Arkansas Water Resources Center

SPATIAL ANALYSIS OF THE CAUSE OF MERCURY CONTAMINATION OF FISH IN ARKANSAS

A Report Submitted to the Arkansas Mercury Task Force

By

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ACKNOWLEDGMENTS

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INTRODUCTION

There have been concerns about mercury (Hg) contamination in fish in Arkansas since the discovery of the problem in the Ouachita River in 1992 (Armstrong et al., 1995). Of the more than 170 lakes and streams sampled by the Mercury Task Force from 1992 through 1994, 23% had fish with Hg concentrations exceeding the FDA Action Level of 1 ppm (Armstrong et al., 1995). Cause of the fish Hg contamination, however, is unknown. Given the economic, human-health and environmental costs associated with fish Hg contamination, it is critical that the cause of this widely-spread problem be identified. Determination of the cause will lead to an improved management and an effective remediation of the problem.

The objective of this study was to investigate the cause of fish Hg contamination in Arkansas through spatial analysis of environmental factors and the locations where fish tissue Hg concentrations have been determined using a Geographic Information System (GIS). The computer software known as Geographic Resources Analysis Support System (GRASS) was used in this study to examine the spatial correlations between fish Hg contamination and soils, geology, vegetation, topography, and those environmental factors that may favor Hg methylation.

GIS DATABASE DEVELOPED IN THIS STUDY AND THEIR BASIC ANALYSIS

A number of maps of various types, have been developed for this study and are briefly described below.

Site Maps

1. Sites where fish (largemouth bass) tissue Hg concentration were determined (from 194 rivers, streams, lakes, or reservoirs) (Note: this data set was selected from a larger data set which consisted of 834 sites. The selection was done by A. Price of the Arkansas Department of Pollution Control & Ecology)
    1) Sites where fish tissue Hg concentrations were >1 ppm (exceeding the FDA action level) (27 sites)
    1.2) Sites where fish Hg concentrations were 0.70-0.99 ppm (suspect) (32 sites)
    .3) Sites where fish Hg concentrations were < 0.70 ppm (acceptable) (135 sites)
2. Sites with lake water quality (including the following parameters for epilimnion, thermocline and hypolimnion: dissolved Hg, total Hg, NH_3-N, NO_3-N, Cl, ortho-phosphate, total phosphorus, SO_4, total organic carbon (TOC), total suspended solids (TSS), total dissolved solids (TDS), DOC, Hardness, Al, Cu, Ca, Fe, K, Mg, Mn, Na, Zn, Ni, Be, Ba, Co, V, Cd, Cr, Pb, Se) (84 lakes)
3. Sites with sediment Hg concentrations (108 lakes and streams)
4. Sites with bedrock Hg concentrations (728 samples from Ouachita Mountains region)
5. Oil fields in Arkansas

Vector Maps

1. Hydrologic unit map of Arkansas (1:2,000,000)
2. Perennial streams of Arkansas (1:100,000)
3. Major streams of Arkansas (1:500,000)
4. Lakes and ponds of Arkansas (1:100,000)

Raster Maps

1. Major land resource areas (MLRA) of Arkansas
2. Hydrologic basins (HB) of Arkansas
3. Soil association map of Arkansas
    3.1) Soil association map of the "hot" HB's of the Lower Ouachita River
    3.2) Soil association map of the Felsenthal area
4. Surficial geology map of Arkansas
5. Land use/land cover map of Arkansas in 1972
    5.1) Wetlands in Arkansas in 1972

6. Vegetation cover map of Arkansas in 1992

    6.1) Forested wetlands in Arkansas in 1992

7. Elevation map of Arkansas

8. Slope map of Arkansas

Maps and Reports

Various maps thought to be useful in spatial analysis of fish Hg contamination in relation to environmental factors were collected. These maps and their associated reports are attached in the Appendix I. Soil maps are shown for:

1) the state of Arkansas,

2) the "hot" (i.e., with significant numbers of contaminated fish) hydrologic basins the Lower Ouachita River, and

3) the Felsenthal area.

Coincidence Reports

Maps of various environmental factors were overlaid in GRASS GIS with the distribution of sites where fish tissue Hg concentrations have been determined. The coincidence reports between the environmental characteristics and those sites where fish tissue Hg concentrations were >1 ppm are provided in the Appendix II. These reports show that the majority (74%) of the 27 fish Hg contamination sites were located in the Western Coastal Plains (MLRA # 133B). The "hot" hydrologic basins identified include:

1) Lower Ouachita - Bayou De Loutre (8 contamination sites),

2) Lower Ouachita - Smackover (6 contamination sites), and

3) Lower Saline (4 contamination sites).

The dominant soil association in the contaminated areas is Guyton-Ouachita-Sardis. These are low terrace and flood plain soils formed in loamy alluvial sediments. This soil association consists of about 65% Guyton soils, 10% Ouachita soils, and 10% Sardis soils. The remaining 15% consist of numerous soils of minor extent (including Amy, Bibb, Felker, Leaf, Ochlockonee, Ozan, Smithton and Toine). Guyton soils are poorly drained and slowly permeable, and typically have a grayish brown silt loam surface layer. The subsoil is gray, mottled silt loam to silty clay loam. Ouachita soils are well drained and moderately slowly permeable, and typically have a brown silt loam surface layer. The subsoil is dark yellowish brown silty clay loam. The underlying

material is yellowish brown fine sandy loam. Sardis soils are somewhat poorly drained, and typically have a brown silt loam surface layer. The upper part of the subsoil is brown silt loam. The lower part is yellowish brown, mottled silt loam. The underlying material is gray, mottled loam.

More information about the soils of Arkansas and the characteristics of other soil associations identified in the fish Hg contamination areas are given in the Appendix III.

It is important to note that the dominant land use/land cover of the fish Hg contamination areas is wetlands. The major topography of these areas is flat (>1% slope) and low in elevation (16-162 m above sea level).

For detailed environmental information in each of the 27 fish Hg contamination sites, see the reports in the Appendix II.

PRELIMINARY RESULTS AND DISCUSSION

Possible Source of Fish Hg Contamination in the Lower Ouachita River Area

Preliminary spatial data analysis suggests that the source of Hg in the Lower Ouachita River was possibly from the Ouachita Mountains. Over geological time, sediments eroded from the Ouachita Mountains shales and other Hg-bearing rocks were transported and deposited in the Ouachita River. Once Hg-bearing sediments were deposited in the river, the Hg could be continuously converted to methyl Hg from bed sediments and accumulated in fish tissue through the food chain.

From the elevation map and hydrologic system in Arkansas, downstream water flow from the Ouachita Mountains to the Ouachita River is obvious. Many of the shales and other rocks found throughout the Ouachita Mountains contain trace or greater amounts of Hg. A commercially-mined cinnabar belt (about six miles wide and about 30 miles long) is in the watershed of the Ouachita River on the southern edge of the Ouachita Mountains. Therefore, it is likely that Hg in bed sediments in the Ouachita River were derived from the Ouachita Mountains. Armstrong et al. (1995) found a relationship between Hg concentrations in the Ouachita River sediments and the black shales in the Ouachita Mountains. The sedimentary rocks in the Coastal Plain of south Arkansas are much younger than the rocks in the Ouachita Mountains. The rocks of the Coastal Plain were deposited in a shallow marine and coastal setting (Guccione, 1993).

In addition, waters from the Hot Springs and brines from petroleum fields in Union County and other nearby counties might also have contributed to elevated Hg concentration in the Ouachita River (see the map of oil fields in Arkansas). High concentrations of Hg have been found in waters from hot springs and in brines from petroleum fields in California. Geothermal gradient areas are often related to elevated Hg release to the environment (Fleischer, 1970).

Despite the favorable appearance of the Ouachita Mountain rocks as a source of Hg. It is important to note that the streams closest to the cinnabar deposits do not have Hg contaminated fish. Therefore, conditions for methylation are also very important for contamination of fish to occur. Furthermore, there are some Hg contaminated fish in locations where it is difficult to find a definite rock source. This observation combined with the knowledge that Hg concentrations can be magnified by almost 1 million by bioaccumulation processes, suggests that there is an adequate amount of Hg in the environment for contamination of fish and that the major factor is conditions for methylation. The source may be from soils and rocks or it may be from atmospheric deposition. The volume-weighted mean concentration for 17 rain collection sites in the Upper Midwest, the Northeast and along the Atlantic seaboard was about 10 ng/L for the period February 1995 to February 1996.

It is interesting to note that the majority of the fish Hg contamination sites were located in wetlands (see, for example, 1972 wetlands map of Arkansas). This may indicate that wetland conditions are favorable for Hg methylation. In other areas of the state, where Hg sources may also be available, but wetlands do not exist, there are few fish Hg contamination.

Currently, we are continuing to determine more closely the dominant environmental factors that lead to Hg contamination in fish in Arkansas from a number of GIS outputs.

Fish Tissue Hg Concentrations in Relation to Lake and Sediment Parameters

In order for Hg methylation to occur, the correct combination of environmental conditions must occur, including low pH, low alkalinity, optimal sulfate concentration, high organic matter content, and low dissolved oxygen (Armstrong et al., 1995). Lake water quality collected from 84 lakes and sediment Hg concentration determined from 108 streams/lakes were used to examine relationships between fish Hg concentrations and the pH, alkalinity, sulfate concentration, total organic carbon, and dissolved oxygen content in lake waters and Hg in sediments. Some preliminary relationships are shown in the Appendix IV. More of these types of analyses are planned to be completed in the phase II of this project. The raw data of the lake water quality and

sediment Hg concentrations are attached in the Appendix V. These data were furnished by A. Price of the Arkansas Department of Pollution Control & Ecology.

REFERENCES

Armstrong, M, P. Burge, S. Evans, J. Giese, T. McChesney, J. Nix, A. Price, K. Thornton, and D. Turman (Arkansas Mercury Task Force). 1995. Mercury in Arkansas: 1993-1994 biennium report. Little Rock, AR.

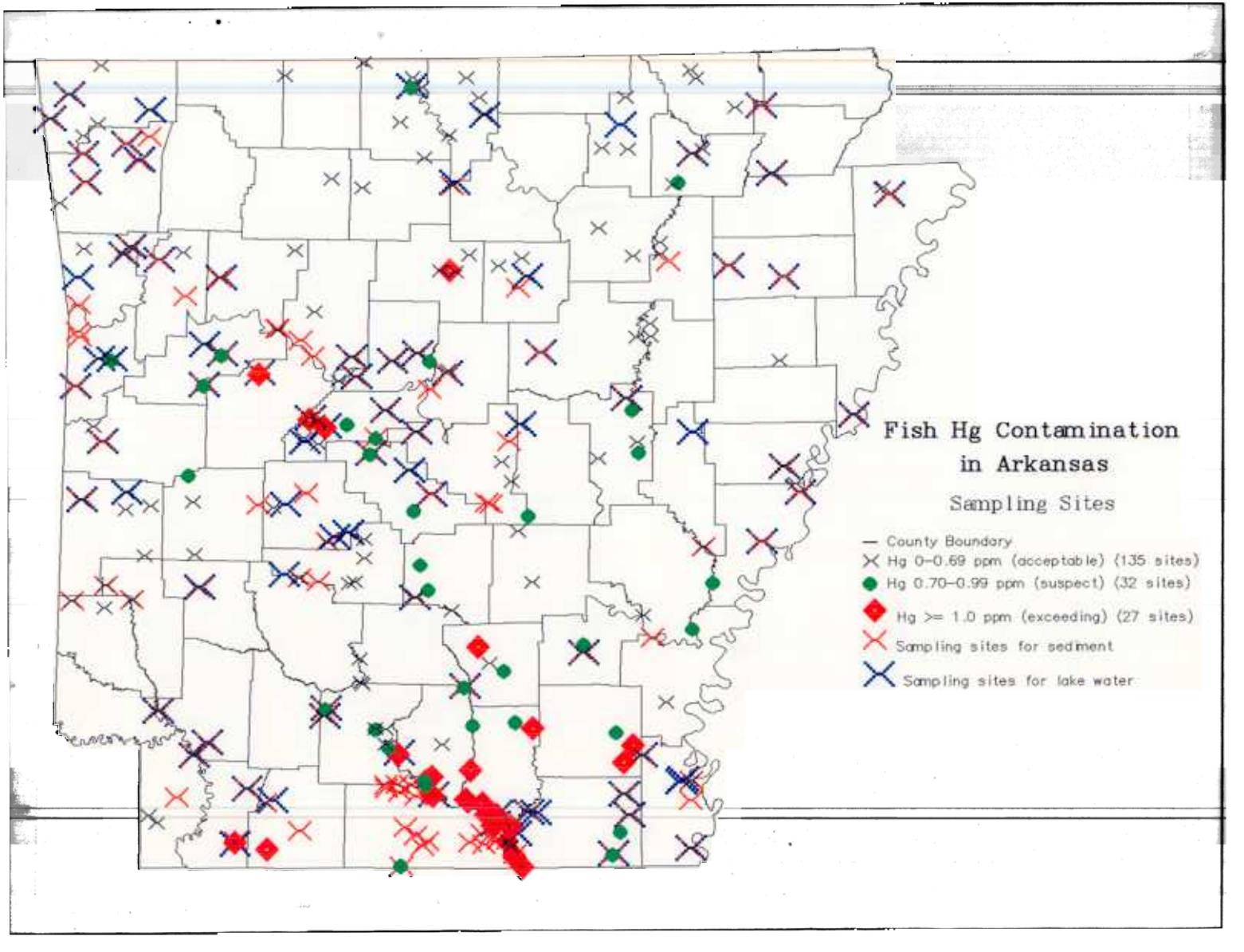
Fleischer, M. 1970. Summary of the literature on the inorganic geochemistry of mercury. p. 6-13 In Mercury in the Environment. U.S. Geological Survey professional paper 713. U.S. Government Printing Office, Washington.

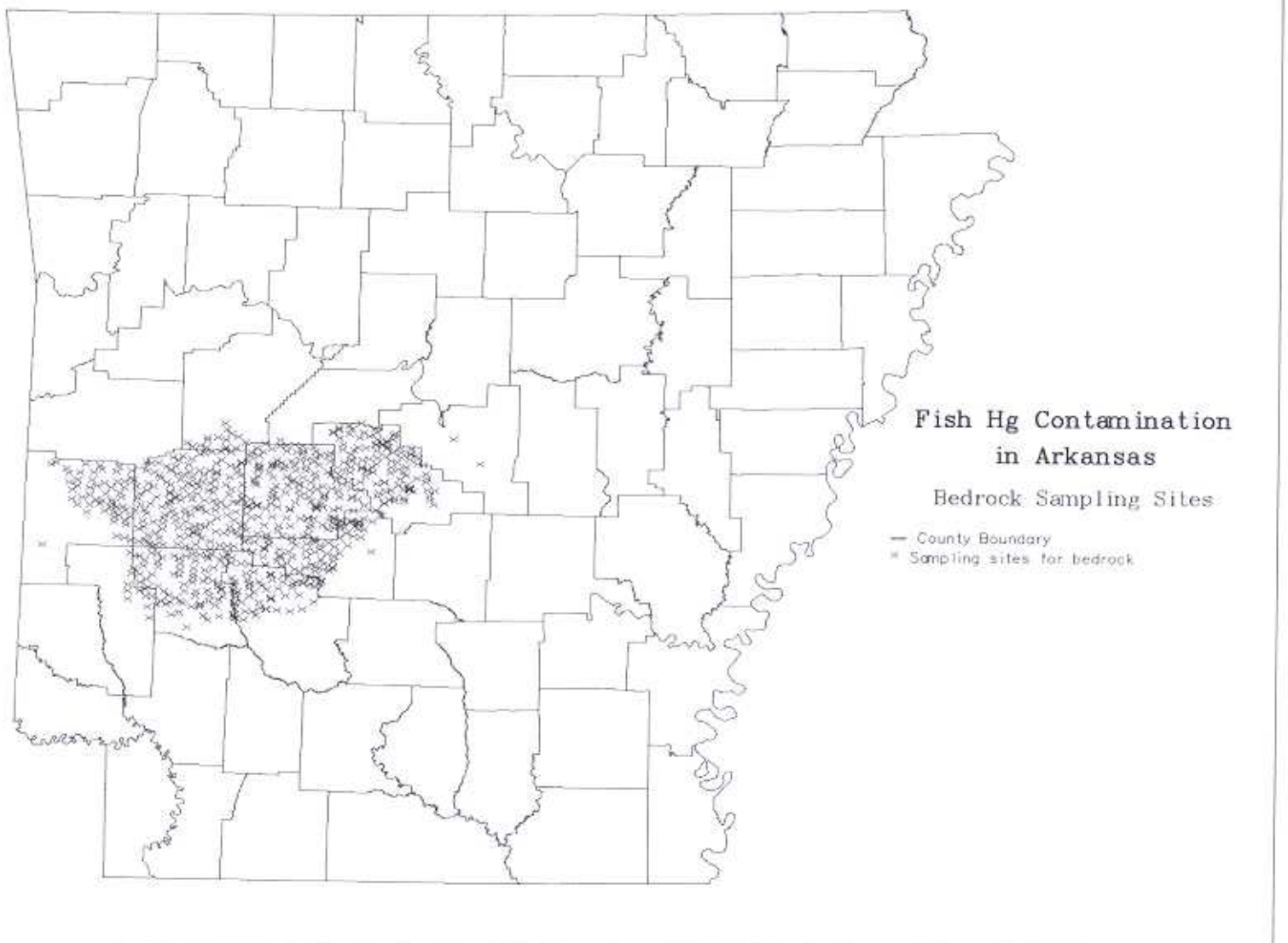
Guccione, M.J. 1993. Geologic history of Arkansas through time and space. The Arkansas and Regional Studies Center, University of Arkansas, Fayettevill, AR.

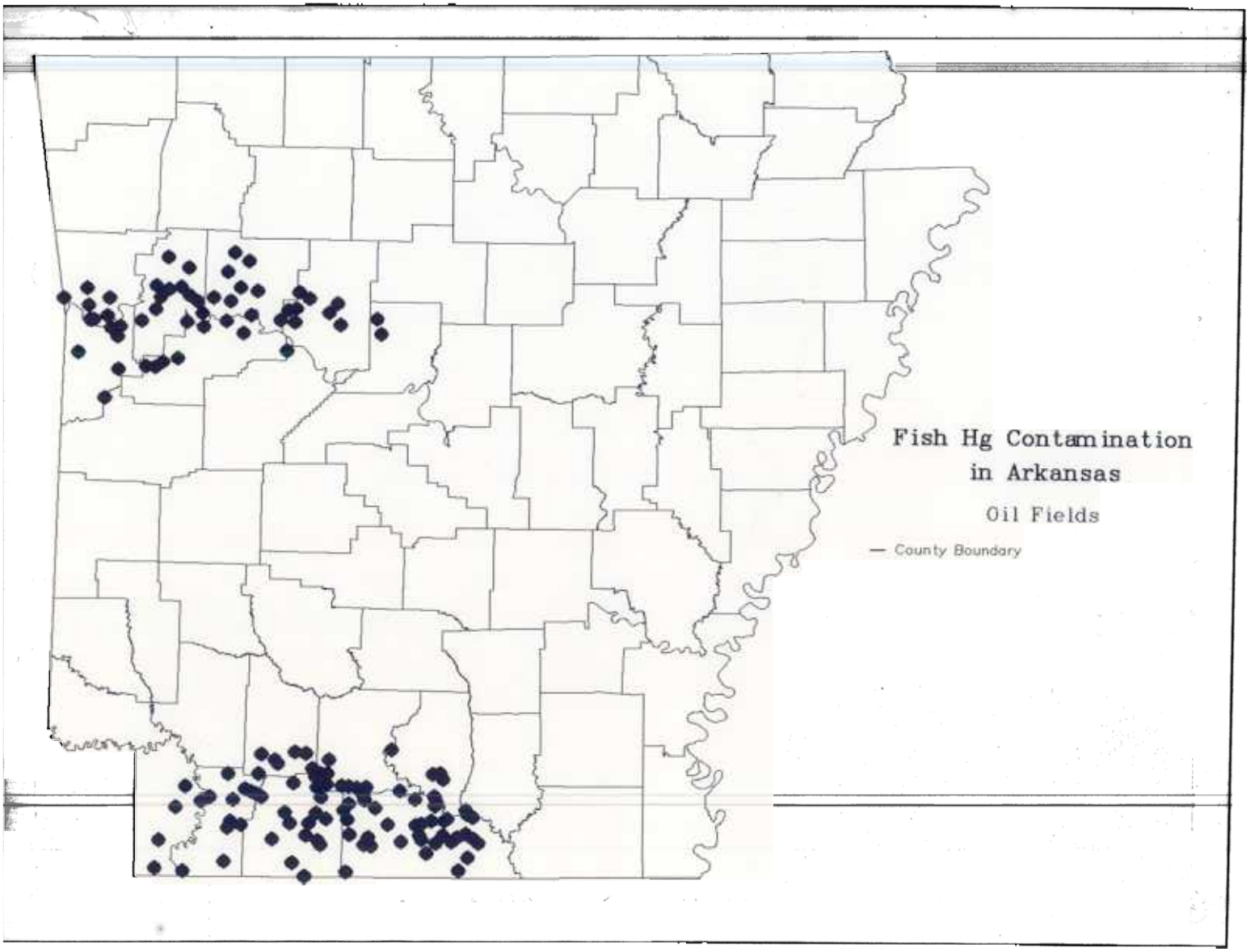
NADP, 1997, The NADP/MDN transition phase data report: The National Atmospheric Deposition Program Web Site for Mercury Deposition Network, htt://nadp.nrel.colostate.edu/NADP/mdn_trandata_rpt.html.

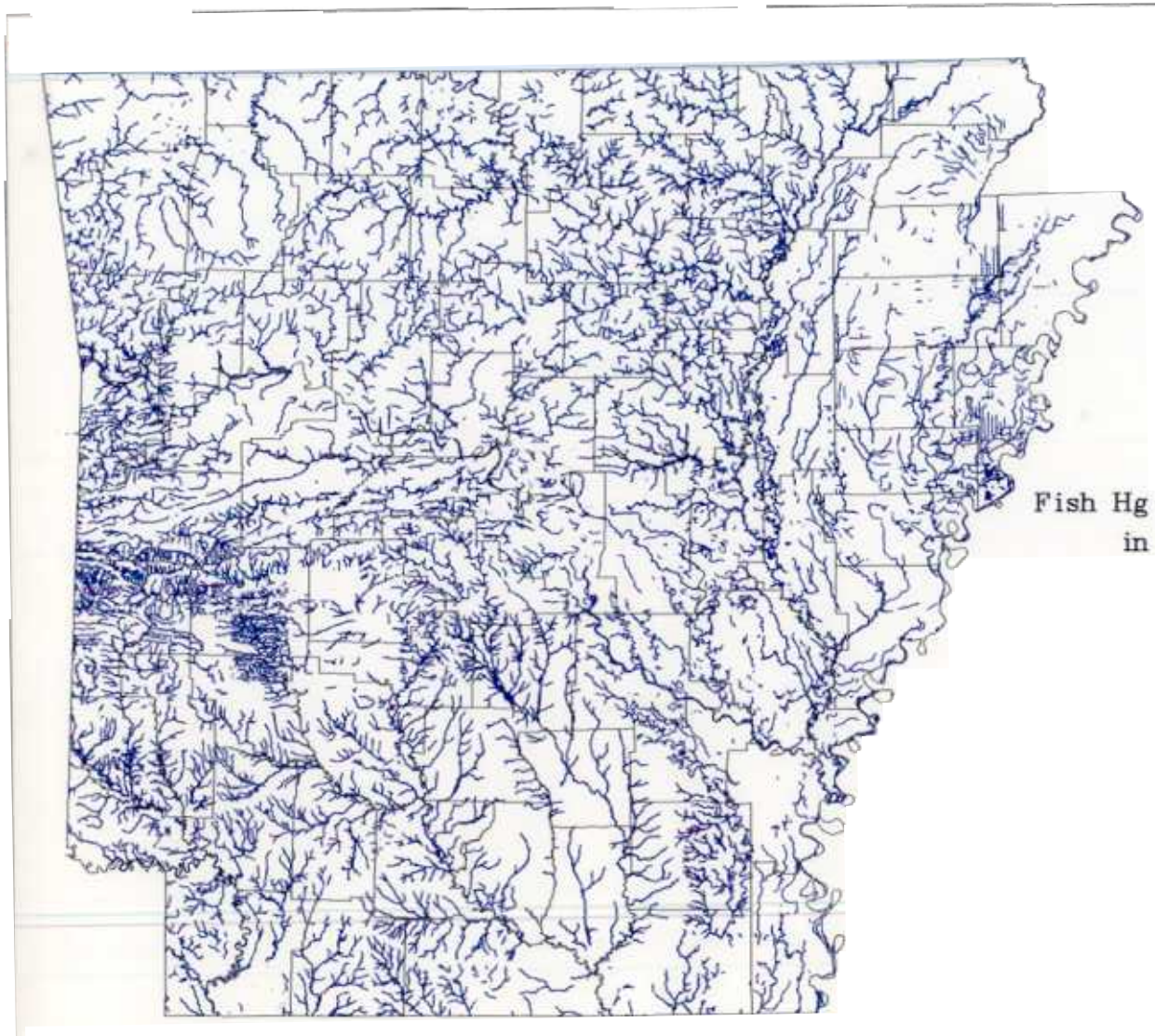
APPENDIX

I. Maps and Reports

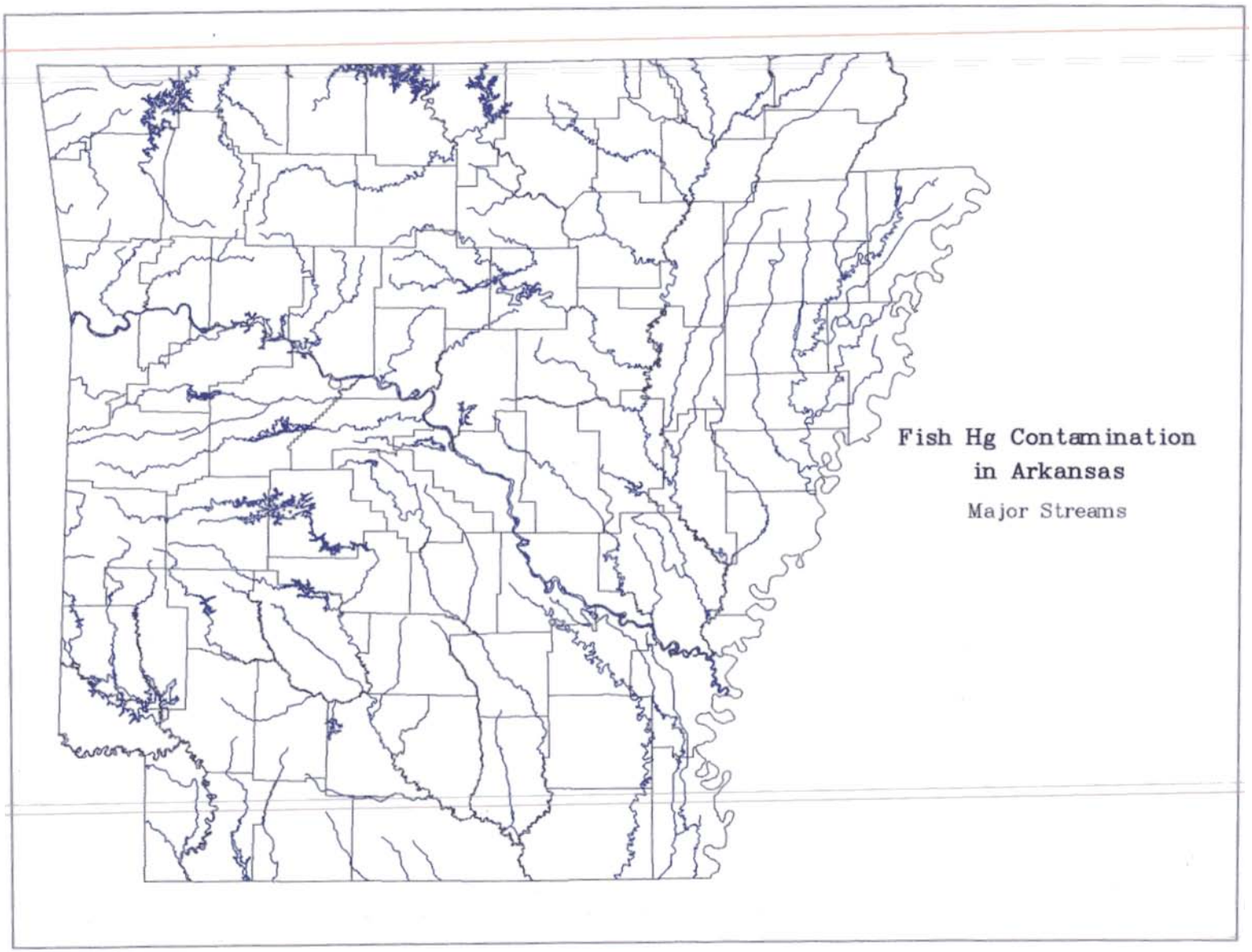

Fish Hg Contamination
in Arkansas
Sampling Sites
County Boundary
Hg 0-0.69 ppm (acceptable) (135 sites)
Hg 0.70-0.99 ppm (suspect) (32 sites)
Hg >= 1.0 ppm (exceeding) (27 sites)
Sampling sites for sediment
Sampling sites for lake water

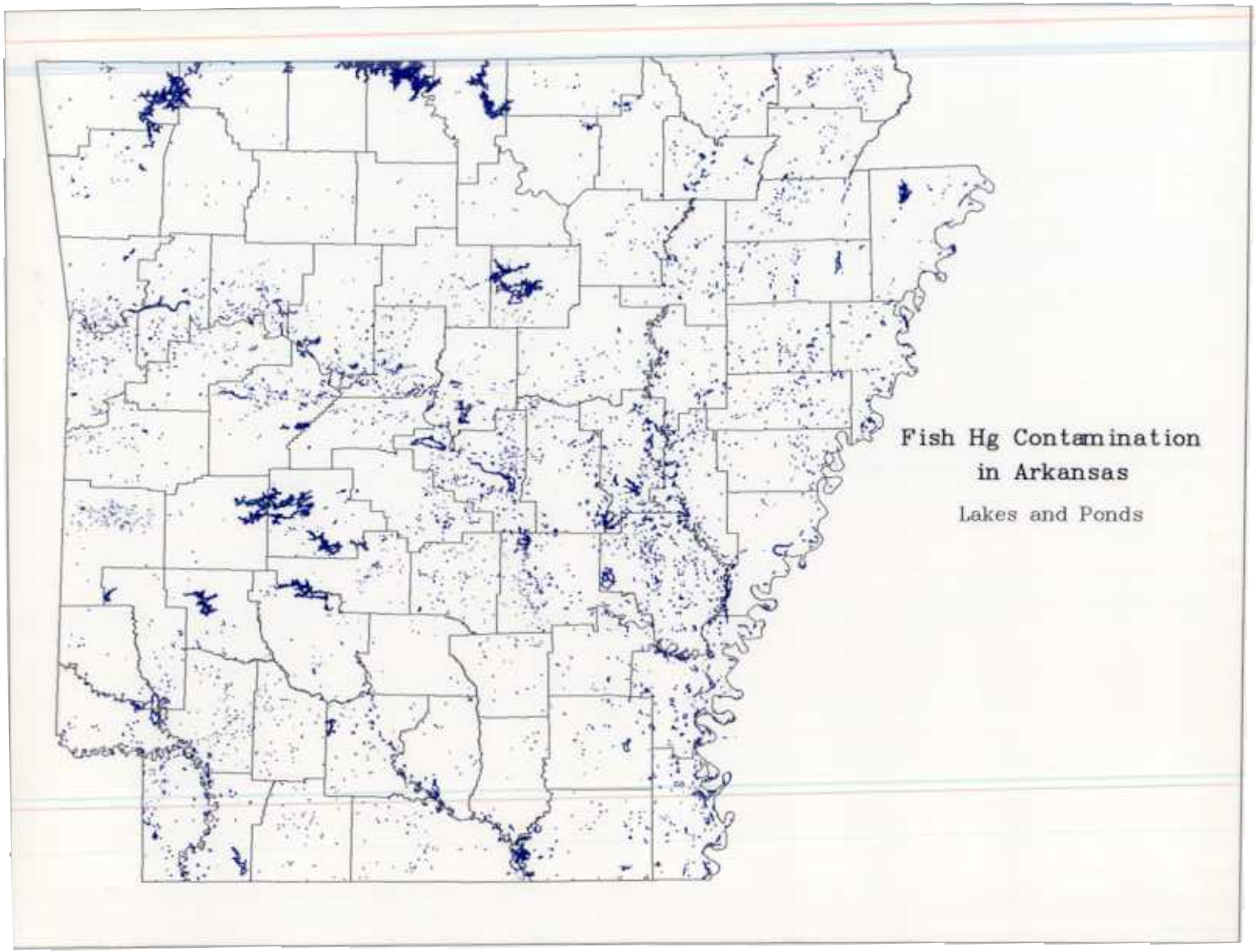

Fish Hg Contamination
in Arkansas
Bedrock Sampling Sites
— County Boundary
× Sampling sites for bedrock

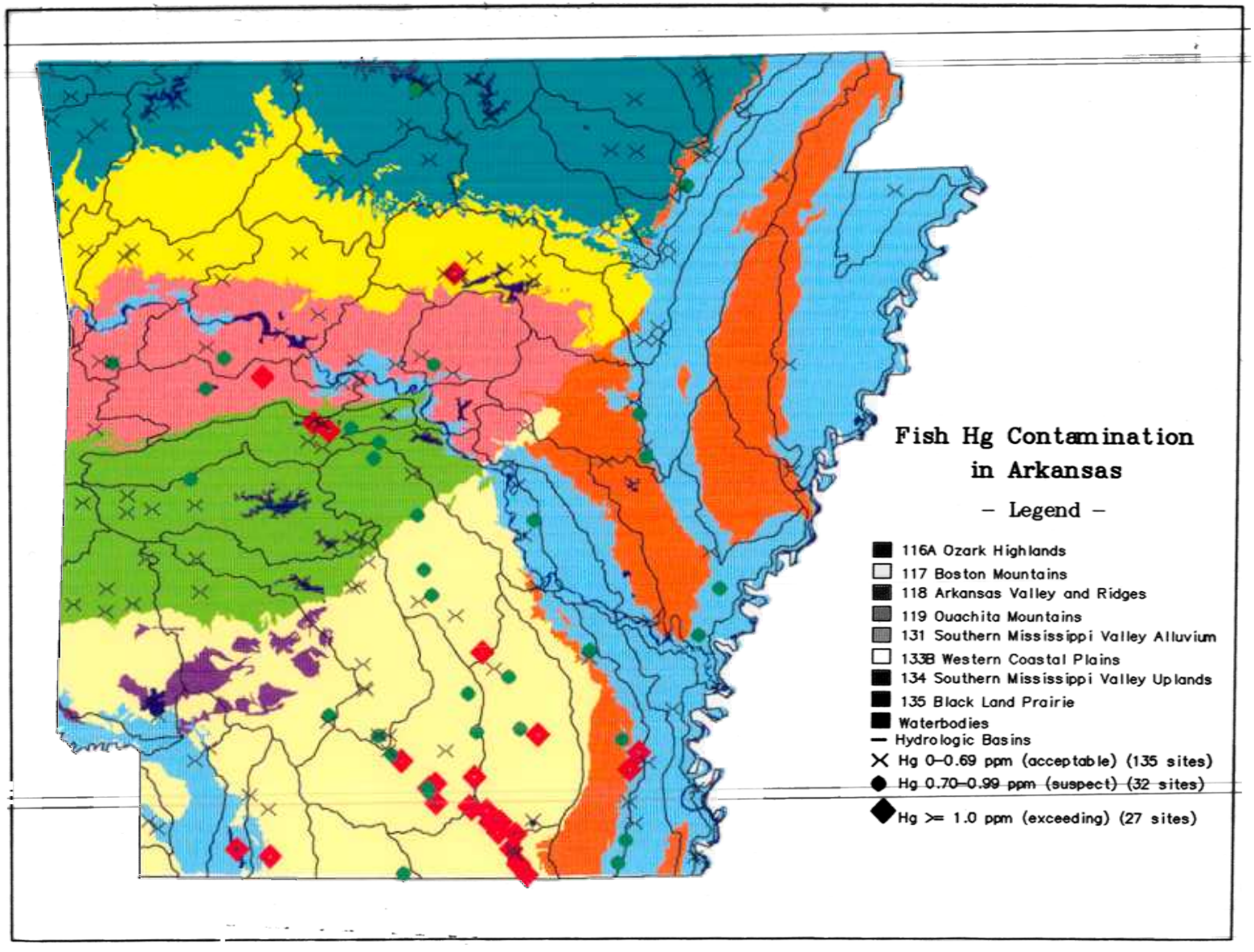

Fish Hg Contamination
in Arkansas
Oil Fields
— County Boundary



Fish Hg Contamination
in Arkansas


Fish Hg Contamination
in Arkansas
Major Streams


Fish Hg Contamination
in Arkansas
Lakes and Ponds


Fish Hg Contamination
in Arkansas
– Legend –
116A Ozark Highlands
117 Boston Mountains
118 Arkansas Valley and Ridges
119 Ouachita Mountains
131 Southern Mississippi Valley Alluvium
133B Western Coastal Plains
134 Southern Mississippi Valley Uplands
135 Black Land Prairie
Waterbodies
Hydrologic Basins
Hg 0–0.69 ppm (acceptable) (135 sites)
Hg 0.70–0.99 ppm (suspect) (32 sites)
Hg >= 1.0 ppm (exceeding) (27 sites)

LOCATION: ar

RASTER MAP CATEGORY REPORT

Wed Oct 9 13:48:30 1996

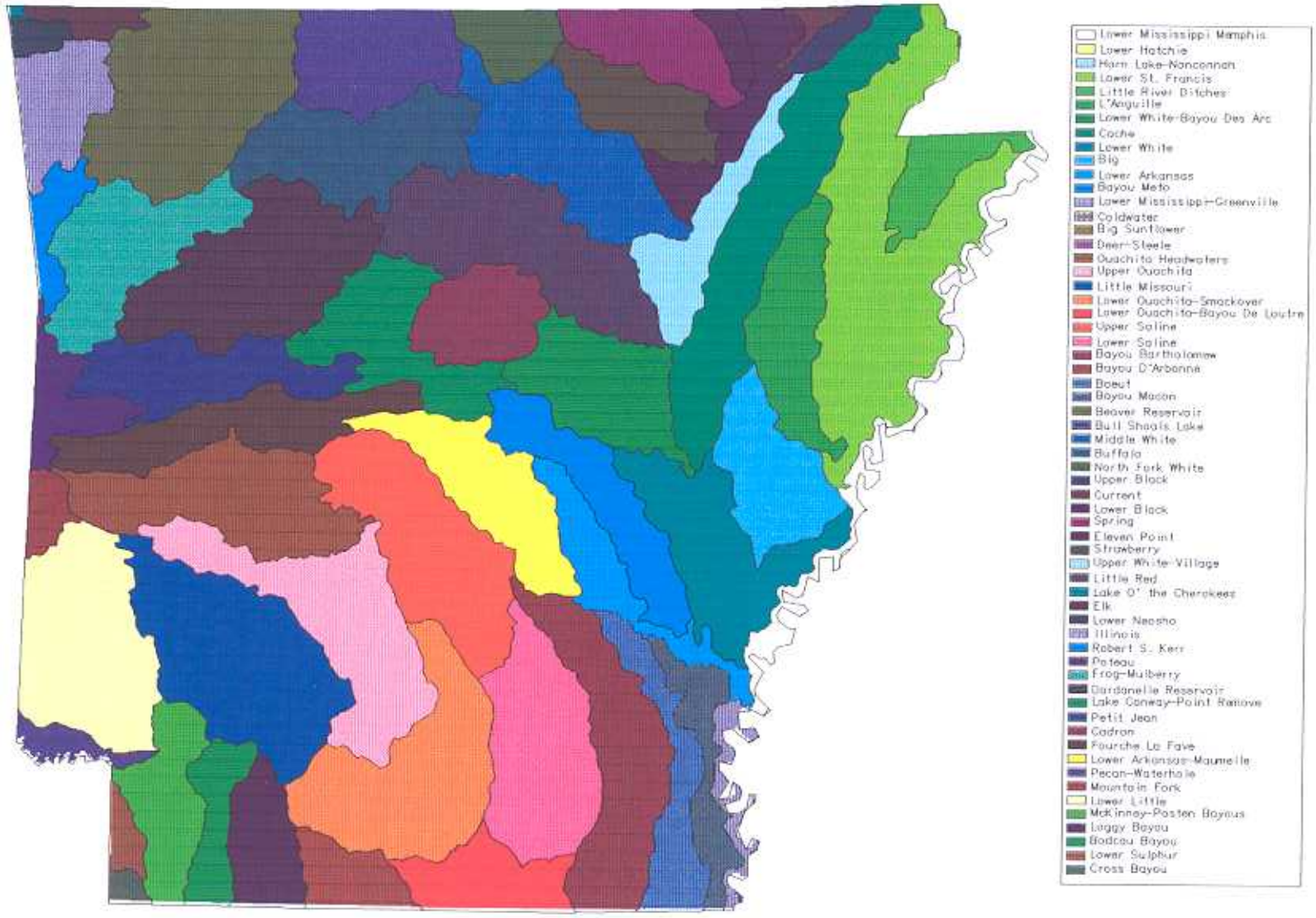
REGION				
	north:	4099000	east:	971400
	south:	3633040	west:	340200
	res:	249.97854077	res:	249.98019802

MASK:arkstate in PERMANENT, categories 1

MAP: (untitled) (mlra in Hg)

#	description	Category Information	acres	% cover
1	116A	Ozark Highlands	4,586,423	13.49
2	117	Boston Mountains	3,533,935	10.40
3	118	Arkansas Valley and Ridges	3,324,027	9.78
4	119	Ouachita Mountains	3,776,223	11.11
5	131	Southern Mississippi Valley Alluvium	7,615,214	22.41
6	133B	Western Coastal Plains	6,762,876	19.90
7	134	Southern Mississippi Valley Uplands	3,621,765	10.66
8	135	Black Land Prairie	370,265	1.09
9	Waterbodies		397,271	1.17
TOTAL			33,987,999	100.00

Hydrologic Basins of Arkansas



RASTER MAP CATEGORY REPORT

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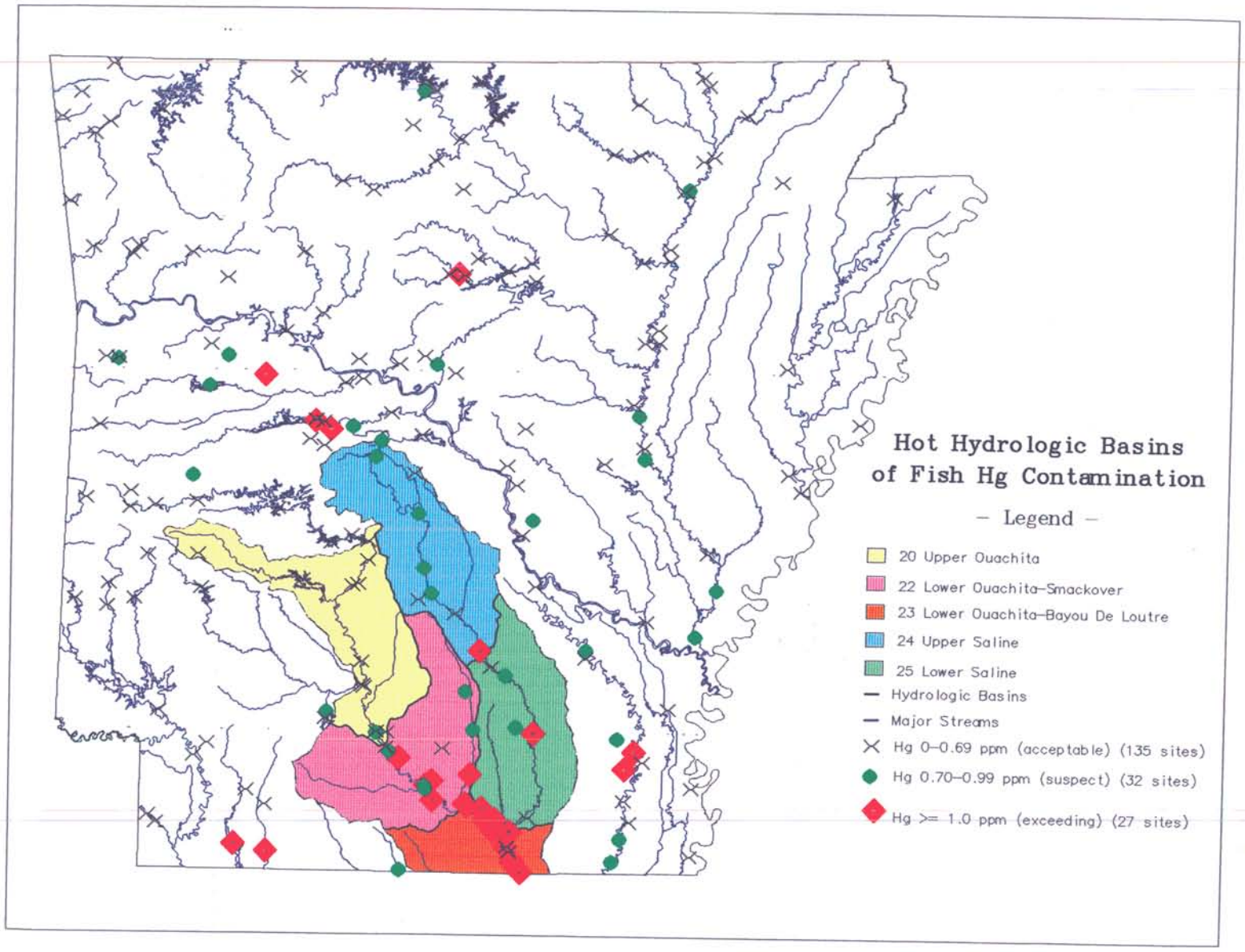
MASK:arkstate in PERMANENT, categories 1

MAP: Reclass of hb in Hg (hb in Hg)

Category Information

#	description	acres	% cover
1	Lower Mississippi Memphis	108,196	0.32
2	Lower Hatchie	154	0.00
4	Horn Lake-Nonconnah	216	0.00
6	Lower St. Francis	1,895,963	5.67
7	Little River Ditches	307,373	0.92
8	L'Anguille	621,153	1.86
9	Lower White-Bayou Des Arc	716,024	2.14
10	Cache	1,239,234	3.70
11	Lower White	881,168	2.63
12	Big	606,067	1.81
13	Lower Arkansas	452,474	1.35
14	Bayou Meto	635,699	1.90
15	Lower Mississippi-Greenville	132,964	0.40
16	Coldwater	525	0.00
17	Big Sunflower	340	0.00
18	Deer-Steele	1807	0.01
19	Ouachita Headwaters	993,610	2.97
20	Upper Ouachita	1,116,924	3.34
21	Little Missouri	1,336,297	3.99
22	Lower Ouachita-Smackover	1,162,275	3.47
23	Lower Ouachita-Bayou De Loutre	423,274	1.26
24	Upper Saline	1,092,805	3.27
25	Lower Saline	970,649	2.90
26	Bayou Bartholomew	983,002	2.94
27	Bayou D'Arbonne	274,035	0.82
28	Boeuf	481,997	1.44
29	Bayou Macon	358,143	1.07
30	Beaver Reservoir	1,367,087	4.09
31	Bull Shoals Lake	689,882	2.06
32	Middle White	950,869	2.84
33	Buffalo	861,140	2.57
34	North Fork White	267,040	0.80
35	Upper Black	113,694	0.34
36	Current	63,108	0.19
37	Lower Black	412,697	1.23
38	Spring	461,321	1.38
39	Eleven Point	107,193	0.32
40	Strawberry	482,306	1.44
41	Upper White-Village	483,202	1.44
42	Little Red	1,150,725	3.44
43	Lake O' the Cherokees	7335	0.02
44	Elk	121,569	0.36
45	Lower Neosho	84,463	0.25
46	Illinois	449,185	1.34
47	Robert S. Kerr	200,983	0.60

48	Poteau	323,663	0.97
49	Frog-Mulberry	821,101	2.45
50	Dardanelle Reservoir	1,196,986	3.58
51	Lake Conway-Point Remove	727,250	2.17
52	Petit Jean	681,204	2.04
53	Cadron	490,922	1.47
54	Fourche La Fave	708,103	2.12
55	Lower Arkansas-Maumelle	711,114	2.13
56	Pecan-Waterhole	136,547	0.41
57	Mountain Fork	138,631	0.41
58	Lower Little	1,115,627	3.33
59	McKinney-Posten Bayous	514,763	1.54
60	Loggy Bayou	390,122	1.17
61	Bodcau Bayou	297,598	0.89
62	Lower Sulphur	98,314	0.29
63	Cross Bayou	45,119	0.13
TOTAL		33,463,229	100.00


Hot Hydrologic Basins
of Fish Hg Contamination
– Legend –
20 Upper Ouachita
22 Lower Ouachita–Smackover
23 Lower Ouachita–Bayou De Loutre
24 Upper Saline
25 Lower Saline
Hydrologic Basins
Major Streams
Hg 0–0.69 ppm (acceptable) (135 sites)
Hg 0.70–0.99 ppm (suspect) (32 sites)
Hg >= 1.0 ppm (exceeding) (27 sites)

RASTER MAP CATEGORY REPORT

LOCATION: ar — Wed Oct 9 17:56:11 1996

REGION	north: 3883098.53390558	east: 642920
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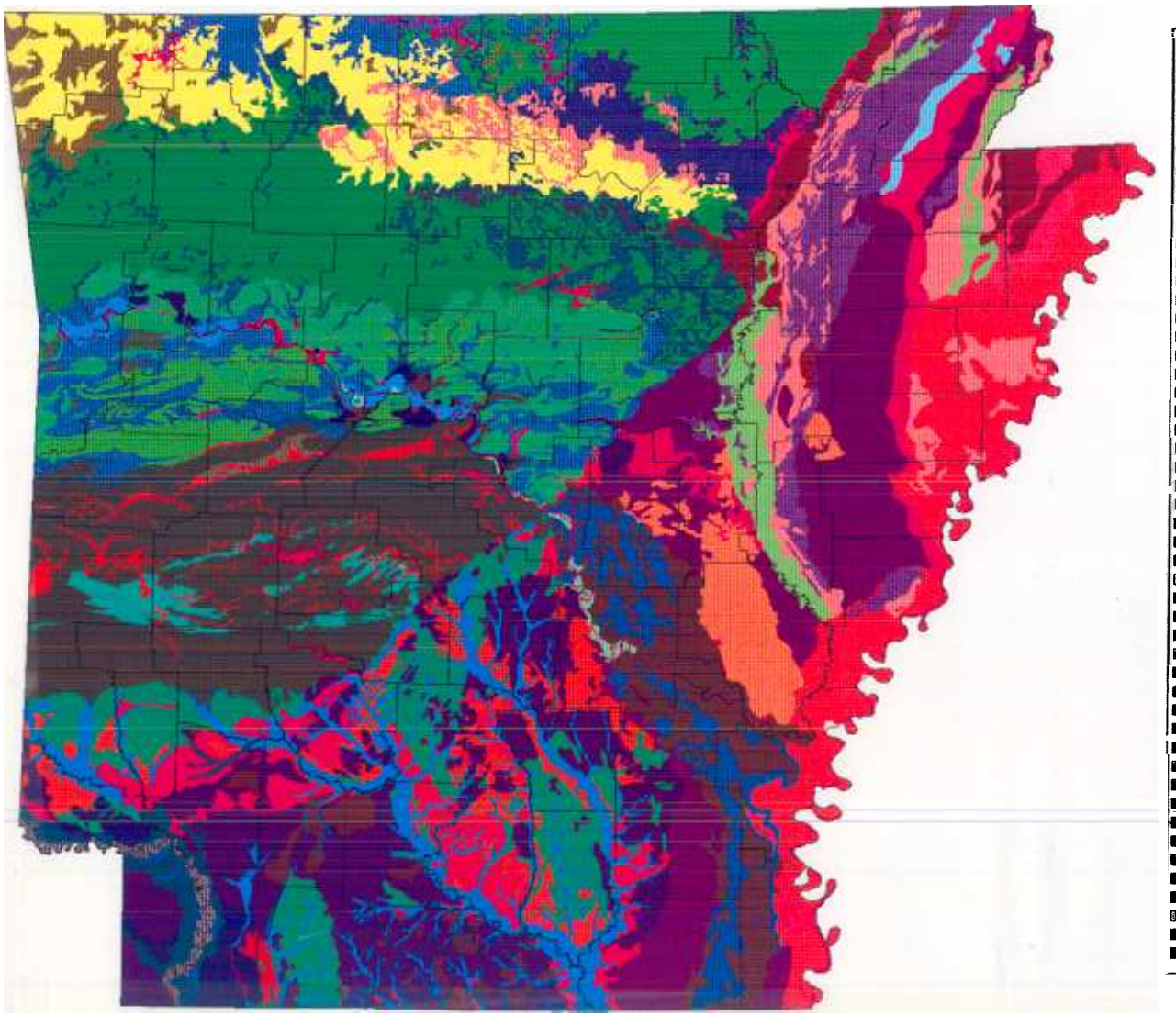
	res: 250.03889776	res: 250

MASK:hb in Hg, categories 20 22-25

MAP: Reclass of hb in Hg (hot_hbs in Hg)

#	Category Information description	acres	% cover
20	Upper Ouachita	1,117,282	23.44
22	Lower Ouachita-Smackover	1,162,647	24.39
23	Lower Ouachita-Bayou De Loutre	423,410	8.88
24	Upper Saline	1,093,155	22.93
25	Lower Saline	970,961	20.37
TOTAL		4,767,455	100.00

Arkansas State Soil Association Map 1:250,000



- Clarksville–Nixa–Noark
- Gepp–Doniphan–Gassville–Agnos
- Arkana–Moko
- Captina–Nixa–Tonti
- Captina–Doniphan–Gepp
- Eden–Newnata–Moko
- Estate–Portia–Moko
- Brockwell–Boden–Portia
- Linker–Mountainburg–Sidon
- Enders–Nella–Mountainburg–Steprock
- Falkner–Wrightsville
- Leadvale–Taft
- Enders–Mountainburg–Nella–Steprock
- Spadra–Guthrie–Pickwick
- Linker–Mountainburg
- Carnasaw–Pirum–Clebit
- Kenn–Ceda–Avilla
- Carnasaw–Sherwood–Bismarck
- Carnasaw–Bismarck
- Leadvale–Taft
- Spadra–Pickwick
- Foley–Jackport–Crowley
- Kobel
- Sharkey–Alligator–Tunica
- Dundee–Basket–Dubbs
- Amagon–Dundee
- Sharkey–Steele
- Commerce–Sharkey–Cresvasse–Robinsonville
- Perry–Portland
- Crevasse–Bruno–Oklared
- Roxana–Dardanelle–Bruno–Roellen
- Rilla–Hebert
- Billyhaw–Perry
- Severn–Oklared
- Adaton
- Wrightsville–Louin–Acadia
- Muskogee–Wrightsville–McKamie
- Amy–Smithton–Pheba
- Darco–Briley–Smithdale
- Pheba–Amy–Savannah
- Smithdale–Sacul–Savannah–Saffell
- Sacul–Smithdale–Sawyer
- Guyton–Ouachita–Sardis
- Calloway–Henry–Grenada–Calhoun
- Crowley–Stuttgart
- Loring
- Loring–Memphis
- Brandon
- Oktibbeha–Sumter
- Water bodies (Rivers,Lakes,Ponds)

RASTER MAP CATEGORY REPORT

LOCATION: ar — Wed Oct 9 13:47:46 1996

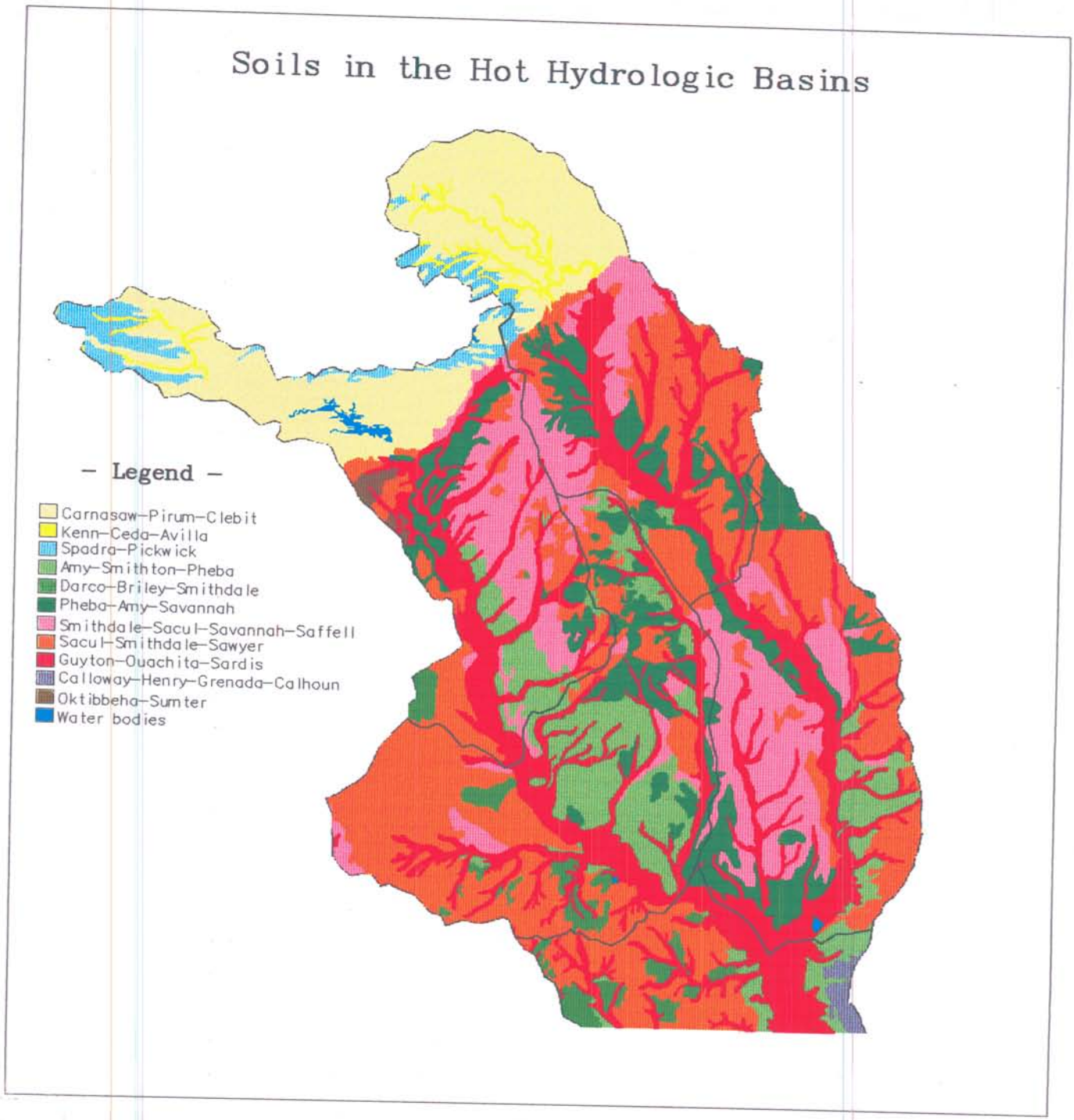
REGION
north: 4099000 east: 971400
south: 3633040 west: 340200
res: 249.97854077 res: 249.98019802

MASK:arkstate in PERMANENT, categories 1

MAP: General Soils (soils in Hg)

#	Category Information description	acres	% cover
1	Clarksville-Nixa-Noark	1,543,626	4.54
2	Gepp-Doniphan-Gassville-Agnos	1,131,392	3.33
3	Arkana-Moko	525,279	1.55
4	Captina-Nixa-Tonti	371,901	1.09
6	Eden-Newnata-Moko	106,745	0.31
7	Estate-Portia-Moko	372,210	1.10
8	Brockwell-Boden-Portia	535,269	1.57
9	Linker-Mountainburg-Sidon	722,262	2.13
10	Enders-Nella-Mountainburg-Steprock	2,811,673	8.27
11	Falkner-Wrightsville	48,115	0.14
12	Leadvale-Taft	1,033,233	3.04
13	Enders-Mountainburg-Nella-Steprock	716,333	2.11
14	Spadra-Guthrie-Pickwick	202,820	0.60
15	Linker-Mountainburg	1,323,527	3.89
16	Carnasaw-Pirum-Clebit	3,005,120	8.84
17	Kenn-Ceda-Avilla	360,691	1.06
20	Leadvale-Taft	67,123	0.20
21	Spadra-Pickwick	343,289	1.01
22	Foley-Jackport-Crowley	1,046,975	3.08
23	Kobel	539,886	1.59
24	Sharkey-Alligator-Tunica	1,344,944	3.96
25	Dundee-Bosket-Dubbs	841,901	2.48
26	Amagon-Dundee	487,046	1.43
27	Sharkey-Steele	205,105	0.60
28	Commerce-Sharkey-Cresvasse-Robinsonville	381,676	1.12
29	Perry-Portland	1,095,661	3.22
30	Crevasse-Bruno-Oklared	57,271	0.17
31	Roxana-Dardanelle-Bruno-Roellen	161,191	0.47
32	Rilla-Hebert	694,483	2.04
33	Billyhaw-Perry	276,228	0.81
34	Severn-Oklared	128,069	0.38
35	Adaton	42,386	0.12
36	Wrightsville-Louin-Acadia	226,893	0.67
37	Muskogee-Wrightsville-McKamie	103,996	0.31
38	Amy-Smithton-Pheba	562,971	1.66
39	Darco-Briley-Smithdale	247,245	0.73
40	Pheba-Amy-Savannah	716,225	2.11
41	Smithdale-Sacul-Savannah-Saffell	1,405,165	4.13
42	Sacul-Smithdale-Sawyer	2,408,194	7.09
43	Guyton-Ouachita-Sardis	1,423,077	4.19
44	Calloway-Henry-Grenada-Calhoun	2,339,481	6.88
45	Crowley-Stuttgart	567,541	1.67
46	Loring	205,692	0.61
47	Loring-Memphis	417,947	1.23
48	Brandon	91,103	0.27

49	Oktibbeha-Sumter	351,766	1.03
50	Water bodies (Rivers,Lakes,Ponds).	397,271	1.17
TOTAL		33,987,999	100.00


Soils in the Hot Hydrologic Basins
– Legend –
Carnasaw–Pirum–Clebit
Kenn–Ceda–Avilla
Spadra–Pickwick
Amy–Smithton–Pheba
Darco–Briley–Smithdale
Pheba–Amy–Savannah
Smithdale–Sacul–Savannah–Saffell
Sacul–Smithdale–Sawyer
Guyton–Ouachita–Sardis
Calloway–Henry–Grenada–Calhoun
Oktibbeha–Sumter
Water bodies

RASTER MAP CATEGORY REPORT

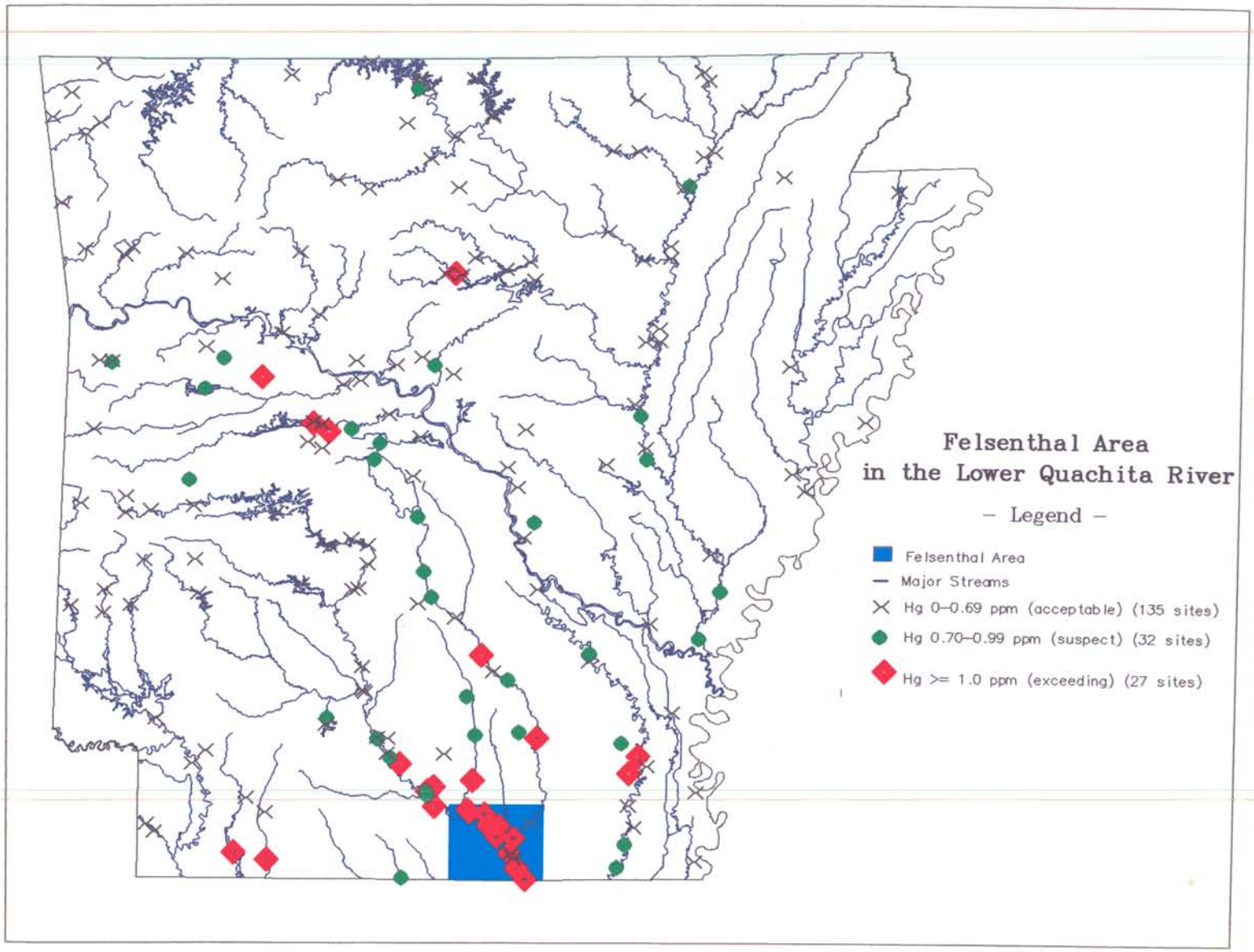
LOCATION: ar — Wed Oct 9 17:44:54 1996

REGION				
	north:	3883098.53390558	east:	642920
	south:	3634559.8695279	west:	404920
	res:	250.03889776	res:	250

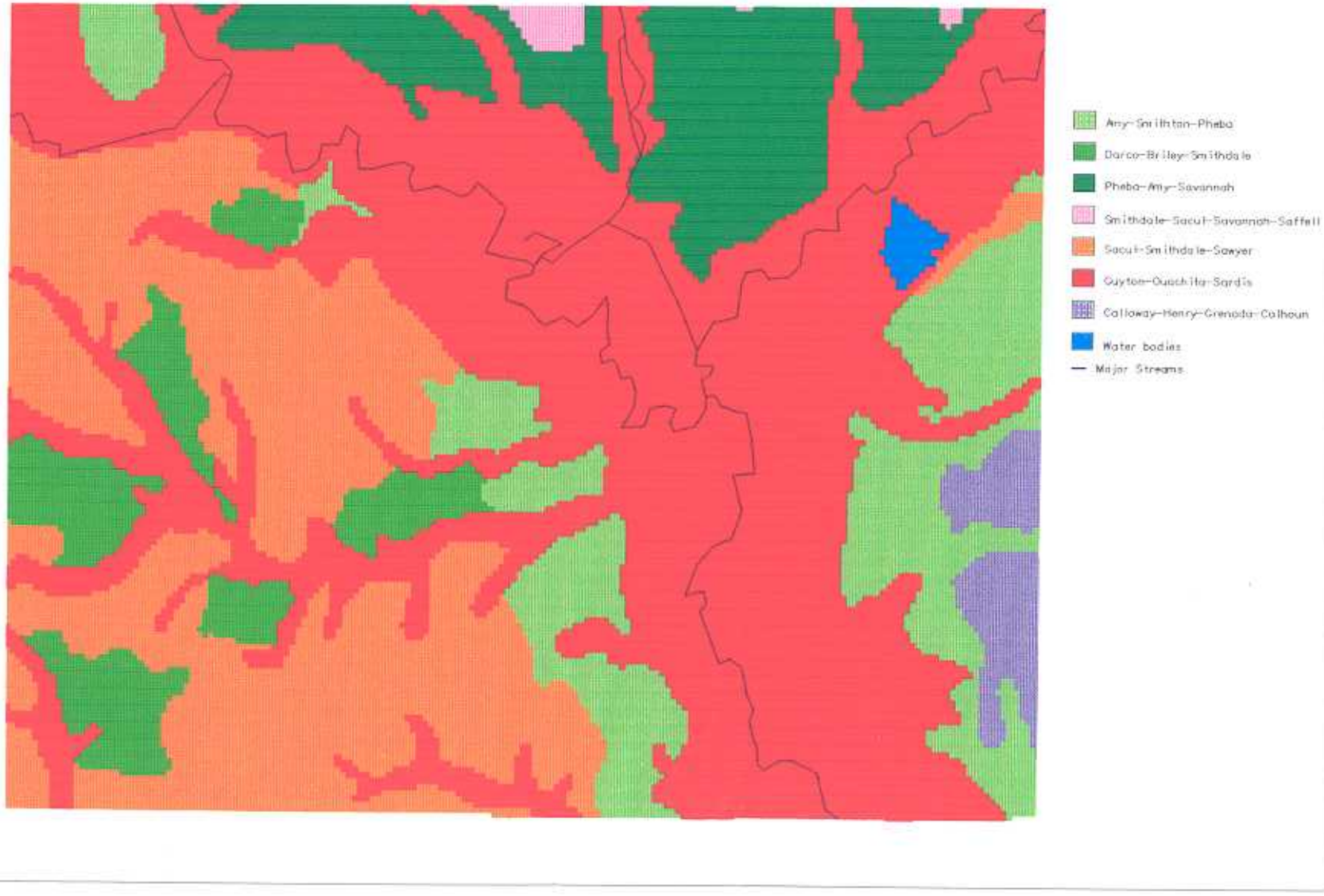
MASK:hb in Hg, categories 20 22-25

MAP: General Soils (soils in Hg)

#	Category Information description	acres	% cover
16	Carnasaw-Pirum-Clebit.	617,383	12.95
17	Kenn-Ceda-Avilla	58,062	1.22
21	Spadra-Pickwick.	121,191	2.54
38	Amy-Smithton-Pheba	460,403	9.66
39	Darco-Briley-Smithdale	108,494	2.28
40	Pheba-Amy-Savannah	442,965	9.29
41	Smithdale-Sacul-Savannah-Saffell	694,660	14.57
42	Sacul-Smithdale-Sawyer	1,269,010	26.62
43	Guyton-Ouachita-Sardis	942,988	19.78
44	Calloway-Henry-Grenada-Calhoun	22,474	0.47
49	Oktibbeha-Sumter	15,786	0.33
50	Water bodies (Rivers,Lakes,Ponds).	13,222	0.28
TOTAL		4,766,636	100.00


Felsenthal Area
in the Lower Quachita River
– Legend –
Felsenthal Area
Major Streams
Hg 0–0.69 ppm (acceptable) (135 sites)
Hg 0.70–0.99 ppm (suspect) (32 sites)
Hg >= 1.0 ppm (exceeding) (27 sites)

Soil Association Map in the Felsenthal Area



RASTER MAP CATEGORY REPORT

LOCATION: ar Wed Oct 9 19:07:26 1996

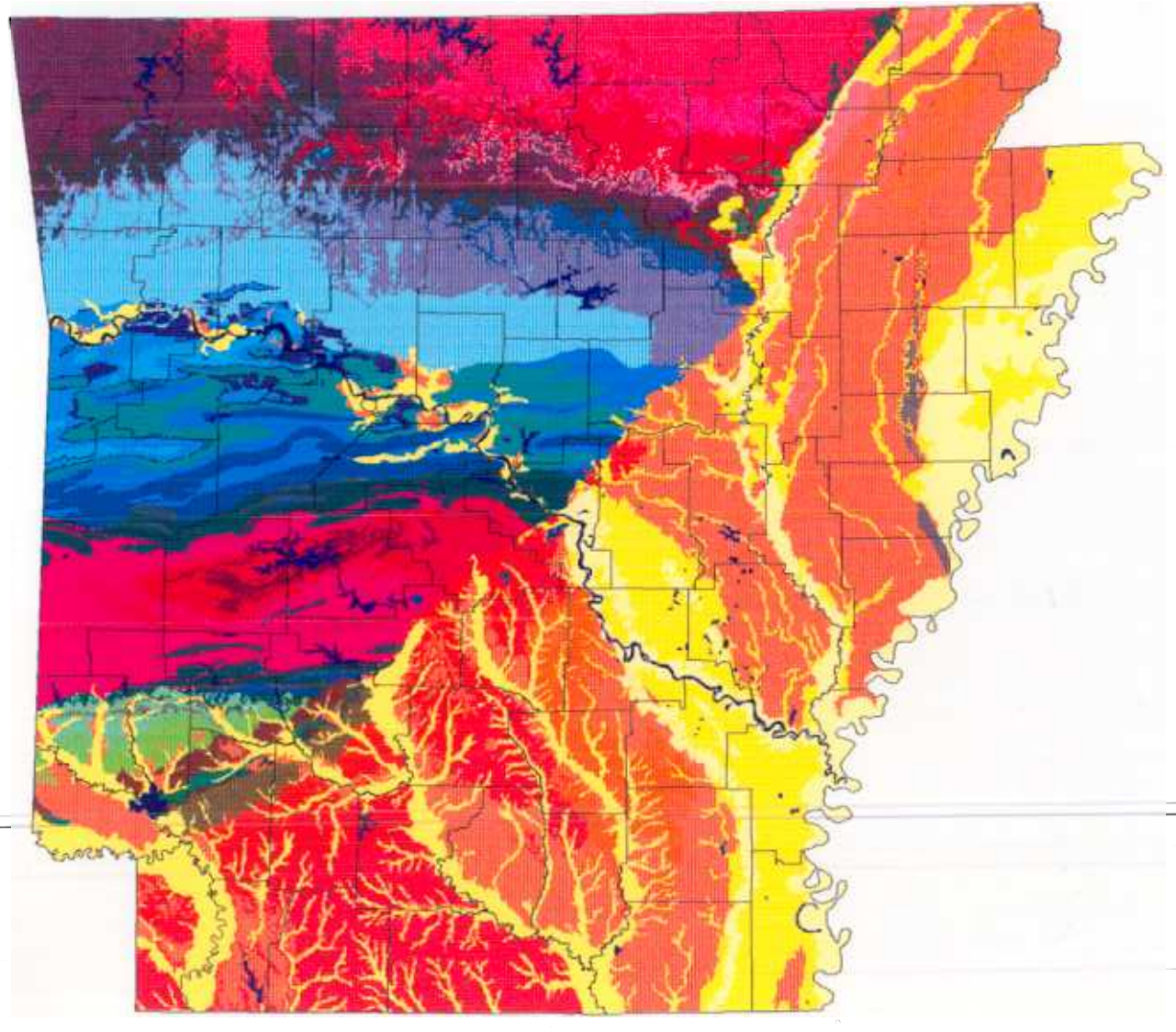
REGION				
	north:	3692021.26418378	east:	607970
	south:	3649480.31186913	west:	549010
	res:	79.96419608	res:	80

MASK:MASK in Hg

MAP: General Soils (soils in Hg)

#	Category Information description	acres	% cover
38	Amy-Smithton-Pheba	45,896.56	11.90
39	Darco-Briley-Smithdale	23,274.70	6.03
40	Pheba-Amy-Savannah	34,635.42	8.98
41	Smithdale-Sacul-Savannah-Saffell	1789.39	0.46
42	Sacul-Smithdale-Sawyer	90,879.46	23.55
43	Guyton-Ouachita-Sardis	178,912.02	46.37
44	Calloway-Henry-Grenada-Calhoun	8842.62	2.29
50	Water bodies (Rivers,Lakes,Ponds)	1610.77	0.42
TOTAL		385,840.93	100.00

Arkansas State Surficial Geology Map (1:250,000)



Qam—Alluvium
Qsc—Alluvium
Qt—Terrace deposits
Qds—Dune sand
Qss—Silt and sand
Ql—Loess
Qsg—Sand and gravel
Tj—Jackson group
Tc—Claiborne group
Tw—Wilcox group
Tm—Midway group
Qal—Alluvium
Kad—Arkadelphia marl
Kn—Nacatoch sand
ks—Saratoga chalk
Km—Marlbrook marl
Ka—Annona chalk
Ko—Ozan formation
Kb—Brownstown marl
Kto—Tokio formation
Kw—Woodbine formation
Kt—Trinity group
Kde—Kde,De Queen limestone
Kdl—Kdl,Dierks limestone
Qat—Alluvium and terrace deposits
Tg—Gravel
Ksc—Sand and Clay
Kr—Cretaceous rocks
IPa—Atoka formation
IPbh—Bloyd shale,prairie grove member of the hale formation
IPhc—Cane hill member of the hale formation
Mpfb—Pitkin limestone
Mr—Ruddell shale
Mm—Moorefield formation
Mb—Boone formation
MDcp—Chattanooga shale and penters chert
Slab—Lafferty,St. Clair,and Brassfield limestones
Ocj—Cason shale,Fern.,Klnm.,Plat.,Isn. and Joachim dolomit
Ose—St. Peter sandstone and everton formation
Op—Powell dolomite
Ocjc—Cotter and Jefferson city dolomites
IPby—Boggy formation
IPsv—Savanna formation
IPma—McAlester formation
IPhs—Hartshorne sandstone
IPau—Upper part of IPa
IPam—Middle part of IPa
IPal—Lower part of IPa
IPjv—Johns valley shale
IPj—Jackfork sandstone
Ms—Stanley shale
MDa—Arkansas novaculite
Smb—Missouri mountain shale and blaylock sandstone
Opb—Polk creek shale
Ow—Womble shale
Ob—Blakely sandstone
Om—Mazarn shale
Ocm—Crystal mountain sandstone
Oc—Collier shale
Wb—Water bodies
Ki—Igneous rocks

RASTER MAP CATEGORY REPORT

LOCATION: ar — Wed Oct 9 13:50:15 1996

REGION				
	north:	4099000	east:	971400
	south:	3633040	west:	340200
	res:	249.97854077	res:	249.98019802

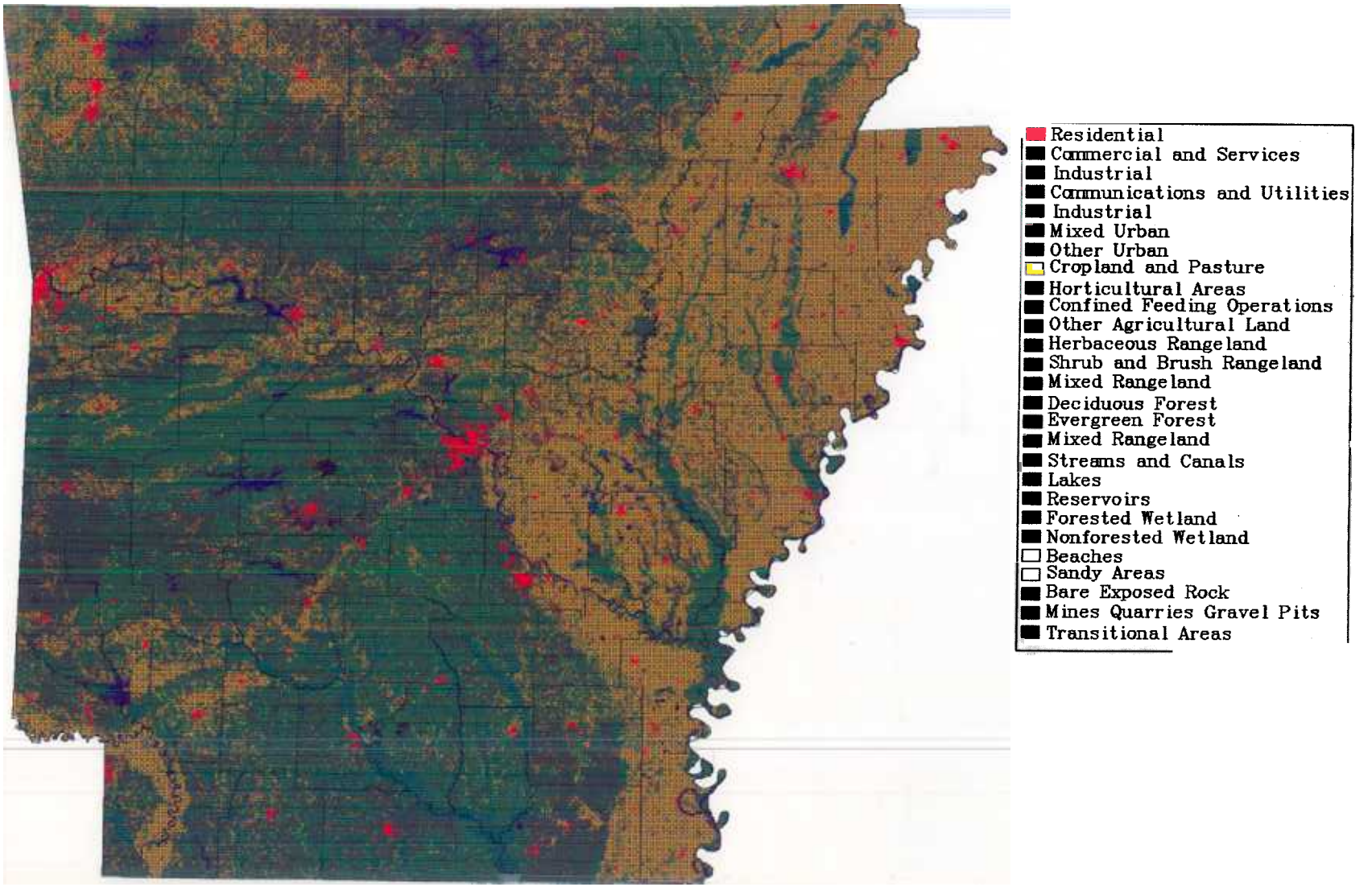
MASK:arkstate in PERMANENT, categories 1

MAP: Geology (geology in Hg)

#	Category Information description	acres	% cover
1	Qcm--Alluvium.	2,004,963	5.91
2	Qso--Alluvium.	2,995,439	8.84
3	Qt---Terrace deposits.	6,240,531	18.41
4	Qds--Dune sand	233,517	0.69
5	Qss--Silt and sand	218,848	0.65
6	QI---Loess	89,652	0.26
7	Qsg--Sand and gravel	34,851	0.10
8	Tj---Jackson group	547,607	1.62
9	Tc---Claiborne group	1,639,717	4.84
10	Tw---Wilcox group.	830,490	2.45
11	Tm---Midway group.	183,951	0.54
12	Qal--Alluvium.	2,496,487	7.37
13	Kad--Arkadelphia marl.	80,634	0.24
14	Kn---Nacatoch sand	124,163	0.37
15	ks---Saratoga chalk.	26,265	0.08
16	Km---Marlbrook marl.	44,872	0.13
17	Ka---Annona chalk.	6007	0.02
18	Ko---Ozan formation.	49,504	0.15
19	Kb---Brownstown marl	84,417	0.25
20	Kto--Tokio formation	147,124	0.43
21	Kw---Woodbine formation.	67,741	0.20
22	Kt---Trinity group	152,791	0.45
23	Kde--Kde,De Queen limestone.	17,171	0.05
24	Kdi--Kdi,Dierks limestone.	12,538	0.04
25	Qat--Alluvium and terrace deposits	45,691	0.13
26	Tg---Gravel.	5126	0.02
27	Ksc--Sand and Clay	27,578	0.08
28	Kr---Cretaceous rocks.	35,468	0.10
29	IPa--Atoka formation	2,006,939	5.92
30	IPbh-Bloyd shale,prairie grove member of the hale formation	1,383,717	4.08
31	IPhc-Cane hill member of the hale formation.	497,948	1.47
32	Mpfb-Pitkin limestone.	581,361	1.72
33	Mr---Ruddell shale	55,017	0.16
34	Mm---Moorefield formation.	6300	0.02
35	Mb---Boone formation	1,651,977	4.87
36	MDcp-Chattanooga shale and penters chert	86,749	0.26
37	SIsb-Lafferty,St. Clair,and Brassfield limestones.	7412	0.02
38	Ocj--Cason shale,Fern.,Kimm.,Plat.,lsn. and Joachim. dolomite	158,519	0.47
39	Ose--St. Peter sandstone and everton formation	799	2.36
40	Op---Powell dolomite	410	1.21
41	Ocjc-Cotter and Jefferson city dolomites	1,301	3.84
42	IPby-Boggy formation		0.00
43	IPsv-Savanna formation	185	0.55

44	IPma-McAlester formation	394,847	1.16
45	IPhs-Hartshorne sandstone	303,265	0.89
46	IPau-Upper part of IPa	858,484	2.53
47	IPam-Middle part of IPa	650,615	1.92
48	IPal-Lower part of IPa	670,055	1.98
49	IPjv-Johns valley shale	128,471	0.38
50	IPj--Jackfork sandstone	658,583	1.94
51	Ms---Stanley shale	1,264,943	3.73
52	MDa--Arkansas novaculite	211,498	0.62
53	Smb--Missouri mountain shale and blaylock sandstone	87,196	0.26
54	Opb--Polk creek shale	170,162	0.50
55	Ow---Womble shale	284,844	0.84
56	Ob---Blakely sandstone	80,773	0.24
57	Om---Mazarn shale	80,078	0.24
58	Ocm--Crystal mountain sandstone	27,779	0.08
59	Oc---Collier shale	13,727	0.04
60	Wb---Water bodies	422,672	1.25
61	Ki---Igneous rocks	11,890	0.04
TOTAL		33,896,293	100.00

Arkansas 1972 Land Use/Land Cover Map From USGS



RASTER MAP CATEGORY REPORT

LOCATION: ar Wed Oct 9 13:52:23 1996

REGION	north:	4099000	east:	971400
	south:	3633040	west:	340200
	res:	249.97854077	res:	249.98019802

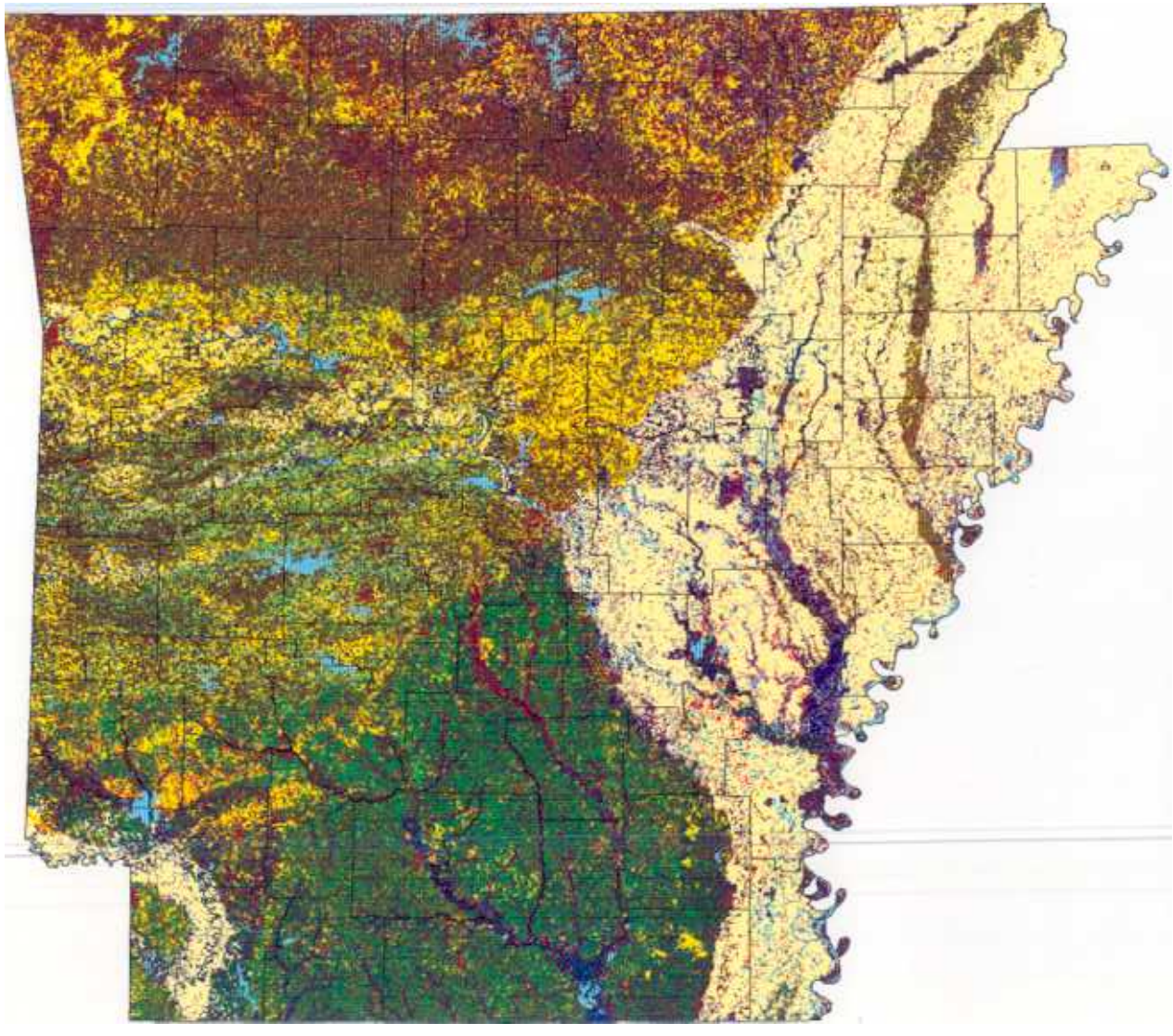
MASK:arkstate in PERMANENT, categories 1

MAP: (untitled) (lulc.72 in Hg)

Category Information

#	description	acres	% cover
11	Residential	358,205	1.05
12	Commercial and Services	111,177	0.33
13	Industrial	23,085	0.07
14	Communications and Utilities	64,359	0.19
15	Industrial	788	0.00
16	Mixed Urban	12,631	0.04
17	Other Urban	27,470	0.08
21	Cropland and Pasture	13,481,543	39.67
22	Horticultural Areas	9836	0.03
23	Confined Feeding Operations	38,649	0.11
24	Other Agricultural Land	56,716	0.17
31	Herbaceous Rangeland	1050	0.00
32	Shrub and Brush Rangeland	93	0.00
33	Mixed Rangeland	14,885	0.04
41	Deciduous Forest	5,172,926	15.22
42	Evergreen Forest	4,648,759	13.68
43	Mixed Rangeland	7,997,492	23.54
51	Streams and Canals	142,569	0.42
52	Lakes	36,565	0.11
53	Reservoirs	402,568	1.18
61	Forested Wetland	1,234,694	3.63
62	Nonforested Wetland	39,344	0.12
72	Beaches	386	0.00
73	Sandy Areas	33,615	0.10
74	Bare Exposed Rock	15	0.00
75	Mines Quarries Gravel Pits	31,160	0.09
76	Transitional Areas	40,101	0.12
TOTAL		33,980,679	100.00

Arkansas 1992 Vegetative Cover From TM Imagery



- Shortleaf Pine
- Loblloly Pine
- Eastern Red Ceder
- Mixed Oak Pine – Hickory
- Mixed Pine – Oak
- Eastern Red Ceder
- American Beech
- White Oak – Mixed Hardwood
- Northern Red Oak – Oak
- Southern Red Oak – Oak
- Post Oak
- Eastern Red Ceder – Oak
- Shortleaf Pine – Oak
- White Ceder – Oak
- Oak – Black Hichory
- Mixed shrub species
- Tall mesic prairie
- Overcup Oak
- Water Hickory
- Cherry Bark Oak
- Sugarberry
- Nutall Oak
- Willow Oak
- Sweetgum
- Baldcypress – Mixed Hardwood
- Baldcypress
- Tupelo – Gum
- Tall prairie (wet)
- Tall prairie (disturbed)
- Willow – Cottonwood
- Birch – Sycamore – Maple
- Bare
- Water
- Agriculture (wet crops)
- Agriculture (dry crops)
- Agriculture (pasture)
- Urban Commercial–Industrial
- Urban Residential

Source: Center for Advanced Spatial Technologies, U of A

RASTER MAP CATEGORY REPORT

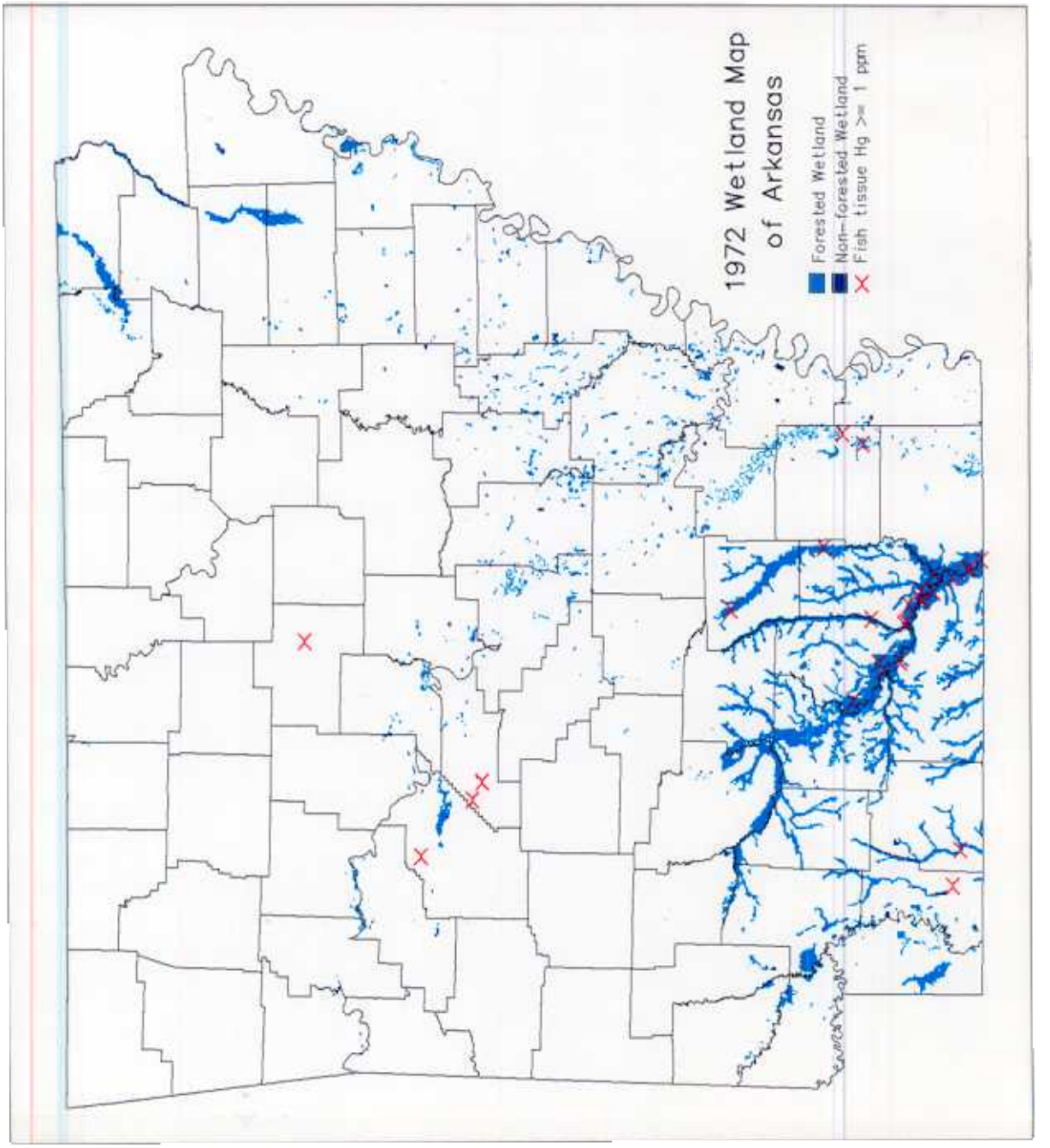
LOCATION: ar — Wed Oct 9 13:54:41 1996

REGION				
	north:	4099000	east:	971400
	south:	3633040	west:	340200
	res:	249.97854077	res:	249.98019802

MASK: arkstate in PERMANENT, categories 1

MAP: Vegetation Cover (veg.92 in Hg)

#	Category Information description	acres	% cover
1	Pinus echinata	2,187,323	6.43
2	Pinus taeda	2,289,745	6.74
4	Juniperus virginiana	46,895	0.14
6	Quercus stellata, marilandica - Pinus echinata - Carya spp.	3,006,448	8.84
8	Pinus taeda - Pinus echinata - Quercus spp.	1,048,118	3.08
9	Juniperus virginiana	606,484	1.78
10	Fagus grandifolia	14,561	0.04
11	Quercus alba	4,116,099	12.11
12	Quercus rubra - Quercus spp.	51,280	0.15
13	Quercus falcata - Quercus spp.	535,192	1.57
14	Quercus stellata	775,056	2.28
17	Juniperus virginiana - Quercus spp.	39,653	0.12
18	Pinus echinata - Quercus spp.	83,135	0.24
19	Juniperus ashei - Quercus spp.	9882	0.03
20	Quercus spp. - Carya texana	49,875	0.15
23	Mixed shrub species	54,600	0.16
24	Mesic Prairie	26,219	0.08
32	Quercus lyrata (Forested wetland)	293,892	0.86
33	Carya aquatica (Forested wetland)	41,259	0.12
34	Quercus falcata var. pagodifolia	30,327	0.09
35	Celtis laevigata	200,072	0.59
36	Quercus nuttallii	1,215,840	3.58
38	Quercus phellos	1,296,829	3.81
39	Liquidambar styraciflua	186,175	0.55
40	Taxodium distichum (Forested wetland)	650,368	1.91
41	Taxodium distichum (Forested wetland)	12,446	0.04
42	Nyssa (Forested wetland)	150,073	0.44
45	Tall grass	40,054	0.12
48	Arundinaria gigantea	31,006	0.09
51	Salix - Populus	61,857	0.18
52	Betula - Platanus - Acer	40,888	0.12
55	Bare	39,684	0.12
60	Water	938,377	2.76
61	Agriculture (wet crops)	2656	0.01
62	Agriculture (dry crops)	7,793,823	22.93
63	Agriculture (pasture)	5,821,981	17.13
64	Urban Commercial-Industrial	58,738	0.17
65	Urban Residential	147,047	0.43
TOTAL		33,993,959	00.00


1972 Wetland Map
of Arkansas
Forested Wetland
Non-forested Wetland
Fish tissue Hg >= 1 ppm

RASTER MAP CATEGORY REPORT

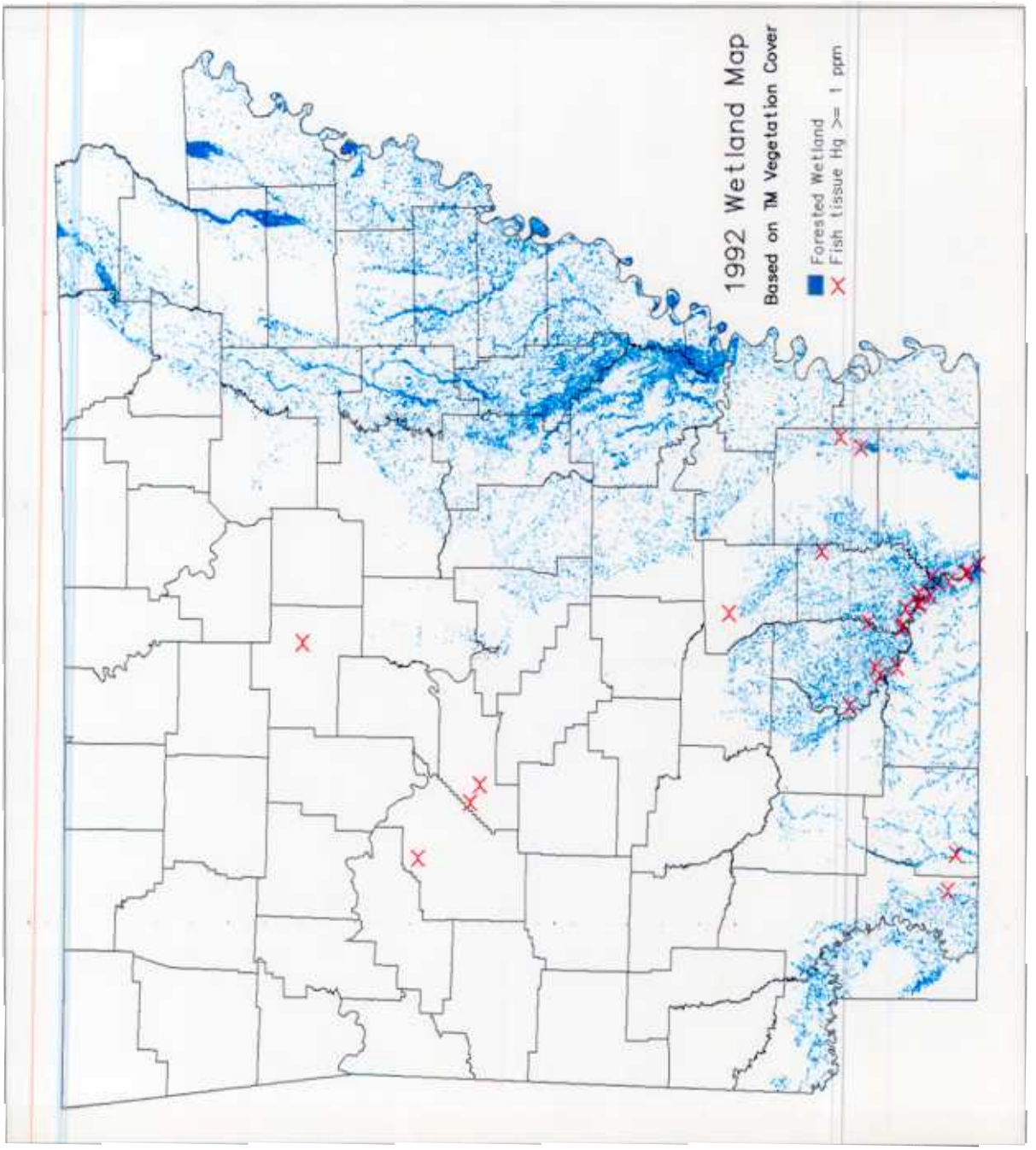
LOCATION: ar — Wed Oct 9 13:56:27 1996

REGION	north: 4099000	east: 971400	
	south: 3633040	west: 340200	
	res: 249.97854077	res: 249.98019802	

MASK:arkstate in PERMANENT, categories 1

MAP: (untitled) (wetland.72 in Hg)

#	description (Category Information)	acres	% cover
61	Forested Wetland	1,234,694	96.91
62	Nonforested Wetland	39,344	3.09
TOTAL		1,274,038	100.00


1992 Wetland Map
Based on TM Vegetation Cover
Forested Wetland
Fish tissue Hg >= 1 ppm

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+-----------------------------------------------------------------------------+
|LOCATION: ar            RASTER MAP CATEGORY REPORT                            |
|                                                   Wed Oct  9 13:58:24 1996|
|-----------------------------------------------------------------------------|
|          north:     4099000    east:       971400                            |
|REGION    south:     3633040    west:       340200                            |
|          res:   249.97854077    res:  249.98019802                           |
|-----------------------------------------------------------------------------|
|MASK:arkstate in PERMANENT, categories 1                                     |
|-----------------------------------------------------------------------------|
|MAP: if(veg.92==32||veg.92==33||veg.92==40||veg.92==41||veg.92==42||veg.... (|
|-----------------------------------------------------------------------------|
|                   Category Information                     |          |   %  |
|#|description                                              |     acres| cover|
|-----------------------------------------------------------------------------|
|1|Forested wetland . . . . . . . . . . . . . . . . . . . . | 1,147,034|100.00|
|-----------------------------------------------------------------------------|
|TOTAL                                                      | 1,147,034|100.00|
+-----------------------------------------------------------------------------+
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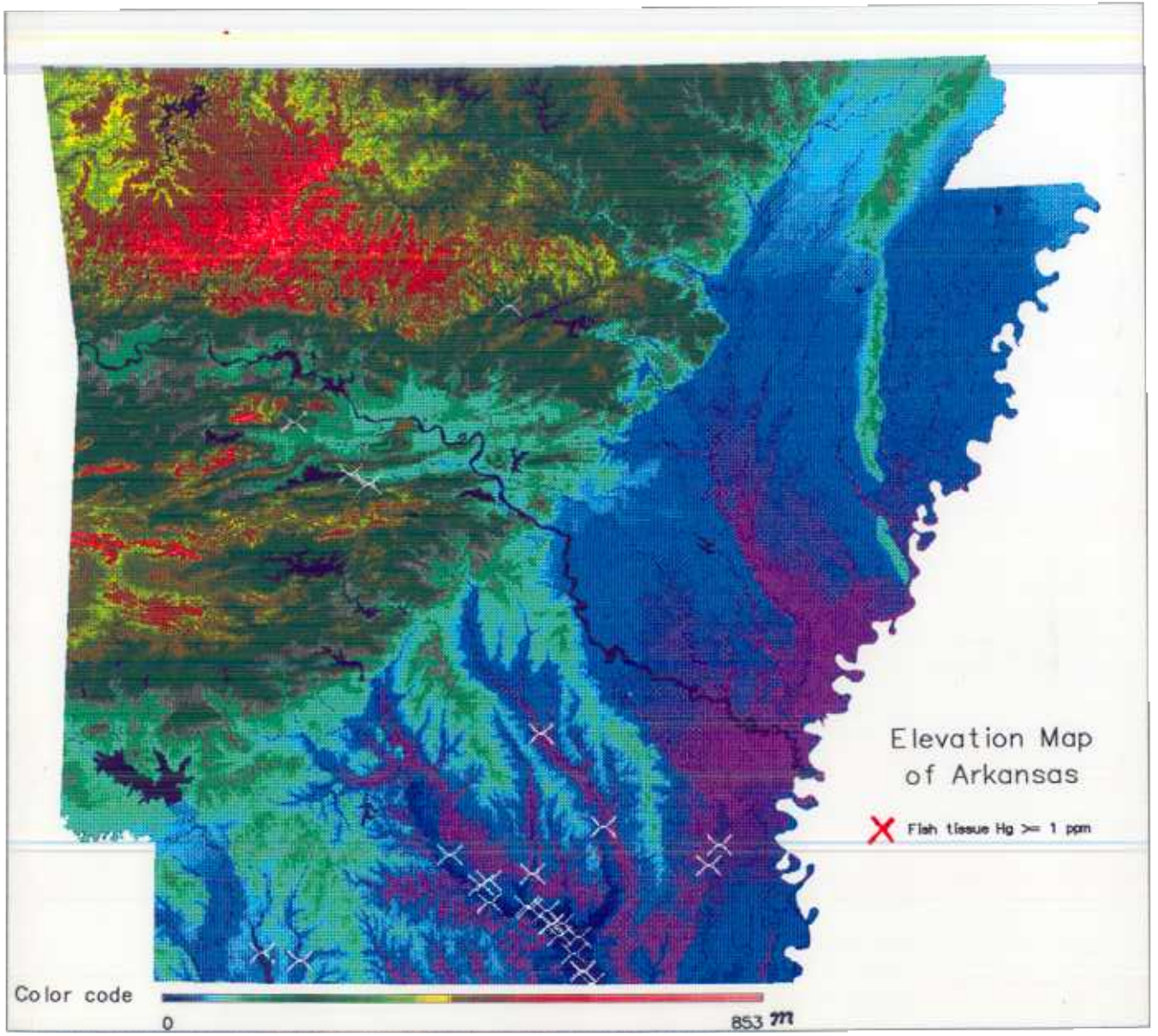
Elevation Map
of Arkansas
Fish tissue Hg >= 1 ppm
Color code
0
853 m

RASTER MAP CATEGORY REPORT

LOCATION: ar — Wed Oct 9 13:51:44 1996

REGION				
	north:	4099000	east:	971400
	south:	3633040	west:	340200
	res:	249.97854077	res:	249.98019802

MASK: arkstate in PERMANENT, categories 1

MAP: (untitled) (elevation.dma in Hg)

actual elevation value (in m above see level)

# / description	Category Information	acres	% cover
16		2610	0.01
17		5821	0.02
18		8801	0.03
19		22,714	0.07
20		8663	0.03
21		29,632	0.09
22		52,994	0.16
23		12,585	0.04
24		17,680	0.05
25		24,799	0.07
26		18,761	0.06
27		32,025	0.09
28		59,371	0.17
29		45,042	0.13
30		158,226	0.47
31		53,210	0.16
32		82,919	0.24
33		150,644	0.44
34		80,958	0.24
35		106,760	0.31
36		125,105	0.37
37		61,410	0.18
38		133,597	0.39
39		136,547	0.40
40		68,852	0.20
41		130,571	0.38
42		126,741	0.37
43		97,712	0.29
44		222,338	0.65
45		368,844	1.08
46		165,715	0.49
47		151,525	0.45
48		224,392	0.66
49		121,229	0.36
50		172,339	0.51
51		241,701	0.71
52		108,521	0.32
53		343,335	1.01
54		459,005	1.35
55		141,565	0.42
56		327,956	0.96
57		420,356	1.24
58		163,800	0.48
59		397,009	1.17
60		1,093,546	3.22

61	. . . . .	300,795	0.88
62	. . . . .	406,768	1.20
63	. . . . .	267,334	0.79
64	. . . . .	446,513	1.31
65	. . . . .	459,299	1.35
66	. . . . .	220,083	0.65
67	. . . . .	474,971	1.40
68	. . . . .	388,840	1.14
69	. . . . .	264,523	0.78
70	. . . . .	442,792	1.30
71	. . . . .	441,016	1.30
72	. . . . .	186,144	0.55
73	. . . . .	429,188	1.26
74	. . . . .	325,501	0.96
75	. . . . .	363,841	1.07
76	. . . . .	633,522	1.86
77	. . . . .	234,119	0.69
78	. . . . .	207,236	0.61
79	. . . . .	174,532	0.51
80	. . . . .	185,047	0.54
81	. . . . .	171,722	0.50
82	. . . . .	152,976	0.45
83	. . . . .	175,366	0.52
84	. . . . .	124,240	0.37
85	. . . . .	261,142	0.77
86	. . . . .	143,850	0.42
87	. . . . .	144,499	0.42
88	. . . . .	161,561	0.48
89	. . . . .	174,532	0.51
90	. . . . .	179,766	0.53
91	. . . . .	1,054,649	3.10
92	. . . . .	145,472	0.43
93	. . . . .	94,763	0.28
94	. . . . .	93,141	0.27
95	. . . . .	73,191	0.22
96	. . . . .	86,857	0.26
97	. . . . .	75,322	0.22
98	. . . . .	66,521	0.20
99	. . . . .	84,587	0.25
100	. . . . .	63,340	0.19
101	. . . . .	63,525	0.19
102	. . . . .	57,225	0.17
103	. . . . .	77,623	0.23
104	. . . . .	61,904	0.18
105	. . . . .	71,987	0.21
106	. . . . .	349,944	1.03
107	. . . . .	72,913	0.21
108	. . . . .	68,976	0.20
109	. . . . .	62,846	0.18
110	. . . . .	65,393	0.19
111	. . . . .	52,763	0.16
112	. . . . .	59,063	0.17
113	. . . . .	61,302	0.18
114	. . . . .	52,531	0.15
115	. . . . .	67,308	0.20
116	. . . . .	55,866	0.16
117	. . . . .	71,122	0.21
118	. . . . .	65,625	0.19
119	. . . . .	77,855	0.23
120	. . . . .	89,976	0.26

121	. . . . .	932,448	2.74
122	. . . . .	87,196	0.26
123	. . . . .	54,415	0.16
124	. . . . .	58,043	0.17
125	. . . . .	40,765	0.12
126	. . . . .	41,568	0.12
127	. . . . .	35,577	0.10
128	. . . . .	42,957	0.13
129	. . . . .	36,565	0.11
130	. . . . .	32,025	0.09
131	. . . . .	43,081	0.13
132	. . . . .	29,632	0.09
133	. . . . .	35,129	0.10
134	. . . . .	33,276	0.10
135	. . . . .	37,291	0.11
136	. . . . .	44,208	0.13
137	. . . . .	59,526	0.18
138	. . . . .	35,499	0.10
139	. . . . .	30,743	0.09
140	. . . . .	31,160	0.09
141	. . . . .	29,060	0.09
142	. . . . .	37,877	0.11
143	. . . . .	29,863	0.09
144	. . . . .	34,789	0.10
145	. . . . .	39,252	0.12
146	. . . . .	34,712	0.10
147	. . . . .	40,101	0.12
148	. . . . .	38,495	0.11
149	. . . . .	52,546	0.15
150	. . . . .	51,821	0.15
151	. . . . .	94,855	0.28
152	. . . . .	805,475	2.37
153	. . . . .	53,720	0.16
154	. . . . .	39,483	0.12
155	. . . . .	32,550	0.10
156	. . . . .	36,148	0.11
157	. . . . .	30,990	0.09
158	. . . . .	29,940	0.09
159	. . . . .	25,710	0.08
160	. . . . .	34,002	0.10
161	. . . . .	24,490	0.07
162	. . . . .	29,632	0.09
163	. . . . .	30,682	0.09
164	. . . . .	25,555	0.08
165	. . . . .	25,524	0.08
166	. . . . .	23,934	0.07
167	. . . . .	56,947	0.17
168	. . . . .	25,818	0.08
169	. . . . .	26,528	0.08
170	. . . . .	32,071	0.09
171	. . . . .	25,910	0.08
172	. . . . .	30,002	0.09
173	. . . . .	26,389	0.08
174	. . . . .	32,396	0.10
175	. . . . .	29,415	0.09
176	. . . . .	60,977	0.18
177	. . . . .	36,534	0.11
178	. . . . .	44,702	0.13
179	. . . . .	44,440	0.13
180	. . . . .	43,776	0.13

181		75,847	0.22
182		777,187	2.29
183		64,220	0.19
184		40,533	0.12
185		43,297	0.13
186		36,379	0.11
187		32,303	0.09
188		35,916	0.11
189		28,628	0.08
190		31,979	0.09
191		26,790	0.08
192		33,399	0.10
193		25,030	0.07
194		28,103	0.08
195		32,396	0.10
196		25,463	0.07
197		30,913	0.09
198		33,955	0.10
199		58,182	0.17
200		26,420	0.08
201		29,153	0.09
202		35,067	0.10
203		27,439	0.08
204		28,813	0.08
205		31,778	0.09
206		36,210	0.11
207		30,882	0.09
208		36,966	0.11
209		34,295	0.10
210		48,516	0.14
211		51,450	0.15
212		81,916	0.24
213		703,161	2.07
214		38,124	0.11
215		36,534	0.11
216		29,709	0.09
217		32,473	0.10
218		30,126	0.09
219		25,771	0.08
220		30,960	0.09
221		23,718	0.07
222		24,644	0.07
223		24,907	0.07
224		26,559	0.08
225		22,714	0.07
226		22,560	0.07
227		26,698	0.08
228		37,198	0.11
229		22,915	0.07
230		21,216	0.06
231		27,887	0.08
232		21,525	0.06
233		25,586	0.08
234		22,050	0.06
235		26,806	0.08
236		27,964	0.08
237		25,215	0.07
238		32,179	0.09
239		25,833	0.08
240		29,848	0.09

241	30,805	0.09
242	48,995	0.14
243	548,008	1.61
244	39,066	0.11
245	31,793	0.09
246	24,351	0.07
247	23,872	0.07
248	23,115	0.07
249	24,536	0.07
250	18,267	0.05
251	23,038	0.07
252	21,757	0.06
253	19,626	0.06
254	17,016	0.05
255	17,140	0.05
256	20,722	0.06
257	15,750	0.05
258	19,425	0.06
259	29,956	0.09
260	15,889	0.05
261	17,124	0.05
262	15,549	0.05
263	20,707	0.06
264	16,445	0.05
265	16,862	0.05
266	19,919	0.06
267	20,166	0.06
268	18,668	0.05
269	20,197	0.06
270	23,285	0.07
271	21,154	0.06
272	25,694	0.08
273	42,432	0.12
274	375,499	1.10
275	24,999	0.07
276	19,286	0.06
277	22,081	0.06
278	19,857	0.06
279	20,552	0.06
280	17,418	0.05
281	21,772	0.06
282	14,329	0.04
283	16,244	0.05
284	21,942	0.06
285	13,650	0.04
286	16,090	0.05
287	13,249	0.04
288	16,754	0.05
289	24,552	0.07
290	14,468	0.04
291	18,560	0.05
292	14,021	0.04
293	15,040	0.04
294	17,634	0.05
295	17,526	0.05
296	14,422	0.04
297	18,313	0.05
298	16,661	0.05
299	21,556	0.06
300	19,549	0.06

301		18,607	0.05
302		24,582	0.07
303		26,281	0.08
304		343,520	1.01
305		23,625	0.07
306		20,336	0.06
307		16,368	0.05
308		17,263	0.05
309		20,043	0.06
310		15,148	0.04
311		14,546	0.04
312		16,908	0.05
313		16,522	0.05
314		17,294	0.05
315		13,017	0.04
316		16,043	0.05
317		12,863	0.04
318		13,681	0.04
319		14,607	0.04
320		22,390	0.07
321		11,967	0.04
322		13,110	0.04
323		13,326	0.04
324		19,487	0.06
325		14,021	0.04
326		13,372	0.04
327		19,240	0.06
328		13,496	0.04
329		15,642	0.05
330		18,468	0.05
331		20,058	0.06
332		20,058	0.06
333		18,591	0.05
334		120,549	0.35
335		208,271	0.61
336		21,818	0.06
337		17,742	0.05
338		19,919	0.06
339		14,808	0.04
340		18,576	0.05
341		57,194	0.17
342		18,236	0.05
343		16,028	0.05
344		14,314	0.04
345		21,309	0.06
346		13,851	0.04
347		16,568	0.05
348		16,615	0.05
349		15,534	0.05
350		27,022	0.08
351		13,882	0.04
352		18,406	0.05
353		15,179	0.04
354		15,410	0.05
355		18,282	0.05
356		18,113	0.05
357		17,140	0.05
358		17,495	0.05
359		21,185	0.06
360		19,765	0.06

361		19,672	0.06
362		20,382	0.06
363		27,068	0.08
364		30,064	0.09
365		344,169	1.01
366		35,221	0.10
367		21,587	0.06
368		22,544	0.07
369		18,082	0.05
370		23,471	0.07
371		17,896	0.05
372		17,433	0.05
373		20,552	0.06
374		15,843	0.05
375		19,471	0.06
376		14,468	0.04
377		18,406	0.05
378		13,897	0.04
379		15,688	0.05
380		21,880	0.06
381		34,341	0.10
382		15,812	0.05
383		16,105	0.05
384		17,572	0.05
385		16,028	0.05
386		16,877	0.05
387		15,271	0.04
388		19,456	0.06
389		16,615	0.05
390		15,719	0.05
391		21,695	0.06
392		15,256	0.04
393		18,236	0.05
394		18,143	0.05
395		94,176	0.28
396		208,286	0.61
397		21,201	0.06
398		20,290	0.06
399		17,124	0.05
400		17,063	0.05
401		16,893	0.05
402		17,804	0.05
403		16,522	0.05
404		13,990	0.04
405		15,009	0.04
406		15,874	0.05
407		12,615	0.04
408		12,863	0.04
409		14,237	0.04
410		12,106	0.04
411		30,743	0.09
412		12,121	0.04
413		15,796	0.05
414		14,268	0.04
415		10,855	0.03
416		17,387	0.05
417		11,921	0.04
418		13,094	0.04
419		13,774	0.04
420		14,623	0.04

421	14,175	0.04
422	12,090	0.04
423	13,959	0.04
424	11,936	0.04
425	16,337	0.05
426	173,034	0.51
427	16,337	0.05
428	10,809	0.03
429	12,044	0.04
430	13,341	0.04
431	12,863	0.04
432	10,732	0.03
433	9790	0.03
434	13,897	0.04
435	8771	0.03
436	13,048	0.04
437	9574	0.03
438	8616	0.03
439	8817	0.03
440	8786	0.03
441	19,132	0.06
442	8400	0.02
443	9234	0.03
444	8138	0.02
445	10,361	0.03
446	12,554	0.04
447	6918	0.02
448	9465	0.03
449	11,396	0.03
450	9913	0.03
451	8168	0.02
452	12,785	0.04
453	9435	0.03
454	9543	0.03
455	10,809	0.03
456	50,647	0.15
457	104,784	0.31
458	7504	0.02
459	9141	0.03
460	8215	0.02
461	8400	0.02
462	11,457	0.03
463	8678	0.03
464	9759	0.03
465	7304	0.02
466	8693	0.03
467	9249	0.03
468	7535	0.02
469	7613	0.02
470	8508	0.03
471	7860	0.02
472	15,796	0.05
473	8354	0.02
474	6578	0.02
475	7643	0.02
476	6624	0.02
477	10,793	0.03
478	6547	0.02
479	7489	0.02
480	10,315	0.03

481		6794	0
482		9110	0
483		6501	0
484		7628	0
485		5976	0
486		9064	0
487		103,163	0
488		6763	0
489		5976	0
490		6439	0
491		7304	0
492		7643	0
493		7088	0
494		7690	0
495		7273	0
496		5929	0
497		7890	0
498		5837	0
499		6099	0
500		5296	0
501		6130	0
502		13,017	0
503		5713	0
504		5250	0
505		6902	0
506		5404	0
507		7890	0
508		5018	0
509		6130	0
510		6794	0
511		5945	0
512		7798	0
513		5018	0
514		6315	0
515		4972	0
516		6285	0
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518		62,861	0
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521		5790	0
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523		8647	0
524		5219	0
525		6979	0
526		4185	0
527		5374	0
528		7273	0
529		4478	0
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532		5157	0
533		9821	0
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536		4447	0
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538		5976	0
539		4169	0
540		5065	0

541	6686	0.02
542	4524	0.01
543	6176	0.02
544	4432	0.01
545	4370	0.01
546	4169	0.01
547	6269	0.02
548	70,412	0.21
549	4509	0.01
550	4200	0.01
551	4571	0.01
552	4107	0.01
553	5837	0.02
554	4864	0.01
555	4277	0.01
556	4694	0.01
557	4138	0.01
558	5590	0.02
559	4354	0.01
560	3829	0.01
561	3690	0.01
562	4277	0.01
563	7906	0.02
564	3829	0.01
565	3721	0.01
566	4293	0.01
567	3768	0.01
568	5250	0.02
569	3799	0.01
570	3320	0.01
571	4601	0.01
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573	5250	0.02
574	2841	0.01
575	3814	0.01
576	3196	0.01
577	3135	0.01
578	20,892	0.06
579	35,299	0.10
580	3150	0.01
581	2980	0.01
582	3737	0.01
583	3752	0.01
584	4354	0.01
585	3521	0.01
586	3845	0.01
587	3582	0.01
588	2486	0.01
589	4771	0.01
590	2826	0.01
591	3243	0.01
592	2934	0.01
593	2888	0.01
594	6686	0.02
595	2471	0.01
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619	3953	0.01
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628	2193	0.01
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630	2393	0.01
631	2224	0.01
632	3382	0.01
633	2795	0.01
634	2764	0.01
635	2347	0.01
636	2270	0.01
637	1915	0.01
638	2239	0.01
639	15,951	0.05
640	23,177	0.07
641	2177	0.01
642	2301	0.01
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666		1127	0.00
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674		896	0.00
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699		896	0.00
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701		5173	0.02
702		293	0.00
703		324	0.00
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705		263	0.00
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707		108	0.00
708		247	0.00
709		185	0.00
710		201	0.00
711		170	0.00
712		201	0.00
713		170	0.00
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715		232	0.00
716		278	0.00
717		124	0.00
718		62	0.00
719		139	0.00
720		93	0.00

721		108	0.00
722		124	0.00
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724		170	0.00
725		62	0.00
726		93	0.00
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728		46	0.00
729		139	0.00
730		170	0.00
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732		170	0.00
733		31	0.00
734		139	0.00
735		77	0.00
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737		77	0.00
738		77	0.00
739		108	0.00
740		46	0.00
741		62	0.00
742		62	0.00
743		15	0.00
744		31	0.00
745		62	0.00
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748		31	0.00
749		77	0.00
750		139	0.00
751		108	0.00
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753		77	0.00
754		108	0.00
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760		46	0.00
761		340	0.00
762		726	0.00
763		15	0.00
764		46	0.00
765		62	0.00
766		15	0.00
767		31	0.00
768		46	0.00
769		170	0.00
770		77	0.00
771		31	0.00
772		31	0.00
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779		15	0.00
781		15	0.00
782		46	0.00
783		46	0.00

784		185	0.00
785		31	0.00
787		31	0.00
788		15	0.00
791		15	0.00
792		525	0.00
793		62	0.00
794		46	0.00
795		31	0.00
796		31	0.00
799		46	0.00
800		62	0.00
802		62	0.00
803		31	0.00
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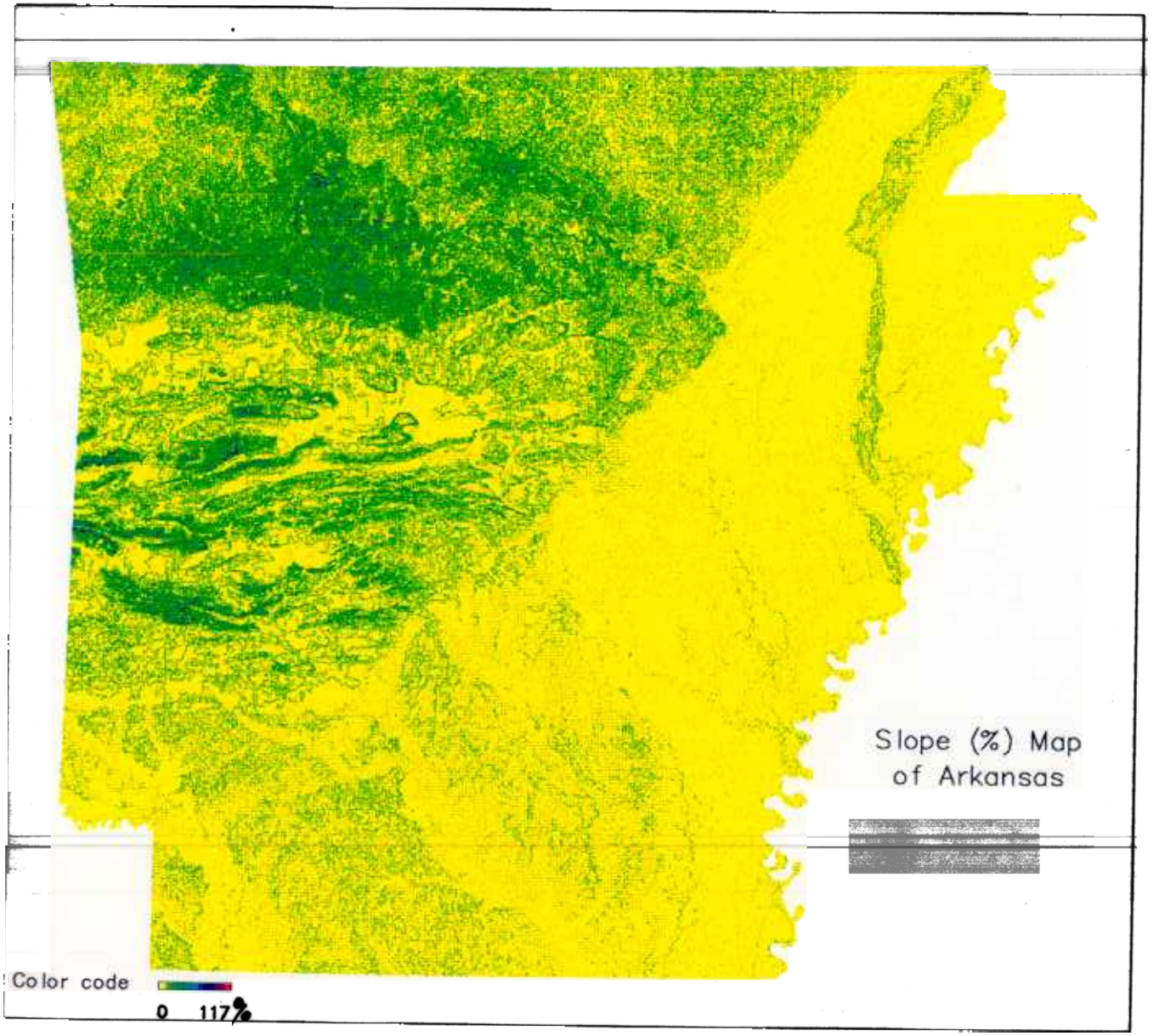
805		46	0.00
806		15	0.00
807		15	0.00
808		15	0.00
811		15	0.00
812		15	0.00
813		15	0.00
815		46	0.00
816		15	0.00
817		15	0.00
818		15	0.00
819		31	0.00
821		15	0.00
822		263	0.00
823		15	0.00
826		31	0.00
829		15	0.00
852		15	0.00
TOTAL		34,004,953	100.00


Slope (%) Map
of Arkansas
Color code
0 117%

RASTER MAP CATEGORY REPORT

LOCATION: ar — Wed Oct 9 13:49:29 1996

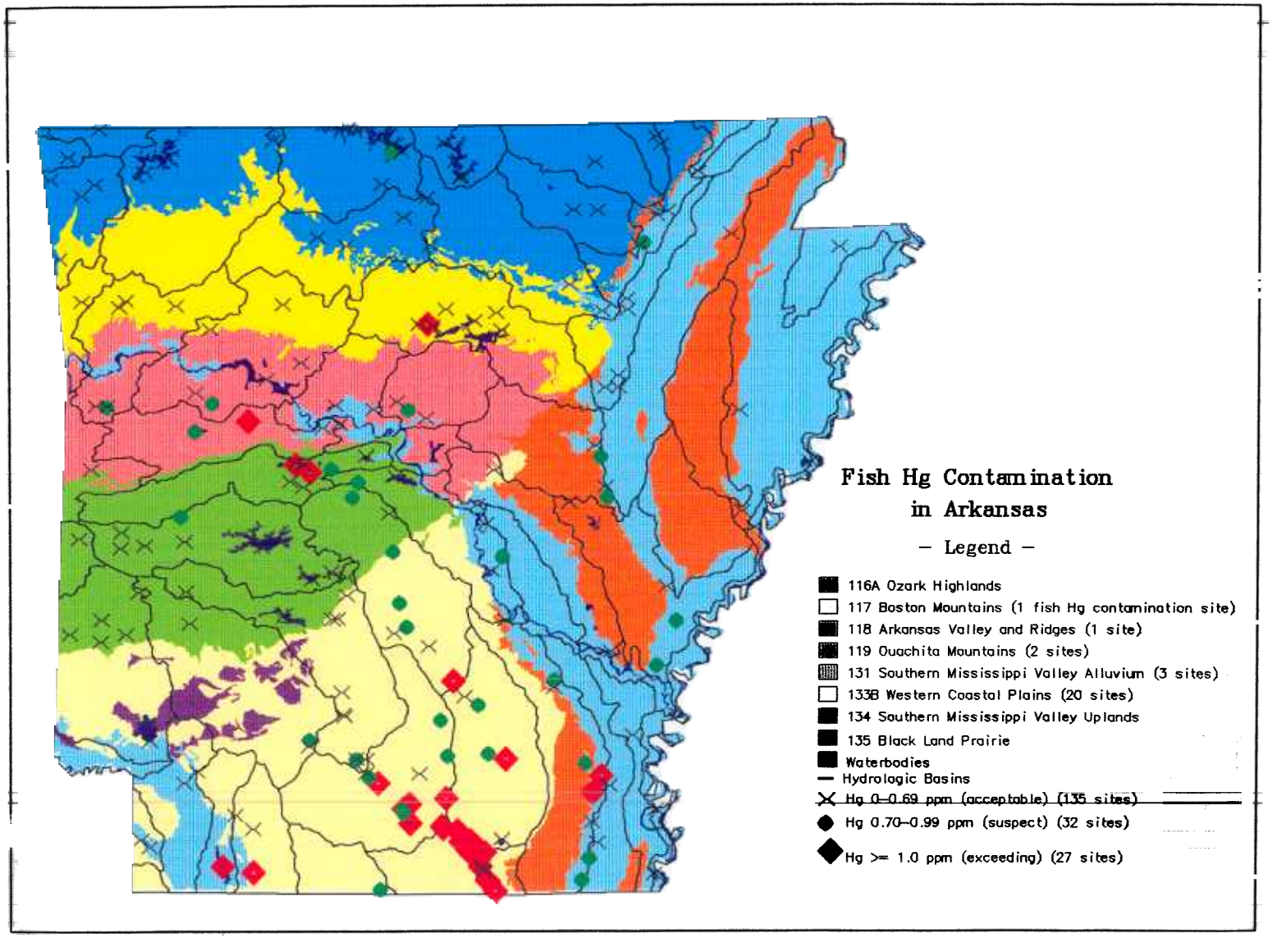
REGION				
	north:	4099000	east:	971400
	south:	3633040	west:	340200
	res:	249.97854077	res:	249.98019802

MASK: arkstate in PERMANENT, categories 1

MAP: percent slope (slope in Hg)

#	Category Information	acres	% cover
1	0 percent	15,892,053	46.74
2	1 percent	,582,183	19.36
3	2 percent	2,225,633	6.55
4	3 percent	1,501,271	4.41
5	4 percent	1,023,937	3.01
6	5 percent	776,785	2.28
7	6 percent	667,446	1.96
8	7 percent	531,363	1.56
9	8 percent	495,554	1.46
10	9 percent	439,858	1.29
11	10 percent	397,904	1.17
12	11 percent	350,762	1.03
13	12 percent	317,857	0.93
14	13 percent	302,509	0.89
15	14 percent	280,613	0.83
16	15 percent	247,399	0.73
17	16 percent	224,608	0.66
18	17 percent	196,937	0.58
19	18 percent	193,370	0.57
20	19 percent	196,258	0.58
21	20 percent	132,547	0.39
22	21 percent	113,091	0.33
23	22 percent	98,021	0.29
24	23 percent	90,933	0.27
25	24 percent	80,109	0.24
26	25 percent	72,713	0.21
27	26 percent	64,436	0.19
28	27 percent	58,090	0.17
29	28 percent	54,152	0.16
30	29 percent	49,381	0.15
31	30 percent	40,317	0.12
32	31 percent	35,422	0.10
33	32 percent	31,763	0.09
34	33 percent	28,968	0.09
35	34 percent	25,478	0.07
36	35 percent	21,463	0.06
37	36 percent	21,093	0.06
38	37 percent	18,468	0.05
39	38 percent	20,490	0.06
40	39 percent	12,276	0.04
41	40 percent	11,133	0.03
42	41 percent	10,299	0.03
43	42 percent	8493	0.02
44	43 percent	8554	0.03
45	44 percent	6763	0.02

46	45 percent	5929	0.02
47	46 percent	4463	0.01
48	47 percent	3999	0.01
49	48 percent	3999	0.01
50	49 percent	3026	0.01
51	50 percent	2980	0.01
52	51 percent	2316	0.01
53	52 percent	2316	0.01
54	53 percent	2224	0.01
55	54 percent	1745	0.01
56	55 percent	1590	0.00
57	56 percent	1374	0.00
58	57 percent	1791	0.01
59	58 percent	1143	0.00
60	59 percent	896	0.00
61	60 percent	710	0.00
62	61 percent	602	0.00
63	62 percent	386	0.00
64	63 percent	417	0.00
65	64 percent	479	0.00
66	65 percent	556	0.00
67	66 percent	324	0.00
68	67 percent	263	0.00
69	68 percent	247	0.00
70	69 percent	355	0.00
71	70 percent	201	0.00
72	71 percent	216	0.00
73	72 percent	77	0.00
74	73 percent	154	0.00
75	74 percent	62	0.00
76	75 percent	93	0.00
77	76 percent	201	0.00
78	77 percent	77	0.00
79	78 percent	46	0.00
80	79 percent	31	0.00
81	80 percent	31	0.00
82	81 percent	62	0.00
83	82 percent	15	0.00
85	84 percent	15	0.00
86	85 percent	15	0.00
87	86 percent	46	0.00
88	87 percent	31	0.00
89	88 percent	31	0.00
90	89 percent	15	0.00
91	90 percent	15	0.00
93	92 percent	46	0.00
94	93 percent	15	0.00
104	103 percent	15	0.00
107	106 percent	15	0.00
115	114 percent	31	0.00
TOTAL		34,004,443	100.00


Fish Hg Contamination
in Arkansas
– Legend –
116A Ozark Highlands
117 Boston Mountains (1 fish Hg contamination site)
118 Arkansas Valley and Ridges (1 site)
119 Ouachita Mountains (2 sites)
131 Southern Mississippi Valley Alluvium (3 sites)
133B Western Coastal Plains (20 sites)
134 Southern Mississippi Valley Uplands
135 Black Land Prairie
Waterbodies
Hydrologic Basins
Hg 0–0.69 ppm (acceptable) (135 sites)
Hg 0.70–0.99 ppm (suspect) (32 sites)
Hg >= 1.0 ppm (exceeding) (27 sites)

APPENDIX

Coincidence Reports of Fish Hg Contamination and Environmental Factors

RASTER MAP CATEGORY REPORT

LOCATION: ar — Wed Oct 9 22:13:16 1996

REGION				
	north:	4064000	east:	921400
	south:	3623040	west:	340200
	res:	249.97732426	res:	249.97849462

MASK: fish.al.mask in Hg, categories 1-27

MAPS: Summary of all fish Hg contamination sites (Hg >= 1 ppm) (fish.al.freq
Major Land Resources Areas (MLRA) (mlra in Hg)

#	Category Information	cell count	% cover
	Fish tissue Hg >= 1 ppm	27	100.00
2	117 Boston Mountains.	1	3.70
3	118 Arkansas Valley and Ridges.	1	3.70
4	119 Ouachita Mountains.	2	7.41
5	131 Southern Mississippi Valley Alluvium.	2	7.41
6	133B Western Coastal Plains.	19	70.37
9	Waterbodies (1 in 133B, 1 in 131)	2	7.41
TOTAL		27	100.00

RASTER MAP CATEGORY REPORT

LOCATION: ar — Wed Oct 9 22:14:50 1996

REGION				
	north:	4064000	east:	921400
	south:	3623040	west:	340200
	res:	249.97732426	res:	249.97849462

MASK: fish.al.mask in Hg, categories 1-27

MAPS: Summary of all fish Hg contamination sites (Hg >= 1 ppm) (fish.al.freq
Hydrologic basins (hb in Hg)

#	description	Category Information	cell count	% cover
1	Fish tissue Hg >= 1 ppm		27	100.00
22	Lower Ouachita-Smackover		6	22.22
23	Lower Ouachita-Bayou De Loutre		8	29.63
24	Upper Saline		1	3.70
25	Lower Saline		4	14.81
26	Bayou Bartholomew.		2	7.41
42	Little Red		1	3.70
52	Petit Jean		1	3.70
54	Fourche La Fave.		2	7.41
60	Loggy Bayou.		1	3.70
61	Bodcau Bayou		1	3.70
TOTAL			27	100.00

RASTER MAP CATEGORY REPORT

LOCATION: ar Wed Oct 9 22:16:52 1996

REGION				
	north:	4064000	east:	921400
	south:	3623040	west:	340200
	res:	249.97732426	res:	249.97849462

MASK: fish.al.mask in Hg, categories 1-27

MAPS: Summary of all fish Hg contamination sites (Hg >= 1 ppm) (fish.al.freq
General Soils (soils in Hg)

#	Category Information	cell count	% cover
1	Fish tissue Hg >= 1 ppm	27	100.00
10	Enders-Nella-Mountainburg-Steprock	1	3.70
15	Linker-Mountainburg	1	3.70
16	Carnasaw-Pirum-Clebit	1	3.70
17	Kenn-Ceda-Avilla	1	3.70
29	Perry-Portland	1	3.70
32	Rilla-Hebert	1	3.70
43	Guyton-Ouachita-Sardis	19	70.37
50	Water bodies (Rivers,Lakes,Ponds)	2	7.41
TOTAL		27	100.00

RASTER MAP CATEGORY REPORT

LOCATION: ar Wed Oct 9 22:17:41 1996

REGION	north:	4064000	east: 921400
	south:	3623040	west: 340200
	res:	249.97732426	res: 249.97849462

MASK: fish.al.mask in Hg, categories 1-27

MAPS: Summary of all fish Hg contamination sites (Hg >= 1 ppm) (fish.al.freq
Geology (geology in Hg)

#	description	Category Information	cell count	% cover
1	Fish tissue Hg >= 1 ppm		27	100.00
1	Qcm--Alluvium.		1	3.70
2	Qso--Alluvium.		1	3.70
3	Qt---Terrace deposits.		1	3.70
9	Tc---Claiborne group		1	3.70
12	Qal--Alluvium.		18	66.67
30	IPbh-Bloyd shale,prairie grove member of the hale formation		1	3.70
45	IPhs-Hartshorne sandstone.		1	3.70
47	IPam-Middle part of IPa.		1	3.70
48	IPal-Lower part of IPa		1	3.70
60	Wb---Water bodies.		1	3.70
TOTAL			27	100.00

RASTER MAP CATEGORY REPORT

LOCATION: ar Wed Oct 9 22:18:26 1996

REGION				
	north:	4064000	east:	921400
	south:	3623040	west:	340200
	res:	249.97732426	res:	249.97849462

MASK: fish.al.mask in Hg, categories 1-27

MAPS: Summary of all fish Hg contamination sites (Hg >= 1 ppm) (fish.al.freq
Land use/land cover (1972) (lulc.72 in Hg)

#	Category Information description	cell count	% cover
1	Fish tissue Hg >= 1 ppm	27	100.00
21	Cropland and Pasture	1	3.70
41	Deciduous Forest	1	3.70
42	Evergreen Forest	2	7.41
43	Mixed Rangeland.	2	7.41
53	Reservoirs	3	11.11
61	Forested Wetland	18	66.67
TOTAL		27	100.00

RASTER MAP CATEGORY REPORT

LOCATION: ar Wed Oct 9 22:20:23 1996

REGION				
	north:	4064000	east:	921400
	south:	3623040	west:	340200
	res:	249.97732426	res:	249.97849462

MASK: fish.al.mask in Hg, categories 1-27

MAPS: Summary of all fish Hg contamination sites (Hg >= 1 ppm) (fish.al.freq
Vegetation Cover (1992) (veg.92 in Hg)

#	Category Information	cell count	% cover
1	Fish tissue Hg >= 1 ppm	27	100.00
6	Quercus stellata, marilandica - Pinus echinata - Carya spp.	1	3.70
36	Quercus nuttallii.	4	14.81
38	Quercus phellos.	5	18.52
42	Nyssa (Forested wetland)	1	3.70
60	Water.	14	51.85
63	Agriculture (pasture).	2	7.41
TOTAL		27	100.00

RASTER MAP CATEGORY REPORT

LOCATION: ar — Wed Oct 9 22:21:36 1996

REGION				
	north:	4064000	east:	921400
	south:	3623040	west:	340200
	res:	249.97732426	res:	249.97849462

MASK: fish.al.mask in Hg, categories 1-27

MAPS: Summary of all fish Hg contamination sites (Hg >= 1 ppm) (fish.al.freq
Elevation (m) (elevation.dma in Hg)

#	Category Information	cell count	% cover
1	Fish tissue Hg >= 1 ppm	27	100.00
16		2	7.41
17		1	3.70
18		1	3.70
20		1	3.70
21		3	11.11
22		4	14.81
26		1	3.70
29		2	7.41
32		2	7.41
33		1	3.70
36		1	3.70
38		1	3.70
47		1	3.70
60		1	3.70
71		1	3.70
91		1	3.70
121		1	3.70
149		1	3.70
162		1	3.70
TOTAL		27	100.00

RASTER MAP CATEGORY REPORT

LOCATION: ar Wed Oct 9 22:22:37 1996

REGION	north:	4064000	east:	921400
	south:	3623040	west:	340200
	res:	249.97732426	res:	249.97849462

MASK: fish.al.mask in Hg, categories 1-27

MAPS: Summary of all fish Hg contamination sites (Hg >= 1 ppm) (fish.al.freq
percent slope (slope in Hg)

#	Category Information	cell count	% cover
1	Fish tissue Hg >= 1 ppm	27	100.00
1	0 percent	19	70.37
2	1 percent	5	18.52
3	2 percent	1	3.70
10	9 percent	1	3.70
11	10 percent	1	3.70
TOTAL		27	100.00

RASTER MAP CATEGORY REPORT

LOCATION: ar

Wed Oct 9 22:11:35 1996

REGION
north: 4064000 east: 921400
south: 3623040 west: 340200
res: 249.97732426 res: 249.97849462

MASK: fish.al.mask in Hg, categories 1-27

MAPS: Summary of all fish Hg contamination sites (Hg >= 1 ppm) (fish.al.freq
Major Land Resources Areas (MLRA) (mlra in Hg)
Hydrologic basins (hb in Hg)
General Soils (soils in Hg)
Geology (geology in Hg)
Land use/land cover (1972) (lulc.72 in Hg)
Vegetation Cover (1992) (veg.92 in Hg)
Elevation (m) (elevation.dma in Hg)
percent slope (slope in Hg)

#	description	Category Information	cell count	% cover
1	Fish tissue Hg >= 1 ppm		27	100.00
2	117 Boston Mountains		1	3.70
42	Little Red		1	100.00
10	Enders-Nella-Mountainburg-Steprock		1	100.00
30	IPbh-Bloyd shale,prairie grove member of the hale formation		1	100.00
43	Mixed Rangeland		1	100.00
63	Agriculture (pasture)		1	100.00
162			1	100.00
11	10 percent		1	100.00
3	118 Arkansas Valley and Ridges		1	3.70
52	Petit Jean		1	100.00
15	Linker-Mountainburg		1	100.00
45	IPhs-Hartshorne sandstone		1	100.00
43	Mixed Rangeland		1	100.00
60	Water		1	100.00
149			1	100.00
3	2 percent.		1	100.00
4	119 Ouachita Mountains		2	7.41

54	Fourche La Fave	2	100.00
16	Carnasaw-Pirum-Clebit	1	50.00
48	IPal-Lower part of IPa	1	100.00
42	Evergreen Forest	1	100.00
6	Quercus stellata, marilandica - Pinus echinata - Carya spp.	1	100.00
121		1	100.00
1	0 percent.	1	100.00
17	Kenn-Ceda-Avilla	1	50.00
47	IPam-Middle part of IPa	1	100.00
53	Reservoirs	1	100.00
60	Water	1	100.00
91		1	100.00
10	9 percent.	1	100.00
5	131 Southern Mississippi Valley Alluvium	2	7.41
26	Bayou Bartholomew	2	100.00
29	Perry-Portland	1	50.00
2	Qso--Alluvium	1	100.00
41	Deciduous Forest	1	100.00
38	Quercus phellos	1	100.00
36		1	100.00
1	0 percent.	1	100.00
32	Rilla-Hebert	1	50.00
1	Qcm--Alluvium	1	100.00
21	Cropland and Pasture	1	100.00
38	Quercus phellos	1	100.00
38		1	100.00
1	0 percent.	1	100.00
6	133B Western Coastal Plains	19	70.37
22	Lower Ouachita-Smackover	5	26.32
43	Guyton-Ouachita-Sardis	5	100.00

		3					Qt---Terrace deposits	1	20.00
			61				Forested Wetland	1	100.00
				63			Agriculture (pasture)	1	100.00
					29			1	100.00
						2	1 percent.	1	100.00
		12					Qal--Alluvium	4	80.00
			61				Forested Wetland	4	100.00
				36			Quercus nuttallii	1	25.00
					32			1	100.00
						1	0 percent.	1	100.00
				60			Water	3	75.00
					21			1	33.33
						2	1 percent.	1	100.00
					29			1	33.33
						1	0 percent.	1	100.00
					33			1	33.33
						1	0 percent.	1	100.00
23							Lower Ouachita-Bayou De Loutre	8	42.11
	43						Guyton-Ouachita-Sardis	8	100.00
		12					Qal--Alluvium	8	100.00
			61				Forested Wetland	8	100.00
				36			Quercus nuttallii	1	12.50
					20			1	100.00
						2	1 percent.	1	100.00
				38			Quercus phellos	1	12.50
					16			1	100.00
						1	0 percent.	1	100.00
				42			Nyssa (Forested wetland)	1	12.50
					17			1	100.00
						2	1 percent.	1	100.00

60	Water	5	62.50
16		1	20.00
1	0 percent.	1	100.00
18		1	20.00
1	0 percent.	1	100.00
22		3	60.00
1	0 percent.	3	100.00
24	Upper Saline	1	5.26
43	Guyton-Ouachita-Sardis	1	100.00
12	Qal--Alluvium	1	100.00
61	Forested Wetland	1	100.00
36	Quercus nuttallii	1	100.00
47		1	100.00
1	0 percent.	1	100.00
25	Lower Saline	4	21.05
43	Guyton-Ouachita-Sardis	4	100.00
12	Qal--Alluvium	4	100.00
42	Evergreen Forest	1	25.00
60	Water	1	100.00
22		1	100.00
1	0 percent.	1	100.00
61	Forested Wetland	3	75.00
36	Quercus nuttallii	1	33.33
21		1	100.00
1	0 percent.	1	100.00
38	Quercus phellos	1	33.33
21		1	100.00
1	0 percent.	1	100.00
60	Water	1	33.33
32		1	100.00

	1|0 percent.	1	100.00
60	Loggy Bayou	1	5.26
43	Guyton-Ouachita-Sardis	1	100.00
9	Tc---Claiborne group	1	100.00
61	Forested Wetland	1	100.00
38	Quercus phellos	1	100.00
60		1	100.00
	2|1 percent.	1	100.00
9	Waterbodies	2	7.41
22	Lower Ouachita-Smackover	1	50.00
50	Water bodies (Rivers,Lakes,Ponds)	1	100.00
12	Qal--Alluvium	1	100.00
53	Reservoirs	1	100.00
60	Water	1	100.00
26		1	100.00
	1|0 percent.	1	100.00
61	Bodcau Bayou	1	50.00
50	Water bodies (Rivers,Lakes,Ponds)	1	100.00
60	Wb---Water bodies	1	100.00
53	Reservoirs	1	100.00
60	Water	1	100.00
71		1	100.00
	1|0 percent.	1	100.00
TOTAL		27	100.00

RASTER MAP CATEGORY REPORT

LOCATION: ar — Wed Oct 9 22:27:11 1996

REGION	north:	4064000	east:	921400
	south:	3623040	west:	340200
	res:	249.97732426	res:	249.97849462

MASK: fish.al.mask in Hg, categories 1-27

MAPS: Fish Hg contamination sites (fish.al.mask in Hg)
Major Land Resources Areas (MLRA) (mlra in Hg)
Hydrologic basins (hb in Hg)
General Soils (soils in Hg)
Geology (geology in Hg)
Land use/land cover (1972) (lulc.72 in Hg)
Vegetation Cover (1992) (veg.92 in Hg)
Elevation (m) (elevation.dma in Hg)
percent slope (slope in Hg)

#	Category Information	cell count	% cover	
1	1.29 BAYOU BARTHOLOMEW (BAXTER)	1	3.70	
5	131 Southern Mississippi Valley Alluvium	1	100.00	
26	Bayou Bartholomew	1	100.00	
32	Rilla-Hebert	1	100.00	
1	Qcm--Alluvium	1	100.00	
21	Cropland and Pasture	1	100.00	
38	Quercus phellos	1	100.00	
38		1	100.00	
1	0 percent.	1	100.00	
2	1.71 BIG JOHNSON LAKE	1	3.70	
6	133B Western Coastal Plains	1	100.00	
22	Lower Ouachita-Smackover	1	100.00	
43	Guyton-Ouachita-Sardis	1	100.00	
12	Qal--Alluvium	1	100.00	
61	Forested Wetland	1	100.00	
36	Quercus nuttallii	1	100.00	
32		1	100.00	
1	0 percent.	1	100.00	
3	1.02 CALION LAKE	1	3.70	

9	Waterbodies	1	100.00	
22	Lower Ouachita-Smackover	1	100.00	
50	Water bodies (Rivers,Lakes,Ponds)	1	100.00	
12	Qal--Alluvium	1	100.00	
53	Reservoirs	1	100.00	
60	Water	1	100.00	
26		1	100.00	
1	0 percent.	1	100.00	
4	1.34 CHAMPAGNOLLE CREEK ABV LITTLE CHAMPAGNOLLE		1	3.70
6	133B Western Coastal Plains	1	100.00	
22	Lower Ouachita-Smackover	1	100.00	
43	Guyton-Ouachita-Sardis	1	100.00	
12	Qal--Alluvium	1	100.00	
61	Forested Wetland	1	100.00	
60	Water	1	100.00	
33		1	100.00	
1	0 percent.	1	100.00	
5	1.06 COVE CREEK LAKE - A COMPOSTE OF TWO		1	3.70
4	119 Ouachita Mountains	1	100.00	
54	Fourche La Fave	1	100.00	
16	Carnasaw-Pirum-Clebit	1	100.00	
48	IPal-Lower part of IPa	1	100.00	
42	Evergreen Forest	1	100.00	
6	Quercus stellata, marilandica - Pinus echinata - Carya spp.	1	100.00	
121		1	100.00	
1	0 percent.	1	100.00	
6	1.14 CUT-OFF CREEK - IN WMA - DREW CO.		1	3.70
5	131 Southern Mississippi Valley Alluvium	1	100.00	
26	Bayou Bartholomew	1	100.00	

Code	Description	Count	Percent	
29	Perry-Portland	1	100.00	
2	Qso--Alluvium	1	100.00	
41	Deciduous Forest	1	100.00	
38	Quercus phellos	1	100.00	
36		1	100.00	
1	0 percent.	1	100.00	
7	2.06 DORCHEAT BAYOU		1	3.70
6	133B Western Coastal Plains	1	100.00	
60	Loggy Bayou	1	100.00	
43	Guyton-Ouachita-Sardis	1	100.00	
9	Tc---Claiborne group	1	100.00	
61	Forested Wetland	1	100.00	
38	Quercus phellos	1	100.00	
60		1	100.00	
2	1 percent.	1	100.00	
8	2.45 EAGLE LAKE		1	3.70
6	133B Western Coastal Plains	1	100.00	
23	Lower Ouachita-Bayou De Loutre	1	100.00	
43	Guyton-Ouachita-Sardis	1	100.00	
12	Qal--Alluvium	1	100.00	
61	Forested Wetland	1	100.00	
60	Water	1	100.00	
22		1	100.00	
1	0 percent.	1	100.00	
9	1.08 GRAYS LAKE - CLEVELAND CO.		1	3.70
6	133B Western Coastal Plains	1	100.00	
24	Upper Saline	1	100.00	
43	Guyton-Ouachita-Sardis	1	100.00	
12	Qal--Alluvium	1	100.00	
61	Forested Wetland	1	100.00	

36	Quercus nuttallii	1	100.00	
47		1	100.00	
1	0 percent.	1	100.00	
10	2.06 GREENS LAKE		1	3.70
6	133B Western Coastal Plains	1	100.00	
25	Lower Saline	1	100.00	
43	Guyton-Ouachita-Sardis	1	100.00	
12	Qal--Alluvium	1	100.00	
42	Evergreen Forest	1	100.00	
60	Water	1	100.00	
22		1	100.00	
1	0 percent.	1	100.00	
11	3.17 JONES LAKE		1	3.70
6	133B Western Coastal Plains	1	100.00	
23	Lower Ouachita-Bayou De Loutre	1	100.00	
43	Guyton-Ouachita-Sardis	1	100.00	
12	Qal--Alluvium	1	100.00	
61	Forested Wetland	1	100.00	
36	Quercus nuttallii	1	100.00	
20		1	100.00	
2	1 percent.	1	100.00	
12	1.56 LAKE BENJAMIN		1	3.70
6	133B Western Coastal Plains	1	100.00	
23	Lower Ouachita-Bayou De Loutre	1	100.00	
43	Guyton-Ouachita-Sardis	1	100.00	
12	Qal--Alluvium	1	100.00	
61	Forested Wetland	1	100.00	
60	Water	1	100.00	
22		1	100.00	
1	0 percent.	1	100.00	

13	1.14 LAKE ERLING		1	3.70
9	Waterbodies	1	100.00	
61	Bodcau Bayou	1	100.00	
50	Water bodies (Rivers,Lakes,Ponds)	1	100.00	
60	Wb---Water bodies	1	100.00	
53	Reservoirs	1	100.00	
60	Water	1	100.00	
71		1	100.00	
1	0 percent.	1	100.00	
14	1.1 LAKE FELSENTHAL	1	3.70	
6	133B Western Coastal Plains	1	100.00	
23	Lower Ouachita-Bayou De Loutre	1	100.00	
43	Guyton-Ouachita-Sardis	1	100.00	
12	Qal--Alluvium	1	100.00	
61	Forested Wetland	1	100.00	
60	Water	1	100.00	
16		1	100.00	
1	0 percent.	1	100.00	
15	1.26 LAKE NIMROD		1	3.70
4	119 Ouachita Mountains	1	100.00	
54	Fourche La Fave	1	100.00	
17	Kenn-Ceda-Avilla	1	100.00	
47	IPam-Middle part of IPa	1	100.00	
53	Reservoirs	1	100.00	
60	Water	1	100.00	
91		1	100.00	
10	9 percent.	1	100.00	
16	1.75 LAKE PIROQUE		1	3.70
6	133B Western Coastal Plains	1	100.00	
25	Lower Saline	1	100.00	

43	Guyton-Ouachita-Sardis	1	100.00	
12	Qal--Alluvium	1	100.00	
61	Forested Wetland	1	100.00	
38	Quercus phellos	1	100.00	
21		1	100.00	
1	0 percent.	1	100.00	
17	1.42 MORO CREEK ABOVE STATE PARK		1	3.70
6	133B Western Coastal Plains	1	100.00	
22	Lower Ouachita-Smackover	1	100.00	
43	Guyton-Ouachita-Sardis	1	100.00	
12	Qal--Alluvium	1	100.00	
61	Forested Wetland	1	100.00	
60	Water	1	100.00	
21		1	100.00	
2	1 percent.	1	100.00	
18	1.56 MORO CREEK AT HWY 160		1	3.70
6	133B Western Coastal Plains	1	100.00	
22	Lower Ouachita-Smackover	1	100.00	
43	Guyton-Ouachita-Sardis	1	100.00	
3	Qt---Terrace deposits	1	100.00	
61	Forested Wetland	1	100.00	
63	Agriculture (pasture)	1	100.00	
29		1	100.00	
2	1 percent.	1	100.00	
19	1.36 OUACHITA R.- BELOW FELSENTHAL		1	3.70
6	133B Western Coastal Plains	1	100.00	
23	Lower Ouachita-Bayou De Loutre	1	100.00	
43	Guyton-Ouachita-Sardis	1	100.00	
12	Qal--Alluvium	1	100.00	
61	Forested Wetland	1	100.00	

						42			Nyssa (Forested wetland)	1	100.00	
							17			1	100.00	
								2	1 percent.	1	100.00	
20									1.4 OUACHITA R- PIGEON HILL	1	3.70	
	6								133B Western Coastal Plains	1	100.00	
		23							Lower Ouachita-Bayou De Loutre	1	100.00	
			43						Guyton-Ouachita-Sardis	1	100.00	
				12					Qal--Alluvium	1	100.00	
					61				Forested Wetland	1	100.00	
						60			Water	1	100.00	
							22			1	100.00	
								1	0 percent.	1	100.00	
21									1.05 OUACHITA RIVER BELOW COFFEE CREEK		1	3.70
	6								133B Western Coastal Plains	1	100.00	
		23							Lower Ouachita-Bayou De Loutre	1	100.00	
			43						Guyton-Ouachita-Sardis	1	100.00	
				12					Qal--Alluvium	1	100.00	
					61				Forested Wetland	1	100.00	
						38			Quercus phellos	1	100.00	
							16			1	100.00	
								1	0 percent.	1	100.00	
22									1.78 SALINE R. BELOW L'AIGLE CREEK		1	3.70
	6								133B Western Coastal Plains	1	100.00	
		25							Lower Saline	1	100.00	
			43						Guyton-Ouachita-Sardis	1	100.00	
				12					Qal--Alluvium	1	100.00	
					61				Forested Wetland	1	100.00	
						36			Quercus nuttallii	1	100.00	
							21			1	100.00	
								1	0 percent.	1	100.00	

23	1.32 SALINE RIVER AT HIGHWAY 4		1	3.70
6	133B Western Coastal Plains	1	100.00	
25	Lower Saline	1	100.00	
43	Guyton-Ouachita-Sardis	1	100.00	
12	Qal--Alluvium	1	100.00	
61	Forested Wetland	1	100.00	
60	Water	1	100.00	
32		1	100.00	
1	0 percent.	1	100.00	
24	1.42 SNOW LAKE		1	3.70
6	133B Western Coastal Plains	1	100.00	
22	Lower Ouachita-Smackover	1	100.00	
43	Guyton-Ouachita-Sardis	1	100.00	
12	Qal--Alluvium	1	100.00	
61	Forested Wetland	1	100.00	
60	Water	1	100.00	
29		1	100.00	
1	0 percent.	1	100.00	
25	2.12 SOUTH FORK LITTLE RED RIVER (JOHNSON HOLE)		1	3.70
2	117 Boston Mountains	1	100.00	
42	Little Red	1	100.00	
10	Enders-Nella-Mountainburg-Steprock	1	100.00	
30	IPbh-Bloyd shale,prairie grove member of the hale formation	1	100.00	
43	Mixed Rangeland	1	100.00	
63	Agriculture (pasture)	1	100.00	
162		1	100.00	
11	10 percent	1	100.00	
26	1.05 SPRING LAKE		1	3.70
3	118 Arkansas Valley and Ridges	1	100.00	
52	Petit Jean	1	100.00	

Code	Description	Count	Percent		
15	Linker-Mountainburg	1	100.00		
45	IPhs-Hartshorne sandstone	1	100.00		
43	Mixed Rangeland	1	100.00		
60	Water	1	100.00		
149		1	100.00		
3	2 percent.	1	100.00		
27	1.91 WILDCAT-FELSENTHAL			1	3.70
6	133B Western Coastal Plains	1	100.00		
23	Lower Ouachita-Bayou De Loutre	1	100.00		
43	Guyton-Ouachita-Sardis	1	100.00		
12	Qal--Alluvium	1	100.00		
61	Forested Wetland	1	100.00		
60	Water	1	100.00		
18		1	100.00		
1	0 percent.	1	100.00		
TOTAL		27	100.00		

APPENDIX

III. Characteristics of the Soils in MLRA's and the Soil Associations Identified in the Fish Hg Contamination Areas

SOILS OF THE OZARK HIGHLANDS LIMESTONE AND DOLOMITE

The Ozark Highlands are comprised of limestone and dolomite hills and valleys in the northern part of the state along the Arkansas-Missouri state line. Elevations range from about 500 to 1,400 feet above sea level. The soils developed mainly from limestone and dolomite and range from deep to shallow in depth. The most productive soils occur on nearly level to gently sloping plateaus and narrow stream valleys and are used for orchards, pasture, and row crops. The more mountainous areas have slopes that range from moderately sloping to very steep. Some of the less sloping areas are used for pasture production with steeper areas remaining in hardwood timber. This area is approximately 3,800,000 acres in size.

SOILS OF THE OZARK HIGHLANDS SANDSTONE AND LIMESTONE

The Ozark Highlands, sandstone-limestone, comprise a small area of hills and valleys dissected from intebedded sandstone, limestone, and some dolomite in north-central Arkansas. Elevations range from about 500 to 1,000 feet above sea level. The soils developed from interbedded limestone and sandstone and range from deep to shallow in depth. Slopes range from gently sloping to steep. Some areas have been cleared and are being used for pasture, but most of this area remains in mixed hardwood and shortleaf pines. This area is approximately 800,000 acres in size.

SOILS OF THE BOSTON MOUNTAINS

The Boston Mountains are remnants of an old plateau in the northern part of the state bordering the Ozark Highland area. Elevations range from about 500 to 2,400 feet above sea level. The mountains are normally capped by sandstone. The soils developed mainly from residuum and colluvium derived from interbedded sandstone and shale. The soils range from deep to shallow in depth. Slopes range from nearly level to moderately sloping in the valleys and on the ridgetops, and steep to very steep on the hillsides and mountainsides. Most of this area remains in woodland, while some of the less sloping areas have been cleared and are used for pasture production. This area is approximately 3,500,000 acres in size.

10) ENDERS-NELLA-MOUNTAINBURG-STEPROCK

Deep to shallow, well drained, very slowly permeable to moderately rapidly permeable, gently sloping to steep, loamy, gravelly or stony soils on uplands.

These soils are on benches, sides, tops, and footsteps of hills and mountains. Enders soils formed in a thin layer of loamy colluvial material and clayey residuum weathered from shale or interbedded shale, siltstone, and sandstone. Mountainburg and Steprock soils formed in loamy residuum weathered from sandstone or interbedded sandstone, siltstone, and shale.

Approximately 30 percent of this unit is Enders soils; 20 percent is Nella soils; 10 percent is Mountainburg soils; 10 percent is Steprock soils; and the remaining 30 percent is soils of minor extent.

The deep, very slowly permeable Enders soils typically have a dark grayish brown, gravelly or stony fine sandy loam surface layer. The subsoil is yellowish red or red silty clay or clay in the upper part and mottled gray, red and brown clay or silty clay in the lower part. The deep, moderately permeable Nella soils typically have a dark grayish brown gravelly or stony fine sandy loam surface layer. The subsoil is typically yellowish red gravelly clay loam or sandy clay loam. The shallow, moderately rapidly permeable Mountainburg soils typically have a dark grayish brown or brown gravelly or stony fine sandy loam surface layer. The subsoil is strong brown or yellowish red very gravelly sandy clay loam or loam underlain by hard bedrock at a depth of 12 to 20 inches. The moderately deep, moderately permeable Steprock soils typically strong brown or yellowish red very gravelly loam or sandy clay loam underlain by soft bedrock at a depth of 20 to 40 inches.

The minor soils in this unit include Cane, Ceda, Leadvale, Leesburg, Linker, Sidon, and Spadra.

The soils in this unit are used mainly for woodland. A few of the gently sloping to moderately sloping areas are used for pasture and hayland.

SOILS OF THE ARKANSAS VALLEY AND RIDGES

This area is comprised of broad valleys, narrow ridges, and high-flat-topped mountains in the central portion of the state. Elevations of the valley floor range from 300 to 500 feet, with mountains protruding from 1,200 feet to 2,800 feet above sea level. Soils developed mainly from residuum, colluvium, or alluvium derived from interbedded sandstone, siltstone, and shale. The soils range from deep to shallow in depth. Slopes range from level to gently sloping in the valleys and on ridgetops, while hillsides and mountainsides are moderately sloping to very steep. The valleys are used mainly for pasture production with a few areas being used for cultivated crops. The steeper hillsides and mountainsides mostly in woodland. This area is approximately 3,500,000 acres in size.

□15) LINKER-MOUNTAINBURG

Moderately deep and shallow, well drained, moderately permeable and moderately rapidly permeable, nearly level to steep, loamy, gravelly or stony soils on uplands.

These soils are on sides and tops of hills and ridges. The soils formed in loamy residuum weathered from sandstone or interbedded sandstone, siltstone, and shale.

Approximately 50 percent of this unit is Linker soils; 30 percent is Mountainburg soils; and the remaining 20 percent is soils of minor extent.

The moderately deep, moderately permeable Linker soils typically have a brown fine sandy loam surface layer which is usually gravelly or stony. The subsoil is yellowish red loam or sandy clay loam underlain by hard bedrock at a depth of 20 to 40 inches. The shallow, moderately rapidly permeable Mountainburg soils typically have a dark grayish brown or brown gravelly or stony fine sandy loam surface layer. The subsoil is strong brown or yellowish red very gravelly sandy clay loam or loam underlain by hard bedrock at a depth of 12 to 20 inches.

The minor soils in this unit include Cane, Enders, Leadvale, Nella, Sidon, and Steprock.

The soils in this unit are used mainly for pasture, hayland, and woodland. A few areas of Linker are also used for cultivated crops such as soybeans and winter small grains.

SOIL OF THE OUACHITA MOUNTAINS

The Ouachita Mountains consist of a series of east-west ridges and valley in the west-central part of the state. Common bedrock is shale, slate, quartzite, novaculite and sandstone. The rocks are generally steeply inclined and fractured and folded causing great variation in parent material and soils within short lateral distances. The soils range from deep to shallow in depth. Slopes range from level to gently sloping in the valleys to moderately sloping to very steep on the mountainsides. Most of this area is used for timber production. Some of the less sloping area have been cleared and are used for pasture production. This are is approximately 3,600,000 acres in size.

16) CARNASAW-PIRUM-CLEBIT

Deep to shallow, well drained, slowly permeable to moderately rapidly permeable, gently sloping to very steep, loamy, gravelly or stony soils on uplands.

These soils are on sides, tops and footslopes of hills and ridges of the Ouachita Mountains. Carnasaw soils formed in clayey residuum weathered from shale with interbedded lenses of siltstone and sandstone. Pirum soils formed in loamy material weathered from sandstone with interbedded lenses of shale and siltstone. Clebit soils formed in a thin layer of loamy material weathered from sandstone with interbedded lenses of shale and siltstone.

Approximately 50 percent of this unit is Caransaw soils; 15 percent is Pirum soils; 15 percent is Clebit soils; and the remaining 20 percent is soils of minor extent.

The deep, slowly permeable Carnasaw soils typically have a dark grayish brown, gravelly or stony silt loam surface layer. The subsoil is yellowish red or red silty clay or clay underlain with tilted and fractured shale with interbedded lenses of siltstone and sandstone. The moderately deep, moderately permeable Pirum soils typically have a dark grayish brown fine sandy loam surface layer. The subsoil is yellowish brown loam underlain with tilted and fractured sandstone with interbedded lenses of shale and siltstone. The shallow, moderately rapidly permeable Clebit soils typically brown very gravelly fine sandy loam underlain with tilted and fractured sandstone with lenses of interbedded siltstone and shale at a depth of 10 to 20 inches.

The minor soils in this unit include Bigfork, Bismarck, Ceda, Kenn, Yanush, Sherwood, Bonnerdale, Townley, and Zafra.

The soils in this unit are used mainly for woodland. A few of the gently sloping to moderately sloping areas are used for pasture and hayland.

17) KENN-CEDA-AVILLA

Deep, well drained, moderately permeable to rapidly permeable, level to gently sloping, loamy soils on flood plains and terraces.

These soils are on flood plains and terraces. Kenn soils formed in loamy alluvial sediments underlain by sediments with a high content of gravel. Ceda soils formed in alluvial sediments with a high content of gravels and stones. Avilla soils formed in older, loamy alluvial sediments.

Approximately 30 percent of this unit is Kenn soils; 30 percent is Ceda soils; 20 percent is Avilla soils; and the remaining 20 percent is soils of minor extent.

The moderately permeable Kenn soils typically have a brown fine sandy loam surface layer. The subsoil is yellowish red sandy clay loam in the upper part and strong brown gravelly sandy clay loam in the lower part, underlain by brown very gravelly fine sandy loam. The rapidly permeable Ceda soils typically have a dark grayish brown gravelly fine sandy loam surface layer. The underlying material is yellowish brown very gravelly loam. The moderately permeable Avilla soils typically have a brown fine sandy loam surface layer. The subsoil is yellowish red or red sandy clay loam.

The minor soils in this unit include Leadvale, Rexor, Spadra, Taft, Toine, and Sherwood.

The soils in this unit are used mainly for woodland. A few of the wider and larger areas are used for pasture and hayland.

SOILS OF THE BOTTOM LANDS AND TERRACES

These areas consist of broad alluvial plains and low terraces occurring mainly along the eastern side of the state. In addition, small areas also occur in the southwestern part of the state along the Red River and in the central part along the Arkansas River. Elevations range from about 100 to 400 feet above sea level. Soils developed in deep, clayey, loamy or sandy alluvial sediments. Slopes typically range from level to gently sloping, while a few escarpments may range to moderately steep. Most of these areas are cleared and used for cropland. Important crops include cotton, grain sorghum, rice, soybeans, and wheat. Some areas also remain forested and are important for hardwood timber production and wildlife habitiat. A few arcres are also used for pasture and hayland. These areas cover approximately 7,300,000 acres.

29) PERRY-PORTLAND

Deep, poorly drained and somewhat poorly drained, very slowly permeable level to nearly level, clayey soils on bottom lands.

These soils are on broad flats that were formerly backswamps and slack water areas of the Arkansas River. The soils formed in clayey alluvium.

Approximately 55 percent of this unit is Perry soil; about 20 percent is Portland soils; and the remaining 25 percent is soils of minor extent.

The poorly drained Perry soils typically have a dark gray or gray clay or silty clay surface layer. The upper part of the subsoil is gray clay and the lower part is reddish brown clay. The somewhat poorly drained Portland soils typically have a dark grayish brown clay or silty clay surface layer. The subsoil is reddish brown clay.

The minor soils in this unit include Desha, Hebert, Latanier, Moreland, Norwood, Rilla, Roellen, and Wabbaseka.

The soils in this unit are used mainly for cultivated crops, such as rice and soybeans. A few areas which are frequently flooded are used mostly for woodland and wildlife habitat.

32) RILLA-HEBERT

Deep, well drained and somewhat poorly drained, moderately permeable and moderately slowly permeable, level to gently sloping, loamy soils on bottom lands.

These soils are on natural levees along former channels of the Arkansas and Red River. The soils formed in loamy alluvium.

Approximately 40 percent of this unit is Rilla soils; about 30 percent is Hebert soils; and the remaining 30 percent is soils of minor extent.

The well drained Rilla soils typically have a brown silt loam surface layer and a reddish brown silty clay loam subsoil. The somewhat poorly drained Hebert soils typically have a dark grayish brown silt loam surface layer and a reddish brown, mottled silty clay loam subsoil.

The minor soils in this unit include Caspiana, Desha, Keo, Latanier, McGehee, Moreland, Norwood, Perry, Portland, and Yorktown.

The soils in this unit are used mainly for cultivated crops, such as cotton, soybeans, and winter small grains.

SOILS OF THE COASTAL PLAIN

The area consists of rolling terrain broken by stream valleys in the south-central and southwestern part of the state. Elevations range from about 100 to 500 feet above sea level. Soils developed from deep, clayey, loamy or sandy marine sediments. Slopes are typically level to nearly level on flood plains and terraces, and range from nearly level to moderately steep on the uplands. This area is used extensively for timber production and pasture. This area is approximately 6,800,000 acres in size.

43) GUYTON-OUCHITA-SARDIS

Deep, well drained to poorly drained, moderately permeable to slowly permeable, level to nearly level, loamy soils on flood plains in the Coastal Plains.

These soils are on low terraces and flood plains. These soils formed in loamy alluvial sediments.

Approximately 65 percent of this unit is Guyton soils; 10 percent is Ouachita soils; 10 percent is Sardis soils; and the remaining 15 percent is soils of minor extent.

The poorly drained, slowly permeable Guyton soils typically have a grayish brown silt loam surface layer. The subsoil is gray, mottled silt loam to silty clay loam. The well drained, moderately slowly permeable Ouachita soils typically have a brown silt loam surface layer. The subsoil is dark yellowish brown silty clay loam. The underlying material is yellowish brown fine sandy loam. The somewhat poorly drained Sardis soils typically have a brown silt loam surface layer. The upper part of the subsoil is brown silt loam. The lower part is yellowish brown, mottled silt loam. The underlying material is gray, mottled loam.

The minor soils in this unit include Amy, Bibb, Felker, Leaf, Ochlockonee, Ozan, Smithton and Toine.

The soils in this unit are used mainly for woodland. Some areas are used for pasture and hayland, and a few areas are used for cropland.

SOILS OF THE LOESSIAL PLAINS

The loessial plains consists of broad, dominantly level to nearly level areas in the eastern part of the state. Elevations range from about 150 to 300 feet above sea level. Soils developed in loess deposits underlain by loamy and clayey sediments. Thickness of loess deposits ranges from 2 to more than 4 feet in thickness. Slopes typically range from level to nearly level, while a few areas may range to moderately sloping. These areas are used extensively for cultivated crops with rice and soybeans as major crops. These areas cover approximately 3,000,000 acres.

SOILS OF THE LOESSIAL HILLS

The loessial hills occur mainly on Crowley's Ridge and a few other scattered areas in the eastern part of the state. Elevations range from about 200 to 500 feet above sea level. Soils are developed in loess deposits underlain by gravelly, sandy, loamy, or clayey marine sediments. Thickness of loess deposits range from 2 to more than 12 feet in thickness. Slopes range from nearly level to steep. These areas are used mainly for pasture and timber production. These areas cover approximately 700,000 acres.

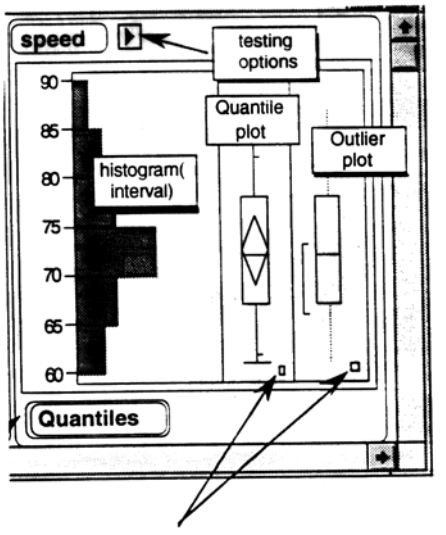
SOILS OF THE BLACKLAND PRAIRIES

These areas consist of gently rolling to rolling uplands in the southwestern part of the state. Elevations range from about 100 to 400 feet above sea level. Soils developed from clayey sediments overlying beds of marly clay or chalk; or from marly clay or chalk. Slopes range from nearly level to moderately steep. These areas are used mainly for pasture and hayland. These areas cover approximately 325,000 acres.

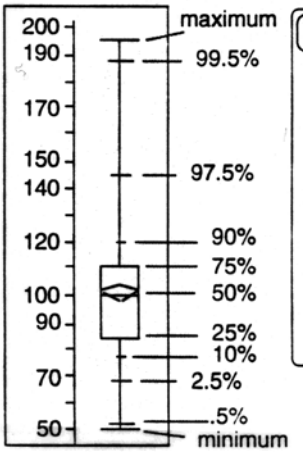
APPENDIX

IV. Graphs of Fish Tissue Hg Concentration and Other Parameters

Explanation for the graphs of statistical output:



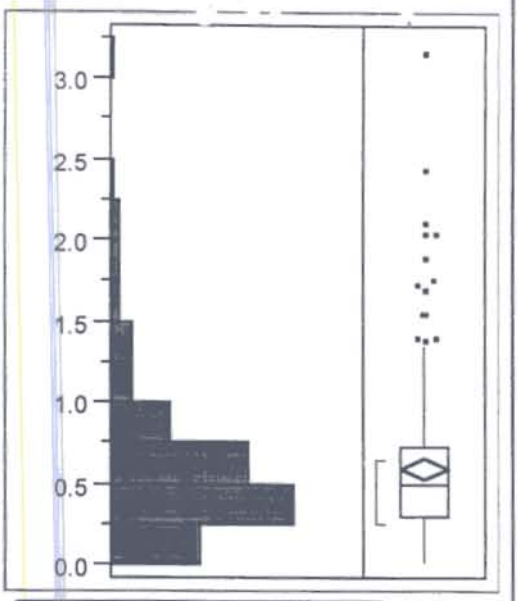
The Box Plot and Quantiles Table



Quantiles		
maximum	100.0%	196.00
	99.5%	188.35
	97.5%	145.30
	90.0%	121.00
quartile	75.0%	112.00
median	50.0%	100.00
quartile	25.0%	85.00
	10.0%	78.40
	2.5%	69.00
	0.5%	53.21
minimum	0.0%	51.00

Hg ppm in fish tissue from 194 sites

Column 1



Quantiles

maximum	100.0%	3.1700
	99.5%	3.1700
	97.5%	2.0600
	90.0%	1.2000
quartile	75.0%	0.7375
median	50.0%	0.4950
quartile	25.0%	0.3100
	10.0%	0.1550
	2.5%	0.0500
	0.5%	0.0300
minimum	0.0%	0.0300

Moments

Mean	0.6041
Std Dev	0.4751
Std Error Mean	0.0341
Upper 95% Mean	0.6714
Lower 95% Mean	0.5368
N	194.0000
Sum Weights	194.0000
Sum	117.2000
Variance	0.2258
Skewness	2.0022
Kurtosis	5.7985
CV	78.6498

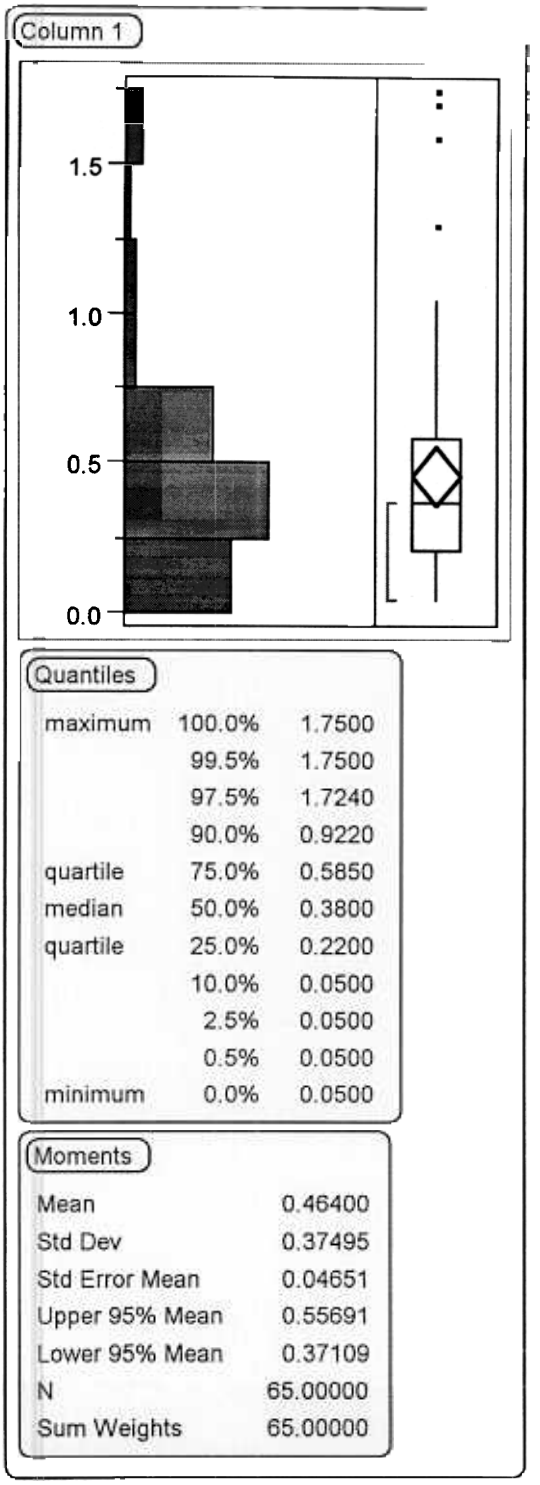
Stem and Leaf

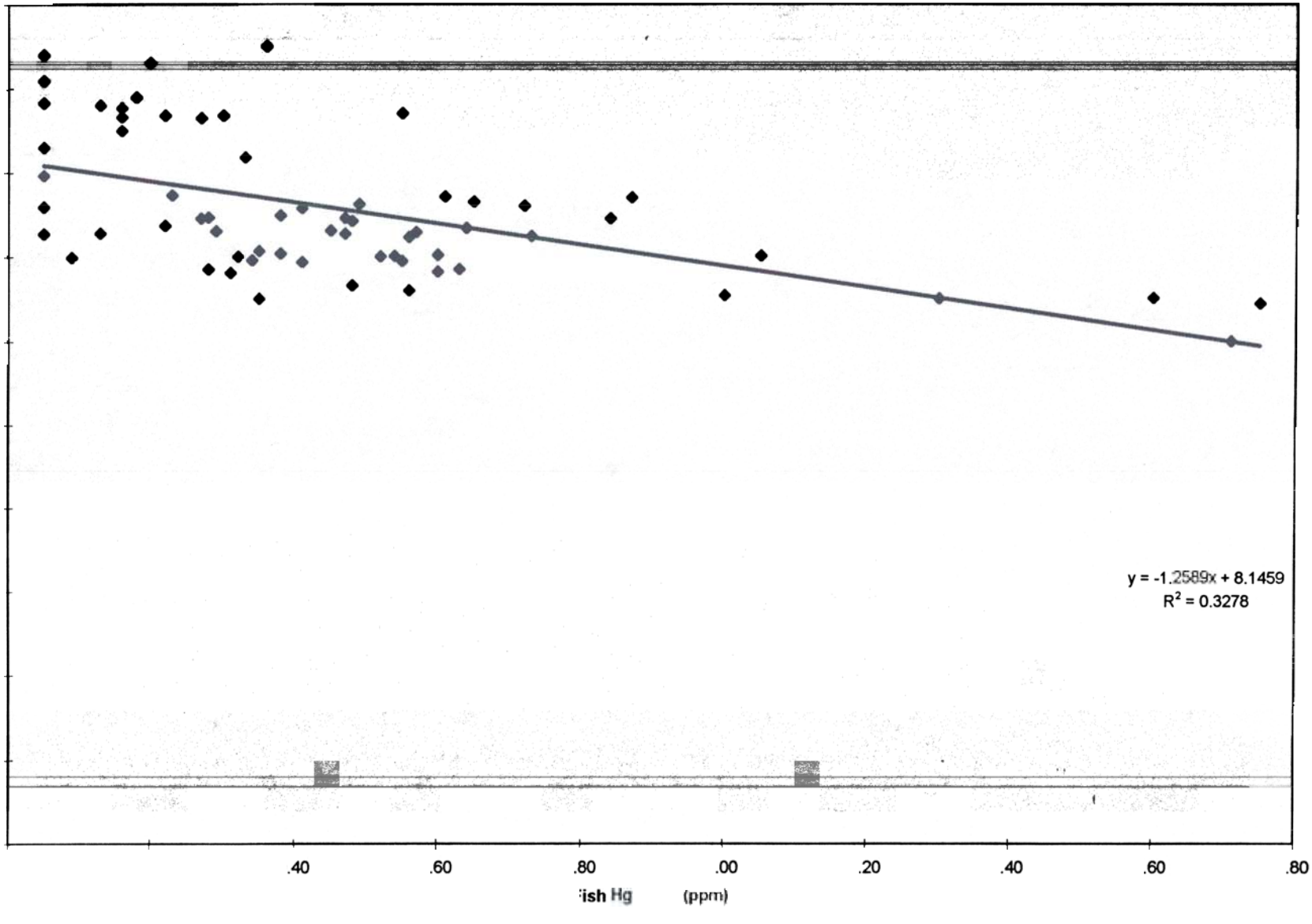
Test for Normality

Shapiro-Wilk W Test

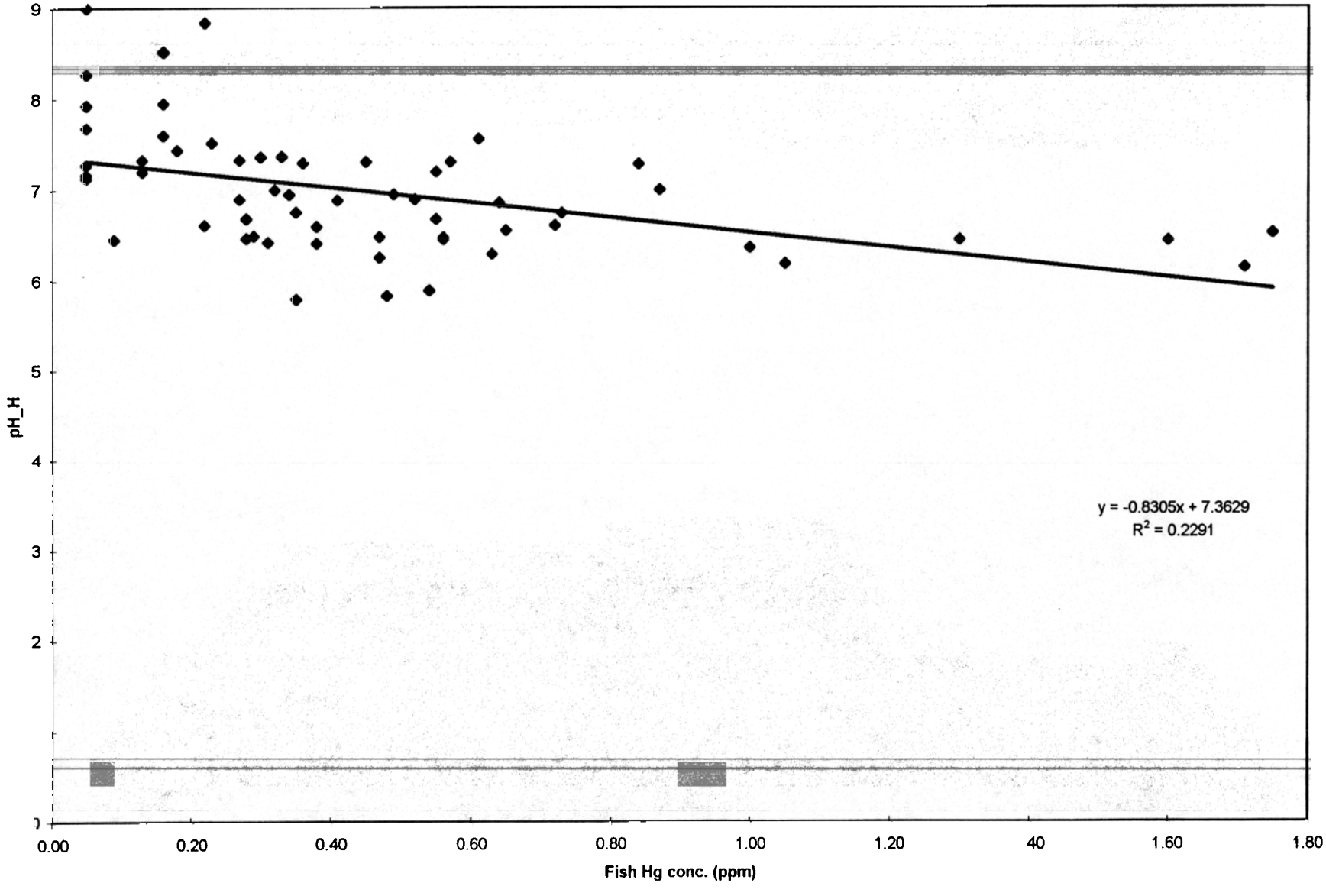
W	Prob<W
0.836774	0.0000

Fish Hg in lakes (ppm)

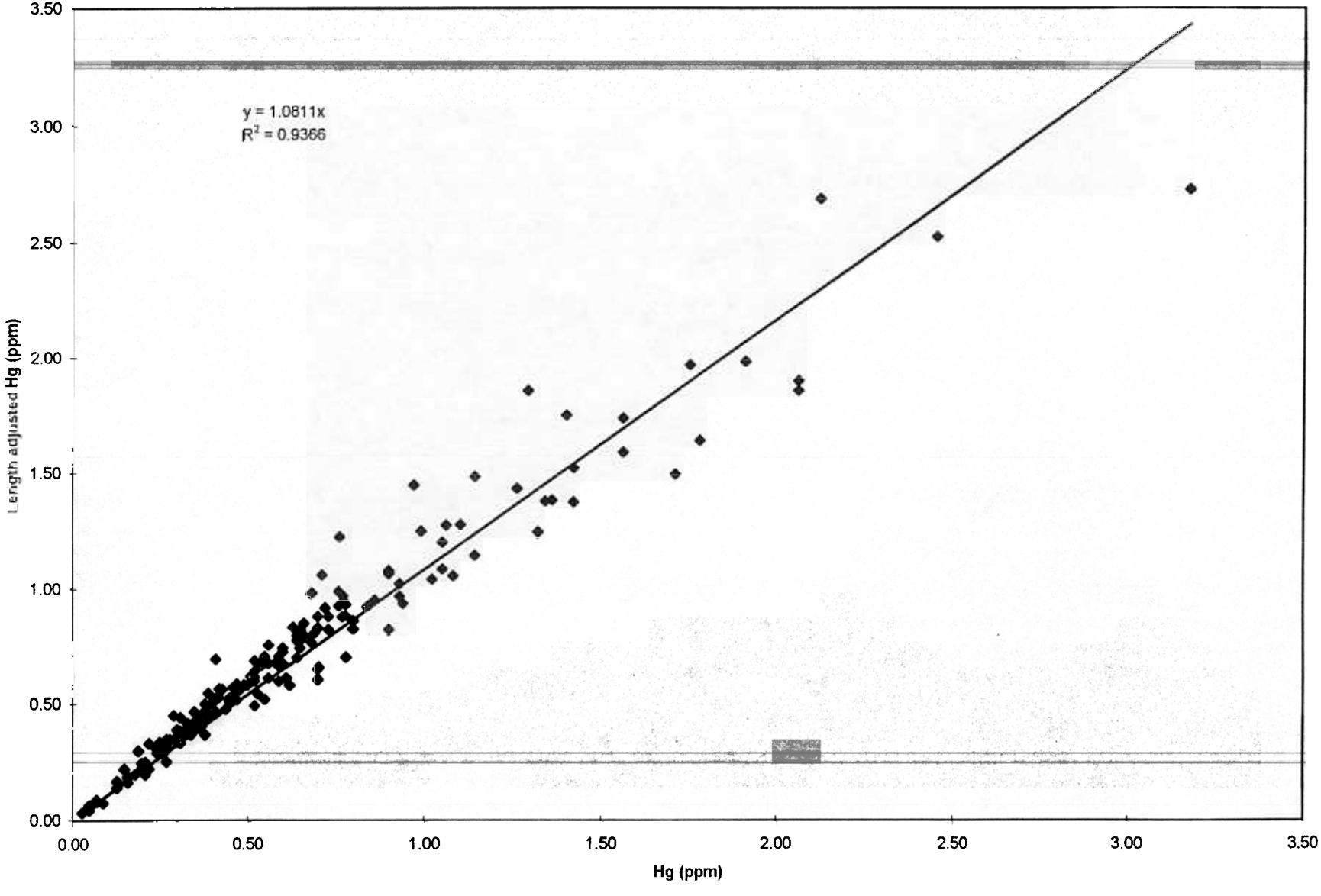



y = -1.2589x + 8.1459
R² = 0.3278
.40
.60
.80
.00
.20
.40
.60
.80
ish Hg (ppm)

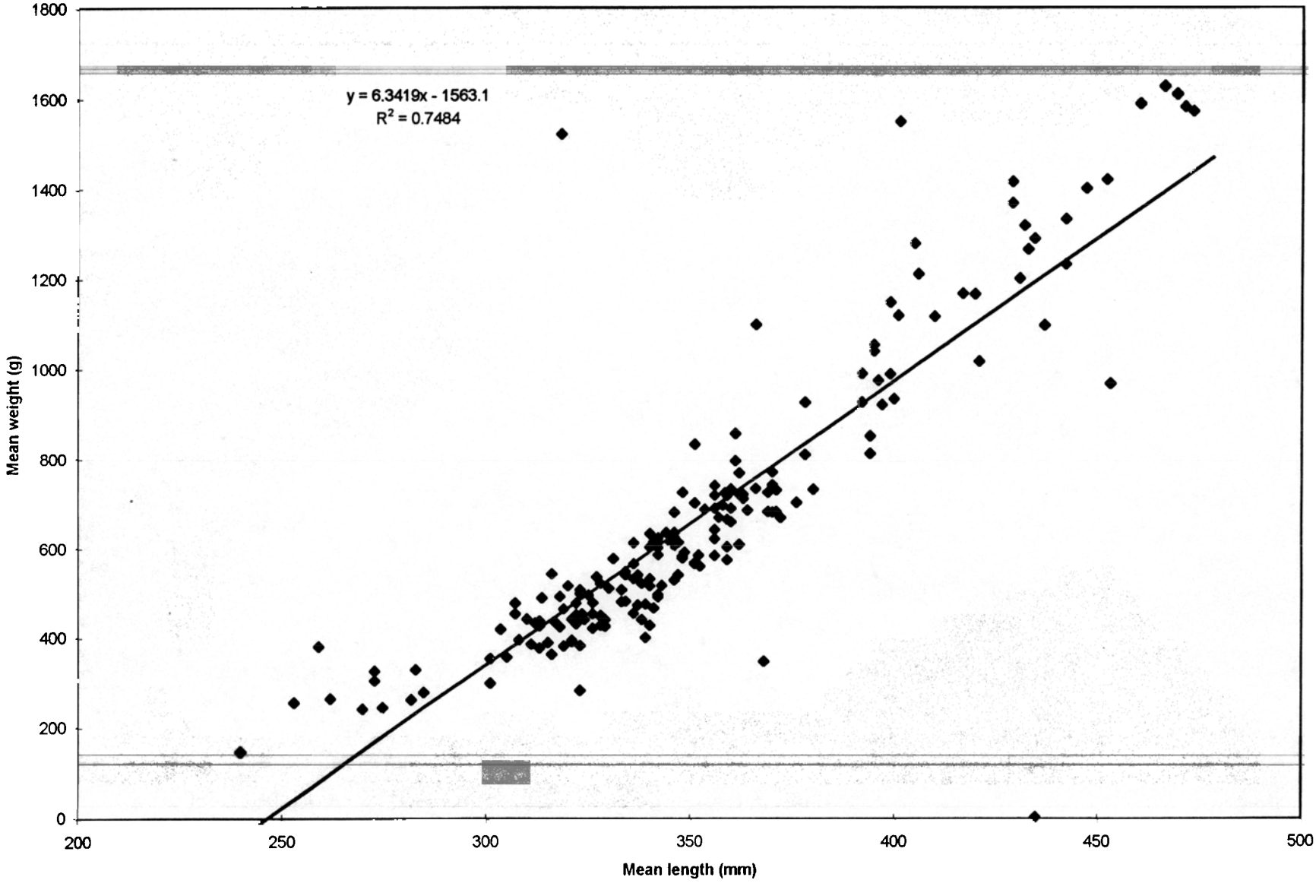
selected data for graphs Chart 3



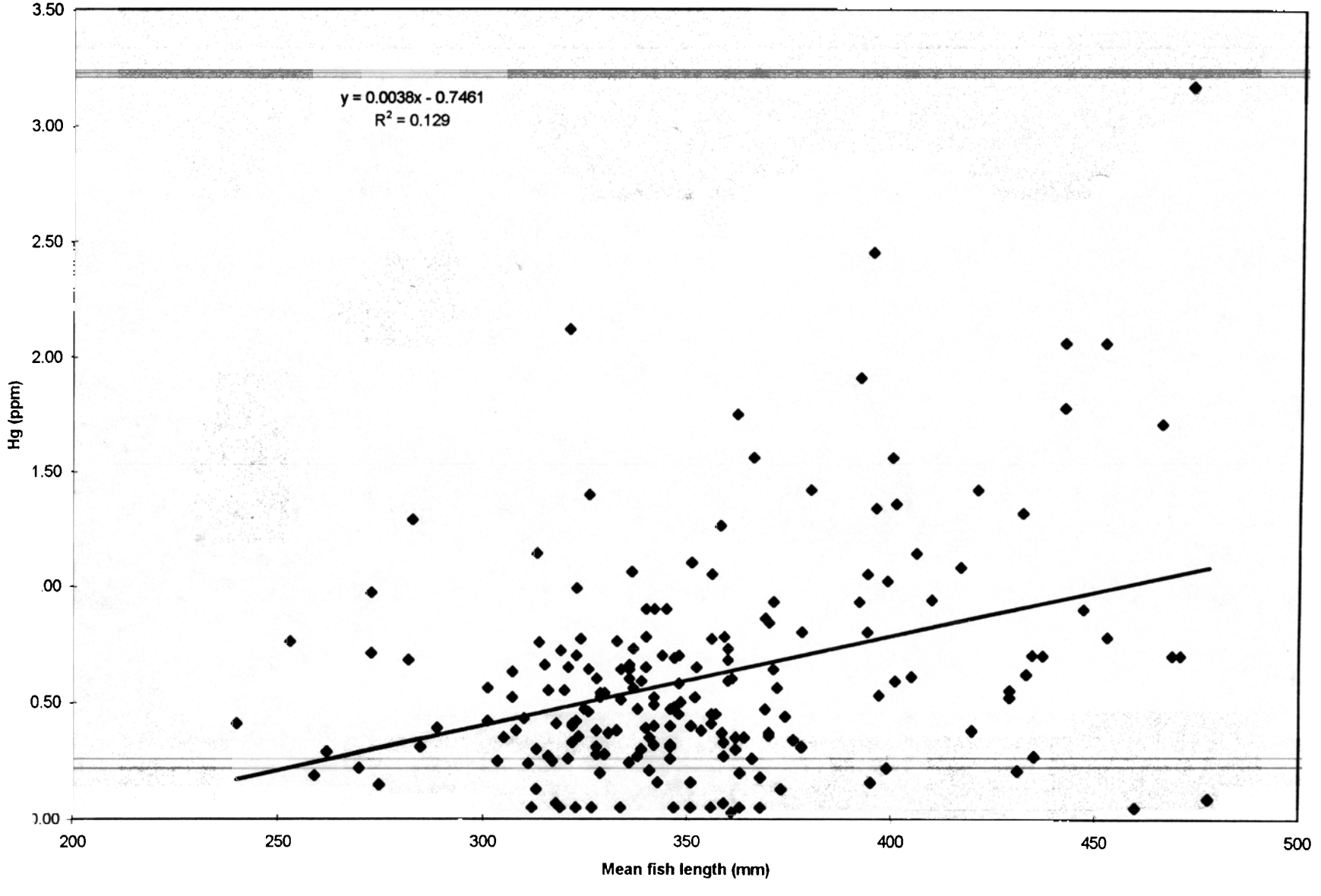
Fish Hg Data - ll + label Chart 1



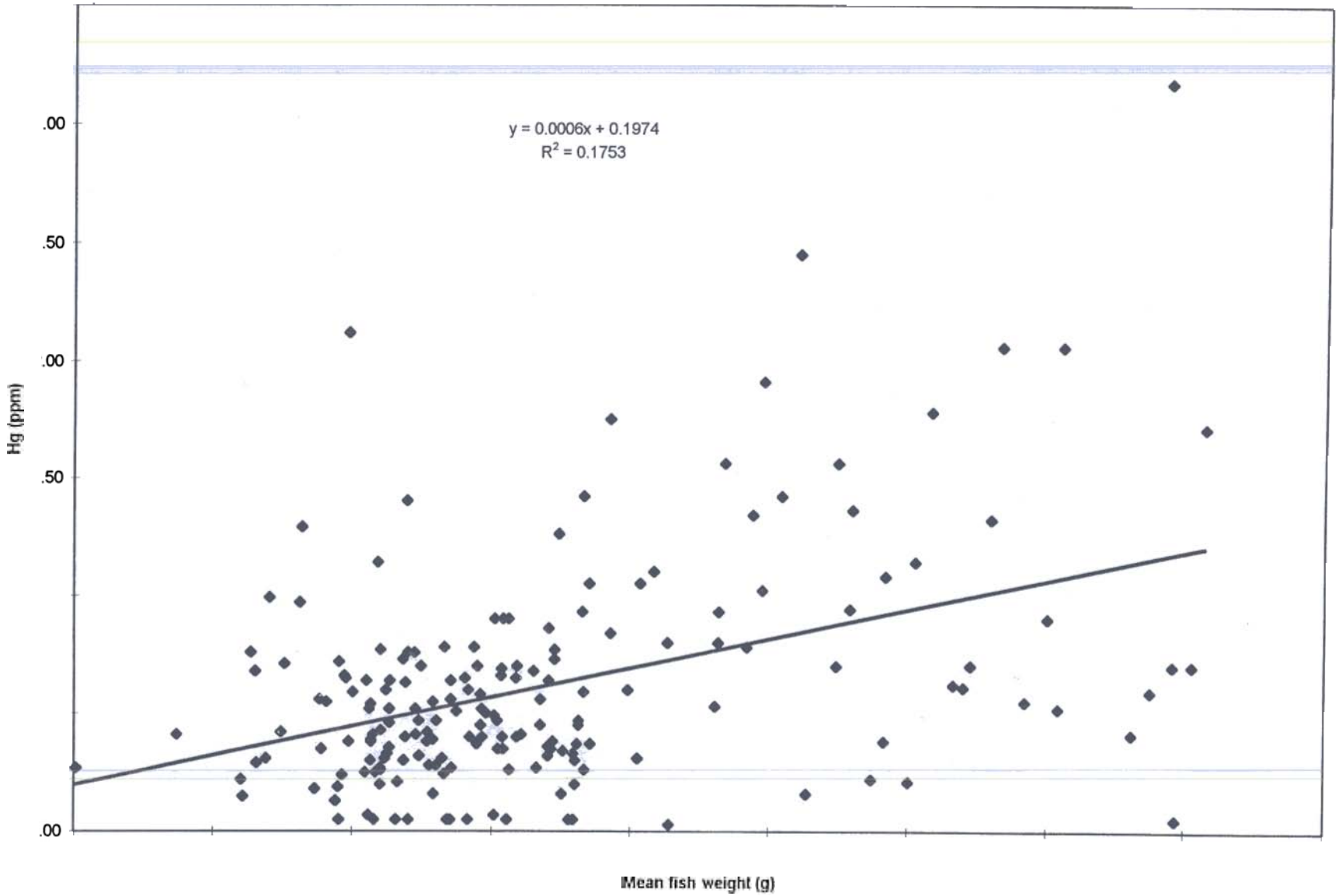
Fish Hg Data - II + label Chart 2



Sorted data for graphs Chart 1



ed data for graph Chart



age

APPENDIX

V. Lake and Sediment Raw Data

Notes

The files h2ovshg.* have two or three sets of parameters across the top for each lake. The parameters collected in the epilimnion (upper layer) are noted with an _E. The parameters at the thermocline are noted with a _T. The hypolimnion layer parameters are noted with an _H. All units are in mg/l (ppm) except as noted in the example shown below. This should answer all unit questions, except fecals which are colonies/100ml. The secchi disk readings are reported in inches and the areas are reported in the appropriate metric measure, as noted in the field id. There is some missing data for these files.

Example Units

AA

Parameter	Data	Units	D.L.	Code
Cd	<0.5	UG/L	.5	01025
Cr	<1	UG/L	1	01030
Pb	<2	UG/L	2	01049
Se	<10	UG/L	5.0	01145

ICAP

Parameter	Data	Units	D.L.	Code
Al	63.36	UG/L	16	01106
Cu	<2	UG/L	2	01040
Ca	36.90	MG/L	0.02	00915
Fe	<1.8	UG/L	1.8	01046
K	1.41	MG/L	0.02	00935
Mg	10.30	MG/L	0.06	00925
Mn	<2.0	UG/L	2.0	01056
Na	2.62	MG/L	0.04	00930
Zn	<2.0	UG/L	2.0	01090
Hardness	135	MG/L		00900
Ni	<5	UG/L	5	01065
Be	<2	UG/L	2	01010
Ba	27.05	UG/L	4	01005
Co	<3	UG/L	3	01035
V	<5	UG/L	5	01085

MERCURY

Parameter	Data	Units	D.L.	Code
DISSOLVED HG	<.03	UG/L	0.03	71890
Total Hg	<.03	UG/L	0.03	

ROUTINE

Parameter	Data	Units	D.L.	Code
NH3-N	<0.05	MG/L	0.05	00610
CL	4.891	MG/L	1.20	00940
NO3-N	0.243	MG/L	0.02	00630
O-PHOS	<0.03	MG/L	0.03	70507
T-PHOS	<0.03	MG/L	0.03	00665
SO4	8.7	MG/L	1.0	00945
TOC	2.3	MG/L	1.0	00680
TSS	1.5	MG/L	1	00530
TDS	149	MG/L	1	70300

MISCELLANEOUS

Parameter	Data	Units	D.L.	Code
DOC	2.9	MG/L		

Lak Data

IIH2OV5HG

LAKE	LatDDMMSS	LONGDDMMS	ECOREGI	LAKETYPE	SIZE_H	MEAN_DEPTH_M	H2OSHED_SQ.K.	DAM_CONST_YEAR	DEPTH OF HYPOLIMNIO	SECCHIDISK_INCHE	NH3_N_S	CHLOR_S	NO3_N_S	OP_S	TP_S	SO4_S	HARD_S	TOC_S	DO_S	PH_S	TURB_S	TSS_S
MAUMELLE	345327	-923629	ARRV	A	3601.70	7.01	354.83	1956	18	35	0.093	1.84	0.035	0.03	0.0351	4	6	5.6	7.3	7.23	2.8	3
WINONA	344755	-925051	OUMT	A	501.81	9.14	115.00	1938	13	122	0.05	1.54	0.02	0.03	0.03	2.8	6	5.9	6.95	7.01	1.3	1
NORRELL	344317	-923840	OUMT	B	40.47	2.44	16.83		13	89	0.088	2.04	0.02	0.03	0.0351	5.9	18.9	7.1	6.73	7.46	1.8	2
BOIS D'ARC	333307	-934204	GULF	D	303.51	1.22	10.36	1961	4	16.5	0.05	8.78	0.02	0.03	0.158	1.8	21.3	9.9	9.94	9.09	10	12.5
MILLWOOD	334120	-935730	GULF	E	11938.23	1.58	10732.91	1966	5.2	21	0.05	3.40	0.027	0.03	0.168	1.8	16.5	7.3	6.68	7.04	12	7.5
PARIS CITY	351620	-934315	ARRV	C	59.49	6.10	108.78		12	57	0.05	2.46	0.02	0.03	0.058	4.1	16.5		6.46	6.81	3.4	2.5
GREENWOO	351237	-941624	ARRV	B	24.28	2.44	62.16		10	32	0.05	2.76	0.02	0.03	0.0681	5.1	16.5		6.36	7.07	5.6	4.5
BEAVER X	361647	-940037	OZHI	A	11412.14	17.68	3071.73	1965	26	145	0.05	2.74	0.1133	0.03	0.048	6.2	61		6.557	8.893	1.2667	1
DRY FORK	345105	-931130	OUMT	B	42.09	7.39	67.34		6	32	0.11	3.21	0.118	0.03	0.0492	5.9	5.1	11	10.23	6.85	13	3.5
NIMROD	345711	-930942	ARRV	E	1456.87	2.50	1761.19	1942	6	37	0.116	2.74	0.047	0.03	0.0492	3.2	9.9	6.8	8.15	7.27	5.2	4.5
GREERS X	353315	-920057	BOMT	A	12747.60	18.29	2986.26	1962	30	202.8	0.085	2.06	0.0253	0.03	0.044075	4.125	9.575	4	7.718	7.463	0.75	1
COVE CR	345500	-930445	ARRV	B	18.70		29.78		6	72	0.093	1.93	0.026	0.03	0.0772	1.5	9.6	7	6.81	6.54	1.8	1.5
BIG JOHNSO	333013	-924230	GULF	D	32.37	3.66	12.95		7	41	0.05		0.02	0.03	0.0554	3.4	7.8	10.4	4.49	6	3.2	3
PIROQUE	331420	-921213	GULF	D	22.26	2.44	7.77		10	24	0.05		0.02	0.03	0.0761	6.3	21.9	7.8	5.1	6.44	5.4	5.5
JONES	331136	-921256	GULF	D	12.95	2.44	89.35		8	36	0.05		0.02	0.03	0.0657	6.3	26.7	11.3	6.57	6.51	3.2	3
BLUE MT.	350607	-934322	ARRV	E	1173.59	2.62	1263.91	1947	8.6	17.5	0.05	3.31	0.02	0.03	0.0767	8.2	5	5	5.59	6.82	1	11.5
IRONS FORK	343800	-940730	OUMT	B	123.43	1.34	72.52		14.6	79	0.05	1.76	0.02	0.03	0.03	1.2	5	3.6	7.7	6.66	21	1
Norfork X	361455	-921403	OZHI	A	8903.08	17.37	4677.52	1944	31.67	145.7	0.0557	3.00	0.02	0.03	0.03	5.2333	174	3.1	8.41	8.68	0.8667	1.167
Bull Shoals X	362224	-923714	OZHI	A	18388.92	20.42	15633.17	1951	36.67	145.7	0.076	4.86	0.02	0.04	0.03	7.2	130.5	3.833	8.917	8.647	0.8667	1
Wright Lak	351234	-941235	ARRV	B	141.64	2.74	8.03			44	0.167	3.97	0.04	0.02	0.0672	4.8	14.1	8.6		7.29	3.4	3
Lee Creek	353335	-942326	ARRV	B	256.98	3.35	1204.34			72	0.025	2.85		0.02	0.015	5	19.8	5.3	7.9	7.19	2.7	1
Lake Sequo	360357	-940400	OZHI	B	202.34	2.44	712.25			35	0.025	2.72	0.01	0.02	0.0554	4.4	52.8	5.7	7.5	7.86	5.5	4
Catherine X	342724	-925753	OUMT	A	785.09	5.49	3926.42			56.7	0.0347	2.58	0.16	0.02	0.045367	5.3667	16.8	4.667	8.6		4.6333	5.167
First Old	332955	-934614	GULF	D	80.94	1.22	5.18			18	0.025	3.66	0.01	0.02	0.148	0.5	78.6		9.2	8.5	12	17.5
Columbia X	331804	-932131	GULF	E	1193.82	3.35	124.32			58	0.025	11.80	0.015	0.02	0.06805	2.4	13.95	10.2	6.4	6.95	2.35	1.25
Cox Creek	341028	-923722	GULF	C	121.41	1.83	44.03	1964		31	0.064	2.44	0.01	0.02	0.0762	5.1	2.5	8.5	7.4	6.5	5.8	3
Degray X	341636	-931748	OUMT	A	5341.85	14.63	1173.26	1972		110	0.199	2.10	0.01	0.75	0.98	5.65	13.95		7.75	7.45	6	2.5
Greeson X	341328	-934441	OUMT	A	2913.74	11.80	613.83	1981		71	0.0595	2.07	0.1	0.25	0.43	1.8	9.5		7.45	7.3	2.45	2.25
Tri-County	334709	-922157	GULF	C	113.31	2.13	29.78	1953		23	0.025	5.72	0.01	0.02	0.106	3	11.4	12.4	7.3	7.45	7.2	7
Callon Lak	331918	-923152	GULF	C	206.39	1.83	17.35			41	0.116	23.10	0.01	0.02	0.0561	1.8	18	9.1	8.1	7.7	2.8	3
Lake Georg	331428	-920230	GULF	E	687.97	1.22	10.36			40	0.025	3.82	0.01	0.02	0.0662	16.9	14.7	8.8	6.7	7	4.3	0.5
Felsenthal X	330902	-920630	GULF	E	5665.60	2.13	28106.55			19	0.081	7.26	0.15	0.05	0.0862	7.65	17.25	10.3	5.25	6.5	21	23
Upper Chicot	332215	-911450	DELTA	E	513.95	4.57	36.26			20	0.109	10.90	0.04	0.03	0.187	10.9	89.7	9	6	8.02	7.6	18.5
Lower Chicot	332134	-911532	DELTA	E	1630.88	4.69	906.50			18	0.069	13.40	0.01	0.05	0.197	5.9	93.9	9.4	7.5	8.66	9.5	23.5
Lake Pine	331415	-920015	GULF	D	202.34	1.83	10.36	1962		25	0.1	3.68	0.01	0.05	0.138	6.2	39.6	8.4	6.5	7.96	8.5	11.5
Pickthorne	345458	-920345	DELTA	D	202.34	1.83	2.59			21	0.025	4.70	0.03	0.02	0.0351	1.5	17.1	10.3	2.5	7	10	9.5
5CMallard	355202	-900600	DELTA	D	121.41	1.83	1.29			21	0.385	5.81	0.01	0.06	0.199	4.8	70.2		3.6	7.22	18	19.5
5CLake Pol	353131	-904031	DELTA	C	222.58	2.13	11.65	1961		38	0.131	2.41	0.01	0.02	0.0592	15.8	17.1		9.3	7.24	5	4.5
5AHorsesho	345533	-901910	DELTA	E	485.82	3.05	34.96			18	0.098	1.31	0.02	0.05	0.149	4.1	65.7	11.6	8.6	9.4	20	8.5
4GLake Cha	360359	-910824	DELTA	B	227.43	2.44	46.62	1962		19	0.227	5.19	0.01	0.05	0.0692	3.8	133		11	8.83	7.2	11.5
4DDes Arc	350119	-913032	DELTA	D	141.64	1.83	2.59	1967		24	0.105	2.58	0.02	0.04	0.0992	3.2	12	8.8	0.2	8.8	7.5	8.5
4DBarnett	351335	-915706	DELTA	B	99.15	11.28	97.12			62	0.025	2.86	0.02	0.02	0.015	1.5	12.9	5.5	7	7.12	2.2	2.5
4CLake Ash	361551	-904613	DELTA	D	202.34	1.52	2.59	1977		34	0.189	3.32	0.01	0.04	0.0792	5.9	57.3		6.4	7.73	4.6	8
4BLake Hog	353447	-905741	DELTA	D	113.31	1.34	5.18	1969		18	0.135	3.18	0.01	0.06	0.119	2.6	20.1		6	7.27	10	16.5
4BLake Fri	355825	-904323	DELTA	C	135.57	2.29	18.91	1975		8	0.219	2.97	0.03	0.21	0.169	6.9	24.6		7.9	7.62	76	47
4AStorm Cr	343545	-903647	DELTA	C	169.97	2.13	20.72			23	0.097	1.72	0.03	0.02	0.0692	4.1	76.5	10.5	9	9.3	10	4
4AOld Town	342322	-904905	DELTA	D	364.22	1.07	59.57			19	0.158	3.17	0.04	0.06	0.209	3.2	42	9.9	4.4	8.5	14	17
4ALake Gre	345204	-911003	DELTA	D	121.41	1.83	1.29	1962		4	0.406	4.97	0.31	0.62	1.14	13.6	36.3	9.4	5.8	6.7	180	4
4ABear Cre	344236	-904138	DELTA	C	252.93	3.05	15.54			17	0.103	1.90	0.03	0.02	0.119	3.2	70.2	13	11	9.5	14	5.5
3JSwepco L	361424	-943235	OZHI	B	214.89	5.18	36.26			61	0.025	11.40	0.01	0.02	0.015	62.3	99.3	6.3	8	8.3	2	1
3JLake Wed	360528	-942159	OZHI	B	41.28	4.88	7.77			108	0.025	3.25	0.01	0.02	0.015	4.4	57.6	4.4	8.4	8.39	1.2	0.5
3JLake Fay	360804	-940815	OZHI	B	79.32	4.57	15.54			53	0.025	6.65	0.01	0.02	0.0864	3.4	62.1	7.2	10.4	8.73	3.4	5
3JLake Elm	361146	-913101	OZHI	B	72.84	2.44	15.54	1953		66	0.025	5.58	0.01	0.02	0.045	2.3	80.7	8.4	8.6	7.47	2.4	3.5
3JCrystal	362038	-942634	OZHI	B	24.28	3.66	11.65	1954		74	0.025	4.24	0.01	0.02	0.045	3.4	71.1	5.8	8	8.18	2.2	2
3JBobb Kid	355810	-942115	OZHI	B	80.94	4.05	10.36	1976		46	0.025	6.10	0.01	0.02	0.0554	11.7	56.4	5.9	9	8.54	3.8	4
3ISugar Lo	350534	-942400	ARRV	B	101.17	3.66	12.95	1955		77	0.07	2.74	0.01	0.02	0.047	6.9	17.1	6		7.52	3.1	1.5
3ILake Hin	345115	-941515	ARRV	B	390.52	4.57	71.22	1972		81	0.025	2.51	0.01	0.02	0.047	4.8	12.6	5.1		7.59	2.4	1.5
3HShores L	353806	-935743	ARRV	B	33.18	3.05	67.34			77	0.052	1.58		0.02	0.015	2.7	9.3	3.1	6	7.04	2.2	0.5
3HLake She	354130	-940641	BOMT	B	223.39	9.45	176.12		17		0.051	1.75		0.02	0.015	3.9	14.1	3.1	7.1	7.31	1.4	0.5
3HHorsehea	353332	-933803	ARRV	B	40.47	4.88	44.81	1950		89	0.051	1.86	0.01	0.02	0.015	3.9	2.5	3.2	7.3	6.9	2	1.5
3HFort Smi	353937	-940846	BOMT	B	168.35	8.53	189.07			112	0.057	1.82		0.02	0.015	3.9	15.9	2.5	7.3	7.28	1.6	1
3HCove Lak	351355	-933741	ARRV	B	64.75	3.05	22.01			68	0.057	1.79	0.01	0.02	0.015	3.9	6.9	3.8	8.2	7.24	3.6	3
3GSpring L	350900	-932533	ARRV	B	33.18	7.01	27.19			72	0.064	2.26	0.01	0.02	0.015	3.9	6.9	3.4	7.5	7.01	3.2	2.5
3GLake Bal	350749	-925512	ARRV	C	50.18	2.44	19.42			40	0.071	2.02	0.03	0.02	0.0873	1.5	14.1	7.9	7	6.6	4.5	3.5
3FOvercup	351148	-924349	ARRV	C	414.80	1.22	44.55	1963		31	0.075	4.87	0.03	0.02	0.0873	1.5	24.6	12	9	8.77	5.2	6.5
3FLake Atk	351254	-925633	ARRV	C	303.51	1.68	26.42	1956		39	0.076	4.08	0.03	0.02	0.0873	3.8	20.1	8.4	5.7	6.85	3.4	3

TDS_S	ALKAL_S	COND_S	IRON_S	K_S	MG_S	MN_S	NA_S	HG_S	CA_S	FCOLI_S	CLPHYLL_S	NH3_N_T	CHLOR_T	NO3_N_T	OP_T	TP_T	SO4_T	HARD_T	TOC_T	DO_T	PH_T	TURB_T	TSS_T	TDS_T	ALK_T	COND_T	FCOLI_T	CLPHYL_T
22	10.2	22		0.454	1.472		0.919			1	2.1	0.082	2.29	0.02	0.03	0.03	2.8	6	5.8	1.37	6.23	5.1	3	25	8	28		1
21	8	22								1	0.1																	
51	28.3	74	0.02	0.525	2.95	0.002	0.835	0.03	7.9		1.9	0.05	1.77	0.02	0.03	0.03	5.9	25.2	5.2	2	6.69	4.1	2.5	53	29.2	74	88	3.7
87		112	0.054	1.28	4.05	0.006	6.8	0.03	5.3			0.052	8.78	0.02	0.03	0.148	1.8	24.3	9.4	2	7.12	9.7	10	86		112		
56		56	0.276	0.852	1.04	0.081	2	0.03	2.91	10		0.053	90.7	0.027	0.037	0.116	39.5	118		5.79	6.1	12	9.5	307		572	270	3.2
51		36	0.031	0.78	1.5	0.004	1.7	0.03	1.65	4	0.1	0.05	2.35	0.02	0.03	0.108	3	8.1		0.62	6.14	12	12.5	31		38	4	40.7
52		74	0.049	1.5	3.3	0.062	3.6	0.03	3.9	4	4.11	0.12	2.88	0.02	0.03	0.0781	4.1	18		0.49	6.85	30	13.5	57		108	66	5.68
81.333		144.67	0.017	1.04	1.833	0.002	2.133	0.03	21.5	5.3333	0.476667	0.0627	2.7967	0.2593	0.03	0.0447	8.2	63		4.76	7.92	2.1	1.3333	83		150.667	4	3.14733
44	10	36	0.556	0.57	1.8	0.05	1.8	0.03	1.4	4	0.28	0.116	3.19	0.132	0.036	0.0492	5	5.1	9	1.93	6	13	3.5	46	10	36	4	1.34
34	18	44	0.043	0.82	1.7	0.008	1.9	0.03	2	4	7.2	0.178	2.36	0.024	0.03	0.0492	3.2	9.9	6.4	4.3	6.35	10	8	36	16	44	4	1.14
27.75	15.75	44.5	0.007	0.543	0.933	0.002	0.957	0.03	4.133	4	0.566667	0.082	1.97	0.024	0.03	0.0416	3.9	11.325	3.5	9.16	7.1725	1.075	1.125	28.25	17.75	44	4	0.58
26	10	28	0.188	0.5	1.07	0.007	1.4	0.03	1.5	4		0.072	1.74	0.03	0.03	0.0571	1.5	9.6	6.7	1.51	5.94	2.1	2	26	10	28	4	
38	10.5	38	0.07	0.83	0.79	0.01	2.5	0.03	2.6	2		0.05		0.02	0.03	0.0657	3.4	7.8	10.5	0.14	5.85	4.3	3.5	41	10.5	42	1	
71	19.5	100	0.16	1.1	1.7	0.01	7.1	0.03	7	9		0.05		0.02	0.03	0.0657	5.4	21.9	7	0.22	6.71	5.8	6	71	21	152	14	
73	14.5	98	0.19	1	1.7	0.02	7.7	0.03	6.3	4		0.05		0.02	0.03	0.0968	3.4	23.4	11.4	0.07	6.19	5.8	5.5	78	17	112	17	
47	24	70	0.69	1.4	2.8	0.27	3.7	0.03	3.9		3.2	0.05	3.07	0.033	0.03	0.0767	7.3	5	4.8	4.35	6.78	18	12.5	47	22	72		2.14
17	11	24	0.06	0.43	0.94	0.002	1.2	0.03	1.3		0.27	0.05	1.75	0.02	0.03	0.03	1.2	5	3.4	1.66	5.65	2	1	16	9.5	24		1.87
159.33	158.667	296	0.002	1.207	16.3	0.002	1.513	0.03	24.8	3	0.843333	0.0537	2.97	0.02	0.03	0.03	4.8667	177	3.06667	2.30333	7.7033	0.8667	1.1667	181	184.7	323.333	3	1.51667
138.67	126	252	0.004	1.343	9.95	0.002	9.78	0.03	27.03	4	1.288667	0.0623	4.7267	0.0223	0.035	0.03	7.2	145.5	3.73333	3.28333	7.6233	1	1.1667	144.67	134.3	278.667	4	2.31333
48	37	71.5									6.87																	7.78
47		67									1.07																	3.05
74	57	120									7.38																	3.2
46	17.1667	62.667									1.033333																	1.87
113		176.6									13.35																	14.69
58	12.5	77.35									7.845																	2.82
36	11	19.9									1.42																	
44		59.3									2.135																	0.05
22.5		25.55									1.225																	10.41
84	15	57.3									3.85																	19.8
80	15	115.3									4.75																	9.34
69	14	84.9									0.53																	1.34
75.5	16	77.95									2.885																	0.535
148	109	252									13.7																	3.33
183	96	238									0.89																	34.1
84	48										26																	20
61	23	65.4									2.2																	0.05
126	75	177									45.42																	37.38
51	8.5	64									1.57																	0.05
96	67	134									170																	325.29
149	132	245									25.63																	22.51
41	55	55									36.12																	42.41
30	12.2	37.5									0.33																	1.8
97	72	151									10.32																	13.57
63	30	74									14.68																	31.07
111	18	46									25.71																	14.69
100	84	159									60.74																	54.07
89	68	130									110.36																	99.68
612	63	63									15.16																	7.74
93	76	139									38.81																	145.96
190	77	313									4.2																	4.81
74	60	121									2.67																	14.15
93	75	147									8.81																	9.79
103	85	178									1.46																	11.75
91	69	150									5.07																	11.45
91	51	143									6.45																	5.07
36	15	53.6									1.34																	5.61
27	13	36.8									1.34																	3.2
29		35									2.4																	21.02
34		42									1.34																	11.21
24		31									2.8																	1.07
31		37									1.34																	2.94
25		27									2.94																	5.33
24		28									2.14																	2.49
32	11	32.9									13.62																	5.72
60	28	81.2									14.14																	19.22
49	20	39.5									12.82																	9.79

NH3_N_H	CHLOR_H	NO3_N_H	OP_H	TP_H	SO4_H	HARD_H	TOC_H	DO_H	PH_H	TURB_H	TSS_H	TDS_H	ALKAL_H	COND_H	FE_H	K_H	MG_H	MN_H	NA_H	HG_H	CA_H	FISH MERCURY	LENGTH ADJUSTED MERCURY
0.084	1.8	0.02	0.03	0.03	4	10.8	5.3	0.04	6.46	6.9	5.5	28	12	44	1.088	0.35	1.406	1.078	1.142		1.606	0.56	0.608
0.05	1.46	0.042	0.03	0.03	2.8	5	4.9	3.68	5.9	3	1	25	7.8	24								0.54	0.59733333
0.05	2.01	0.122	0.03	0.03	7	25.2	5.3	0.81	6.49	1.2	1	57	30	80						0.03		0.47	0.52266667
0.05	8.5	0.034	0.03	0.168	1.8	25.8	8.8	1.95	7.17	8.2	8.5	88		112	0.038	1.37	4.19	0.002	7.4	0.61	5.5	0.05	0.05333333
0.05	2.66	0.131	0.03	0.108	1	9.6	5.5	5.9	6.42	18	10.5	48		42	0.238	1.03	1.23	0.004	2.5	0.03	5.22	0.38	0.43733333
0.133	2.61	0.02	0.03	0.0681	7.2	11.4		0	6.43	14	7	51		86	5.9	0.89	1.8	2.7	1.7	0.03	2.7	0.31	0.384
1.03	3.1	0.02	0.034	0.118	16.1	40.2		0	6.76	0.8	24.5	111		202	0.016	1.7	4.5	0.009	3.2	0.03	7	0.35	0.416
0.076	2.71667	0.315667	0.03	0.0547	5.8333	63.4		2.77	7.4367	2.6333	1.66667	85.333		143.333	0.01	1.1	1.7967	0.081	2.1333	0.03	21.467	0.18	0.20266667
0.601	3.83	0.031	0.033	0.0592	9.9	14.1	10.1	0.06	6.3	34	12.5	61	20	78	5.7	0.53	2.2	1.1	1.8	0.03	1.9	0.63	0.75733333
0.275	2.38	0.022	0.03	0.0792	4.1	9.9	6.8	0.15	6.26	12	11	38	9	52	0.111	0.86	1.8	0.593	1.9	0.03	2.2	0.47	0.56533333
0.089	1.875	0.14475	0.03	0.04138	4.1	12.45	3.175	5.995	6.4725	1.5	1	31	15.25	45	0.015	0.543	0.935	0.007	0.95	0.078	4	0.26	0.30933333
0.378	1.99	0.029	0.03	0.0772	10.6	14.1	7.4	0.07	6.37	1.4	7	48	18	80	9.25	0.5	1.09	1.91	1.3	0.03	1.36	1	0.85333333
0.05		0.035	0.03	0.0761	17.3	29.7	20.4	0.09	6.14	13	15	108	36.5	198	16.2	1.3	1.1	3.7	3.9	0.03	8.3	1.71	1.49333333
0.05		0.02	0.048	0.117	22.7	58.8	16.9	0.03	6.52	19	18	169	6.1	344	0.35	2	2.2	6.1	8.3	0.56	17.8	1.75	1.96266667
0.109		0.02	0.503	0.635	25.6	42.3	22.6	0	6.44	11	15	154	45	244	27	1.8	2.3	2.1	7.1	0.03	12.1	1.6	1.80266667
																						0.6	0.78933333
0.05	1.62	0.02	0.03	0.0362	3.4	5	3.7	0.03	5.84	2.6	2	28	9	56	0.38	0.45	0.95	0.52	1.1		1.3	0.48	0.56533333
0.09533	2.9	0.170667	0.03	0.03	4.8667	193	2.8	0.06	7.3633	2.5667	1.83333	175	170.333	326.667	0.231	1.24	15.567	0.217	1.5333	0.097	29.933	0.3	0.352
0.08033	4.50667	0.445333	0.03	0.03	6.8667	151	2.9	1.44	7.3333	2.1333	1.83333	158.33	137.333	282	0.007	1.277	9.07	0.08	2.54	0.063	34.367	0.27	0.30933333
3.06	4.26	0.03	0.049	0.108	8.8		13.3		7.31	7.4	7.5	111	83	190								0.57	0.65066667
0.624	2.7		0.015	0.015	9	66.6	8	0.1	6.55	15	6.5	84		120									
0.399	2.7	0.01	0.015	0.0657	3.4	49.5	7.5	0.2	7.33	9.1	7.5	85	68	141									
0.08033	2.70333	0.176667	0.015	0.04537	5.6667	25.133	4.7333	6.1		5.7	6.83333	47	20.1667	67								0.31	0.36373333
0.025	3.37	0.01	0.015	0.158	0.5	15.6		0.2	7.95	12	16	118		179.7								0.16	0.18133333
0.1855	13.1	0.015	0.015	0.0681	6.8	43.5	11.6	2.2	6.685	4.1	2.5	77.5	25	96.6								0.55	0.53333333
0.242	3.37	0.01	0.038	0.0662	9.1	13.2	12.8	0.1	5.8	18	16	59	24	57.7								0.35	0.416
0.025	1.965	0.13	0.015	0.048	3.55	15.6		3.15	6.9	2.7	1.25	41		57.1								0.27	0.32
0.495	1.895	0.13	0.23	0.48	3	7.95		1.35	6.5	6.2	2	31		32								0.29	
0.025	5.74	0.01	0.015	0.0963	3	17.4	10.4	0.5	7.28	7	7.5	60	16	57.4								0.84	0.768
0.025	23.3	0.01	0.015	0.0762	3	9.6	10.1	0.1	7	6.6	13	80	16	116.8								0.87	0.82133333
0.025	3.98	0.01	0.015	0.0662	16.9	18	11.6	4.6	7	5.2	1.5	69	14	85								0.32	0.384
0.068	7.245	0.15	0.055	0.0762	7.2	14.7	10.6	5.4	6.45	24.5	33.5	75	15	77.85								1.3	1.32266667
0.186	13.2	0.05	0.037	0.167	4.7	18	9.1	5.3	7.96	7.6	19	146	109	253									
0.063	13.9	0.01	0.051	0.187	5.9	102	8.9	3.9	8.52	9.2	22.5	135	128	238								0.16	0.16
0.181	4.12	0.01	0.051	0.138	6.2	96	7.9	4.2	8.27	8.6	11.5	83	48.2									0.05	0.064
0.071	4.57	0.03	0.015	0.0351	1.5	39.6	10.2	0.5	6.9	15	16.5	59	24	67.6								0.52	0.59733333
0.429	5.66	0.01	0.04	0.199	3.8	17.1		2	7.43	18	20	127	76	178									
0.84	3.43	0.01	0.447	0.44	18.2	76.5		0.1	6.62	30	24	82	23	94									
0.099	1.53	0.02	0.015	0.129	4.1	24.6	9.5	1.5	9	15	14.5	87	70	136								0.05	0.064
0.376	4.35	0.01	0.054	0.0892	2.6	65.7		0.1	7.93	8	10.5	147	132	259								0.05	0.064
0.212	2.38	0.03	0.036	0.129	3.2	142	7.8	4.3	7.2	7.4	6.5	40	56	56								0.13	0.13866667
0.153	3.4	0.45	0.015	0.015	2.8	15.9	3.5	0	6.9	2.1	1.5	36	12	44.8									
0.157	3.25	0.01	0.015	0.0492	4.8	12.9		0.5	7.52	4.6	8	94	74	278								0.23	0.288
0.179	3.29	0.01	0.043	0.0992	2.6	69		0.7	7.23	9.7	15.5	63	28	74									
0.459	3.73	0.04	0.205	0.199	6.9	20.1		0.1	6.95	93	76	109	17	50								0.49	0.58666667
1.79	1.76	0.03	0.203	0.46	9.2	17.1	10.5	0.1		14	6	126	118	223								0.2	0.24533333
0.147	3.18	0.03	0.064	0.249	3.2	106	9.8	3.6	8.2	15	17.5	88	64	132									
0.455	5.12	0.31	0.667	1.09	14.3	49.8	10.7	5.8	6.9	180	4.5	615	63	63									
1.6	2.06	0.03	0.365	0.46	9.9	33.3	11.5	0	7.3	10	2.5	108	96	182								0.36	0.39466667
1.37	12.8	0.01	0.015	0.0347	45.8	85.8	7.2	0.1	7.68	33	0.5	211	138	368								0.05	0.05333333
0.34	2.79	0.01	0.015	0.0554	3.4	136	3.5	0.1	7.52	8.1	3	131	80	160									
4.28	6.31	0.01	0.089	1.06	4.4	71.1	12.8	0.1	7.26	21	13	150	141	280									
1.03	5.48	0.01	0.173	0.325	4.4	108	11.4	0.1	6.93	9.6	3.5	119	96	205									
1.5	3.59	0.01	0.041	0.221	4.4	88.5	10.2	0.1	7.37	10	8.5	139	96	233								0.33	0.416
2.22	5.94	0.01	0.243	0.449	9.9	111	6.8	0.2	7.21	19	7	111	89	192									
0.42	2.62	0.01	0.036	0.0772	7.9	64.5	5.6		7.09	2.8	1.5	50	28	72.9									
0.136	2.24	0.06	0.015	0.047	4.8	20.1	5.9		7.14	15	1.5	35	18	47.5									
0.763	1.7		0.015	0.015	5	14.1	4	0.2	6.51	14	6.5	59		58									
0.071	1.77		0.015	0.015	3.9	19.8	1.8	0.3	7.31	4.5	1	34		44								0.45	0.512
0.211	1.89	0.01	0.015	0.015	6	15.9	3.1	0.1	6.62	6.8	2.5	34		41									
0.058	1.9		0.015	0.015	3.9	11.7	1.8	0.3	7.33	6.8	1.5	38		41								0.13	0.17066667
0.336	1.77	0.01	0.015	0.015	9	15.9	5	0.2	6.75	17	5	48		40								0.73	0.88533333
0.025	1.9	0.01	0.015	0.015	9.9	9.3	6.3	0.1	6.19	13	4	52		46								1.05	1.088
0.107	2.22	0.03	0.015	0.0873	1.5	14.1	8.2	0	6.48	9.3	6	36	14	36.8								0.56	0.75733333
0.485	4.89	0.03	0.015	0.0873	2.6	17.1	11.9	0.1	7.6	5.4	5.5	60	38	89.5								0.16	0.192
0.215	4.4	0.03	0.031	0.0873	3.8	29.1	9.5	0.2	6.69	2.8	2	44	22	67.2								0.28	0.34133333

3EHarris S	345907	-924811	ARRV	C	526.09	1.83	29.01	1955		37	0.025	3.14	0.03	0.02	0.0351	2.8	17.1	5.5	6.2	7.27	3	2.5
Conway X	355742	-922350	ARRV	E	2711.39	1.52	352.24	1948		16.5	0.0385	5.15	0.03	0.02	0.0762	2.8	22.65	7.8		7.59	8.05	8.5
3DBrewer L	351348	-923549	ARRV	B	471.46	6.10	94.26			90	0.073	3.05	0.02	0.02	0.0772	5	11.7	4.8	8.4	7.37	2	0.5
3DBeaverfo	350824	-922641	ARRV	B	364.22	3.05	29.78			81	0.068	6.29	0.03	0.02	0.0672	5	6.9	5.6	8.4	7.54	2.2	1.5
2GUpper Wh	333955	-930516	GULF	C	254.95	2.44	53.61	1960		34	0.025	2.31	0.01	0.02	0.0881	0.5	8.3	8.8	7.9	7.49	3.8	2.5
2GLower Wh	334150	-930500	GULF	C	437.06	2.44	110.07	1960		48	0.073	2.47	0.02	0.02	0.0681	1.8	2.5	7.5	7.7	7.65	3.3	1
Ouachita X	343450	-931725	OUMT	A	16227.89	15.54	2861.94	1953		206.7	0.025	1.97	0.01	0.02	0.040267	3.8	16.6	5		6.937	0.6667	0.5
Hamilton X	342621	-930205	OUMT	A	2954.21	7.92	3732.17			81	0.038	2.21	0.01	0.02	0.015	2.1	11.4	3.95		7.57	3	2.75
2CHurrican	343708	-923150	OUMT	C	121.41	2.44	64.49			31	0.025	3.52	0.04	0.02	0.015	5.1	32.4	7.8	8.4	8.45	5.4	4
2BLake Wil	331311	-913131	OUMT	D	60.70	1.52	2.59			30	0.085	5.22	0.02	0.02	0.126	0.5	18.9	10.2	9.3	8.7	4.2	9
2BLake Wal	332844	-912713	DELTA	D	146.50	1.58	2.59			29	0.068	3.20	0.01	0.04	0.167	0.5	26.7	9.8	8.2	7.71	5.9	9.5
2BLake Gra	331849	-913302	DELTA	D	135.17	1.83	5.18			41	0.025	1.70	0.01	0.02	0.0963	0.5	8.7	9.9	7.5	6.96	2.2	6
2BEnterpri	330326	-913640	DELTA	D	80.94	1.52	5.18			42	0.025	4.26	0.01	0.02	0.106	0.5	17.4	10.2	8.4	7.6	2	2
2BCane Cre	335526	-914454	GULF	C	655.59	1.83	62.16			46	0.083	3.34	0.01	0.02	0.0454	9.4	28.1	8.2	6.4	7.42	3.8	2.5
2AGrand La	330425	-911242	DELTA	E	566.56	2.13	14.24			20	0.025	3.03	0.01	0.05	0.187	0.5	88.8	9.5	6.9	8.68	8	19
1DLake Wil	343605	-942136	DELTA	B	60.94	3.05	34.96	1958		37	0.089	1.80	0.01	0.02	0.0772	2.6	11.1	6.4		7.34	5.2	5
1ALake Jun	332110	-932935	GULF	C	24.28	1.52	10.36			28	0.025	30.40	0.01	0.02	0.158	5.1	22.8	12	5.1	6.99	5.3	7
Erling X	330700	-933323	GULF	E	2832.80	2.13	1036.00			38	0.025	10.25	0.015	0.02	0.09305	1.8	17.25	12.15		7.02	2.9	1.25

31	12.2	37.2								2.7																		0.05
60	29.75	78.3								13.795																		0.05
28	14	49								0.53																		8.01
37	12	67								3.2																		9.01
27	9	25.1								27.7																		44.8
25	11	24								6.94																		7.33
34.333	21.3333	52.733								0.463333																		0.64033
35	17	43.25								3.335																		2
56	47.6	90.4								1.07																		20.5
61	28.5	77.7								3.2																		2.13
79	27	63.9								4.81																		7.48
34	38	31								0.53																		9.34
41	16	47.5								43.8																		50.1
54	19									0.05																		2.9
131	98	198.8								40																		0.05
24	9.5	26								0.05																		7.63
113		170.9								0.05																		24.5
64.5		76.7								8.545																		6.345

0.025	3.14	0.01	0.015	0.015	2.8	20.1	5.3	6	7.13	3	3	35	12	36.9							0.05	0.064	
0.07	4.89	0.04	0.015	0.08135	2.15	19.5	7.85		7.275	8.2	8.25	60	30.5	79.85							0.05	0.05333333	
1.2	3.49	0.03	0.127	0.188	9.9	22.8	5.8	0.1	6.62	19	11.5	56	38	92							0.22	0.24533333	
0.103	6.09	0.02	0.015	0.0772	6	19.8	5.8	0.2	6.71	3.4	2	39	15	73									
0.83	2.89	0.01	0.015	0.0881	14.4	18	12.8	0.1	6.6	8.6	6.5	67	27	60.2							0.38	0.36266667	
0.408	2.38	0.02	0.015	0.0781	1.8	16.5	7.3	0.1	6.56	14	2.5	33	16	42							0.65	0.704	
0.025	1.94667	0.22	0.015	0.04027	4.1333	15.1	5.3333		6.89	2.2333	0.5	34.333	19.3333	51.8667							0.41	0.65066667	
0.108	2.6	0.115	0.015	0.015	2.1	14.7	4.05			2.7	2.5	37	20	52.45							0.41	0.52266667	
0.142	3.79	0.03	0.049	0.107	7.3	17.4	7.8	0	6.91	5.2	5	73	46	103.1									
0.302	5.35	0.01	0.015	0.136	0.5	42.3	9.4	0.3	7.2	4.6	8.5	58	30	82.8							0.55	0.52266667	
0.025	3.03	0.01	0.048	0.156	0.5	22.2	9.8	6	7.56	5.4	9	63	29	62.8							0.61	0.608	
0.025	1.88	0.01	0.038	0.167	0.5	18.9	9.9	0.1	6.95	8.3	9	36	19	39.9							0.34	0.36266667	
0.025	4.27	0.01	0.015	0.0963	0.5	10.5	9.9	0.1	6.61	2.6	4	38	16	48.6							0.72	0.91733333	
1.34	3.87	0.01	0.142	0.22	14.2	10.5	12.2	6.1		12	11.5	94	59.3								0.48	0.608	
0.025	2.64	0.01	0.068	0.187	0.5	43.8	9.2	6.9	8.84	7.7	20.5	124	99.5	198.8							0.22	0.224	
1.11	2.2	0.01	0.188	0.319	10.6	93.9	7.7		6.86	18	22	43	20	42							0.64	0.704	
0.025	30.7	0.01	0.015	0.168	6.2	11.1	11.6	0.1	6.46	8	10	119		180.1							0.09		
0.6815	11	0.01	0.1115	0.19855	8.5	30.3	14.7			6.35	4.25	90.5		101.15							0.6	0.576	

Sediment Data

PC&E Sta. #	Sample Description		Date (YYMMDD)	Mercury (ppm)	Latitude	Longitude
	SEDIMENT/LAKE SWEPCO		900813	<0.25	361424.0	943235.0
	SEDIMENT/LAKE FAYETTEVILLE		900814	<0.25	360804.0	940815.0
	SEDIMENT/LAKE SEQUOYA		900814	<0.25	360340.0	940400.0
	SEDIMENT/LAKE FRIERSON/GREENE COUNTY		900903	<0.25	355825.0	904323.0
	SEDIMENT/LAKE CONWAY		900912	0.25	355650.0	922430.0
	SEDIMENT/LAKE HAMILTON		900927	<0.25	342514.0	930420.0
	SEDIMENT/LORANCE CR/BELOW HWY 65/PULASKI-SALINE CO. LINE		901002	<0.25	343456.0	921430.0
	SEDIMENT/LORANCE CR./BELOW HWY 65/LOWER PART OF WETLANDS AREA		901002	<0.25	343430.0	921310.0
ARK0050	3BBayou Meto @ Hwy 161 near Jacksonville AR	DELT3	900529	<0.25	345039.0	920719.5
RED0004A	1BDays Cr SE of Texarkana AR	GULF3	900619	<0.25	331915.0	945953.0
	FIRST OLD RIVER LAKE		900620	<0.25	332955.0	934614.0
	MILLWOOD LAKE/NEAR DAM		900621	<0.25	334120.0	935730.0
ARK0030	3DArk R @ L & D No 8	ARRV3	900706	<0.25	350430.0	923206.0
RED0035	1AUnnamed trib to Horsehead Cr below Ethyl (South) outfall 003	GULF3	900709	<0.25	331022.0	931305.0
	LAKE JUNE		900709	<0.25	332110.0	932935.0
	UPPER LAKE CHICOT		900716	<0.25	332200.0	911205.0
	LAKE WALLACE		900716	1.9	332844.0	912713.0
	LOWER LAKE CHICOT		900717	<0.25	331650.0	911230.0
	LAKE GRAND		900717	<0.25	330425.0	911242.0
	LAKE WILSON/ASHLEY COUNTY		900724	<0.25	331311.0	913131.0
	LAKE GRAMPUS		900725	<0.25	331849.0	913302.0
	LAKE FELSENTHAL		900726	<0.25	330730.0	920905.0
	LAKE ENTERPRISE		900726	<0.25	330326.0	913640.0
	OLD TOWN LAKE		900730	<0.25	342322.0	904905.0
	HORSESHOE LAKE		900730	<0.25	345533.0	901910.0
	STORM CREEK LAKE		900731	<0.25	343545.0	903647.0
	BEAR CREEK LAKE		900731	<0.25	344236.0	904138.0
	OVERCUP LAKE CONWAY COUNTY/SEDIMENT		910709	<0.1	351148.0	924349.0
	MOUNTAIN HARBOR AREA LAKE OUACHITA/SEDIMENT		910709	<0.1	343450.0	932605.0
	HARRIS BRAKE/SEDIMENT		910717	<0.1	345907.0	924611.0
	BLUE MOUNTAIN LAKE/SEDIMENT		910718	<0.1	350607.0	934322.0
	LOWER LAKE OUACHITA NR STATE PARK/SEDIMENT		910730	0.19	343750.0	931100.0
	LAKE NIMROD AT DAM PERRY COUNTY		910805	<0.1	345711.0	930942.0
	LAKE POINSETT AT DAM POINSETT CO./SEDIMENT		910807	<0.1	353131.0	904031.0
	UPPER GREESON/SEDIMENT		910813	<0.1	341315.0	934450.0
	WHITE RIVER ABOVE HWY 412/SEDIMENT		910821	<0.1	361005.0	940052.0
	OZARK POOL ARK RIVER CRAWFORD CO./SEDIMENT		910822	<0.1	352854.0	934925.0
	HORSHOE LAKE 164N N OF CLARKSVILLE JOHNSON CO.		910904	<0.1	353345.0	933830.0
	ARK. RIVER LEE CREEK PARK NEAR VAN BUREN CRAWFORD CO./SEDIMENT		910904	<0.1	352640.0	942255.0
	LAKE FORT SMITH AT DAM CRAWFORD CO./SEDIMENT		910904	<0.1	353937.0	940846.0

UNNAMED STREAM BELOW QUANEX	910905	<0.1	351811.0	942230.0
WHIRLPOOL DRAINAGE BELOW OUTFLOW SEBASTIAN COUNTY/SEDIMENT	910905	<0.1	351938.0	942311.0
LAKE WILHELMENA NEAR DAM POLK CO.	910905	<0.1	343605.0	942136.0
LAKE HINKLE NEAR RESTRICTED AREA SCOTT CO./SEDIMENT	910905	<0.1	345115.0	941515.0
DEQUEEN LAKE UPPER END SEVIER CO./SEDIMENT	910906	<0.1	340949.0	942418.0
WHIG CR. NR RUSSELVILLE/SEDIMENT	910910	<0.1	351320.0	930842.0
COVE LAKE NR SPILLWAY-LOGAN CO.	910911	<0.1	351355.0	933741.0
UPPER LAKE DEGRAY NEAR POINT CEDAR/SEDIMENT	910917	<0.1	341545.0	931309.0
LOWER LAKE DEGRAY NEAR DEROCHE RIDGE/SEDIMENT	910917	<0.1	341445.0	930715.0
LOWER LAKE WHITE OAK OUACHITA CO./SEDIMENT	910918	<0.1	334150.0	930500.0
LAKE JOE LEE FELSENTHAL NEAR DAM ASHLEY/SEDIMENT	910918	<0.1	330340.0	920650.0
NEWPORT CITY LAKE/SEDIMENT	910919	<0.1	353619.0	911636.0
ARK. RIVER BACKWATER/(COAL PILE) NR. HWY. 165 BR./SEDIMENT	911023	<0.1	335900.0	912331.0
WHITE R. NR. ST. CHARLES/SEDIMENT	911023	<0.1	342224.0	910715.0
LAKE MAUMELLE - UPPER SECTION - SEDIMENT SAMPLE	920603	0.08	345327.0	923629.0
LAKE WINONA - SEDIMENT SAMPLE	920604	0.12	344755.0	925051.0
BOBB KIDD LAKE - SEDIMENT SAMPLE	920608	0.05	355810.0	942115.0
LAKE WEDDINGTON - SEDIMENT SAMPLE	920609	0.06	360528.0	942159.0
CRYSTAL LAKE - SEDIMENT SAMPLE	920610	0.05	362038.0	942634.0
LAKE BAILEY - SEDIMENT	920616	0.05	350749.0	925512.0
LAKE BEAVERFORK - SEDIMENT	920617	0.07	350824.0	922641.0
LAKE BARNETT - SEDIMENT	920617	<.05	351335.0	915706.0
LAKE SYLVIA - SEDIMENT	920618	0.05	345205.0	924858.0
HURRICANE LAKE - SALINE CO. - SEDIMENT	920622	0.1	343708.0	923150.0
COX CREEK LAKE -- SEDIMENT	920623	0.08	341035.0	923710.0
UPPER WHITE OAK LAKE - SEDIMENT	920625	0.05	333955.0	930516.0
BOIS D'ARC LAKE - SEDIMENT SAMPLE	920625	<.05	333307.0	934204.0
LAKE ATKINS SEDIMENT SAMPLE	920707	<.05	351254.0	925633.0
SUGARLOAF LAKE SEDIMENT SAMPLE	920708	<.05	350534.0	942400.0
LAKE SHEPHERD SPRINGS SEDIMENT SAMPLE	920708	<.05	354130.0	940641.0
GILLHAM LAKE - SEDIMENT	920722	<.05	341353.0	941354.0
DIERKS LAKE - SEDIMENT SAMPLE	920722	0.05	341008.0	940545.0
HORSEHEAD LAKE - SEDIMENT	920720	<.05	353332.0	933803.0
BREWER LAKE - SEDIMENT	920722	<.05	351348.0	923549.0
SPRING LAKE - SEDIMENT	920721	<.05	350900.0	932533.0
SHORES LAKE - SEDIMENT	920720	<.05	353806.0	935743.0
GREERS FERRY- LOWER- HEBER SPRINGS PARK- SEDIMENT	920728	<.05	353025.0	920400.0
CANE CREEK LAKE - SEDIMENT	920805	<.05	335526.0	914454.0
LAKE GEORGIA PACIFIC - SEDIMENT	920805	<.05	331428.0	920223.0
LAKE DES ARC - SEDIMENT	920805	<.05	350119.0	913032.0
LAKE ERLING - SEDIMENT	920810	0.09	330740.0	933320.0