
CHAPTER 10: NATURAL RESOURCES

Introduction

A comprehensive plan provides a platform for defining proper use of natural resource areas. Natural resources provide a range of benefits which at times can conflict when that resource is utilized. Efficient resources often allow more than one use to occur. Comprehensive plans can outline procedures for long term resource use rationalizing potential actions that will result in desired outcomes. This chapter contains information related to the geographic landscape, water resources, soil and mineral resources, wildlife habitat, and climate.



Physical Geography

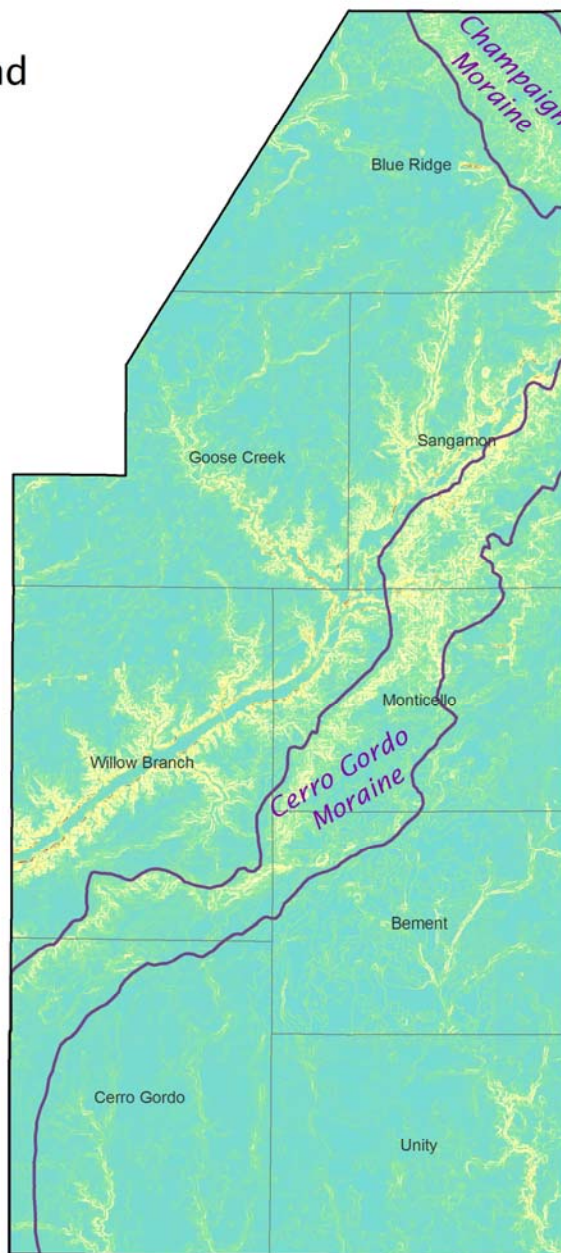
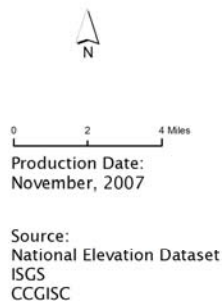
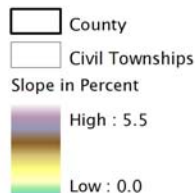
The 437 square miles of Piatt County are crossed by 461 linear miles of rivers, streams, and drainage ways. Two glacial moraines pass through the county, determining flow of water and providing noticeable rolling landscapes with small but evident changes in elevation. Glacial till and outwash plain are the predominant geologic features resulting in a mean slope of 0.19 percent. Glacial drift ranges from 100 to about 460 feet below the surface and is comprised of a mixture of clay, silt, sand, pebbles, and larger stones. Wind-lain silt and loess also cover the county, which greatly contributes to the rich prairie soils that are found there.

Map 10-1:

Slope of the Land

Piatt County, Illinois

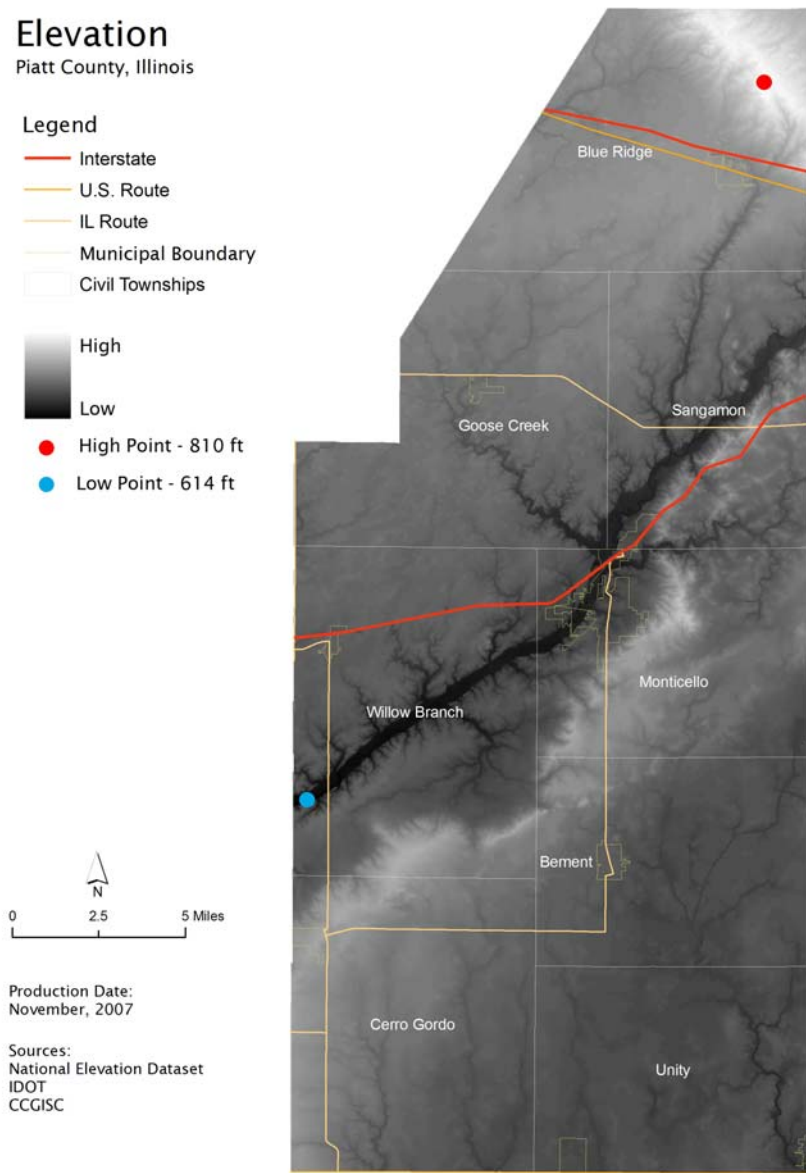
Legend



Topography

Piatt County land elevations range from 614 to 810 feet above mean sea level. The lowest point in the county is in Willow Branch Township where the Sangamon River crosses into Macon County. The highest point is located in Blue Ridge Township north of Mansfield. The slope of the land in Piatt County ranges from 0 to 5.5 percent. Highest slopes occur along the Sangamon River and other smaller drainage areas as well as along the two glacial moraines that run through the County. The northern portion of the county contains a greater number of rolling hills than the flat of the southern portion. At one time timber and prairie covered the county at near proportional acreages.

Map 10-2:



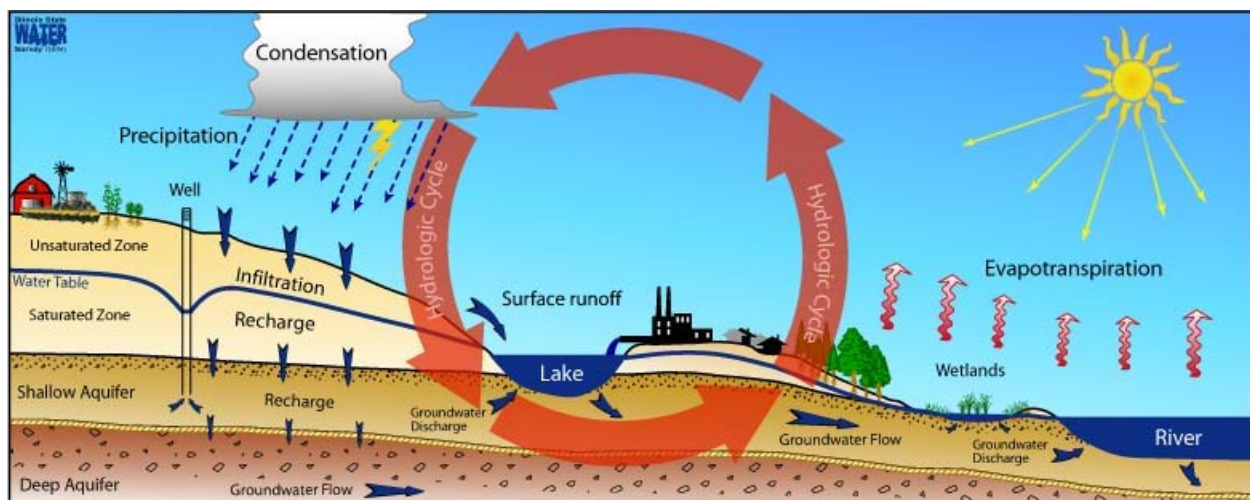
Water Resources

Water resources in Piatt County include both surface and underground sources. Surface waters are sustained through local precipitation events (rain, snow) while underground aquifers are recharged throughout the region by infiltration. Infiltration rates are variable based on composition of the ground but are presently undetermined.

Groundwater

The Mahomet Aquifer is the primary groundwater source for much of East Central Illinois as well as West Central Indiana. The top of the aquifer is within 70 to 90 feet of the surface, making it a readily available source for ground water. These pre-glacial period waterways provide the county with water for both potable and commercial uses. Bedrock aquifers also exist down to depths of 500 feet below the surface; however, these are more difficult to tap. Planning for groundwater use has become a major initiative in the State of Illinois with state government funding research and local organizations providing a voice for local interests and concerns. Current research is probing at the amount of water available for extraction and how that amount can be maintained in the long-term future. Other relevant research topics include pollution and groundwater quality, as well as groundwater recharge.

Figure 10-1: Hydrologic Cycle



Source: Illinois State Water Survey

Map 10-3:

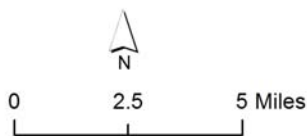
Sand and Gravel Aquifers

Piatt County, Illinois

This map depicts Sand and Gravel Aquifers that lie within 300 feet of the surface and the bases occur within 500 feet. Major aquifers are defined as geologic units capable of yielding 70 gallons of potable water per minute. Major sand and gravel aquifers are generally Quaternary deposits found within pre-glacial bedrock valleys or along modern streams and rivers. They are commonly separated from shallower aquifers by layers of less permeable till or fine-grained lacustrine deposits.

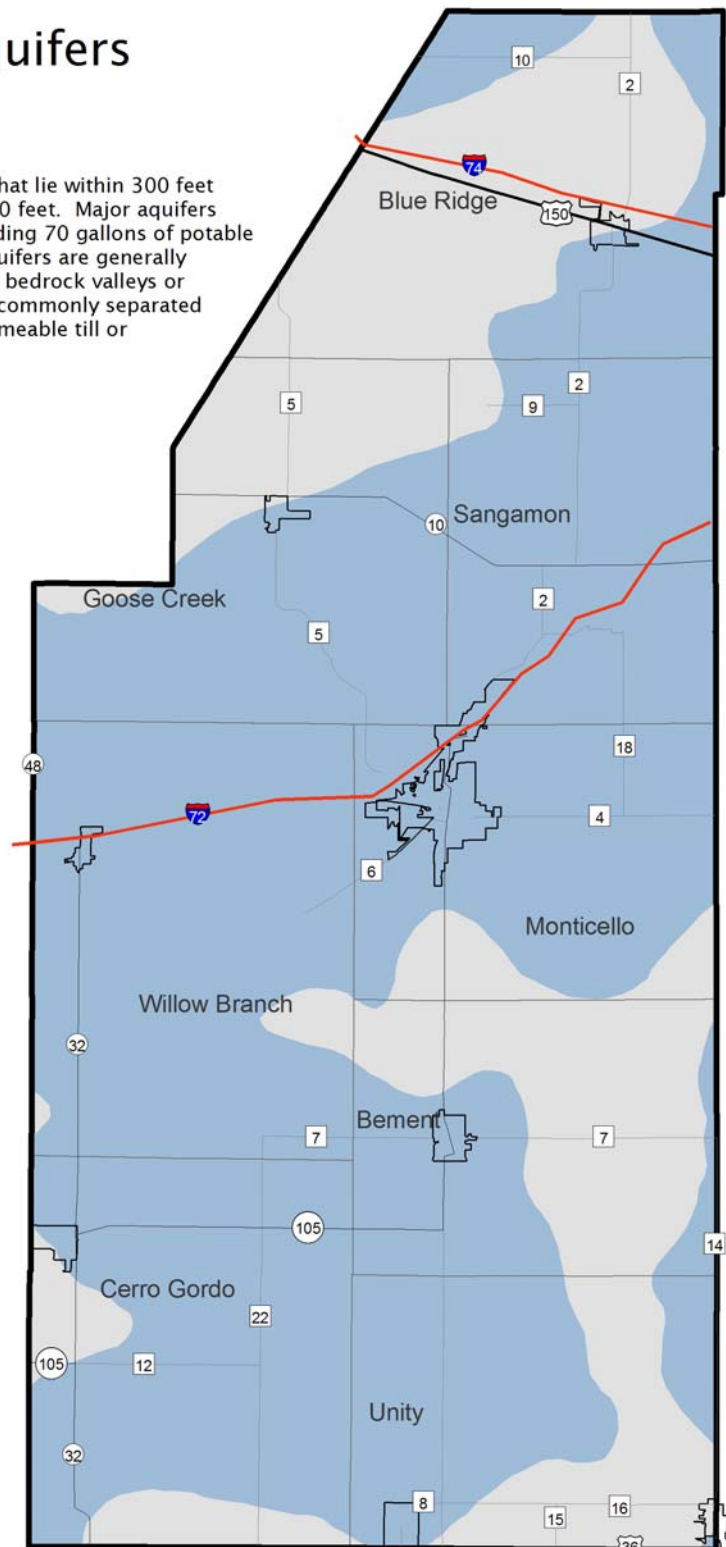
Legend

- Aquifer Absent
- Aquifer Present
- County Boundary
- Civil Township
- Municipal Boundary



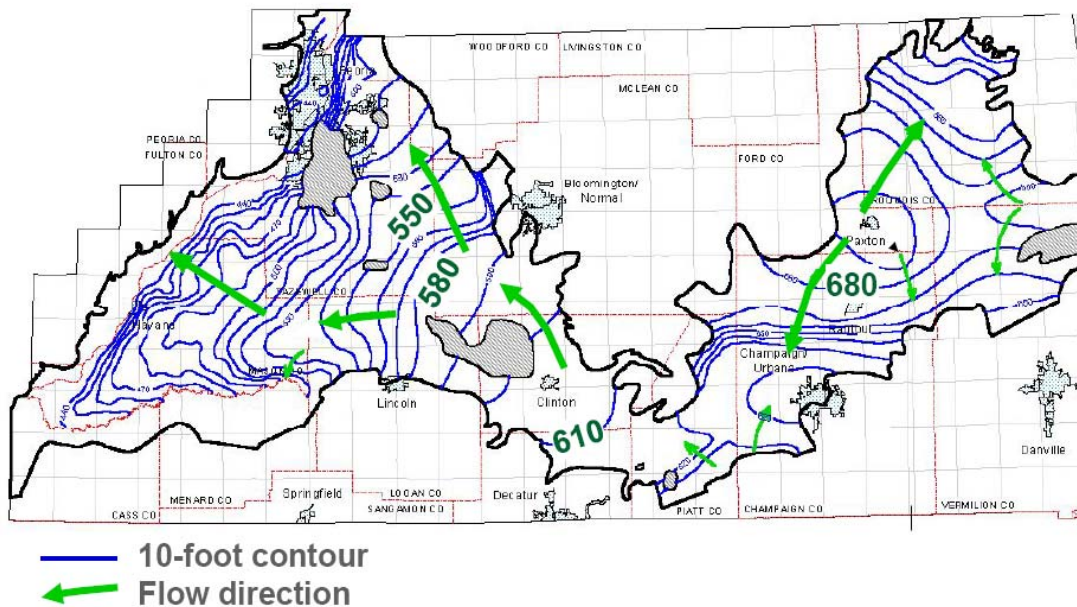
Production Date:
November, 2007

Sources:
IDOT
ISGS
CCGIS



It is estimated that groundwater in the Mahomet Aquifer flows mostly from east to west, with few exceptions. One area is near Paxton, in Ford County, which flows north into Iroquois County. The other is on the Champaign/Piatt County border, flowing northeast towards the municipalities of Champaign and Urbana. Since groundwater is the predominant source of potable water in Piatt County, the primary concern is that the source is maintained and regulated so that it sustains as many people as possible in the region.

Figure 10-2: Approximated Surface of Groundwater under Natural Pressure Conditions (Potentiometric Surfaces)



Source: Illinois State Water Service

Wells and Wellheads

The dependency on groundwater as a water source requires individual water wells to be drilled. This indication of rural development, while not a natural resource, has notable impacts on our natural resources and essentially becomes a part of the rural infrastructure.

Surface Water

Surface water in Piatt County features the Sangamon River which runs southwest through the county. The Sangamon River drains approximately the northern 2/3 of the county while the Kaskaskia River system drains the southern 1/3 of the county. Surface water in Piatt County mainly provides drainage for agriculture land uses and effluence from water treatment plants. The County is split into three primary hydrologic watersheds. The Salt Fork in the Sangamon watershed drains the Trenkle Slough at the very northwest corner of the county. The Upper Sangamon watershed drains the majority of the County, including Madden Creek, Goose Creek, Wildcat Creek, Camp Creek, Willow Branch, Run Ditch and Spoil Bank. The Upper Kaskaskia watershed drains Ditch No.3, Ditch No. 4, Hammond Mutual Ditch, and Unity No. 3 and Lake Fork Special.

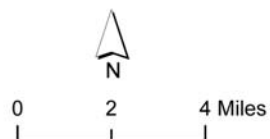
Map 10-5:

Watershed and Surface Water

Piatt County, Illinois

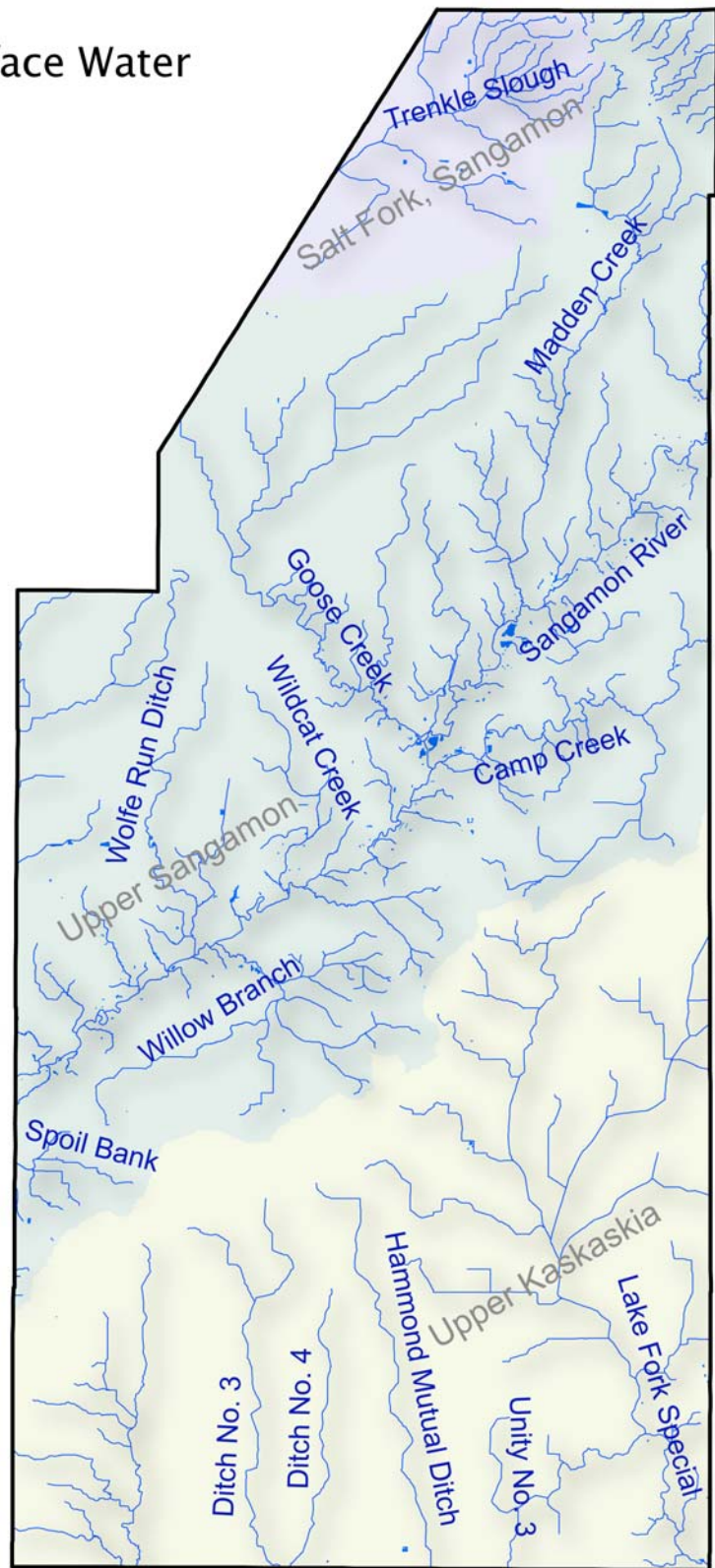
Legend

-  County Boundary
-  Lakes
-  Streams



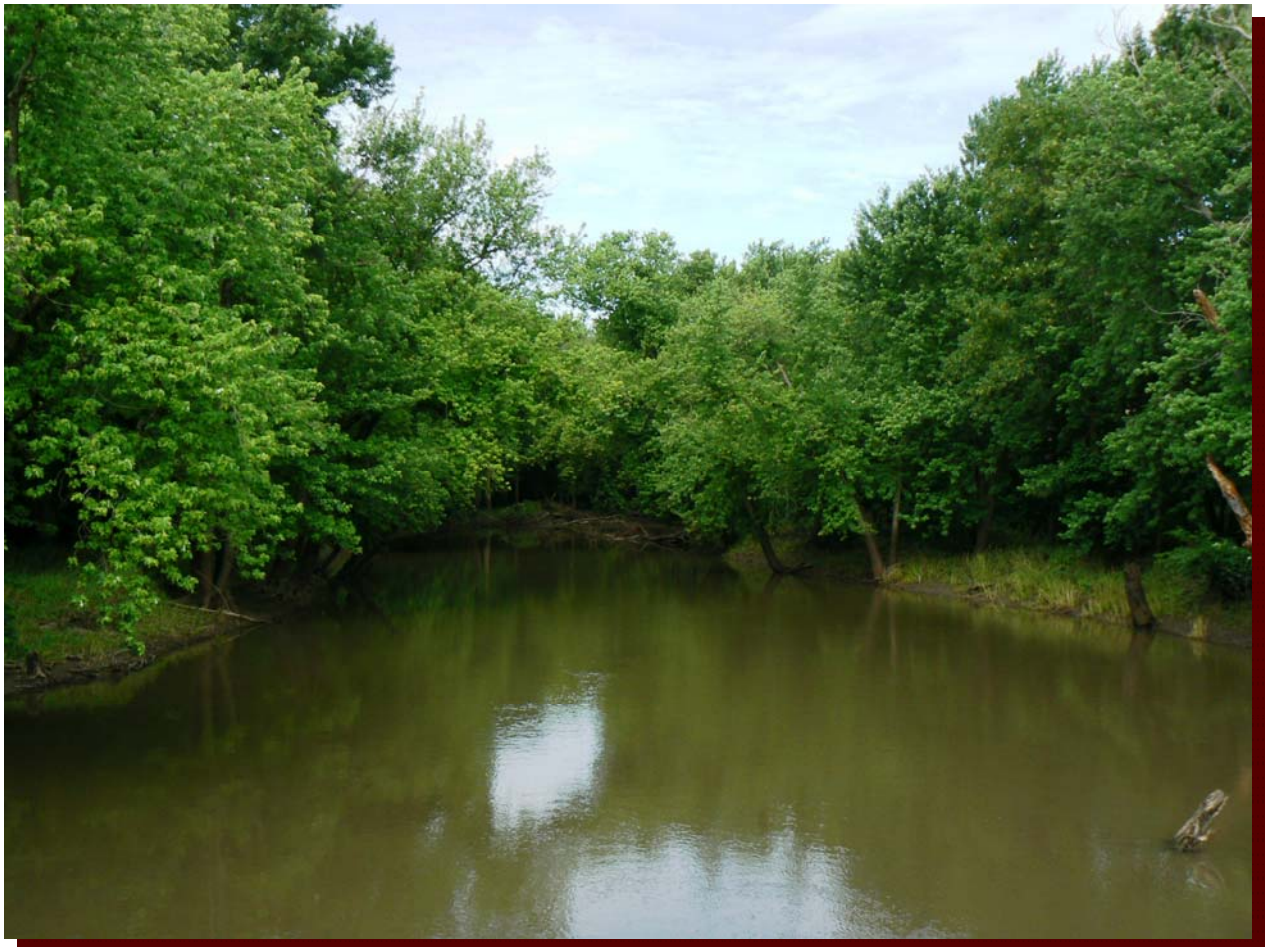
Production Date:
May 2008

Sources:
CCGIS
ISGS



The Illinois Environmental Protection Agency (IEPA) assesses and monitors water quality through stream monitoring sites on a regular basis throughout the state. Ten water quality monitoring sites are located along streams in Piatt County. No lakes in Piatt County are currently monitored by the IEPA. Sedimentation and nutrient loading are the leading stressors of water quality in Piatt County.

Waters are considered impaired when they cannot meet use expectations set for them under state and federal law. When this occurs, Total Maximum Daily Load (TMDL) reports are written to determine the maximum amount of pollution a water body can receive and still meet water quality standards for its designated uses. Designated uses include: aquatic life, public water supply, swimming, recreation, fish consumption, and aesthetic quality. TMDL requirements have been set for the Upper Sangamon watershed in Piatt County. A segment of the Sangamon River is designated as impaired for Primary Contact/Swimming but fully supports aquatic life and fish consumption as uses.



Sangamon River

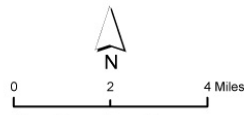
Map 10-6:

Surface Water Quality Piatt County, Illinois

Stream Category

- 2
- 3
- 5

- ▲ IEPA Stream Monitor Site
- Total Maximum Daily Load



Production Date:
November, 2007

Pollution Cause Identification

- 400 - Fecal Coliform
- 84 - Alteration in stream-side or littoral vegetative covers
- 348 - Polychlorinated biphenyls
- 371 - Sedimentation/Siltation
- 399 - Total Dissolved Solids
- 458 - Nitrogen(total)
- 463 - Impairment Unknown
- N/A - Not Available

Pollution Source Identification

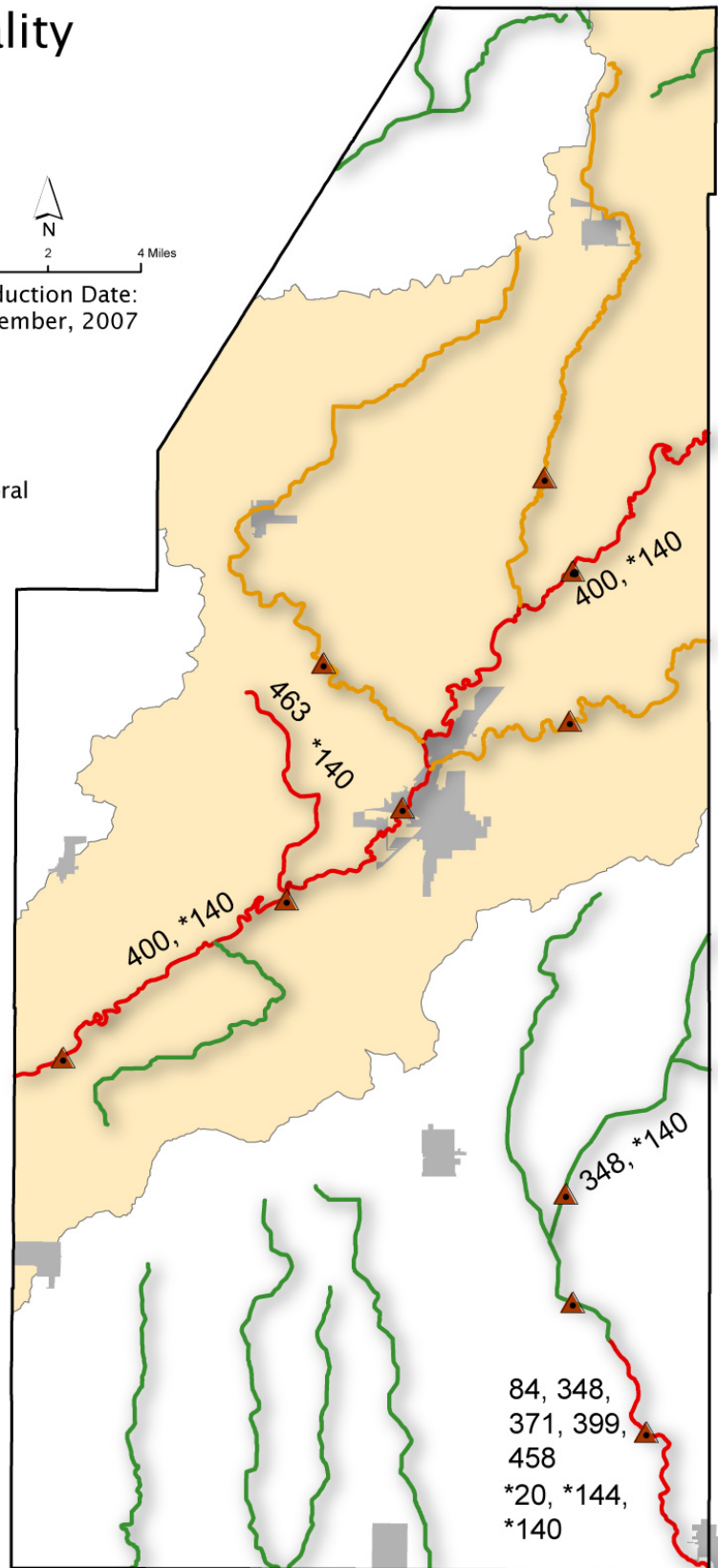
- *20 - Channelization
- *144 - Crop Production (crop land or dry land)
- *140 - Unknown
- N/A - Not Available

Category Definitions

- 2 - Attaining some for the designated uses; no use is threatened; and insufficient or no data information is available to determine if the remaining uses are attained or threatened.
- 3 - Insufficient or no data and information to determine if any designated use is attained.
- 5 - The water quality standard is not attained.

Sources:

Stream Monitor data provided by the Illinois Environmental Protection Agency (IEPA)
Champaign County
Regional Planning Commission



Drainage Districts

Twenty-nine drainage districts are assembled within Piatt County. The districts are given the power to construct and maintain drainage improvements and to pay for them through assessments on the land within the district. A variety of methods exist for maintaining ditches, ranging from high impact dredging to lower impact stream bank and soil erosion control. Cost often plays a critical role in the method of maintenance.

Map 10-7:

Drainage Districts

Piatt County, Illinois

Legend

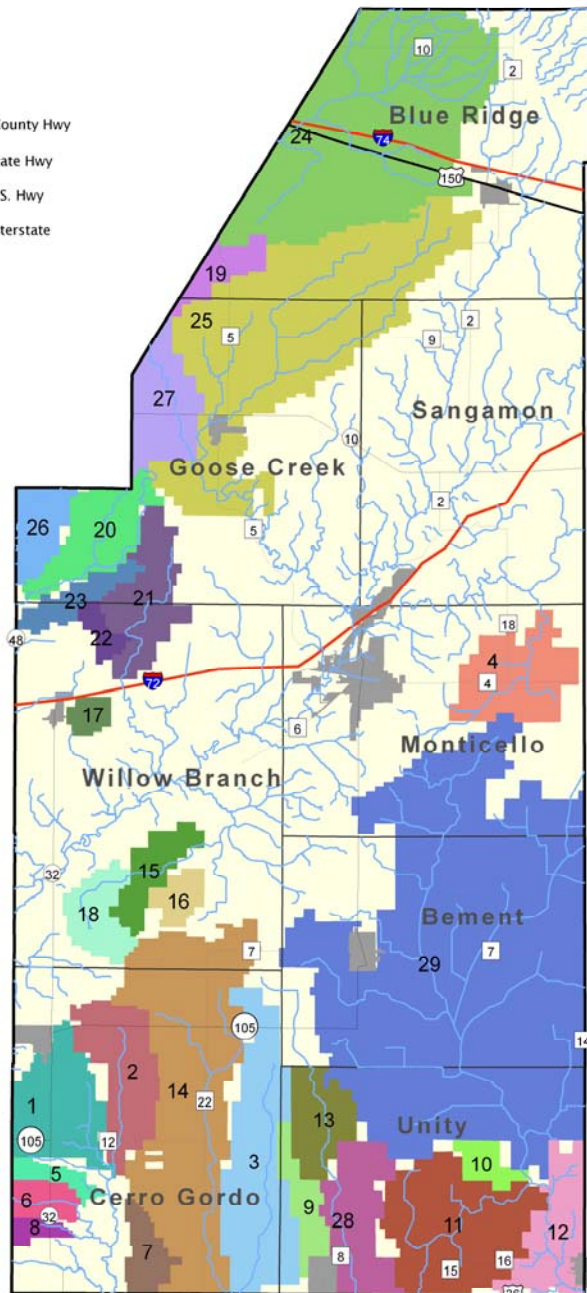
- County Boundary
- Municipality
- Civil Township
- 1 - D.D. No. 1 of Cerro Gordo
- 2 - D.D. No. 2 of Cerro Gordo
- 3 - D.D. No. 4 of Cerro Gordo
- 4 - D.D. No. 2 of Monticello
- 5 - Union D.D. #5 of Cerro Gordo & Long Creek
- 6 - Union D.D. #6 of Cerro Gordo & Long Creek
- 7 - Union D.D. #7 of Cerro Gordo & Lovington
- 8 - Mutual D.D. of Cerro Gordo & Long Creek
- 9 - Union #1 by users of Unity & Lovington
- 10 - D.D. #2. of Unity
- 11 - D.D. #3 of Unity
- 12 - D.D. #7 of Unity
- 13 - D.D. #9 of Unity
- 14 - Union #3 of Cerro Gordo & Willow Branch
- 15 - Willow Branch D.D. #10
- 16 - Willow Branch D.D. #12
- 17 - Willow Branch D.D. #5.
- 18 - Willow Branch D.D. #4
- 19 - Goose Creek Special D.D.
- 20 - Goose Creek D.D. #1
- 21 - Wolfe Run Special D.D.
- 22 - Wolfe Run Union D.D. #1
- 23 - Wolfe Run Union D.D. #2
- 24 - Trenkle Slough D.D.
- 25 - Deland Special D.D.
- 26 - Friends Creek Special D.D.
- 27 - Dewitt Special D.D.
- 28 - Hammond Mutual D.D.
- 29 - Lake Fork Special D.D.
- undetermined - Wildcat Creek D.D.

- County Hwy
- State Hwy
- U.S. Hwy
- Interstate



Production Date:
July, 2009

Sources:
Federal Land Bank of Saint Louis
Drainage District Map
IDOT
CCGIS

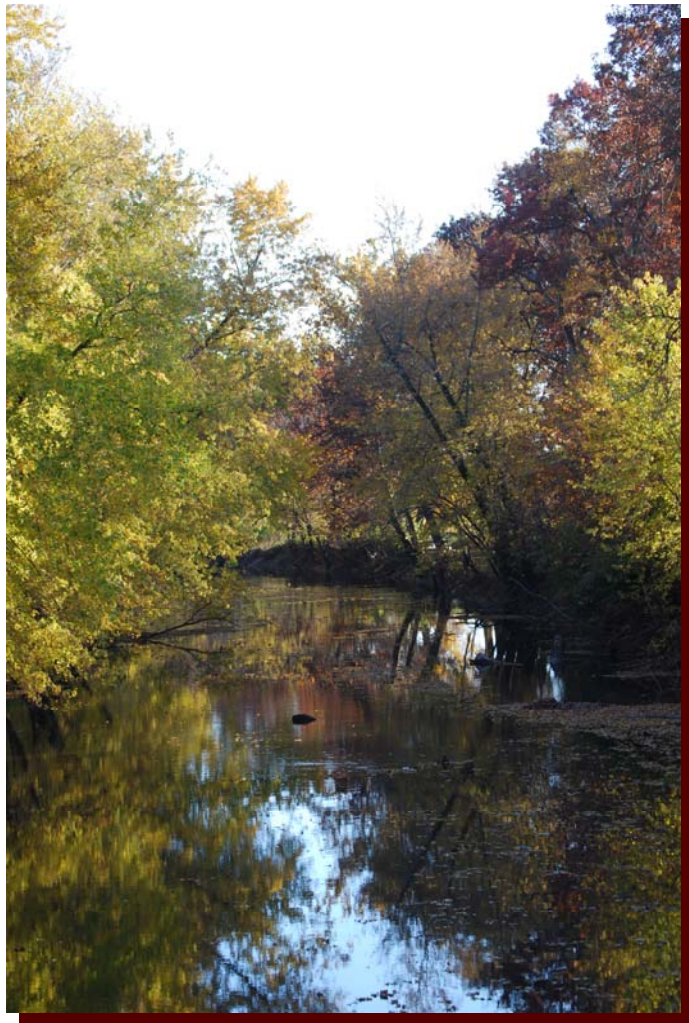


Flood Plain

Flooding is a major concern in Piatt County, particularly as rural areas continue to see water over roadways and banks overflowing. An ecological perspective considers flood plains to be a natural resource. Flood plains consist of stream channels, topographic floodplain, and transitional upland fringe. The Federal Emergency Management Agency (FEMA) has produced paper Flood Insurance Rate Maps (FIRM); most FIRM maps in Illinois are outdated by 20 years or more. Map updates for numerous counties in Illinois are in progress; however, Piatt County is not on the list to be updated. An update of these maps is highly desirable to better understand areas that flood on a regular basis and to maximize the developable areas surrounding the flood plain without endangering property owners.

Wetlands

Wetlands have one or more of the three following attributes: 1- periodically support wetland plants; 2-substrate of predominantly undrained hydric soil; or 3-covered by shallow water for at least part of the year. Many different types of wetlands exist as combinations of these three attributes. Piatt County currently holds 5.9 square miles of wetland that are predominantly located within the Sangamon River floodplain. 4.6 square miles of this are categorized as Freshwater Forested/Shrub Wetland. These areas are generally described as forested swamp or wetland shrub bog or wetland. Wetlands are important parts of our environment because they provide a slowing mechanism for floodwater; they help to clean pollutants from surface waters; and they provide habitat for both flora and fauna.



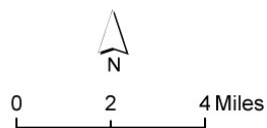
Map 10-8:

Wetlands and Floodplains

Piatt County, Illinois

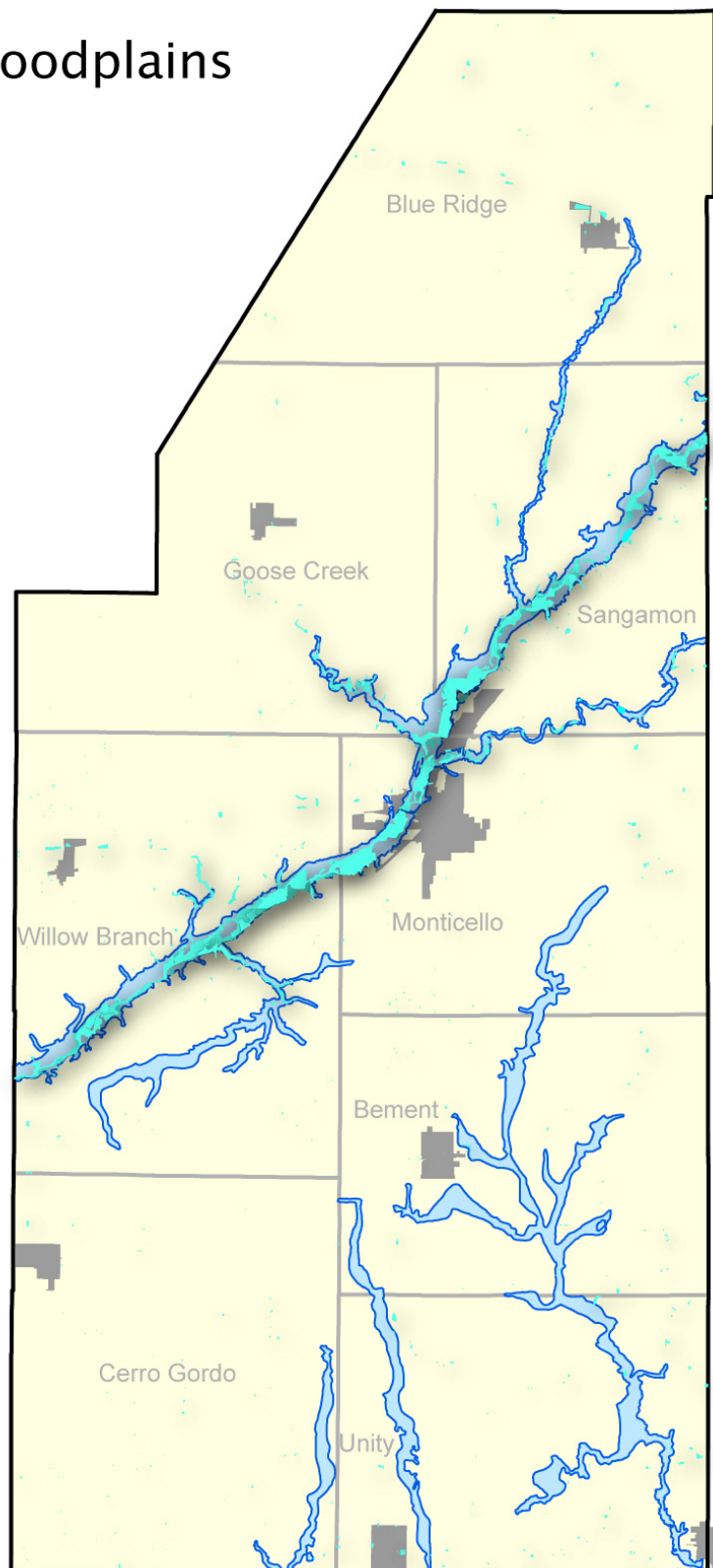
Legend

-  Wetlands
-  Floodplains
-  Civil Township
-  Municipality



Production Date:
November, 2007

Sources:
FEMA National Flood Insurance
Program Maps
CCGIS



Soil Resources

The Natural Resource Conservation Service (NRCS) groups soil based on productivity without degrading over a long period of time. Major classes range from Class I to Class VII. These classes, along with a productivity index, provide a Land Evaluation (LE) score that emphasizes farmland productivity. Piatt County also uses subclass descriptors to specify more about the soils' productivity. A similar ranking system focuses on Site Assessment (SA), including other important factors such as location, compatibility, storm water management, and others. Piatt County uses the combination of these criteria in a Land Evaluation and Site Assessment (LESA) scoring system, which is a tool help make decisions regarding farmland conversion. Currently, 96.6 percent (269,330 acres) of the land in Piatt County is considered prime farmland.









Farmland north of Milmine

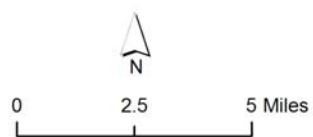
Map 10-9:

Prime Farmland

Piatt County, Illinois

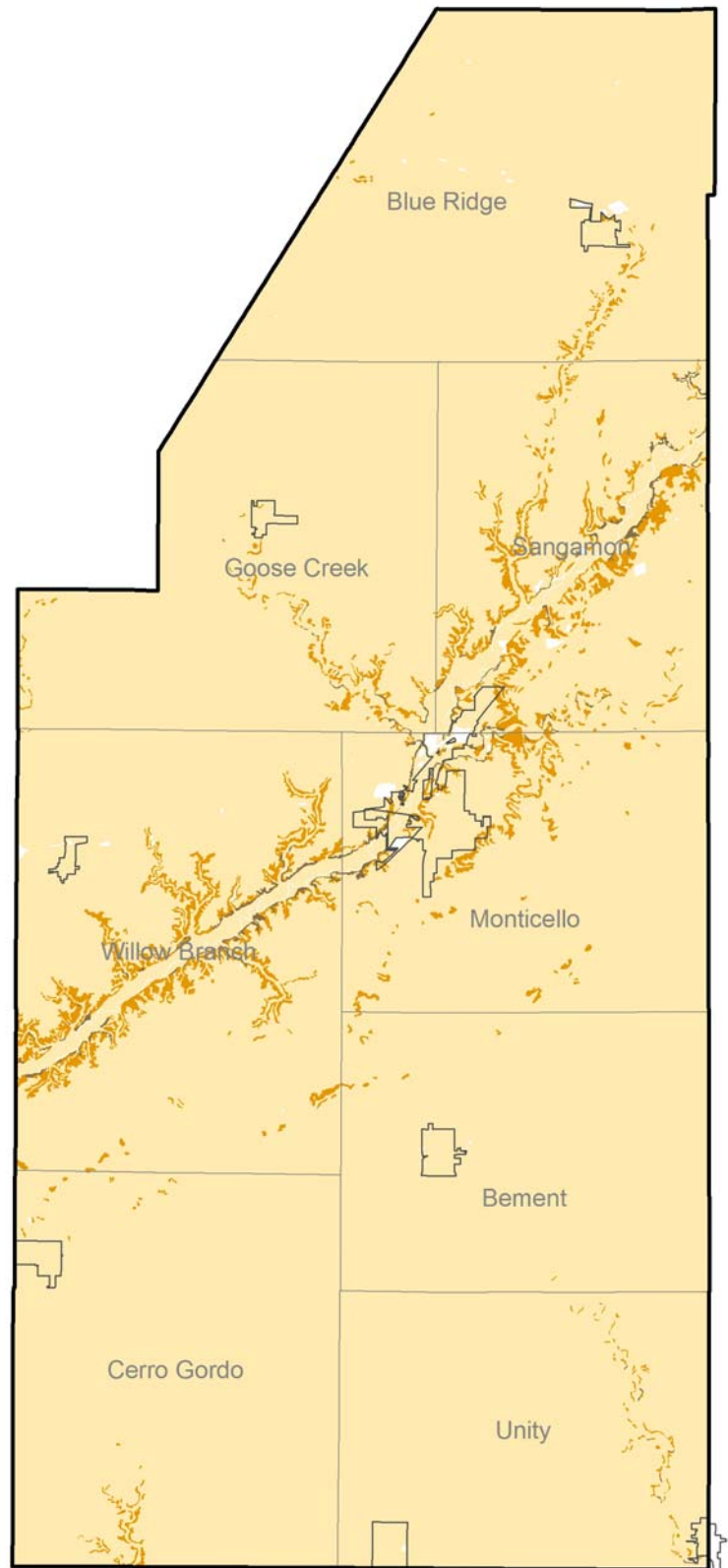
Legend

-  County
-  Civil Townships
-  Municipal Boundary
- LESA Group
 -  Prime Farmland
 -  Important
 -  Nonprime Farmland



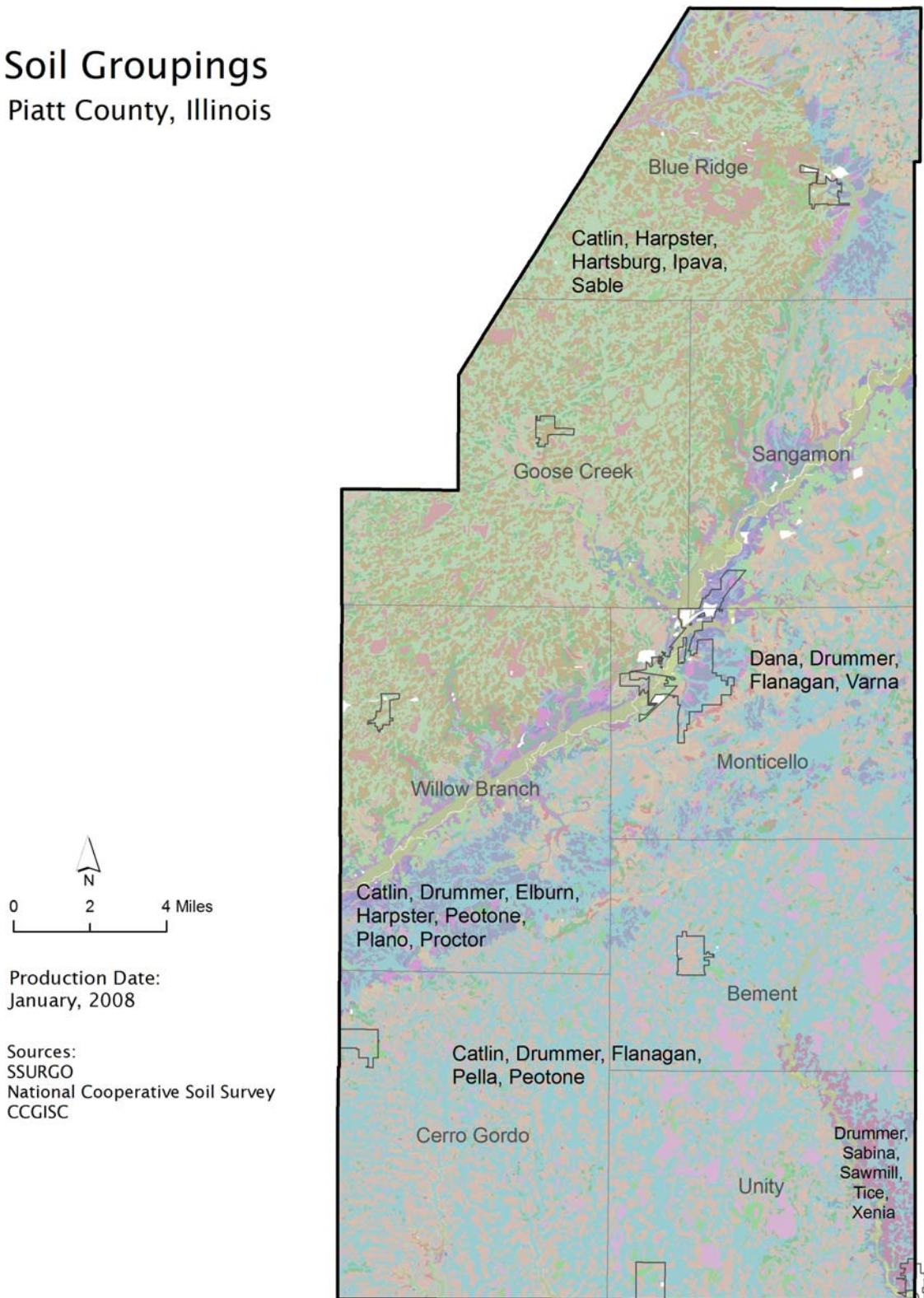
Production Date:
January, 2008

Sources:
SSURGO
National Cooperative Soil Survey
CCGIS



Map 10-10:

Soil Groupings Piatt County, Illinois



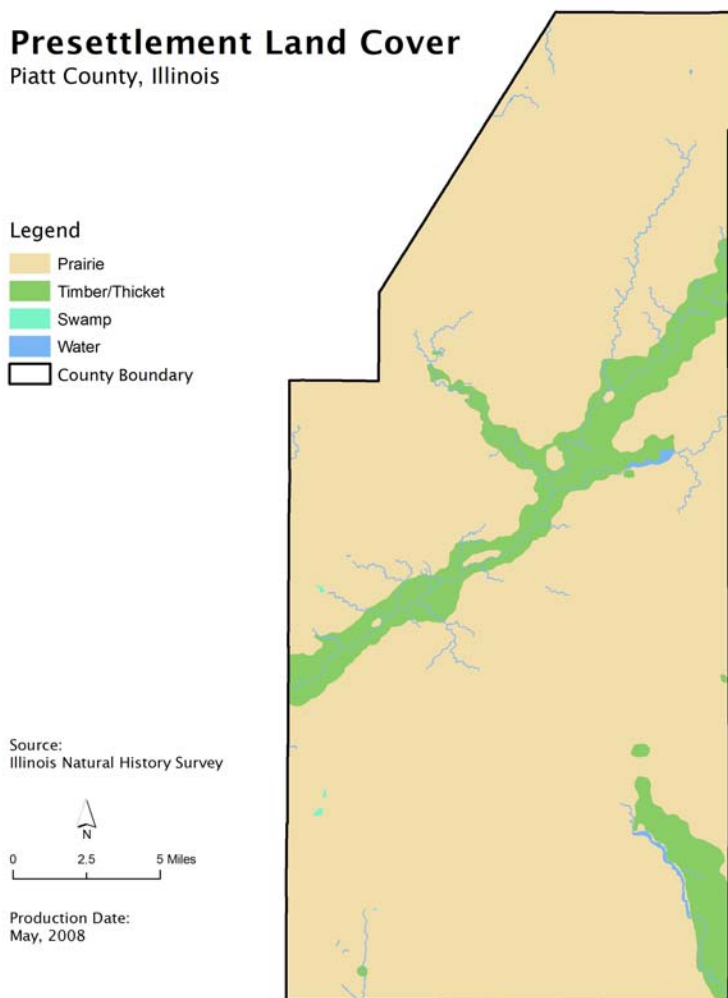
Minerals

Mineral resources in Piatt County are limited primarily to sand and gravel. Sand alluvium near the Sangamon River reaches to a depth of more than ten feet. A few areas of gravel deposits from glacial melt water are also located in the county. Coal is also located below the surface of Piatt County. Oil wells are present in the county though there is currently little to no extraction.

Land Cover

Presettlement land cover in Piatt County consists of prairie and timbered acreages along the Sangamon River and Lake Fork of the Kaskaskia River. The timbered areas represented in presettlement maps are largely limited to areas in close proximity to flood plains. A portion of this area is now developed as farmland. This loss of woodland has reduced both quantity and quality of natural habitats through fragmentation.

Map 10-11:



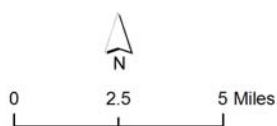
Map 10-12:

Land Cover

Piatt County, Illinois

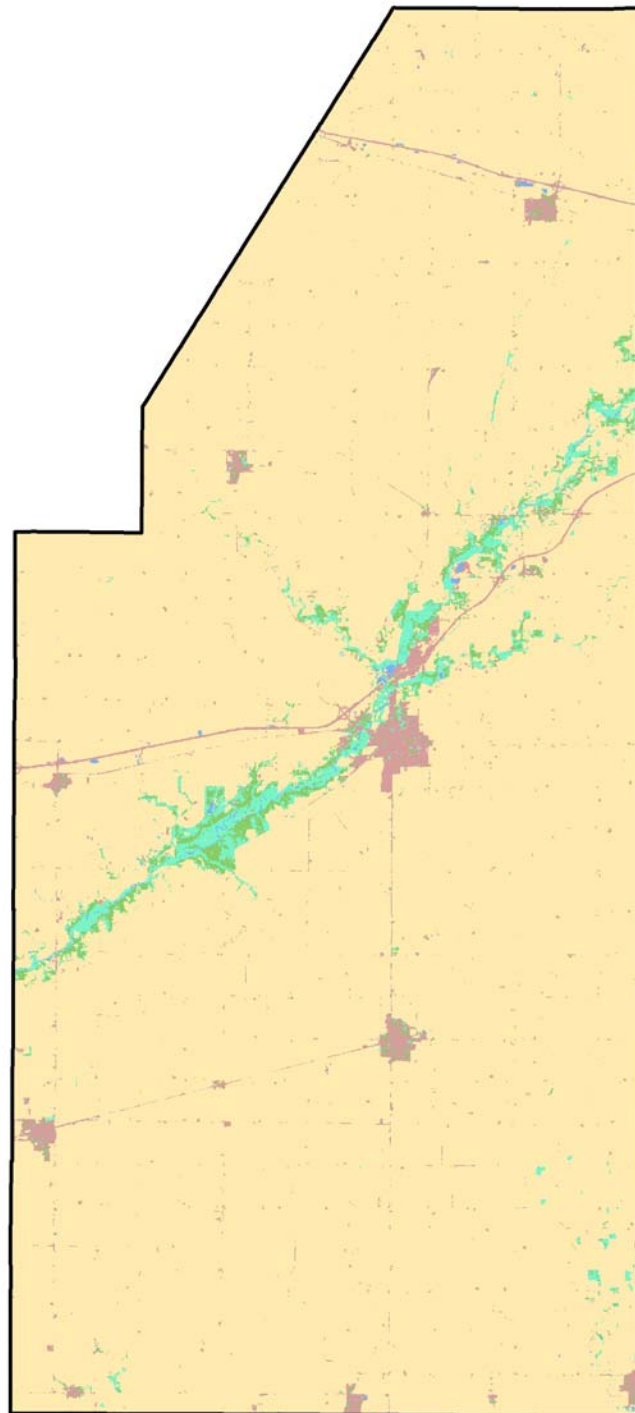
Legend

- Agriculture
- Forested
- Urban/Developed
- Prairie/Wetland
- Water
- County Boundary



Production Date:
May, 2008

Source:
IDNR



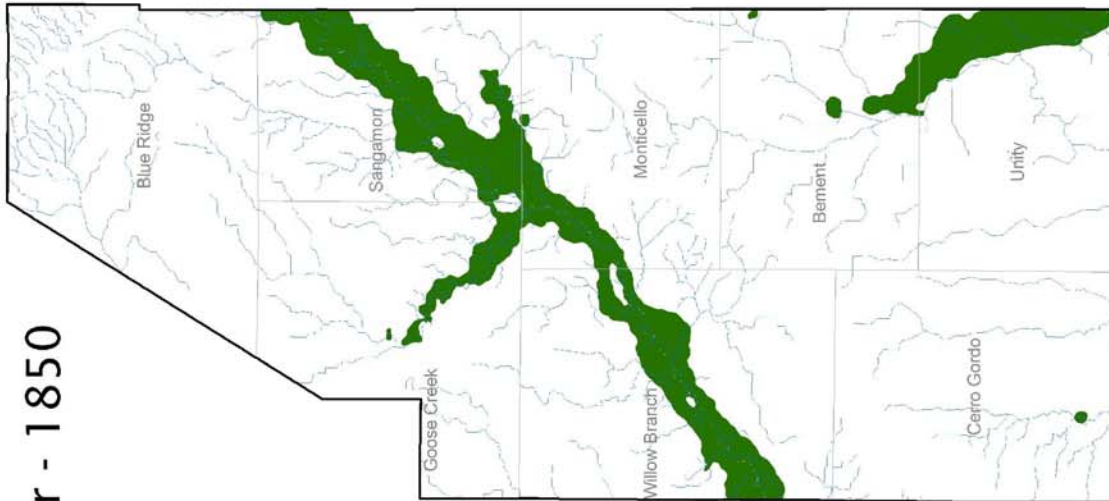
Forests

Approximately three percent of Piatt County is currently covered by woodlands. Surveys from 1850 approximate nine percent of the county as being wooded. Currently, no timber is actively extracted for commercial use in Piatt County. The most significant change in wooded areas is the amount of interior forest compared to edge forest.

Map 10-13:

Woodland Cover - 2000

Piatt County, Illinois

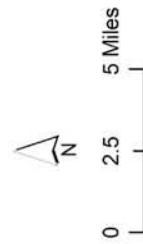


Sources:
CCGIS

Woodland Cover - 1850

Piatt County, Illinois

- Civil Township
- Stream
- Woodland
- Municipality



Production Date:
January, 2008

Sources:
Illinois Natural History Survey
CCGIS

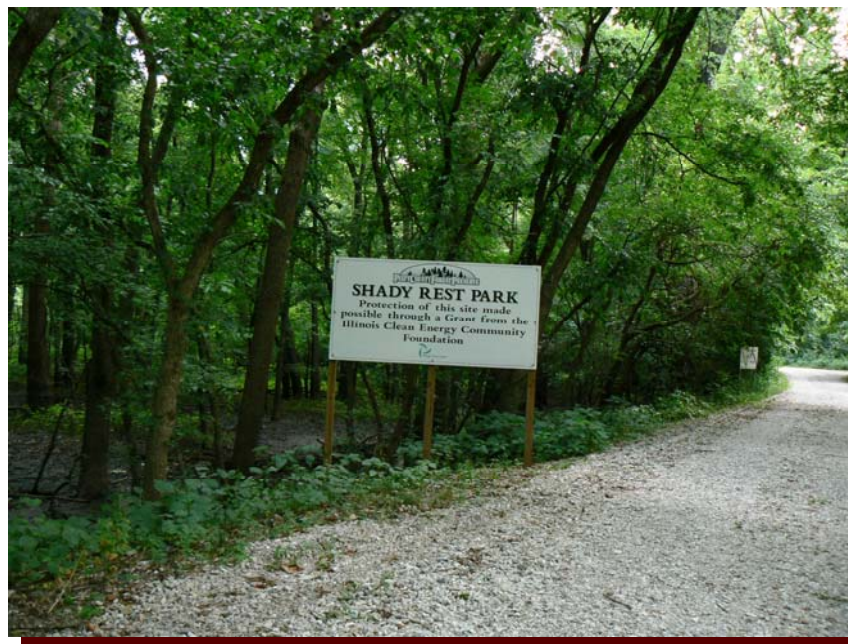
Wildlife/Habitats

The Illinois Department of Natural Resources published the Critical Trends Assessment Project in 1997 as a state of the environment report for Illinois. Piatt County was included in the Grand Prairie region of the state and was included in the assessment of this region. Notable inclusions in this report are the occurrences of habitat fragmentation, and increasing competition from exotic species. More specifically, wildlife habitat in Piatt County has largely been converted to agricultural land uses through forest cutting and the draining of wetlands. The loss of natural habitat has resulted in some cases a reduction in population of certain species while other species are maintained and move into urbanized or other developed areas. The Illinois Natural History Survey maintains a list of threatened and endangered species as listed by the State of Illinois. The table below lists the species for Piatt County as of January 2008. Allerton Park is one of approximately ten natural areas in Illinois that has a population of the endangered Eastern Massasauga rattlesnake.

Land and Water Reserves

Monticello's Sangamon River Land and Water Reserve is a 153-acre natural area located along the Sangamon River, owned by the City of Monticello. It protects a section of the Sangamon River, which is recognized as a biologically significant stream with aquatic resources, especially fresh-water mussels. There are more than a dozen species of mussels recorded from this stretch of river.

Shady Rest is an approximately 28-acre natural area located along the Sangamon River north of Monticello. This natural area protects a segment of the Sangamon River, bottomland forest and upland forest.



Jasmine Hollow, is a privately owned 143.77-acre natural area along the Sangamon River southwest of Allerton Park and Monticello. The parcel protects a segment of the Sangamon River and is one of nine protected natural areas that preserve more than 8.5 miles of the river and more than 3,100 acres of forest and other natural land along the Sangamon River corridor. Jasmine Hollow provides an important habitat corridor link to these protected natural lands. The Illinois Department of Natural Resources C2000 program enabled protection of the site by providing a grant to register the area as a land and water reserve.

Table 10-1: Threatened and Endangered Species in Piatt County, 2008

Latin name	Common Name	Threatened/ Endangered	Occurrence	Last Observed
<i>Ammodramus</i>				
<i>henslowii</i>	Henslow's Sparrow	LT	1	6/10/2006
<i>Clonophis kirtlandi</i>	Kirtland's Snake	LT	3	9/25/2006
<i>Lanius ludovicianus</i>	Loggerhead Shrike	LT	1	5/25/2000
<i>Phlox pilosa</i> ssp.				
<i>sangamonensis</i>	Sangamon Phlox	LE	3	6/14/2004
<i>Sistrurus catenatus</i>				
<i>catenatus</i>	Eastern Massasauga	LE	1	4/9/2007
<i>Tomanthera auriculata</i>	Ear-leafed Foxglove	LT	1	9/1/1933

Source: Illinois Department of Natural Resources

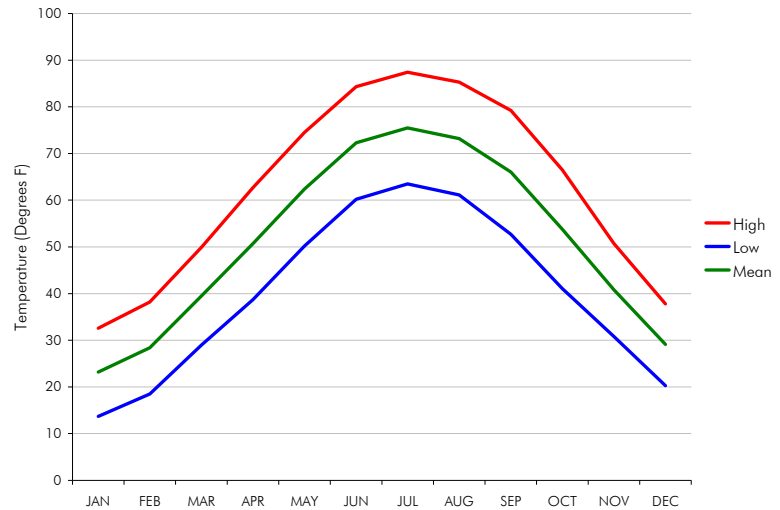
LT=Listed as Threatened – Any breeding species which is likely to become a state endangered species within the foreseeable future in Illinois.

LE=Listed as Endangered – Any species which is in danger of extinction as a breeding species in Illinois.

Climate

Mean temperatures for Piatt County range from 23.2 degrees (F) to 75.5 degrees (F). High temperatures range from 32.6 degrees (F) to 87.4 degrees (F). Annually, 29.8 days reach temperatures greater than 90 degrees (F) and 37.4 days where the maximum temperature is below 32 degrees (F).

Chart 10-1: Monthly Temperatures 1971-2000



Precipitation is highest during the spring and summer months; average rainfall is 39.68 inches. In the spring and summer months, between 1 and 1.5 days in each month will receive greater than one inch in a single rain event. On average, 7 to 11.3 days each month experience some degree of precipitation.

Chart 10-2: Monthly Precipitation

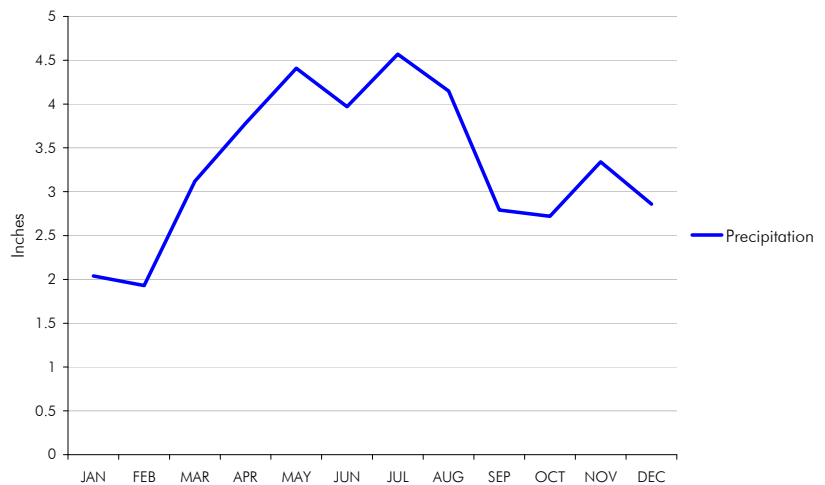


Chart 10-3: Monthly Snowfall

Snowfall in Piatt County averages 22.7 inches annually, the majority occurring between the months of December and March. Snow events rarely accumulate greater than 5 inches in a single day. One and two inch accumulations are much more common.

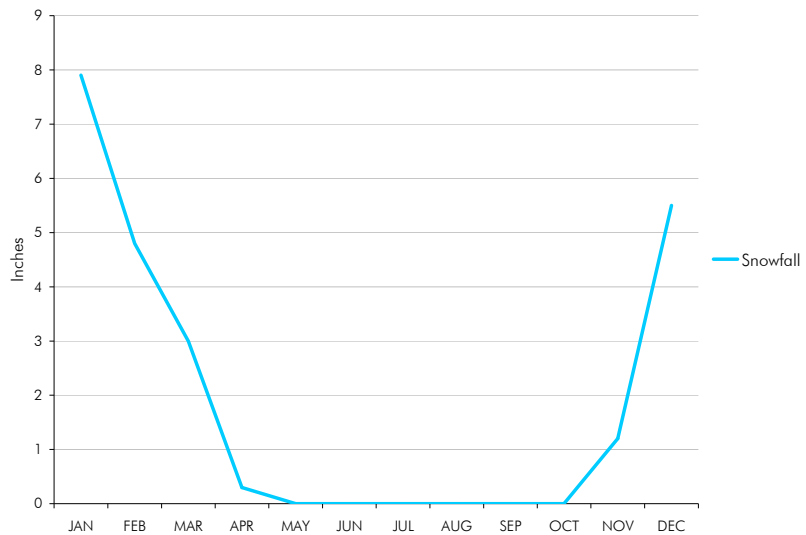
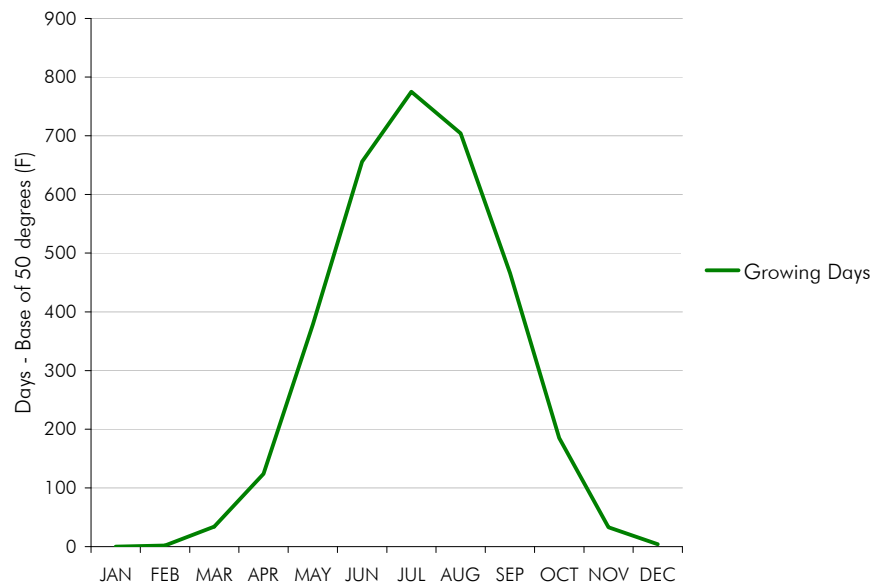


Chart 10-4: Growing Degree Days

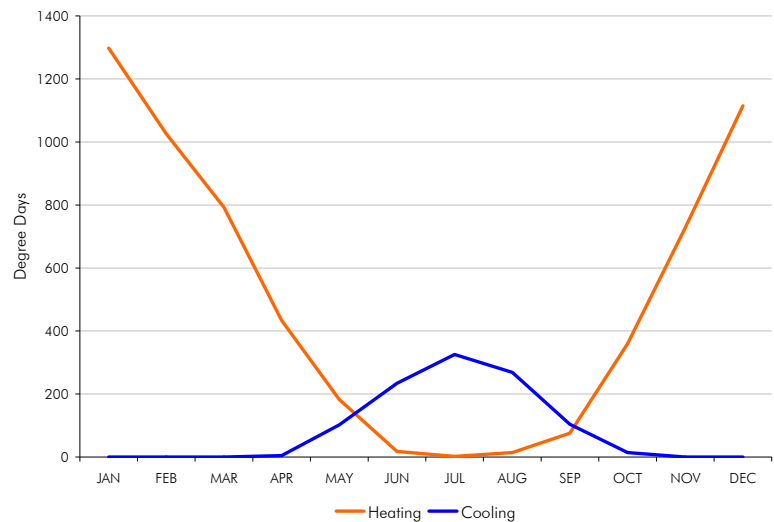
Growing degree days occur in Piatt County predominantly between March and November. On average, 174 days have a base temperature of 32 degrees (F) or above. The median date of last spring occurrence for 32 degree temperatures is April 23 while the median date of the first fall freeze is October 11.



Wind direction is generally from the south during spring, summer, and fall, and from the west during the winter months. Mean wind speed in open areas averages 10 mph. Annual gusts reach up to 80 mph.

Heating and cooling degree days indicate household energy consumption for space heating or cooling. Heating degree days are calculated for days with average temperatures below 65 degrees Fahrenheit while cooling degree days are for average temperatures above 65 degrees Fahrenheit. This information can be compared from year to year and is used to define characteristics of a location in alternative energy studies. The great amount of heating required through the year in Piatt County provides a case for focusing on efficient heating systems.

Chart 10-5: Heating and Cooling Degree Days



Key Findings

- The Mahomet aquifer is the primary source of water for Piatt County.
- Individual water wells are common in Piatt County.
- Surface water quality is degraded along a few stream segments.
- Flood plains and wetlands are an important part of the environment in Piatt County.
- Better information is needed about flood plains and low lying roadways.
- Soil is the greatest naturally occurring resource in Piatt County.
- Sand and gravel deposits are located in certain areas of the County.
- Piatt County is dominated by agricultural land cover and has lost substantial forested land.
- Wildlife habitat has degraded through fragmentation and increased competition from exotic species.

Plans for Natural Resources

This section establishes goals, objectives and strategies for the future conditions of natural resources. Recommendations in this chapter intend to provide tools by which natural resources can be maintained and provide benefit to residents of Piatt County. Natural resource areas contain a variety of services (flood protection, water purification) that are important to maintain or restore. Development can have significant impact on these services and developers may not have the same concerns as residents. These concerns can be recognized countywide through controls and requirements that match the desires of county residents.

Issues in Natural Resources

A variety of natural resources exist in Piatt County. Plans for natural resources include methods for protection, preservation, conservation, and restoration. These methods of response depend on the resource and its relationship to people living in the community. The qualities of some natural resources are directly connected to public health and should be heavily controlled. Other natural resources have complicated tradeoffs where conservation, restoration and unregulated management are desirable methods. Residents showed concern for land use priorities and conflicts between natural resource areas and farmland. They were also concerned with negative impacts from development. The following issues were derived from public input received during the planning process. The breadth of natural resource issues is developed in the best management practices section.

- How do we reduce negative impacts on natural resources from development?
- How do we maintain farm production and provide for natural areas?
- How do we keep from bisecting animal habitats?
- How do we help industries interested in locating in Piatt County respect the environment and residents?

Best Management Practices

The following best management practices were collected from The Environmental Planning Handbook published by Planners Press.

Public Health

Water Supply

- Protect surface and ground water sources
- Growth and development does not exceed sustainable water capacity

Water Quality

- Meet Federal and State requirements
- Maintain or improve water quality
- Protect present and future water sources
- Development should not degrade water quality
- Water suppliers coordinate water testing and protection with state and federal officials

Air Quality

- Maintaining air quality to meet federal standards (vehicles, burning)

Solid Waste and Recycling

- Reduce solid waste
- Dispose of solid waste safely and responsibly
- Increase reuse and recycling of solid waste
- Keep waste disposal away from environmental areas

Toxic Substances

- Use and store hazardous waste responsibly

Landscapes

Habitat

- Maintain population of native species by preserving habitats and ecosystems
- Minimize human impact on native species

Wetlands

- Protect important wetlands that provide water recharge flood protection, wildlife habitat, aesthetic and educational benefit
- Protection standards for isolated fresh-water wetlands

Natural Hazards

- Respond effectively to natural disasters
- Establish a natural hazard mitigation plan

Working Landscapes

Farming

- Sustainable use of agricultural land while maintaining environmental quality
- Valid economic use of land
- Promote use of soil and water conservation plans and practices on agricultural land

- Avoid conflicts between farm operations and nonfarm development

Forestry

- Sustained yield management of forests for timber resources, recreational uses, and environmental services
- Promote replanting and selective cutting

Mining

- Encourage development of valuable mineral and aggregate resources while maintaining environmental quality

Goals and Objectives

Goal 1: Preserve the integrity of the Sangamon River, other natural waterways (class 1 streams) and wetlands as sustainable sources of water and as an environmental, recreational and economic resource.

Objective 1.1: Educate residents about the role that natural resources and wildlife play in maintaining a high quality of life in the County, and residents' roles in protection and restoration efforts.

Objective 1.2: Natural areas will be protected to benefit all county residents by protecting against floods, cleaning surface waters, and preventing erosion.

Objective 1.3: Promote recreation and tourism opportunities within the County.

Goal 2: Piatt County's environmental features and natural resources will be safeguarded as distinguishing features of the community.

Objective 2.1: Prepare a county-wide inventory and program to preserve and manage existing and potential natural resources and habitats that emphasizes larger, connected areas rather than small, isolated pockets.

Objective 2.2: Make available to the public the state of Illinois Department of Natural Resources inventory that identifies natural resources and habitats that are unique to Piatt County.

Goal 3: Piatt County will provide wildlife with habitats that are minimally affected and fragmented by development.

Objective 3.1: Support the use of cluster housing and conservation design techniques to preserve open space and environmentally sensitive areas.

Objective 3.2: Consider environmentally sensitive areas when constructing new roadway alignments.

Goal 4: Piatt County residents and agencies will work collaboratively to protect the county's natural resources.

Objective 4.1: Encourage County residents to be good stewards of natural resources.

Objective 4.2: Encourage efforts of local governments and their programs that strive to protect and improve the quality and productivity of soils in the County.

Objective 4.3: Participate in developing a regional approach to preserving and managing natural resources including ground and surface water resources.

Objective 4.4: Identify strategies to reduce pollution levels within the County, including air, night sky, noise, water, and land pollutants.

Goal 5: Protect groundwater resources, including the Mahomet Aquifer, from over-extraction.

Objective 5.1: Consider studies regarding local area groundwater and how their recommendations may relate to Piatt County.

Objective 5.2: Educate Piatt County residents about area water resources and how they can make water-conserving choices.

Future Conditions

In 2030, natural resources in Piatt County will be conserved, protected, preserved, and restored based on identified needs and conditions. These four levels of management will be determined by cooperative multijurisdictional efforts and scientific rationale. Regulatory barriers to natural resource management will be eliminated and landowners will be encouraged to design and implement management techniques.

Highly desirable resources such as water (ground and surface) wetlands, flood plains, and forests are monitored for their health and integrity. Development controls are used to avoid, mitigate, or minimize potential negative impacts and a no negative impact balance for development is the accepted standard. Less restrictive controls are afforded to other resource areas; however, emphasis is prescribed for maintaining or enhancing natural resources.

Land use conflicts with natural areas are determined through carrying capacity criteria. Impact on water quality, presence of native species, and ecological service are consulted along with other criteria to permit development or land use conversion. Development in Piatt County does not exceed sustainable capacities of land, water, and other essential resources.

Development is encouraged to be designed so that it limits negative impacts and uses restoration to enhance ecological integrity of the local environment.

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