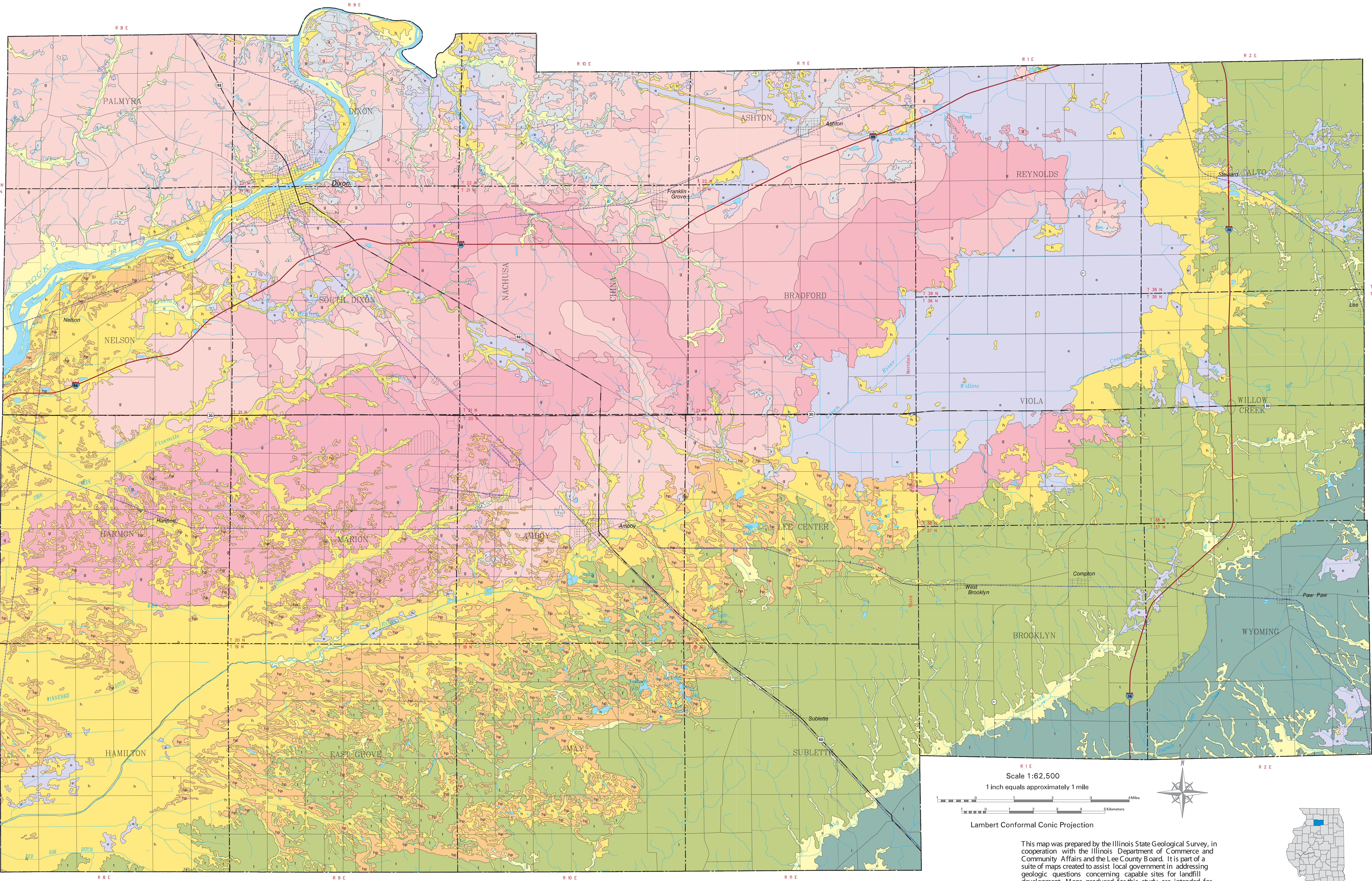


Illinois State Geological Survey  
William W. Shilts, Chief  
Champaign

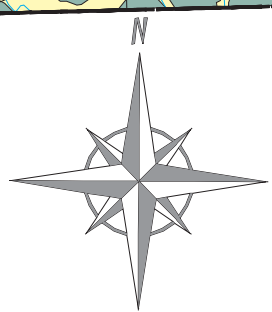
Renee J. Nagy  
1999

State of Illinois  
Department of Natural Resources

# Quaternary Deposits in Lee County, Illinois



Scale 1:62,500  
1 inch equals approximately 1 mile  
1:62,500  
0 1 2 3 4 5 Kilometers  
Lambert Conformal Conic Projection



This map was prepared by the Illinois State Geological Survey, in cooperation with the Illinois Department of Commerce and Community Affairs and the Lee County Board. It is part of a suite of maps created to assist local government in addressing geologic questions concerning capable sites for landfill development. Maps produced for this study are intended for regional land use planning purposes. More detailed mapping is needed for site specific considerations. This map has been reviewed for scientific accuracy and has been edited to meet the quality standards of maps in the ISGS Map Series.

## Explanation

This map shows the surficial geology of Lee County, Illinois. The Quaternary deposits vary from fine-grained silts and clays, to diamictos composed of an unsorted mixture of clay, silt, sand, and rocks, to coarse-grained sands and gravels. At least two glacial episodes affected the surficial geology in Lee County. The older Illinois Episode glaciation deposited the loam to clay loam diamicton of the Glasford Formation. During the younger Wisconsin Episode glaciation a large system of moraines known as the Bloomington Moraine System (Inset B) were formed (Willman and Frye, 1970) and diamicton of the Tiskilwa and Lemont Formations was deposited (Hansel and Johnson, 1996). When the glaciers retreated during the Wisconsin Episode, large volumes of sand and gravel were deposited in the Green River Lowland (Inset A) by glacial meltwater. These deposits form an important water bearing unit known as the Henry Formation (Hansel and Johnson, 1996). Another interesting feature is the fine-grained deposits of the Equality Formation left by a large proglacial lake that formed between the Bloomington Moraine and the older Temperance Hill Moraine (Inset B).

Many different data sets were used to create this map. Initially, a parent materials map was created from the Soil Survey Report for Lee County (Zwicker, 1985). This map was then overlain on the surficial geology to identify geomorphic landforms to assist in characterizing the Quaternary Geology. Drill logs from 2,667 well locations, 166 historical fieldnote descriptions, 22 project borings drilled by the ISGS, and project field observations were also used to verify and characterize the geology. In some areas of the county aerial photographs were utilized to obtain additional information.

## Acknowledgments

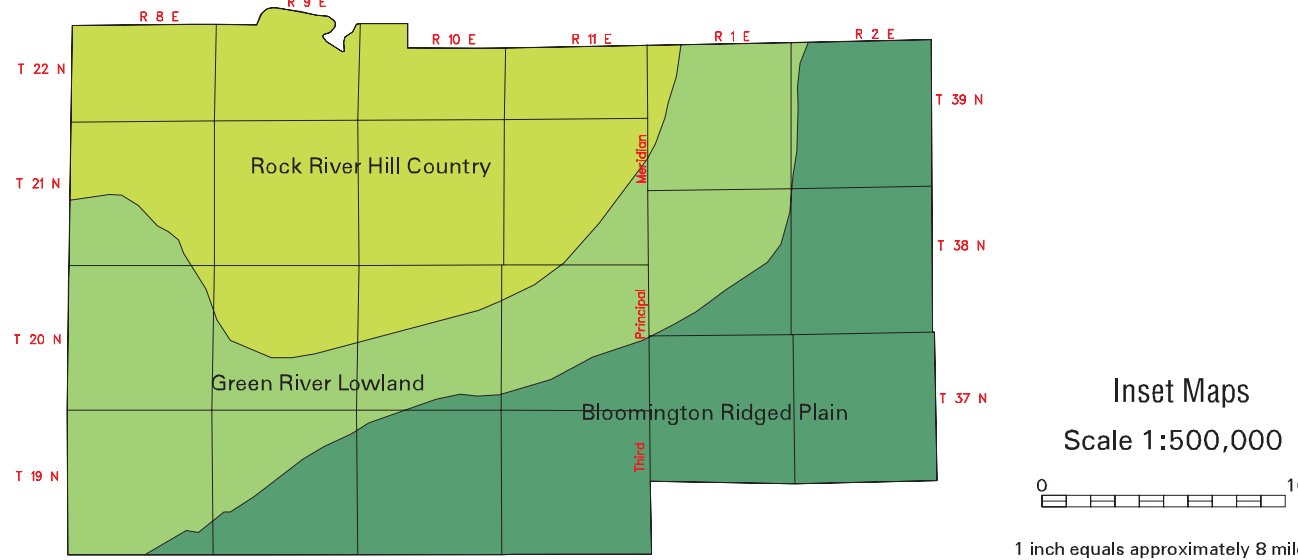
Data for this map were compiled by Christopher Blakley, Christopher C. Goldsmith, Robert J. Krumm, Troy Lively, Matthew H. Riggs, and Joseph Schoen. Digital cartography by Matthew H. Riggs.

## References

- Leighton, M.M., G.E. Elkbaw, and C.L. Horberg, 1948, Physiographic divisions of Illinois, Illinois State Geological Survey Report of Investigations 129, 33p.
- Willman, H. B. and J. C. Frye, 1970, Woodfordian Moraines of Illinois, Illinois State Geological Survey Bulletin 94, 204p.
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- c** CAHOKIA FORMATION  
Channel and floodplain deposits of modern streams and rivers consisting of stratified silt containing sand and clay lenses. Thickness varies greatly, and may be up to 75 feet along the Rock River. The Cahokia Formation generally rests unconformably on bedrock and glacial deposits.
- e** EQUALITY FORMATION  
Lake deposits including proglacial lakes and slack water lakes in tributaries to major river valleys. Deposits consist of brown to gray to red bedded silt and clay. Limestones (isolated stones) and lenses of gravel, sand, diamicton, organic debris, and wood may be present. Bedding structures in the unit range from distinct rhythmites or indistinct laminae to massive beds with no apparent bedding. Thickness typically ranges from 5 to 20 feet. The Equality Formation usually overlies sand and gravel of the Henry Formation, but may also overlie peat, diamicton, or bedrock.
- h** HENRY FORMATION  
Glacial outwash in outwash plains and valleytrains consisting of well sorted sand and gravel generally having a thin cover of silt (Peoria Silt). The Henry Formation varies in thickness throughout Lee County. In the southwestern part of Lee County, in the Green River Lowland, the thickness may range from 30 to over 80 feet. In the northeast just beyond the Bloomington Ridged Plain, the thickness ranges from 20 to 80 feet. The Henry Formation typically overlies diamicton, but may also overlie and interfinger with the Equality Formation.
- hp** PARKLAND FACIES OF THE HENRY FORMATION  
Windblown sand that is well sorted and fine to medium grained. The Parkland facies occurs in dunes or sheetlike deposits and typically overlies sand and gravel of the Henry Formation, but may also overlie diamicton in some areas.
- i** LEMONT FORMATION  
Calcareous, gray, medium textured, loam diamicton that contains lenses of gravel, sand silt, and clay. The Lemont Formation may appear brown, olive brown or yellow brown when oxidized. Thickness may be up to 150 feet within the Bloomington Moraine System. The Lemont Formation overlies the Tiskilwa Formation.
- t** TISKILWA FORMATION  
Calcareous, red gray to gray, medium textured, clay loam to loam diamicton that contains lenses of gravel, sand, silt, and clay. Typically, it oxidizes to red brown or yellow brown. Thickness may be up to 150 feet within the Bloomington Moraine System. The Tiskilwa Formation typically overlies bedrock, but may also overlie the Glasford Formation.
- g** GLASFORD FORMATION (0.5 - 25 Ft)
- g** GLASFORD FORMATION (25 - 50 Ft)
- g** GLASFORD FORMATION (Greater Than 50 Ft)  
Calcareous, gray to tan gray, loam to clay loam diamicton that may appear yellowish brown when oxidized. Often small clasts of coal (less than 5mm diameter) are present within the diamicton. The Sangamon Gneiss may or may not be present at the top of the unit, which is typically overlain by silt (Peoria Silt). The silt covering may be up to 30 feet thick in some areas. The unit typically overlies bedrock.
- r** BEDROCK  
Bedrock Units overlain by 5 feet or less of silt (Peoria Silt).

**Inset A. Physiographic Divisions of Lee County, Illinois**  
modified from Leighton et al., (1948)



**Inset B. Glacial Moraines of Lee County, Illinois**  
modified from Willman and Frye, (1970)

