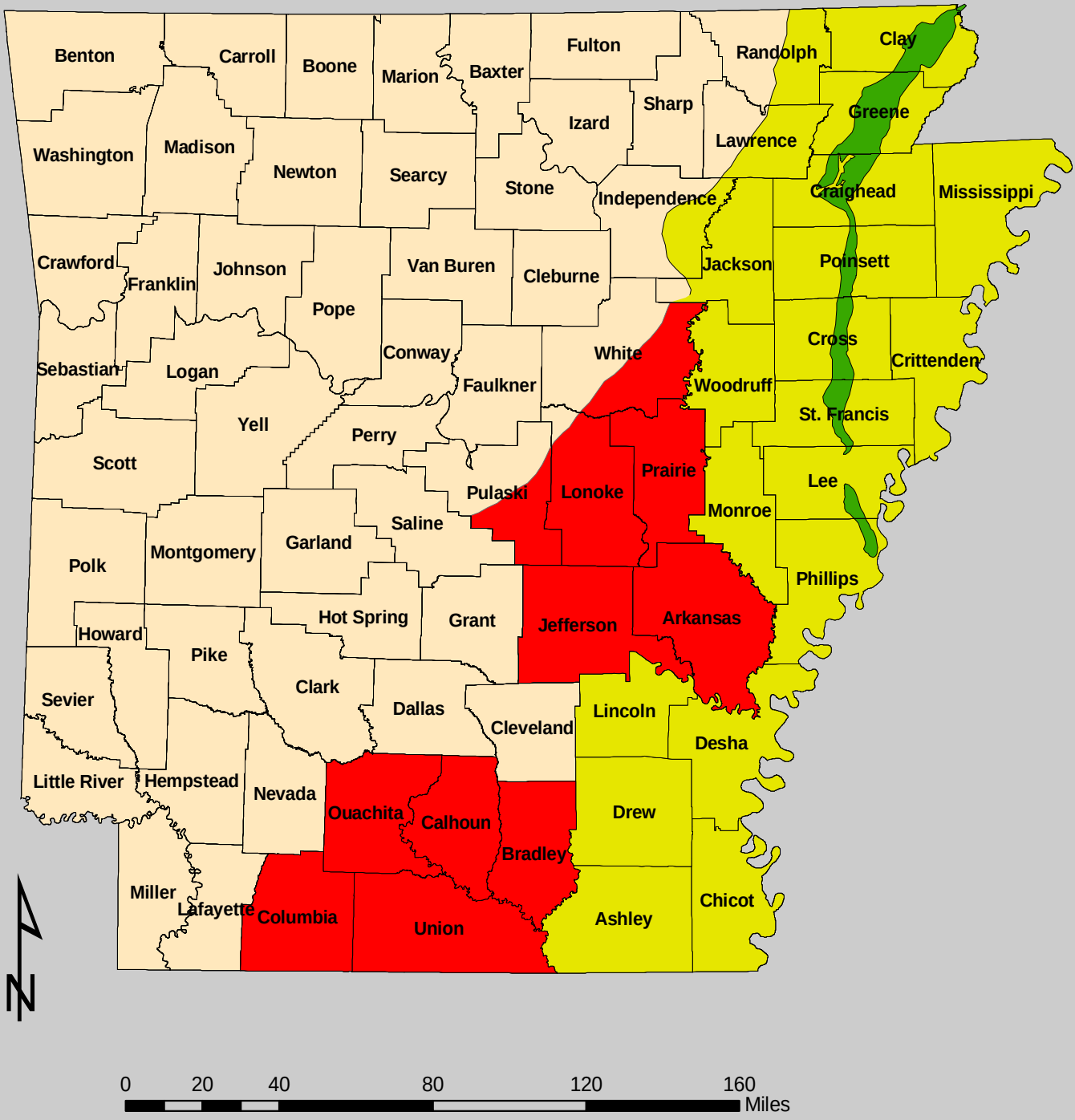
Arkansas is withdrawing ground water from the alluvial and Sparta aquifers in eastern and southern Arkansas at a rate which is far above sustainable. With this in mind, the ANRC should continue to promote conservation, education, and the conjunctive use of ground- and surface- water at rates that are sustainable for current and future water use needs. Water–level data in this report indicates that the alluvial and Sparta aquifers, in the Cache Study Area continue to meet critical area criteria for saturated thickness, water-level declines, and sustainable yield.

WATER POLICY

Water-resources policy in Arkansas was established in the Arkansas Water Plan, 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 States ground-water 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 very near 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 as well as the stream flow needs of the State's surface-water flow system if our water resources are to be protected for future generations to utilize and enjoy. The ANRC advocates that the State move towards a sustainable yield pumping strategy through conservation utilizing critical ground water area designation wherever needed to focus resources and minimize water-level declines. Designation as a Critical Ground Water Area brings about enhanced tax credits for conservation activities, focuses educational programs, and sets the area as a priority for possible federal programs and funding.

Critical Ground Water Designations



Legend

- Crowleys Ridge
- Current Study Areas
- Current Critical Areas
- County Boundary

South Arkansas Study Area for Sparta in 1996

Grand Prairie Study Area for Sparta & Alluvial in 1998

Fig. 3

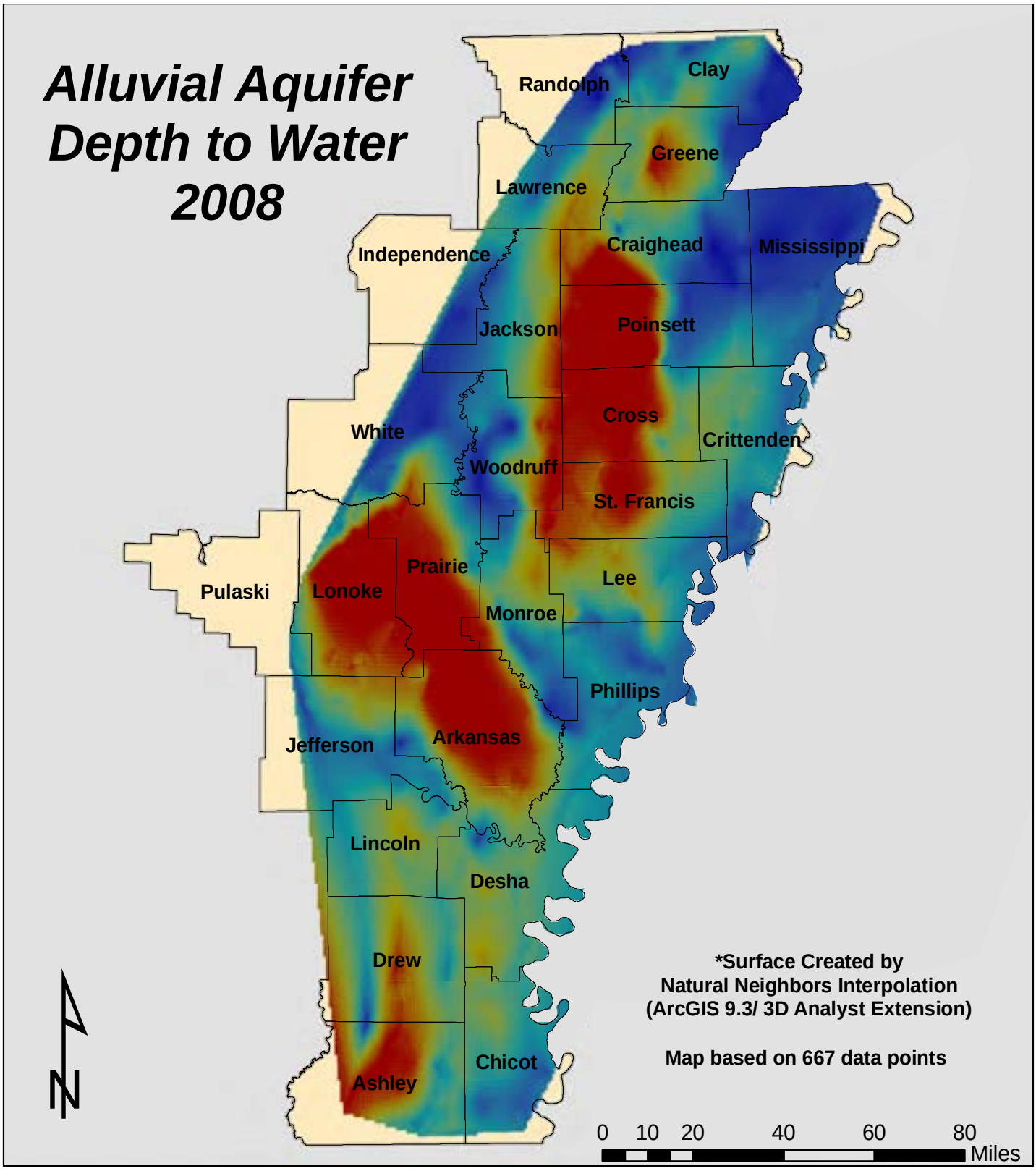
Hydrogeology

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.

Mostly due to the use of ground water for agriculture in the region, the aquifer has been pumped in ever-increasing amounts since records were kept from the early 1900's. In 2006 Arkansas had ground water withdrawals estimated to be 6505.30 million gallons per day (Mgal/d). That is a 70.7% increase from the amount used in 1985. (Holland, T.W. 2006).

In 2006 there was 6505.30 Mgal/d pumped from the alluvial aquifer. The estimated sustainable yield for the alluvial aquifer is 2,987 Mgal/d, leaving an unmet demand of 3,518 Mgal/d (45.9%). Ground water furnishes 63% of the state's total water use, and 95% of the ground water used comes from the alluvial aquifer. Agriculture accounts for 96% of the total water that is pumped from the alluvial aquifer. Figures 4 and 5 are illustrations of the 2008 depth to water, and 10-year water level change map. Increased pumping from this aquifer has resulted in decreased outflow to rivers, increased inflow from rivers, increased inflow from the



Legend

Depth to Water, Below Land Surface

- 0 ft. - 16 ft.
- 17 ft. - 29 ft
- 30 ft. - 45 ft.
- 46 ft. - 66 ft.
- 67 ft. - 91 ft.
- 92 ft - 135 ft.
- County Boundaries

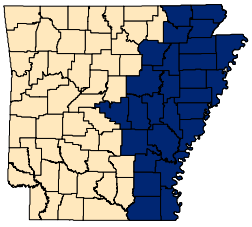


Fig. 4

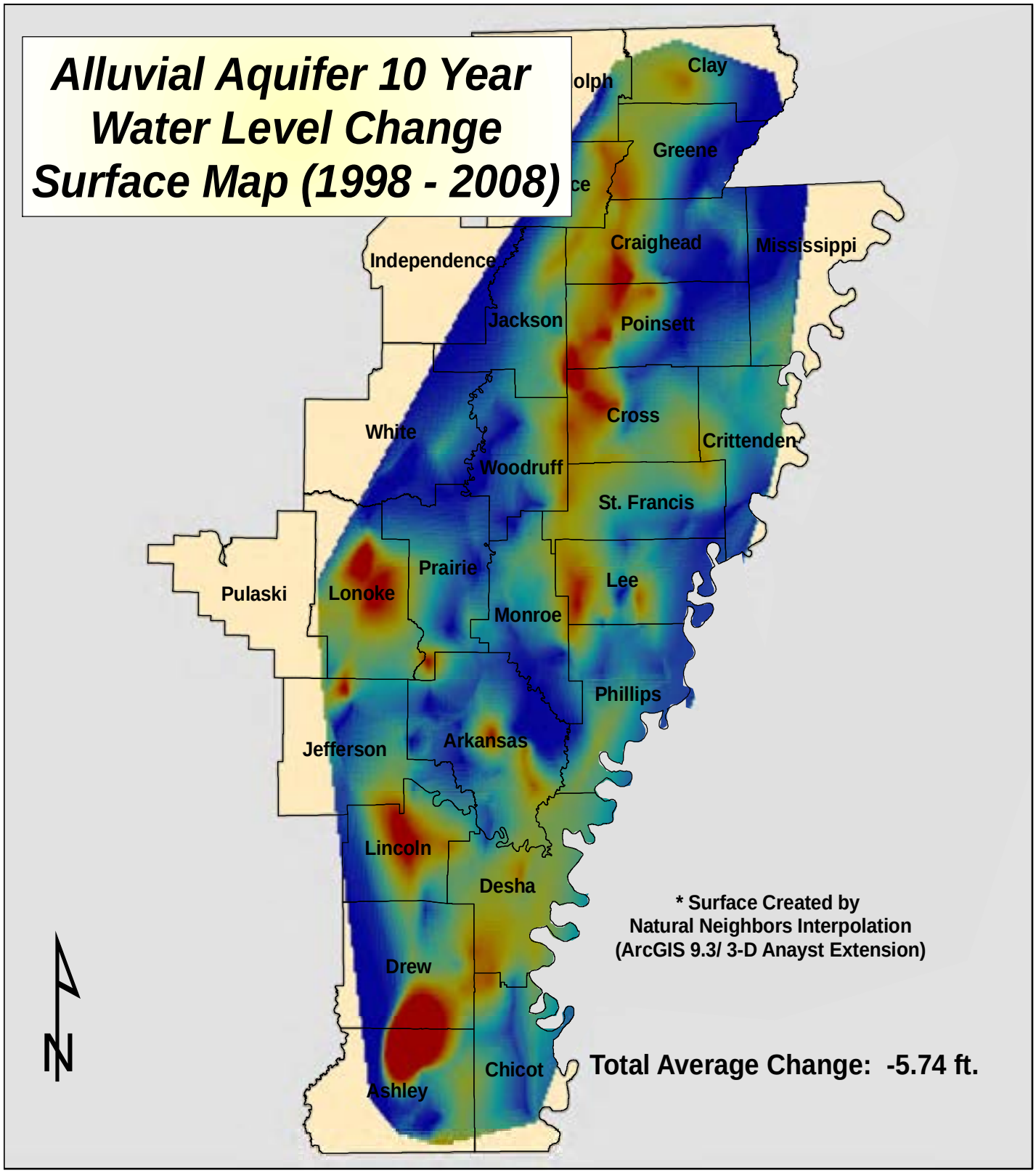

Alluvial Aquifer 10 Year Water Level Change Surface Map (1998 - 2008)
Clay
Greene
Craighead
Mississippi
Independence
Jackson
Poinsett
White
Cross
Crittenden
Woodruff
St. Francis
Prairie
Lee
Pulaski
Lonoke
Monroe
Phillips
Jefferson
Arkansas
Lincoln
Desha
Drew
Chicot
Ashley
* Surface Created by
Natural Neighbors Interpolation
(ArcGIS 9.3/ 3-D Anayst Extension)
N
Total Average Change: -5.74 ft.
Legend
Water Level Change, feet
1 to 17
-4 to 0
-9 to -5
-22 to -10
-63 to -23
County Boundaries
0 10 20 40 60 80
Miles

Fig. 5

overlying confining unit, regional changes in ground-water flow, regional water level declines, reduction of aquifer storage, and decreases in well yields (Ackerman, 1996).

There were 531 alluvial aquifer wells monitored for water-level change in both 2007 and 2008, 299 (56.3%) of these had a decline in the static water level. The overall water-level change was -0.09 ft. The 2007 precipitation for Arkansas was approximately 46.72 inches, which is just below the statewide average of 49.19 inches. Of 474 alluvial aquifer wells monitored in both 2003 and 2008, 339 (71.5%) of these had declining static water levels. Over a 10-year period of time from 1998 to 2008, 238 of 286 wells (83.2%) monitored showed declines in the alluvial aquifer. The average change over the entire aquifer during the 2007-2008 monitoring period was -0.09 feet, the 5-year average change was -1.77 feet, and the 10-year average change was -5.74 feet respectively. As in last year's report, the greatest 10-year declines were observed in the Cache Study Area (-7.09 feet) and the Boeuf-Tensas Study Area (-7.61 feet). Appendix A is a table of specific water level monitoring data for the alluvial aquifer. Appendix B is a series of selected hydrographs for alluvial aquifer wells.

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".

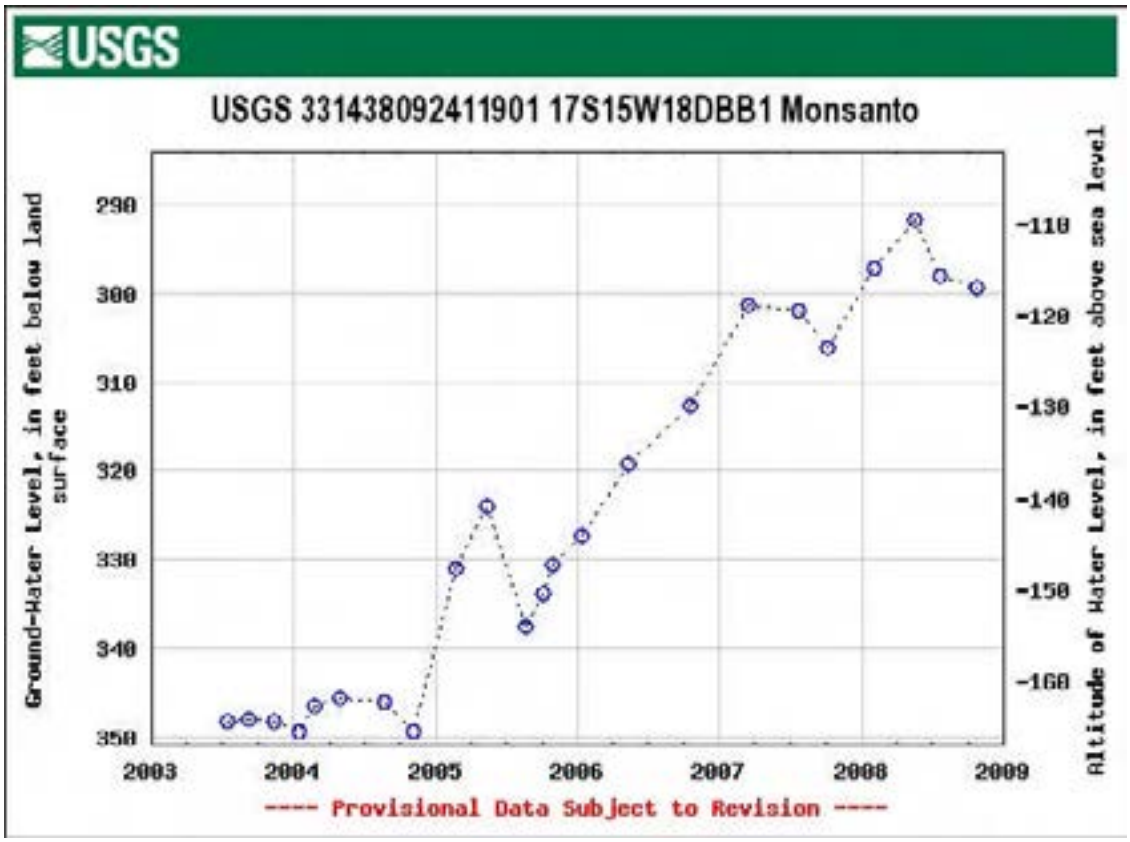
The Memphis Sand aquifer in eastern Arkansas is part of a thick sand section in the middle and lower portions of the Claiborne Group. It includes the Sparta Sand, the predominantly sandy facies of the Cane River, and the Carrizo Sand. The Memphis aquifer is the major source of quality drinking water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

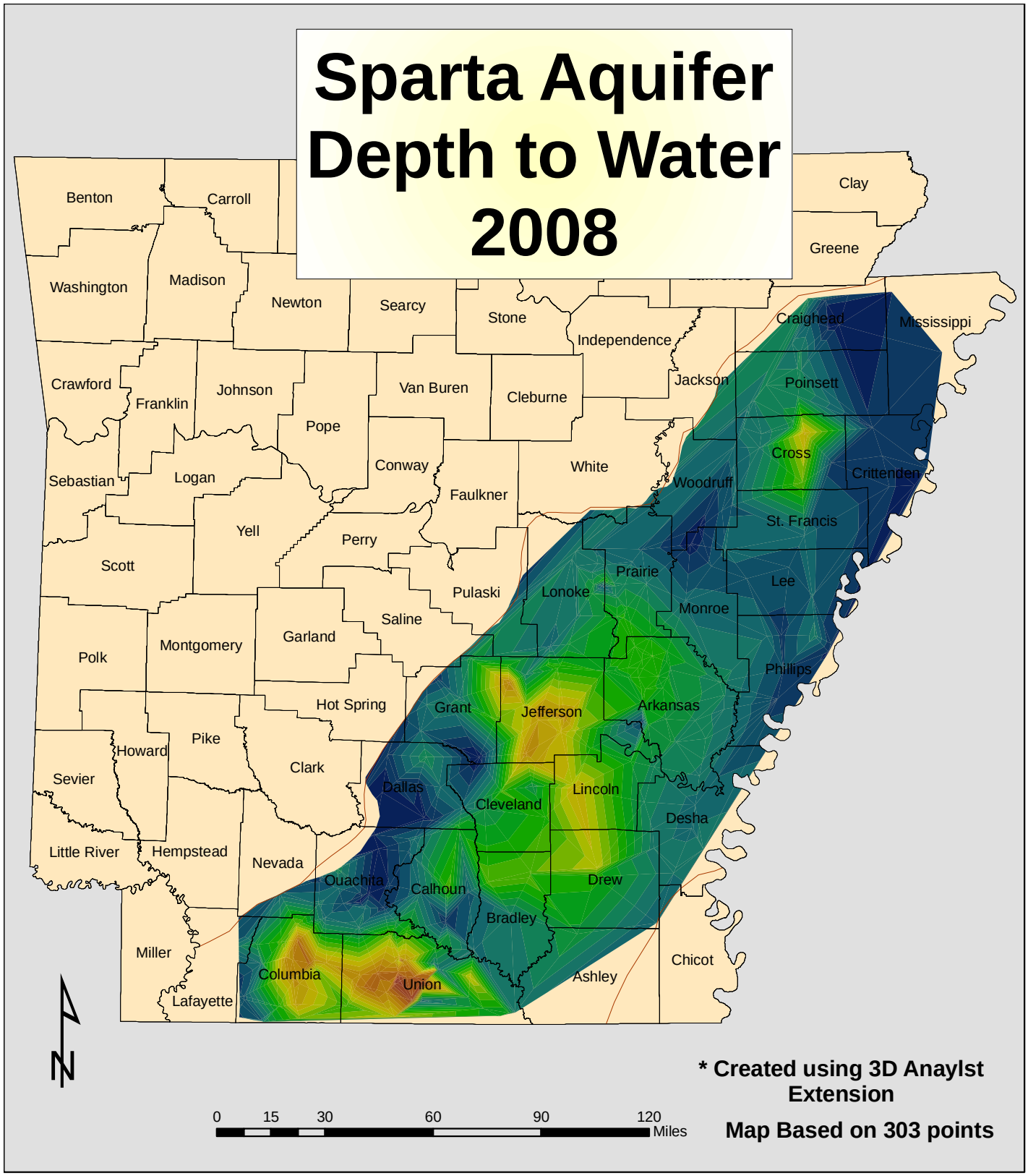
Ground-water levels were collected from 262 water wells in the Sparta/Memphis aquifer throughout the south and east portions of Arkansas in 2007 and 2008. One hundred and eleven of those wells (42.4%) showed declines in the static water level. The average change over the entire aquifer during the 2006-2007 monitoring period was +0.53 feet. During the monitoring period from 2003 to 2008, 234 wells were monitored for water-level change, with 133 of these wells (56.8%) showed a decline in static water levels during this time. During the 10-year monitoring period 116 wells were monitored, with 88 (75.9%) of these wells showing declines. Appendix C is a table of specific water level monitoring data for the Sparta/Memphis aquifer. For the Sparta/Memphis aquifer the USGS Conjunctive Use Optimization Model estimates that only 54.3 percent of the 2006 withdrawal of 158.71 Mgal/d is sustainable.

Data from as far back as 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 (Fig. 6). 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 158.71 Mgal/d in 2006, an increase of 14.2 percent. The estimated sustainable yield for the aquifer is 87 Mgal/d leaving an unmet demand of 71.71 Mgal/d. The most recent significant increase in water use from the Sparta 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 one well has actually risen over 49 feet over a five year period from 2003 to 2008. The figure below shows a graph of a well in the USGS Sparta Recovery Project. Appendix D is a series of hydrographs for Sparta/Memphis aquifer wells in Arkansas.

On April 21, 2008 the U.S. Department of the Interior awarded the Union County Water Conservation Board's Sparta Aquifer Recovery Project in southern Arkansas, with the 2008 Cooperative Conservation Award, which recognizes the cooperative efforts of the board, along with many other contributors to this effort including the Arkansas Natural Resources Commission and the U.S. Geological Survey, Arkansas District. This project continues to be recognized across the nation as a success story in the field of natural resources conservation and protection.

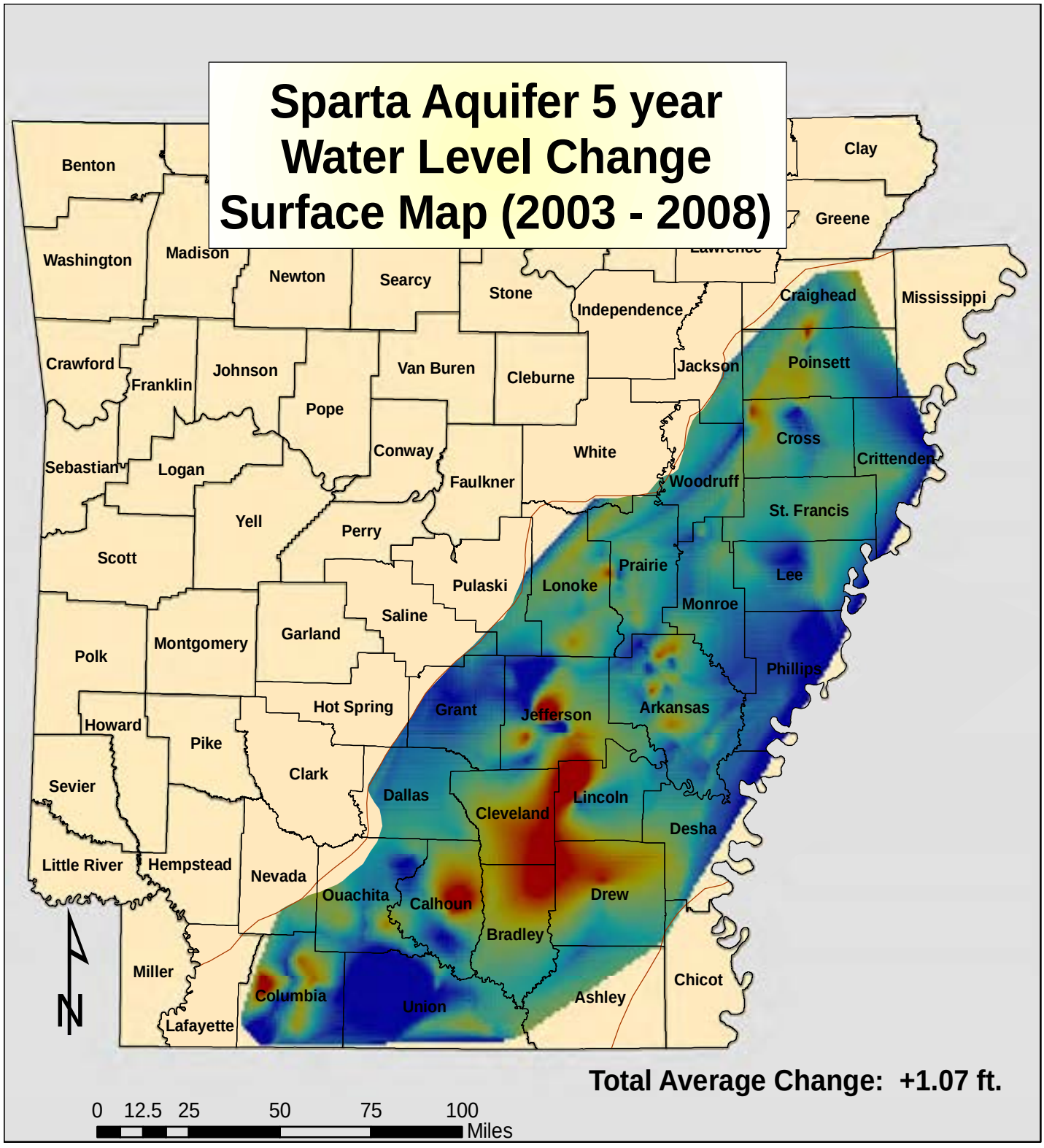




Legend

- Sparta Boundary
- 0 ft. - 69 ft.
- 70 ft. - 136 ft.
- 137 ft. - 202 ft
- 203 ft. - 269 ft.
- 270 ft. - 336 ft.
- 337 ft. - 402 ft.
- County Boundary

Fig. 6



Legend

- Sparta Boundary
- 29 to 71
- 12 to 28
- 0 - 11
- -1 to 0
- -4 to -2
- -10 to -5
- -43 to -11
- County Boundaries

*** Created using 3D Analyst Extension**

Map based on 243 points

Fig. 7

GROUND-WATER LEVELS AND WATER-LEVEL CHANGE

MONITORING PROTOCOL

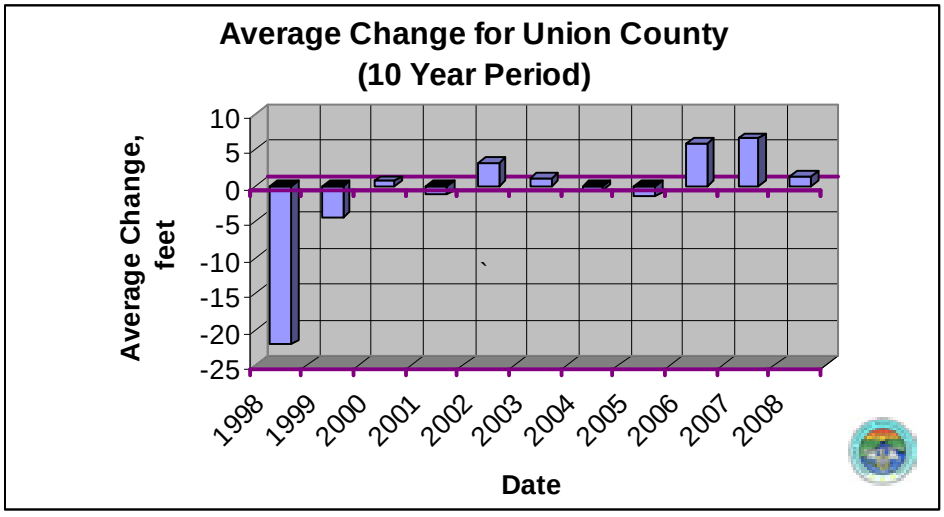
The United States Geological Survey (USGS), in cooperation with the Arkansas Natural Resources Commission (ANRC), the Arkansas Geological Commission (AGC), and the Natural Resource Conservation Service (NRCS), monitor wells throughout the entire state for general ground water quality as well as to record water levels. In addition, several agencies continually monitor wells throughout the state in an effort to detect significant changes and/or trends in ground-water levels and ground-water quality. The ANRC has recently added to this monitoring network by constructing 50 wells primarily in the eastern part of the state used exclusively for monitoring purposes, with more to be added in the near future. (Fig.38) All water level data collected by the USGS and ANRC is collected in accordance with USGS data collection protocol.

Water-level measurements are made each spring for a designated portion of the monitoring network of approximately 1,200 wells statewide. A schedule of monitoring has been established based upon existing funding and the ANRC's management and protection responsibilities as mandated by the Arkansas General Assembly. The monitoring schedule has been set up to obtain data annually from the alluvial and Sparta/Memphis aquifers. Other aquifers with less usage are measured at least once every five years. Measurements of water levels in the alluvial and Sparta/Memphis aquifers are taken each spring to obtain as close to true static water level data as possible. This allows the water level data to be the least affected by summer pumping. Measurements in the alluvial aquifer are obtained each spring and fall by the NRCS and are helpful in evaluating the zones of drawdown that result from seasonal pumping for irrigation of crops.

SOUTH ARKANSAS CRITICAL GROUND-WATER AREA

The South Arkansas Critical Ground-Water Area is composed of the Sparta Aquifer in Bradley, Calhoun, Columbia, Ouachita, and Union Counties. In 1996 this area was the first to be designated as a critical ground water area for the Sparta aquifer pursuant to the Arkansas Groundwater Protection and Management Act of 1991.

Continued monitoring of Sparta aquifer ground-water levels show that some ground-water levels in this region have stabilized or risen, while others continue to decline. During the 2007-2008 monitoring period, the ground-water level showed an average change of +4.86 feet in Union County, -0.17 feet in Ouachita County, -1.84 feet in Calhoun County, -0.89 feet in Bradley County, and -2.10 feet in Columbia County respectively. The South Arkansas Study Area as a whole had an average change of +1.34 feet during the 2007-2008 monitoring period, with only 37 of the 89 wells monitored showing declines (Fig.9). In 1998 the average change for Union County was -22.14 feet, in 1999 -4.40 feet, 2000 +0.62 feet, 2001 -1.25 feet, 2002 +3.21 feet, 2003 +1.14 feet, 2004 -0.58 feet, 2005 -1.54 feet, 2006 +5.82, 2007 +6.59, and +1.34 feet in 2008, respectively. The diminishing declines in average change seem to indicate that the education, conservation, and development of surface water from the Ouachita River in Union County have made an impact on ground-water levels.

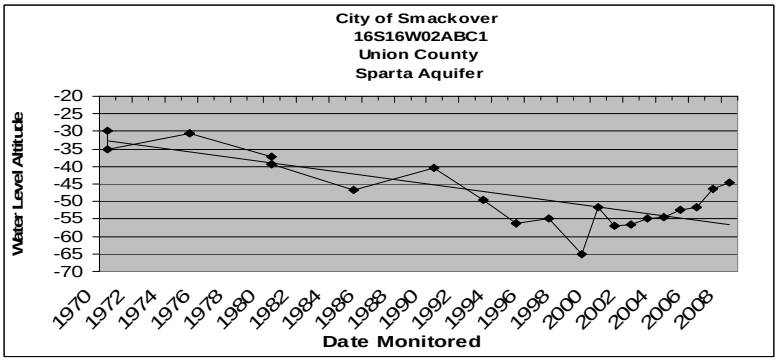


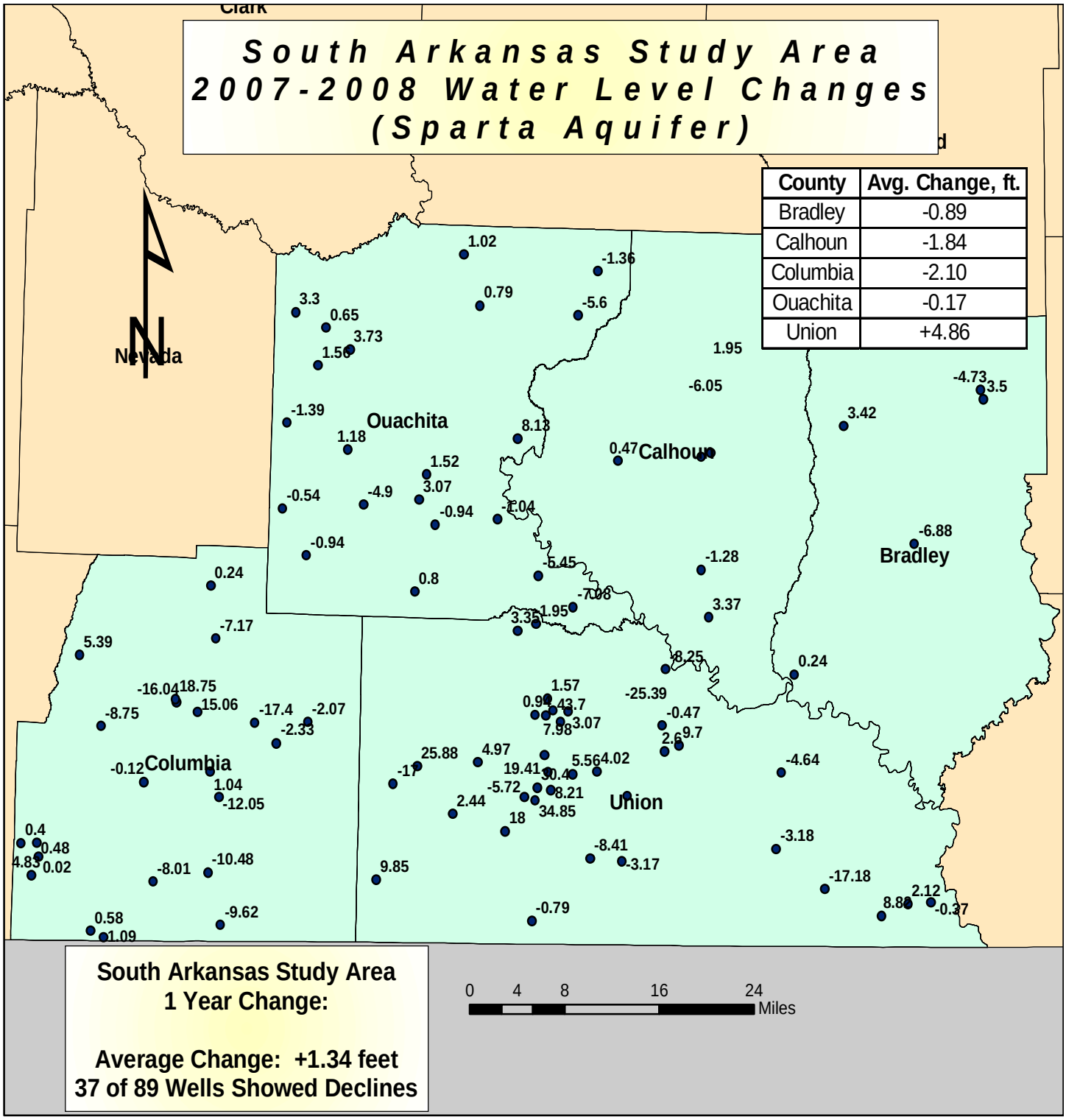
The USGS reports that the water levels have risen in all eight of the Sparta Recovery wells since the summer of 2003. The water levels have risen in specific wells from 2.68 feet in the "Spencer" well, to 48.77 feet in the "Monsanto" well. The "Monsanto" well is a good example of the recovery because it is located near the center of the cone of depression in this area. A graph of this well can be seen on page 21.

Since the lowest water level recorded in this well in October 1999 (-196.81 msl) to the level recorded in October of 2008 (116.54 msl) the depression has rebounded 80.27 feet, or approximately 26% of the total drawdown since 1922. (Schrader, 2008)

During the 5-year monitoring period, from 2003 to 2008, the South Arkansas Study Area had an average change of +6.83 feet. Eighty-two wells were monitored over this time, with 40 of them showing a decline in static water levels. Union county was the only county in the study area, over this time, to show an average positive change, +22.96 feet. Ouachita County had an average change of -1.62 feet, Calhoun –7.73 feet, Bradley -11.62 feet, and Columbia -0.61 feet respectively (Fig. 10).

Though the trend of water level increases in the South Arkansas Study Area have been encouraging, many of the wells in the area still show the potentiometric surface below the top of the formation. This criteria alone is enough for the study area to keep the designation of a Critical Ground-Water Area. The USGS ground-water flow models indicate that the withdrawals in Union County must be reduced to 28 percent of the 1997 pumping rate (4.84 Mgal/d) to maintain water levels at or above the top of the Sparta Sand. (Hays, 2000) Union county's use of 12.58 Mgal/d in 2006 is still 61.6% (7.74 Mgal/d) unmet demand.





Legend

- Wells
- South Arkansas Study Area

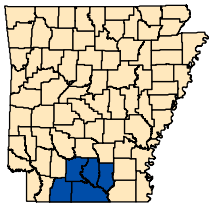
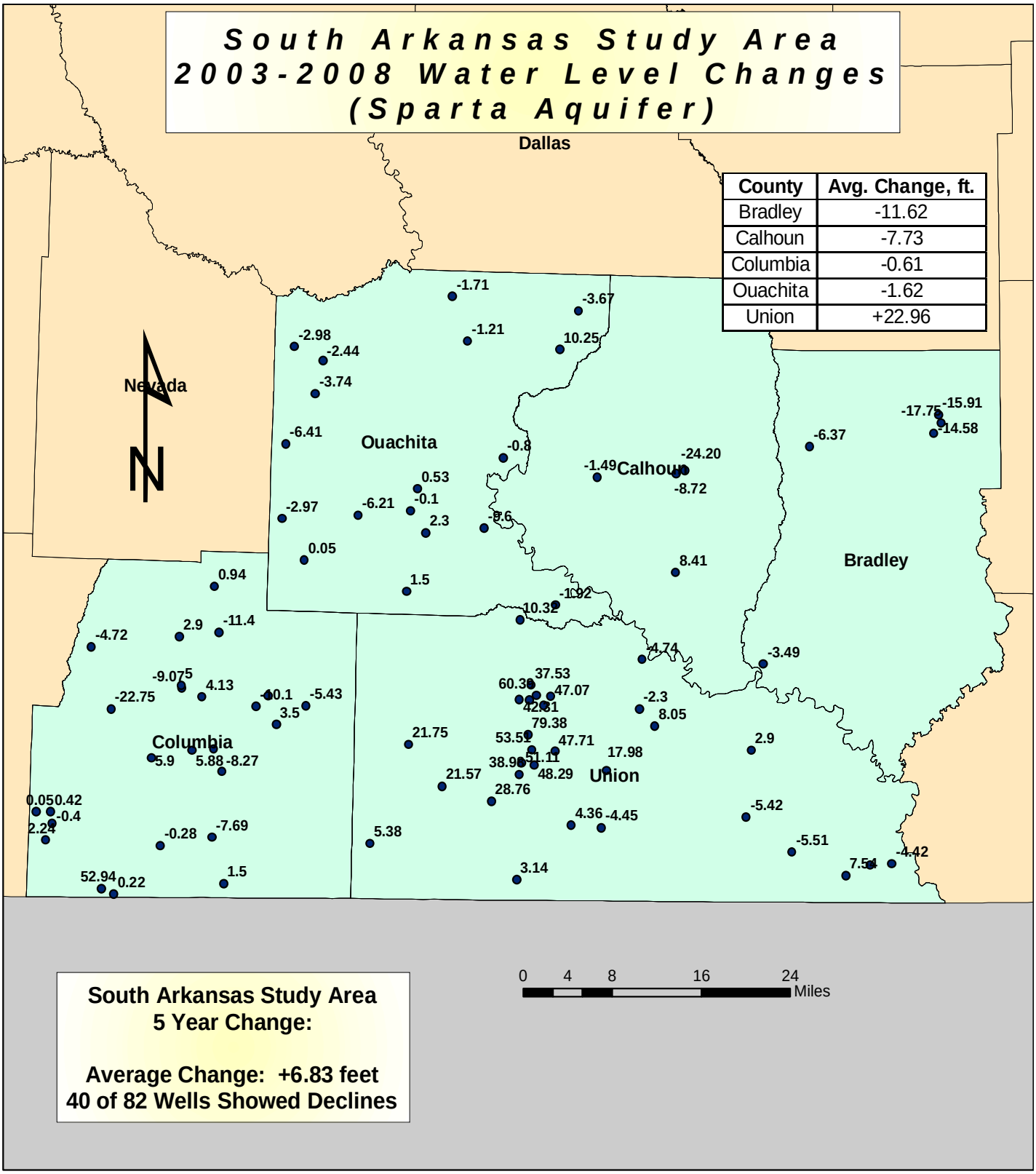


Fig. 9



County	Avg. Change, ft.
Bradley	-11.62
Calhoun	-7.73
Columbia	-0.61
Ouachita	-1.62
Union	+22.96

Legend

- Wells
- South Arkansas Study Area

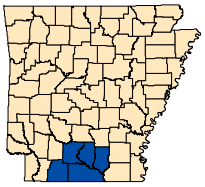
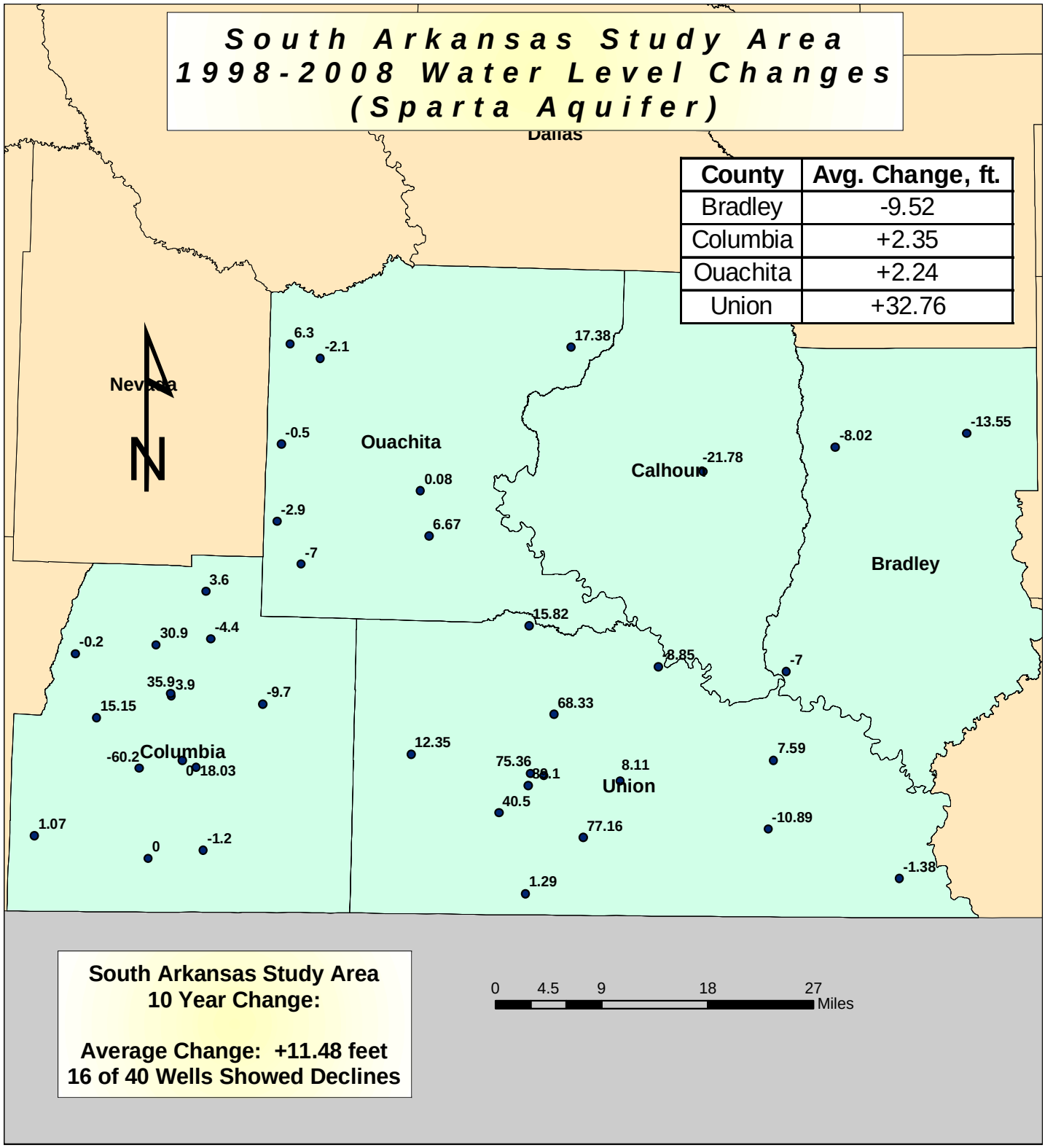


Fig. 10



County	Avg. Change, ft.
Bradley	-9.52
Columbia	+2.35
Ouachita	+2.24
Union	+32.76

Legend

- Wells
- South Arkansas Study Area

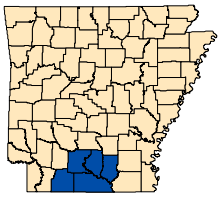


Fig. 11

GRAND PRAIRIE CRITICAL GROUND-WATER AREA

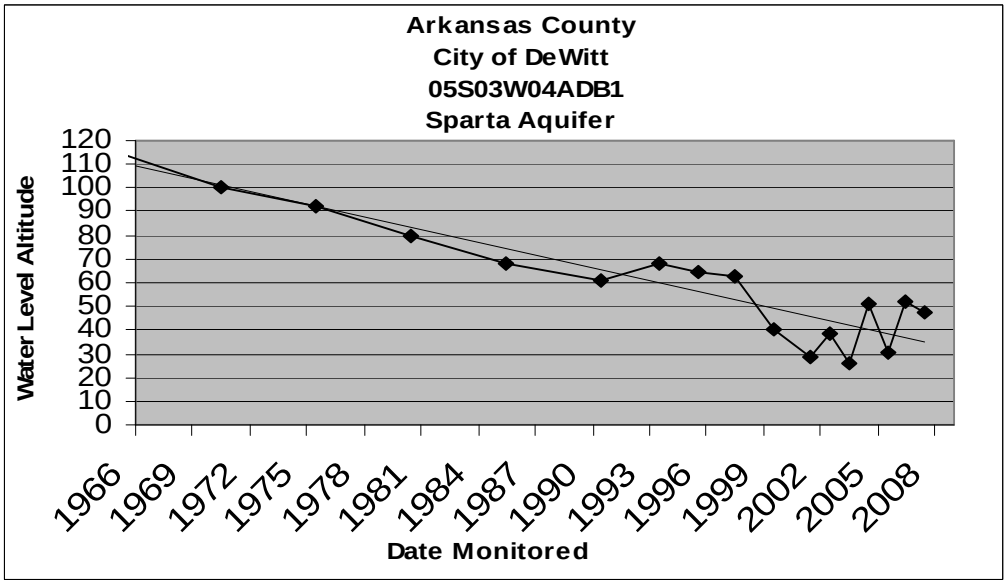
The designation “Grand Prairie” varies according to authors, but is commonly used to designate the area bounded on the south and west by the Arkansas River and on the north and east by the White and Little Red Rivers. (Ackerman, 1996) (Fig.1) This area was designated as a critical ground-water area for the alluvial aquifer and for the Sparta/Memphis aquifer in July 1998. Since designation, water levels have continued to decline throughout much of the Grand Prairie in both the alluvial and Sparta/Memphis aquifers. The alluvial aquifer averaged a change of -0.48 ft/yr, and the Sparta aquifer averaged -0.94 ft/yr, respectively.

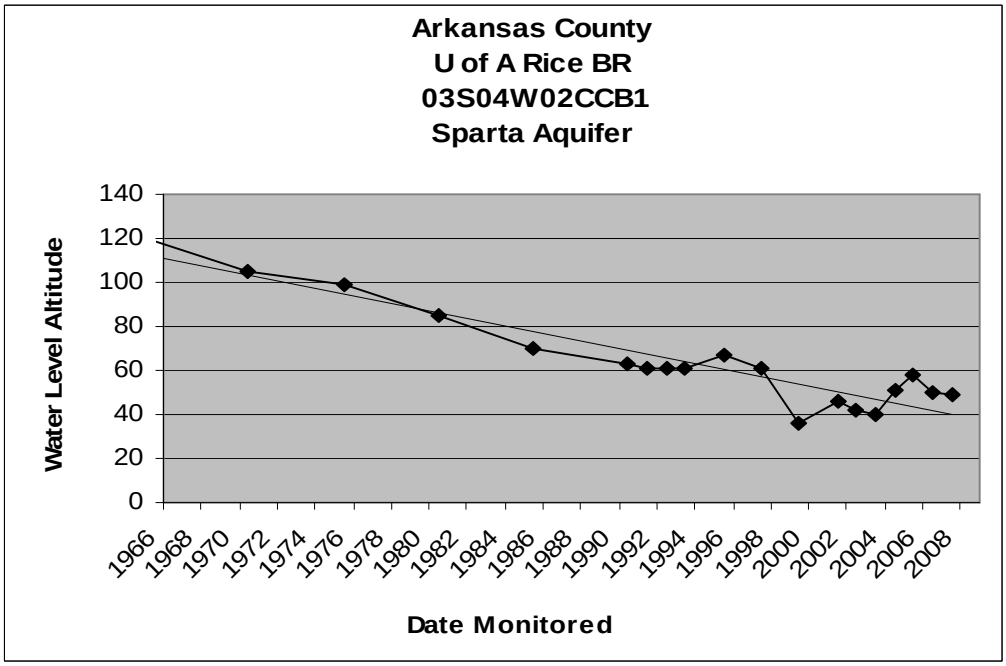
During the 2007-2008 monitoring period there 67 wells monitored with 28 (41.8%) showing average declines in the Sparta/Memphis aquifer throughout the counties in this study area. Every county in this study area had an average decline in static water levels during this monitoring period with the exception of Prairie with a change of +0.57 feet. The Jefferson County change was -0.92 feet, Lonoke County -0.38 feet, and Arkansas County an average change of -0.22 feet. The average change for the entire study area for this time was -0.18 feet. (Fig.12)

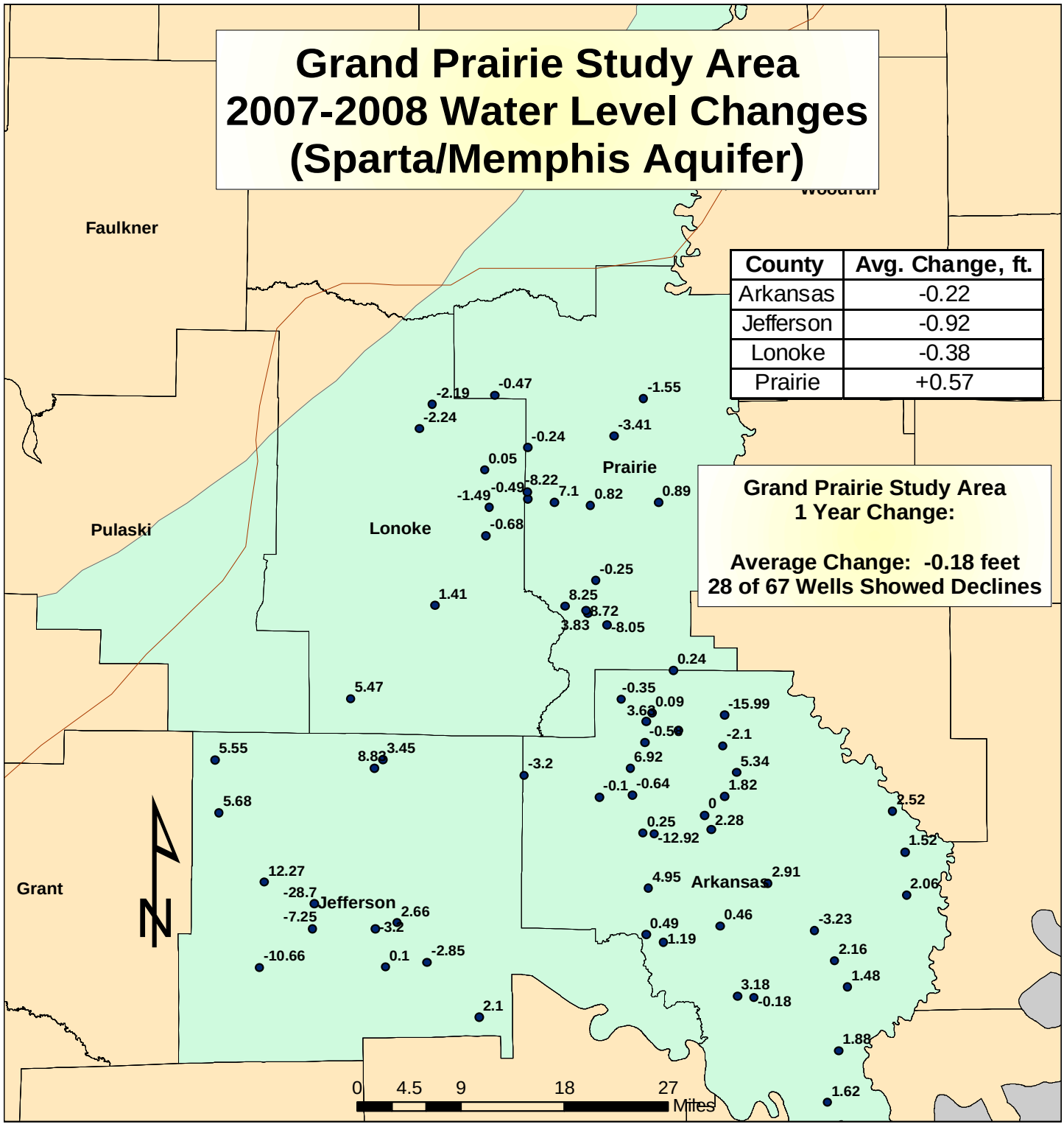
During the 5-year monitoring period from 2003 to 2008 Jefferson County had an average change of -0.14 feet, Lonoke County -5.03 feet, Arkansas County -0.98 feet and Prairie County -3.63 feet. Although some counties will show short- term increases in water levels, even in areas of significant historical decline, the long-term effect of over-use can be seen in the hydrograph below. The entire Grand Prairie Study Area averaged a -1.80 foot change during this 5-year period in the Sparta/Memphis aquifer, with 45 of 75 (60.0%) of the wells monitored showing declines. (Fig.13)

Over the 10-year period from 1998 to 2008 the Sparta/Memphis aquifer has shown an average decline of -9.39 feet. As seen in figure 14 all counties in the study area show a significant average decline. Prairie County had an average change of -10.28 feet, Lonoke -11.39 feet, Jefferson -6.70, and Arkansas – 9.91 feet, respectively.

Withdrawals form the Sparta aquifer in Arkansas County have increased from an estimated 20.3 mgd in 1970 (Halburg, 1972) to a reported water use of 34.05 Mgal/d in 2006, an increase of 67.7% over this time period.







Legend

- Wells
- Sparta Boundary
- Grand Prairie Study Area

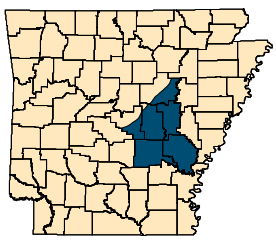
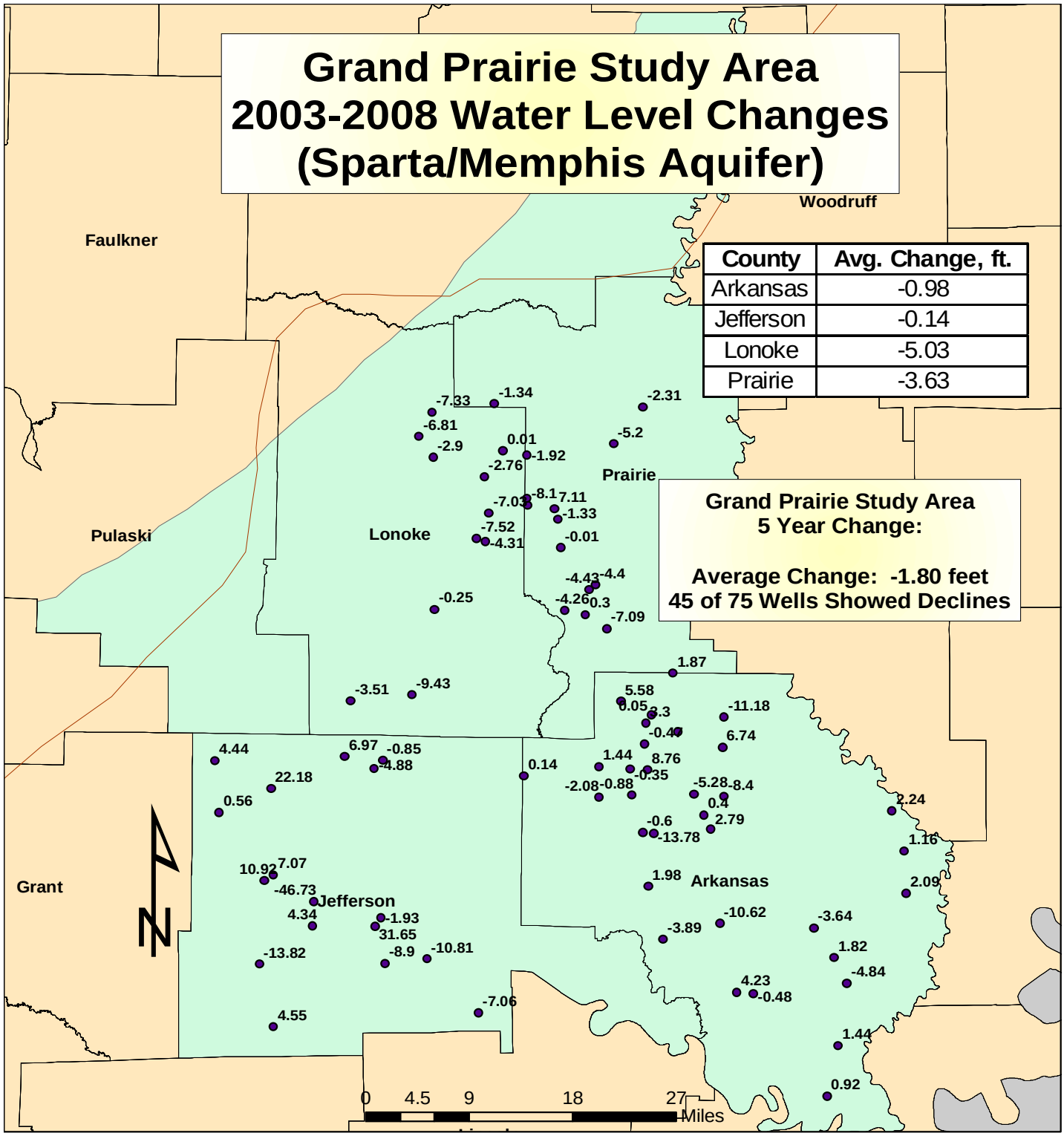


Fig. 12



Legend

- Wells
- Sparta Boundary
- Grand Prairie Study Area

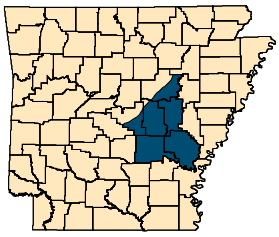


Fig. 13

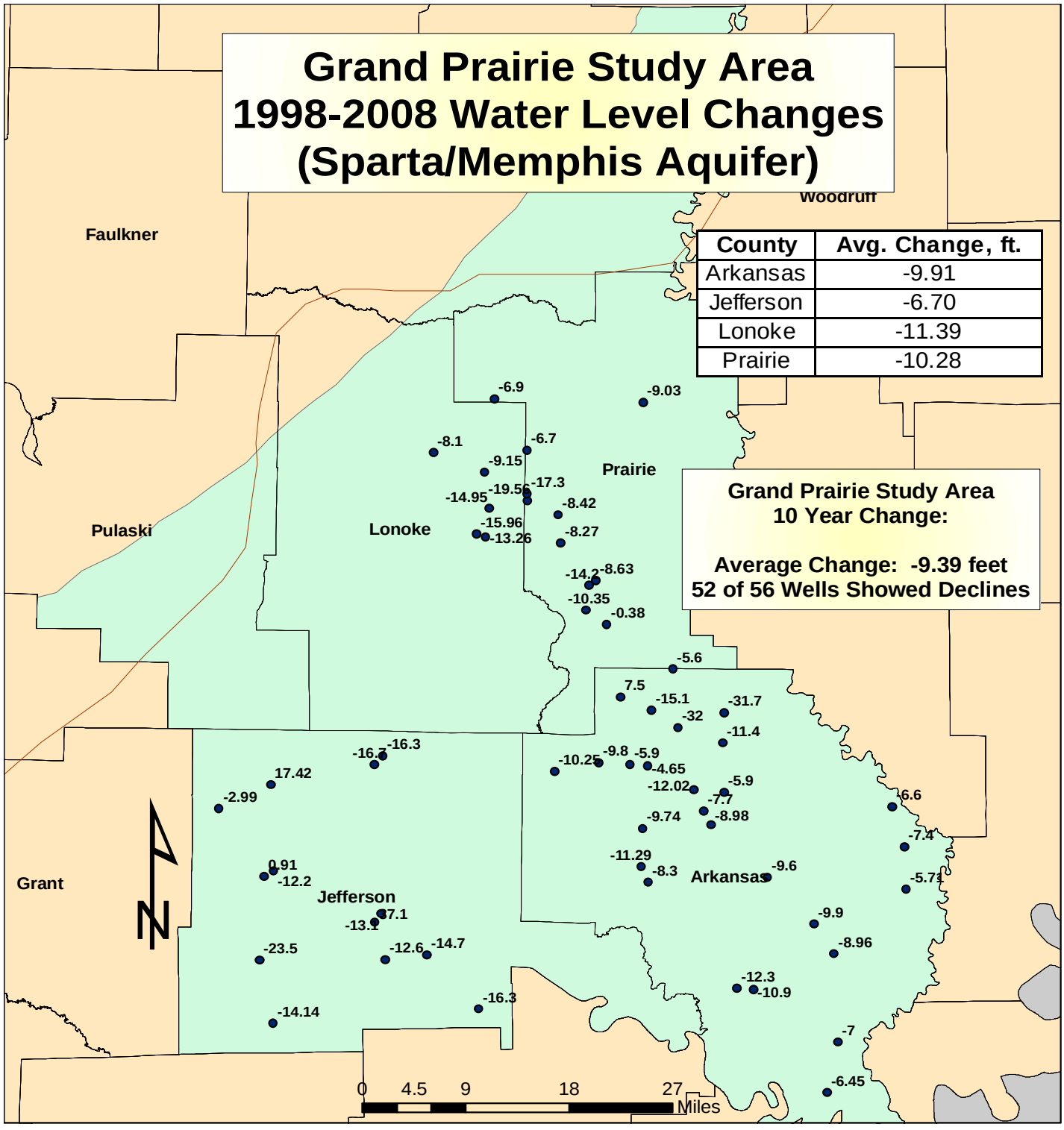

Grand Prairie Study Area
1998-2008 Water Level Changes
(Sparta/Memphis Aquifer)
Faulkner
Woodruff
Pulaski
Lonoke
Prairie
Grant
Jefferson
Arkansas
County | Avg. Change, ft.
Arkansas | -9.91
Jefferson | -6.70
Lonoke | -11.39
Prairie | -10.28
Grand Prairie Study Area
10 Year Change:
Average Change: -9.39 feet
52 of 56 Wells Showed Declines
-6.9
-9.03
-8.1
-6.7
-9.15
-17.3
-19.56
-14.95
-8.42
-15.96
-13.26
-8.27
-14.2
-8.63
-10.35
-0.38
-5.6
7.5
-15.1
-31.7
-32
-11.4
-16.7
-16.3
-10.25
-9.8
-5.9
-4.65
17.42
-12.02
-5.9
-2.99
-7.7
6.6
-9.74
-8.98
-7.4
-11.29
0.91
-8.3
-9.6
-12.2
-5.7
-17.1
-13.2
-9.9
-23.5
-12.6
-14.7
-8.96
-12.3
-10.9
-16.3
-14.14
-7
-6.45
0
4.5
9
18
27
Miles
Legend
Wells
Sparta Boundary
Grand Prairie Study Area

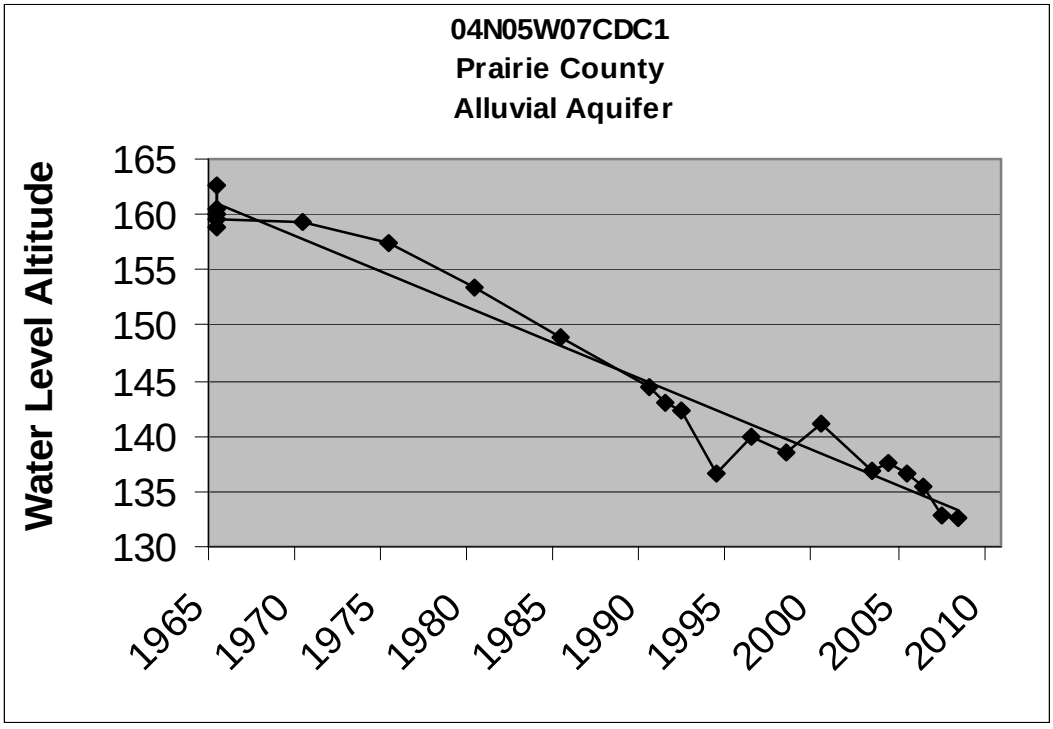
Fig. 14

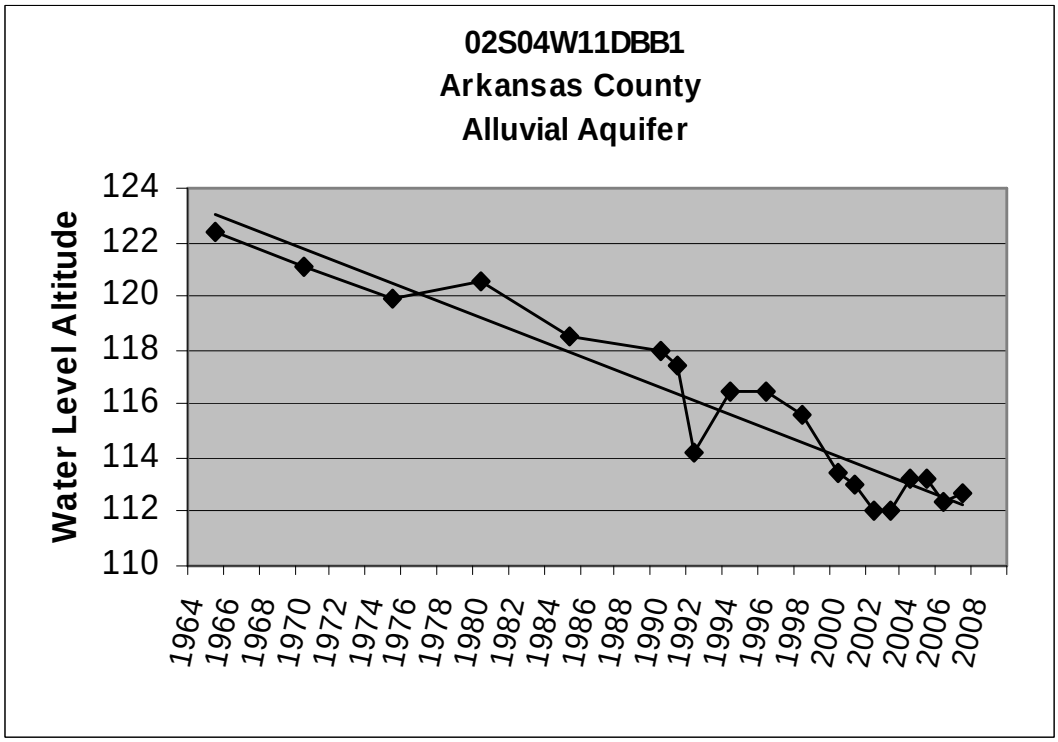
In the alluvial aquifer, during the 2007-2008 monitoring period for the Grand Prairie Critical Ground Water Area, Pulaski County had an average change of -1.33 feet, White County +1.26 feet, Prairie County +0.03 feet, Lonoke County -0.62 feet, Jefferson county +0.27 feet, and Arkansas County -0.15 feet, respectively. The average change for the entire study area for 2007-2008 in the alluvial aquifer was -0.07 feet, with 78 of the 132 wells (59.1%) monitored showing declines. (Fig.15)

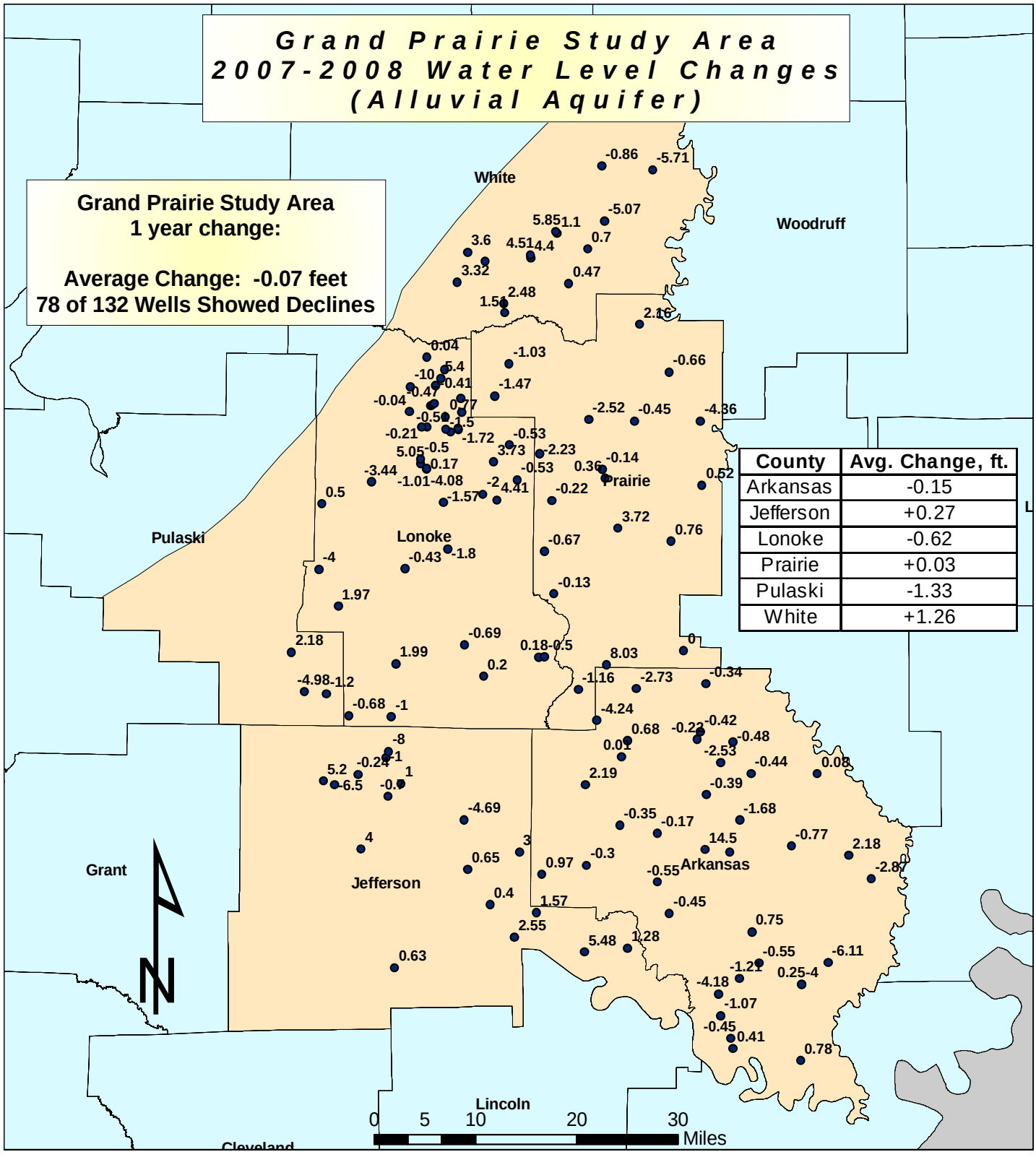
During the 5-year monitoring period from 2003 to 2008, some counties showed declines in average ground water levels, while others showed positive average changes in the alluvial aquifer. White County showed an average change of +1.90 feet, Arkansas County +0.03 feet, Jefferson County -0.57 feet, Prairie County -0.03 feet, and Lonoke County -2.58 feet respectively. The Grand Prairie Study Area had an average decline -0.68 feet during this 5-year period for the alluvial aquifer, with 87 of the 130 wells (66.9%) monitored showing declines. (Fig.16)

From 1998 to 2008 the alluvial aquifer in the Grand Prairie Study Area had an average change of -4.80 feet, with 46 of 60 (76.7%) wells monitored showing declines. Changes during this 10-year period ranged from -9.78 feet in Lonoke County, to -0.64 feet in White County. Arkansas County had an average change of -3.05 feet, Jefferson County -5.71 feet, and Prairie County showed an average decline of -3.22 feet. (Fig.17)

For the alluvial aquifer in the Grand Prairie Study Area the USGS Conjunctive Use Optimization Model indicated that the ground-water use in this area is substantially more than is sustainable. Based on the 1997 pumping rates, Jefferson County could sustain 91.6% of the counties reported use for 2006, Prairie County 58.9%, Arkansas County 44.2%, and Lonoke County 41.4% respectively. (Fig.46) The Grand Prairie Irrigation Project, once in place, is expected to significantly help reduce these counties' unmet demands for irrigation.


04N05W07CDC1
Prairie County
Alluvial Aquifer
Water Level Altitude
165
160
155
150
145
140
135
130
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010


02S04W11DBB1
Arkansas County
Alluvial Aquifer
Water Level Altitude
124
122
120
118
116
114
112
110
1964
1966
1968
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008



Legend

- Wells
- Grand Prairie Study Area

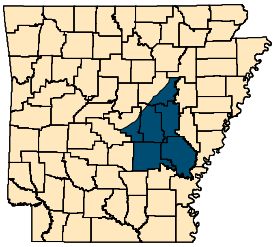
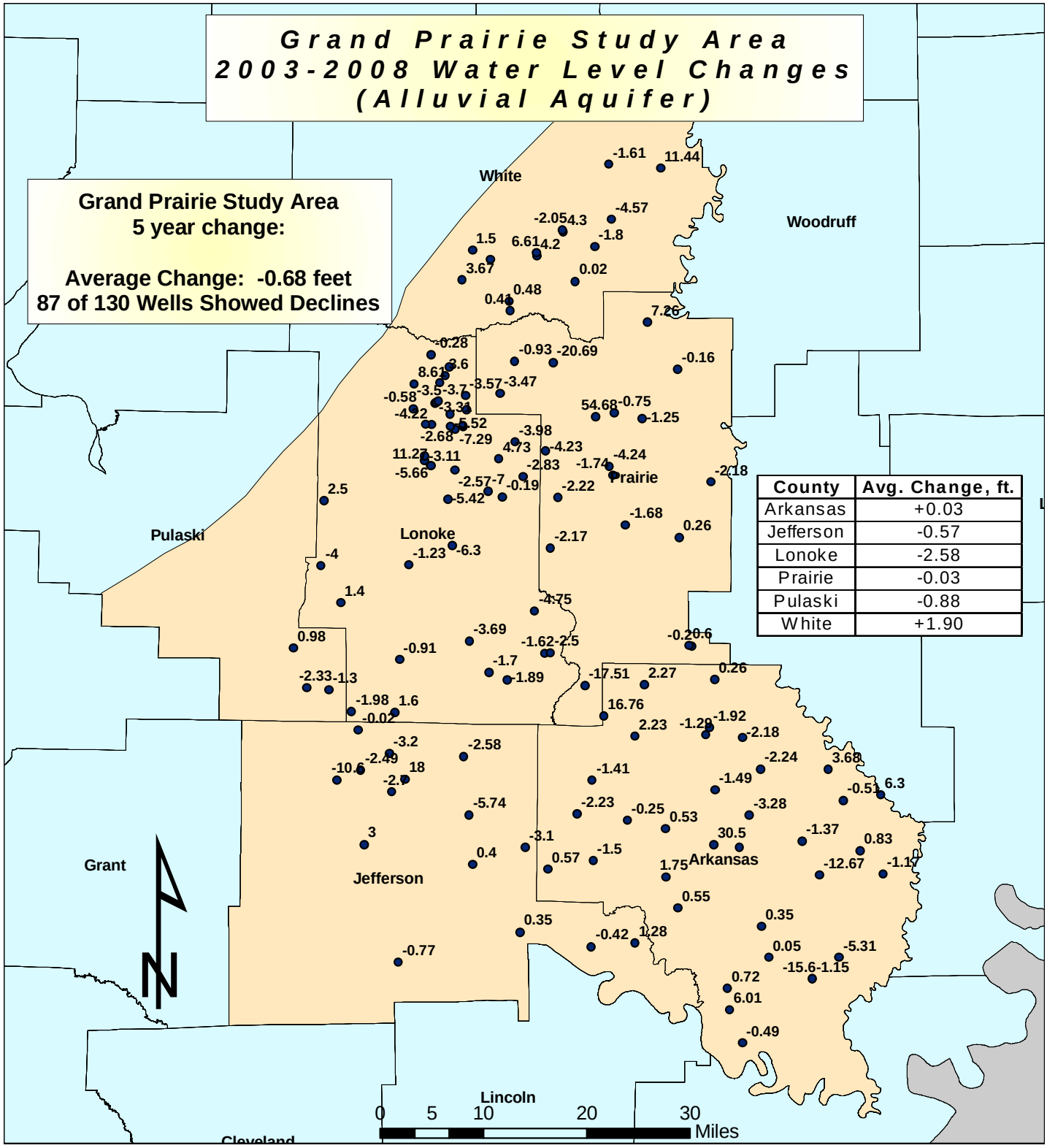


Fig. 15



County	Avg. Change, ft.
Arkansas	+0.03
Jefferson	-0.57
Lonoke	-2.58
Prairie	-0.03
Pulaski	-0.88
White	+1.90

Legend

- Wells
- Grand Prairie Study Area

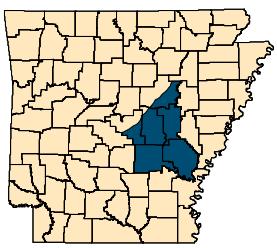
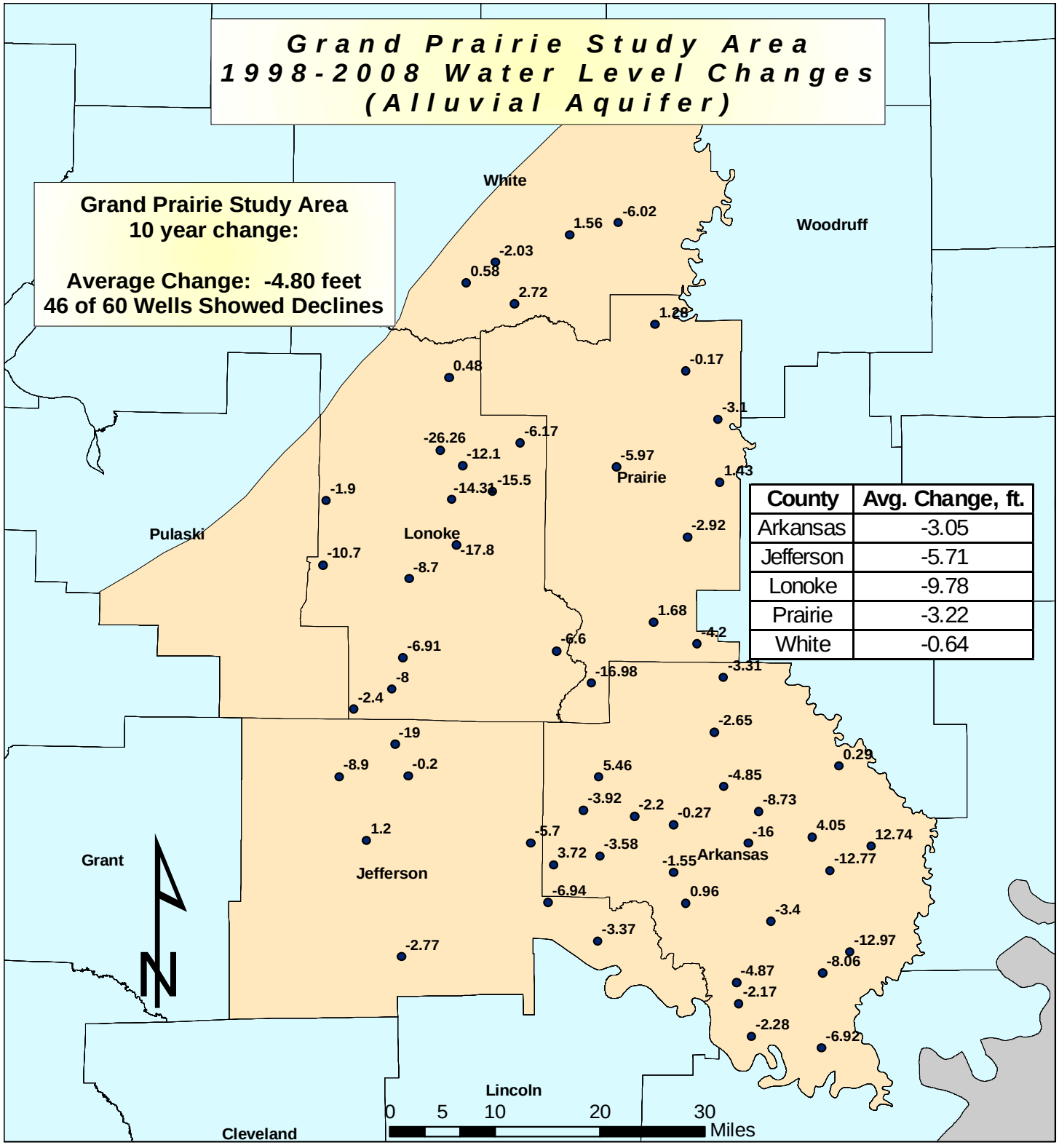


Fig. 16



County	Avg. Change, ft.
Arkansas	-3.05
Jefferson	-5.71
Lonoke	-9.78
Prairie	-3.22
White	-0.64

Legend

- Wells
- Grand Prairie Study Area

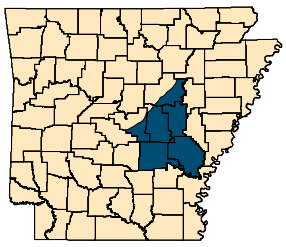


Fig. 17

CACHE STUDY AREA

The Cache Study Area is defined as the 7300 square mile region between Crowley's Ridge to the east, the Fall Line to the west, the state line to the north, and the White River to the south. (Ackerman, 1996) This study area includes portions of Craighead, Poinsett, Cross, St. Francis, Lee, Phillips, Monroe, Woodruff, Jackson, Lawrence, Greene, and Clay Counties. (Fig.1)

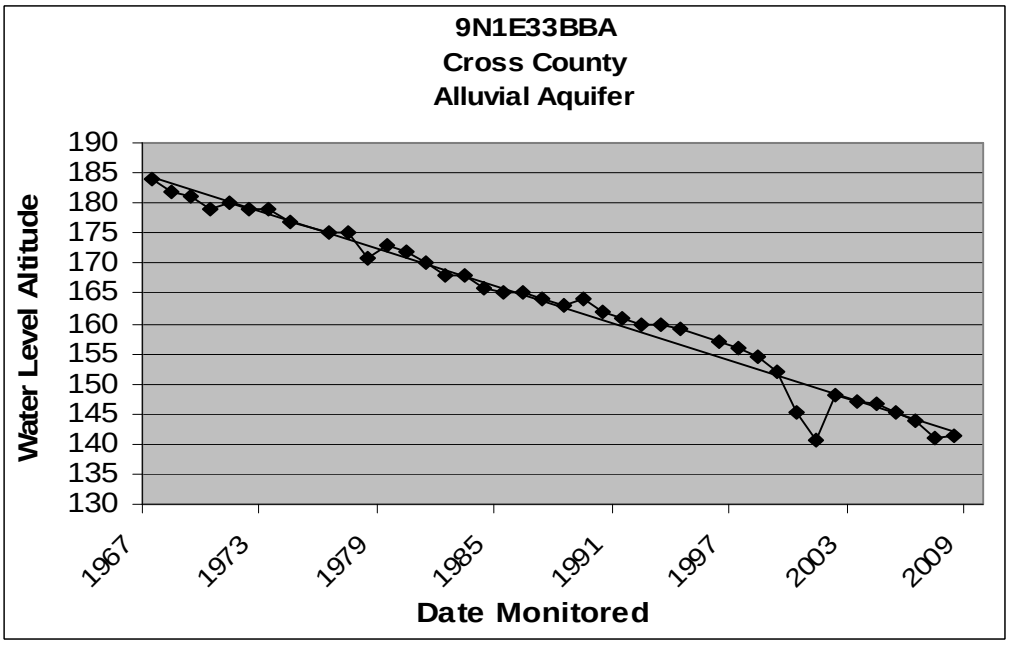
Monitoring of the alluvial aquifer in this study area from 2007 to 2008 showed significant change with the entire study area having an average change of -0.43 feet. One hundred and thirty five of the 214 wells monitored (63.1%) had a decline in static water level. During this same time Craighead County showed an average change of -1.79 feet, Cross County -1.93 feet, Greene County +0.63 feet, Independence County +14.53, Jackson County +0.57, Lawrence County +1.31, Lee County +0.69, Monroe County -0.77, Poinsett County -1.03, Randolph County -1.88, St. Francis -1.49 feet, Woodruff County +0.93, Phillips County +0.55 feet, and Clay County -2.58 feet, respectively. (Fig.18)

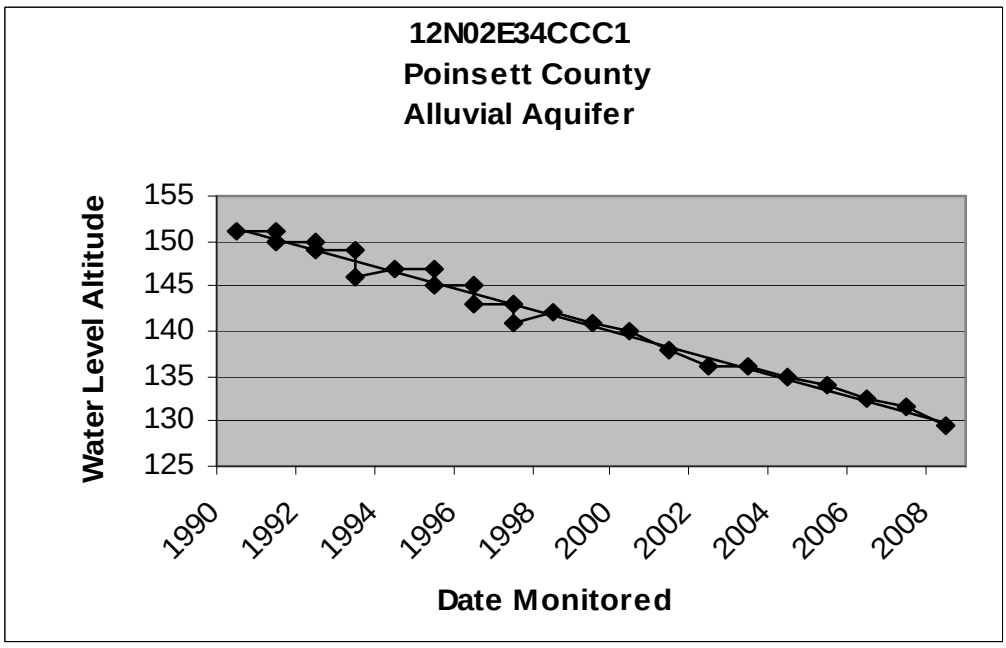
The alluvial aquifer in the Cache Study Area was also evaluated for change in water levels for a 5-year time period from 2003 to 2008. For this period all but two counties showed declines in static water levels. Greene County had an average change of -2.06 feet, Clay County -2.08 feet, Craighead County -5.07 feet, Cross County -4.31 feet, Independence County +14.56 feet, Jackson County -1.49 feet, Lee County -3.21 feet, Monroe County -1.39 feet, Phillips County -3.17 feet, Poinsett County -5.14 feet, Randolph -0.86 feet, St. Francis County -4.14 feet, and Woodruff County +0.26 feet, respectively. The entire Cache Study Area showed an average change of -2.54 feet in the alluvial aquifer during this 5-year monitoring period. Out of the 198 wells monitored, 155 (78.3%) of these showed average declines. (Fig.19)

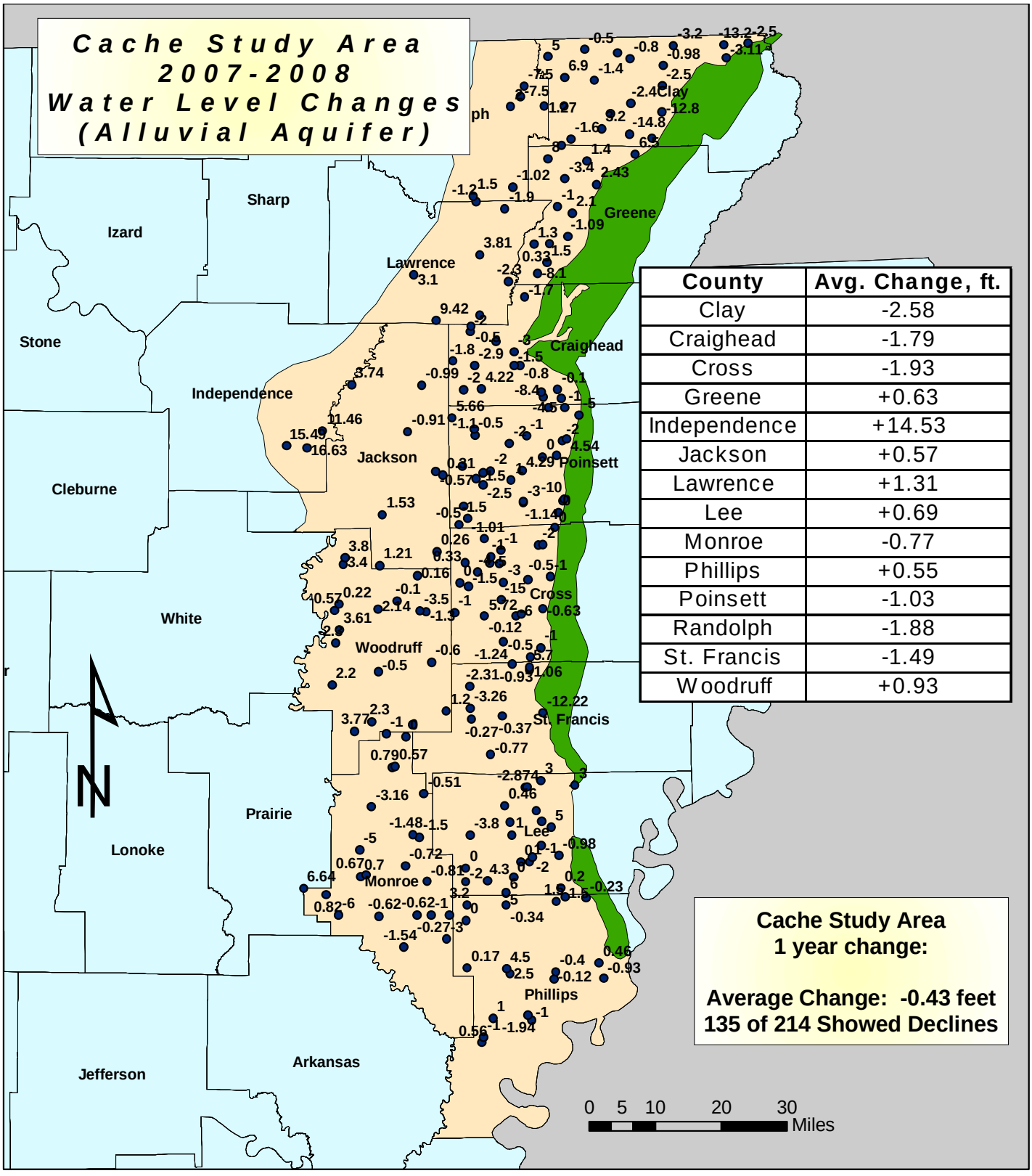
Average change was also compared in the alluvial aquifer for a 10-year timeframe for the Cache Study Area. Of the 121 wells monitored, 108 of these (89.3%) showed an average decline. All but one county in the study area showed an average decline in static water levels once again for this time period. Phillips County had an average change of -4.18 feet, Cross -11.15 feet, Craighead -10.45 feet,

Lawrence -7.34 feet, Lee -5.93 feet, Monroe -4.37 feet, Poinsett -12.95 feet, Randolph -3.31 feet, St. Francis -10.66 feet, Woodruff -3.44, Independence + 8.21, and Clay County -8.98 feet respectively. The average change for the study area over this time was a decline of -7.09 feet. (Fig.20)

Based on the USGS's Conjunctive-Use Optimization Models of the Alluvial Aquifer sustainable yields were acquired based on the 1997 pumping rates. The percentage of the sustainable yield for each county in the model is shown in figure 43 and is based on the 2006 withdrawals. Water-use data shown in Table 1 is the reported use for 2006. Based on the reported water use for 2006, as well as the sustainable yields estimated from the USGS models, the percentage of water use that was sustainable in 2006 for each county in the Cache Study Area are as follows; Craighead County 68.8%, Cross County 26.3%, Greene County 62.4%, Independence County 53.1%, Jackson County 54.6%, Lawrence County 100%, Lee County 23.1%, Monroe County 69.6%, Phillips County 41.2%, Poinsett County 29.4%, Randolph County 65.1%, and St. Francis County 24.2% respectively. It should be noted that Clay County was "allowed" 100% of its 1997 pumping rate by the USGS model as part of the optimization. When the County's pumping rate went from 234.9 Mgal/d in 1997 to 436.22 Mgal/d in 2006, this dropped the sustainable yield to 53.8%. While the 234.9 Mgal/d in 1997 may not have been the maximum volume sustainable in this county, the model assigned it 100% sustainable as part of the optimization. This should be noted when taking into account the 53.8% sustainable figure for 2006. Another factor that should be considered is the hydrogeologic boundary that is Crowley's Ridge. Due to the separation of the alluvial aquifer by the ridge in some counties in the Cache Study Area, the sustainable yields may be even lower west of the ridge, as the total county volume of ground-water was taken into account for the 1997 and 2006 pumping rates.


9N1E33BBA
Cross County
Alluvial Aquifer
Water Level Altitude
190
185
180
175
170
165
160
155
150
145
140
135
130
1967
1973
1979
1985
1991
1997
2003
2009
Date Monitored


12N02E34CCC1
Poinsett County
Alluvial Aquifer
Water Level Altitude
155
150
145
140
135
130
125
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
Date Monitored



County	Avg. Change, ft.
Clay	-2.58
Craighead	-1.79
Cross	-1.93
Greene	+0.63
Independence	+14.53
Jackson	+0.57
Lawrence	+1.31
Lee	+0.69
Monroe	-0.77
Phillips	+0.55
Poinsett	-1.03
Randolph	-1.88
St. Francis	-1.49
Woodruff	+0.93

Legend

- Wells
- Crowleys Ridge
- Cache Study Area

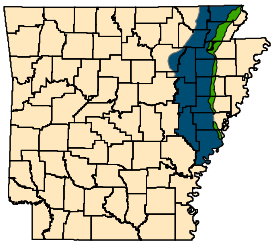
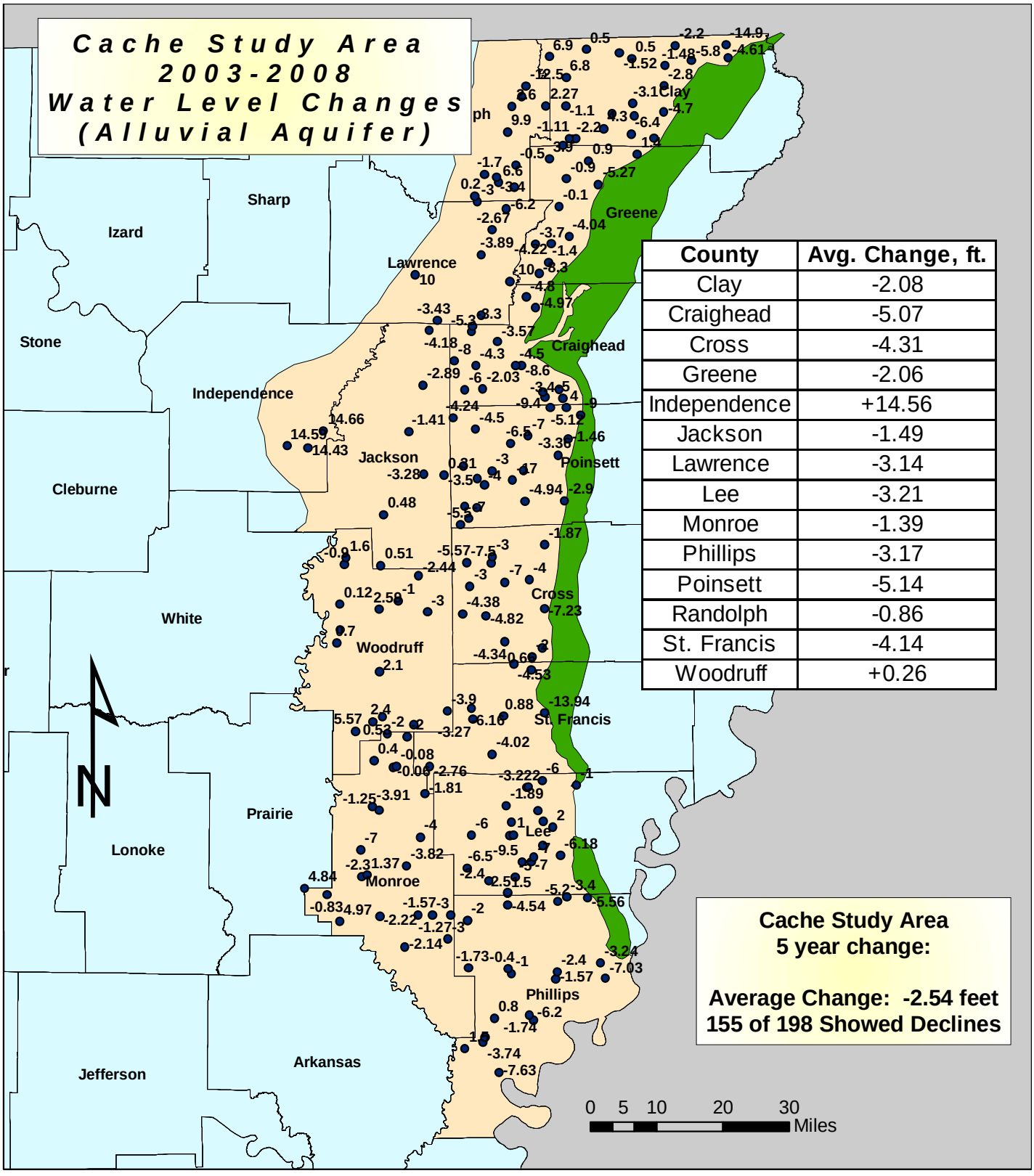


Fig. 18



County	Avg. Change, ft.
Clay	-2.08
Craighead	-5.07
Cross	-4.31
Greene	-2.06
Independence	+14.56
Jackson	-1.49
Lawrence	-3.14
Lee	-3.21
Monroe	-1.39
Phillips	-3.17
Poinsett	-5.14
Randolph	-0.86
St. Francis	-4.14
Woodruff	+0.26

Legend

- Wells
- Crowleys Ridge
- Cache Study Area

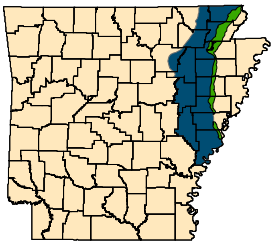
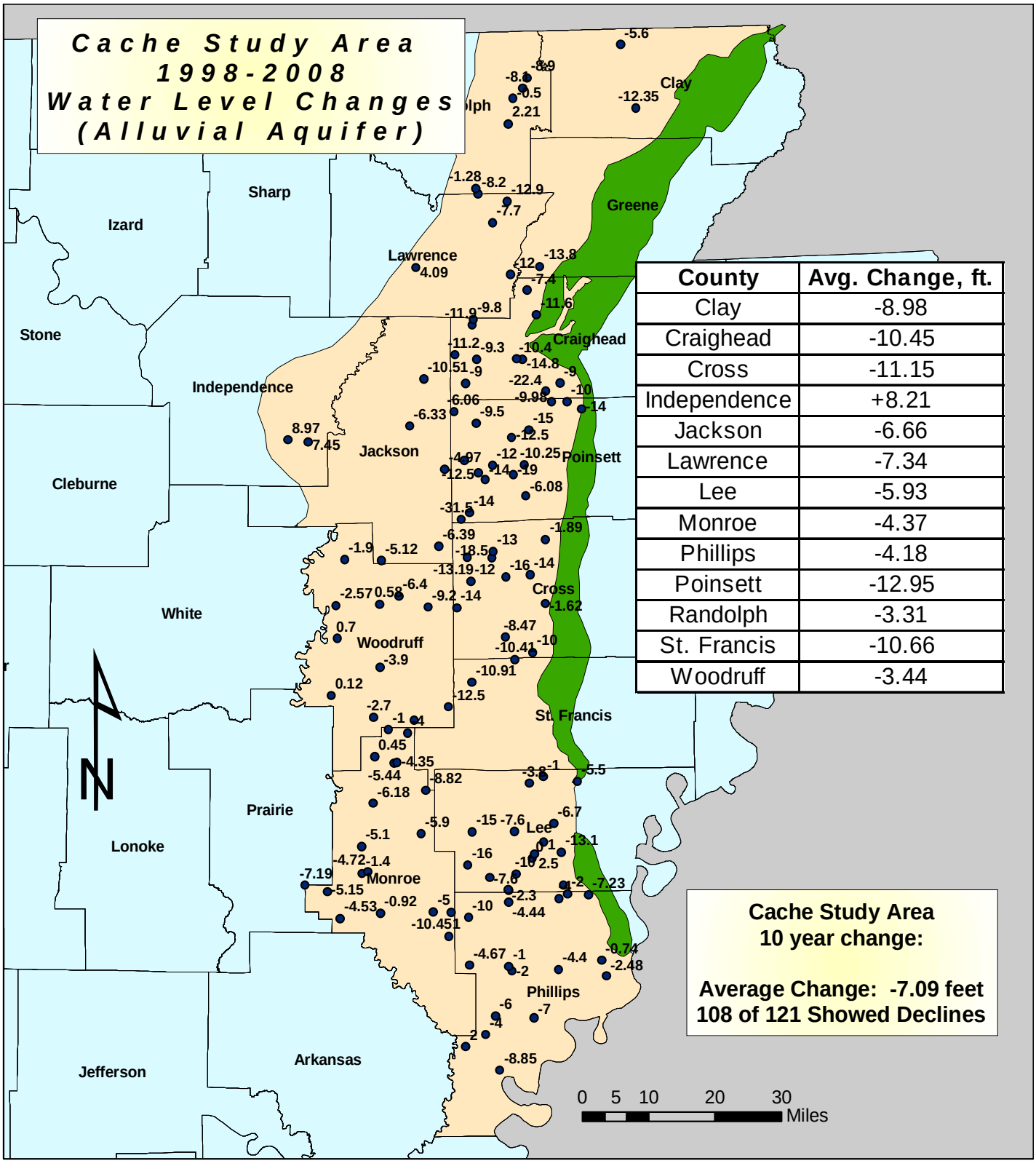


Fig. 19



County	Avg. Change, ft.
Clay	-8.98
Craighead	-10.45
Cross	-11.15
Independence	+8.21
Jackson	-6.66
Lawrence	-7.34
Lee	-5.93
Monroe	-4.37
Phillips	-4.18
Poinsett	-12.95
Randolph	-3.31
St. Francis	-10.66
Woodruff	-3.44

Legend

- Wells
- Crowleys Ridge
- Cache Study Area

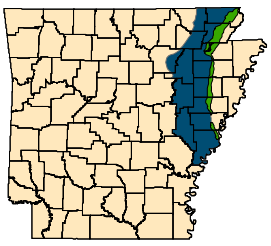
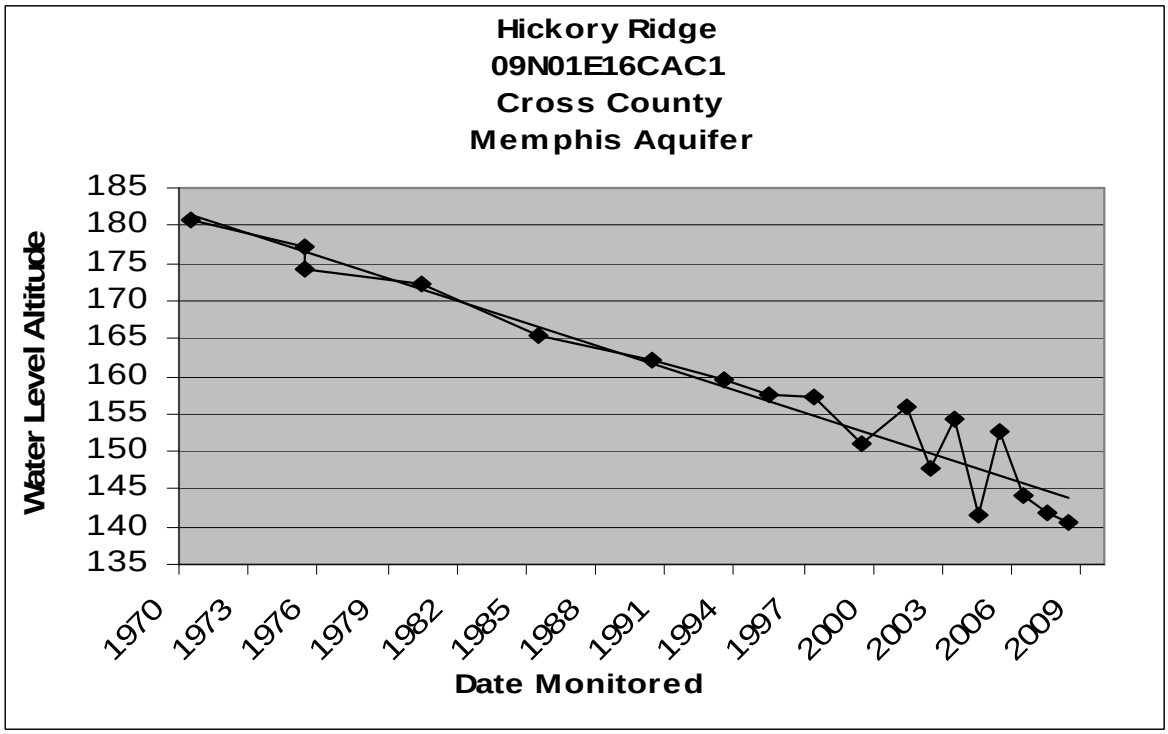


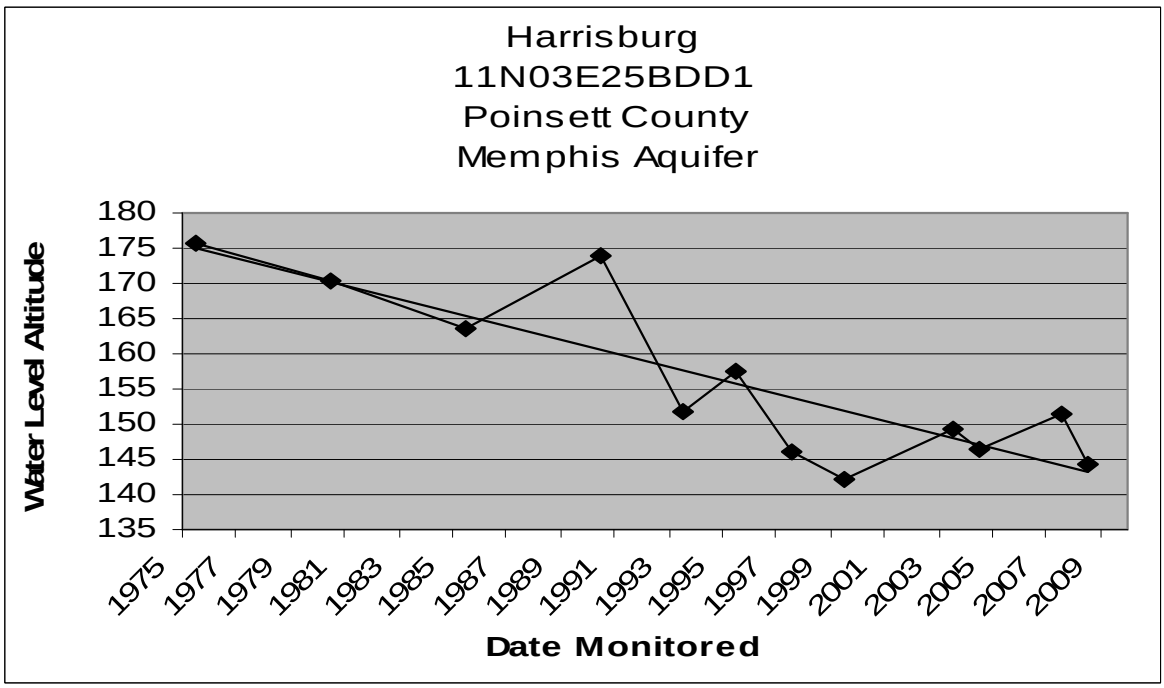
Fig. 20

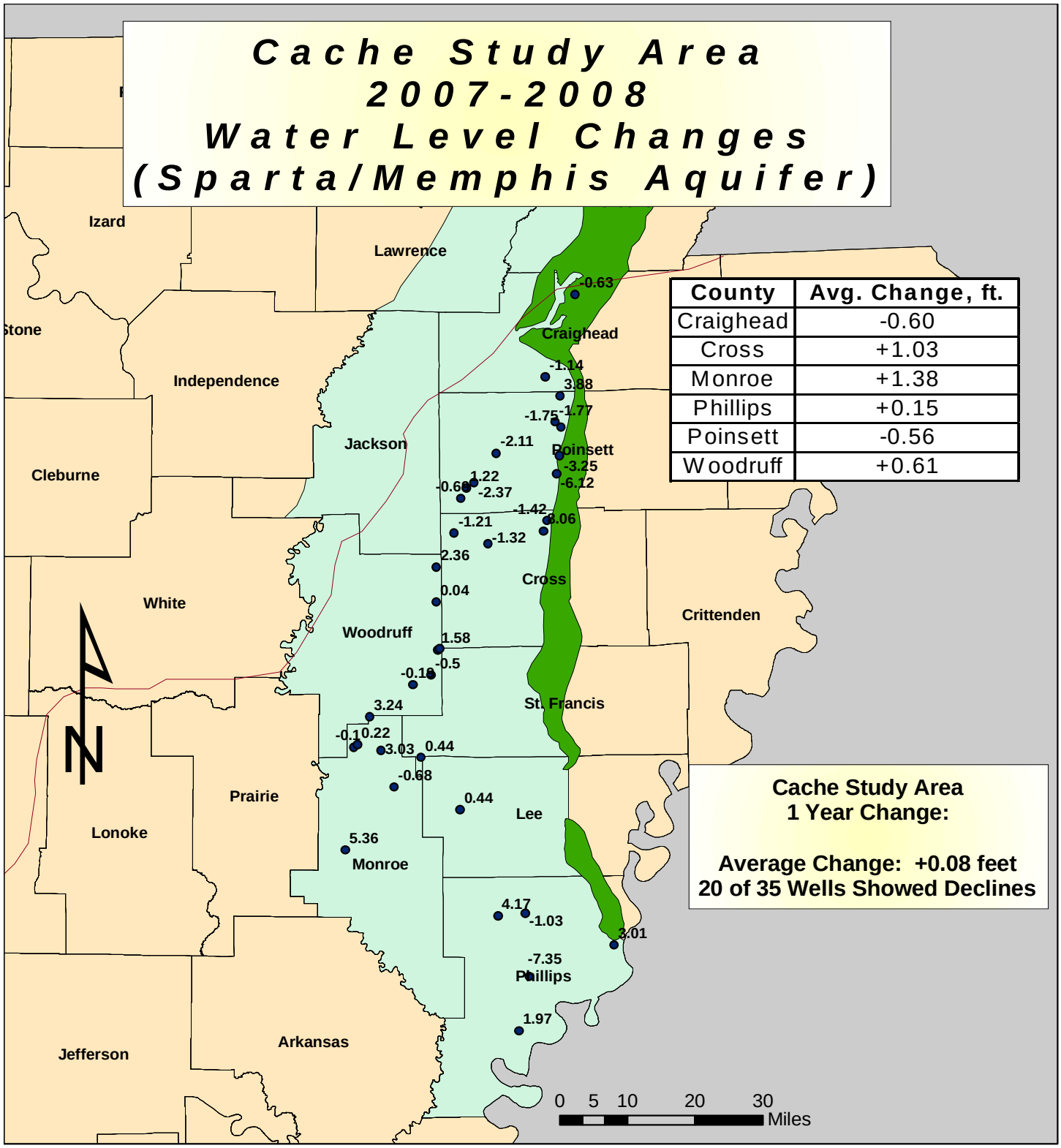
Monitoring of the Sparta/Memphis aquifer in the Cache Study Area from 2007 to 2008 shows that the study area had an overall average change in static water level of +0.08 feet. Although there are not as many irrigation wells in the Sparta/Memphis aquifer as there are in the alluvial aquifer in this study area, there has been an increase in recent years as the water level in the alluvial aquifer continues to drop. Twenty of the 35 wells (57.1%) monitored showed declines during this time period. The average change for the counties in this study area over the one-year period (2007-2008) were; Craighead County -0.60 feet, Cross County +1.03 feet, Monroe County +1.38 feet, Phillips County +0.15 feet, Poinsett County -0.56 feet, and Woodruff County +0.61 feet respectively. (Fig.21)

During the 2003 to 2008 monitoring period the Sparta/Memphis aquifer in the Cache Study Area had an average water level decline of -1.35 feet, with 21 of the 35 wells monitored (60.0%) showing decline. Woodruff County had an average change of -1.38 feet, Phillips County +6.66 feet, Poinsett County -5.54 feet, Monroe County -1.42 feet, Cross County -5.22 feet, and Craighead County +0.78 feet respectively. (Fig. 22)

Few wells were monitored in the Sparta/Memphis aquifer back in 1998, so that makes comparisons sparse for the 10-year change map as seen on figure 23. Of the 9 wells monitored from 1998 to 2008, all 9 show declines. Monroe County had an average change of -5.93 feet, and Poinsett county -13.41 respectively. USGS Scientific Investigations Reports studying the potentiometric surface of the Sparta/Memphis aquifer show an expanding cone of depression in Poinsett and Cross Counties west of Crowley's Ridge.


Hickory Ridge
09N01E16CAC1
Cross County
Memphis Aquifer
Water Level Altitude
185
180
175
170
165
160
155
150
145
140
135
1970
1973
1976
1979
1982
1985
1988
1991
1994
1997
2000
2003
2006
2009
Date Monitored


Harrisburg
11N03E25BDD1
Poinsett County
Memphis Aquifer
Water Level Altitude
180
175
170
165
160
155
150
145
140
135
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
Date Monitored



County	Avg. Change, ft.
Craighead	-0.60
Cross	+1.03
Monroe	+1.38
Phillips	+0.15
Poinsett	-0.56
Woodruff	+0.61

Cache Study Area
1 Year Change:

Average Change: +0.08 feet
20 of 35 Wells Showed Declines

Legend

- Wells
- Sparta Boundary
- Crowleys Ridge
- Cache Study Area

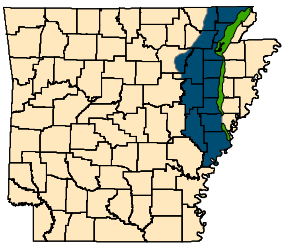
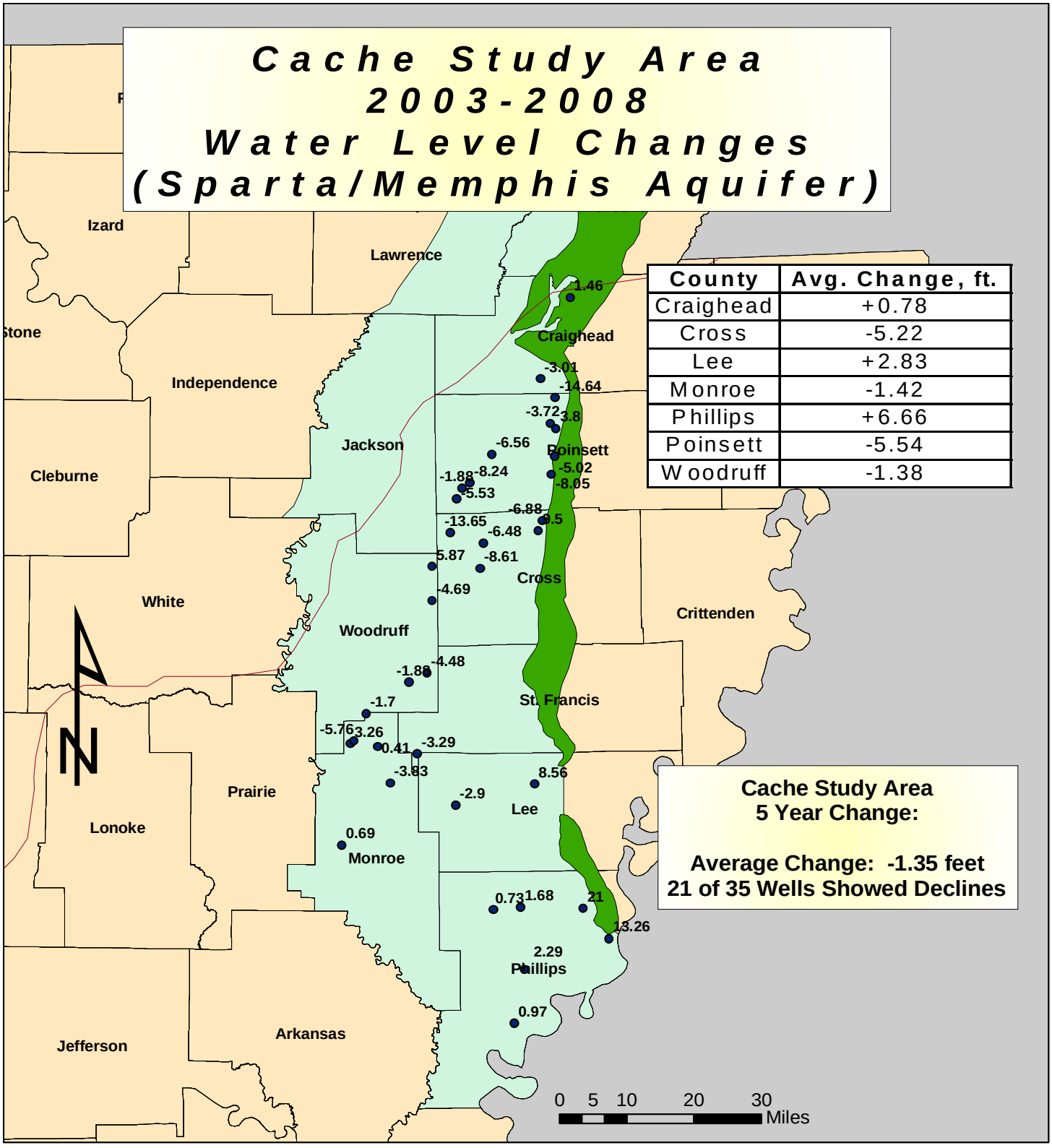


Fig. 21

Cache Study Area
2003-2008
Water Level Changes
(Sparta/Memphis Aquifer)

County	Avg. Change, ft.
Craighead	+0.78
Cross	-5.22
Lee	+2.83
Monroe	-1.42
Phillips	+6.66
Poinsett	-5.54
Woodruff	-1.38



Cache Study Area
5 Year Change:

Average Change: -1.35 feet
21 of 35 Wells Showed Declines

Legend

- Wells
- Sparta Boundary
- Crowleys Ridge
- Cache Study Area

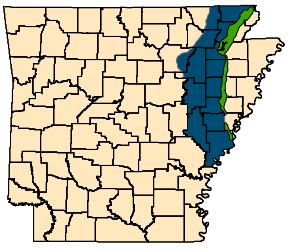
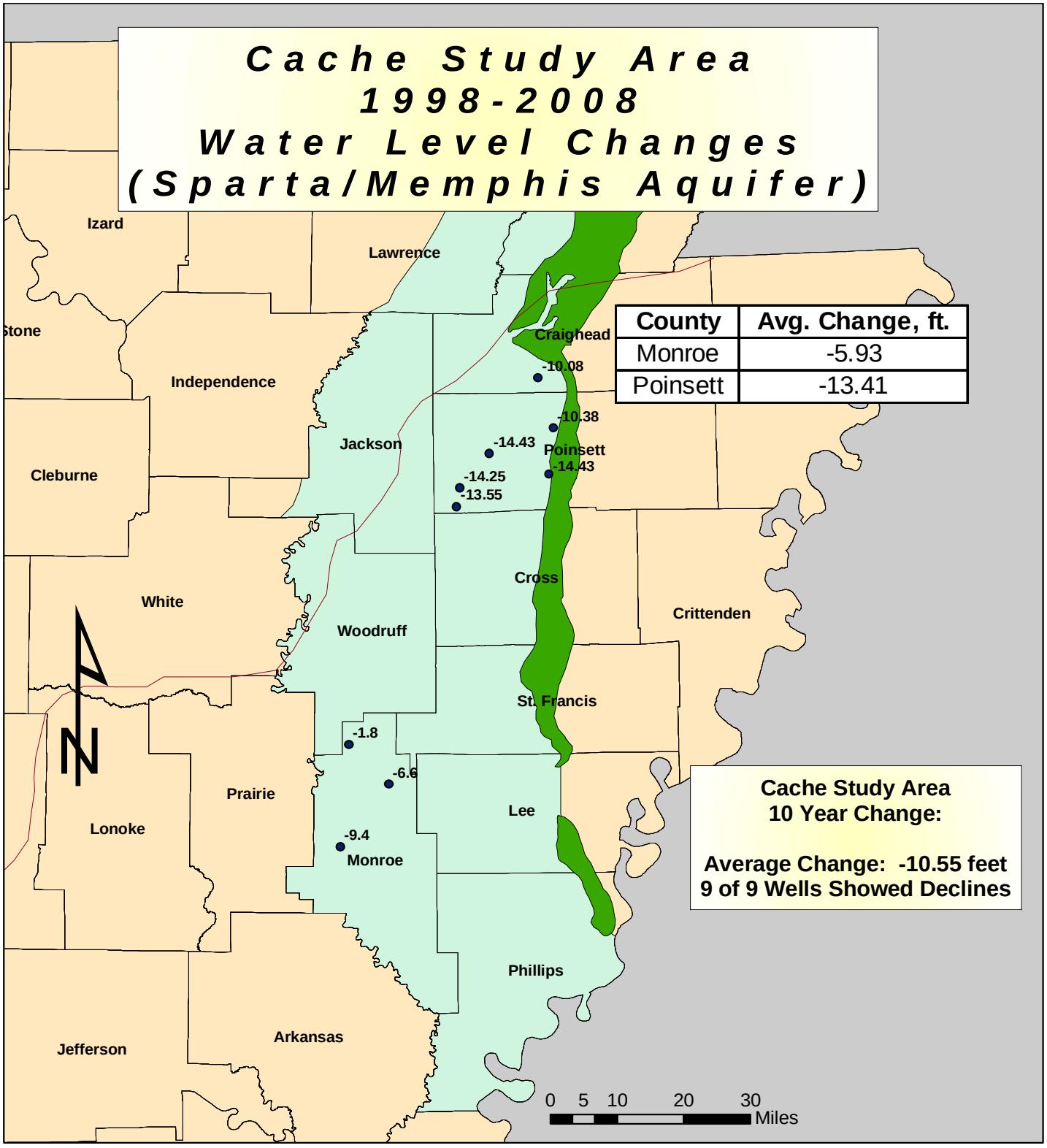


Fig. 22



Legend

- Wells
- Sparta Boundary
- Crowleys Ridge
- Cache Study Area

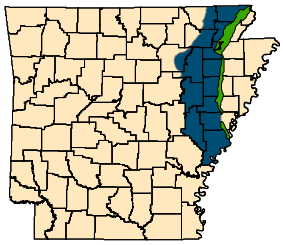


Fig. 23

BOEUF-TENSAS STUDY AREA

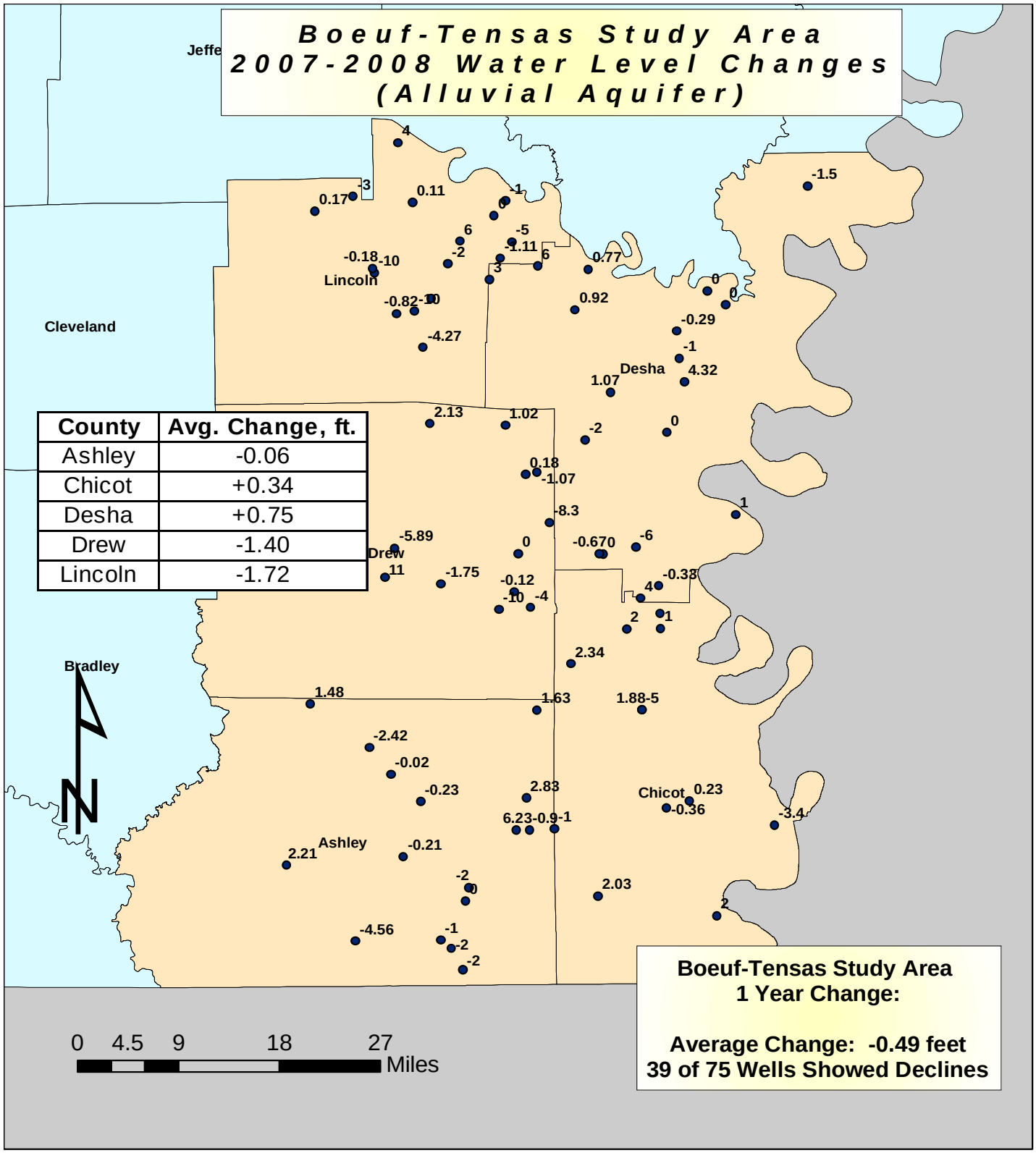
The Boeuf-Tensas study area in southeast Arkansas is comprised of Ashley, Chicot, Desha, Drew, and Lincoln Counties. This hydrologic basin extends into Louisiana but for the purposes of this study will be bounded by the Arkansas state line to the south.

The alluvial aquifer data in the Boeuf-Tensas Study Area for the monitoring period of 2007-2008 showed the entire study area having an average change of -0.49 feet, and 39 of the 75 wells monitored (52.2%) having declines in static water level. Lincoln County had an average change of -1.72 feet, Chicot County +0.34 feet, Desha County +0.75 feet, Drew County -1.40 feet, and Ashley County -0.06 feet respectively. (Fig.24)

During the 5-year monitoring period from 2003 to 2008 the study area had an average change of -3.28 feet in the alluvial aquifer, with 49 of the 60 wells monitored (81.7%) showing declines. Ashley County had an average change of -5.70 feet, Chicot County -1.80 feet, Drew County -2.76 feet, Desha County -2.78 feet, and Lincoln County -2.23 feet respectively. (Fig.25)

The data for the 10-year change in the Boeuf-Tenses shows Ashley County had an average change of -6.52 feet, Chicot County -5.60 feet, Desha County -8.16 feet, Drew County -7.17 feet, and Lincoln County -10.48 feet respectively. The entire study area showed an average change of -7.61 feet during this 10-year period in the alluvial aquifer with 48 of 52 wells monitored (92.3%) showing declines. (Fig.26)

Based on the USGS Conjunctive-Use Optimization Models of the alluvial aquifer sustainable yields were acquired based on the 1997 pumping rates. The percentage of the sustainable yield for each county based on the 2006 rates is shown in figure 43. Water-use data shown in Table 1 is the reported use for 2006. Based on the reported water use for 2006, as well as the sustainable yields estimated from the USGS models, the average percentage of water use in the alluvial aquifer that was sustainable in the Boeuf-Tenses Study Area was 54.1%.



County	Avg. Change, ft.
Ashley	-0.06
Chicot	+0.34
Desha	+0.75
Drew	-1.40
Lincoln	-1.72

Legend

- Wells
- Beouf-Tensas Study Area

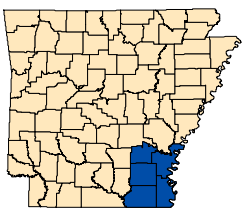
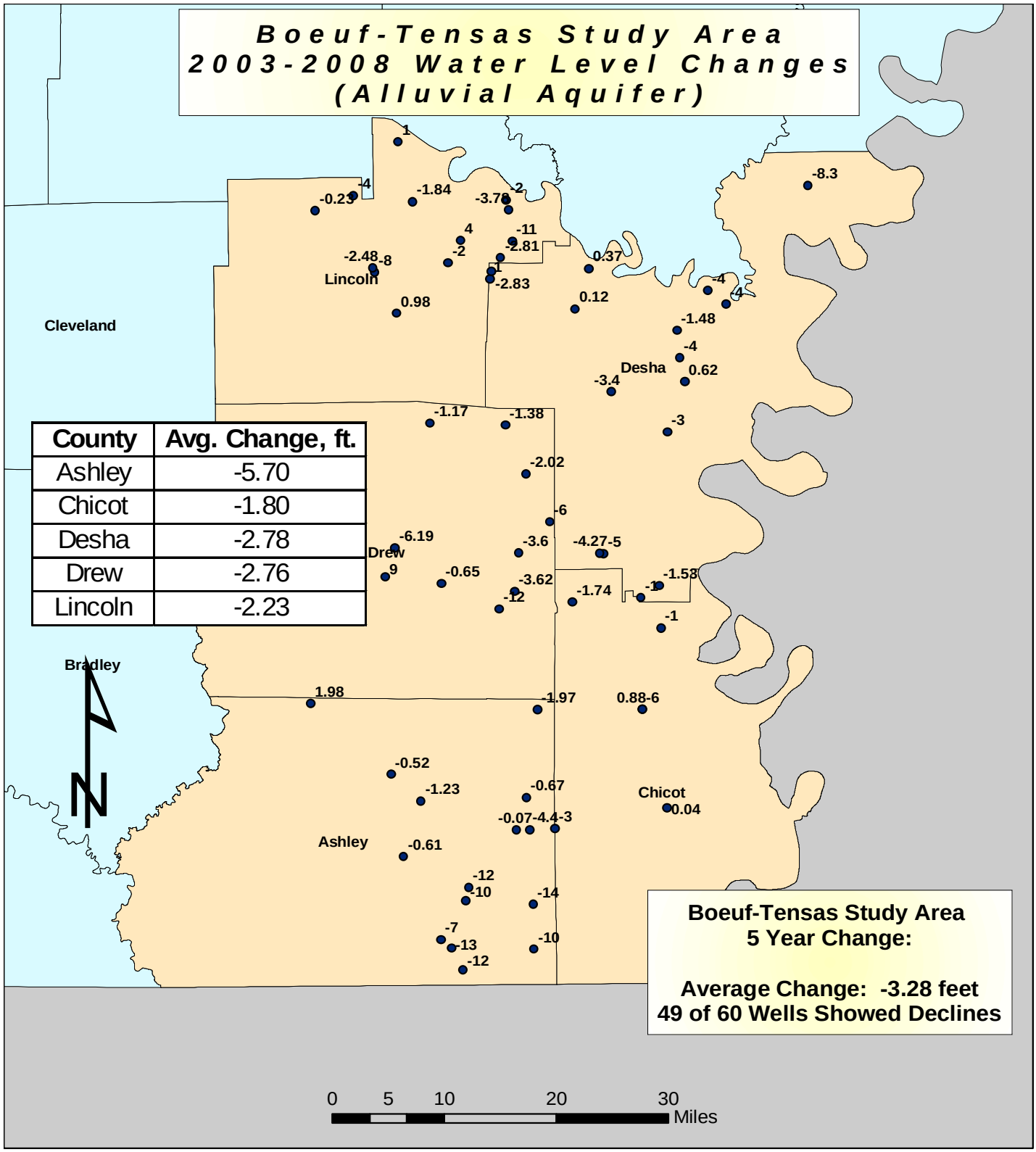


Fig. 24



County	Avg. Change, ft.
Ashley	-5.70
Chicot	-1.80
Desha	-2.78
Drew	-2.76
Lincoln	-2.23

Boeuf-Tensas Study Area
5 Year Change:

Average Change: -3.28 feet
49 of 60 Wells Showed Declines

Legend

- Wells
- Beouf-Tensas Study Area

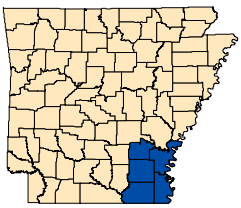
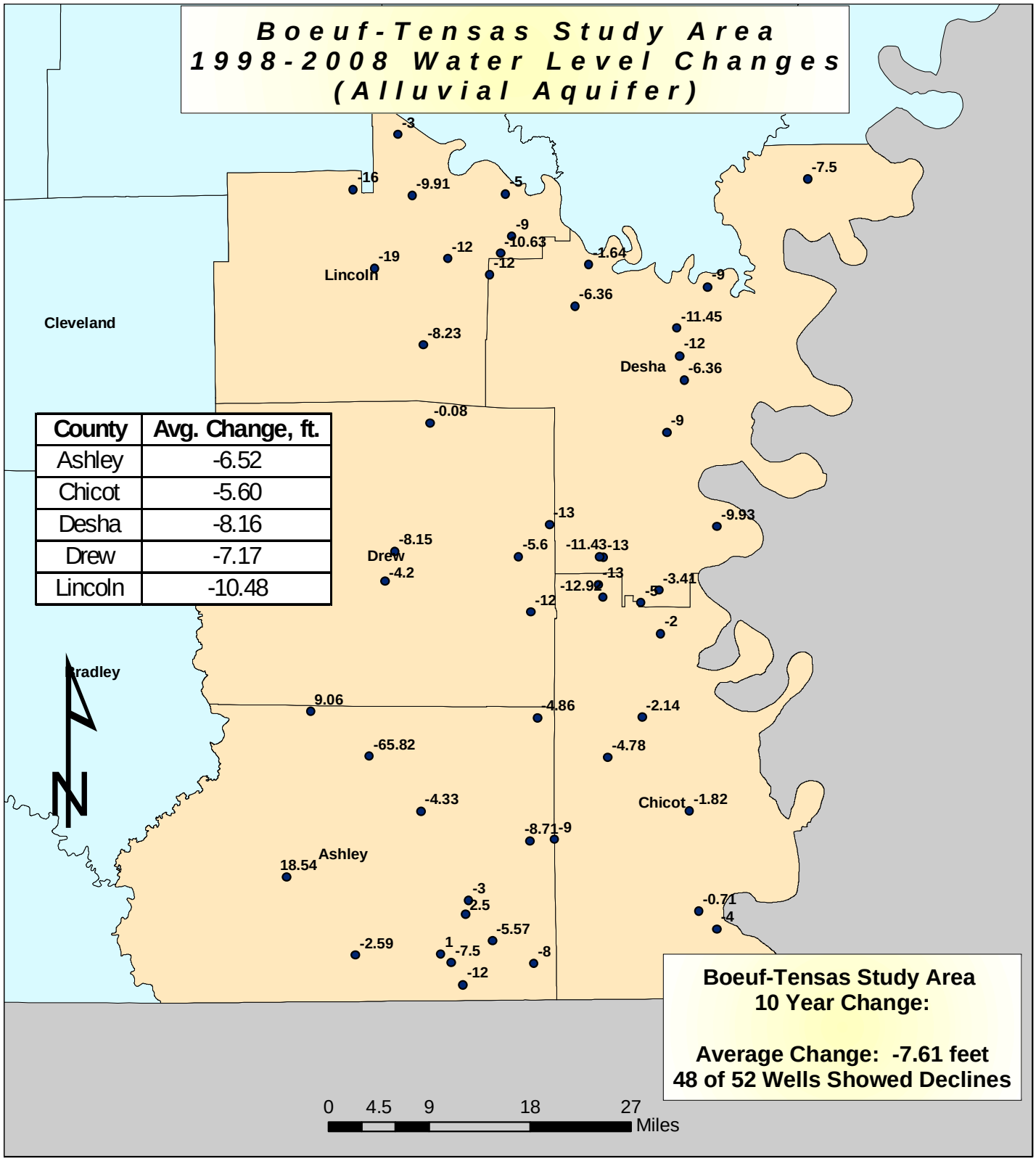


Fig. 25



County	Avg. Change, ft.
Ashley	-6.52
Chicot	-5.60
Desha	-8.16
Drew	-7.17
Lincoln	-10.48

Legend

- Wells
- Beouf-Tensas Study Area

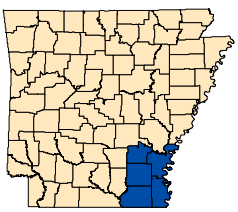
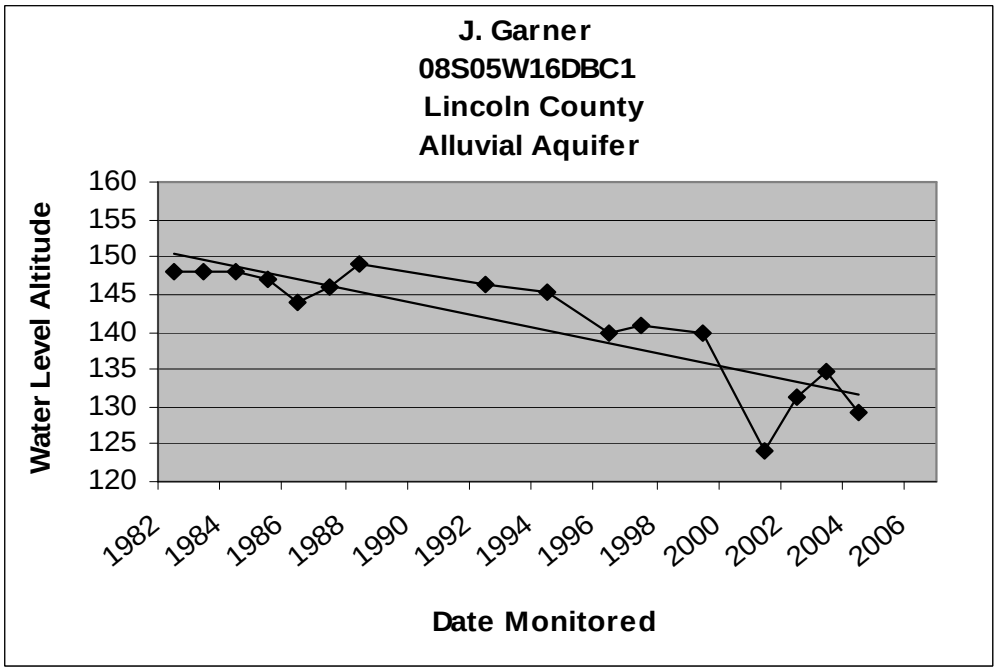
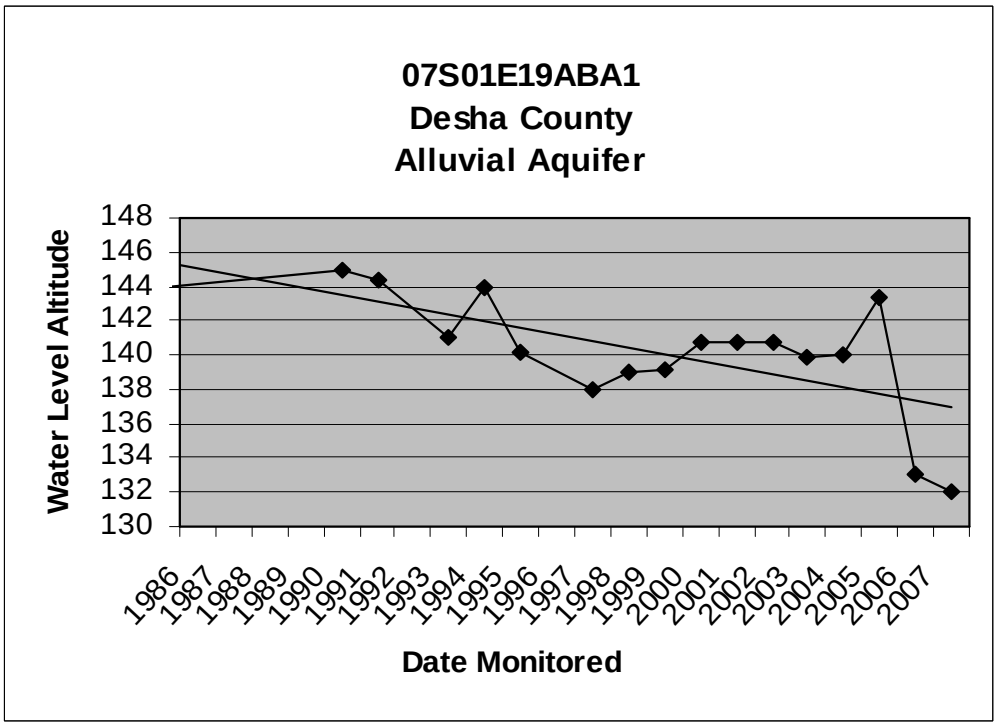


Fig. 26


J. Garner
08S05W16DBC1
Lincoln County
Alluvial Aquifer
Water Level Altitude
160
155
150
145
140
135
130
125
120
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
Date Monitored

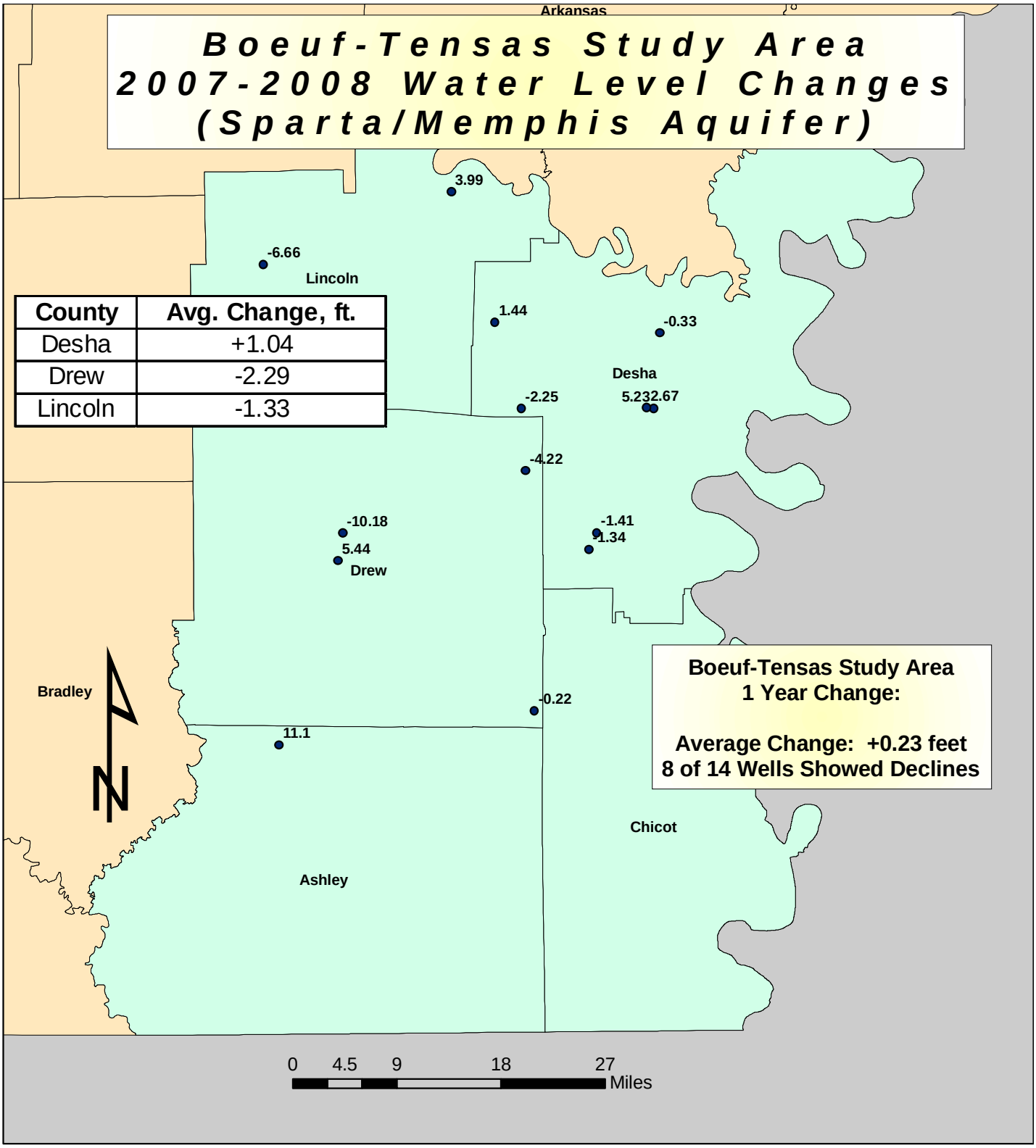

07S01E19ABA1
Desha County
Alluvial Aquifer
Water Level Altitude
148
146
144
142
140
138
136
134
132
130
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
Date Monitored

Continued monitoring of the ground-water levels in the Sparta aquifer of the Boeuf-Tensas Study Area shows mixed results mostly because of the relative lack of wells that are drilled into the aquifer in this part of the state. The ANRC as well as the USGS continue to add Sparta aquifer wells to the database from this study area and the historical data continues to improve every year.

During the 2007-2008 monitoring period the Boeuf-Tenses Study Area showed an average change of +0.23 feet in the Sparta/Memphis aquifer, with 8 of the 14 wells monitored (57.1%) showing declines. Lincoln County had an average change of -1.33 feet, Desha County a change of +1.04 feet, and Drew County -2.29 feet respectively. (Fig.27)

During the 5-year monitoring period, from 2003 to 2008, 12 of the 16 wells monitored in the Sparta/Memphis aquifer (75.0%) showed water-level declines in this study area. Desha County had an average change of -2.61 feet, Lincoln County -8.16 feet, and Drew County -6.77 feet respectively. The entire study area had an average change of -5.09 feet during this time. (Fig.28)

From 1998 to 2008 the entire Boeuf-Tensas Study Area had an average change of -6.60 feet in the Sparta/Memphis aquifer. Eight of the 9 wells monitored during this 10-year period showed declines ranging from -8.53 feet in Desha County to -11.07 feet in Drew County. (Fig. 29)



County	Avg. Change, ft.
Desha	+1.04
Drew	-2.29
Lincoln	-1.33

Legend

- Wells
- Boeuf- Tensas Study Area

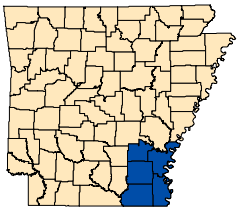
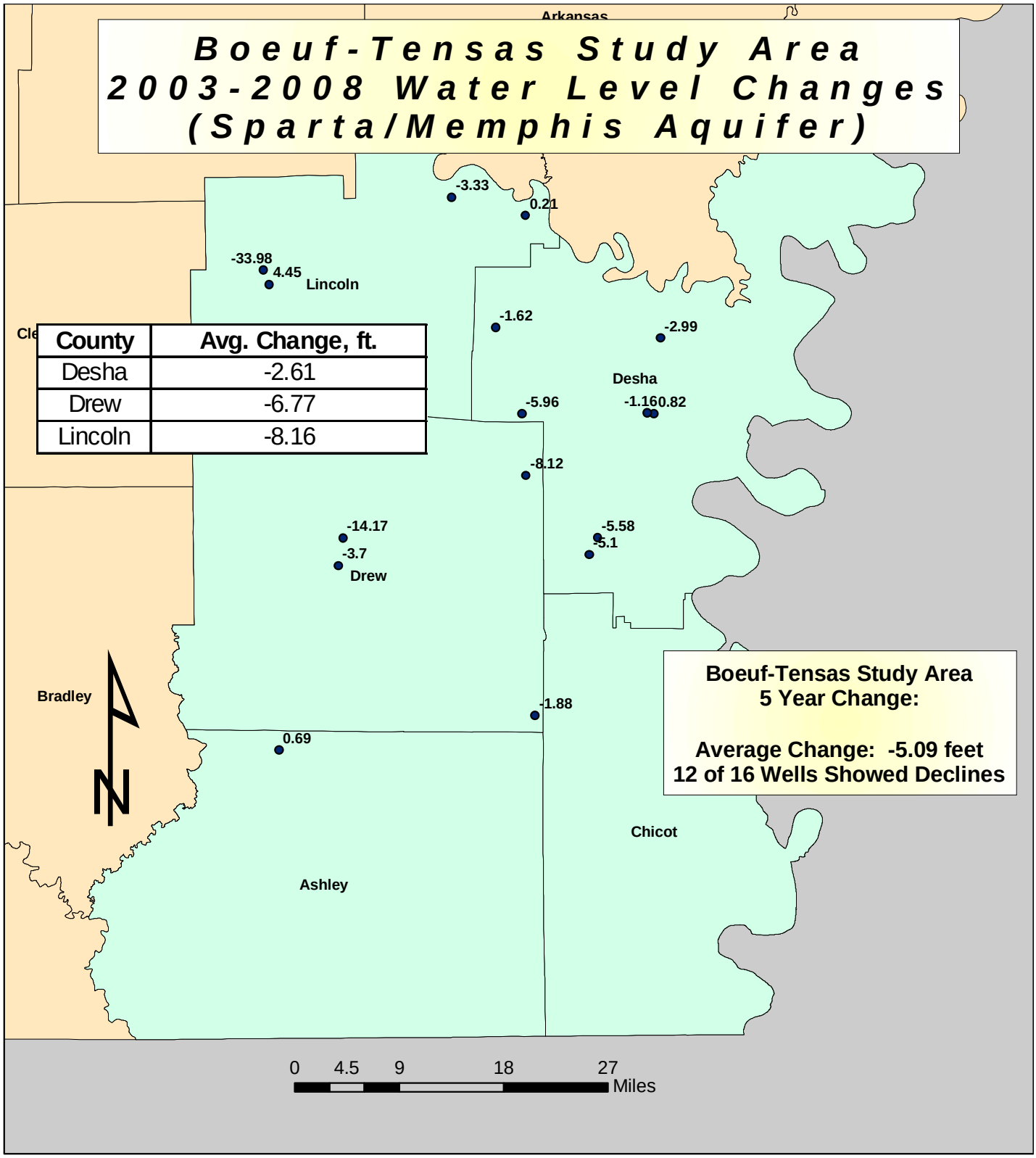


Fig. 27



County	Avg. Change, ft.
Desha	-2.61
Drew	-6.77
Lincoln	-8.16

Legend

- Wells
- Boeuf- Tensas Study Area

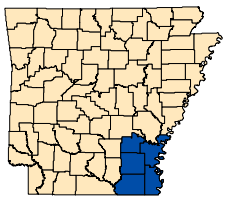
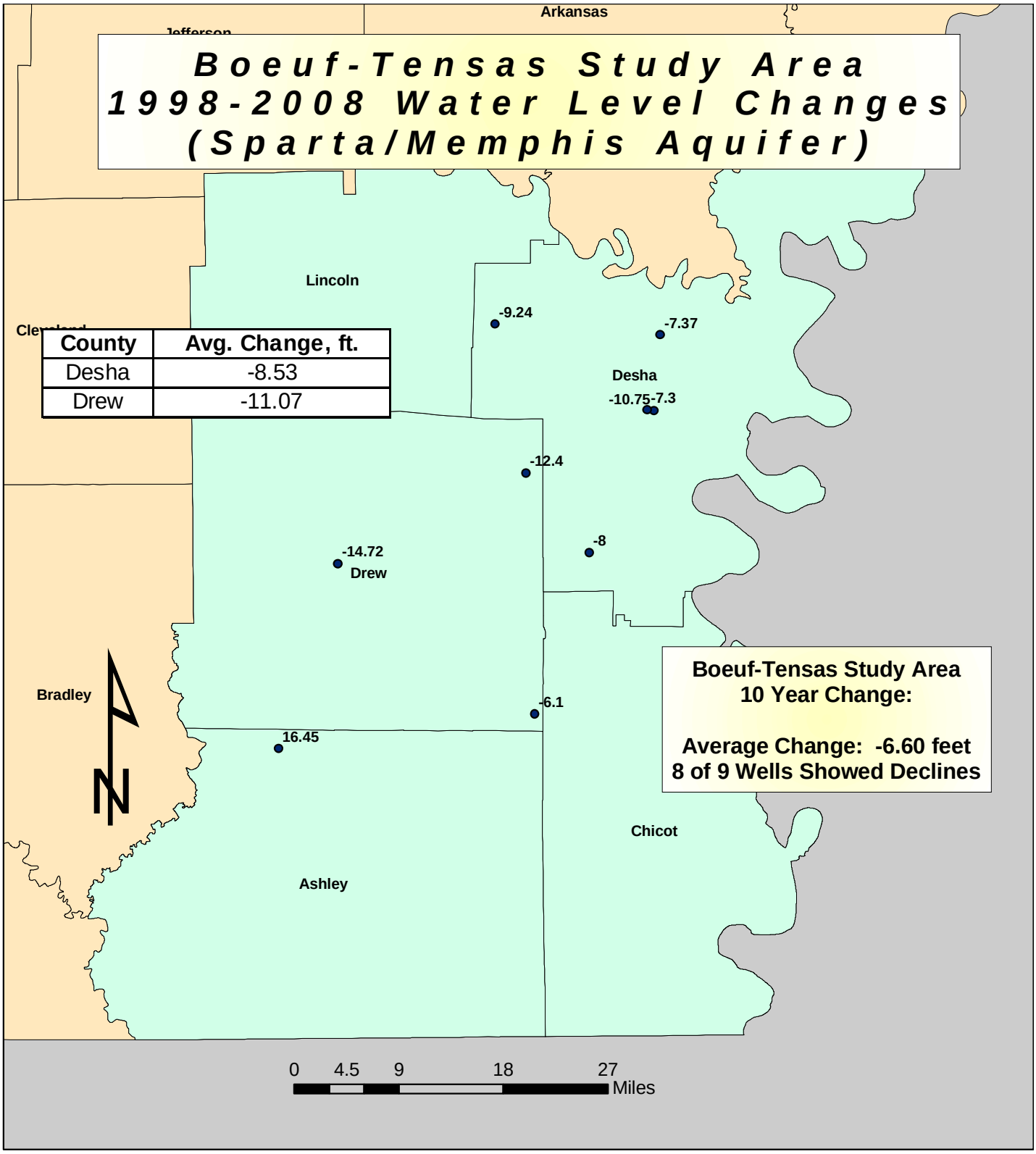


Fig. 28



County	Avg. Change, ft.
Desha	-8.53
Drew	-11.07

Legend

- Wells
- Boeuf- Tensas Study Area

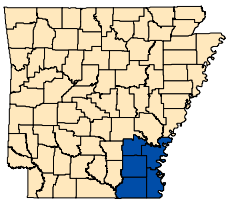


Fig. 29

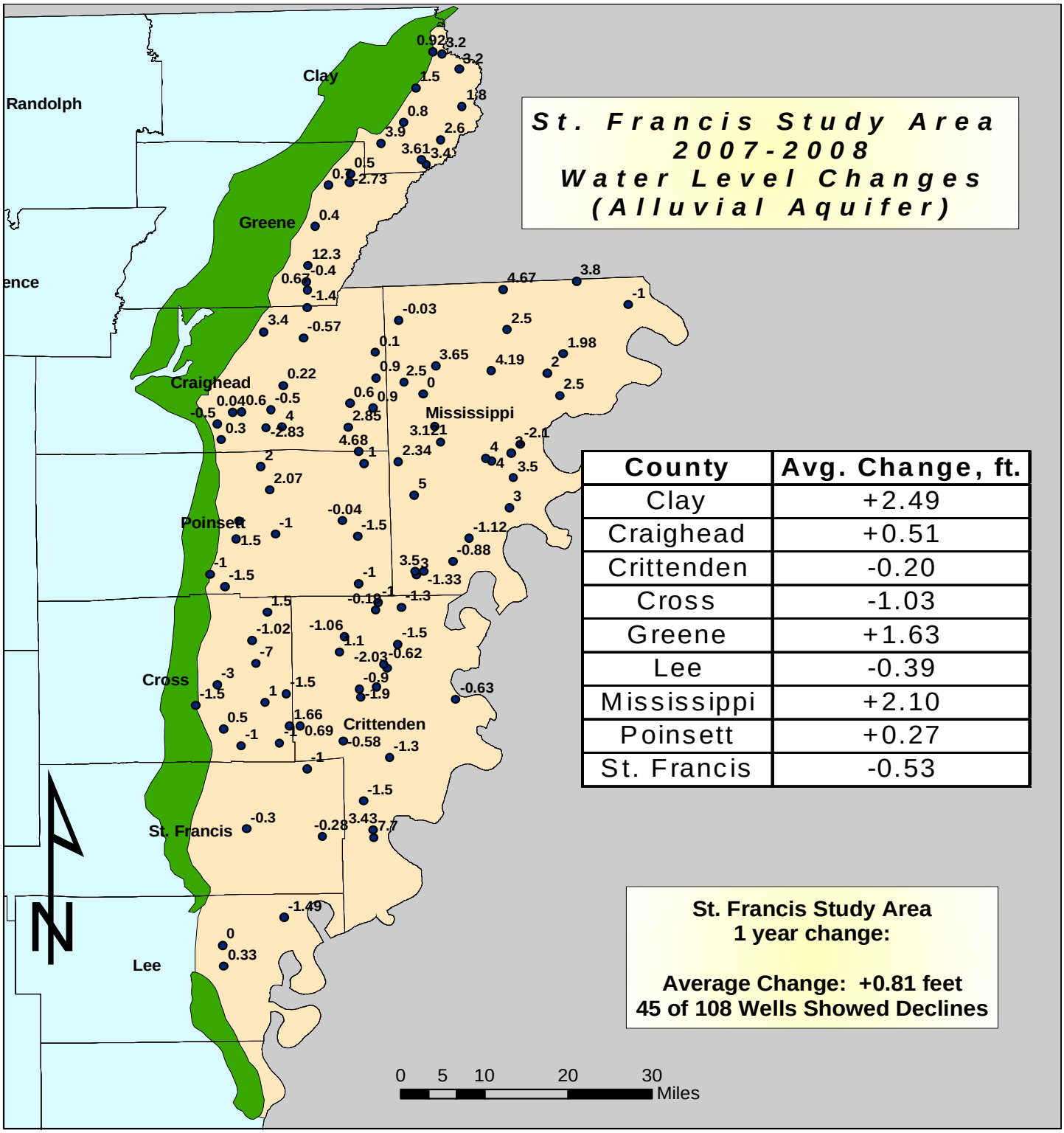
ST. FRANCIS STUDY AREA

The St. Francis Study Area is defined as the area west of the Mississippi River, east of Crowley's Ridge, and south and east of the subcrop of the McNairy-Nacatoch aquifer (6900 square miles) (Ackerman, 1996). For the purpose of this report, only the area inside the boundaries of Arkansas is considered. (Fig.1)

During the 2007-2008 monitoring period there were declines in average static water levels in the alluvial aquifer in 45 of the 108 wells monitored (41.7%) with an average change of +0.80 for a nearly static potentiometric surface. Cross County had an average change of -1.03 feet, Clay County +2.49 feet, Craighead County +0.51 feet, Crittenden County -0.20 feet, Greene County +1.63 feet, Lee County -0.39 feet, Mississippi County +2.10 feet, Poinsett County +0.27 feet, and St. Francis County -0.53 feet respectively. (Fig.30)

During the 5-year monitoring timeframe, from 2003 to 2008, Greene County had an average change of +1.68 feet, Mississippi County -0.17 feet, Craighead County -1.35 feet, Cross County -1.36 feet, Crittenden County -2.19 feet, St. Francis County -0.89 feet, Poinsett County -0.14 feet, Lee County -3.27 feet, and Clay County +1.47 feet respectively. The alluvial aquifer in this study area had an average change of -0.48 feet, with 46 of the 84 wells monitored (54.8%) showing declines. (Fig.31)

A 10-year average change was also done in the St. Francis Study Area for the alluvial aquifer static water levels. Clay County has an average change of +1.36 feet, Craighead County -2.44 feet, Crittenden County -3.78 feet, Cross County -8.20 feet, Greene County +0.62 feet, Mississippi County -0.67 feet, St. Francis county -5.65 feet, and Poinsett County +0.23 feet, respectively. There was an average change of -1.89 feet over the entire study area for this 10-year period, with all 36 of the 53 wells monitored (67.9%) showing declines. (Fig. 32)



County	Avg. Change, ft.
Clay	+2.49
Craighead	+0.51
Crittenden	-0.20
Cross	-1.03
Greene	+1.63
Lee	-0.39
Mississippi	+2.10
Poinsett	+0.27
St. Francis	-0.53

St. Francis Study Area
1 year change:

Average Change: +0.81 feet
45 of 108 Wells Showed Declines

Legend

- Wells
- Crowleys Ridge
- St. Francis Study Area

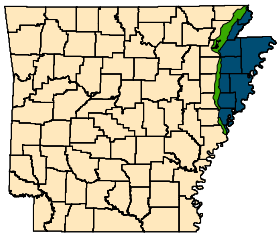
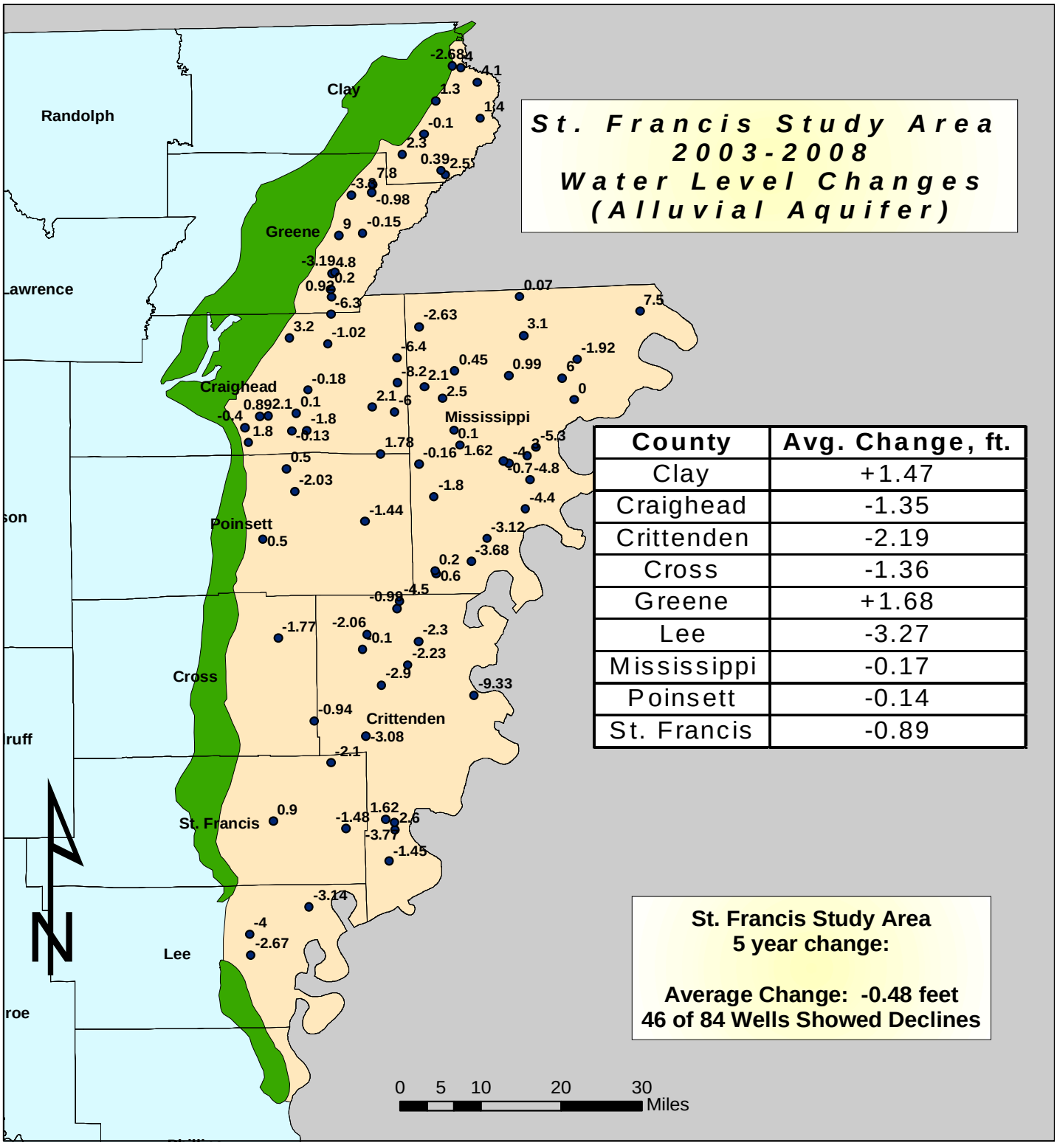


Fig. 30



County	Avg. Change, ft.
Clay	+1.47
Craighead	-1.35
Crittenden	-2.19
Cross	-1.36
Greene	+1.68
Lee	-3.27
Mississippi	-0.17
Poinsett	-0.14
St. Francis	-0.89

Legend

- Wells
- Crowleys Ridge
- St. Francis Study Area

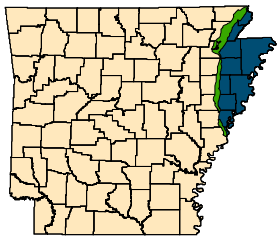
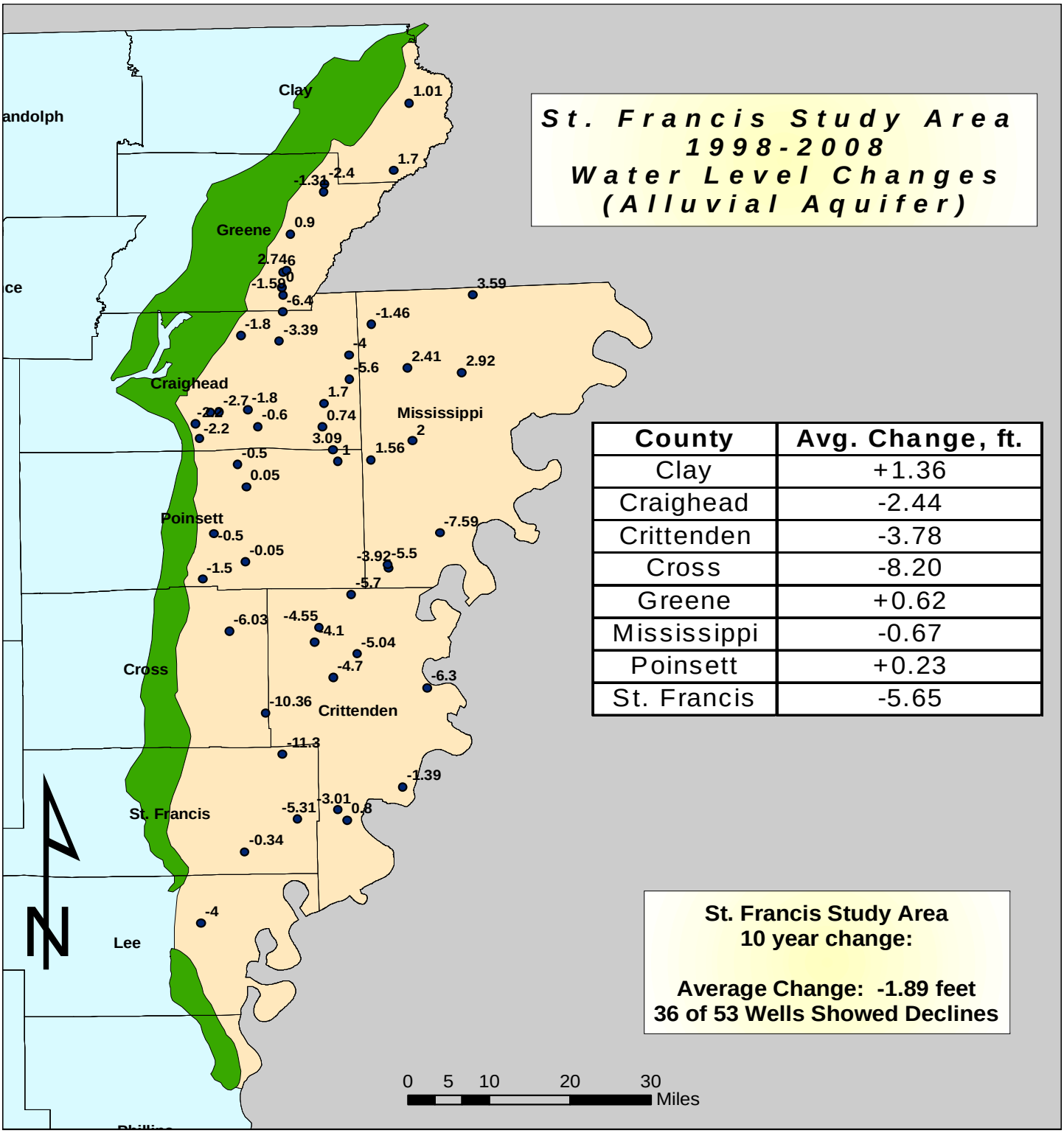


Fig. 31



County	Avg. Change, ft.
Clay	+1.36
Craighead	-2.44
Crittenden	-3.78
Cross	-8.20
Greene	+0.62
Mississippi	-0.67
Poinsett	+0.23
St. Francis	-5.65

St. Francis Study Area
10 year change:

Average Change: -1.89 feet
36 of 53 Wells Showed Declines

Legend

- Wells
- Crowleys Ridge
- St. Francis Study Area

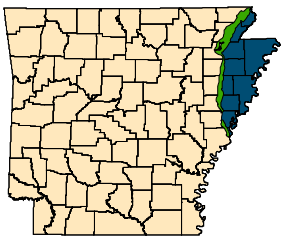
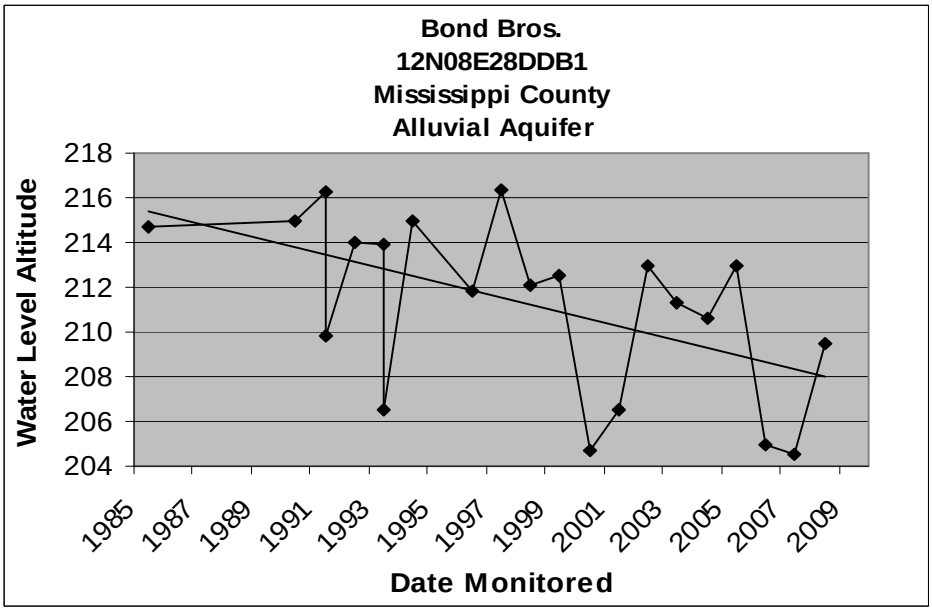
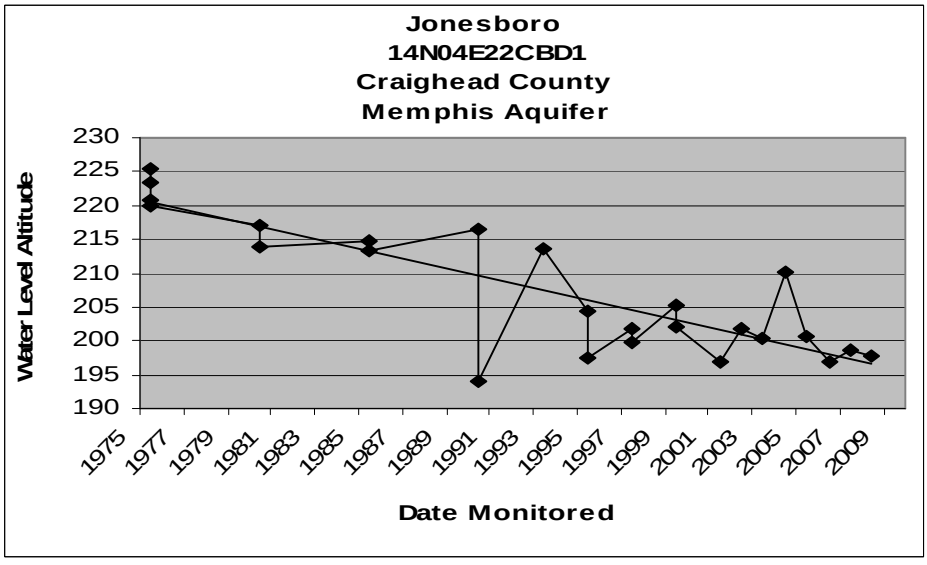


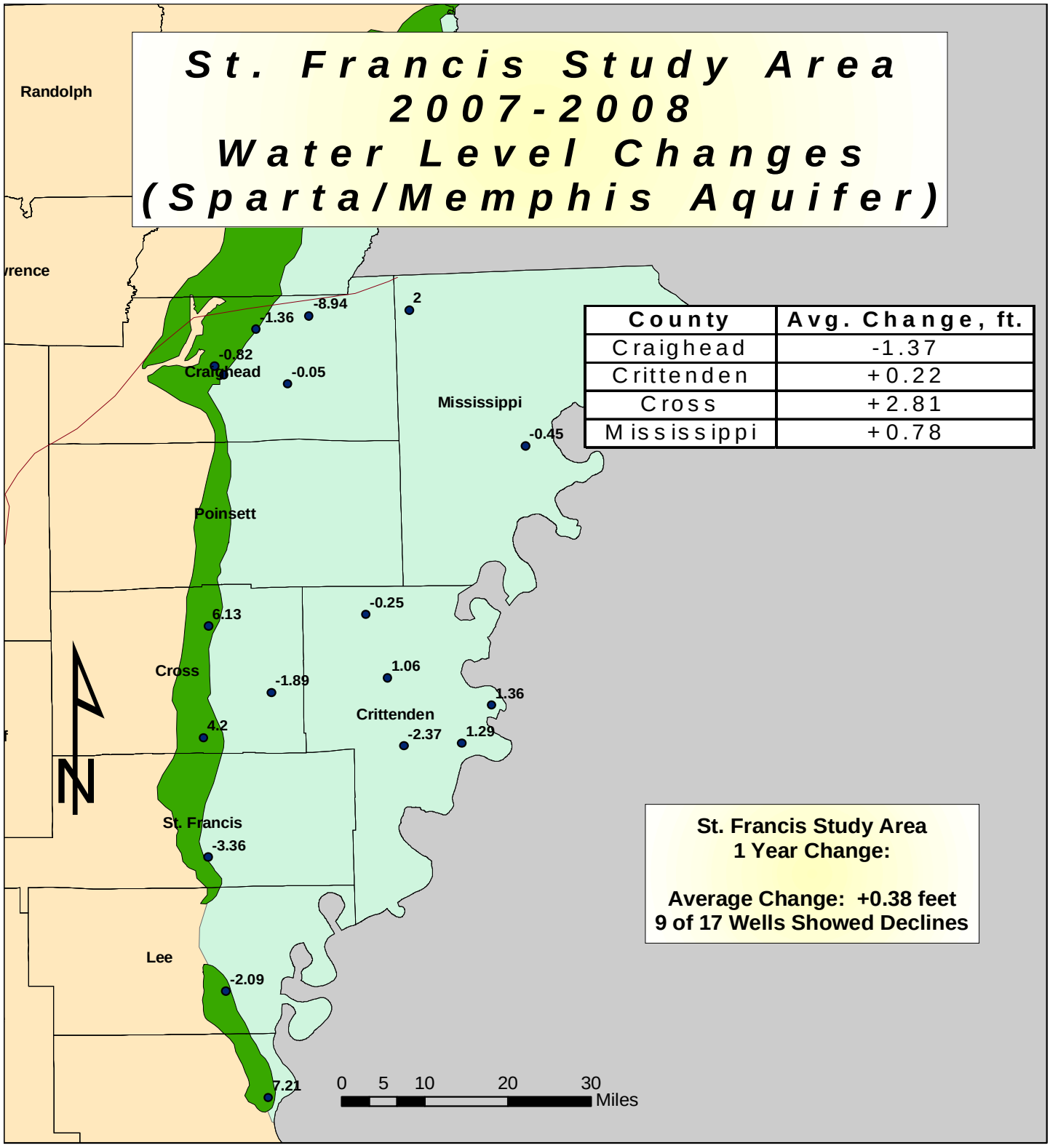
Fig. 32

Just as in the Boeuf-Tensas Study Area, the St. Francis Study Area has a limited number of wells drilled into the Sparta/Memphis aquifer. This should be taken into account when looking at the county changes in the figures. There are more wells being drilled into these areas as the water level in the alluvial aquifer continues to decline. USGS as well as the ANRC will continue to add monitoring points in these areas for the Sparta/Memphis aquifer. The hydrographs below are good representations of the static water level changes over time. Figures 33 and 34 show the actual measurements taken for the 1 year and 10 year periods respectively.





St. Francis Study Area 2007-2008 Water Level Changes (Sparta/Memphis Aquifer)



County	Avg. Change, ft.
Craighead	-1.37
Crittenden	+0.22
Cross	+2.81
Mississippi	+0.78

St. Francis Study Area
1 Year Change:

Average Change: +0.38 feet
9 of 17 Wells Showed Declines

Legend

- Wells
- Sparta Boundary
- Crowleys Ridge
- St. Francis Study Area

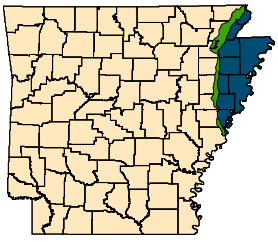


Fig. 33

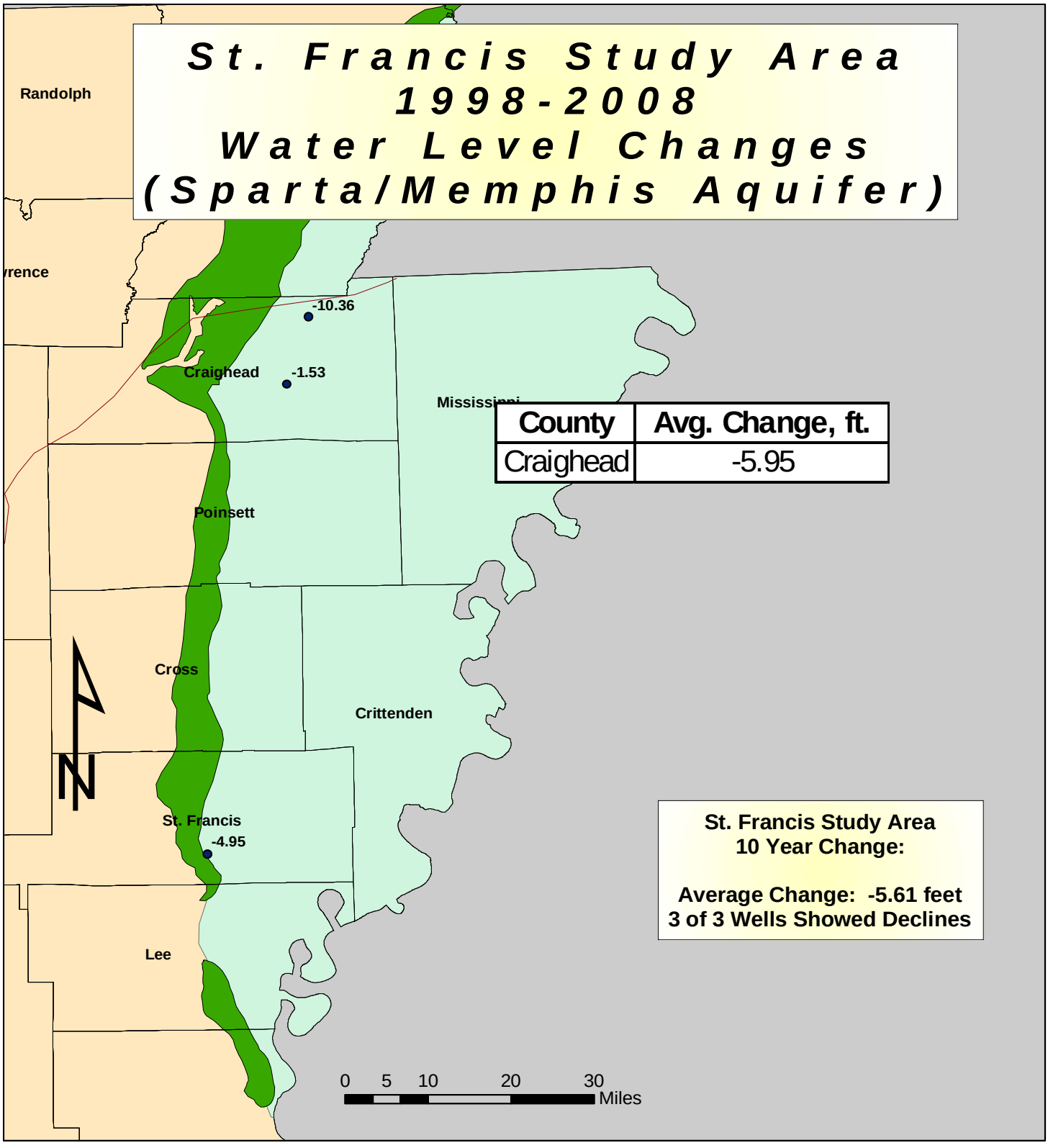

St. Francis Study Area
1998-2008
Water Level Changes
(Sparta/Memphis Aquifer)
Randolph
rrence
-10.36
Craighead
-1.53
Mississippi
Poinsett
Cross
Crittenden
St. Francis
-4.95
Lee
N
0 5 10 20 30
Miles
County | Avg. Change, ft.
Craighead | -5.95
St. Francis Study Area
10 Year Change:
Average Change: -5.61 feet
3 of 3 Wells Showed Declines
Legend
Wells
Sparta Boundary
Crowleys Ridge
St. Francis Study Area

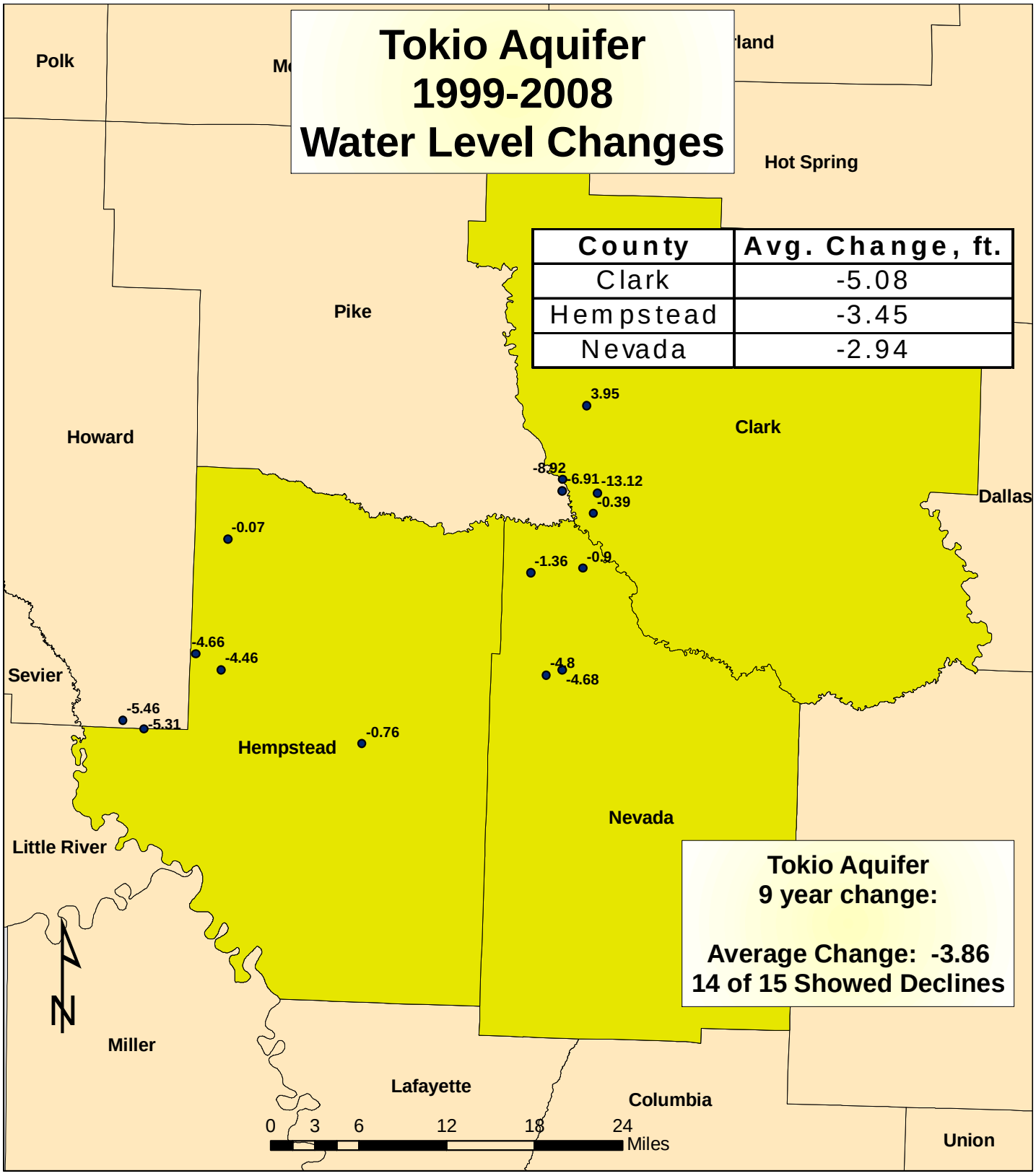
Fig. 34

Other Aquifers Monitored

The USGS in cooperation with the ANRC monitors aquifers other than the alluvial and Sparta/Memphis aquifers throughout Arkansas. Every third year the USGS monitors the Cockfield and Wilcox aquifers, the Tokio and Nacatoch aquifers, and Paleozoic Age aquifers. The 2008 monitoring year was designated for monitoring of the Tokio and Nacatoch aquifers. The water level changes were analyzed for a 3-year and 9-year periods from 2005 to 2008 and from 1999 to 2008.

In the Tokio aquifer there were 16 wells monitored by the USGS for water level change from 2005 to 2008. All of these showed a decline, with an average change of -1.47 feet over the area of the aquifer studied. From the 1999 to 2008 period there were 15 wells monitored, with 14 showing static water level decline as well. The average change during this 9-year period was -3.86 for the counties studied. The county by county averages may be seen on figure 35.

The Nacatoch aquifer is monitored in extreme northeast and southwest Arkansas as can be seen in figure 36. For the 3-year monitoring period from 2005 to 2008, 44 of the 48 wells monitored (91.7%) showed water level declines, the aquifer-wide average change being -1.30 feet statewide. From 1999 to 2008 there were 45 wells monitored by the USGS with 37 (82.2%) showing declines. The entire aquifer studied had an average change of -5.98 feet during this time. Each individual county average may be seen on figures 35 and 36.



County	Avg. Change, ft.
Clark	-5.08
Hempstead	-3.45
Nevada	-2.94

Tokio Aquifer
9 year change:

Average Change: -3.86
14 of 15 Showed Declines

Legend

- Wells
- Counties Studied

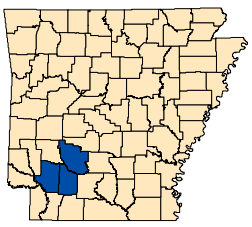
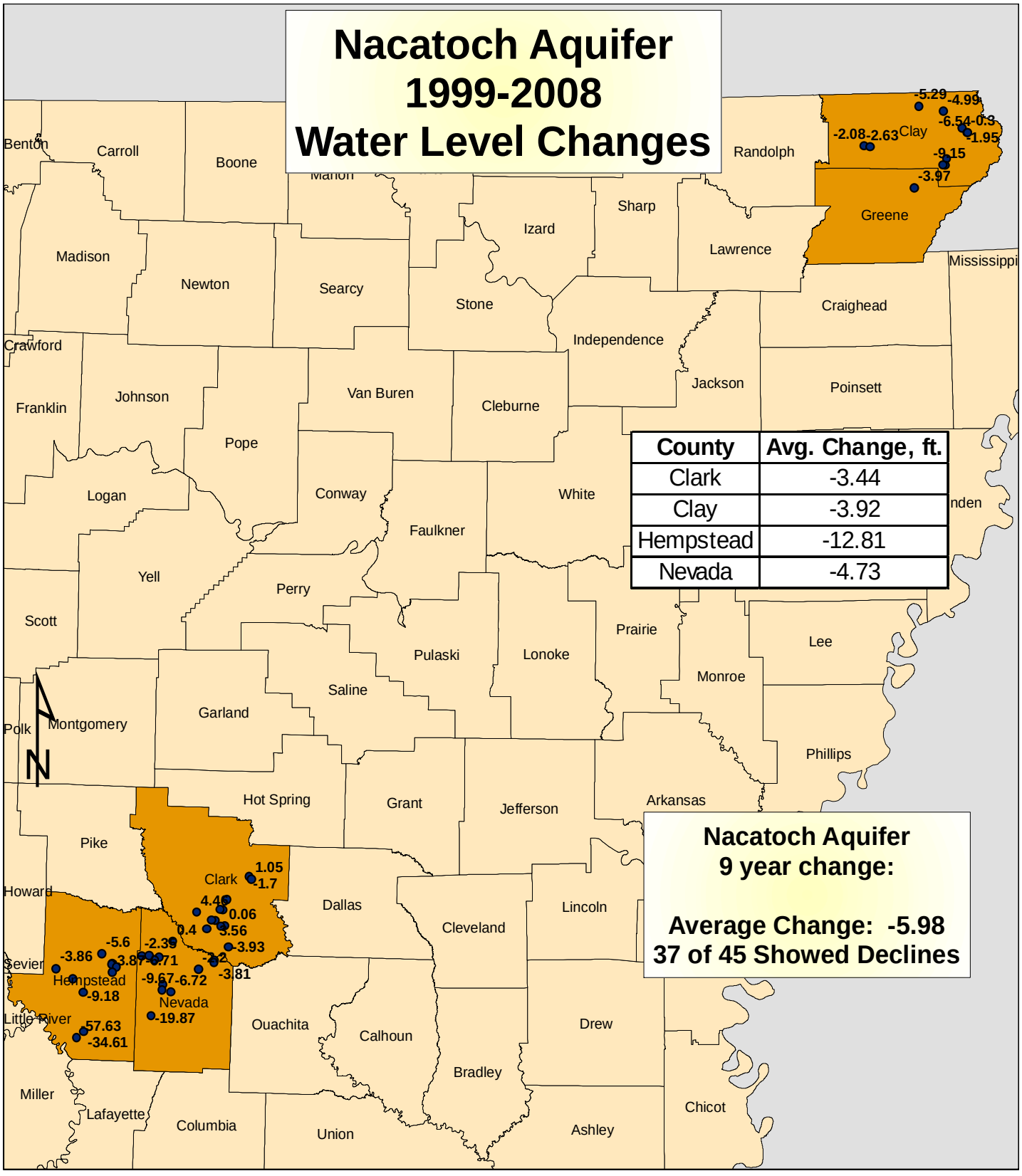


Fig. 35



County	Avg. Change, ft.
Clark	-3.44
Clay	-3.92
Hempstead	-12.81
Nevada	-4.73

Fig. 36

Water Quality

Specific Conductance in the Alluvial and Sparta/Memphis Aquifers

Generally, the occurrences of higher specific conductance in the alluvial aquifer most likely are caused by movement of water containing elevated concentrations of dissolved solids from sources at depth. (Bryant and others 1985). This "leaking" of water with higher concentrations of dissolved solids from an underlying aquifer is also thought to be a plausible explanation for the increase of specific conductance in the Sparta/Memphis aquifer.

The specific conductance data that is collected by the USGS is used to quantify the amount of dissolved solids present in the ground water. Generally the areas of higher specific conductance in the alluvial aquifer are located in western Chicot County and eastern Lincoln County. In data collected by the USGS, an area of increased concentration was noted west of Crowley's Ridge in Cross, Greene, Craighead, St. Francis, Lee, Monroe and Poinsett Counties. A map showing different concentrations can be found in the USGS Water-Resources Investigations Report 01-4124. (Schrader, T.P. 2001)

In the Sparta/Memphis aquifer the USGS collected water samples, and recorded specific conductance data from 61 wells in the spring of 2005. Specific conductance values greater than 700 uS/cm were present in Arkansas, Ashley, Lee, Monroe, Philips, and Union counties. (Schrader, T.P., 2007). A table of wells sampled for specific conductance can be found in USGS Scientific Investigations Report 2007-5029.

Ground-Water Quality Standards

Through legislative authority, the ANRC Ground-Water section has been given the task of creating ground-water quality standards for the State of Arkansas. For the past two years, ANRC Ground-Water section staff has been researching and documenting existing ground-water quality standards throughout the United States to determine the best approach to initializing the creation of enforceable regulations for the state of Arkansas. Arkansas Department of Environmental Quality (ADEQ) geologist, Tim Kresse, among others, has assisted ANRC staff by providing information from their research and documentation of existing ground-water quality standards from other States in the US. This information has been most valuable to ANRC staff, and the ANRC is extremely grateful to have the assistance of ADEQ on this matter.

ANRC staff has determined that although most states have some form of water quality standards, there are few that have enforceable standards targeted specifically at ground-water. Some states have chosen to have either narrative or numerical standards; however other states decided to include both narrative criteria as well as a list of numerical standards in their ground-water quality standards document. Figure 37 shows an illustration of the differences between states' ground-water quality standards. Those states that have standards deemed appropriate by ANRC staff will be used as models in the preparation of standards for Arkansas. The standards vary from state to state, but most of them share a few common traits. Most standards are based on water use. For example, waters used for agriculture may have a different set of numerical criteria than waters designated for municipal use. Some states have also implemented a numerical warning level that is usually half of the allotted MCL to serve as an early indicator that the ground-water is becoming impaired. These levels are often referred to as preventative action levels, (PAL).

ANRC staff has begun compiling data into lists, spreadsheets, and maps that will aid in the overall process of initializing a set of standards for the State. A

comprehensive list of the specific constituents and their recommended maximum contaminant level (MCL), listing every constituent that other States have included in their regulations and a range of the recommended MCL's, has been developed. From this spreadsheet, ANRC staff along with other groups and agencies will determine which constituents apply to Arkansas.

Developing ground-water quality standards for the State of Arkansas will prove to be a monumental task for the ANRC as well as for the stakeholders involved. There is currently no timeline in which the ANRC expects to have completed a set of standards; however, the need for such enforceable standards continues to grow. Enforceable ground-water quality standards will protect the State's ground-water for all uses, and once completed and in effect, the standards will be of utmost value to current and future citizens of the State of Arkansas.

Fig. 37

*** Data compiled by Arkansas Department of Environmental Quality and Arkansas Natural Resources Commission**

Nonpoint Source Program

The Arkansas Natural Resources Commission's (ANRC's) Nonpoint Source Program is supported by Section 319 (Clean Water Act) Grant Funds which provide 60 percent of the total program funding. ANRC staff continued work on two nonpoint source ground-water projects in 2008.

A statewide 319 ground-water project began in 2000 and is ongoing until completed. The purpose of this project is to upgrade the statewide ambient ground-water quality monitoring program through installation of new wells or annexing existing wells into the monitoring network where new monitoring points are needed. Monitoring well installations/annexations have focused in the existing and potential critical ground-water areas of eastern and southern Arkansas. A more efficient monitoring network has resulted from the new well installations. Emphasis toward the critical threat to ground-water quality in the karst terrain of northern Arkansas has now also become a primary objective.

In 2008, six new monitoring wells were installed, two in Benton County, two in Dallas County, one in Grant County, and one in Calhoun County. One Boone well, and one Ozark well were installed near Decatur in Benton County. Three Sparta wells were installed near the Sparta outcrop in Dallas and Grant County, and one Cockfield well was installed in Calhoun County.

Thus far, 36 alluvial wells have been installed in 19 counties in eastern Arkansas from Greene to Chicot Counties (Figure 38), 11 Sparta wells have been installed in eastern (6 wells) and south-central Arkansas (5 wells), and 2 Boone and one Ozark well have been installed in northwestern Arkansas. Most wells are located on private lands through implementation of leases; however, some are located on State lands.

New wells are sampled following installation for select chemical constituents using EPA approved protocols. Sampling is designed to document changes in ground-water quality over extended periods. One goal of the sampling program is to monitor wells in areas that may demonstrate water quality degradation as aquifers

are overdrawn and/or establish observable trends in ground-water quality. This monitoring will benefit government agencies and the general public.

Water quality analyses include parameters that allow evaluation of basic water quality conditions, as well as specific constituents, which indicate potential water quality degradation in the State's aquifers. Analyses include selected metals, nutrients, inorganic water parameters, and selected pesticides. The analyses selected for each well (or spring) are determined by the naturally occurring and/or anthropogenic induced effect on the aquifer being monitored.

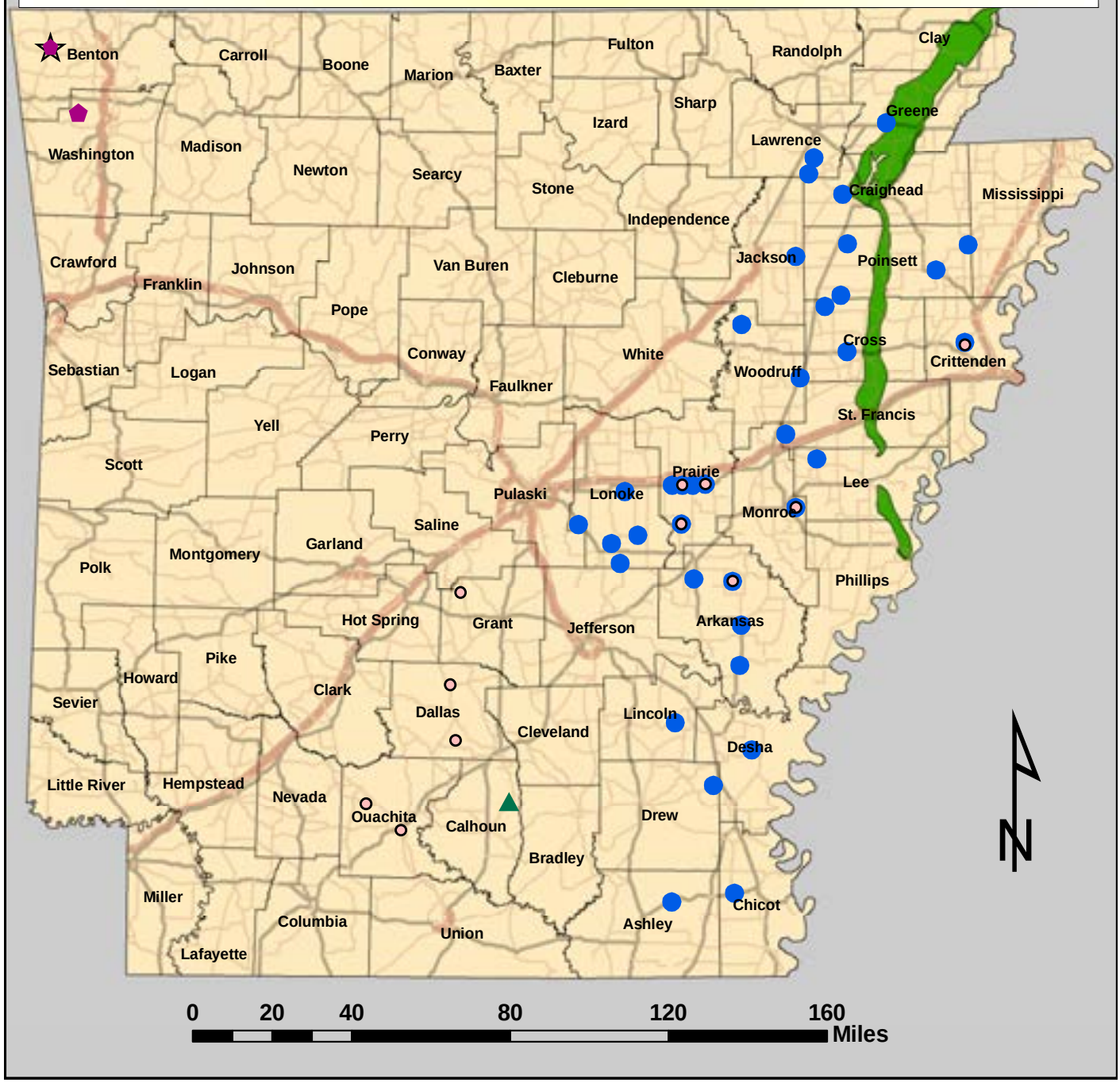
Ground-water sampling is performed in all newly installed wells following installation. Samples are analyzed by the Arkansas Water Resources Center laboratory or a contract associate. Results from ANRC monitoring wells sampled in 2008 are shown in Appendix E (One well in northern Dallas county had to be re-drilled and sampled. Results from this well are not completed to-date.)

A second non-point project involves development of ground-water quality standards for Arkansas. Initiated in 2006 and 2007, documentation of standards in other states provided select states which are currently being used as models for development of standards in Arkansas. Aquifers in Arkansas are currently being classified and specifications for standards are being developed. In 2009, formulation of a draft of ground water quality standards for Arkansas will be developed, reviewed and approved by senior staff, and presented to a legislative committee for review.

In northern Arkansas, a third project documenting karst features is currently inactive due to concentration of efforts in other areas. ARNC will continue, however, to document karst features including sinkholes, lineaments, and losing streams with assistance from cooperating agencies.

These projects represent the State's commitment to improve and monitor ground-water quality as part of the Nonpoint Source Pollution Management Program.

ANRC
Section 319 Core Program
Monitoring Enhancement Wells



Legend

- Alluvial Wells (36 Wells)
- Sparta Wells (11 Wells)
- Cockfield Well
- Wells in Boone Formation (2 Wells)
- Everton Well
- Crowleys Ridge
- County Boundaries

Fig. 38

ARKANSAS WATER WELL CONSTRUCTION COMMISSION

WATER WELL CONSTRUCTION PROGRAM

The Arkansas Water Well Construction Commission (AWWCC) is designed to insure "that the general health, safety, and welfare be protected by providing a means for the proper development of the natural resource of underground water in an orderly, sanitary, reasonable, and safe manner, without waste, so that sufficient potable supplies for the continued economic growth of our state may be assured" (Arkansas Water Well Construction Act, 1969). The commission is composed of seven members. The members consist of: the Director of the Department of Health or a designated representative, the Director of the Arkansas Soil and Water Conservation Commission or a designated representative, one member involved in the heat pump industry, and four members involved the water well drilling industry.

The commission achieves its goal by monitoring the construction of water wells in the state. Any person who engages in water well construction must obtain a water well contractors license from the commission. The contractor must keep a current bond and obtain six hours of continuing education each year to keep their license. In addition to monitoring the drilling industry the commission also provides services to licensed drillers as well as to the public. Some of the services include providing information on water levels in wells, construction information about wells in an area, and proper well abandonment procedures. The Commission also is equipped to assist drillers in the assessment of repair work, which may be needed in damaged wells.

One way the Commission monitors where well construction is taking place is through its relationship with Arkansas Department of Health. The Health Department has an Environmental Health Specialist in each county. These health specialists know where in each county wells are required, and often layout lots showing landowners where to place their septic system and well on their property. The commission's inspectors try to visit each county health office at least once a year. The commission

also conducts well inspections in each county. These inspections are to insure the protection of our groundwater, through compliance with the rules and regulations set forth by the commission.

The inspectors also visit licensed contractors during their county surveys and inspections. These visits provide valuable insight about the area and industry. The local water well contractor knows more about drilling wells in their area than anyone else. This knowledge, along with grouting and sealing requirements in the commission's rules, ensure the customer clean safe water, and protect this precious resource.

During the 2003 legislative sessions an act was passed to allow the commission to develop an apprenticeship program for drillers and pump installers. The apprentice program will allow people wanting to become registered a way to gain verifiable experience in their chosen field. The program allows a person with one year of experience to apply for the apprenticeship program. Since the program began in 2005 sixty applicants have enrolled, and almost a dozen have become registered drillers and pump installers.

The Commission fields complaints from the public about water well construction, as well as inspecting wells for violations of the Commissions rules and regulations. The following is a summary of those activities for the 2007-2008 licensing year.

1. Twelve (12) complaints were recorded in which it was determined that an investigation or arbitration was required, or in which it was determined that a violation had occurred as a result of noncompliance.

2. There were Three (3) cases, which required civil penalties to be assessed.

3. Two (2) administrative hearings were conducted regarding contractors.

There are 172 water well contractors licensed (drill and/or pump) to work in Arkansas. The larger contractors usually employ several registered drillers and/or pump installers and can have more than one rig permitted. The following is a listing

of the licensed contractors, drillers, pump installers, and permitted rigs for 2007-2008.

1. 141 contractors are licensed for drilling and pump installation.
2. 31 contractors are licensed for pump installation only.
3. 276 registered drillers
4. 286 registered pump installers
5. 362 permitted drill or pump installation rigs.
6. 45 registered driller and pump installer apprentices

Last year there were 3,023 wells reported to the Commission. Of these 3,023 wells, domestic water wells accounted for approximately 50% of wells drilled last year. The next largest group were irrigation wells. Irrigation wells accounted for approximately 45% of the total number of wells drilled in Arkansas.

The remaining wells were: livestock/poultry wells; monitoring wells; public or semi-public supply wells; test wells; and geothermal wells for heat pump installations.

AWWCC LICENSE SUMMARY

	Contractors Licensed Drill and Pump	Pump Installer Contractors Only	Driller Registrations	Pump Installer Registrations	Driller Apprentice Registrations	Pump Installer Apprentice Registrations	Riggs
2003	**176**	**56**	**303**	**300**			**383**
2004	**148**	**37**	**283**	**271**			**389**
2005	**142**	**34**	**276**	**254**			**369**
2006	**149**	**34**	**305**	**271**	**7**	**11**	**393**
2007	**148**	**32**	**286**	**282**	**17**	**27**	**375**
2008	**141**	**31**	**276**	**286**	**16**	**29**	**362**

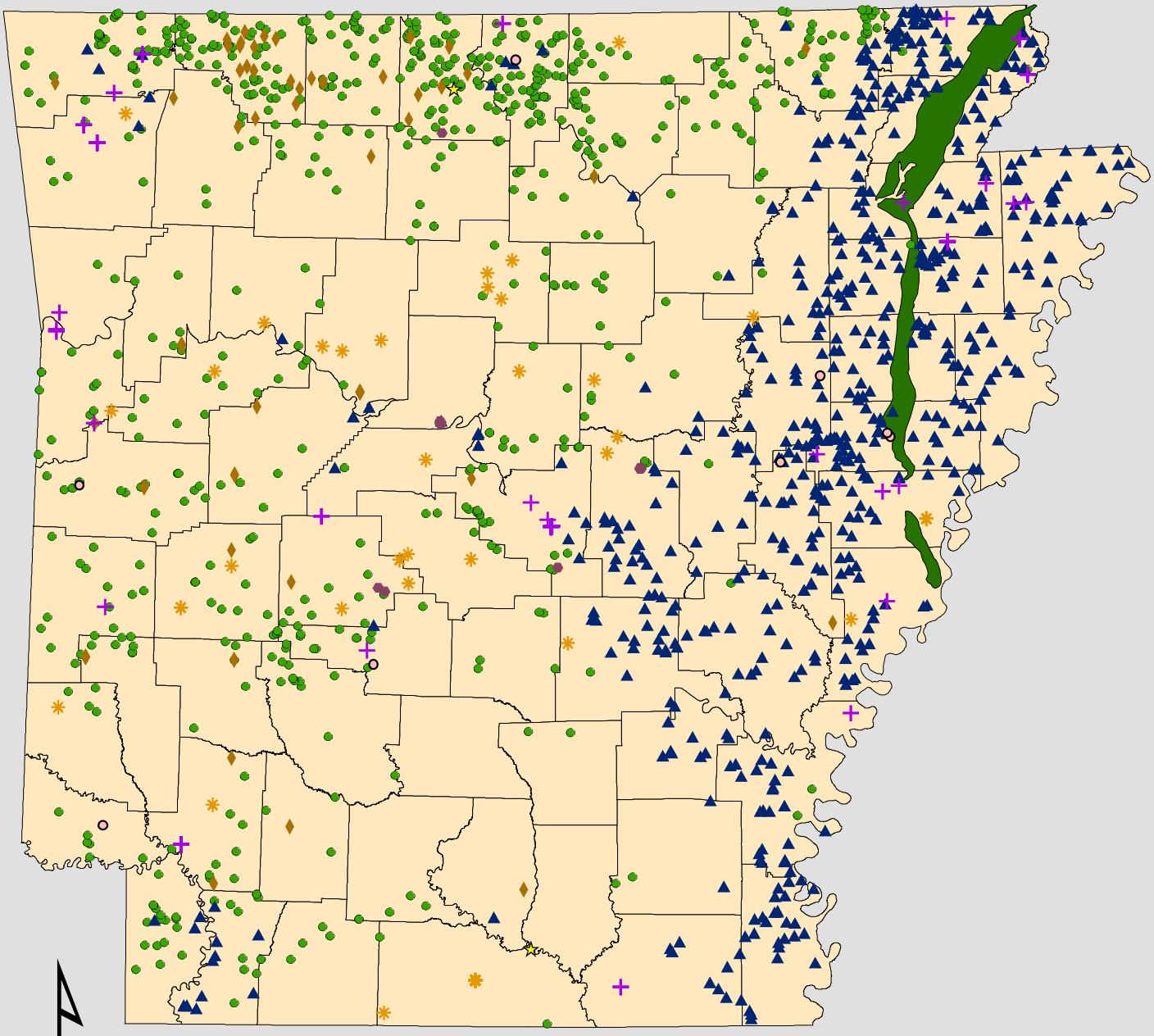
Flow Meter Report

According to Act 1426 of 2001, any well constructed after September 30th, 2001 to withdraw ground water from a sustaining aquifer, shall be equipped with a functioning metering device. After September 30th, 2006 any well withdrawing ground water from a sustaining aquifer shall have a functioning metering device. Domestic wells are exempt from metering requirements.

The aquifers affected are sustaining aquifers. The sustaining aquifers in Arkansas include the Sparta, Memphis, Cockfield, Cane River, Carrizo, Wilcox, Nacatoch, Roubidoux and Gunter.

This year a field inspection of wells requiring meters was performed in several counties in Arkansas. On average, about one third of the total number of wells inspected had metering devices installed. The number of meters on newly constructed wells is much higher. Installing the meters is costly, but most farmers are seeing benefits for installing the meters. They are collecting more accurate data about their water use, and therefore saving on fuel cost. A flow meter also helps with maintaining the wells performance. Most of the well owners contacted in the field are installing meters when the wells are pulled for maintenance and repairs. Many of the wells are requiring extensive reworking because there is not enough room between the well and the standpipe to install the meter. The ANRC and AWWCC personnel will continue in the future to monitor the instillation, or lack thereof, of monitoring devices for the wells installed in sustaining aquifers.

New Wells Reported from July 2007 to July 2008



Agriculture: 1612 Wells
Municipal/ Industrial: 8 Wells
Domestic: 668 Wells

Legend

- Domestic
- Public Supply
- Irrigation
- Livestock/Poultry
- Monitoring
- Semi-Public
- Test Wells
- Other
- Crowleys Ridge
- County Boundaries

Fig. 39

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. The USGS reported for 2006 there were approximately 48,972 registered wells reported in the State. Of this total, 48,019 (98.1%) are agricultural wells most of which are irrigation wells located primarily in eastern Arkansas. The remaining 953 reported wells are used predominately for municipal, industrial, and public water supply purposes.

REPORTED WATER USE

In 2006, an estimated 6869.28 million gallons per day (mgd) of water were reported to be withdrawn from the State's aquifers. The greatest reported volume is pumped from the alluvial aquifer and used primarily for irrigation. Poinsett County and Cross County used the most alluvial water of all counties, with 584.65 mgd and 558.92 mgd respectively. The reported total ground-water use from the alluvial aquifer during 2006 was 6505.30 Mgal/d. The Sparta/Memphis aquifer is the second largest aquifer in terms of withdrawals. The reported ground-water use from the Sparta/Memphis aquifer for 2006 was 158.71 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 48.47 Mgal/d, followed by Arkansas County with a rate of 34.05 Mgal/d. (Holland, 2008)

Table 1 contains the reported ground-water use by aquifer per county in Arkansas for 2006 and is also broken down by category of use. This is the most

recent information as supplied to the ANRC by the USGS.

The Sparta/Memphis aquifer had a reported average withdrawal of 158.71 Mgal/d during the 2006 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 leading user of this aquifers' resources, with a withdrawal of 34.05 Mgal/d. Jefferson County is the largest user of Sparta/Memphis ground-water by far, with a withdrawal of 48.47 Mgal/d. (Table 1) Figure 40 shows water use in million gallons per day (mgd) for the entire state from 1965 to 2006 in increments of 5 years. Figure 41 shows the quantity of ground water use for each county in Arkansas as reported.

The estimated sustainable yield of the Sparta/Memphis aquifer is discussed in the following section of this report, however the relation to this figure and reported water use are significant. The 2006 reported ground-water use from the Sparta/Memphis aquifer was an estimated 54,86 Mgal/d for agricultural uses, 60.14 Mgal/d for public supply use, and 43.71 Mgal/d for industrial uses, which combine with other uses for an estimated total use of 158.71 Mgal/d. The estimated sustainable use for the entire aquifer is 83 Mgal/d based on 1997 reported water use. This leaves a deficit of 75.71 Mgal/day, or 44.9% of the 1997 rate that is an unmet demand. (Holland, 2003, 2006)

2006 Withdrawals of Ground Water from Aquifers in Arkansas Counties by Use Type

(In million gallons per day; ---, no data available)

County	Use Type	Deposits of Quaternary Age		Cockfield Formation		Cane River		Sparta-Memphis Sand		Wilcox Group		Clayton Formation		Nacatoch Sand		Tokio Formation		Trinity Group		ROCKS PALEOZOIC AGE'		All Other Aquifers		Use Type total	
		Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well
ARKANSAS	AG/IR	409.11	2076	0.44	1	--	--	29.71	81	--	--	--	--	--	--	--	--	--	--	--	--	6.74	27	446	2185
	IN/COMM	--	--	--	--	--	--	0	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	2
	WS	0	4	--	--	--	--	4.34	12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.34	16
Totals		409.11	2080	0.44	1	--	--	34.05	95	--	--	--	--	--	--	--	--	--	--	--	--	6.74	27	450.34	2203
ASHLEY	AG/IR	112.11	984	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.31	42	117.42	1026
	IN/COMM	--	--	6.18	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.18	7
	WS	--	--	1.88	12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.12	2	2	14
Totals		112.11	984	8.06	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.43	44	125.6	1047
BAXTER	IN/COMM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	2	0	2	0	4
	WS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.47	20	--	--	0.47	20
Totals		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.47	22	0	2	0.47	24
BENTON	AG/IR	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.07	3	--	--	0.07	3
	IN/COMM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	2	--	--	0	2
	WS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.72	10	--	--	0.72	10
Totals		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.79	15	--	--	0.79	15
BOONE	IN/COMM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	1	--	--	0	1
	WS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.66	12	--	--	0.66	12
Totals		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.66	13	--	--	0.66	13
BRADLEY	IN/COMM	--	--	--	--	--	--	0.53	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.53	5
	WS	--	--	0.07	2	--	--	1.24	6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.31	8
Totals		--	--	0.07	2	--	--	1.77	11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.84	13
CALHOUN	AG/IR	--	--	--	--	--	--	0.01	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	1
	IN/COMM	--	--	--	--	--	--	0	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	1
	WS	--	--	--	--	--	--	0.42	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.42	7
Totals		--	--	--	--	--	--	0.43	9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.43	9
CARROLL	AG/IR	0.89	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.89	1
	IN/COMM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.04	5	0.05	2	0.09	7
	WS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.8	8	0.02	6	0.82	14
Totals		0.89	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.84	13	0.07	8	1.8	22
CHICOT	AG/IR	209.96	1501	0.73	6	--	--	0.05	1	--	--	--	--	--	--	--	--	--	--	--	--	0.09	2	210.83	1510
	WS	--	--	1.37	8	--	--	0.46	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.83	11
Totals		209.96	1501	2.1	14	--	--	0.51	4	--	--	--	--	--	--	--	--	--	--	--	--	0.09	2	212.66	1521

2006 Withdrawals of Ground Water from Aquifers in Arkansas Counties by Use Type

(In million gallons per day; ---, no data available)

County	Use Type	Deposits of Quaternary Age		Cockfield Formation		Cane River		Sparta-Memphis Sand		Wilcox Group		Clayton Formation		Nacatoch Sand		Tokio Formation		Trinity Group		ROCKS PALEOZOIC AGE'		All Other Aquifers		Use Type total	
		Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well
CLARK	IN/COMMI	--	--	--	--	--	--	--	--	--	--	--	--	0.22	3	--	--	--	--	0	3	0	1	0.22	7
	WS	--	--	--	--	--	--	--	--	--	--	0	1	0	4	0.07	2	--	--	--	--	--	--	0.07	7
Totals		--	--	--	--	--	--	--	--	--	--	0	1	0.22	7	0.07	2	--	--	0	3	0	1	0.29	14
CLAY	AG/IR	435.81	2222	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.28	14	33.45	174	472.54	2410
	IN/COMMI	0	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	2
	WS	0.41	3	--	--	--	--	--	--	--	--	--	--	1.15	11	--	--	--	--	--	--	--	--	1.56	14
Totals		436.22	2227	--	--	--	--	--	--	--	--	--	--	1.15	11	--	--	--	--	3.28	14	33.45	174	474.1	2426
CLEVELAND	WS	--	--	--	--	--	--	0.46	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.46	5
Totals		--	--	--	--	--	--	0.46	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.46	5
COLUMBIA	IN/COMMI	--	--	--	--	--	--	2.06	36	--	--	--	--	--	--	--	--	0.09	1	--	--	--	--	2.15	37
	WS	--	--	--	--	--	--	0.33	12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.33	12
Totals		--	--	--	--	--	--	2.39	48	--	--	--	--	--	--	--	--	0.09	1	--	--	--	--	2.48	49
CONWAY	AG/IR	1.78	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.11	1	1.89	14
	IN/COMMI	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	1	0	1
Totals		1.78	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.11	2	1.89	15
CRAIGHEAD	AG/IR	320.39	2938	--	--	--	--	2.93	28	--	--	--	--	--	--	--	--	--	--	--	--	19.14	200	342.46	3166
	IN/COMMI	0.07	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.07	1
	WS	1.65	7	--	--	--	--	11.21	23	0.42	7	--	--	--	--	--	--	--	--	--	--	--	--	13.28	37
Totals		322.11	2946	--	--	--	--	14.14	51	0.42	7	--	--	--	--	--	--	--	--	--	--	19.14	200	355.81	3204
CRAWFORD	AG/IR	0.04	9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.04	9
Totals		0.04	9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.04	9
CRITTENDEN	AG/IR	145.72	1224	0.43	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.54	51	150.69	1276
	IN/COMMI	0.44	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.24	2	0.68	5
	WS	--	--	--	--	--	--	--	--	8.93	15	--	--	--	--	--	--	--	--	--	--	0.23	3	9.16	18
Totals		146.16	1227	0.43	1	--	--	--	--	8.93	15	--	--	--	--	--	--	--	--	--	--	5.01	56	160.53	1299
CROSS	AG/IR	557.62	2210	--	--	--	--	4.2	9	--	--	--	--	--	--	--	--	--	--	--	--	10.67	46	572.49	2265
	IN/COMMI	0.35	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.35	4
	WS	0.95	5	--	--	--	--	1.11	5	0.25	2	--	--	--	--	--	--	--	--	--	--	--	--	2.31	12
Totals		558.92	2219	--	--	--	--	5.31	14	0.25	2	--	--	--	--	--	--	--	--	--	--	10.67	46	575.15	2281

2006 Withdrawals of Ground Water from Aquifers in Arkansas Counties by Use Type

(In million gallons per day; ---, no data available)

County	Use Type	Deposits of Quaternary Age		Cockfield Formation		Cane River		Sparta-Memphis Sand		Wilcox Group		Clayton Formation		Nacatoch Sand		Tokio Formation		Trinity Group		ROCKS PALEOZOIC AGE'		All Other Aquifers		Use Type total	
		Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well
DALLAS	WS	0	1	--	--	0.01	2	0.75	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.76	8
Totals		0	1	--	--	0.01	2	0.75	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.76	8
DESHA	AG/IR	276.05	1946	1.93	7	--	--	0.08	1	--	--	--	--	--	--	--	--	--	--	--	--	8.37	80	286.43	2034
	IN/CO/MI	--	--	0	1	--	--	3.25	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.25	5
	WS	--	--	--	--	--	--	2.13	10	--	--	--	--	--	--	--	--	--	--	--	--	0.03	1	2.16	11
Totals		276.05	1946	1.93	8	--	--	5.46	15	--	--	--	--	--	--	--	--	--	--	--	--	8.4	81	291.84	2050
DREW	AG/IR	68.3	534	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.94	18	71.24	552
	WS	--	--	--	--	--	--	2.74	9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.74	9
Totals		68.3	534	--	--	--	--	2.74	9	--	--	--	--	--	--	--	--	--	--	--	--	2.94	18	73.98	561
FAULKNER	AG/IR	1.27	12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.27	12
	IN/CO/MI	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	2	--	--	0	2
	WS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	8	--	--	0	8
Totals		1.27	12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	10	--	--	1.27	22
FRANKLIN	AG/IR	0.04	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	1	0.06	6
	IN/CO/MI	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	1	--	--	0	1
Totals		0.04	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	1	0.02	1	0.06	7
FULTON	AG/IR	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.11	1	--	--	0.11	1
	IN/CO/MI	0	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	1
	WS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.58	5	0	1	0.58	6
Totals		0	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.69	6	0	1	0.69	8
GARLAND	IN/CO/MI	0	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	4	--	--	0	5
	WS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03	4	0.01	2	0.04	6
Totals		0	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03	8	0.01	2	0.04	11
GRANT	AG/IR	0.06	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.06	1
	IN/CO/MI	--	--	--	--	--	--	0.22	6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.22	6
	WS	--	--	--	--	--	--	1.29	11	--	--	--	--	--	--	--	--	--	--	--	--	0.31	2	1.6	13
Totals		0.06	1	--	--	--	--	1.51	17	--	--	--	--	--	--	--	--	--	--	--	--	0.31	2	1.88	20
GREENE	AG/IR	182.32	1936	--	--	--	--	--	--	1.21	17	--	--	--	--	--	--	--	--	--	--	0.07	1	183.6	1954
	IN/CO/MI	0.1	1	--	--	--	--	--	--	0.56	4	--	--	0.02	1	--	--	--	--	--	--	--	--	0.68	6
	WS	--	--	--	--	--	--	--	--	3.69	9	--	--	0.39	3	--	--	--	--	--	--	--	--	4.08	12
Totals		182.42	1937	--	--	--	--	--	--	5.46	30	--	--	0.41	4	--	--	--	--	--	--	0.07	1	188.36	1972

2006 Withdrawals of Ground Water from Aquifers in Arkansas Counties by Use Type

(in million gallons per day; ---, no data available)

County	Use Type	Deposits of Quaternary Age		Cockfield Formation		Cane River		Sparta-Memphis Sand		Wilcox Group		Clayton Formation		Nacatoch Sand		Tokio Formation		Trinity Group		ROCKS PALEOZOIC AGE'		All Other Aquifers		Use Type total	
		Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well
HEMPSTEAD	AG/IR	--	--	--	--	--	--	0	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	1
	IN/COMI	--	--	--	--	--	--	--	--	--	--	--	--	0.01	1	--	--	--	--	--	--	0	1	0.01	2
	WS	--	--	--	--	--	--	--	--	--	--	--	--	0.63	6	2.12	13	--	--	--	--	--	--	2.75	19
Totals		--	--	--	--	--	--	0	1	--	--	--	--	0.64	7	2.12	13	--	--	--	--	0	1	2.76	22
HOT SPRING	IN/COMI	0	1	--	--	--	--	0	1	--	--	--	--	--	--	--	--	--	--	0	4	--	--	0	6
Totals		0	1	--	--	--	--	0	1	--	--	--	--	--	--	--	--	--	--	0	4	--	--	0	6
HOWARD	WS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.09	5	--	--	--	--	--	--	0.09	5
Totals		--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.09	5	--	--	--	--	--	--	0.09	5
INDEPENDENCE	AG/IR	32.76	299	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.65	5	33.41	304
	WS	0.75	11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.75	11
Totals		33.51	310	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.65	5	34.16	315
IZARD	AG/IR	0.08	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.08	1
	WS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.77	12	--	--	0.77	12
Totals		0.08	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.77	12	--	--	0.85	13
JACKSON	AG/IR	377.02	2558	--	--	--	--	0.41	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	377.43	2560
	WS	0.38	6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.38	6
Totals		377.4	2564	--	--	--	--	0.41	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	377.81	2566
JEFFERSON	AG/IR	212.43	1659	--	--	--	--	0.04	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	212.47	1660
	IN/COMI	5.09	7	--	--	--	--	33.06	30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	38.15	37
	WS	--	--	--	--	--	--	15.37	39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.37	39
Totals		217.52	1666	--	--	--	--	48.47	70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	265.99	1736
JOHNSON	AG/IR	0.02	14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	14
	IN/COMI	0	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	1
Totals		0.02	15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	15
LAFAYETTE	AG/IR	24.36	252	0.01	4	--	--	0.03	25	0.01	12	--	--	--	--	--	--	--	--	0	1	--	--	24.41	294
	IN/COMI	--	--	--	--	--	--	0.02	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	2
	WS	--	--	--	--	0.66	7	0.09	4	--	--	--	--	--	--	--	--	--	--	--	--	0	1	0.75	12
Totals		24.36	252	0.01	4	0.66	7	0.14	31	0.01	12	--	--	--	--	--	--	--	--	0	1	0	1	25.18	308
LAWRENCE	AG/IR	204.82	1665	--	--	--	--	0.2	1	--	--	--	--	--	--	--	--	--	--	0.21	3	8.96	72	214.19	1741
	IN/COMI	--	--	--	--	--	--	--	--	--	--	--	--	0	1	--	--	--	--	--	--	--	--	0	1
	WS	0.81	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.6	7	0.06	1	1.47	18

2006 Withdrawals of Ground Water from Aquifers in Arkansas Counties by Use Type

(In million gallons per day, --, no data available)

County	Use Type	Deposits of Quaternary Age		Cockfield Formation		Cane River		Sparta-Memphis Sand		Wilcox Group		Clayton Formation		Nacatoch Sand		Tokio Formation		Trinity Group		ROCKS PALEOZOIC AGE'		All Other Aquifers		Use Type total	
		Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well
Totals		205.63	1875	--	--	--	--	0.2	1	--	--	--	--	0	1	--	--	--	--	0.81	10	9.02	73	215.66	1760
LEE	AG/IR	255.16	2188	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	255.16	2188
	WS	--	--	--	--	--	--	0.96	2	--	--	--	--	--	--	--	--	--	--	--	--	0.37	3	1.33	5
Totals		255.16	2188	--	--	--	--	0.96	2	--	--	--	--	--	--	--	--	--	--	--	--	0.37	3	256.49	2193
LINCOLN	AG/IR	176.17	1152	--	--	--	--	0.5	4	--	--	--	--	--	--	--	--	--	--	--	--	1.56	5	178.23	1161
	WS	--	--	--	--	--	--	1.03	9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.03	9
Totals		176.17	1152	--	--	--	--	1.53	13	--	--	--	--	--	--	--	--	--	--	--	--	1.56	5	179.26	1170
LITTLE RIVER	AG/IR	3.41	27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.41	27
	IN/COMM	0.3	6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3	6
	WS	0.58	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.58	7
Totals		4.29	42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.29	42
LOGAN	AG/IR	0.19	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.19	19
Totals		0.19	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.19	19
LONOKE	AG/IR	314.83	2517	--	--	--	--	7.36	32	0.05	1	--	--	--	--	--	--	--	--	--	--	12.05	52	334.29	2602
	IN/COMM	0.59	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.59	4
	WS	3.79	16	0.24	2	--	--	1.73	8	0.49	2	--	--	--	--	--	--	--	--	--	--	--	--	6.25	28
Totals		319.21	2537	0.24	2	--	--	9.09	40	0.54	3	--	--	--	--	--	--	--	--	--	--	12.05	52	341.13	2634
MADISON	AG/IR	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	1	--	--	0	1
Totals		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	1	--	--	0	1
MARION	IN/COMM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	1	0	1	0	2
	WS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	3	--	--	0.01	3
Totals		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	4	0	1	0.01	5
MILLER	AG/IR	13.94	77	--	--	--	--	0.04	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13.98	78
	IN/COMM	--	--	--	--	--	--	--	--	0.04	2	--	--	--	--	--	--	--	--	--	--	0	3	0.04	5
	WS	0.11	1	--	--	--	--	0.03	1	0.06	2	--	--	--	--	--	--	--	--	--	--	0	1	0.2	5
Totals		14.05	78	--	--	--	--	0.07	2	0.1	4	--	--	--	--	--	--	--	--	--	--	0	4	14.22	88
MISSISSIPPI	AG/IR	242.44	2123	--	--	--	--	--	--	0.49	1	--	--	--	--	--	--	--	--	--	--	0.21	4	243.14	2128
	IN/COMM	0.01	1	--	--	--	--	--	--	2.3	9	--	--	--	--	--	--	--	--	--	--	--	--	2.31	10
	WS	--	--	--	--	--	--	--	--	2.92	16	--	--	--	--	--	--	--	--	--	--	0.07	2	2.99	18
Totals		242.45	2124	--	--	--	--	--	--	5.71	26	--	--	--	--	--	--	--	--	--	--	0.28	6	248.44	2156

2006 Withdrawals of Ground Water from Aquifers in Arkansas Counties by Use Type

(in million gallons per day; ---, no data available)

County	Use Type	Deposits of Quaternary Age		Cockfield Formation		Cane River		Sparta-Memphis Sand		Wilcox Group		Clayton Formation		Nacatoch Sand		Tokio Formation		Trinity Group		ROCKS PALEOZOIC AGE'		All Other Aquifers		Use Type total	
		Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well
MONROE	AG/IR	258.05	2187	0.64	7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.14	1	258.83	2195
	IN/COM/I	0	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	1
	WS	0.66	1	---	---	---	---	0.87	3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.53	4
Totals		258.71	2189	0.64	7	---	---	0.87	3	---	---	---	---	---	---	---	---	---	---	---	---	0.14	1	260.36	2200
MONTGOMERY	IN/COM/I	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.01	5	---	---	0.01	5
	WS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.03	3	0.03	3
Totals		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.01	5	0.03	3	0.04	8
NEVADA	IN/COM/I	0.04	2	---	---	---	---	---	---	---	---	0.05	1	---	---	---	---	---	---	---	---	---	---	0.09	3
	WS	---	---	---	---	---	---	0.04	2	0.08	2	---	---	0.04	2	---	---	---	---	---	---	---	---	0.16	6
Totals		0.04	2	---	---	---	---	0.04	2	0.08	2	0.05	1	0.04	2	---	---	---	---	---	---	---	---	0.25	9
NEWTON	WS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.35	8	---	---	0.35	8
Totals		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.35	8	---	---	0.35	8
OUACHITA	WS	---	---	---	---	0.06	1	0.96	13	---	---	---	---	0	1	---	---	---	---	---	---	---	---	1.02	15
Totals		---	---	---	---	0.06	1	0.96	13	---	---	---	---	0	1	---	---	---	---	---	---	---	---	1.02	15
PERRY	IN/COM/I	0	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	1
	WS	0	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	2
Totals		0	3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	3
PHILLIPS	AG/IR	217.1	1847	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	217.1	1847
	IN/COM/I	0.03	1	0	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.03	2
	WS	---	---	---	---	---	---	3.71	15	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.71	15
Totals		217.13	1848	0	1	---	---	3.71	15	---	---	---	---	---	---	---	---	---	---	---	---	---	---	220.84	1864
PIKE	AG/IR	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	1	---	---	0	1
	IN/COM/I	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	2	---	---	0	2
Totals		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	3	---	---	0	3
POINSETT	AG/IR	584.13	2838	---	---	---	---	0.71	3	---	---	---	---	---	---	---	---	---	---	---	---	0.45	2	585.29	2843
	IN/COM/I	0.18	3	---	---	---	---	0.07	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.25	4
	WS	0.34	7	---	---	---	---	0.09	4	1.21	5	---	---	---	---	---	---	---	---	---	---	---	---	1.64	16
Totals		584.65	2848	---	---	---	---	0.87	8	1.21	5	---	---	---	---	---	---	---	---	---	---	0.45	2	587.18	2863
POLK	AG/IR	0	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	1
	IN/COM/I	0	3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.01	2	0.01	3	0.02	8
Totals		0	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.01	2	0.01	3	0.02	9

2006 Withdrawals of Ground Water from Aquifers in Arkansas Counties by Use Type

(in million gallons per day; ---, no data available)

County	Use Type	Deposits of Quaternary Age		Cockfield Formation		Cane River		Sparta-Memphis Sand		Wilcox Group		Clayton Formation		Nacatoch Sand		Tokio Formation		Trinity Group		ROCKS PALEOZOIC AGE'		All Other Aquifers		Use Type total	
		Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well
POPE	AG/IR	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.42	2	--	--	0.42	2
	IN/CO/MI	0.06	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.06	3
Totals		0.06	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.42	2	--	--	0.5	5
PRAIRIE	AG/IR	186.31	1794	--	--	--	--	7.76	32	2.03	9	--	--	--	--	--	--	--	--	--	--	13.69	84	209.79	1919
	WS	0.91	12	--	--	--	--	0.17	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.08	13
Totals		187.22	1806	--	--	--	--	7.93	33	2.03	9	--	--	--	--	--	--	--	--	--	--	13.69	84	210.87	1932
PULASKI	AG/IR	17.73	232	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17.73	232
	IN/CO/MI	0.06	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.06	1
	WS	4.47	14	--	--	--	--	0.12	2	--	--	--	--	--	--	--	--	--	--	0.02	4	0.08	2	4.69	22
Totals		22.26	247	--	--	--	--	0.12	2	--	--	--	--	--	--	--	--	--	--	0.02	4	0.08	2	22.5	255
RANDOLPH	AG/IR	96.83	644	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.18	1	97.01	645
	IN/CO/MI	0.04	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	1	--	--	0.04	3
	WS	0.04	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.21	4	--	--	0.25	5
Totals		96.91	647	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.21	5	0.18	1	97.3	653
ST FRANCIS	AG/IR	273.18	1969	0.29	4	--	--	0.07	1	--	--	--	--	--	--	--	--	--	--	--	--	0.58	4	274.12	1978
	WS	3.9	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.25	1	4.15	11
Totals		277.08	1979	0.29	4	--	--	0.07	1	--	--	--	--	--	--	--	--	--	--	--	--	0.83	5	278.27	1989
SALINE	AG/IR	--	--	--	--	--	--	0.03	2	0	1	--	--	--	--	--	--	--	--	--	--	--	--	0.03	3
	WS	0.42	2	--	--	--	--	0.41	4	0.66	9	--	--	--	--	--	--	--	--	--	--	0.04	1	1.53	16
Totals		0.42	2	--	--	--	--	0.44	6	0.66	10	--	--	--	--	--	--	--	--	--	--	0.04	1	1.56	19
SCOTT	IN/CO/MI	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	1	--	--	0	1
Totals		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	1	--	--	0	1
SEARCY	WS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.22	4	0.13	2	0.35	6
Totals		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.22	4	0.13	2	0.35	6
SEVIER	IN/CO/MI	--	--	--	--	--	--	0	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	1
	WS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.09	3	--	--	--	--	0.02	1	0.11	4
Totals		--	--	--	--	--	--	0	1	--	--	--	--	--	--	0.09	3	--	--	--	--	0.02	1	0.11	5
SHARP	IN/CO/MI	0	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	1
	WS	0.13	2	--	--	--	--	--	--	--	--	--	--	--	--	0.03	2	--	--	0.77	11	--	--	0.93	15

2006 Withdrawals of Ground Water from Aquifers in Arkansas Counties by Use Type

(In million gallons per day; —, no data available)

County	Use Type	Deposits of Quaternary Age		Cockfield Formation		Cane River		Sparta-Memphis Sand		Wilcox Group		Clayton Formation		Nacatoch Sand		Tokio Formation		Trinity Group		ROCKS PALEOZOIC AGE*		All Other Aquifers		Use Type total	
		Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well
Totals		0.13	3	--	--	--	--	--	--	--	--	--	--	--	--	0.03	2	--	--	0.77	11	--	--	0.93	16
STONE	AG/IR	0.07	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.07	1
	IN/CO/MI	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	1	--	--	0.01	1
Totals		0.07	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	1	--	--	0.08	2
UNION	IN/CO/MI	--	--	--	--	--	--	4.5	27	--	--	--	--	--	--	--	--	--	--	--	--	0.36	2	4.86	29
	WS	0.04	3	--	--	--	--	8.08	46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.12	49
Totals		0.04	3	--	--	--	--	12.58	73	--	--	--	--	--	--	--	--	--	--	--	--	0.36	2	12.98	78
VAN BUREN	AG/IR	0.32	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.32	1
Totals		0.32	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.32	1
WASHINGTON	IN/CO/MI	0.02	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	1	0.03	2
Totals		0.02	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	1	0.03	2
WHITE	AG/IR	39.33	763	--	--	--	--	--	--	0.54	1	--	--	--	--	--	--	--	--	--	--	3.15	40	43.02	804
	IN/CO/MI	0.04	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.04	1
	WS	0.78	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.78	7
Totals		40.15	771	--	--	--	--	--	--	0.54	1	--	--	--	--	--	--	--	--	--	--	3.15	40	43.84	812
WOODRUFF	AG/IR	224.12	2197	--	--	--	--	0.73	6	--	--	--	--	--	--	--	--	--	--	--	--	13.51	137	238.36	2342
	IN/CO/MI	0	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	2
	WS	0.45	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.45	4
Totals		224.57	2203	--	--	--	--	0.73	8	--	--	--	--	--	--	--	--	--	--	--	--	13.51	137	238.81	2348
YELL	IN/CO/MI	0	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	2
	WS	0	9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	9
Totals		0	11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	11

Table 1

Use Type	Deposits of Quaternary Age		Cockfield Formation		Cane River		Sparta-Memphis Sand		Wilcox Group		Clayton Formation		Nacatoch Sand		Tokio Formation		Trinity Group		ROCKS PALEOZOIC AGE*		All Other Aquifers		Use Type total	
	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well	Mgal/ day	# of Well
Agriculture/ Irrigation	6476.27	46837	4.47	30	0.00	0	54.86	234	4.33	42	0.00	0	0.00	0	0.00	0	0.00	0	4.09	26	146.58	1050	6690.60	48019
Commercial/ Industrial/ Mining	7.46	59	6.18	9	0.00	0	43.71	116	2.90	15	0.05	1	0.25	6	0.00	0	0.09	1	0.07	37	0.67	19	61.38	236
Water Supply/ Domestic	21.57	145	3.56	24	0.73	10	60.14	261	18.71	69	0.00	1	2.21	27	2.40	25	0.00	0	6.21	120	1.77	35	117.30	717
Total	6505.30	46841	14.21	63	0.73	10	158.71	611	25.94	126	0.05	2	2.46	33	2.40	25	0.09	1	10.37	183	149.02	1104	6869.28	48972

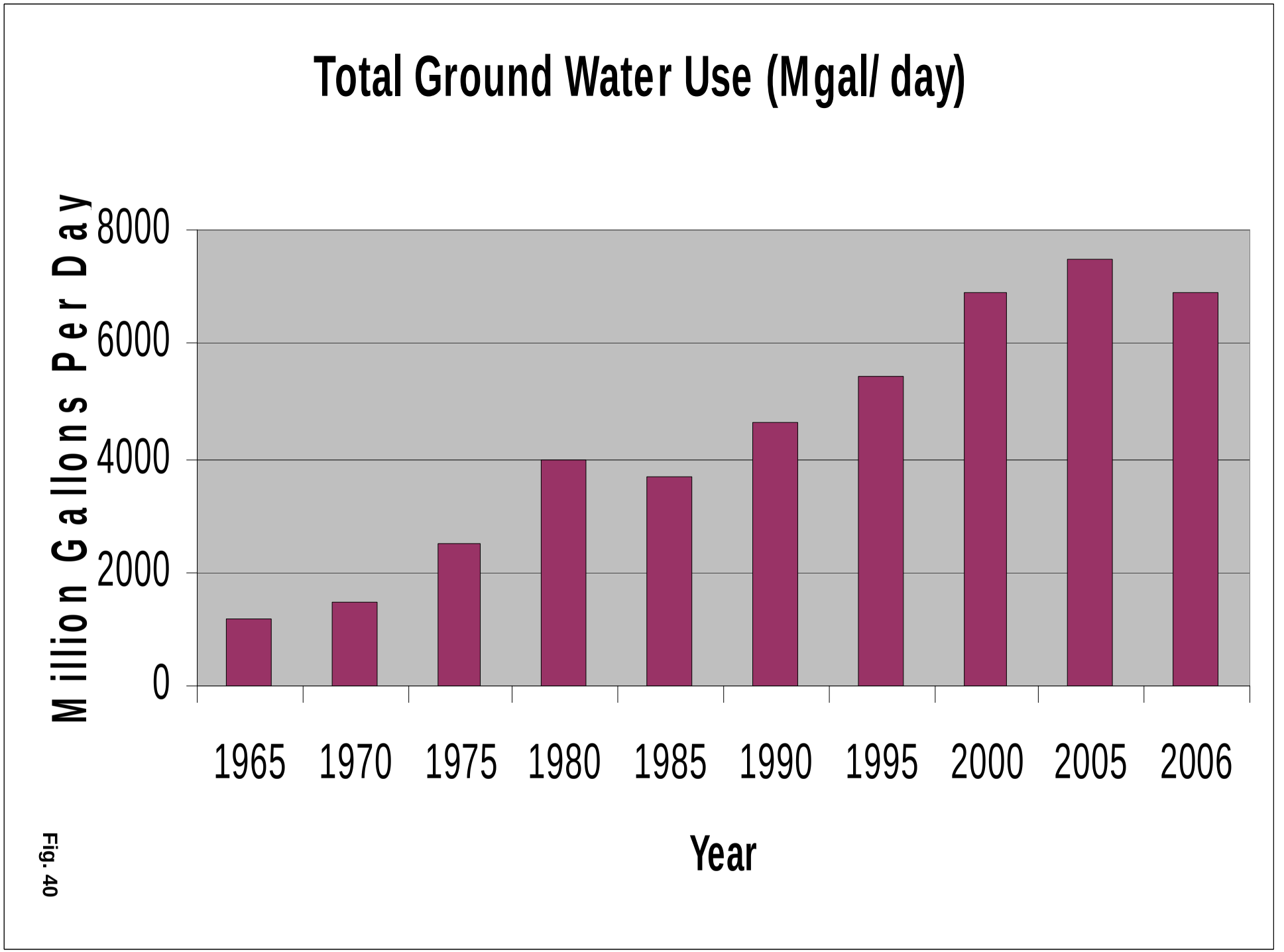
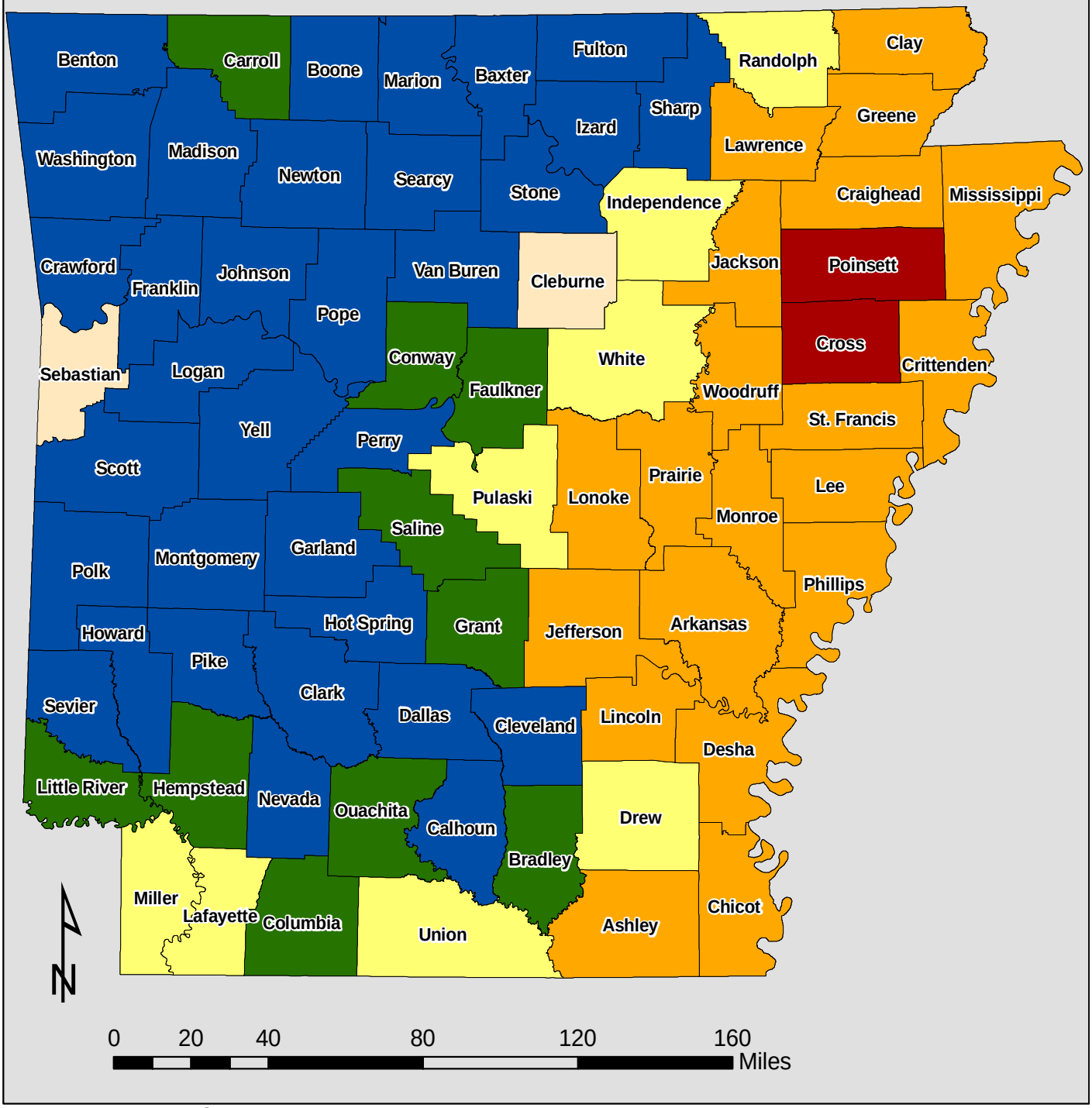

Total Ground Water Use (Mgal/ day)
Million Gallons Per Day
8000
6000
4000
2000
0
1965
1970
1975
1980
1985
1990
1995
2000
2005
2006
Year

Fig. 40

Ground Water Use in Arkansas as of 2006 (Mgal/day)



Legend

- 0 - 1 Mgal/ Day
- Greater than 1 -10 Mgal/day
- Greater than 10 - 100 Mgal/day
- Greater than 100 - 560 Mgal/day
- Greater than 560 - 685 Mgal/day
- No Data Available

Total Use (Mgal/day): 6869.28

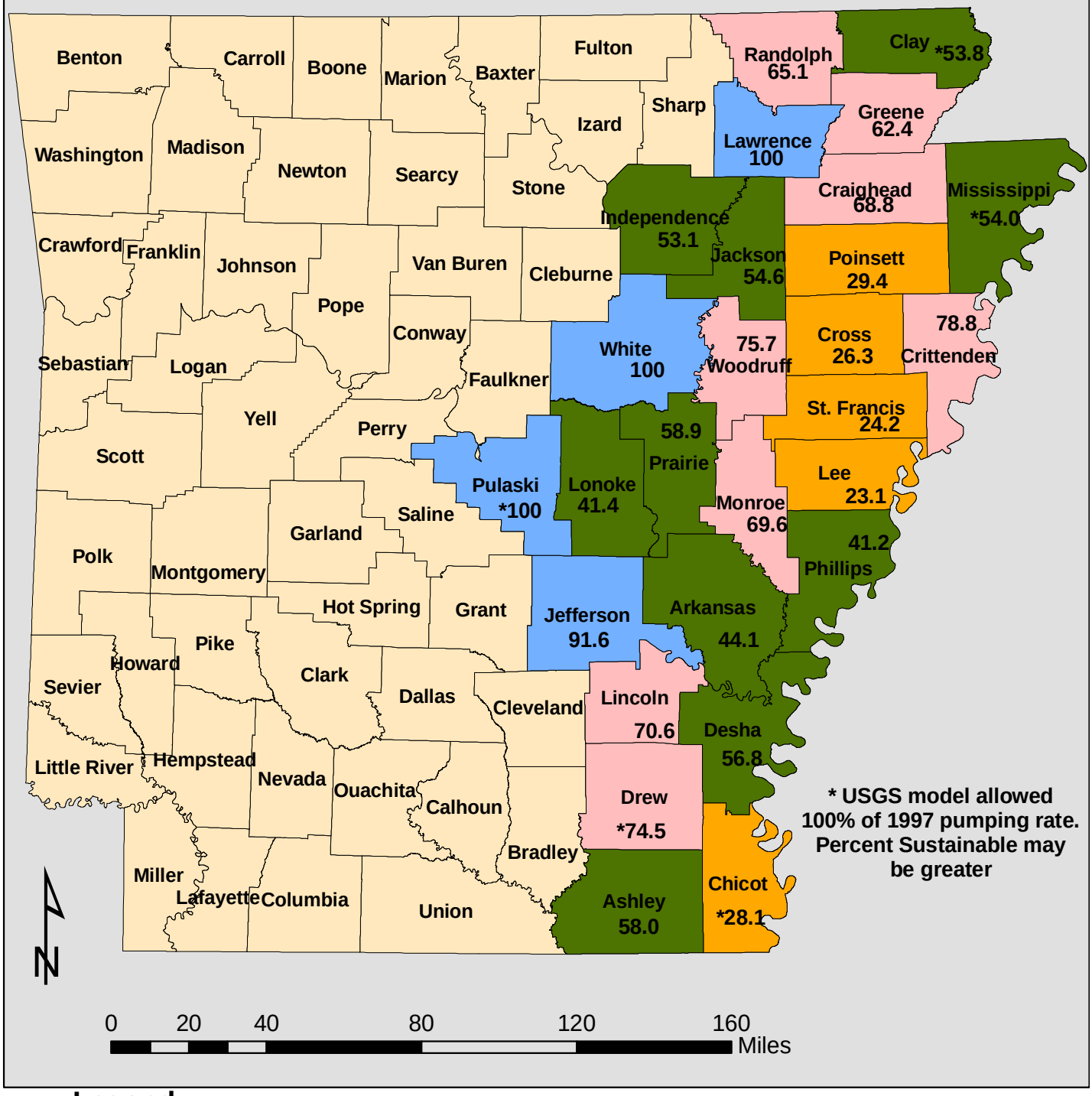
***Data Obtained from United States Geological Survey**

Fig. 41


2006 Ground Water Use (Mgal/day)
Eastern Arkansas Counties
600
550
500
450
400
350
300
250
200
150
100
50
0
Arkansas
Ashley
Chicot
Clay
Craighead
Crittenden
Cross
Desha
Drew
Greene
Independence
Jackson
Jefferson
Lawrence
Lee
Lincoln
Lonoke
Mississippi
Monroe
Phillips
Poinsett
Prairie
Pulaski
Randolph
St. Francis
White
Woodruff

Fig. 42

Percentage of Sustainable Yield for the Alluvial Aquifer based on 2006 Pumping Rates



* USGS model allowed 100% of 1997 pumping rate. Percent Sustainable may be greater

Legend

- 21 - 40%
- 41 - 60%
- 61 - 80%
- 81 - 100%
- County Boundaries

Modified from USGS Reports 2003-4230 &2007-5241

Total Alluvial Water Use: 6505.3 Mgal/day
Total Sustainable Yield: 45.90%

Fig. 43

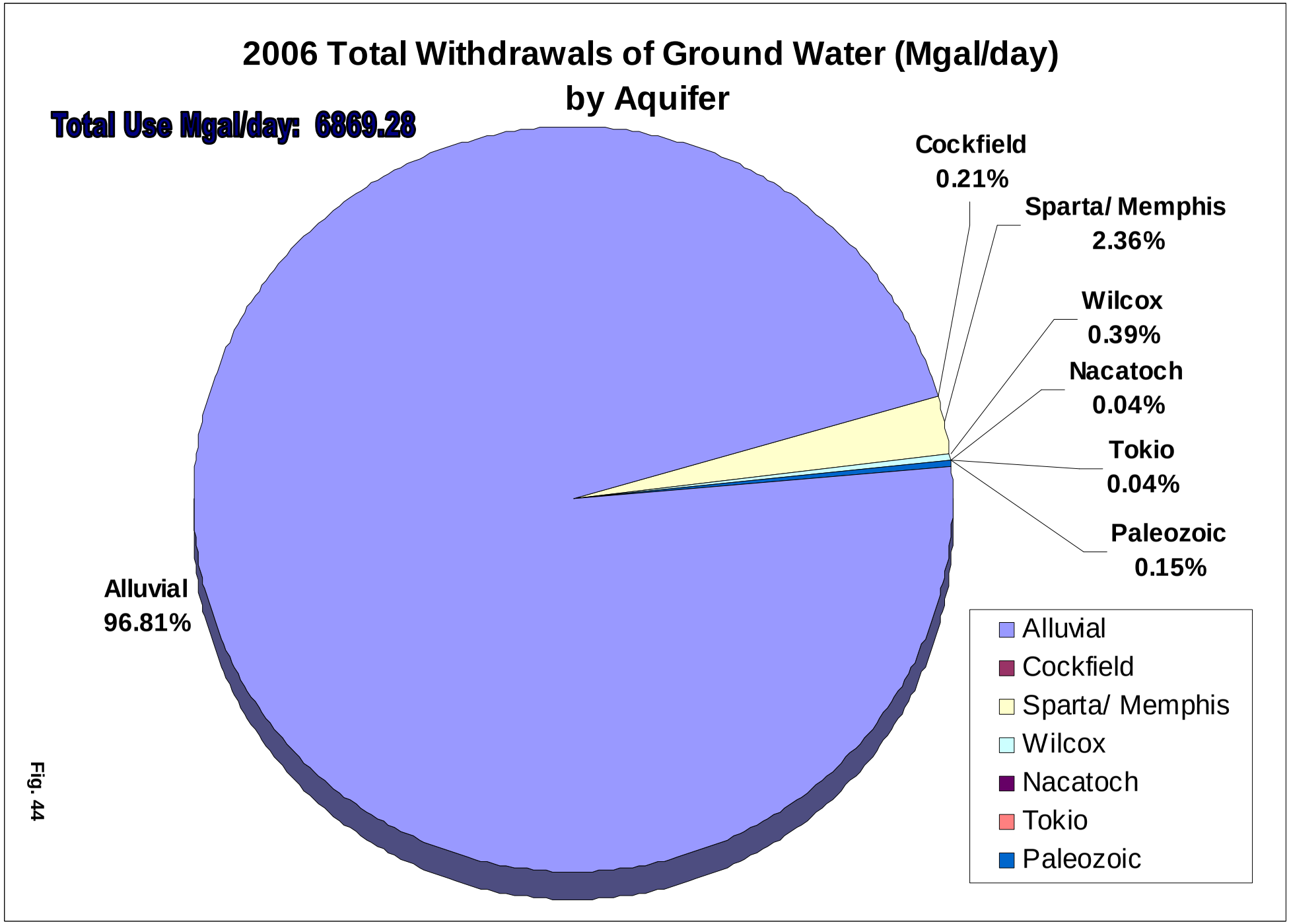

2006 Total Withdrawals of Ground Water (Mgal/day)
by Aquifer
Total Use Mgal/day: 6869.28
Cockfield
0.21%
Sparta/ Memphis
2.36%
Wilcox
0.39%
Nacatoch
0.04%
Tokio
0.04%
Paleozoic
0.15%
Alluvial
96.81%
Alluvial
Cockfield
Sparta/ Memphis
Wilcox
Nacatoch
Tokio
Paleozoic

Fig. 44

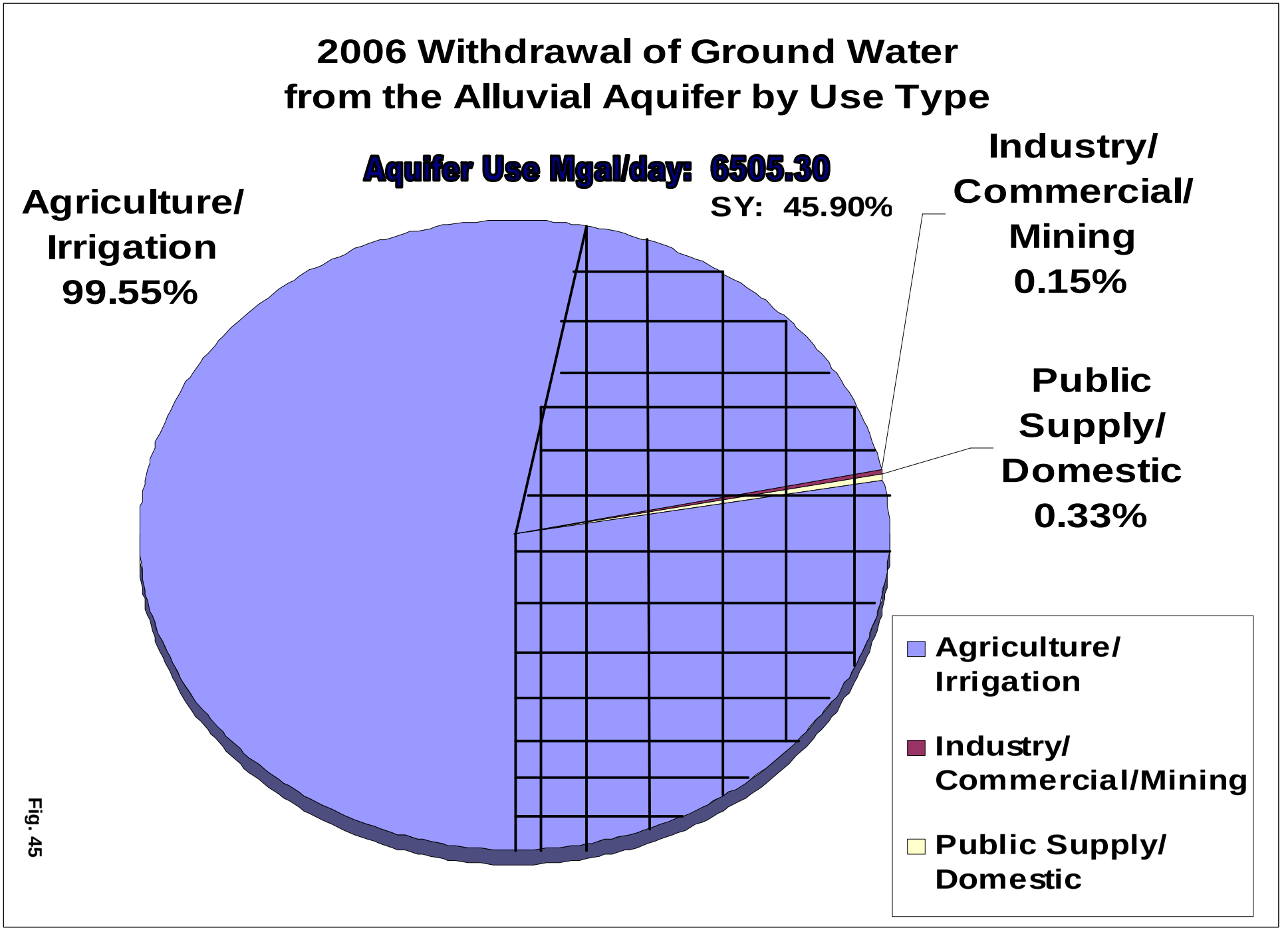

2006 Withdrawal of Ground Water
from the Alluvial Aquifer by Use Type
Aquifer Use Mgal/day: 6505.30
SY: 45.90%
Agriculture/
Irrigation
99.55%
Industry/
Commercial/
Mining
0.15%
Public
Supply/
Domestic
0.33%
Agriculture/
Irrigation
Industry/
Commercial/Mining
Public Supply/
Domestic

Fig. 45

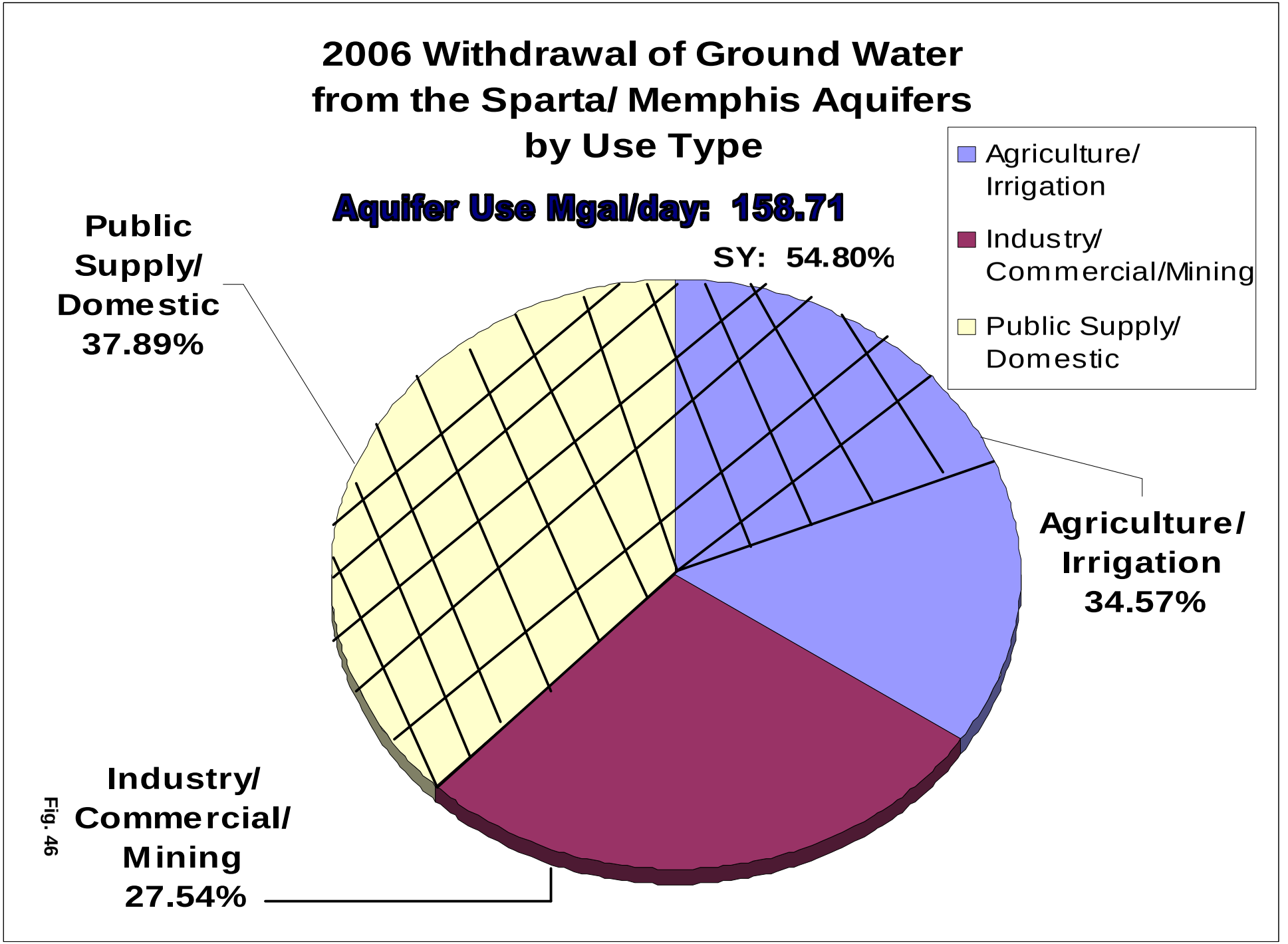

2006 Withdrawal of Ground Water
from the Sparta/ Memphis Aquifers
by Use Type
Aquifer Use Mgal/day: 158.71
SY: 54.80%
Agriculture/
Irrigation
Industry/
Commercial/Mining
Public Supply/
Domestic
Public
Supply/
Domestic
37.89%
Agriculture/
Irrigation
34.57%
Industry/
Commercial/
Mining
27.54%

Fig. 46

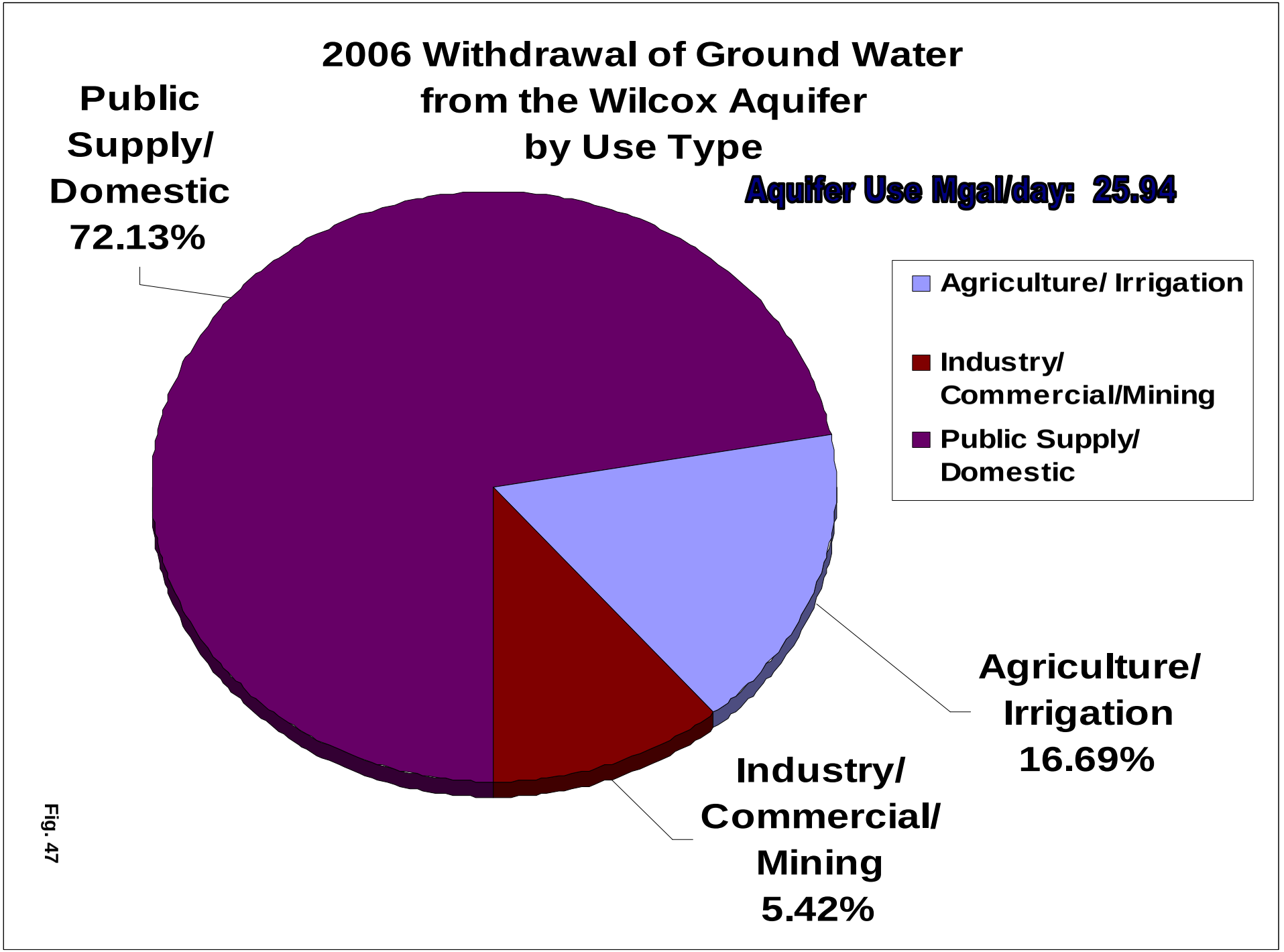

2006 Withdrawal of Ground Water
from the Wilcox Aquifer
by Use Type
Aquifer Use Mgal/day: 25.94
Public Supply/ Domestic 72.13%
Agriculture/ Irrigation 16.69%
Industry/ Commercial/ Mining 5.42%
Agriculture/ Irrigation
Industry/ Commercial/Mining
Public Supply/ Domestic

Fig. 47

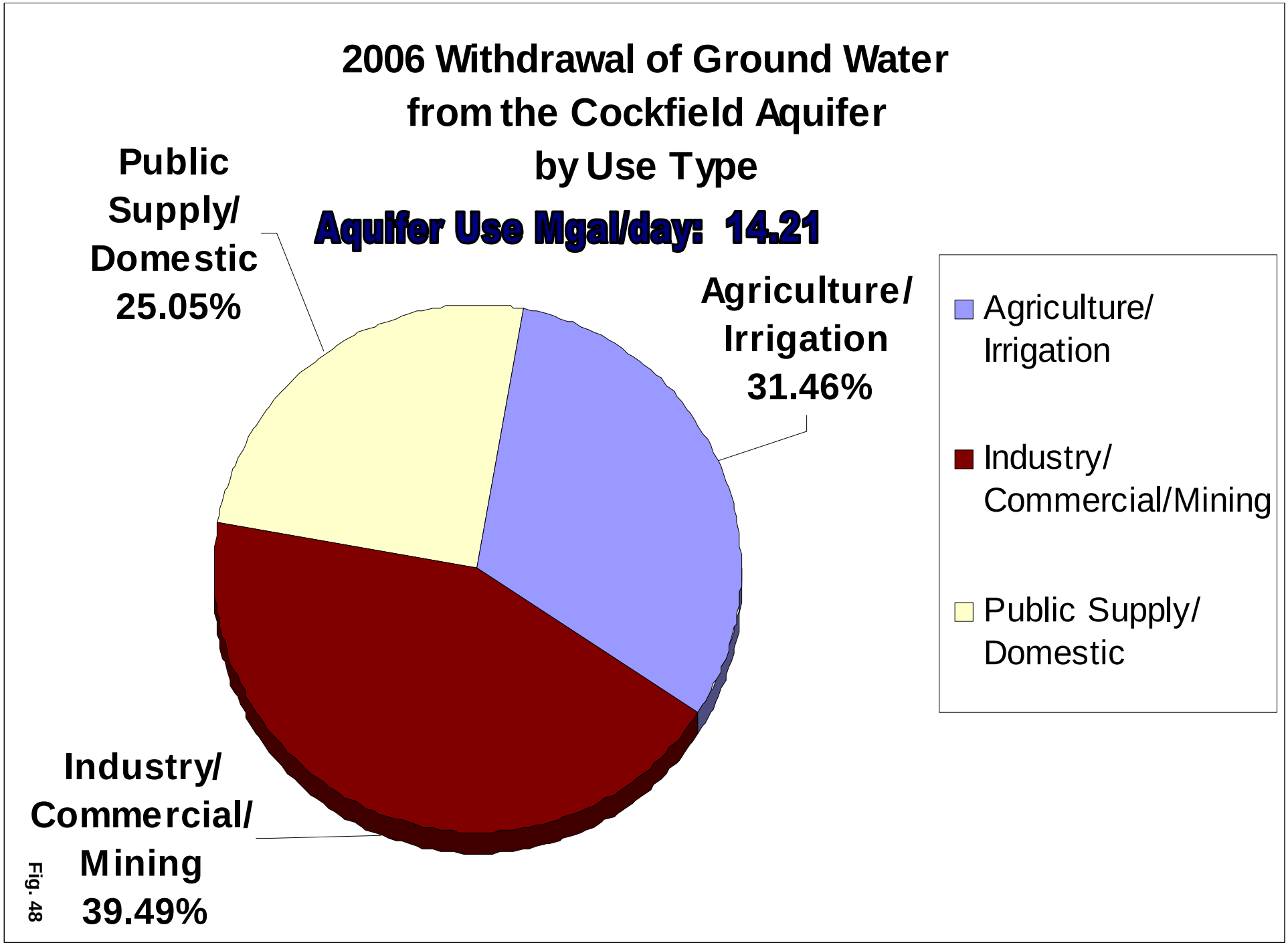

2006 Withdrawal of Ground Water
from the Cockfield Aquifer
by Use Type
Aquifer Use Mgal/day: 14.21
Public
Supply/
Domestic
25.05%
Agriculture/
Irrigation
31.46%
Industry/
Commercial/
Mining
39.49%
Agriculture/
Irrigation
Industry/
Commercial/Mining
Public Supply/
Domestic

Fig. 48

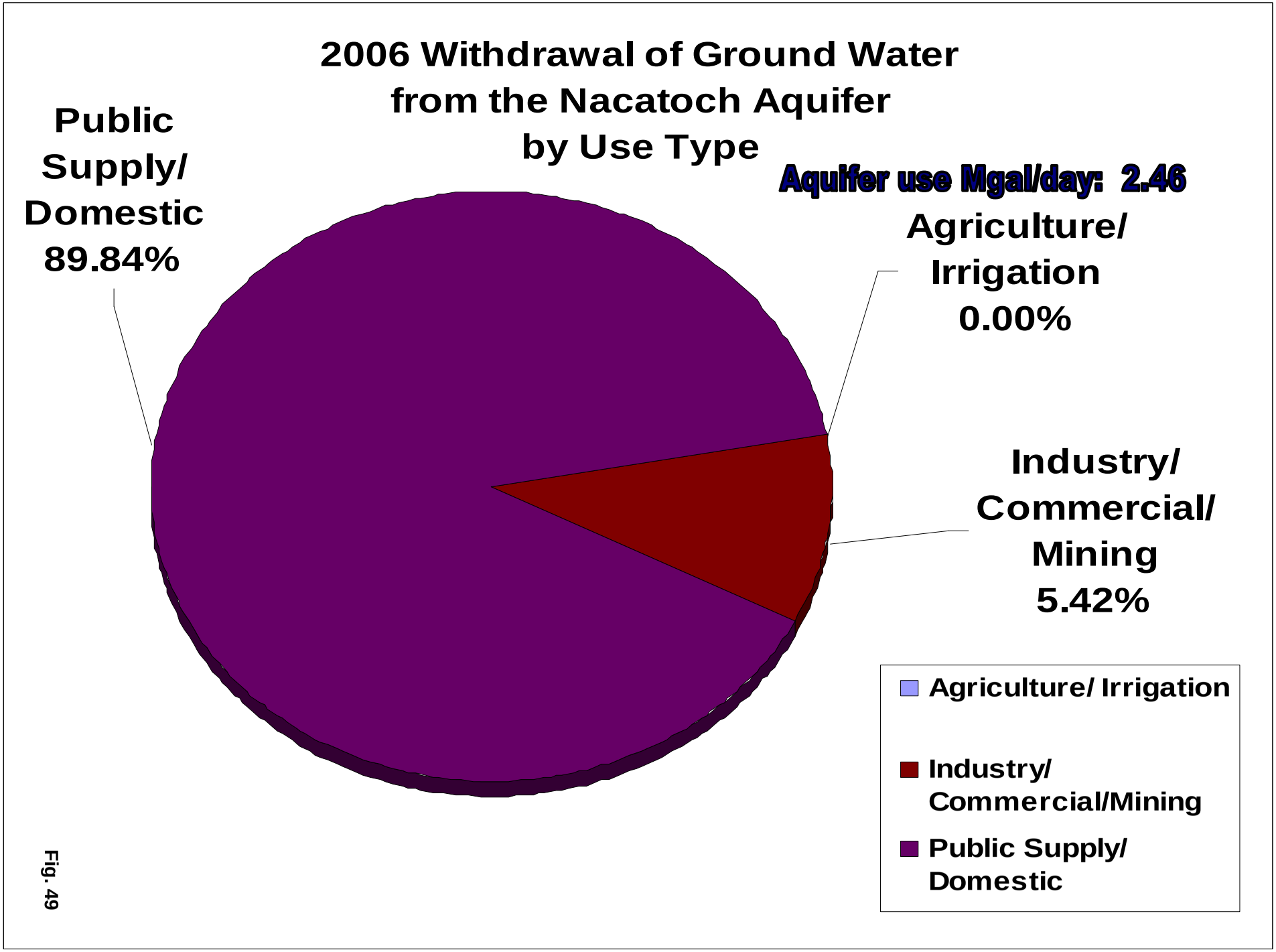

2006 Withdrawal of Ground Water
from the Nacatoch Aquifer
by Use Type
Aquifer use Mgal/day: 2.46
Public
Supply/
Domestic
89.84%
Agriculture/
Irrigation
0.00%
Industry/
Commercial/
Mining
5.42%
Agriculture/ Irrigation
Industry/
Commercial/Mining
Public Supply/
Domestic

Fig. 49

Ground-Water Modeling and Sustainable Yield

The Arkansas District of the US Geological Survey has released several ground-water flow modeling reports allowing for the development of conservation program targets such as sustainable yield withdrawal rates from the State's aquifers. These models provide the State with valuable information on the ground-water flow systems of the two major aquifers in Arkansas as well as an important ground-water resources tool that define areas of future ground-water depletion, and quantifies a sustainable yield, along with unmet demand, based on a described set of head constraints that are consistent with current State water resources policy.

The USGS has provided recalibration, conjunctive-use optimization, and sustainable yield optimization estimates of ground-water flow models for the Sparta and alluvial aquifers in eastern and southern Arkansas. These reports define and document future projected ground-water declines in Arkansas based on current water use trends, and quantify a sustainable yield for each aquifer based on the head constraints consistent with State water policy.

Any attempt to establish a "safe yield" for an aquifer should appropriately be consistent with the preferred concept of "sustainable yield", which includes the often dynamic needs of society, ecology, hydrology and the environment. (Maimone, 2004). The definition of sustainable yield in *WRI Report 03-4230* is the withdrawal rate from an aquifer that can be maintained indefinitely without causing a violation hydraulic head or streamflow constraints. Another definition of sustainable yield proposed by the USGS is *"the development and use of ground water resources in a manner that can be maintained for an indefinite time without causing unacceptable environmental, economic, or social consequences"* (Alley 2004). The misperception of setting a fixed safe yield has been replaced with the goal of establishing a process of defining a sustainable yield that is adaptive and flexible to changing needs and additional scientific knowledge.

The scale of these models is immense, and the methodology and complete results can be found in the USGS Water-Resources Investigations Reports; 03-4230,

03 4231, 03-4233, and 2008-5138, which are all listed in the “References” section of this report. One product of these models was the determination of maximum withdrawal rates from each one square mile cell in the model based on 1997 ground-water use, while not violating specified constraints imposed on the model. (Czarnecki, and others, 2003) The constraints were based on predetermined stream flow levels, as well as aquifer saturated thickness percentages that must be maintained. A minimum of 50% has been utilized for the alluvial aquifer as the sustainable yield thickness in Arkansas.

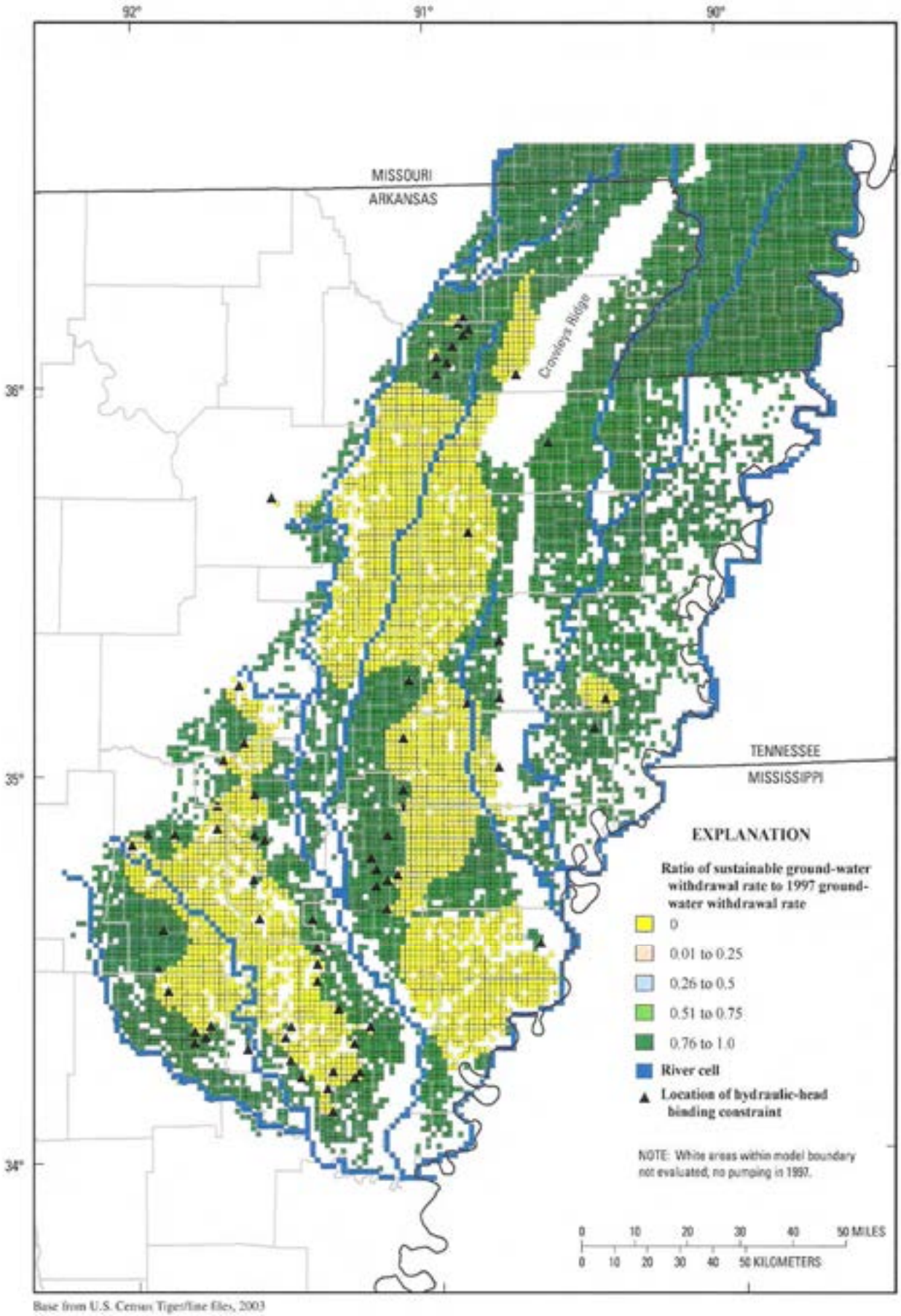
The ground-water models showed that a sustainable yield for the alluvial and Sparta aquifers could not be met using the 1997 pumping rate. The alluvial model is split into a North Optimization Model, and a South Optimization Model. The sustainable yield from ground water in the North Model was 360.3 million cubic feet per day, and the demand was 635.7 million cubic feet per day, based on 1997 pumping rates. This leaves an unmet demand of 275.5 million cubic feet per day (43%). In the South Optimization Model the sustainable yield from ground water, based in 1997 pumping rates, was 70.3 million gallons per day with a demand of 73.6 million gallons per day. This leaves an unmet demand of 3.3 million gallons per day, or 5% for the south model. (Czarnecki and others, 2003) The unmet demand represents the amount by which water use must be reduced to achieve a sustainable yield. The amount of water use, as well as the unmet demand has both increased since this time due to the number of new irrigation wells drilled each year. There have been over 11,000 new wells drilled in the alluvial aquifer since 1997.

The most recent report is “Evaluation of Selected Model Constraints and Variables on simulated Sustainable Yield from the Mississippi River Valley Alluvial Aquifer System in Arkansas”. Results from this report, illustrated in figures 50 and 51, are useful in evaluating conservation measures and ground-water use patterns with respect to the sustainable yield of the alluvial aquifer. Figure 50 shows the optimized ground-water withdrawal rates for the alluvial aquifer in eastern Arkansas, if sustainable yield is to be achieved with maximum withdrawal. This scenario allows for 100 percent withdrawal from wells in optimal locations such as along major streams where greatest recharge is available from stream capture to the aquifer.

Though withdrawals are maximized overall, pumping in inter-stream areas is reduced to 0. This scenario is only acceptable, economically, if alternative sources of water are available in the inter-stream areas.

The highest estimated sustainable yield value is actually achieved with an overall limit of ground-water withdrawal of .75 (2,694 mgd) of the 1997 value utilized in the model development. This scenario is shown in figure 51. Figure 52 illustrates a limit of .5 on ground-water withdrawals, and Figure 53 shows the sustainable yield with a withdrawal limit of .25, which is a scenario that represents equal pumping rates across the Mississippi River Valley alluvial plain of eastern Arkansas. This scenario would require drastic reduction in ground-water pumping, and therefore crop production, or would require development of excess surface water across all of eastern Arkansas regardless of proximity to excess surface water.

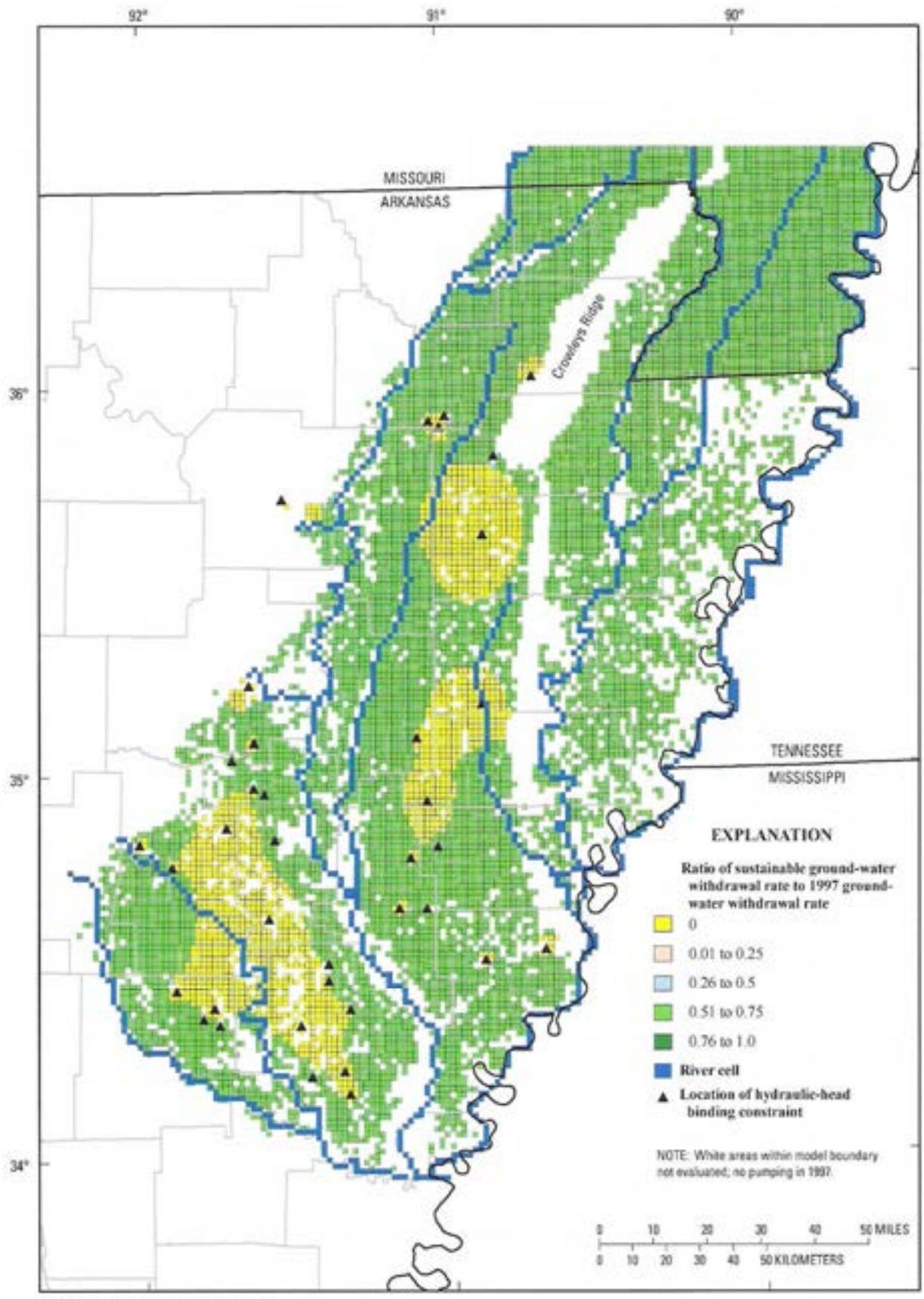
It is essential that the State pursue protection of a sustainable yield for its aquifers, in order to protect this valuable resource from adverse impacts such as damage to the aquifer system, land subsidence, reduced yield to wells, saline water encroachment, increased cost to well users, and reduced base flow to streams and wetlands.



Optimized ground-water withdrawal rates and binding-constraint locations for scenario 1 (baseline), maximum withdrawal ratio of 1.0.

Fig. 50

From USGS Report 2008-2158

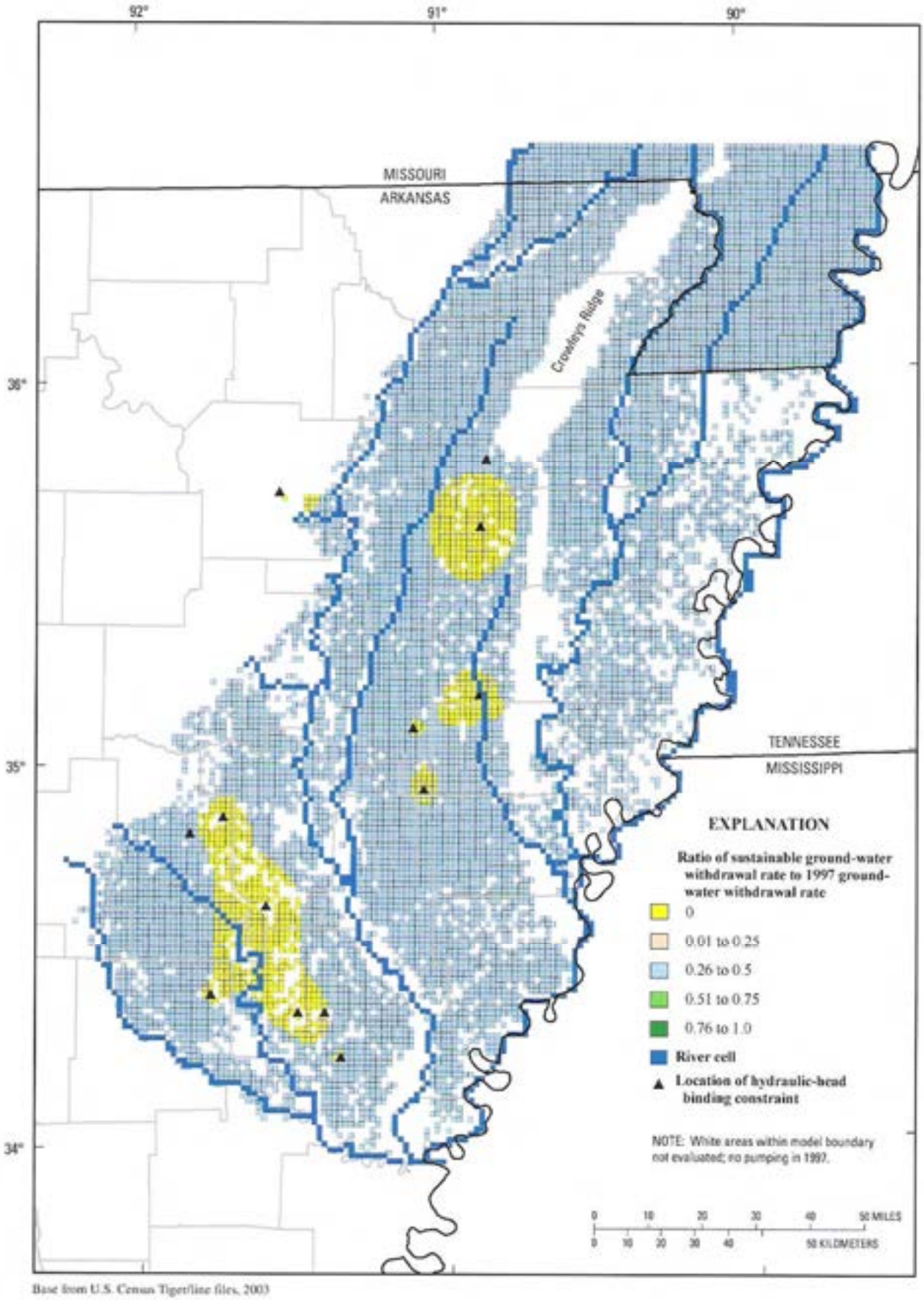


Base from U.S. Census Tigerline files, 2003

Optimized ground-water withdrawal rates and binding-constraint locations for scenario 2, maximum withdrawal ratio of 0.75.

From USGS Report 2008-2158

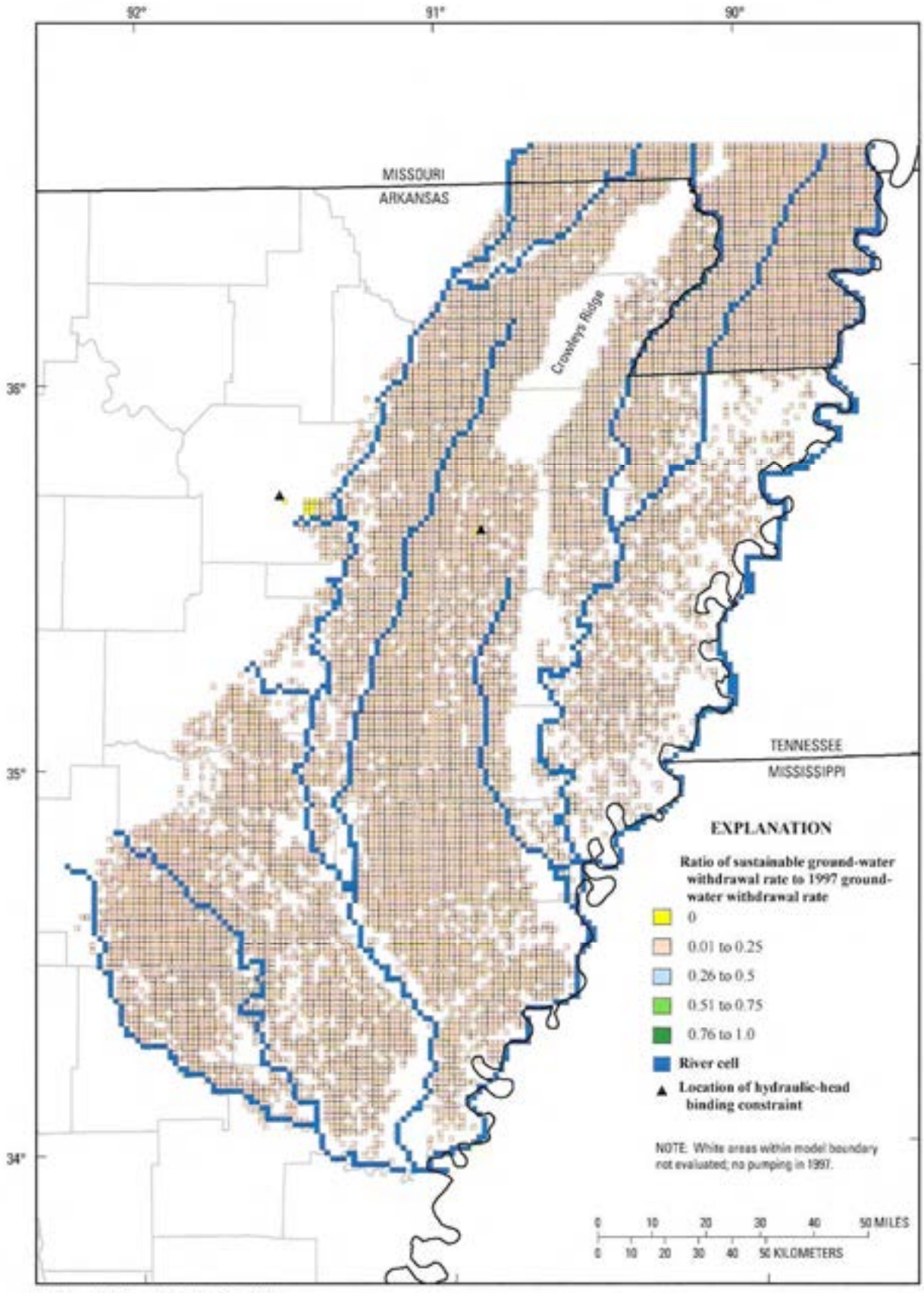
Fig. 51



Optimized ground-water withdrawal rates and binding-constraint locations for scenario 3, maximum withdrawal ratio of 0.50.

From USGS Report 2008-5138

Fig. 52



Base from U.S. Census Tigerline files, 2003

Optimized ground-water withdrawal rates and binding-constraint locations for scenario 4, maximum withdrawal ratio of 0.25.

From USGS Report 2008-5128

Fig. 53

SUMMARY

The Ground Water Protection and Management Report for 2008 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 ground-water resources. The report also describes ground-water protection activities administered through Region VI of the U.S. Environmental Protection Agency, which are funded through Sections 106 and 319 of the Clean Water Act.

The purposes of the programs outlined in this report are to monitor the condition of the State's ground-water resources and to evaluate trends in water level and water quality fluctuations. The ANRC, the NRCS, and the USGS monitor over 1,700 water wells each year for water levels and prescribed water quality parameters. This monitoring is accomplished through a cooperative agreement with the ANRC, the USGS, and the Arkansas Geological Commission (AGC).

Spring water level measurements from 2007 to 2008 provided short term data indicating an overall average decline in water levels. The overall change in the alluvial aquifer for spring 2007 to spring 2008 was a decline of 0.09 feet with 56.3 percent of measured wells showing a water-level decline. Over the same time period the Sparta aquifer had an average change of +0.53 feet; however, the water levels in the Grand Prairie and Cache Study areas declined nearly a foot/year over the last 10 years. Elevated levels of dissolved solids are being recorded in areas of significant water-level decline in the Boeuf-Tensas and Grand Prairie Study Areas. 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 ground-water levels as illustrated by the hydrographs and long term change maps. These hydrographs for both the alluvial and Sparta/Memphis aquifers are included as appendix B and appendix D respectively.

Arkansas is withdrawing ground water from the alluvial and Sparta 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

Alluvial Aquifer
98-03-07-08 WL Change

County	Station ID	Latitude	Longitude	LSA	Date	08	WL	WL	WL	WL	07-08	03-08	98-08
					Measured	meas.	Alt. 08	Alt. 07	Alt. 03	Alt. 98	Change	Change	Change
Arkansas	02S04W11DBB1	343232.89	912415.21	213.04	3/24/2008	100.74	112.30	112.64	112.04	115.61	-0.34	0.26	-3.31
Arkansas	02S05W15AAB1	343212.68	913126.72	213.00	3/24/2008	107.38	105.62	108.35	103.35		-2.73	2.27	
Arkansas	02S05W31BBB1	342936.71	913536.22	198.00	3/24/2008	41.24	156.76	161.00	140.00		-4.24	16.76	
Arkansas	03S02W27ABB1	342447.92	911251.01	197.00	3/25/2008	65.92	131.08	131.00	127.40	130.79	0.08	3.68	0.29
Arkansas	03S03W05CCD1	342737.02	912131.83	201.00	3/24/2008	99.78	101.22	101.70	103.40		-0.48	-2.18	
Arkansas	03S03W18CCC1	342553	912251	196.00	3/18/2008	102.24	93.76	96.29			-2.53		
Arkansas	03S03W27BBC1	342454.73	911944.08	195.00	3/24/2008	93.04	101.96	102.40	104.20		-0.44	-2.24	
Arkansas	03S04W02BBB1	342831	912454	197.63	3/24/2008	93.22	104.41	104.83	106.33		-0.42	-1.92	
Arkansas	03S04W03DCA16	342753.04	912515.37	205.00	5/12/2008	101.14	103.86	104.08	105.15	106.51	-0.22	-1.29	-2.65
Arkansas	03S04W03DDA1	342750.05	912459.88	202.00	3/24/2008	100.94	101.06						
Arkansas	03S05W03CCC1	342752.15	913227.43	215.00	3/20/2008	104.42	110.58	109.90	108.35		0.68	2.23	
Arkansas	03S05W13AC1	342630	913307	211.00	3/13/2008	107.39	103.61	103.60			0.01		
Arkansas	03S06W35ADD1	342411.4	913651.67	190.00	3/21/2008	54.81	135.19	133.00	136.60	129.73	2.19	-1.41	5.46
Arkansas	04S01W04ACD2	342233.35	910732.62	155.00	3/25/2008	4.05	150.95		144.65			6.30	
Arkansas	04S01W31DCB1	341753	910947	179.00	3/25/2008	52.42	126.58	124.40	125.75	113.84	2.18	0.83	12.74
Arkansas	04S02W11AAA1	342208.6	911123.27	195.08	3/25/2008	67.81	127.27		127.78			-0.51	
Arkansas	04S02W29CCC1	341846.35	911538.5	191.00	3/25/2008	83.92	107.08	107.85	108.45	103.03	-0.77	-1.37	4.05
Arkansas	04S03W17ADD1	342101.87	912058.11	200.00	3/24/2008	109.98	90.02	91.70	93.30	98.75	-1.68	-3.28	-8.73
Arkansas	04S03W32BCB1	341820.31	912202.18	192.00	3/20/2008	123.19	68.81	60.50	85.00	84.81	8.31	-16.19	-16.00
Arkansas	04S04W02ABB1	342313.2	912423.69	200.00	2/24/2008	109.89	90.11	90.50	91.60	94.96	-0.39	-1.49	-4.85
Arkansas	04S04W35ABC1	341835	912437	193.00	4/7/2008	91.00	102.00	87.50	71.50		14.50	30.50	
Arkansas	04S05W16CDC1	342044.68	913320.89	201.00	3/20/2008	71.25	129.75	130.10	130.00	131.95	-0.35	-0.25	-2.20
Arkansas	04S05W24DAA1	342001.3	912929.57	198.00	3/20/2008	90.17	107.83	108.00	107.30	106.10	-0.17	0.53	-0.27
Arkansas	04S06W15DBB1	342122.37	913826.67	190.00	3/21/2008	34.88	155.12		157.35	159.04		-2.23	-3.92
Arkansas	05S01W16BAB1	341551.59	910729.49	183.00	3/25/2008	51.37	131.63	134.50	132.80		-2.87	-1.17	
Arkansas	05S02W16ABD1	341551.84	911357	190.00	3/20/2008	86.13	103.87		116.54	116.64		-12.67	-12.77
Arkansas	05S03W09CBA1	341624	912046	196.00	3/12/2008	113.09	82.91						
Arkansas	05S04W07CCC1	341555.36	912931.61	194.00	3/20/2008	75.05	118.95	119.50	117.20	120.50	-0.55	1.75	-1.55
Arkansas	05S04W32BBA1	341315.97	912821.81	191.00	3/20/2008	58.75	132.25	132.70	131.70	131.29	-0.45	0.55	0.96
Arkansas	05S06W02DDD1	341723.66	913650.8	182.93	3/21/2008	21.80	161.13	161.43	162.63	164.71	-0.30	-1.50	-3.58
Arkansas	05S06W07DDC1	341641.5	914129.68	180.48	3/21/2008	3.83	176.65	175.68	176.08	172.93	0.97	0.57	3.72
Arkansas	06S02W23DCD1	340852.62	911206.48	188.00	3/20/2008	70.61	117.39	123.50	122.70	130.36	-6.11	-5.31	-12.97
Arkansas	06S03W10BBA1	341135.97	911953.82	184.00	3/20/2008	82.25	101.75	101.00	101.40	105.15	0.75	0.35	-3.40
Arkansas	06S03W27AAA1	340857.58	911912.78	183.14	3/20/2008	68.55	114.59	115.14	114.54		-0.55	0.05	
Arkansas	06S03W32DDA	340740	912115	180.00	3/12/2008	57.35	122.65	123.86			-1.21		
Arkansas	07S02W04BBB1	340707.15	911451.89	176.00	3/20/2008	50.50	125.50	129.50	141.10		-4.00	-15.60	
Arkansas	07S02W17BBA1	340707.15	911451.89	184.00	3/20/2008	54.05	129.95	129.70	131.10	138.01	0.25	-1.15	-8.06
Arkansas	07S03W18CCD1	340435.28	912316.09	186.18	3/20/2008	44.17	142.01	143.08	136.00	144.18	-1.07	6.01	-2.17

Alluvial Aquifer
98-03-07-08 WL Change

County	Station ID	Latitude	Longitude	LSA	Date	08	WL	WL	WL	WL	07-08	03-08	98-08
					Measured	meas.	Alt. 08	Alt. 07	Alt. 03	Alt. 98	Change	Change	Change
Arkansas	07S03W32BBC1	340240	912216	176.92	3/20/2008	26.45	150.47	150.92			-0.45		
Arkansas	07S04W01DDD1	340625.25	912327.15	186.00	3/20/2008	48.48	137.52	141.70	136.80	142.39	-4.18	0.72	-4.87
Arkansas	08S02W08ACA1	340041.03	911505.57	179.00	3/20/2008	42.67	136.33	135.55		143.25	0.78		-6.92
Arkansas	08S03WT2299	340147.45	912202.5	178.00	3/20/2008	22.09	155.91	155.50	156.40	158.19	0.41	-0.49	-2.28
								Declines/wells:			**24/36**	**19/35**	**18/24**
								Average Change:			**-0.15**	**0.03**	**-3.05**
Ashley	15S04W23DBD1	332247.3	912851.9	128.00	3/11/2008	33.42	94.58						
Ashley	15S04W26DCC1	332231.97	912902	127.00	3/11/2008	32.17	94.83	93.20	96.80	99.69	1.63	-1.97	-4.86
Ashley	15S07W21CBA1	332315.7	915001.37	210.00	3/10/2008	4.52	205.48	204.00	203.50	196.42	1.48	1.98	9.06
Ashley	16S06W08CAA1	331941	914438	185.00	3/10/2008	78.92	106.08	108.50		171.90	-2.42		-65.82
Ashley	16S06W25DDD1	331640	913958	182.00	3/12/2008	78.47	103.53						
Ashley	16S06W27BAB1	331729	914240	182.00	3/10/2008	84.07	97.93	97.95	98.45		-0.02	-0.52	
Ashley	17S04W03ABB1	331528	913010	124.00	3/11/2008	30.77	93.23	90.40	93.90		2.83	-0.67	
Ashley	17S04W15DDC1	331252.48	912954.09	116.00	3/11/2008	27.70	88.30	89.20	92.70	97.01	-0.90	-4.40	-8.71
Ashley	17S04W21ABA1	331252	913106	117.00	3/11/2008	22.97	94.03	87.80	94.10		6.23	-0.07	
Ashley	17S05W01AAC1	331529.1	913347.5	122.00	4/17/2008	18.00	104.00						
Ashley	17S06W01ADD1	331517.9	913956.26	182.00	3/10/2008	84.03	97.97	98.20	99.20	102.30	-0.23	-1.23	-4.33
Ashley	17S06W35CAC1	331049	914136	179.00	3/10/2008	72.41	106.59	106.80	107.20		-0.21	-0.61	
Ashley	18S04W23DDD1	330651.4	912941.2	103.00	4/17/2008	30.00	73.00		87.00			-14.00	
Ashley	18S05W11CCD1	330816.6	913537.3	118.00	4/17/2008	27.00	91.00	93.00	103.00	94.00	-2.00	-12.00	-3.00
Ashley	18S05W22DDA1	330712	913555	125.00	4/17/2008	22.00	103.00	103.00	113.00	100.50	0.00	-10.00	2.50
Ashley	18S08W01AAB1	331014.97	915225.12	181.00	3/10/2008	84.34	96.66	94.45		78.12	2.21		18.54
Ashley	18S08W26DDD2	330624.8	915528.5	163.26	5/13/2008	85.11	78.15						
Ashley	19S04W06BAB2	330504	913328.6	110.00	3/11/2008	23.92	86.08			91.65			-5.57
Ashley	19S04W14BBB1	330314.2	912940.6	107.00	4/17/2008	31.00	76.00		86.00	84.00		-10.00	-8.00
Ashley	19S05W08ACA1	330405	913815	111.00	4/17/2008	18.00	93.00	94.00	100.00	92.00	-1.00	-7.00	1.00
Ashley	19S05W16ABB1	330323	913718	116.00	4/17/2008	28.00	88.00	90.00	101.00	95.50	-2.00	-13.00	-7.50
Ashley	19S05W22DCD1	330139	913615	107.00	4/17/2008	26.00	81.00	83.00	93.00	93.00	-2.00	-12.00	-12.00
Ashley	19S06W07BCC1	330403.56	914607.92	134.70	3/10/2008	32.46	102.24	106.80		104.83	-4.56		-2.59
								Declines/Wells:			**10/16**	**14/15**	**10/14**
								Average Change:			**-0.06**	**-5.70**	**-6.52**
Chicot	13S03W27AAA1	333253	912310	138.00	3/24/2008	48.00	90.00			103.00			-13.00
Chicot	13S03W34BAA1	333110.24	912539.38	133.00	3/11/2008	40.74	92.26		94.00			-1.74	
Chicot	13S03W34CAA1	333135.5	912335.8	132.00	3/11/2008	37.92	94.08						

Alluvial Aquifer
98-03-07-08 WL Change

County	Station ID	Latitude	Longitude	LSA	Date	08	WL	WL	WL	WL	07-08	03-08	98-08
					Measured	meas.	Alt. 08	Alt. 07	Alt. 03	Alt. 98	Change	Change	Change
Chicot	13S03W35BAC1	333154.1	912245.5	134.00	3/11/2008	41.29	92.71			105.63			-12.92
Chicot	14S02W09BDD1	332859	911729	133.00	3/26/2008	30.00	103.00	102.00	104.00	105.00	1.00	-1.00	-2.00
Chicot	14S02W18BBA1	332859	912038	130.00	3/24/2008	34.00	96.00	94.00			2.00		
Chicot	14S03W07BBD1	333011	911729	134.00	3/11/2008	27.62	106.38	104.00			2.38		
Chicot	14S03W32CDB2	332613.47	912551.45	134.00	3/11/2008	35.76	98.24	95.90			2.34		
Chicot	15S02W20DDC1	332226.59	911919.83	126.00	3/26/2008	28.12	97.88	96.00	97.00	100.02	1.88	0.88	-2.14
Chicot	15S03W18BBB1	332226.59	911919.83	125.00	3/25/2008	42.00	83.00	88.00	89.00		-5.00	-6.00	
Chicot	16S03W11ADC1	331919.5	912233.9	118.00	3/11/2008	29.61	88.39			93.17			-4.78
Chicot	17S01W06BCC1	331501.18	911505.22	115.00	3/11/2008	21.57	93.43	93.20		95.25	0.23		-1.82
Chicot	17S01E17CDA1	331258	910716	118.00	3/11/2008	21.00	97.00	100.40			-3.40		
Chicot	17S01E18ADA1	331325.7	910758.2	121.00	3/11/2008	11.53	109.47						
Chicot	17S02W10AAA1	331429	911712	114.00	3/11/2008	27.36	86.64	87.00	86.60		-0.36	0.04	
Chicot	17S03W18CBC1	331257	912736	117.00	3/26/2008	35.00	82.00	83.00	85.00	91.00	-1.00	-3.00	-9.00
Chicot	17S03W28DBA1	331126.6	912441.4	110.00	3/11/2008	24.74	85.26						
Chicot	18S01W19DAB1	330708.5	911423.2	110.00	3/11/2008	13.95	96.05			96.76			-0.71
Chicot	18S01W33BDA1	330543	911245	115.00	3/26/2008	14.00	101.00	99.00		105.00	2.00		-4.00
Chicot	18S03W22ABA2	330728	912341	103.00	3/11/2008	11.17	91.83	89.80			2.03		
Chicot	19S01W17BCC1	330250.36	911406.24	106.00	3/11/2008	20.57	85.43						
Chicot	19S03W14ABB1	330304.5	912250.7	111.00	3/11/2008	23.99	87.01						
								Declines/Wells:			**4/12**	**4/6**	**9/9**
								Average Change:			**0.34**	**-1.80**	**-5.60**
Clay	18N06E03DAB1	361323.23	901153.03	257.00	4/9/2008	4.29	252.71	249.10	252.32	251.01	3.61	0.39	1.70
Clay	18N08E11BAA1	361253	901117	259.00	4/2/2008	4.00	255.00	251.60	252.50		3.40	2.50	
Clay	19N03E24AAA1	361655	904157.1	278.00	4/9/2008	20.96	257.04		258.15			-1.11	
Clay	19N04E11DAA1	361805	903621	280.00	4/2/2008	17.80	262.20	259.00	257.90		3.20	4.30	
Clay	19N04E19AAA1	361654.4	904050	282.00	4/9/2008	31.56	250.44		253.30			-2.86	
Clay	19N04E19BAA1	361649	904125	279.00	4/6/2008	23.20	255.80	257.40	258.00		-1.60	-2.20	
Clay	19N05E15BBD1	361716	903152	289.00	4/2/2008	39.00	250.00	264.80	256.40		-14.80	-6.40	
Clay	19N06E18DBC1	361642	902815	297.00	4/2/2008	38.90	258.10	260.40	262.40		-2.30	-4.30	
Clay	19N07E25BCB1	361519	901700	268.00	4/2/2008	13.10	254.90	251.00	252.60		3.90	2.30	
Clay	19N08E08DCA1	361729	901402	270.00	4/2/2008	4.00	266.00	265.20	266.10		0.80	-0.10	
Clay	19N09E30BB1	361531	900921	265.00	4/2/2008	4.50	260.50	257.90			2.60		
Clay	20N03E25BAA1	362112	904225	288.00	4/6/2008	23.00	265.00	267.50	266.10		-2.50	-1.10	
Clay	20N05E22CAD1	362118	903132	290.00	4/2/2008	29.50	260.50	262.90	263.60		-2.40	-3.10	
Clay	20N05E30CAC1	362003	903454	283.00	4/6/2008	17.40	265.60	266.20	266.70		-0.60	-1.10	
Clay	20N05E34DBA1	361939.3	903117.2	285.00	4/9/2008	31.78	253.22		257.75	265.57		-4.53	-12.35

Alluvial Aquifer
98-03-07-08 WL Change

County	Station ID	Latitude	Longitude	LSA	Date Measured	08 meas.	WL Alt. 08	WL Alt. 07	WL Alt. 03	WL Alt. 98	07-08 Change	03-08 Change	98-08 Change
Clay	20N06E09BBA1	362327	902620	290.00	3/26/2008	22.50	267.50	270.00	270.30		-2.50	-2.80	
Clay	20N06E28CCD1	362005	902630	290.00	4/2/2008	30.80	259.20	272.00	263.90		-12.80	-4.70	
Clay	20N08E22BDC1	362111	901220	275.00	4/2/2008	6.50	268.50	267.00	267.20		1.50	1.30	
Clay	20N08E24DDA1	362057.1	900933.6	276.00	4/9/2008	6.16	269.84			268.83			1.01
Clay	20N09E09ABC1	362306	900642	279.00	4/2/2008	3.00	276.00	272.80	271.90		3.20	4.10	
Clay	20N09E33DDC1	361904	900628	270.00	4/2/2008	5.00	265.00	263.20	263.60		1.80	1.40	
Clay	21N03E15CBC1	362738	904453	292.00	4/8/2008	5.00	287.00	282.00	280.10		5.00	6.90	
Clay	21N03E36CDD1	362450	904214	290.00	4/8/2008	11.10	278.90	272.00	272.10		6.90	6.80	
Clay	20N04E03AA1	362425	903725	290.00	4/8/2008	16.00	274.00	275.40			-1.40		
Clay	21N04E09DBC1	362828	903853	291.00	4/8/2008	10.00	281.00	281.50	280.50		-0.50	0.50	
Clay	21N05E17ABB1	362755.47	903328.9	298.00	4/9/2008	23.92	274.08	275.60	275.60	279.68	-1.52	-1.52	-5.60
Clay	21N05E22BAB1	362704	903132	288.00	4/8/2008	5.80	282.20	283.00	281.70		-0.80	0.50	
Clay	21N06E11BBB1	362639	902421	296.00	4/2/2008	15.20	280.80	284.00	283.00		-3.20	-2.20	
Clay	21N06E28BB1	362604.92	902607.97	292.50	4/9/2008	19.38	273.12	274.10	274.60		-0.98	-1.48	
Clay	21N07E01DDC1	362835	901607	303.00	4/2/2008	33.20	269.80	283.00	284.70		-13.20	-14.90	
Clay	21N07E19BDA1	362640	902148	295.00	3/26/2008	24.80	270.20		276.00			-5.80	
Clay	21N08E03CD1	362842	901211	308.00	4/2/2008	20.50	287.50	290.00			-2.50		
Clay	21N08E18CCC1	362650.9	901550.33	324.00	4/9/2008	40.71	283.29	286.40	287.90		-3.11	-4.61	
Clay	21N08E36ABB1	362502	900958	283.00	4/9/2008	2.68	280.32	279.40	283.00		0.92	-2.68	
Clay	21N09E31BDA1	362447	900851	284.00	4/2/2008	1.00	283.00	279.80	279.00		3.20	4.00	
								Declines/Wells;			**17/30**	**19/31**	**2/4**
								Average Change:			**-0.89**	**-1.05**	**-3.81**
Craighead	13N01E03AAA1	354739	905753	240.00	3/17/2008	56.60	183.40	186.30	187.70	192.70	-2.90	-4.30	-9.30
Craighead	13N01E21CAB	354434	905945	240.00	3/17/2008	65.50	174.50	176.50	180.50	183.50	-2.00	-6.00	-9.00
Craighead	13N01E23DAA1	354435.4	905651.69	242.00	4/10/2008	71.08	170.92	166.70	172.95		4.22	-2.03	
Craighead	13N01E26BC1	353832	905800	245.00	3/17/2008	70.10	174.90	176.00			-1.10		
Craighead	13N02E02AAB1	354731	905032	251.00	3/17/2008	93.80	157.20	158.00	165.80	172.00	-0.80	-8.60	-14.80
Craighead	13N02E03AAA1	354733	905129	250.00	3/17/2008	88.70	161.30	162.80	165.80	171.70	-1.50	-4.50	-10.40
Craighead	13N03E23CDA1	354419	904434	249.00	3/12/2008	81.70	167.30	167.40	170.70	176.30	-0.10	-3.40	-9.00
Craighead	13N03E28CDB1	354322	904652	250.00	3/12/2008	116.90	133.10	141.50	142.50	155.50	-8.40	-9.40	-22.40
Craighead	13N03E29AAA1	354403.31	904712.98	251.00	4/10/2008	105.76	145.24	146.70	148.15		-1.46	-2.91	
Craighead	13N03E35AAA1	354308	904401	249.00	3/12/2008	97.50	151.50	156.00	156.50		-4.50	-5.00	
Craighead	13N04E12ABB1	354635	903656	231.00	4/10/2008	24.51	206.49	206.45	205.60	209.97	0.04	0.89	-3.48
Craighead	13N04E15DBA1	354521	903857	230.00	3/12/2008	26.60	203.40	203.90	203.80	205.60	-0.50	-0.40	-2.20
Craighead	13N04E26BCC1	354340	903829	225.00	3/12/2008	26.60	198.40	198.10	196.60	200.60	0.30	1.80	-2.20
Craighead	13N05E02CCC1	354648	903202	230.00	3/12/2008	13.50	216.50	217.00	216.40	218.30	-0.50	0.10	-1.80

Alluvial Aquifer
98-03-07-08 WL Change

County	Station ID	Latitude	Longitude	LSA	Date	08	WL	WL	WL	WL	07-08	03-08	98-08
					Measured	meas.	Alt. 08	Alt. 07	Alt. 03	Alt. 98	Change	Change	Change
Craighead	13N05E06DCC1	354637	903547	229.00	3/12/2008	20.40	208.60	208.00	206.50	211.30	0.60	2.10	-2.70
Craighead	13N05E22BAD1	354449	903243	226.00	4/10/2008	13.23	212.77	215.60	212.90		-2.83	-0.13	
Craighead	13N05E24BAC1	354451	903045	225.00	3/12/2008	8.80	216.20	212.20	218.00	216.80	4.00	-1.80	-0.60
Craighead	13N06E21AD1	354421	902743	220.00	3/12/2008	8.50	211.50	211.00					
Craighead	13N07E02CAB1	354642	901901	226.00	3/12/2008	10.50	215.50	214.60	221.50		0.90	-6.00	
Craighead	13N07E05ABB1	354716	902158	225.00	3/12/2008	4.40	220.60	220.00	218.50	218.90	0.60	2.10	1.70
Craighead	13N07E20BBA1	354439.77	902216.44	223.20	4/10/2008	1.95	221.25	218.40		220.51	2.85		0.74
Craighead	13N07E35AD1	354403	901821	249.00	3/12/2008	12.90	236.10						
Craighead	14N01E03ACB1	355246	905816	249.00	3/17/2008	51.50	197.50	198.00	200.80	207.30	-0.50	-3.30	-9.80
Craighead	14N01E10BAB1	355204	905828	246.00	3/17/2008	54.00	192.00	194.00	197.30	203.90	-2.00	-5.30	-11.90
Craighead	14N01E31DCA1	354817	910121	251.00	3/17/2008	61.90	189.10	190.90	197.10	200.30	-1.80	-8.00	-11.20
Craighead	14N02E15DD1	354852	905044	255.00	3/17/2008	78.00	177.00	179.50					
Craighead	14N02E18BDD1	355040.91	905419.37	242.00	4/10/2008	53.57	188.43	189.50	192.00		-1.07	-3.57	
Craighead	14N02E27AA	354918	905125	255.00	4/9/2008	82.25	172.75	175.75			-3.00		
Craighead	14N06E06BB1	355238	902948	240.00	3/12/2008	21.50	218.50						
Craighead	14N05E25ABB1	354920.85	903025.35	238.00	4/10/2008	18.58	219.42	219.20	219.60		0.22	-0.18	
Craighead	14N07E26DBB1	354833.6	901843.4	228.00	4/10/2008	2.68	225.32						
Craighead	14N06E27AAB1	354911.46	902559.08	225.93	4/10/2008	0.25	225.68	222.83					
Craighead	14N07E14DDC1	354956	901831	230.00	3/12/2008	13.10	216.90	216.00	225.10	222.50	0.90	-8.20	-5.60
Craighead	15N02E12DCB1	355628	904930	250.00	3/17/2008	36.50	213.50	215.20	218.30	220.90	-1.70	-4.80	-7.40
Craighead	15N03E19ADA1	355502.21	904802.05	262.00	4/10/2008	51.27	210.73	212.10	215.70			-4.97	
Craighead	15N03E31ADA1	355313.6	904807.3	270.00	4/10/2008	59.20	210.80			222.40			-11.60
Craighead	15N03E31AD1	355314	904807	270.00	3/17/2008	6.10	263.90						
Craighead	15N05E22BAB1	355513	903241	260.00	3/12/2008	31.80	228.20	224.80	225.00	230.00	3.40	3.20	-1.80
Craighead	15N06E04BAD1	355744	902706	239.00	3/12/2008	17.40	221.60	223.00	227.90	228.00	-1.40	-6.30	-6.40
Craighead	15N06E20DDD1	355426	902739	234.00	4/10/2008	9.37	224.63	225.20	225.65	228.02	-0.57	-1.02	-3.39
Craighead	15N07E35DCB1	355241	901831	231.00	3/12/2008	13.90	217.10	217.00	223.50	221.10	0.10	-6.40	-4.00
								Declines/Wells:			**20/32**	**24/30**	**22/24**
								Average Change:			**-0.64**	**-3.21**	**-6.61**
Crittenden	03N07E01ACC2	345348.5	901836.8	200.00	4/3/2008	14.19	185.81						
Crittenden	03N07E01DBB1	345341	901833.7	200.00	4/3/2008	12.45	187.55						
Crittenden	03N07E01DBB2	345343.2	901836.5	200.00	4/3/2008	12.23	187.77						
Crittenden	03N07E01DBC2	345338.7	901839.2	203.00	4/3/2008	16.14	186.86						
Crittenden	03N07E01DBD1	345338.7	901833.8	201.00	4/3/2008	11.21	189.79						
Crittenden	03N07E01DBD2	345338.6	901832.1	201.00	4/3/2008	9.81	191.19						
Crittenden	04N07E21AAD1	345643.8	902121.5	202.00	4/3/2008	10.10	191.90		193.35			-1.45	

Alluvial Aquifer
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County	Station ID	Latitude	Longitude	LSA	Date	08	WL	WL	WL	WL	07-08	03-08	98-08
					Measured	meas.	Alt. 08	Alt. 07	Alt. 03	Alt. 98	Change	Change	Change
Crittenden	05N07E09BCA1	350410	902138	206.00	4/7/2008	26.00	180.00	181.50			-1.50		
Crittenden	05N07E28CBA1	350121.32	902139.85	201.00	4/3/2008	17.08	183.92		182.30	186.93		1.62	-3.01
Crittenden	05N07E34BAB1	350059.39	902029.86	203.00	4/3/2008	16.27	186.73	183.30	190.50		3.43	-3.77	
Crittenden	05N07E34CDD1	350010	902028	205.00	4/7/2008	9.90	195.10	187.40	192.50	194.30	7.70	2.60	0.80
Crittenden	05N08E11CCD2	350344.8	901308.2	211.00	4/3/2008	25.27	185.73			187.12			-1.39
Crittenden	06N07E13BAB1	350849	901811	211.00	4/7/2008	23.60	187.40	188.70			-1.30		
Crittenden	07N06E24CCD1	351255.2	902452.9	213.00	4/7/2008	37.60	175.40						
Crittenden	07N06E30AAA1	351227	902923	210.00	4/8/2008	40.11	169.89	169.20			0.69		
Crittenden	07N07E31CCC1	351041.9	902358.97	207.00	4/3/2008	36.48	170.52	171.10	173.60		-0.58	-3.08	
Crittenden	07N08E04BDC1	351525	902138	211.00	3/26/2008	22.90	188.10	190.00			-1.90		
Crittenden	07N09E05CDD1	351453.34	900933.58	214.00	4/3/2008	14.83	199.17	199.80	208.50	205.47	-0.63	-9.33	-6.30
Crittenden	08N06E01DCC1	352021	902408	215.00	3/26/2008	33.10	181.90	180.80	182.00	186.00	1.10	-0.10	-4.10
Crittenden	08N07E13CCC2	351828.34	901811.95	221.00	4/3/2008	31.43	189.57	191.60	191.80		-2.03	-2.23	
Crittenden	08N07E14DAA2	351854.41	901832.68	219.00	4/3/2008	31.82	187.18	187.80		192.22	-0.62		-5.04
Crittenden	08N07E32DAA1	351618	902146	215.00	4/7/2008	31.40	183.60	184.50	186.50	188.30	-0.90	-2.90	-4.70
Crittenden	08N07E35BCB1	351630	901933	221.00	4/7/2008	32.58	188.42	190.49			-2.07		
Crittenden	08N08E06ABB1	352103	901644	223.00	3/26/2008	31.30	191.70	193.20	194.00		-1.50	-2.30	
Crittenden	09N06E30ADD1	352113.9	903007.6	214.00	3/26/2008	34.00	180.00						
Crittenden	09N07E02CDB1	352537	901905	225.00	3/26/2008	33.50	191.50	192.50	196.00	197.20	-1.00	-4.50	-5.70
Crittenden	09N07E10DDA1	352447.58	901924.64	221.00	4/3/2008	29.29	191.71	191.90	192.70		-0.19	-0.99	
Crittenden	09N07E31BAB1	352159.85	902326.57	221.00	4/3/2008	34.06	186.94	188.00	189.00	191.49	-1.06	-2.06	-4.55
Crittenden	09N08E08CCB1	352501	901608	214.00	3/26/2008	27.00	187.00	188.30			-1.30		
								Declines/Wells:			**14/18**	**11/13**	**8/9**
								Average Change:			**-0.20**	**-2.19**	**-3.78**
Cross	06N02E11DDB1	350923	905132	200.00	4/14/2008	69.50	130.50	136.00					
Cross	06N02E12AAA1	350934	904952	235.00	4/14/2008	81.00	154.00	154.50	156.00	164.00	-0.50	-2.00	-10.00
Cross	06N04E01DDB1	351028	903656	205.00	4/8/2008	37.00	168.00	169.00			-1.00		
Cross	06N05E02BAB1	351039	903202	205.00	4/7/2008	41.00	164.00	165.00			-1.00		
Cross	07N01E05BCD1	351550	910726	215.00	4/8/2008	77.50	137.50	141.00			-3.50		
Cross	07N01E05CDA1	351517.52	910049.05	217.00	4/4/2008	76.38	140.62	142.20	145.00			-4.38	
Cross	07N01E06DCD1	351532	910152	220.00	4/8/2008	75.00	145.00	146.00		159.00	-1.00		-14.00
Cross	07N01E11AAA1	351501.25	905705.29	217.00	4/2/2008	78.62	138.38	138.50	143.20		-0.12	-4.82	
Cross	07N02E02CD	351510	905113	225.00	4/8/2008	76.50	148.50	142.78			5.72		
Cross	07N02E10BBB1	351455	905205	225.00	4/8/2008	91.00	134.00	140.00			-6.00		
Cross	07N02E15ACA1	351959	904623	218.00	4/8/2008	83.00	135.00	135.50			-0.50		
Cross	07N02E28CCC1	351709	903947	210.00	4/7/2008	74.50	135.50	138.50			-3.00		

Alluvial Aquifer
98-03-07-08 WL Change

County	Station ID	Latitude	Longitude	LSA	Date	08	WL	WL	WL	WL	07-08	03-08	98-08
					Measured	meas	Alt. 08	Alt. 07	Alt. 03	Alt. 98	Change	Change	Change
Cross	07N02E29DDC1	351138.09	905409.17	220.00	4/2/2008	74.14	145.86	147.10	150.20	154.33	-1.24	-4.34	-8.47
Cross	07N03E05ADA1	351548.89	904738.6	254.00	4/2/2008	112.23	141.77	142.40	149.00	143.39	-0.63	-7.23	-1.62
Cross	07N03E32DCC1	351045.29	904810.28	251.00	4/2/2008	97.80	153.20	154.20	154.50		-1.00	-1.30	
Cross	07N04E07AAA1	351457	904234	215.00	4/8/2008	48.00	167.00	168.50			-1.50		
Cross	07N04E27ADB1	351221	903908	200.00	4/7/2008	24.50	175.50	175.00			0.50		
Cross	07N05E02AAB1	351600	903103	210.00	4/8/2008	43.00	167.00	168.50			-1.50		
Cross	07N05E09BAA1	351506	903347	210.00	4/8/2008	31.50	178.50	177.50			1.00		
Cross	07N05E19CCC1	351237.7	903644.9	207.00	4/3/2008	39.34	167.66						
Cross	07N05E25ABA1	351228.87	903044.79	205.00	4/3/2008	38.94	166.06	164.40	167.00	176.42	1.66	-0.94	-10.36
Cross	08N01E02DDC1	352045	905801	220.00	4/8/2008	89.00	131.00	135.00			-4.00		
Cross	08N01E16DBB1	351855	905933	225.00	4/8/2008	87.00	138.00	139.50	141.00	150.00	-1.50	-3.00	-12.00
Cross	08N01E17CAD1	351926	910056	220.00	4/8/2008	76.00	144.00	144.00			0.00		
Cross	08N02E12DCC1	351938	905002	230.00	4/14/2008	92.00	138.00	140.50	142.00	152.00	-2.50	-4.00	-14.00
Cross	08N02E17AAA1	351923	905354	225.00	4/8/2008	90.00	135.00	138.00	142.00	151.00	-3.00	-7.00	-16.00
Cross	08N02E29ABD1	351704	905421	225.00	4/8/2008	86.50	138.50	153.50			-15.00		
Cross	08N03E09CAC1	351959	904823	265.00	4/14/2008	115.00	150.00	151.00			-1.00		
Cross	08N05E17AAC1	351922	903448	210.00	4/8/2008	32.00	178.00	185.00			-7.00		
Cross	08N05E32ADD1	351631.65	903440.45	204.00	4/3/2008	31.47	172.53	176.10					
Cross	09N01E04CDB1	352617	905913	225.00	4/8/2008	90.00	135.00	135.00					
Cross	09N01E12BBC1	352505	905653	226.00	4/9/2008	92.28	133.72	134.73			-1.01		
Cross	09N01E33BBA2	352202.76	910000.6	225.00	4/4/2008	83.67	141.33	141.00	146.90	154.52	0.33	-5.57	-13.19
Cross	09N01E36AAB1	352155	905605	225.00	4/8/2008	91.50	133.50	138.50	141.00	152.00	-5.00	-7.50	-18.50
Cross	09N02E30CBB1	352243	905551	225.00	4/8/2008	90.00	135.00	136.00	138.00	148.00	-1.00	-3.00	-13.00
Cross	09N02E32BBB1	352148	905431	225.00	4/8/2008	100.00	125.00	129.00			-4.00		
Cross	09N03E03DCC1	352619	904529	250.00	4/14/2008	108.00	142.00	142.00			0.00		
Cross	09N03E17DDC1	352408.8	904725.6	251.00	4/4/2008	107.77	143.23	144.00	145.10	145.12	-0.77	-1.87	-1.89
Cross	09N03E17DCD1	352422	904753	245.00	4/14/2008	105.50	139.50	142.50					
Cross	09N05E10DBC1	352451	903312	210.00	4/9/2008	20.00	190.00	188.50			1.50		
Cross	09N05E32BDB1	352150.53	903512.11	210.00	4/3/2008	32.17	177.83	178.85	179.60	183.86	-1.02	-1.77	-6.03
Cross	09N09E20AAA1	352333	905414	230.00	4/8/2008	94.00	136.00	137.00			-1.00		
								Declines/Wells:			**28/36**	**15/15**	**13/13**
								Average Change:			**-1.66**	**-3.91**	**-10.70**
Desha	07S01E19ABA1	340428	910303	154.00	3/25/2008	22.50	131.50	133.00	139.80	139.00	-1.50	-8.30	-7.50
Desha	08S03W33ABD1	335802.92	912338.18	165.04	3/13/2008	6.93	158.11	157.34	157.74	159.75	0.77	0.37	-1.64
Desha	09S01W08BDA1	335608	911234	156.00	4/1/2008	30.00	126.00	126.00	130.00	135.00	0.00	-4.00	-9.00
Desha	09S01W15CBB1	335501	911055	152.00	4/1/2008	39.00	113.00	113.00	117.00		0.00	-4.00	

Alluvial Aquifer
98-03-07-08 WL Change

County	Station ID	Latitude	Longitude	LSA	Date	08	WL	WL	WL	WL	07-08	03-08	98-08
					Measured	meas.	Alt. 08	Alt. 07	Alt. 03	Alt. 98	Change	Change	Change
Desha	09S02W17CBC1	355502	911920	153.00	4/1/2008	35.00	118.00	110.00			8.00		
Desha	09S02W26DDC1	335256.57	911529.64	149.27	3/13/2008	31.68	117.59	117.88	119.07	129.04	-0.29	-1.48	-11.45
Desha	09S03W17DCB1	335448.23	912456.66	155.08	3/13/2008	33.68	121.40	120.48	121.28	127.76	0.92	0.12	-6.36
Desha	09S04W02CDA1	335823	912821	163.00	4/1/2008	36.00	127.00	121.00			6.00		
Desha	09S04W06BCA1	335756.1	913243	161.00	3/13/2008	36.43	124.57		127.40			-2.83	
Desha	10S02W11ADD1	335045	911517	146.00	4/1/2008	31.00	115.00	116.00	119.00	127.00	-1.00	-4.00	-12.00
Desha	10S02W20ADA1	334916	911825	148.00	3/12/2008	40.85	107.15						
Desha	10S02W24DBC1	334849.63	911453.44	143.00	3/12/2008	26.18	116.82	112.50	116.20	123.18	4.32	0.62	-6.36
Desha	10S03W26CAA1	334806	912144.55	155.00	3/12/2008	47.43	107.57	106.50	110.97		1.07	-3.40	
Desha	10S04W03ABB1	335208.1	912931.2	165.00	3/13/2008	36.20	128.80						
Desha	10S04W03BAB1	335208.6	912947.7	166.00	3/13/2008	36.86	129.14						
Desha	10S04W11DDA1	335031.3	912801.7	155.00	3/13/2008	33.33	121.67						
Desha	10S04W12DBB1	335101.64	912729.27	152.00	3/13/2008	31.73	120.27						
Desha	11S03W21ABB1	334416	912412	139.00	4/1/2008	36.00	103.00	105.00			-2.00		
Desha	11S03W31BBA1	334228.2	912651.1	148.00	3/12/2008	37.27	110.73						
Desha	11S02W15BAD1	334446	911635	148.00	4/1/2008	36.00	112.00	112.00	115.00	121.00	0.00	-3.00	-9.00
Desha	12S01W23DBC1	333803	911019	146.00	4/1/2008	31.00	115.00	114.00			1.00		
Desha	12S01W33BAA1	333718.1	911205.1	135.00	3/13/2008	25.21	109.79			119.72			-9.93
Desha	13S02W05CDD1	333535	911938	146.00	4/1/2008	46.00	100.00	106.00			-6.00		
Desha	13S02W27CAC1	333223.99	911734.76	133.00	3/12/2008	32.43	100.57	100.90	102.10	103.98	-0.33	-1.53	-3.41
Desha	13S02W32DBD1	333126	911917	135.00	4/1/2008	40.00	95.00	91.00	96.00	100.00	4.00	-1.00	-5.00
Desha	13S03W10DAA1	333505.64	912301.83	140.00	3/12/2008	49.17	90.83	91.50	95.10	102.26	-0.67	-4.27	-11.43
Desha	13S03W11CAB1	333503	912241	142.00	4/1/2008	52.00	90.00	90.00	95.00	103.00	0.00	-5.00	-13.00
								Declines/Wells:			**7/19**	**12/15**	**12/13**
								Average Change:			**0.75**	**-2.78**	**-8.16**
Drew	11S04W08DBA1	334531.98	913136.2	160.00	3/12/2008	26.08	133.92	132.90	135.30		1.02	-1.38	
Drew	11S04W35DC1	334144	912842	154.00	3/12/2008	29.73	124.27	125.34			-1.07		
Drew	11S05W08CCC1	334546.48	913837.16	185.00	3/12/2008	37.47	147.53	145.40	148.70	147.61	2.13	-1.17	-0.08
Drew	12S04W03ABB1	334133.92	912946.13	155.00	3/12/2008	26.02	128.98	128.80	131.00		0.18	-2.02	
Drew	12S04W25DBB1	333739	912738	149.00	3/17/2008	40.00	109.00	117.30	115.00	122.00	-8.30	-6.00	-13.00
Drew	13S04W09ACD1	333512	913034	145.00	3/17/2008	20.00	125.00	125.00	128.60	130.60	0.00	-3.60	-5.60
Drew	13S04W28CDD1	333206.5	913100.3	139.00	3/12/2008	19.92	119.08						
Drew	13S04W33BAA1	333206	913100	138.00	3/12/2008	19.32	118.68	118.80	122.30		-0.12	-3.62	
Drew	13S05W29ADA1	333248	913747	185.00	3/12/2008	46.85	138.15	139.90	138.80		-1.75	-0.65	
Drew	13S06W03DDC1	333544.69	914201.6	191.00	3/12/2008	64.89	126.11	132.00	132.30	134.26	-5.89	-6.19	-8.15

Alluvial Aquifer
98-03-07-08 WL Change

County	Station ID	Latitude	Longitude	LSA	Date	08	WL	WL	WL	WL	07-08	03-08	98-08
					Measured	meas.	Alt. 08	Alt. 07	Alt. 03	Alt. 98	Change	Change	Change
Drew	13S06W21DAA1	333324	914258	207.00	3/17/2008	76.00	131.00	120.00	122.00	135.20	11.00	9.00	-4.20
Drew	14S04W03ADD1	333050	912929	141.00	3/17/2008	33.00	108.00	112.00		120.00	-4.00		-12.00
Drew	14S04W05CBC1	333042	913226	131.00	3/17/2008	26.00	105.00	115.00	117.00		-10.00	-12.00	
								Declines/Wells:			**7/12**	**9/10**	**6/6**
								Average Change:			**-1.40**	**-2.76**	**-7.17**
Greene	16N03E03BA1	360315.87	904515.85	260.00	4/9/2008	33.17	226.83	226.50	231.05		0.33	-4.22	
Greene	16N03E05BBB1	360316	904750	257.00	4/17/2008	32.60	224.40	223.10	226.10		1.30	-3.70	
Greene	16N03E16DDD1	360049	904547	258.00	4/17/2008	28.10	229.90	228.40	231.30		1.50	-1.40	
Greene	16N03E29ACC1	355926	904722	257.00	4/17/2008	37.10	219.90	228.00	228.20	233.70	-8.10	-8.30	-13.80
Greene	16N06E03CCC1	360224.07	902625.9	258.00	4/9/2008	41.19	216.81		220.00	214.07		-3.19	2.74
Greene	16N06E09ABB1	360215	902651	261.00	4/7/2008	40.20	220.80	208.50	216.00	214.80	12.30	4.80	6.00
Greene	16N06E21BAA1	360031	902705	249.00	4/7/2008	27.60	221.40	221.80	221.20	221.40	-0.40	0.20	0.00
Greene	16N06E28ABB1	355938.31	902657.01	251.00	4/9/2008	25.73	225.27	224.60	224.35	226.86	0.67	0.92	-1.59
Greene	17N03E02DCC1	360606	904352	267.00	4/17/2008	30.80	236.20	237.20	236.30		-1.00	-0.10	
Greene	17N03E26CBB1	360422	904626	260.00	4/17/2008	37.20	222.80						
Greene	17N04E07DDA1	360712	904129	271.00	4/17/2008	38.10	232.90	230.80			2.10		
Greene	17N04E28DAA1	360431	903917	319.00	4/8/2008	87.26	231.74						
Greene	17N04E30CDC1	360409.09	904217.57	265.00	4/9/2008	39.09	225.91	227.00	229.95		-1.09	-4.04	
Greene	17N06E15ABC1	360631	902546	268.00	4/17/2008	30.90	237.10	236.70	228.10	236.20	0.40	9.00	0.90
Greene	17N07E18ABB1	360638.5	902234.7	245.00	4/9/2008	7.85	237.15		237.30			-0.15	
Greene	18N03E24ABA1	361141	904234	270.00	4/17/2008	35.10	234.90	238.30	235.80		-3.40	-0.90	
Greene	18N04E04AAC1	361356	903854	273.00	4/17/2008	31.30	241.70	240.30	240.80		1.40	0.90	
Greene	18N04E21CBD1	361052.32	903724.76	294.00	4/9/2008	58.57	235.43	233.00	240.70		2.43	-5.27	
Greene	18N06E23ACB1	361056	902357	277.00	4/17/2008	15.40	261.60	260.90	264.90		0.70	-3.30	
Greene	18N07E17BAB1	361203	902105	262.00	4/7/2008	8.60	253.40	252.90	245.60	255.80	0.50	7.80	-2.40
Greene	18N07E20BBA1	361110.37	902113.23	257.00	4/9/2008	7.23	249.77	252.50	250.75	251.08	-2.73	-0.98	-1.31
Greene	19N03E26AD1	361600.72	904258.43	281.00	4/9/2008	30.28	250.72	252.46	253.67		-1.74	-2.95	
Greene	19N03E33DDD1	361418	904516	276.00	4/17/2008	36.50	239.50	231.50	235.60		8.00	3.90	
Greene	19N05E34AAD1	361437	903102	282.00	4/17/2008	34.80	247.20	240.70	245.80		6.50	1.40	
								Declines/Wells:			**7/20**	**13/21**	**4/8**
								Average Change:			**0.98**	**-0.46**	**-1.18**
Independence	12N04W14DD1	353929.42	912236.26	231.00	4/16/2008	10.54	220.46	209.00	205.80		11.46	14.66	
Independence	12N04W34CBB1	353720.1	912512.5	231.00	4/16/2008	4.47	226.53	209.90	212.10	219.08	16.63	14.43	7.45
Independence	12N05W36AAA1	353738.04	912827.22	236.00	4/16/2008	6.41	229.59	214.10	215.00	220.62	15.49	14.59	8.97

Alluvial Aquifer
98-03-07-08 WL Change

County	Station ID	Latitude	Longitude	LSA	Date Measured	08 meas.	WL Alt. 08	WL Alt. 07	WL Alt. 03	WL Alt. 98	07-08 Change	03-08 Change	98-08 Change
Independence								**Declines/Wells:**			**0/3**	**0/3**	**0/2**
								Average Change:			**14.53**	**14.56**	**8.21**
Jackson	09N01W22ADD1	352331.57	910432.57	215.00	4/15/2008	63.04	151.96	151.70		158.35	0.26		-6.39
Jackson	09N02W32CBB1	352151.79	911347.79	220.00	4/15/2008	30.39	189.61	188.40	189.10	194.73	1.21	0.51	-5.12
Jackson	10N02W29ABB1	352828	911311	227.00	4/15/2008	28.47	198.53	197.00	198.05		1.53	0.48	
Jackson	11N01W10DA	353358	910428	231.00	3/27/2008	55.10	175.90	176.47			-0.57		
Jackson	11N01W25	353332	910321	227.00	3/27/2008	69.30	157.70						
Jackson	11N01W26AAD1	353329.77	910323.21	227.00	4/15/2008	68.29	158.71	158.40	158.40	163.68	0.31	0.31	-4.97
Jackson	11N01W29AAD1	353338.7	910635.3	225.00	4/15/2008	41.88	183.12		186.40			-3.28	
Jackson	11N02W23	353407	910926	221.00	3/27/2008	28.10	192.90						
Jackson	12N01W11	354129	910410	231.00	3/27/2008	40.70	190.30						
Jackson	12N02W25ABB2	353909.97	910852.17	234.00	4/16/2008	34.41	199.59	200.50	201.00	205.92	-0.91	-1.41	-6.33
Jackson	13N01W20AAA1	354514.14	910627.47	242.00	4/16/2008	41.59	200.41	201.40	203.30	210.92	-0.99	-2.89	-10.51
Jackson	13N03W15CDD1	354525.9	911749.46	232.00	4/16/2008	7.41	224.59	220.85			3.74		
Jackson	13N03W36	354337	911533	235.00	3/27/2008	16.30	218.70						
Jackson	14N01W08	355144	910622	252.00	3/27/2008	37.50	214.50						
Jackson	14N01W09AAA1	355220.36	910515.16	251.00	4/16/2008	43.88	207.12	209.20	211.30			-4.18	
Jackson	14N02W22	355011	911055	245.00	3/27/2008	25.20	219.80						
								Declines/Wells:			**3/8**	**4/7**	**5/5**
								Average Change:			**0.57**	**-1.49**	**-6.66**
Jefferson	03S08W24BBC1	342620.37	914953.19	202.00	3/18/2008	51.03	150.97	150.10	153.55			-2.58	
Jefferson	03S09W06DDA1	342839.9	920036.6	225.00	3/18/2008	37.02	187.98		188.00			-0.02	
Jefferson	03S09W14BCD1	342712	915712	220.00	3/31/2008	51.00	169.00	177.00		188.00	-8.00		-19.00
Jefferson	03S09W22AAA1	342639.63	915728.43	218.00	3/31/2008	43.00	175.00	176.00	178.20		-1.00	-3.20	
Jefferson	03S09W29CBD1	342516.81	920023.32	216.00	3/18/2008	27.74	188.26	188.50	190.75		-0.24	-2.49	
Jefferson	03S09W36ACC1	342428	915555	214.00	3/31/2008	29.00	185.00	184.00	167.00	185.20	1.00	18.00	-0.20
Jefferson	03S10W26BBB2	342427	920249	215.00	3/31/2008	25.00	190.00	196.50	200.60	198.90	-6.50	-10.60	-8.90
Jefferson	03S10W35BBC1	342446	920357	215.00	3/31/2008	8.50	206.50	201.30			5.20		
Jefferson	04S07W35DDB1	341836	914347	185.00	3/31/2008	28.80	156.20	153.20	159.30	161.90	3.00	-3.10	-5.70
Jefferson	04S08W13DCB1	342122.85	914926.45	204.00	3/18/2008	47.99	156.01	160.70	161.75		-4.69	-5.74	
Jefferson	04S09W02CBD1	342325	915717	212.00	3/31/2008	35.50	176.50	177.20	179.20		-0.70	-2.70	
Jefferson	04S09W32DDA1	341859	920006	212.00	3/31/2008	16.00	196.00	192.00	193.00	194.80	4.00	3.00	1.20
Jefferson	05S06W31CAA1	341329.94	914206.1	189.22	3/18/2008	18.33	170.89	169.32		177.83	1.57		-6.94
Jefferson	05S07W28CCC1	341412	914651	195.00	3/31/2008	16.10	178.90	178.50			0.40		
Jefferson	05S08W12DAA1	341712	914907	194.25	3/18/2008	16.15	178.10	177.45	177.70		0.65	0.40	

Alluvial Aquifer
98-03-07-08 WL Change

County	Station ID	Latitude	Longitude	LSA	Date	08	WL	WL	WL	WL	07-08	03-08	98-08
					Measured	meas.	Alt. 08	Alt. 07	Alt. 03	Alt. 98	Change	Change	Change
Jefferson	06S05W15BCA1	341022.95	913245	177.14	3/18/2008	18.22	158.92	157.64	157.64		1.28	1.28	
Jefferson	06S06W23AAD1	341006.74	913712.2	189.01	3/18/2008	19.02	169.99	164.51	170.41	173.36	5.48	-0.42	-3.37
Jefferson	06S07W14BAA1	341124.96	914425	199.00	3/18/2008	15.25	183.75	181.20	183.40		2.55	0.35	
Jefferson	07S08W06BAA1	340858.53	915647.26	202.31	3/18/2008	19.07	183.24	182.61	184.01	186.01	0.63	-0.77	-2.77
								Declines/Wells:			**6/17**	**10/15**	**7/8**
								Average Change:			**0.27**	**-0.57**	**-5.71**
Lawrence	15N01E09ABD1	355714	905900	259.00	3/27/2008	55.25	203.75						
Lawrence	15N01E26DDA1	355412	905651	251.00	4/10/2008	54.07	196.93	198.70	202.85		-1.77	-5.92	
Lawrence	15N01E32BAA1	355352	910027	254.00	3/27/2008	53.09	200.91						
Lawrence	15N01W35CBB1	355336.15	910356.33	250.00	4/10/2008	46.68	203.32	193.90	206.75		9.42	-3.43	
Lawrence	16N01E11DAC2	360203.04	905639.37	262.00	4/10/2008	48.69	213.31	209.50	217.20		3.81	-3.89	
Lawrence	16N01W30DDC1	355936.93	910723.26	255.00	3/24/2008	13.00	242.00	238.90	232.00	237.91	3.10	10.00	4.09
Lawrence	16N02E34CBB1	355831	905206	255.00	3/24/2008	50.00	205.00	207.30	215.00	217.00	-2.30	-10.00	-12.00
Lawrence	17N01E02BBA1	360901	905707	260.00	3/24/2008	16.20	243.80	245.00	246.80	252.00	-1.20	-3.00	-8.20
Lawrence	17N02E04DCA1	360758	905224	270.00	3/24/2008	44.20	225.80	227.70	232.00	238.70	-1.90	-6.20	-12.90
Lawrence	17N02E19CDC1	360515.9	905449.4	265.00	4/10/2008	41.07	223.93		226.60	231.63		-2.67	-7.70
								Declines/Wells:			**4/7**	**7/8**	**4/5**
								Average Change:			**1.31**	**-3.14**	**-7.34**
Lee	01N01E09CCC1	344215	910054	182.00	4/15/2008	35.50	146.50	146.50	153.00	162.50	0.00	-6.50	-16.00
Lee	01N01E21CCC1	344030	910055	209.00	4/15/2008	56.00	153.00	155.00			-2.00		
Lee	01N01E24CBD1	344033	905729	185.00	4/15/2008	16.70	168.30	164.00	170.70	175.90	4.30	-2.40	-7.60
Lee	01N02E01ADD1	344330	905016	207.00	4/15/2008	31.00	176.00	178.00	183.00	173.50	-2.00	-7.00	2.50
Lee	01N02E11BAB1	344255	905208	202.00	4/15/2008	33.00	169.00	169.00	178.50		0.00	-9.50	
Lee	01N02E12ABB1	344254	905040	206.00	4/15/2008	34.00	172.00	171.00	179.00	172.00	1.00	-7.00	0.00
Lee	01N02E22CBA1	344056	905318	200.00	4/15/2008	29.50	170.50	170.50	175.50	180.50	0.00	-5.00	-10.00
Lee	01N02E33CBB1	343858	905434	186.00	4/15/2008	11.00	175.00	169.00	173.50	177.30	6.00	1.50	-2.30
Lee	01N02E33CCB1	343851	905433	185.00	4/15/2008	9.00	176.00	171.00	173.50	176.40	5.00	2.50	-0.40
Lee	01N03E02BBC1	344339.29	904601.14	236.43	4/1/2008	53.68	182.75	183.73	188.93	195.85	-0.98	-6.18	-13.10
Lee	01N03E35BBA1	343923	904549	202.00	4/1/2008	13.85	188.15	187.95		197.56	0.20		-9.41
Lee	02N01W12BAA1	344828.3	910329	185.00	4/1/2008	45.65	139.35						
Lee	02N01E21BAA1	344633	910005	185.00	4/15/2008	38.30	146.70	150.50	152.70	161.70	-3.80	-6.00	-15.00
Lee	02N02E08ADC1	344807.34	905338.75	201.00	4/1/2008	45.92	155.08	156.70	160.65		-1.62	-5.57	
Lee	02N02E21ABC1	344621.6	905358.2	200.00	4/1/2008	41.25	158.75		161.70			-2.95	
Lee	02N02E22BBB1	344628	905327	200.00	4/15/2008	34.00	166.00	165.00	165.00	173.60	1.00	1.00	-7.60

Alluvial Aquifer
96-03-07-08 WL Change

County	Station ID	Latitude	Longitude	LSA	Date Measured	08 meas	WL Alt. 08	WL Alt. 07	WL Alt. 03	WL Alt. 98	07-08 Change	03-08 Change	98-08 Change
Lee	02N03E08AAD1	344810	904837	211.00	4/1/2008	45.73	165.27	166.00	167.25		-0.73	-1.98	
Lee	02N03E09DDD1	344723	904707	220.00	4/15/2008	47.00	173.00	168.00	171.00	179.70	5.00	2.00	-6.70
Lee	02N03E29CAD1	344500	904846	215.00	4/15/2008	43.00	172.00	173.00	176.50	171.00	-1.00	-4.50	1.00
Lee	02N04E03ABD1	344855	903954	192.00	4/15/2008	26.00	166.00	166.00	170.00	170.00	0.00	-4.00	-4.00
Lee	02N04E15DAC1	344636.73	903950.39	192.00	4/1/2008	20.67	171.33	171.00	174.00		0.33	-2.67	
Lee	03N01E15CC1	345206	905947	205.00	4/1/2008	63.96	141.04						
Lee	03N01E16CBA1	345222.1	910039.9	202.00	4/1/2008	65.14	136.86						
Lee	03N02E12CDC1	345239	905053	210.00	4/15/2008	43.00	167.00	163.00	165.00	170.80	4.00	2.00	-3.80
Lee	03N02E13BBA1	345237.4	905107.32	212.00	4/1/2008	51.87	160.13	163.00	163.35		-2.87	-3.22	
Lee	03N02E29DAD1	345013.62	905429.78	205.00	4/1/2008	44.64	160.36	159.90	162.25		0.46	-1.89	
Lee	03N03E05CDD1	345327	904837	204.00	4/15/2008	49.00	155.00	152.00	161.00	156.00	3.00	-6.00	-1.00
Lee	03N03E32CAB1	344932.65	904926.23	204.00	4/1/2008	51.22	152.78	154.80	155.70		-2.02	-2.92	
Lee	03N04E07CBB1	345245	904312	200.00	4/15/2008	30.00	170.00	167.00	171.00	175.50	3.00	-1.00	-5.50
Lee	03N05E14DDA1	345148.08	903203.25	193.00	4/1/2008	15.79	177.21	178.70	180.35		-1.49	-3.14	
								Declines/Wells:			**10/26**	**20/25**	**14/17**
								Average Change:			**0.57**	**-3.22**	**-5.82**
Lincoln	07S06W03CCA2	340828	914114	190.00	3/12/2008	18.00	172.00	168.00	171.00	175.00	4.00	1.00	-3.00
Lincoln	07S07W36CBD1	340411	914529	183.00	3/12/2008	41.00	142.00	145.00	146.00	158.00	-3.00	-4.00	-16.00
Lincoln	08S04W06ABD1	340341	913116	171.00	3/12/2008	16.00	155.00	156.00	157.00	160.00	-1.00	-2.00	-5.00
Lincoln	08S04W08BBB2	340253.9	913100.8	171.00	3/13/2008	23.23	147.77		151.55			-3.78	
Lincoln	08S04W31CBA1	335901.09	913149.69	161.90	3/13/2008	35.11	126.79	127.90	129.60	137.42	-1.11	-2.81	-10.63
Lincoln	08S05W12DBA1	340229	913222	171.00	3/12/2008	24.00	147.00	147.00			0.00		
Lincoln	08S05W21DCD1	340027	913533	169.00	3/12/2008	30.00	139.00	133.00	135.00		6.00	4.00	
Lincoln	08S05W29ABC1	340021	913044	176.00	3/12/2008	45.00	131.00	136.00	142.00	140.00	-5.00	-11.00	-9.00
Lincoln	08S05W32DCC1	335840	913644	172.00	3/12/2008	47.00	125.00	127.00	127.00	137.00	-2.00	-2.00	-12.00
Lincoln	08S06W02ACB1	340338.84	913957.73	181.03	3/13/2008	43.49	137.54	137.43	139.38	147.45	0.11	-1.84	-9.91
Lincoln	08S07W05DDD1	340301	914903	190.00	3/14/2008	30.23	159.77	159.60	160.00		0.17	-0.23	
Lincoln	09S04W06CBB1	335721	913252	163.00	3/12/2008	39.00	124.00	121.00	123.00	136.00	3.00	1.00	-12.00
Lincoln	09S05W17BCB1	335551.59	913819.95	171.00	3/13/2008	43.17	127.83	132.90			-5.07		
Lincoln	09S06W04BCD1	335821.38	914345.83	181.00	3/13/2008	42.58	138.42	138.60	140.90		-0.18	-2.48	
Lincoln	09S06W04BDD1	335759	914335	178.00	3/12/2008	46.00	132.00	142.00	140.00	151.00	-10.00	-8.00	-19.00
Lincoln	09S06W23CDB1	335439.57	914136.37	175.00	3/13/2008	30.92	144.08	144.90	143.10		-0.82	0.98	
Lincoln	09S06W24DAA1	335452	913954	177.00	3/12/2008	40.00	137.00	147.00			-10.00		
Lincoln	10S05W06DCC1	335155.3	913907.96	175.00	3/13/2008	32.37	142.63	146.90		150.86	-4.27		-8.23
								Declines/Wells:			**11/17**	**10/14**	**10/10**
								Average Change:			**-1.72**	**-2.23**	**-10.48**

Alluvial Aquifer
98-03-07-08 WL Change

County	Station ID	Latitude	Longitude	LSA	Date	08	WL	WL	WL	WL	07-08	03-08	98-08
					Measured	meas.	Alt. 08	Alt. 07	Alt. 03	Alt. 98	Change	Change	Change
Lonoke	01N08W03DDA1	344411	915050	229.00	4/15/2008	137.00	92.00	93.80	98.30	109.80	-1.80	-6.30	-17.80
Lonoke	01N09W13DAB1	344235.17	915517.01	226.00	3/19/2008	88.43	137.57	138.00	138.80		-0.43	-1.23	
Lonoke	01N09W07DAA1	344330	900028	240.00	4/15/2008	51.00	189.00	191.00	189.80		-2.00	-0.80	
Lonoke	01N09W25BAA1	344120	915537	228.00	4/15/2008	88.00	140.00			148.70			-8.70
Lonoke	01N10W15CDA1	344236	920414	240.00	4/15/2008	31.00	209.00	213.00	213.00	219.70	-4.00	-4.00	-10.70
Lonoke	01S06W31ABB1	343459.39	914131.48	200.00	3/19/2008	79.32	120.68	120.50	122.30		0.18	-1.62	
Lonoke	01S06W32BBB1	343501	914056	201.00	4/15/2008	78.50	122.50	123.00	125.00	129.10	-0.50	-2.50	-6.60
Lonoke	01S07W12ABA1	343834.3	914229.8	207.00	3/19/2008	71.77	135.23		139.98			-4.75	
Lonoke	01S08W24CDD1	343605.64	914912.37	210.00	3/19/2008	83.34	126.66	127.35	130.35		-0.69	-3.69	
Lonoke	01S09W36CCC1	343435.31	915618.98	220.00	3/18/2008	61.91	158.09	156.10	159.00	165.00	1.99	-0.91	-6.91
Lonoke	01S10W01ACB1	343926.84	920214.96	236.00	3/18/2008	44.63	191.37	189.40	189.97		1.97	1.40	
Lonoke	02N07W07DAA1	344845	914707	232.00	4/15/2008	134.00	98.00	100.00	105.00	113.50	-2.00	-7.00	-15.50
Lonoke	02N07W16BAB1	344815.2	914539.5	240.00	3/19/2008	135.79	104.21	99.80	104.40		4.41	-0.19	
Lonoke	02N06W16ABC1	344806.48	915113.61	230.00	3/19/2008	124.87	105.13	106.70	110.55	119.44	-1.57	-5.42	-14.31
Lonoke	02N08W23DDB1	344646.6	914958.6	229.00	4/15/2008	129.00	100.00						
Lonoke	02N09W02BDB1	344955.06	915840.93	251.00	3/19/2008	126.74	124.26	127.70			-3.44		
Lonoke	02N10W15ACC1	344807	920352	241.00	4/15/2008	32.00	209.00	208.50	206.50	210.90	0.50	2.50	-1.90
Lonoke	02S07W05CDC1	343326	914715	205.00	4/15/2008	70.00	135.00	134.80	136.70		0.20	-1.70	
Lonoke	02S07W10CCB1	343246.5	914524.7	201.00	3/19/2008	63.34	137.66		139.55			-1.89	
Lonoke	02S08W13BBB1	343231.9	914935.4	200.00	3/19/2008	57.67	142.33						
Lonoke	02S08W34DBB1	343003	915149.8	214.00	3/19/2008	63.76	150.24						
Lonoke	02S09W22AAA1	343153	915727	228.00	4/15/2008	63.00	165.00			173.00			-8.00
Lonoke	02S09W30CDD1	343014.34	920116.01	226.00	3/18/2008	38.88	187.12	187.80	189.10	189.52	-0.68	-1.98	-2.40
Lonoke	02S09W35ABB1	343008	915652	217.00	4/15/2008	53.00	164.00	165.00	162.40		-1.00	1.60	
Lonoke	03N07W08BDB1	345406.6	914638.3	250.00	2/7/2008	98.31	151.69						
Lonoke	03N07W15DBC2	345252.79	914416.62	227.00	3/19/2008	83.53	143.47	144.00	147.45	149.64	-0.53	-3.98	-6.17
Lonoke	03N07W29ADA1	345128.53	914558.4	234.00	2/7/2008	92.27	141.73	138.00	137.00		3.73	4.73	
Lonoke	03N07W29CCD1	345055.7	914650.6	232.00	4/15/2008	98.00	134.00						
Lonoke	03N07W35CDC2	344957.16	914332.11	232.00	3/19/2008	117.23	114.77	115.30	117.60		-0.53	-2.83	
Lonoke	03N08W03BAA1	345518.5	915053.5	260.00	2/7/2008	95.69	164.31	163.54	169.83		0.77	-5.52	
Lonoke	03N06W03CCC1	355429.9	915123.2	260.00	2/7/2008	105.10	154.90	156.39	163.62		-1.49	-8.72	
Lonoke	03N06W05CCC1	345429.4	915323.5	257.00	2/7/2008	81.03	175.97	176.18	178.65		-0.21	-2.68	
Lonoke	03N08W08ABA1	345427	915247.9	258.00	2/7/2008	95.71	162.29	162.78	166.51		-0.49	-4.22	
Lonoke	03N08W10ACB1	345414.7	915052.7	250.00	2/7/2008	92.62	157.38	158.88	164.41		-1.50	-7.03	
Lonoke	03N08W10ADD1	345401.1	915022.8	250.00	2/7/2008	95.05	154.95	156.80	162.24		-1.85	-7.29	
Lonoke	03N08W11ABD1	345419.1	914935.9	260.00	2/7/2008	106.11	153.89	155.61	160.57		-1.72	-6.68	
Lonoke	03N08W11ACA1	345412.7	914934.3	256.00	2/7/2008	104.23	151.77	153.64	158.31		-1.87	-6.54	
Lonoke	03N08W21BCC1	345220.2	915220.2	247.00	3/19/2008	82.79	164.21			190.47			-26.26

Alluvial Aquifer
98-03-07-08 WL Change

County	Station ID	Latitude	Longitude	LSA	Date	08	WL	WL	WL	WL	07-08	03-08	98-08
					Measured	meas.	Alt. 08	Alt. 07	Alt. 03	Alt. 98	Change	Change	Change
Lonoke	03N08W26CDC1	345100	915007	235.00	4/15/2008	111.00	124.00			136.10			-12.10
Lonoke	03N08W29BBB1	345147.1	915332.8	249.00	2/7/2008	113.34	135.66	136.16	138.77		-0.50	-3.11	
Lonoke	03N08W29BBC1	345125	915333.4	250.00	2/7/2008	133.08	116.92	111.87	122.58		5.05	-5.66	
Lonoke	03N08W32ABB1	345057	915256	250.00	2/7/2008	120.61	129.39	130.40			-1.01		
Lonoke	03N08W32ABB2	345057	915258	250.00	3/19/2008	119.68	130.32	130.15	119.05		0.17	11.27	
Lonoke	03N08W32ABB3	345058.68	915255.43	250.00	3/19/2008	62.18	187.82	191.90	197.90		-4.08	-10.08	
Lonoke	03N08W34ADD1	345034.9	915028.3	240.00	2/7/2008	121.67	118.33		120.90			-2.57	
Lonoke	04N08W05ACA1	350020.5	915246.5	238.00	2/8/2008	46.96	191.04	191.00	191.32		0.04	-0.28	
Lonoke	04N08W10BDD1	345917.1	915055.5	218.00	2/8/2008	30.47	187.53	191.83	193.41		-4.30	-5.88	
Lonoke	04N08W15BCB2	345832.92	915121.25	225.00	3/19/2008	29.20	195.80	190.40	192.20	195.32	5.40	3.60	0.48
Lonoke	04N08W16DCC1	345757.3	915154	225.00	2/7/2008	47.88	177.12	177.53	180.38		-0.41	-3.26	
Lonoke	04N08W19BBB1	345753.4	915431.8	300.00	2/8/2008	13.25	286.75	296.75	278.14		-10.00	8.61	
Lonoke	04N08W26AAD1	345652.2	914916.8	246.00	2/8/2008	71.18	174.82	175.53	178.39		-0.71	-3.57	
Lonoke	04N08W28CAC1	345620.3	915215.8	235.00	2/7/2008	55.90	179.10	179.61	182.60		-0.51	-3.50	
Lonoke	04N08W28CAD1	345626.1	915204	249.00	2/7/2008	71.23	177.77	178.24	181.47		-0.47	-3.70	
Lonoke	04N08W28CCC1	345614.6	915225.3	240.00	2/7/2008	61.43	178.57	179.20	181.88		-0.63	-3.31	
Lonoke	04N08W31CBB2	345547.4	915439.1	283.00	2/8/2008	32.11	250.89	250.93	251.47		-0.04	-0.58	
Lonoke	04N08W33ABD1	345558.6	915141.3	258.00	5/1/2008	85.22	172.78						
Lonoke	04N08W33ABD2	345557.8	915140.8	258.00	5/1/2008	86.73	171.27						
Lonoke	04N08W33ACD1	345546.9	915140.9	256.00	5/1/2008	79.16	176.84						
Lonoke	04N08W33ADB1	345552.6	915125	257.00	5/1/2008	94.55	162.45						
Lonoke	04N08W33ADD1	345547	915124.7	265.00	5/1/2008	97.00	168.00						
Lonoke	04N08W33ADD2	345546.4	915125.4	266.00	5/1/2008	96.67	169.33						
Lonoke	04N08W36DBB1	345540	914914.4	259.00	5/1/2008	93.08	165.92	166.65	170.74		-0.73	-4.82	
								Declines/Wells:			**32/44**	**38/45**	**13/14**
								Average Change:			**-0.62**	**-2.58**	**-9.78**
Mississippi	10N08E21ABA1	352852	901415	224.00	4/17/2008	25.50	198.50	195.00	198.30	204.00	3.50	0.20	-5.50
Mississippi	10N08E21BDC1	352830	901407	224.00	4/17/2008	25.00	199.00	196.00	198.40	202.92	3.00	0.60	-3.92
Mississippi	10N08E22ABA2	352850.89	901312.16	224.00	4/7/2008	25.53	198.47	199.80			-1.33		
Mississippi	10N09E08ACC1	352949.05	900925.66	230.00	4/7/2008	17.78	212.22	213.10	215.90		-0.88	-3.68	
Mississippi	11N09E34BBB1	353217.73	900715.17	235.00	4/7/2008	19.12	215.88	217.00	219.00	223.47	-1.12	-3.12	-7.59
Mississippi	11N10E09BCB1	353530	900202	236.00	4/17/2008	16.00	220.00	217.00	224.40		3.00	-4.40	
Mississippi	12N08E08BCB1	354047.06	901559.25	225.00	4/7/2008	6.26	218.74	216.40	218.90	217.18	2.34	-0.16	1.56
Mississippi	12N08E28DDB1	353707	901406	225.00	4/17/2008	15.50	209.50	204.50	211.30		5.00	-1.80	
Mississippi	12N09E12ABC1	354054	900449	232.00	4/25/2008	9.00	223.00	219.00	223.70		4.00	-0.70	
Mississippi	12N10E04CAA1	354124	900136	235.00	4/17/2008	8.00	227.00	224.00	224.00		3.00	3.00	

Alluvial Aquifer
98-03-07-08 WL Change

County	Station ID	Latitude	Longitude	LSA	Date	08	WL	WL	WL	WL	07-08	03-08	98-08
					Measured	meas.	Alt. 08	Alt. 07	Alt. 03	Alt. 98	Change	Change	Change
Mississippi	12N10E07BCD1	354036	900404	234.00	4/17/2008	17.00	217.00	213.00	221.00		4.00	-4.00	
Mississippi	12N10E21DBA1	353842	900122	236.00	4/17/2008	16.50	219.50	216.00	224.30		3.50	-4.80	
Mississippi	13N08E24ABB1	354428	901112	230.00	4/17/2008	7.50	222.50	221.50	222.40		1.00	0.10	
Mississippi	13N09E30CCD1	354247.81	901028.63	230.00	4/7/2008	7.08	222.92	219.80	221.30	220.92	3.12	1.62	2.00
Mississippi	13N10E34DBB1	354218	900024	235.00	4/7/2008	10.80	224.20	226.30	229.50		-2.10	-5.30	
Mississippi	14N08E12DAB1	355104.17	901051.94	235.00	4/7/2008	2.75	232.25	228.60	231.80	229.84	3.65	0.45	2.41
Mississippi	14N08E20DAA1	354921	901458	225.00	4/25/2008	2.50	222.50	220.00	220.40		2.50	2.10	
Mississippi	14N08E26DCC1	354803	901235	230.00	4/25/2008	3.50	226.50	226.50	224.00		0.00	2.50	
Mississippi	14N10E18ABC1	355022.36	900345.36	236.00	4/7/2008	8.11	227.89	223.70	226.90	224.97	4.19	0.99	2.92
Mississippi	14N11E03BCB1	355158.11	895432.97	247.00	4/7/2008	3.52	243.48	241.50	245.40		1.98	-1.92	
Mississippi	14N11E17CCB1	354955	895639	240.00	4/25/2008	3.00	237.00	235.00	231.00		2.00	6.00	
Mississippi	14N11E33CAA1	354727	895508	240.00	3/25/2008	10.00	230.00	227.50	230.00		2.50	0.00	
Mississippi	15N08E08DBC2	355604.96	901526.26	238.00	4/7/2008	10.53	225.47	225.50	228.10	226.93	-0.03	-2.63	-1.46
Mississippi	15N10E21ABC1	355447	900135	240.00	3/25/2008	7.50	232.50	230.00	229.40		2.50	3.10	
Mississippi	15N12E01BCD1	355704	894601	258.00	3/25/2008	9.00	249.00	250.00	241.50		-1.00	7.50	
Mississippi	16N10E28BBD1	355906.13	900156.03	238.00	4/7/2008	5.33	232.67	228.00	232.60	229.08	4.67	0.07	3.59
Mississippi	16N11E23ADA1	355947.24	895231.23	255.00	4/7/2008	9.20	245.80	242.00			3.80		
								Declines/Wells:			6/27	11/25	4/9
								Average Change:			2.10	-0.17	-0.67
Monroe	01N01W21CDC2	344037.18	910706.66	181.00	3/8/2008	39.68	141.32	142.13			-0.81		
Monroe	01N02W12CBC1	344242.3	911031.9	182.00	3/27/2008	40.90	141.10	141.82	144.92		-0.72	-3.82	
Monroe	01N03W23BAC1	344124	911743	170.00	3/20/2008	14.30	155.70	155.00	158.00	157.10	0.70	-2.30	-1.40
Monroe	01N03W24BBB1	344135.21	911650.59	185.00	3/27/2008	28.23	156.77	156.10	155.40	161.49	0.67	1.37	-4.72
Monroe	01N04W33BBB2	343959.52	912648.52	218.00	3/27/2008	97.56	120.44	113.80	115.60	127.63	6.64	4.84	-7.19
Monroe	01S01W13CDD1	343610.94	910340.54	178.00	3/27/2008	22.52	155.48	155.75	156.75	165.93	-0.27	-1.27	-10.45
Monroe	01S01W16DB	343615	910632	175.00	3/27/2008	20.00	155.00	156.00	158.00	160.00	-1.00	-3.00	-5.00
Monroe	01S01W18DCD1	343617.76	910849.2	178.00	3/27/2008	24.52	153.48	154.10	155.05		-0.62	-1.57	
Monroe	01S02W20BBB1	343612.7	911456.1	170.00	3/27/2008	12.22	157.78	158.40	160.00	158.70	-0.62	-2.22	-0.92
Monroe	01S03W20BBA1	343538.3	912117.7	210.00	3/27/2008	75.03	134.97		130.00	139.50		4.97	-4.53
Monroe	01S03W20CCD1	343626	912121	210.00	3/20/2008	85.00	125.00	131.00			-6.00		
Monroe	01S04W01BAB1	343905.88	912316.73	210.00	3/27/2008	76.88	133.12	132.30	133.95	138.27	0.82	-0.83	-5.15
Monroe	02N01W19ADD1	344624	910814	188.00	3/27/2008	54.00	134.00	135.50	138.00	139.90	-1.50	-4.00	-5.90
Monroe	02N01W19BBA1	344645.21	910912.46	191.00	3/27/2008	54.78	136.22	137.70			-1.48		
Monroe	02N03W35BCA1	344455	911745	188.00	3/20/2008	35.00	153.00	158.00	160.00	158.10	-5.00	-7.00	-5.10
Monroe	02S01W01BCD1	343305	910408	176.00	3/27/2008	22.00	154.00	157.00	157.00	153.00	-3.00	-3.00	1.00
Monroe	02S01W01BCA1	343321.6	911031.2	171.00	3/27/2008	13.36	157.64						

Alluvial Aquifer
98-03-07-08 WL Change

County	Station ID	Latitude	Longitude	LSA	Date	08	WL	WL	WL	WL	07-08	03-08	98-08
					Measured	meas.	Alt. 08	Alt. 07	Alt. 03	Alt. 98	Change	Change	Change
Monroe	02S02W11DAC1	343208.97	911100.58	164.00	3/27/2008	11.04	152.96	154.50	155.10		-1.54	-2.14	
Monroe	03N01W20ABA1	345201.18	910722.83	189.00	3/27/2008	48.61	140.39	140.90	142.20	149.21	-0.51	-1.81	-8.82
Monroe	03N02W31ADC1	344958.3	911447.2	190.00	3/27/2008	39.15	150.85		152.10			-1.25	
Monroe	03N03W36AAA1	345026.65	911547.12	176.00	3/27/2008	23.06	152.94	156.10	156.85	159.12	-3.16	-3.91	-6.18
Monroe	04N02W01BCC1	345929	911004	175.00	3/20/2008	39.00	136.00	136.00	138.00	140.00	0.00	-2.00	-4.00
Monroe	04N02W05BBB1	345957	911311	188.00	3/20/2008	16.00	172.00	173.00	174.00	173.00	-1.00	-2.00	-1.00
Monroe	04N02W27CDD3	345540.22	911149.73	200.00	3/27/2008	45.68	154.32	153.75	154.40	158.67	0.57	-0.08	-4.35
Monroe	04N02W28DDD3	345535.05	911220.68	192.00	3/27/2008	32.81	159.19	158.40	159.25	164.63	0.79	-0.06	-5.44
Monroe	04N02W30BBB1	345627.9	911524.7	185.16	3/27/2008	13.80	171.36		170.96	170.91		0.40	0.45
								Declines/Wells:			**15/22**	**18/22**	**16/18**
								Average Change:			**-0.77**	**-1.39**	**-4.37**
Phillips	01S01E20DDB1	343529	910058	185.00	4/14/2008	27.00	158.00	158.00	160.00	168.00	0.00	-2.00	-10.00
Phillips	01S02E09BDC1	343725	910047	185.00	3/24/2008	12.80	172.20	169.00			3.20		
Phillips	01S02E09CBB1	343718.73	905434.06	185.00	4/1/2008	15.44	169.56	169.90	174.10	174.00	-0.34	-4.54	-4.44
Phillips	01S03E02ADD1	343814	904511	200.00	3/24/2008	17.00	183.00	181.50	186.40	185.00	1.50	-3.40	-2.00
Phillips	01S03E10ABB1	343741	904634	205.00	3/24/2008	19.00	186.00	184.50	191.20	190.00	1.50	-5.20	-4.00
Phillips	01S04E05DCD1	343802	904151	230.00	4/1/2008	50.23	179.77	180.00	185.33	187.00	-0.23	-5.56	-7.23
Phillips	02S01E28CCB1	342916.37	910058.18	174.00	3/31/2008	18.63	155.37	155.20	157.10	160.04	0.17	-1.73	-4.67
Phillips	02S02E29DDD1	342901	905444	180.00	4/14/2008	24.00	156.00	151.50	156.40	157.00	4.50	-0.40	-1.00
Phillips	02S02E33ACC1	342824	905412	177.00	4/14/2008	24.00	153.00	150.50	154.00	155.00	2.50	-1.00	-2.00
Phillips	02S03E15ADC1	343110	904621.5	174.00	5/12/2008	8.59	165.41						
Phillips	02S03E34BCD1	342828	904653	165.00	3/25/2008	20.40	144.60	145.00	147.00	149.00	-0.40	-2.40	-4.40
Phillips	02S04E27AAC1	342931.57	904001.09	179.00	3/31/2008	9.74	169.26	168.80	172.50	170.00	0.46	-3.24	-0.74
Phillips	03S02E35DDA1	342256.24	905129.93	163.00	3/31/2008	22.44	140.56	142.50	142.30		-1.94	-1.74	
Phillips	03S03E04DAA1	342735	904710	171.00	3/31/2008	20.37	150.63	150.75	152.20		-0.12	-1.57	
Phillips	03S04E02CAA1	342732	903918	176.00	3/31/2008	17.48	158.52	159.45	165.55	161.00	-0.93	-7.03	-2.48
Phillips	04S01E01AAD1	342238	905700	156.00	3/25/2008	18.00	138.00	137.00	137.20	144.00	1.00	0.80	-6.00
Phillips	04S01E14CDD1	342014	905837	155.00	3/25/2008	16.00	139.00	140.00	144.10	143.00	-1.00	-5.10	-4.00
Phillips	04S01E23CCA1	341931.3	905852.62	156.00	3/31/2008	14.14	141.86	141.30	145.60		0.56	-3.74	
Phillips	04S01E29CBC1	341844	910148	150.00	3/25/2008	7.00	143.00		141.50	141.00		1.50	2.00
Phillips	04S02E01DBB1	342220	905053	163.00	3/25/2008	16.00	147.00	148.00	153.20	154.00	-1.00	-6.20	-7.00
Phillips	05S02E18BDA1	341534.8	905627.8	156.00	3/31/2008	23.53	132.47		140.10	141.32		-7.63	-8.85
								Declines/Wells:			**8/18**	**17/19**	**15/16**
								Average Change:			**0.52**	**-3.17**	**-4.18**

Alluvial Aquifer
98-03-07-08 WL Change

County	Station ID	Latitude	Longitude	LSA	Date	08	WL	WL	WL	WL	07-08	03-08	98-08
					Measured	meas.	Alt. 08	Alt. 07	Alt. 03	Alt. 98	Change	Change	Change
Poinsett	10N01E02AAA	353205	905654	235.00	4/7/2008	101.00	134.00	136.50	138.00	148.00	-2.50	-4.00	-14.00
Poinsett	10N01E14CC1	352909.77	905813.38	231.00	4/8/2008	94.91	136.09	137.50	141.80			-5.71	
Poinsett	10N01E16CCB1	352921.87	910005.35	225.00	4/8/2008	77.67	147.33	149.80	153.05		-2.47	-5.72	
Poinsett	10N01E32CBB1	352857	910053	222.00	3/26/2008	76.50	145.50	146.00	151.00	177.00	-0.50	-5.50	-31.50
Poinsett	10N01E33ACB1	352746	905931	220.00	3/26/2008	81.00	139.00	140.50	146.00	153.00	-1.50	-7.00	-14.00
Poinsett	10N02E13BCC1	352948.52	905026.29	237.00	4/8/2008	105.24	131.76	132.90	136.70	137.84	-1.14	-4.94	-6.08
Poinsett	10N02E15CAA1	352939	905026	237.00	3/26/2008	108.00	129.00	132.00			-3.00		
Poinsett	10N03E13BCB1	353001	904352	270.00	3/26/2008	140.00	130.00	140.00			-10.00		
Poinsett	10N03E14DAB1	352947.21	904404.93	263.00	4/8/2008	119.60	143.40	144.00	146.30		-0.60	-2.90	
Poinsett	10N03E19BCB1	352906	904021	239.00	3/26/2008	101.00	138.00	139.00			-1.00		
Poinsett	10N03E20BBA1	352405	904810	235.00	3/26/2008	106.00	129.00	131.00			-2.00		
Poinsett	10N03E26BBD1	352817	904449	257.00	4/7/2008	115.00	142.00	142.00			0.00		
Poinsett	10N03E35CDD1	352656.2	904436	275.00	4/8/2008	125.48	149.52						
Poinsett	10N04E35BBA1	352745	903831	212.00	3/24/2008	19.50	192.50	194.00		194.00	-1.50		-1.50
Poinsett	10N05E15BDD1	352937.3	903252.6	207.00	4/8/2008	12.71	194.29			194.34			-0.05
Poinsett	10N07E22AAC1	352847	901935	215.00	4/8/2008	28.86	186.14						
Poinsett	10N07E28CBB1	352743	902128	217.00	3/24/2008	31.00	186.00	187.00			-1.00		
Poinsett	11N01E17DDD1	353436.83	910013.21	230.00	4/8/2008	80.89	149.11	150.70	155.30	160.00	-1.59	-6.19	-10.89
Poinsett	11N01E26AA1	353340.33	905653.32	236.00	4/8/2008	96.63	139.37	141.60			-2.23		
Poinsett	11N01E34AAA	353256	905759	229.00	4/7/2008	90.50	138.50	140.00	142.00	151.00	-1.50	-3.50	-12.50
Poinsett	11N02E26AAB1	353350.31	905034.19	241.00	4/8/2008	110.11	130.89	126.60	136.10	141.14	4.29	-5.21	-10.25
Poinsett	11N02E30BBB1	353352	905540	239.00	4/7/2008	105.00	134.00	136.00	137.00	146.00	-2.00	-3.00	-12.00
Poinsett	11N02E34CBA1	353238	905222	240.00	4/7/2008	110.00	130.00	129.00	147.00	149.00	1.00	-17.00	-19.00
Poinsett	11N03E10DDA1	353545.69	904456.54	243.00	4/8/2008	106.11	136.89	137.65	140.25		-0.76	-3.36	
Poinsett	11N03E17AAA1	353534	904713	243.00	4/7/2008	107.00	136.00	136.00			0.00		
Poinsett	11N03E18BAB1	353537.8	904852.4	243.00	4/8/2008	106.53	136.47						
Poinsett	11N04E13DDA1	353447	903631	210.00	3/26/2008	18.00	192.00	194.00			-2.00		
Poinsett	11N04E36ABA1	353251	903654	211.00	3/24/2008	16.50	194.50	193.00	194.00	195.00	1.50	0.50	-0.50
Poinsett	11N05E26BDB1	353318	903155	213.00	3/24/2008	11.00	202.00	203.00			-1.00		
Poinsett	11N07E18CAB1	353435	902320	217.00	4/8/2008	14.04	202.96	203.00	204.40		-0.04	-1.44	
Poinsett	11N07E28CBB1	353250	902125	218.00	3/24/2008	25.00	193.00	194.50			-1.50		
Poinsett	12N01E07CDA1	354053.69	910141.25	236.00	4/8/2008	55.14	180.86	175.20	185.10	186.92	5.66	-4.24	-6.06
Poinsett	12N01E22DAB1	353922	905809	235.00	4/7/2008	76.50	158.50	159.00	163.00	168.00	-0.50	-4.50	-9.50
Poinsett	12N02E25DCC1	353820	904944	245.00	4/7/2008	115.00	130.00	131.00	137.00	145.00	-1.00	-7.00	-15.00
Poinsett	12N02E34CCC1	353724	905230	245.00	4/7/2008	115.50	129.50	131.50	136.00	142.00	-2.00	-6.50	-12.50
Poinsett	12N03E01CBD1	354154	904329	250.00	3/26/2008	96.00	154.00	155.00	150.00	164.00	-1.00	4.00	-10.00
Poinsett	12N03E04DAD1	354158.01	904600.16	247.00	4/8/2008	106.12	140.88	141.00	146.00	150.86	-0.12	-5.12	-9.98
Poinsett	12N03E35DDA1	353735	904355	247.00	4/7/2008	106.00	141.00	143.00			-2.00		

Alluvial Aquifer
98-03-07-08 WL Change

County	Station ID	Latitude	Longitude	LSA	Date	08	WL	WL	WL	WL	07-08	03-08	98-08
					Measured	meas.	Alt. 08	Alt. 07	Alt. 03	Alt. 98	Change	Change	Change
Poinsett	12N03E36ACB1	353749	904318	250.00	4/8/2008	99.86	150.14	145.60	151.60		4.54	-1.46	
Poinsett	12N04E08CDA	354053	904112	250.00	3/26/2008	95.00	155.00	160.00	164.00	169.00	-5.00	-9.00	-14.00
Poinsett	12N05E16ABA1	354039	903333	221.00	3/26/2008	9.50	211.50	209.50	211.00	212.00	2.00	0.50	-0.50
Poinsett	12N05E34ABA1	353805.38	903230.45	215.00	4/8/2008	7.13	207.87	205.80	209.90	207.82	2.07	-2.03	0.05
Poinsett	12N07E04BAA1	354201.95	902059.69	223.00	4/8/2008	2.42	220.58	215.90	218.80	217.49	4.68	1.78	3.09
Poinsett	12N07E10BCC1	354042	902022	228.00	3/24/2008	10.00	218.00	217.00		217.00	1.00		1.00
								Declines/Wells:			28/39	22/26	20/23
								Average Change:			-0.63	-4.17	-8.94
Prairie	01N06W05CCB1	344352.97	914049.06	220.00	3/26/2008	119.27	100.73	101.40	102.90		-0.67	-2.17	
Prairie	01N06W29DDD1	344017.54	913951.46	235.00	3/26/2008	118.13	116.87	117.00			-0.13		
Prairie	01S04W28BBC1	343529	912650	206.00	4/2/2008	100.00	106.00		105.40	110.20		0.60	-4.20
Prairie	01S04W28BDB1	343522.68	912629.73	205.00	3/26/2008	98.00	107.00	107.00	107.20		0.00	-0.20	
Prairie	01S05W14BBC1	343722	913108.8	211.00	3/25/2008	109.68	101.32			99.64			1.68
Prairie	01S05W31DDA1	343416	913431	206.00	3/26/2008	105.57	100.43	92.40			8.03		
Prairie	02N04W02BCB1	344916.31	912418.61	188.00	3/26/2008	19.88	168.12	167.60	170.30	166.69	0.52	-2.18	1.43
Prairie	02N04W32CCB1	344436.43	912737.79	221.00	3/25/2008	84.84	136.16	135.40	135.90	139.08	0.76	0.26	-2.92
Prairie	02N05W06BAB1	344957.83	913420.77	221.00	3/26/2008	89.81	131.19	130.83	132.93		0.36	-1.74	
Prairie	02N05W29DDB2	344544	913308	228.00	3/26/2008	119.78	108.22	104.50	109.90		3.72	-1.68	
Prairie	02N06W17ABB1	344809.48	913959.44	235.00	3/26/2008	125.82	109.18	109.40	111.40		-0.22	-2.22	
Prairie	02S06W14BBB1	343213.38	913728.62	201.00	3/26/2008	75.76	125.24	126.40	142.75	142.22	-1.16	-17.51	-16.98
Prairie	03N04W03AAC1	345439.23	912424.37	187.00	3/26/2008	26.91	160.09	164.45		163.19	-4.36		-3.10
Prairie	03N05W03BDD2	345444.06	913115.35	207.00	3/26/2008	65.25	141.75	142.20	143.00		-0.45	-1.25	
Prairie	03N06W01BCB1	345454.54	913601.39	216.00	3/26/2008	80.72	135.28	137.80	80.60		-2.52	54.68	
Prairie	03N06W19BDD1	345207	914110	221.00	3/26/2008	86.33	134.67	136.90	138.90		-2.23	-4.23	
Prairie	04N04W07ADC1	345850.31	912733.07	195.00	3/25/2008	23.66	171.34	172.00	171.50	171.51	-0.66	-0.16	-0.17
Prairie	04N05W07CDC1	345042.62	913440.92	212.00	3/25/2008	79.34	132.66	132.80	136.90	138.63	-0.14	-4.24	-5.97
Prairie	04N05W31DDC1	345513.7	913405.8	206.00	3/26/2008	76.25	129.75		130.50			-0.75	
Prairie	04N06W05CCC1	345933.76	914017.96	206.00	3/25/2008	80.49	125.51		146.20			-20.69	
Prairie	04N07W03DCB1	345942.1	914412.48	255.00	3/25/2008	88.73	166.27	167.30	167.20		-1.03	-0.93	
Prairie	04N07W20DDB1	345709.2	914607	255.00	2/7/2008	103.11	151.89						
Prairie	04N07W28BBA1	345700.53	914544.88	258.00	3/25/2008	97.67	160.33	161.80	163.80		-1.47	-3.47	
Prairie	05N05W14DCD1	350252.43	913034.06	205.00	3/25/2008	31.74	173.26	171.10	166.00	171.98	2.16	7.26	1.28
								Declines/Wells:			12/19	15/19	6/9
								Average Change:			0.03	-0.03	-3.22

Alluvial Aquifer
98-03-07-08 WL Change

County	Station ID	Latitude	Longitude	LSA	Date Measured	08 meas.	WL Alt. 08	WL Alt. 07	WL Alt. 03	WL Alt. 98	07-08 Change	03-08 Change	98-08 Change
Pulaski	01S10W29CC1	343537.78	920707.66	239.00	3/18/2008	14.87	224.13	221.95	223.15		2.18	0.98	
Pulaski	02S10W14DC1	343204.71	920333.75	225.00	3/18/2008	23.50	201.50	202.70	202.80		-1.20	-1.30	
Pulaski	02S10W16CCA1	343216.99	920549.36	230.76	3/18/2008	25.33	205.43	210.41	207.76		-4.98	-2.33	
								Declines/Wells:			**2/3**	**2/3**	
								Average Change:			**-1.33**	**-0.88**	
Randolph	18N01E13BBA1	361230	905551	265.00	4/8/2008	16.00	249.00		250.70			-1.70	
Randolph	18N01E34AAC1	360942.69	905729.13	266.00	4/10/2008	15.90	250.10	248.60	249.90	251.38	1.50	0.20	-1.28
Randolph	18N02E03DAD1	361336	905043	280.00	4/8/2008	32.50	247.50		248.00			-0.50	
Randolph	18N02E17CBB1	361204	905356	265.00	4/8/2008	19.00	246.00	245.50	249.40			-3.40	
Randolph	18N02E20BDA1	361125	905332	274.00	4/8/2008	32.50	241.50	243.00	234.90			6.60	
Randolph	18N02E22DCD1	361045.76	905104.7	273.00	4/10/2008	39.12	233.88	234.90	237.00		-1.02	-3.12	
Randolph	18N02E28AAA1	361236.7	905836	265.00	4/8/2008	13.50	251.50						
Randolph	18N02E34BAB1	360933	905150	270.00	4/8/2008	35.50	234.50	235.50					
Randolph	19N02E09DCA1	361759	905158	267.00	4/10/2008	0.50	266.50		256.60	264.29		9.90	2.21
Randolph	19N03E33CCB1	361941	904552	285.00	4/9/2008	23.50	261.50						
Randolph	20N02E01ADD1	362424.2	904811.4	280.00	4/10/2008	2.66	277.34						
Randolph	20N02E06DAD1	362410	905339	281.00	4/10/2008	3.00	278.00						
Randolph	20N02E12BAA1	362352	904848	281.00	4/9/2008	19.00	262.00	269.50	274.50	270.90	-7.50	-12.50	-8.90
Randolph	20N02E14DAB1	362232	904930	274.00	4/10/2008	18.00	256.00	263.50	265.80	264.10	-7.50	-9.80	-8.10
Randolph	20N02E21CDD1	362117	905107	270.00	4/10/2008	9.00	261.00	259.00	258.40	261.50	2.00	2.60	-0.50
Randolph	20N03E28BA1	362113.53	904537.97	276.00	4/10/2008	9.43	266.57	265.30	264.30		1.27	2.27	
								Declines/Wells:			**3/6**	**6/11**	**4/5**
								Average Change:			**-1.88**	**-0.86**	**-3.31**
St. Francis	04N01E13ADA1	345754.9	905638.2	206.00	4/2/2008	61.56	144.44						
St. Francis	04N01W28CDD1	345535.26	910633.55	208.00	4/2/2008	72.51	135.49	135.90	138.25			-2.76	
St. Francis	04N02E19BBB1	345701	905633	209.00	4/2/2008	61.77	147.23	148.00	151.25		-0.77	-4.02	
St. Francis	04N03E21DAD1	345623.1	904655.3	236.00	4/2/2008	60.37	175.63						
St. Francis	04N05E22BBB1	345850.6	903356.8	200.00	4/2/2008	27.22	172.78			173.12			-0.34
St. Francis	05N01E15BCB1	350302.57	905942.41	209.00	4/2/2008	69.66	139.34	142.60	145.50		-3.26	-6.16	
St. Francis	05N01E27BBA1	350135.73	905928.78	209.00	4/2/2008	69.07	139.93	140.20	143.20		-0.27	-3.27	
St. Francis	05N02E20ADC1	350156.9	905437.16	211.00	4/2/2008	56.07	154.93	155.30	154.05		-0.37	0.88	
St. Francis	05N03E20AAA2	350214.31	904800.83	250.00	4/2/2008	106.09	143.91	156.13	157.85		-12.22	-13.94	
St. Francis	05N05E19DCA1	350128	903629	203.00	4/2/2008	32.66	170.34	170.64	169.44		-0.30	0.90	

Alluvial Aquifer
98-03-07-08 WL Change

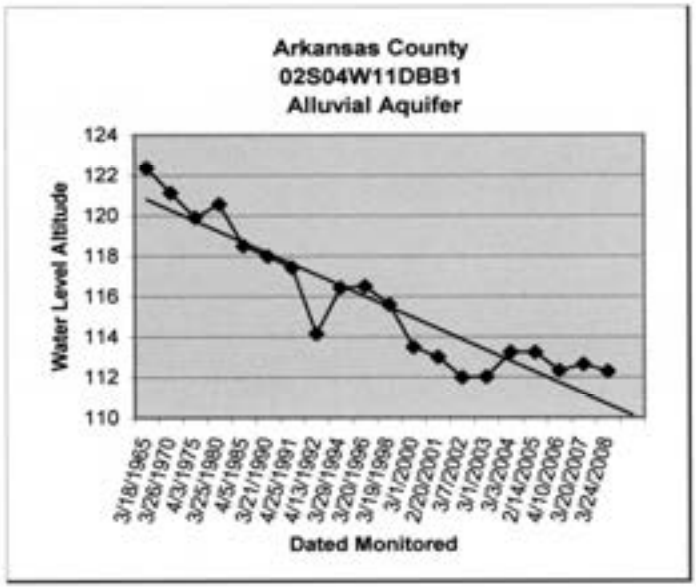
County	Station ID	Latitude	Longitude	LSA	Date	08	WL	WL	WL	WL	07-08	03-08	98-08
					Measured	meas.	Alt. 08	Alt. 07	Alt. 03	Alt. 98	Change	Change	Change
St. Francis	05N06E34CAB1	350025.57	902656.87	200.00	4/2/2008	28.38	171.62	171.90	173.10	176.93	-0.28	-1.48	-5.31
St. Francis	06N01E33ACA2	350552.33	905941.6	211.00	4/2/2008	69.41	141.59	143.90		152.50	-2.31		-10.91
St. Francis	06N02E13DCA1	350812.64	905002.71	231.00	4/2/2008	75.80	155.20	149.50			5.70		
St. Francis	06N02E15BDD1	350841.91	905247.31	214.64	4/2/2008	62.23	152.41	153.34	156.94	162.82	-0.93	-4.53	-10.41
St. Francis	06N02E24AAA1	350755.19	905002.42	232.00	4/2/2008	72.94	159.06	158.00	158.40		1.06	0.66	
St. Francis	06N05E22ACC1	350723.4	903252.2	200.00	4/2/2008	42.82	157.18						
St. Francis	06N06E20ABB2	350747.06	902841.2	200.00	4/2/2008	37.30	162.70	163.70	164.80	174.00	-1.00	-2.10	-11.30
								Declines/Wells:			**10/12**	**8/11**	**5/5**
								Average Change:			**-1.25**	**-3.26**	**-7.65**
White	05N07W09AAA1	350446.87	914441.48	205.00	4/16/2008	12.62	192.38	189.90	191.90	189.66	2.48	0.48	2.72
White	05N07W10CCC1	350400.22	914436	203.00	4/16/2008	7.79	195.21	193.70	194.80		1.51	0.41	
White	06N06W04BAA1	351047.21	913909.91	220.00	4/16/2008	28.90	191.10	185.25	193.15		5.85	-2.05	
White	06N06W04BAD1	351037	913903	215.00	3/27/2008	36.70	178.30	177.20	174.00	176.74	1.10	4.30	1.56
White	06N06W13DBB1	350918	913552	213.00	3/27/2008	45.80	167.20	166.50	169.00		0.70	-1.80	
White	06N06W18BBC1	350851.33	914151.92	210.00	4/16/2008	12.09	197.91	193.40	191.30		4.51	6.61	
White	06N06W18BCA1	350835	914150	210.00	3/27/2008	13.80	196.20	191.80	192.00		4.40	4.20	
White	06N06W34AAB1	350623.57	913753.55	213.00	4/16/2008	60.78	152.22	151.75	152.20		0.47	0.02	
White	06N07W17DCC1	350822.47	914634.73	217.00	4/16/2008	13.42	203.58	204.30	203.60	205.61	-0.72	-0.02	-2.03
White	06N08W13ABA1	350907.73	914824.37	228.00	4/16/2008	6.60	221.40	217.80	219.90		3.60	1.50	
White	06N08W26DDB1	350639	914931	230.00	4/16/2008	13.23	216.77	213.45	213.10	216.19	3.32	3.67	0.58
White	07N05W01AAA1	351552	912858	205.00	4/16/2008	11.11	193.89	199.60	182.45		-5.71	11.44	
White	07N05W32BAB1	351136.63	913406.19	213.70	4/16/2008	33.17	180.53	185.60	185.10	186.55	-5.07	-4.57	-6.02
White	08N04W06CCB1	352028.21	912846.51	214.00	4/16/2008	12.81	201.19	197.90	195.30		3.29	5.89	
White	08N05W32CBC1	351615.66	913416.96	199.00	4/16/2008	3.46	195.54	196.40	197.15		-0.86	-1.61	
								Declines/Wells:			**4/15**	**5/15**	**2/5**
								Average Change:			**1.26**	**1.90**	**-0.64**
Woodruff	04N03W03AB1	350020.93	911819.87	185.00	4/11/2008	9.63	175.37	171.60	169.80		3.77	5.57	
Woodruff	05N01W13CDC1	350244	910331	210.00	4/19/2008	76.60	133.40	132.20	137.30	145.90	1.20	-3.90	-12.50
Woodruff	05N01W31CCC1	350106	910900	210.00	4/19/2008	61.20	148.80	150.40	152.00	148.90	-1.60	-3.20	-0.10
Woodruff	05N02W20DCB1	350207.8	911356.2	192.00	4/11/2008	11.87	180.13		179.60			0.53	
Woodruff	05N03W25DDB1	350133	911531	190.00	4/19/2008	10.60	179.40	177.10	177.00	182.10	2.30	2.40	-2.70
Woodruff	05N04W12DBA1	350426.8	912210.8	186.00	4/15/2008	2.94	183.06			182.94			0.12
Woodruff	06N01W06BAB1	351048.3	910834.6	202.00	4/11/2008	36.73	165.27						
Woodruff	06N01W10BC1	350910	910542	220.00	4/30/2008	68.20	151.80	152.40			-0.60		

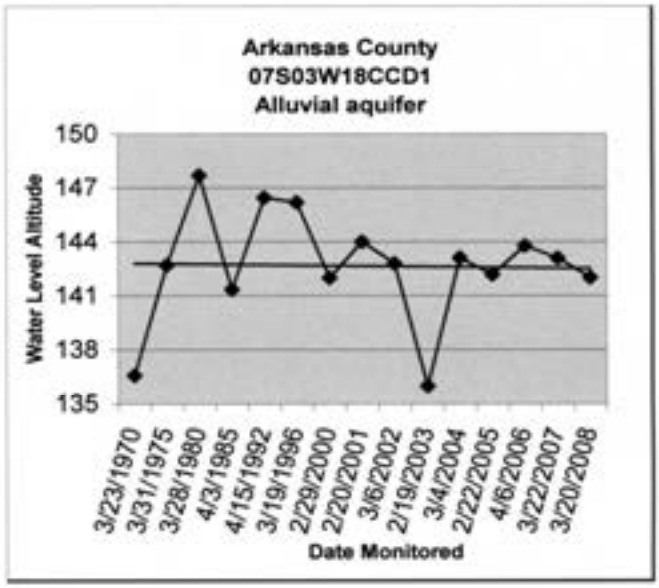
Alluvial Aquifer
98-03-07-08 WL Change

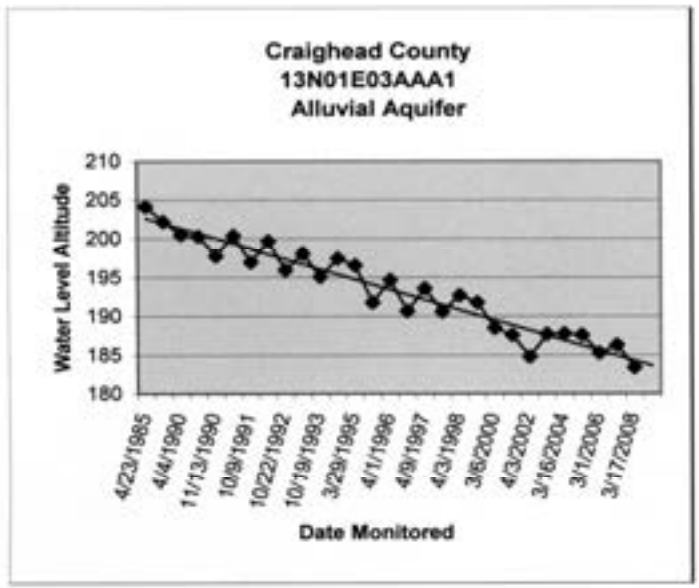
County	Station ID	Latitude	Longitude	LSA	Date	08	WL	WL	WL	WL	07-08	03-08	98-06
					Measured	meas.	Alt. 08	Alt. 07	Alt. 03	Alt. 98	Change	Change	Change
Woodruff	06N02W19AAA1	350802	911419	225.00	4/30/2008	45.90	179.10	179.60	177.00	183.00	-0.50	2.10	-3.90
Woodruff	06N03W31BCB1	350623	912144	185.00	4/15/2008	1.50	183.50	181.30			2.20		
Woodruff	07N01W04ACB1	351541	910626	225.00	4/30/2008	64.20	160.80	162.10	163.80	170.00	-1.30	-3.00	-9.20
Woodruff	07N03W06BAC1	351607	912109	211.00	4/30/2008	24.07	186.93	187.50		189.50	-0.57		-2.57
Woodruff	07N03W19AAA1	351335	912025.42	202.59	4/15/2008	8.39	194.20	190.59	191.49		3.61	2.71	
Woodruff	07N03W31BBA1	351152	912103	195.00	4/30/2008	7.70	187.30	189.60	186.60	186.60	-2.30	0.70	0.70
Woodruff	08N01W06DDD1	352028	910747	218.00	4/11/2008	46.14	171.86	171.70	174.30		0.16	-2.44	
Woodruff	08N02W27DDB1	351711	911107	213.00	4/30/2008	27.50	185.50	185.60	186.50	191.90	-0.10	-1.00	-6.40
Woodruff	08N02W31DDD1	351611	911411	194.55	4/11/2008	1.66	192.89	190.75	190.30	192.31	2.14	2.59	0.58
Woodruff	08N03W31AAD1	351655	912028	212.00	4/15/2008	22.78	189.22	189.00	189.10		0.22	0.12	
Woodruff	09N03W21DBD1	352326.13	911841.57	220.00	4/30/2008	17.60	202.40						
Woodruff	09N03W29AAD1	352258	911921	220.00	4/15/2008	18.90	201.10	197.30	199.50		3.80	1.60	
Woodruff	09N03W32ACA1	352205	911936	217.00	4/30/2008	16.90	200.10	196.70	201.00	202.00	3.40	-0.90	-1.90
								Declines/Wells:			**7/17**	**6/15**	**8/11**
								Average Change:			**0.93**	**0.26**	**-3.44**
								Total Average Change:			**-0.09**	**-1.77**	**-5.74**
								Total Declines/Wells:			**299/531**	**339/474**	**238/286**
											56.30%	**71.52%**	**83.21%**

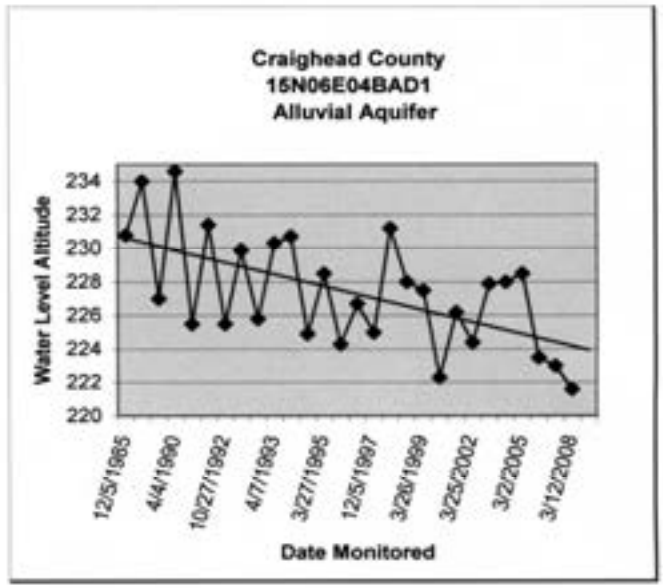
Appendix B

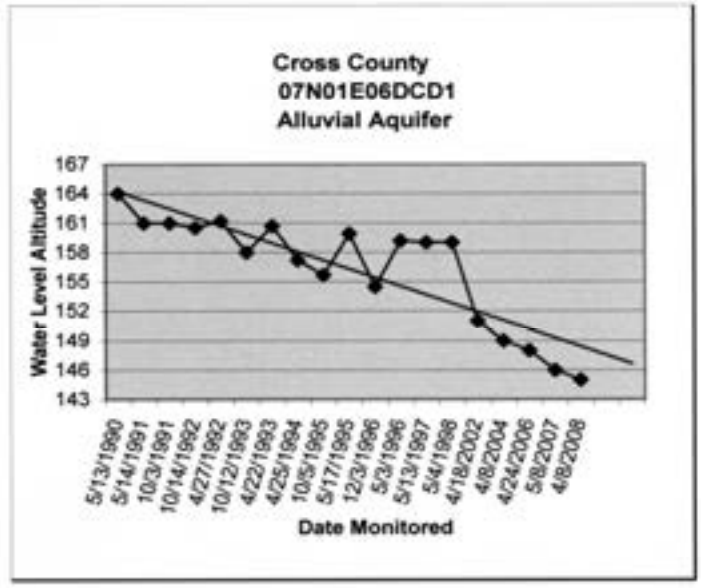
Selected Alluvial Aquifer Well Hydrographs

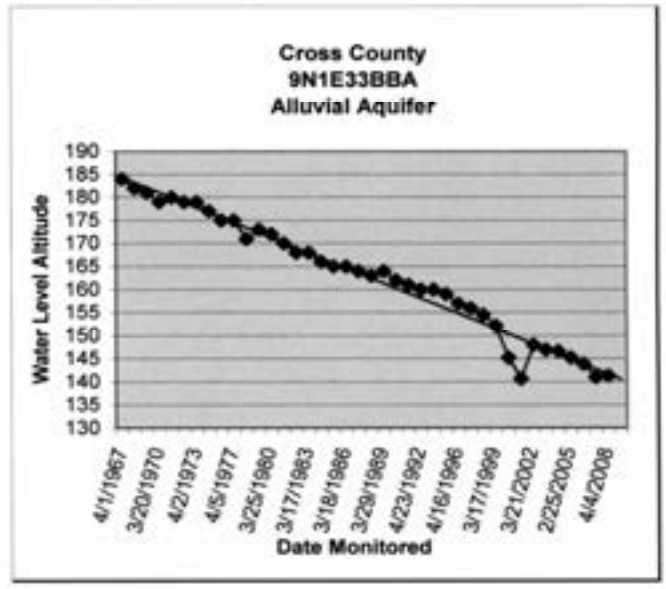

Arkansas County
02S04W11DBB1
Alluvial Aquifer
Water Level Altitude
124
122
120
118
116
114
112
110
3/18/1965
3/26/1970
4/3/1975
3/25/1980
4/5/1985
3/21/1990
4/25/1991
4/13/1992
3/29/1994
3/20/1996
3/19/1998
3/1/2000
2/20/2001
3/7/2002
3/1/2003
3/3/2004
2/14/2005
4/10/2006
3/20/2007
3/24/2008
Dated Monitored

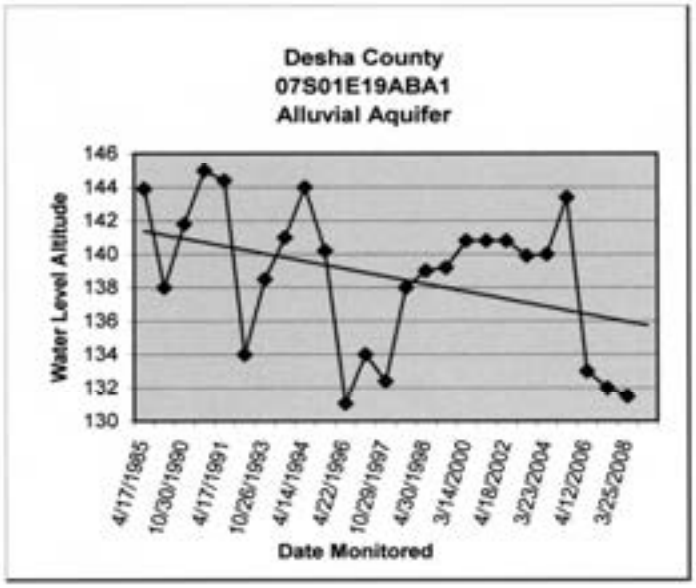

Arkansas County
07S03W18CCD1
Alluvial aquifer
Water Level Altitude
150
147
144
141
138
135
3/23/1970
3/31/1975
3/28/1980
4/3/1985
4/15/1992
3/19/1996
2/29/2000
2/20/2001
3/6/2002
2/19/2003
3/4/2004
2/22/2005
4/6/2006
3/22/2007
3/20/2008
Date Monitored

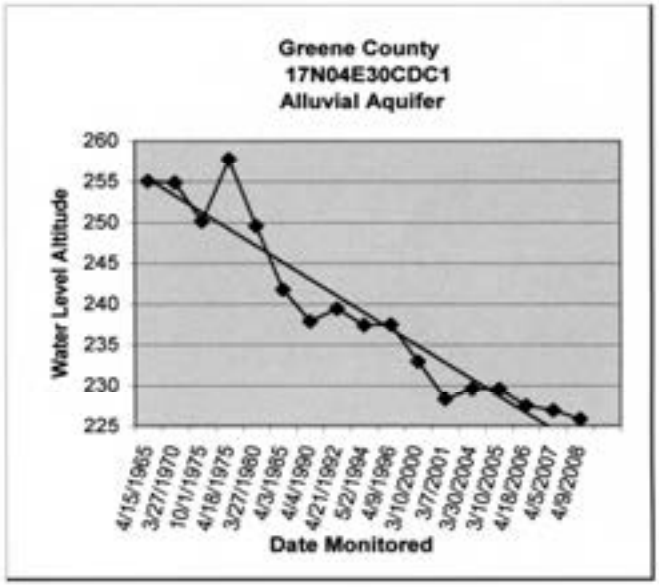

Craighead County
13N01E03AAA1
Alluvial Aquifer
Water Level Altitude
210
205
200
195
190
185
180
4/23/1985
4/4/1990
11/13/1990
10/9/1991
10/22/1992
10/19/1993
3/29/1995
4/1/1996
4/9/1997
4/3/1998
3/6/2000
4/3/2002
3/16/2004
3/1/2006
3/17/2008
Date Monitored

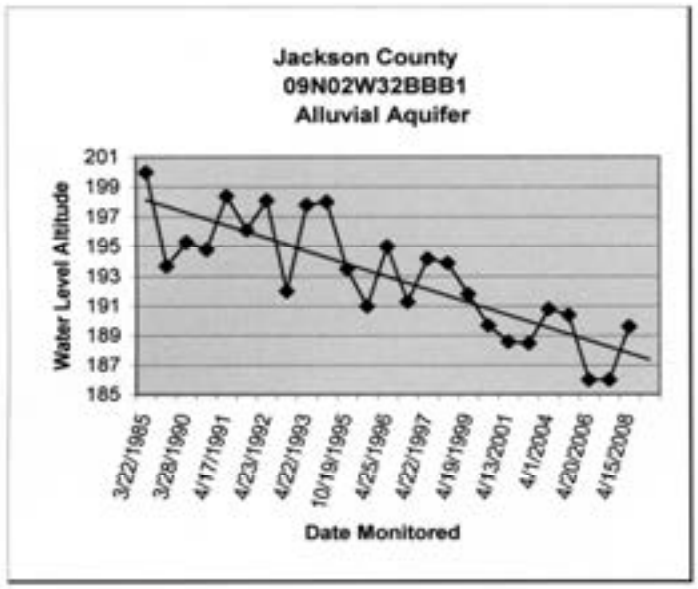

Craighead County
15N06E04BAD1
Alluvial Aquifer
Water Level Altitude
234
232
230
228
226
224
222
220
12/5/1985
4/4/1990
10/27/1992
4/7/1993
3/27/1995
12/5/1997
3/26/1999
3/25/2002
3/2/2005
3/12/2008
Date Monitored

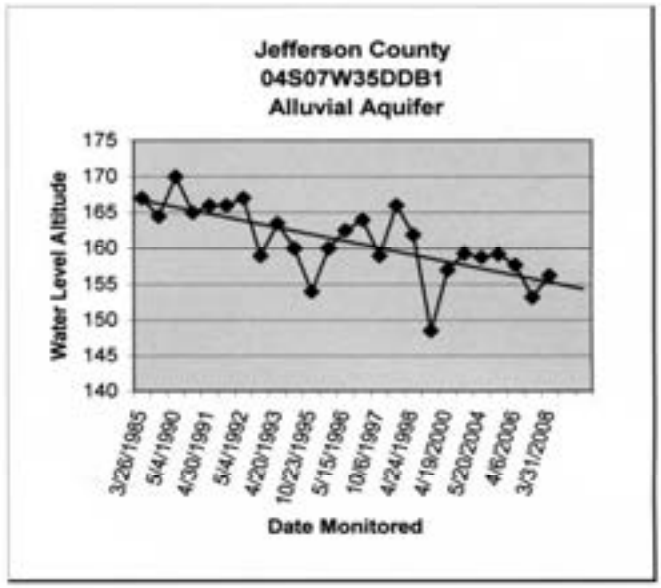

Cross County
07N01E06DCD1
Alluvial Aquifer
Water Level Altitude
167
164
161
158
155
152
149
146
143
5/13/1990
5/14/1991
10/3/1991
10/14/1992
4/27/1992
10/12/1993
4/22/1993
4/25/1994
10/5/1995
5/17/1995
12/3/1996
5/3/1996
5/13/1997
5/4/1998
4/18/2002
4/8/2004
4/24/2006
5/8/2007
4/8/2008
Date Monitored

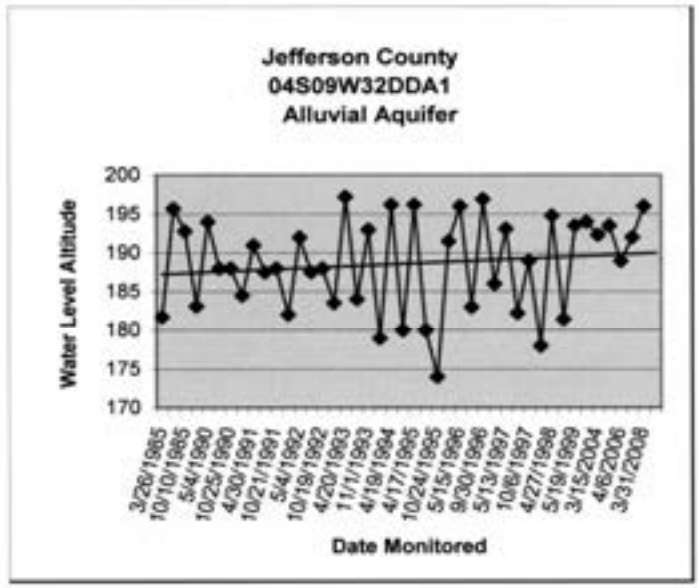

Cross County
9N1E33BBA
Alluvial Aquifer
Water Level Altitude
190
185
180
175
170
165
160
155
150
145
140
135
130
4/1/1967
3/20/1970
4/2/1973
4/5/1977
3/25/1980
3/17/1983
3/18/1986
3/29/1989
4/23/1992
4/16/1996
3/17/1999
3/21/2002
2/25/2005
4/4/2008
Date Monitored

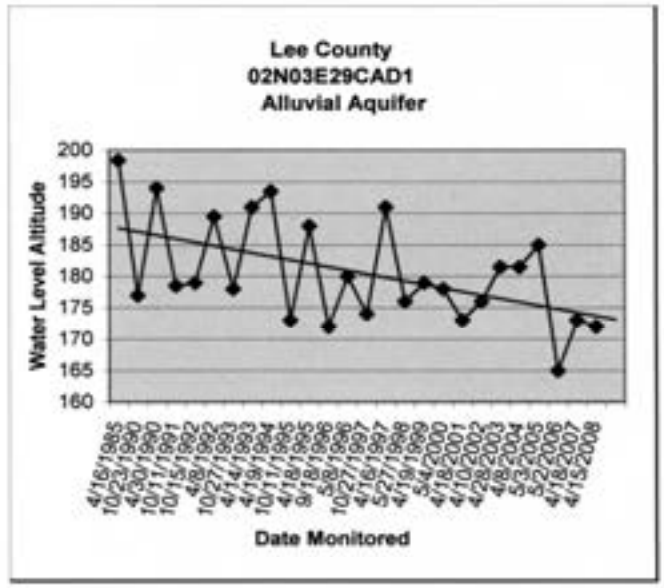

Desha County
07S01E19ABA1
Alluvial Aquifer
Water Level Altitude
146
144
142
140
138
136
134
132
130
4/17/1985
10/30/1990
4/17/1991
10/26/1993
4/14/1994
4/22/1996
10/29/1997
4/30/1998
3/14/2000
4/18/2002
3/23/2004
4/12/2006
3/25/2008
Date Monitored

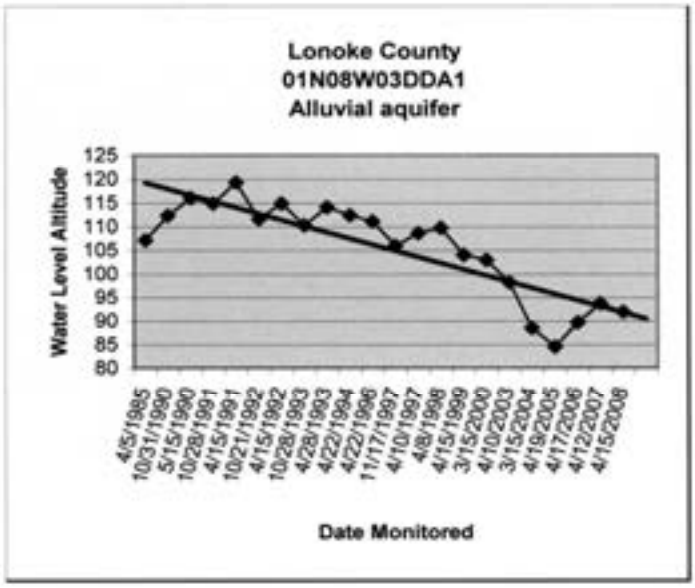

Greene County
17N04E30CDC1
Alluvial Aquifer
Water Level Altitude
260
255
250
245
240
235
230
225
4/15/1965
3/27/1970
10/1/1975
4/18/1975
3/27/1980
4/3/1985
4/4/1990
4/21/1992
5/2/1994
4/9/1996
3/10/2000
3/7/2001
3/30/2004
3/10/2005
4/18/2006
4/5/2007
4/9/2008
Date Monitored

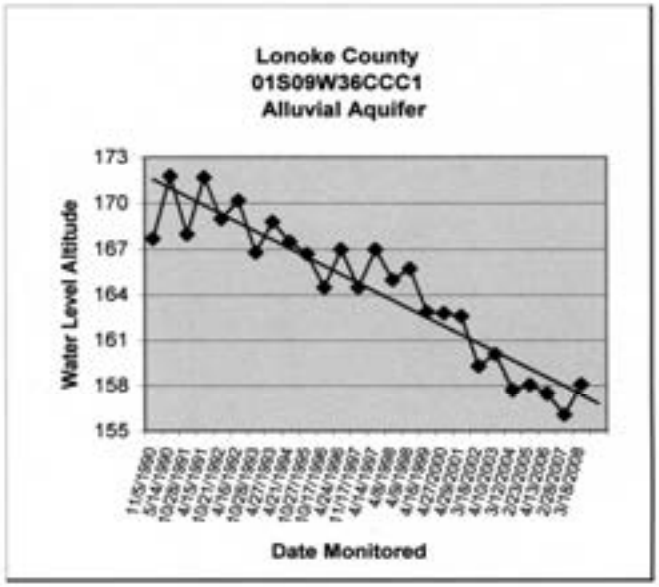

Jackson County
09N02W32BBB1
Alluvial Aquifer
Water Level Altitude
201
199
197
195
193
191
189
187
185
3/22/1985
3/28/1990
4/17/1991
4/23/1992
4/22/1993
10/19/1995
4/25/1996
4/22/1997
4/19/1999
4/13/2001
4/1/2004
4/20/2006
4/15/2008
Date Monitored

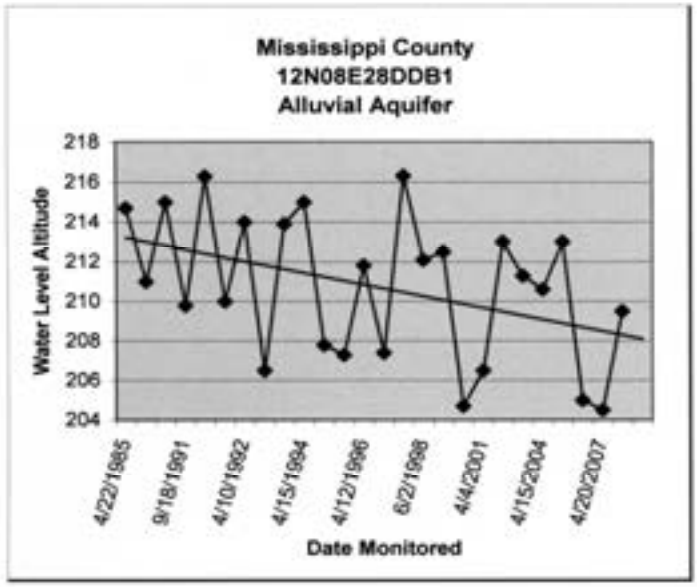

Jefferson County
04S07W35DDB1
Alluvial Aquifer
Water Level Altitude
175
170
165
160
155
150
145
140
3/26/1985
5/4/1990
4/30/1991
5/4/1992
4/20/1993
10/23/1995
5/15/1996
10/6/1997
4/24/1998
4/19/2000
5/20/2004
4/6/2006
3/31/2008
Date Monitored

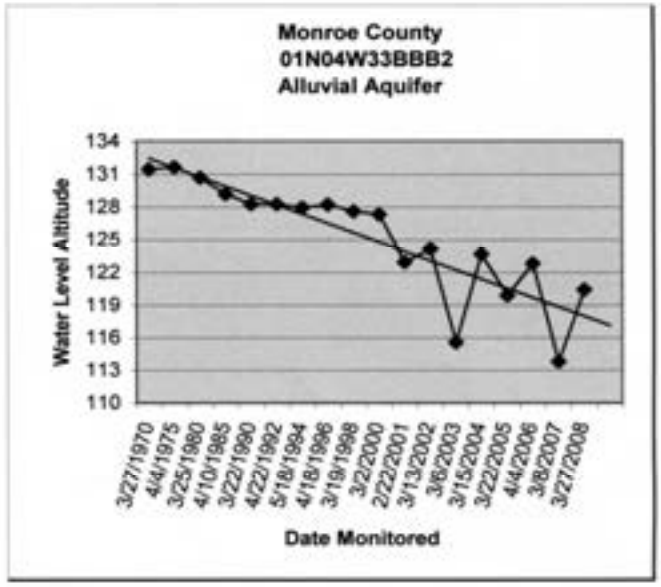

Jefferson County
04S09W32DDA1
Alluvial Aquifer
Water Level Altitude
200
195
190
185
180
175
170
3/26/1985
10/10/1985
5/4/1990
10/25/1990
4/30/1991
10/21/1991
5/4/1992
10/19/1992
4/20/1993
11/1/1993
4/19/1994
4/17/1995
10/24/1995
5/15/1996
9/30/1996
5/13/1997
10/6/1997
4/27/1998
5/19/1999
3/15/2004
4/6/2006
3/31/2008
Date Monitored

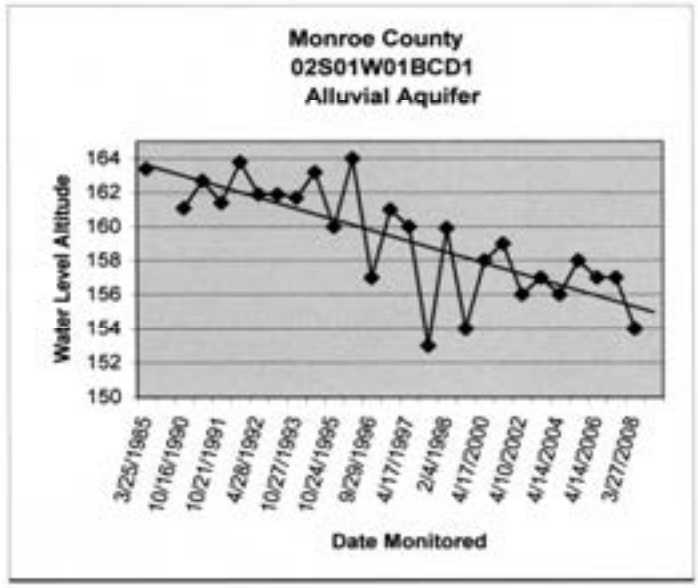

Lee County
02N03E29CAD1
Alluvial Aquifer
Water Level Altitude
200
195
190
185
180
175
170
165
160
4/16/1985
10/23/1990
4/30/1990
10/11/1991
10/15/1992
4/8/1992
10/27/1993
4/14/1993
4/19/1994
10/11/1995
4/18/1995
9/18/1996
5/8/1996
10/27/1997
4/16/1997
5/27/1998
4/19/1999
5/4/2000
4/18/2001
4/10/2002
4/28/2003
4/8/2004
5/3/2005
5/2/2006
4/18/2007
4/15/2008
Date Monitored

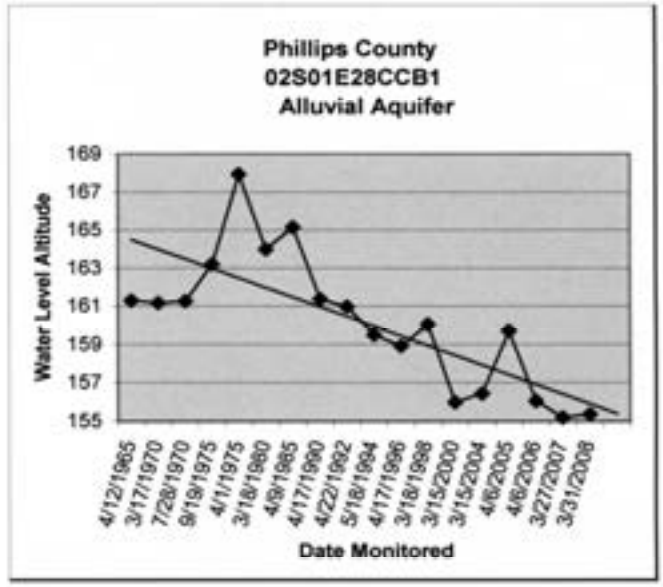

Lonoke County
01N08W03DDA1
Alluvial aquifer
Water Level Altitude
125
120
115
110
105
100
95
90
85
80
4/5/1985
10/31/1990
5/15/1990
10/28/1991
4/15/1991
10/21/1992
4/15/1992
10/28/1993
4/28/1993
4/22/1994
4/22/1996
11/17/1997
4/10/1997
4/8/1998
4/15/1999
3/15/2000
4/10/2003
3/15/2004
4/19/2005
4/17/2006
4/12/2007
4/15/2008
Date Monitored

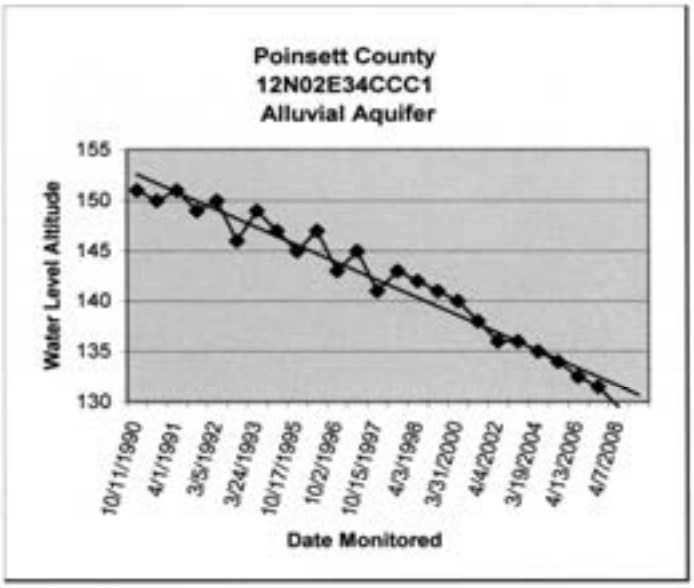

Lonoke County
01S09W36CCC1
Alluvial Aquifer
Water Level Altitude
173
170
167
164
161
158
155
Date Monitored

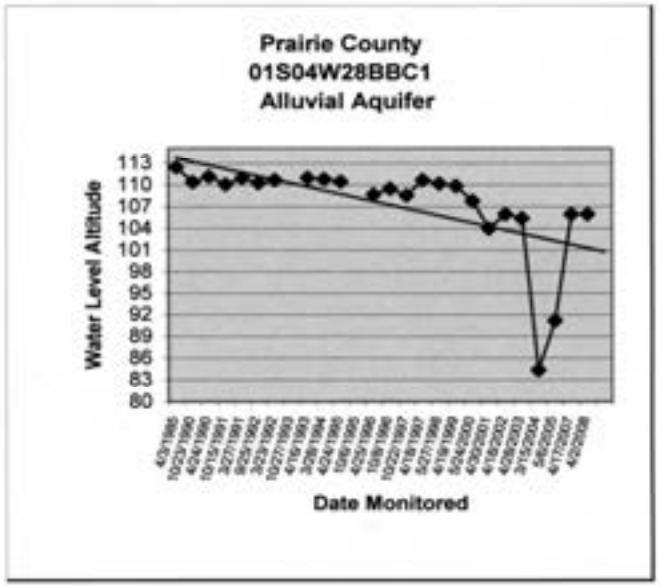

Mississippi County
12N08E28DDB1
Alluvial Aquifer
Water Level Altitude
218
216
214
212
210
208
206
204
4/22/1985
9/18/1991
4/10/1992
4/15/1994
4/12/1996
6/2/1998
4/4/2001
4/15/2004
4/20/2007
Date Monitored

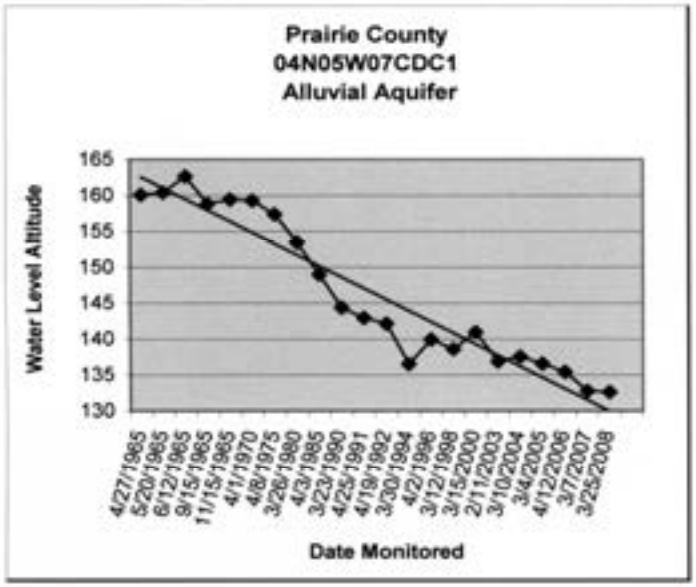

Monroe County
01N04W33BBB2
Alluvial Aquifer
Water Level Altitude
134
131
128
125
122
119
116
113
110
3/27/1970
4/4/1975
3/25/1980
4/10/1985
3/22/1990
4/22/1992
5/18/1994
4/18/1996
3/19/1998
3/2/2000
2/22/2001
3/13/2002
3/6/2003
3/15/2004
3/22/2005
4/4/2006
3/8/2007
3/27/2008
Date Monitored

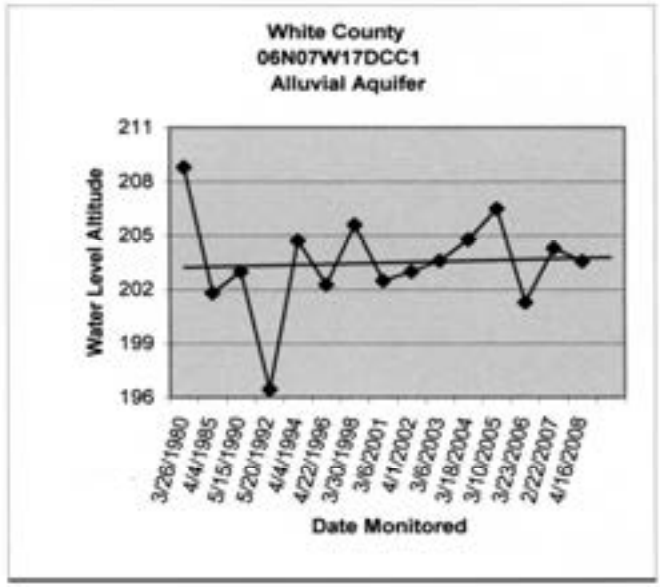

Monroe County
02S01W01BCD1
Alluvial Aquifer
Water Level Altitude
164
162
160
158
156
154
152
150
3/25/1985
10/16/1990
10/21/1991
4/28/1992
10/27/1993
10/24/1995
8/29/1996
4/17/1997
2/4/1998
4/17/2000
4/10/2002
4/14/2004
4/14/2006
3/27/2008
Date Monitored

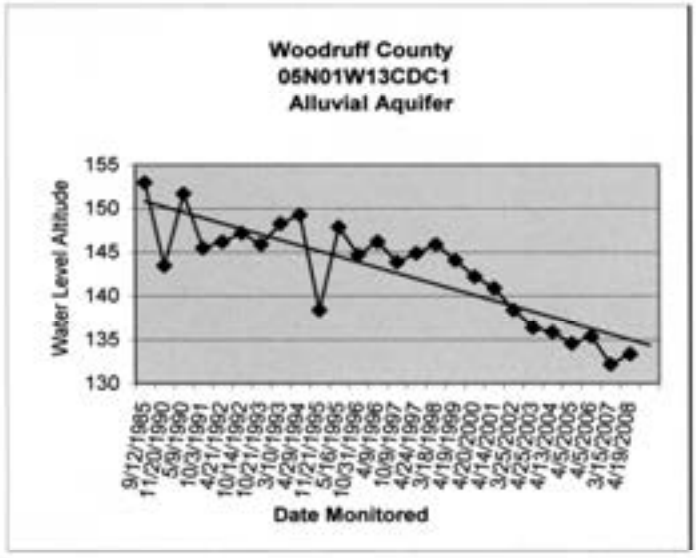

Phillips County
02S01E28CCB1
Alluvial Aquifer
Water Level Altitude
169
167
165
163
161
159
157
155
4/12/1965
3/17/1970
7/28/1970
9/19/1975
4/1/1975
3/18/1980
4/9/1985
4/17/1990
4/22/1992
5/18/1994
4/17/1996
3/18/1998
3/15/2000
3/15/2004
4/6/2005
4/6/2006
3/27/2007
3/31/2008
Date Monitored

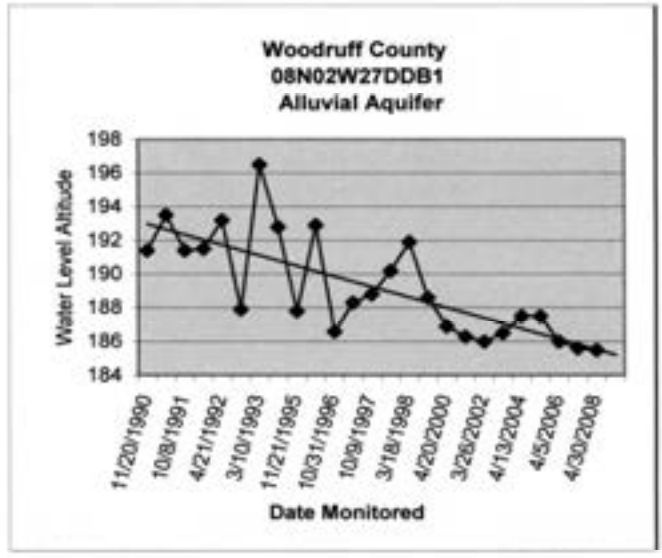

Poinsett County
12N02E34CCC1
Alluvial Aquifer
Water Level Altitude
155
150
145
140
135
130
10/11/1990
4/1/1991
3/5/1992
3/24/1993
10/17/1995
10/2/1996
10/15/1997
4/3/1998
3/31/2000
4/4/2002
3/19/2004
4/13/2006
4/7/2008
Date Monitored


Prairie County
01S04W28BBC1
Alluvial Aquifer
Water Level Altitude
113
110
107
104
101
98
95
92
89
86
83
80
Date Monitored


Prairie County
04N05W07CDC1
Alluvial Aquifer
Water Level Altitude
165
160
155
150
145
140
135
130
4/27/1965
5/20/1965
6/12/1965
9/15/1965
11/15/1965
4/1/1970
4/8/1975
3/26/1980
4/3/1985
3/29/1990
4/25/1991
4/19/1992
3/30/1994
4/2/1996
3/12/1998
3/15/2000
2/11/2003
3/10/2004
3/4/2005
4/12/2006
3/7/2007
3/25/2008
Date Monitored


White County
06N07W17DCC1
Alluvial Aquifer
Water Level Altitude
211
208
205
202
199
196
3/26/1980
4/4/1985
5/15/1990
5/20/1992
4/4/1994
4/22/1996
3/30/1998
3/8/2001
4/1/2002
3/6/2003
3/18/2004
3/10/2005
3/23/2006
2/22/2007
4/16/2008
Date Monitored


Woodruff County
05N01W13CDC1
Alluvial Aquifer
Water Level Altitude
155
150
145
140
135
130
9/12/1985
11/20/1990
5/9/1990
10/3/1991
4/21/1992
10/14/1992
10/21/1993
3/10/1993
4/29/1994
11/21/1995
5/16/1995
10/31/1996
4/9/1996
10/9/1997
4/24/1997
3/18/1998
4/19/1999
4/20/2000
4/14/2001
3/25/2002
4/25/2003
4/13/2004
4/5/2005
4/5/2006
3/15/2007
4/19/2008
Date Monitored


Woodruff County
08N02W27DDB1
Alluvial Aquifer
Water Level Altitude
198
196
194
192
190
188
186
184
11/20/1990
10/8/1991
4/21/1992
3/10/1993
11/21/1995
10/31/1996
10/9/1997
3/18/1998
4/20/2000
3/26/2002
4/13/2004
4/5/2006
4/30/2008
Date Monitored

Appendix C

Sparta/Memphis Aquifer Water Level Monitoring Data

Sparta Aquifer
98-03-07-08 WL Change

County	Station	Latitude	Longitude	LSD Alt	WL Date	08 WL MEAS	WL ALT 2008	WL ALT 2007	WL ALT 2003	WL ALT 1998	07-08 Change	03-08 Change	98-08 Change
Arkansas	02S04W06CDB1	343311.54	912849.29	212.00	3/12/2008	159.00	53.00	52.76	51.13	58.60	0.24	1.87	-5.60
Arkansas	02S04W23DAA1	343044.22	912354.53	208.00	3/12/2008	160.90	47.10	63.09	58.28	78.80	-15.99	-11.18	-31.70
Arkansas	02S04W33BBB1	342922.14	912702.68	205.00	3/12/2008	183.70	21.30	36.22	33.99	53.30	-14.92	-12.69	-32.00
Arkansas	02S05W16CBB1	343143	913318	213.00	3/11/2008	173.30	39.70	40.05	34.12	32.20	-0.35	5.58	7.50
Arkansas	02S05W34BDA1	342924.58	913148.02	216.00	4/17/2008	176.50	39.50	35.87	36.20		3.63	3.30	
Arkansas	02S05W35AAB1	342929.98	913035.31	216.00	3/17/2008	174.80	41.20	41.11	41.15	56.30	0.09	0.05	-15.10
Arkansas	03S03W18CCC1	342553	912251	196.00	3/13/2008	138.96	57.04	51.70			5.34		
Arkansas	03S04W02CCB1	342747.58	912458.04	202.00	3/12/2008	155.50	46.50	48.60	39.76	57.90	-2.10	6.74	-11.40
Arkansas	03S04W26CDA1	342421.03	912438.3	203.00	3/12/2008	145.70	57.30	55.48	65.70	63.20	1.82	-8.40	-5.90
Arkansas	03S04W33BAA1	342416	912645	201.00	3/12/2008	165.22	35.78		41.06	47.80		-5.28	-12.02
Arkansas	03S05W02AAB1	342842.19	913033.71	210.00	3/17/2008	173.90	36.10	36.68	36.57		-0.58	-0.47	
Arkansas	03S05W13BDC1	342631.15	913004.57	210.00	3/17/2008	170.10	39.90		31.14	44.55		8.76	-4.65
Arkansas	03S05W15CBB1	342633.21	913229.33	206.00	3/18/2008	172.30	33.70	26.78	34.05	39.60	6.92	-0.35	-5.90
Arkansas	03S05W18CAB1	342633	913523	196.00	3/13/2008	167.70	28.30		26.86	38.10		1.44	-9.80
Arkansas	03S05W26DAB1	342447.16	913240.25	204.00	3/13/2008	173.50	30.50	31.14	31.38		-0.64	-0.88	
Arkansas	03S06W21ACB1	342554	913927	200.00	3/12/2008	160.80	39.20			49.45			-10.25
Arkansas	03S06W30BBD1	342515.54	914216.15	191.00	3/12/2008	160.60	30.40	33.60	30.26		-3.20	0.14	
Arkansas	04S01W04CBD1	342225.42	910808.42	196.00	3/25/2008	110.90	85.10	82.58	82.86	91.70	2.52	2.24	-6.60
Arkansas	04S01W28BAA1	341929	910739	190.00	3/25/2008	105.00	85.00	83.48	83.84	92.40	1.52	1.16	-7.40
Arkansas	04S04W11BCC1	342156.96	912501.52	198.00	3/12/2008	155.10	42.90	42.90	42.50	50.60	0.00	0.40	-7.70
Arkansas	04S04W19CBB1	342003.73	912928.89	195.00	3/13/2008	176.50	18.50	31.42	32.28		-12.92	-13.78	
Arkansas	04S04W22DAA1	342006.89	912515.15	195.00	3/12/2008	157.20	37.80	35.52	35.01	46.78	2.28	2.79	-8.98
Arkansas	04S05W05ACC1	342302.67	913412.84	186.00	3/18/2008	159.50	26.50	26.60	28.58		-0.10	-2.08	
Arkansas	04S05W15AAA1	342132.16	913133.29	201.00	3/13/2008	167.30	33.70	33.45	34.30	43.44	0.25	-0.60	-9.74
Arkansas	04S05W34DAA1	341814	913139	192.00	3/13/2008	157.70	34.30			45.59			-11.29
Arkansas	04S05W36DCC1	341752.00	913003.63	196.00	3/13/2008	161.20	34.80	29.85	32.82	43.10	4.95	1.98	-8.30
Arkansas	05S01W17BAA1	341550.68	910745.34	176.00	3/25/2008	91.40	84.60	82.54	82.51	90.31	2.06	2.09	-5.71
Arkansas	05S03W04ADB1	341734.14	912007.11	188.00	3/24/2008	137.40	50.60	47.69		60.20	2.91		-9.60
Arkansas	05S04W26ACA1	341358	912435	188.00	3/24/2008	139.60	48.40	47.94	59.02		0.46	-10.62	
Arkansas	05S05W26CDD1	341324	913119	188.00	3/13/2008	37.55	150.45	149.96			0.49		
Arkansas	05S05W36DAA	341247	912946	180.00	3/13/2008	144.05	35.95	34.76	39.84		1.19	-3.89	
Arkansas	06S02W06ABB1	341227.90	911620.01	181.00	3/25/2008	118.40	62.60	65.83	66.24	72.50	-3.23	-3.64	-9.90
Arkansas	06S02W17ADA1	341022.67	911453.14	188.00	3/26/2008	112.95	75.05	72.89	73.23	84.01	2.16	1.82	-8.96
Arkansas	06S02W22CDB1	340904	911331.06	186.00	3/25/2008	110.70	75.30	73.82	80.14		1.48	-4.84	
Arkansas	06S03W27BAA1	340859.22	912006.98	181.00	5/13/2008	120.10	60.90	61.08	61.38	71.80	-0.18	-0.48	-10.90
Arkansas	07S02W28ABA1	340339.67	911411.01	181.00	3/25/2008	104.20	76.80	74.92	75.36	83.80	1.88	1.44	-7.00
Arkansas	07S03W06ABC1	340701.89	912247.68	185.00	3/25/2008	127.10	57.90	54.72	53.67	70.20	3.18	4.23	-12.30
Arkansas	08S02W09BCC1	340031.06	911447.66	174.00	3/25/2008	99.30	74.70	73.08	73.78	81.15	1.62	0.92	-6.45
									Declines/Wells:		**11/33**	**15/33**	**26/27**
									Average Change:		**-0.22**	**-0.98**	**-9.91**

Sparta Aquifer
98-03-07-08 WL Change

County	Station	Latitude	Longitude	LSD Alt	WL Date	08 WL MEAS	WL ALT 2008	WL ALT 2007	WL ALT 2003	WL ALT 1998	07-08 Change	03-08 Change	98-08 Change
Ashley	15S07W32CDD1	332117.77	915101.06	190.00	3/29/2008	137.15	52.85	41.75	52.16	36.40	11.10	0.69	16.45
Bradley	12S09W31CCB1	333711.24	920444.21	231.00	4/23/2008	199.45	31.55	36.28	47.46		-4.73	-15.91	
Bradley	13S09W06ACA1	333647.9	920437.48	235.00	4/23/2008	198.25	36.75		51.33	50.30		-14.58	-13.55
Bradley	13S09W06ACB3	333647	920407	208.00	4/23/2008	175.50	32.50	29.00	50.25		3.50	-17.75	
Bradley	13S11W17BCD1	333453.65	921607.25	250.00	4/23/2008	198.80	51.20	47.78	57.57	59.22	3.42	-6.37	-8.02
Bradley	14S11W31DBB1	332715	921015	150.00	4/23/2008	98.38	51.62	58.50			-6.88		
Bradley	16S12W21CAA1	331839	922052	100.00	4/23/2008	78.78	21.22	20.98	24.71	28.22	0.24	-3.49	-7.00
								Declines/Wells:			2/5	5/5	3/3
								Average Change:			-0.89	-11.62	-9.52
Calhoun	13S13W32CDA1	333226.81	922741.66	208.00	4/29/2008	192.88	15.12	13.17	39.32	36.90	1.95	-24.20	-21.78
Calhoun	13S12W31DAA1	333233	922224	200.00	4/24/2008	57.15	142.85						
Calhoun	13S15W36CBD1	333252	923616	158.00	4/24/2008	82.00	76.00	75.53	77.49		0.47	-1.49	
Calhoun	14S13W05BBD1	333206.66	922801.55	189.00	4/29/2008	162.85	26.15	32.20	34.87		-6.05	-8.72	
Calhoun	14S13W12CCB1	333040.05	922403.54	205.00	4/25/2008	181.10	23.90	33.40	36.55	29.50	-9.50	-12.65	-5.60
Calhoun	15S13W20BDC1	332410.97	922806.59	109.00	4/24/2008	25.70	83.30	84.58	74.89		-1.28	8.41	
Calhoun	15S13W32BBD1	332230	922821	102.00	4/24/2008	124.10	-22.10	-25.47			3.37		
								Declines/Wells:			3/6	4/5	2/2
								Average Change:			-1.84	-7.73	
Cleveland	08S09W06BBA1	340349	920237	300.00	4/29/2008	268.80	31.20						
Cleveland	09S09W04BBD1	335820.09	920236.95	308.00	4/29/2008	128.00	180.00	84.80					
Cleveland	09S11W01DCA1	335729.02	921133.93	225.00	4/30/2008	186.58	38.42						
Cleveland	09S11W11CDB1	335622.66	921250.52	233.00	4/30/2008	162.55	70.45	70.38			0.07		
Cleveland	10S09W23CDC1	334917.94	920020.5	220.00	4/29/2008	177.50	42.50	55.88	58.12		-13.38	-15.62	
Cleveland	10S12W12BDD1	335132.99	921743.38	220.00	4/30/2008	125.77	94.23	99.74	102.71		-5.51	-8.48	
								Declines/Wells:			2/3	2/2	
								Average Change:			-6.27	-12.05	
Columbia	15S20W20CCB1	332453.37	931215.01	372.00	4/9/2008	216.10	155.90	155.66	154.96	152.30	0.24	0.94	3.60
Columbia	16S20W08DCC1	332114.08	931141.34	402.00	4/9/2008	326.50	75.50	82.67	86.90	79.90	-7.17	-11.40	-4.40
Columbia	16S21W14CBB1	332049	931516	281.00	4/9/2008	197.70	83.30		80.40			2.90	
Columbia	16S21W15CBC1	332041	931622	288.00	4/9/2008	191.10	96.90			66.00			30.90
Columbia	16S22W22CCD1	331947.61	932224.89	340.00	4/11/2008	137.40	202.60	197.21	207.32	202.80	5.39	-4.72	-0.20
Columbia	17S19W15ABD1	331537	930328	325.00	4/10/2008	277.80	47.20	49.27	52.63		-2.07	-5.43	
Columbia	17S19W18CBD1	331516.81	930655.59	305.00	4/10/2008	289.60	15.40		25.51	25.10		-10.11	-9.70

Sparta Aquifer
98-03-07-08 WL Change

County	Station	Latitude	Longitude	LSD Alt	WL Date	08 WL MEAS	WL ALT 2008	WL ALT 2007	WL ALT 2003	WL ALT 1998	07-08 Change	03-08 Change	98-08 Change
Columbia	17S19W30ABB1	331406.12	930650.14	248.00	4/10/2008	218.40	29.60	31.93	26.10		-2.33	3.50	
Columbia	17S20W13BCD1	331533	930807	340.00	4/10/2008	328.20	11.80	29.20	21.90		-17.40	-10.10	
Columbia	17S20W17CDA1	331519.76	931200.69	325.10	4/10/2008	298.90	26.20	11.14	22.07		15.06	4.13	
Columbia	17S21W01BBC1	331743.07	931423.65	305.00	4/9/2008	265.40	39.60	20.85	34.60	3.70	18.75	5.00	35.90
Columbia	17S21W11DCC2	331608.55	931448.61	300.00	4/10/2008	292.15	7.85	23.89	16.92	3.95	-16.04	-9.07	3.90
Columbia	17S22W22ABB1	331521	932209	321.00	4/14/2008	83.15	237.85						
Columbia	17S22W23BBB1	331519	932136	340.00	4/14/2008	136.85	203.15	211.90	225.90	188.00	-8.75	-22.75	15.15
Columbia	18S20W06DDC1	331142	931248	300.00	4/10/2008	288.00	12.00			-6.03			18.03
Columbia	18S20W06CBC1	331114.79	931227.04	263.00	4/10/2008	280.80	-17.80	-18.84	-7.16		1.04	-10.64	
Columbia	18S20W10CAA1	331054.37	931015.76	290.00	4/10/2008	283.25	6.75	18.80	15.02		-12.05	-8.27	
Columbia	18S21W01ACC1	331214	931404	295.00	4/10/2008	291.85	3.15		-2.73	3.15		5.88	0.00
Columbia	18S21W17ACD1	331033.97	931758.51	315.00	4/16/2008	230.50	84.50	84.62	78.60	144.70	-0.12	5.90	-60.20
Columbia	19S20W09CBD1	330555.38	931128.72	332.00	4/16/2008	273.70	58.30	68.78	65.99	59.50	-10.48	-7.69	-1.20
Columbia	19S20W34BDD1	330239.09	931030.67	290.00	4/16/2008	210.62	79.38	89.00	77.88		-9.62	1.50	
Columbia	19S21W16DBB1	330517.2	931724.2	264.00	4/11/2008	174.70	109.30	117.31	109.58	109.30	-8.01	-0.28	0.00
Columbia	19S23W10ABD1	330643.92	932833.33	242.00	4/15/2008	45.17	196.83	196.43	196.78		0.40	0.05	
Columbia	19S23W11CDA2	330609.39	932744.02	248.00	4/15/2008	53.05	194.95	194.93	195.35	193.88	0.02	-0.40	1.07
Columbia	19S23W11DDB1	330604.93	932722.12	246.00	4/15/2008	53.34	192.66	192.18	192.24		0.48	0.42	
Columbia	19S23W14BAB2	330555.24	932752.38	244.00	4/13/2008	47.75	196.25	191.42	194.01		4.83	2.24	
Columbia	20S22W03DCC1	330138.44	932236.27	214.00	4/16/2008	52.27	161.73	161.15	108.79		0.58	52.94	
Columbia	20S22W11ACD1	330109.20	932133.20	271.00	4/16/2008	106.95	164.05	162.96	163.83		1.09	0.22	
								Declines/Wells:			11/22	12/25	5/14
								Average Change:			-2.10	-0.61	2.35
Craighead	13N03E23CDD1	354404.17	904432.83	248.00	3/20/2008	89.90	158.10	159.24	161.11	168.18	-1.14	-3.01	-10.08
Craighead	14N04E22CBD1	354928.92	903920.99	256.00	3/20/2008	58.20	197.80	198.62	200.30		-0.82	-2.50	
Craighead	14N04E26DBD1	354836.94	903953.27	254.00	3/20/2008	58.15	195.85	191.52	192.83		4.33	3.02	
Craighead	14N05E34ADD1	354748	903414	230.00	3/20/2008	18.15	211.85		212.27			-0.42	
Craighead	14N05E36CBC1	354750.84	903100.18	220.00	3/20/2008	12.45	207.55	207.60	207.90	209.08	-0.05	-0.35	-1.53
Craighead	15N04E20ADB1	355506.01	904043.21	438.00	3/20/2008	119.15	318.85	319.48	317.39		-0.63	1.46	
Craighead	15N05E29DBB1	355359.83	903432.73	258.00	3/20/2008	25.25	232.75	234.11	234.53		-1.36	-1.78	
Craighead	15N06E18ACA1	355544.42	902858.20	230.00	3/20/2008	26.20	203.80	212.74	211.64	214.16	-8.94	-7.84	-10.36
								Declines/Wells:			6/7	6/8	3/3
								Average Change:			-1.23	-1.43	-7.32
Crittenden	06N07E01DAD2	350958.04	901738.42	209.00	3/20/2008	28.65	180.35	182.72	184.84		-2.37	-4.49	
Crittenden	06N09E06DCC1	350849.72	900921.78	215.00	3/20/2008	7.10	207.90	206.61	204.96		1.29	2.94	
Crittenden	07N07E35BCC1	351629	901933	221.00	4/7/2008	33.96	187.04	185.98			1.06		

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County	Station	Latitude	Longitude	LSD Alt	WL Date	08 WL MEAS	WL ALT 2008	WL ALT 2007	WL ALT 2003	WL ALT 1998	07-08 Change	03-08 Change	98-08 Change
Crittenden	07N09E14BAC1	351348.14	900628.23	217.00	3/19/2008	30.90	186.10	184.74	179.67		1.36	6.43	
Crittenden	09N07E21BBB1	352341.22	902130.65	216.00	4/26/2008	25.12	190.88	191.13			-0.25		
									Declines/Wells:		2/15	1/3	
									Average Change:		0.22	1.63	
Cross	06N04E06ACA1	351004.29	904237.72	358.00	4/14/2008	202.14	155.86	151.66	156.12		4.20	-0.26	
Cross	07N05E04ADD1	351538.11	903329.85	209.00	4/14/2008	37.40	171.60	173.49	173.74		-1.89	-2.14	
Cross	08N02E18BDB1	351908	905536	228.00	4/14/2008	92.40	135.60		144.21			-8.61	
Cross	09N01E16CAC1	352405.00	905950.75	234.00	4/15/2008	93.30	140.70	141.91	154.35		-1.21	-13.65	
Cross	09N01E25AAD1	352244.31	905554.00	227.00	4/2/2008	90.80	136.20	137.52	142.68		-1.32	-6.48	
Cross	09N03E22AAB2	352403.82	904518.39	277.00	4/2/2008	129.40	147.60	149.02	154.48		-1.42	-6.88	
Cross	09N03E22AAD1	352403.2	904511.77	278.00	4/3/2008	125.00	153.00	144.94	143.50		8.06	9.50	
Cross	09N04E30DCA1	352231	904215	429.32	4/15/2008	265.60	163.72	157.59			6.13		
									Declines/Wells:		4/7	6/7	
									Average Change:		1.79	-4.07	
Dallas	07S14W30DCC1	340430.87	923359.85	335.00	4/15/2008	120.80	214.20	214.65			-0.45		
Dallas	07S16W20CAB1	340559	924541	322.00	4/21/2008	32.00	290.00	293.54			-3.54		
Dallas	08S15W34BDC1	335863	923658	240.00	4/15/2008	23.50	216.50	213.33			3.17		
Dallas	08S16W18ACC1	340152	922446	252.00	4/21/2008	15.40	236.60	235.14			1.46		
Dallas	08S16W27DDD1	335935	924307	275.00	4/15/2008	34.50	240.50	241.34			-0.84		
Dallas	09S13W35CCD1	335304	922413	200.00	4/21/2008	73.00	127.00	128.38			-1.38		
Dallas	09S14W01BDC1	335753.63	922918.78	265.00	4/21/2008	79.30	185.70	182.08	186.20		3.62	-0.50	
Dallas	09S16W19CAA1	335605.48	924701.17	260.00	4/21/2008	6.30	253.70	252.69	253.49		1.01	0.21	
Dallas	10S13W34ACA2	334829.46	922457.61	272.00	4/21/2008	152.30	119.70	120.62	121.26		-0.92	-1.56	
Dallas	10S14W27CDB1	334907.60	923137.99	270.00	4/21/2008	23.60	246.40						
Dallas	10S15W24AAB1	335041	923505	242.00	4/21/2008	16.70	225.30						
									Declines/Wells:		5/9	2/3	
									Average Change:		0.24	-0.62	
Desha	09S02W26AAC1	335346.00	911520.82	153.00	3/26/2008	72.97	80.03	80.36	83.02	87.40	-0.33	-2.99	-7.37
Desha	09S04W28DDD1	335309.60	913006.71	165.00	3/26/2008	114.04	50.96	49.52	52.58	60.20	1.44	-1.62	-9.24
Desha	10S02W26CCC2	334750.23	911623.99	148.00	3/26/2008	73.30	74.70	72.03	75.86	82.00	2.67	-1.16	-7.30
Desha	11S01W31BBB1	334223	911421	141.00	3/26/2008	97.60	43.40						
Desha	11S02W03CCA1	334615.78	911711.03	139.00	3/26/2008	69.50	69.50	64.27	68.68	80.25	5.23	0.82	-10.75
Desha	12S03W26CBB1	333748.60	912259.18	143.00	3/26/2008	101.70	41.30	42.71	46.88		-1.41	-5.58	
Desha	12S03W34DAD1	333643.44	912305.04	147.00	3/26/2008	83.55	63.45	64.79	68.55	71.45	-1.34	-5.10	-8.00

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County	Station	Latitude	Longitude	LSD Alt	WL Date	08 WL MEAS	WL ALT 2008	WL ALT 2007	WL ALT 2003	WL ALT 1998	07-08 Change	03-08 Change	98-08 Change
								Declines/Wells:			3/6	3/6	5/5
								Average Change:			1.04	-2.61	-8.53
Drew	11S04W02ACA2	334631.87	912826.56	153.00	3/19/2008	98.34	54.66	56.91	60.62		-2.25	-5.96	
Drew	11S04W25CB2	334249.46	912706.98	148.00	3/19/2008	92.40	55.60	59.82	63.72	68.00	-4.22	-8.12	-12.40
Drew	12S06W30BBD1	333807.15	914543.08	271.00	3/20/2008	236.80	34.20	44.38	48.37		-10.18	-14.17	
Drew	12S06W32DAD1	333649.09	914401.96	215.00	3/20/2008	171.72	43.28	37.84	46.98	58.00	5.44	-3.70	-14.72
Drew	15S04W12DDA1	332429.38	912723.69	125.00	3/20/2008	63.90	61.10	61.32	62.98	67.20	-0.22	-1.88	-6.10
								Declines/Wells:			4/5	5/5	3/3
								Average Change:			-2.29	-6.77	-11.07
Grant	03S13W12AAA1	342845.65	922106.24	361.00	4/16/2008	132.40	228.60	228.59	229.55		0.01	-0.95	
Grant	03S15W26DAA1	342600.52	923447.01	337.00	4/15/2008	4.50	332.50	325.98	326.55		6.52	5.95	
Grant	05S13W03CAA1	341843.97	922400.47	260.00	4/14/2008	85.70	174.30	171.74			2.56		
Grant	05S13W03CDA4	341837.64	922401.95	281.00	4/14/2008	106.55	174.45	167.07	169.10		7.38	5.35	
Grant	05S13W07ADB1	341810	922649.75	270.00	4/14/2008	102.90	167.10						
Grant	05S14W06DCC1	341842.5	923326.69	293.00	4/15/2008	83.90	209.10	205.36	205.38		3.74	3.72	
Grant	05S15W05ABD1	341923.78	923826.87	236.00	4/14/2008	11.00	225.00	221.71	216.97		3.29	8.03	
Grant	06S11W05ACD1	341340.82	921413.01	269.00	4/22/2008	195.00	74.00						
Grant	06S15W26ACA1	341021.99	923537.59	280.00	4/14/2008	64.70	215.30	207.23	213.66		8.07	1.64	
Grant	07S12W21BDB1	340558.11	921952.7	223.00	4/22/2008	3.14	219.86	218.88	220.83		0.98	-0.97	
								Declines/Wells:			0/8	2/7	
								Average Change:			4.07	3.25	
Hot Spring	05S16W35ACA1	341459.51	924151.12	342.00	4/21/2008	32.90	309.10	307.22	306.33		1.88	2.77	
Jefferson	03S08W19BAD1	342623.76	915443.67	217.00	3/11/2008	170.50	46.50	43.05	47.35	62.80	3.45	-0.85	-16.30
Jefferson	03S08W19BBD1	342628.36	915504.54	215.00	3/11/2008	172.40	42.60	33.77	47.48	59.30	8.83	-4.88	-16.70
Jefferson	03S09W23BBD1	342626.95	915712.96	224.00	3/11/2008	171.30	52.70		45.73			6.97	
Jefferson	03S10W27AAD1	342502.05	920433.81	222.00	3/11/2008	103.78	118.22		96.04	100.80		22.18	17.42
Jefferson	03S11W22ABC1	342650.81	921058.27	310.00	4/28/2008	170.90	139.10	133.55	134.66		5.55	4.44	
Jefferson	04S10W29ADB1	341814	920512	257.55	3/5/2008	211.00	56.55		49.48	68.75		7.07	-12.20
Jefferson	04S11W14BAD1	342219.74	921000.07	400.00	3/4/2008	307.99	92.01	86.33	91.45	95.00	5.68	0.56	-2.99
Jefferson	05S08W30CBA1	341446	915526	207.46	2/28/2008	290.80	-83.34		-81.41	-70.24		-1.93	-13.10
Jefferson	05S08W30ADB1	341452.32	915440.2	221.00	3/6/2008	296.00	-75.00	-77.66			2.66		
Jefferson	05S09W31DDC1	341336.69	920109.42	227.00	3/8/2008	281.80	-54.80	-47.55	-59.14		-7.25	4.34	
Jefferson	05S09W19BAA3	341605	920131	226.00	3/6/2008	302.30	-76.30	-47.60	-29.57		-28.70	-46.73	
Jefferson	05S09W35AAB1	341420.05	915653.1	205.00	3/18/2008	241.80	-36.80	-33.60	-68.45	-73.90	-3.20	31.65	37.10

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County	Station	Latitude	Longitude	LSD Alt	WL Date	08 WL MEAS	WL ALT 2008	WL ALT 2007	WL ALT 2003	WL ALT 1998	07-08 Change	03-08 Change	98-08 Change
Jefferson	05S10W16BAD1	341700.48	920548.64	277.00	3/4/2008	234.00	43.00	30.73	32.08	42.09	12.27	10.92	0.91
Jefferson	06S08W16CCC1	341143.07	915517.06	202.42	3/1/2008	257.80	-55.38	-55.48	-46.48	-42.78	0.10	-8.90	-12.60
Jefferson	06S08W25ADC1	341024.86	915116.18	203.48	3/1/2008	228.20	-24.72	-21.87	-13.91	-10.02	-2.85	-10.81	-14.70
Jefferson	06S10W23ACA2	341123.09	920503.93	235.00	3/8/2008	241.50	-6.50	4.16	7.32	17.00	-10.66	-13.82	-23.50
Jefferson	07S07W24BAB1	340632.68	914522.99	188.00	3/6/2008	168.75	19.25	17.15	26.31	35.55	2.10	-7.06	-16.30
Jefferson	07S10W24CAC1	340548.70	920420.81	311.00	3/5/2008	297.50	13.50		8.95	27.64		4.55	-14.14
									Declines/Wells:		5/14	8/17	10/13
									Average Change:		-0.92	-0.14	-6.70
Lafayette	16S23W12CAD1	332142.57	932608.59	322.00	5/13/2008	62.16	259.84						
Lafayette	16S24W26AAC1	331950.2	933302.96	267.00	5/12/2008	56.10	210.90	209.39			1.51		
Lafayette	17S24W23BBD1	331525.67	933402.79	261.00	5/12/2008	32.81	228.19	225.58			2.61		
Lafayette	18S23W29ACC1	330910.83	933039.27	255.00	5/12/2008	16.30	238.70	241.74			-3.04		
Lafayette	19S23W29BDB1	330351.94	933103.37	250.00	5/12/2008	40.57	209.43	206.84			2.59		
Lafayette	20S23W05ADB1	330223.35	933036.08	242.00	5/12/2008	37.65	204.35	201.04			3.31		
									Declines/Wells:		1/5		
									Average Change:		1.40		
Lee	01N04E09CDD1	344209.69	904119.07	208.00	3/5/2008	64.30	143.70	145.79	148.72		-2.09	-5.02	
Lee	02N01E10CAD1	344743.36	905924.74	201.00	3/5/2008	54.00	147.00	146.56	149.90		0.44	-2.90	
Lee	03N03E28CDB1	345011	904749	207.00	3/5/2008	52.55	154.45		145.89			8.56	
									Declines/Wells:		1/2	2/3	
									Average Change:			0.21	
Lincoln	08S04W22AAA1	340104.86	912752.79	167.00	3/19/2008	117.72	49.28		49.07			0.21	
Lincoln	08S05W03BAA2	340309.54	913453.58	180.00	3/19/2008	148.47	31.53	27.54	34.86		3.99	-3.33	
Lincoln	08S08W35DBB1	335858.35	915222.4	250.00	3/19/2008	235.54	14.46	21.12	48.44		-6.66	-33.98	
Lincoln	09S07W07DAD1	335633.89	915128.31	296.00	3/14/2008	263.75	32.25		27.80			4.45	
									Declines/Wells:		1/2	2/4	
									Average Change:		-1.33	-8.16	
Lonoke	01N07W03BCC1	344425.34	914503.28	223.00	4/2/2008	131.90	91.10	91.78	95.41	104.36	-0.68	-4.31	-13.26
Lonoke	01S08W02DBD1	343854.72	914959.73	210.00	4/2/2008	96.90	113.10	111.69	113.35		1.41	-0.25	
Lonoke	02N07W09AAA1	344906.42	914500.30	232.00	4/1/2008	101.40	130.60	130.55	133.36	139.75	0.05	-2.76	-9.15
Lonoke	02N07W22DBA1	344651.49	914425.68	227.00	4/3/2008	133.20	93.80	95.29	100.83	108.75	-1.49	-7.03	-14.95
Lonoke	02N07W24DAC1	344650.23	914209.37	231.00	4/3/2008	53.85	177.15						

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County	Station	Latitude	Longitude	LSD Alt	WL Date	08 WL MEAS	WL ALT 2008	WL ALT 2007	WL ALT 2003	WL ALT 1998	07-08 Change	03-08 Change	98-08 Change
Lonoke	02N07W32DDD1	344448	914618	226.00	4/3/2008	134.85	91.15		98.67	107.11		-7.52	-15.96
Lonoke	02S08W16BDA1	343227	915222	216.00	4/22/2008	130.50	85.50		94.93			-9.43	
Lonoke	02S09W15BBB2	343246.5	915825.0	226.00	4/23/2008	76.50	149.50	144.03	153.01		5.47	-3.51	
Lonoke	03N07W03CAA1	345444.90	914426.30	235.00	4/1/2008	80.45	154.55	155.02	155.89	161.45	-0.47	-1.34	-6.90
Lonoke	03N07W23CCC1	345145	914347	228.00	4/1/2008	86.20	141.80		141.79			0.01	
Lonoke	03N08W11ACD1	345402.52	914934.74	248.00	2/7/2008	95.31	152.69	154.88	160.02		-2.19	-7.33	
Lonoke	03N08W22DAD1	345205.16	345205.16	233.00	2/7/2008	99.77	133.23	136.49	145.44		-3.26	-12.21	
Lonoke	03N08W22DAD2	345204.58	915023.87	233.00	2/7/2008	101.10	131.90	134.14	138.71		-2.24	-6.81	
Lonoke	03N08W22DDD2	345152.18	915025.08	235.00	4/1/2008	97.90	137.10		140.00	145.20		-2.90	-8.10
								Declines/Wells:			6/9	12/13	6/6
								Average Change:			-0.38	-5.03	-11.39
Miller	17S25W18CDB1	331604.95	934402.45	220.00	5/12/2008	6.10	213.90	212.96			0.94		
Mississippi	12N08E03ACB1	354133	911350	225.00	3/18/2008	37.10	187.90	188.35			-0.45		
Mississippi	15N08E17CCA1	355602	901526	235.00	3/20/2008	23.00	212.00	210.00			2.00		
								Declines/Wells:			1/2		
								Average Change:			0.78		
Monroe	01N03W14CCB1	344143.93	911801.12	172.00	2/27/2008	70.60	101.40	96.04	100.71	110.80	5.36	0.69	-9.40
Monroe	03N01W33CDD1	345446.34	910635.08	210.00	2/27/2008	70.80	139.20	138.76	142.49		0.44	-3.29	
Monroe	03N02W26DAB1	345043	911026	192.00	2/27/2008	49.70	142.30	142.98	146.13	148.90	-0.68	-3.83	-6.60
Monroe	04N02W28DDD4	345535	911221	192.00	2/27/2008	29.65	162.35	159.32	161.94		3.03	0.41	
Monroe	04N02W30BAC1	345617.03	911503.95	182.00	3/5/2008	11.90	170.10	170.20	166.84	171.90	-0.10	3.26	-1.80
Monroe	04N02W30BAD1	345617.24	911514.62	176.00	2/27/2008	14.85	161.15	160.93	166.91		0.22	-5.76	
								Declines/Wells:			2/6	3/6	3/3
								Average Change:			1.38	-1.42	-5.93
Nevada	14S21W04CCB1	333251	931708	360.00	5/13/2008	59.98	300.02		303.55			-3.53	
Ouachita	11S15W27ABD1	334440.87	923725.58	200.00	4/1/2008	70.70	129.30	130.66	132.97		-1.36	-3.67	
Ouachita	11S17W14CAC1	334631.35	924927.46	146.00	4/1/2008	21.30	124.70	123.68	126.41		1.02	-1.71	
Ouachita	11S17W36CCA1	334341.11	924834.21	133.00	4/1/2008	8.64	124.36	123.57	125.57		0.79	-1.21	
Ouachita	12S15W09BBA1	334223.32	923922.44	213.00	4/1/2008	58.50	154.50	160.10	144.25	137.12	-5.60	10.25	17.38
Ouachita	12S18W19CDC1	334018	925948	235.00	4/3/2008	26.90	208.10	204.37			3.73		
Ouachita	12S19W09BAB1	334251.46	930351.94	290.00	4/3/2008	13.40	276.60	273.30	279.58	270.30	3.30	-2.98	6.30
Ouachita	12S19W14AAA1	334143.44	930104.54	237.00	4/3/2008	6.80	230.20	229.55	232.64	232.30	0.65	-2.44	-2.10

Sparta Aquifer
98-03-07-08 WL Change

County	Station	Latitude	Longitude	LSD Alt	WL Date	08 WL MEAS	WL ALT 2008	WL ALT 2007	WL ALT 2003	WL ALT 1998	07-08 Change	03-08 Change	98-08 Change
Ouachita	12S19W35BDD1	333901.13	930145.97	350.00	4/3/2008	158.69	191.31	189.75	196.05		1.56	-3.74	
Ouachita	13S18W28ADD1	333416.22	924450.63	106.00	4/1/2008	25.15	80.85	72.72	81.65		8.13	-0.80	
Ouachita	13S18W06BBA1	333819	930006	283.00	5/2/2008	114.45	168.55						
Ouachita	13S18W31BDD1	333340	925958	242.00	4/2/2008	70.00	172.00	170.82			1.18		
Ouachita	13S19W28BCD1	333433.86	930417.81	230.00	4/2/2008	39.60	190.40	191.79	196.81	190.90	-1.39	-6.41	-0.50
Ouachita	14S16W32BDB1	332815.62	924639.52	231.00	4/1/2008	26.80	204.20	205.24	213.80		-1.04	-9.60	
Ouachita	14S17W03CBA1	333234	925055	140.00	5/1/2008	15.48	124.52						
Ouachita	14S17W05CAD1	333238.01	925254.64	157.00	4/2/2008	35.72	121.28	119.76	120.75	121.20	1.52	0.53	0.08
Ouachita	14S17W19DBB1	333002.20	925345.44	259.00	4/2/2008	10.70	248.30	245.23	248.40		3.07	-0.10	
Ouachita	14S17W32CAD1	332803.41	925251.18	220.00	4/2/2008	80.00	140.00	140.94	137.70	133.33	-0.94	2.30	6.67
Ouachita	14S18W27BDC1	332917.60	925703.97	309.00	4/2/2008	48.20	260.80	265.70	267.01		-4.90	-6.21	
Ouachita	14S19W29ABB1	332941.45	930513.43	280.00	4/2/2008	88.70	191.30	191.84	194.27	194.20	-0.54	-2.97	-2.90
Ouachita	15S15W32DBB2	332233.72	924027.13	119.00	4/1/2008	176.50	-57.50	-50.42	-55.58		-7.08	-1.92	
Ouachita	15S16W23DAC1	332416.77	924314.16	170.00	4/1/2008	131.60	38.40	43.85			-5.45		
Ouachita	15S18W36ADD1	332310.75	925436.06	160.00	4/2/2008	93.60	66.40	65.60	64.90		0.80	1.50	
Ouachita	15S19W10DCC1	332618.38	930318.37	210.00	4/2/2008	70.80	139.20	140.14	139.15	146.20	-0.94	0.05	-7.00
								Declines/Wells:			10/21	13/18	4/8
								Average Change:			-0.17	-1.62	2.24
Phillips	01S02E32DDC1	343324.32	905455.41	211.00	4/9/2008	80.00	131.00	126.83	130.27		4.17	0.73	
Phillips	02S02E01ADC1	343323.48	905056.27	176.00	4/7/2008	36.20	139.80	140.83	138.12		-1.03	1.68	
Phillips	02S04E02DBA1	343242.87	903906.98	250.00	4/7/2008	92.30	157.70		136.70			21.00	
Phillips	02S05E16BCB1	343108.32	903525.64	190.00	4/9/2008	27.90	162.10	154.89	157.98		7.21	4.12	
Phillips	02S05E29CCC1	342850.81	903635.44	179.00	4/9/2008	20.55	158.45	155.44	145.19		3.01	13.26	
Phillips	03S03E30DAA1	342402.88	904914.59	172.00	4/9/2008	42.40	129.60	136.95	127.31		-7.35	2.29	
Phillips	04S02E25CCC1	341824.20	905121.49	166.00	4/9/2008	35.40	130.60	128.63	129.63		1.97	0.97	
								Declines/Wells:			2/6	0/7	
								Average Change:			1.33	6.29	
Poinsett	10N01E12BDC1	353026.35	905629.57	234.00	3/24/2008	102.75	131.25	133.62	139.49		-2.37	-8.24	
Poinsett	10N01E15DBB1	352930.54	905825.14	232.00	4/15/2008	95.70	136.30	135.08	138.18	150.55	1.22	-1.88	-14.25
Poinsett	10N01E33ABA1	352724.90	905924.05	221.00	3/24/2008	80.19	140.81	141.50	146.34		-0.69	-5.53	
Poinsett	10N01E34BAA1	352724	905846	231.00	3/24/2008	93.30	137.70			151.25			-13.55
Poinsett	10N03E02BCD1	353139.29	904446.6	251.00	4/14/2008	117.80	133.20	139.32	141.25	147.63	-6.12	-8.05	-14.43
Poinsett	11N02E16CCC1	353448.21	905321.22	243.00	3/24/2008	110.80	132.20	134.31	138.76	146.63	-2.11	-6.56	-14.43
Poinsett	11N03E25BDD1	353324.54	904323.28	269.00	4/8/2008	124.70	144.30	147.55	149.32		-3.25	-5.02	
Poinsett	12N03E12BBB1	354137.44	904340.09	246.00	3/24/2008	108.40	137.60	133.72	152.24		3.88	-14.64	
Poinsett	12N03E35BCC1	353744.78	904455.7	244.00	3/24/2008	102.30	141.70	143.47	145.42		-1.77	-3.72	

Sparta Aquifer
98-03-07-08 WL Change

County	Station	Latitude	Longitude	LSD Alt	WL Date	08 WL MEAS	WL ALT 2008	WL ALT 2007	WL ALT 2003	WL ALT 1998	07-08 Change	03-08 Change	98-08 Change
Poinsett	12N03E35DDA1	353727.35	904353.06	247.00	3/24/2008	104.70	142.30	144.05	138.50	152.68	-1.75	3.80	-10.38
								Declines/Wells:			7/9	8/9	5/5
								Average Change:			-1.44	-5.54	-13.41
Prairie	01N05W19CDC1	344113.1	913505.27	212.00	2/28/2008	145.40	66.60	66.85	71.00	75.23	-0.25	-4.40	-8.63
Prairie	01N06W02ABB1	344442.4	913700.96	221.00	2/28/2008	117.55	103.45		103.46	111.72		-0.01	-8.27
Prairie	01N06W34CBB1	343943.01	913846.17	226.00	2/28/2008	161.45	64.55	56.30	68.81		8.25	-4.26	
Prairie	01S05W06BCB1	343903.98	913531.63	220.00	2/28/2008	158.20	61.80		66.23	76.00		-4.43	-14.20
Prairie	01S05W20ABB1	343639.91	913351.89	220.00	2/28/2008	162.70	57.30	65.35	64.39	57.68	-8.05	-7.09	-0.38
Prairie	01S06W11DBD1	343748.99	913654.24	226.00	2/28/2008	169.10	56.90	48.18	56.60	67.25	8.72	0.30	-10.35
Prairie	01S06W12BAB1	343826	913613	228.00	3/26/2008	163.30	64.70	60.87			3.83		
Prairie	02N05W24ACA1	344659	912937	225.00	3/26/2008	101.01	123.99	123.10			0.89		
Prairie	02N06W19AAB1	344718.24	914049.95	236.00	3/4/2008	151.07	84.93	85.42	93.03	104.49	-0.49	-8.10	-19.56
Prairie	02N06W20BCB1	344706.57	914032.97	236.00	3/4/2008	155.40	80.60	88.82	96.19	97.90	-8.22	-15.59	-17.30
Prairie	02N06W21DAD1	344644.15	913829.47	232.00	3/11/2008	122.35	109.65		110.98	118.07		-1.33	-8.42
Prairie	02N06W22BDD1	344653.66	913800.68	233.00	3/11/2008	120.80	112.20	105.10	105.09		7.10	7.11	
Prairie	02N06W24CAA1	344651	913551	232.90	3/27/2008	117.08	115.82	115.00			0.82		
Prairie	03N05W03ADA2	345451.65	913042.51	205.00	3/4/2008	61.45	143.55	145.10	145.86	152.58	-1.55	-2.31	-9.03
Prairie	03N05W20CCC1	345144.72	913356.35	213.00	3/4/2008	75.30	137.70	141.11	142.90		-3.41	-5.20	
Prairie	03N06W20CDD1	345140.24	914003.93	225.00	3/4/2008	86.12	138.88	139.12	140.80	145.58	-0.24	-1.92	-6.70
								Declines/Wells:			7/13	11/13	10/10
								Average Change:			0.57	-3.63	-10.28
St. Francis	04N04E18BAB1	345743.38	904319.00	220.00	3/8/2008	68.65	151.35	154.71	155.75	156.30	-3.36	-4.40	-4.95
Union	16S14W15CAB1	331944.03	923218.09	94.00	2/21/2008	157.95	-63.95	-55.70	-59.21	-55.10	-8.25	-4.74	-8.85
Union	16S15W31ACC1	331717.09	924128.90	168.00	2/20/2008	264.15	-96.15	-97.72	-133.68		1.57	37.53	
Union	16S16W02ABC1	332205	924330	116.00	2/29/2008	160.58	-44.58	-46.53	-54.90	-60.40	1.95	10.32	15.82
Union	16S16W03CBB1	332138	924507	200.00	2/20/2008	219.15	-19.15	-22.50			3.35		
Union	17S12W32BBC1	331202.09	922219.02	231.00	2/27/2008	246.18	-15.18	-10.54	-18.06	-22.77	-4.64	2.90	7.59
Union	17S14W10DCC1	331456.79	923203.26	182.00	2/26/2008	96.50	85.50	85.97	87.80		-0.47	-2.30	
Union	17S14W15ABA1	331451.3	923159.8	169.00	2/26/2008	86.60	82.40	72.70	74.35		9.70	8.05	
Union	17S14W22BAB1	331354.37	923224.17	201.00	4/26/2008	295.01	-94.01	-96.61			2.60		
Union	17S15W06BAA1	331645.6	924133.99	170.00	2/20/2008	234.50	-64.50	-72.48	-88.75		7.98	24.25	
Union	17S15W08CDD1	331504.77	924027.41	174.92	2/20/2008	286.58	-111.66	-114.73	-158.73		3.07	47.07	
Union	17S15W18DBB1	331438.96	924129.21	182.93	4/26/2008	292.41	-109.48	-118.40	-163.90	-177.81	8.92	54.42	68.33
Union	17S15W28DBA1	331246.08	923909.78	230.00	5/14/2008	340.27	-110.27	-115.83	-157.98		5.56	47.71	

Sparta Aquifer
98-03-07-08 WL Change

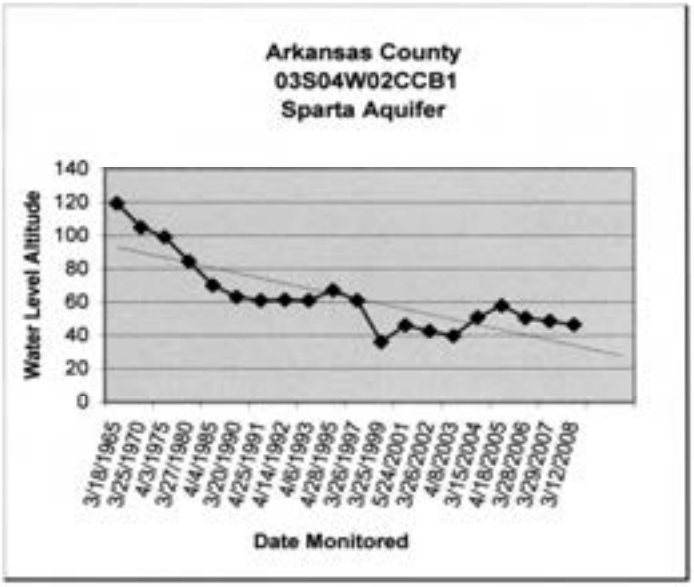
County	Station	Latitude	Longitude	LSD Alt	WL Date	08 WL MEAS	WL ALT 2008	WL ALT 2007	WL ALT 2003	WL ALT 1998	07-08 Change	03-08 Change	98-08 Change
Union	17S15W31DCA1	331145.05	924116.74	272.00	1/27/2008	368.40	-116.40	-124.61	-164.69	-200.57	8.21	48.29	84.17
Union	17S15W31DDA1	331143.75	924104.87	261.00	5/14/2008	372.30	-111.30	-122.42	-164.81		11.12	53.51	
Union	17S16W01BAA1	331649.04	924232.96	188.84	2/20/2008	270.79	-81.95	-82.89	-124.26		0.94	42.31	
Union	17S16W12CDD1	331505.81	924232.01	221.58	2/22/2008	338.68	-117.10	-160.80	-177.49		43.70	60.39	
Union	17S16W24BDB1	331357.24	924248.47	205.00	2/28/2008	324.44	-119.44	-138.85	-198.82		19.41	79.38	
Union	17S17W25DBA2	331256	924837	250.00	1/30/2008	331.45	-81.45	-86.42			4.97		
Union	17S17W30DCD1	331257.41	925355.54	280.00	2/21/2008	297.65	-17.65	-43.53	-39.40	-30.00	25.88	21.75	12.35
Union	18S12W33BBB1	330650.66	922119.92	112.00	2/27/2008	142.74	-30.74	-27.56	-25.32	-19.85	-3.18	-5.42	-10.89
Union	18S14W06CCD1	331040	923531	232.00	2/27/2008	368.19	-136.19	-110.80	-154.17	-144.30	-25.39	17.98	8.11
Union	18S15W03DAB1	331103.78	923802.12	240.00	1/30/2008	342.03	-102.03	-106.05			4.02		
Union	18S15W33ADA1	330659.32	923858.48	253.00	2/26/2008	368.28	-115.28	-106.87	-119.64	-192.44	-8.41	4.36	77.16
Union	18S16W11DAC1	331011.23	924316.37	272.00	2/21/2008	377.90	-105.90	-140.75	-144.88	-195.00	34.85	38.98	89.10
Union	18S16W10CDD1	331000.38	924445.32	182.00	3/21/2008	320.40	-138.40	-132.68			-5.72		
Union	18S16W12ACB1	331028.75	924231.85	302.00	2/21/2008	402.64	-100.64	-131.04	-151.75	-176.00	30.40	51.11	75.36
Union	18S16W28BBB1	330809.22	924611.13	225.00	3/26/2008	301.20	-76.20	-94.20	-104.96	-116.70	18.00	28.76	40.50
Union	18S17W16BBD1	331006	925448	270.00	2/20/2008	305.00	-35.00						
Union	18S17W22BDD1	330855.91	925056.48	285.00	2/20/2008	338.25	-53.25	-55.69	-74.82		2.44	21.57	
Union	18S18W11ACD2	331050.91	925615.1	239.00	2/20/2008	284.28	-45.28	-28.28			-17.00		
Union	19S10W16CBC1	330329	920903	82.00	2/27/2008	88.70	-6.70	-5.33	-2.28		-0.37	-4.42	
Union	19S11W23ACA1	330255.38	921228.80	142.00	2/27/2008	143.62	-1.62	-10.44	-9.16		8.82	7.54	
Union	19S11W25AAA1	330217.84	921113.03	135.00	2/27/2008	149.08	-14.08	-16.20	-13.02	-12.70	2.12	-1.06	-1.38
Union	19S12W13AAA1	330411.26	921716.78	191.00	2/27/2008	159.55	31.45	48.63	36.96		-17.18	-5.51	
Union	19S15W01CCA1	330534.81	923645.01	192.00	2/26/2008	73.75	118.25	121.42	122.70		-3.17	-4.45	
Union	19S16W35DDC1	330108.86	924325.54	175.00	2/21/2008	235.94	-60.94	-60.15	-64.08	-62.23	-0.79	3.14	1.29
Union	19S18W14ADA1	330451.70	925607.90	243.00	2/20/2008	182.22	60.78	50.93	55.40	243.00	9.85	5.38	
								Declines/Wells:			**12/36**	**7/30**	**3/14**
								Average Change:			**4.86**	**22.96**	**32.76**
Woodruff	05N01W11ABA1	350425.81	910407.19	211.00	4/29/2008	60.50	150.50	151.00	154.98		-0.50	-4.48	
Woodruff	05N01W17DBB1	350310.68	910727.11	210.00	4/29/2008	47.55	162.45	162.64	164.33		-0.19	-1.88	
Woodruff	05N02W31DCB3	350026.9	911455.9	193.00	4/29/2008	13.00	180.00	176.76	181.70		3.24	-1.70	
Woodruff	06N01W13ABA1	350851	910255	212.00	4/29/2008	70.70	141.30	143.54			-2.24		
Woodruff	06N01W13ADC1	350827.39	910246.74	212.00	4/29/2008	66.80	145.20	143.62			1.58		
Woodruff	07N01W12BCB1	351441.58	910326.17	222.00	4/29/2008	67.90	154.10	154.06	158.79		0.04	-4.69	
Woodruff	08N01W12CDA1	351932	910310	225.00	4/29/2008	72.50	152.50	150.14	146.63		2.36	5.87	
								Declines/Wells:			**3/7**	**4/5**	
								Average Change:			**0.61**	**-1.38**	

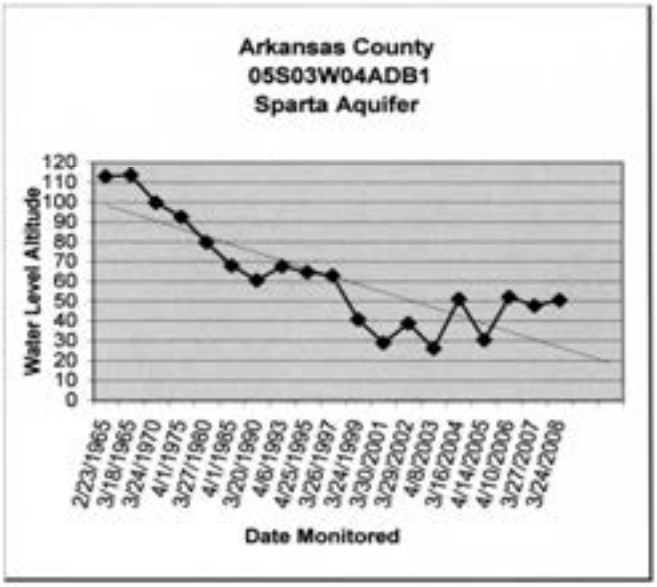
Sparta Aquifer
98-03-07-08 WL Change

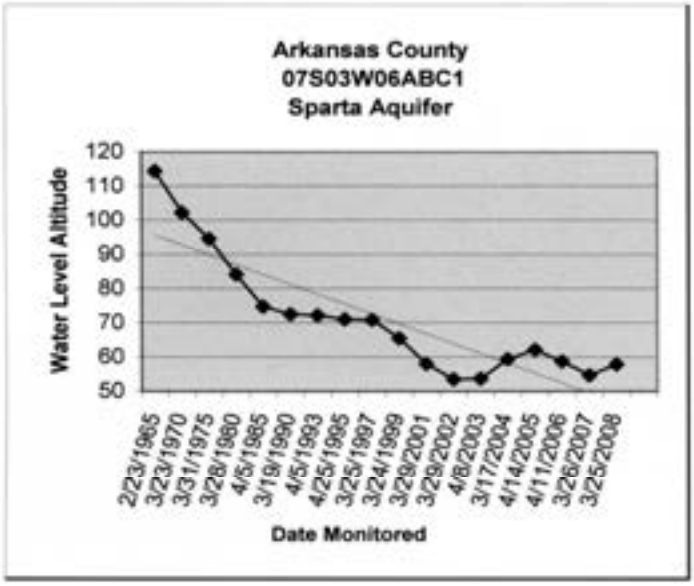
County	Station	Latitude	Longitude	LSD Alt	WL Date	08 WL MEAS	WL ALT 2008	WL ALT 2007	WL ALT 2003	WL ALT 1998	07-08 Change	03-08 Change	98-08 Change
								Total Declines/ Wells:			111/262	133/234	88/116
								Total Average Change:			0.53	1.07	-2.06
											42.36%	56.83%	75.86%

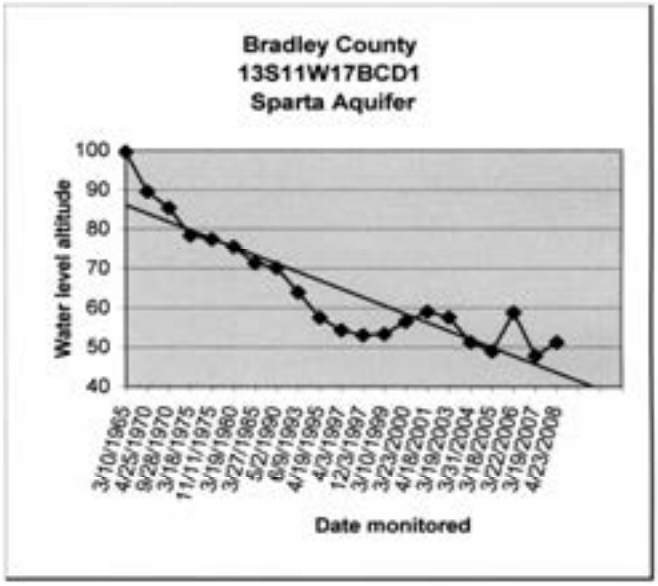
Appendix D

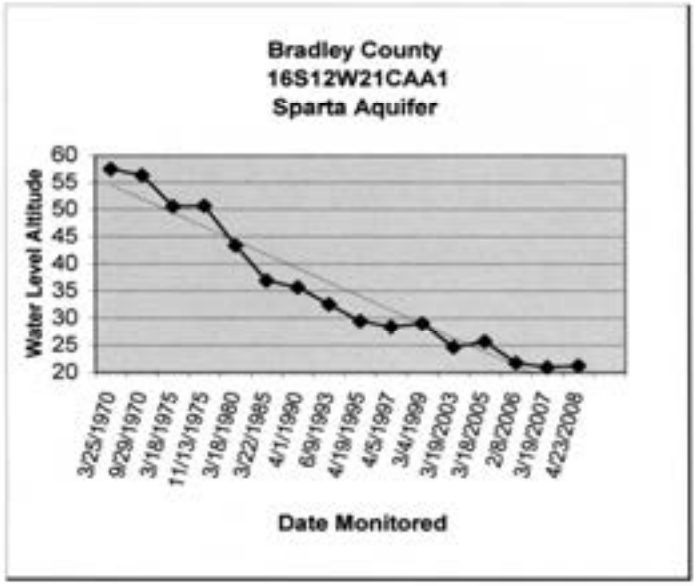
Selected Sparta/Memphis Aquifer Well Hydrographs

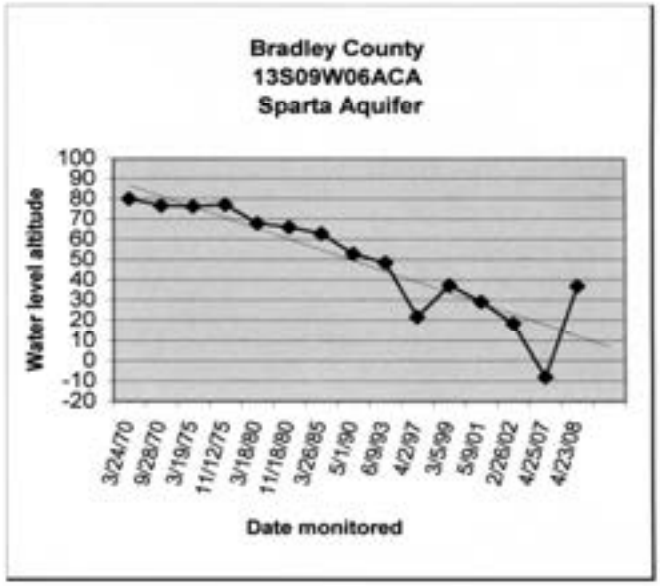

Arkansas County
03S04W02CCB1
Sparta Aquifer
Water Level Altitude
140
120
100
80
60
40
20
0
3/18/1965
3/25/1970
4/3/1975
3/27/1980
4/4/1985
3/20/1990
4/25/1991
4/14/1992
4/6/1993
4/28/1995
3/26/1997
3/25/1999
5/24/2001
3/26/2002
4/8/2003
3/15/2004
4/18/2005
3/28/2006
3/29/2007
3/12/2008
Date Monitored

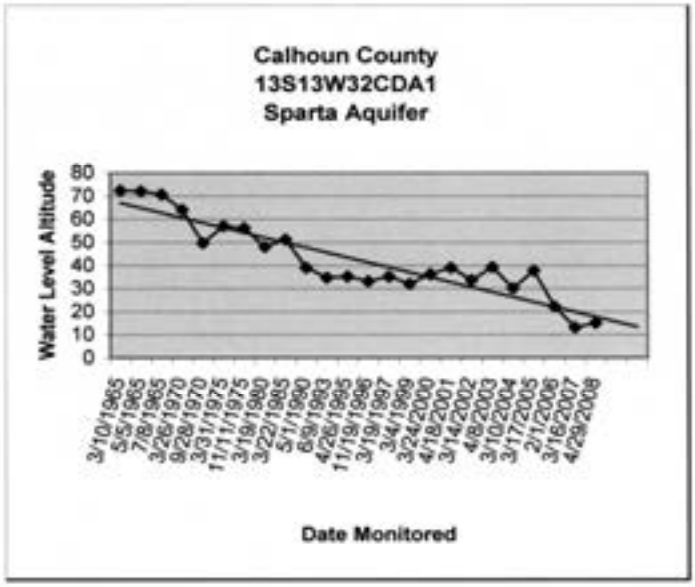

Arkansas County
05S03W04ADB1
Sparta Aquifer
Water Level Altitude
120
110
100
90
80
70
60
50
40
30
20
10
0
2/23/1965
3/18/1965
3/24/1970
4/1/1975
3/27/1980
4/1/1985
3/20/1990
4/6/1993
4/25/1995
3/26/1997
3/24/1999
3/30/2001
3/29/2002
4/8/2003
3/16/2004
4/14/2005
4/10/2006
3/27/2007
3/24/2008
Date Monitored

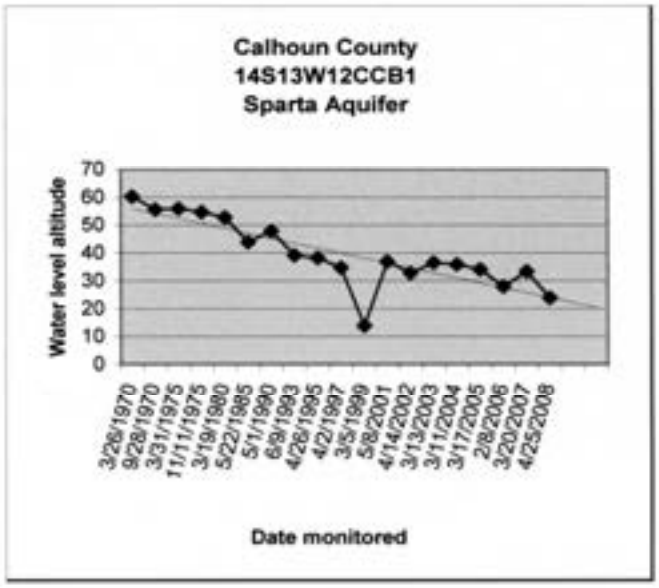

Arkansas County
07S03W06ABC1
Sparta Aquifer
Water Level Altitude
120
110
100
90
80
70
60
50
2/23/1965
3/23/1970
3/31/1975
3/28/1980
4/5/1985
3/19/1990
4/5/1993
4/25/1995
3/25/1997
3/24/1999
3/29/2001
3/29/2002
4/6/2003
3/17/2004
4/14/2005
4/11/2006
3/26/2007
3/25/2008
Date Monitored

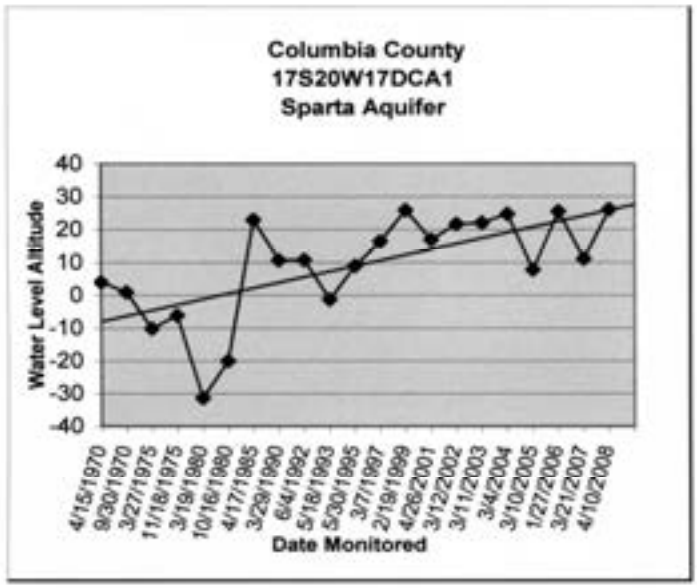

Bradley County
13S11W17BCD1
Sparta Aquifer
Water level altitude
100
90
80
70
60
50
40
3/10/1965
4/25/1970
9/28/1970
3/18/1975
11/11/1975
3/19/1980
3/27/1985
5/2/1990
6/9/1993
4/19/1995
4/3/1997
12/3/1997
3/10/1999
3/23/2000
4/18/2001
3/19/2003
3/31/2004
3/18/2005
3/22/2006
3/19/2007
4/23/2008
Date monitored

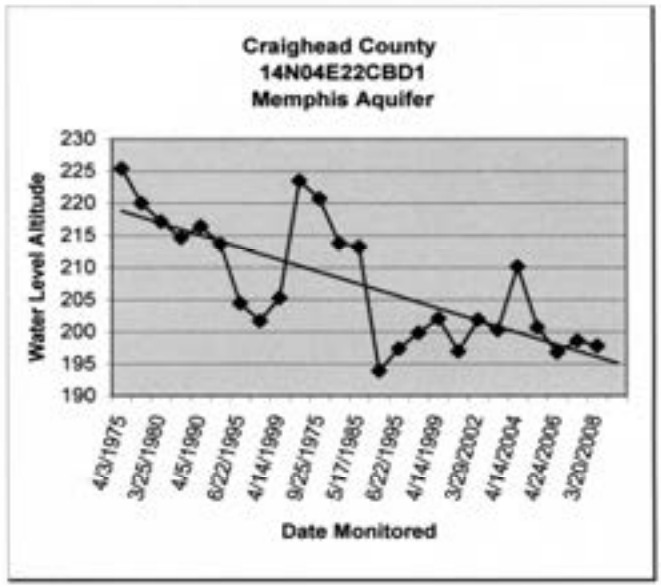

Bradley County
16S12W21CAA1
Sparta Aquifer
Water Level Altitude
60
55
50
45
40
35
30
25
20
3/25/1970
9/29/1970
3/18/1975
11/13/1975
3/18/1980
3/22/1985
4/1/1990
6/9/1993
4/19/1995
4/5/1997
3/4/1999
3/19/2003
3/18/2005
2/8/2006
3/19/2007
4/23/2008
Date Monitored

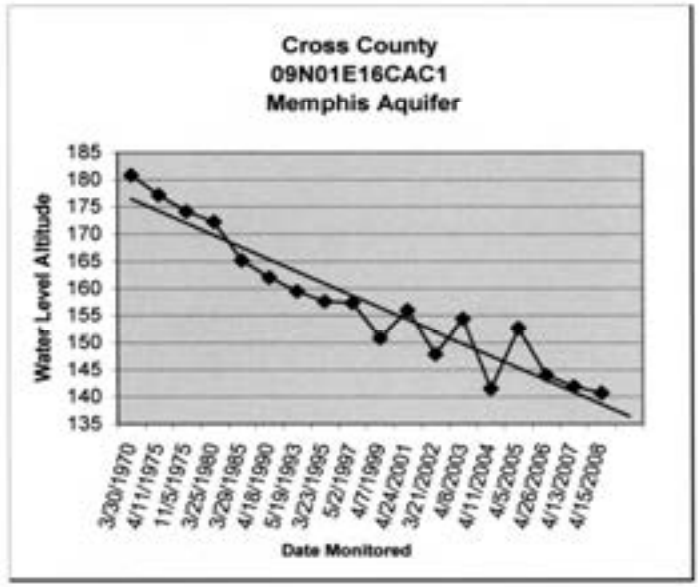

Bradley County
13S09W06ACA
Sparta Aquifer
Water level altitude
100
90
80
70
60
50
40
30
20
10
0
-10
-20
3/24/70
9/28/70
3/19/75
11/12/75
3/18/80
11/18/80
3/26/85
5/1/90
6/9/93
4/2/97
3/5/99
5/9/01
2/26/02
4/25/07
4/23/08
Date monitored

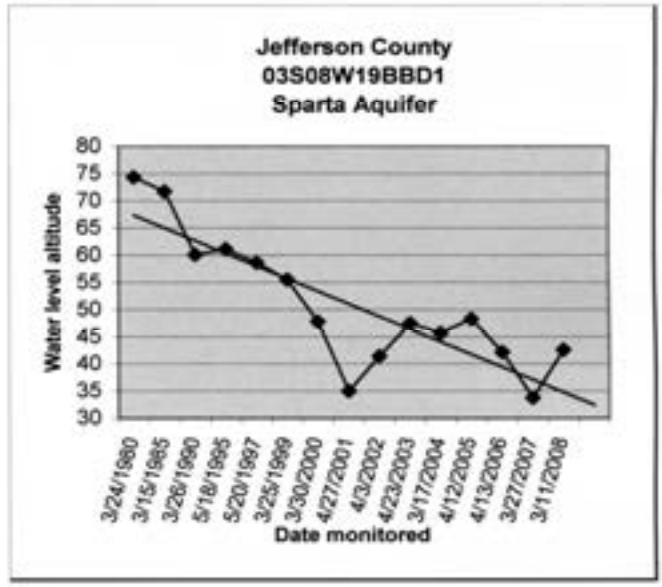

Calhoun County
13S13W32CDA1
Sparta Aquifer
Water Level Altitude
80
70
60
50
40
30
20
10
0
3/10/1965
5/5/1965
7/8/1965
3/26/1970
9/28/1970
3/31/1975
11/11/1975
3/19/1980
3/22/1985
5/1/1990
6/9/1993
4/26/1995
11/19/1996
3/19/1997
3/4/1999
3/24/2000
4/18/2001
3/14/2002
4/8/2003
3/10/2004
3/17/2005
2/1/2006
3/16/2007
4/29/2008
Date Monitored

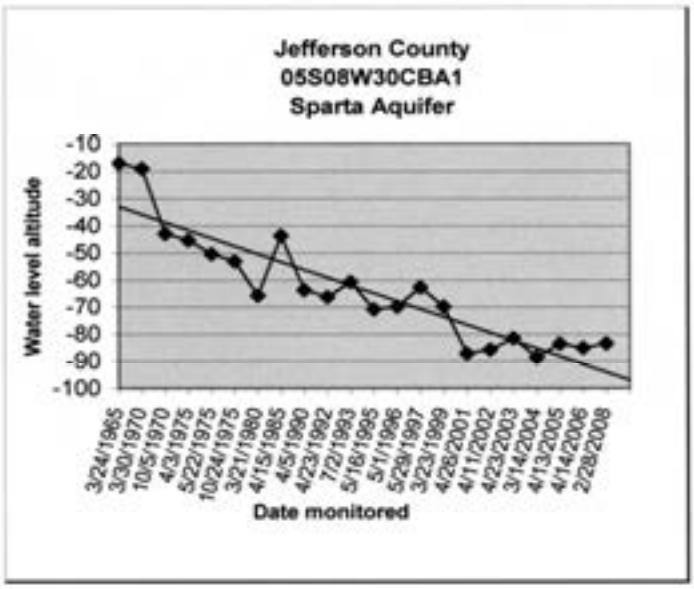

Calhoun County
14S13W12CCB1
Sparta Aquifer
Water level altitude
70
60
50
40
30
20
10
0
3/26/1970
9/28/1970
3/31/1975
11/11/1975
3/19/1980
5/22/1985
5/1/1990
6/9/1993
4/26/1995
4/2/1997
3/5/1999
5/8/2001
4/14/2002
3/13/2003
3/11/2004
3/17/2005
2/8/2006
3/20/2007
4/25/2008
Date monitored

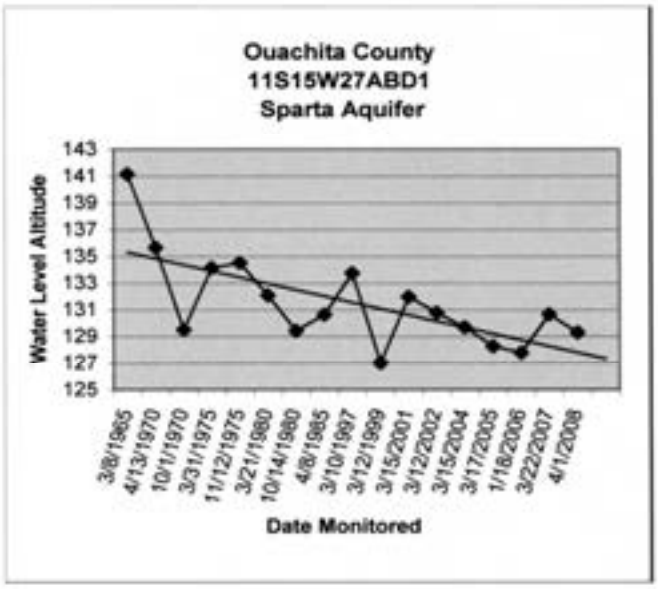

Columbia County
17S20W17DCA1
Sparta Aquifer
Water Level Altitude
40
30
20
10
0
-10
-20
-30
-40
4/15/1970
9/30/1970
3/27/1975
11/18/1975
3/19/1980
10/16/1980
4/17/1985
3/28/1990
6/4/1992
5/18/1993
5/30/1995
3/7/1997
2/19/1999
4/26/2001
3/12/2002
3/11/2003
3/4/2004
3/10/2005
1/27/2006
3/21/2007
4/10/2008
Date Monitored

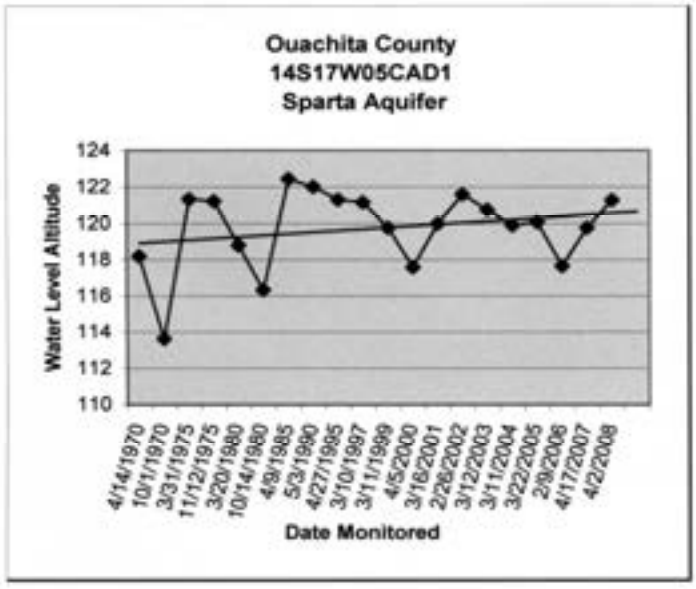

Craighead County
14N04E22CBD1
Memphis Aquifer
Water Level Altitude
230
225
220
215
210
205
200
195
190
4/3/1975
3/25/1980
4/5/1990
6/22/1995
4/14/1999
9/25/1975
5/17/1985
6/22/1995
4/14/1999
3/29/2002
4/14/2004
4/24/2006
3/20/2008
Date Monitored

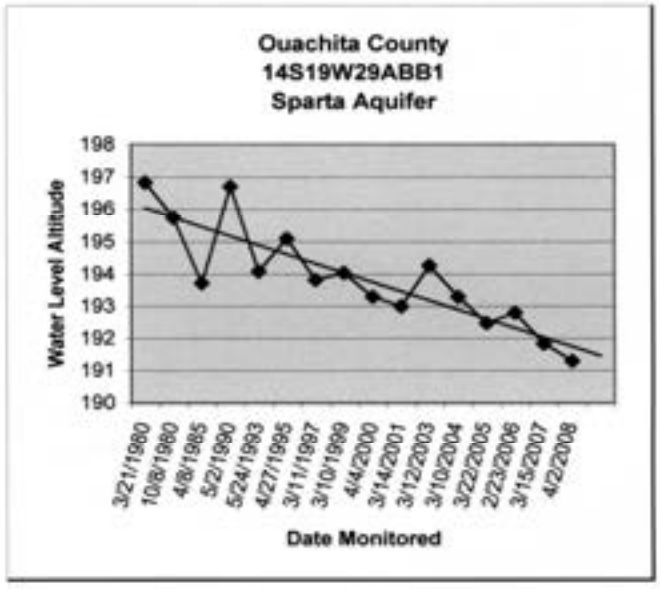

Cross County
09N01E16CAC1
Memphis Aquifer
Water Level Altitude
185
180
175
170
165
160
155
150
145
140
135
3/30/1970
4/11/1975
11/5/1975
3/25/1980
3/28/1985
4/18/1990
5/19/1993
3/23/1995
5/2/1997
4/7/1999
4/24/2001
3/21/2002
4/8/2003
4/11/2004
4/5/2005
4/26/2006
4/13/2007
4/15/2008
Date Monitored

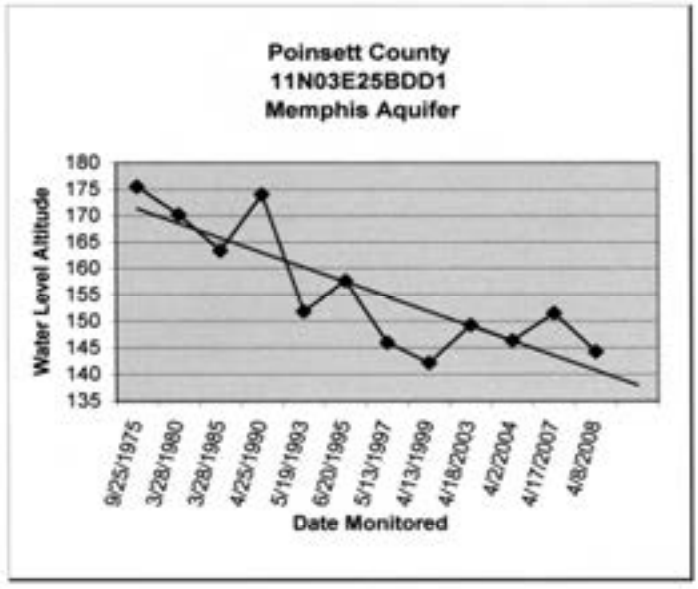

Jefferson County
03S08W19BBD1
Sparta Aquifer
Water level altitude
80
75
70
65
60
55
50
45
40
35
30
3/24/1980
3/15/1985
3/26/1990
5/18/1995
5/20/1997
3/25/1999
3/30/2000
4/27/2001
4/3/2002
4/23/2003
3/17/2004
4/12/2005
4/13/2006
3/27/2007
3/11/2008
Date monitored

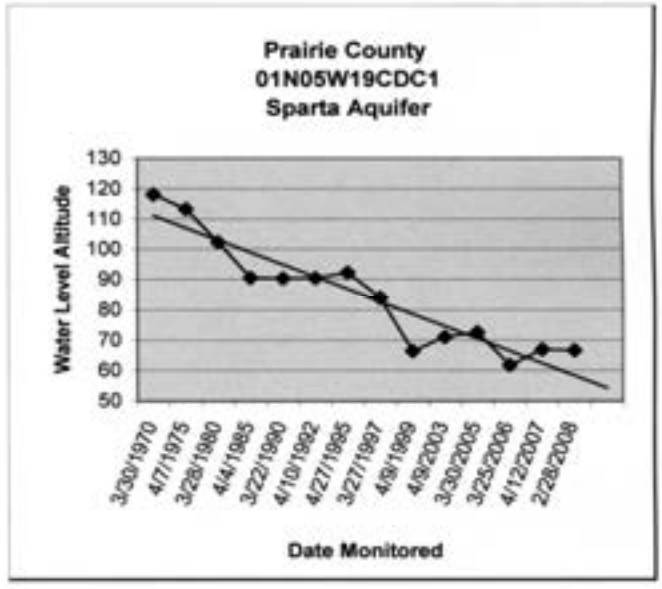

Jefferson County
05S08W30CBA1
Sparta Aquifer
Water level altitude
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
3/24/1965
3/30/1970
10/5/1970
4/3/1975
5/22/1975
10/24/1975
3/21/1980
4/15/1985
4/5/1990
4/23/1992
7/2/1993
5/16/1995
5/1/1996
5/29/1997
3/23/1999
4/26/2001
4/11/2002
4/23/2003
3/14/2004
4/13/2005
4/14/2006
2/28/2008
Date monitored

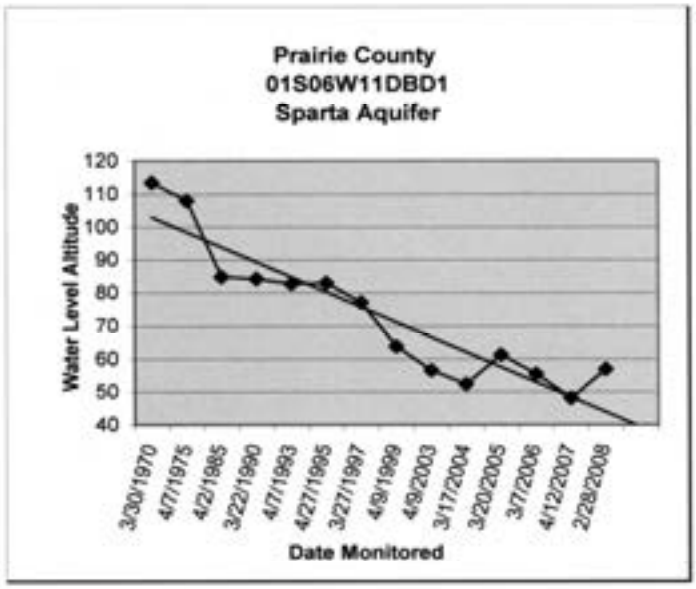

Ouachita County
11S15W27ABD1
Sparta Aquifer
Water Level Altitude
143
141
139
137
135
133
131
129
127
125
3/8/1965
4/13/1970
10/1/1970
3/31/1975
11/12/1975
3/21/1980
10/14/1980
4/8/1985
3/10/1987
3/12/1999
3/15/2001
3/12/2002
3/15/2004
3/17/2005
1/18/2006
3/22/2007
4/1/2008
Date Monitored

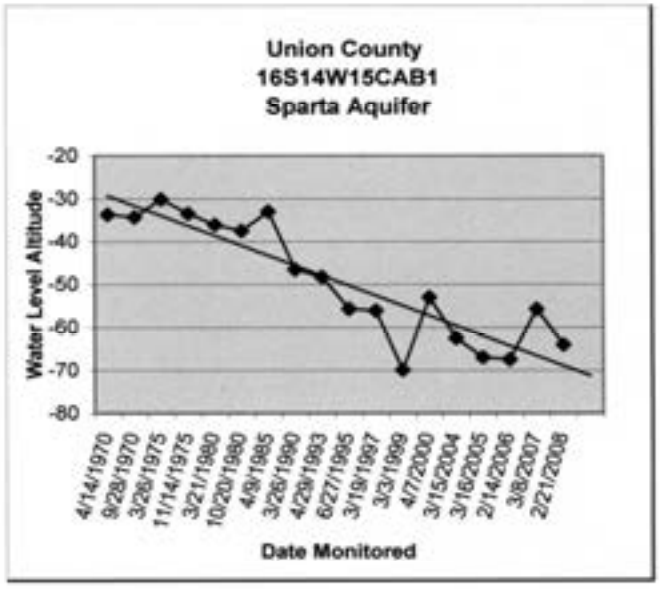

Ouachita County
14S17W05CAD1
Sparta Aquifer
Water Level Altitude
124
122
120
118
116
114
112
110
4/14/1970
10/1/1970
3/31/1975
11/12/1975
3/20/1980
10/14/1980
4/9/1985
5/3/1990
4/27/1995
3/10/1997
3/11/1999
4/5/2000
3/16/2001
2/26/2002
3/12/2003
3/11/2004
3/22/2005
2/9/2006
4/17/2007
4/2/2008
Date Monitored

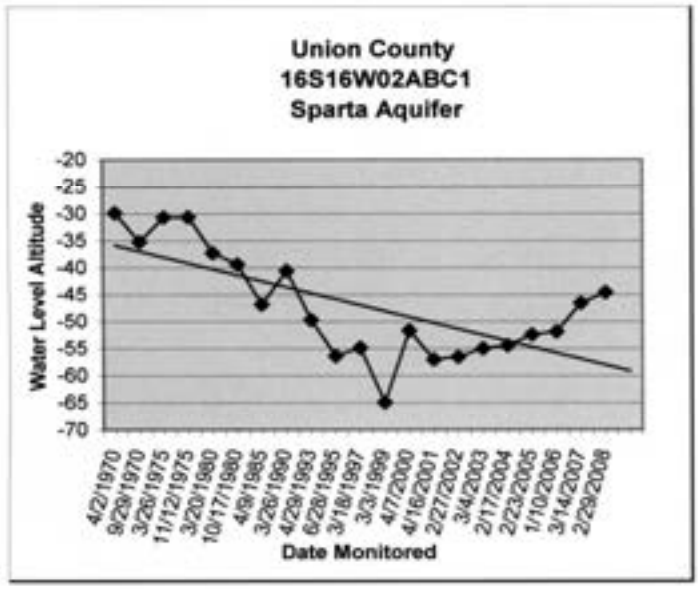

Ouachita County
14S19W29ABB1
Sparta Aquifer
Water Level Altitude
198
197
196
195
194
193
192
191
190
3/21/1980
10/8/1980
4/8/1985
5/2/1990
5/24/1993
4/27/1995
3/11/1997
3/10/1999
4/4/2000
3/14/2001
3/12/2003
3/10/2004
3/22/2005
2/23/2006
3/15/2007
4/2/2008
Date Monitored

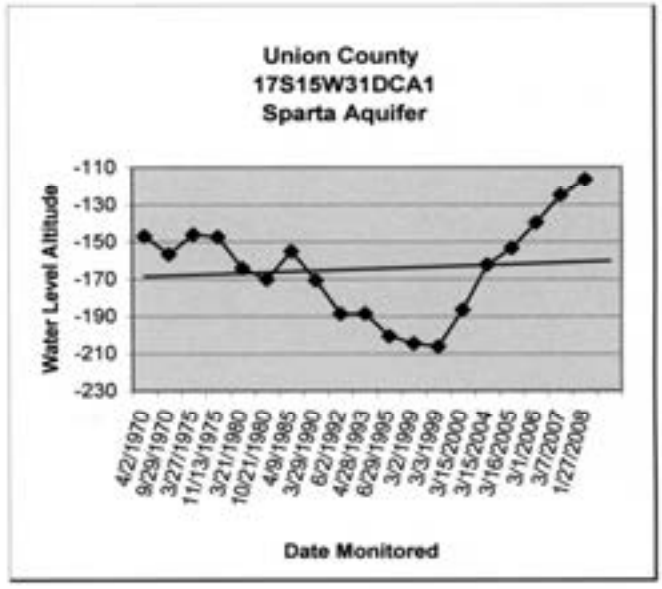

Poinsett County
11N03E25BDD1
Memphis Aquifer
Water Level Altitude
180
175
170
165
160
155
150
145
140
135
9/25/1975
3/28/1980
3/28/1985
4/25/1990
5/19/1993
6/20/1995
5/13/1997
4/13/1999
4/18/2003
4/2/2004
4/17/2007
4/8/2008
Date Monitored

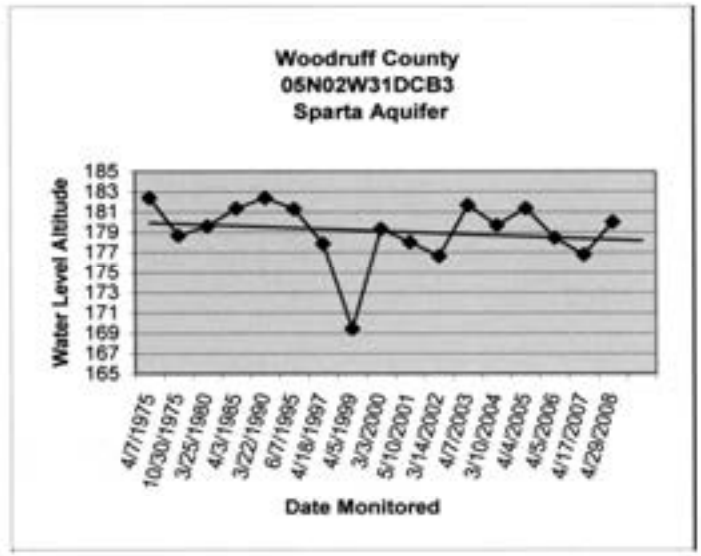

Prairie County
01N05W19CDC1
Sparta Aquifer
Water Level Altitude
130
120
110
100
90
80
70
60
50
3/30/1970
4/7/1975
3/28/1980
4/4/1985
3/22/1990
4/10/1992
4/27/1995
3/27/1997
4/9/1999
4/9/2003
3/30/2005
3/25/2006
4/12/2007
2/28/2008
Date Monitored

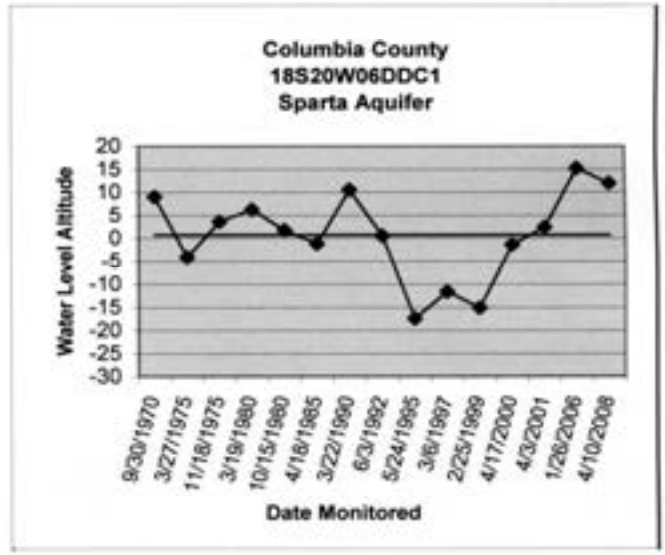

Prairie County
01S06W11DBD1
Sparta Aquifer
Water Level Altitude
120
110
100
90
80
70
60
50
40
3/30/1970
4/7/1975
4/2/1985
3/22/1990
4/7/1993
4/27/1995
3/27/1997
4/9/1999
4/9/2003
3/17/2004
3/20/2005
3/7/2006
4/12/2007
2/28/2008
Date Monitored


Union County
16S14W15CAB1
Sparta Aquifer
Water Level Altitude
-20
-30
-40
-50
-60
-70
-80
4/14/1970
9/29/1970
3/26/1975
11/14/1975
3/21/1980
10/20/1980
4/9/1985
3/26/1990
4/29/1993
6/27/1995
3/19/1997
3/3/1999
4/7/2000
3/15/2004
3/16/2005
2/14/2006
3/8/2007
2/21/2008
Date Monitored


Union County
16S16W02ABC1
Sparta Aquifer
Water Level Altitude
-20
-25
-30
-35
-40
-45
-50
-55
-60
-65
-70
4/2/1970
9/29/1970
3/26/1975
11/12/1975
3/20/1980
10/17/1980
4/9/1985
3/26/1990
4/29/1993
6/28/1995
3/18/1997
3/3/1999
4/7/2000
4/16/2001
2/27/2002
3/4/2003
2/17/2004
2/23/2005
1/10/2006
3/14/2007
2/29/2008
Date Monitored


Union County
17S15W31DCA1
Sparta Aquifer
Water Level Altitude
-110
-130
-150
-170
-190
-210
-230
4/2/1970
9/29/1970
3/27/1975
11/13/1975
3/21/1980
10/21/1980
4/9/1985
3/29/1990
6/2/1992
4/28/1993
6/29/1995
3/2/1999
3/3/1999
3/15/2000
3/15/2004
3/16/2005
3/1/2006
3/7/2007
1/27/2008
Date Monitored


Woodruff County
05N02W31DCB3
Sparta Aquifer
Water Level Altitude
185
183
181
179
177
175
173
171
169
167
165
4/7/1975
10/30/1975
3/25/1980
4/3/1985
3/22/1990
6/7/1995
4/18/1997
4/5/1999
3/3/2000
5/10/2001
3/14/2002
4/7/2003
3/10/2004
4/4/2005
4/5/2006
4/17/2007
4/29/2008
Date Monitored


Columbia County
18S20W06DDC1
Sparta Aquifer
Water Level Altitude
20
15
10
5
0
-5
-10
-15
-20
-25
-30
9/30/1970
3/27/1975
11/18/1975
3/19/1980
10/15/1980
4/18/1985
3/22/1990
6/3/1992
5/24/1995
3/6/1997
2/25/1999
4/17/2000
4/3/2001
1/26/2006
4/10/2008
Date Monitored

Appendix E

Water Quality Data from Selected ANRC Wells

Arkansas Water Resources
Center Water Quality Lab

ANRC Monitoring
Enhancement Wells
Water Quality Analysis

THE ARKANSAS WATER RESOURCES CENTER WATER QUALITY LABORATORY WAS RESPONSIBLE FOR THE							
ANALYTICAL DATA. THE AWRC LABORATORY CONDUCTED ANION, AMMONIA, pH, CONDUCTANCE AND							
TURBIDITY ANALYSES AND THE BUREAU OF GEOLOGY AND MINERAL RESOURCES, NEW MEXICO INSTITUTE							
OF MINING AND TECHNOLOGY ANALYZED CATIONS.							
Well ID	Units	BT1-BN2	GT1-SP11	CN1-CF1	CN1-CF1 duplicate	BT1- EV1	DA1-SP9
Location	Latitude	362155	342405	333846	333846	362144	335201
	Longitude	942548	923456	922226	922226	942547	923632
Sampling date	mm/dd/yyyy	6/15/2008 15:15	6/21/2008 15:00	6/18/2008 9:35	6/19/2008 9:35	6/24/2008 14:50	6/24/2008 14:00
Sample	Characteristics	Filtered	Filtered	Filtered	Filtered	Filtered	Filtered
Aquifer	Aquifer	Springfield	Sparta	Cockfield	Cockfield	Ozark	Springfield
Calcium	mg/L	85	1.5	23	22	7.5	10
Magnesium	mg/L	3.3	0.34	6.3	6.2	0.70	3.8
Sodium	mg/L	7.0	4.3	60	59	126	13
Potassium	mg/L	0.65	2.1	3.4	3.3	2.2	4.0
Iron	mg/L	0.006	0.164	0.006	0.002	0.16	0.64
Lead	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Manganese	mg/L	0.01	0.018	0.01	<0.01	0.023	0.085
Copper	mg/L	0.002	0.004	0.002	0.002	0.010	0.002
Zinc	mg/L	0.010	0.017	<0.002	<0.002	0.015	0.040
Alkalinity	mg/L as $CaCO_3$	264	6	152	NA	212	54
Bicarbonate#	mg/L	321	10	185	NA	258	66
Carbonate#	mg/L	0.37	<0.01	0.01	NA	0.19	0.09
Chloride	mg/L	8.41	1.51	27.94	NA	3.49	6.82
Sulfate	mg/L	10.95	4.56	23.19	NA	57.44	2.27
Bromide	mg/L	0.03	0.008	0.128	NA	<0.01	<0.01
Fluoride	mg/L	0.089	0.213	0.116	NA	0.239	0.038
Nitrate+nitrite	mg/L as N	0.029	0.148	0.048	NA	0.512	0.023
Ammonia	mg/L as N	0.07	0.21	0.45	NA	0.1	0.13
Orthophosphate **	mg/L	0.007	0.009*	0.006*	NA	0.005*	0.009*
pH	pH units	8.14*	6.07*	7.28*	NA	8.40*	7.31*
Conductivity	uS/cm	456	34.1	420	NA	520	145.9
Turbidity	NTU	NA	NA	NA	NA	NA	NA
E. Coli	MPN	<1	NA	NA	NA	TTTU	NA
Total Coliform	MPN	218.7	NA	NA	NA	TTTU	NA
* exceeded holding time							
**Orthophosphate is measured by IC, therefore sample filtered in instrument through 0.20 um pore-size membrane							
# Bicarbonate and carbonate concentrations were calculated from measured alkalinity and pH						NA = not analyzed	
TTTU = too turbid to use							
August 26,2008							

Appendix F

Tokio Aquifer Water Level Data

Tokio Aquifer
99-05-08 WL Change

County	Station	Latitude	Longitude	LS Alt	Date	2008 WL Measure	2008 WL Alt.	2005 WL Alt.	1999 WL Alt.	08-05 Change	08-99 Change
Clark	08S22W05CCC1	340408	932255	390	2/27/2008	31.63	358.37	358.60		-0.23	
Clark	08S22W15ABB2	340312.77	932017.91	325	2/27/2008	53.59	271.41	272.52	267.46	-1.11	3.95
Clark	09S22W05BBB1	335950.53	932258.75	312	2/28/2008	107.18	204.82	206.82	213.74	-2.00	-8.92
Clark	09S22W05BCA1	335936.13	932256.76	235	2/28/2008	33.60	201.40	202.37	208.31	-0.97	-6.91
Clark	09S22W10DBA1	335831.65	932021.45	362	2/27/2008	142.93	219.07	220.88	232.19	-1.81	-13.12
Clark	09S22W16ACA1	335753.53	932120.02	233	2/27/2008	13.23	219.77	219.93	220.16	-0.16	-0.39
							Declines/ Wells:			**6/6**	**4/5**
							Average Change:			**-1.05**	**-5.08**
Hempstead	10S26W03BBA1	335506.74	934611.68	367	2/25/2008	1.18	365.82	366.04	365.89	-0.22	-0.07
Hempstead	11S26W08BBB1	334909.23	934903.22	372	2/25/2008	71.58	300.42	302.03	305.08	-1.61	-4.66
Hempstead	11S26W23BBB1	334719.87	934601.93	419	2/25/2008	95.74	323.26	324.33	327.72	-1.07	-4.46
Hempstead	12S24W06DAD1	334359.68	933701.28	355	2/25/2008	222.56	132.44	139.00	133.20	-6.56	-0.76
Hempstead	12S27W04BBC1	334449.54	935357.5	435	2/25/2008	174.83	260.17	261.32	265.48	-1.15	-5.31
Hempstead	12S27W05AAC1	334448.86	935421.32	435	2/25/2008	176.22	258.78	260.57	264.24	-1.79	-5.46
							Declines/ Wells:			**6/6**	**6/6**
							Average Change:			**-2.07**	**-3.45**
Nevada	09S22W33DCC1	335437.37	932130.47	225	2/26/2008	5.47	219.53	219.81	220.43	-0.28	-0.90
Nevada	10S23W12AAA1	335344.81	932420.89	256	2/26/2008	21.14	234.86	236.36	236.22	-1.50	-1.36
Nevada	11S22W08DAC1	334757.94	932315.14	305	2/26/2008	92.17	212.83	214.43	217.51	-1.60	-4.68
Nevada	11S22W08DAC8	334756.76	932311.82	305	2/26/2008	91.47	213.53	214.91	218.33	-1.38	-4.80
Nevada	12S21W28ADA1	334015.5	931559.2	265	2/27/2008	1.92	263.08				
							Declines/ Wells:			**4/4**	**4/4**
							Average Change:			**-1.19**	**-2.94**
							Total Declines/ Wells:			**16/16**	**14/15**
							Average Change:			**-1.47**	**-3.86**
										100%	**93.33%**

*Data collected by USGS

Appendix G
Nacatoch Aquifer Water Level Data

Nacatoch Aquifer
99-05-08 WL Change

County	Site Id	Station	Latitude	Longitude	LS Alt.	WL Date	08 WL Measure	08 WL Alt.	2005 WL Alt.	1999 WL Alt.	08-05 Change	08-99 Change
Clark	340359093043301	08S19W06DCB1	340359.1	930432.5	270	2/28/2008	78.98	191.02	193.37		-2.35	
Clark	340322093023001	08S19W09ACC1	340323.35	930228.33	177	2/28/2008	0.85	176.15	176.15	177.85	0.00	-1.70
Clark	340220093024301	08S19W16CAB1	340225.62	930247.1	173	2/28/2008	0.78	172.22	172.41	171.17	-0.19	1.05
Clark	335950093073601	08S20W34DAB1	335954.15	930744.35	200	2/28/2008	18.47	181.53	182.87	183.31	-1.34	-1.78
Clark	335707093084201	09S20W16DBD1	335708.15	930847.37	241	2/28/2008	77.83	163.17	165.23	162.43	-2.06	0.74
Clark	335656093084001	09S20W16DDC1	335656.77	930844.75	233	2/28/2008	75.93	157.07	158.79	156.59	-1.72	0.48
Clark	335455093093201	09S20W28DCB1	335516.13	930900.79	202	2/28/2008	16.93	185.07	184.59	181.51	0.48	3.56
Clark	335435093111101	09S20W31CAD1	335434.79	931111.15	259	2/28/2008	114.39	144.61	146.30	179.47	-1.69	-34.86
Clark	335447093085201	09S20W33ABD1	335447.13	930852.09	209	2/28/2008	33.33	175.67	175.73	175.61	-0.06	0.06
Clark	335455093093202	09S20W33BCD2	335446.06	930926.02	207	2/28/2008	26.22	180.78	181.11	182.25	-0.33	-1.47
Clark	335638093143501	09S21W21DAD1	335625.47	931453.39	345	2/28/2008	100.76	244.24	244.73	239.78	-0.49	4.46
Clark	335052093081401	10S20W22DCB1	335054.14	930757.21	260	2/28/2008	83.18	176.82	178.86	180.75	-2.04	-3.93
Clark	335327093123601	10S21W12BAB1	335321.39	931225.22	221	2/28/2008	69.26	151.74	152.48	159.61	-0.74	-7.87
								Declines/Wells:			**11/13**	**6/12**
								Average Change:			**-0.96**	**-3.44**
Clay	361909090355902	19N04E01BDB1	361909.66	903559.97	280	3/3/2008	11.33	268.67	269.27	270.75	-0.60	-2.08
Clay	361601090175101	19N07E23BAC1	361601.75	901748.02	322	3/3/2008	82.64	239.36	248.23	242.31	-8.87	-2.95
Clay	361552090172801	19N07E23DBC1	361548.58	901730.31	283	3/3/2008	37.68	245.32	246.63	248.64	-1.31	-3.32
Clay	361528090173101	19N07E26AAA1	361531.66	901702.61	176	3/3/2008	41.18	134.82	135.93	143.97	-1.11	-9.15
Clay	361927090354201	20N04E36DCC1	361928.53	903542.09	279	3/3/2008	15.24	263.76	264.24	266.39	-0.48	-2.63
Clay	362312090120201	20N08E10ABC1	362312.6	901201.74	340	3/3/2008	88.97	251.03	252.94	252.98	-1.91	-1.95
Clay	362227090112001	20N08E14BAB2	362227.05	901119.62	286	3/3/2008	44.63	241.37	243.27	241.67	-1.90	-0.30
Clay	362225090120801	20N08E15BAA1	362223.5	901207.7	381	3/3/2008	148.86	232.14	233.66	238.68	-1.52	-6.54
Clay	362617090232801	21N06E23DAC1	362618.79	902329.21	300	3/3/2008	28.02	271.98	273.38	277.27	-1.40	-5.29
Clay	362549090160601	21N07E25AAC1	362549.74	901606.97	342	3/3/2008	72.77	269.23	270.61	274.22	-1.38	-4.99
								Declines/Wells:			**10/10**	**10/10**
								Average Change:			**-2.05**	**-3.92**
Greene	361118090242201	18N06E14CCD1	361114.55	902419.58	287	3/4/2008	48.12	238.88	240.82	242.85	-1.94	-3.97
Greene	361112090225601	18N06E24ABB2	361112	902256	276	3/4/2008	34.69	241.31	237.41		3.90	
Hempstead	334834093362501	11S24W08BDB1	334836.52	933619.25	470	2/26/2008	28.18	441.82	442.61	447.42	-0.79	-5.60
Hempstead	334641093344701	11S24W21ADD1	334640.64	933448.8	370	2/26/2008	50.29	319.71	320.67	321.69	-0.96	-1.98
Hempstead	334618093344601	11S24W21DDD1	334620.53	933447.12	371	2/26/2008	35.97	335.03	336.93	338.36	-1.90	-3.33
Hempstead	334643093334301	11S24W22ADD1	334647.25	933342.5	365	2/26/2008	34.13	330.87	332.59	333.41	-1.72	-2.54

*Data collected by USGS

Nacatoch Aquifer
99-05-08 WL Change

County	Site Id	Station	Latitude	Longitude	LS Alt.	WL Date	08 WL Measure	08 WL Alt.	2005 WL Alt.	1999 WL Alt.	08-05 Change	08-99 Change
Hempstead	334441093343801	11S24W34CBC1	334443.82	933437.9	320	2/26/2008	26.28	293.72	294.61	297.59	-0.89	-3.87
Hempstead	334605093464501	11S26W27BDD1	334610.5	934644.59	430	2/25/2008	9.16	420.84	422.72	424.70	-1.88	-3.86
Hempstead	334346093433001	12S25W07ABB1	334345.67	934340.05	435	2/25/2008	42.14	392.86	393.90	398.34	-1.04	-5.48
Hempstead	334002093405101	12S25W34BAC1	334001.94	934055.44	320	2/26/2008	74.80	245.2	247.13	254.38	-1.93	-9.18
Hempstead	333405093393001	13S25W35DDC1	333406.09	933930.91	373	2/26/2008	187.49	185.51	186.41	220.12	-0.90	-34.61
Hempstead	333318093412701	14S25W04DDD1	333317.01	934131.68	260	2/26/2008	105.94	154.06	155.24	211.69	-1.18	-57.63
								Declines/Wells:			10/10	10/10
								Average Change:			-1.32	-12.81
Nevada	335105093193501	10S22W23DCB1	335105.16	931934.65	242	2/27/2008	0.66	241.34	241.40	240.94	-0.06	0.40
Nevada	334726093104201	11S20W08DCD1	334727.45	931037.28	181	2/27/2008	3.18	177.82	178.71	175.34	-0.89	2.48
Nevada	334622093090401	11S20W15CDC1	334622	930904	175	2/27/2008	8.12	166.88	167.45		-0.57	
Nevada	334626093093001	11S20W22AAA1	334623.76	930925.95	175	2/27/2008	1.76	173.24	177.04	177.05	-3.80	-3.81
Nevada	334646093141101	11S21W14CAB1	334652.02	931434.14	196	2/27/2008	1.20	194.8	197.23	197.00	-2.43	-2.20
Nevada	334759093231302	11S22W08DAC2	334759.75	932314.18	306	2/26/2008	41.70	264.3	266.20	266.42	-1.90	-2.12
Nevada	334756093231804	11S22W08DDB4	334757.45	932313.82	306	2/26/2008	22.92	283.08	284.03	283.92	-0.95	-0.84
Nevada	334840093272601	11S23W03DCD1	334840.28	932726.19	385	2/26/2008	85.28	299.72	301.64	306.43	-1.92	-6.71
Nevada	334832093254001	11S23W12ABB1	334837	932538	381	2/26/2008	72.40	308.6	311.08	310.95	-2.48	-2.35
Nevada	334230093224901	12S22W09CDD1	334229.68	932250.19	229	2/27/2008	6.37	222.63	222.58	228.02	0.05	-5.39
Nevada	334107093213201	12S22W22ACD1	334107.66	932134.93	342	2/27/2008	126.93	215.07	215.27	224.74	-0.20	-9.67
Nevada	334103093210501	12S22W23CBA1	334102.42	932057.36	329	2/27/2008	114.00	215	216.23	221.72	-1.23	-6.72
Nevada	333742093251201	13S22W07BDC1	333744.12	932514.03	343	2/27/2008	135.48	207.52	209.29	227.39	-1.77	-19.87
								Declines/Wells:			12/13	10/12
								Average Change:			-1.40	-4.73
								Total Average Change:			-1.30	-5.98
								Declines/Wells:			44/48	37/45
											91.67%	82.22%

*Data collected by USGS