

Arkansas Ground Water Protection and Management Report for 2004



January 2005



STATE OF ARKANSAS

ARKANSAS SOIL AND WATER CONSERVATION COMMISSION

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Perry Dotson
Lynn Richardson

Chief, Water Resources Management Division
Geology Supervisor
Senior Geologist
Geologist
Ground Water Technician
Water Well Investigator
Water Well Investigator
Secretary

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INTRODUCTION

The Arkansas Ground Water Protection and Management Report is produced annually by the Arkansas Soil and Water Conservation Commission (ASWCC) pursuant to Arkansas Code Annotated 15-22-906. This report provides a summary of ground-water protection and conservation programs administered by the ASWCC during the year 2004. Water-resources policy in Arkansas was established in the Arkansas Water Plan, 1991, in which the ASWCC 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. All water use strategies must protect the sustainable yield of the State's aquifers as well as the streamflow needs of the State's surface-water flow system if our water resources are to be protected for future generations to utilize and enjoy. Furthermore, the interaction of aquifers and streams must be understood and applied in all water resources programs.

Executive Summary

The Arkansas Soil and Water Conservation Commission (ASWCC), United States Geological Survey (USGS), Arkansas Geological Commission (AGC), and the Natural Resource Conservation Service (NRCS) participate cooperatively in monitoring ground-water wells throughout Arkansas to determine ground-water levels as well as ground-water quality. 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 ASWCC taking measurements of the alluvial aquifer in both the spring and fall. Hydrologic data is collected statewide, however resources are

Arkansas Ground Water Study Areas 2004

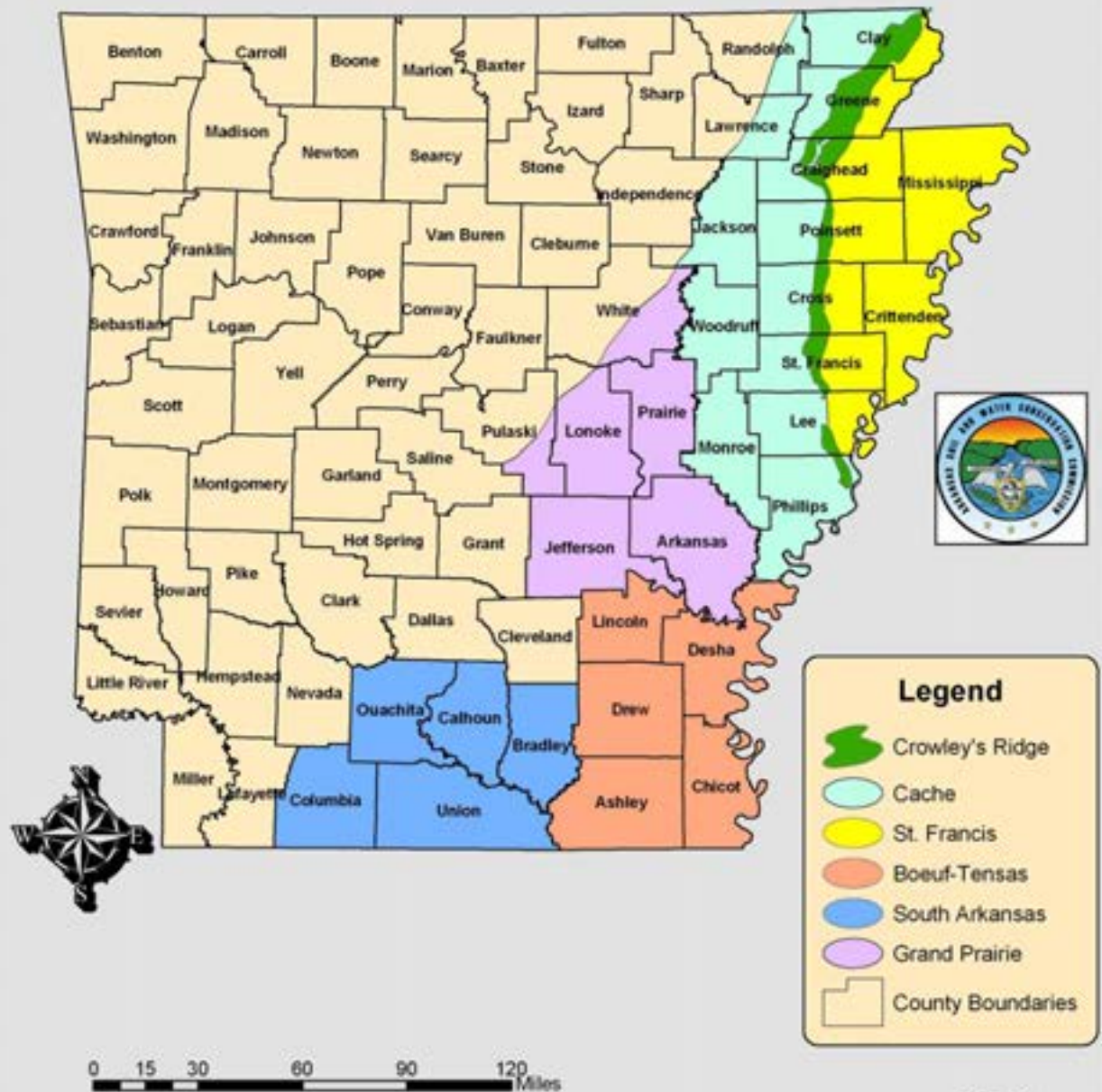


Fig. 1

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

Data for this report is collected by staff of the ASWCC, USGS, and NRCS. All water-level and water quality data provided in this report is collected in accordance with USGS protocol and quality control guidelines.

Each spring approximately 800 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 500 wells that are monitored for water levels in the Sparta/Memphis aquifer.

The general trend is that the ground-water levels in Arkansas have been slowly dropping, with a few areas that have remained constant or have risen slightly. Long-term water-level data collected over a 25-year period indicate a decline of 0.8 feet per year in the Sparta-Memphis aquifer (USGS, 2004-5055). 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 natural recharge, or sustainable yield, resulting in consistently falling ground-water levels, and the development of cones of depression. These areas are depressions in the potentiometric surface, and occur in both the alluvial and Sparta/Memphis aquifers. (Fig. 3) Water level declines are consistently observed in areas where water use is highest as indicated by recent USGS data.

The areas in the state that are of most concern are a five-county area of the Sparta aquifer in southern Arkansas that was designated a critical ground water area in 1996, the Grand Prairie area in eastern Arkansas for which both the alluvial and Sparta/Memphis aquifers were designated as critical ground water areas in 1998, and the Cache Study Area in which significant declines in the alluvial aquifer have been observed. Since designation as a critical area, declines in the South Arkansas Study Area have been reduced significantly due to education and ground-water conservation. The Grand Prairie Study Area has continued to show significant declines in the alluvial

aquifer since designation with an average change of -4.80 feet over the last five years. There has also been a -4.65 foot average decline in the Sparta/Memphis aquifer over the last 5 years in this study area.

Data from the alluvial aquifer wells show that of 291 alluvial wells monitored from 1999 to 2004, 231 (79.4%) have shown a decline during this time period. The wells showing the greatest declines in the alluvial aquifer during this 5-year period are located in the Cache Study Area with an average change of -3.68 feet, and the Grand Prairie Study Area with an average change of -4.80 feet. In the Cache Study Area during the last 5 monitoring years, we have seen smaller cones of depression in western Lee County, northwest Cross County, and southwest Poinsett County expand. These cones of depression have now coalesced into a significantly larger depression extending from southwest Poinsett County, southward into Monroe County. (Fig.3)

Data from the wells monitored in the Sparta/Memphis aquifer show that of 221 wells monitored from 1999 to 2004, 128 of these (57.9%) show a decline in static water levels. The wells showing the greatest decline in the Sparta/Memphis aquifer are located in the Grand Prairie Critical Ground Water Area with an average change of -4.65 feet during this time.

Water quality data collected by the USGS in 2002 show a trend toward increased specific conductance ($>1,200$ microsiemens/cm) in the alluvial aquifer in Ashley and Chicot Counties. (Reed, T.B., 2004) 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 the past year, the Arkansas District of the US Geological Survey has released several ground-water flow modeling reports. 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 defines 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

Cones of Depression

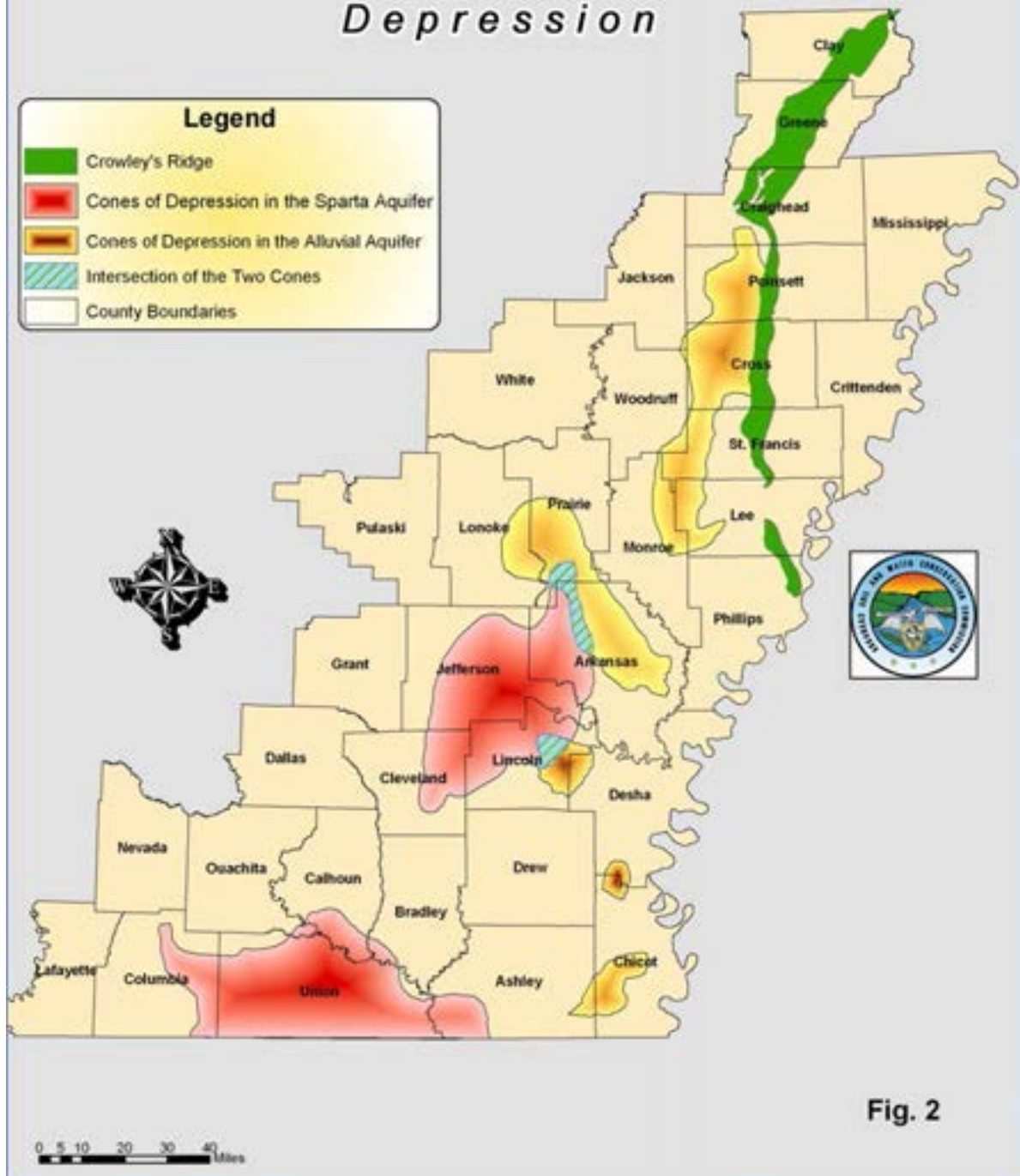


Fig. 2

State water resources policy. Based on these model reports, it is estimated that the State is withdrawing ground water from the alluvial and Sparta aquifers in eastern and southern Arkansas at a rate, which is far above sustainable. The primary source for the unmet demand is stream capture from the major rivers hydraulically connected to the aquifer.

Based on these modeling results, it is now understood that the State of Arkansas can only sustain about 57 percent of the 1997 withdrawals from the alluvial aquifer, and approximately 49 percent from the Sparta aquifer. If conservation and the development of excess surface water are not successfully implemented in the very near future, the State will have to consider regulatory alternatives to preserve the aquifers at a sustainable level.

The ASWCC will continue to monitor water levels and water quality throughout Arkansas with emphasis on the Cache, Grand Prairie, and Boeuf-Tensas Study Areas. Significant water-level declines have been observed in these areas. The ASWCC will continue to work with other Federal, State, and local agencies to enhance ground water monitoring and research programs.

Some of the programs described in this report are partially funded through federal grants from Region VI of the Environmental Protection Agency.

GROUND WATER CONSERVATION AND CRITICAL AREAS

Summary of Factors Considered in a Critical Ground Water Designation

Each year data is analyzed to determine areas that have developed, or trends which indicate they may develop, significant ground water depletion and/or degradation. In a confined aquifer this analysis will examine, but not be restricted to the relative position of water levels to the top of the formation, water level declines both short and long term, and trends that may indicate degradation of water quality. Consideration will also be given to the sustainable yield of the entire aquifer, including the utilization of ground water flow and optimization models, the natural hydrologic boundaries of the aquifer, and projected water level declines. The USGS has recently finished work on conjunctive use modeling and sustainable yield estimations. Scenario projections, and sustainable yield estimation are discussed in later sections of this report.

In an unconfined aquifer the analysis would examine, but not be restricted to the recent saturated thickness of the formation, water level declines both short and long term, and trends toward the degradation of water quality. Consideration will also be given to the sustainable yield of the aquifer, including the utilization of ground water flow models, the natural hydrologic boundaries of the aquifer, and projected water level declines. Analysis will be done on hydrographic projections as well as conjunctive use modeling and optimization projections. The analysis would also be based on hydraulic criteria and natural hydrogeologic boundaries. This is necessary because water levels fluctuate and because ground water withdrawals in any given area can affect other hydraulically connected areas.

Critical Ground Water Designations

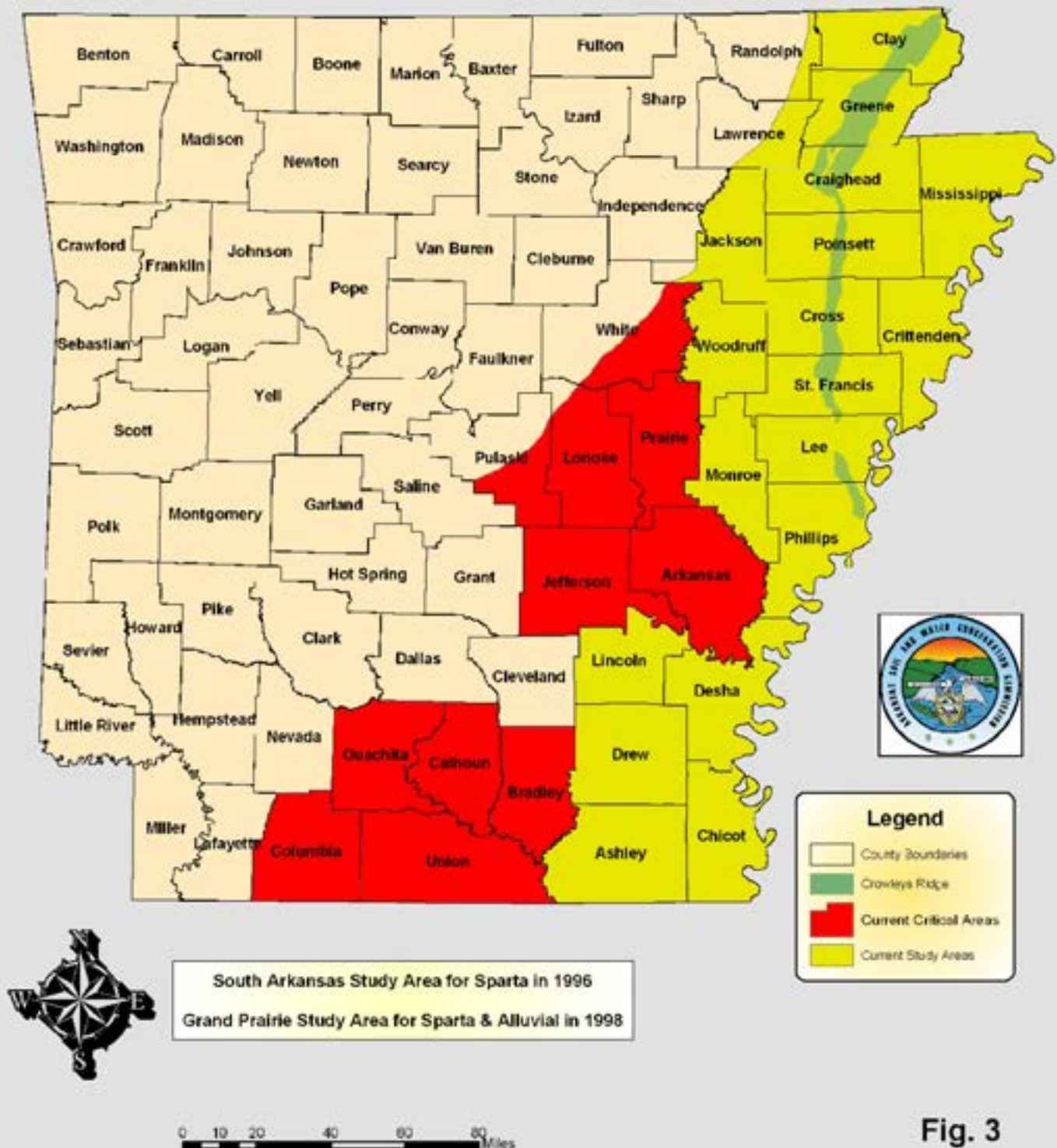


Fig. 3

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 1995 Arkansas ranked fourth in the nation for ground water withdrawals with an estimated use of 5,460 million gallons per day (Mgal/d) (Solley, et. al., 1998). By 2000 that number had increased to approximately 6,920 Mgal/d, and in 2002 was up to approximately 6,960 Mgal/d. The estimated sustainable yield for the alluvial aquifer is 2,700 Mgal/d, leaving an unmet demand of 4,260 Mgal/d (62%). 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. Increased pumping from this aquifer has resulted in decreased outflow to rivers, increased inflow from rivers, increased inflow from the

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

There were 608 alluvial aquifer wells monitored for water-level change in both 2003 and 2004, 318 (52.3%) of these had a decline in the static water level. Of 291 alluvial aquifer wells monitored in both 1999 and 2004, 231 (79.4%) of these had declining static water levels. Over a 10-year period of time 328 of 355 wells (92.4%) monitored showed declines in the alluvial aquifer. The average change over the entire aquifer during the 2003-2004 monitoring period was -0.20 feet, the 5-year average was -3.31, and the 10-year average -6.26 feet respectively. The greatest 5-year declines were observed in the Grand Prairie Study Area (-4.80 feet) and the Cache Study Area (-3.68 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 241 water wells in the Sparta/Memphis aquifer throughout the south and east portions of Arkansas in 2003 and 2004. One hundred and thirty-seven of those 241 wells (56.8%) showed declines in the static water level. The average change over the entire aquifer during the 2003-2004 monitoring period was -0.62 feet. Data is collected in the spring because the water levels in the wells at that time are more representative of static levels than water level data collected during periods of increased water usage. During the monitoring period from 1999 to 2004, 221 wells were monitored for water-level change. One hundred and twenty eight of these 221 wells (57.9%) showed a decline in static water levels during this time. Appendix C is a table of specific water level monitoring data for the Sparta/Memphis aquifer. For the Sparta aquifer the USGS Conjunctive use Optimization Model estimates that only 32 percent of the 2001 withdrawal of 260 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. This decline in potentiometric surface in the aquifer can be attributed to a statewide increase in water use from 139 million gallons per day (mgd) in 1970 to 230 mgd in 2002, an increase of 64 percent. The most recent significant increase in water use from the Sparta has been for agricultural supply.

The exception to this rule is the data from the South Arkansas Study Area, where local education and conservation has led to significantly fewer declines, as well as some rebound in water levels in some areas. Appendix D is a series of hydrographs for Sparta/Memphis aquifer wells in Arkansas.

2004 Alluvial Aquifer Potentiometric Surface (15 ft Contour)



0 12.5 25 50 75 100 Miles

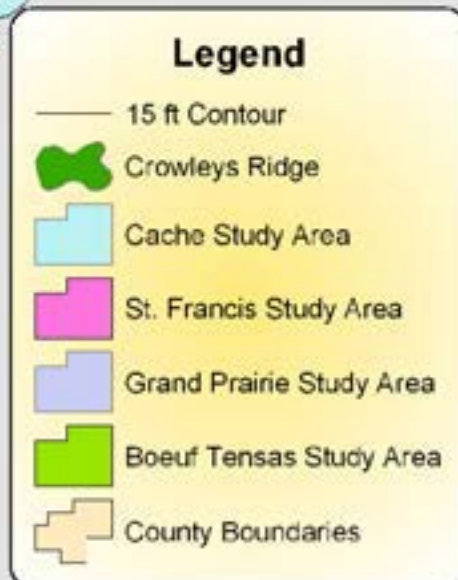


Fig. 4

2004 Sparta/ Memphis Aquifer Potentiometric Surface (20 ft Contour)

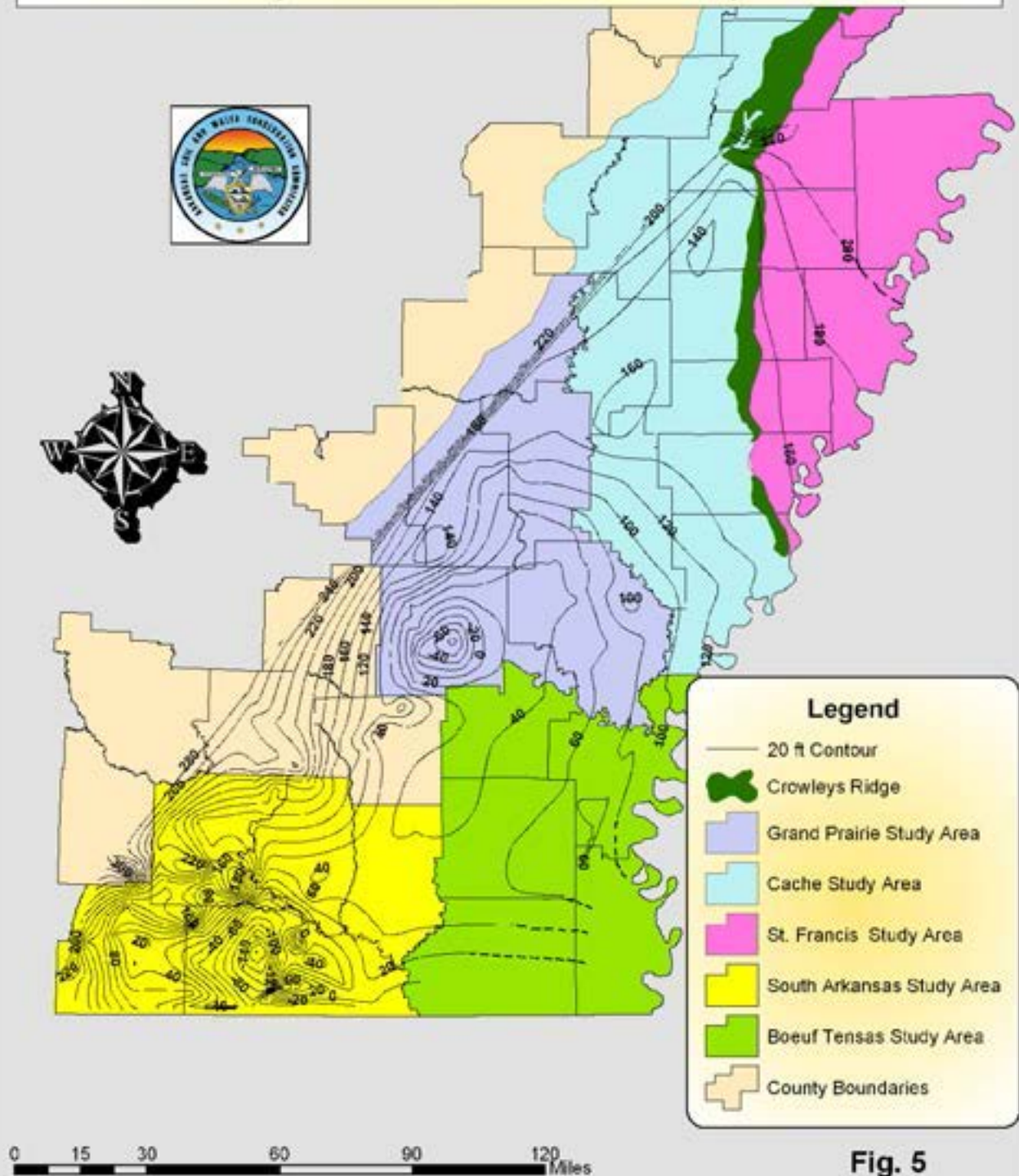


Fig. 5

GROUND WATER LEVELS AND WATER LEVEL CHANGE

MONITORING

The United States Geological Survey (USGS), in cooperation with the Arkansas Soil and Water Conservation Commission (ASWCC), 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 ASWCC has recently added to this monitoring network by constructing 27 wells throughout the eastern part of the state used exclusively for monitoring purposes, with more to be added in the near future. (Fig.30) All water level data collected by the USGS and ASWCC 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 ASWCC'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. A table of measurements taken in the spring and fall from the same wells is included as Appendix F. This table is useful in showing the amount of drawdown and rebound from specific wells during the pumping season.

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 2003-2004 monitoring period, the ground-water level showed an average change of -0.58 feet in Union County, -1.78 feet in Ouachita County, -3.03 feet in Calhoun County, -2.93 feet in Bradley County, and +0.04 feet in Columbia County respectively. The South Arkansas Study Area as a whole had an average change of -0.90 feet during the 2003-2004 monitoring period, with 53 of the 86 wells monitored showing declines. (Appendix C) Although Union County had an average change that was a decline, it is important to recognize the stabilization of declines in this area. In 1998 the average change for Union County was -22.14 feet, in 1999 -4.40 feet, in 2000 +0.62 feet, in 2001 -1.25 feet, in 2002 +3.21 feet, and in 2003 Union County showed a +1.14 foot average change. The diminishing declines in average change seem to indicate that the education and conservation efforts in Union County have made an impact on ground-water levels. (Fig. 6)

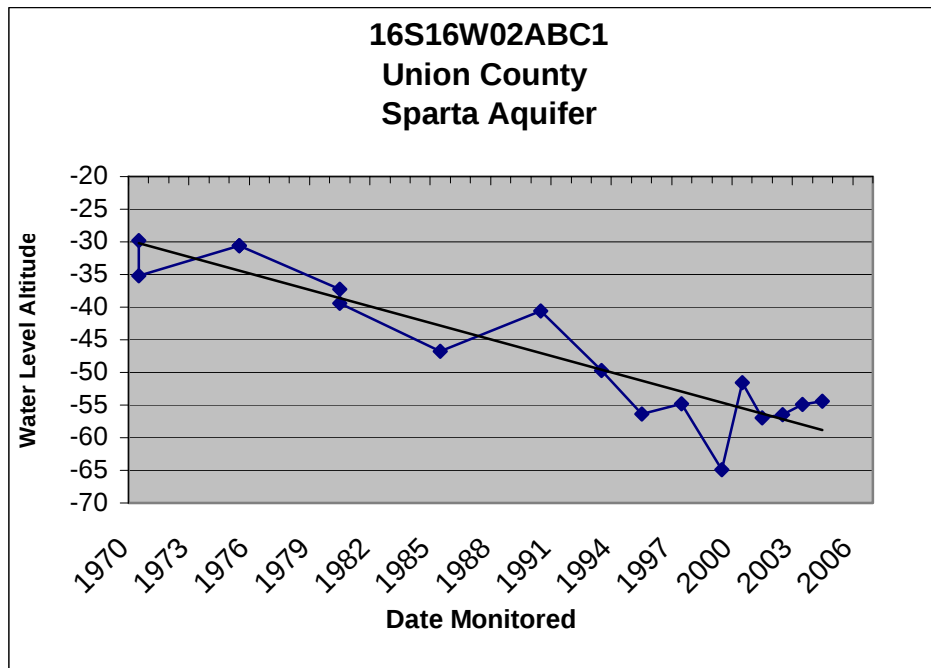
During the 5-year monitoring period, from 1999 to 2004, the South Arkansas Study Area had an average change of +5.39 feet. Seventy-four wells were monitored over this time, with 25 of them showing a decline in static water levels. Ouachita County was the only county in this study area to show an average decline in water level (-3.53 feet) during this monitoring period. All other counties showed average increases; Union +13.18 feet, Calhoun +1.37 feet, Bradley +6.71 feet, and Columbia +0.93 feet respectively. (Fig. 7)

The USGS has recently completed extensive modeling for both the Sparta/Memphis aquifer, as well as the alluvial aquifer. This modeling work contained sustainable yield estimates for the selected areas. The sustainable yield is defined as

the amount of ground water that can be pumped from the aquifer without violating the Critical Area constraints or reducing a protected base flow in streams in the outcrop and subcrop areas of the aquifer. These numbers were based on the amount of ground water that was being pumped in 1997. For the Sparta aquifer in the South Arkansas Study Area, the USGS Conjunctive Use Optimization Model indicates that both Bradley and Columbia counties are able to sustain 0% of the pumping rate of 1997. Union County can sustain only 36% of the 1997 rates, while Calhoun and Ouachita counties are able to sustain 57% respectively. (Fig. 34)

The progress that has occurred in the rate of decline in this area over the past few monitoring periods can be attributed to a local reduction on the dependence of ground-water since the critical designation. Some actions that have been taken by the ASWCC to reduce pumpage include working with the Cooperative Extension Service to continue an education and information service in the area, increasing the number of wells monitored in the area, and continuing ground-water flow modeling activities. The ASWCC is also involved in supporting legislation that increases incentives for industrial water users, providing technical data and information on hydrology and conservation, and assisting the Bi-State Sparta Coalition interested in protecting the Sparta aquifer in Arkansas and Louisiana. The diversion of excess surface water from the Ouachita River should allow for a greater degree of aquifer recovery. These conservation methods are expected to reduce the ground-water use in this area by about 80% of the 1997 pumping rate. The USGS, in cooperation with the Union County Water Conservation Board, continue to monitor the recovery of the Sparta aquifer in south Arkansas by monitoring an ever-increasing network of wells equipped with real-time data.

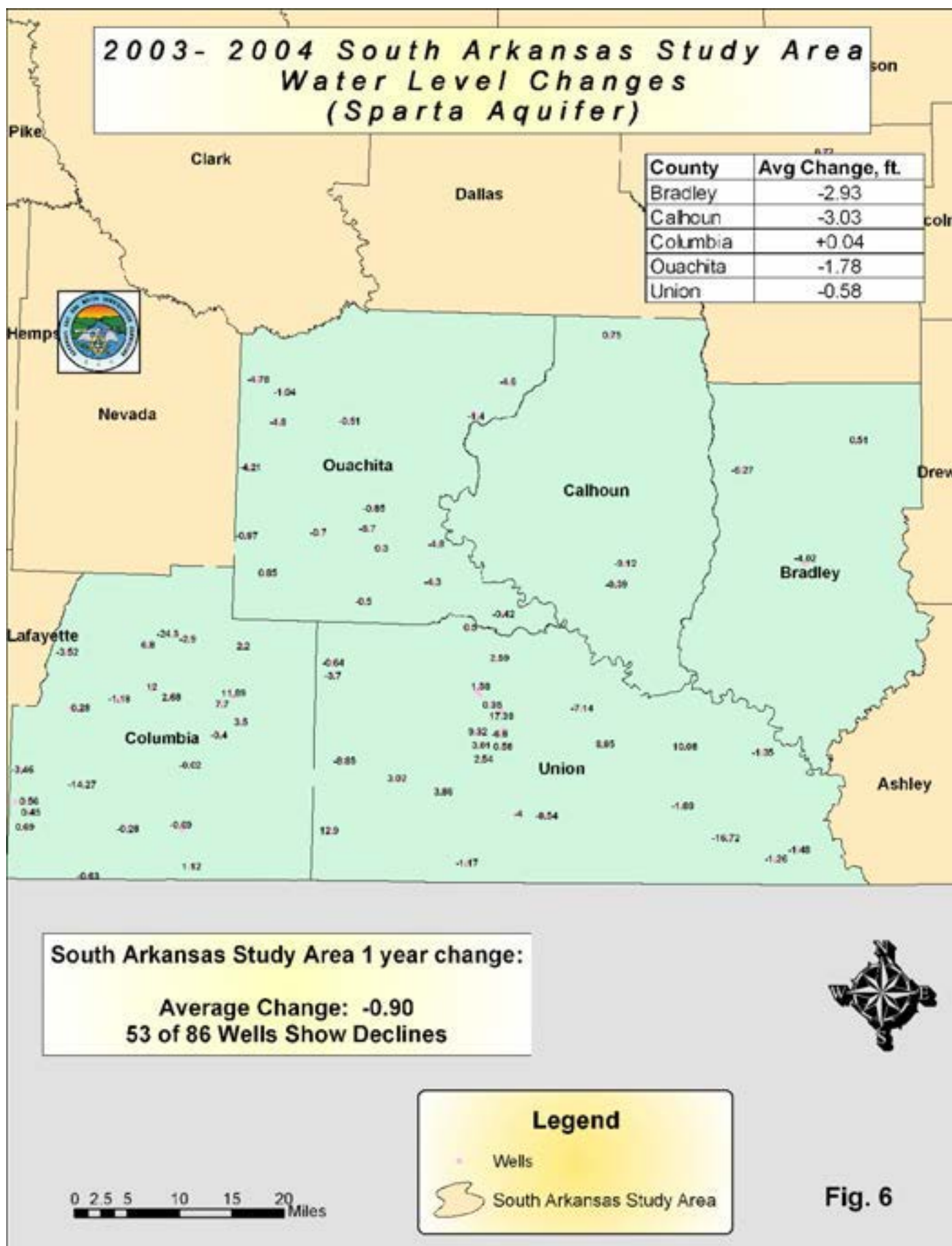
The conservation efforts in the South Arkansas Study Area have shown encouraging results in slowing the declines in the Sparta aquifer in recent years. However there still remains a large cone of depression of greater than 300 feet in the potentiometric surface in this area, as well as long term trend toward declines as the hydrograph below illustrates.



GRAND PRAIRIE CRITICAL GROUND-WATER AREA

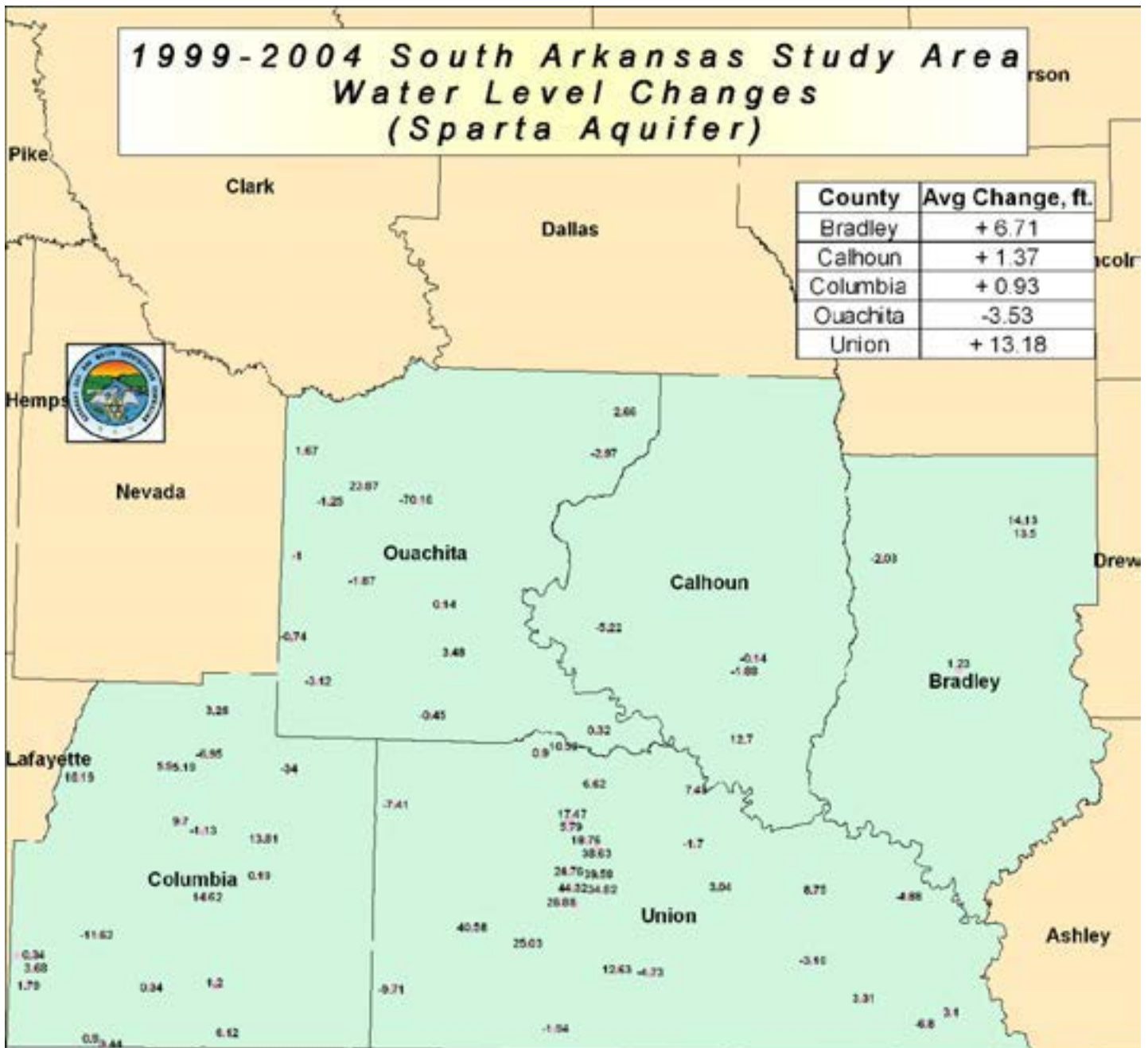
The designation “Grand Prairie” varies according to authors, but is commonly used to designate the area bounded on the south and west by the Arkansas River and on the north and east by the White and Little Red Rivers. (Ackerman, 1996) (Fig.1) This area was designated as a critical ground-water area for 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.

During the 2003-2004 monitoring period there were both average increases and declines in the Sparta/Memphis aquifer throughout the counties in this study area. Prairie County had an average change of -5.77 feet, Jefferson County -1.16 feet, Lonoke County -2.09 feet, while Arkansas County had an average change of $+1.20$ feet. The average change for the entire study area for this time was -0.84 feet, with 42 of 83 wells (50.6%) monitored showing declines. (Fig.8)



1999-2004 South Arkansas Study Area Water Level Changes (Sparta Aquifer)

County	Avg Change, ft.
Bradley	+ 6.71
Calhoun	+ 1.37
Columbia	+ 0.93
Ouachita	-3.53
Union	+ 13.18



South Arkansas Study Area 5 year change:

Average Change: + 5.39
25 of 74 Wells Show Declines

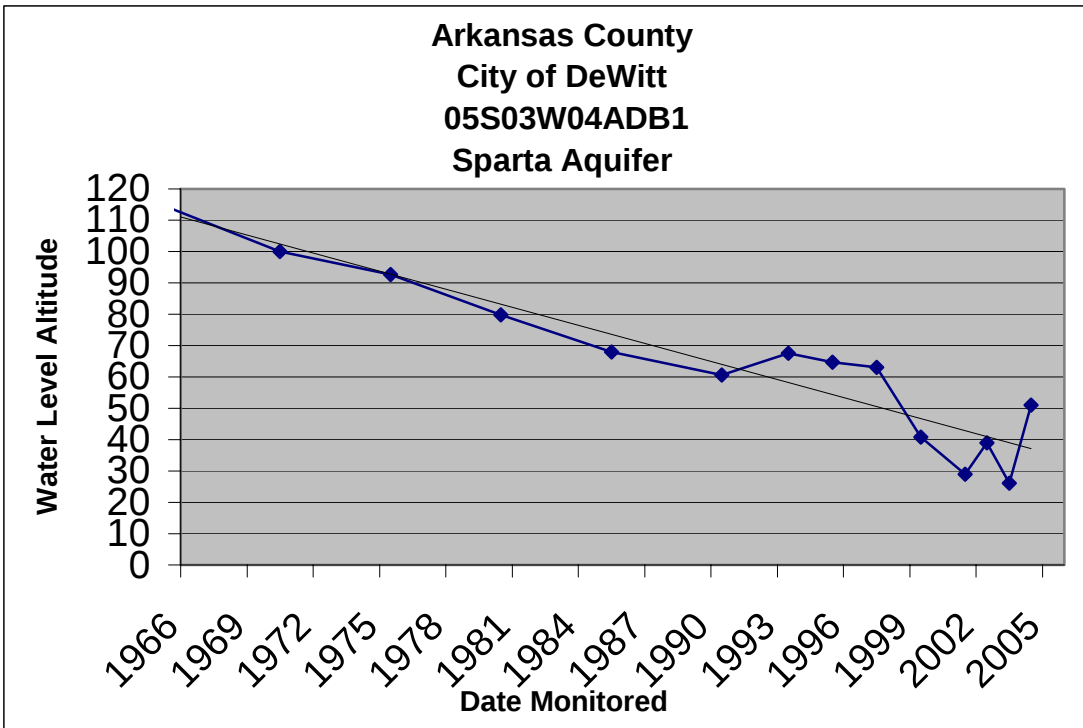
Legend

- Wells
- South Arkansas Study Area

0 2.5 5 10 15 20 Miles

Fig. 7

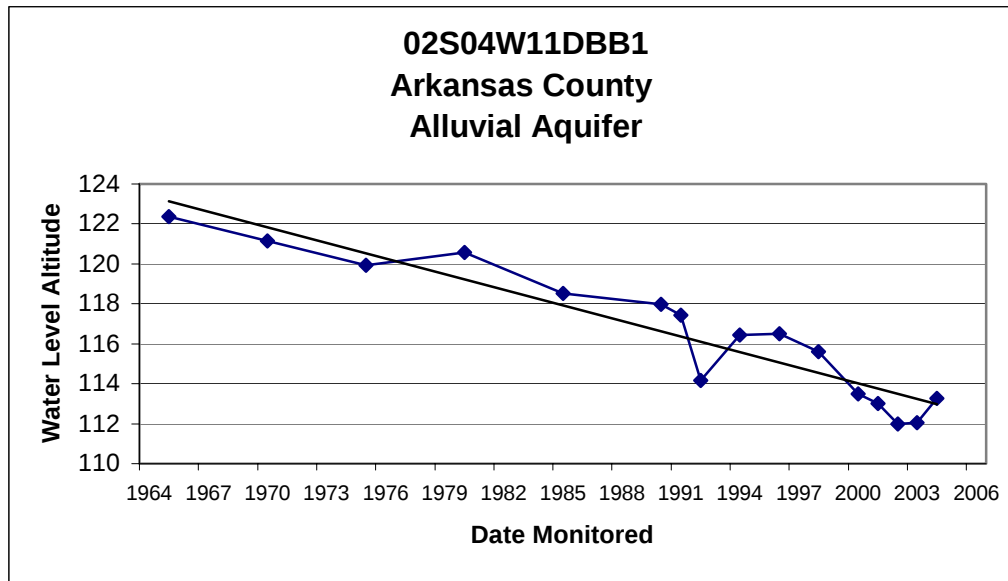
During the 5-year monitoring period from 1999 to 2004 Jefferson County had the largest change showing a –10.59 foot decline followed by Prairie County –8.94 feet, and Lonoke County –6.83 feet. Arkansas County had an average change of +1.89 feet during this time. Although some counties will show short- 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 –4.65 foot change during this 5-year period in the Sparta/Memphis aquifer, with 54 of 78 wells monitored showing declines. (Fig.9) These water-level declines can be attributed to the steady increase of Sparta aquifer withdrawals for primarily agricultural needs in the Grand Prairie. For example, Sparta withdrawals in Arkansas County have increased from an estimated 20.3 mgd in 1970 (Halburg, 1972) to a reported water use of 60.1 mgd in 2002, an increase of almost 200 percent.



In the alluvial aquifer during the 2003-2004 monitoring period for the Grand Prairie Critical Ground Water Area, 4 of the 5 counties had average declines. Pulaski County had an average change of -2.03 feet, White County -0.21 feet, Prairie County -1.20 feet, Lonoke County -0.90 feet, and Jefferson county -3.14 feet respectively. Arkansas County was the only county to show an average increase during this time, $+1.23$ feet. The average for the entire study area for 2003-2004 in the alluvial aquifer was -0.64 feet, with 80 of the 139 wells (57.6%) monitored showing declines. (Fig.10)

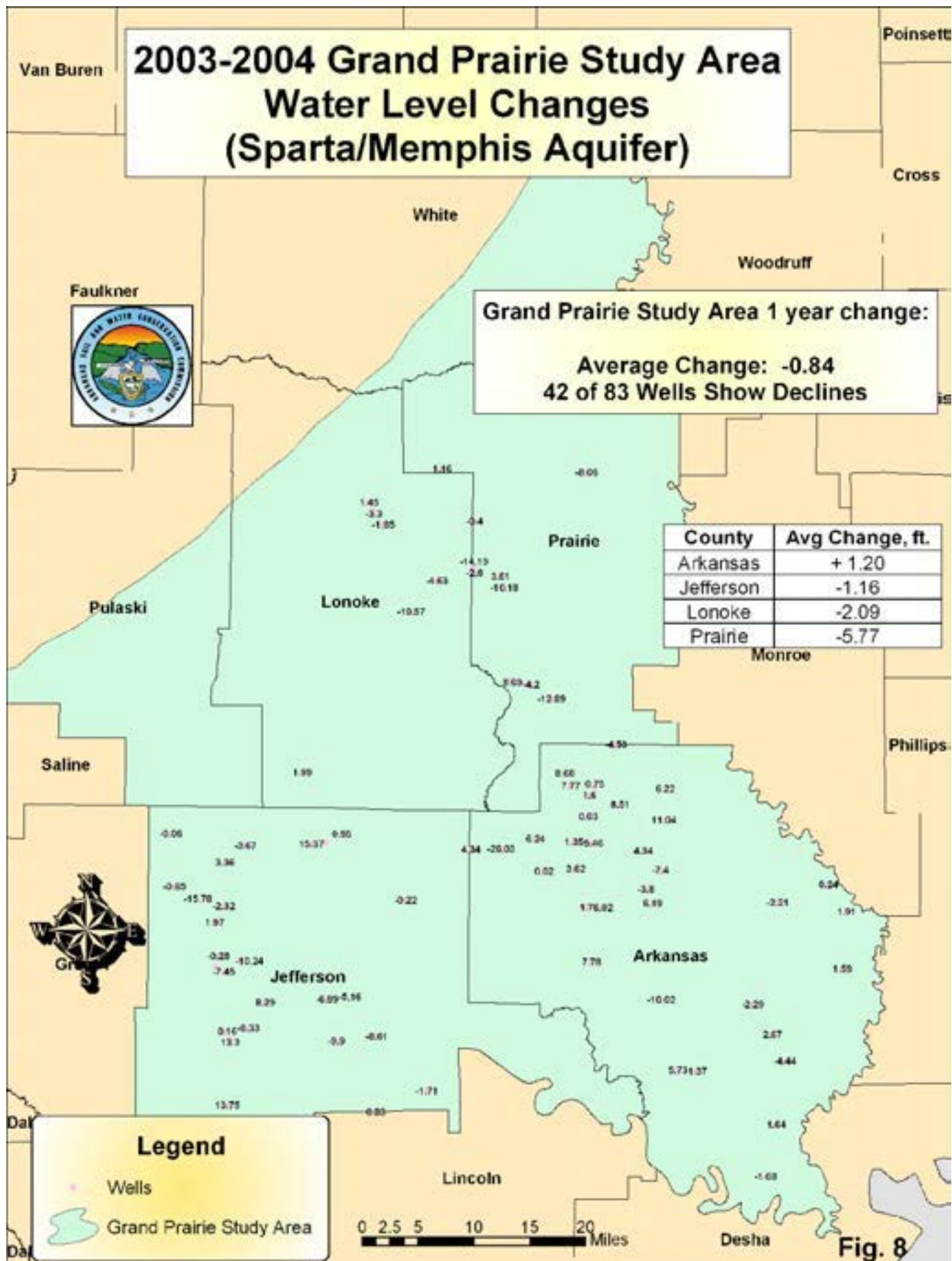
Ground-water levels have also declined during the 1999 to 2004 monitoring period in the alluvial aquifer for the Grand Prairie Critical Ground Water Area, with the exception of White County, which had an increase of $+0.71$ feet during this time. From 1999 to 2004 Lonoke County showed an average decline of -8.72 feet, Prairie County -7.26 feet, Jefferson County -4.10 feet, and Arkansas County -3.21 feet, respectively. The Grand Prairie Study Area had an average decline -4.80 feet during this 5-year period, with 27 of the 37 wells (73.0%) monitored showing declines. (Fig.11)

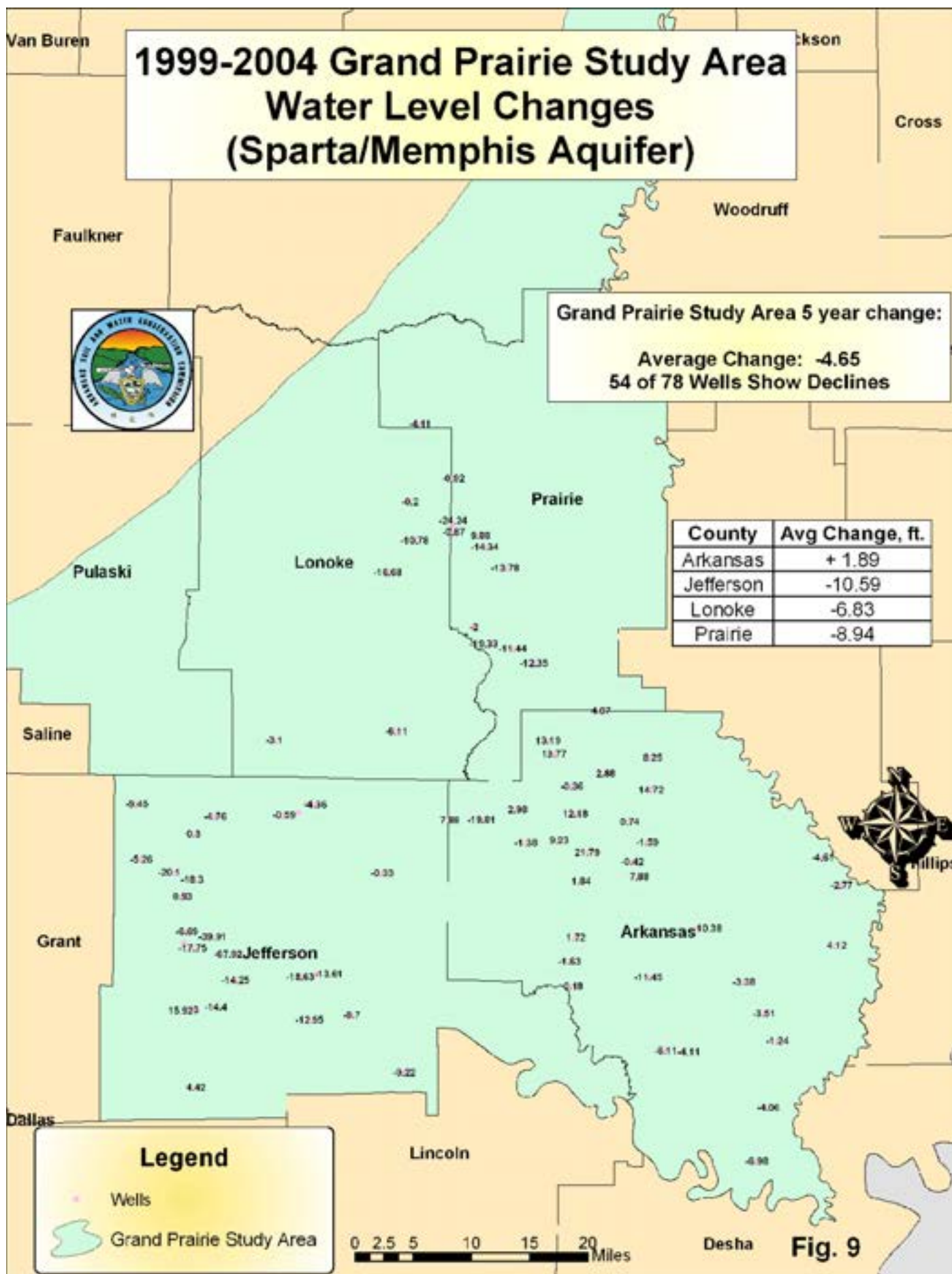
From 1994 to 2004 the alluvial aquifer in the Grand Prairie Study Area had an average change of -5.50 feet, with 57 of 72 (79.2%) wells monitored showing declines. Declines during this 10-year period ranged from -11.73 feet in Lonoke County, to -0.25 feet in White County. Prairie County has an average change of -5.15 feet, Jefferson County an average change of -7.67 feet, and Arkansas County an average change of -3.87 feet respectively. With the exception of White County, every county in this study area had at least one well with an average decline greater than 10 feet over this 10-year monitoring period. (Fig.12)

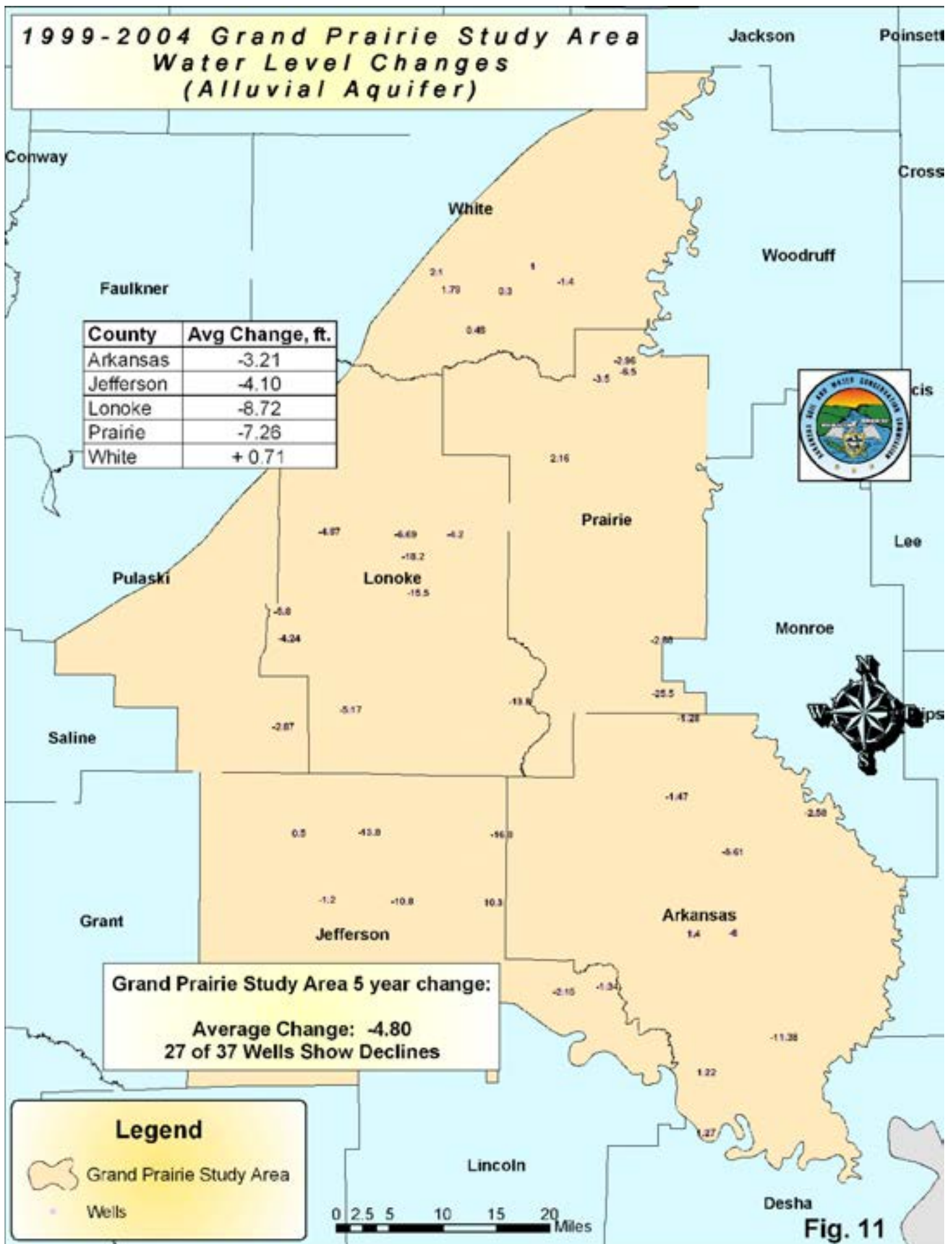


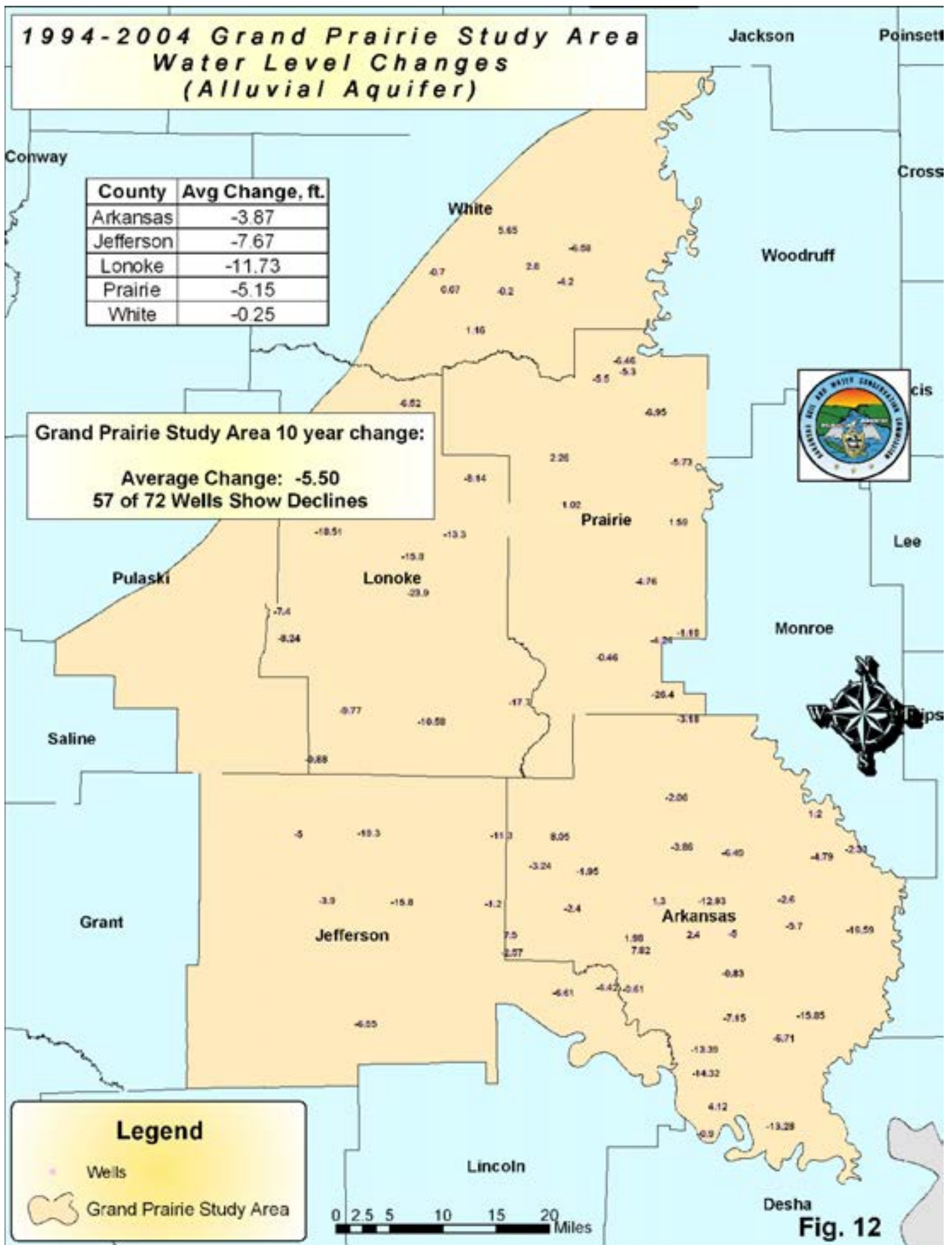
For the alluvial aquifer in the Grand Prairie Study Area the USGS Conjunctive Use Optimization Model indicated that the ground-water use in this area is substantially more than is sustainable. Based on the 1997 data, Jefferson County could sustain 76% of the actual pumping rate, Monroe County 74%, Prairie County 50%, Arkansas County 47%, and Lonoke County 42%. (Fig.38) The Grand Prairie Irrigation Project, once in place, is expected to significantly help reduce these counties' unmet demands for irrigation.

On November 15, 2001, ASWCC issued findings of fact and conclusions of law and a Commission order including all of Arkansas County within the Critical Ground Water Area. On December 10, 2001, the Commission filed its order with the Southern District of Arkansas County Circuit Court with a motion to dismiss the judicial review of its administrative decision. The petitioners have objected to the dismissal of the review and the motion is currently awaiting hearing before the Arkansas County Circuit Court. Also, Stewards of the Land, a group of land owners from southeast Arkansas County, have filed suit in Arkansas County Circuit Court -- Southern Division for judicial review of the November 15, 2001 ASWCC order. The administrative record has been filed with the court by ASWCC. The case is awaiting the beginning of the review process.









CACHE STUDY AREA

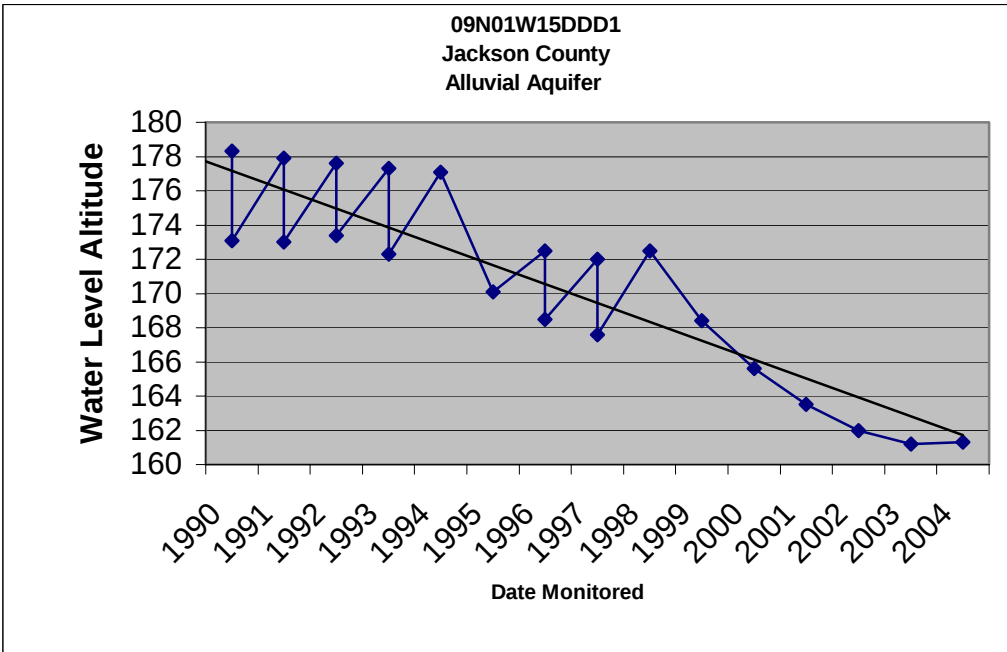
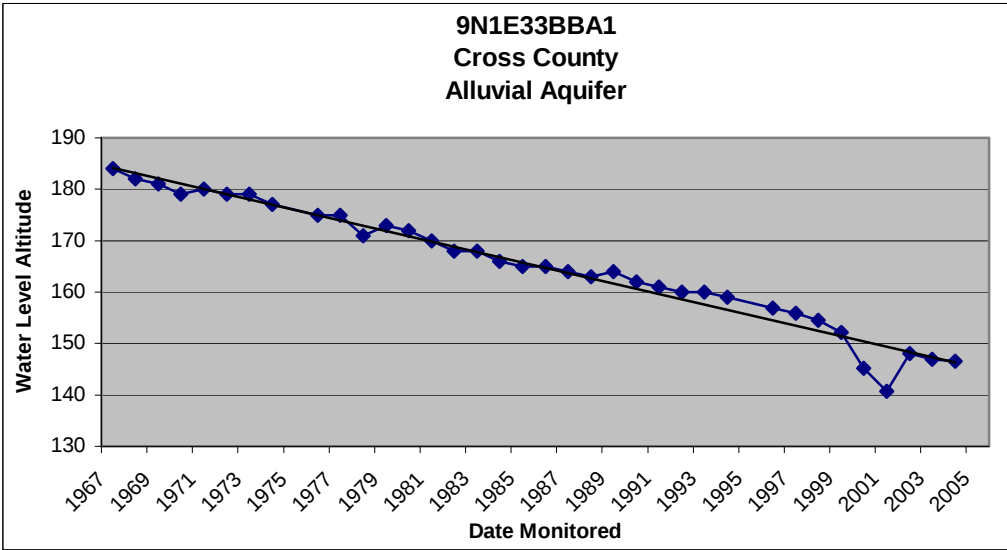
The Cache Study Area is defined as the 7300 square mile region between Crowley's Ridge to the east, the Fall Line to the west, the state line to the north, and the White River to the south. (Ackerman, 1996) This study area includes portions of Craighead, Poinsett, Cross, St. Francis, Lee, Phillips, Monroe,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

Monitoring of the alluvial aquifer in this study area from 2003-2004 showed little change with county average changes ranging from -1.17 feet to +1.00 feet. During this same time Craighead County showed an average change of -0.21 feet, Cross County -0.05 feet, Greene County +0.76 feet, Independence County -1.17 feet, Jackson County +0.50 feet, Lawrence County -0.18 feet, Lee County +0.21 feet, Monroe County +0.22 feet, Poinsett County -0.89, Randolph County +1.00, St. Francis -0.20 feet, Woodruff County +0.37, Phillips County +0.29 feet, and Clay County +0.33 feet, respectively. During this one-year monitoring period 274 wells were monitored for water level change in the alluvial aquifer for the Cache Study Area. Of these wells, 134 (49.0%) showed an average decline in static water level. The average change for this time period throughout this study area was +0.13 feet. (Fig.13)

The alluvial aquifer in the Cache Study Area was also evaluated for change in water levels for a 5-year time period from 1999 to 2004. For this period all the counties showed average declines with the exception of Greene County that had an average change of +1.46 feet. All other counties had declines in this study area; Clay County -4.01, Craighead County -4.34, Cross County -7.64, Independence County -3.24, Jackson county -3.56, Lee County -1.75, Monroe County -1.75, Phillips County -0.11, Poinsett County -7.89, Randolph -4.28, St. Francis County -3.90, and Woodruff County -2.91 respectively. The entire Cache Study Area showed an average change of -3.68 feet in the alluvial aquifer during this 5-year monitoring period. Out of the 163 wells monitored, 139 (85.3%) of these showed average declines. (Fig.14)

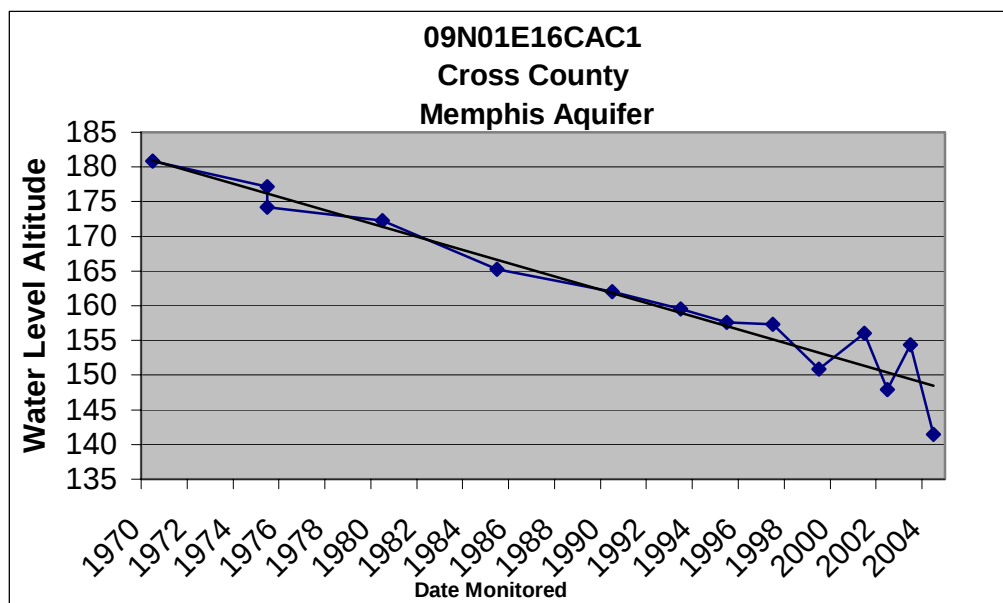
Average change in 165 wells was also compared in the alluvial aquifer for a 10-year timeframe, for the Cache Study Area. One hundred and sixty of the 165 wells (97.0%) showed an average decline. Every county in the study area showed an

average decline in static water-levels ranging from -2.81 feet in Phillips County, to -12.30 feet in Cross County. The other counties' declines during this time were; Craighead -8.94 feet, Greene -8.90 feet, Jackson -8.14 feet, Lawrence -6.32 feet, Lee -10.44 feet, Monroe -5.99 feet, Independence -3.03 feet, Poinsett -11.87 feet, Randolph -6.74 feet, St. Francis -9.13 feet, Woodruff -3.60, and Clay County -7.90 feet respectively. The average change for the study area over this time was a decline of -7.87 feet. (Fig. 15)



Monitoring of the Sparta/Memphis aquifer in the Cache Study Area from 2003 to 2004 shows that the study area had an overall average decline in static water level of -0.13 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. Seventeen of the 30 wells (56.7%) monitored showed declines during this time period. The average change for the counties in this study area over the one-year period were; Craighead County $+0.34$ feet, Cross County -2.44 feet, Monroe County $+0.80$ feet, Phillips County $+1.92$ feet, Poinsett County $+0.91$ feet, and Woodruff County $+2.54$ feet respectively. (Fig.16)

During the 1999 to 2004 monitoring period the Sparta/Memphis aquifer in the Cache Study Area had an average water level decline of -2.91 feet, with 20 of the 26 wells monitored (76.9%) showing decline. Poinsett County showed the largest average change with a -5.46 foot decline. Woodruff County had an average change of -4.78 feet, Phillips County -1.53 feet, Monroe County -0.32 feet, and Cross County -4.96 feet respectively (Fig. 17)



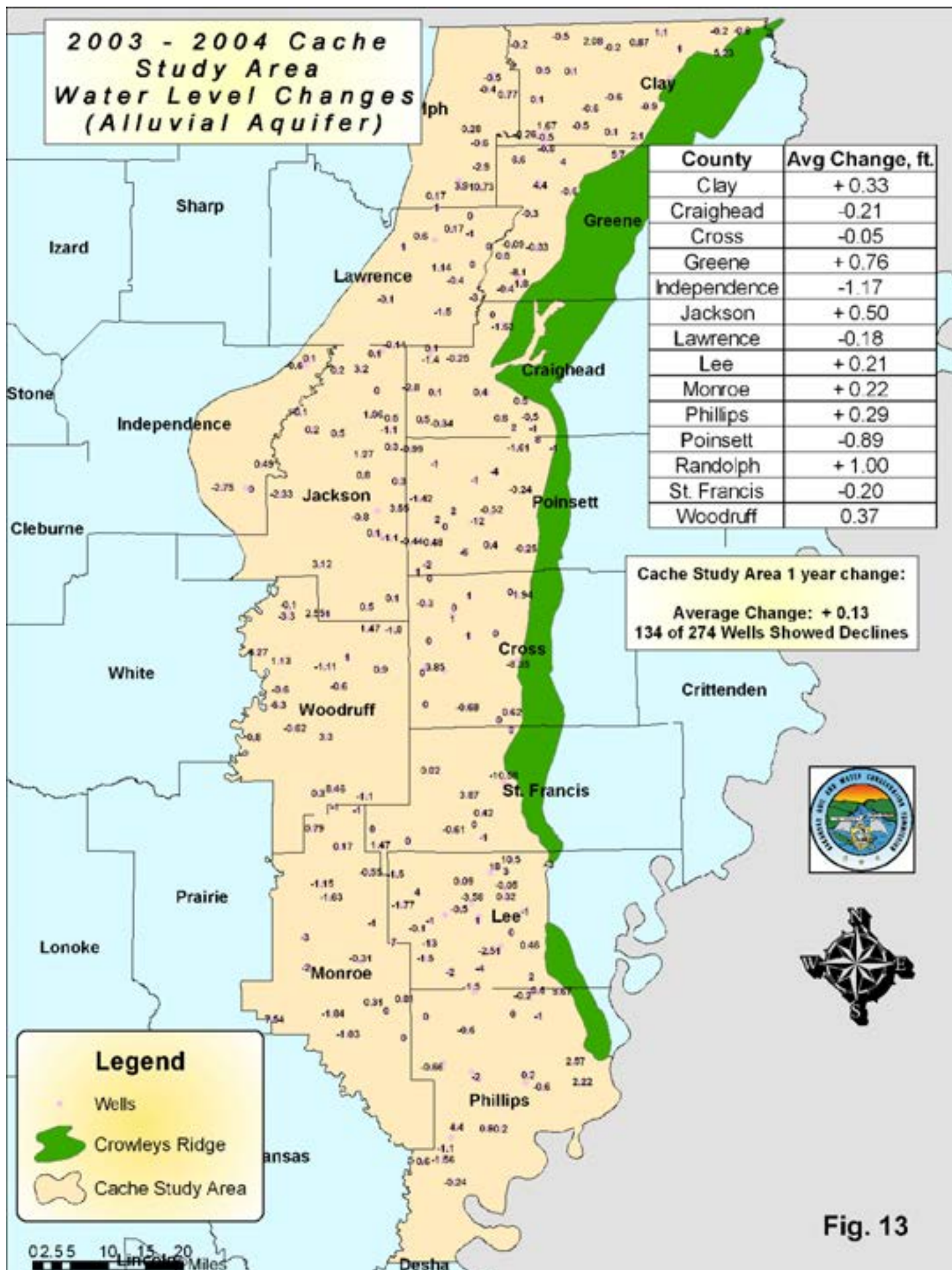
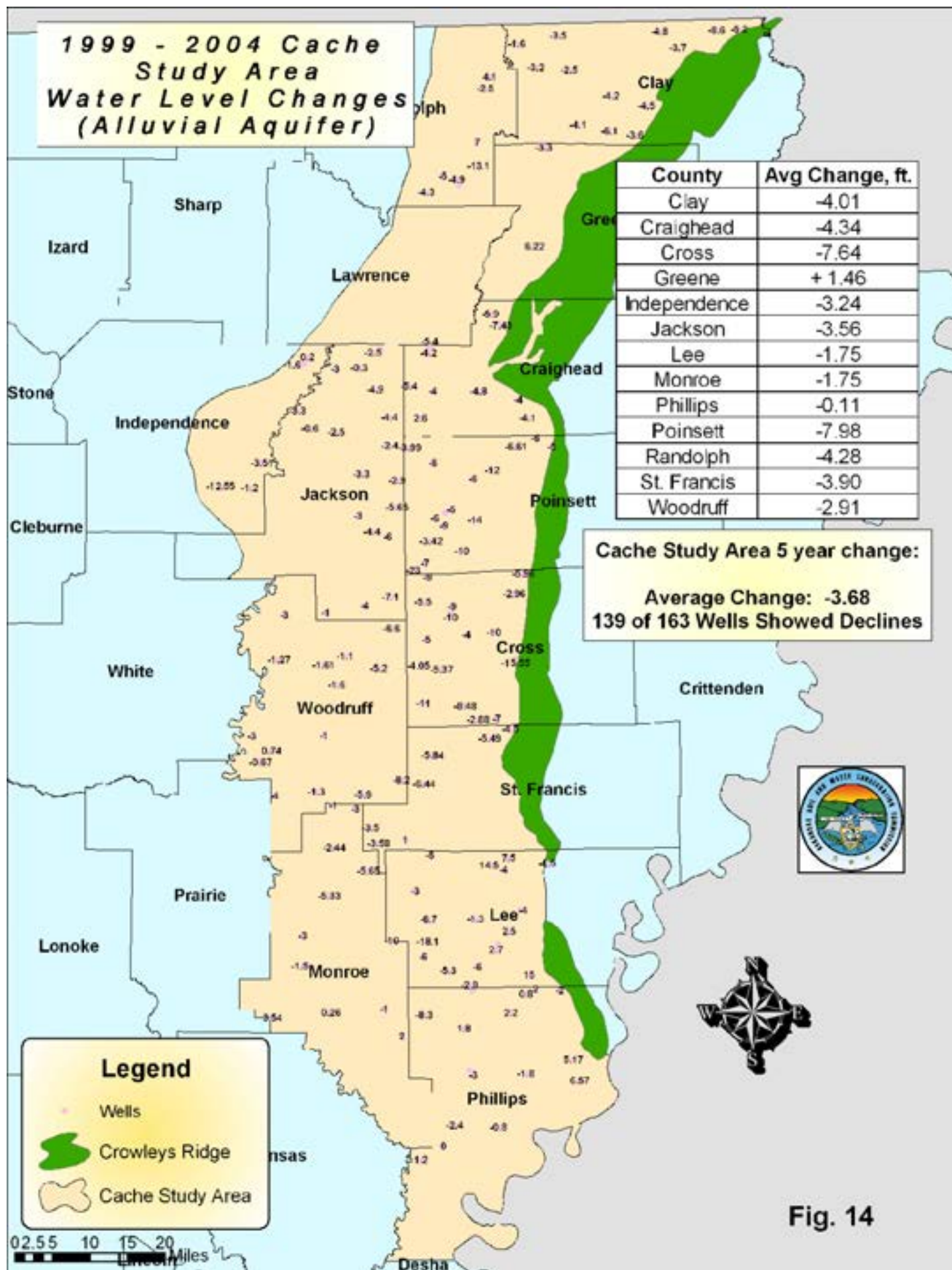
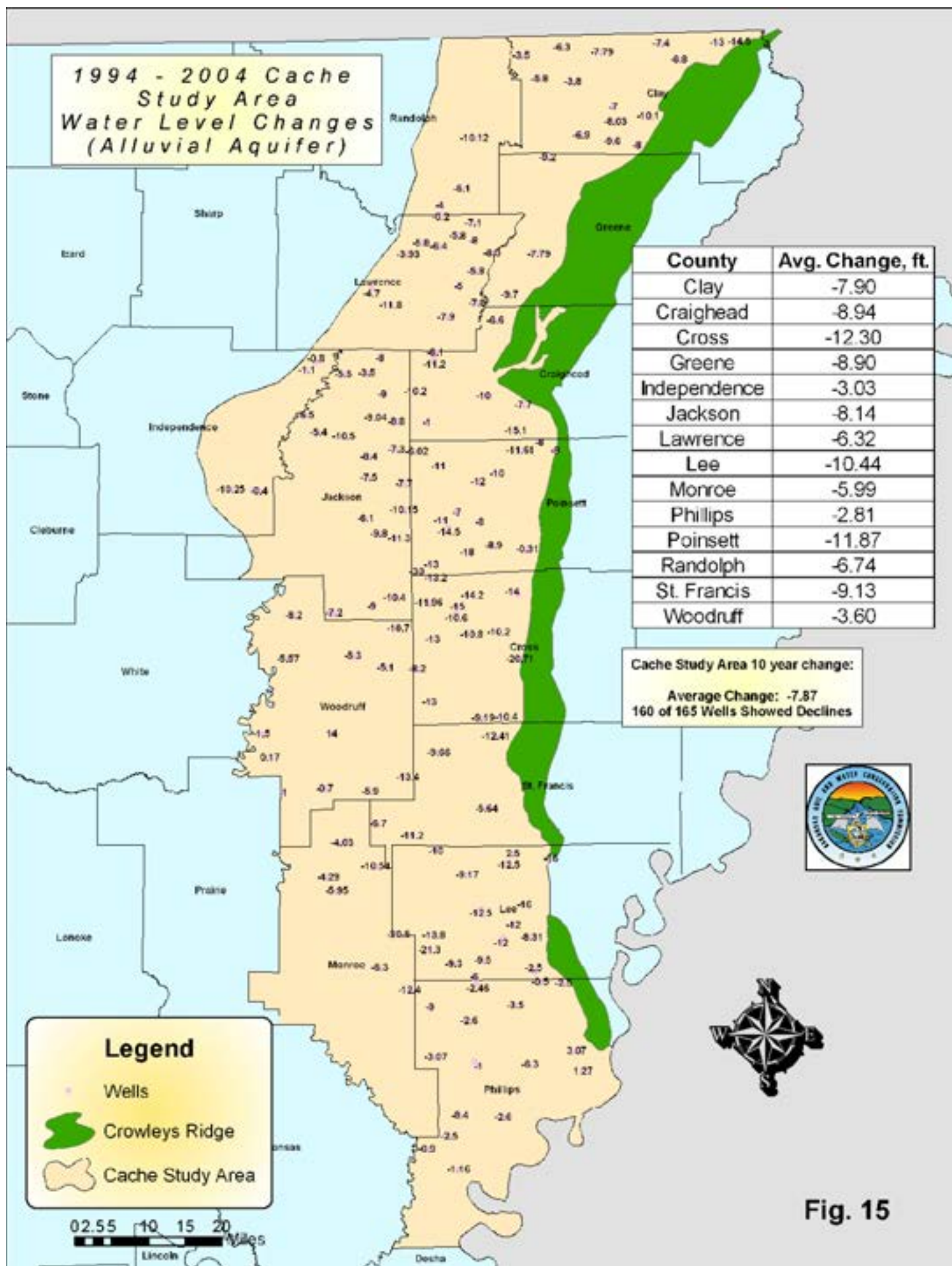


Fig. 13





2003-2004 Cache Study Area Water Level Changes (Sparta/Memphis Aquifer)

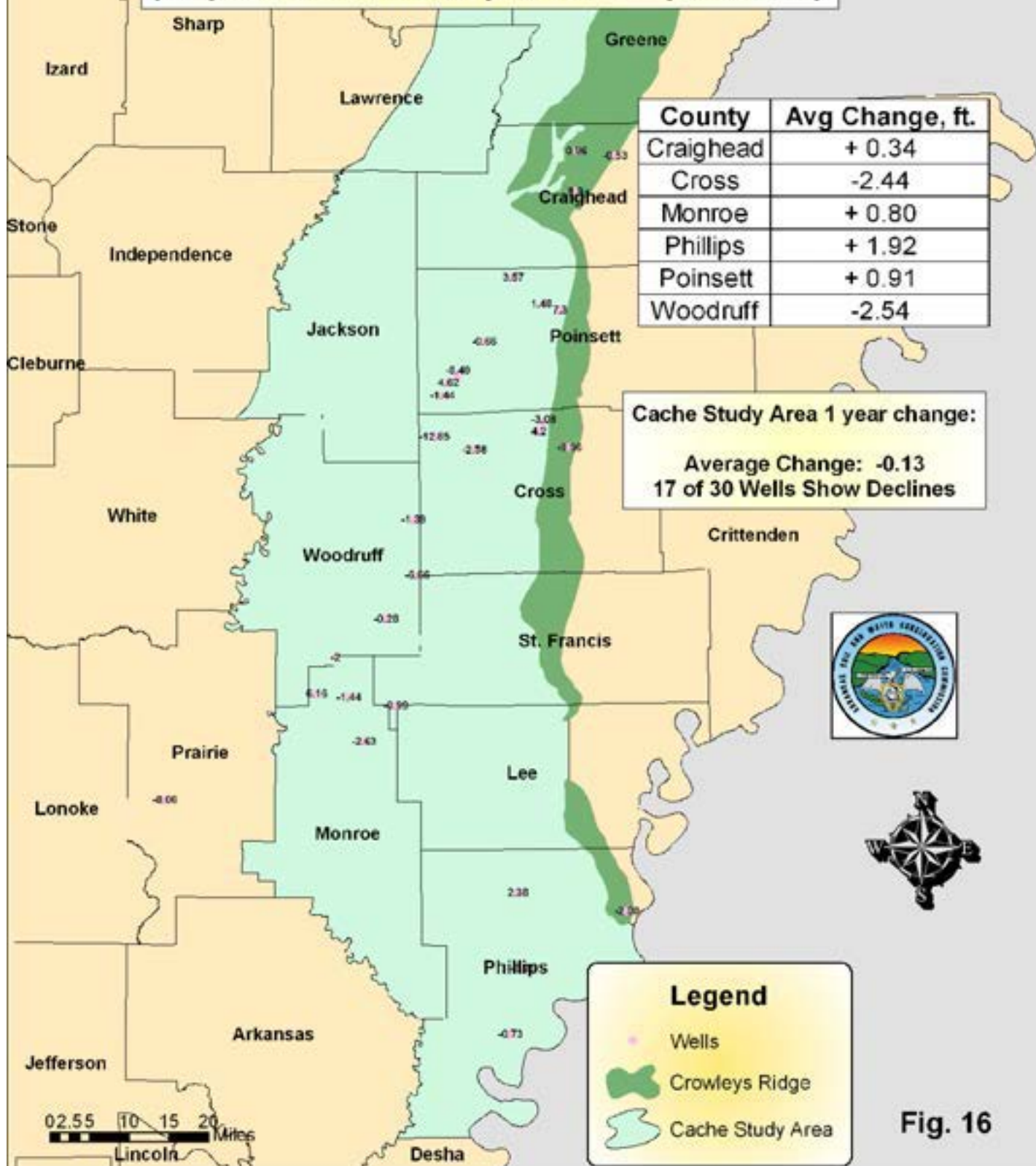


Fig. 16

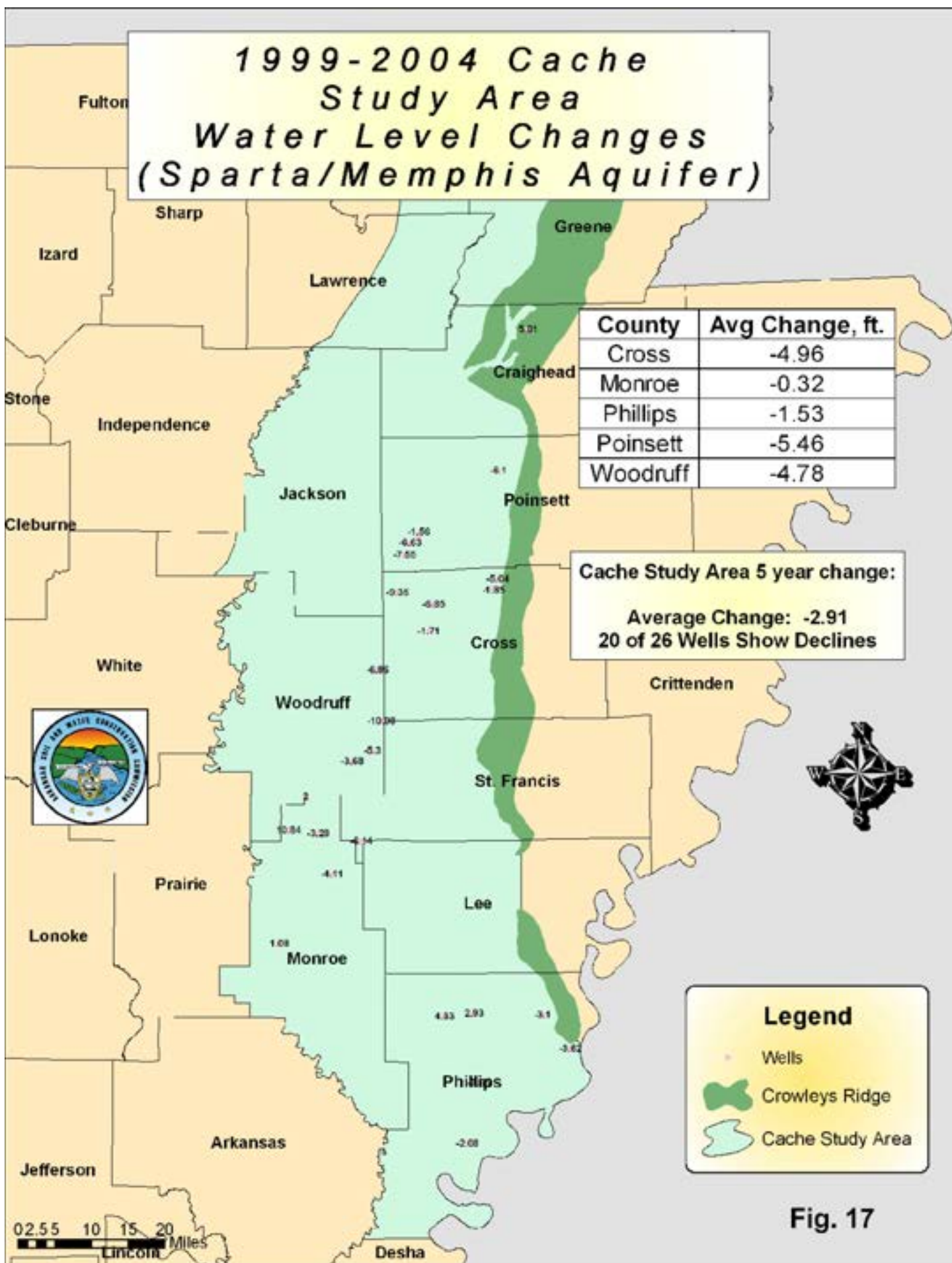


Fig. 17

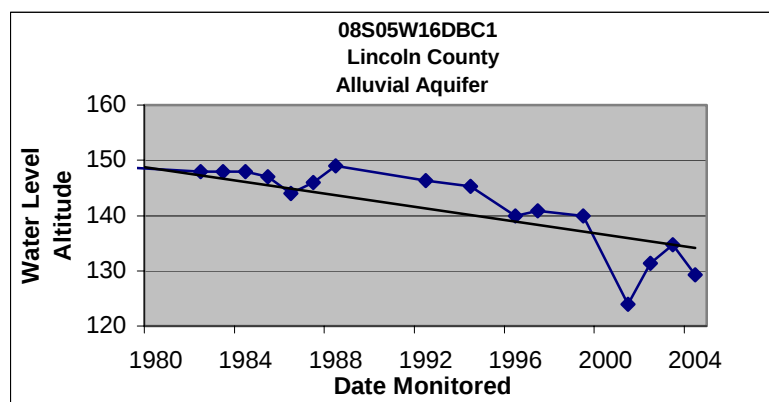
BOEUF-TENSAS STUDY AREA

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 2003-2004 showed declines in all counties except Lincoln, which had an average change of +0.09 feet. All other counties showed an average negative change during this time, with Chicot averaging -0.63 feet, Desha -0.17 , Drew -0.43 , and Ashley -1.22 feet respectively. The average change for the entire study area during this time was -0.48 feet, with 43 of 76 wells (56.6%) showing declines. (Fig.18)

During the 5-year monitoring period from 1999 to 2004 all the counties in the study area showed average declines with Ashley having a -0.08 foot change, Chicot County -5.27 feet, Desha County -1.31 feet, and Lincoln County -5.17 feet respectively. The entire study area had an average 5-year change of -2.57 feet, with 17 of 24 wells monitored (70.8%) showing declines. (Fig.19)

The data for the 10-year change in the Boeuf-Tensas shows once again that every county in the study area had average declines. Ashley County an average change of -3.28 , Chicot County -8.06 feet, Desha County -8.66 , Drew County -7.43 feet, and Lincoln County -9.41 feet respectively. The entire study area showed an average change of -6.84 feet during this 10-year period in the alluvial aquifer with 45 of 49 wells monitored (91.8%) showing declines. (Fig. 20)



Continued monitoring of the ground-water levels in the Sparta aquifer of the Boeuf-Tensas Study Area shows mixed results mostly because of the lack of wells that are drilled into the aquifer in this part of the state. The ASWCC 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.

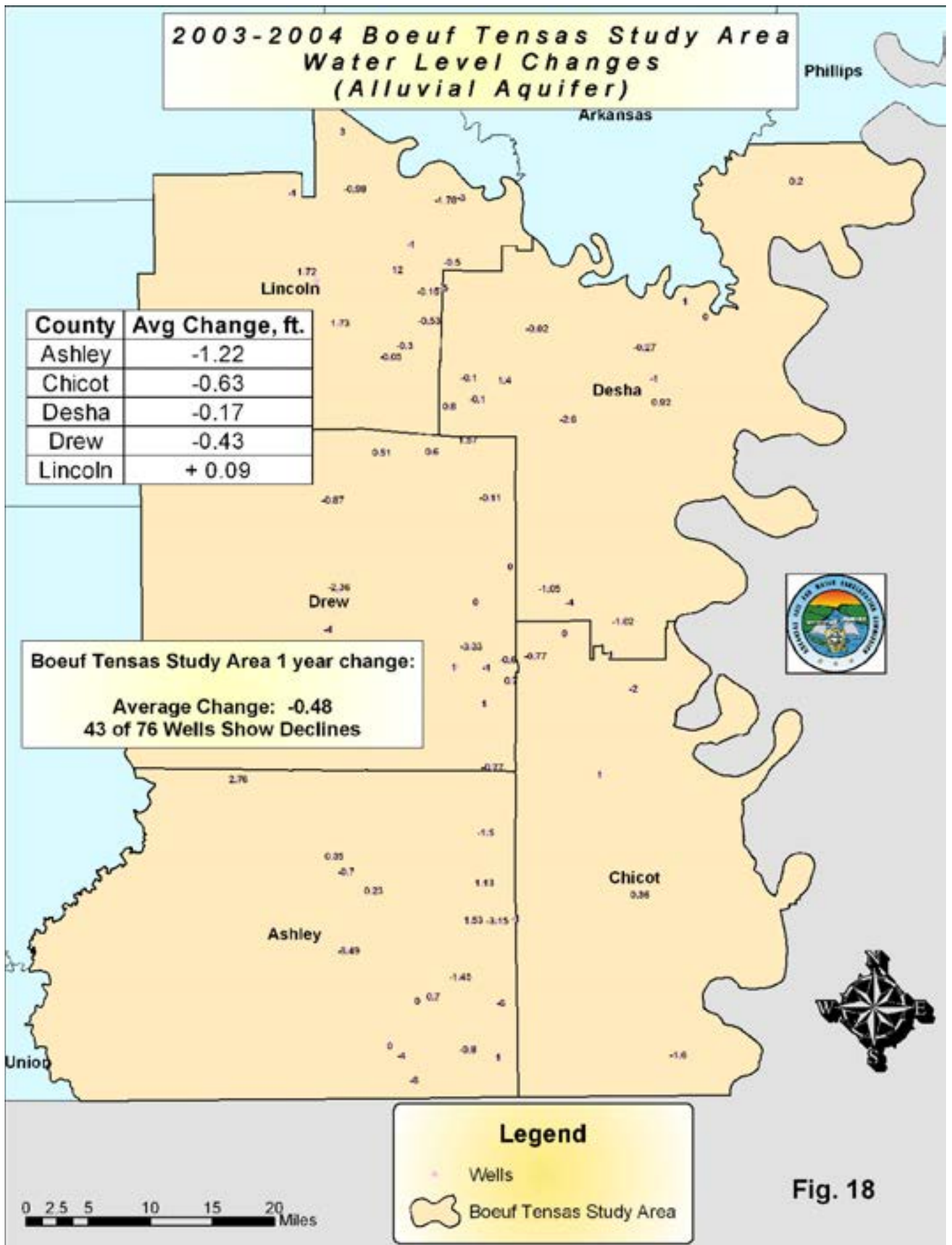
During the 2003-2004 monitoring period the Bouuf-Tenses Study Area showed an average decline of +0.31 feet in the Sparta/Memphis aquifer, with 9 of the 16 wells monitored (56.3%) showing declines. Lincoln County had an average change of +4.30 feet, while Desha and Drew Counties had an average of -0.09 and -2.61 feet respectively. (Fig.21)

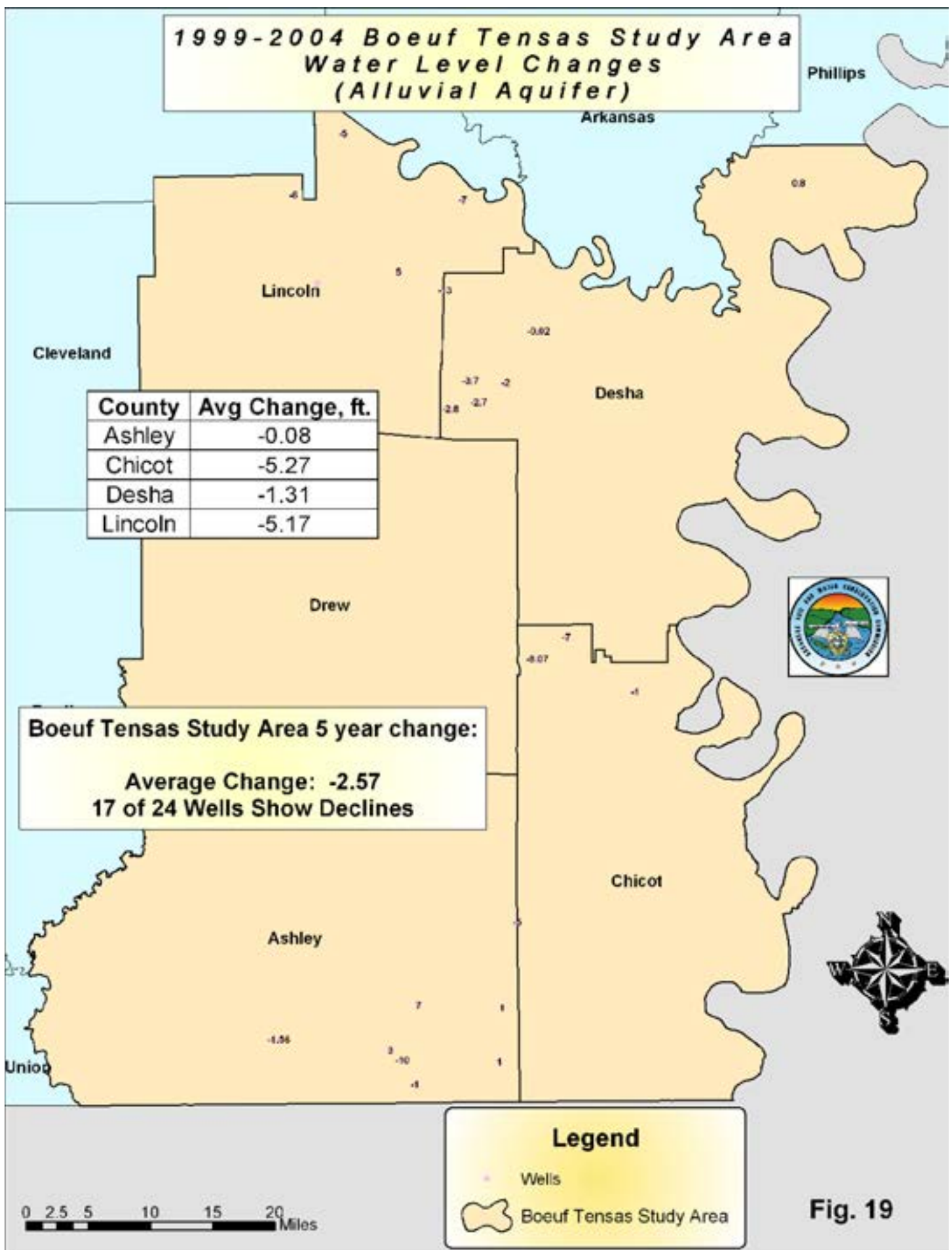
During the 5-year monitoring period, from 1999 to 2004, 13 of the 21 wells monitored in the Sparta/Memphis aquifer (61.9%) showed water-level declines in this study area. Desha County had an average change of -0.14 feet, Drew County -1.37 feet, and Lincoln County -6.92 feet respectively. The entire study area during this monitoring period had an average decline of -1.59 feet. (Fig.22)

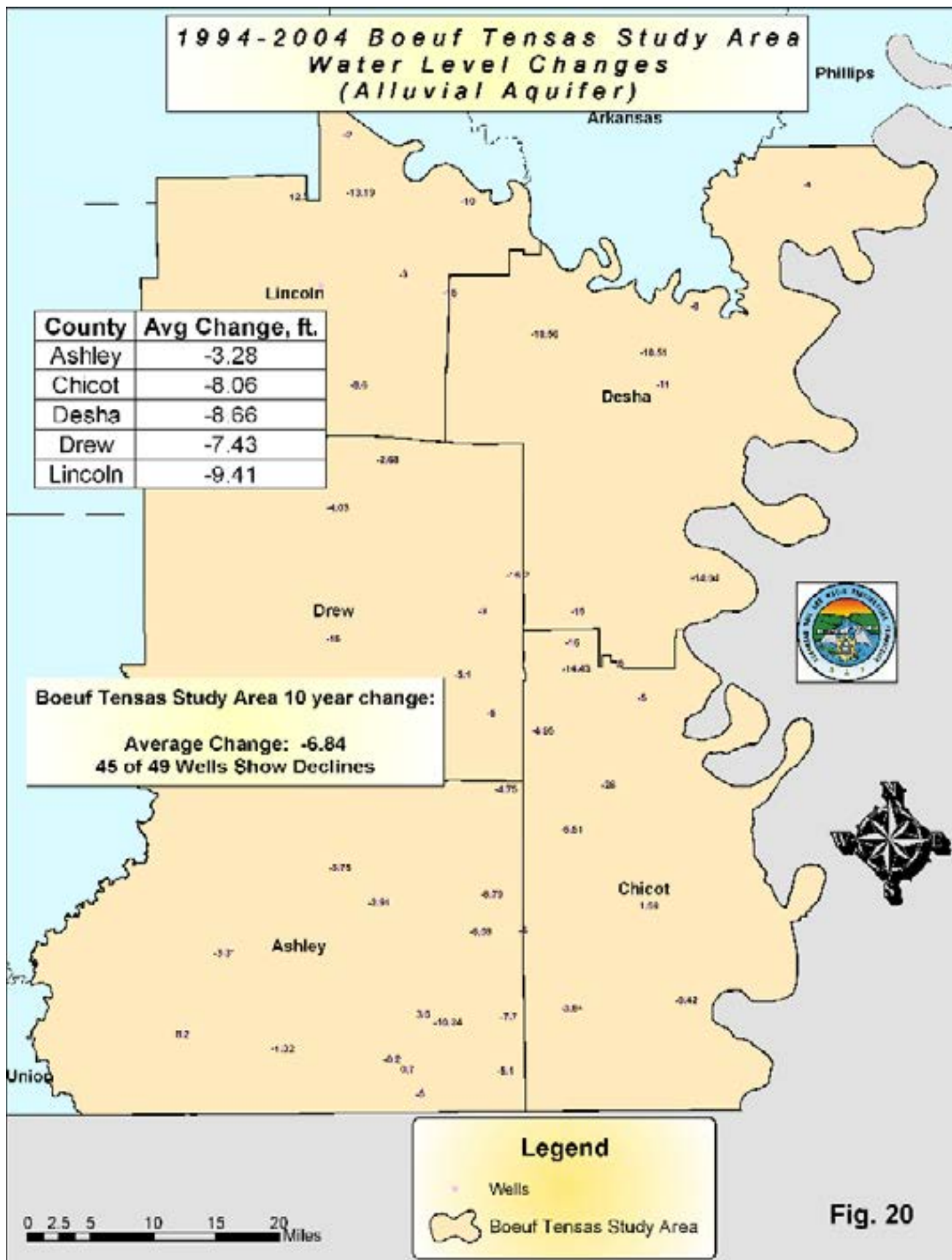
ST. FRANCIS STUDY AREA

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.

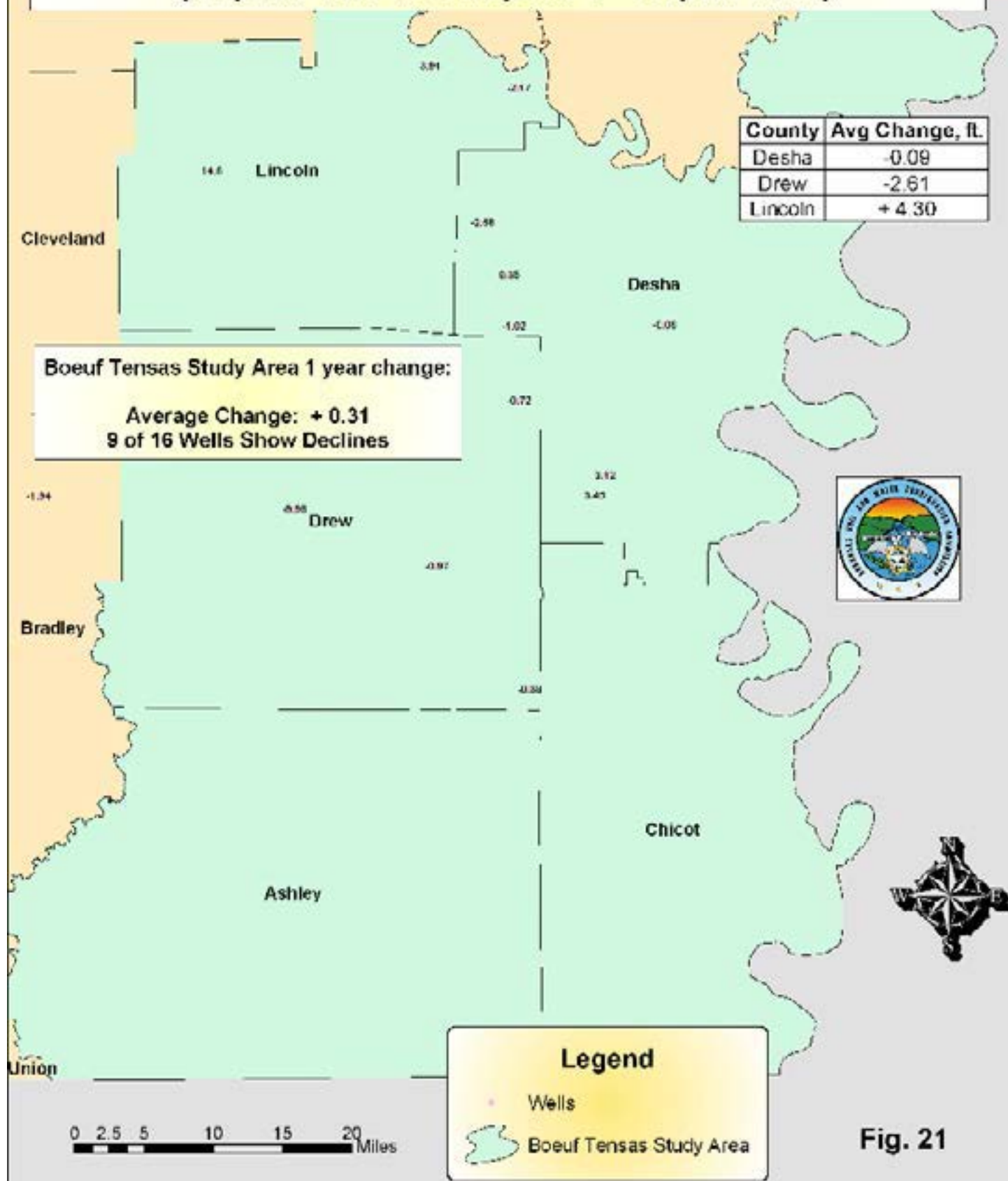
As was observed in the preceding study areas, during the 2003-2004 monitoring period there were both declines and increases in average static water levels in the alluvial aquifer throughout this study area. Clay county had an average change of -1.32 feet, Craighead County +0.21 feet, Crittenden County -0.55 feet, Cross County, -1.15 feet, Greene County +1.29 feet, Lee County -1.89 feet, Mississippi County -0.57 feet, Poinsett County -0.83 feet, and St. Francis County +0.10 feet respectively. (Fig.23)

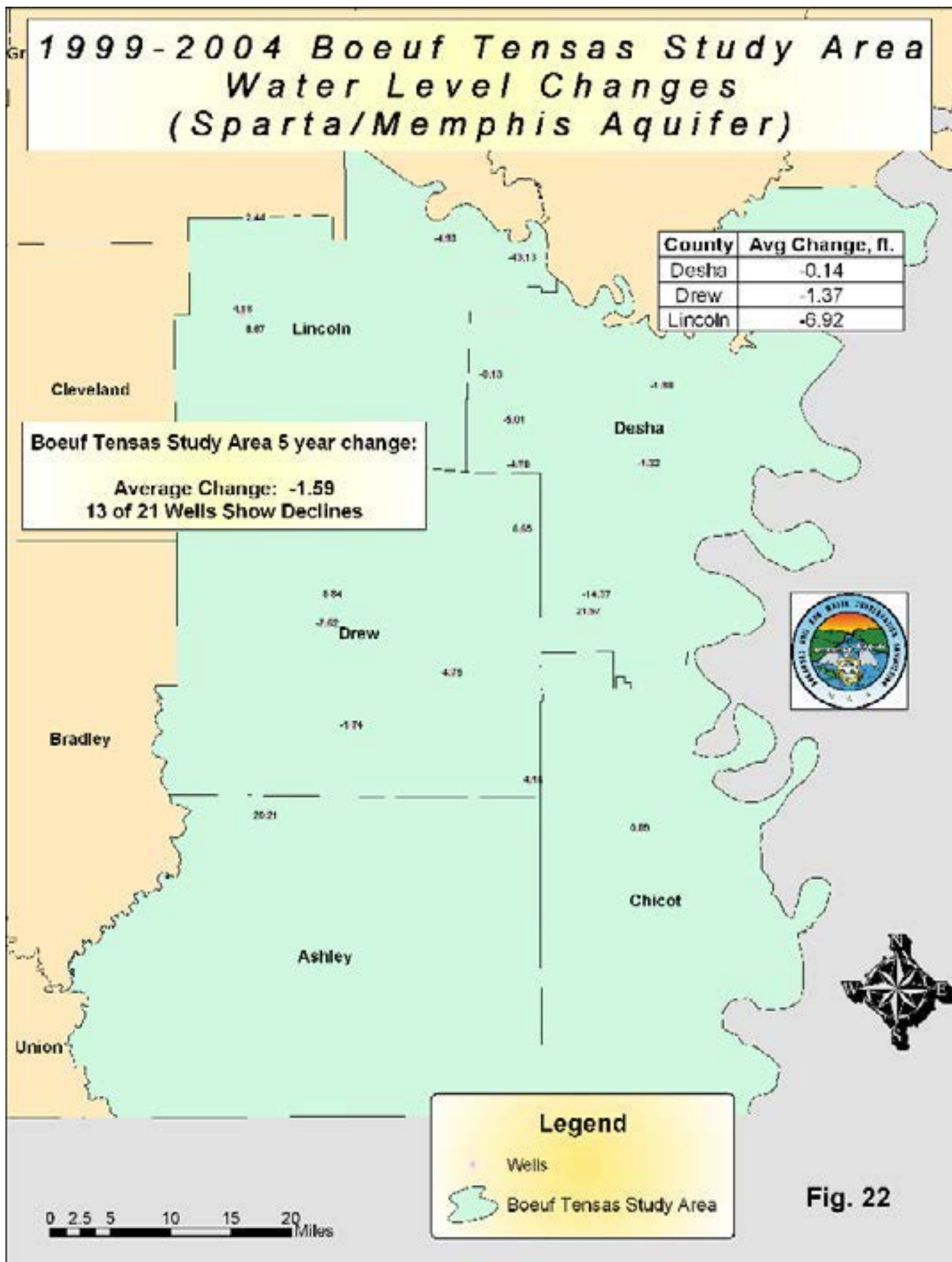






2003-2004 Boeuf Tensas Study Area Water Level Changes (Sparta/Memphis Aquifer)





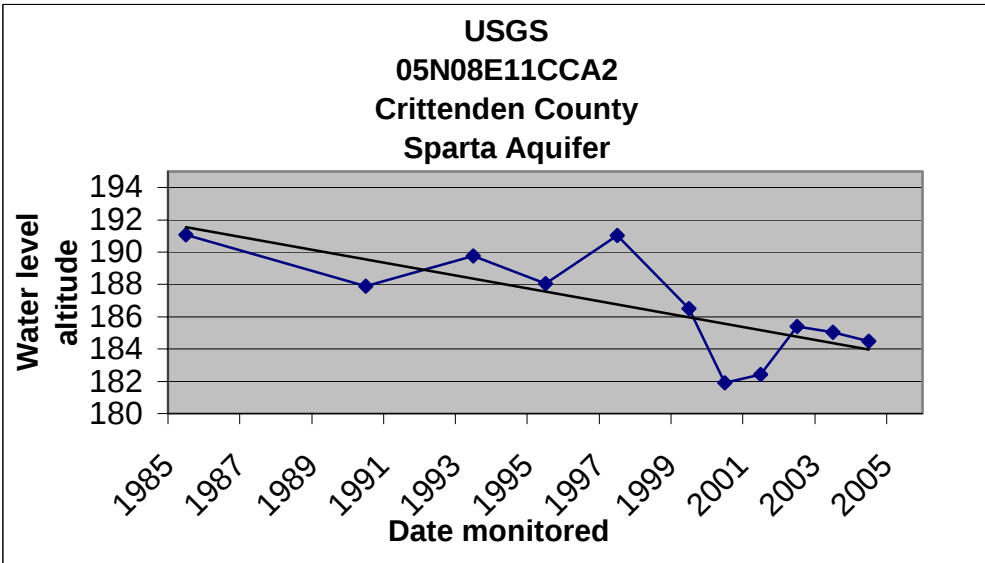
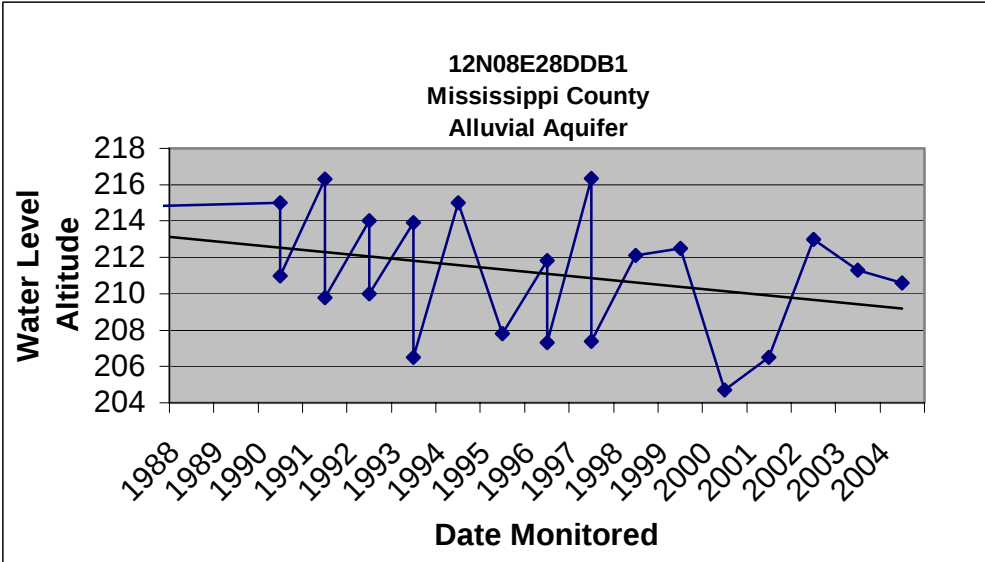
The overall study area had an average static water-level change of -0.29 feet during this time, with 60 of the 117 (51.3%) wells monitored showing declines.

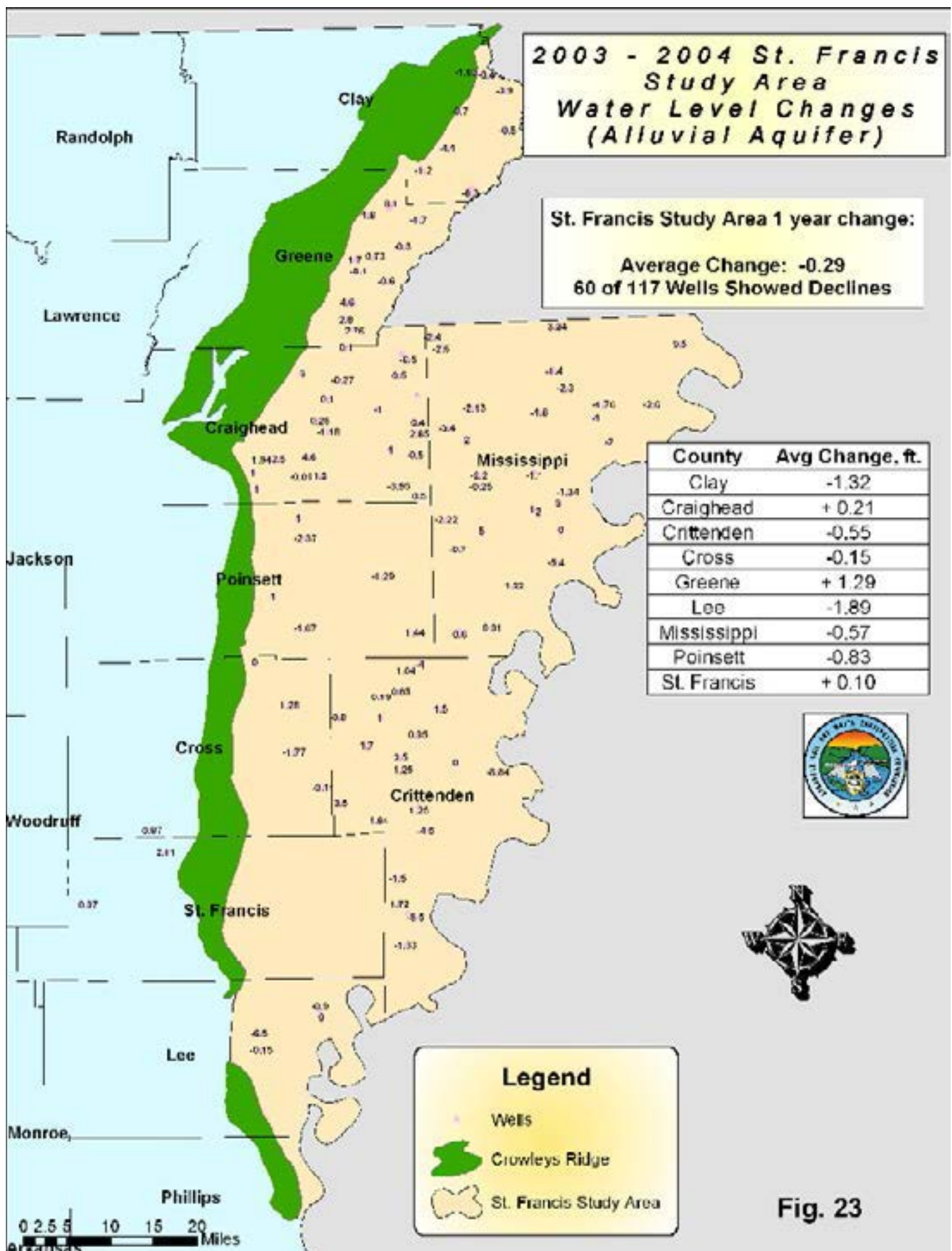
During the 5-year monitoring timeframe, from 1999 to 2004, all the counties in this study area showed an average decline in static water levels in the alluvial aquifer. Greene County had an average decline of -2.10 feet, Mississippi County -2.30 feet, Craighead County -0.30 feet, Cross County -3.15 feet, Crittenden County -3.89 , St. Francis County -2.10 , Poinsett County -0.76 feet, Lee County -1.75 feet, and Clay county -1.35 feet respectively. The alluvial aquifer in this study area had an average change of -1.88 feet, with 41 of the 59 wells monitored (69.5%) showing declines. (Fig.24)

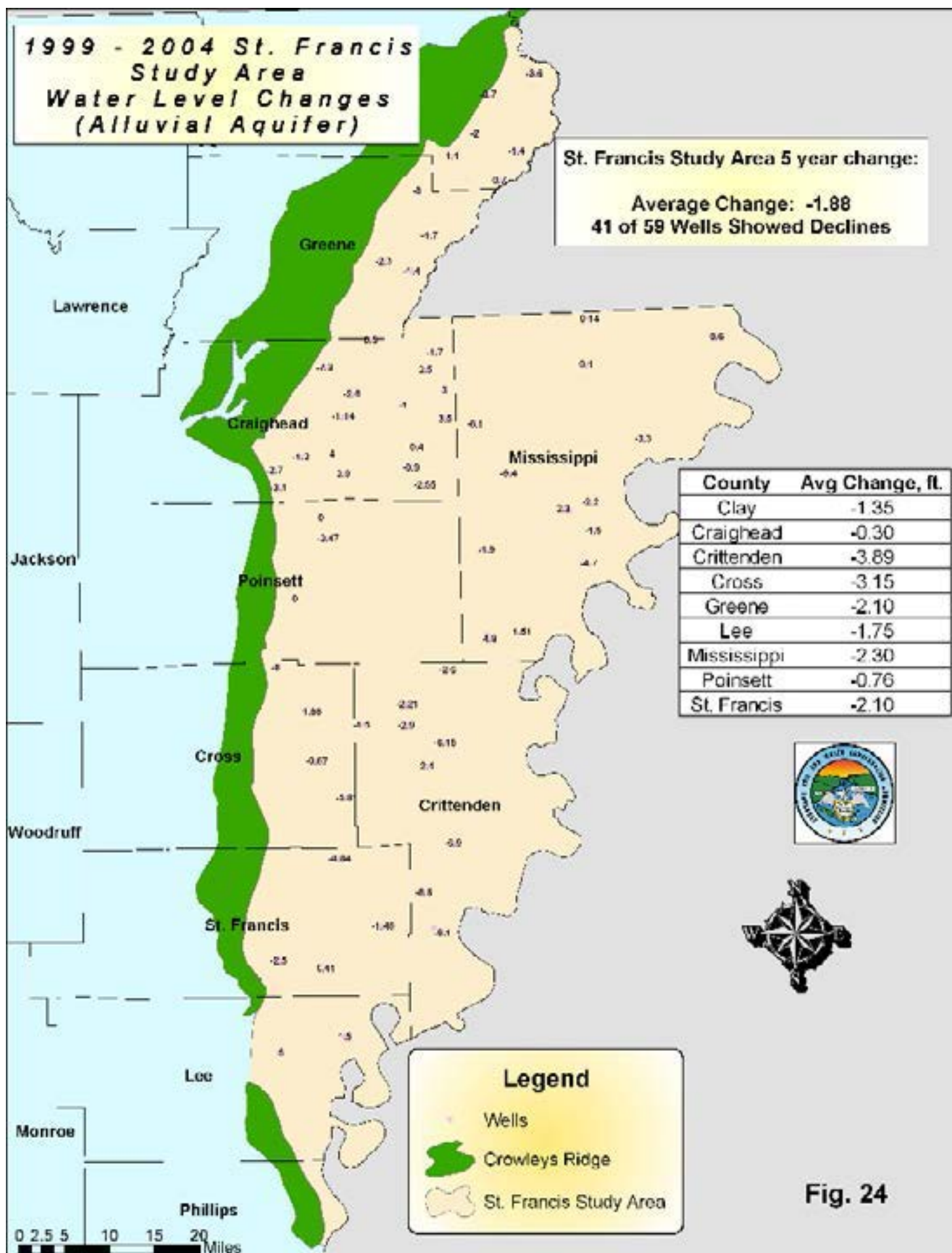
A 10-year average change was also done in the St. Francis Study Area for the alluvial aquifer static water levels. Once again during this period all the counties showed an average negative change; Clay County -2.75 feet, Craighead County -1.50 feet, Crittenden County -7.46 feet, Cross County -6.55 feet, Greene County -1.56 feet, Lee County -4.90 feet, Mississippi county -3.08 feet, and Poinsett County -1.44 feet respectively. There was an average change of -3.29 feet over the entire study area for this 10-year period, with 65 of the 75 wells monitored (86.7%) showing declines. (Fig. 25)

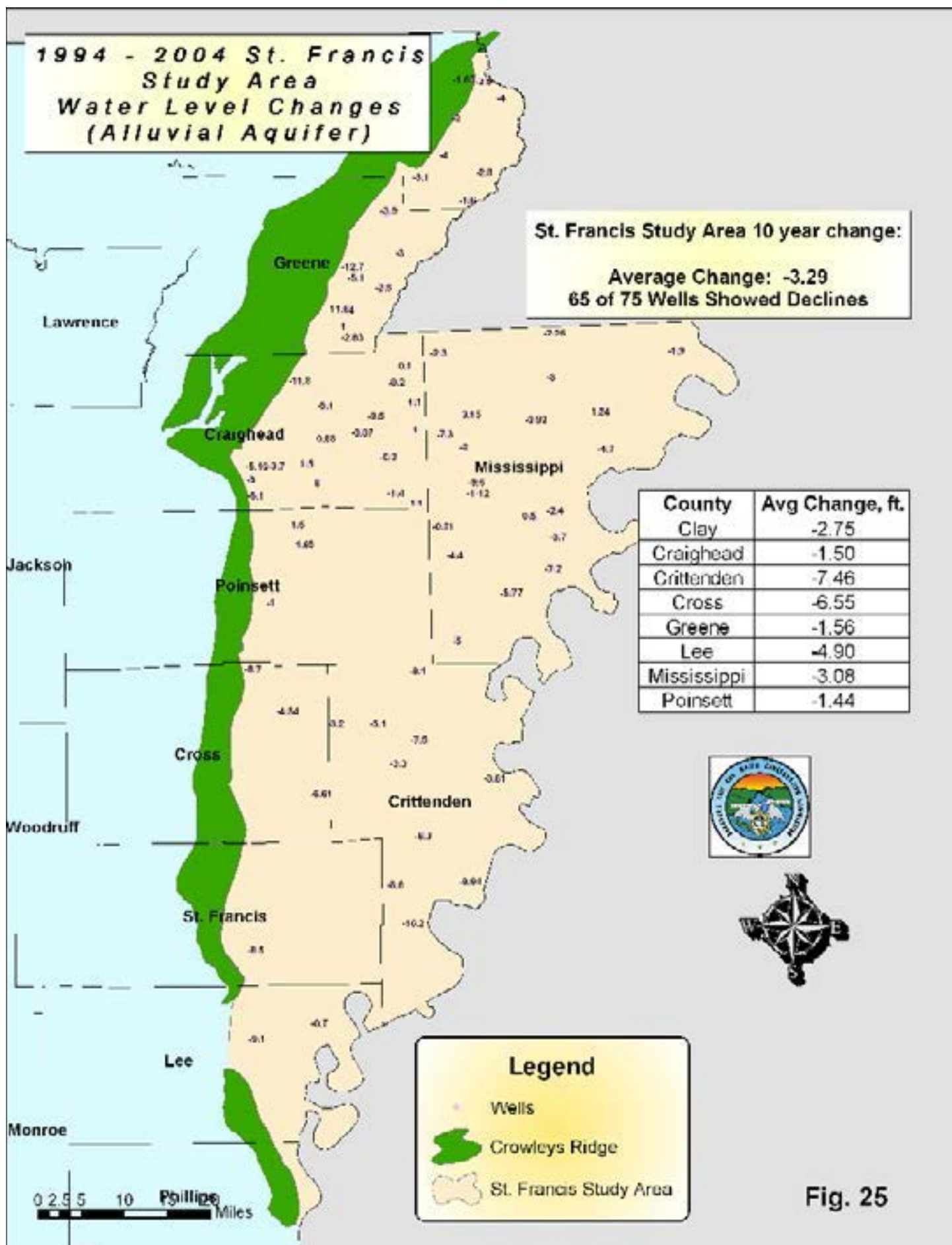
Just as in the Boeuf-Tensas Study Area, the St. Francis Study Area has a limited number of wells drilled into the Sparta/Memphis aquifer. This should be taken into account when looking at the county changes in the figures. There are more wells being drilled into these areas as the water level in the alluvial aquifer continues to decline. USGS as well as the ASWCC will continue to add data-points in these areas for the Sparta/Memphis aquifer.

From 2003 to 2004 there were 12 wells monitored in the Sparta/Memphis aquifer in the St. Francis Study Area, 7 of which showed an average decline in static water level. The study area had an average change of -1.22 feet during this time. There are equally as few wells to correlate for data collection during the 5-year timeframe due to the lack of Sparta/Memphis wells available in this study area. From 1999 to 2004 8 of 10 wells showed declines in static water level, and the entire study area showed an average decline of -3.40 feet. (Figs. 26 and 27)









2003-2004 St. Francis Study Area Water Level Changes (Sparta/Memphis Aquifer)

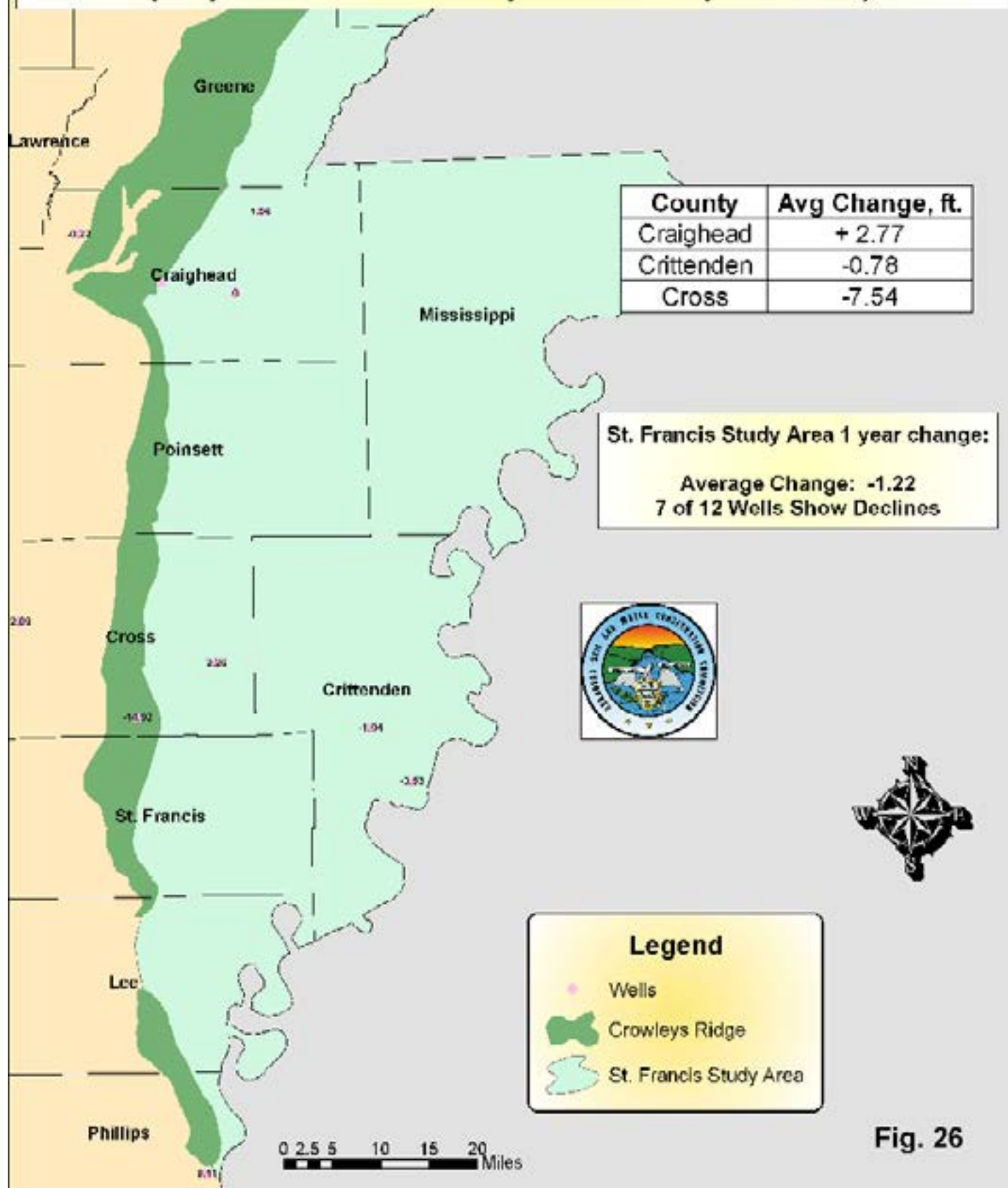


Fig. 26

1999-2004 St. Francis Study Area Water Level Changes (Sparta/Memphis Aquifer)

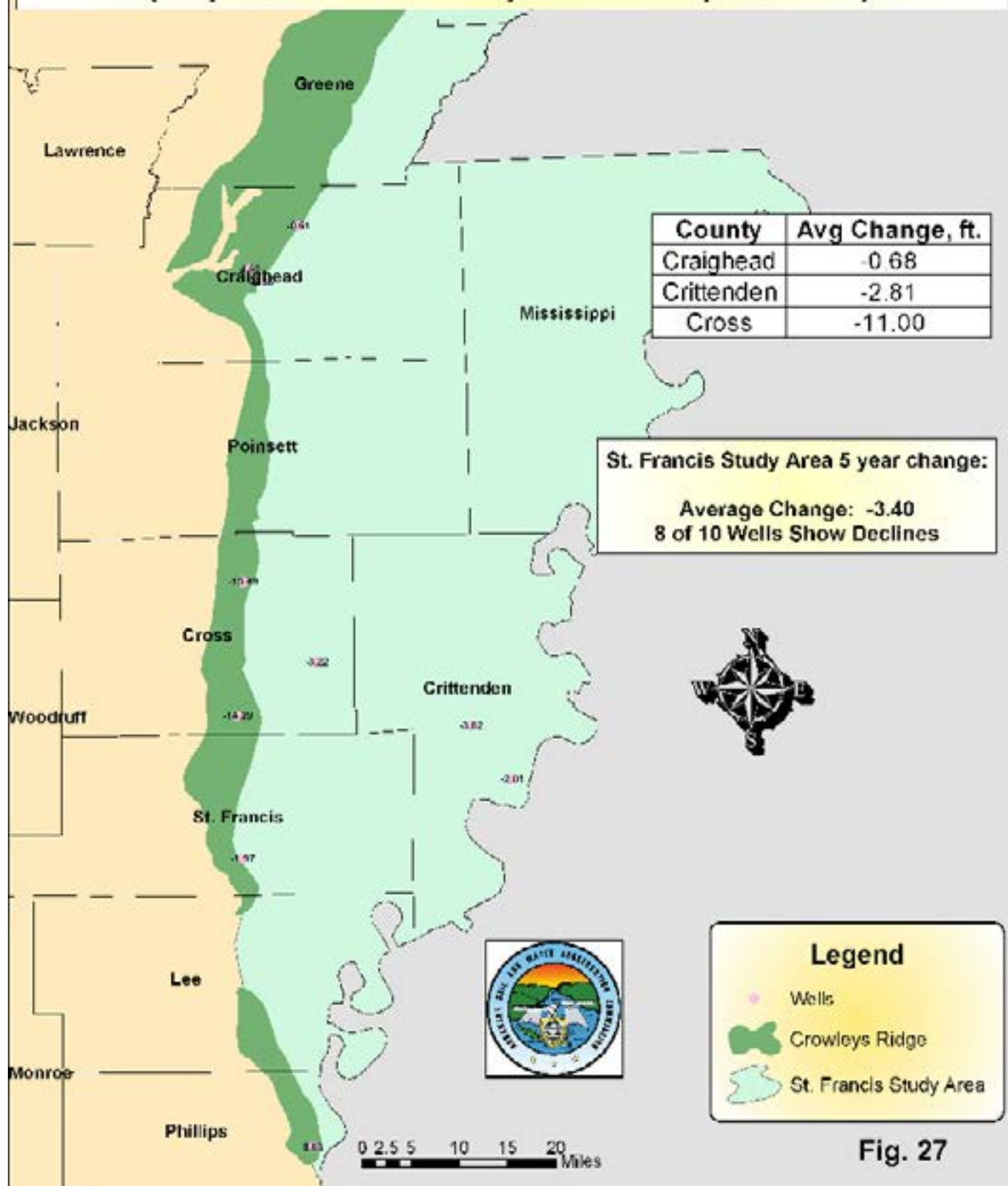


Fig. 27

Figure 28 shows the area of water level decline in the alluvial aquifer over the last 10 years, and figure 29 shows water level declines in the Sparta/Memphis aquifer over the last 5 years. These figures were produced using the Natural Neighbors method of interpolation. The first step in this process was to create an Excel d-base IV file for all of the water-level change data, by converting the data into a d-base, file using the mapping program Arc GIS 8.3. The next step was to use the Natural Neighbors method of interpolation to create a raster surface. Natural Neighbors creates a group of points triangulated with a circle around each. The weight or value of each point is then evaluated for its influence on other areas, creating the raster surface. A slope and hill shade analysis was done to give the surface a 3 dimensional look. On the maps you will notice areas of the state that are not included in the surface. These are areas where there was not enough data to create an accurate interpolation of the area.

Other Aquifers Monitored

The USGS in cooperation with the ASWCC 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 2004 monitoring year was designated for the Paleozoic Ozark aquifer. Baxter County had an average change of -4.96 feet, Benton County -1.81 feet, Boone County -1.25 feet, Carroll County +0.06 feet, Fulton County +0.57 feet, Marion County -5.84 feet, Searcy County -2.55 feet, Sharp County +1.97 feet, and Washington County +0.41 feet, respectively. This information is contained in Appendix E. The formations that are included in the wells monitored for the Ozark aquifer are the Powell Dolomite, Plattin Limestone, Gunter Sandstone, Roubidoux Formation, Jefferson City Dolomite, Potosi Dolomite, Cotter Dolomite, and the Everton Formation.

*Alluvial Aquifer 10 Year
Water Level Change (Ft.)
Surface Map (1994 - 2004)*

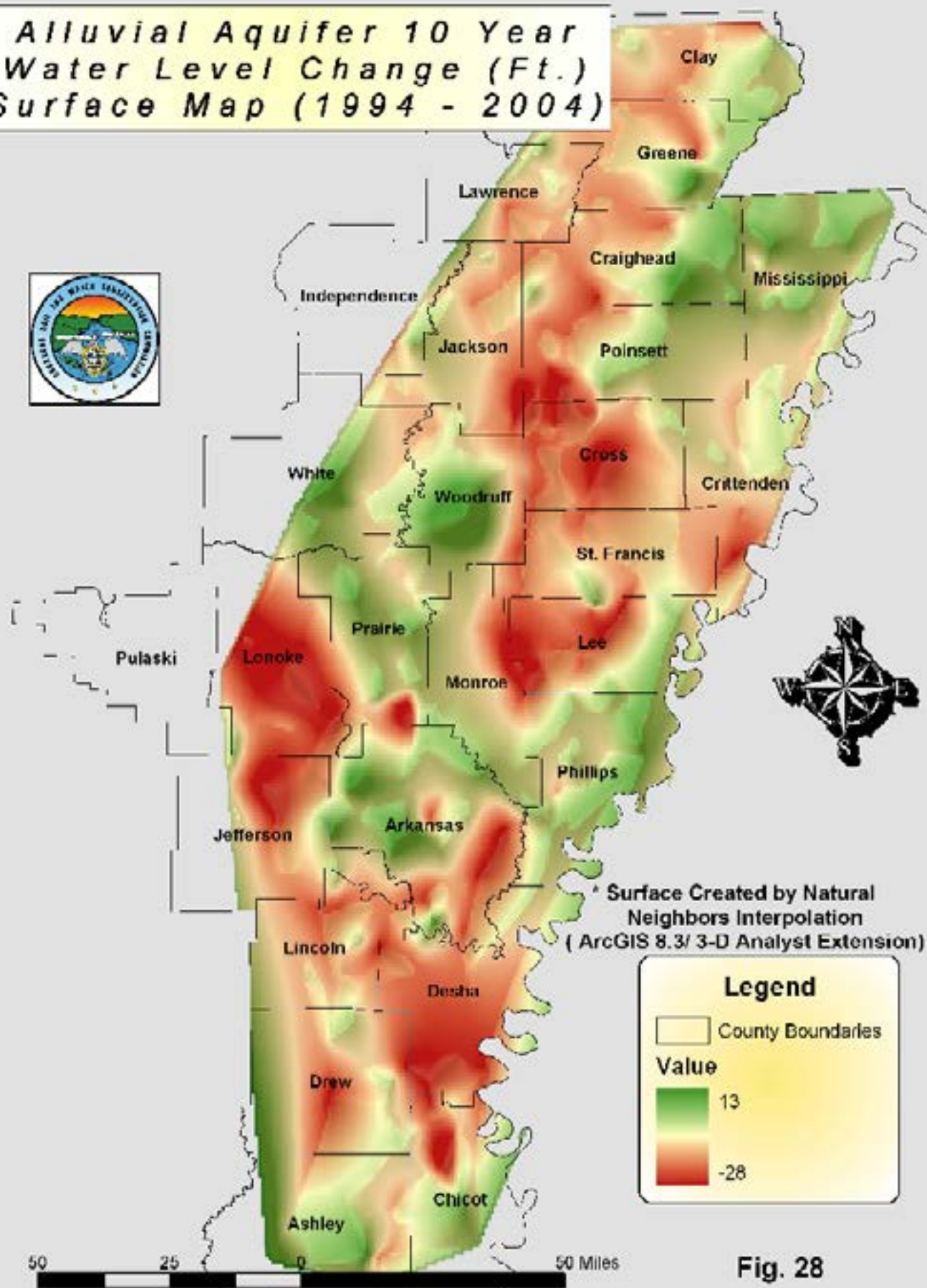
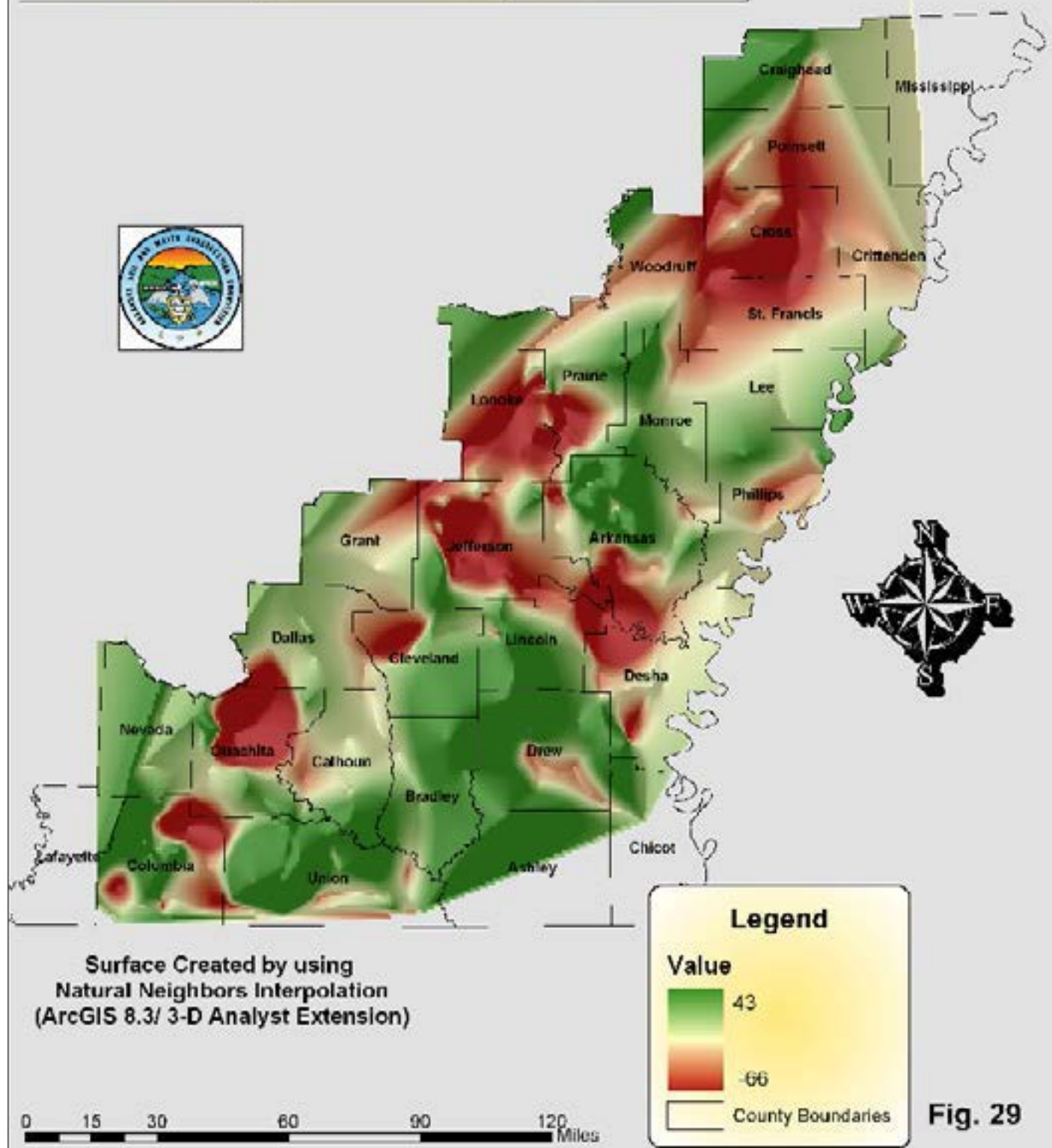


Fig. 28

Sparta Aquifer 5 year Water Level Change Surface Map (1999 - 2004)



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 every year is used to quantify the amount of dissolved solids present in the ground water. Table 2 shows the specific conductance and equivalent dissolved chloride for the wells monitored by the USGS in both the alluvial and Sparta/Memphis aquifers in 2004.

In 2002, the areas of higher specific conductance in the alluvial aquifer were located in western Chicot County and eastern Lincoln County. In the data collected by the USGS in 2000, 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 234 wells in 2004. One hundred and twenty-five of these wells were tested for dissolved chlorides. This data is included in Table 2. Specific conductance values were greater than 1,000 uS/cm in Arkansas, Lee, Phillips, and Union Counties. (Schrader, T.P., 2004). A table of wells sampled, as well as a map showing the areas of equal specific conductance can be found in USGS Scientific Investigations Report 2004-5055.

Nonpoint Source Program

The Arkansas Soil and Water Conservation Commission's (ASWCC's) Nonpoint Source Program is supported by Section 319 (Clean Water Act) Grant Funds which provide 60 percent of the total program funding. ASWCC staff continued work on one statewide nonpoint source ground water project in 2004. This 319 ground water project was initiated in 2000 and is ongoing until completed. The purpose of this project is to evaluate the position of wells in the statewide ground-water quality monitoring program, and to upgrade the program by installing new wells or annexing existing wells into the monitoring network where new monitoring points are needed. Figure 30 shows the locations of these wells and the specific aquifer in which they were installed. The staff of ASWCC is currently enhancing this statewide monitoring network which will benefit government agencies and the general public. This project does not specifically evaluate other monitoring networks in the state. However, coordination with all other water resource agencies has been maintained to best utilize resources and avoid redundancy.

Ambient ground-water monitoring in Arkansas has traditionally been performed by three organizations: the United States Geological Survey (USGS), the Arkansas Department of Environmental Quality (ADEQ), and the Arkansas Department of Health (ADH). The USGS monitors 25 master wells (or springs) completed in fourteen aquifers throughout the State. These wells are monitored for a variety of constituents, including nutrients, metals, radioactivity, organics, and selected primary and secondary drinking water constituents. Ambient ground-water quality monitoring performed by the USGS is partially funded through grants obtained from ASWCC. ADEQ maintains the Arkansas Ambient Ground Water Quality Program, which was initiated in 1986. This program consists of nine monitoring areas selected to gather water quality data from various aquifers to evaluate potential impacts from multiple land uses. Analyses include selected parameters based on the presumed industrial or agricultural impact at each site. The ADH monitors public water supply wells (treated water only) in

ASWCC

Section 319 Core Program

Monitoring Enhancement Wells



Fig. 30

Arkansas. Analyses by ADH include bacteriological, nitrate, and other basic water quality parameters.

The State's previous ground-water quality assessment program relies on a network of wells that are utilized for monitoring. The wells selected for the monitoring network are sometimes located in areas that are not ideal monitoring locations. In addition, they often do not meet ideal construction specifications because these wells were typically drilled for a variety of purposes. Because of the inconsistencies associated with the location and construction of these wells, the credibility of the assessment data can sometimes be questioned or criticized. The quality of this data is essential to the State's ability to manage and protect its valuable ground water resources.

The location of new ground-water monitoring well locations was determined for twelve principal aquifers in the State based on the locations of wells included in the existing USGS and ADEQ monitoring networks, with consideration of the ground-water monitoring requirements of the State. Locations of public supply wells monitored by ADH were included as part of this evaluation with limited consideration because only treated water is analyzed.

Maps showing the locations of the existing monitoring network were constructed. In 2001, a text summary of the hydrogeologic characteristics of each aquifer was prepared, and each aquifer's aerial extent was determined utilizing publications such as Water-Resources Investigations Reports and Professional Papers of the USGS and the State Water Plan. Maps showing the regional extent of each aquifer with the ground water quality monitoring network well locations were generated. Interpretation of these maps identified areas where new monitoring points are needed.

Monitoring network deficiencies in twelve major aquifers of the State, including: the Alluvial, Cockfield, Sparta, Memphis, Cane River, Nacatoch, Tokio, Trinity, Atoka, Boone, Ozark, and Bigfork Chert aquifers, were identified in 2001 and 2002. A summary of the statewide ambient ground-water monitoring network for each aquifer

was prepared which outlines areas in each aquifer where monitoring deficiencies are present and identifies areas where new wells are needed. Even though the project is statewide in scope, new monitoring well annexation and installation have focused on the alluvial and Sparta aquifers of eastern and southern Arkansas, primarily due the Critical Area designations of these aquifers. Existing water-level monitoring locations in these aquifers are also evaluated as part of the potential well site selection process.

Existing wells are annexed into the network program where new monitoring points are needed and suitable wells can be located. Well inventories are performed on all wells considered for annexation to determine their suitability for monitoring. Well inventories initiated in October of 2001 and continue to date. Well construction reports, utilizing the Arkansas Water Well Construction Commission (AWWCC) database and files of the Arkansas Geological Commission are acquired when available. Inventory of numerous existing wells in 2001 and 2002, promulgated the interpretation that many existing wells do not meet ideal specifications required for monitoring. Many wells are not accessible for water level measurements or construction specifications may be indeterminate.

New monitoring wells are being installed in areas where suitable existing monitoring wells are lacking. Currently, twenty-two alluvial and five Sparta wells have been installed in eastern Arkansas. Well installations are targeted in areas based on the following criteria: drawdown history and USGS models of predicted aquifer depletion (i.e., position of Critical Areas), distribution of water level and water quality monitoring sites, and areas where future ground water quality degradation is anticipated. Following installation, boring logs and well construction reports are completed for each well. In addition, all well installations are performed according to the Rules and Regulations of the AWWCC.

New monitoring well installations initiated in June 2002 included two alluvial wells in Lonoke County. Also, eight alluvial wells and two Sparta wells were annexed into the monitoring network in the Grand Prairie in 2002. In 2003, eight alluvial wells and two Sparta wells were installed in the Grand Prairie. Twelve alluvial wells were installed in the Cache, St. Francis, and Bayou Bartholomew River Basins in 2004.

Three new Sparta wells were also installed in Monroe, Prairie, and Crittenden Counties in 2004. In 2005, 4-6 new alluvial wells and one additional Sparta well are planned for installation. (Fig.30)

The staff of ASWCC also worked with State agencies including, the Arkansas Natural Heritage Commission and Arkansas State Parks. Cooperative agreements were established with these agencies, and at this time, five alluvial and two Sparta wells have been installed on State lands along the Railroad Prairie and at Toltec Mounds State Park. In addition, the U.S. Fish and Wildlife Service was also contacted regarding the possibility of potential monitoring sites in Wildlife Management Areas within the Cache River Basin. No monitoring wells, however, have been installed on Federal lands at this time.

New wells added to the monitoring network are sampled, following installation or annexation, for selected chemical constituents using EPA approved protocols. Monitoring data collected to date is insufficient to document changes in ground water quality. Subsequent sampling frequency is designated to enhance the existing ground water quality monitoring program by documenting 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 the alluvial and Sparta aquifers continue to be overdrawn. Long term monitoring will also establish observable trends in ground water quality, which will benefit government agencies and the general public.

All ground water quality sampling for this project is performed under protocol outlined in EPA approved Quality Assurance Project Plan (QAPP). Initially approved on March 12, 2001, the QAPP was revised as required during the project, and is currently updated each year.

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 is 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, in addition to all wells annexed into the monitoring network. Samples are analyzed by the Arkansas Water Resources Center laboratory. These results are presented in Appendix G. Pesticide analyses has also been performed on all alluvial wells to date, however, due to the high cost of analyses and the absence of significant detections, pesticide analyses will only be performed on samples from selected alluvial wells. Pesticide analyses are performed by ADEQ.

This project represents the State's commitment to ground water quality monitoring as part of the Nonpoint Source Pollution Management Program.

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 AWWC 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 AWWCC achieves its goal by monitoring the construction of water wells in the state. Figure 31 shows the type and location of the reported wells drilled in one year. In addition to monitoring the drilling industry the AWWCC 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 AWWCC also is equipped to assist drillers in the assessment of repair work, which may be needed in damaged wells.

One way the AWWCC keeps up with where well construction is taking place is through its relationship with Arkansas Department of Health. The Health Department has local sanitarians in each county. The sanitarians know where in the county wells would be required, and often layout lots showing landowners where to place their septic system and well on their property. The AWWCC inspectors try to visit each county sanitarian at least once a year. The AWWCC also conducts well inspections in each county. These inspections are to insure the protection of our ground-water, through compliance with the rules and regulations set forth by the AWWCC.

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 his area than anyone else. This knowledge, along with grouting and sealing requirements in the AWWCC rules, ensure the customer clean safe water, and protect this precious resource.

During the 2003 legislative sessions an act was passed to allow the AWWCC 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. This program will go into effect during the 2005 licensing year.

The AWWCC fields complaints from the public about water well construction, as well as inspecting wells for violations of the AWWCC rules and regulations. The following is a summary of those activities for the 2003-2004 licensing year.

1. Eighteen (18) complaints were recorded in which it was determined 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 14 cases, which required civil penalties to be assessed.

3. Eight (8) administrative hearings were conducted regarding contractors.
4. Forty-six (46) new applications to become a licensed pump installer or certified driller were received.

There are 180 water well contractors licensed (drill and/or pump) to work in Arkansas. The larger contractors usually employ several licensed drillers and/or pump installers and can have more than one rig permitted. The following is a break down of the licensed contractors, drillers, pump installers, and permitted rigs.

1. 146 contractors are licensed for drilling and pump installation.
2. 34 contractors are licensed for pump installation only.
3. 376 licensed drillers
4. 256 licensed pump installers
5. 377 permitted drill or pump installation rigs.

New Wells Reported In 2003

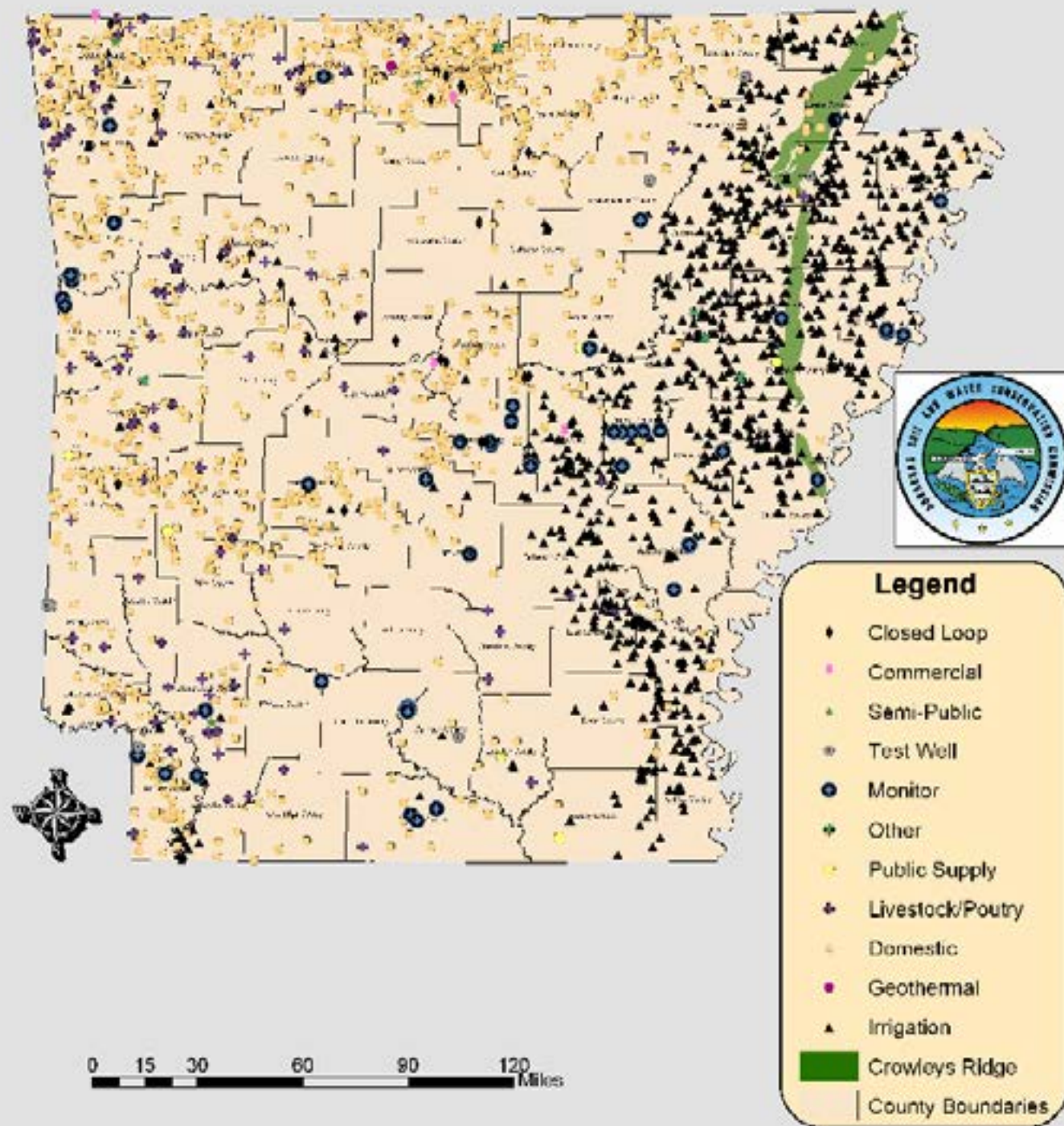


Fig. 31

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 ASWCC. Domestic wells are exempt. The quantity used must be reported by March 1st of the following year. In 2003, there were approximately 45,941 registered wells reported in the State. Of this total, 44,922 (97.8%) are agricultural wells most of which are irrigation wells located primarily in eastern Arkansas. The remaining 1,019 reported wells are used predominately for municipal or industrial purposes.

REPORTED WATER USE

In 2000, an estimated 6,952 million gallons per day (mgd) of water were reported to be withdrawn from the State's aquifers. This was 63% of the total reported consumptive use in Arkansas. The greatest reported volume is pumped from the alluvial aquifer and used primarily for irrigation. Poinsett County and Arkansas County used the most alluvial water of all counties, with 583.84 mgd and 567.33 mgd respectively. The reported total ground-water use from the alluvial aquifer during 2000 was 6,592.72 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 2000 was 287.44 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 90.63 Mgal/d, followed by Arkansas County with a rate of 63.40 Mgal/d. (Holland, 2004)

Table 1 contains the 2002 ground-water reported water use, by aquifer per county in Arkansas in 2002 and is the most recent information as supplied to the

ASWCC by the USGS. During this reporting period the alluvial aquifer had an average withdrawal rate of 6603.6 Mgal/d. Poinsett County showed the highest water use with an average rate of 558.67 Mgal/d, followed by Arkansas County with a rate of 488.33 Mgal/d.

The Sparta/Memphis aquifer had a reported average withdrawal of 229.94 Mgal/d during the 2002 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 leading user of this aquifers' resources, with an average withdrawal of 60.11 Mgal/d. Jefferson County is the second largest user of Sparta/Memphis ground-water by far, with an average withdrawal of 47.17 Mgal/d. (Table 1) Figure 32 shows water use in million gallons per day (mgd) for the entire state from 1965 to 2000 in increments of 5 years, and also for 2002 respectively. Figure 33 shows 2002 ground-water use by county for the entire state.

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 2001 reported ground-water use from the Sparta/Memphis aquifer was an estimated 103 Mgal/d for agricultural uses, 89 Mgal/d for public supply use, and 75 Mgal/d for industrial uses, which combine for an estimated total use of 267 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 184 Mgal/day, or 69% of the 1997 rate that is an unmet demand. Each single use; industrial, irrigation, and public supply solely exceed, or come close to exceeding the estimated sustainable yield for the Sparta/Memphis aquifer.

					TABLE 1							
Withdrawals of ground water from aquifers in Arkansas counties, 2002												
(In million gallons per day: ---, no data available)												
County	Deposits of Quaternary age	Cockfield Formation	Cane River Formation	Sparta-Memphis Sand	Wilcox Group undifferentiated	Clayton Formation	Nacatoch Sand	Tokio Formation	Trinity Group	Rocks of Paleozoic age undifferentiated	County total	County
ARKANSAS	488.33	0.65	---	60.11	---	---	---	---	---	---	549.09	ARKANSAS
ASHLEY	124.59	10.39	---	0.18	---	---	---	---	---	---	135.16	ASHLEY
BAXTER	---	---	---	---	---	---	---	---	---	2.48	2.48	BAXTER
BENTON	---	---	---	---	---	---	---	---	---	22.99	22.99	BENTON
BOONE	---	---	---	---	---	---	---	---	---	2.49	2.49	BOONE
BRADLEY	---	0.08	---	2.00	---	---	---	---	---	---	2.08	BRADLEY
CALHOUN	---	---	---	0.77	---	---	---	---	---	---	0.77	CALHOUN
CARROLL	---	---	---	---	---	---	---	---	---	2.95	2.95	CARROLL
CHICOT	141.12	1.57	---	0.52	---	---	---	---	---	---	143.21	CHICOT
CLARK	---	---	---	---	---	---	1.07	0.06	---	0	1.13	CLARK
CLAY	317.9	---	---	---	2.35	---	1.22	---	---	0.26	321.73	CLAY
CLEBURNE	---	---	---	---	---	---	---	---	---	3.14	3.14	CLEBURNE
CLEVELAND	---	---	---	1.20	---	---	---	---	---	---	1.20	CLEVELAND
COLUMBIA	---	---	---	26.86	---	---	---	---	0.01	---	26.87	COLUMBIA
CONWAY	2.43	---	---	---	---	---	---	---	---	---	2.43	CONWAY
CRAIGHEAD	332.22	---	---	---	1.48	---	---	---	---	---	333.70	CRAIGHEAD
CRAWFORD	1.25	---	---	---	---	---	---	---	---	---	1.25	CRAWFORD
CRITTENDEN	251.21	0.5	---	0.11	2.31	---	---	---	---	---	254.13	CRITTENDEN
CROSS	403.57	---	---	0.34	---	---	---	---	---	---	403.91	CROSS
DALLAS	---	---	0.05	1.3	---	---	---	---	---	---	1.35	DALLAS
DESHA	258.66	0.26	---	7.24	---	---	---	---	---	---	266.16	DESHA
DREW	56.84	0.17	---	2.57	---	---	---	---	---	---	59.58	DREW
FAULKNER	5.98	---	---	---	---	---	---	---	---	---	5.98	FAULKNER
FRANKLIN	1.38	---	---	---	---	---	---	---	---	---	1.38	FRANKLIN
FULTON	---	---	---	---	---	---	---	---	---	2.26	2.26	FULTON
GARLAND	---	---	---	---	---	---	---	---	---	2.97	2.97	GARLAND
GRANT	---	---	---	2.24	---	---	---	---	---	---	2.24	GRANT
GREENE	177.56	---	---	---	8.51	---	0.24	---	---	---	186.31	GREENE
HEMPSTEAD	---	---	---	---	---	---	0.61	4.59	---	---	5.20	HEMPSTEAD
HOT SPRING	---	---	---	---	---	---	---	---	---	0.86	0.86	HOT SPRING
HOWARD	---	---	---	---	---	---	---	0.15	---	1.22	1.37	HOWARD
INDEPENDENCE	31.06	---	---	---	---	---	---	---	---	---	31.06	INDEPENDENCE
IZARD	---	---	---	---	---	---	---	---	---	1.85	1.85	IZARD
JACKSON	338.02	---	---	---	---	---	---	---	---	---	338.02	JACKSON
JEFFERSON	365.38	3.77	---	47.17	---	---	---	---	---	---	416.32	JEFFERSON
JOHNSON	1.47	---	---	---	---	---	---	---	---	---	1.47	JOHNSON

TABLE 1
Withdrawals of ground water from aquifers in Arkansas counties, 2002
(In million gallons per day: ---, no data available)

* Data Provided by USGS

County	Deposits of Quaternary age	Cockfield Formation	Cane River Formation	Sparta-Memphis Sand	Wilcox Group undifferentiated	Clayton Formation	Nacatoch Sand	Tokio Formation	Trinity Group	Rocks of Paleozoic age undifferentiated	County total	County
LAFAYETTE	17.87	---	0.41	0.6	---	---	---	---	---	---	18.88	LAFAYETTE
LAWRENCE	378.25	---	---	4.54	---	---	0	---	---	---	382.79	LAWRENCE
LEE	265.27	---	---	1.3	---	---	---	---	---	---	266.57	LEE
LINCOLN	148.5	---	---	2.12	---	---	---	---	---	---	150.62	LINCOLN
LITTLE RIVER	2.57	---	---	---	---	---	---	---	---	---	2.57	LITTLE RIVER
LOGAN	2.4	---	---	---	---	---	---	---	---	---	2.40	LOGAN
LONOKE	303.35	0.25	---	19.5	0.65	---	---	---	---	---	323.75	LONOKE
MADISON	---	---	---	---	---	---	---	---	---	2.62	2.62	MADISON
MARION	---	---	---	---	---	---	---	---	---	0.65	0.65	MARION
MILLER	9.99	---	---	---	0.12	---	---	---	---	---	10.11	MILLER
MISSISSIPPI	238.89	---	---	---	9.07	---	---	---	---	---	247.96	MISSISSIPPI
MONROE	279.46	---	---	0.26	---	---	---	---	---	---	279.72	MONROE
MONTGOMERY	---	---	---	---	---	---	---	---	---	1.53	1.53	MONTGOMERY
NEVADA	---	---	---	0.04	1.29	---	0.05	---	---	---	1.38	NEVADA
NEWTON	---	---	---	---	---	---	---	---	---	1.31	1.31	NEWTON
OUACHITA	---	---	---	2.1	---	---	---	---	---	---	2.10	OUACHITA
PERRY	0	---	---	---	---	---	---	---	---	1.04	1.04	PERRY
PHILLIPS	201.04	0	---	4.07	---	---	---	---	---	---	205.11	PHILLIPS
PIKE	0.06	---	---	---	---	---	---	---	---	1.51	1.57	PIKE
POINSETT	558.67	---	---	---	2.07	---	---	---	---	---	560.74	POINSETT
POLK	0	---	---	---	---	---	---	---	---	2.11	2.11	POLK
POPE	4.93	---	---	---	---	---	---	---	---	0.35	5.28	POPE
PRAIRIE	203.17	---	---	17.84	---	---	---	---	---	---	221.01	PRAIRIE
PULASKI	22.41	---	---	0.45	---	---	---	---	---	---	22.86	PULASKI
RANDOLPH	88.31	---	---	---	---	---	---	---	---	---	88.31	RANDOLPH
ST FRANCIS	283.81	---	---	---	---	---	---	---	---	---	283.81	ST FRANCIS
SALINE	---	---	---	5.19	1.19	---	---	---	---	---	6.38	SALINE
SCOTT	---	---	---	---	---	---	---	---	---	2.77	2.77	SCOTT
SEARCY	---	---	---	---	---	---	---	---	---	1.12	1.12	SEARCY
SEBASTIAN										0.86	0.86	SEBASTIAN
SEVIER	---	---	---	2.61	---	---	---	0.12	0.08	---	2.81	SEVIER
SHARP	1.69	---	---	---	---	---	---	0.06	---	---	1.75	SHARP
STONE	---	---	---	---	---	---	---	---	---	1.01	1.01	STONE
UNION	---	---	---	16.71	---	---	---	---	---	---	16.71	UNION
VAN BUREN										1.43	1.43	VAN BUREN
WASHINGTON	0.02	---	---	---	---	---	---	---	---	8.08	8.10	WASHINGTON
WHITE	32.06	---	---	---	1.43	---	---	---	---	---	33.49	WHITE
WOODRUFF	258.68	---	---	---	---	---	---	---	---	---	258.68	WOODRUFF
YELL	3.23	---	---	---	---	---	---	---	---	---	3.23	YELL
TOTALS	6603.6	17.64	0.46	229.94	30.47	0.00	3.19	4.98	0.09	69.86	6960.23	TOTALS

* Data Provided by USGS

Table 2

County	Station number	Station name	Geologic unit	Date	Time	Date	Specific Conductance wat unf uS/cm 25 degC	Temperature water, deg C	Chloride, water, fltrd, mg/L
Arkansas	343312091284901	02S04W06CDB1	124SPRT	6/22/2004	0800	6/22/2004	396	23.6	--
Arkansas	343232091241701	02S04W11DBB1	110ALVM	6/22/2004	0845	6/22/2004	736	19.5	16.0
Arkansas	343100091244501	02S04W14CD1	110ALVM	6/22/2004	0925	6/22/2004	906	19.4	40.0
Arkansas	342448091125201	03S02W27ABB1	110ALVM	6/22/2004	1600	6/22/2004	528	19.9	9.30
Arkansas	342416091243701	03S04W26CDA1	124SPRT	6/21/2004	1245	6/21/2004	346	23.9	8.80
Arkansas	342713091334601	03S05W08DD1	110ALVM	6/21/2004	1335	6/21/2004	770	19.2	39.0
Arkansas	342226091075801	04S01W04CBD1	124SPRT	6/22/2004	1405	6/22/2004	840	24.3	130
Arkansas	342142091091601	04S01W08CCB1	112TRRC	6/22/2004	1325	6/22/2004	456	19.3	17.0
Arkansas	342207091112501	04S02W11AAA1	110ALVM	6/22/2004	1250	6/22/2004	568	19.4	5.10
Arkansas	341846091153601	04S02W29CCC1	110ALVM	6/22/2004	1450	6/22/2004	837	19.1	43.0
Arkansas	341832091215801	04S03W32BCB1	110ALVM	6/22/2004	1205	6/22/2004	724	19.8	26.0
Arkansas	342312091242601	04S04W02ABB1	110ALVM	6/21/2004	1700	6/21/2004	1030	19.6	--
Arkansas	342130091400001	04S06W16BD1	110ALVM	6/21/2004	1440	6/21/2004	691	19.3	56.0
Arkansas	341734091200601	05S03W04ADB1	124SPRT	6/22/2004	1045	6/22/2004	393	23.9	12.0
Arkansas	341556091293101	05S04W07CCC1	110ALVM	6/21/2004	1500	6/21/2004	1220	19.8	200
Arkansas	340904091133101	06S02W22CDB1	124SPRT	6/23/2004	1115	6/23/2004	407	24.6	14.0
Arkansas	340621091190401	06S03W23CC1	110ALVM	6/23/2004	1030	6/23/2004	478	19.2	--
Arkansas	340857091181101	06S03W27AAA1	110ALVM	6/23/2004	0830	6/23/2004	1180	19.3	170
Arkansas	340704091145101	07S02W04BBB1	110ALVM	6/23/2004	0930	6/23/2004	894	19.3	74.0
Arkansas	340622091232401	07S04W01DDD1	110ALVM	6/23/2004	0730	6/23/2004	827	19.2	--
Ashley	332245091285201	15S04W23DBD1	110ALVM	6/16/2004	0935	6/16/2004	506	19.1	36.0
Ashley	332117091510301	15S07W32CDD1	124SPRT	6/15/2004	1450	6/15/2004	866	26.3	36.0
Ashley	331729091424001	16S06W27BAB1	110ALVM	6/16/2004	0900	6/16/2004	682	20.5	24.0
Ashley	331501091504901	17S07W05CDD1	110ALVM	6/15/2004	1600	6/15/2004	648	21.3	44.0
Bradley	333647092040701	13S09W06ACB2	124SPRT	6/15/2004	1200	6/15/2004	359	24.1	11.0
Bradley	333453092160701	13S11W17BCD1	124SPRT	6/15/2004	1300	6/15/2004	443	24.3	15.0
Calhoun	333944092430401	12S16W26AAD1	124SPRT	6/9/2004	1530	6/9/2004	210	21.1	7.0
Calhoun	333226092274101	13S13W32CDA1	124SPRT	6/9/2004	1640	6/9/2004	424	24.4	18.0

* Data Provided by USGS

Table 2

County	Station number	Station name	Geologic unit	Date	Time	Date	Specific Conductance wat unf uS/cm 25 degC	Temperature water, deg C	Chloride, water, fltrd, mg/L
Calhoun	333252092361601	13S15W36CBD1	124SPRT	6/9/2004	1710	6/9/2004	281	24	8.90
Calhoun	333040092240301	14S13W12CCB1	124SPRT	6/9/2004	1615	6/9/2004	442	24	15.0
Chicot	332613091255102	14S03W32CDB2	110ALVM	6/16/2004	1615	6/16/2004	379	19.1	17.0
Chicot	332311091211901	15S03W24AAA1	110ALVM	6/16/2004	1530	6/16/2004	1430	19.4	--
Chicot	331308091074801	17S01E17CDA1	110ALVM	6/16/2004	1205	6/16/2004	505	20	33.0
Chicot	331125091244001	17S03W28DBA1	110ALVM	6/16/2004	1400	6/16/2004	856	20.1	28.0
Chicot	331011091154001	18S02W01BAA1	110ALVM	6/16/2004	1300	6/16/2004	735	20	--
Chicot	330249091140601	19S01W17BCC1	110ALVM	6/16/2004	1100	6/16/2004	411	23.1	8.40
Clay	361651090404501	19N04E19AAA1	112TRRC	7/13/2004	1115	7/13/2004	238	18.8	6.20
Clay	361519090131801	19N08E28BB1	110ALVM	7/13/2004	0735	7/13/2004	237	19.7	9.70
Clay	361412090150301	19N08E31DAB1	112VLTR	7/13/2004	0810	7/13/2004	336	18	10.0
Clay	361938090311601	20N05E34DBA1	112TRRC	7/13/2004	0900	7/13/2004	478	17.5	5.20
Clay	362445090372901	21N04E34DDC1	112VLTR	7/13/2004	1015	7/13/2004	434	18.9	8.60
Cleveland	335816092023701	09S09W04BBD1	124SPRT	6/29/2004	1010	6/29/2004	175	25.3	1.90
Cleveland	335728092113301	09S11W01DCA1	124SPRT	6/29/2004	0700	6/29/2004	272	23.4	3.60
Cleveland	334758091595701	10S09W35ACD1	124SPRT	6/29/2004	0915	6/29/2004	233	23.9	2.30
Cleveland	334758091595701	10S09W35ACD1	124SPRT	6/29/2004	0915	6/29/2004	233	23.9	2.30
Cleveland	334543092142201	11S11W16AAB1	124SPRT	6/29/2004	0800	6/29/2004	365	23.6	5.90
Columbia	331545093031801	17S19W15AAB1	124SPRT	6/8/2004	0820	6/8/2004	327	25	--
Columbia	331519093115901	17S20W17CDA1	124SPRT	6/8/2004	0730	6/8/2004	383	22.4	5.6
Columbia	331142093124801	18S20W06DDC1	124SPRT	6/7/2004	1530	6/7/2004	311	23.3	--
Columbia	330834093215801	18S22W27DDD1	124SPRT	6/7/2004	1425	6/7/2004	234	22.5	--
Columbia	330555093112801	19S20W09CBD1	124SPRT	6/7/2004	1500	6/7/2004	227	24.3	3.3
Columbia	330604093272201	19S23W11DDB1	124SPRT	6/7/2004	1345	6/7/2004	183	21.9	--
Craighead	354712090503801	13N02E02AD1	110ALVM	7/8/2004	1800	7/8/2004	523	20.2	--
Craighead	354236090504401	13N02E35DAC1	112TRRC	7/9/2004	0700	7/9/2004	934	18.8	--

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Table 2

County	Station number	Station name	Geologic unit	Date	Time	Date	Specific Conductance wat unf uS/cm 25 degC	Temperature water, deg C	Chloride, water, fltrd, mg/L
Craighead	354402090471201	13N03E29AAA1	110ALVM	7/8/2004	1850	7/8/2004	710	18.4	--
Craighead	354306090491901	13N03E31BB1	110ALVM	7/8/2004	1835	7/8/2004	743	19.6	14.0
Craighead	354929090392201	14N04E22CBD1	12405MP	7/8/2004	1530	7/8/2004	131	19.5	--
Craighead	354839090403301	14N04E28DBD1	12405MP	7/8/2004	1500	7/8/2004	154	22.7	--
Craighead	355516090285600	15N06E19AAB1	112VLTR	7/8/2004	1730	7/8/2004	748	19.6	--
Crittenden	350942090194001	06N07E11BB1	110ALVM	7/7/2004	1240	7/7/2004	460	18.9	--
Crittenden	350848090180801	06N07E13BAA1	110ALVM	7/7/2004	1335	7/7/2004	484	19	--
Crittenden	350853090234301	06N07E18BBA1	110ALVM	7/7/2004	1450	7/7/2004	473	19.4	--
Crittenden	350744090055601	06N09E23AAB1	12405MP	7/7/2004	1400	7/7/2004	231	23.4	--
Crittenden	351504090212901	07N07E01ACC1	110ALVM	7/7/2004	1715	7/7/2004	565	19.1	--
Crittenden	351525090193401	07N07E03ADD1	110ALVM	7/7/2004	1640	7/7/2004	425	19.1	--
Crittenden	351043090235901	07N07E31CCC1	110ALVM	7/7/2004	1145	7/7/2004	493	19.4	--
Crittenden	351116090194001	07N07E34AAD2	110ALVM	7/7/2004	1540	7/7/2004	431	19.3	--
Cross	351520091005201	07N01E05CDA1	112TRRC	7/8/2004	0905	7/8/2004	888	18.8	--
Cross	351415090554201	07N02E07CDC1	110ALVM	7/8/2004	0830	7/8/2004	805	19.4	--
Cross	351134090540501	07N02E29DDC1	110ALVM	7/8/2004	0800	7/8/2004	867	18.9	--
Cross	351238090364401	07N05E19CCC1	110ALVM	7/8/2004	1015	7/8/2004	580	18.7	--
Cross	351241090333301	07N05E22CCB1	--	7/8/2004	1040	7/8/2004	660	18.9	--
Cross	351632090343801	08N05E32ADD1	110ALVM	7/7/2004	1800	7/7/2004	575	19.7	--
Cross	352403090451801	09N03E22ABD1	12405MP	7/7/2004	1640	7/7/2004	317	26.7	5.90
Cross	352231090421501	09N04E30DCA1	12405MP	7/7/2004	1620	7/7/2004	478	23.6	--
Cross	352151090351101	09N05E32BDB1	110ALVM	7/7/2004	1835	7/7/2004	505	18.7	--
Dallas	340429092333201	07S14W31AAA1	124SPRT	6/14/2004	1345	6/14/2004	127	22.7	--
Dallas	340152092463901	08S16W18ACC1	124SPRT	6/14/2004	1435	6/14/2004	58	26.8	--
Dallas	335605092470101	09S16W19CAA1	124SPRT	6/14/2004	1530	6/14/2004	96	22.6	--
Dallas	334832092245502	10S13W34ACA2	124SPRT	6/14/2004	1730	6/14/2004	254	25.6	--
Desha	335341091152201	09S02W26AAC1	124SPRT	6/17/2004	1350	6/17/2004	254	23.3	--

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Desha	335754091324301	09S04W06BCA1	110ALVM	6/17/2004	1630	6/17/2004	943	21	--
Desha	334809091220901	10S03W26CAA1	110ALVM	6/17/2004	1530	6/17/2004	855	20.7	--
Desha	335035091290301	10S04W11CBC1	124SPRT	6/17/2004	1445	6/17/2004	247	26.8	--
Desha	334223091142101	11S01W31BBB1	124SPRT	6/17/2004	1300	6/17/2004	307	23.7	--
Desha	333709091134201	12S01W31AAB1	110ALVM	6/17/2004	1135	6/17/2004	905	19.4	--
Desha	333629091124401	12S01W32CDB1	124SPRT	6/17/2004	1100	6/17/2004	355	22.7	--
Desha	333636091230401	12S03W34DAD1	124SPRT	6/17/2004	1015	6/17/2004	365	25.4	9.4
Desha	333212091173601	13S02W27CAC1	110ALVM	6/17/2004	0830	6/17/2004	1220	20.1	--
Desha	333503091230401	13S03W10DAA1	110ALVM	6/17/2004	0905	6/17/2004	872	19.3	--
Drew	333803091454201	12S06W30BBD1	124SPRT	6/15/2004	0830	6/15/2004	274	24.1	4.60
Drew	333154091340401	13S05W36ACB1	124SPRT	6/15/2004	1045	6/15/2004	339	23.6	--
Grant	341845092235901	05S13W03CAA1	124SPRT	6/25/2004	1050	6/25/2004	81	21.3	--
Grant	341841092332001	05S14W06DCC1	124SPRT	6/25/2004	1340	6/25/2004	104	22	5.00
Grant	341923092382501	05S15W05ABD1	124SPRT	6/24/2004	1550	6/24/2004	63	19.5	4.60
Grant	341341092141401	06S11W05ACD1	124SPRT	6/24/2004	1330	6/24/2004	144	24.3	--
Grant	341024092354501	06S15W26ACA1	124SPRT	6/24/2004	1500	6/24/2004	48	18.8	--
Greene	360219090262501	16N06E03CCC1	110ALVM	7/12/2004	1640	7/12/2004	438	18.8	--
Greene	355940090265501	16N06E28ABB1	110ALVM	7/12/2004	1600	7/12/2004	680	18.5	--
Greene	360410090420901	17N04E30CDC1	112TRRC	7/12/2004	1500	7/12/2004	678	19	--
Greene	361555090430101	19N03E26AD1	110ALVM	7/13/2004	1200	7/13/2004	265	18.1	--
Jackson	352338091080501	09N01W20BDD1	112VLTR	7/9/2004	1020	7/9/2004	520	19	--
Jackson	353040091125700	10N02W08CD1	112TRRC	7/9/2004	0940	7/9/2004	402	20.4	--
Jackson	353323091031201	11N01W26AAD1	112TRRC	7/9/2004	0905	7/9/2004	446	18.4	--
Jackson	353909091085102	12N02W25ABB2	112TRRC	7/9/2004	0830	7/9/2004	480	18.4	--
Jackson	354455091041501	13N01W23BC1	112VLTR	7/9/2004	0745	7/9/2004	552	19.1	--
Jackson	354341091120801	13N02W28DDC1	112VLTR	7/8/2004	1300	7/8/2004	397	21.3	--

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Jefferson	342832091444201	03S07W03DB1	110ALVM	6/30/2004	1600	6/30/2004	651	19.7	--
Jefferson	342714091453801	03S07W16AAA1	110ALVM	6/21/2004	1651	6/21/2004	734	18	--
Jefferson	342657092013901	03S09W18CC2	110ALVM	6/30/2004	1710	6/30/2004	832	19.2	--
Jefferson	342644092105501	03S11W22ABC1	124SPRT	6/24/2004	1005	6/24/2004	88	22.5	--
Jefferson	342140091474101	04S07W17BCC1	124SPRT	6/21/2004	1510	6/21/2004	144	23.6	--
Jefferson	342218092095701	04S11W14BAD1	124SPRT	6/24/2004	1140	6/24/2004	89	23	3.20
Jefferson	342218092095701	04S11W14BAD1	124SPRT	6/24/2004	1140	6/24/2004	89	23	3.20
Jefferson	342218092101501	04S11W14BCA1	124SPRT	6/24/2004	1150	6/24/2004	96	23	--
Jefferson	341329091420001	05S06W31CAA1	110ALVM	6/30/2004	1400	6/30/2004	436	18	--
Jefferson	341637092054501	05S10W16CAA1	124SPRT	6/22/2004	1110	6/22/2004	110	24.3	--
Jefferson	341634092053401	05S10W16DBD1	124SPRT	6/22/2004	1100	6/22/2004	150	21.6	--
Jefferson	341007091370701	06S06W23AAD1	110ALVM	6/22/2004	1520	6/22/2004	490	18.2	--
Jefferson	341007091370701	06S06W23AAD1	110ALVM	6/30/2004	1505	6/30/2004	490	18.2	--
Jefferson	340647091503701	07S07W18CAC1	110ALVM	6/30/2004	1250	6/30/2004	446	18.9	--
Jefferson	340901091564601	07S08W06BAA1	110ALVM	6/22/2004	1240	6/22/2004	225	17.6	--
Lafayette	330351093310301	19S23W29BDB1	124SPRT	6/7/2004	1245	6/7/2004	388	25.3	--
Lawrence	355412090565101	15N01E26DDA1	110ALVM	7/12/2004	1225	7/12/2004	891	19.1	--
Lawrence	355330091035200	15N01W35CBB1	110ALVM	7/12/2004	1135	7/12/2004	541	18.2	--
Lawrence	360326090535201	16N02E05BA1	110ALVM	7/12/2004	1410	7/12/2004	745	19	--
Lawrence	355839090515001	16N02E34BDA1	112VLTR	7/12/2004	1315	7/12/2004	540	18.9	--
Lee	344025090460401	01N03E23CCC1	112VLTR	7/6/2004	1525	7/6/2004	762	19.5	--
Lee	344825091035501	02N01W12BB1	110ALVM	7/1/2004	1445	7/1/2004	801	18.1	--
Lee	344905090533001	02N02E04AAA1	110ALVM	7/6/2004	1315	7/6/2004	565	19.5	--
Lee	354620090535801	02N02E21ABC1	110ALVM	7/6/2004	1420	7/6/2004	508	20.1	--
Lee	345011090474901	03N03E28CDB1	124SPRT	7/6/2004	1130	7/6/2004	1350	21.4	--
Lee	344941090480401	03N03E33CB1	110ALVM	7/6/2004	1235	7/6/2004	630	20.1	15.0
Lee	345218090341601	03N05E16AAD1	110ALVM	7/6/2004	1600	7/6/2004	437	20	--

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Lincoln	340508091423201	07S06W28CBB1	110ALVM	6/29/2004	1430	6/29/2004	548	19.3	41.0
Lincoln	340445091414001	07S06W33BAA1	124SPRT	6/29/2004	1530	6/29/2004	198	24.8	--
Lincoln	340444091504201	07S07W30CDC1	124SPRT	6/29/2004	1335	6/29/2004	217	29.1	1.30
Lincoln	340021091320101	08S04W19CC1	110ALVM	6/30/2004	0930	6/30/2004	806	18.6	100
Lincoln	340345091344602	08S05W03BAA2	124SPRT	6/30/2004	0830	6/30/2004	202	24	5.10
Lincoln	335907091333301	08S05W35ACC1	124SPRT	6/30/2004	0715	6/30/2004	240	26.7	8.60
Lincoln	335955091530101	08S08W35DBB1	124SPRT	6/29/2004	1245	6/29/2004	195	27.4	1.40
Lincoln	335858091522201	08S08W35DCB1	124SPRT	6/29/2004	1215	6/29/2004	189	22.9	2.60
Lincoln	335505091335001	09S05W13CDB1	110ALVM	6/29/2004	1720	6/29/2004	463	19.4	23.0
Lincoln	335821091434601	09S06W04BCD1	110ALVM	6/29/2004	1625	6/29/2004	414	19.3	16.0
Lincoln	335631091512101	09S07W07DAD1	124SPRT	6/29/2004	1100	6/29/2004	192	25.7	4.20
Lonoke	344114091472001	01N07W29BBB1	110ALVM	6/24/2004	1700	6/24/2004	555	19.6	44.0
Lonoke	344235091551701	01N09W13DAB1	110ALVM	6/25/2004	0945	6/25/2004	768	18.8	--
Lonoke	343607091492601	01S08W24CDD1	110ALVM	6/25/2004	0850	6/25/2004	836	19.1	15.0
Lonoke	344957091433801	02N07W02BBA1	110ALVM	6/24/2004	1615	6/24/2004	397	19.8	20.0
Lonoke	344906091450001	02N07W09AAA1	124SPRT	6/28/2004	1700	6/28/2004	359	18.9	10.0
Lonoke	344815091454001	02N07W16BAB1	110ALVM	6/28/2004	1735	6/28/2004	378	18.9	--
Lonoke	344811091520301	02N08W16ABC1	110ALVM	6/28/2004	1340	6/28/2004	293	18.9	6.50
Lonoke	344806092033501	02N10W15AD1	110ALVM	6/28/2004	1300	6/28/2004	236	19	15.0
Lonoke	344725092032101	02N10W23BCA1	110ALVM	6/28/2004	1235	6/28/2004	254	19.1	14.0
Lonoke	343339091453501	02S07W04DA1	110ALVM	6/24/2004	1800	6/24/2004	500	19.1	25.0
Lonoke	343230091495001	02S08W13BBB1	110ALVM	6/21/2004	1145	6/21/2004	492	18.1	--
Lonoke	343230091495001	02S08W13BBB1	110ALVM	6/25/2004	0700	6/25/2004	727	19.3	19.0
Lonoke	343002091515001	02S08W34DBB1	110ALVM	6/28/2004	1815	6/28/2004	340	19	--
Lonoke	343013092011401	02S09W30CDD1	110ALVM	6/25/2004	0745	6/25/2004	594	19.1	--
Lonoke	345157091522401	03N08W21BCC1	110ALVM	6/28/2004	1430	6/28/2004	205	19	6.00
Lonoke	345057091530001	03N08W32ABB3	110ALVM	6/28/2004	1515	6/28/2004	276	18.4	--
Lonoke	345058092035601	03N10W34ABB1	110ALVM	6/28/2004	1600	6/28/2004	353	19.3	--
Miller	330310093515701	19S27W35DDA1	124SPRT	6/7/2004	1145	6/7/2004	60	26.1	5.00

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Mississippi	354154090105101	12N08E01AAB1	110ALVM	7/8/2004	1440	7/8/2004	651	19	6.20
Mississippi	354050090155901	12N08E08BCB1	110ALVM	7/8/2004	1340	7/8/2004	490	20.1	5.40
Mississippi	353841090145901	12N08E20DAD1	112VLTR	7/8/2004	1410	7/8/2004	543	18.3	5.00
Mississippi	354941090010100	14N10E22BB1	110ALVM	7/8/2004	1535	7/8/2004	527	19.1	5.10
Monroe	344145091175601	01N03W14CCB1	124SPRT	7/1/2004	1650	7/1/2004	871	21.4	130
Monroe	343601090115801	01S02W22ADB1	124SPRT	7/1/2004	0900	7/1/2004	762	20.9	58.0
Monroe	344749091143600	02N02W07DD1	110ALVM	7/1/2004	1025	7/1/2004	1440	19.1	--
Monroe	344651091144300	02N02W18DD1	110ALVM	7/1/2004	1525	7/1/2004	1070	18.5	130
Monroe	343154091111000	02S02W11DAC1	110ALVM	7/1/2004	1740	7/1/2004	990	19.1	79.0
Monroe	345158091080701	03N01W20BBB1	110ALVM	7/1/2004	1300	7/1/2004	735	18.2	34.0
Monroe	344925091070701	03N01W32DDD1	110ALVM	7/1/2004	1400	7/1/2004	780	18	--
Monroe	344958091144601	03N02W31ADC1	112TRRC	7/1/2004	1610	7/1/2004	500	18.5	32.0
Monroe	345008091143901	03N02W31ADD2	110ALVM	7/1/2004	1100	7/1/2004	440	18.6	28.0
Monroe	345616091150201	04N02W30BAD1	112TRRC	7/1/2004	1215	7/1/2004	759	18.8	110
Nevada	333251093170801	14S21W04CCB1	124SPRT	6/10/2004	1215	6/10/2004	200	21.1	4.40
Nevada	333050093172301	14S21W20AAB1	124SPRT	6/10/2004	1200	6/10/2004	184	23.9	5.50
Ouachita	334154093010901	12S19W14AAA1	124SPRT	6/10/2004	1015	6/10/2004	33	18.4	2.70
Ouachita	333435093041701	13S19W28BCD1	124SPRT	6/10/2004	0935	6/10/2004	54	21.1	5.10
Ouachita	332305092543401	15S18W36ADD1	124SPRT	6/10/2004	0745	6/10/2004	379	21.1	13.0
Ouachita	332618093031801	15S19W10DCC1	124SPRT	6/10/2004	0845	6/10/2004	188	21.8	5.30
Phillips	343322090505601	02S02E01ADC1	124SPRT	7/2/2004	1130	7/2/2004	980	21.1	72.0
Phillips	342754090362101	03S05E05BAB1	124SPRT	7/2/2004	1030	7/2/2004	776	19.7	20.0
Phillips	341822090512401	04S02E25CCC1	124SPRT	7/2/2004	0915	7/2/2004	1230	23.1	41.0
Poinsett	352906090492201	10N03E20BCB1	--	7/9/2004	1000	7/9/2004	777	19.4	--
Poinsett	352651090443701	10N03E35CDD1	110ALVM	7/9/2004	0900	7/9/2004	412	19	48.0
Poinsett	352934090265401	10N06E16ADD1	112VLTR	7/8/2004	1140	7/8/2004	610	19.6	5.40

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Poinsett	353435091002401	11N01E17DDD1	112TRRC	7/9/2004	1050	7/9/2004	466	19.8	6.80
Poinsett	353352090540701	11N02E29AB1	124SPRT	7/9/2004	0730	7/9/2004	548	19.6	--
Poinsett	353436090485901	11N03E19BB1	110ALVM	7/9/2004	0800	7/9/2004	599	18.8	11.0
Poinsett	353225090431601	11N03E25BDD1	12405MP	7/8/2004	1130	7/8/2004	381	20.7	5.00
Prairie	344118091334801	01N05W20DCB1	110ALVM	6/23/2004	1445	6/23/2004	602	18.9	12.0
Prairie	343521091262401	01S04W28BD1	110ALVM	6/23/2004	1250	6/23/2004	1100	18.7	130
Prairie	343722091310801	01S05W14BBC1	110ALVM	6/23/2004	1345	6/23/2004	867	18.9	22.0
Prairie	344916091241801	02N04W02BCB1	110ALVM	6/24/2004	1145	6/24/2004	277	19.3	5.10
Prairie	344649091280101	02N04W19ACB1	124SPRT	6/24/2004	1100	6/24/2004	342	19.3	6.80
Prairie	344544091330802	02N05W29DDB2	124SPRT	6/24/2004	1000	6/24/2004	756	19.5	11.0
Prairie	344653091380001	02N06W22BDD1	124SPRT	6/24/2004	0815	6/24/2004	545	21.3	--
Prairie	343212091372901	02S06W14BBB1	110ALVM	6/23/2004	1600	6/23/2004	577	19.3	61.0
Prairie	345207091411001	03N06W19BDD1	110ALVM	6/24/2004	1530	6/24/2004	658	19	--
Prairie	345514091340601	04N05W31DDC1	110ALVM	6/24/2004	1300	6/24/2004	760	19.2	74.0
Prairie	345934091401801	04N06W05CCC1	110ALVM	6/24/2004	1410	6/24/2004	613	19.6	36.0
Randolph	360942090572901	18N01E34AAC1	110ALVM	7/13/2004	1400	7/13/2004	440	17.8	--
Randolph	361254090500801	18N02E11DB1	110ALVM	7/13/2004	1245	7/13/2004	447	18.5	12.0
St. Francis	345708090563801	04N01E13DDA1	112TRRC	7/7/2004	0905	7/7/2004	675	19.8	31.0
St. Francis	345647091024500	04N01W24DA1	112VLTR	7/7/2004	0945	7/7/2004	926	19.6	40.0
St. Francis	345536091063401	04N01W28CDD1	110ALVM	7/7/2004	1025	7/7/2004	822	19.6	33.0
St. Francis	345855090513501	04N02E02DC1	110ALVM	7/7/2004	0730	7/7/2004	577	19.2	--
St. Francis	345631090522000	04N02E22DAC1	112VLTR	7/7/2004	0805	7/7/2004	685	19.6	17.0
St. Francis	345628090295701	04N06E19DAA1	110ALVM	7/6/2004	1700	7/6/2004	516	19.7	3.80
St. Francis	350144090315401	05N05E24CBB1	110ALVM	7/6/2004	1735	7/6/2004	538	19.5	--
Union	331900092395602	16S15W20DAA1	124SPRT	6/8/2004	1300	6/8/2004	505	24.7	34.0
Union	332113092421001	16S16W01DDD1	124SPRT	6/8/2004	1200	6/8/2004	450	21.8	20.0
Union	331805092570902	16S18W34ABC2	124SPRT	6/8/2004	1030	6/8/2004	326	22.9	--

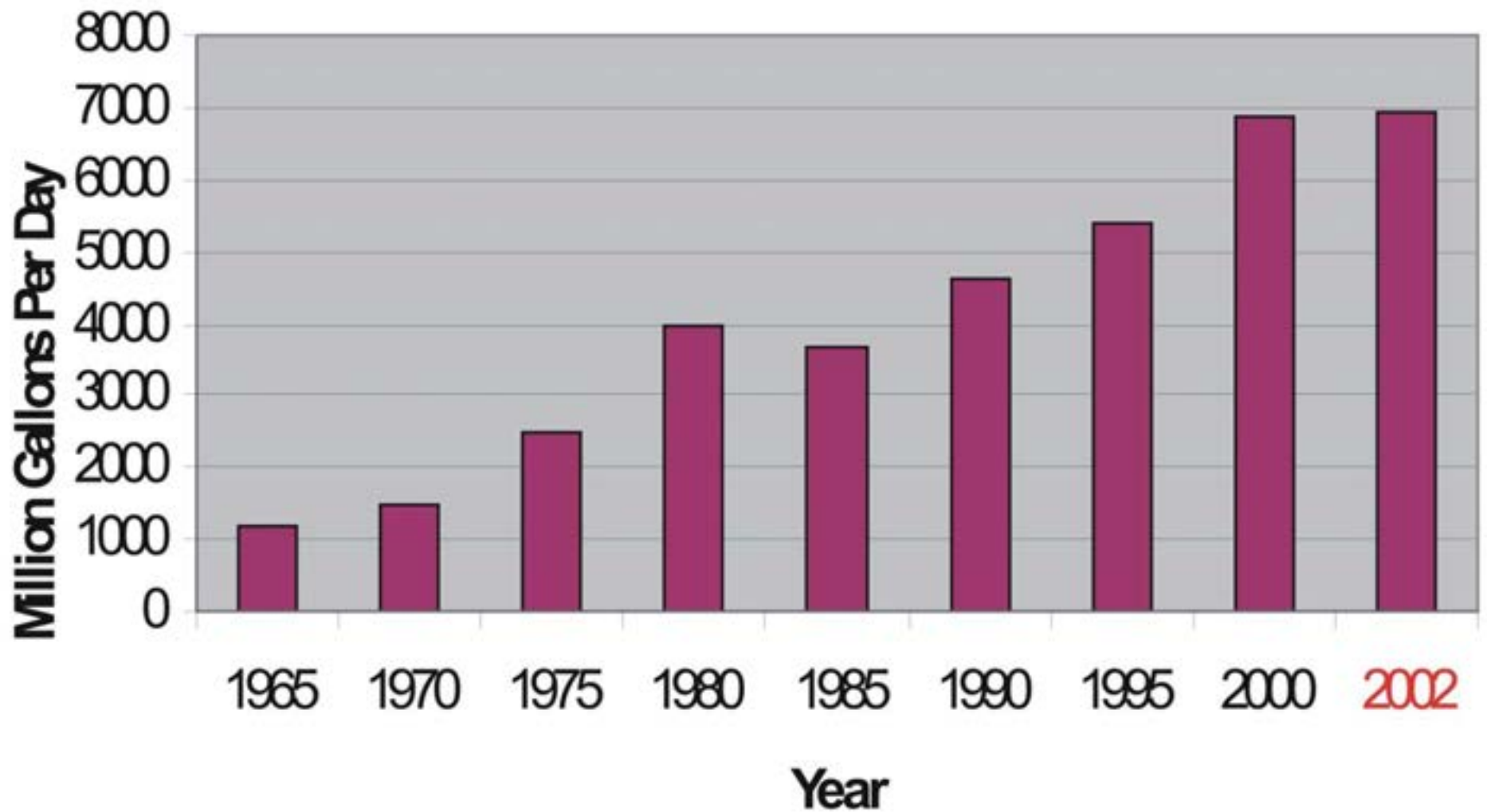
* Data Provided by USGS

Table 2

County	Station number	Station name	Geologic unit	Date	Time	Date	Specific Conductance wat unf uS/cm 25 degC	Temperature water, deg C	Chloride, water, fltrd, mg/L
Union	331203092290801	17S13W31BAD1	124SPRT	6/8/2004	1715	6/8/2004	718	25.7	87.0
Union	331358092424301	17S16W24BDB1	124SPRT	6/9/2004	0740	6/9/2004	430	22.4	23.0
Union	331351092572701	17S17W30DCD1	124SPRT	6/8/2004	0900	6/8/2004	330	25.1	16.0
Union	331040092353101	18S14W06CCD1	124SPRT	6/9/2004	0830	6/9/2004	724	24.5	--
Union	330657092385901	18S15W33ADA1	124SPRT	6/8/2004	1350	6/8/2004	661	24.6	--
Union	330631092370801	18S15W35DAC1	124SPRT	6/9/2004	1040	6/9/2004	710	24.2	--
Union	331011092431701	18S16W11DAC1	124SPRT	6/9/2004	1230	6/9/2004	528	24	--
Union	331024092422901	18S16W12ACB1	124SPRT	6/9/2004	1200	6/9/2004	561	22.4	--
Union	330809092461101	18S16W28BBB1	124SPRT	6/9/2004	1300	6/9/2004	531	24.1	--
Union	331057092555901	18S18W11ACA1	124SPRT	6/8/2004	0945	6/8/2004	352	24.9	--
Union	330219092111201	19S11W25AAA1	124SPRT	6/8/2004	1625	6/8/2004	1150	21.6	212
Union	330531092364201	19S15W01CCA1	124SPRT	6/9/2004	1120	6/9/2004	323	22.8	--
Union	330107092432301	19S16W35DDC1	124SPRT	6/9/2004	0915	6/9/2004	570	23.5	97.0
Woodruff	350026091145401	05N02W31DCB3	12405MP	7/8/2004	0830	7/8/2004	175	20.6	1.80
Woodruff	350944091051201	06N01W10AB1	112VLTR	7/9/2004	1200	7/9/2004	513	19.6	17.0
Woodruff	351046091074101	07N01W32CCD1	110ALVM	7/9/2004	1130	7/9/2004	567	18.7	10.0
Woodruff	351550091120101	07N02W04ADA1	112VLTR	7/8/2004	0945	7/8/2004	336	21.5	5.40
Woodruff	351655091202801	08N03W31AAD1	110ALVM	7/9/2004	1100	7/9/2004	412	18.8	9.40

* Data Provided by USGS

Total Ground Water Use (Mgal/ day)



Based on Holland, USGS Ground Water Use Information Sheet, 2004

Fig. 32

Ground Water Use in Arkansas as of 2002 (Mgal/day)



Ground-Water Modeling and Sustainable Yield

The USGS recently completed recalibration, conjunctive-use optimization, and sustainable yield optimization 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. Though the ASWCC has not formally defined a safe yield for these aquifers, these models provide the tool that will be used as the State considers such a definition. 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.

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 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, and 03-4233, 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.

Figure 34 illustrates a pumping scenario volume for the Sparta aquifer that could be maintained and still achieve a sustainable yield goal.

The ground-water models showed that a sustainable yield for the alluvial and Sparta aquifers could not be met using the 1997 pumping rate. Figures 35 and 38 provide a summary of the water use, sustainable volume, and unmet demand for the optimization model.

The alluvial model is split into a North Optimization Model, and a South Optimization Model. (Fig. 36) 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. Figure 37 provides an a real view of those portions of the State which could continue to pump from the alluvial aquifer within a sustainable yield pumping rate, based on head constraints as described. This figure also shows those portions of the State where no pumping from the alluvial aquifer could be maintained.

It should be noted that the aforementioned sustainable yield and demand figures were based on 1997 ground-water rates. 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 approximately 9,000 new wells drilled in the alluvial aquifer since 1997.

Percentage of 1997 Pumpage from the Sparta aquifer that is Sustainable

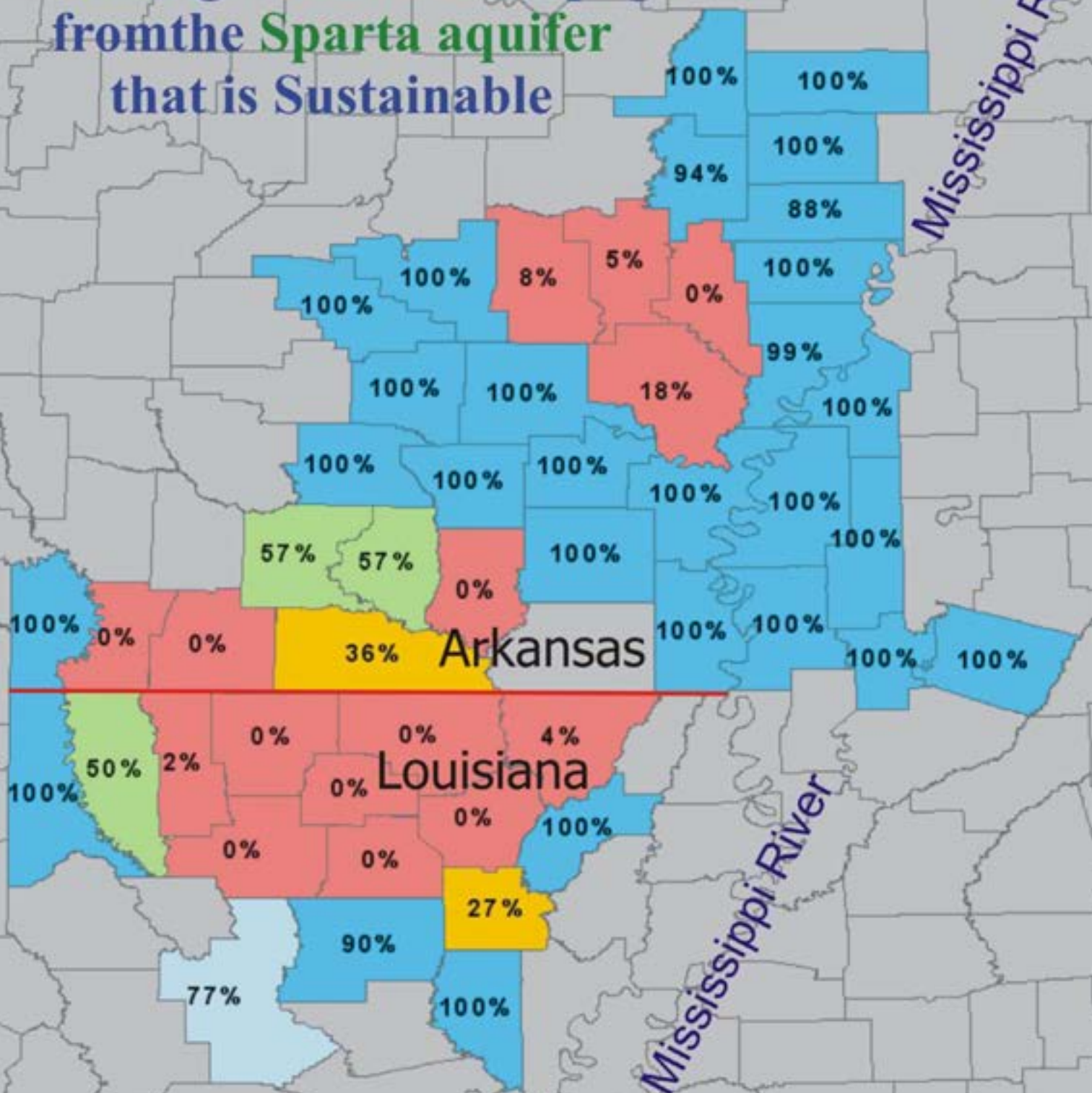
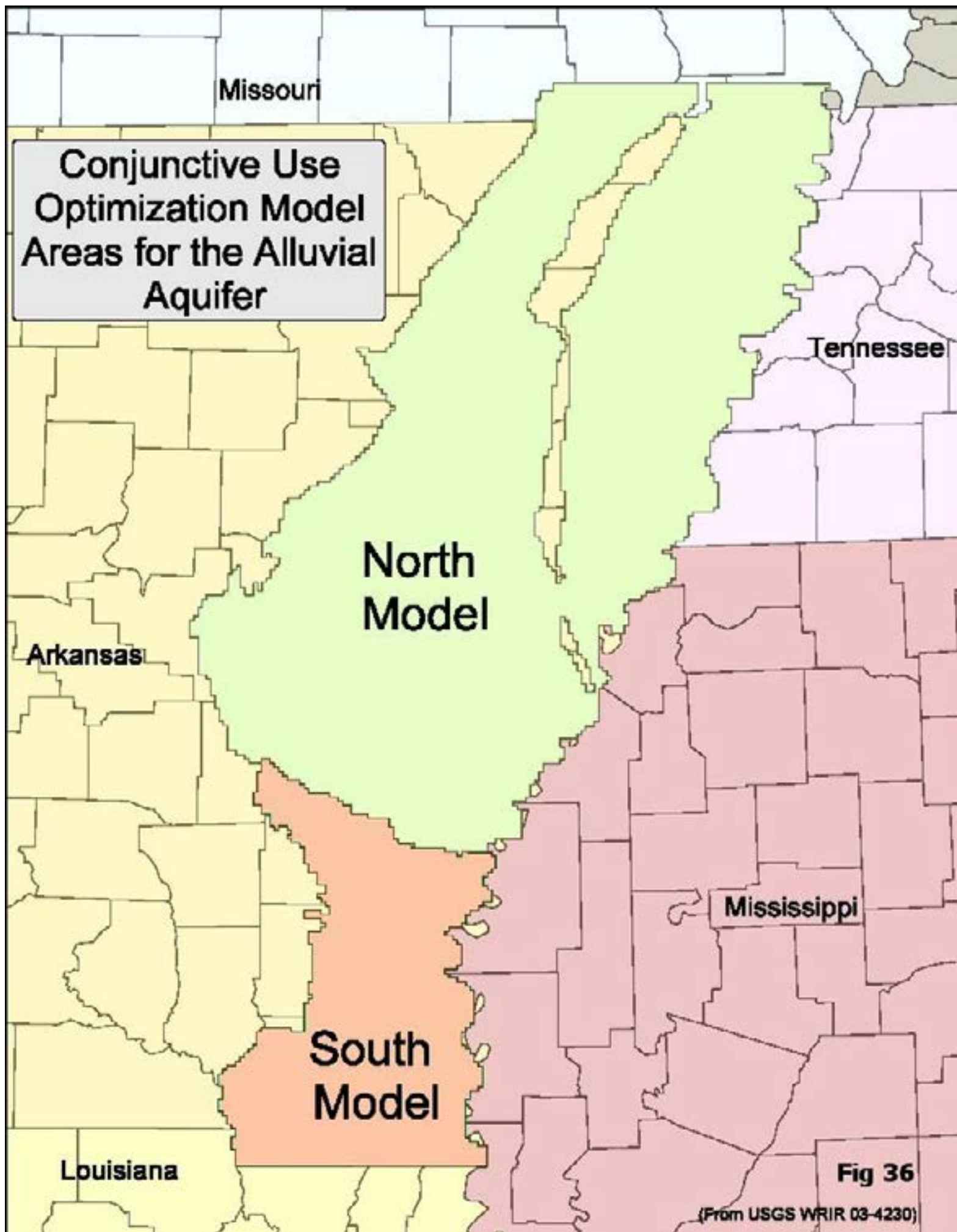
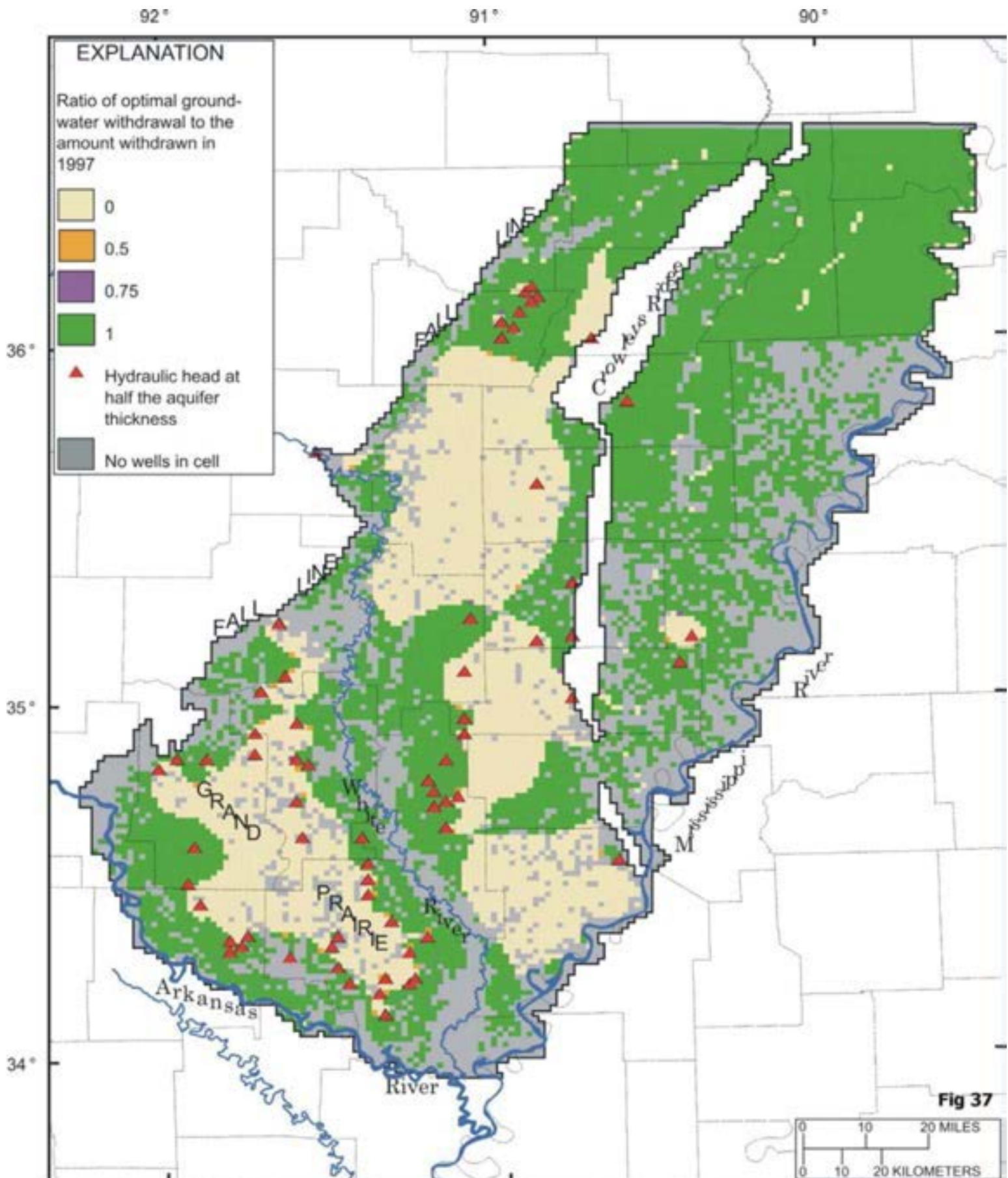


Fig. 34

Conjunctive Use Optimization Modeling Summary

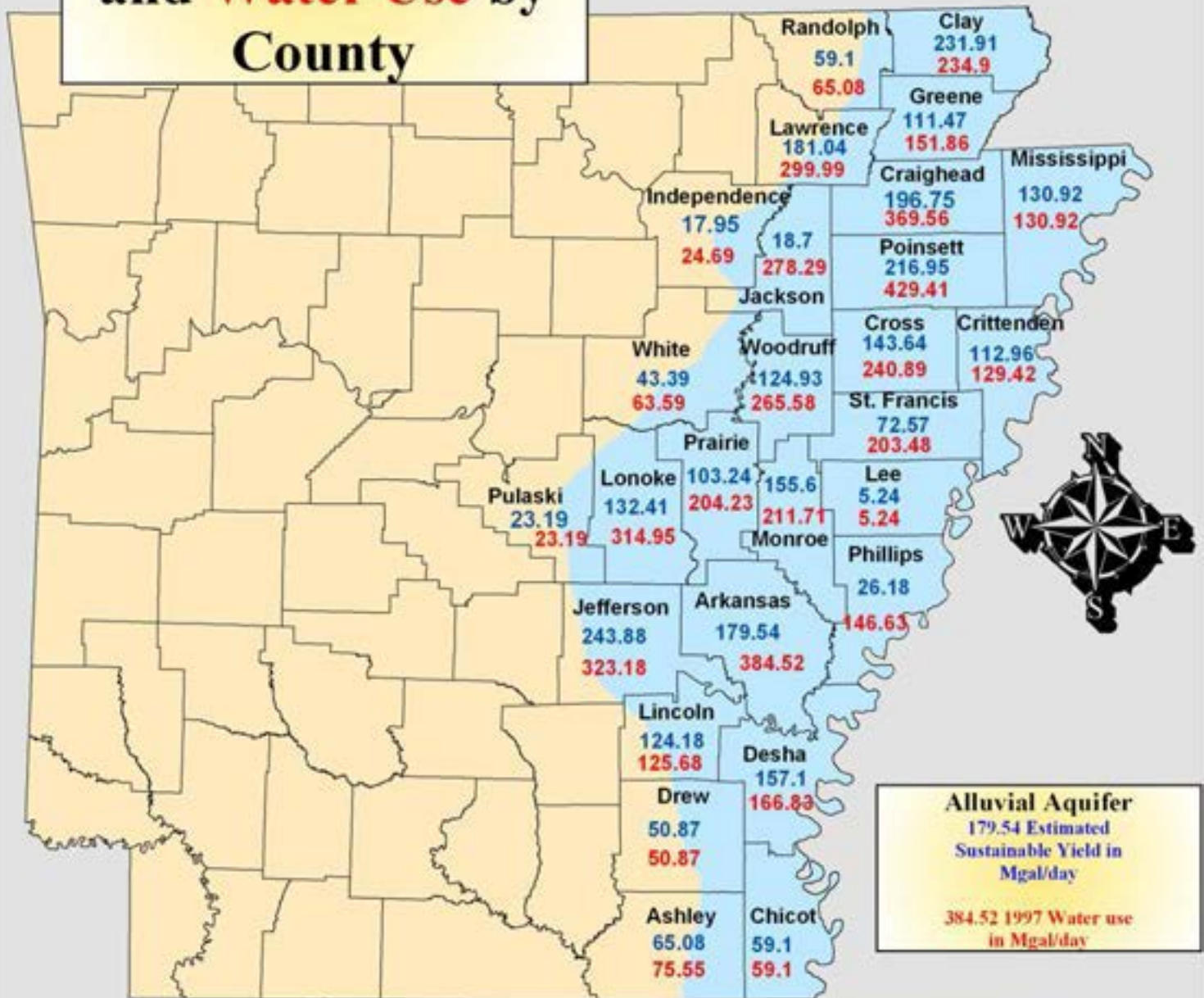
- **Alluvial aquifer** sustainable yield- 2700 mgd
 - 1997 Use – 4760 mgd (57% SY + 43% Unmet Demand)
 - 2002 Use – 6690 mgd (40% SY + 60% Unmet Demand)
-
- **Sparta aquifer** sustainable yield – 83 mgd
 - 1997 Use – 168 mgd (49% SY + 51% Unmet Demand)
 - 2002 Use – 230 mgd (36% of SY + 64% Unmet Demand)





Base from U.S. Geological Survey digital data, 1: 100,000

Alluvial Aquifer Estimated Sustainable Yield and **Water Use** by County



Alluvial Aquifer
179.54 Estimated
Sustainable Yield in
Mgal/day

384.52 1997 Water use
in Mgal/day

Legend



Extent Of the Arkansas Alluvial Aquifer



County Boundaries

Total use 4979 Mg/day

Total sustainable yield 2987 Mg/day
(60% of total water use)

Current average rate of decline is 1 ft/yr

0 20 40 80 120 160 Miles

Fig. 38

SUMMARY

The Ground Water Protection and Management Report for 2004 is a summary of the activities and significant findings of the Arkansas Soil and Water Conservation Commission (ASWCC). This report is prepared annually in response to legislative mandates that direct the ASWCC 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 ASWCC, 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 ASWCC, the U.S. Geological Survey, and the Arkansas Geological Commission.

Significant ground-water depletion continues throughout study areas in Arkansas. Elevated levels of dissolved solids are being recorded in areas of significant water level decline in the Cache 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.

As shown by the recently completed model by the USGS, ground-water use in the alluvial aquifer in eastern Arkansas was 4,760 mgd in 1997, well above the estimated sustainable yield of 2,700 mgd. A check of the 1985 water use data for the alluvial aquifer shows that in that year there was already greater than 3,400 mgd being pumped from the aquifer. The percentage above optimized sustainable yield ranged from 5.3% in Pulaski County, to 97.9% in Lee County, with no single county below sustainable yield in 1997. Currently in the Boeuf-Tenses Study Area we are developing ground water at the approximate sustainable yield for that area.

The State of Arkansas can only sustain about 57 percent of the 1997 withdrawals from the alluvial aquifer, and approximately 49 percent from the Sparta aquifer. If additional conservation measures, and the development of excess surface water are not successfully implemented in the very near future, the State may have to consider other alternatives to preserve the aquifers at a sustainable level.

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Appendix A

Alluvial Aquifer Water Level Monitoring Data

Alluvial Aquifer
94-99-03-04 WL Change

County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	Alt.94	Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Arkansas	02S04W11DBB1	343232.89	912415.21	3/9/2004	116.44	114.54	112.04	113.26	-3.18	-1.28	1.22
Arkansas	02S05W15AAB1	343212.68	913126.72	3/9/2004			103.35	105.34			1.99
Arkansas	02S05W31BBB1	342936.71	913536.22	3/9/2004			140.00	159.82			19.82
Arkansas	03S02W27ABB1	342447.92	911251.01	3/9/2004	130.22	134.00	127.40	131.42	1.20	-2.58	4.02
Arkansas	03S03W05CCD1	342737.02	912131.83	3/9/2004			103.40	103.15			-0.25
Arkansas	03S03W27BBC1	342454.73	911944.08	3/4/2004			104.20	104.17			-0.03
Arkansas	03S04W02BBB1	342831	912454	3/4/2004			106.33	105.71			-0.62
Arkansas	03S04W03DCA16	342753.04	912515.37	1/6/2004	106.69	106.10	105.15	104.63	-2.06	-1.47	-0.52
Arkansas	03S05W03CCC1	342752.15	913227.43	3/8/2004			108.35	110.13			1.78
Arkansas	03S06W35ADD1	342411.4	913651.67	3/8/2004	129.97		136.60	138.02	8.05		1.42
Arkansas	04S01W04ACD2	342233.35	910732.62	3/9/2004	151.71		144.65	149.38	-2.33		4.73
Arkansas	04S02W11AAA1	342208.6	911123.27	3/9/2004	133.47		127.78	128.68	-4.79		0.90
Arkansas	04S02W29CCC1	341846.35	911538.5	3/9/2004	111.80		108.45	109.20	-2.60		0.75
Arkansas	04S03W17ADD1	342101.87	912058.11	3/4/2004	99.41	98.53	93.30	92.92	-6.49	-5.61	-0.38
Arkansas	04S03W32BCB1	341820.31	912202.18	3/4/2004	88.50		85.00	75.57	-12.93		-9.43
Arkansas	04S04W02ABB1	342313.2	912423.69	3/4/2004	95.32		91.60	91.46	-3.86		-0.14
Arkansas	04S05W16CDC1	342044.68	913320.89	3/8/2004	132.37		130.00	130.42	-1.95		0.42
Arkansas	04S05W24DAA1	342001.3	912929.57	3/8/2004			107.30	107.51			0.21
Arkansas	04S06W15DBB1	342122.37	913826.67	3/8/2004	160.40		157.35	157.16	-3.24		-0.19
Arkansas	05S01W16BAB1	341551.59	910729.49	3/9/2004	149.98		132.80	133.39	-16.59		0.59
Arkansas	05S02W16ABD1	341551.84	911357.77	3/4/2004	116.34		116.09	110.64	-5.70		-5.45
Arkansas	05S03W16ABB1	341551	912019	3/16/2004	87.00	88.00	74.30	82.00	-5.00	-6.00	7.70
Arkansas	05S04W04BAA	341785	912691	3/17/2004	92.00		92.70	93.30	1.30		0.60
Arkansas	05S04W07CCC1	341555.36	912931.61	3/8/2004	116.82		117.20	118.80	1.98		1.60
Arkansas	05S04W14AAD1	341549	912411	3/17/2004	91.00	92.00	93.10	93.40	2.40	1.40	0.30
Arkansas	05S04W32BBA1	341315.97	912821.81	3/8/2004	125.15		131.70	132.97	7.82		1.27
Arkansas	05S06W02DDD1	341723.66	913650.8	3/8/2004	164.85		162.63	162.45	-2.40		-0.18
Arkansas	05S06W07DDC1	341641.5	914129.68	3/8/2004	170.20		176.08	177.70	7.50		1.62
Arkansas	06S02W23DCD1	340852.62	911206.48	3/4/2004	135.68		122.70	119.83	-15.85		-2.87
Arkansas	06S03W03ABA1	341228.4	911302.3	3/16/2004			117.20	117.30			0.10
Arkansas	06S03W10BBA1	341135.97	911953.82	3/4/2004	102.41		101.40	101.58	-0.83		0.18
Arkansas	06S03W27AAA1	340857.58	911912.78	3/4/2004	123.57		114.54	116.42	-7.15		1.88
Arkansas	06S03W32DDA	340740	912115	3/16/2004				122.66			

Alluvial Aquifer
94-99-03-04 WL Change

County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Arkansas	06S04W18CBB1	341018.86	912948.68	3/8/2004	153.20		151.43	152.59	-0.61		1.16
Arkansas	07S02W04BBB1	340707.15	911451.89	3/4/2004	149.63	152.00	141.10	140.62	-9.01	-11.38	-0.48
Arkansas	07S02W17BBA1	340707.15	911451.89	3/4/2004	138.48		131.10	131.77	-6.71		0.67
Arkansas	07S03W10ACD1	340560	911944	3/16/2004			135.80	137.80			2.00
Arkansas	07S03W18CCD1	340435.28	912316.09	3/4/2004	157.42	141.88	136.00	143.10	-14.32	1.22	7.10
Arkansas	07S03W32BBC1	340240	912216	3/4/2004				151.42			
Arkansas	07S04W01DDD1	340625.25	912327.15	3/4/2004	154.87		136.80	141.48	-13.39		4.68
Arkansas	08S02W08ACA1	340041.03	911505.57	3/4/2004	150.05			136.77	-13.28		
Arkansas	08S03WT2299	340147.45	912202.5	3/4/2004	152.26		156.40	156.38	4.12		-0.02
						Declines/Wells			23/31	6/8	13/39
						Average Change			-3.87	-3.21	1.23
Ashley	15S04W26DCC1	332231.97	912902.22	2/26/2004			96.80	96.03			-0.77
Ashley	15S4W23DBD1	332245	912852	2/26/2004	110.46			95.71	-4.75		
Ashley	15S07W21CBA1	332315.7	915001.37	2/25/2004			203.50	206.26			2.76
Ashley	16S04W10ABB	331902	913002	3/22/2004			96.80	95.30			-1.50
Ashley	16S06W27BAB1	331729	914240	2/25/2004	104.55		98.45	98.80	-5.75		0.35
Ashley	16S06W35BAD	331624	914143	3/30/2004			103.90	103.20			-0.70
Ashley	17S04W03ABB1	331528	913010	2/26/2004	103.82		93.90	95.03	-8.79		1.13
Ashley	17S04W15DDC1	331252.48	912954.09	2/26/2004			92.70	89.55			-3.15
Ashley	17S04W21ABA1	331252	913108	2/26/2004	102.22		94.10	95.63	-6.59		1.53
Ashley	17S06W01ADD1	331517.9	913956.26	2/25/2004	102.34		99.20	99.43	-2.91		0.23
Ashley	17S06W35CAC1	331049	914136	2/25/2004			107.20	100.71			-6.49
Ashley	18S04W08CAD1	330852	913218	3/22/2004			90.05	88.60			-1.45
Ashley	18S04W23DDD1	330658	912856	4/30/2004	88.70	80.00	87.00	81.00	-7.70	1.00	-6.00
Ashley	18S05W22DDA1	330712	913555	4/30/2004	109.50	106.00	113.00	113.00	3.50	7.00	0.00
Ashley	18S05W24BDC1	330730	913435	3/22/2004			95.40	96.10			0.70
Ashley	18S08W01AAB1	331014.97	915225.12	2/25/2004	97.98			94.67	-3.31		
Ashley	18S08W28DDD2	330624.8	915528.46	1/5/2004	77.33			85.53	8.20		
Ashley	19S04W06BAB2	330503.96	913328.56	2/26/2004	96.17			85.93	-10.24		
Ashley	19S04W09CBB	330346	913146	3/22/2004			82.10	81.30			-0.80
Ashley	19S04W14BBB1	330310	912913	4/30/2004	92.10	86.00	86.00	87.00	-5.10	1.00	1.00

Alluvial Aquifer
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County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Ashley	19S05W08ACA1	330405	913815	4/30/2004	100.20	97.00	100.00	100.00	-0.20	3.00	0.00
Ashley	19S05W16ABB1	330323	913718	4/30/2004	96.30	107.00	101.00	97.00	0.70	-10.00	-4.00
Ashley	19S05W22DCD1	330139	913615	4/30/2004	92.00	88.00	93.00	87.00	-5.00	-1.00	-6.00
Ashley	19S06W07BCC1	330403.56	914607.92	4/30/2004	104.59	104.83		103.27	-1.32	-1.56	
						Declines/Wells			12/15	3/7	10/19
						Average Change			-3.28	-0.08	-1.22
Chicot	13S03W27AAA1	333253	912310	4/28/2004	111.00	102.00	95.00	95.00	-16.00	-7.00	0.00
Chicot	13S03W34BAA1	333110.24	912539.38	2/26/2004		101.30	94.00	93.23		-8.07	-0.77
Chicot	13S03W34CAA1	333135.52	912335.8	2/26/2004							
Chicot	13S03W35BAC1	333154.05	912245.53	2/26/2004	109.56			95.13	-14.43		
Chicot	14S02W09BDD1	332859	911729	5/7/2004	109.00	105.00	106.00	104.00	-5.00	-1.00	-2.00
Chicot	14S03W07BBD1	333011	911729	2/26/2004				108.00			
Chicot	14S03W32CDB2	332613.47	912551.45	2/26/2004	104.02			99.07	-4.95		
Chicot	15S02W20DDC1	332226.59	911919.83	4/28/2004	106.00		81.00	80.00	-26.00		-1.00
Chicot	15S03W18BBB1	332226.59	911919.83	4/28/2004			89.00	90.00			1.00
Chicot	16S03W11ADC1	331919.54	912233.88	2/27/2004	95.00			89.49	-5.51		
Chicot	16S03W24BBC1	331759	912234	3/22/2004				86.10			
Chicot	17S01E17CDA1	331258.52	910716.26	2/26/2004				96.23			
Chicot	17S01E18ADA1	331325.68	910758.2	2/26/2004				109.76			
Chicot	17S01W06BCC1	331501.18	911505.22	2/27/2004				92.83			
Chicot	17S02W10AAA1	331429	911712	2/27/2004	85.37		86.60	86.96	1.59		0.36
Chicot	17S03W18CBC1	331257	912736	4/28/2004	90.00	89.00	85.00	84.00	-6.00	-5.00	-1.00
Chicot	17S03W24ABB1	331259	912159	3/22/2004				97.50			
Chicot	17S03W28DBA1	331126.59	912441.42	2/27/2004				85.39			
Chicot	18S01W19DAB1	330708.54	911423.15	2/26/2004	98.24			97.82	-0.42		
Chicot	18S03W22ABA2	330728	912341	2/26/2004	94.31			90.47	-3.84		
Chicot	19S01W17BBB	330309	911415	3/22/2004			89.10	87.50			-1.60
Chicot	19S01W17BCC1	330250.36	911406.24	2/26/2004				86.81			
Chicot	19S03W14ABB1	330304.47	912250.69	2/26/2004				88.08			
						Declines/Wells			9/10	4/4	5/8
						Average Change			-8.06	-5.27	-0.63

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County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Clay	18N08E03DAB1	361323.23	901153.03	3/30/2004			252.32	250.16			-2.16
Clay	18N08E11BAA1	361253	901117	4/14/2004	253.80	251.50	252.50	252.20	-1.60	0.70	-0.30
Clay	19N03E24AAA1	361654.99	904157.11	3/30/2004			258.15	259.82			1.67
Clay	19N04E11DAA1	361805	903621	4/14/2004	264.30	261.50	257.90	257.40	-6.90	-4.10	-0.50
Clay	19N04E19AAA1	361654.4	904049.99	3/30/2004		253.50	253.30	252.97		-0.53	-0.33
Clay	19N04E19BAA1	361649	904125	4/14/2004			258.00	257.50			-0.50
Clay	19N05E15BBD1	361716	903152	4/14/2004	266.10	262.60	256.40	256.50	-9.60	-6.10	0.10
Clay	19N06E18DBC1	361642	902815	4/14/2004	272.50	268.10	262.40	264.50	-8.00	-3.60	2.10
Clay	19N07E25BCB1	361519	901700	4/14/2004	254.50	252.50	252.60	251.40	-3.10	-1.10	-1.20
Clay	19N08E02ABB1	361858.57	901103.74	3/30/2004				264.88			
Clay	19N08E08DCA1	361729	901402	4/14/2004	266.00	264.00	266.10	262.00	-4.00	-2.00	-4.10
Clay	19N08E27DAA1	361459	901140	4/1/2004				256.60			
Clay	19N09E19CDC1	361539	900908	4/14/2004	260.30	258.90		257.50	-2.80	-1.40	
Clay	20N03E25BAA1	362112	904225	4/14/2004			266.10	266.20			0.10
Clay	20N04E02BBC1	362427	903722	4/1/2004			269.90	269.30			-0.60
Clay	20N04E03ADA1	362425	903725	4/14/2004	276.90	275.60	273.00	273.10	-3.80	-2.50	0.10
Clay	20N04E06BB1	362444.34	904131.25	3/30/2004			271.30	271.80			0.50
Clay	20N05E22CAD1	362118	903132	4/14/2004	270.00	267.20	263.60	263.00	-7.00	-4.20	-0.60
Clay	20N05E30CAC1	362003	903454	4/14/2004			266.70	266.10			-0.60
Clay	20N05E34DBA1	361939.31	903117.17	3/3/2004	265.40			257.37	-8.03		
Clay	20N06E12BBB1	362325	902321	4/1/2004			273.60	273.20			-0.40
Clay	20N06E28CCD1	362005	902630	4/14/2004	273.10	267.50	263.90	263.00	-10.10	-4.50	-0.90
Clay	20N08E22BDC1	362111	901220	4/14/2004	268.50	267.20	267.20	266.50	-2.00	-0.70	-0.70
Clay	20N09E09ABC1	362306	900642	4/14/2004	275.00	274.60	271.90	271.00	-4.00	-3.60	-0.90
Clay	20N09E33DDC1	361904	900628	4/14/2004			263.60	263.10			-0.50
Clay	21N03E15CBC1	362738	904453	4/14/2004	283.40	281.50	280.10	279.90	-3.50	-1.60	-0.20
Clay	21N03E36CDD1	362450	904214	4/14/2004	277.70	275.10	272.10	271.90	-5.80	-3.20	-0.20
Clay	21N04E09DBC1	362828	903853	4/14/2004	286.30	283.50	280.50	280.00	-6.30	-3.50	-0.50
Clay	21N05E17ABB1	362755.47	903328.9	3/30/2004	285.47		275.60	277.68	-7.79		2.08
Clay	21N05E22BAB1	362704	903132	4/14/2004			281.70	281.50			-0.20
Clay	21N06E11BBB1	362839	902421	4/14/2004	291.50	288.90	283.00	284.10	-7.40	-4.80	1.10
Clay	21N06E28BB1	362604.92	902607.97	3/30/2004			274.60	275.47			0.87
Clay	21N07E01DDC1	362835	901607	4/14/2004	297.50	293.10	284.70	284.50	-13.00	-8.60	-0.20
Clay	21N07E19BDA1	362640	902148	4/14/2004	283.80	280.70	276.00	277.00	-6.80	-3.70	1.00

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County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Clay	21N08E04DDC1	362835	901252	4/14/2004	305.50	296.20	291.80	291.00	-14.50	-5.20	-0.80
Clay	21N08E18CCC1	362650.9	901550.33	3/30/2004			287.90	293.13			5.23
Clay	21N08E36ABB1	362502	900958	3/30/2004	283.00		283.00	281.37	-1.63		-1.63
Clay	21N09E31BDA1	362447	900851	4/14/2004	281.50	281.70	279.00	278.60	-2.90	-3.10	-0.40
						Declines/Wells			23/23	20/21	23/34
						Average Change			-6.11	-3.21	-0.10
Craighead	13N01E03AAA1	354739	905753	3/16/2004		191.80	187.70	187.80		-4.00	0.10
Craighead	13N01E21CAB	354434	905945	3/16/2004	182.00	178.40	180.50	181.00	-1.00	2.60	0.50
Craighead	13N01E23DAA1	354435.4	905651.69	3/25/2004			172.95	172.61			-0.34
Craighead	13N02E02AAB1	354731	905032	3/16/2004	176.60	171.10	165.80	166.00	-10.60	-5.10	0.20
Craighead	13N02E03AAA1	354733	905129	3/16/2004	176.20	171.00	165.80	166.20	-10.00	-4.80	0.40
Craighead	13N03E10BDB1	354625	904546	3/16/2004	190.20	186.50	182.00	182.50	-7.70	-4.00	0.50
Craighead	13N03E23CDA1	354419	904434	3/16/2004		174.30	170.70	170.20		-4.10	-0.50
Craighead	13N03E28CDB1	354322	904652	3/16/2004	159.60		142.50	144.50	-15.10		2.00
Craighead	13N03E29AAA1	354403.31	904712.98	3/25/2004			148.15	148.95			0.80
Craighead	13N03E35AAA1	354308	904401	3/16/2004			156.50	155.50			-1.00
Craighead	13N04E12ABB1	354635	903656	3/25/2004	212.70		205.60	207.54	-5.16		1.94
Craighead	13N04E15DBA1	354521	903857	3/9/2004	209.80	207.50	203.80	204.80	-5.00	-2.70	1.00
Craighead	13N04E26BCC1	354340	903829	3/9/2004	202.70	200.70	196.60	197.60	-5.10	-3.10	1.00
Craighead	13N05E02CCC1	354648	903202	3/9/2004	219.50	217.00	216.40	221.00	1.50	4.00	4.60
Craighead	13N05E06DCC1	354637	903547	3/9/2004	212.70	210.20	206.50	209.00	-3.70	-1.20	2.50
Craighead	13N05E22BAD1	354449	903243	3/25/2004			212.90	212.89			-0.01
Craighead	13N05E24BAC1	354451	903045	3/9/2004	213.50	216.60	218.00	219.50	6.00	2.90	1.50
Craighead	13N07E02CAB1	354642	901901	3/16/2004			221.50	221.00			-0.50
Craighead	13N07E05ABB1	354716	902158	3/16/2004	219.70	219.10	218.50	219.50	-0.20	0.40	1.00
Craighead	13N07E20BBA1	354439.77	902216.44	3/25/2004		220.20		219.30		-0.90	
Craighead	13N07E35BCD1	354233	901837	3/16/2004	211.90		212.50	213.00	1.10		0.50
Craighead	14N01E03ACB1	355246	905816	3/17/2004	209.00	206.30	200.80	200.90	-8.10	-5.40	0.10
Craighead	14N01E10BAB1	355204	905828	3/17/2004	207.10	200.10	197.30	195.90	-11.20	-4.20	-1.40
Craighead	14N01E31DCA1	354817	910121	3/17/2004	204.50	199.70	197.10	194.30	-10.20	-5.40	-2.80
Craighead	14N02E18BDD1	355040.91	905419.37	3/25/2004			192.00	191.75			-0.25
Craighead	14N05E25ABB1	354920.85	903025.35	3/25/2004		221.00	219.60	219.86		-1.14	0.26

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County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Craighead	14N06E06BAA1	355234	902934	3/16/2004	224.10	221.60	218.90	219.00	-5.10	-2.60	0.10
Craighead	14N06E20CCD1	354922.16	902849.94	3/25/2004	218.99		221.05	219.87	0.88		-1.18
Craighead	14N06E27AAB1	354911.46	902559.08	3/25/2004	223.85			223.48	-0.37		
Craighead	14N07E07BCB1	355124	902323	3/8/2004	225.50	226.00	226.00	225.00	-0.50	-1.00	-1.00
Craighead	14N07E14DDC1	354956	901831	3/8/2004	224.50	222.00	225.10	225.50	1.00	3.50	0.40
Craighead	14N07E26DBB1	354833.59	901843.36	3/25/2004			225.50	222.65			-2.85
Craighead	15N02E12DCB1	355626	904930	3/17/2004	224.90	224.20	218.30	218.30	-6.60	-5.90	0.00
Craighead	15N03E19ADA1	355502.21	904802.05	3/25/2004		221.50	215.70	214.07		-7.43	-1.63
Craighead	15N05E22BAB1	355513	903241	3/16/2004	233.80	229.30	225.00	222.00	-11.80	-7.30	-3.00
Craighead	15N06E04BAD1	355744	902706	3/12/2004		227.50	227.90	228.00		0.50	0.10
Craighead	15N06E20DDD1	355426	902739	3/25/2004			225.65	225.38			-0.27
Craighead	15N07E10DAB1	355622	901934	3/8/2004	227.40	229.20	228.00	227.50	0.10	-1.70	-0.50
Craighead	15N07E10DBA1	355627.56	901943.75	3/25/2004			230.63	228.42			-2.21
Craighead	15N07E21DAB1	355444	902043	3/8/2004	229.70	227.00	229.00	229.50	-0.20	2.50	0.50
Craighead	15N07E35DCB1	355241	901831	3/8/2004	223.40	221.50	223.50	224.50	1.10	3.00	1.00
						Declines/Wells			19/26	19/27	16/39
						Average Change			-4.08	-1.95	0.04
Crittenden	04N07E21AAD1	345643.83	902121.49	3/24/2004			193.35	192.02			-1.33
Crittenden	05N07E08BDC1	350407	902234	4/13/2004	190.60	190.60	183.50	182.00	-8.60	-8.60	-1.50
Crittenden	05N07E28CBA1	350121.32	902139.85	3/24/2004			182.30	184.02			1.72
Crittenden	05N07E34BAB1	350059.39	902029.86	3/24/2004		190.40	190.50	188.11		-2.29	-2.39
Crittenden	05N07E34CDD1	350010	902028	4/13/2004	202.20	194.10	192.50	186.00	-16.20	-8.10	-6.50
Crittenden	05N08E11CCD2	350344.75	901308.22	3/24/2004	193.78			184.94	-8.84		
Crittenden	06N07E13BAA1	350849.58	901807.57	3/24/2004	192.27		185.15	185.97	-6.30		0.82
Crittenden	06N07E14ABA1	350848	901858	4/13/2004	197.30	192.90	190.50	186.00	-11.30	-6.90	-4.50
Crittenden	07N06E29CBC1	351152	902914	4/13/2004			172.50	173.00			0.50
Crittenden	07N07E01ACC1	351514.1	902447.26	3/24/2004				-28.10			
Crittenden	07N07E05DAD1	351504	902129	3/24/2004			185.65	186.90			1.25
Crittenden	07N07E31CCC1	351041.9	902358.97	3/24/2004			173.60	175.44			1.84
Crittenden	07N07E34DDA1	351116	901941	4/15/2004			186.55	187.80			1.25
Crittenden	07N08E04BBD1	351538	901505	4/13/2004			205.00	205.00			0.00
Crittenden	07N09E05CDD1	351453.34	900933.58	3/24/2004	203.27		208.50	199.66	-3.61		-8.84
Crittenden	08N06E01DCC1	352021	902408	4/13/2004	188.10	185.90	182.00	183.00	-5.10	-2.90	1.00

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County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Crittenden	08N06E06DDB1	352030	902920	4/13/2004	186.20	184.50	183.80	183.00	-3.20	-1.50	-0.80
Crittenden	08N06E26BBA1	351737	902552	4/15/2004			181.90	183.60			1.70
Crittenden	08N07E13CCC2	351828.34	901811.95	3/24/2004		198.90	191.80	192.75		-6.15	0.95
Crittenden	08N07E14DAA2	351854.41	901832.68	3/24/2004	197.30			189.80	-7.50		
Crittenden	08N07E32DAA1	351618	902146	4/13/2004	192.30	186.60	186.50	189.00	-3.30	2.40	2.50
Crittenden	08N08E06ABB1	352103	901644	4/13/2004			194.00	195.50			1.50
Crittenden	09N07E02CDB1	352537	901905	4/13/2004	200.10	194.60	196.00	192.00	-8.10	-2.60	-4.00
Crittenden	09N07E10DDA1	352447.58	901924.64	3/24/2004			192.70	193.74			1.04
Crittenden	09N07E20DDC1	352256	902158	4/14/2004			186.65	187.50			0.85
Crittenden	09N07E31BAB1	352159.85	902326.57	3/24/2004		190.90	188.50	188.69		-2.21	0.19
						Declines/Wells			11/11	9/10	8/23
						Average Change			-7.46	-3.89	-0.55
Cross	06N02E12AAA1	350934	904952	4/15/2004	166.40	163.00	156.00	156.00	-10.40	-7.00	0.00
Cross	07N01E05CDA1	351517.52	910049.05	3/23/2004		149.30	141.40	145.25		-4.05	3.85
Cross	07N01E05DCA1	351514	910033	4/15/2004			143.00	143.00			0.00
Cross	07N01E06CAA1	351530	910154	4/8/2004	157.20			149.00	-8.20		
Cross	07N01E11AAA1	351501.25	905705.29	3/23/2004		147.60	143.20	142.23		-5.37	-0.97
Cross	07N01E33BBA1	351134	910010	4/15/2004	158.00	156.00	145.00	145.00	-13.00	-11.00	0.00
Cross	07N02E29DDC1	351138.09	905409.17	3/23/2004		158.00	150.20	149.52		-8.48	-0.68
Cross	07N03E05ADA1	351548.89	904738.6	3/23/2004	153.86	148.70	141.50	133.15	-20.71	-15.55	-8.35
Cross	07N03E32DCC1	351045.29	904810.28	3/23/2004			154.50	155.12			0.62
Cross	07N05E19CCC1	351237.65	903644.91	3/23/2004				172.09			
Cross	07N05E25ABA1	351228.87	903044.79	4/15/2004	175.80	175.00	169.30	169.19	-6.61	-5.81	-0.11
Cross	08N01E16DBB1	351855	905933	4/8/2004	154.00	146.00	141.00	141.00	-13.00	-5.00	0.00
Cross	08N02E12DCC1	351938	905002	4/15/2004	152.20	152.00	142.00	142.00	-10.20	-10.00	0.00
Cross	08N02E17AAA1	351923	905354	4/8/2004	153.80	147.00	142.00	143.00	-10.80	-4.00	1.00
Cross	08N05E32ADD1	351631.65	903440.45	3/23/2004		176.20	177.30	175.53		-0.67	-1.77
Cross	09N01E04ACD1	352608	905914	4/8/2004	153.20	149.00	140.00	140.00	-13.20	-9.00	0.00
Cross	09N01E33BBA2	352202.76	910000.6	3/23/2004	158.56	152.10	146.90	146.60	-11.96	-5.50	-0.30
Cross	09N01E36AAB1	352155	905605	4/15/2004	152.60	152.00	141.00	142.00	-10.60	-10.00	1.00
Cross	09N02E20AAA1	352402	905342	4/8/2004	153.20		138.00	139.00	-14.20		1.00
Cross	09N02E30CBB1	352243	905551	4/8/2004	153.00	147.00	138.00	138.00	-15.00	-9.00	0.00
Cross	09N03E17CDD1	352422	904753	4/8/2004	157.00		143.00	143.00	-14.00		0.00

Alluvial Aquifer
94-99-03-04 WL Change

County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Cross	09N03E17DDC1	352408.8	904725.6	3/23/2004	153.97	150.00	145.10	147.04	-6.93	-2.96	1.94
Cross	09N04E03DBB1	352614	903918	4/15/2004	192.70	192.00	184.00	184.00	-8.70	-8.00	0.00
Cross	09N05E32BDB1	352150.53	903512.11	3/23/2004	185.22	179.00	179.60	180.88	-4.34	1.88	1.28
						Declines/Wells			17/17	17/18	6/22
						Average Change			-11.29	-6.64	-0.07
Desha	07S01E19ABA1	340428	910303	4/13/2004	144.00	139.20	139.80	140.00	-4.00	0.80	0.20
Desha	08S03W33ABD1	335802.92	912338.18	3/2/2004	160.62	158.45	157.74	159.72	-0.90	1.27	1.98
Desha	09S01W08BDA1	335608	911234	4/30/2004	137.00		130.00	131.00	-6.00		1.00
Desha	09S01W15CBB1	335501	911055	4/30/2004			117.00	117.00			0.00
Desha	09S02W26DDC1	335256.57	911529.64	1/5/2004	128.69		119.07	118.80	-10.51		-0.27
Desha	09S03W17DCB1	335448.23	912456.66	3/2/2004	131.82	121.28	121.28	121.26	-10.56	-0.02	-0.02
Desha	09S04W06BCA1	335756.06	913242.95	3/2/2004			127.40	127.25			-0.15
Desha	10S02W11ADD1	335045	911517	4/30/2004	129.00		119.00	118.00	-11.00		-1.00
Desha	10S02W24DBC1	334849.63	911453.44	3/2/2004			116.20	117.12			0.92
Desha	10S03W26CAA1	334806	912144.55	3/2/2004				110.97			
Desha	10S03W26CCC	334759	912235	3/24/2004			109.20	106.60			-2.60
Desha	10S04W09BCD1	335059	913052	3/24/2004		135.80	132.20	132.10		-3.70	-0.10
Desha	10S04W12BBB1	335048	912754	3/24/2004		124.60	121.20	122.60		-2.00	1.40
Desha	10S04W19DAC1	334901	913233	3/24/2004		135.80	132.20	133.00		-2.80	0.80
Desha	10S04W21AAA1	334929	913012	3/24/2004		134.50	131.90	131.80		-2.70	-0.10
Desha	11S03W31BBA1	334228.22	912651.1	3/2/2004				113.82			
Desha	12S01W33BAA1	333718.14	911205.07	3/2/2004	125.39			110.45	-14.94		
Desha	13S02W27CAC1	333223.99	911734.76	3/2/2004			102.10	101.08			-1.02
Desha	13S02W32DBD1	333126	911917	4/30/2004	102.00		96.00	97.00	-5.00		1.00
Desha	13S03W10DAA1	333505.64	912301.83	3/2/2004			95.10	94.05			-1.05
Desha	13S03W11CAB1	333503	912241	4/30/2004	106.00		95.00	91.00	-15.00		-4.00
						Declines/Wells			9/9	5/7	10/18
						Average Change			-8.66	-1.31	-0.17
Drew	11S04W08DBA1	334531.98	913136.2	3/1/2004			135.30	136.87			1.57
Drew	11S04W09BBB	334550	913404	3/31/2004			131.10	131.70			0.60

Alluvial Aquifer
94-99-03-04 WL Change

County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Drew	11S05W08CCC1	334546.48	913837.16	3/1/2004	151.89		148.70	149.21	-2.68		0.51
Drew	11S06W34DAC2	334239.31	914226.27	3/1/2004	146.11		142.95	142.08	-4.03		-0.87
Drew	12S04W03ABB1	334133.92	912946.13	3/1/2004			131.00	130.89			-0.11
Drew	12S04W25DBB1	333739	912738	5/4/2004	131.20		115.00	115.00	-16.20		0.00
Drew	13S04W09ACD1	333512	913034	5/4/2004	131.60		128.60	128.60	-3.00		0.00
Drew	13S04W33BAA1	333206	913100	3/1/2004			122.30	118.97			-3.33
Drew	13S04W36DCC	333110	912757	3/30/2004			116.00	115.40			-0.60
Drew	13S05W29ADA1	333248	913747	3/1/2004				154.50			
Drew	13S06W03DDC1	333544.69	914201.6	3/1/2004			132.30	129.94			-2.36
Drew	13S06W21DAA1	333324	914258	5/5/2004	134.00		122.00	118.00	-16.00		-4.00
Drew	14S04W03CBA1	333039	912944	5/4/2004			116.00	115.00			-1.00
Drew	14S04W05CBA1	333047	913218	5/4/2004	124.10		119.00	119.00	-5.10		0.00
Drew	14S04W05CBC1	333042	913226	5/4/2004			117.00	118.00			1.00
Drew	14S04W22CAA1	332805	912957	5/4/2004	121.00		115.00	116.00	-5.00		1.00
Drew	14S05W23DCB1	332801.62	913512.21	3/1/2004				131.12			
Drew	15S04W12DBB	332942	912744	3/31/2004			91.20	91.90			0.70
						Declines/Wells			7/7		7/16
						Average Change			-7.43		-0.43
Greene	16N03E03BA1	360315.87	904515.85	3/30/2004			231.05	230.96			-0.09
Greene	16N03E05BBB1	360316	904750	4/16/2004			228.10	228.60			0.50
Greene	16N03E16DDD1	360049	904547	4/16/2004			231.30	223.20			-8.10
Greene	16N03E19DBC1	360000	904519	4/1/2004			226.50	228.30			1.80
Greene	16N03E29ACC1	355926	904722	4/15/2004	237.50		228.20	227.80	-9.70		-0.40
Greene	16N06E03CCC1	360224.07	902625.9	3/29/2004	213.61		220.00	217.61	4.00		-2.39
Greene	16N06E09ABB1	360215	902651	4/15/2004	209.00		216.00	220.60	11.60		4.60
Greene	16N06E21BAA1	360031	902705	4/15/2004	223.00		221.20	224.00	1.00		2.80
Greene	16N06E28ABB1	355938.31	902657.01	3/29/2004	229.94		224.35	227.11	-2.83		2.76
Greene	17N03E02DCC1	360806	904352	4/16/2004			236.30	236.00			-0.30
Greene	17N04E30CDC1	360409.09	904217.57	3/30/2004	237.41	223.40	229.95	229.62	-7.79	6.22	-0.33
Greene	17N06E15ABC1	360631	902546	4/15/2004	242.50		228.10	229.80	-12.70		1.70
Greene	17N06E22CBB1	360520	902521	4/15/2004	237.50	234.70	232.50	232.40	-5.10	-2.30	-0.10
Greene	17N07E03CCC1	360744	901951	4/15/2004	242.20	240.90	239.50	239.20	-3.00	-1.70	-0.30

Alluvial Aquifer
94-99-03-04 WL Change

County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Greene	17N07E18ABB1	360638.48	902234.73	3/29/2004			237.30	238.03			0.73
Greene	17N07E29CBC1	360419	902201	4/15/2004	243.60	242.20	241.40	240.80	-2.80	-1.40	-0.60
Greene	18N03E24ABA1	361141	904234	4/1/2004			241.50	240.85			-0.65
Greene	18N03E24ACA1	361119	904216	4/16/2004			236.80	241.20			4.40
Greene	18N04E04AAC1	361356	903854	4/16/2004			240.80	244.80			4.00
Greene	18N04E21CBD1	361052.32	903724.76	3/30/2004			240.70	240.10			-0.60
Greene	18N06E23ACB1	361056	902357	4/16/2004			264.90	266.70			1.80
Greene	18N07E17BAB1	361203	902105	4/15/2004	257.60	256.70	245.60	253.70	-3.90	-3.00	8.10
Greene	18N07E20BBA1	361110.37	902113.23	3/29/2004	252.00		250.75	250.12	-1.88		-0.63
Greene	18N07E23CCD1	361022	901747	4/1/2004			244.40	242.70			-1.70
Greene	19N03E26AD1	361600.72	904258.43	3/30/2004			253.67	253.41			-0.26
Greene	19N03E33DDD1	361418	904516	4/16/2004			235.60	242.20			6.60
Greene	19N04E30DBB1	361532	904119	4/16/2004	257.20	251.30	248.80	248.00	-9.20	-3.30	-0.80
Greene	19N05E34AAD1	361437	903102	4/15/2004			245.80	251.50			5.70
						Declines/Wells			10/13	5/6	15/28
						Average Change			-3.25	-0.91	1.01
Independence	11N04W02ABB1	353650	912416	4/13/2004	218.00	218.80	217.60	217.60	-0.40	-1.20	0.00
Independence	12N04W14DD1	353929.42	912236.26	3/31/2004		209.80	205.80	206.29		-3.51	0.49
Independence	12N04W34CBB1	353720.1	912512.5	3/31/2004	211.70		212.10	209.09	-2.61		-3.01
Independence	12N05W36AAA1	353738.04	912827.22	3/31/2004	222.50	224.80	215.00	212.25	-10.25	-12.55	-2.75
Independence	14N03W12CAB1	355152	911541	4/13/2004	228.90	227.90	228.00	228.10	-0.80	0.20	0.10
Independence	14N03W14CBB1	355101	911703	4/13/2004	234.30	234.80	233.80	233.20	-1.10	-1.60	-0.60
Independence	14N03W14DAA2	355107	911602.11	3/31/2004		226.70	227.67	225.92		-0.78	-1.75
Independence	14N03W14DBB1	355106	911640.42	3/31/2004			227.80	225.98			-1.82
						Declines/Wells			5/5	5/6	5/8
						Average Change			-3.03	-3.24	-1.17
Jackson	09N01W15DDD1	352357	910433	4/7/2004	177.10	168.40	161.20	161.30	-15.80	-7.10	0.10
Jackson	09N01W22ADD1	352331.57	910432.57	3/31/2004	165.74			155.34	-10.40		
Jackson	09N01W30BAC1	352258	910813	4/1/2004	185.00	180.00	175.50	176.00	-9.00	-4.00	0.50
Jackson	09N02W32BBB1	352215	911344	4/1/2004	198.00	191.80	189.80	190.80	-7.20	-1.00	1.00

Alluvial Aquifer
94-99-03-04 WL Change

County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Jackson	09N02W32CBB1	352151.79	911347.79	3/31/2004	193.83		189.10	191.65	-2.18		2.55
Jackson	10N01W04DCB1	353114	910602	3/11/2004			172.50	173.00			0.50
Jackson	10N01W05ADD1	353132	910702	4/1/2004	191.50	186.10	181.60	181.70	-9.80	-4.40	0.10
Jackson	10N01W10ABA1	353055	910445	4/6/2004	176.90	171.60	166.70	165.60	-11.30	-6.00	-1.10
Jackson	10N02W29ABB1	352828.7	911311.86	3/31/2004			198.05	201.17			3.12
Jackson	11N01W26AAD1	353329.77	910323.21	3/31/2004	171.90	167.40	158.20	161.75	-10.15	-5.65	3.55
Jackson	11N01W29AAD1	353338.66	910635.27	3/31/2004			186.40	185.99			-0.41
Jackson	11N02W25BBD1	353322	910855	3/26/2004	201.60	198.50	196.30	195.50	-6.10	-3.00	-0.80
Jackson	11N03W06DAB1	353655.13	912008.5	3/31/2004			203.30	200.97			-2.33
Jackson	12N01W11BCB1	354127	910416	4/6/2004	203.70	198.80	196.10	196.40	-7.30	-2.40	0.30
Jackson	12N01W30CCC2	353812	910821	3/26/2004	202.70	198.50	194.40	195.20	-7.50	-3.30	0.80
Jackson	12N01W36CBC1	353724	910317	3/26/2004	193.30	188.50	185.30	185.60	-7.70	-2.90	0.30
Jackson	12N02W25ABB2	353909.97	910852.17	3/31/2004	210.67		201.00	202.27	-8.40		1.27
Jackson	12N03W35BCA1	353800	911706	3/31/2004				208.12			
Jackson	13N01W20AAA1	354514.14	910627.47	3/31/2004	213.40		203.30	204.36	-9.04		1.06
Jackson	13N01W23BCC1	354444	910413	4/6/2004	210.70	206.30	201.40	201.90	-8.80	-4.40	0.50
Jackson	13N01W27DDD1	354327	910435	3/1/2004			198.40	197.30			-1.10
Jackson	13N02W34CBB1	354306	911151	4/6/2004	231.00	223.00	220.00	220.50	-10.50	-2.50	0.50
Jackson	13N03W15CDD1	354525.9	911749.46	3/31/2004				216.82			
Jackson	13N03W15DCB1	354540	911718	4/7/2004	228.00	224.80	221.60	221.50	-6.50	-3.30	-0.10
Jackson	13N03W36ABB1	354337	911532	4/6/2004	232.20	227.40	226.60	226.80	-5.40	-0.60	0.20
Jackson	14N01W08AAA1	355216	910623	4/5/2004	226.30	220.80	218.20	218.30	-8.00	-2.50	0.10
Jackson	14N01W09AAA1	355220.36	910515.16	3/31/2004		217.00	211.30	210.68		-6.32	-0.62
Jackson	14N01W19BBB1	355032	910823	4/5/2004	222.80	219.60	216.10	219.30	-3.50	-0.30	3.20
Jackson	14N01W33CCD1	354759	910610	4/5/2004	215.30	211.20	206.30	206.30	-9.00	-4.90	0.00
Jackson	14N02W22BBC1	355026	911145	4/5/2004	229.50	227.00	223.80	224.00	-5.50	-3.00	0.20
						Declines/Wells			22/22	19/19	7/27
						Average Change			-8.14	-3.56	0.50
Jefferson	03S07W36ACC1	342410	914253	5/20/2004	155.00	160.50	143.30	143.70	-11.30	-16.80	0.40
Jefferson	03S08W24BBC1	342620.37	914953.19	3/3/2004			153.55	152.42			-1.13
Jefferson	03S09W06DDA1	342839.9	920036.62	3/3/2004			188.00	189.39			1.39
Jefferson	03S09W22AAA1	342639.63	915728.43	5/11/2004			178.20	175.00			-3.20

Alluvial Aquifer
94-99-03-04 WL Change

County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Jefferson	03S09W29CBD1	342516.81	920023.32	3/3/2004			190.75	168.96			-21.79
Jefferson	03S09W36ACC1	342428	915555	5/20/2004	187.00	181.50	167.00	167.70	-19.30	-13.80	0.70
Jefferson	03S09W32CBC1	342415	902248	3/24/2004		189.40		187.80		-1.60	
Jefferson	03S10W25BCA2	342537	920241	5/11/2004			199.50	196.70			-2.80
Jefferson	03S10W26BBB2	342427	920249	5/11/2004	204.00	198.50	200.60	199.00	-5.00	0.50	-1.60
Jefferson	04S07W08CBB1	342226	914745	3/19/2004			148.35	147.00			-1.35
Jefferson	04S07W35DDB1	341836	914347	5/20/2004	160.00	148.50	159.30	158.80	-1.20	10.30	-0.50
Jefferson	04S08W13DCB1	342122.85	914926.45	3/3/2004			161.75	157.88			-3.87
Jefferson	04S08W33CDA1	341848	915244	5/20/2004	185.00	180.00	181.70	169.20	-15.80	-10.80	-12.50
Jefferson	04S09W02CBD1	342325	915717	5/11/2004			179.20	167.30			-11.90
Jefferson	04S09W32DDA1	341859	920008	5/11/2004	196.20	193.50	193.00	192.30	-3.90	-1.20	-0.70
Jefferson	05S06W31CAA1	341329.94	914206.1	3/3/2004	175.62			173.05	-2.57		
Jefferson	05S08W12DAA1	341712	914907	3/3/2004			177.70	176.78			-0.92
Jefferson	06S05W15BCA1	341022.95	913245	3/3/2004	162.12	159.04	157.64	157.70	-4.42	-1.34	0.06
Jefferson	06S06W23AAD1	341006.74	913712.2	3/3/2004	174.16	169.70	170.41	167.55	-6.61	-2.15	-2.86
Jefferson	06S07W14BAA1	341124.96	914425.73	3/3/2004			183.40	182.77			-0.63
Jefferson	07S07W16BAA1	340722	914828	4/27/2004			164.70	165.60			0.90
Jefferson	07S07W18CAC1	340647.02	915036.77	3/3/2004			160.30	157.67			-2.63
Jefferson	07S08W06BAA1	340858.53	915647.26	3/3/2004	189.59		184.01	183.04	-6.55		-0.97
						Declines/Wells			10/10	7/9	16/21
						Average Change			-7.67	-4.10	-3.14
Lawrence	15N01E11ADD1	355657	905638	4/7/2004	220.90		214.50	213.00	-7.90		-1.50
Lawrence	15N01W03BAB1	355831	910441	4/8/2004	235.60		223.90	223.80	-11.80		-0.10
Lawrence	15N01W35CBB1	355336.15	910356.33	3/31/2004			206.75	206.61			-0.14
Lawrence	16N01E11DAC2	360203.04	905639.37	3/31/2004			217.20	218.34			1.14
Lawrence	16N01W30DDC1	355936.93	910723.26	4/7/2004	237.70		233.00	233.00	-4.70		0.00
Lawrence	16N02E09AAD1	360219	905212	4/7/2004	229.20		223.40	223.40	-5.80		0.00
Lawrence	16N02E19ACA1	360031	905442	4/8/2004	226.20		221.60	221.20	-5.00		-0.40
Lawrence	16N02E34CBB1	355831	905208	4/7/2004	219.80		215.00	212.00	-7.80		-3.00
Lawrence	17N01E02BBA1	360901	905707	4/8/2004	248.00		246.80	247.80	-0.20		1.00
Lawrence	17N01E21CBC1	360543	905931	4/6/2004	251.20		244.80	245.40	-5.80		0.60

Alluvial Aquifer
94-99-03-04 WL Change

County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Lawrence	17N01E27AAA1	360519	905732	4/6/2004	242.60		236.80	236.20	-6.40		-0.60
Lawrence	17N01W36AAB1	360435	910158	4/6/2004	249.43		244.50	245.50	-3.93		1.00
Lawrence	17N02E04DCA1	360758	905224	4/6/2004	239.10		232.00	232.00	-7.10		0.00
Lawrence	17N02E19CDC1	360515.91	905449.43	4/6/2004	234.20		226.60	226.77	-5.80		0.17
Lawrence	17N02E21ABD1	360554	905225	4/6/2004	235.00		228.00	227.00	-8.00		-1.00
Lawrence	17N02E25CBD1	360423	904948	4/6/2004	238.30		230.00	230.00	-8.30		0.00
						Declines/Wells			14/14		7/16
						Average Change			-6.32		-0.18
Lee	01N01E04AAB1	344358	910015	4/15/2004	150.50	154.80	149.70	136.70	-13.80	-18.10	-13.00
Lee	01N01E09CCC1	344215	910054	4/12/2004	172.80	157.50	153.00	151.50	-21.30	-6.00	-1.50
Lee	01N01E24CBD1	344033	905729	4/12/2004	178.00	174.00	170.70	168.70	-9.30	-5.30	-2.00
Lee	01N02E01ADD1	344330	905016	4/7/2004	193.80	181.70	183.00	182.00	-11.80	0.30	-1.00
Lee	01N02E11BAB1	344255	905208	4/7/2004			178.50	176.00			-2.50
Lee	01N02E12ABB1	344254	905040	4/7/2004	192.00	177.30	179.00	180.00	-12.00	2.70	1.00
Lee	01N02E22CBA1	344056	905318	4/12/2004	181.00	177.50	175.50	171.50	-9.50	-6.00	-4.00
Lee	01N02E33CBB1	343858	905434	4/12/2004	178.00	175.70	173.50	172.00	-6.00	-3.70	-1.50
Lee	01N02E33CCB1	343851	905433	4/12/2004	177.60	174.90	173.50	172.00	-5.60	-2.90	-1.50
Lee	01N03E02BBC1	344339.29	904601.14	3/22/2004	197.70		188.93	189.39	-8.31		0.46
Lee	01N03E7BBB	344258	905044	4/15/2004				171.90			
Lee	01N03E27ADD1	343952	904605	4/7/2004	199.50	182.00	195.00	197.00	-2.50	15.00	2.00
Lee	01N03E35BBA1	343923	904549	3/22/2004	194.70			192.82	-1.88		
Lee	02N01E21BAA1	344633	910005	4/7/2004		158.40	152.70	151.70		-6.70	-1.00
Lee	02N01E23BAA2	344631.74	905820.4	3/22/2004			153.55	152.78			-0.77
Lee	02N01E29ABC1	344542	910108	4/15/2004			138.10	138.00			-0.10
Lee	02N01W12BAA1	344828.26	910329.55	3/22/2004			144.70	142.93			-1.77
Lee	02N01W34DDC1	344410	910520	4/12/2004	153.50	143.00	126.00	133.00	-20.50	-10.00	7.00
Lee	02N02E07ACA1	344752	905602	4/15/2004			154.60	154.10			-0.50
Lee	02N02E08ADC1	344807.34	905338.75	3/22/2004			160.65	157.07			-3.58
Lee	02N02E21ABC1	344621.57	905358.16	3/22/2004	172.40		161.70	161.27	-11.13		-0.43
Lee	02N02E22BBB1	344628	905327	4/12/2004	178.50	167.30	165.00	166.00	-12.50	-1.30	1.00
Lee	02N03E08AAD1	344810.69	904837.83	3/22/2004			167.25	167.57			0.32
Lee	02N03E09DDD1	344723	904707	4/15/2004	186.00	174.00	171.00	170.00	-16.00	-4.00	-1.00
Lee	02N03E29CAD1	344500	904846	4/15/2004	193.50	179.00	181.50	181.50	-12.00	2.50	0.00

Alluvial Aquifer
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County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Lee	02N04E03ABD1	344855	903954	4/15/2004	172.60	168.50	170.00	163.50	-9.10	-5.00	-6.50
Lee	02N04E15DAC1	344636.73	903950.39	3/22/2004			174.00	173.85			-0.15
Lee	03N01E03CBC1	345355	905941	4/7/2004	152.00	147.00		142.00	-10.00	-5.00	
Lee	03N01E16CBA1	345222.08	910039.89	3/22/2004				138.80			
Lee	03N01E32BCC1	344951	910150	4/13/2004		143.00	136.00	140.00		-3.00	4.00
Lee	03N01W10DCC1	345201	910455	4/15/2004			134.50	133.00			-1.50
Lee	03N02E12CDC1	345239	905053	4/12/2004		168.50	165.00	183.00		14.50	18.00
Lee	03N02E13BBA1	345237.4	905107.32	3/22/2004			163.35	163.45			0.10
Lee	03N02E29DAD1	345013.62	905429.78	3/22/2004	171.51		162.25	162.34	-9.17		0.09
Lee	03N03E05CDD1	345327	904837	4/15/2004	169.00	164.00	161.00	171.50	2.50	7.50	10.50
Lee	03N03E18DAB1	345206	904919	4/15/2004	181.50	173.00	166.00	169.00	-12.50	-4.00	3.00
Lee	03N03E32CAB1	344932.65	904926.23	3/22/2004			155.70	155.65			-0.05
Lee	03N04E07CBB1	345245	904312	4/15/2004	184.00	169.50	171.00	168.00	-16.00	-1.50	-3.00
Lee	03N05E14DDA1	345148.08	903203.25	3/22/2004			180.35	179.45			-0.90
Lee	03N05E26ADC1	345020	903215	4/15/2004	180.70	178.50	180.00	180.00	-0.70	1.50	0.00
						Declines/Wells			22/23	15/22	22/36
						Average Change			-9.96	-1.75	-0.02
Lincoln	07S06W03CCA2	340828	914114	5/11/2004	176.00	179.00	171.00	174.00	-2.00	-5.00	3.00
Lincoln	07S07W36CBD1	340411	914529	5/11/2004	157.50	151.00	146.00	145.00	-12.50	-6.00	-1.00
Lincoln	08S04W06ABD1	340341	913116	5/11/2004	164.00	161.00	157.00	154.00	-10.00	-7.00	-3.00
Lincoln	08S04W08BBB2	340253.92	913100.76	3/2/2004			151.55	149.77			-1.78
Lincoln	08S04W31CBA1	335901.09	913149.69	3/2/2004			129.60	129.10			-0.50
Lincoln	08S05W21DCD1	340027	913533	5/11/2004			135.00	134.00			-1.00
Lincoln	08S05W32DCC1	335840	913644	5/11/2004	142.00	134.00	127.00	139.00	-3.00	5.00	12.00
Lincoln	08S06W02ACB1	340338.84	913957.73	3/2/2004	151.58		139.37	138.39	-13.19		-0.98
Lincoln	09S04W06CBB1	335721	913252	5/11/2004	133.00	131.00	123.00	118.00	-15.00	-13.00	-5.00
Lincoln	09S05W14ABC1	335553.02	913439.08	3/2/2004			135.45	134.92			-0.53
Lincoln	09S05W17BCB1	335551.59	913819.95	3/3/2004				129.23			
Lincoln	09S05W34BAB1	335319	913614	3/4/2004			136.60	136.30			-0.30
Lincoln	09S06W04BCD1	335821.38	914345.83	3/2/2004			140.90	142.62			1.72
Lincoln	09S06W04BDD1	335759	914335	5/11/2004	148.00	142.00	140.00	137.00	-11.00	-5.00	-3.00

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County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Lincoln	09S06W23CDB1	335439.57	914136.37	3/2/2004			143.10	144.83			1.73
Lincoln	10S05W04BBB1	335233	913725	3/2/2004			141.00	140.95			-0.05
Lincoln	10S05W06DCC1	335155.3	913907.96	3/3/2004	153.22			144.62	-8.60		
						Declines/Wells			8/8	5/6	11/15
						Average Change			-9.41	-5.17	0.09
Lonoke	01N08W03DDA1	344411	915050	4/8/2004	112.50	104.10	98.30	88.60	-23.90	-15.50	-9.70
Lonoke	01N09W13DAB1	344235.17	915517.01	3/12/2004			138.80	138.88			0.08
Lonoke	01N10W15CDA1	344236	920414	4/8/2004	220.60	219.00	213.00	213.20	-7.40	-5.80	0.20
Lonoke	01S06W31ABB1	343459.39	914131.48	3/11/2004			122.30	121.30			-1.00
Lonoke	01S06W32BBB1	343501	914056	4/8/2004	131.80	127.90	125.00	114.10	-17.70	-13.80	-10.90
Lonoke	01S07W12ABA1	343834.31	914229.84	3/11/2004			139.98	138.23			-1.75
Lonoke	01S08W24CDD1	343605.64	914912.37	3/11/2004			130.35	126.07			-4.28
Lonoke	01S09W02DDD1	343857	915623	4/8/2004			141.60	140.40			-1.20
Lonoke	01S09W36CCC1	343435.31	915618.98	3/12/2004	167.50	162.90	159.00	157.73	-9.77	-5.17	-1.27
Lonoke	01S10W01ACB1	343926.84	920214.96	3/12/2004	197.00	193.00	189.97	188.76	-8.24	-4.24	-1.21
Lonoke	02N07W07DAA1	344845	914707	4/8/2004	113.80	104.70	105.00	100.50	-13.30	-4.20	-4.50
Lonoke	02N07W16BAB1	344815.2	914539.5	3/11/2004			104.40	103.81			-0.59
Lonoke	02N08W16ABC1	344806.48	915113.61	3/11/2004		116.80	110.55	110.11		-6.69	-0.44
Lonoke	02N08W23CAB1	344659	915118	4/8/2004	106.80	109.20	93.30	91.00	-15.80	-18.20	-2.30
Lonoke	02N09W02BDB1	344955.06	915840.93	3/11/2004	145.64	132.00		127.13	-18.51	-4.87	
Lonoke	02S07W05CDC1	343326	914715	4/8/2004			136.70	131.50			-5.20
Lonoke	02S07W10CCB1	343246.45	914524.67	3/11/2004			139.55	138.52			-1.03
Lonoke	02S07W20ACD1	343112	914655	4/8/2004			142.10	141.10			-1.00
Lonoke	02S08W13BBB1	343231.92	914935.37	3/11/2004	152.13			141.55	-10.58		
Lonoke	02S08W34DBB1	343002.96	915149.75	3/12/2004			152.50	151.32			-1.18
Lonoke	02S09W30CDD1	343014.34	920116.01	3/12/2004	189.00		189.10	188.12	-0.88		-0.98
Lonoke	02S09W35AB1	343008	915652	4/8/2004			162.40	167.60			5.20
Lonoke	03N07W08BDB1	345406.62	914638.28	1/21/2004				156.28			
Lonoke	03N07W15DBC2	345252.79	914416.62	3/11/2004	154.64		147.45	146.50	-8.14		-0.95
Lonoke	03N07W29ADA1	345128.53	914558.4	1/22/2004			137.00	144.73			7.73
Lonoke	03N07W35CDC2	344957.16	914332.11	3/11/2004			117.60	117.37			-0.23
Lonoke	03N08W03BAA1	345518.54	915053.52	1/22/2004			169.83	168.00			-1.83
Lonoke	03N08W03CCC1	345429.86	915123.2	4/15/2004				161.13			

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County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Lonoke	03N08W05CCC1	345429.38	915323.47	4/15/2004			178.98	178.04			-0.94
Lonoke	03N08W08ABA1	345426.98	915247.87	4/15/2004				166.55			
Lonoke	03N08W10ACB1	345414.65	915052.74	4/15/2004				161.57			
Lonoke	03N08W10ADD1	345401.06	915022.78	4/15/2004				161.01			
Lonoke	03N08W11ABD1	345419.05	914935.94	4/15/2004			160.15	159.46			-0.69
Lonoke	03N08W11ACA1	345412.72	914934.26	4/14/2004			158.31	157.50			-0.81
Lonoke	03N08W29BBB1	345147.1	915332.81	4/15/2004				138.74			
Lonoke	03N08W29BCC1	345125.01	915333.4	4/15/2004				128.94			
Lonoke	03N08W32ABB2	345057	915258	4/14/2004			119.05	132.76			13.71
Lonoke	03N08W32ABB3	345058.68	915255.43	3/11/2004			197.90	196.80			-1.10
Lonoke	03N08W34ADD1	345034.89	915028.32	4/15/2004				118.45			
Lonoke	04N08W05ACA1	350020.48	915246.51	4/16/2004			191.32	193.88			2.56
Lonoke	04N08W10BDD1	345917.09	915055.45	4/16/2004			193.41	190.86			-2.55
Lonoke	04N08W15BCB2	345832.92	915121.25	3/11/2004	197.98		192.20	191.46	-6.52		-0.74
Lonoke	04N08W16DCC1	345757.26	915154.02	4/16/2004				179.88			
Lonoke	04N08W20ADD1	345735.25	915229.26	4/16/2004				180.45			
Lonoke	04N08W26AAD1	345652.24	914916.76	4/15/2004				175.84			
Lonoke	04N08W28CAC1	345620.27	915215.78	4/16/2004				181.73			
Lonoke	04N08W28CAD1	345626.08	915203.96	4/16/2004				180.43			
Lonoke	04N08W28CCC1	345614.57	915225.31	4/15/2004				180.91			
Lonoke	04N08W31CBB2	345547.43	915439.07	4/16/2004				253.47			
						Declines/Wells			12/12	9/9	26/32
						Average Change			-11.73	-8.72	-0.90
Mississippi	10N08E21ABA1	352852	901415	4/15/2004	205.00	203.50	198.30	199.00	-6.00	-4.50	0.70
Mississippi	10N08E21BDC1	352830	901407	4/15/2004	204.00	203.80	198.40	199.00	-5.00	-4.80	0.60
Mississippi	10N08E22ABA2	352850.89	901312.16	3/24/2004				201.66			
Mississippi	10N09E08ACC1	352949.05	900925.66	3/24/2004		214.70	215.90	216.21		1.51	0.31
Mississippi	11N09E34BBB1	353217.73	900715.17	3/24/2004	225.99		219.00	220.22	-5.77		1.22
Mississippi	11N10E09BCB1	353530	900202	4/15/2004	226.20	223.70	224.40	219.00	-7.20	-4.70	-5.40

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County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Mississippi	12N08E08BCB1	354047.06	901559.25	3/24/2004	217.39		218.90	216.68	-0.71		-2.22
Mississippi	12N08E27ACA1	353851	901104	4/14/2004			206.90	211.90			5.00
Mississippi	12N08E28DDB1	353707	901406	4/15/2004	215.00	212.50	211.30	210.60	-4.40	-1.90	-0.70
Mississippi	12N09E12ABC1	354054	900449	4/15/2004	224.20	222.40	223.70	224.70	0.50	2.30	1.00
Mississippi	12N10E04CAA1	354124	900136	4/15/2004	229.40	229.20	224.00	227.00	-2.40	-2.20	3.00
Mississippi	12N10E07BCD1	354036	900404	4/15/2004	225.50	223.70	221.00	223.00	-2.50	-0.70	2.00
Mississippi	12N10E21DBA1	353842	900122	4/15/2004	228.00	225.80	224.30	224.30	-3.70	-1.50	0.00
Mississippi	13N08E24ABB1	354428	901112	4/14/2004	222.80	222.60	222.40	213.20	-9.60	-9.40	-9.20
Mississippi	13N09E013DDA1	354437	900425	4/14/2004			227.00	225.90			-1.10
Mississippi	13N09E30CCD1	354247.81	901028.63	3/24/2004	222.17		221.30	221.05	-1.12		-0.25
Mississippi	13N10E34DBB1	354218	900024	3/24/2004			229.50	228.16			-1.34
Mississippi	14N08E12DAB1	355104.17	901051.94	3/24/2004	226.52		231.80	229.67	3.15		-2.13
Mississippi	14N08E20DAA1	354921	901458	4/14/2004	222.30	221.10	220.40	215.00	-7.30	-6.10	-5.40
Mississippi	14N08E26DCC1	354803	901235	4/14/2004	228.00		224.00	226.00	-2.00		2.00
Mississippi	14N10E18ABC1	355022.36	900345.36	3/24/2004	226.02		226.90	225.10	-0.92		-1.80
Mississippi	14N11E03BCB1	355158.11	895432.97	3/25/2004	242.30		245.40	243.64	1.34		-1.76
Mississippi	14N11E17CCB1	354955	895639	4/14/2004			231.00	230.00			-1.00
Mississippi	14N11E33CAA1	354727	895508	4/14/2004	232.70	231.30	230.00	228.00	-4.70	-3.30	-2.00
Mississippi	14N12E05DCB1	355134.03	894935.44	3/25/2004			243.00	240.40			-2.60
Mississippi	15N08E08DBC2	355604.96	901526.26	3/24/2004	227.80		228.10	225.50	-2.30		-2.60
Mississippi	15N10E21ABC1	355447	900135	4/14/2004	231.00	227.90	229.40	228.00	-3.00	0.10	-1.40
Mississippi	15N10E34AAC1	355259	900018	4/14/2004			233.10	230.80			-2.30
Mississippi	15N12E01BCD1	355704	894601	4/14/2004	252.90	250.40	241.50	251.00	-1.90	0.60	9.50
Mississippi	16N08E31BDD1	355831	901628	4/14/2004			236.20	233.80			-2.40
Mississippi	16N10E28BBD1	355906.13	900156.03	3/25/2004	232.70	230.30	227.20	230.44	-2.26	0.14	3.24
Mississippi	16N11E23ADA1	355947.24	895231.23	3/25/2004				242.69			
						Declines/Wells			19/22	10/15	18/30
						Average Change			-3.08	-2.30	-0.57
Monroe	01N01W21CDC2	344037.18	910706.66	3/15/2004	152.83			146.53	-6.30		
Monroe	01N02W12CBC1	344242.3	911031.9	3/15/2004			144.92	144.61			-0.31
Monroe	01N03W23BAC1	344124	911743	4/14/2004		157.50	158.00	156.00		-1.50	-2.00
Monroe	01N03W24BBB1	344135.21	911650.59	3/15/2004		160.40	155.40	157.66		-2.74	2.26

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94-99-03-04 WL Change

County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Monroe	01N04W33BBB2	343959.52	912648.52	3/15/2004	127.96	126.60	115.60	123.72	-4.24	-2.88	8.12
Monroe	01S01W13CDD1	343610.94	910340.54	3/17/2004	169.96		156.75	157.56	-12.40		0.81
Monroe	01S01W16DB	343615	910632	4/15/2004		159.00	158.00	158.00		-1.00	0.00
Monroe	01S01W18DCD1	343617.76	910849.2	3/17/2004			155.05	155.36			0.31
Monroe	01S02W20BBB1	343612.7	911456.1	3/17/2004		158.00	160.10	158.26		0.26	-1.84
Monroe	01S03W20BBA1	343538.29	912117.73	3/15/2004		134.00	130.00	137.54		3.54	7.54
Monroe	01S04W01BAB1	343905.86	912316.73	3/15/2004	134.84		133.95	133.66	-1.18		-0.29
Monroe	02N01W19ADD1	344624	910814	4/15/2004			138.00	137.00			-1.00
Monroe	02N01W19BBA1	344645.21	910912.46	3/15/2004				138.44			
Monroe	02N03W35BCA1	344455	911745	4/15/2004		160.00	160.00	157.00		-3.00	-3.00
Monroe	02S01W01BCD1	343305	910408	4/14/2004		154.00	156.00	156.00		2.00	0.00
Monroe	02S02W11DAC1	343208.97	911100.58	3/17/2004			155.10	154.07			-1.03
Monroe	03N01W20ABA1	345201.18	910722.83	3/15/2004	152.19	147.30	142.20	141.65	-10.54	-5.65	-0.55
Monroe	03N02W31ADC1	344958.28	911447.2	3/15/2004	156.42	155.80	152.10	150.47	-5.95	-5.33	-1.63
Monroe	03N03W36AAA1	345026.65	911547.12	3/15/2004	159.99		156.85	155.70	-4.29		-1.15
Monroe	04N02W01BCC1	345929	911004	4/15/2004		140.00	138.00	137.00		-3.00	-1.00
Monroe	04N02W05BBB1	345957	911311	4/15/2004		174.00	174.00	173.00		-1.00	-1.00
Monroe	04N02W27CDD3	345540.22	911149.73	3/15/2004	159.51		154.40	154.57	-4.94		0.17
Monroe	04N02W28DDD3	345535.05	911220.68	3/15/2004	162.99	161.40	159.25	158.96	-4.03	-2.44	-0.29
Monroe	04N02W30BBB1	345627.88	911524.71	3/15/2004			170.96	171.75			0.79
						Declines/Wells			9/9	10/13	13/22
						Average Change			-5.99	-1.75	0.22
Phillips	01S01E20DDB1	343529	910058	4/12/2004	169.00	168.30	160.00	160.00	-9.00	-8.30	0.00
Phillips	01S02E09CBB1	343718.73	905434.06	3/17/2004	176.00	173.90	174.10	173.54	-2.46	-0.36	-0.56
Phillips	01S02E32BCC1	343350	905526	4/12/2004	171.00	166.60	169.00	168.40	-2.60	1.80	-0.60
Phillips	01S03E02ADD1	343814	904511	4/12/2004	187.50	185.00	186.40	187.00	-0.50	2.00	0.60
Phillips	01S03E02CBB1	343809	904604	4/14/2004			188.60	187.70			-0.90
Phillips	01S03E10ABB1	343741	904634	4/12/2004		190.20	191.20	191.00		0.80	-0.20
Phillips	01S03E20BDD1	343533	904846	4/12/2004	183.50	177.80	180.00	180.00	-3.50	2.20	0.00
Phillips	01S03E23CDA1	343516	904511	4/14/2004			186.00	185.00			-1.00
Phillips	01S04E05DCD1	343802	904151	4/12/2004	187.50	187.00	175.33	185.00	-2.50	-2.00	9.67
Phillips	02S01E23CAC1	343004	905842	4/14/2004			157.85	157.10			-0.75

Alluvial Aquifer
94-99-03-04 WL Change

County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Phillips	02S01E28CCB1	342916.37	910058.18	3/17/2004	159.51		157.10	156.44	-3.07		-0.66
Phillips	02S02E29DDD1	342901	905444	4/12/2004	160.00	157.20	156.40	154.40	-5.60	-2.80	-2.00
Phillips	02S02E33ACC1	342824	905412	4/12/2004	153.00	155.00	154.00	152.00	-1.00	-3.00	-2.00
Phillips	02S02E33DCA1	342812	905347	4/14/2004			167.45	166.10			-1.35
Phillips	02S03E15ACD1	343109.96	904621.48	1/6/2004				158.54			
Phillips	02S03E34BCD1	342828	904653	4/13/2004	153.50	149.00	147.00	147.20	-6.30	-1.80	0.20
Phillips	02S04E27AAC1	342931.57	904001.09	3/17/2004	172.00	169.90	172.50	175.07	3.07	5.17	2.57
Phillips	03S02E35DDA1	342256.24	905129.93	3/17/2004			142.30	143.10			0.80
Phillips	03S03E02DDD1	342706	904504	4/14/2004			154.20	153.60			-0.60
Phillips	03S03E04DAA1	342735	904710	3/17/2004			152.20	152.73			0.53
Phillips	03S04E02CAA1	342732	903918	3/17/2004	166.50	161.20	165.55	167.77	1.27	6.57	2.22
Phillips	04S01E01AAD1	342238	905700	4/13/2004	150.00	144.00	137.20	141.60	-8.40	-2.40	4.40
Phillips	04S01E12CAB1	342128	905748	4/14/2004			139.90	139.50			-0.40
Phillips	04S01E14CDD1	342014	905837	4/13/2004	145.50	143.00	144.10	143.00	-2.50	0.00	-1.10
Phillips	04S01E23CCA1	341931.3	905852.62	3/17/2004			145.60	144.04			-1.56
Phillips	04S01E29CDC1	341844	910148	4/13/2004	143.00	140.90	141.50	142.10	-0.90	1.20	0.60
Phillips	04S02E01DBB1	342220	905053	4/13/2004	156.00	154.20	153.20	153.40	-2.60	-0.80	0.20
Phillips	05S02E18BDA1	341534.75	905627.82	3/17/2004	141.02		140.10	139.86	-1.16		-0.24
						Declines/Wells			15/17	8/16	15/27
						Average Change			-2.81	-0.11	0.29
Poinsett	10N01E02AAA	353205	905654	3/19/2004	152.50	147.00	138.00	138.00	-14.50	-9.00	0.00
Poinsett	10N01E14CC1	352909.77	905813.38	3/29/2004		144.70	140.80	141.28		-3.42	0.48
Poinsett	10N01E16CCB1	352921.87	910005.35	3/29/2004			153.05	152.61			-0.44
Poinsett	10N01E32CBB1	352657	910053	3/19/2004	182.00	175.00	151.00	152.00	-30.00	-23.00	1.00
Poinsett	10N01E33ACB1	352746	905931	3/19/2004	157.00	151.00	146.00	144.00	-13.00	-7.00	-2.00
Poinsett	10N02E13BCC1	352948.52	905026.29	3/29/2004	146.00		136.70	137.10	-8.90		0.40
Poinsett	10N02E20BAB1	352906	905418	3/19/2004	151.00	143.00	139.00	133.00	-18.00	-10.00	-6.00
Poinsett	10N03E14DAB1	352947.21	904404.93	3/29/2004	146.36		146.30	146.05	-0.31		-0.25
Poinsett	10N03E35CDD1	352656.17	904435.97	3/29/2004		157.10		151.14		-5.96	
Poinsett	10N05E15BDD1	352937.32	903252.64	3/29/2004			196.50	194.83			-1.67
Poinsett	10N07E22AAC1	352847	901935	3/29/2004			186.00	187.44			1.44
Poinsett	11N01E17DDD1	353436.83	910013.21	3/26/2004			155.30	153.88			-1.42
Poinsett	11N01E26AA1	353340.33	905653.32	3/26/2004		150.80		144.05		-6.75	

Alluvial Aquifer
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County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Poinsett	11N01E34AAA	353256	905759	3/19/2004	155.00	150.00	142.00	144.00	-11.00	-6.00	2.00
Poinsett	11N02E05BDA1	353703.82	905408.41	3/26/2004				151.72			
Poinsett	11N02E26AAB1	353350.31	905034.19	3/29/2004			136.10	135.58			-0.52
Poinsett	11N02E30BBB1	353352	905540	3/19/2004	146.00	144.00	137.00	139.00	-7.00	-5.00	2.00
Poinsett	11N02E34CBA1	353238	905222	3/19/2004	143.00	149.00	147.00	135.00	-8.00	-14.00	-12.00
Poinsett	11N03E10DDA1	353545.69	904456.54	3/29/2004			140.25	140.01			-0.24
Poinsett	11N03E18BAB1	353537.76	904852.42	3/29/2004				139.77			
Poinsett	11N04E36ABA1	353251	903654	3/17/2004	196.00	195.00	194.00	195.00	-1.00	0.00	1.00
Poinsett	11N07E18CAB1	353435	902320	3/29/2004			204.40	203.11			-1.29
Poinsett	12N01E07CDA1	354053.69	910141.25	3/26/2004	190.13	188.10	185.10	184.11	-6.02	-3.99	-0.99
Poinsett	12N01E22DAB1	353922	905809	3/19/2004	173.00	168.00	163.00	162.00	-11.00	-6.00	-1.00
Poinsett	12N02E25DCC1	353820	904944	3/19/2004	143.00	145.00	137.00	133.00	-10.00	-12.00	-4.00
Poinsett	12N02E34CCC1	353724	905230	3/19/2004	147.00	141.00	136.00	135.00	-12.00	-6.00	-1.00
Poinsett	12N03E01CBD1	354154	904329	3/19/2004	166.00	164.00	150.00	158.00	-8.00	-6.00	8.00
Poinsett	12N03E04DAD1	354158.01	904600.16	3/26/2004	156.00	151.00	146.00	144.39	-11.61	-6.61	-1.61
Poinsett	12N04E08CDA	354053	904112	3/17/2004	172.00	168.00	164.00	163.00	-9.00	-5.00	-1.00
Poinsett	12N05E16ABA1	354039	903333	3/17/2004	213.50	212.00	211.00	212.00	-1.50	0.00	1.00
Poinsett	12N05E34ABA1	353805.38	903230.45	3/29/2004	209.38	208.00	209.90	207.53	-1.85	-0.47	-2.37
Poinsett	12N07E04BAA1	354201.95	902059.69	3/29/2004	216.25	217.40	218.80	214.85	-1.40	-2.55	-3.95
						Declines/Wells			20/20	19/21	18/28
						Average Change			-9.20	-6.61	-0.87
Prairie	01N06W05CCB1	344352.97	914049.08	3/10/2004			102.90	102.90			0.00
Prairie	01N06W26CDD1	344014.88	913707.61	3/10/2004			150.40	159.63			9.23
Prairie	01N06W29DDD1	344017.54	913951.46	3/10/2004				-115.91			
Prairie	01S04W28BBC1	343529	912650	4/19/2004	110.80	109.90	105.40	84.40	-26.40	-25.50	-21.00
Prairie	01S04W28BDB1	343522.68	912629.73	3/9/2004			107.20	107.75			0.55
Prairie	01S05W14BBC1	343721.96	913108.76	3/9/2004	103.72			103.26	-0.46		
Prairie	01S05W31DDA1	343416.82	913431.69	3/9/2004			110.66	95.30			-15.36
Prairie	01S06W12BAB1	343826	913613	3/10/2004				108.99			
Prairie	02N04W02BCB1	344916.31	912418.61	3/10/2004	167.28		170.30	168.87	1.59		-1.43
Prairie	02N04W32CCB1	344436.43	912737.79	3/10/2004	142.03		135.90	137.27	-4.76		1.37
Prairie	02N05W06BAB1	344957.63	913420.77	3/10/2004			132.93	132.21			-0.72
Prairie	02N05W13AAB1	344805.45	912854.34	3/10/2004			144.50	145.23			0.73
Prairie	02N05W21CB1	344649	913300	2/26/2004			116.80	117.25			0.45

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County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Prairie	02N05W24ACB	344659	912937	2/26/2004			133.90	136.65			2.75
Prairie	02N05W29DDB2	344544	913308	3/10/2004			109.90	109.76			-0.14
Prairie	02N05W32AAA1	344534	913305	3/4/2004			107.00	108.10			1.10
Prairie	02N06W17ABB1	344809.48	913959.44	3/10/2004			111.40	111.84			0.44
Prairie	02S06W14BBB1	343213.38	913728.62	3/9/2004			142.75	138.75			-4.00
Prairie	02N06W21DAA1	344653	913827	2/26/2004				117.73			
Prairie	02N06W24CAA1	344651	913551	2/26/2004				114.88			
Prairie	03N04W03AAC1	345439.23	912424.37	3/10/2004	165.90			160.17	-5.73		
Prairie	03N05W03BDD2	345444.06	913115.35	3/10/2004			143.00	140.73			-2.27
Prairie	03N06W01BCB1	345454.54	913601.39	3/10/2004	133.10	133.20	135.40	135.36	2.26	2.16	-0.04
Prairie	03N06W19BDD1	345207.24	914110.17	3/10/2004			138.90	135.76			-3.14
Prairie	04N04W07ADC1	345850.31	912733.07	3/10/2004	176.42		171.50	169.47	-6.95		-2.03
Prairie	04N05W07CDC1	345042.62	913440.92	3/10/2004	136.56		136.90	137.58	1.02		0.68
Prairie	04N05W31DDC1	345513.66	913405.83	3/10/2004			130.50	129.77			-0.73
Prairie	04N06W05CCC1	345933.76	914017.96	3/10/2004			146.20	146.04			-0.16
Prairie	04N07W03DCB1	345942.1	914412.48	3/10/2004			167.20	168.39			1.19
Prairie	04N07W20DDB1	345709.23	914607.27	4/15/2004				145.48			
Prairie	04N07W28BBA1	345700.53	914544.88	3/10/2004			163.80	163.25			-0.55
Prairie	05N05W14DCD1	350252.43	913034.06	3/10/2004	173.50	170.00	166.00	167.04	-6.46	-2.96	1.04
Prairie	05N05W25BAA1	350153	912949	4/19/2004	174.80	176.00	168.50	169.50	-5.30	-6.50	1.00
Prairie	05N05W28DDA1	350119	913228	4/19/2004	163.40	161.40	159.20	157.90	-5.50	-3.50	-1.30
						Declines/Wells			8/11	4/5	14/27
						Average Change			-5.15	-7.26	-1.20
Pulaski	01S10W29CC1	343537.78	920707.66	3/19/2004			223.15	222.35			-0.80
Pulaski	02S10W14DC1	343204.71	920333.75	3/19/2004		202.30	202.80	199.43		-2.87	-3.37
Pulaski	02S10W16CCA1	343216.99	920549.36	3/19/2004			207.76	205.84			-1.92
						Declines/Wells					3/3
						Average Change					-2.03
Randolph	18N01E13BAB1	361230	905551	4/23/2004		255.30	251.70	250.30		-5.00	-1.40
Randolph	18N01E28AAD1	361040	905820	4/22/2004		254.00	246.50	249.70		-4.30	3.20
Randolph	18N01E34AAC1	360942.69	905729.13	3/30/2004	254.07		249.90	250.07	-4.00		0.17

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County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Randolph	18N02E03DAD1	361336	905043	4/23/2004		258.20	248.00	245.10		-13.10	-2.90
Randolph	18N02E17CBB1	361204	905356	4/22/2004	255.10	253.90	249.40	249.00	-6.10	-4.90	-0.40
Randolph	18N02E20BDA1	361125	905332	4/23/2004		254.30	234.90	238.80		-15.50	3.90
Randolph	18N02E22DCD1	361045.76	905104.7	3/30/2004			237.00	247.73			10.73
Randolph	19N02E09DCA1	361759	905158	3/30/2004	267.00		256.60	256.88	-10.12		0.28
Randolph	19N02E22DAB1	361622	905049	4/23/2004		252.00	259.60	259.00		7.00	-0.60
Randolph	20N02E01ADD1	362424.21	904811.39	3/30/2004			268.65	268.78			0.13
Randolph	20N02E12BAA1	362352	904848	4/23/2004		269.90	274.50	274.00		4.10	-0.50
Randolph	20N02E14DAB1	362232	904930	4/23/2004		267.90	265.80	265.40		-2.50	-0.40
Randolph	20N03E28BA1	362113.53	904537.97	3/30/2004			264.30	265.07			0.77
						Declines/Wells			3/3	6/8	6/13
						Average Change			-6.74	-4.28	1.00
St. Francis	04N01E13ADA1	345754.94	905638.2	3/23/2004				148.13			
St. Francis	04N01W20BBB1	345716	910759	4/16/2004	149.20	146.00	142.50	142.50	-6.70	-3.50	0.00
St. Francis	04N01W25DBD1	345549	910303	4/16/2004	136.20	124.00	125.00	125.00	-11.20	1.00	0.00
St. Francis	04N01W28CDD1	345535.26	910633.55	3/23/2004		143.30	138.25	139.72		-3.58	1.47
St. Francis	04N02E03DDD3	345848	905219	3/23/2004	173.86		167.80	168.22	-5.64		0.42
St. Francis	04N02E16ACD1	345733	905341	4/16/2004			158.00	158.00			0.00
St. Francis	04N02E19BBB1	345701	905633	3/23/2004			151.25	150.64			-0.61
St. Francis	04N02E27AAA1	345604	905220	4/16/2004			165.00	164.00			-1.00
St. Francis	04N04E15ABA1	345752	903948	4/16/2004	176.50	170.50	168.00	168.00	-8.50	-2.50	0.00
St. Francis	04N05E22BBB1	345650.62	903356.75	3/22/2004		173.00		173.41		0.41	
St. Francis	05N01E15BCB1	350302.57	905942.41	3/23/2004			145.50	145.52			0.02
St. Francis	05N01E27BBA1	350135.73	905928.78	3/23/2004		150.01	143.20	143.57		-6.44	0.37
St. Francis	05N02E20ADC1	350156.9	905437.16	3/23/2004			154.05	157.92			3.87
St. Francis	05N03E20AAA2	350214.31	904800.83	3/23/2004			157.85	147.27			-10.58
St. Francis	05N05E1CBB1	350928	903131	4/16/2004				163.70			
St. Francis	05N05E33BCC1	350004	903506	4/16/2004			167.00	167.00			0.00
St. Francis	05N06E34CAB1	350025.57	902656.87	3/22/2004		175.00	173.10	173.54		-1.46	0.44
St. Francis	06N01E33ACA2	350552.33	905941.6	3/23/2004	155.32	151.50		145.66	-9.66	-5.84	
St. Francis	06N02E13DCA1	350812.64	905002.71	3/23/2004				157.39			
St. Francis	06N02E15BDD1	350841.91	905247.31	3/23/2004	165.26	158.95	156.94	156.07	-9.19	-2.88	-0.87

Alluvial Aquifer
94-99-03-04 WL Change

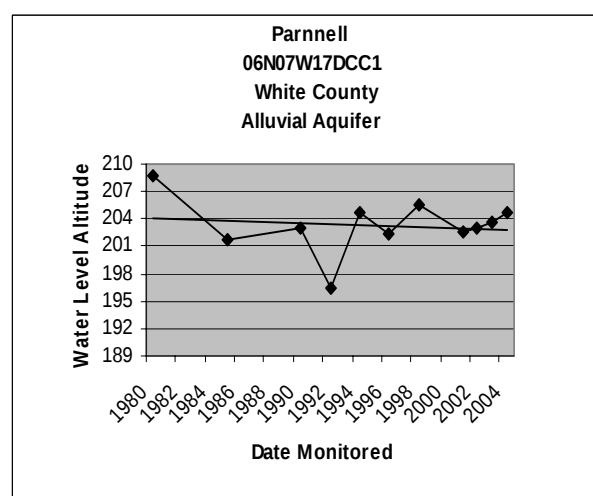
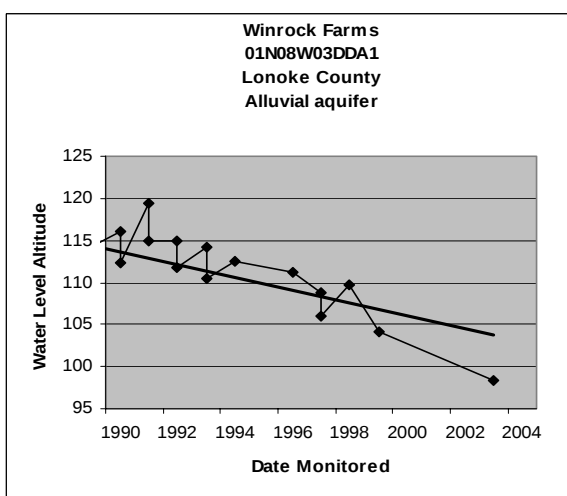
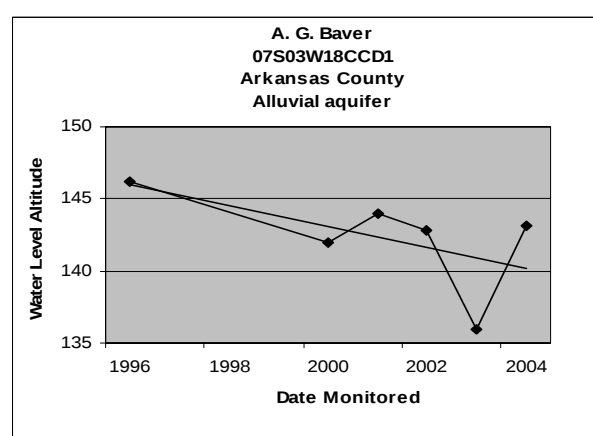
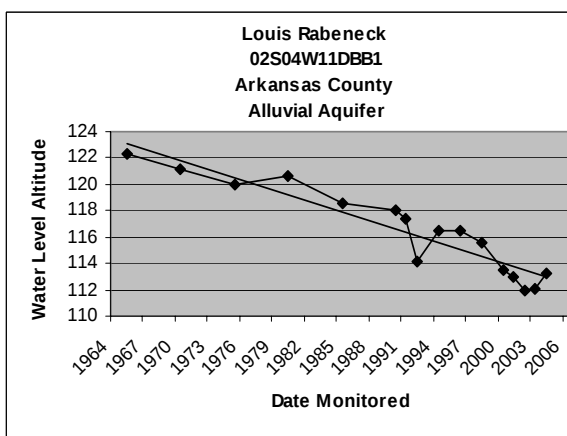
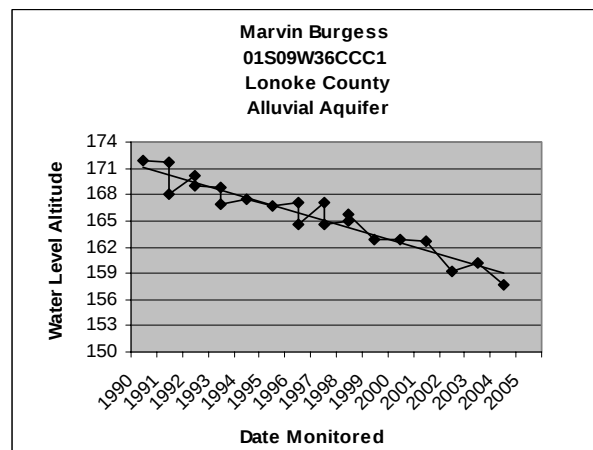
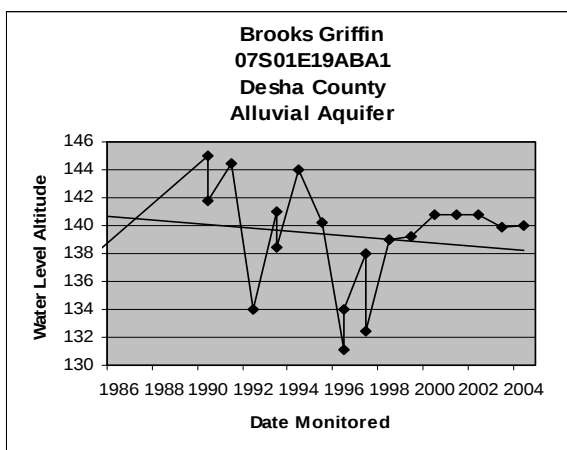
County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
St. Francis	06N02E24AAA1	350755.19	905002.42	3/23/2004	172.92	166.00	158.40	160.51	-12.41	-5.49	2.11
St. Francis	06N03E17CAA1	350822	904810	4/16/2004		162.50	156.00	158.00		-4.50	2.00
St. Francis	06N05E22ACC1	350723.36	903252.21	3/22/2004		165.40		160.56		-4.84	
St. Francis	06N06E20ABB2	350747.06	902841.2	3/22/2004			164.80	164.75			-0.05
						Declines/Wells			7/7	10/12	5/18
						Average Change			-9.04	-3.30	-0.13
White	05N07W09AAA1	350446.87	914441.48	3/18/2004	189.02	189.70	191.90	190.18	1.16	0.48	-1.72
White	05N07W10CCC1	350400.22	914436	3/18/2004			194.80	194.22			-0.58
White	06N06W04AAD1	351037	913839	3/18/2004			176.00	177.40			1.40
White	06N06W04BAA1	351047.21	913909.91	3/18/2004			193.15	183.55			-9.60
White	06N06W04BAD1	351037	913903	4/16/2004	170.70	172.50	174.00	173.50	2.80	1.00	-0.50
White	06N06W13DBB1	350918	913552	4/16/2004	170.30	167.50	169.00	166.10	-4.20	-1.40	-2.90
White	06N06W18BBC1	350851.33	914151.92	3/18/2004			191.30	195.33			4.03
White	06N06W18BCA1	350835	914150	4/16/2004	186.00	185.50	192.00	185.80	-0.20	0.30	-6.20
White	06N06W34AAB1	350623.57	913753.55	3/18/2004			152.20	153.30			1.10
White	06N07W17DCC1	350822.47	914634.73	3/18/2004	204.72	203.00	203.60	204.79	0.07	1.79	1.19
White	06N08W13ABA1	350907.73	914824.37	3/18/2004	221.30	218.50	219.90	220.60	-0.70	2.10	0.70
White	06N08W26DDB1	350639.72	914931.17	3/18/2004			213.10	217.75			4.65
White	07N05W01AAA1	351552.59	912858.14	3/18/2004			182.45	189.65			7.20
White	07N05W26AAA1	351224	913003	3/18/2004			178.90	174.00			-4.90
White	07N05W32BAB1	351136.63	913406.19	3/18/2004	191.28		185.10	184.70	-6.58		-0.40
White	07N06W19CAB1	351258.95	914142.28	3/18/2004	213.65			219.30	5.65		
White	08N04W06CCB1	352028.21	912846.51	3/18/2004			195.30	197.84			2.54
White	08N05W32CBC1	351615.66	913416.96	3/18/2004			197.15	197.50			0.35
						Declines/Wells			4/8	1/6	8/17
						Average Change			-0.25	0.71	-0.21
Woodruff	04N03W03AB1	350020.93	911819.87	4/1/2004			169.80	171.52			1.72
Woodruff	05N01W13CDC1	350244	910331	4/13/2004	149.30	144.10	136.40	135.90	-13.40	-8.20	-0.50
Woodruff	05N01W31CCC1	350106	910900	4/13/2004	156.80	156.80	152.00	150.90	-5.90	-5.90	-1.10
Woodruff	05N02W20DCB1	350207.8	911356.19	4/1/2004			169.60	178.06			8.46
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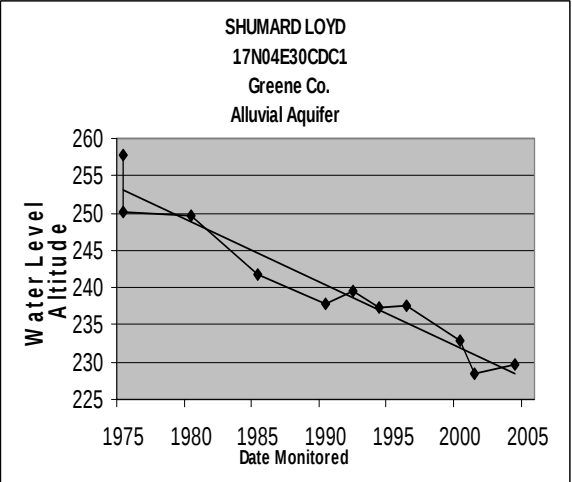
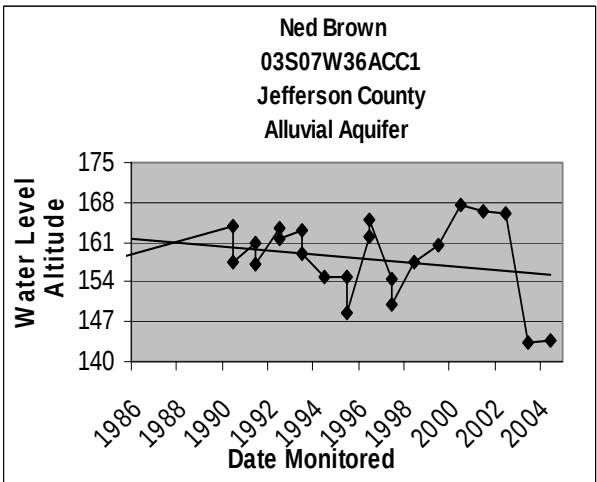
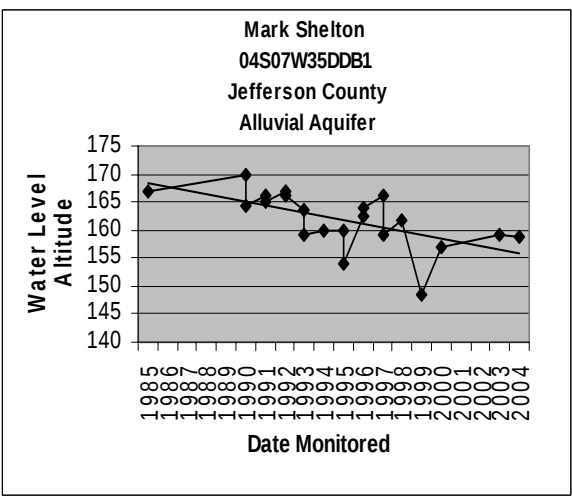
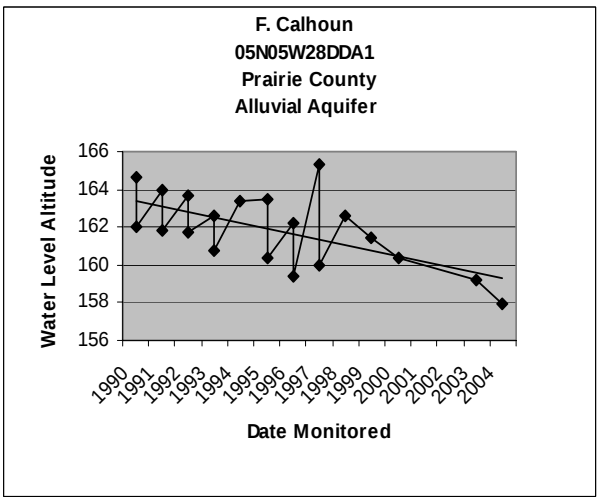
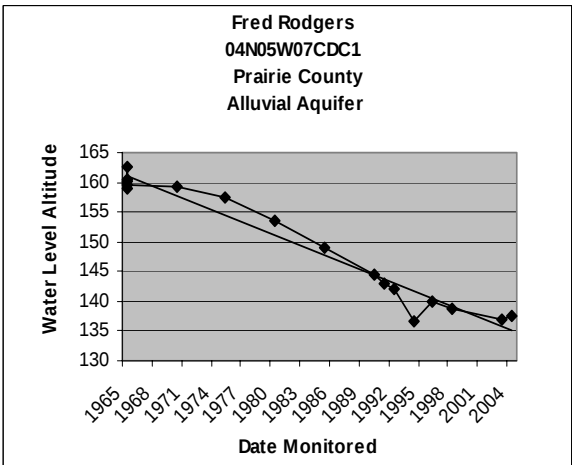
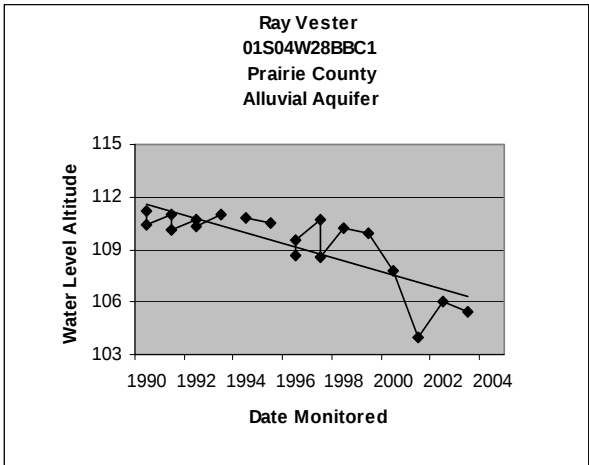
Alluvial Aquifer
94-99-03-04 WL Change

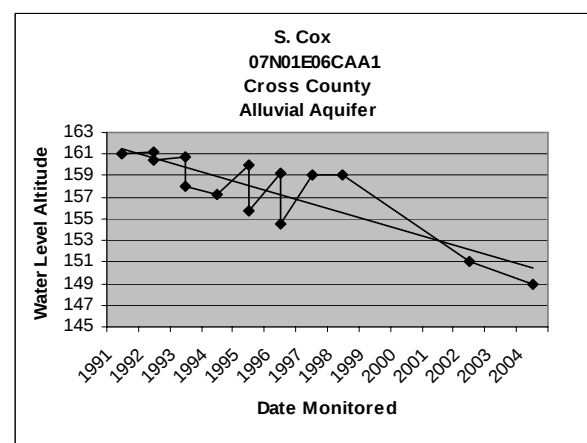
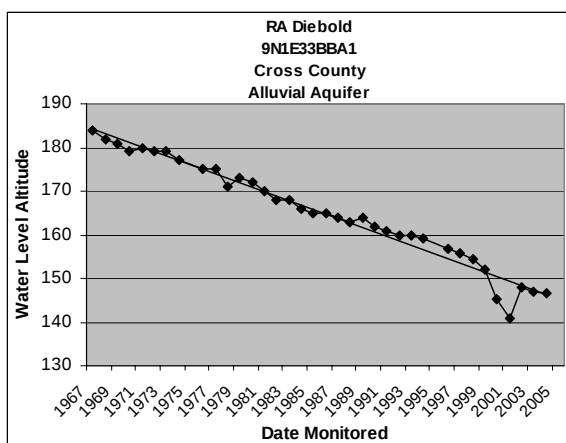
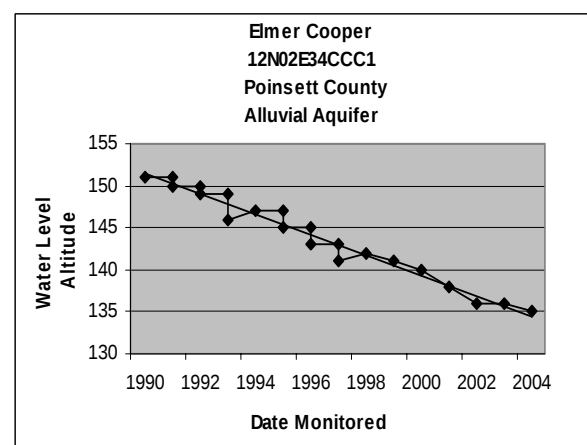
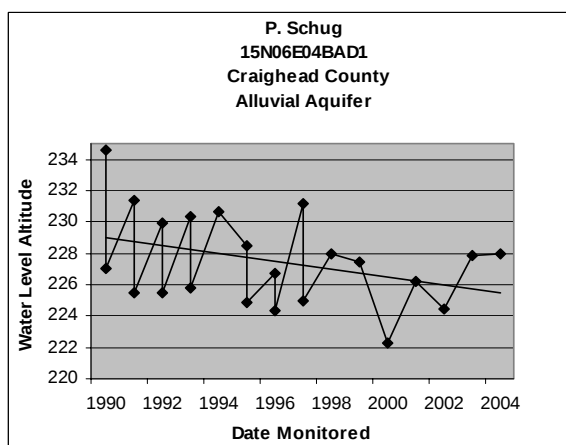
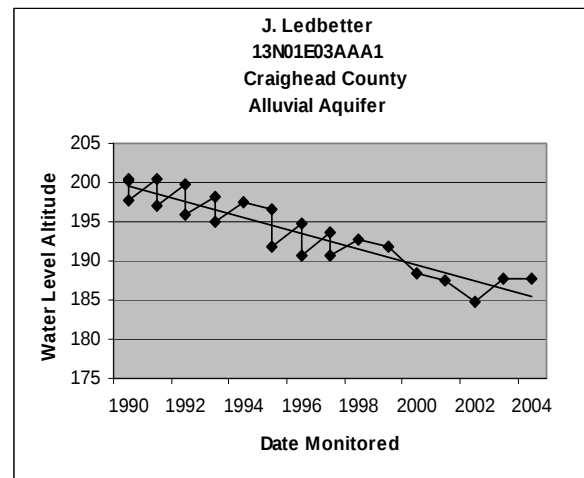
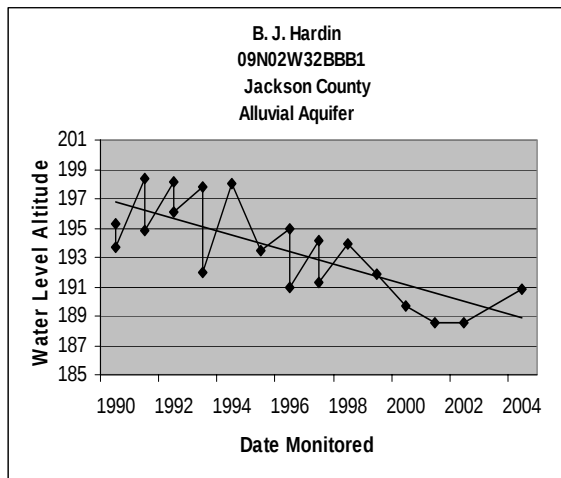
County	Station ID	Latitude	Longitude	Date	WL	WL	WL	WL	WL Change	WL Change	WL Change
				Measured	WL Alt.94	WL Alt.99	Alt.03	Alt.04	94-04	99-04	03-04
Woodruff	05N03W31BAC1	350110	912127	4/14/2004	173.20	176.20		172.20	-1.00	-4.00	
Woodruff	05N04W12DBA1	350426.78	912210.78	4/1/2004	181.16	182.00		181.33	0.17	-0.67	
Woodruff	06N01W06BAB1	351048.27	910834.63	4/1/2004				169.53			
Woodruff	06N02W19AAA1	350802	911419	4/14/2004	166.30	181.30	177.00	180.30	14.00	-1.00	3.30
Woodruff	06N03W15BAB1	350903.06	911807.41	4/1/2004			183.69	183.07			-0.62
Woodruff	06N03W31BCB1	350623	912144	4/1/2004		182.00		182.74		0.74	
Woodruff	06N04W22BDA1	350807	912428	4/13/2004	182.60	184.10	180.30	181.10	-1.50	-3.00	0.80
Woodruff	07N01W04ACB1	351541	910626	4/13/2004	169.80	169.90	163.80	164.70	-5.10	-5.20	0.90
Woodruff	07N02W16DBB1	351353	911225	4/13/2004		183.50	182.50	181.90		-1.60	-0.60
Woodruff	07N03W06BAC1	351607	912109	3/24/2004				190.00			
Woodruff	07N03W19AAA1	351335	912025.42	4/1/2004			191.49	190.89			-0.60
Woodruff	07N03W31BBA1	351152	912103	4/13/2004			181.60	175.30			-6.30
Woodruff	08N01W06DDD1	352028	910747	4/1/2004			174.30	175.77			1.47
Woodruff	08N01W10AAA1	352018	910431	4/13/2004	169.90	165.80	161.00	159.20	-10.70	-6.60	-1.80
Woodruff	08N02W27ddb1	351711	911107	4/13/2004	192.80	188.60	186.50	187.50	-5.30	-1.10	1.00
Woodruff	08N02W31DDD1	351611	911411	4/1/2004		190.80	190.30	189.19		-1.61	-1.11
Woodruff	08N03W31AAD1	351655	912028	4/1/2004	195.80	191.50	189.10	190.23	-5.57	-1.27	1.13
Woodruff	08N04W27AAA1	351757	912341	4/1/2004			185.40	189.67			4.27
Woodruff	09N03W29AAD1	352258	911921	4/1/2004			199.50	199.40			-0.10
Woodruff	09N03W32ACA1	352205	911936	4/14/2004	205.90	200.70	201.00	197.70	-8.20	-3.00	-3.30
						Declines/Wells			10/12	14/15	10/20
						Average Change			-3.60	-2.91	0.37
						Total Average Change:			-6.26	-3.31	-0.20
						Total Declines/Wells			328/355	231/291	318/608
									92.4%	79.4%	52.3%

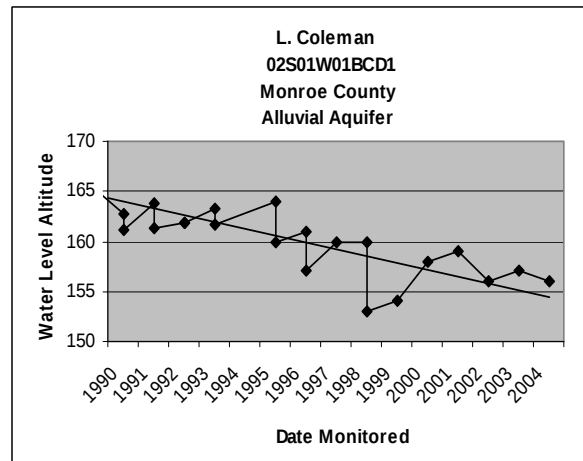
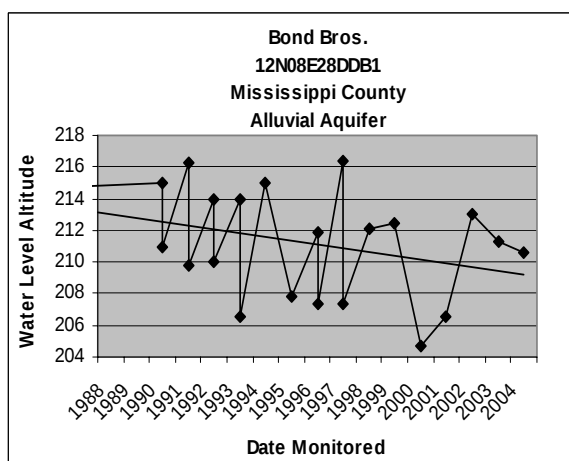
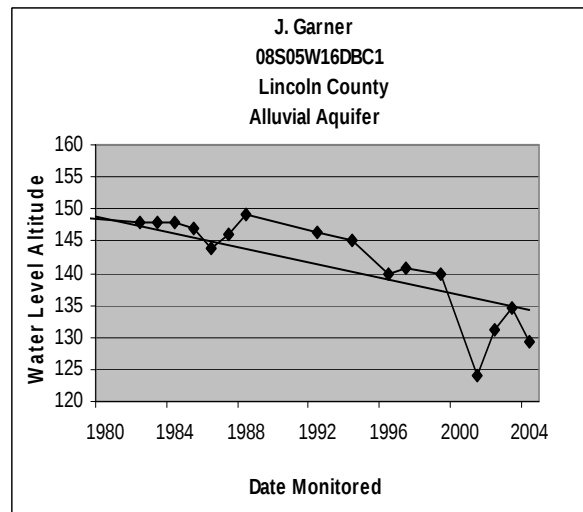
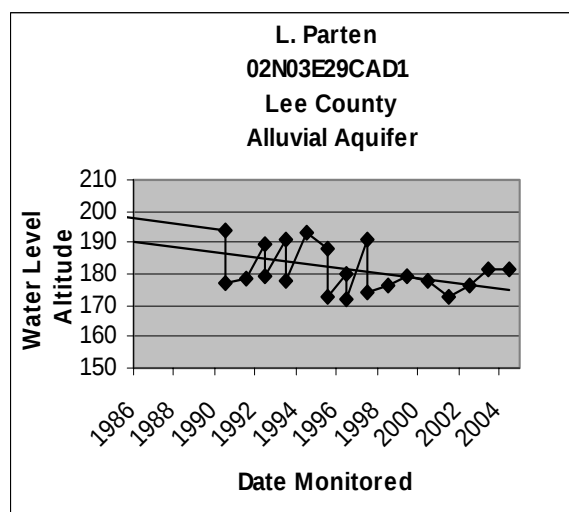
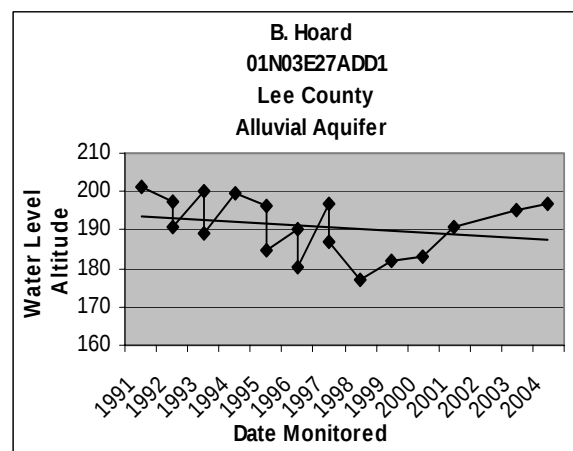
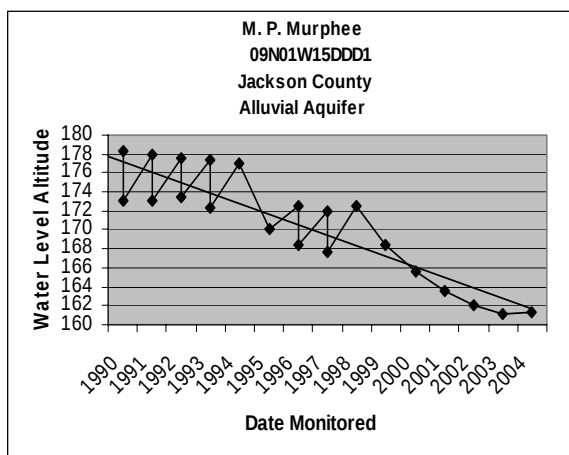
Appendix B

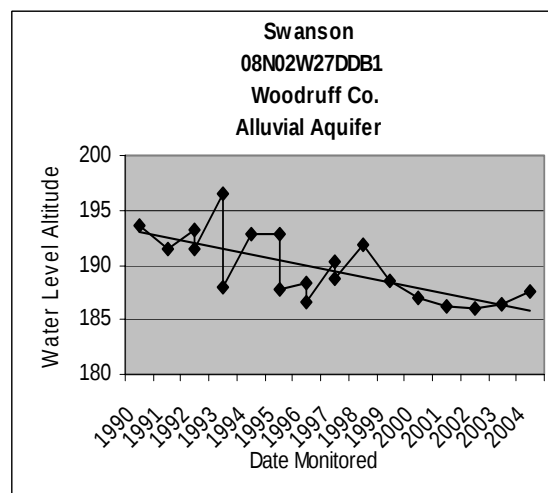
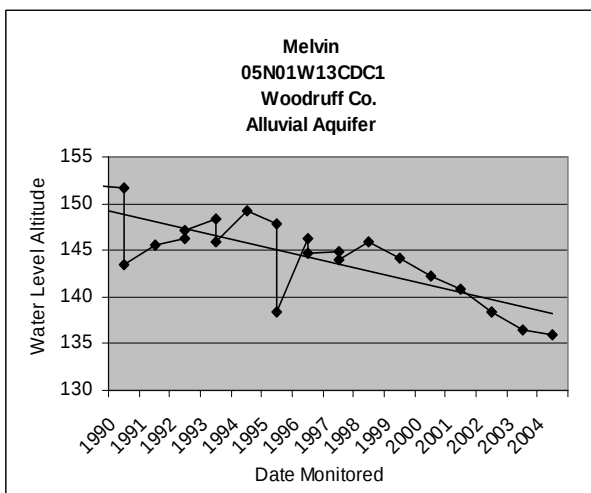
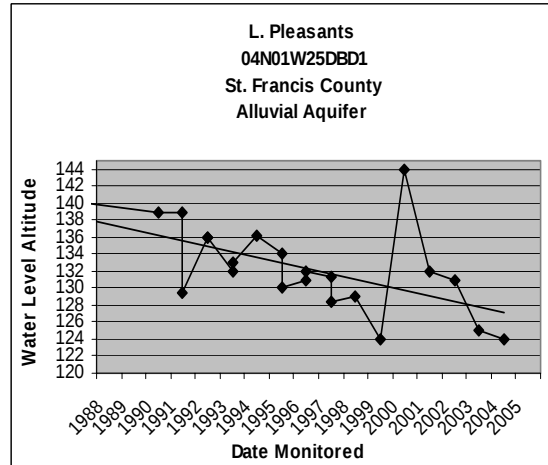
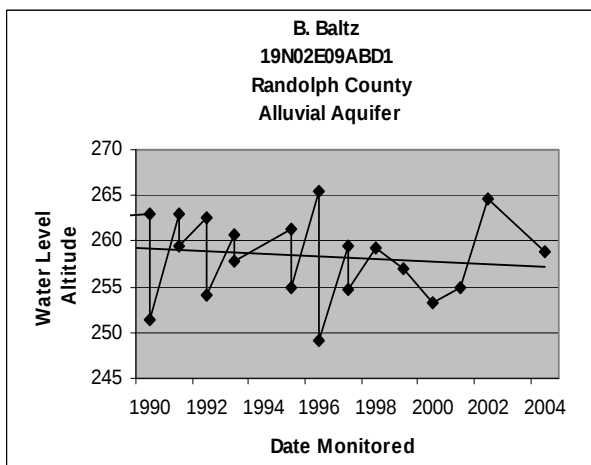
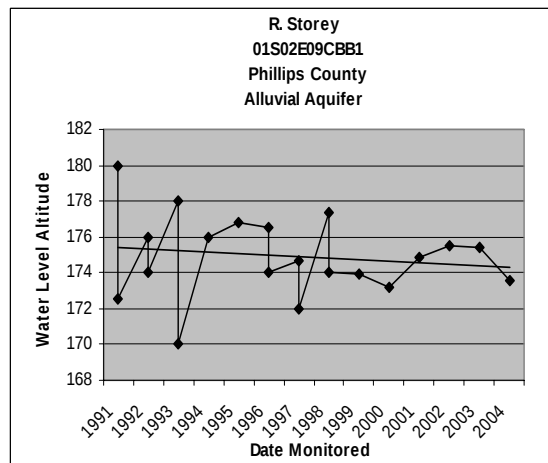
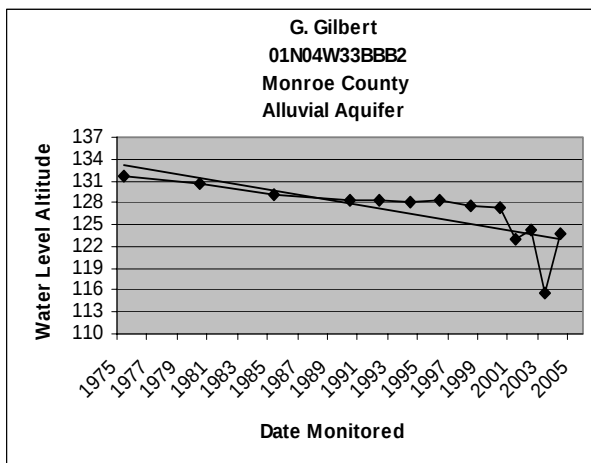
Selected Alluvial Aquifer Well Hydrographs











Appendix C

Sparta/Memphis Aquifer Water Level Monitoring Data

Sparta/Memphis Aquifer
Water Level Data
'99-'03-'04

County	Station	Latitude	Longitude	LSD Alt	Aquifer Code	WL Date	WL Measure	WL ALT 1999	WL ALT 2003	WL ALT 2004	Change 99-04	Change 2003-2004
Arkansas	02S04W06CDB1	343311.54	912849.29	212.00	124SPRT	3/15/2004	165.40	42.53	51.13	46.60	4.07	-4.53
Arkansas	02S04W23DAA1	343044.22	912354.53	208.00	124SPRT	3/15/2004	143.50	56.25	58.28	64.50	8.25	6.22
Arkansas	02S04W33BBB1	342922.14	912702.68	205.00	124SPRT	3/15/2004	162.50	39.62	33.99	42.50	2.88	8.51
Arkansas	02S05W16CBC1	343143	913318	213.00	124SPRT	3/15/2004	171.20	29.61	34.12	42.80	13.19	8.68
Arkansas	02S05W27BBB1	343028.45	913230.47	216.00	124SPRT	3/15/2004	172.50	29.73	35.73	43.50	13.77	7.77
Arkansas	02S05W34BDA1	342924.58	913148.02	216.00	124SPRT	3/15/2004	178.20		36.2	37.80		1.60
Arkansas	02S05W35AAB1	342929.98	913035.31	216.00	124SPRT	3/15/2004	174.10		41.15	41.90		0.75
Arkansas	03S04W02CCB1	342747.58	912458.04	202.00	124SPRT	3/15/2004	151.20	36.08	39.76	50.80	14.72	11.04
Arkansas	03S04W26CDA1	342421.03	912438.30	203.00	124SPRT	3/18/2004	144.70	59.89	65.7	58.30	-1.59	-7.40
Arkansas	03S04W33BAA1	342406.95	912639.02	201.00	124SPRT	3/18/2004	155.60	44.66	41.06	45.40	0.74	4.34
Arkansas	03S05W02AAB1	342842.19	913033.71	210.00	124SPRT	3/15/2004	173.40	36.96	36.57	36.60	-0.36	0.03
Arkansas	03S05W13BDC1	342631.15	913004.57	210.00	124SPRT	3/15/2004	173.40	24.42	31.14	36.60	12.18	5.46
Arkansas	03S05W15CBB1	342633.21	913229.33	206.00	124SPRT	3/15/2004	170.60		34.05	35.40		1.35
Arkansas	03S05W18CAB1	342629.37	913524.68	196.00	124SPRT	3/16/2004	162.90	30.12	26.86	33.10	2.98	6.24
Arkansas	03S05W28DAB1	342447.16	913240.25	204.00	124SPRT	4/12/2004	169.00	25.77	31.38	35.00	9.23	3.62
Arkansas	03S06W21ACC1	342554	913925	195.00	124SPRT	3/16/2004	157.00	57.81	64.03	38.00	-19.81	-26.03
Arkansas	03S06W30BBD1	342515.54	914216.15	191.00	124SPRT	3/16/2004	156.40	26.72	30.26	34.60	7.88	4.34
Arkansas	04S01W04CBD1	342225.42	910808.42	196.00	124SPRT	3/16/2004	112.90	87.71	82.86	83.10	-4.61	0.24
Arkansas	04S01W28BAA1	341926.96	910748.04	190.00	124SPRT	3/16/2004	104.25	88.52	83.84	85.75	-2.77	1.91
Arkansas	04S02W09DDC	342123	911331	175.00	124SPRT	3/16/2004	64.70		112.51	110.30		-2.21
Arkansas	04S04W11BCC1	342156.96	912501.52	198.00	124SPRT	3/18/2004	159.30	39.12	42.5	38.70	-0.42	-3.80
Arkansas	04S04W19CBB1	342003.73	912928.89	195.00	124SPRT	3/18/2004	156.70	36.46	32.28	38.30	1.84	6.02
Arkansas	04S04W22DAA1	342006.89	912515.15	195.00	124SPRT	3/18/2004	153.80	33.32	35.01	41.20	7.88	6.19
Arkansas	04S05W05ACC1	342302.67	913412.84	186.00	124SPRT	3/16/2004	157.40	29.98	28.58	28.60	-1.38	0.02
Arkansas	04S05W15AAA1	342132.16	913133.29	201.00	124SPRT	3/18/2004	165.00		34.3	36.00		1.70
Arkansas	04S05W04BAA1	342321	912955	196.00	124SPRT	3/18/2004	169.80	4.41		26.20	21.79	
Arkansas	04S05W34DAA	341514	913139	192.00	124SPRT	3/17/2004	155.70	37.93		36.30	-1.63	
Arkansas	04S05W36DCC1	341752.00	913003.63	196.00	124SPRT	3/17/2004	155.40	38.88	32.82	40.60	1.72	7.78
Arkansas	05S01W17BAA1	341550.68	910745.34	176.00	124SPRT	3/16/2004	91.90	79.98	82.51	84.10	4.12	1.59
Arkansas	05S03W04ADB1	341734	912006	187.00	124SPRT	3/16/2004	135.90	40.72		51.10	10.38	
Arkansas	05S04W26ACA1	341358	912435	188.00	124SPRT	3/17/2004	139.00	60.45	59.02	49.00	-11.45	-10.02
Arkansas	05S05W26CDD1	341324	913119	188.00	124SPRT	3/17/2004	38.85	148.97	150.53	149.15	0.18	-1.38
Arkansas	05S05W36DAA	341247	912946	180.00	124SPRT	3/17/2004	102.55			77.45		
Arkansas	06S02W06ABB1	341227.90	911620.01	181.00	124SPRT	3/16/2004	117.05	67.33	66.24	63.95	-3.38	-2.29
Arkansas	06S02W17ADA1	341022.67	911453.14	188.00	124SPRT	3/16/2004	112.10	79.41	73.23	75.90	-3.51	2.67
Arkansas	06S02W22CDB1	340904	911331.06	186.00	124SPRT	3/17/2004	110.30	76.94	80.14	75.70	-1.24	-4.44
Arkansas	06S03W27BAA1	340859.22	912008.98	181.00	124SPRT	3/16/2004	118.25	66.86	61.38	62.75	-4.11	1.37
Arkansas	07S02W28ABA1	340339.67	911411.01	181.00	124SPRT	3/17/2004	104.00	81.06	75.36	77.00	-4.06	1.64

Sparta/Memphis Aquifer
Water Level Data
'99-'03-'04

County	Station	Latitude	Longitude	LSD Alt	Aquifer Code	WL Date	WL Measure	WL ALT 1999	WL ALT 2003	WL ALT 2004	Change 99-04	Change 2003-2004
Arkansas	07S03W06ABC1	340701.89	912247.68	185.00	124SPRT	3/17/2004	125.60	65.51	53.67	59.40	-6.11	5.73
Arkansas	08S02W09BCC1	340031.06	911447.66	174.00	124SPRT	3/17/2004	101.90	79.08	73.78	72.10	-6.98	-1.68
								Declines/Wells			16/34	10/36
								Average Change			1.89	1.20
Ashley	15S07W32CDD1	332117.77	915101.06	190.00	124SPRT	3/30/2004	136.50	33.29	52.16	53.50	20.21	1.34
Bradley	12S09W31CCB1	333709	920444	231.00	124SPRT	3/31/2004	185.48		47.46	45.52		-1.94
Bradley	12S10W10BCA1	334107.62	920807.47	227.00	124SPRT	3/31/2004	123.20			39.80		
Bradley	13S09W06ACB1	333647.90	920437.48	201.00	124SPRT	3/31/2004	194.16	3.71	17.33	17.84	14.13	0.51
Bradley	13S09W06ACB3	333647	920437	210.00	124SPRT	3/31/2004	157.30	30.2		43.70	13.50	
Bradley	13S11W17BCD1	333453.65	921607.25	250.00	124SPRT	3/31/2004	198.70	53.33	57.57	51.30	-2.03	-6.27
Bradley	14S11W31DBB1	332715	921015	349.00	124SPRT	3/31/2004	98.07	50.7	55.95	51.93	1.23	-4.02
								Declines/Wells			1/4	3/4
								Average Change			6.71	-2.93
Calhoun	11S14W12CAC3	334630.25	922928.17	313.00	124SPRT	3/11/2004	145.25		167	167.75		0.75
Calhoun	13S12W31DAA1	333233	922224	200.00	124SPRT	3/10/2004	59.65			140.35		
Calhoun	13S13W32CDA1	332626.81	922741.66	208.00	124SPRT	3/10/2004	177.80	32.08	39.32	30.20	-1.88	-9.12
Calhoun	14S13W12CCB1	333040.05	922403.54	205.00	124SPRT	3/11/2004	169.10		36.55	35.90		-0.65
Calhoun	14S13W29DAC1	332811	922722	148.00	124SPRT	3/10/2004	14.00	134.14		134.00	-0.14	
Calhoun	14S15W16BAA1	333055.22	923912.24	146.00	124SPRT	3/10/2004	102.80	48.42	48.93	43.20	-5.22	-5.73
Calhoun	15S13W20BDC1	332410.97	922806.59	115.00	124SPRT	3/10/2004	27.50		80.89	80.50		-0.39
Calhoun	15S13W32BBD1	332230	922821	102.00	124SPRT	3/10/2004	108.70	-19.2		-6.50	12.70	
								Declines/Wells			3/4	4/5
								Average Change			1.37	-3.03
Chicot	15S02W16CCD1	332315	911837	126.00	124SPRT	3/27/2004	0.60			125.40		
Chicot	15S02W33CBA1	332100	911854	124.00	124SPRT	3/22/2004	37.70	85.41		86.30	0.89	
Cleveland	08S12W13CAA1	340133	920801	261.00	124SPRT	3/2/2004	144.85	113.68	115.43	116.15	2.47	0.72
Cleveland	09S11W01DCA1	335729.02	921133.93	230.00	124SPRT	3/2/2004	197.70	32.14	23.82	32.30	0.16	8.48
Cleveland	09S11W11CDB1	335622.66	921250.52	233.00	124SPRT	3/2/2004	161.65	93.8		71.35	-22.45	
Cleveland	10S12W12BDD1	335132.99	921743.38	220.00	124SPRT	3/2/2004	119.40	100.82	102.71	100.60	-0.22	-2.11
								Declines/Wells			2/4	1/3
								Average Change			-5.01	2.36

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Columbia	15S20W20CCB1	332453.37	931215.01	372.00	124SPRT	3/4/2004	216.80	151.94	154.96	155.20	3.26	0.24
Columbia	16S19W20ABD1	332008.32	930520.62	288.00	124SPRT	2/25/2004	173.30	155.7	119.5	121.70	-34.00	2.20
Columbia	16S20W08DCC1	332114.08	931141.34	402.00	124SPRT	3/5/2004	318.00		86.9	84.00		-2.90
Columbia	16S20W18ACD1	332052.93	931237.40	337.00	124SPRT	2/27/2004	287.50	56.45	73.8	49.50	-6.95	-24.30
Columbia	16S21W	331920	921817	340.00	124SPRT	3/16/2004	257.20			82.80		
Columbia	16S21W14CBB1	332049.37	931517.28	281.00	124SPRT	2/27/2004	193.80	82.01	80.4	87.20	5.19	6.80
Columbia	16S21W15CBC1	332041	931622	288.00	124SPRT	2/27/2004	194.10	88		93.90	5.90	
Columbia	16S22W22CCD1	331947.61	932224.89	340.00	124SPRT	2/25/2004	136.20	187.61	207.32	203.80	16.19	-3.52
Columbia	17S19W15ABD1	331537	930328	325.00	124SPRT	3/4/2004	294.10			30.90		
Columbia	17S19W18CBD1	331516.81	930655.59	305.00	124SPRT	3/4/2004	267.60		25.51	37.40		11.89
Columbia	17S19W30ABB1	331406.12	930650.14	248.00	124SPRT	3/2/2004	218.40		26.1	29.60		3.50
Columbia	17S20W13CB1	331532.41	930807.08	312.00	124SPRT	3/4/2004	310.40	-12.21	-6.1	1.60	13.81	7.70
Columbia	17S20W17CDA1	331519.76	931200.69	325.10	124SPRT	3/4/2004	300.35	25.88	22.07	24.75	-1.13	2.68
Columbia	17S20W36ABC1	331307.06	930754.88	335.00	124SPRT	3/2/2004	297.40	37.41	38	37.60	0.19	-0.40
Columbia	17S21W01BBC1	331743.07	931423.65	305.00	124SPRT	2/25/2004	258.40		34.6	46.60		12.00
Columbia	17S21W08DCA1	331613.42	931758.30	298.00	124SPRT	3/3/2004	128.20			169.80		
Columbia	17S21W11DCC2	331608.55	931448.61	303.00	124SPRT	3/4/2004	283.65	9.65	19.92	19.35	9.70	-0.57
Columbia	17S21W17BAA1	331607	931818	311.00	124SPRT	3/3/2004	204.50		107.68	106.50		-1.18
Columbia	17S22W21ABD1	331516	932303	242.00	124SPRT	3/3/2004	82.00		160.65	160.00		-0.65
Columbia	17S22W22ABC1	331521	932209	318.00	124SPRT	3/3/2004	136.20		115.52	115.80		0.28
Columbia	17S22W23BBB1	331519	932136	318.00	124SPRT	3/3/2004	144.85			130.15		
Columbia	18S20W06DDC1	331142	931248	300.00	124SPRT	3/16/2004	299.50	-15.12		-0.50	14.62	
Columbia	18S20W10CAA1	331054.37	931015.76	290.00	124SPRT	3/3/2004	275.00		15.02	15.00		-0.02
Columbia	18S22W27DDD1	330834.57	932158.59	312.00	124SPRT	3/2/2004	137.25	186.37	189.02	174.75	-11.62	-14.27
Columbia	19S20W08DAD1	330555.19	931148.61	320.00	124SPRT	3/3/2004	254.40	75.32	65.71	65.60	-9.72	-0.11
Columbia	19S20W09CAC1	330555.38	931128.72	332.00	124SPRT	3/3/2004	266.70	64.1	65.99	65.30	1.20	-0.69
Columbia	19S20W34BDD1	330239.09	931030.67	290.00	124SPRT	3/3/2004	211.00	72.88	77.88	79.00	6.12	1.12
Columbia	19S21W16DBB1	330517	931725	284.00	124SPRT	3/2/2004	174.70	108.96	109.58	109.30	0.34	-0.28
Columbia	19S23W10ABD1	330643.92	932833.33	242.00	124SPRT	2/24/2004	44.69	197.17	196.78	197.31	0.14	0.53
Columbia	19S23W11CDA2	330609.39	932744.02	248.00	124SPRT	3/2/2004	52.20	192.12	195.35	195.80	3.68	0.45
Columbia	19S23W11DDB1	330604.93	932722.12	246.00	124SPRT	3/2/2004	53.20	192.46	192.24	192.80	0.34	0.56
Columbia	19S23W14BAB2	330555.24	932752.38	244.00	124SPRT	3/2/2004	49.30	192.91	194.01	194.70	1.79	0.69
Columbia	20S22W03DCC1	330138.44	932236.27	214.00	124SPRT	3/2/2004	52.42	160.68		161.58	0.90	
Columbia	20S22W11ACD1	330109.20	932133.20	271.00	124SPRT	3/2/2004	107.80	162.76	163.83	163.20	0.44	-0.63
								Declines/Wells			5/22	13/27
								Average Change			0.93	0.04

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Craighead	13N03E23CDD1	354404.17	904432.83	248.00	12405MP	4/7/2004	86.60		161.11	161.40		0.29
Craighead	14N04E22CBD1	354928.92	903920.99	256.00	12405MP	4/14/2004	45.80	205.28	200.3	210.20	4.92	9.90
Craighead	14N04E28DBD1	354836.94	903953.27	254.00	12405MP	4/14/2004	58.25	202.11	192.83	195.75	-6.36	2.92
Craighead	14N05E36CBC1	354750.84	903100.18	220.00	12405MP	4/7/2004	12.10		207.9	207.90		0.00
Craighead	15N03E31ADA1	355313.63	904807.26	270.00	12405MP	4/7/2004	55.10		215.12	214.90		-0.22
Craighead	15N04E20ADB1	355506.01	904043.21	438.00	12405MP	4/7/2004	119.65	312.54	317.39	318.35	5.81	0.96
Craighead	15N05E29DBB1	355359.83	903432.73	258.00	12405MP	4/28/2004	24.00	234.61	234.53	234.00	-0.61	-0.53
Craighead	15N06E18ACA1	355544.42	902858.20	230.00	12405MP	4/7/2004	16.80		211.64	213.20		1.56
								Declines/Wells			2/4	2/8
								Average Change			0.94	1.86
Crittenden	05N08E11CCA2	350344.68	901300.21	211.00	12405MP	3/20/2004	26.50	186.51	185.03	184.50	-2.01	-0.53
Crittenden	06N07E01DAD2	350958.04	901738.42	209.00	12405MP	3/20/2004	25.20	187.42	184.84	183.80	-3.62	-1.04
								Declines/Wells			2/2	2/2
								Average Change			-2.81	-0.78
Cross	06N04E06ACA1	351004.29	904237.72	358.00	12405MP	2/19/2004	216.80	155.49	156.12	141.20	-14.29	-14.92
Cross	07N05E04ADD1	351538.11	903329.85	209.00	12405MP	4/2/2004	33.00	179.22	173.74	176.00	-3.22	2.26
Cross	08N02E18BDB1	351908.19	905538.47	228.00	12405MP	2/19/2004	81.70	148.01	144.21	146.30	-1.71	2.09
Cross	09N01E16CAC1	352405.00	905950.75	234.00	12405MP	4/6/2004	92.50	150.85	154.35	141.50	-9.35	-12.85
Cross	09N01E25AAD1	352244.31	905554.00	227.00	12405MP	2/19/2004	86.90	146.95	142.68	140.10	-6.85	-2.58
Cross	09N03E22AAD1	352403.20	904511.77	278.00	12405MP	4/2/2004	130.30	149.55	143.5	147.70	-1.85	4.20
Cross	09N03E22ABD1	352403.82	904518.39	277.00	12405MP	4/2/2004	125.60	156.44	154.48	151.40	-5.04	-3.08
Cross	09N04E30DCA1	352231	904215	429.32	12405MP	4/6/2004	273.70	171.11	165.58	155.62	-15.49	-9.96
								Declines/Wells			8/8	5/8
								Average Change			-7.23	-4.36
Dallas	07S16W20CAB1	340559	924541	322.00	124SPRT	2/24/2004	26.10	295.83	297.63	295.90	0.07	-1.73
Dallas	08S15W34BDC1	335853	923658	240.00	124SPRT	2/24/2004	23.60	215.87	214.26	216.40	0.53	2.14
Dallas	08S16W18ACC1	940152	922446	252.00	124SPRT	2/24/2004	15.60	242.83	236.22	236.40	-6.43	0.18
Dallas	08S16W27DDD1	335935	924307	272.00	124SPRT	2/24/2004	33.80	239.37	239.07	238.20	-1.17	-0.87
Dallas	09S13W35CCD1	335304	922413	200.00	124SPRT	2/24/2004	71.90	131.13	128.39	128.10	-3.03	-0.29
Dallas	09S14W01BDC1	335753.63	922918.78	265.00	124SPRT	2/24/2004	79.10	187.9	186.2	185.90	-2.00	-0.30
Dallas	09S16W19CAA1	335605.48	924701.17	260.00	124SPRT	2/24/2004	7.20	254.73	253.49	252.80	-1.93	-0.69
Dallas	10S13W34ACA2	334829.46	922457.61	272.00	124SPRT	2/24/2004	151.30	123.55	121.26	120.70	-2.85	-0.56
Dallas	10S14W27CDB1	334907.60	923137.99	270.00	124SPRT	2/24/2004	25.50		234.97	244.50		9.53
Dallas	10S15W18BCC1	335119.53	924120.08	328.00	124SPRT	5/12/2004	76.80		252.61	251.20		-1.41

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Dallas	10S15W24AAB1	335041	923505	242.00	124SPRT	2/24/2004	17.20			224.80		
Dallas	10S16W25BAC1	334952	924203	270.00	124SPRT	2/24/2004	31.70	241.06	241.18	238.30	-2.76	-2.88
								Declines/Wells			7/9	8/11
								Average Change			-2.17	0.28
Desha	09S02W26AAC1	335346.00	911520.82	153.00	124SPRT	3/25/2004	71.80	83.18	83.02	81.20	-1.98	-1.82
Desha	09S04W28DDD1	335309.60	913006.71	165.00	124SPRT	3/25/2004	115.00	50.13	52.58	50.00	-0.13	-2.58
Desha	10S02W26CCC2	334750.23	911623.99	148.00	124SPRT	3/29/2004	72.20	77.12	75.86	75.80	-1.32	-0.06
Desha	10S04W11CBC1	335034.41	912905.14	161.00	124SPRT	3/25/2004	102.10	63.91	58.55	58.90	-5.01	0.35
Desha	12S03W26CBB1	333748.60	912259.18	138.00	124SPRT	3/29/2004	96.00	56.37	41.88	42.00	-14.37	0.12
Desha	12S03W34DAD1	333643.44	912305.04	147.00	124SPRT	3/29/2004	75.00	50.03	68.55	72.00	21.97	3.45
								Declines/Wells			5/6	3/6
								Average Change			-0.14	-0.09
Drew	11S04W02ACA2	334631.87	912826.56	153.00	124SPRT	3/31/2004	92.40	64.38	60.62	59.60	-4.78	-1.02
Drew	11S04W25DAA1	334249.46	912706.98	148.00	124SPRT	3/31/2004	85.00	56.35	63.72	63.00	6.65	-0.72
Drew	12S06W30BBD1	333807.15	914543.08	302.00	124SPRT	4/1/2004	215.00	35.16		42.00	6.84	
Drew	12S06W32DAD1	333649.09	914401.96	227.00	124SPRT	4/1/2004	163.00	56.62	58.98	49.00	-7.62	-9.98
Drew	13S05W36ACB1	333150.88	913407.59	169.00	124SPRT	4/2/2004	90.10	83.65	79.87	78.90	-4.75	-0.97
Drew	14S06W21BDC1	332846	914338	212.00	124SPRT	4/6/2004	116.25	97.49		95.75	-1.74	
Drew	15S04W12DDA1	332429.38	912723.69	125.00	124SPRT	4/5/2004	62.40	66.79	62.98	62.60	-4.19	-0.38
								Declines/Wells			5/7	5/5
								Average Change			-1.37	-2.61
Hot Spring	05S16W35ACA1	341459.51	924151.12	342.00	124SPRT	5/12/2004	36.20	304.68	306.33	305.80	1.12	-0.53
Jefferson	03S08W19BAD1	342623.76	915443.67	217.00	124SPRT	3/19/2004	169.30	48.16	47.35	47.70	-0.46	0.35
Jefferson	03S08W19BBD1	342628.36	915504.54	215.00	124SPRT	3/19/2004	169.30	55.55	47.48	45.70	-9.85	-1.78
Jefferson	03S08W19BDB1	342618.71	915455.22	215.00	124SPRT	3/19/2004	166.60	52.76	47.45	48.40	-4.36	0.95
Jefferson	03S09W23BCA1	342626	915713	222.00	124SPRT	3/19/2004	171.10	59.69	43.73	59.10	-0.59	15.37
Jefferson	03S10W14CAD1	342659.22	920330.26	221.00	124SPRT	3/24/2004	120.50	105.26	104.17	100.50	-4.76	-3.67
Jefferson	03S10W27AAD1	342502.05	920433.81	222.00	124SPRT	4/13/2004	122.60	99.1	96.04	99.40	0.30	3.36
Jefferson	03S11W22ABC1	342650.81	921058.27	310.00	124SPRT	3/23/2004	175.40	144.05	134.66	134.60	-9.45	-0.06
Jefferson	04S07W17BCC1	342139.61	914741.85	200.00	124SPRT	3/19/2004	171.55	28.78	28.67	28.45	-0.33	-0.22
Jefferson	04S10W17BDA1	342212.14	920645.60	265.00	124SPRT	3/22/2004	207.35	77.75	73.43	57.65	-20.10	-15.78
Jefferson	04S10W22BDD1	342109.41	920441.93	244.24	124SPRT	3/22/2004	206.00	56.54	40.56	38.24	-18.30	-2.32
Jefferson	04S10W29ADB1	342025	920623	267.55	124SPRT	3/22/2004	216.50	50.52	49.48	51.45	0.93	1.97

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Jefferson	04S11W14BAD1	342219.74	921000.07	400.00	124SPRT	3/23/2004	309.20	96.06	91.45	90.80	-5.26	-0.65
Jefferson	05S08W30ADB1	341452.32	915440.20	221.00	124SPRT	3/22/2004	299.65	-65.74	-74.19	-79.35	-13.61	-5.16
Jefferson	05S08W30CBA1	341446.21	915526.54	207.46	124SPRT	3/14/2004	295.40	-69.77	-81.41	-88.40	-18.63	-6.99
Jefferson	05S09W24DBD1	341529.68	915555.60	208.17	124SPRT	3/19/2004	280.40	-59.09	-64.35	-72.20	-13.11	-7.85
Jefferson	05S09W31DDC1	341336.69	920109.42	227.00	124SPRT	3/23/2004	277.85	-36.6	-59.14	-50.85	-14.25	8.29
Jefferson	05S09W19BAA1	341605	920131	226.00	124SPRT	3/23/2004	320.90	-26.98		-94.90	-67.92	
Jefferson	05S10W11ACA1	341741.24	920321.58	235.00	124SPRT	3/22/2004	206.20	68.71	39.04	28.80	-39.91	-10.24
Jefferson	05S10W16BAD1	341700.48	920548.64	277.00	124SPRT	3/23/2004	245.20	38.49	32.08	31.80	-6.69	-0.28
Jefferson	05S10W16DBB1	341634.59	920542.79	315.00	124SPRT	3/23/2004	294.75	30.7	22.6	20.25	-10.45	-2.35
Jefferson	05S10W16DBD1	341634	920534	300.00	124SPRT	3/23/2004	287.20	30.55	20.25	12.80	-17.75	-7.45
Jefferson	06S08W16CCC1	341143.07	915517.06	202.42	124SPRT	3/19/2004	258.80	-43.43	-46.48	-56.38	-12.95	-9.90
Jefferson	06S08W25ADC1	341024.86	915116.18	203.48	124SPRT	3/19/2004	226.00	-13.82	-13.91	-22.52	-8.70	-8.61
Jefferson	06S09W17CAD1	341158.70	920206.91	233.00	124SPRT	3/23/2004	286.40	-39	-47.07	-53.40	-14.40	-6.33
Jefferson	06S10W11DDB1	341118	920501	228.00	124SPRT	3/24/2004	224.50		-9.8	3.50		13.30
Jefferson	06S10W23ACD1	341115.54	920507.54	232.00	124SPRT	3/22/2004	224.90	-8.82	5.84	7.10	15.92	1.26
Jefferson	06S10W23DBA1	341104.56	920506.17	230.00	124SPRT	3/22/2004	239.80	-12.8	-9.96	-9.80	3.00	0.16
Jefferson	06S10W23DDB1	341123.09	920503.93	228.00	124SPRT	3/22/2004	224.50			3.50		
Jefferson	07S07W24BAB1	340632.68	914522.99	188.00	124SPRT	3/22/2004	163.40	33.82	26.31	24.60	-9.22	-1.71
Jefferson	07S10W24CAC1	340548.70	920420.81	311.00	124SPRT	3/22/2004	288.30	18.28	8.95	22.70	4.42	13.75
								Declines/Wells			23/28	18/28
								Average Change			-10.59	-1.16
Lincoln	07S07W30CDC1	340443.93	915042.86	208.00	124SPRT	4/6/2004	178.40	27.16	28.77	29.60	2.44	0.83
Lincoln	08S04W22AAA1	340104.86	912752.79	167.00	124SPRT	4/6/2004	120.10	90.03	49.07	46.90	-43.13	-2.17
Lincoln	08S05W03BAA2	340309.54	913453.58	180.00	124SPRT	4/6/2004	141.20	43.73	34.86	38.80	-4.93	3.94
Lincoln	08S08W35DBB1	335858.35	915222.40	285.00	124SPRT	4/6/2004	207.20	41.72		32.80	-8.92	
Lincoln	08S08W35DCB1	335850.57	915217.37	292.00	124SPRT	4/6/2004	208.70	52.12		56.30	4.18	
Lincoln	09S07W07DAD1	335633.89	915128.31	289.00	124SPRT	4/2/2004	264.60	26.53	20.8	35.40	8.87	14.60
								Declines/Wells			3/6	1/4
								Average Change			-6.92	4.30
Lonoke	02N07W09AAA1	344906.42	914500.30	232.00	124SPRT	3/18/2004	99.60	132.6	133.36	132.40	-0.20	-0.96
Lonoke	02N07W22DBA1	344651.49	914425.68	227.00	124SPRT	3/18/2004	130.80	106.98	100.83	96.20	-10.78	-4.63
Lonoke	02N07W32DDD1	344453.26	914618.97	226.00	124SPRT	3/18/2004	137.90	104.78	98.67	88.10	-16.68	-10.57
Lonoke	02S07W08DCC1	343235	914700	202.00	124SPRT	3/19/2004	137.20	70.91		64.80	-6.11	
Lonoke	02S09W15BBB2	343246.5	915825.0	226.00	124SPRT	3/19/2004	71.00	158.1	153.01	155.00	-3.10	1.99

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County	Station	Latitude	Longitude	LSD Alt	Aquifer Code	WL Date	WL Measure	WL ALT 1999	WL ALT 2003	WL ALT 2004	Change 99-04	Change 2003-2004
Lonoke	03N07W03CAA1	345444.90	914426.30	235.00	12405MP	3/18/2004	77.95	161.16	155.89	157.05	-4.11	1.16
Lonoke	03N08W22DAD1	345205.16	915023.62	233.00	12405MP	1/22/2004	87.58		146.00	142.70		-3.30
Lonoke	03N08W22DAD2	345204.58	915023.87	233.00	12405MP	1/22/2004	95.00		139.63	141.08		1.45
Lonoke	03N08W22DDD2	345152.18	915025.08	235.00	12405MP	1/21/2004	96.12		140.00	138.15		-1.85
Lonoke	03N08W23DDD1	345120	915025	234.00	124SPRT	3/19/2004	95.30			138.70		
								Declines/Wells			6/6	5/8
								Average Change			-6.83	-2.09
Miller	16S26W13ADB1	332114	934430	226.00	124SPRT	3/9/2004	19.35			206.65		
Miller	17S25W18CDB1	331604	934406	220.00	124SPRT	3/9/2004	6.70			213.30		
Monroe	01N03W14CCB1	344143.93	911801.12	172.00	124SPRT	2/18/2004	68.40	102.52	100.71	103.60	1.08	2.89
Monroe	03N01W33CDD1	345446.34	910635.08	210.00	124SPRT	4/27/2004	68.50	147.64	142.49	141.50	-6.14	-0.99
Monroe	03N02W26DAB1	345043	911026	192.00	124SPRT	2/18/2004	48.50	147.61	146.13	143.50	-4.11	-2.63
Monroe	04N02W28DDD4	345535	911221	192.00	12405MP	2/18/2004	31.50	163.78	161.94	160.50	-3.28	-1.44
Monroe	04N02W30BAC1	345617.03	911503.95	180.00	12405MP	4/27/2004	9.00	160.16	164.84	171.00	10.84	6.16
								Declines/Wells			3/5	3/5
								Average Change			-0.32	0.80
Nevada	14S20W29BCA1	332931.28	931151.57	369.00	124SPRT	3/10/2004	9.15	362	360.85	362.85	0.85	2.00
Nevada	14S21W04CCB1	333251.22	931708.33	360.00	124SPRT	3/10/2004	58.80	301.11	303.55	301.20	0.09	-2.35
								Declines/Wells			0/2	1/2
								Average Change			0.47	-0.18
Ouachita	11S15W27ABD1	334440.87	923725.58	200.00	124SPRT	3/12/2004	70.30	127.04	132.97	129.70	2.66	-3.27
Ouachita	12S15W09BBA1	334223.32	923922.44	213.00	124SPRT	3/15/2004	73.35	142.62	144.25	139.65	-2.97	-4.60
Ouachita	12S16W25BDA1	333942	924252	137.00	124SPRT	3/15/2004	34.50		103.9	102.50		-1.40
Ouachita	12S16W26ABD1	333945.55	924304.12	134.00	124SPRT	3/15/2004	44.15		91.68	102.50		10.82
Ouachita	12S18W19CDC1	334018	925948	235.00	124SPRT	3/11/2004	15.80	195.33		219.20	23.87	
Ouachita	12S18W25CAB1	333937.19	925441.87	187.00	124SPRT	3/10/2004	77.80	179.36	109.71	109.20	-70.16	-0.51
Ouachita	12S19W09BAB1	334251.46	930351.94	290.00	124SPRT	3/11/2004	15.20	273.13	279.58	274.80	1.67	-4.78
Ouachita	12S19W14AAA1	334143.44	930104.54	237.00	124SPRT	3/15/2004	5.40		232.64	231.60		-1.04
Ouachita	12S19W35BDD1	333901.13	930145.97	350.00	124SPRT	3/11/2004	159.75	191.5	195.05	190.25	-1.25	-4.80
Ouachita	13S18W31BDD1	333340	925958	242.00	124SPRT	3/11/2004	71.70	172.57		170.70	-1.87	
Ouachita	13S19W28BCD1	333433.86	930417.81	230.00	124SPRT	3/11/2004	37.40	193.6	196.81	192.60	-1.00	-4.21

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County	Station	Latitude	Longitude	LSD Alt	Aquifer Code	WL Date	WL Measure	WL ALT 1999	WL ALT 2003	WL ALT 2004	Change 99-04	Change 2003-2004
Ouachita	14S16W32BDB1	332815.62	924639.52	231.00	124SPRT	3/12/2004	26.00		213.8	209.00		-4.80
Ouachita	14S17W05CAD1	333238.01	925254.64	157.00	124SPRT	3/11/2004	37.10	119.76	120.75	119.90	0.14	-0.85
Ouachita	14S17W19DBB1	333002.20	925345.44	259.00	124SPRT	3/10/2004	10.30		248.4	239.70		-8.70
Ouachita	14S17W32CAD1	332803.41	925251.18	220.00	124SPRT	3/10/2004	82.00	134.52	137.7	138.00	3.48	0.30
Ouachita	14S17W02ABB1	333252	924926	120.00	124SPRT	3/11/2004	20.60			99.40		
Ouachita	14S18W27BDC1	332917.60	925703.97	309.00	124SPRT	3/10/2004	42.90		247.8	247.10		-0.70
Ouachita	14S19W29ABB1	332941.45	930513.43	280.00	124SPRT	3/10/2004	86.70	194.04	194.27	193.30	-0.74	-0.97
Ouachita	15S15W32DBB2	332233.72	924027.13	119.00	124SPRT	3/11/2004	175.00	-56.32	-55.58	-56.00	0.32	-0.42
Ouachita	15S16W07DDC1	332553	924716	230.00	124SPRT	3/11/2004	31.30		203	198.70		-4.30
Ouachita	15S18W36ADD1	332310.75	925436.06	160.00	124SPRT	3/10/2004	95.10	64.85	64.9	64.40	-0.45	-0.50
Ouachita	15S19W10DCC1	332618.38	930318.37	210.00	124SPRT	3/15/2004	70.00	143.12	139.15	140.00	-3.12	0.85
								Declines/Wells			8/14	16/19
								Average Change			-3.53	-1.78
Phillips	01S02E32DDC1	343324.32	905455.41	211.00	124SPRT	4/14/2004	75.70	130.97	130.27	135.30	4.33	5.03
Phillips	02S02E01ADC1	343323.48	905056.27	176.00	124SPRT	4/12/2004	35.50	137.57	138.12	140.50	2.93	2.38
Phillips	02S04E02DBA1	343242.87	903906.98	250.00	124SPRT	4/8/2004	103.30	149.8		146.70	-3.10	
Phillips	02S05E16BCB1	343108.32	903525.64	190.00	124SPRT	4/14/2004	34.10	147.27	157.98	155.90	8.63	-2.08
Phillips	02S05E29CCC1	342850.81	903635.44	179.00	124SPRT	4/8/2004	24.70	157.92	145.19	154.30	-3.62	9.11
Phillips	03S03E30DAA1	342402.88	904914.59	172.00	124SPRT	4/14/2004	42.90	128.75	127.31	121.10	-7.65	-6.21
Phillips	04S02E25CCC1	341824.20	905121.49	166.00	124SPRT	4/14/2004	37.10	130.98	129.63	128.90	-2.08	-0.73
								Declines/Wells			4/7	3/6
								Average Change			-0.08	1.25
Poinsett	10N01E12BDC1	353026.35	905629.57	234.00	12405MP	4/5/2004	103.00	132.56	139.49	131.00	-1.56	-8.49
Poinsett	10N01E15DBB1	352930.54	905825.14	232.00	12405MP	4/6/2004	89.20	149.43	138.18	142.80	-6.63	4.62
Poinsett	10N01E33ABA1	352724.90	905924.05	221.00	12405MP	4/5/2004	76.10	152.45	146.34	144.90	-7.55	-1.44
Poinsett	10N1W34BAA1	352724	905846	231.00	12405MP	4/5/2004	82.30			148.70		
Poinsett	11N02E16CCC1	353448.21	905321.22	243.00	12405MP	4/5/2004	104.90		138.76	138.10		-0.66
Poinsett	11N3E25ACC1	353225	904316	273.00	12405MP	4/2/2004	126.60			146.40		
Poinsett	12N02E12DDC1	354104.17	904928.15	248.00	12405MP	4/26/2004	106.50		138.43	142.00		3.57
Poinsett	12N03E35BCC1	353744.78	904455.70	244.00	12405MP	4/26/2004	97.10	153	145.42	146.90	-6.10	1.48
Poinsett	12N03E35DDA1	353727.35	904353.06	247.00	12405MP	4/5/2004	101.20		138.5	145.80		7.30
								Declines/Wells			4/4	3/7
								Average Change			-5.46	0.91

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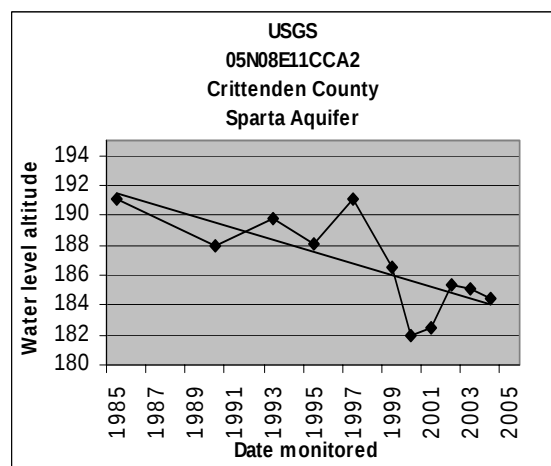
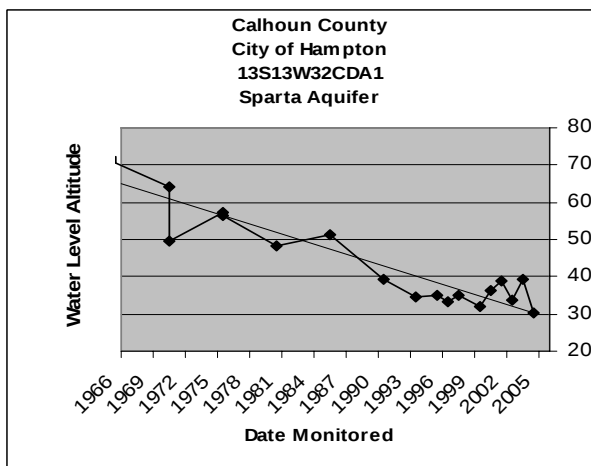
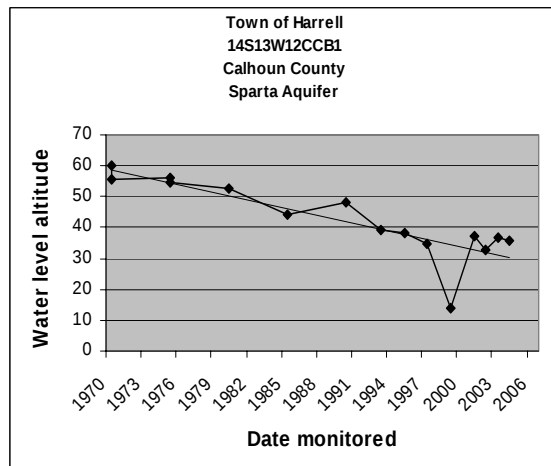
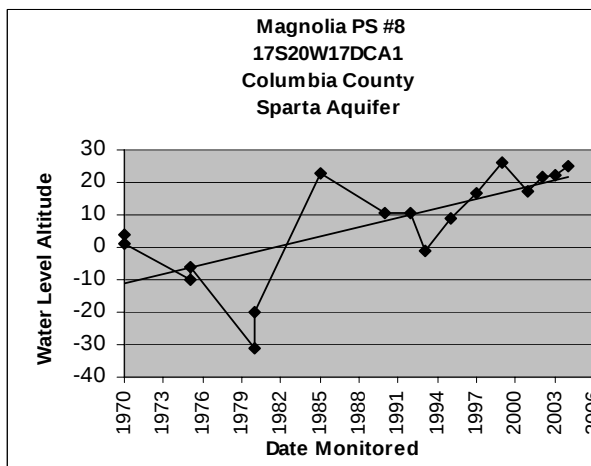
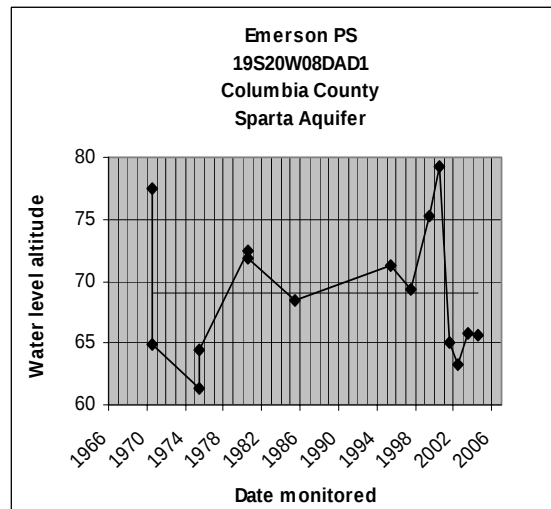
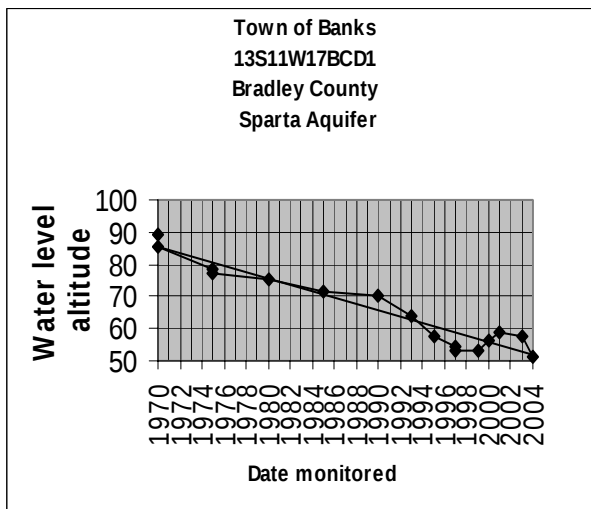
County	Station	Latitude	Longitude	LSD Alt	Aquifer Code	WL Date	WL Measure	WL ALT 1999	WL ALT 2003	WL ALT 2004	Change 99-04	Change 2003-2004
Prairie	01N06W02ABB1	344440	913658	223.00	124SPRT	3/17/2004	125.60	111.18	105.46	97.40	-13.78	-8.06
Prairie	01N06W34CBB1	343943.01	913846.17	226.00	124SPRT	3/17/2004	172.40	72.93	68.81	53.60	-19.33	-15.21
Prairie	01S05W20ABB1	343639.91	913351.89	220.00	124SPRT	3/17/2004	168.50	63.85	64.39	51.50	-12.35	-12.89
Prairie	01S06W01BDD2	343859.48	913612.77	226.00	124SPRT	3/17/2004	159.90		57.41	66.10		8.69
Prairie	01S06W11DBD1	343748.99	913654.24	226.00	124SPRT	3/17/2004	173.60	63.84	56.6	52.40	-11.44	-4.20
Prairie	1N06W29DDD1	344017	913951	223.00	124SPRT	3/17/2004	115.30	109.7		107.70	-2.00	
Prairie	02N05W24ACA1	344659	912937	225.00	124SPRT	2/26/2004	102.45			122.55		
Prairie	02N06W19AAB1	344718.24	914049.95	236.00	124SPRT	3/17/2004	145.57	91.3	93.03	90.43	-0.87	-2.60
Prairie	02N06W20BCB1	344706.57	914032.97	236.00	124SPRT	3/17/2004	154.00	106.24	96.19	82.00	-24.24	-14.19
Prairie	02N06W21DAD1	344644.15	913829.47	232.00	124SPRT	3/17/2004	131.20	115.14	110.98	100.80	-14.34	-10.18
Prairie	02N06W22BDD1	344653.66	913800.68	233.00	124SPRT	3/15/2004	124.30	98.82	105.09	108.70	9.88	3.61
Prairie	02N06W24CAA1	344651	913551	232.60	124SPRT	2/26/2004	166.80			115.80		
Prairie	03N05W03ADA2	345451.65	913042.51	205.00	12405MP	3/17/2004	67.20		145.86	137.80		-8.06
Prairie	03N06W20CDD1	345140.24	914003.93	225.00	12405MP	3/17/2004	84.60	141.32	140.8	140.40	-0.92	-0.40
								Declines/Wells			9/10	9/11
								Average Change			-8.94	-5.77
St. Francis	04N04E18BAB1	345743.38	904319.00	220.00	12405MP	3/5/2004	66.50	155.47	155.75	153.50	-1.97	-2.25
Union	16S14W15CAB1	331944.03	923218.09	94.00	124SPRT	2/23/2004	159.90	-69.83	-59.21	-62.40	7.43	-3.19
Union	16S15W20DAA1	331859.92	923957.97	190.00	124SPRT	3/8/2004	273.30	-89.92	-85.89	-83.30	6.62	2.59
Union	16S15W31ACC1	331717.09	924128.90	168.00	124SPRT	2/19/2004	300.10	-149.57	-133.68	-132.10	17.47	1.58
Union	16S16W02ABC1	332205	924330	116.00	124SPRT	2/17/2004	170.44	-64.92	-54.9	-54.40	10.52	0.50
Union	16S16W03CBB1	332138	924507	200.00	124SPRT	2/17/2004	227.40	-28.3		-27.40	0.90	
Union	16S18W22DCD1	331910	925707	224.00	124SPRT	2/17/2004	8.50		216.14	215.50		-0.64
Union	16S18W34ABC2	331805	925709	250.00	124SPRT	3/8/2004	210.05	45.36	41.65	37.95	-7.41	-3.70
Union	17S12W32BBC1	331203	922218	230.00	124SPRT	3/8/2004	239.00	-17.75	-19.08	-9.00	8.75	10.08
Union	17S13W31BAC1	331200.17	922915.70	216.00	124SPRT	3/8/2004	291.02	-78.06	-83.97	-75.02	3.04	8.95
Union	17S14W10DCC1	331456.79	923203.26	186.00	124SPRT	3/8/2004	95.34	86.36	91.8	84.66	-1.70	-7.14
Union	17S14W15ABA1	331450	923201	155.00	124SPRT	3/8/2004	89.40			90.60		
Union	17S15W06BAA1	331645.30	924133.94	190.00	124SPRT	2/19/2004	257.15	-94.94	-68.75	-89.15	5.79	-20.40
Union	17S15W08DCC1	331505	924027	174.92	124SPRT	2/19/2004	333.65	-179.98	-158.73	-141.35	38.63	17.38
Union	17S18W18DBB1-MONS	331438.96	924129.21	182.93	124SPRT	2/17/2004	346.48	-182.31	-163.9	-163.55	18.76	0.35
Union	17S15W28DBA1	331246.08	923909.78	230.00	124SPRT	4/13/2004	387.40	-192.22	-157.98	-157.40	34.82	0.58
Union	17S15W28DCC1	331232.92	923923.73	285.00	124SPRT	2/27/2004	452.40		-160.2	-167.40		-7.20
Union	17S15W29CDC1	331228.71	924039.39	220.00	124SPRT	2/23/2004	387.20	-206.78	-160.4	-167.20	39.58	-6.80

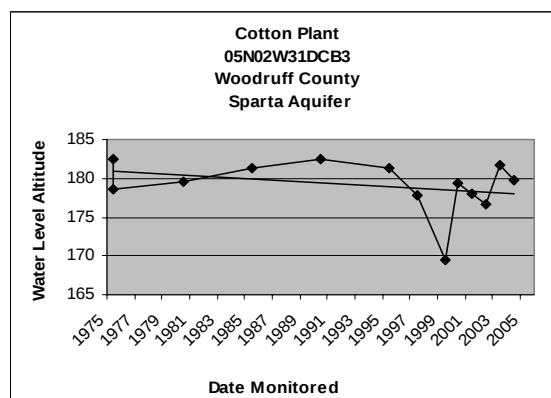
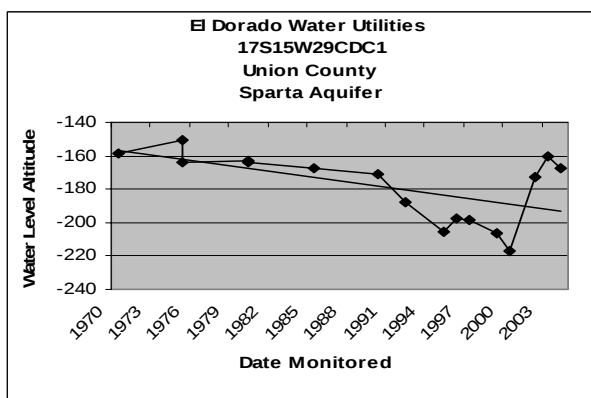
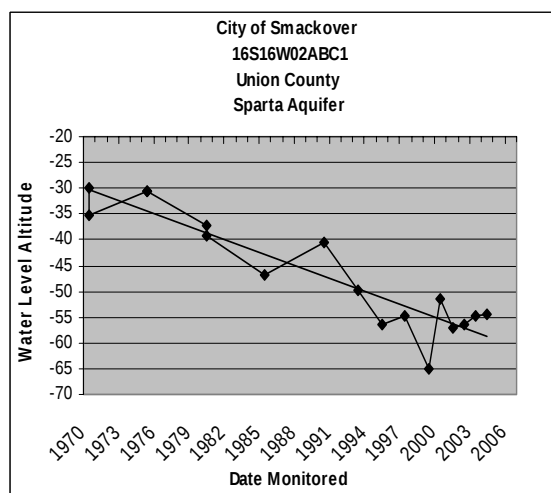
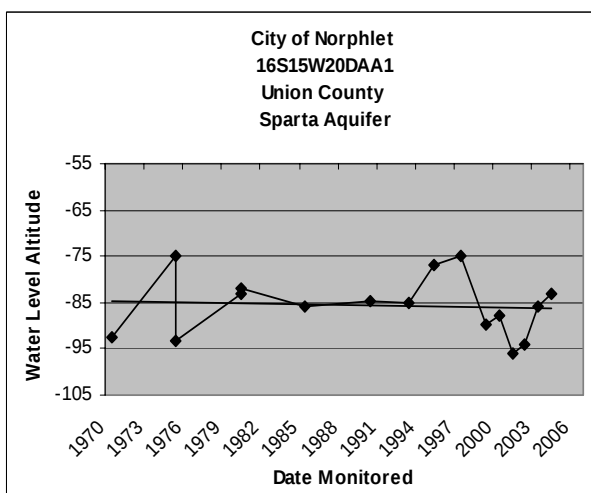
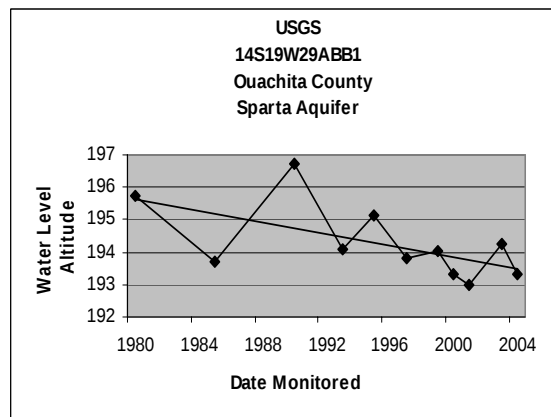
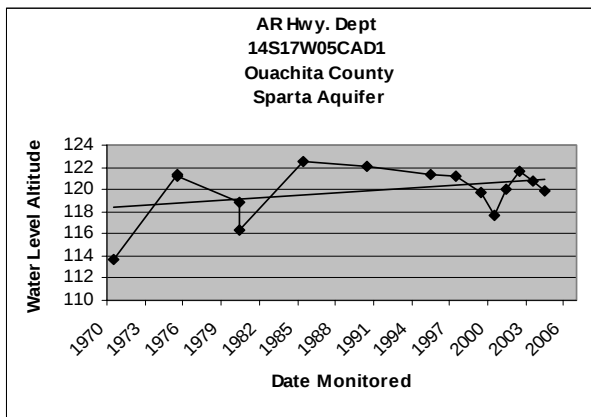
Sparta/Memphis Aquifer
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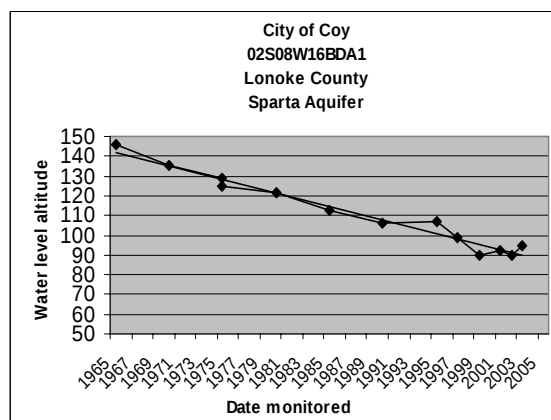
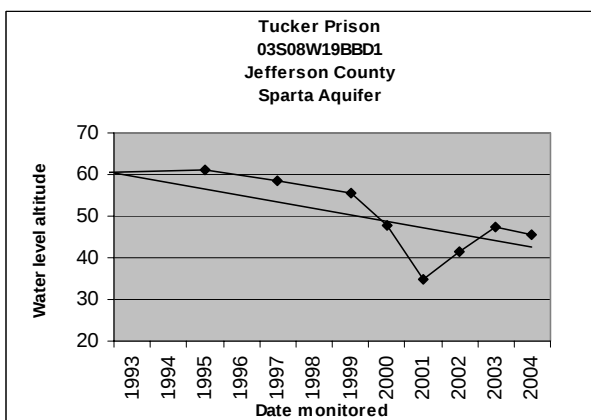
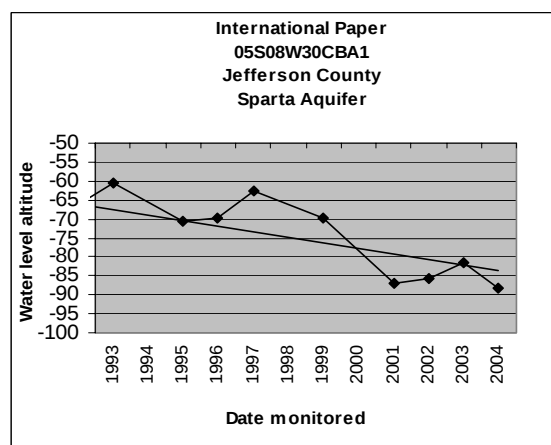
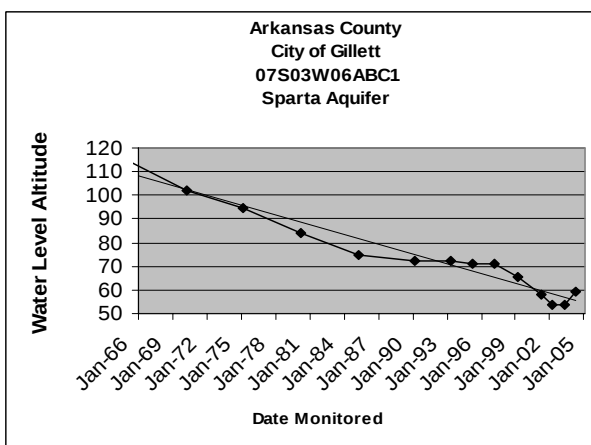
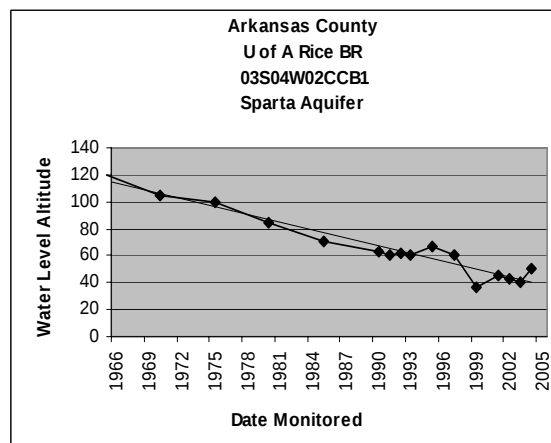
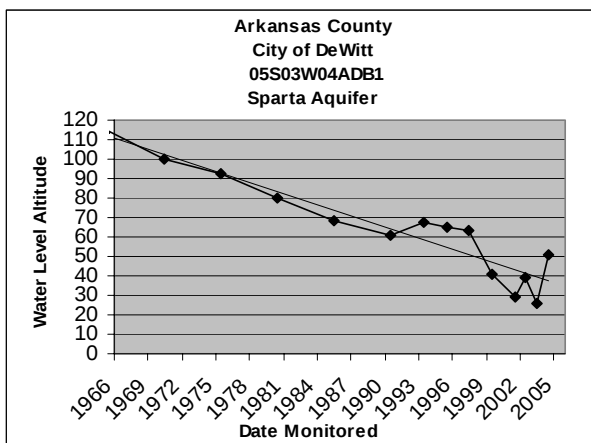
County	Station	Latitude	Longitude	LSD Alt	Aquifer Code	WL Date	WL Measure	WL ALT 1999	WL ALT 2003	WL ALT 2004	Change 99-04	Change 2003-2004
Union	17S15W31DCA1	331145.05	924116.74	272.00	124SPRT	3/8/2004	434.15	-204.53	-164.69	-162.15	42.38	2.54
Union	17S15W31DDA1	331143.75	924104.87	261.00	124SPRT	3/8/2004	422.80	-206.12	-164.81	-161.80	44.32	3.01
Union	17S16W01ABB1	331649	924253	188.84	124SPRT	2/19/2004	312.50	-144.87	-124.26	-124.50	20.37	-0.24
Union	17S16W24BDB1	331357.24	924248.47	205.00	124SPRT	2/27/2004	394.50	-214.26	-198.82	-189.50	24.76	9.32
Union	18S11W09ABC1	331011.92	921443.35	135.00	124SPRT	2/17/2004	97.50	42.38	38.85	37.50	-4.88	-1.35
Union	18S12W33BBB1	330650.66	922119.92	112.00	124SPRT	2/17/2004	139.20	-24.04	-25.32	-27.20	-3.16	-1.88
Union	18S15W33ADA1	330659.32	923858.48	253.00	124SPRT	3/9/2004	376.64	-136.27	-119.64	-123.64	12.63	-4.00
Union	18S16W12ACB1	331028.75	924231.85	230.00	124SPRT	2/23/2004	456.70	-180.58		-153.70	26.88	
Union	18S16W28BBB1	330809.22	924611.13	225.00	124SPRT	3/9/2004	326.10	-126.13	-104.96	-101.10	25.03	3.86
Union	18S17W22BDD1	330855.91	925056.48	285.00	124SPRT	3/2/2004	356.80	-112.38	-74.82	-71.80	40.58	3.02
Union	18S18W11ACA1	331057	925559	245.00	124SPRT	3/8/2004	284.55		-35.7	-44.55		-8.85
Union	19S11W23ACA1	330255.38	921228.80	142.00	124SPRT	2/18/2004	152.42	-3.62	-9.16	-10.42	-6.80	-1.26
Union	19S11W25AAA1	330217.84	921113.03	135.00	124SPRT	2/17/2004	149.50	-17.6	-13.02	-14.50	3.10	-1.48
Union	19S12W13AAA1	330411.26	921716.78	191.00	124SPRT	3/8/2004	159.76	16.93	36.96	20.24	3.31	-16.72
Union	19S15W01CCA1	330534.81	923645.01	188.00	124SPRT	3/9/2004	71.84	114.89	118.7	110.16	-4.73	-8.54
Union	19S16W35DDC1	330108.86	924325.54	175.00	124SPRT	3/8/2004	240.25	-63.31	-64.08	-65.25	-1.94	-1.17
Union	19S18W14ADA1	330451.70	925607.90	243.00	124SPRT	2/17/2004	191.70	78.01	55.4	68.30	-9.71	12.90
								Declines/Wells			8/30	17/31
								Average Change			13.18	-0.58
Woodruff	05N01W11ABA1	350425.81	910407.19	211.00	12405MP	3/10/2004	58.40	157.9	154.98	152.60	-5.30	-2.38
Woodruff	05N01W17DBB1	350310.68	910727.11	210.00	12405MP	3/10/2004	45.95	167.73	164.33	164.05	-3.68	-0.28
Woodruff	05N02W31DCB3	350026.9	911455.9	193.00	12405MP	3/10/2004	13.30	177.7	181.7	179.70	2.00	-2.00
Woodruff	06N01W13ABA1	350851	910255	212.00	12405MP	4/27/2004	72.20	149.88	146.46	139.80	-10.08	-6.66
Woodruff	07N01W12BCB1	351441.58	910326.17	222.00	12405MP	3/10/2004	64.60	164.26	158.79	157.40	-6.86	-1.39
								Declines/Wells			4/5	5/5
								Average Change			-4.78	-2.54
								Total Average Change:			-0.63	-0.62
								Declines/Wells			128/221	137/241
											57.9%	56.8%

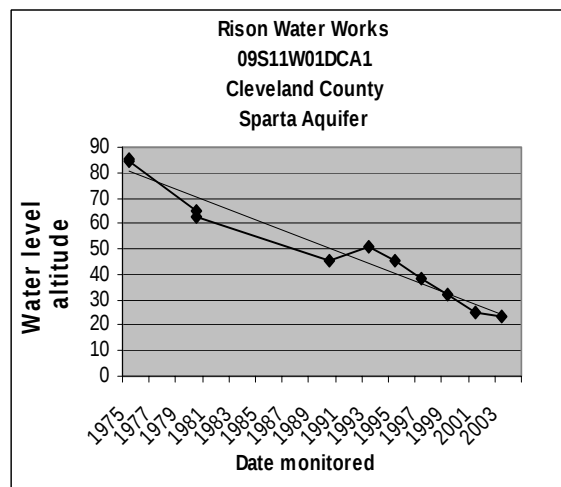
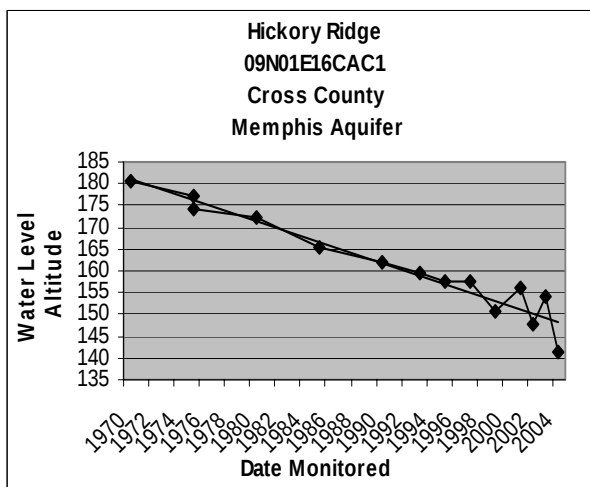
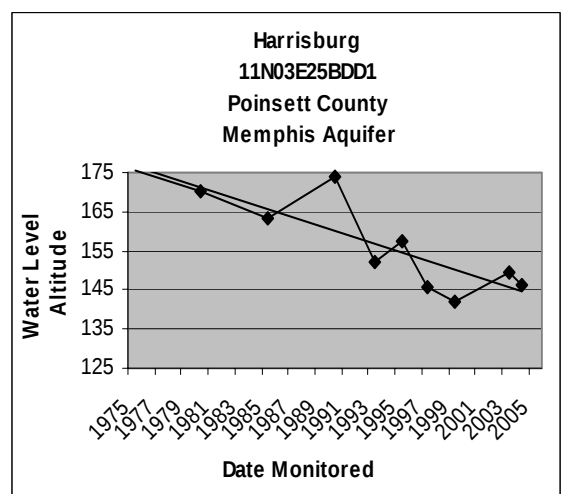
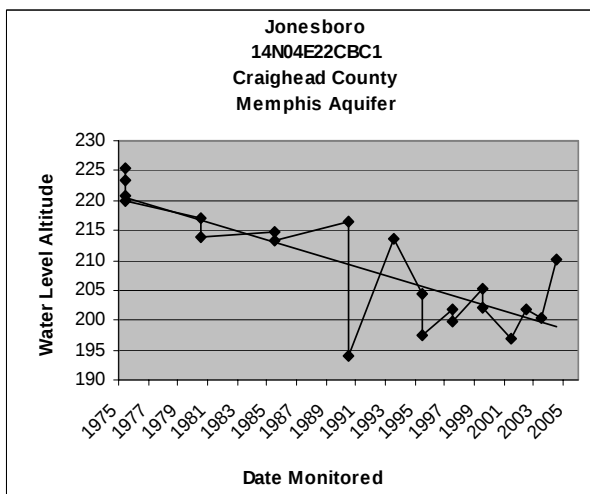
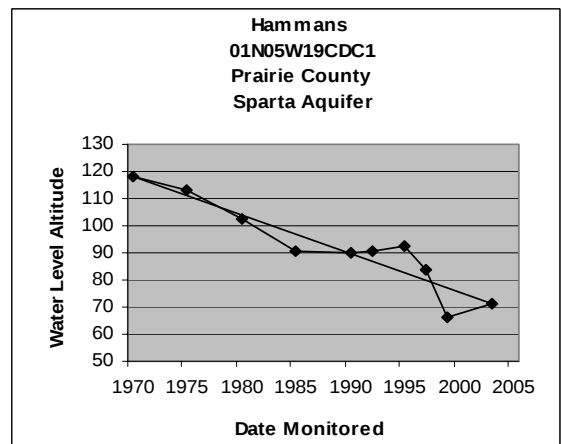
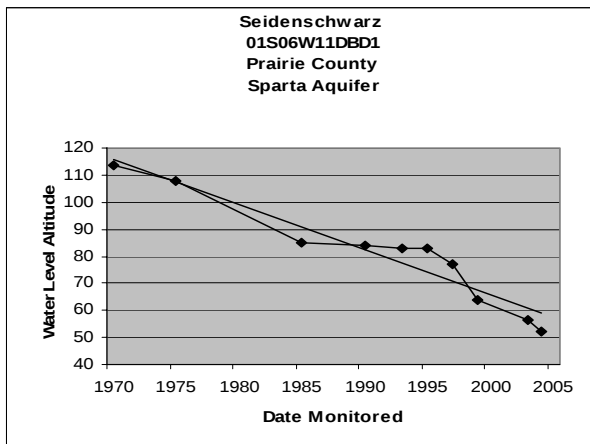
Appendix D

Selected Sparta / Memphis Aquifer Well Hydrographs









Appendix E

Ozark Aquifer Water Level Data

**Ozark Aquifer
Water Level Data
'01-'04**

County	Station	Latitude	Longitude	Depth	LS ALT.	Code	Date	2004 WL	2001 WL	01 WL ALT	04 WL ALT	2001 - 2004 WL Change
Baxter	19N11W31DAA1	361609.67	0921143.33	193	640	367CTTR	2/11/2004	84.97	87.99	555.03	552.01	-3.02
Baxter	19N14W29DBC1	361714.18	0923025.53	1625	720	367GNTR	2/11/2004	56.27	56.55	663.73	663.45	-0.28
Baxter	20N11W35CCA1	362113.76	0921422.92	295	600	367CTTR	2/11/2004	35.44	40.94	564.56	559.06	-5.50
Baxter	20N12W23CBA1	362309.28	0921418.72	550	600	367RBDX	2/11/2004	52.53	57.04	547.47	542.96	-4.51
Baxter	20N13S14ABC1	362435.41	0922026.15	493	580	367CTTR	2/11/2004	34.39	39.40	545.61	540.60	-5.01
Baxter	20N13W13ABD1	362430.93	0921911.63	209	620	367CTTR	2/11/2004	72.02	79.24	547.98	540.76	-7.22
Baxter	21N12W33ACB1	362700.02	0921558.31	500	610	367RBDX	2/11/2004	42.93	52.14	567.07	557.86	-9.21
									Declines/Wells:			7/7
									Average Change:			-4.96
Benton	19N29W07DAA1	361953.87	0940618.46	1659	1210	367GNTR	2/18/2004	144.68	150.73	1065.32	1059.27	-6.05
Benton	20N33W14ACD1	362456.00	0942723.10	1600	1185	367GNTR	2/18/2004	426.78	426.83	758.22	758.17	-0.05
Benton	21N29W35DDB2	362635.83	0940137.97	1769	1405	367GNTR	2/18/2004	342.15	341.49	1062.85	1063.51	0.66
									Declines/Wells:			2/3
									Average Change:			-1.81
Boone	18N19W19BCC1	361149.75	0930257.77	1649	1150	367GNTR	2/12/2004	224.66	222.27	925.34	927.73	2.39
Boone	21N18W20CCD1	362702.95	0925502.67	1415	880	371POTS	2/11/2004	237.24	242.12	642.76	637.88	-4.88
									Declines/Wells:			1/2
									Average Change:			-1.25
Carroll	19N23W08ADD1	361917.69	0932633.25	2300	1355	367GNTR	2/17/2004	253.73	256.95	1101.27	1098.05	-3.22
Carroll	20N26W16DCA1	362339.53	0934457.65	1332	1198	367GNTR	2/17/2004	136.40	133.86	1061.60	1064.14	2.54
Carroll	20N26W23ACA1	362312.82	0934253.17	1713	1335	371POTS	2/17/2004	287.10	286.95	1047.90	1048.05	0.15
Carroll	21N26W10CDC1	362938.61	0934411.55	1122	1090	367GNTR	2/17/2004	97.30	96.54	992.70	993.46	0.76
									Declines/Wells:			1/4
									Average Change:			0.06
Fulton	19N06W23AAD1	361727.77	0913503.45	1630	680	367GNTR	2/10/2004	226.67	221.14	453.33	458.86	5.53
Fulton	20N06W27DBC1	362128	0913631	165	550	368JFRC	2/10/2004	64.77	64.69	485.23	485.31	0.08
Fulton	20N09W18BAD1	362401.62	0915904.08	950	875	367RBDX	2/10/2004	116.85	120.74	758.15	754.26	-3.89
									Declines/Wells:			1/3
									Average Change:			0.57

* Data collected by USGS

**Ozark Aquifer
Water Level Data
'01-'04**

County	Station	Latitude	Longitude	Depth	LS ALT.	Code	Date	2004 WL	2001 WL	01 WL ALT	04 WL ALT	2001 - 2004 WL Change
Izard	17N11W13AAD1	360753	0920626	1729	538	367RBDX	2/10/2004	39.79	39.30	498.21	498.70	0.49
Marion	18N14W08BCC1	361300.13	0922940.34	198	700	367CTTR	2/12/2004	114.27	115.92	585.73	584.08	-1.65
Marion	19N15W14BAA2	361747.67	0923221.53		640	367CTTR	2/12/2004	141.17	147.74	498.83	492.26	-6.57
Marion	19N15W20ACC1	361633.53	0923526.60	900	684	367RBDX	2/12/2004	166.81	180.45	517.19	503.55	-13.64
Marion	19N16W33CCB1	361442.14	0924124.33	753	841	367RBDX	2/12/2004	287.39	294.90	553.61	546.10	-7.51
Marion	19N18W36BDC1	361512.25	0925049.70	1392	755	367RBDX	2/12/2004	35.43	36.17	719.57	718.83	-0.74
Marion	20N17W19ABC2	362225.43	0924918.58	180	862	367CTTR	2/11/2004	25.32	30.22	836.68	831.78	-4.90
									Declines/Wells:			6/6
									Average Change:			-5.84
Newton	16N21W34ABC1	360014.42	0931130.23	190	870	364EVRN	2/12/2004	65.79	60.40	804.21	809.60	5.39
Randolph	18N02W02CAC1	361350.03	0910943.81	128	361	367CRJF	2/9/2004	52.38	51.31	308.62	309.69	1.07
Searcy	14N15W15AAC1	355125.65	0923401.13	3534	1060	367GNTR	2/13/2004	340.83	351.52	719.17	708.48	-10.69
Searcy	15N16W09BBA1	355749.78	0924133.48	950	925	368PWLL	2/12/2004	135.43	137.06	789.57	787.94	-1.63
Searcy	15N16W34BAD1	355416.32	0924024.71	485	1000	364PLTN	2/12/2004	184.67	186.67	815.33	813.33	-2.00
Searcy	16N15W29ACB1	360014.48	0923603.38	640	1090	364EVRN	2/12/2004	141.20	137.07	948.80	952.93	4.13
									Declines/Wells:			3/4
									Average Change:			-2.55
Sharp	15N05W06DDD1	355812.22	0913317.54	482	645	364EVRN	2/10/2004	103.32	101.74	541.68	543.26	1.58
Sharp	16N06W27ACC1	360023	0913654	1000	650	367CTTR	2/10/2004	94.87	92.95	555.13	557.05	1.92
Sharp	17N05W12BDC1	360817.71	0912804.43	425	417	367CTTR	2/10/2004	58.42	56.73	358.58	360.27	1.69
Sharp	17N06W29ABC1	360604	0913854	900	525	367CTTR	2/10/2004	82.13	80.17	442.87	444.83	1.96
Sharp	18N06W10CBC1	361325.14	0913637.77	1525	625	367GNTR	2/9/2004	146.16	141.88	478.84	483.12	4.28
Sharp	19N04W15BAA1	361813.01	0912336.97	611	584	367RBDX	2/9/2004	55.65	55.28	528.35	528.72	0.37
									Declines/Wells:			0/6
									Average Change:			1.97

* Data collected by USGS

**Ozark Aquifer
Water Level Data
'01-'04**

County	Station	Latitude	Longitude	Depth	LS ALT.	Code	Date	2004 WL	2001 WL	01 WL ALT	04 WL ALT	2001 - 2004 WL Change
Washington	15N31W17BBD1	355902.73	0941807.14	2097	1195	367GNTR	2/18/2004	44.07	42.95	1150.93	1152.05	1.12
Washington	15N31W30CAD1	355652.45	0941857.56	2485	1165	367GNTR	2/18/2004	15.02	15.32	1149.98	1149.68	-0.30
									Declines/Wells:			1/2
									Average Change:			0.41
									Total Average Change:			-1.66
									Total Declines/Wells:			22/37
												59.40%

* Data collected by USGS

Appendix F

Comparative Table of Selected Spring/Fall Water Level Changes in the Alluvial Aquifer

Spring/Fall Draw-downs on
Selected Alluvial Wells
2004

County	Station ID	Latitude	Longitude	Date	WL	Date	WL	Spring/Fall
				Measured	Alt. Spring '04	Measured	Alt Fall '04	04 Change
Arkansas	02S04W11DBB1	343232.89	912415.21	3/9/2004	113.26	10/21/2004	111.47	-1.79
Arkansas	03S05W13AC1	342630	913307	4/19/2004	105.54	10/21/2004	104.07	-1.47
Arkansas	03S03W18CCC	342553	912251	4/20/2004	98.79	10/21/2004	97.79	-1.00
Arkansas	04S02W29CCC1	341846.35	911538.5	3/9/2004	109.20	10/21/2004	106.70	-2.50
Arkansas	06S03W32DDA1	340740	912115	6/10/2003	118.45	10/21/2004	120.42	1.97
Arkansas	07S02W17BBA1	340707.15	911451.89	3/4/2004	131.77	10/21/2004	123.08	-8.69
Ashley	17S04W03ABB1	331528	913010	2/26/2004	95.03	10/18/2004	93.20	-1.83
Ashley	19S04W09CBB	330346	913146	3/22/2004	81.30	10/18/2004	80.75	-0.55
Chicot	13S03W34BAA1	333110.24	912539.38	2/26/2004	93.23	10/18/2004	92.45	-0.78
Chicot	19S01W17BBB	330309	911415	3/22/2004	87.50	10/18/2004	91.75	4.25
Craighead	13N03E29AAA1	354403.31	904712.98	3/25/2004	148.95	10/19/2004	147.50	-1.45
Craighead	14N02E27AA	354918	905125	3/16/2004	178.95	10/19/2004	176.85	-2.10
Crittenden	07N07E05DAD1	351504	902129	3/24/2004	186.90	10/19/2004	185.15	-1.75
Cross	07N01E11AAA1	351501.25	905705.29	3/23/2004	142.23	10/20/2004	140.20	-2.03
Cross	07N02E02CD	351510	905113	5/11/2004	145.26	10/20/2004	145.43	0.17
Desha	09S03W17DCB1	335448.23	912456.66	3/2/2004	121.26	10/18/2004	120.81	-0.45
Desha	10S02W24DBC1	334849.63	911453.44	3/2/2004	117.12	10/18/2004	115.13	-1.99
Drew	11S04W35DC	334144	912842	5/19/2004	128.35	10/18/2004	127.54	-0.81
Drew	15S04W12DBB	332942	912744	3/31/2004	91.90	10/18/2004	91.77	-0.13
Jackson	10N02W29ABB1	352828.7	911311.86	3/31/2004	201.17	10/19/2004	200.45	-0.72
Jackson	11S04W35DC1	334144	912842	5/19/2004	128.35	10/19/2004	127.54	-0.81
Jefferson	03S08W24BBC1	342620.37	914953.19	3/3/2004	152.42	10/21/2004	152.18	-0.24
Jefferson	04S07W08CBB1	342226	914745	3/19/2004	147.00	10/21/2004	146.40	-0.60
Jefferson	05S08W12DAA1	341712	914907	3/3/2004	176.78	10/21/2004	174.81	-1.97
Jefferson	06S05W15BCA1	341022.95	913245	3/3/2004	157.70	10/21/2004	157.09	-0.61
Jefferson	06S06W23AAD1	341006.74	913712.2	3/3/2004	167.55	10/21/2004	165.95	-1.60

Spring/Fall Draw-downs on
Selected Alluvial Wells
2004

County	Station ID	Latitude	Longitude	Date	WL	Date	WL	Spring/Fall
				Measured	Alt. Spring '04	Measured	Alt Fall '04	04 Change
Lee	03N01W10DCC1	345201	910455	4/15/2004	133.00	10/19/2004	134.10	1.10
Lee	03N02E29DAD1	345013.62	905429.78	3/22/2004	162.34	10/19/2004	159.29	-3.05
Lee	03N05E14DDA1	345148.08	903203.25	3/22/2004	179.45	10/19/2004	179.07	-0.38
Lincoln	08S06W02ACB1	340338.84	913957.73	3/2/2004	138.39	10/18/2004	138.79	0.40
Lincoln	10S05W05CB	335529	913832	5/18/2004	145.76	10/18/2004	145.15	-0.61
Lonoke	02N08W34BA1	344543	915106	4/23/2004	104.24	10/20/2004	100.88	-3.36
Lonoke	01S10W11CCB	343839	920337	5/20/2004	203.13	10/20/2004	201.68	-1.45
Lonoke	02N07W16BAB1	344815.2	914539.5	3/11/2004	103.81	10/20/2004	100.60	-3.21
Lonoke	02N08W16ABC1	344806.48	915113.61	3/11/2004	110.11	10/20/2004	108.69	-1.42
Lonoke	02S08W28CDC1	343008	915237	6/18/2004	151.16	10/20/2004	149.90	-1.26
Lonoke	02S08W06ABB1	343430	915447	6/19/2004	154.70	10/20/2004	153.44	-1.26
Mississippi	12N08E08BCB1	354047.06	901559.25	3/24/2004	216.68	10/19/2004	214.40	-2.28
Mississippi	13N09E30CCD1	354247.81	901028.63	3/24/2004	221.05	10/19/2004	213.80	-7.25
Monroe	02S02W11DAC1	343208.97	911100.58	3/17/2004	154.07	10/19/2004	152.10	-1.97
Monroe	03N01W20ABA1	345201.18	910722.83	3/15/2004	141.65	10/19/2004	138.25	-3.40
Monroe	01N01W15CBD1	344139	910542	5/20/2004	137.26	10/19/2004	134.87	-2.39
Phillips	01S03E23CDA1	343516	904511	4/14/2004	185.00	10/19/2004	177.10	-7.90
Phillips	04S01E12CAB1	342128	905748	4/14/2004	149.50	10/19/2004	137.75	-11.75
Poinsett	12N07E25DC1	353740	901802	4/27/2004	210.05	10/19/2004	206.56	-3.49
Poinsett	11N06E34AB1	353224	902646	4/28/2004	199.18	10/19/2004	192.63	-6.55
Prairie	01S06W12BAB1	343826	913613	3/10/2004	108.99	10/20/2004	108.55	-0.44
Prairie	02N05W21CB1	344649	913300	2/26/2004	117.25	10/20/2004	116.39	-0.86
Prairie	02N05W24ACB	344659	912937	2/26/2004	136.65	10/20/2004	133.29	-3.36
Prairie	02N06W21DAA1	344653	913827	2/26/2004	117.73	10/20/2004	117.80	0.07
Prairie	02N06W24CAA1	344651	913551	2/26/2004	114.80	10/20/2004	114.68	-0.12
Prairie	04N04W07ADC1	345850.31	912733.07	3/10/2004	169.47	10/20/2004	169.26	-0.21

Spring/Fall Draw-downs on
Selected Alluvial Wells
2004

County	Station ID	Latitude	Longitude	Date	WL	Date	WL	Spring/Fall
				Measured	Alt. Spring '04	Measured	Alt Fall '04	04 Change
St. Francis	04N01W17CBC	345735	910801	5/12/2004	149.43	10/19/2004	147.85	-1.58
St. Francis	05N06E34CAB1	350025.57	902656.87	3/22/2004	173.54	10/19/2004	171.95	-1.59
White	07N05W26AAA1	351224	913003	3/18/2004	174.00	10/19/2004	176.10	2.10
White	08N05W32CBC1	351615.66	913416.96	3/18/2004	197.50	10/19/2004	193.50	-4.00
Woodruff	08N03W04BBB1	352128	911919	5/7/2004	205.00	10/19/2004	201.82	-3.18
Woodruff	08N03W31AAD1	351655	912028	4/1/2004	190.23	10/19/2004	187.70	-2.53

Appendix G

ASWCC Water-Quality Tables

ASWCC Monitoring Enhancement Wells Water Quality Analysis

* Exceeded holding time		SW wells are ASWCC wells, other wells are private		
**Orthophosphate is measured by IC, therefore sample filtered in instrument through 0.20 um pore-size membrane				
***Nitrate was analyzed for samples collected before 10/12/03 and nitrate+nitrite thereafter and both are reported as N				
- Not analyzed				
? Questionable data				
# Bicarbonate and carbonate concentrations were calculated from measured alkalinity and pH				
## pH value is calculated value from bicarbonate and carbonate concentrations				

ASWCC Monitoring Enhancement Wells Water Quality Analysis

[illegible]

ASWCC Monitoring Enhancement Wells Water Quality Analysis

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ASWCC Monitoring Enhancement Wells Water Quality Analysis

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ASWCC Monitoring Enhancement Wells Water Quality Analysis

[illegible]

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Enhancement Wells
Water Quality Analysis

## pH value is calculated value from bicarbonate and carbonate concentrations									
Well ID	PN1 SW14	PN2 SW15	CH1-SW16	JK1-SW17	W01-SW18	CS1-SW19	SF1-SW20	LN1-SW21	DR1-SW22
Location	353740	353224	354916	353550	352128	351508	345735	335228	334144
	901802	902646	905125	910428	911919	905113	910801	913833	912842
Sampling date	04/27/04	04/28/04	05/04/04	05/06/04	05/07/04	05/11/04	05/12/04	05/18/04	05/19/04
Sample	Filtered	Filtered	Filtered	Filtered	Filtered	Filtered	Filtered	Filtered	Filtered
Parameter	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
Calcium	74.608	89.638	59.962	81.302	60.176	126.640	64.047	22.647	30.074
Magnesium	12.612	22.795	17.115	23.199	13.885	56.522	19.662	6.884	10.267
Sodium	7.30	10.35	28.85	24.10	19.40	30.98	15.04	14.87	12.08
Potassium	2.08	1.19	2.00	2.35	2.22	1.77	1.53	1.95	1.62
Iron	14.620	9.903	0.878	2.575	3.427	0.427	0.626	16.362	23.765
Lead	0.008	0	0.004	0.001	0.005	0.003	0.003	0.007	0.001
Manganese	0.532	0.744	0.245	0.634	1.530	0.239	0.904	0.617	0.414
Copper	0.001	0.003	0.005	0.002	0.001	0.006	0.001	0.003	0.000
Zinc	0.015	0.021	0.010	0.015	0.012	0.029	0.017	0.038	0.008
Alkalinity	240	256	268	256	192	472	316	100	116
Bicarbonate#	292	312	326	310	233	571	382	122	141
Carbonate#	0.29	0.31	0.70	1.08	0.71	2.19	1.64	0.03	0.06
Chloride	2.412	8.511	26.649	15.171	6.061	15.948	17.538	1.986	7.148
Sulfate	16.651	51.682	49.327	61.752	54.832	54.722	23.360	1.129	7.894
Bromide	0.008	0.000	0.231	0.113	0.000	0.169	0.115	0.006	0.000
Fluoride	0.099	0.093	0.0637	0.0554	0.0700	0.0525	0.0776	0.062	0.092
Nitrate***	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ammonia	0.616	0.092	0.278	0.402	0.196	0.152	0.164	0.287	0.222
Orthophosphate **	0.0265	0	0.0261	0	0	0	0.1059	0.0282	0
pH	7.30	7.30	7.64	7.85	7.79	7.89	7.94	6.62	6.94
Conductivity	480	578	713	653	480	1007	688	214	277
Turbidity	42	48	3	11	16	12	20	91	37
TSS	-	-	-	-	-	-	-	-	-
TDS	-	-	-	-	-	-	-	-	-
Total Coliform	-	-	-	-	-	-	-	-	-
E. coli	-	-	-	-	-	-	-	-	-

* Exceeded holding time

**Orthophosphate is measured by IC, therefore sample filtered in instrument through 0.20 um pore-size membrane

***Nitrate was analyzed for samples collected before 10/12/03 and nitrate+nitrite thereafter and both are reported as N

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Bicarbonate and carbonate concentrations were calculated from measured alkalinity and pH

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pH value is calculated value from bicarbonate and carbonate concentrations