



# Surficial Geologic Map of the Danvers 7.5 Minute Quadrangle, McLean and Woodford County, Illinois

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## Abstract

The Danvers Quadrangle is located in McLean and Woodford counties and spans from 40° 30' to 40° 37' 30" north latitude and 89° 15' to 89° 07' 30" west longitude. This map was prepared using soil maps from the McLean and Woodford County Soil Survey. Parent materials were identified and grouped together, creating formation boundaries. Units had to be at least 2 m in thickness to be mapped. Well data was secured through the Illinois State Geological Survey (125 wells). After boundaries were delineated, a field check was conducted to adjust positions of contact. Quaternary units in excess of 100 m overlie the local bedrock valleys. Major Quaternary units include Cahokia alluvium, the Wedron Group till, the Mason Group glacial outwash, and the Peoria loess. Today, many rivers and streams are still present in the Danvers Quadrangle, and thus Holocene Cahokia alluvium is abundant in less than 5 meters of thickness. The El Paso and Bloomington Moraines are represented by the Wedron Group, which is Tiskilwa till and Lemont formation respectively. These till units consist of pink and grey diamicton units that are interbedded with proglacial river and lake sediments. Henry outwash is a sand/gravel unit of the Mason Group and is found south of the Bloomington Moraine less than 10 meters in thickness. Peoria Silt is fine-grained yellow-orange silt and clay that covers much of the Quadrangle.

## Methodology

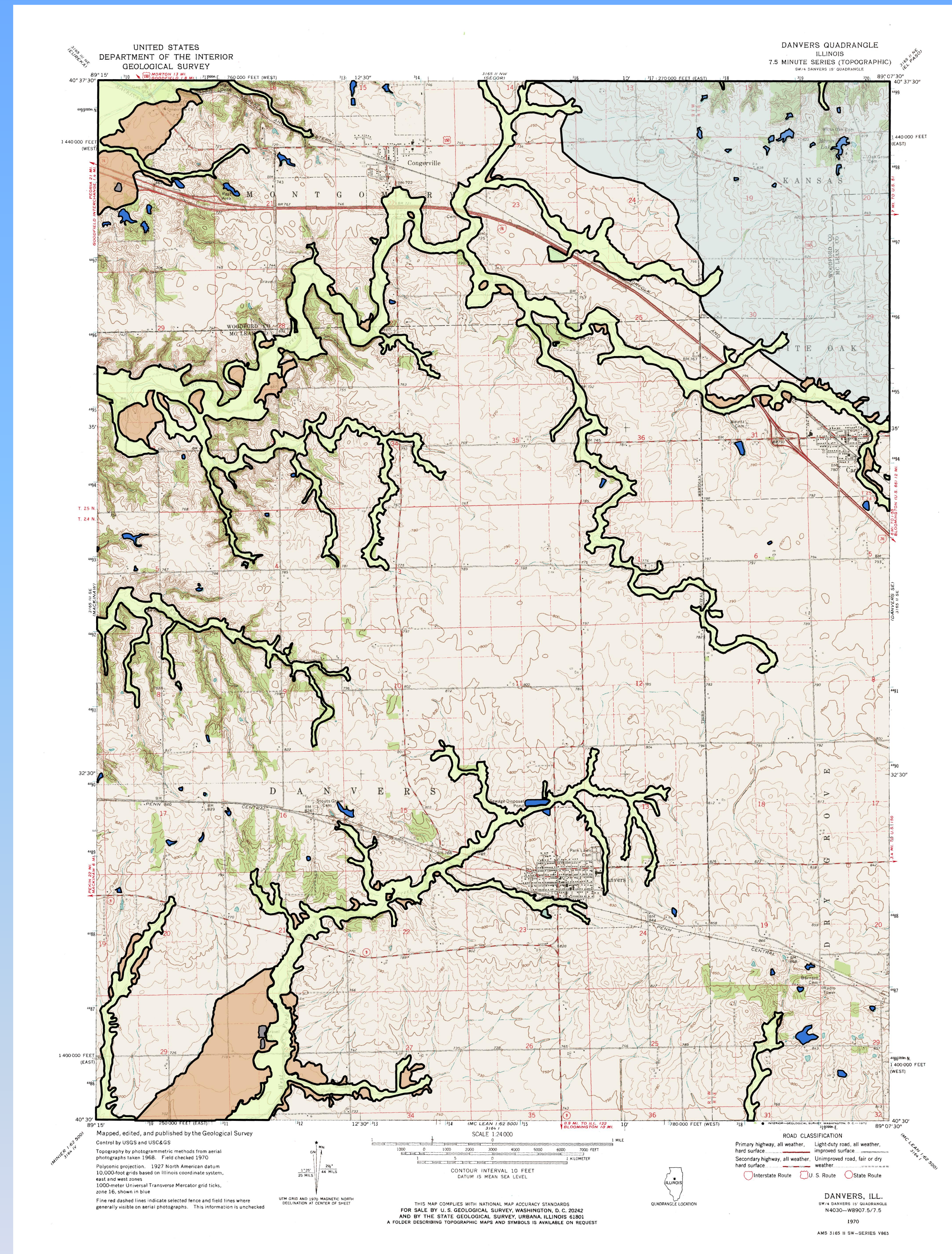
Multiple data sets were procured through the Illinois State Geological Survey, hereon referred to as ISGS. Data provided by ISGS includes, well data, LIDAR imaging, and glacial episode maps. Mclean county and Woodford county provided soils data that was the framework for interpreting the soils as formations. Next, the soils data was cross referenced to the well data, LIDAR, and glacial episode maps. The well data was essential in determining the depths of the formations. LIDAR provided high resolution photography, this was used to confirm or adjust soils data. The glacial episode maps clarified the boundaries of the formations and members of Wisconsin and Illinois glaciations.

## Results

The Quaternary Geology of the Danvers Quadrangle has the furthest extent of Wisconsin age Glaciation. This includes the Bloomington end moraine made up of Tiskilwa Formation till units and the Henry Formation glacial outwash deposits as the glacier retreated. Throughout the Danvers Quadrangle, Cahokia alluvium is exposed in the modern river beds. In areas near Cahokia alluvium, Henry outwash may be exposed as terraces. Not pictured, but present, is Illinoian aged Glassford Till along the deep cuts made by the Mackinaw River. In the northeast quadrant of the Danvers quadrangle we have the Tiskilwa/Lemont boundary of the Wedron Group.

## Discussion

The Danvers Quadrangle has several interesting Quaternary geologic features. End moraines of Wisconsin Age glaciations, outwash plains, outwash terraces, and large modern river systems mark the landscape. For instance, LIDAR data exposed a large outwash plain in the southwest corner of the Danvers Quadrangle. This is likely from the Bloomington Moraine retreating and depositing glacial outwash in a fan like shape. With the LIDAR, it is quite easy to see the extent of the moraines. A lobe of the Eureka moraine in the northeast corner of the quad can be seen to overtake the Normal moraine. The Eureka glacier was of a younger age than the Normal glacier, therefore it is possible that it advanced and annihilated the Normal moraine at this location. Normally, the Tiskilwa/Lemont boundary is defined as the end of the Normal moraine; however, the Eureka moraine has a lobe that extends beyond the Normal moraine, so the Eureka moraine was interpreted as the boundary instead.



## Map Key

<b>Aq</b>	Water	<b>Qtu</b>	Tiskilwa Till: Pink diamicton	<b>Qh</b>	Henry Outwash: Coarse sand and gravel that forms outwash plains and terraces.
<b>Qc</b>	Cahokia Alluvium: Gravel, sand, silt, and clay forming Holocene Era stream deposits	<b>Ql</b>	Lemont Till: Gray diamicton		

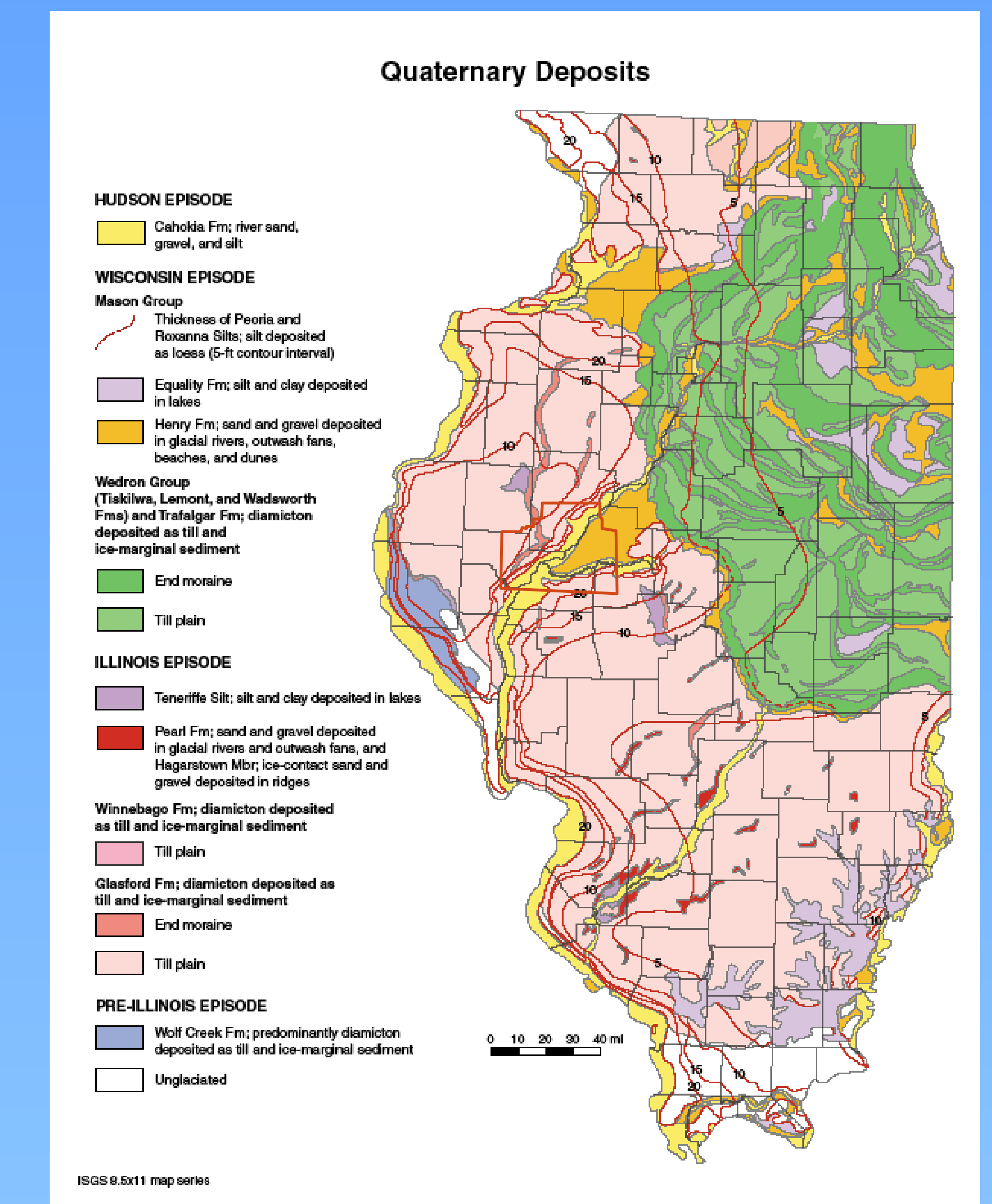


Figure 1: Quaternary Deposits of Illinois. Mclean County outlined in red. (<https://www.isgs.illinois.edu/content/quaternary-ice-age-deposits>)

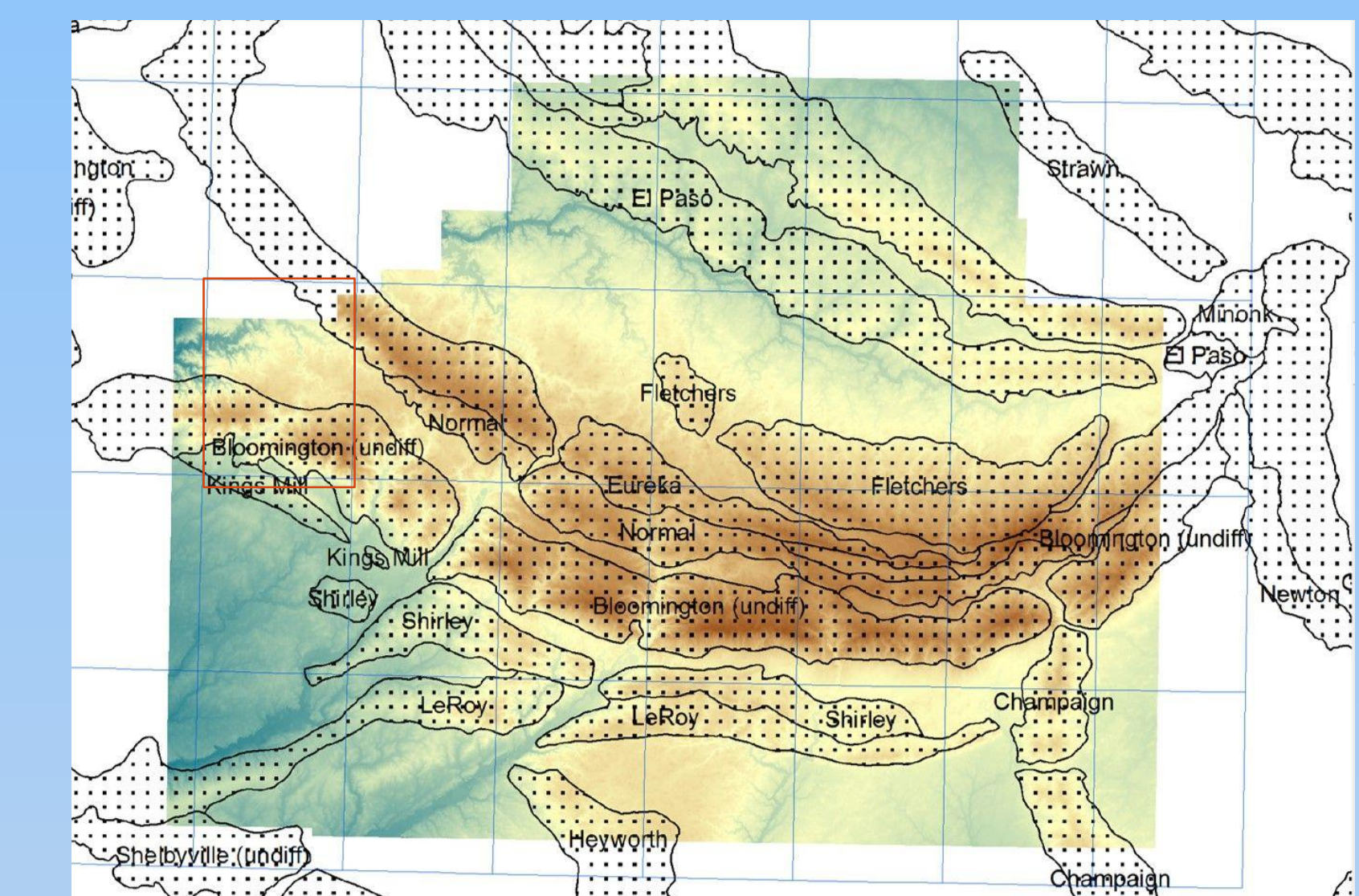


Figure 2: McLean County with end moraines. Danvers Quadrangle outlined in red.

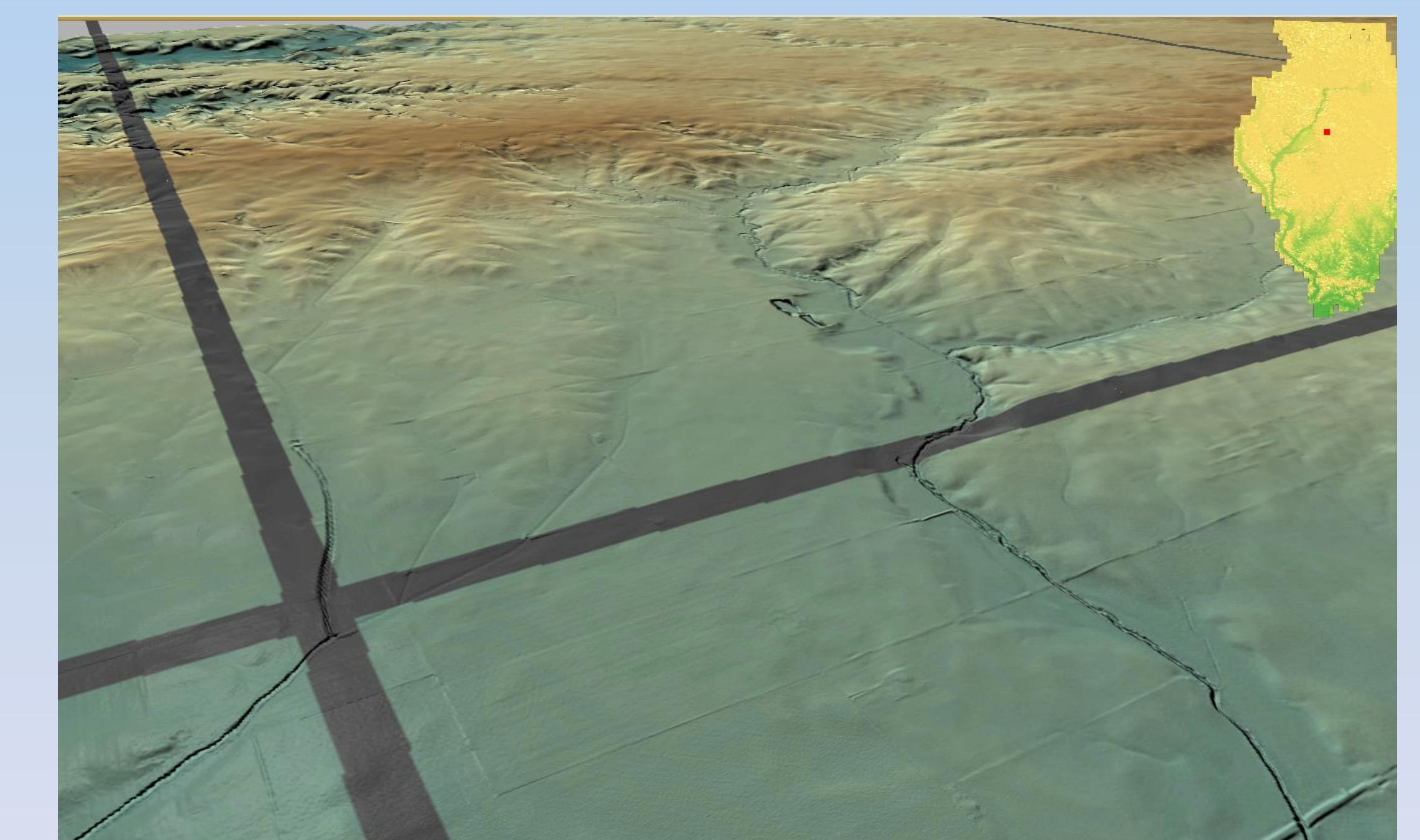


Figure 3: Bloomington end moraine, and glacial outwash terrace

## References

- Hansel, A. K., Johnson, W. H., 1996, Wedron and Mason Groups: Lithostratigraphic Reclassification of Deposits of the Wisconsin Episode, Lake Michigan Lobe Area.

## Acknowledgements

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