Great Rivers Land Trust

Alley Ringhausen, Executive Director

Great Rivers Land Trust

Great Rivers Land Trust is a non-profit organization dedicated to preserving open space and critical wildlife habitat in our river corridor. We are the most active local land trust in the entire St. Louis region!

GRLT Mission Statement

The mission of Great Rivers Land Trust is to promote the preservation and improvement of natural resources principally in, but not limited to, the watershed of the Mississippi River for the benefit of the general public. These resources include: land and water resources, the plant and animal life thereon, and the area's unique scenic, natural, and historic sites.

With Whom Does GRLT Work?

Government Entities

- Local Municipalities
- Illinois Department of Natural Resources
- Illinois Environmental Protection Agency
- State & Federal Officials
- Soil & Water Conservation Districts

With Whom Does GRLT Work?

Educational Institutes and Nonprofit Organizations

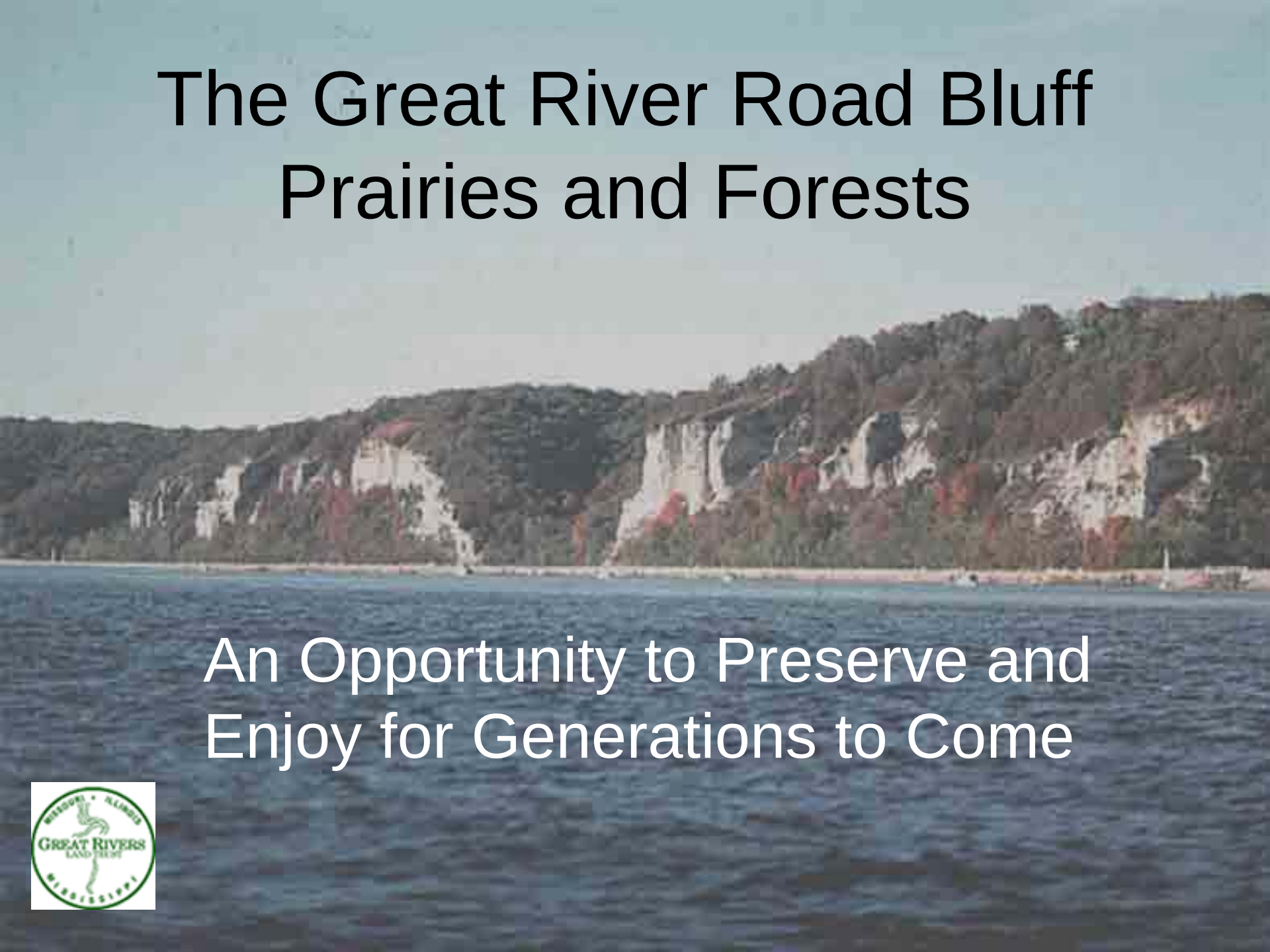
- Local School Districts
- Illinois Department of Education
- Lewis & Clark Community College
- Southern Illinois University at Edwardsville
- Principia College
- The Nature Institute
- The Nature Conservancy

With Whom Does GRLT Work?

Private Citizens & Corporations

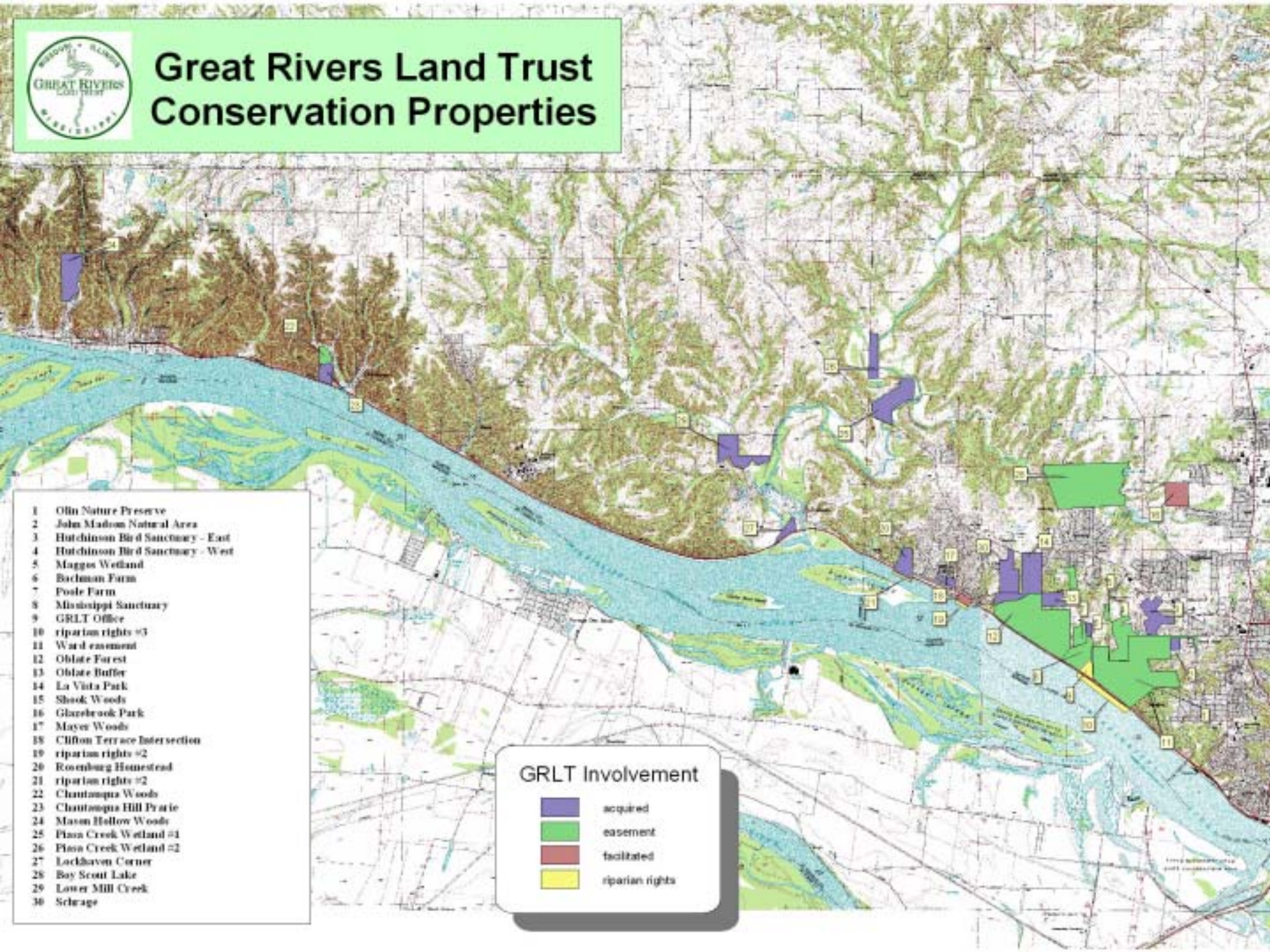
- Private Citizens & Local Land Owners
  - Board of Directors –13
  - Advisory Board –57
  - Individual Donors - 485
- Illinois-American Water

The Great River Road Bluff Prairies and Forests



An Opportunity to Preserve and Enjoy for Generations to Come

Great Rivers Land Trust Conservation Properties



"No other stretch of the Great River Road, from Itasca to New Orleans, offers such ready access to such superb riverscape to so many people."

John Madson, <u>Up on the River</u>

What Has GRLT Accomplished in the Past?

What Has GRLT Accomplished in the Past?

TREES FOREVER – ILLINOIS BUFFER PARTNERSHIP

What Has GRLT Accomplished in the Past?

COMMUNITY PARKS & RIVERFRONTS

Amy Roady/Calhoun News-Herald

More than 20 volunteers gathered to plant trees Saturday morning at the Brussels Heritage Park behind the Brussels Village Hall. The celebration was a part of USA Weekend Magazine's Make a Difference Day. The volunteers planted 12 Juniper trees as part of the first phase of the park project. The trees were paid for by the Brussels Women's Club. Volunteers included Women's Club members, Golden Eagle 4-H Club members, community service workers, village officials, a Great Rivers Land Trust trustee and other community volunteers.

BREAKING GROUND

Volunteers Plant Trees For The New Brussels Heritage Park

PIASA CREEK WATERSHED PROJECT

Illinois American Water

RWE

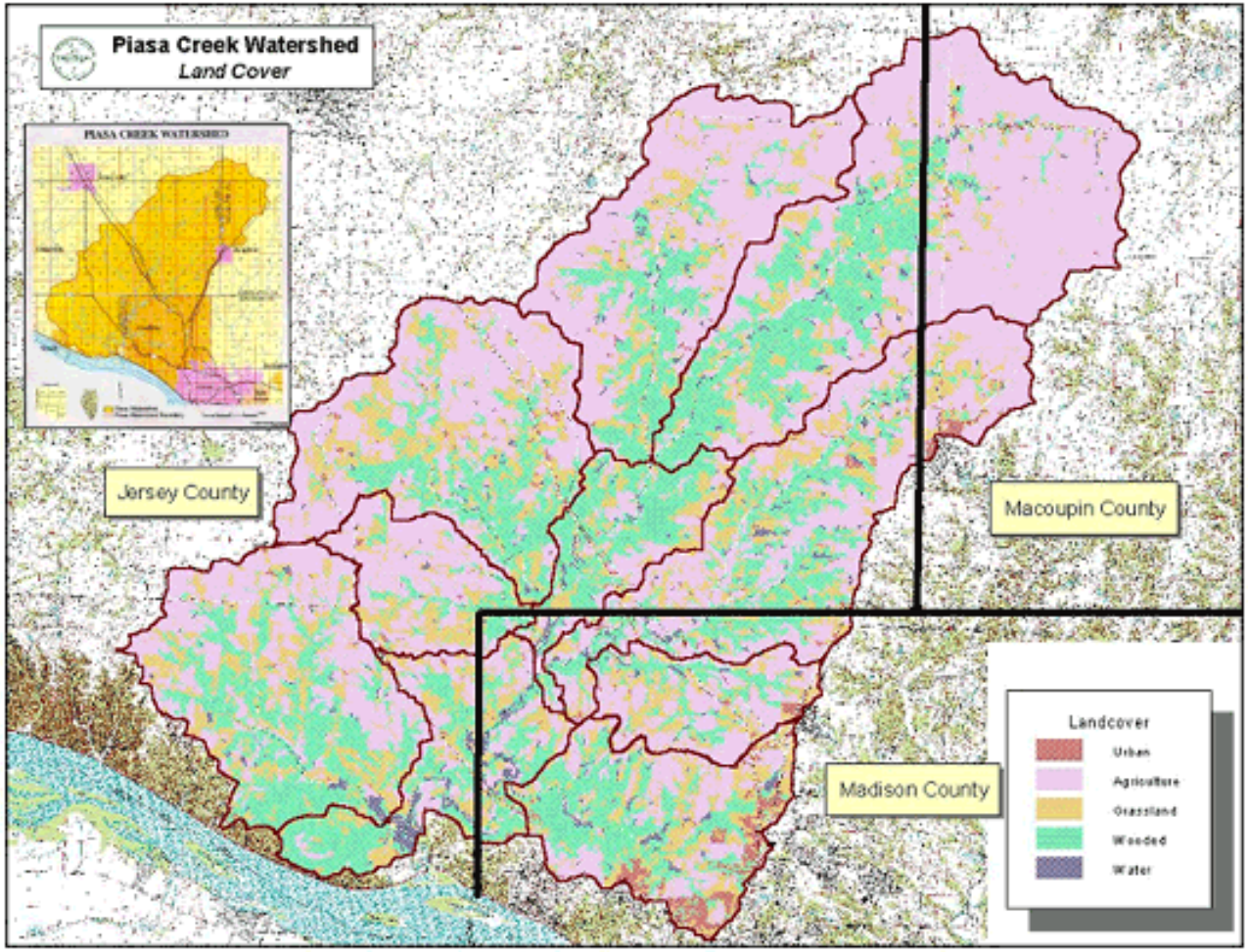
Piasa Creek Watershed Project

PIASA CREEK WATERSHED

Piasa Creek Watershed

- **Piasa Creek Watershed drains over 78,000 acres in Madison, Jersey, and Macoupin counties.**
- **The lower reaches of the stream were channeled years ago and are comprised of second growth bottomland deciduous forests.**
- **The upper reaches vacate water from the residential landscapes of Godfrey to the agricultural lands of Jersey and Macoupin counties.**
- **The watershed's point of discharge into the Mississippi is at the Great River Road, about five miles north of Alton.**

PIASA CREEK WATERSHED: Jersey, Macoupin, and Madison Counties



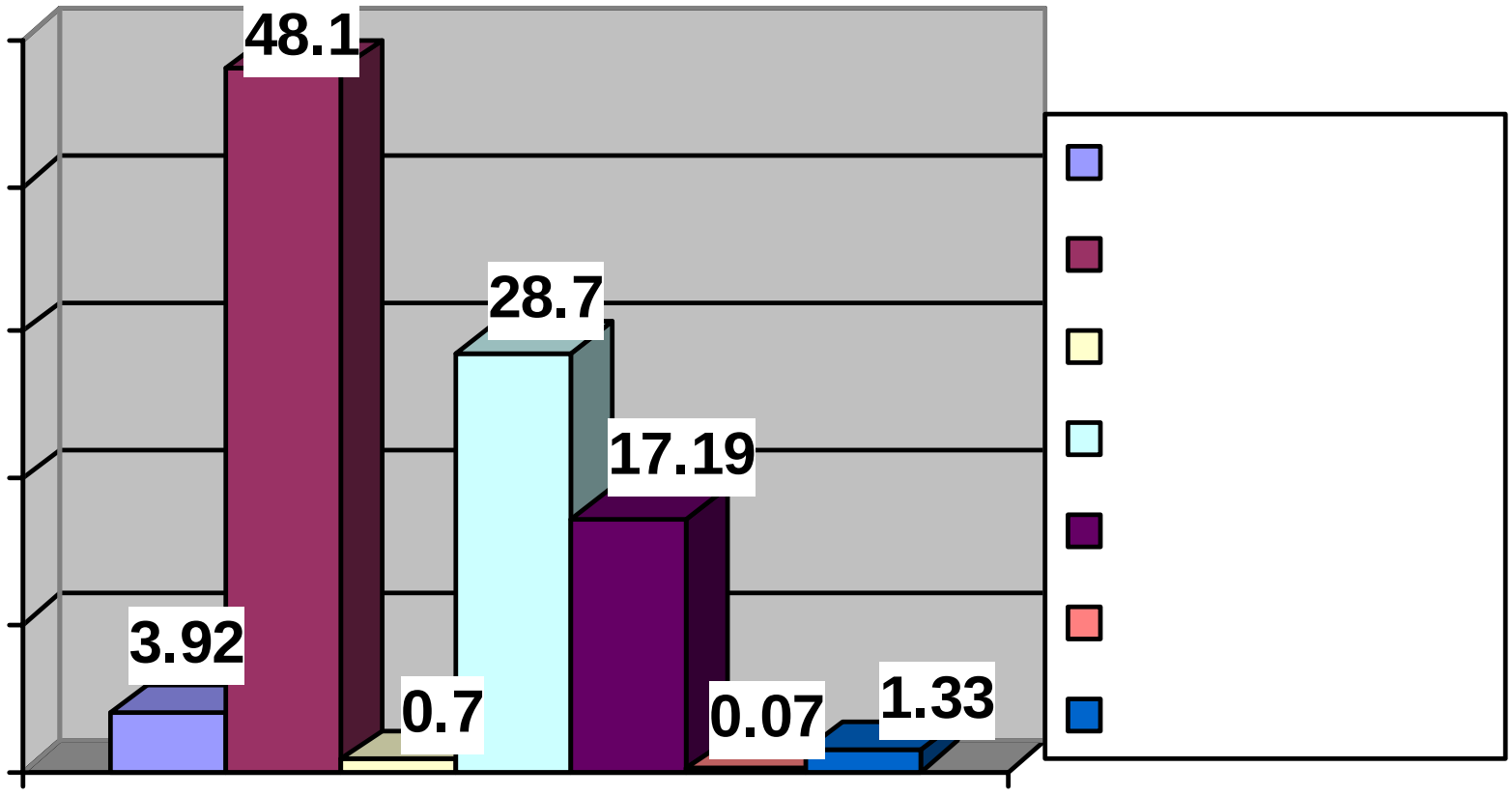

MISSOURI • ILLINOIS
GREAT RIVERS
LAND TRUST
MISSISSIPPI
Illinois-American
Water Company

GOALS OF PROJECT

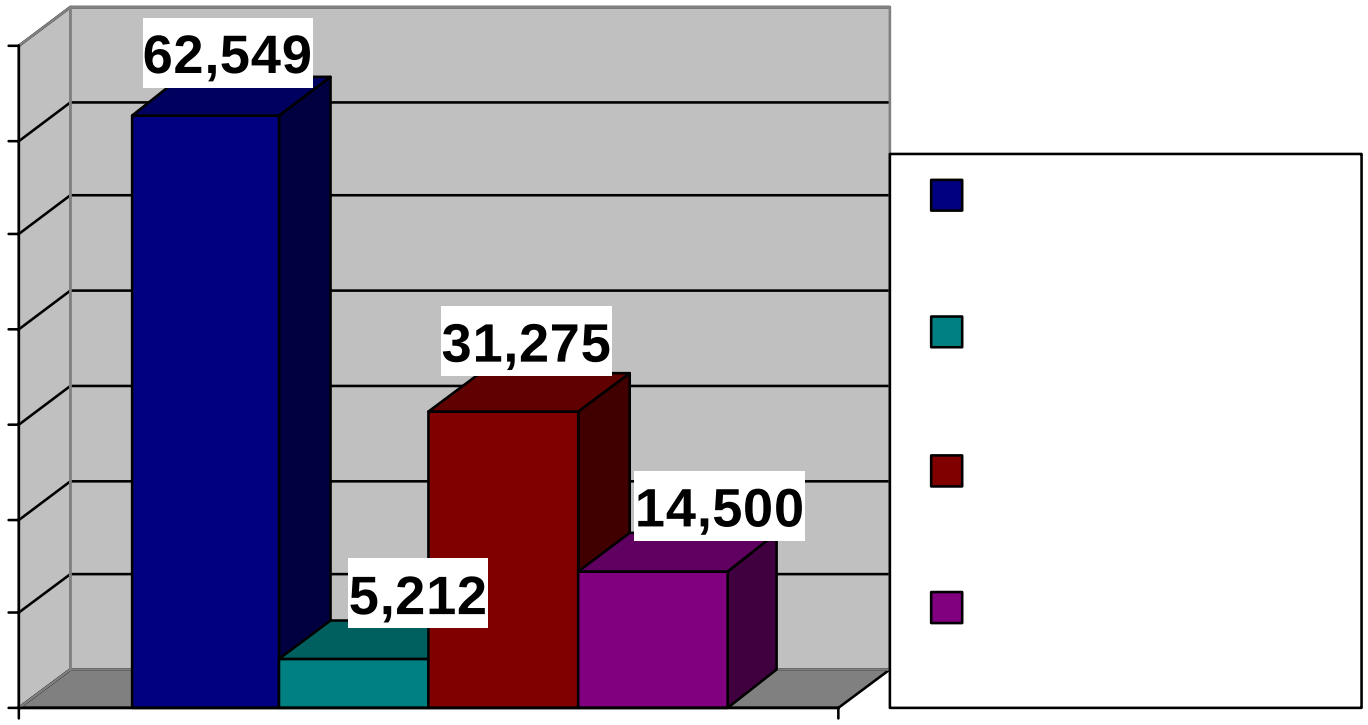
- **The Great Rivers Land Trust and the Illinois-American Water Company signed an agreement to begin implementation of the Piasa Creek Watershed Project.**
- **The 10-year project will attempt to reduce sedimentation in the Piasa Creek Watershed by approximately 6,600 tons per year by the end of the contractual agreement.**
- **The process of achieving the sediment reduction rates will include a variety of soil conservation practices such as silt basins, dry damns, streambank stabilization and various other practices to reduce sedimentation.**
- **The Piasa Creek Watershed covers approximately 78,000 acres in portions of Jersey, Madison, and Macoupin Counties.**


GRLT-LP1

Land Cover Percentages



Estimates of Annual Sediment Yield to Piasa Creek



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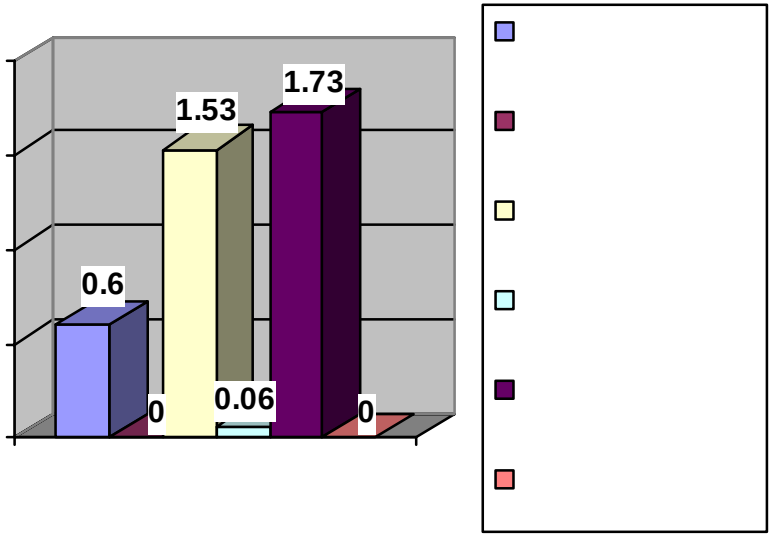
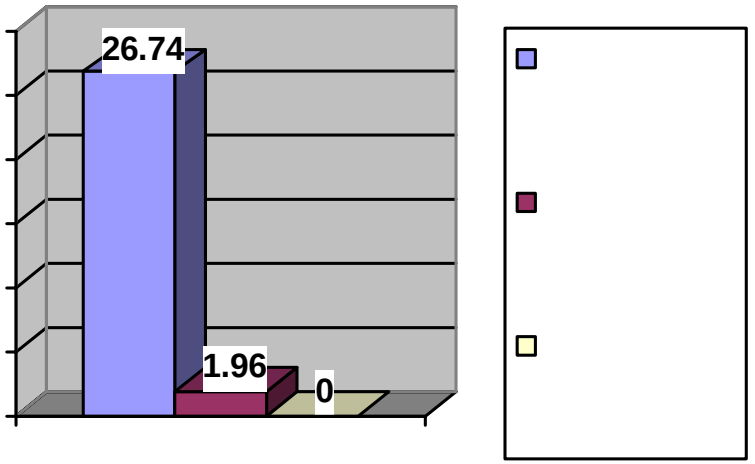


WOODLAND



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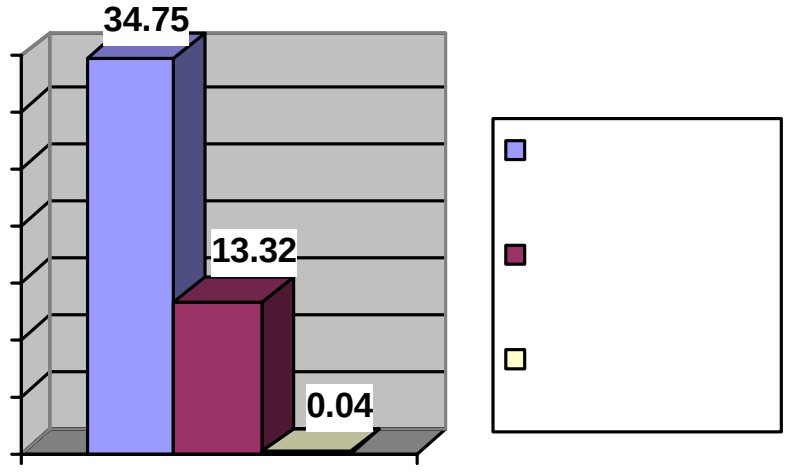
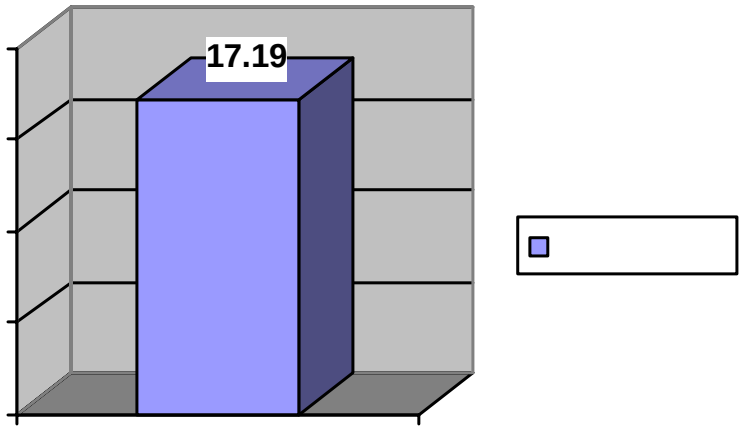
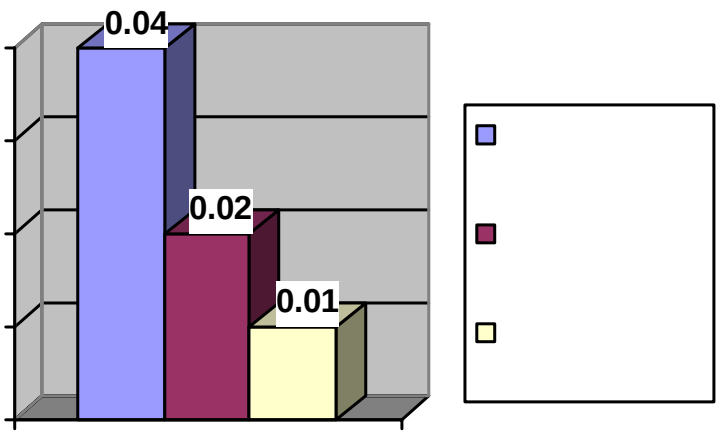


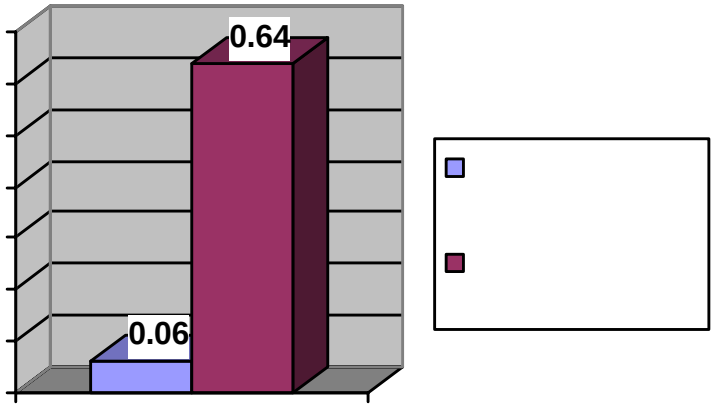
GRASSLAND



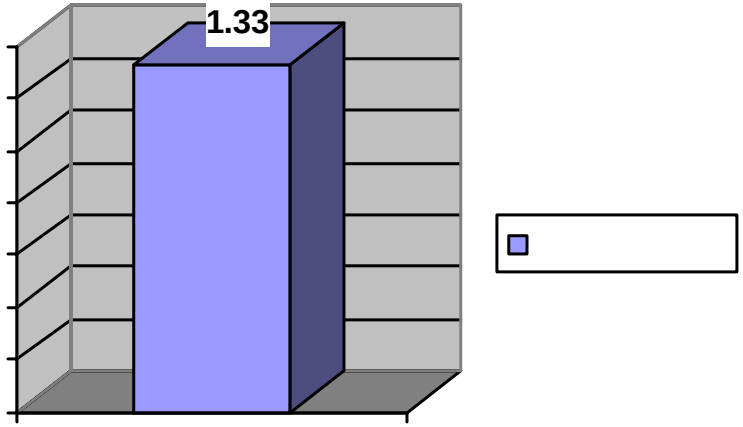
WETLANDS



WATER



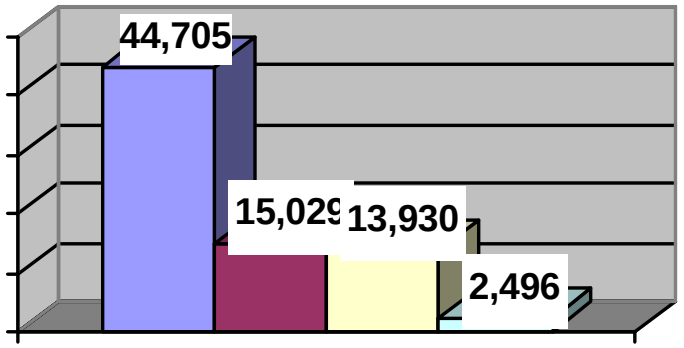
BOTTOMLAND

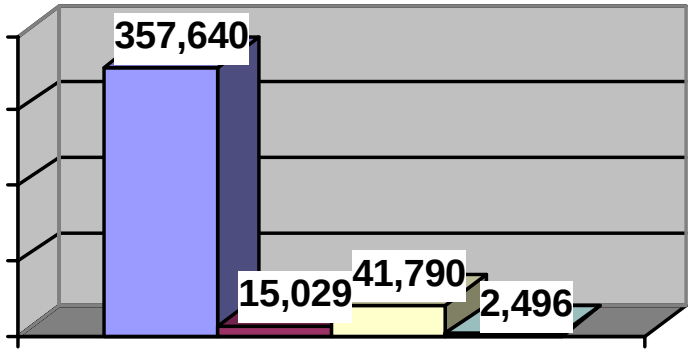


Gross Erosion Estimates by Land Use Piasa Creek Watershed

Land Use	Acres	Annual Soil Loss in Gross Tons
Cropland	44,705	357,640
Woodland	15,029	15,029
Grassland	13,930	41,790
Urban	2,496	2,496
Total	76,160	416,955

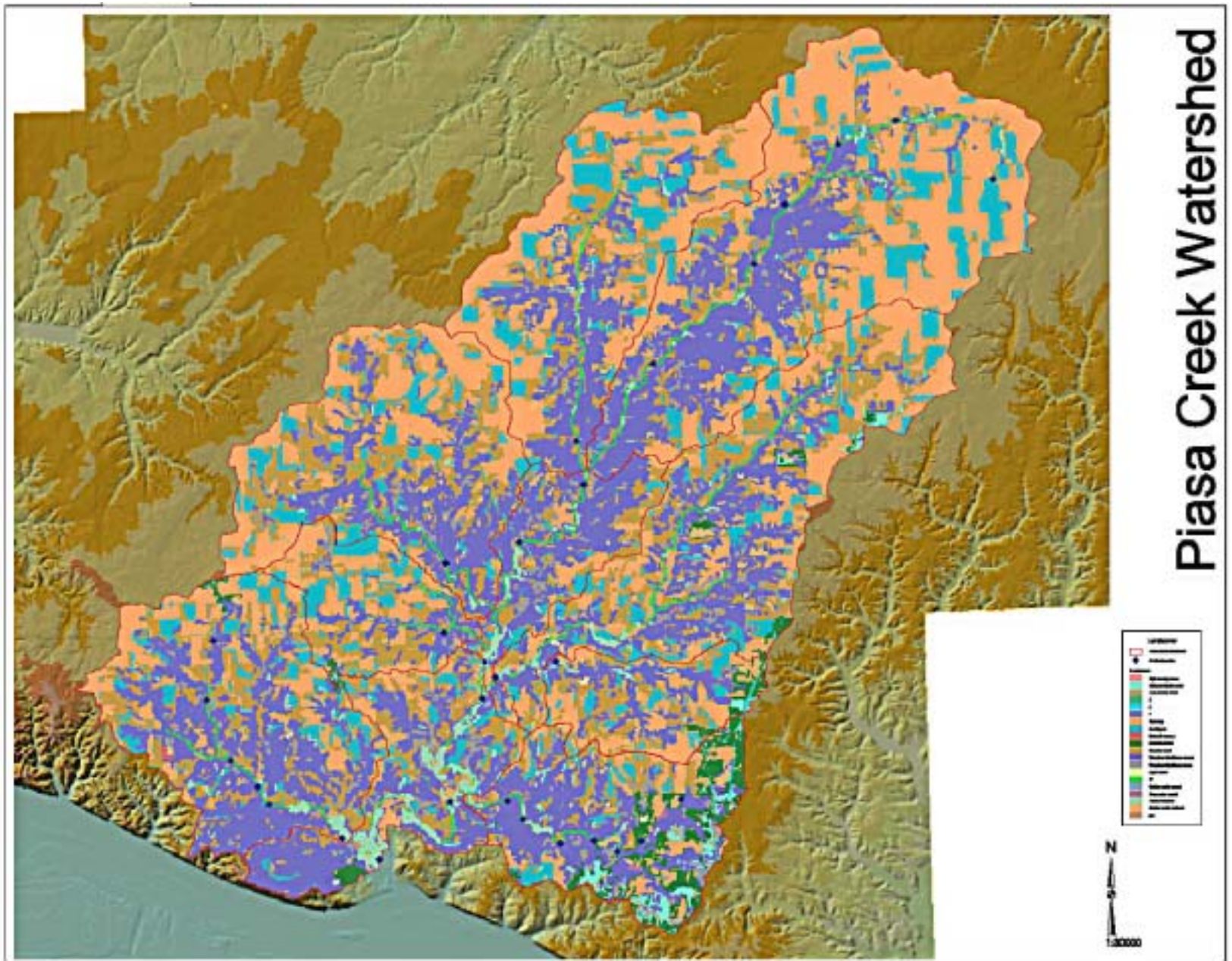
Gross Erosion Estimates by Land Use
Piasa Creek Watershed



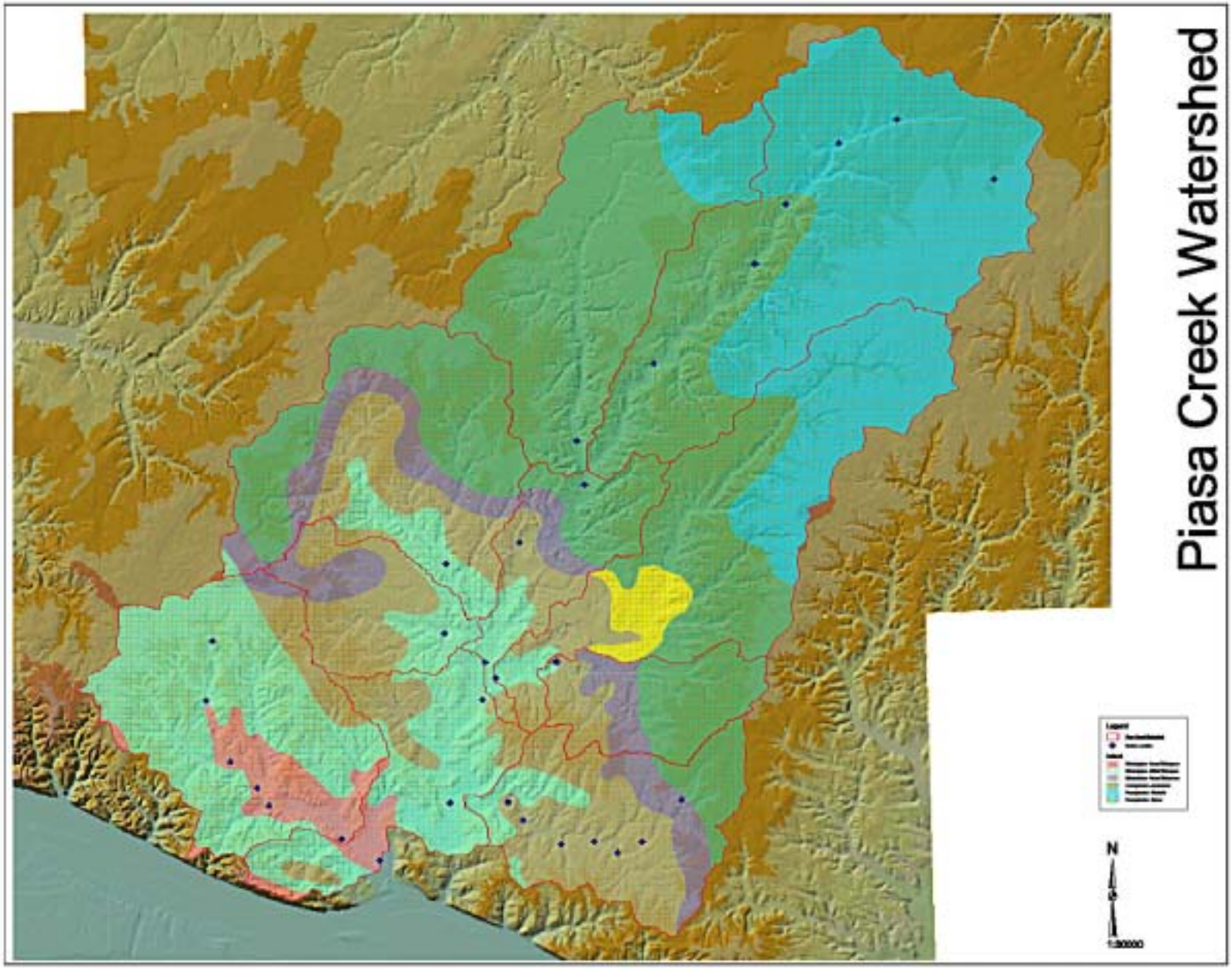


USGS

Land Cover



Bedrock



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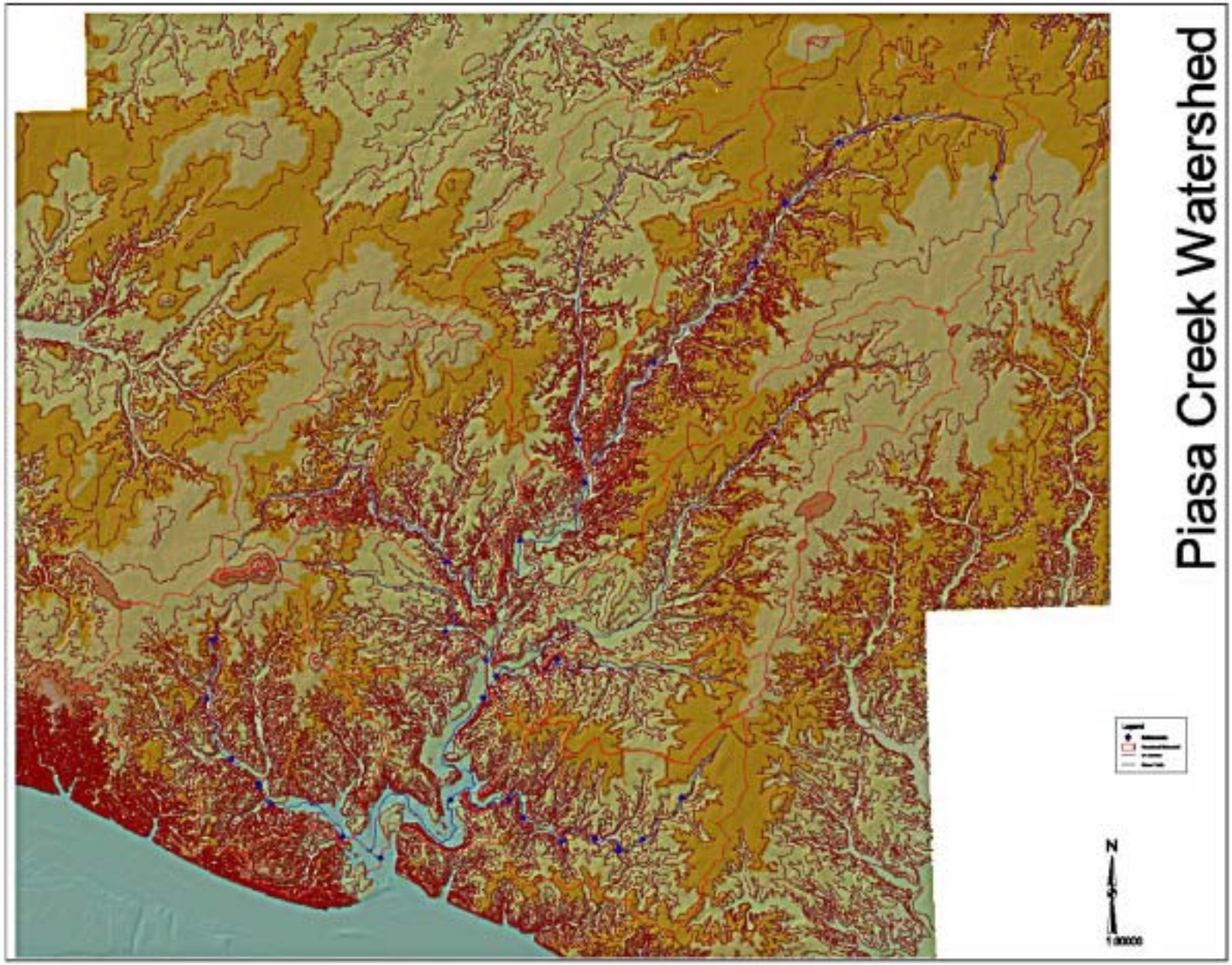
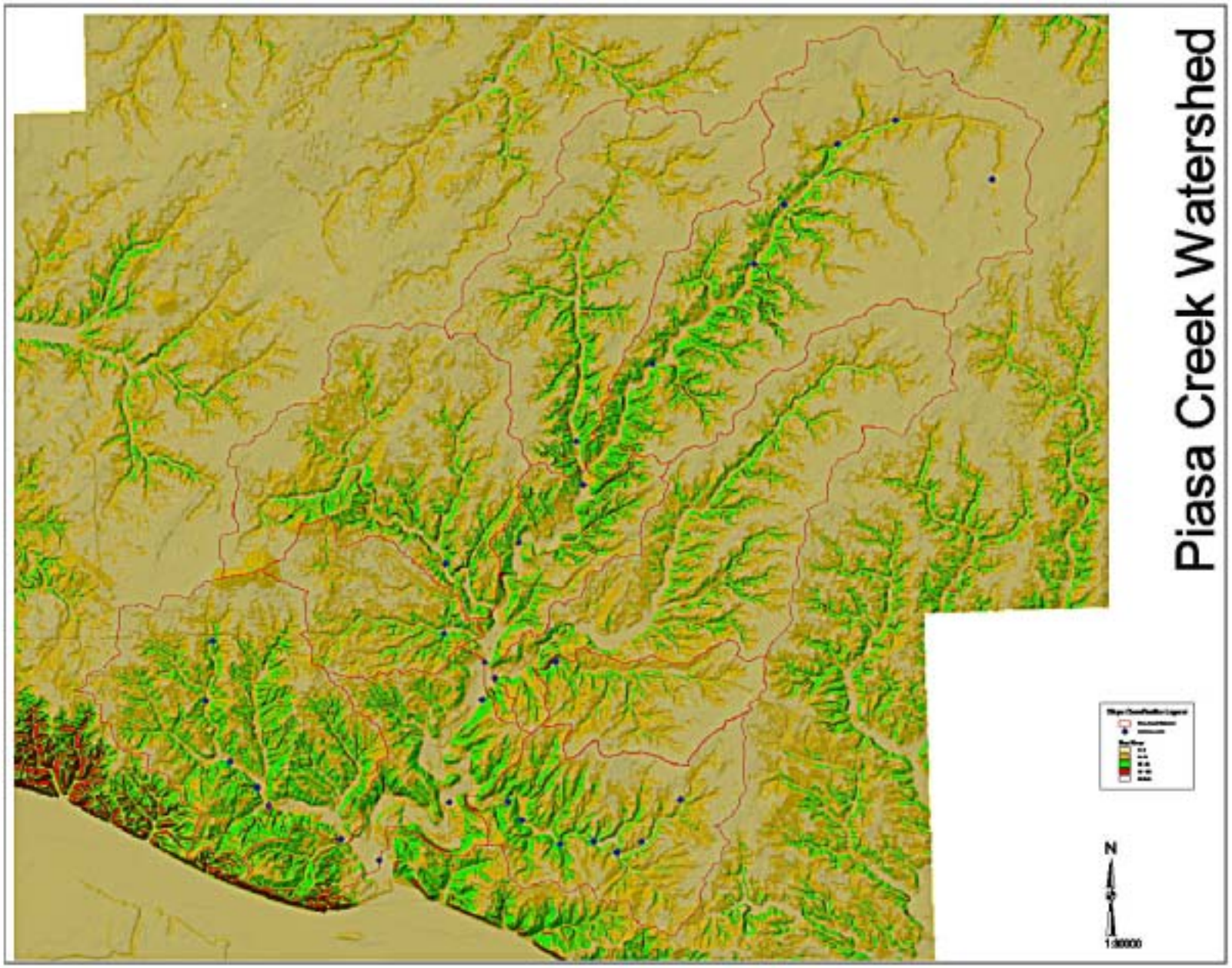
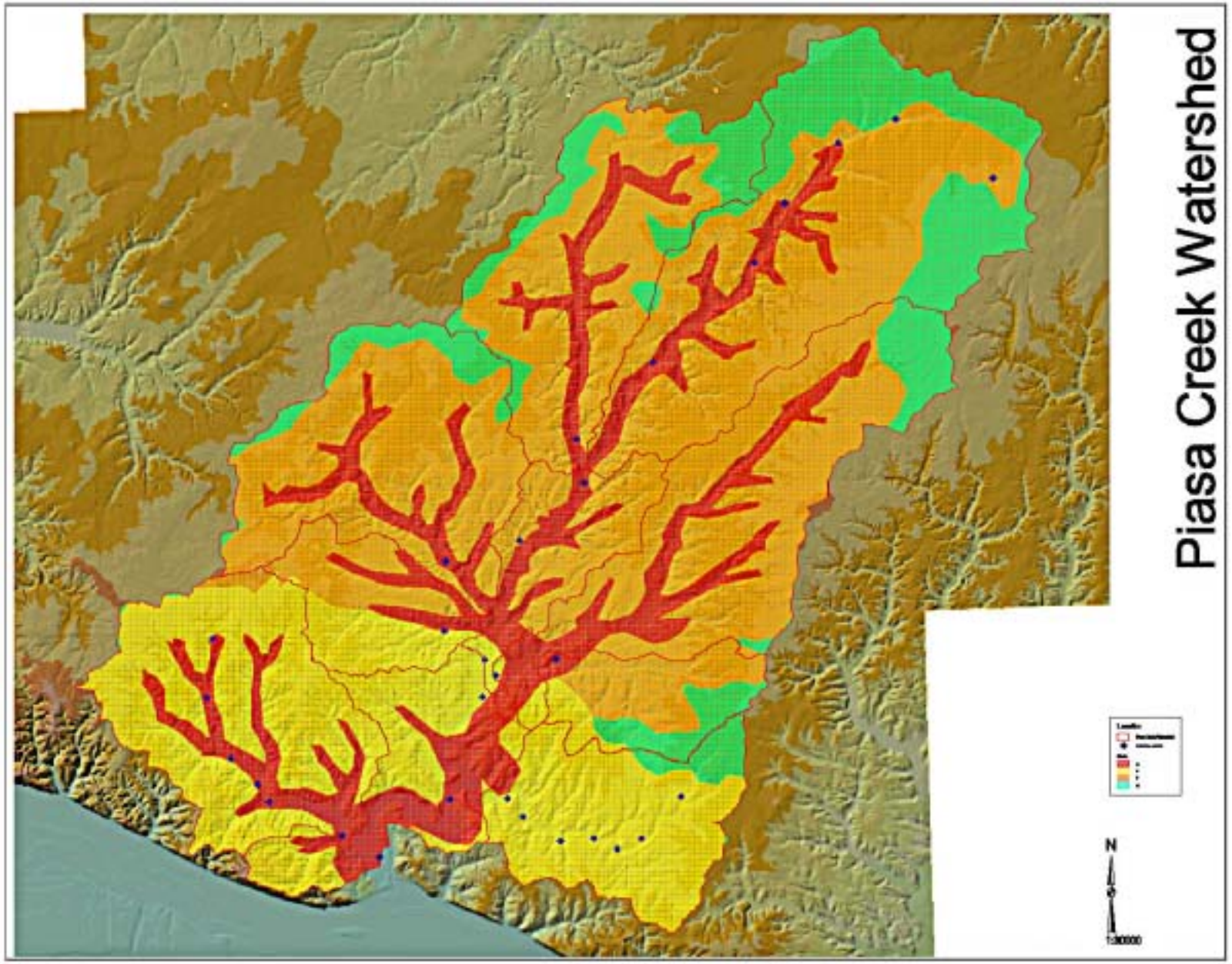
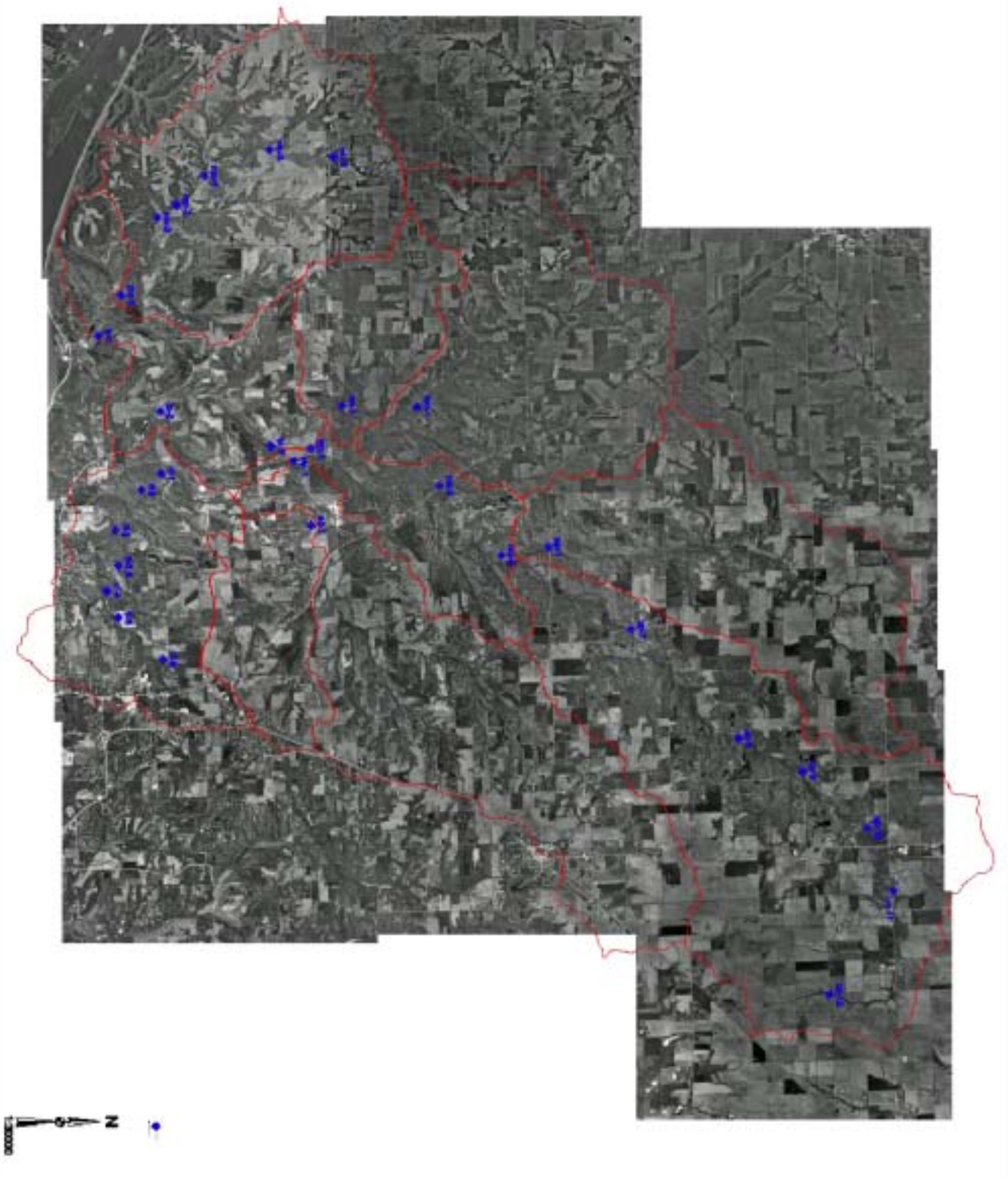


Slope

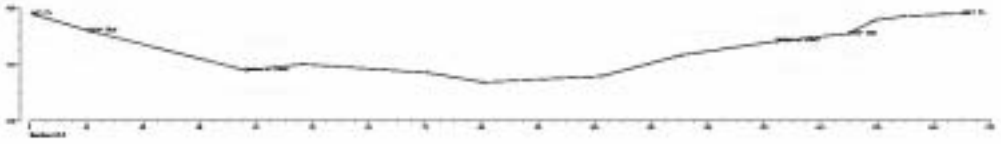


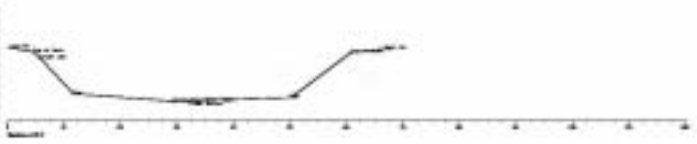
Soils

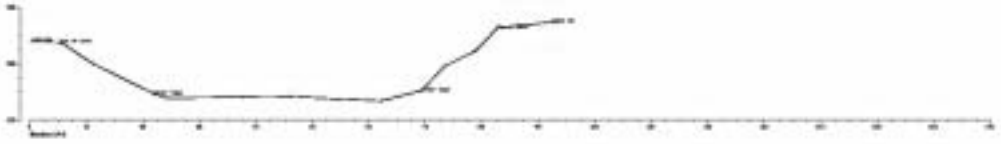


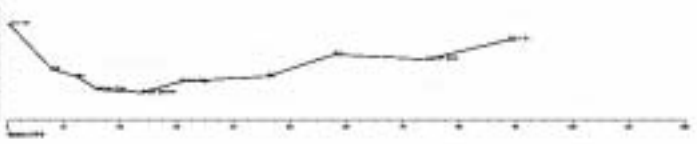


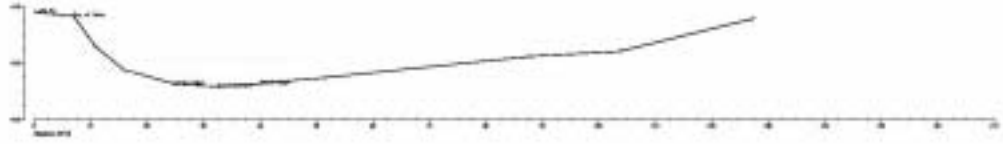
Piasa Creek Watershed

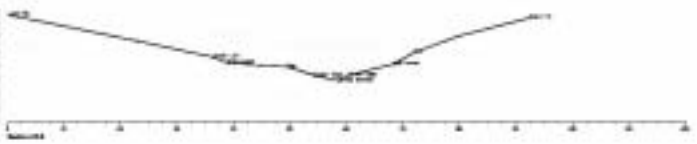


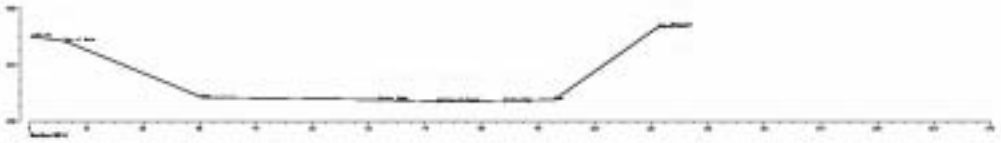


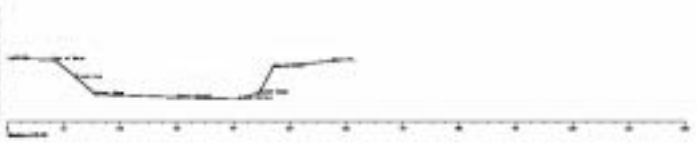


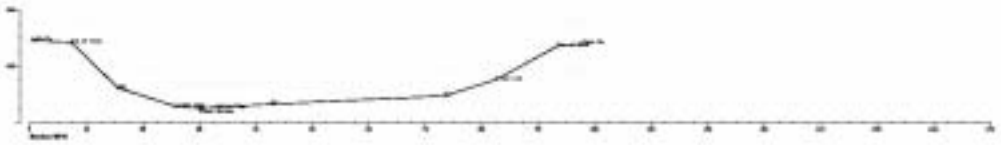


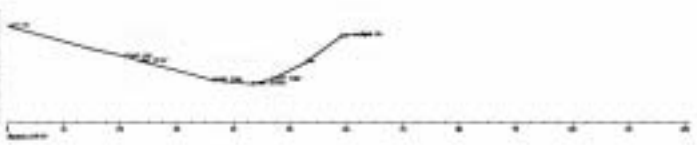


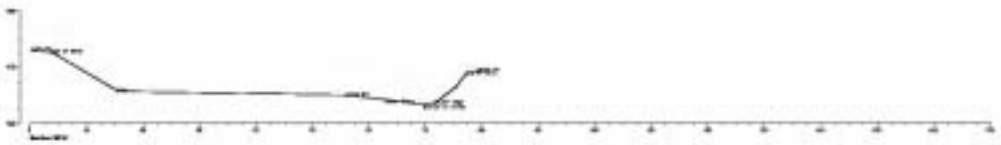


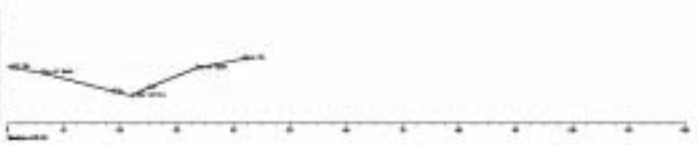












SHANNON & WILSON, INC.

GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Seattle Tacoma Vancouver Portland Anchorage Boise

Designed by: Kern

Drawn by: Kern

Checked by:

Approved by:

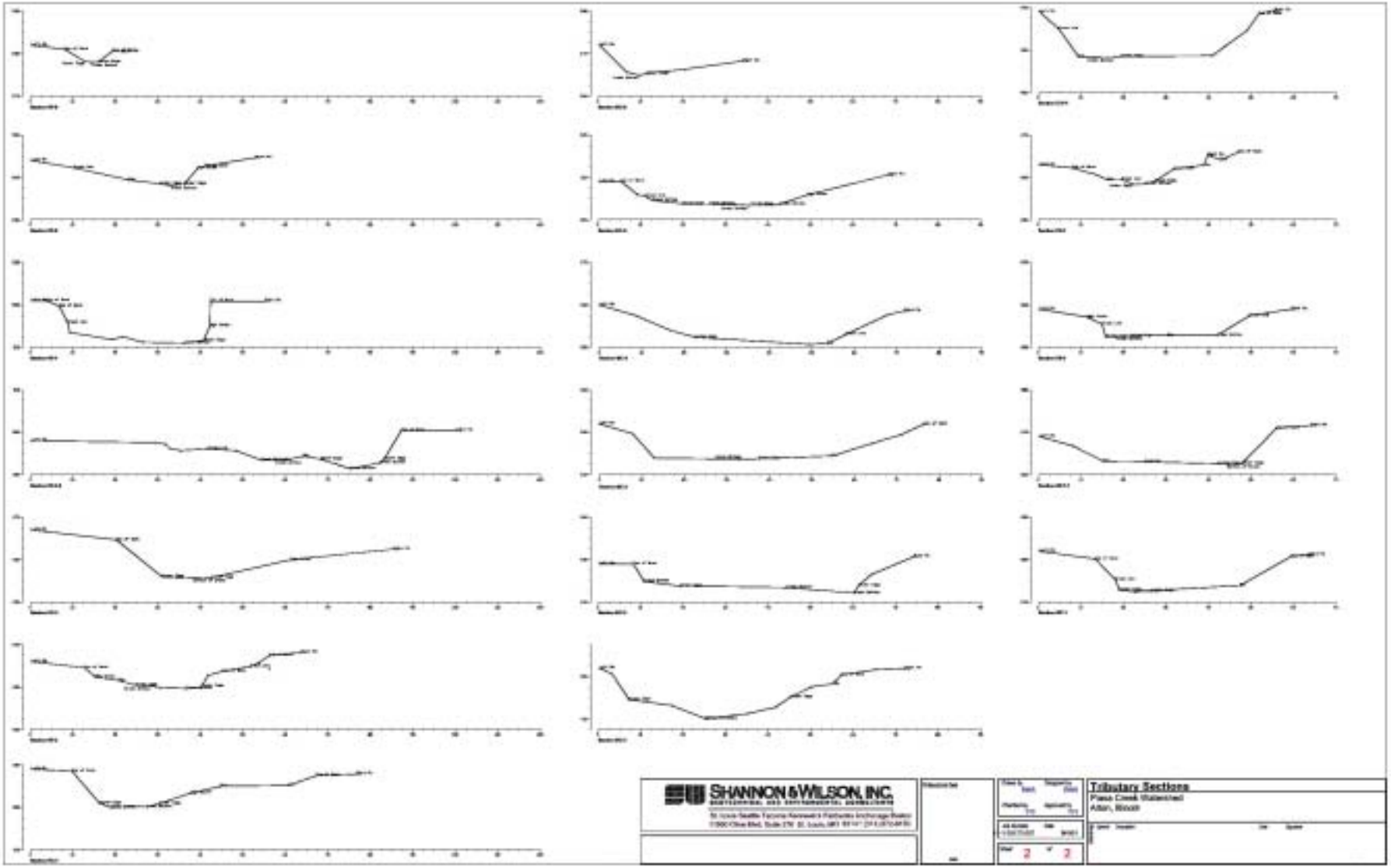
Date: 4/2/07

Sheet 1 of 2

Channel Sections

Piano Creek Watershed

Aitkin, Minnesota



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Tributary Sections
Plaza Creek Watershed
Allyn, Illinois

Sheet 2 of 2

THE TOOLS OF SEDIMENT CONTROL

<u>Water and Sediment Control Basins</u> – A short earthen dam built across a drainage way. An embankment traps sediment and water running off farmland above the structure, reducing gully erosion and trapping sediment.

<u>Grassed Waterway</u> – Shaping a drainage way and establishing grass to prevent gullies from forming. The vegetation acts as a filter for runoff water, absorbing nutrients and chemicals, trapping sediment, and preventing gully formation.

<u>Filter Strip</u> – A strip of grass, trees or shrub that filters runoff and removes contaminants before they reach water bodies or water sources. The vegetative ground cover prevents contaminants and sediment from entering water bodies.

Streambank Stabilization – Planting vegetation in the graded banks of streams or rivers to hold soil in place and prevent undercutting. This practice prevents streambanks from collapsing during periods of high flow.

Storm Detention Basins – A pool of water formed by a dam, to detain water during a storm, thereby reducing flash flooding and controlling erosion.

Terrace – An earthen embankment around a hillside that stops water flow and stores it or guides it safely off a field. Terraces break long slopes into shorter ones, following the contour. They either store water until it can infiltrate into the ground or slow runoff water until it is carried to a grassed waterway.

Grade Control Structure – An earthen, wooden, concrete, or other structure built across a drainage way to prevent gully erosion. Grade control structures are often used at the outlet of a grassed waterway to stabilize the waterway outlet, preventing gully erosion.

WHAT PROBLEMS DOES THIS CAUSE?

- Water containing those extra particles can travel down the watershed and pollute our water sources – streams, lakes, and rivers

WHAT PROBLEMS DOES THIS CAUSE?

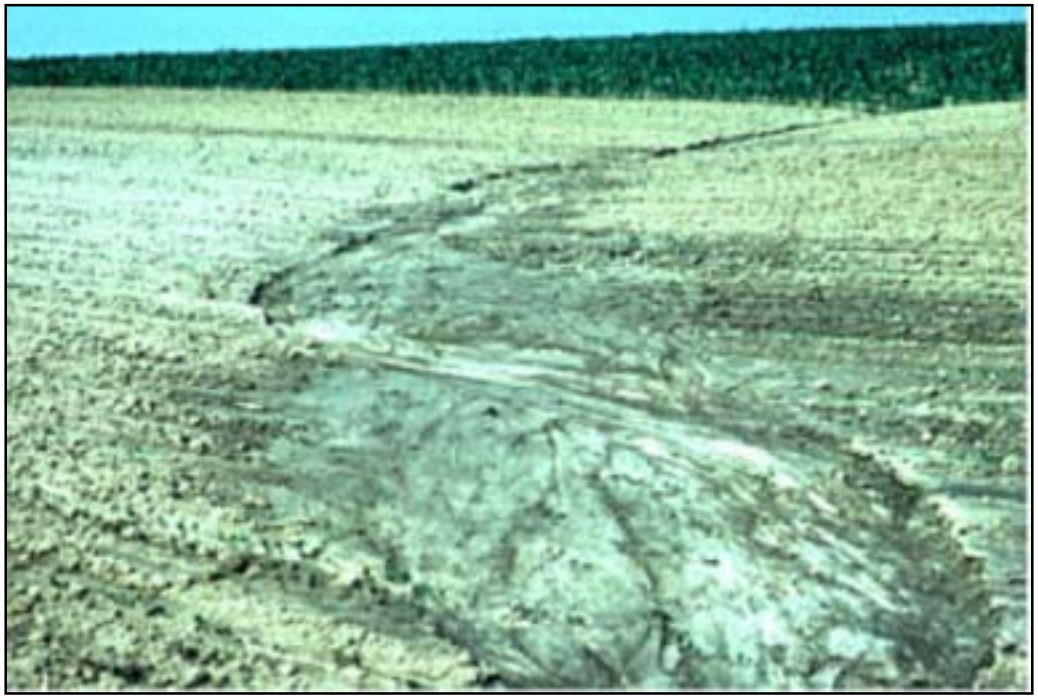
- Soil carried with the water can cause *erosion* – the wearing down of soil on land by sources such as water

TYPES OF EROSION

- *SHEET EROSION* removes a thin layer of soil from the surface from raindrops or water runoff
- This type of erosion makes it difficult for the soil to hold water for the plants

TYPES OF EROSION

- *RILL EROSION* happens after a larger rainfall and creates small channels called rills in the soil
- This erosion also takes away topsoil that reduces productivity



TYPES OF EROSION

- *GULLY EROSION* happens when a rill becomes so deep that it is difficult to cross the large gullies it creates

TYPES OF EROSION

- *STREAMBANK EROSION* is caused by the direct removal of banks and beds by running water.
- This type of erosion can cause changes in a creek or river and reduce the water quality

How does GRLT reduce erosion?

- Sediment Control Basins
- Stormwater Retention Basins
- Streambank Stabilization
- Grade Control Structures
- Terraces
- Filter Strips
- Grassed Waterways

Sediment Control Basins

- A short earthen dam built across a drainage way.

Stormwater Retention Basins

- A pool of water formed by a dam, to detain water during a storm, thereby reducing flash flooding and controlling erosion.

Streambank Stabilization

- Planting vegetation in the graded banks of streams or rivers to hold soil in place and prevent undercutting.

Grade Control Structures

- An earthen, wooden, concrete, or other structure built across a drainage way to prevent gully erosion.

Terraces

- An earthen embankment around a hillside that stops water flow and stores it or guides it safely off a field.

Filter Strips

- A strip of grass, trees, or shrub that filters runoff and removes contaminants before they reach water bodies or water sources.

Grassed Waterways

- Shaping a drainage way and establishing grass to prevent gullies from forming.

How Does GRLT Track PCWP Projects?

- GRLT Uses a Geographic Information System (GIS) to track each of its projects and to identify priority areas for future projects
- GRLT uses the desktop GIS program, ArcView 3.2a
- USGS Topographic Maps and aerial photos are often used as a base map, then thematic data is layered over the base maps

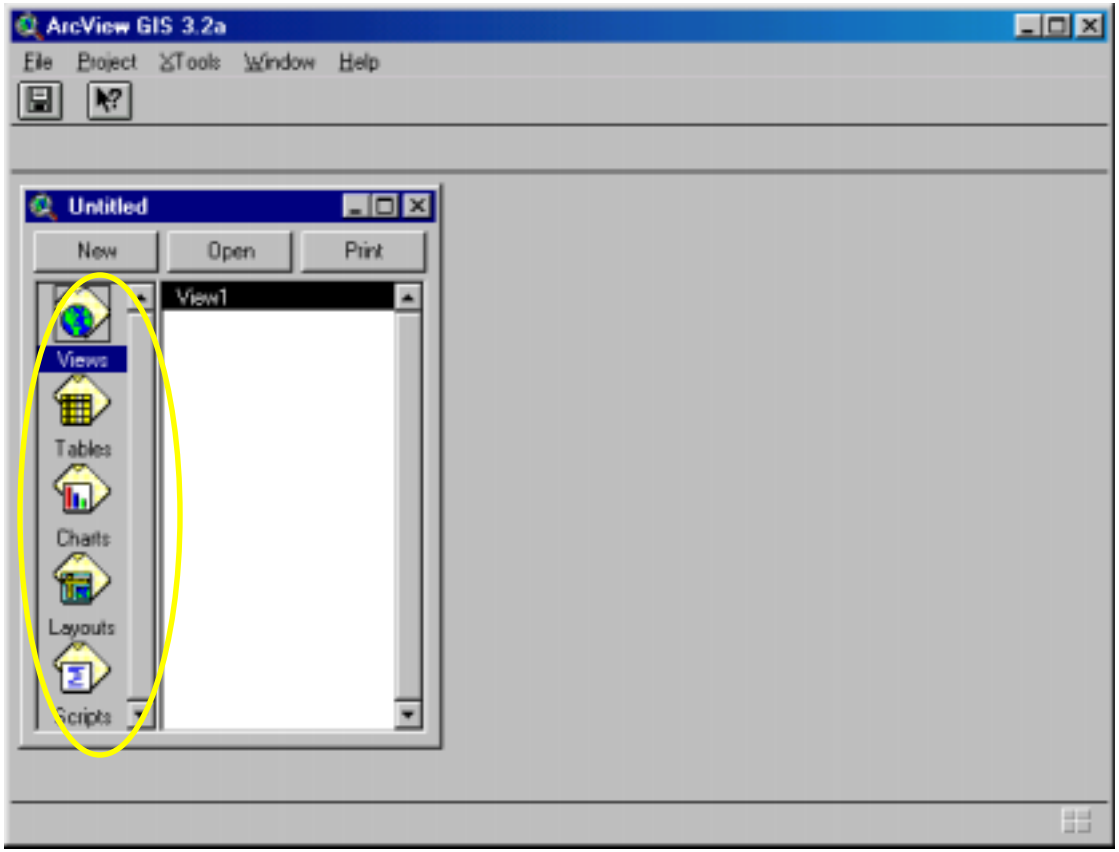
Geographic Information System

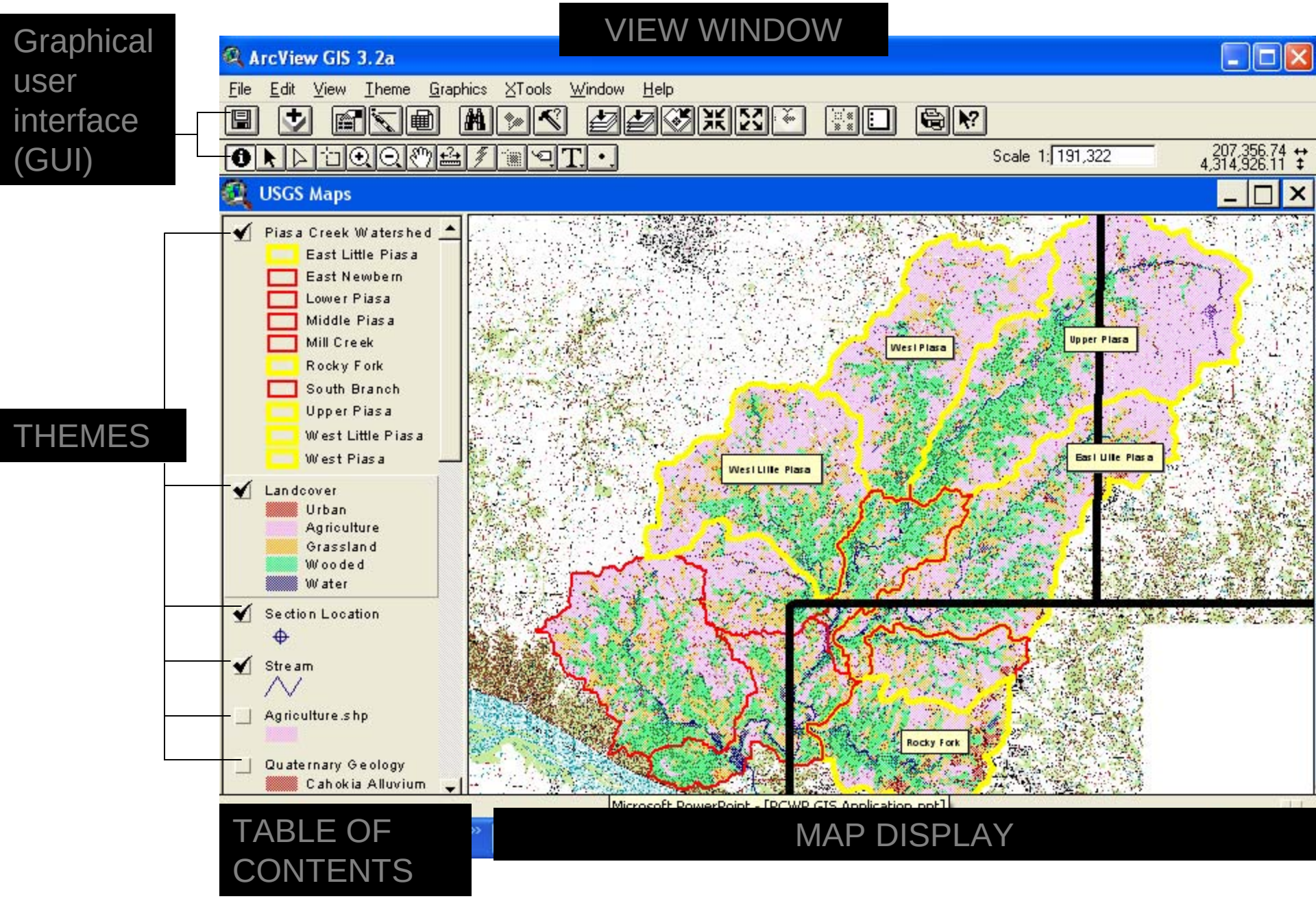
- GIS Basics
- PCW Thematic Maps
- PCWP Project Maps

GIS Basics

PROJECT WINDOW

- Views
- Tables
- Charts
- Layouts
- Scripts




Graphical user interface (GUI)
VIEW WINDOW
ArcView GIS 3.2a
File Edit View Theme Graphics XTools Window Help
Scale 1: 191,322
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4,314,926.11
USGS Maps
Piasa Creek Watershed
East Little Piasa
East Newbern
Lower Piasa
Middle Piasa
Mill Creek
Rocky Fork
South Branch
Upper Piasa
West Little Piasa
West Piasa
THEMES
Landcover
Urban
Agriculture
Grassland
Wooded
Water
Section Location
Stream
Agriculture.shp
Quaternary Geology
Cahokia Alluvium
West Piasa
Upper Piasa
West Little Piasa
East Little Piasa
Rocky Fork
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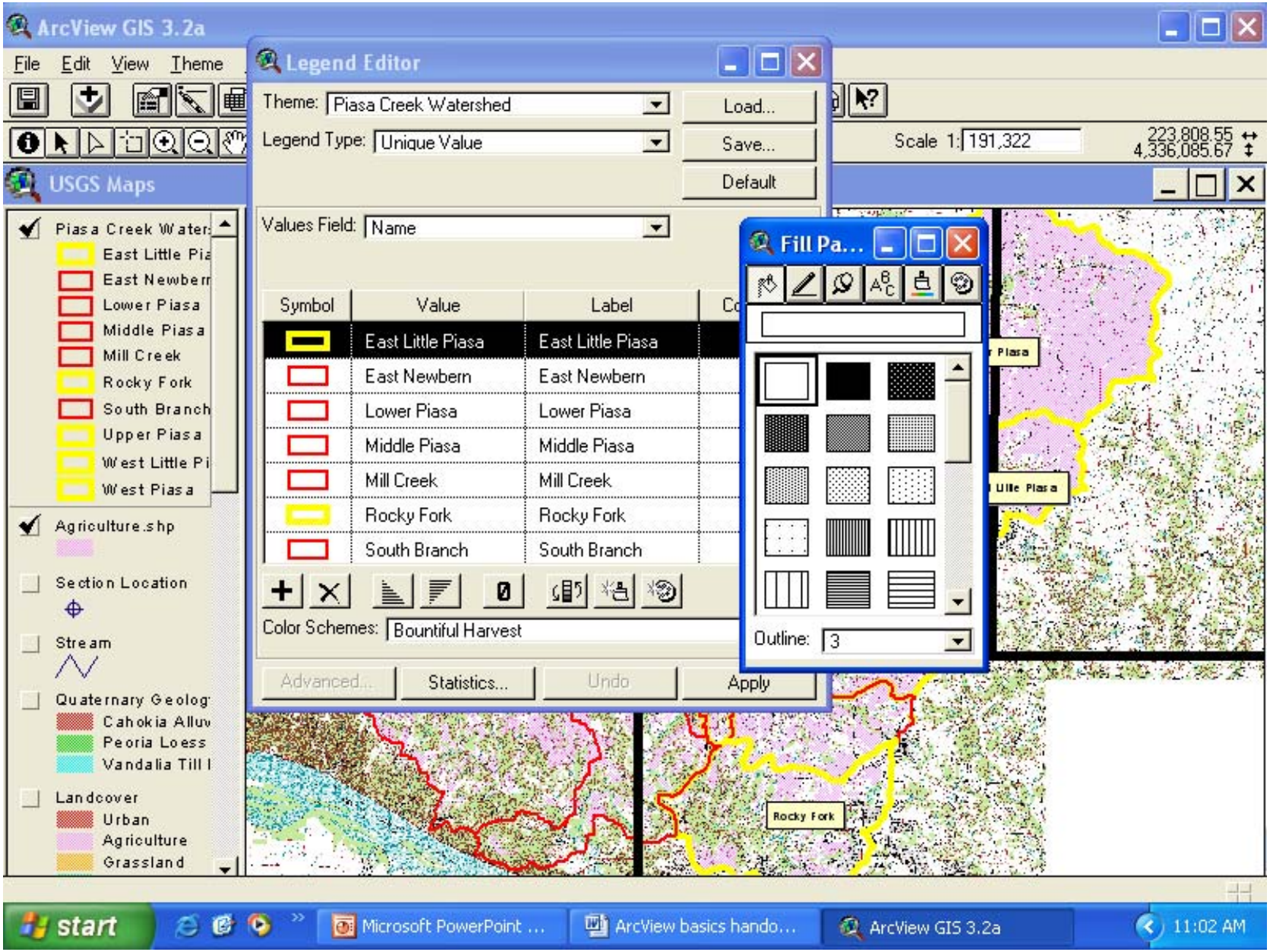
MAP DISPLAY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Save...
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East Little Piasa East Little Piasa
East Newbern East Newbern
Lower Piasa Lower Piasa
Middle Piasa Middle Piasa
Mill Creek Mill Creek
Rocky Fork Rocky Fork
South Branch South Branch
Color Schemes: Bountiful Harvest
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USGS Maps
Piasa Creek Water
East Little Pia
East Newbern
Lower Piasa
Middle Piasa
Mill Creek
Rocky Fork
South Branch
Upper Piasa
West Little Pi
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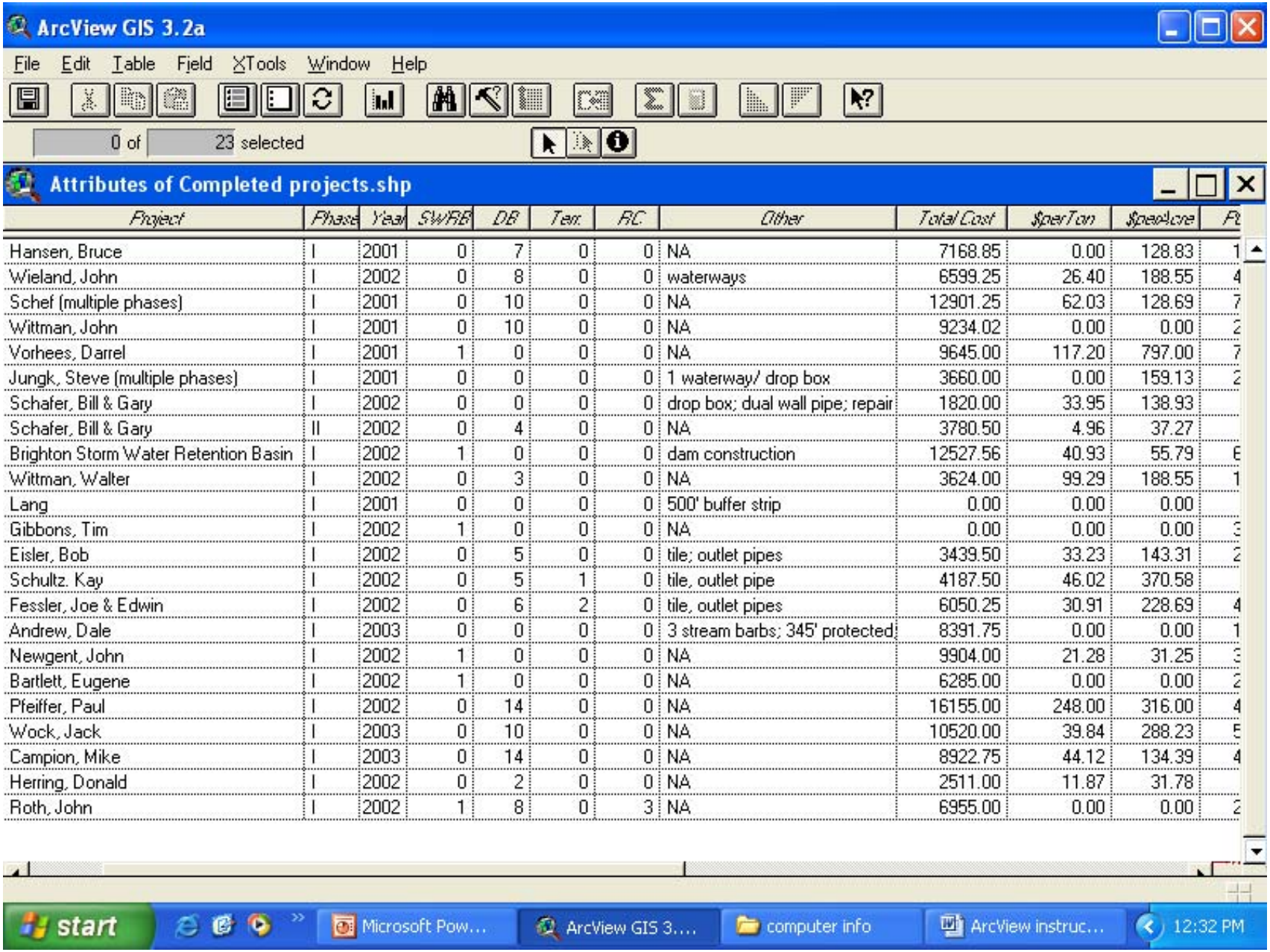

Project	Phase	Year	SWRB	DB	Terr.	RC	Other	Total Cost	$perTon	$perAcre	Ft
Hansen, Bruce	I	2001	0	7	0	0	NA	7168.85	0.00	128.83	1
Wieland, John	I	2002	0	8	0	0	waterways	6599.25	26.40	188.55	4
Schef (multiple phases)	I	2001	0	10	0	0	NA	12901.25	62.03	128.69	7
Wittman, John	I	2001	0	10	0	0	NA	9234.02	0.00	0.00	2
Vorhees, Darrel	I	2001	1	0	0	0	NA	9645.00	117.20	797.00	7
Jungk, Steve (multiple phases)	I	2001	0	0	0	0	1 waterway/ drop box	3660.00	0.00	159.13	2
Schafer, Bill & Gary	I	2002	0	0	0	0	drop box; dual wall pipe; repair	1820.00	33.95	138.93	
Schafer, Bill & Gary	II	2002	0	4	0	0	NA	3780.50	4.96	37.27	
Brighton Storm Water Retention Basin	I	2002	1	0	0	0	dam construction	12527.56	40.93	55.79	6
Wittman, Walter	I	2002	0	3	0	0	NA	3624.00	99.29	188.55	1
Lang	I	2001	0	0	0	0	500' buffer strip	0.00	0.00	0.00	
Gibbons, Tim	I	2002	1	0	0	0	NA	0.00	0.00	0.00	3
Eisler, Bob	I	2002	0	5	0	0	tile; outlet pipes	3439.50	33.23	143.31	2
Schultz. Kay	I	2002	0	5	1	0	tile, outlet pipe	4187.50	46.02	370.58	
Fessler, Joe & Edwin	I	2002	0	6	2	0	tile, outlet pipes	6050.25	30.91	228.69	4
Andrew, Dale	I	2003	0	0	0	0	3 stream barbs; 345' protected	8391.75	0.00	0.00	1
Newgent, John	I	2002	1	0	0	0	NA	9904.00	21.28	31.25	3
Bartlett, Eugene	I	2002	1	0	0	0	NA	6285.00	0.00	0.00	2
Pfeiffer, Paul	I	2002	0	14	0	0	NA	16155.00	248.00	316.00	4
Wock, Jack	I	2003	0	10	0	0	NA	10520.00	39.84	288.23	5
Campion, Mike	I	2003	0	14	0	0	NA	8922.75	44.12	134.39	4
Herring, Donald	I	2002	0	2	0	0	NA	2511.00	11.87	31.78	
Roth, John	I	2002	1	8	0	3	NA	6955.00	0.00	0.00	2

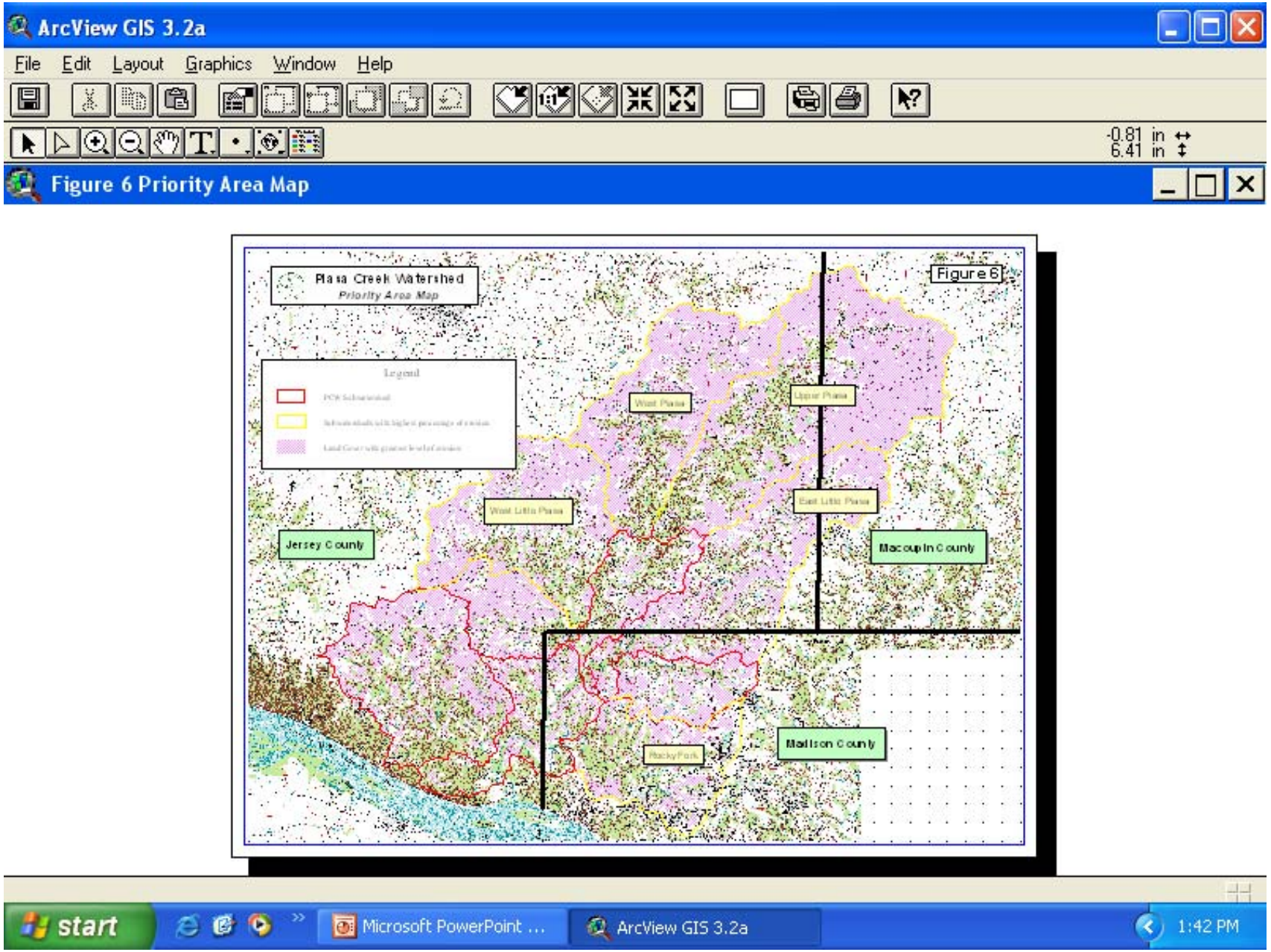
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Figure 6 Priority Area Map
Piasa Creek Watershed
Priority Area Map
Figure 6
Legend
West Piasa
Upper Piasa
West Little Piasa
East Little Piasa
Jersey County
Macoupin County
Madison County
Rocky Fork
start
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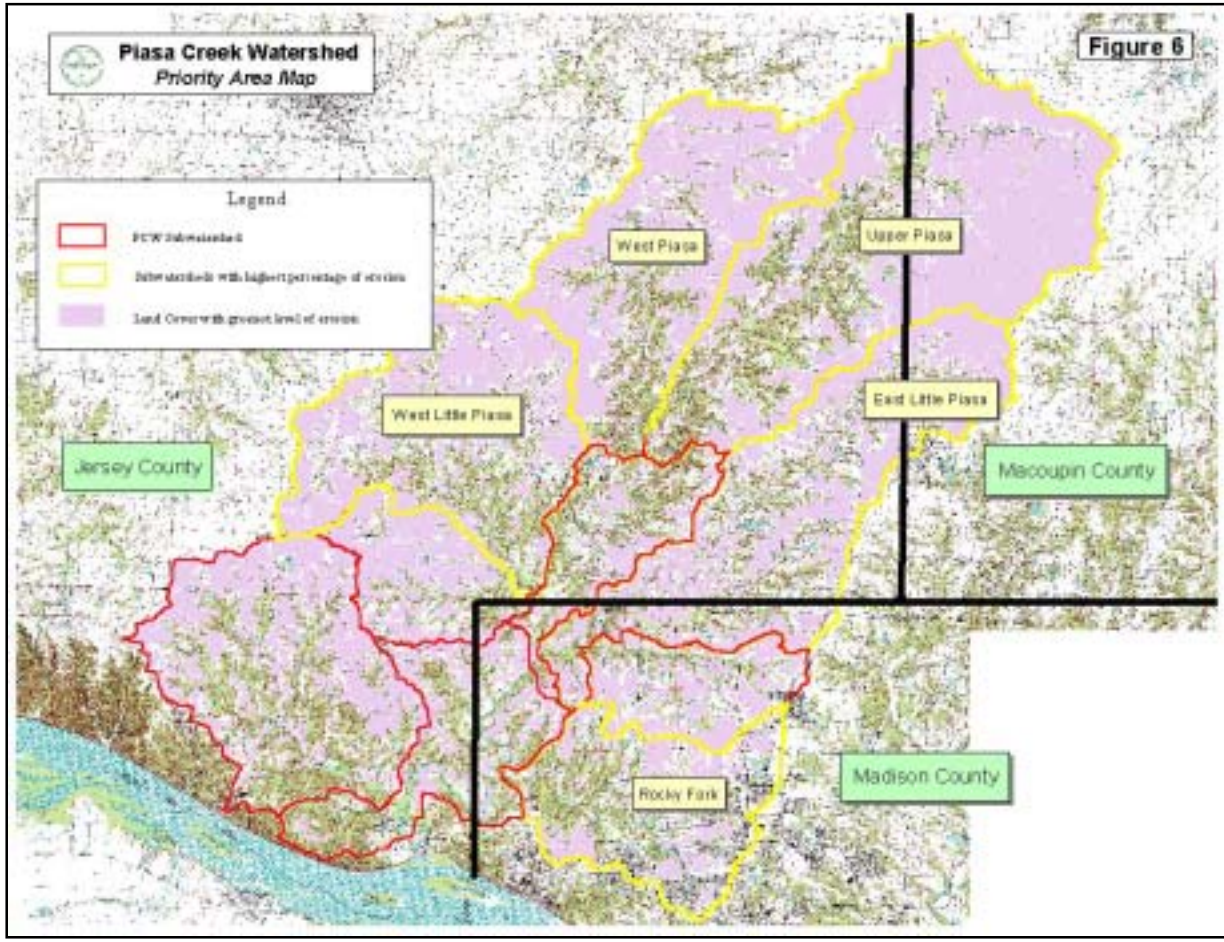
PCW Thematic Maps

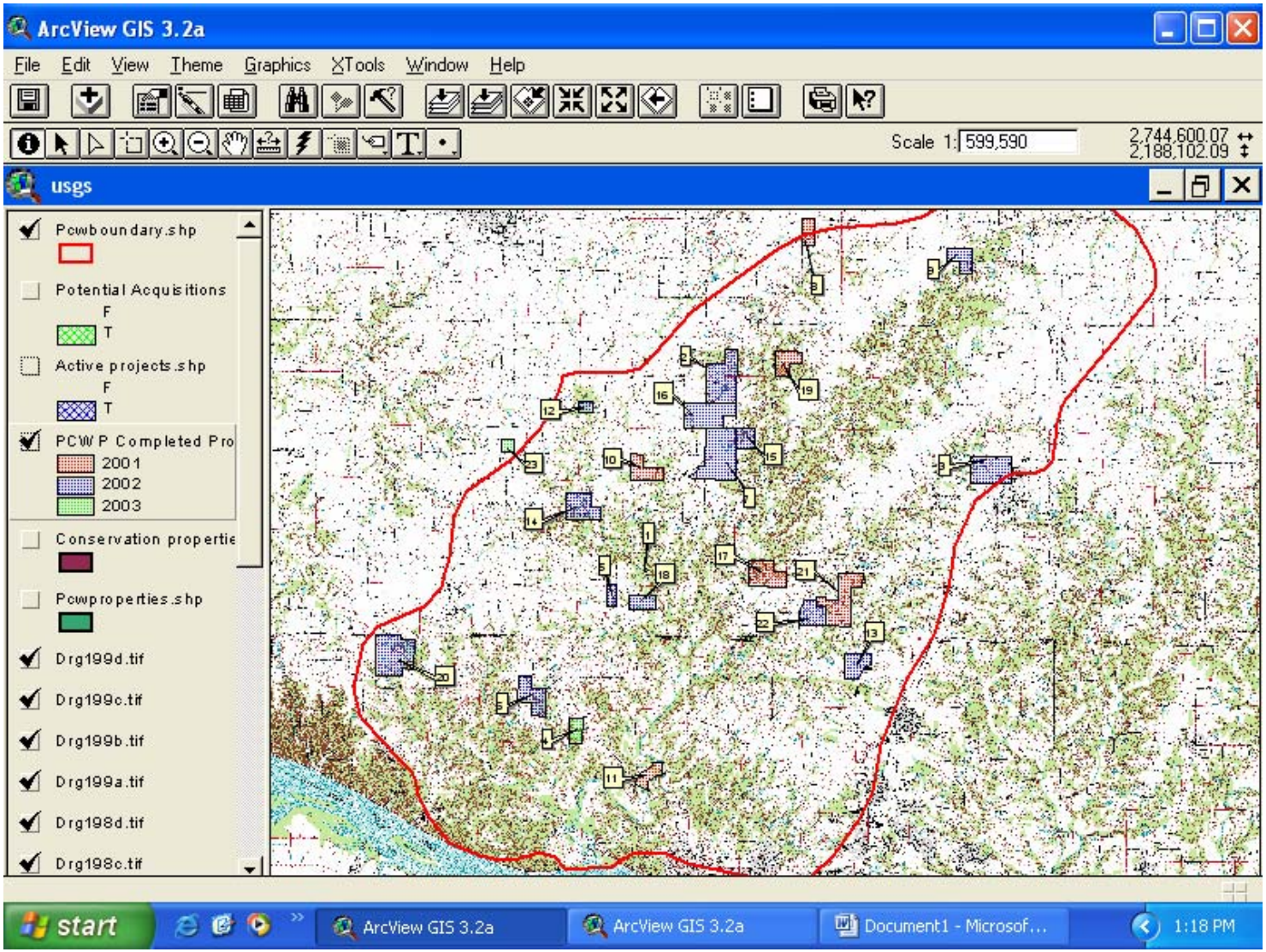
- Thematic data indicates which areas of the watershed are in most need of protection
- Data used for PCWP are: Quaternary Geology; Landcover; Bedrock Geology; Wetlands; Prior Converted Wetlands; and Soil Classification

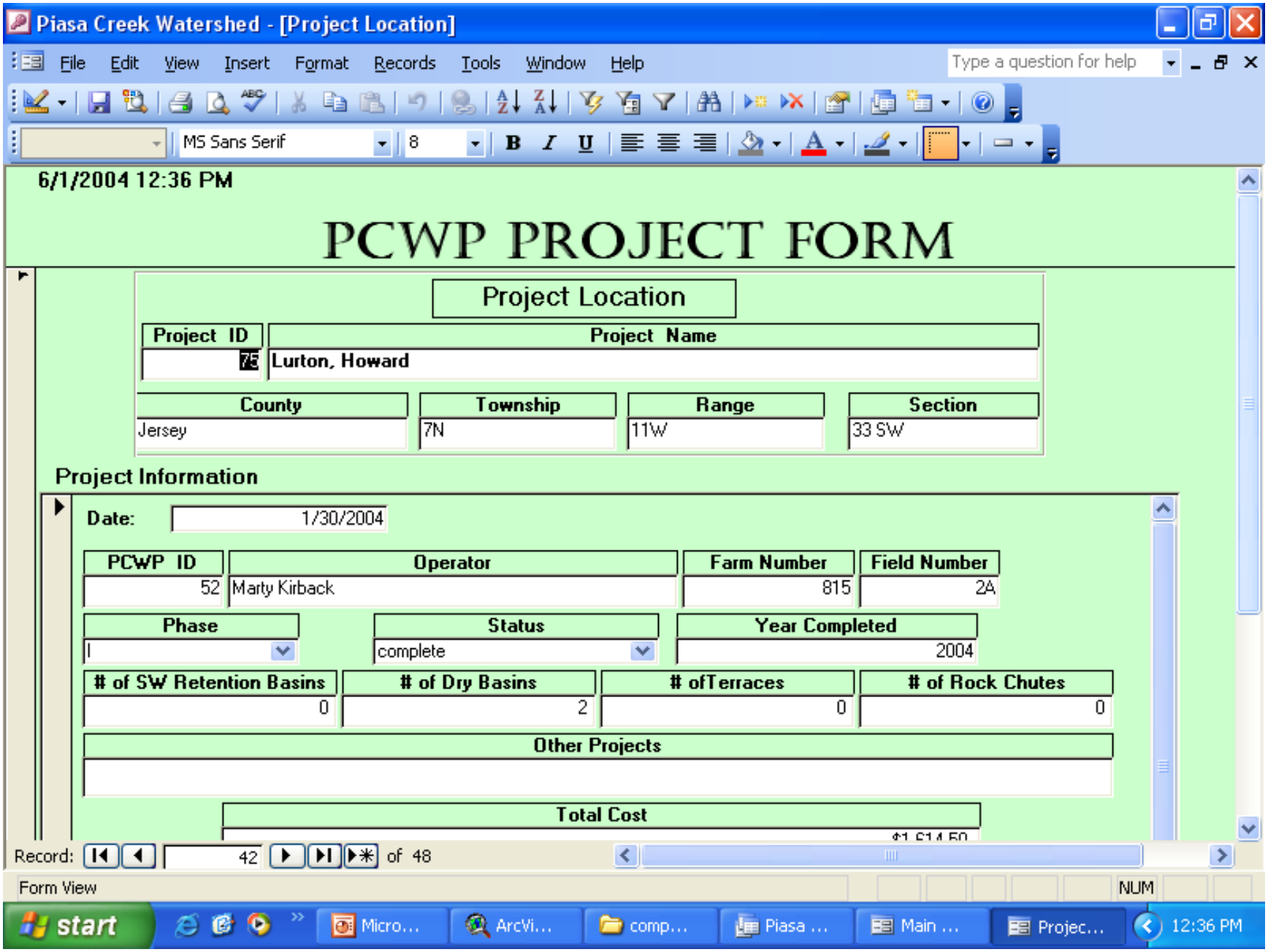
Thematic Maps

- Landcover with the largest areas of erosion is where we focus our work as this map indicates



PCWP Project Maps




Piasa Creek Watershed - [Project Location]
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PCWP PROJECT FORM
Project Location
Project ID
Project Name
75
Lurton, Howard
County
Township
Range
Section
Jersey
7N
11W
33 SW
Project Information
Date:
1/30/2004
PCWP ID
Operator
Farm Number
Field Number
52
Marty Kirback
815
2A
Phase
Status
Year Completed
I
complete
2004
# of SW Retention Basins
# of Dry Basins
ofTerraces
of Rock Chutes
0
2
0
0
Other Projects
Total Cost
Record:
42
of 48
Form View
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Main ...
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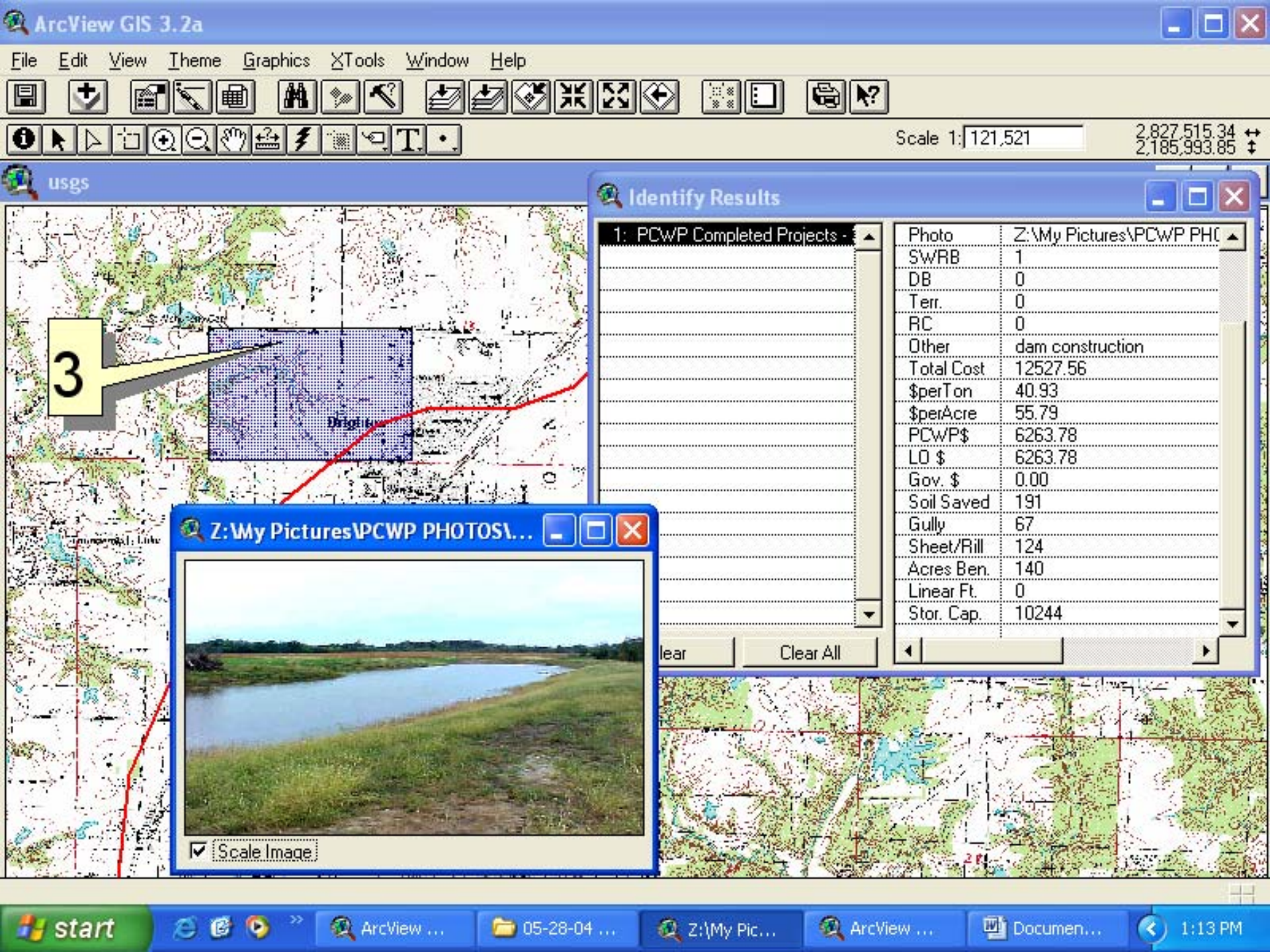
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3
Identify Results
1: PCWP Completed Projects -
Photo Z:\My Pictures\PCWP PHO
SWRB 1
DB 0
Terr. 0
RC 0
Other dam construction
Total Cost 12527.56
$perTon 40.93
$perAcre 55.79
PCWP$ 6263.78
LO $ 6263.78
Gov. $ 0.00
Soil Saved 191
Gully 67
Sheet/Rill 124
Acres Ben. 140
Linear Ft. 0
Stor. Cap. 10244
Clear All
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Boy Scout Lake Project

Project Background

- The Boy Scout Lake Project began during the winter of 2002 when Great Rivers Land Trust (GRLT) and the Trails West Council of the Boy Scouts of America came to an agreement on the project.
- 40-acre lake at Camp Warren Levis became filled with silt.
- The levy of the lake was breeched in 1989 in an attempt to dry the lakebed, however no funds were available to complete the restoration process.

Project Background

- GRLT is restoring approximately half of the original lake and the remainder will become an enhanced wetland.
- In exchange for the restoration work, GRLT has received a conservation easement on 253 acres of their camp. The effort is funded in part by the Piasa Creek Watershed Project.
- Phase I excavation work on the 15-acre lake is nearly complete.
- Phase II designs are complete and will address the restoration of the levy and spillway.

December 20, 2003

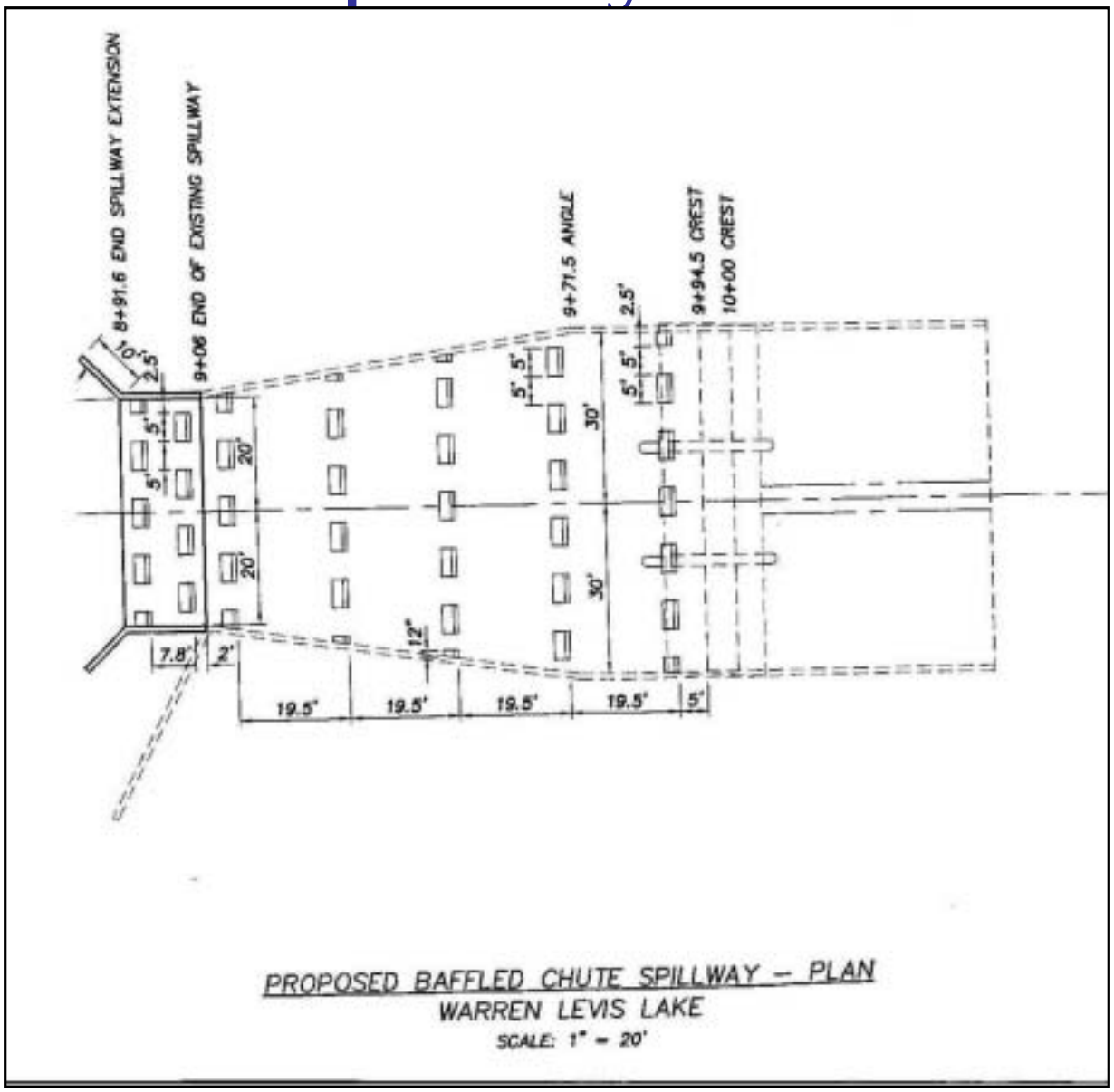
May 11, 2004

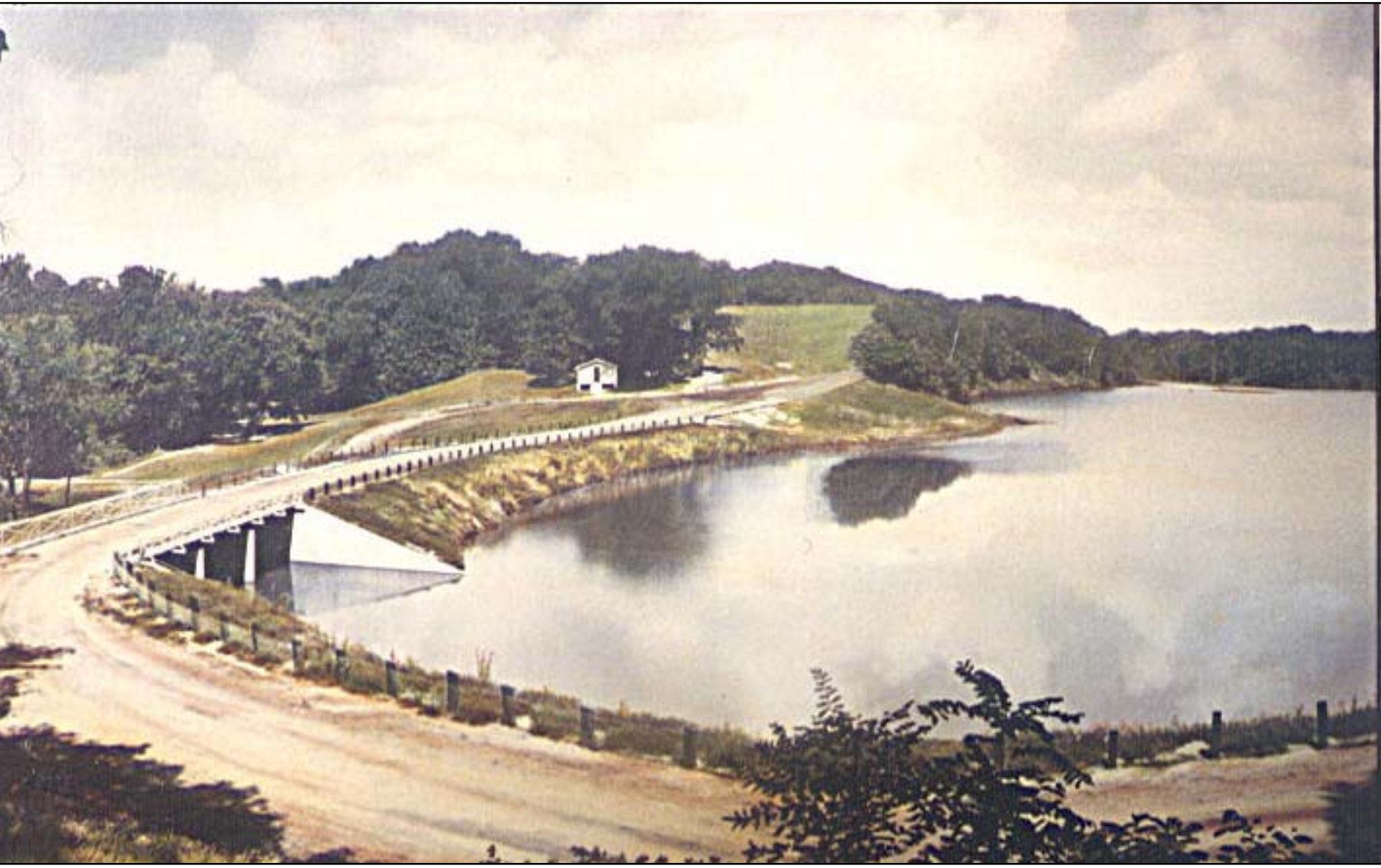
June 23, 2004

November 10, 2004
Tree Planting

November 10, 2004
Tree Planting

Phase II: Spillway Construction

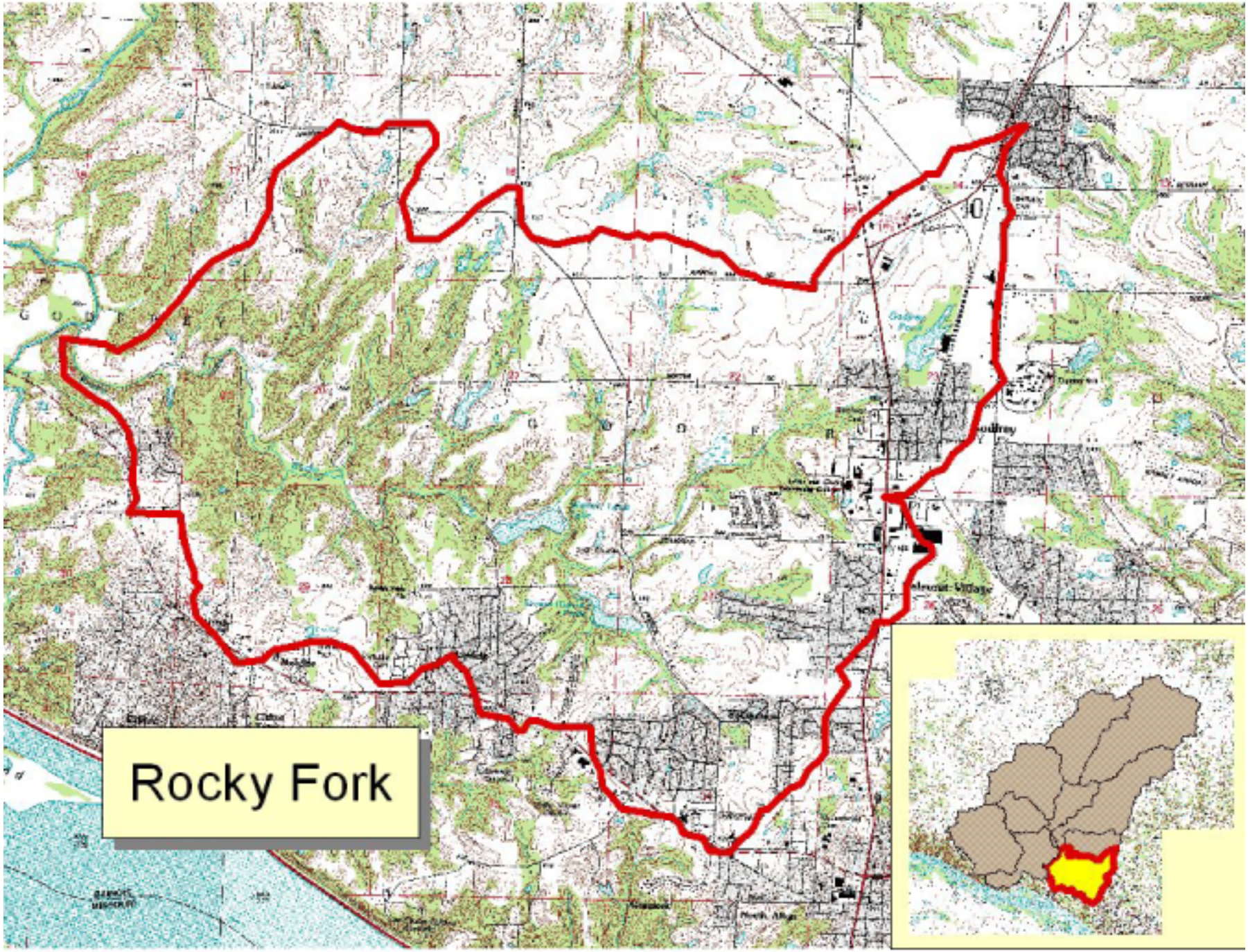




Rocky Fork Creek Committee

Rocky Fork New Bethel African Methodist Episcopal (AME) Church

- Local landowners
- Public Interest


Rocky Fork

1st Rocky Fork New Bethel AME Church 1868