

**CHAPTER 5**  
**Agriculture, Natural and Cultural Resources**

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**Section 5.1 Climate**

Ogle County is cold in winter. In summer it generally is hot but has occasional cool spells. Precipitation falls as snow during frequent snowstorms in winter and chiefly as rain showers, which often are heavy, during the warmer periods when warm moist air moves in from the south. The amount of annual rainfall usually is adequate for corn, soybeans, and small grain crops.

In winter, the average temperature is about 22 degrees F and the average daily minimum temperature is about 14 degrees. The lowest temperature during the period of record is -33 degrees. In summer, the average temperature is about 70 degrees and the average daily maximum temperature is about 82 degrees. The highest temperature during the period of record is 101 degrees. The total annual precipitation is 34.49 inches. Of this total, 22.72 inches, or 66 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 11.58 inches. Thunderstorms occur on about 40 days each year. The average seasonal snowfall is 18.4 inches. On the average, 36 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year. Tornadoes and severe thunderstorms strike occasionally. They are of local extent and short duration, and they cause only sparse damage in narrow belts. Hailstorms sometimes occur during the warmer periods in scattered small areas.

**Section 5.2 Land Cover**

Land cover is the physical material at the surface of the earth. Land covers include grass, asphalt, trees, bare ground, water, etc. There are two primary methods for capturing information on land cover: field survey and through analysis of remotely sensed imagery. Land cover is distinct from land use despite the two terms often being used interchangeably. Land use is a description of how people *utilize* the land and socio-economic activity - urban and agricultural land uses are two of the most commonly recognized high-level classes of use. Chapter 8 Land Use analyzes the County's land use.

The predominant land cover in Ogle County is crop land. In 2011, approximately 78% of the County was in some form of agricultural crop production. The following Table 5.1 details the land cover characteristics of the County. The County's land cover is graphically depicted in the map titled "Map 5.1: Land Cover, Ogle County, Illinois" in Appendix II Maps.

**Table 5.1 Land Cover of Ogle County, Illinois**

<b>Land Cover Category</b>	<b>Area (Ac.)</b>	<b>Area (Sq. Mi.)</b>	<b>% of Area</b>
Corn	273,592.3	427.5	56.0
Soybeans	77,434.7	121.0	15.9
Deciduous Forest	53,730.3	84.0	11.0
Developed/Open Space	20,948.0	32.7	4.3
Other Hay/Non Alfalfa	14,140.7	22.1	2.9
Developed/Low Intensity	13,304.8	20.8	2.7
Grassland Herbaceous	9,337.7	14.6	1.9
Alfalfa	8,802.2	13.8	1.8

Winter Wheat	4,573.3	7.1	0.9
Open Water	3,424.9	5.4	0.7
Developed/Medium Density	3,164.9	4.9	0.6
Developed/High Intensity	1,449.1	2.3	0.3
Barren	880.0	1.4	0.2
Other Crops	768.4	1.2	0.2
Woody Wetlands	759.7	1.2	0.2
Sweet Corn	519.7	0.8	0.1
Herbaceous Wetlands	510.8	0.8	0.1
Evergreen Forest	386.5	0.6	0.1
Oats	305.1	0.5	0.1
Sod/Grass Seed	174.6	0.3	0.0
Shrubland	51.6	0.1	0.0
Fallow/Idle Cropland	44.0	0.1	0.0
Dry Beans	40.7	0.1	0.0
Walnuts	18.5	0.0	0.0
Winter Wheat/Soybeans Dbl. Cropped	11.1	0.0	0.0
Peas	10.5	0.0	0.0
Popcorn or Ornamental Corn	8.9	0.0	0.0
Pumpkins	6.4	0.0	0.0
Switchgrass	3.1	0.0	0.0
Sorghum	2.0	0.0	0.0
Clover/Wildflowers	1.6	0.0	0.0
Apples	1.3	0.0	0.0
Mixed Forest	0.4	0.0	0.0
Potatoes	0.2	0.0	0.0
Winter Wheat/Sorghum Dbl. Crop	0.2	0.0	0.0
<b>Total</b>	<b>488,408.2</b>	<b>763.1</b>	<b>100.0</b>

Source: National Agricultural Statistics Service, 2011 Cropland Data Layer

### Section 5.3 Agricultural Resources

The economic activity of agriculture has some very specific land use requirements, depending on the type of farming. The growing of crops for profit necessitates relatively large, contiguous parcels, the slope of which should not be excessive and the soils, fertile and well drained. This is particularly true of grains and soybeans. Other types of agricultural pursuits, such as feed lots, garden farms, and dairies generally demand increased labor and less land to be profitable. Generally, agricultural units are limited to the physical characteristics of the land and are relatively flexible with respect to location. This is in marked contrast to other economic activities where the location of the activity with respect to others is a very important part of their economic framework.

Over 90% of the County's land area is in agricultural or agriculturally-related uses. Grain farming, hay farming and livestock production are the predominant agricultural activities in Ogle County. Agriculture has always been the major industry in Ogle County. The county has a high percentage of productive soils, good transportation facilities, nearby markets, and a favorable climate.

In 2007, the county had 1,274 farms that made up 366,470 acres; the average farm size was 287.7 acres (2007 Census of Agriculture). Corn, soybeans, wheat and hay are the major crops. In 2010, 247,000 acres of corn was harvested; 85,400 acres of soybeans was harvested; 8,900 acres of alfalfa hay was harvested; and 2,500 acres of wheat was harvested (Illinois Agricultural Statistics Service). Livestock is also an important component of the agricultural industry in Ogle County. As of December 1, 2010, there were 67,000 hogs and pigs in Ogle County; as of January 1, 2011 there were 35,500 cattle and calves in Ogle County (Illinois Agricultural Statistics Service, 2011).

Ogle County is one of the top agricultural producing counties in the State (102 counties). Following are listed several of the more noteworthy state ranking for Ogle County from 2010 according to the Illinois Department of Agriculture:

- 5<sup>th</sup> in the State for acres of alfalfa hay production.
- 5<sup>th</sup> in the State for number of cattle & calves.
- 8<sup>th</sup> in the State for number of farms.
- 8<sup>th</sup> in the State for corn production.
- 9<sup>th</sup> in the State for average value of land and buildings per acre.
- 13<sup>th</sup> in the State for crop cash receipts.
- 15<sup>th</sup> in the State for livestock cash receipts.
- 15<sup>th</sup> in the State for total cash receipts.

Other Ogle County agricultural items and trends of note (Source: 1997 and 2002 U.S. Census of Agriculture):

- The number of farms increased 13% between 2002 and 2007 from 1,129 farms to 1,274 farms.
- The amount of land in farms decreased 2% between 2002 and 2007 from 372,285 acres to 366,470 acres.
- The average farm size decreased 13% between 2002 and 2007 from 330 acres to 288 acres.
- The market value of agricultural products sold increased 97% between 2002 and 2007 from \$131,454,000 to \$258,747,000.
- The market value of agricultural products sold (based on average per farm) increased 74% between 2002 and 2007 from \$116,434 to \$203,098.
- Government payments increase 3% between 2002 and 2007 from \$8,289,000 to \$8,579,000.
- Government payments based on average per farm receiving payments decreased 14% between 2002 and 2007 from \$11,232 to \$9,639.
- The average age of principal farm operators decreased slightly between 2002 and 2007 from 55.5 years to 55.2 years.

- In 2007, 47% of principal farm operators indicated farming as their primary occupation compared to 64.8% in 2002.
- The number of female principal farm operators increased from 78 (6.9%) in 2002 to 112 (8.8%) in 2007.

## **Section 5.4 Natural Resources**

This section will describe the existing conditions of natural resources in Ogle County. Natural resources include: geology and mineral resources, soils, groundwater and water supply, surface water, wetlands and floodplains, natural areas and open space, vegetation and wildlife.

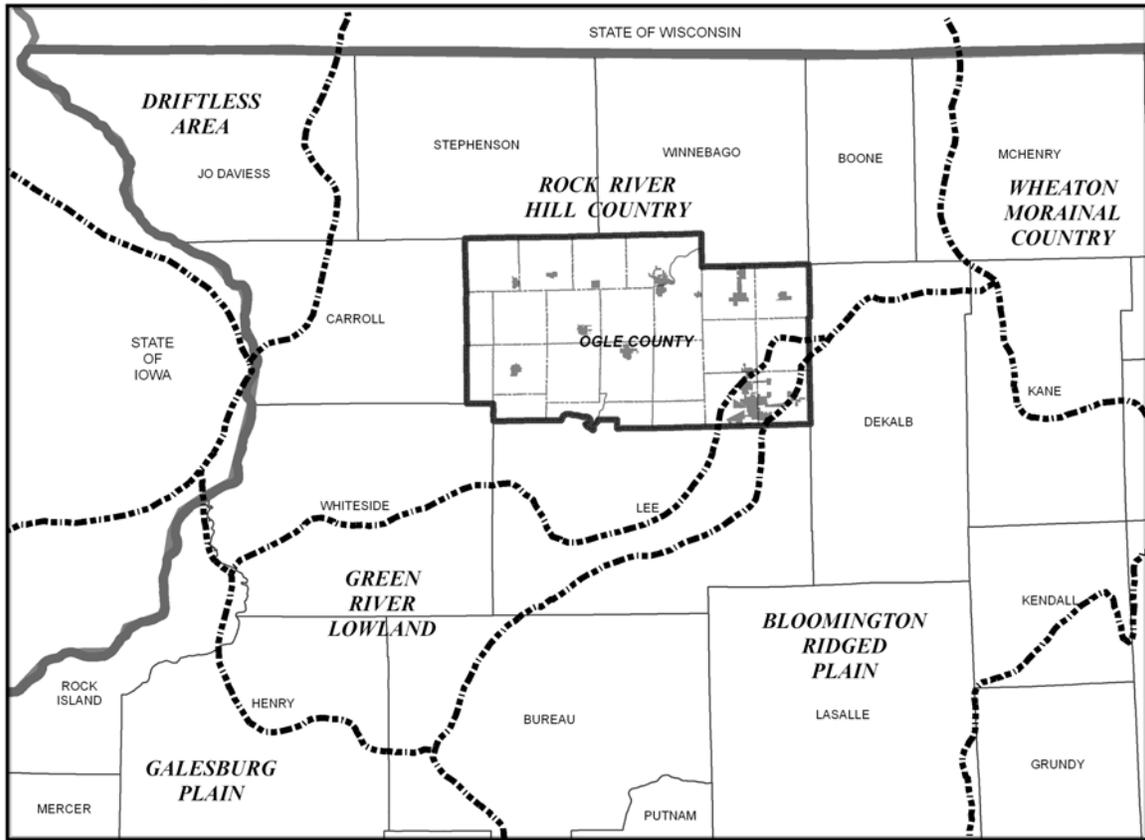
### A. Topography and Physiography

The topography of Ogle County is mostly flat to rolling, and is the result of both erosional processes and irregularities in the bedrock surface, which have influenced the total drift thickness, as well as the actions of several glacial advances that crossed the County during the Pleistocene Epoch. The two glacial ages of particular importance to the physiographic development of Ogle County were the Illinois Episode and the more recent Wisconsin Episode, which ended approximately 10,000 years ago.

Ogle County is divided into three distinct physiographic regions (see Figure 5.1 below). Much of the County is located in the Rock River Hill Country of the Till Plains Section of the Central Lowlands Province. The Central Lowlands Province is principally the State of Illinois. This area is characterized by its rolling hills, thin glacial drift and narrow valleys. The Rock River Hill Country Division is divided into two sections; Freeport and Oregon. Two distinct bedrock types are recognized in these section, dolomite and limestone under the Freeport Section and sandstone under the Oregon Section. These different bedrock types have a significant effect on the resultant flora and natural communities of the two sections. The Oregon Section is distinguished by relict northern natural communities and specialized habitat types that harbor numerous state listed species. The extreme southeastern corner of the County is in the Bloomington Ridge Plain of the Till Plains Section of the Central Lowlands Province. This area is characterized by its low, broad morainic ridges, flat to gently rolling ground moraine and thick glacial drift. Between these two subsections lies the land in the Green River Lowland of the Till Plains Section of the Central Lowland Province, which is best known for its low, poorly drained soils.

The highest elevation in the County appears to be approximately 1,024 feet (312 m) above mean sea level based on the National Geodetic Vertical Datum (NGVD), and is located in the northeast one-quarter of Section 3, Township 25 North, Range 8 East of the 4th Principal Meridian (Maryland Township) along a ridge known as "Hardpan Ridge." The lowest elevation in the County appears to be approximately 649.6 feet (198 m) above mean sea level (NGVD), and is located at the Rock River's exit from Ogle County into Lee County in Section 8, Township 22 North, Range 9 East of the 4th Principal Meridian (Grand Detour Township). The maximum elevations of the land surface west of the Rock River are generally higher than east of the river, and the amount of dissection of the landscape by stream erosion is greater. East of the Rock River, the topography is generally flatter. A prominent ridge located in the extreme southeast corner of the County and extending into Lee County is the Bloomington Moraine, which contains a thick succession of sediments deposited by glaciers during the last episode of the Ice Age.

Figure 5.1: Physiographic Divisions



Source: Illinois State Geological Survey

B. Geology and Mineral Resources

1. Bedrock Topography/Drift Thickness

During the long interval between deposition of the bedrock formations (about 440-490 million years ago [mya]) and the advance of continental ice sheets across North America (about 1 mya), streams dissected and removed younger rocks, creating an integrated pre-glacial drainage network on the bedrock surface. By early glacial time this erosion had carved most of the major topographic features of the present bedrock surface. Subsequent scouring by glacial ice and erosion by glacial meltwater and modern streams and rivers further eroded the bedrock surface. The amount of glacial deposition, the amount of subsequent erosion of these deposits, and the many irregularities in the bedrock surface are the important factors controlling the total drift thickness (glacial deposits) in Ogle County.

The most pronounced bedrock topographic feature in Ogle County and the region is the Rock Bedrock Valley. The modern Rock River generally follows the course of the Rock Bedrock Valley through much of Winnebago County. However, in southern Winnebago County, blockage by glacial ice and the construction of Wisconsinian Episode moraines to the south diverted the Rock River to the southwest, away from the bedrock valley. Glacial meltwater flowing down the Rock River has cut a gorge into bedrock through most of its course in Ogle County.

The steep-sided Rock Bedrock Valley generally trends north-south through the eastern portion of Ogle County. The thalweg (lowest point) of the valley lies below 500 feet elevation in Winnebago and Ogle Counties and below 450 feet in northeastern Lee County. A tributary valley to the Rock (also with a thalweg elevation below 500 feet) trends west to east from north-central Ogle County, through Byron, to its confluence with the Rock Bedrock Valley just north of Davis Junction. The Rock Bedrock Valley and this tributary are entrenched 200 to 300 feet below the bedrock uplands. Drift thickness increases in the Rock Bedrock Valley from about 250 feet in southern Winnebago County to 300-450 feet in eastern Ogle and northeastern Lee Counties. Drift thickness in upland areas of Ogle County is generally less than 50 feet (and often less than 25 feet) and bedrock outcrops are common.

## 2. Bedrock Geology

Underlying Ogle County is Precambrian granite at depths greater than 2,500 feet below land surface. Overlying the granite are Cambrian (approximately 500-515 million years old) and Ordovician (approximately 440-490 million years old) marine sediments. Variabilities in the mapped distribution of the uppermost bedrock units are due to regional faulting erosion associated with development of the pre-glacial bedrock valleys and glacial/post-glacial erosion.

Two major fault zones cross Ogle County; the Plum River Fault Zone and the Sandwich Fault Zone. The Plum River Fault Zone trends west-east from Carroll County into northwestern Ogle County. The eastern-most extent is about three miles northeast of the Village of Leaf River. The Plum River Fault Zone is generally less than one-half mile wide, with rocks downthrown 100-400 feet on the north. The uppermost bedrock units north of the fault zone are the Maquoketa Group (youngest Ordovician rocks consisting mostly of shale) and Silurian dolomite. South of the fault zone, in the upthrown block of the fault, the uppermost bedrock units are Ordovician Galena-Platteville Dolomite and St. Peter Sandstone of mid-to-late Ordovician age.

The Sandwich Fault Zone extends southeasterly across Ogle County from near Oregon to near Manhattan in Will County. This fault zone is about one-half to two miles wide and is upthrown on the southwest side as much as 800 feet. The uppermost bedrock units northeast of the fault zone are Galena-Platteville Dolomite and St. Peter Sandstone. South of the fault zone, the uppermost bedrock units are the Prairie du Chien Group (mainly cherty limestone of early Ordovician age) and Cambrian rocks of various lithologies.

There is no evidence that either the Plum River Fault Zone or the Sandwich Fault Zone have been active within the last 1 to 2 million years. Glacial deposits are not displaced.

Erosion associated with the development of the Rock Bedrock Valley and Rock River also affects variabilities in the mapped distribution of uppermost bedrock units within Ogle County. St. Peter Sandstone underlies thick glacial deposits throughout the extent of the deeply cut Rock Bedrock Valley system and is the uppermost bedrock along the course of modern Rock River from near Oregon to near Dixon. St. Peter Sandstone can be 300-500 feet thick in the County. It is a friable quartz sandstone with moderate to high porosity and permeability. Dolomites of the Galena-Platteville Group are the most widespread surficial bedrock deposits of the County. They contain significant solution channel and joint porosity and are interrupted by K-bentonite beds (ancient volcanic ash falls) that are significant barriers to vertical fluid movement.

Because of the faulting and erosion, numerous exposures of Ordovician and Cambrian bedrock occur throughout the County. Ordovician-age Galena-Platteville Dolomite is exposed in several quarries throughout the County and many other locations throughout the County such as White Pines State Park along the Pine Creek. St. Peter Sandstone is exposed along the Rock River between Oregon and Grand Detour. Cambrian-age Potosi Dolomite is quarried in Ogle County,

but the underlying Franconia Formation is exposed in Illinois at only one locality - in the quarry near Oregon north of IL Route 64 approximately one-quarter mile east of Daysville Road. This outcrop of Franconia is the oldest formation exposed in Illinois.

The bedrock units in Ogle County have considerable economic importance as sources of groundwater and aggregate materials for construction. Mt. Simon and Ironton-Galesville Sandstones of the Cambrian age and the St. Peter Sandstone and Galena-Platteville Dolomite of the Ordovician age are productive aquifers throughout the County and northern Illinois and beyond. Dolomite units are quarried in many locations for aggregate and the St. Peter Sandstone is mined near Oregon to produce a wide range of industrial sand products.

### 3. Quaternary Geology

Glacial drift and post-glacial sediments overlie bedrock throughout most of Ogle County. The oldest deposits are found in the lowermost portions of the Rock Bedrock Valley and its tributaries. The youngest deposits are wind-blown silt and modern river sediment on the land surface.

In Ogle County, the Rock Bedrock Valley is filled with approximately 100 feet of sand and gravel overlain by about 300 feet of tills (diamictons) that consist of unnamed pre-Illinoian units at the base, the Glasford Formation of Illinoian age, and the Tiskilwa Formation of Wisconsinian age. Diamicton is a mixture of sand, silt and clay deposited as till or supraglacial and ice-marginal sediment. The sand and gravel deposits in the Rock Bedrock Valley system provide ample groundwater supplies for municipalities and private residences.

The bedrock upland areas of the County are mostly characterized by relatively thin drift deposited during the Illinois Episode of glacial activity. The sandy Oregon Member covers south-central and southwestern Winnebago County, north-central Ogle County, and restricted areas in northwestern Lee County/southwestern Ogle County and north-central Lee County. The sandy Fairdale and Ogle Members are the surface units in western Ogle County. The clay-loam Esmond, Sterling and Lee Members are the most wide-spread surficial units in Ogle County, occurring in the south-central and eastern parts of the County, and into southeastern Winnebago County and parts of Lee County.

The thickest unit in Ogle County occurs in the extreme southeastern corner of the County and into eastern Lee County where the Wisconsin Episode glacier formed the Bloomington Moraine. This moraine consists of more than 100 feet of loam-textured, reddish-brown till of the Tiskilwa Formation.

Throughout the County, the glacial sediments and bedrock are overlain predominately by fine-grained silts and clays deposited in glacial lakes (Equality Formation), modern river sediments (Cahokia Alluvium) and wind-blown deposits (primarily Peoria Silt and Parkland Sand). The Equality Formation occurs in numerous areas adjacent to the Rock River where glacial meltwater backed up from the Rock River and flooded into tributaries, creating temporary lakes. The largest areas are east of Byron, southeast of Oregon, and south of Grand Detour. An extensive area of Equality Formation deposits occurs in front of the Bloomington Moraine in the southeastern corner of the County and into eastern Lee County. Here, the sediment was deposited in lakes formed by the blocking of stream courses by glacial ice.

Cahokia Alluvium, generally consisting of poorly sorted sand, silt and clay, is prevalent along the entire course of the Rock River and its tributaries. Sometimes referred to as modern alluvium, it has been deposited by modern (post-glacial) river and flooding processes.

Finally, windblown silt (loess or eolian deposits) can be as much as 10 feet thick in the western parts of Ogle County and is usually greater than 5 feet thick. Eastern Ogle County is characterized by loamy wind-blown dunes comprised of Parkland Sand. Between 22,000 and 13,000 years ago, sand and silt, exposed in the Rock River valley during periods of low flow, were blown out of the valley and deposited across the landscape, locally producing large areas of eolian loam dunes more than 5 feet thick.

Loess, diamicton and bedrock are the principal parent materials from which modern soils of Ogle County are developed. Modern soils began developing on the surface as the climate warmed following de-glaciation and as loess deposition ceased.

#### 4. Mineral Resources: Sand and Gravel

Sand and gravel deposits of Ogle County and surrounding areas have played an essential role in the economic development of the County and surrounding areas, providing (along with crushed stone) the aggregate products necessary for highway and bridge development and residential, commercial and industrial construction. Local aggregate production provides jobs and helps hold down the cost of construction because the delivered price of aggregates can double within the first 50 miles of transportation away from the source. Within the County are finite deposits that contain sand and gravel resources important to the maintenance and improvement of the existing infrastructure. Ogle County is experiencing growth and development that is expected to continue, but it also contains many unique scenic, ecological and historic sites that may be worthy of and/or slated for preservation. Significant sand and gravel deposits may underlie some of these sites, so it is important to know the locations of the aggregate resource deposits in order to examine potentially conflicting land uses. Many major sand and gravel deposits are already lost as far as aggregate resources are concerned, because they are located at sites where various other types of development are already in place. Some unique sites have already been preserved in the County for their scenic rock formations and other features, such as Castle Rock State Park where the Rock River has cut cliffs into St. Peter Sandstone.

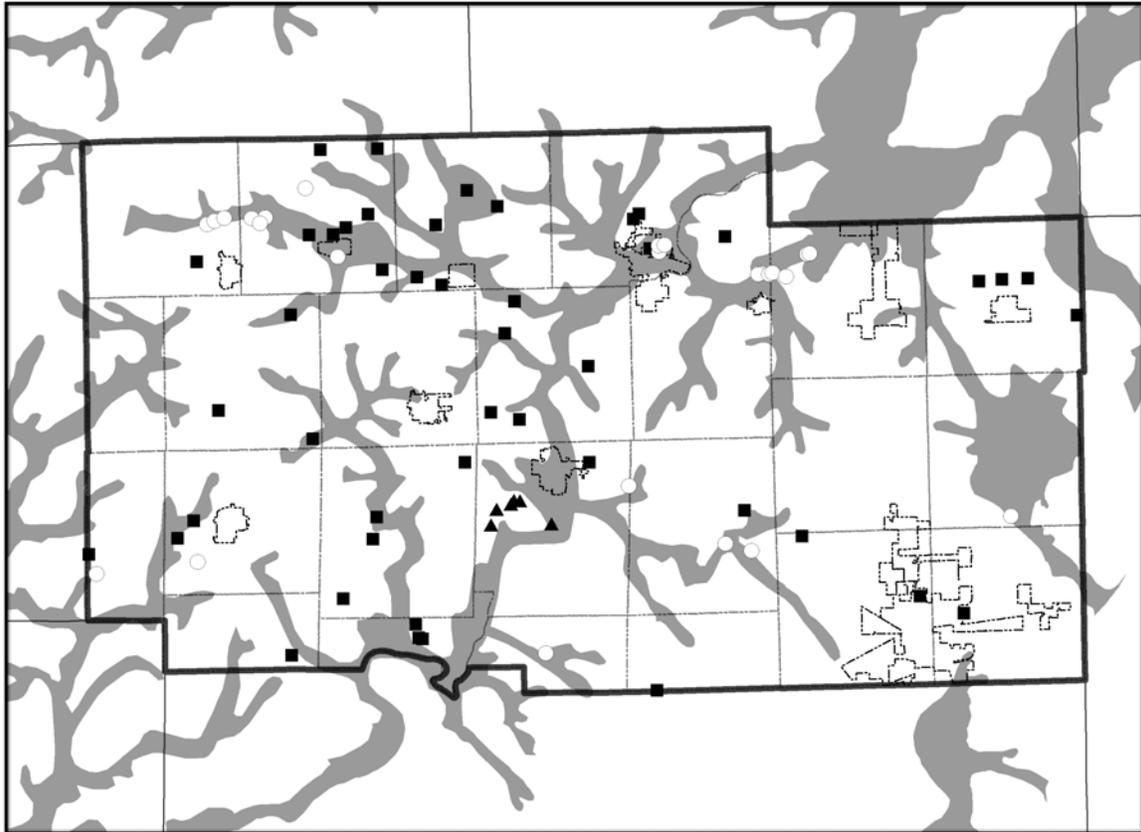
The potential importance of a sand and gravel deposit as an aggregate resource depends on such factors as: (1) the thickness and extent of the deposit, (2) the thickness and variability of the overburden, (3) the particle-size distribution and rock types (quality of material) in the deposit, (4) accessibility of the deposit to heavy-duty roads or railroads, and (5) distance of the deposit from the point of use.

Most sand and gravel deposits in Ogle County and vicinity formed roughly between 200,000 and 20,000 years ago during periods of continental glaciation when immense lobes of ice flowed out of modern-day Canada into the modern-day northern United States, including Illinois, carrying enormous amounts of rock debris. Large volumes of sand and gravel, collectively known as outwash, were deposited by meltwater draining away from these glaciers. Relatively wide-spread, well-sorted upland deposits are called outwash plains or fans; similar deposits that tend to be lower in the landscape and partially fill long meltwater outwash channels are called valley trains, and erosional remnants of valley trains are called terraces. Ice contact deposits, occurring in the form of hills (kames) and ridges (eskers) are less extensive than the above, generally poorly sorted and highly variable deposits. During deposition of the outwash strong winds often blew fine-grained material off the surfaces of the deposits, causing sand to accumulate into dunes.

The shaded areas on Figure 5.2 encompass a broad spectrum of sand and gravel deposits. Portions of these deposits have excellent potential for containing aggregate resources. However, the location of those areas is often not well known because the drilling and testing required to determine what deposits are economically mineable are too expensive unless a company is considering purchasing or leasing a property for a future mining site or expansion of an existing

site. Locations of known surface mines, both active and inactive at the present time, are indicated with black dots, squares and triangles. The squares represent limestone surface mines, the circles represent sand and/or gravel surface quarries, and the triangles represent silica sand surface mines.

Figure 5.2: General Distribution of Sand/Gravel Resources and Surface Mine Location in Ogle County, IL



Source: Illinois State Geological Survey

Rock River Valley: In the Rock River Valley, valley train deposits are present almost continuously in four or five different terrace levels. The upper and lower terraces contain the most important sand and gravel resources in Ogle County and surrounding counties, especially south of Rockford in Winnebago County, where they are the coarsest and thickest. They gradually become finer-grained downstream, but the upper terrace usually contain coarser material than the lower terrace at any point in the valley. Downstream from the mouth of the Kishwaukee River, the valley of the Rock River is much narrower, bedrock is much shallower, and terrace remnants are much smaller.

Leaf River Valley: Outwash in the Leaf River Valley is an important source of construction aggregate in northwestern Ogle County.

Other River Valleys: Terraces in the valleys of the Kishwaukee River contain finer-grained sand and gravel, and bedrock is shallower than in the Rock River Valley. However, pits in them are important sources of construction aggregates in the Belvidere area. Similar valley train deposits are present in the narrower valleys of the South Branch of the Kishwaukee River, which crosses the extreme northeast corner of Ogle County, and Kilbuck Creek that have good resource potential.

Upland Ice-Contact Deposits: A complex of kames, eskers and kame terrace deposits forms rolling hills and ridges in southeastern Winnebago County where materials are actively mined. Other similar but smaller deposits are present in east-central and west-central Ogle County.

Kilbuck Creek Outwash Plain: A large outwash plain is located in the head waters of Kilbuck Creek. No sand and gravel pits are located in it and information is limited, but it has good potential for containing construct aggregate resources.

Alluvium: Included in the shaded areas of Figure 7 are relatively small and often poorly sorted sand and gravel deposits that occur in creek and river beds and their flood plains. Such deposits are know as alluvium and are the result of post-glacial to modern erosional and depositional processes. Sand and gravel was excavated from creek and river deposits in the area to a limited extent years ago mainly during periods of low water. Where these deposits overlie thick valley train deposits they have good potential for containing construction aggregate resources.

#### 5. Mineral Resources: Industrial Sand - St. Peter Sandstone

A quarry in St. Peter Sandstone is located west of Oregon. St. Peter Sandstone is exposed in the vicinity of Oregon and Castle Rock State Park due to uplift of the bedrock along the Oregon anticline, and also due to weathering and erosion of the bedrock for much of the last 200 million years. The St. Peter Sandstone is a very pure, well sorted, fine-grained quartz sandstone that was deposited near the shoreline of a shallow sea that covered much of present-day central North America about 470 million years ago.

The St. Peter Sandstone is a major U.S. source of industrial sand, because it is one of the purest quartz sandstones in the world. Processed St. Peter sand is shipped long distances, mainly for use in glass manufacturing. Other uses include molding sand, sand-blasting sand, railroad-traction sand, filtration sand, and proppant or hydrofrac sand. St. Peter sand is also ground for use in abrasives, chemicals, enamels, pottery, porcelain, tile and various filler applications. The state of Illinois ranks first in the volume and value of industrial sand production among all states.

#### 6. Mineral Resources: Crushed Stone Resources

Crushed stone for construction is an important mineral resource derived by quarrying bedrock in Ogle County, as well as surrounding counties. Dolomite and limestone strata of the Ordovician Galena and Platteville Groups, which crop out or are close to the ground surface throughout much of the County and surrounding region, provide a convenient source of this material. There approximately 46 stone quarries, both active and inactive, distributed throughout the County. Most of the rock mined in Ogle County is of the Galena Group and Platteville Group. Historically, nearly all of the crushed stone mined locally was used locally. However, this pattern of production and use is changing because urban areas to the east are requiring new sources of aggregate as their local sources become exhausted and urban land uses have precluded mining uses.

In addition to aggregate, cement is an important product derived from the Platteville Group carbonate rocks of the County. A single large cement plant has been in operation at Dixon since the 19<sup>th</sup> century. Demand for this resource will likely increase.

#### 5. Importance of Geology Within Ogle County

Unique geological formations and the surface and subsurface distribution of geologic materials provide both exceptional recreational and educational opportunities, and the foundation for unique habitats that contain valuable biotic resources within Ogle County. Following is a list of geologically significant features of Ogle County:

- Bedrock exposures of numerous formations within Ogle County provide unique educational opportunity for studying Earth history. For example, the oldest rocks in Illinois (Cambrian) are exposed in Ogle County. In addition, bedrock exposures provide numerous opportunities for scenic overlooks and path/trail development.
- Plentiful groundwater resources in bedrock are found in Ogle County. Because St. Peter Sandstone and Galena-Platteville Dolomite are exposed in Ogle County, rainfall and snowmelt directly recharge these aquifers. St. Peter Sandstone is one of Illinois' most productive aquifers. It is essential that measures be established to protect recharge areas for these regional aquifer systems.
- Two major fault systems (Plum River and Sandwich) that cross Ogle County reveal information on the early tectonic history and crustal instability of Illinois.
- Sand and gravel deposits that filled the Rock Bedrock Valley are major aquifers in the region, sustaining base stream flow during drought and determining the location and viability of wetlands. The Rock Bedrock Valley system of Ogle County is a portion of a vast drainage network in Illinois cut by pre-glacial rivers, and then by glacial meltwater. Thick deposits of sand and gravel interspersed by thin deposits of silt and clay in the northern portion of the Rock Bedrock Valley and thick diamictons in the southern portion of the valley reveal a unique and complex history of multiple glaciation in north-central Illinois.
- The distribution of tills, glacial lake sediments, wind-blown sediments, and modern river alluvium on the surface document glacial and post-glacial processes that shaped the present-day configuration of the Ogle County landscape.
- Geologic deposits provide the parent materials from which the modern-day soils of Ogle County were developed. To a large degree, the distribution of the natural flora within Ogle County and the surrounding areas depends upon, and can be predicted by, variabilities in geologic materials. Crop productivity and the potential to grow plants are equally dependent on the distribution of soils and their hydrologic characteristics.
- Finally, geologic deposits provide direct habitat for fauna. For example, burrowing and subsurface dwelling insects and mammals, and rock-nesting birds rely on specific geologic materials and/or settings. Bottom-dwelling aquatic life is dependent on specific substrate conditions dictated by the geologic environment. Groundwater seeps and springs provide local habitats often with unique temperatures and water chemistry. When geology, topography and groundwater hydrology are fully understood, areas where critical habitats for rare and endangered species are likely to occur can be predicted and possible impacts of proposed management practices and /or land use changes can be determined.

According to the Illinois Natural History Survey records, six natural areas within Ogle County contain outstanding geological features: Castle Rock, Fearer Tract at Castle Rock State Park, Mt. Morris East Geological Area, Oregon Geological Area and Prairie Star School Geological Area.

### C. Soils

Soil is a natural body comprised of solids (minerals and organic matter), liquid, and gases that occurs on the land surface, occupies space, and is characterized by one or both of the following: horizons, or layers, that are distinguishable from the initial material as a result of additions, losses, transfers, and transformations of energy and matter or the ability to support rooted plants in a natural environment. The upper limit of soil is the boundary between soil and air, shallow water, live plants, or plant materials that have not begun to

decompose. Areas are not considered to have soil if the surface is permanently covered by water too deep (typically more than 2.5 meters) for the growth of rooted plants. The lower boundary that separates soil from the non-soil underneath is most difficult to define. Soil consists of horizons near the earth's surface that, in contrast to the underlying parent material, have been altered by the interactions of climate, relief, and living organisms over time. Commonly, soil grades at its lower boundary to hard rock or to earthy materials virtually devoid of animals, roots, or other marks of biological activity. For purposes of classification, the lower boundary of soil is arbitrarily set at 200 cm (From *Soil Taxonomy*, second edition).

The present soils of Ogle County were formed in sediments left by the Illinoian and Wisconsinian glaciations. When the glaciers melted, they released the rock materials which had been picked up during their advancement. This glacial drift was then distributed by three agents: ice, wind and water. Drift deposited directly by the ice is called till and consists primarily of unsorted sand, gravel and silt. Some of the glacial drift was washed out with the meltwaters and is called outwash. The coarsest material (gravel) was deposited nearest the ice front, and the finer silt and clay was carried farther away. Wind picked up silt and fine sand from the flood plains and carried these materials to the bluffs and uplands forming deposits of loess. Loess material is responsible for silt loam textures which form more than half of the soil types in the County. Vegetation in the form of prairie grasses and deciduous forests further affected the degree of development of Ogle County's soils. Dark-colored prairie soils have large amounts of organic matter. The bottom land soils and flood plains are for the most part alluvial material deposited by the streams.

Loess varies from about 20 inches in depth in the eastern part of the County to six or seven feet in depth in the western part (Smith and et al., 1927). The glacial drift averages four feet deep on the upland, 150 to 400 feet deep in the pre-glacial valleys, and 100 feet deep on the Bloomington moraine in the southeastern corner of the County (Smith and et al., 1927).

71.2% of the soil types identified in Ogle County (approximately 347,591 acres) are classified as being "prime farmland"; 23.0% (approximately 112,370.1 acres) are classified as "farmland of statewide importance". The remaining soils are classified as "not prime farmland", "other land", "water" or "wetland". "Prime farmland" is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland. See Appendix II Maps for map titled *Map 5.2 Farmland Classification of Soils, Ogle County, Illinois*.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

For some of the soils identified in the table as prime farmland, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

In some areas, land that does not meet the criteria for prime or unique farmland is considered to be "farmland of statewide importance" for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable.

The United States Department of Agriculture, Natural Resources Conservation Service (in cooperation with other Federal, State and local agencies), has prepared a soil survey for Ogle County. Soil surveys contain information that affects land use planning in the soil survey areas. They include predictions of soil behavior for selected land uses. The survey highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

Soil surveys are designed for many different users. Farmers, foresters, and agronomists can use the surveys to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the surveys to help them understand, protect, and enhance the environment.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations. These and many other soil properties that affect land use are described in the Ogle County Soil Survey. The location of each soil is shown on the detailed soil maps found in the Ogle County Soil Survey. Each soil in the survey area is described, and information on specific uses is given. The published soil survey consists of a manuscript and a set of soil maps.

#### D. Groundwater and Water Supply

Groundwater quality is a high priority in Illinois. Water quality degradation or contamination resulting from point and nonpoint sources throughout the state is of primary concern. In many industrialized parts of the state (including the metropolitan areas of Chicago, Rockford, and East St. Louis) groundwater in glacial deposits and bedrock aquifers has been degraded by improperly contained or disposed of chemicals. In some agricultural areas, the quality of groundwater in the underlying shallow aquifers has been degraded by the routine application of agricultural chemicals.

The Illinois Environmental Protection Agency (IL EPA) has designed and implemented a "probabilistic monitoring network" of community water supply wells (CWS) in the State of Illinois. The goal of the network is to represent contamination levels in the population of all active CWS wells. This probabilistic network is designed to provide an overview of the groundwater conditions in the CWS wells; provide an overview of the groundwater conditions in the principle aquifers (e.g., sand and gravel, Silurian, Cambrian-Ordovician, etc.); establish baselines of water quality within the principle aquifers; identify trends in groundwater quality in the principle aquifers; and evaluate the long-term effectiveness of the Illinois Groundwater Protection Act, Clean Water Act and Safe Drinking Water Act program activities in protecting groundwater in Illinois. Of the 354 wells in the IL EPA's probabilistic monitoring network, six (6) are located in Ogle County.

Assessment of overall groundwater use support is based upon application of Illinois' Ground Water Quality Standards (including non-degradation standards) to water quality sample measurements from the probabilistic network of CWS wells. Generally, a detection of an organic contaminant above the laboratory practical quantification limit or the detection of an inorganic constituent above the naturally occurring

background level in a CWS well is considered a cause of less than full use support. Class I standards include the non-degradation standards. The attainment of use support is described as Full and Nonsupport, as described below:

**Full Support:**

Good - indicates that no detections occurred in organic chemical monitoring data and inorganic constituents assessed were at or below background levels for the groundwater source being utilized.

**Nonsupport:**

Fair - indicates that organic chemicals were detected and therefore exceed the non-degradation standard, but measured levels are less than the numerical Class I Ground Water Quality Standards (GWQS), and inorganic constituents assessed were above background level (non-degradation standard) but less than the numerical Class I GWQS.

Poor - indicates that organic chemical monitoring data detections were greater than the Class I GWQS and inorganic chemicals assessed were greater than both the background concentration and Class I GWQS.

According to the Illinois Integrated Water Quality Report and Section 303(d) List - 2010 (Clean Water Act Sections 303(d), 305(b) and 314; Water Resource Assessment Information and Listing of Impaired Waters; Volume II: Groundwater) dated December 2011, of the six Ogle County wells in the IL EPA's probabilistic monitoring network, two (Leaf River and Byron wells) were determined to be Not Supporting ("Fair") due to statistically significant increases in chloride (Cl-) above background, detections of VOCs (trichloroethylene), and detections of nitrates (total nitrogen) greater than 3 mg/l. The remaining four wells in the probabilistic monitoring network (Creston, Rochelle, Woodlawn Utilities Corporation and Knoll's Edge Subdivision) were determined to be Fully Supporting ("Good").

For comparison, of the 354 wells in the IL EPA's state-wide probabilistic monitoring network:

- 28 (8 percent [%]) were determined to be Not Supporting ("Poor") due to the elevated levels of nitrate and VOCs that include trichloroethylene and of these wells draw their water from shallow sand & gravel aquifers, except for one, which is using a deep well from the Cambrian/Ordovician bedrock aquifer in the northern part of the state);
- 90 (25%) were determined to be Not Supporting ("Fair") due to statistically significant increases in chloride (Cl-) above background, detections of VOCs, nitrate (total nitrogen) greater than 3 mg/l, but have not exceeded the health-based Groundwater Quality Standards; and
- 236 (67 %) were determined to be Fully Supporting ("Good"), which show no detections of any of the above analytes.

The summary and conclusions of the Illinois Integrated Water Quality Report and Section 303(d) List - 2010 are that, *"Illinois groundwater resources are being degraded. Degradation occurs based on the potential or actual diminishment of the beneficial use of the resource. When contaminant levels are detected (caused or allowed) or predicted (threat) to be above concentrations that cannot be removed via ordinary treatment techniques, applied by the owner of a private drinking water system well, potential or actual diminishment occurs. At a minimum private well treatment techniques consist of chlorination of the raw source water prior to drinking. This groundwater degradation is exacerbated due to the predicted shortages of drinking water sources in the northeastern Illinois. It should be noted that groundwater that is consumed via a CWS has to be treated before it is delivered to the users. This treatment often includes methods for removing various contaminants."*

Groundwater is generally plentiful in Ogle County and the surrounding area. According to the Illinois Environmental Protection Agency's "Source Water Assessment Program" Ogle County has twenty-four (24) "community water supplies" and sixty-one (61) "non-community" water supplies. A "community water supply" serves at least 15 service connections used by year-round residents or regularly serves 25 year-round residents. "Non-community water supplies" may be one of two types: "Non-Transient Non-Community water supplies" serve at least the same 25 non-residential individuals during 6 months of the year; "Transient Non-Community water supplies" regularly serves at least 25 non-residential individuals (transient) during 60 or more days per year. All of the "community water supplies" and "non-community water supplies" in the County access ground water via wells.

The community water supplies in the County are: City of Byron, Country View Estates Subdivision, Village of Creston, Village of Davis Junction, Village of Forreston, Village of Hillcrest, Knoll's Edge Subdivision, Village of Leaf River, Lindenwood Water Association, Lost Lake Utility District, Meridian Mobile Home Park, Village of Mt. Morris, Mt. Morris Estates Mobile Home Park, Nordic Woods Subdivision, City of Oregon, City of Polo, City of Rochelle, Rockvale Corporation, Rolling Green Estates Mobile Home Park, Rolling Meadows Mobile Home Park, Shangri-La Mobile Home Park, Village of Stillman Valley and Woodlawn Utilities Corporation.

33,358 people in Ogle County, or 62.4% the total County population, receive their domestic water from a community water supply. The remainder of the population is served by private wells.

The Illinois Environmental Protection Act provides minimum protection zones of 200 feet for community wells, which is regulated by IEPA. However, to further minimize the risk to a community's groundwater supply, IEPA recommends that communities consider three additional actions: 1) Enact a "maximum setback zone" ordinance. These ordinances are authorized by the Illinois Environmental Protection Act and allow county and municipal officials the opportunity to provide additional protection up to a fixed distance, normally 1,000 feet from their well; 2) The water supply staff may wish to revisit their contingency planning documents. Contingency planning documents are a primary means to ensure that, through emergency preparedness, a community will minimize their risk of being without safe and adequate water; and, 3) The water supply staff is encouraged to review their cross connection control program to ensure that it remains current and viable. Cross connections to either the water treatment plant (for example, at bulk water loading stations) or in the distribution system may negate all source water protection initiatives provided by the community.

Community drinking water systems are inspected and monitored under the supervision of the Illinois Environmental Protection Agency (IEPA), while non-community drinking water systems are the responsibility of the Illinois Department of Public Health (IDPH). In addition, IDPH reviews water well installation plans, issues permits for new well construction, and inspects wells. However, private water well owners themselves have the primary responsibility to test well water for potential contaminants.

An estimated 37.6% of the population of Ogle County receives its domestic water supply via a private well. Groundwater (the source of fresh water for households with a well) can become contaminated in many ways: through contact with natural pollutants, such as arsenic and radon, and by human activities, such as chemical spills and failing septic systems. The degree to which a potential health threat may exist depends on the amount and type of the contamination. In some cases, contamination of the water can be detected by sight, taste or smell; however, many of the most serious problems can only be detected through laboratory testing of the water.

#### E. Surface Water

A watershed is defined as the land area that directly drains water, sediment, and other materials to a common stream, river or lake (often considered synonymous with a drainage basin or catchment). Watershed (drainage basin) boundaries follow topographic highs - land elevation, not political borders,

defines watershed boundaries. Watersheds are important as the viability of the watershed directly affects the health of the communities within that watershed. Water for human consumption, wildlife, industry and recreation are all impacted by activities that occur within the watershed.

Watersheds may be broken down into smaller and smaller units based on drainage area. For example, a large stream’s watershed, such as the Rock River watershed, may be broken down into smaller watersheds based on the streams that flow into it. In turn, these streams may be broken down into smaller units and so on. In Illinois, watersheds are categorized (from largest unit to smallest) as basins, sub-basins, and local watersheds. Ogle County is drained by the Rock River basin. Sub-basins of the Rock River basin that are within Ogle County are the Kishwaukee River, Pecatonica River and Rock River sub-basins (see Appendix II Maps, Map 5.2 Watershed Sub-Basins, Ogle County, Illinois). The local watersheds that drain Ogle County are: Beach Creek, Black Walnut Creek, Buffalo Creek, Coon Creek, East Fork Mill Creek, Elkhorn Creek, Fivemile Creek, Franklin Creek, Kishwaukee River, Kyte River Tributary, Kyte River, Leaf River, Lower Kilbuck Creek, Lower Rock River, Middle Rock River, Otter Creek, Pine Creek, Reid Creek, Steward Creek, Stillman Creek, Upper Kilbuck Creek, Upper Rock River, West Fork Mill Creek and Yellow Creek (see Appendix II Maps, Map 5.3 Local Watersheds, Ogle County, Illinois).

Ogle County has numerous lakes and ponds, most of which are man-made. The largest named lakes in Ogle County are Lost Lake (Sections 5, 8 & 9 Taylor Township; approximately 82 acres), Lake Sule (Section 29 Dement Township; approximately 73 acres), Lake Louise (Section 29 Byron Township; approximately 27 acres), Lake Ole (Section 24 Buffalo Township; approximately 18 acres), and Lake Lida (Section 36 Flagg Township; approximately 15 acres). Most lakes and ponds in the County are private, unnamed, less than 10 acres in area and are used for agricultural, recreational or erosion control/sediment management purposes.

The Illinois Environmental Protection Agency (IEPA) annually collects chemical, physical, biological, habitat and toxicity data on rivers and streams, inland lakes, Lake Michigan and groundwater to satisfy reporting requirements found in Section 305(b) of the Federal Clean Water Act (CWA). The primary purpose of the Section 305(b) process is to provide for an assessment of the overall water quality conditions of Illinois waters. The IEPA provides the following assessment of streams in Ogle County (not all streams are assessed):

**Table 5.2**  
**Stream Quality Data**  
**IEPA Assessed Streams Within Ogle County**

<b>Stream Segment ID</b>	<b>Stream Segment Name</b>	<b>Segment Length (mi.)</b>	<b>Designate Uses</b>	<b>Potential Causes of Impairment</b>	<b>Potential Sources of Impairment</b>
PQB 02	Kilbuck Cr.	6.54	Full overall use and aquatic life support. Not supported for Primary Contact (swimming)	Fecal Coliform	Unknown
PQB 04	Kilbuck Cr.	10.89	Full overall use and aquatic life support.	No data.	No data.
PQBE	Spring Run	6.12	Not assessed.	No data.	No data.
PQBA	E Br. Kilbuck Cr.	14.87	Not supporting overall and aquatic life.	Phosphorus	Atmospheric Deposition, unknown.

Stream Segment ID	Stream Segment Name	Segment Length (mi.)	Designate Uses	Potential Causes of Impairment	Potential Sources of Impairment
PQC 11	S. Br. Kishwaukee R.	7.15	Full aquatic life support, Not supporting fish consumption.	PCB's	Unknown
P 21	Rock River	18.39	Full aquatic life support, Primary and Secondary contact, Not supporting fish consumption.	PCB's, metals (mercury)	Atmospheric Deposition, Unknown.
PZZN	Sevenmile Branch	10.56	Not assessed.	No data.	No data.
P 14	Rock River	10.97	Full aquatic life support, Primary and Secondary contact, Not supporting fish consumption.	PCB's, metals (mercury)	Atmospheric Deposition, Unknown.
P 20	Rock River	25.04	Full aquatic life support, Primary and Secondary contact, Not supporting fish consumption.	PCB's, metals (mercury)	Atmospheric Deposition, Unknown.
PM	Silver Cr.	7.44	Not assessed.	No data.	No data.
PZU	Clear Cr.	8.85	Not assessed.	No data.	No data.
PZV	Gale Cr.	8.49	Not assessed.	No data.	No data.
PZW	Mud Cr. South	4.93	Not assessed.	No data.	No data.
PZZA	Spring Cr.	6.54	Not assessed.	No data.	No data.
PH 17	Elkhorn Cr.	20.43	Not supporting aquatic life.	Nutrients (nitrates), suspended solids.	Non-irrigated crop production, livestock grazing.
PHG	Eagle Cr.	8.73	Not assessed.	No data.	No data.
PHJ	W. Fk. Elkhorn Cr.	6.06	Not assessed.	No data.	No data.
PHE 01	Buffalo Cr.	8.09	Full overall and aquatic life support.	No data.	No data.
PHE-A1	Buffalo Cr.	4.16	Full overall and aquatic life support.	No data.	No data.
PHE-C1	Buffalo Cr.	2.06	Not supporting aquatic life.	Nutrients (phosphorus, total ammonia-N)	Municipal point sources.

<b>Stream Segment ID</b>	<b>Stream Segment Name</b>	<b>Segment Length (mi.)</b>	<b>Designate Uses</b>	<b>Potential Causes of Impairment</b>	<b>Potential Sources of Impairment</b>
PHI 01	Fivemile Cr.	7.24	Full overall and aquatic life support.	No data.	No data.
PJ 01	Pine Cr.	14.7	Full overall and aquatic life support.	No data.	No data.
PJ 11	Pine Cr.	8.06	Full overall and aquatic life support.	No data.	No data.
PJBA-C1	Mt. Morris Cr. North	2.76	Full overall and aquatic life support.	Nutrients (phosphorus, total ammonia-N)	Municipal point sources.
PJBA-C2	Mt. Morris Cr. North	1.13	Full overall and aquatic life support.	No data.	No data.
PJBB	Mt. Morris Cr. South	3.3	Not assessed.	No data.	No data.
PJB-C4	Coon Cr.	6.05	Full overall and aquatic life support.	No data.	No data.
PL 03	Kyte R.	9.18	Full overall and aquatic life support.	Fecal Coliform.	Agricultural.
PL 18	Kyte R.	10.96	Full overall and aquatic life support.	No data.	No data.
PL 03	Kyte R.	9.18	Full aquatic life support. Not supporting Primary contact (swimming).	Fecal Coliform	Agricultural.
PL 18	Kyte R.	10.96	Full overall and aquatic life support.	No data.	No data.
PL 99	Kyte R.	10.74	Full overall and aquatic life support.	No data.	No data.
PLD	Honey Cr.	5.65	Not assessed.	No data.	No data.
PLB 03	Beach Cr.	3.31	Full overall and aquatic life support.	No data.	No data.
PLC 01	Steward Cr.	5.27	Full overall and aquatic life support.	No data.	No data.
PLE 03	Prairie Cr.	11.55	Full overall and aquatic life support.	No data.	No data.
PN 01	Leaf R.	4.3	Full overall and aquatic life support.	No data.	No data.

Stream Segment ID	Stream Segment Name	Segment Length (mi.)	Designate Uses	Potential Causes of Impairment	Potential Sources of Impairment
PN 02	Leaf R.	4.04	Full overall and aquatic life support.	No data.	No data.
PN 03	Leaf R.	21.4	Full overall and aquatic life support.	No data.	No data.
PNA	Mud Cr.	13.95	Full overall and aquatic life support.	No data.	No data.
PO 01	Mill Cr.	14.34	Full overall and aquatic life support.	No data.	No data.
POA	Middle Cr.	9.42	Full overall and aquatic life support.	No data.	No data.
POAA	E. Fk. Middle Cr.	11.07	Not assessed.	No data.	No data.
PP 01	Stillman Cr.	17.92	Full overall and aquatic life support.	No data.	No data.
PPA 01	Black Walnut Cr.	10.4	Full overall and aquatic life support.	No data.	No data.
PWNA	Crane Grove Cr.	9.33	Full overall and aquatic life support.	No data.	No data.

Source: [Illinois Integrated Water Quality Report and Section 303\(d\) List - 2010](#) (IL Environmental Protection Agency)

Note: Some streams/stream segments are not entirely within Ogle County. This table does not reflect all Ogle County streams/stream segments, but only those assessed and/or monitored by IEPA.)

#### F. Wetlands

In general terms, wetlands are lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface. The single feature that most wetlands share is soil or substrate that is at least periodically saturated with or covered by water. The water creates severe physiological problems for all plants and animals except those that are adapted for life in water or in saturated soil. Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of the year. (*U.S. Fish & Wildlife Service*)

Wetlands found to occur within Ogle County are classified by the U.S. Fish & Wildlife Service as “Lacustrine”, “Palustrine” or “Riverine” wetlands.

The Lacustrine System includes wetlands and deepwater habitats with all of the following characteristics: 1) situated in a topographic depression or a dammed river channel; 2) Lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage; and, 3) Total area exceeds 20 acres.

The Palustrine System includes all non-tidal wetlands dominated by trees, shrubs, emergents, and mosses or lichens. The Palustrine System was developed to group the vegetated wetlands traditionally called by such names as marsh, swamp, fen, and prairie, which are found throughout the United States. It also includes the small, shallow, permanent or intermittent water bodies often called ponds. Palustrine wetlands may be situated shoreward of lakes, river channels, or estuaries; on river floodplains; in isolated catchments; or on slopes. They may also occur as islands in lakes or rivers.

The Riverine System includes all wetlands and deepwater habitats contained in natural or artificial channels periodically or continuously containing flowing water or which forms a connecting link between the two bodies of standing water. Upland islands or Palustrine wetlands may occur in the channel, but they are not part of the Riverine System.

The National Wetlands Inventory (U.S. Fish & Wildlife Service) indicates the presence of approximately 8,157.5 acres of wetlands within Ogle County. Approximately 61.7% of these wetlands are classified as Palustrine; approximately 22.8% are classified as Lacustrine; and, approximately 15.5% are classified as Riverine. The descriptive (Cowardin classification system) types of wetlands found in Ogle County are indicated in the following Table 5.3.

**Table 5.3  
Wetland Type and Acreage  
Ogle County, IL**

Wetland Type	Area (Ac.)
Freshwater Emergent (Palustrine)	2,015.6
Freshwater Forest/ Shrub (Palustrine)	2,544.0
Pond (Palustrine)	472.5
Lake (includes much of Rock River and other bodies of water) (Palustrine)	1,859.4
Riverine	1,265.6
Other (Palustrine)	0.4
<b>TOTAL</b>	<b>8,157.5</b>

Source: U.S. Fish & Wildlife Service, National Wetlands Inventory

### G. Floodplains

Flood plain lands and adjacent waters combine to form a complex, dynamic physical and biological system found nowhere else. When portions of floodplains are preserved in (or restored to) their natural state, they provide many benefits to both human and natural systems. These benefits range from providing aesthetic pleasure to reducing the number and severity of floods, helping handle stormwater runoff and minimizing non-point water pollution. For example, by allowing floodwater to slow down, sediments settle out, thus maintaining water quality. The natural vegetation filters out impurities and uses excess nutrients. Such natural processes cost far less money than it would take to build facilities to correct flood, stormwater, water quality and other community problems. Natural resources of floodplains fall into three categories: water resources, living resources and societal resources. The following sections describe each category's natural and beneficial functions.

#### **Natural flood and erosion control**

Over the centuries, floodplains develop their own ways to handle flooding and erosion with natural features that provide floodwater storage and conveyance, reduce flood velocities and flood peaks,

and curb sedimentation. Natural controls on flooding and erosion help to maintain water quality by filtering nutrients and impurities from runoff, processing organic wastes and moderating temperature fluctuations. These natural controls also contribute to recharging groundwater by promoting infiltration and refreshing aquifers, and by reducing the frequency and duration of low surface flows.

#### **Biologic resources and functions**

Floodplains enhance biological productivity by supporting a high rate of plant growth. This helps to maintain biodiversity and the integrity of ecosystems. Floodplains provide excellent habitats for fish and wildlife by serving as breeding and feeding grounds. They also create and enhance waterfowl habitats, and help to protect habitats for rare and endangered species.

#### **Societal resources and functions**

People benefit from floodplains through the food they provide, the recreational opportunities they afford and the scientific knowledge gained in studying them. Wild and cultivated products are harvested in floodplains, which are enhanced agricultural land made rich by sediment deposits. They provide open space, which may be used to restore and enhance forest lands, or for recreational opportunities or simple enjoyment of their aesthetic beauty. Floodplains provide areas for scientific study and outdoor education. They contain cultural resources such as historic or archaeological sites, and thus provide opportunities for environmental and other kinds of studies. Floodplains can increase a community's overall quality of life, a role that often has been undervalued. By transforming floodplains from problem areas into value-added assets, the community can improve its quality of life. In Illinois, Chicago's lakefront, Peoria's riverfront, Naperville's Riverwalk, and Lockport's historic canal district are well-known examples. Parks, bike paths, open spaces, wildlife conservation areas and aesthetic features are important to citizens. Assets like these make the community more appealing to potential employers, investors, residents, property owners and tourists.

The Federal Emergency Management Agency (FEMA) has designated and mapped floodplains, or "Special Flood Hazard Areas" within Ogle County (for specific information, the Ogle County Flood Insurance Rate Maps and Flood Insurance Study should be reviewed [available from the Ogle County Zoning Administrator / Flood plain Administrator]). Encroachment on flood plains by development, such as structures and fill, reduces the flood-carrying capacity, increases the flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. Development can occur in Special Flood Hazard Areas if structures are constructed above the elevation of the 100-year flood plain, but flood plain development should be discouraged.

In order to have common standards, the National Flood Insurance Program (NFIP) and the State of Illinois adopted a baseline flooding probability called the base flood. The base flood is the one percent chance flood. The one percent chance flood is the flood that has a one percent (one out of 100) chance of occurring in any given year. The one percent chance was chosen as a compromise between excessive exposure to flood risk from using a lower standard (such as a 10 percent chance flood) and applying such a high standard (say, a 0.1 percent chance flood) that it would be considered excessive and unreasonable for the intended purposes of requiring the purchase of flood insurance and regulating new development. The one percent chance flood has also been called the 100-year flood. The term 100-year flood is often misconstrued. Commonly, people interpret the 100-year flood definition to mean "once every 100 years." This is wrong. You could have a 100-year flood two times in the same year, two years in a row, or four times over the course of 100 years. You could also not have a 100-year flood over the course of 200 years. To avoid confusion (and because probabilities and statistics can be confusing), the NFIP uses the term base flood. A 100-year flood is defined as having a one-percent chance of being reached or exceeded in any single year. Thus, the 100-year flood also is called the "one-percent annual chance flood." To restate, the 100-year flood, the base flood, refers to a flood that the one percent chance of occurring in any given year. The terms base flood, 100-year flood and one-percent annual chance flood are used interchangeably

throughout the NFIP. Another term used is the “500-year flood.” This has a 0.2% chance of occurring in any given year. While the odds are more remote, it is the standard used for protecting critical facilities, such as hospitals and power plants.

Development within Special Flood Hazard Areas is regulated to the “Base Flood.” The land area covered by the floodwaters of the base flood is the base flood plain. On FEMA maps, the base flood plain is called the Special Flood Hazard Area (SFHA). The SFHA is the area where the NFIP’s flood plain management regulations must be enforced by the community and the area where the federal mandatory flood insurance purchase requirement applies. The computed elevation to which floodwater is anticipated to rise during the base flood is the base flood elevation (BFE).

The term "100-year flood" has caused much confusion for people not familiar with statistics. Another way of looking at it is to think of the odds that a base flood will happen sometime during the life of a 30-year mortgage (26% chance) as indicated in Table 5.4 below.

**Table 5.4  
Chance of Flooding Over a Period of Years**

Flood Size				
Time Period	10-Year	25-Year	50-Year	100-Year
1 Year	10%	4%	2%	1%
10 Years	65%	34%	18%	10%
20 Years	88%	56%	33%	18%
30 Years	96%	71%	45%	26%
50 Years	99%	87%	64%	39%

Source: National Flood Insurance Program

Even these numbers do not convey the true flood risk because they focus on the larger, less frequent, floods. If a house is low enough, it may be subject to the 10- or 25-year flood. During the proverbial 30-year mortgage, it may have a 26% chance of being hit by the 100-year flood, but the odds are 96% (nearly guaranteed) that it will be hit by a 10-year flood. Compare those odds to the only 5% chance that the house will catch fire during the same 30-year mortgage. (Source: CFM Study Guide, IL Assoc. of Flood plain and Stormwater Managers).

#### H. Natural Areas and Open Spaces

Natural areas and open space provide Ogle County with recreational opportunities, resource protection and aesthetic beauty, and are an important part of the County’s identity. Ogle County is host to a variety of natural communities and vegetation types. The distribution and extent of these natural communities has been altered significantly since European settlement. Many of the natural communities that remain were spared the conversion to cultivation due to uncompromising topography, unproductive soils, or preservation efforts on the part of the land owner.

According to the Illinois Department of Natural Resources, in its study of the Lower Rock River basin (also known as the “Rock River country,” the heart of which is Ogle County), the Rock River country boasts 18 distinct “natural communities.” These are habitats of particular properties and the plants and animals adapted (in some cases, uniquely) to them. Among these communities are acid seeps, fens, and sandy south-facing slopes that are, in effect, mini-deserts; wooded uplands and flood plains, and soils derived from loam, limestone and sandstone; rivers and marsh, and grasslands of several types, including prairies that grow atop eroded glacial rubble or on forested slopes exposed to the sun.

The more varied the habitat, the more varied are the creatures that can thrive there. The rich panoply of life in the Rock River country includes 198 species of vertebrates, including 122 species of breeding native birds, 13 amphibians and 33 reptile species, 39 species of native mammal, and 78 of native freshwater fish. Thirty-three species of native mussel are found here, and 10 of native crustacean. In all, about 950 taxa or botanical types have been found in an area that includes most of the Rock River country; one valley in Castle Rock State Park harbors 27 different species of fern alone.

Several of the County's streams have been rated as highly valued aquatic resources by state scientists using complex criteria of water and habitat quality, and all but two short stream segments of all streams assessed in Ogle County are rated as good quality by the Illinois Environmental Protection Agency's "Statewide Stream Aquatic Life Use Support Assessment Report."

The forests of the Rock River country provide habitat for animals of all kinds. No part of Illinois is home to more breeding pairs of forest birds (85) than the Castle Rock State Park/Lowden-Miller State Forest complex. Many of these are warblers, including one of the state's largest populations of cerulean warblers, which return each spring from Colombia and Bolivia to the George B. Fell Nature Preserve in Castle Rock State Park. Flood plain forests are home to Acadian flycatchers and American redstarts. Bats feed in these insect-rich areas too, while beaver, mink and muskrat frequent the open water. Even otters are reported to have been seen in Ogle County. Bald eagles are also becoming a frequent site along the Rock River during the winter months.

Rare habitats usually harbor plants and animals that, having adapted to them, become rare as well. State agencies maintain lists of "special status" plant and animal species. These are species thought to be in danger of disappearing from the state or which are threatened with endangerment. (Federal agencies list species at risk of disappearing nationally.) In all, 56 state-listed species of various kinds are found in the Rock River country. So are six species that are either listed by federal experts as endangered or threatened, or are being considered for listing.

Ogle County and the Rock River country, like much of the rest of Illinois, lies at the crossroads of continental climate zones. The area sees Canadian winters and Gulf of Mexico summers, and it lies in the zone of transition between the nation's humid Eastern forests and its dry Western plains. The territories within which all living things make their homes - what scientists call their "natural ranges" - are largely determined by climate, so where climates overlap, the ranges of plants and animals overlap, too.

- The western hognose snakes that have been sighted near Lowden-Miller State Forest and near Castle Rock State Park dwell at the eastern-most extent of their natural range.
- The white pines along Pine Creek in the White Pines State Park survive at the extreme southern limit of their natural range, as do other woody plants found there, such as the yellow birch and the hairy woodrush.
- The Rock River country lies at the northern extreme of the breeding range of many southern birds - the summer tanager and Kentucky warbler are two - and is about as far south as northern species such as the Canada and mourning warbler are normally found.
- It is said that half the continent is folded up inside the Rock River country. A botanist in 1860 found the vegetation nestled in its sandstone cliffs to be "so entirely similar to that of some parts of Massachusetts, and so entirely unlike that of the prairies ten miles above, as to excite astonishment."
- In the cool deep ravines and protected sandstone cliff faces at the 686-acre George B. Fell Nature Preserve, plants such as the bunchberry, hairy woodrush, round-leaved shinleaf and wild sarsaparilla plants survive. They are refugees from a community of boreal, or northern coniferous forest plants that covered northern Illinois 10 -15,000 years ago.

- To experience what Illinois was like then, one has to travel to the northern Great Lakes states; spruce trees were as common in Illinois as maples are today. Safe in their sandstone bunkers, these cool-loving plants survived a pronounced post-glacial hot and dry spell that lasted 3,300 years.
- Where it lies exposed to weather, the sandstone that forms the cliffs in the Fell Nature Preserve has crumbled to sand. The resulting soils lie within a brisk hike from Castle Rock, yet the dry open woodlands they sustain are half a continent away from the park's canyons in ecological terms. Here may be found populations of the slender glass lizard, now rare in Illinois but widespread during a warmer, drier between-glacier interval about 5,000 to 8,000 years ago when conditions in Illinois were more like those of modern Oklahoma.

The Illinois Natural Areas Inventory (INAI) was conducted by the University of Illinois, the Natural Land Institute and the Illinois Department of Conservation (now Illinois Department of Natural Resources) over a three-year period in the mid-1970's to document remaining examples of the natural communities of Illinois. Results from the Inventory indicated that, statewide, only 0.07% of Illinois' total land and water area remained in what the INAI described as "high quality, relatively undisturbed" condition at the time. The Inventory established seven categories of natural areas based on significant features. The categories are:

- I - High quality natural communities and natural community restorations;
- II - Specific suitable habitat for state-listed species of state-listed species relocations;
- III - State dedicated Nature Preserves, Land and Water Reserves, and Natural Heritage Landmarks;
- IV - Outstanding geological features;
- V - Category unused at this time;
- VI - Unique concentrations of flora or fauna and high quality streams; and,
- VII - Category not used at this time.

The INAI recognized 83 natural community types from 9 community classes for the state. The Inventory documented examples of 18 different natural community types, from 6 community classes for Ogle County. Some of these represent the only or best remaining examples of a particular community type for the state. The features and associated vegetation of many of these communities make them unique within the state.

**Table 5.5  
Illinois Natural Areas Inventory (INAI) Sites within Ogle County, Illinois**

<b>INAI No.</b>	<b>Natural Area Name -Category: (# of occurrences) *Significant/exceptional features</b>	<b>Acreage</b>	<b>Owner-ship</b>
11	Douglas E. Wade Prairie - Category I, III * B - dry-mesic gravel prairie	15.2	Private
74	Stronghold Hill Prairie - Category I, III * B - glacial drift hill prairie	1.5	Private
86	Lowden Memorial Forest - Category I * B - dry-mesic upland forest	25.3	Public
87	White Pines Forest State Park - Category I, II, III * B - dry-mesic upland forest	71.9	Public

<b>INAI No.</b>	<b>Natural Area Name -Category: (# of occurrences) *Significant/exceptional features</b>	<b>Acreage</b>	<b>Owner-ship</b>
88	Pine Rock - Category I, II, III * A - sandstone cliff community, wet-mesic prairie	68.4	Public
89	Heeren Prairie - Category I, III * A - dry dolomite prairie	3.5	Private
458	Oregon Geological Area - Category IV * Exposed Franconian, Potosi dolomite	9.4	Private
459	Prairie Star School Geological Area - Category IV * Potosi dolomite outcrop	2.2	Private
482	Devil's Backbone - Category III	50.51	Private
685	Nachusa Grasslands - Category I, II * A - dry gravel prairie, A sandstone cliff community, B marsh, B seep	1,879.1 (Ogle Co. only)	Public/ Private
765	Sinnissippi Forest - Category II	7.21	Private
770	Fearer Tract at Castle Rock State Park - Category II, III, IV * A - sandstone cliff community, exposed St. Peter Sandstone formation	157.3	Private
773	Beach Cemetery Prairie - Category I, II, III * A & B - dry-mesic prairie	3.62	Private
774	Mt. Morris East Geologic Area - Category IV * Exposed of Mud Creek Fault	10.8	Private
1052	Castle Rock - Category I, II, III, IV * A - seep, B - sandstone cliff community	624.7	Public
1106	Byron Dragway Prairie - Category II, III * Dry-mesic prairie	16.2	Private
1107	Commonwealth Edison Prairie - Category II * Dry prairie, dry-mesic prairie	177.1	Private

INAI No.	Natural Area Name -Category: (# of occurrences) *Significant/exceptional features	Acreage	Owner-ship
1108	Kilbuck Prairie - Category II	1.2	Private
1454	Jarrett Prairie - Category II, III	312.6	Public
1455	Lowden-Miller Forest - Category I, II * A - sandstone cliff community, B & C - dry and dry-mesic upland forest, perennial stream	904.5	Public
1527	Piros Prairie - Kyte Creek Fen - Category I, III	125.6	Private
1717	Kyte River - Flagg Center/Daysville Segment - Category VI	115.2	Private
1747	Kyte River Bottoms - Category III	231.3	Private
1789	Kishwaukee River South Branch - Category VI	192.91	Private

Source: Illinois Department of Natural Resources

### I. Wildlife

Much of Ogle County is suitable habitat for a variety of species of wildlife including birds, mammals, amphibians, reptiles and fish. Even in the intensive agricultural areas, scattered woodlands and fence rows exist which provide habitat for various wildlife species.

Mammals commonly sighted in Ogle County include white-tailed deer, red fox, coyote, grey and fox squirrel, woodchuck, cotton-tail rabbit, raccoon, opossum, Eastern chipmunk, thirteen-lined ground squirrel, and several species of bats. There have been several reports of wolf and mountain lion sightings in Ogle County.

Many species of birds live year-round in Ogle County or are migratory visitors during various times throughout the year. Bald eagles have become more common in Ogle County, particularly in winter months, and several nesting pairs have been reported and observed.

Several species of reptiles and amphibians are known to occur in Ogle County, including salamanders and newts, frogs, turtles and snakes.

The Illinois Natural Heritage Database lists nine (9) species of threatened or endangered animals that have been observed in Ogle County as of September 12, 2011, as follows:

<u>Scientific Name</u>	<u>Common Name</u>	<u>State Status</u>
<i>Bartramia longicauda</i>	Upland Sandpiper	Endangered
<i>Cyclonaias tuberculata</i>	Purple Wartyback Mussel	Threatened
<i>Emydoidea blandingii</i>	Blanding's Turtle	Threatened
<i>Erimystax x-punctatus</i>	Gravel Chub	Threatened
<i>Hemidactylium scutatum</i>	Four-toed Salamander	Threatened

<i>Heterodon nasicus</i>	Plains Hog-nosed Snake	Threatened
<i>Lanius ludovicianus</i>	Loggerhead Shrike	Threatened
<i>Ligumia recta</i>	Black Sandshell	Threatened
<i>Terapene ornata</i>	Ornate Box Turtle	Threatened

J. Flora.

Prior to settlement, the area of present-day Ogle County consisted of approximately 58 percent prairie, 21 percent timber, and the remainder were wetland, bottom land and terrace soils. As people settled the County, wetlands were drained and prairies tilled for agricultural purposes, and timber groves were utilized for building materials and fuel.

In present-day Ogle County, native prairie is all but non-existent, except for a few scattered prairie remnants found mostly along railroad right-of-ways, in old pioneer cemeteries and on rocky and/or sandy ridges and hillsides that have not been tilled. The Byron Forest Preserve and Nachusa Grasslands have restored large areas to native prairie vegetation. Scattered “islands” of primarily deciduous forest exist scattered throughout the County, particularly along stream corridors and in areas not well suited to cropland. There are larger tracts of forest primarily along the Rock River corridor north of Byron and south of Oregon.

The open spaces, Natural Areas, State Parks, State Forest and Nature Preserves in the County are host to a wide variety of floral species - some of which are unique or rare. The Illinois Natural Heritage Database lists thirty-three (33) species of threatened or endangered plant species that have been observed in Ogle County as of September 10, 2011, as follows:

<u>Scientific Name</u>	<u>Common Name</u>	<u>State Status</u>
<i>Amelanchier sanguinea</i>	Shadbush	Endangered
<i>Arctostaphylos uva-ursi</i>	Bearberry	Endangered
<i>Asclepias lanuginosa</i>	Woolly Milkweed	Endangered
<i>Aster furcatus</i>	Forked Aster	Threatened
<i>Besseyia bullii</i>	Kittentails	Threatened
<i>Betula alleghaniensis</i>	Yellow Birch	Endangered
<i>Carex cryptolepsis</i>	Sedge	Endangered
<i>Carex echinata</i>	Sedge	Endangered
<i>Carex woodii</i>	Pretty Sedge	Threatened
<i>Castilleja sessiliflora</i>	Downy Yellow Painted Cup	Endangered
<i>Ceanothus herbaceus</i>	Redroot	Endangered
<i>Cornus canadensis</i>	Bunchberry	Endangered
<i>Cordyalis sempervirens</i>	Pink Corydalis	Endangered
<i>Cypripedium accaule</i>	Moccasin Flower	Endangered
<i>Dichanthelium boreale</i>	Norther Panic Grass	Endangered
<i>Equisetum pratense</i>	Meadow Horsetail	Threatened
<i>Equisetum sylvaticum</i>	Horsetail	Endangered
<i>Filipendula rubra</i>	Queen-of-the-prairie	Endangered
<i>Gymnocarpium dryopteris</i>	Oak Fern	Endangered
<i>Helianthus giganteus</i>	Tall Sunflower	Endangered
<i>Lathyrus ochroleucus</i>	Pale Vetchling	Threatened
<i>Lespedeza leptostachya</i>	Prairie Bush Clover	Endangered
<i>Luzula acuminata</i>	Hairy Woodrush	Endangered
<i>Lycopodium clavatum</i>	Running Pine	Endangered
<i>Lycopodium dendroideum</i>	Ground Pine	Endangered
<i>Nothocalais cuspidata</i>	Prairie Dandelion	Endangered
<i>Phegopteris connectilis</i>	Long Beech Fern	Endangered
<i>Sorbus americana</i>	American Mountain Ash	Endangered

<i>Speyeria idalia</i>	Regal Fritillary	Threatened
<i>Sullivantia sullivanii</i>	Sullivantia	Threatened
<i>Tomanthera auriculata</i>	Ear-leafed Foxglove	Threatened
<i>Trientalis borealis</i>	Star-flower	Endangered
<i>Woodsia ilvensis</i>	Rusty Woodsia	Endangered

### Section 5.5 Cultural Resources

Cultural and historic resources often help link the past with the present and can give a community a sense of place or identity. These resources can include historic buildings and structures along with ancient, historic and archeological sites.

Many of Ogle County’s historic structures have been lost to time, accidental fires, and the demolition crew, although there are some fine examples of late-nineteenth century residential architecture, and the commercial downtown areas of the cities and villages have both historical and cultural value. The County cemeteries are an important cultural and genealogical resources, serving as records of past inhabitants of the area.

Early trails were important to the settlement and development of Ogle County. Many trails that later became wagon roads and stage routes were originally Indian trails. As settlers moved to the area, many trails were blazed across the County to make travel and marketing of agricultural products easier and safer.

The timber groves in the area are also important cultural and historic resources. The groves served as important resting places for travelers and sources of raw materials and the necessities of life in the early settlement days, as they provided sources of shelter, lumber, fire wood, water, and game for food. The groves later became recreational areas for community, church and family festivals and picnics.

Table 5.6 below details the sites in Ogle County that are listed on the National Register of Historic Places. The table column with the heading “Site ID No.” corresponds to the site locations as indicated on “Map 5.3 National Register of Historic Places Sites in Ogle County”.

**Table 5.6**  
**Sites Listed on the National Register of Historic Places**  
**Ogle County, Illinois**

Site ID No.	Site	Location	Historic Significance (Period)	Architectural Style	Historic Function	Current Function
1	Bryant H. and Lucie Barber House	103 N. Barber Ave., Polo	Architecture (1900-1924)	Classical Revival	Dwelling	Dwelling
2	Henry D. Barber House	410 W. Mason St., Polo	Architecture (1875-1899)	Classical Revival	Dwelling	Medical business/ office and dwelling
3	Buffalo Grove Lime Kiln	Galena Trail Road, Polo	Engineering, industry (1900-1924, 1875-1899, 1850-1874)	Other	Industry/ Processing/ Extraction	Not in use

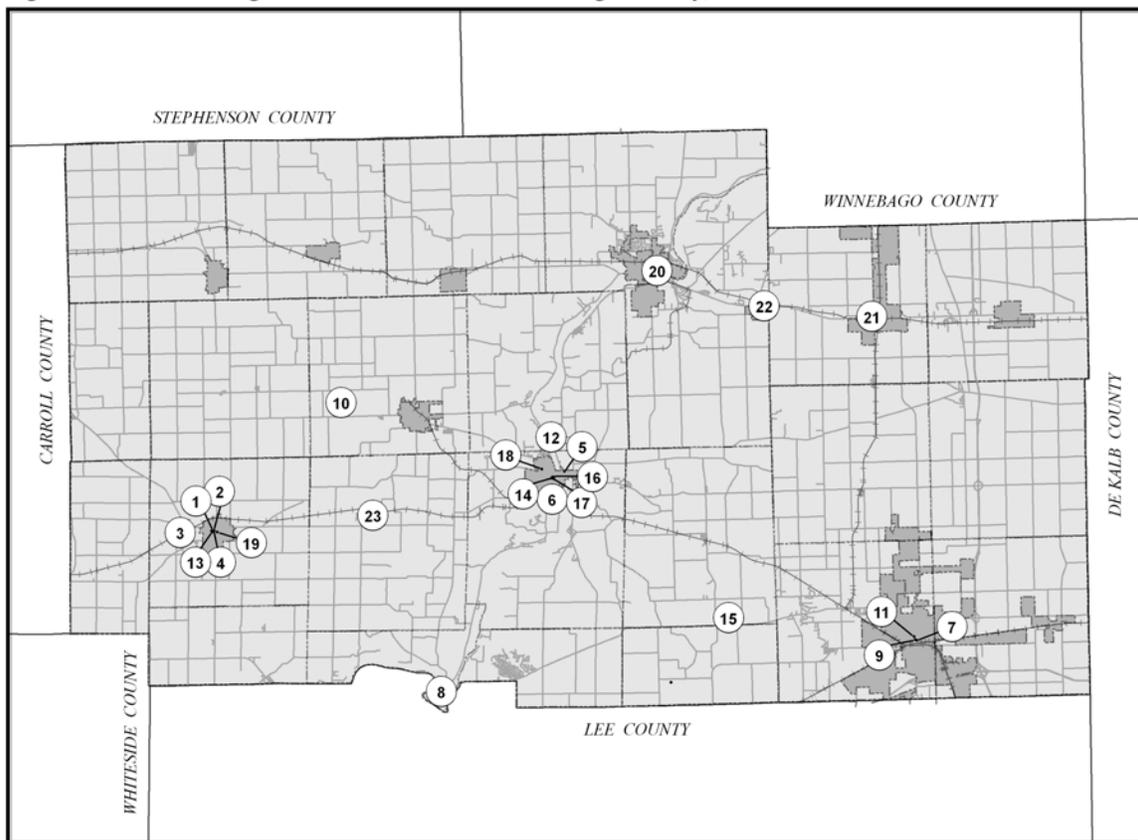
4	Buffalo Township Public Library	302 W. Mason St., Polo	Education (1925-1949, 1900-1924)	---	Library	Library, meeting hall
N/A	Camling-Cline Mound Group	Address/Location is restricted	Archaeological (Pre-Columbian Native American)	---	---	---
5	Chana School	201 N. River Rd., Oregon	Architecture (1875-1899)	Other, Italianate	Meeting hall, School	Meeting hall, museum
6	Chicago, Burlington and Quincy Railroad Depot	400 Collins St., Oregon	Rail transportation	—	Railroad depot	In process of being converted to museum
7	City and Town Hall	Fourth Ave. & Sixth St., Rochelle	Politics/government (1925-1949, 1900-1924, 1875-1899)	---	City hall, correctional facility, fire station, library	Museum
8	John Deere House and Shop	Illinois & Clinton St., Grand Detour	Agriculture, invention (1825-1849)	---	Business, dwelling	Museum
9	Flagg Township Public Library	Northeast corner of 7 <sup>th</sup> St. at 4 <sup>th</sup> Ave., Rochelle	Architecture/engineering (1900-1924)	No style listed	Library	Library
10	Samuel M. Hitt House	7782 W. IL Route 64, Mt. Morris	Architecture/engineering (1850-1874)	Italianate	Dwelling	Dwelling
11	William H. Holcomb House a/k/a Carl Vandre House	526 N. 7 <sup>th</sup> St., Rochelle	Architecture/engineering (1850-1874)	No style listed	Dwelling	Dwelling
12	Indian Statue	Lowden Memorial State Park, 1411 N. River Rd., Oregon	Architecture/engineering (1900-1924)	No style listed	Work of art	Work of art
13	John McGrath House	403 W. Mason St., Polo	Architecture (1875-1899)	Queen Anne	Dwelling	Dwelling

14	William Moats Farm	Wood Rd., Ashton	Architecture, agriculture (1925-1949, 1900-1924, 1875-1899, 1850-1874, 1825-1849)	Other	Agricultural outbuildings, secondary structure, dwelling	Agricultural outbuildings, secondary structure, dwelling
15	Ogle County Courthouse	Courthouse Square, 105 S. 5 <sup>th</sup> St., Oregon	Architecture (1875-1899)	No style listed	Courthouse	County administrative offices
16	Oregon Commercial Historic District	Central business district area of Oregon	Industry, commerce, politics/government, art, architecture (1950-1974, 1925-1949, 1900-1924, 1875-1899, 1850-1874)	Italianate, Classical Revival	Courthouse, department store, manufacturing facility, meeting hall, professional, restaurant, specialty store	Business, courthouse, financial institution, professional, restaurant, specialty store
17	Oregon Public Library	300 Jefferson St., Oregon	Education, architecture (1950-1974, 1925-1949, 1900-1924)	Bungalow/ Craftsman, Late 19 <sup>th</sup> and Early 20 <sup>th</sup> Century American Movements	Library, meeting hall, museum	Library, meeting hall, museum
18	Pinehill	400 Mix St., Oregon	Architecture (1850-1874)	Italianate	Dwelling	Dwelling
19	Polo Independent Order of Odd Fellows Lodge No. 197	117 W. Mason St., Polo	Social history, architecture (1950-1974, 1925-1949, 1900-1924)	---	Meeting hall, specialty store	Specialty store
20	Soldier's Monument	Chestnut & Second St., Byron	Social history (1875-1899, 1850-1874)	---	Monument/ marker	Monument/ marker
21	Stillman's Run Battle Site a/k/a Battleground Memorial Park	Roosevelt & Spruce St., Stillman Valley	Military (1900-1924, 1825-1849)	---	Battle site	Monument/ marker, park

22	Village of Davis Junction Town Hall a/k/a Scott Township Hall	202 Pacific Ave., Davis Junction	Politics/ government, social history (1950-1974, 1925-1949, 1900-1924, 1875-1899)	---	City hall, meeting hall	Museum
23	White Pines State Park Lodge and Cabins	6712 W. Pines Rd., Oregon	Architecture/ engineering (1925-1949)	Other	Hotel	Hotel, park

Source: National Register of Historic Places

Figure 5.3: National Register of Historic Places Sites in Ogle County, IL



There are many other cultural resources in the County that are not listed on the National Register of Historic Places, but have local cultural and historic value include the following as indicated in Table 5.7 below. The table column with the heading "Site ID No." corresponds to the site locations as indicated on "Map 5.4 Cultural Resources Not Listed on the National Register of Historic Places, Ogle County".

**Table 5.7  
Cultural Resources Not Listed on the National Register of Historic Places  
Ogle County, Illinois**

<b>Site ID No.</b>	<b>Site Name</b>	<b>Location</b>	<b>Site Interpretation</b>
1	Eagle Point	17500 Block of W. Eagle Point Road	A brick school and a few houses remain of this old village where the Eagle Point Gang Plow factory once stood.
2	Wilson's Mill	1/8 Mile west of S. Wilson Mill Road on Elm Road	The first mill in the area was build just over the county line in 1835. The second mill was built near the road in 1849. The millrace and logs of the first mill can still be seen and also the stones from the dam of the second grist mill.
3	Buffalo Grove	13000 Block of W. Milledgeville Road	A stone marker has been placed near the spot where Isaac Chambers, first settler in the county, built his home. The first town, St. Marion, was laid out here in 1835. A half mile north is another stone marker placed where William Durley was killed by Native Americans.
4	West Branch Church of the Brethren	4014 N West Branch Road	Built of limestone in 1862.
5	North Grove Evangelical Church	10384 W Coffman Road	Picturesque stone church on the crest of a hill.
6	White Eagle Camp and Stone School	6903 W. White Eagle Road	A saw mill and grist mill were located on the Leaf River where this camp is now located. A stone school house is located south of the entrance to the Camp on N. Bass Road.
7	Lightsville	9000 Block of N Leaf River Rd and 3500 Block of W. Lightsville Road	First settlers came in 1836 among them being John Light. The stone church was built in 1868 but four of the original buildings which are older still stand. They are: a store, hotel, parsonage, Dr. Bowerman's home and office.
8	Gitchell Homestead	10538 N Pecatonica Road	Large house built of bricks made on the farm by Hiram Gitchell who was one of the county's largest land owners.

9	Shott's Mill	N. Mill Road on curve approximately ½ mile north of IL Route 72	Also known as Glen Haven. Remnants of barn and mill pond can be seen.
10	Stronghold	1922 N. IL Route 2	Medieval type castle built in 1930 by Walter Strong, Chicago publisher. Scenes from the Hollywood film "MacBeth" were taken here. It is now a Presbyterian summer retreat and camp.
11	Silver Creek Church and Cemetery	W. West Grove Road west of N. Leaf River Road	Old stone church building. The remains of an old stage coach inn may lie a short distance south.
12	Pine Creek Settlement a/k/a Pennsylvania Corners	Intersection S. Lowell Park Road and W. Penn Corner Road	Pine Creek Christian Church and Cemetery stand at this crossroads, known as Pennsylvania Corners, where a number of people from that State settled.
13	Oak Ridge Road	Ridge Road from Grand Detour to Mt. Morris	Andrus Stage Route traveled this road from Grand Detour to Freeport.
14	Grand Detour		One of the first towns in northern Illinois and now a New England-style village. There are many old landmarks here such as the John Deere Historic Site where he made the first self-scouring steel plow. St. Peter's Episcopal Church, built in 1850 on land donated by Leonard Andrus, partner of John Deere, is the second oldest Episcopal church building in Illinois. Orson Welles spent several summers here as a youth.
15	Lighthouse Point	Corner of S. Daysville Road and E. Lighthouse Road	Dr. John Roe came here in 1836. He always kept a light in his cabin as a beacon for travelers in the night.
16	Lafayette Grove	Near intersection of S. Sudbury and E. Yorty Roads	A boulder marks the spot where one of the first log schools in the county stood.
17	Washington Grove	3000 Block of S. Prairie Road	A boulder marks the place where two prairie bandits were executed by early settlers. Throughout this grove are several cabin sites and places where mills once stood.
18	Bemis Homestead	3330 S. Watertown Road	Owned by the Bemis family since 1835 when their ancestors came by ox team and settled here. The original house, now gone, was the first brick home in the county.

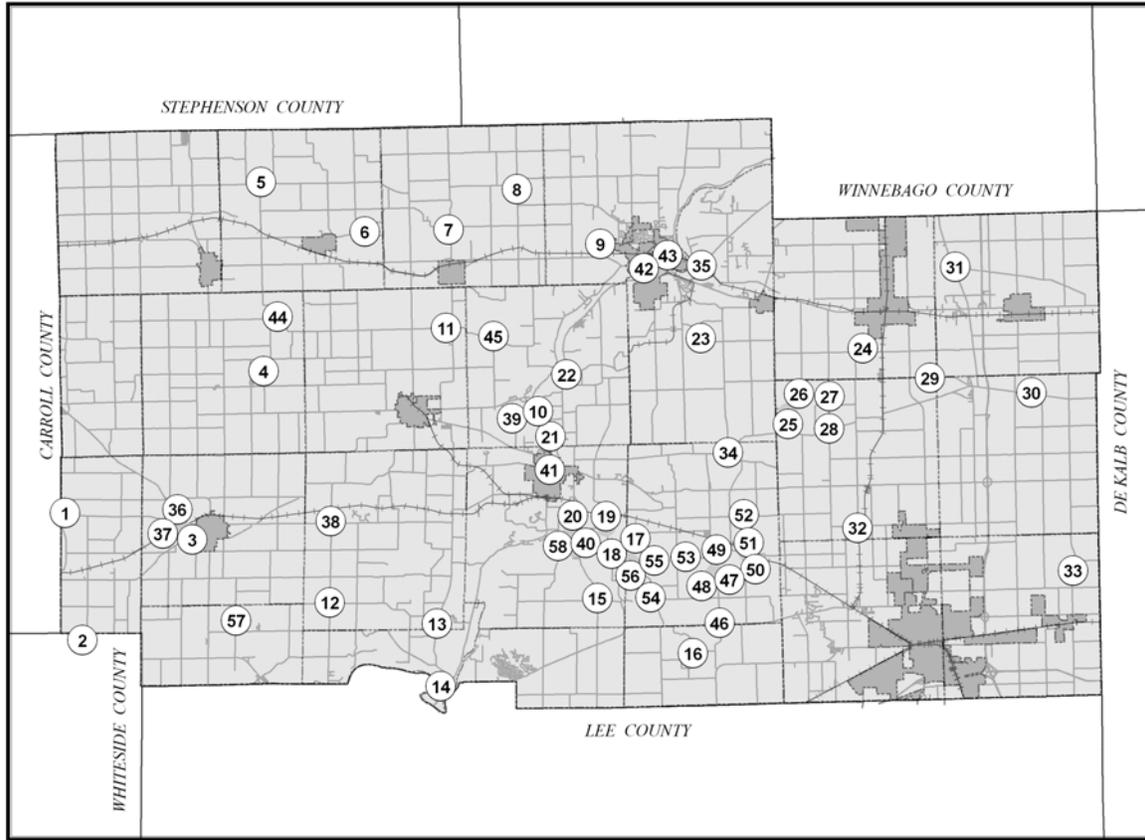
19	Watertown	Intersection of E. Honey Creek and S. Watertown Roads	Cyrus Chamberlain, who owned the saw mill, laid out a town. Most of the houses are gone, as well as the blacksmith shop where Chet Murphy built the first corn cultivator. A stone fence, built by Civil War veteran Virgil Reed, was located at the northwest corner but was dismantled and sold. The stone fence has been now been re-constructed in a fashion similar to the original.
20	Daysville	North of intersection of S. Daysville and S. Lowden Roads	Laid out by Colonel Jehial Day in 1837. Several of the original buildings are still standing.
21	Eagle Nest Tree and Ganymede Spring	Lowden Memorial State Park, 1411 N. River Road	A spring located along the shore of the Rock River near the base of artist Lorado Taft's monolithic concrete statue "The Eternal Indian". Margaret Fuller of Cambridge visited here in 1843 and was so impressed by what she saw that she wrote a poem entitled "Ganymede to his Eagle." The "Eagle's Nest Tree", which is no longer standing, was located in the "Eagle's Nest Art Colony", of which Lorado Taft was the founding member.
22	Brooklyn Cemetery	3513 N River Road	Located back of the old Brooklyn Schoolhouse (now a private residence). Veterans of the War of 1812, Civil War and Spanish-American War are buried here.
23	Weld Memorial Park and Black Walnut Settlement	5935 E. Weld Park Road	The only county park, acquired through the will of the late Henry Weld. A grist mill site is located in the park., as well as traces of the old stage road, which led to the large house across the road which was a stage inn and Black Walnut Post Office.
24	Big Mound Cemetery	12000 Block of E. Big Mound Road	From 1860 to 1880 huge Independence Day picnics were held here. Canons were fired as early as 4:00 A.M.
25	The White Rocks	2000 Block of N. Meridian Road	Limestone bluffs with layers of white going through them. Cabin sites are to be found and the old Chaney Cemetery with graves dating to 1846.
26	Stone Boulder	2000 Block of N. White Rock Road	A stone boulder marks the place where Captain John Campbell was murdered by prairie bandits in 1841. In the adjoining field is an Artesian well. Another boulder stands in the White Rock Center Cemetery 4 miles southeast of here where Captain Campbell is buried.
27	Everlasting House	2307 N. White Rock Road	Eastern type stone farmhouse built by John Hayes over 125 years ago. Stones were hauled in an cut to shape in the yard. Construction was said to be fireproof and storm proof.

28	White Rock Burg	Intersection of E. Lindenwood and N. White Rock Roads	Early settlement on the Chicago & Iowa Trail. Several houses and store buildings are standing and also the church built before the Civil War where local youth left together for the army.
29	First Land Sold	14000 Block of E. Holcomb Road near intersection with N. Blackwood Road.	Purchased by Jacob Wickhizer, October 29, 1839. This was the first land in Ogle County that was sold on the market.
30	Chicago & Iowa Trail	Lindenwood Road and Brick Road	Covered wagon trail used by many early travelers with many stopping places along the way.
31	Kilbuck Cemetery	Near intersection of E. Crill and N. Kilbuck Roads	Cemetery containing many pioneer settlers graves. A schoolhouse used for meeting purposes also stood here until moved to a nearby farm. Kilbuck Post Office was located one mile east during the Civil War. Farther east was the stage inn of John Crill on this road from Chicago to Galena.
32	Octagon House	12053 E. Bethel Road	Eight-sided octagon house built by J.E. Bailey, a large land owner, around 1858.
33	Brodie's Grove	4000 Block S. Woodlawn Road	Brodie's built the first cabin in 1836. When Frink & Walter ran the stage line through here this was the only house between DeKalb and Paines Point.
34	Paines Point	Intersection of N. Stillman and E. Brick Roads	Aaron Paine settled here after the Blackhawk War and kept a trading post. Thomas Stinson built a large stone house for an inn and Post Office. The old blacksmith shop is still standing and some of the original houses.
35	Fitz Henry	7645 N. Kishwaukee Road	The stone house located here was the Fitz Henry Post Office, and was kept by Freeman Woodcock, who also ran a nearby mill. The Methodist Church and Cemetery are also located nearby and date before the Civil War.
36	William Durley Killed by Indians	S. Galena Trail Road near W. Eagle Point Road	Site of Native American ambush May 19, 1832. William Durley was killed in the attack.
37	First cabin in Ogle County	S. Galena Trail Road between W. Milledgeville and W. Eagle Point Roads	Site of first cabin in Ogle County - built in 1830.
38	One-room school house	8020 W. Pines Road	A one-room school house typical of country schools that dotted the County during the early 1900's.

39	Oregon Lime Kiln	2000 Block N. Limekiln Road	A pre-1900 lime kiln used to produce raw quicklime, an important component of mortar.
40	Daysville Cemetery	2900 Block S. Daysville Road	A revolutionary war veteran is buried in this cemetery, as well as veterans from other wars.
41	Ruby Nash Home and Ogle County Historical Society	111 N. 6 <sup>th</sup> Street, Oregon	Former home of Chester Nash family, inventor of the cultivator and contemporary of John Deere. House built in 1878 in Midwestern prairie-type style.
42	Lucius Read Home and Byron Museum of History	Corner of IL Route 2 and IL Route 72, Byron	Constructed in 1843 of Byron brick. Was a safe haven for runaway slaves being smuggled north through the Underground Railroad. Last wagon with hidden slaves reached the Read house in 1862.
43	A.G. Spalding Birthplace	Corner of E. 2nd and N. Chestnut Streets, Byron	A.G. Spalding was born in this house on September 2, 1850; he died September 9, 1915 in Point Loma, CA. The premier pitcher in professional baseball during the 1870's, he was the founder of Spalding Sporting Goods Co. and the club president of the Chicago White Stockings 1882-1891. He was elected to the Baseball Hall of Fame in 1939.
44	St. James Lutheran Church and Cemetery	Corner of W. West Grove and N. Columbine Roads	Stone church constructed in 1858.
45	Silver Creek Cemetery	North side of W. West Grove west of N. Silver Creek Road	A cemetery dating back to the pioneer days.
46	Tilton Tree and stone marker	Corner of E. Flagg and S. Chana Roads	Stone marker reads, "Tree Planted By Francis Tilton 1858. Stone erected in 1931 by Pine Rock Women's Club.
47	1905 Oil Well Site	4000 Block S. Chana Road	An attempt to find oil in Pine Rock Twp. was made about 200 yards east of here on the farm then owned by Charles Dalley. After drilling to a depth of 1,020' without finding gas or oil, project was abandoned.
48	Morgan Grist Mill	4000 Block S. Chana Road	Lyman Morgan built a grist mill near this location circa 1840. This was first known as the Morgan Mill and later as the White Oak Mill. This was the center of a small settlement of several houses, blacksmith shop and store.
49	White Oak School	6000 Block E. Grist Mill Road	A frame school house 18' x 24' was erected here in 1869. It was equipped with 16 double seats, recitation bench, teacher's desk and bell, water pail with a dipper and a stove. When a new school was erected in Chana in 1883, this school was closed.

50	Gross Saw Mill	7000 Block E. Grist Mill Road	During the 1840's, 50's and 60's the Gross Saw Mill was operated with water power from the Kyte River. The mill was the chief supplier of lumber for many early homes in this area.
51	Seaworth Grist Mill	7000 Block E. Grist Mill Road	A grist mill was built during the 1850's by John Seaworth and operated by him until the 1870's. The mill was located on Mill Creek, 1/4 mile west on the north side of the RR tracks.
52	Stone Hill School	7690 E. Cottonwood Road	One-room frame school house erected 1889.
53	Canfield Oil Well	5298 E. Canfield Road	In 1903 George Canfield made the first attempt to drill for oil in Pine Rock Township. The well site is about 100 yards north of Canfield Road. At his expense, the well was drilled to depth of 600'; at this depth the well casing either buckled or broke, and project was abandoned.
54	Aikens Saw Mill	4794 S. Prairie Road	Some of first settlers to migrate to Northern Illinois settled in this area. 1/2 mile west on Grove Creek was a water-powered saw mill, built by Sam Aikens in the late 1830's, and operated by him and Richard Hardesty. There were several houses and a blacksmith shop located nearby.
55	Mob Trial and Execution	3000 Block S. Prairie Road	On June 29, 1841, the vigilante group known as the "Ogle County Regulators" captured John, William and Pierce Driscoll, conducted a trial and executed them near this site. The trial and execution put an end to the banditi and other outlaw gangs in Ogle County.
56	Stephenson Grist Mill	3000 Block S. Prairie Road	From 1840 to 1855 John Stephenson operated a grist mill and distillery here. A part of the earthen dam still remains and can be seen about 30 yards south of Prairie Road. The mill pond covered several acres and extended about 300 yards south of the earthen dam.
57	Peek Home	5747 S. Peek Home Road	The Peek Home for Children was operated from 1916 to the late 1960's. Peek Home was originally established as an orphanage, but later became a home for children from broken homes, or children whose parents could not care for them.
58	Sinnissippi Farms		On May 20, 1899, Mr. & Mrs. Frank Lowden made an initial purchase of 576 acres of land, including a house, for \$27,500. Over the years, the Lowdens purchased land totaling approximately 4,400 acres. Mr. Lowden became a congressman and governor of Illinois. Mrs. Lowden was the heiress to the Pullman rail car fortune. Much of Sinnissippi Farms is now Lowden-Miller State Forest.

Figure 5.4: Cultural Resources Not Listed on the National Register of Historic Places Sites, Ogle County, IL



**Section 5.6 Issues Identified by the Planning Commission**

- A. Historical and cultural sites in the County need to be identified, preserved and maintained.
- B. Prime farmland needs to be protected and preserved.
- C. Unique natural features need to be identified, preserved and protected.

**Section 5.7 Agricultural Resources Goals, Objectives, Policies**

A. Goal

Protect economically productive farmland areas.

B. Objectives

- 1. Work to preserve farming as a viable occupation and way of life within the County.
- 2. Protect farm operations from incompatible land uses and activities that may adversely affect the capital investment in agricultural land, improvements, and equipment.
- 3. Protect, strengthen and maintain the economic base that agricultural pursuits provide the County.
- 4. Prevent the conversion of agricultural land to scattered non-farm development which, when unmanaged, unnecessarily increases the cost of public services to all citizens and results in the premature disinvestment in agriculture.

### C. Policies

1. Minimize non-agricultural development in farming areas.
2. Promote the continuation of the “family” farm by supporting the introduction and operation of agriculture-support businesses, and providing families with opportunities for small non-farm businesses to supplement farm income.
3. Ensure that development occurs in such a fashion as to minimize conflict between agricultural and other land uses and the enforcement of any rule, regulation or ordinance is consistent with the “Farm Nuisance Suit Act”, *Illinois Compiled Statutes, Chapter 740, par. 70/0.01 et seq.*
4. Prevent scattered, haphazard or premature urbanization by guiding growth in a logical, orderly fashion.
5. Protect lands best suited for agricultural purposes from the encroachment of urban-type development in order to promote more efficient use of the increasingly reduced area of land in agricultural use as the result of expanding urbanization.

## **Section 5.8 Natural Resources Goals, Objectives, Policies**

### A. Goal

Preserve and protect the County’s natural features, including wetlands, streams, lakes, woodlands, wildlife habitats, open spaces, groundwater and mineral resources, and encourage the wise use and management of natural resources throughout the County in order to preserve the integrity, stability and beauty of the County and the value of land.

### B. Objectives

1. Identify and protect the County’s natural resources, such as rivers, lakes, floodplains, wetlands, mineral resources, steep slopes, ridgetops, woodlands and productive soils.
2. Areas containing significant natural features such as native vegetation, rivers, streams, wetlands, etc. or areas with significant historical and cultural values should be preserved and protected, with special attention to dedicated nature preserves and habitats containing threatened or endangered natural plant or animal species.
3. Protect and enhance surface water, ground water, and shoreline quality.
4. Encourage the use of soil conservation practices and the management of woodlands.
5. Direct development away from environmentally sensitive areas.
6. Discourage developments which utilize private, on-site sewage disposal systems in areas where soil conditions and/or geology indicate that there is a potential for contamination of ground and/or surface water.
7. Areas containing underground deposits of mineral resources should be given adequate protection so that these natural resources will be preserved for future uses. The appropriate re-use of such areas after the resource(s) have been depleted should be planned in advance.
8. Pursue opportunities that support both natural resource protection and rural economic development.

### C. Policies

1. Map and protect “environmental corridors” as a composite of the County’s most sensitive natural areas by:
  - a. Protecting areas classified as wetlands from development to preserve the significant natural functions that wetlands provide.
  - b. Protecting areas within the 100-year flood plain to avoid damage to private and public property and the health, safety and welfare of the County.
  - c. Discouraging building or driveway development on slopes in excess of 20 percent.

2. Protect surface water quality (e.g., waterways, drainage channels, lakes, ponds, impoundments, and wetlands) by supporting streambank management, natural shoreline restoration, erosion control, proper agricultural practices, stormwater management, and buffer areas as appropriate practices to protect the County's water quality, depending in part on the quality and sensitivity of the associated water and the relative presence or absence of development.
3. Protect groundwater quality through proper placement of new on-site wastewater systems, appropriate maintenance and replacement of older systems.
4. Work to protect rare species and wildlife habitat areas.
5. Preserve woodlands and wetlands associated with farms which, because of their natural physical features, are useful as water retention and groundwater recharge areas, and as habitat for plant and animal life; and which have an important aesthetic and scenic value which contributes to the unique character of the County.
6. Promote land stewardship through the development of environmentally oriented site planning standards and the preservation of environmentally sensitive areas.
7. Protect and preserve the natural and scenic qualities of the Rock River corridor and other high-quality riparian corridors throughout the County:
  - Protect and preserve scenic "view sheds" from visual intrusions.
  - Prohibit flood plain development.
  - Protect wetlands near and/or adjacent to streams.
  - Monitor water quality and control point- and non-point source pollution.
  - Promote wise stream-bank management practices.
  - Require developments to dedicate open space along the river.
  - Preserve scenic and historic features.
  - Protect the river from over-use by watercraft and encourage less intrusive recreational pursuits.
  - Ensure public access to the Rock River.
8. Leverage the County's natural resources to promote tourism and local economic development.

### **Section 5.9 Cultural Resource Goals, Objectives, Policies**

Preserve the County's cultural, historic and archeological sites and scenic character.

#### A. Objectives

1. Identify and promote the preservation of the County's cultural, historic, and archeological resources that celebrate the County's pre-settlement and early settlement periods.
2. Preserve large blocks of woodlands, hunting land, wetlands, and open space that contribute to Ogle County's rural character and way of life.
3. Protect the narrow, winding, lightly-traveled roadways that contribute to the County's scenic quality and, for some, outdoor recreation opportunities.

#### B. Policies

1. Encourage private landowners to protect and rehabilitate known historic and archeological sites.
2. Preserve and celebrate the scenic landscape and byways in the County.
3. Promote "heritage tourism" (e.g., local festivals, fairs, farm tours, and markets) that celebrates the County's heritage and rural setting.