

BEDROCK TOPOGRAPHY OF TAZEWELL COUNTY, ILLINOIS

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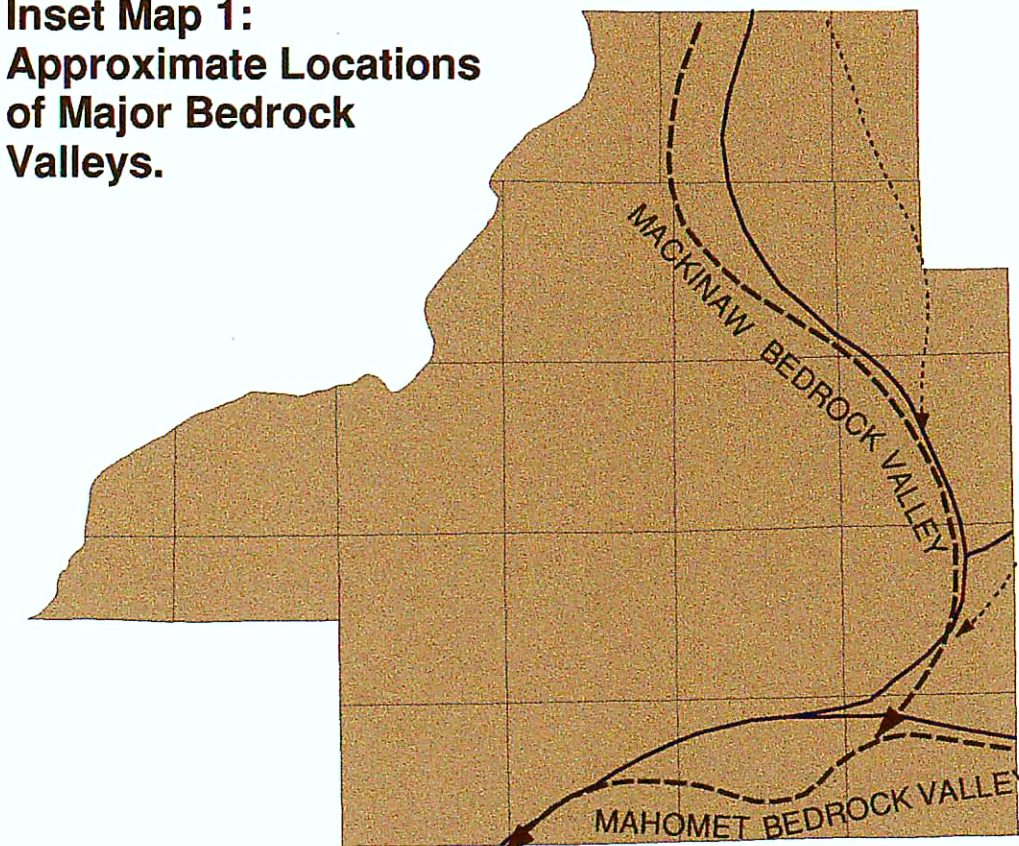
2003

Bedrock Topography is the elevation of the bedrock surface above mean sea level (msl.). In Tazewell County, this elevation ranges from less than 320 feet msl. in the southern part of the county to almost 580 feet msl. under the city of Pekin. Therefore, the relief, or maximum difference in elevation, of the bedrock surface under the county is 260 feet, much less than the 400+ feet of relief found on the modern land surface.

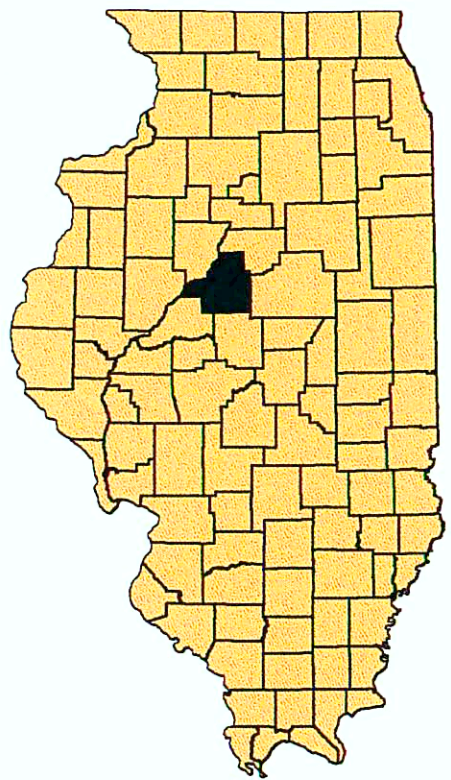
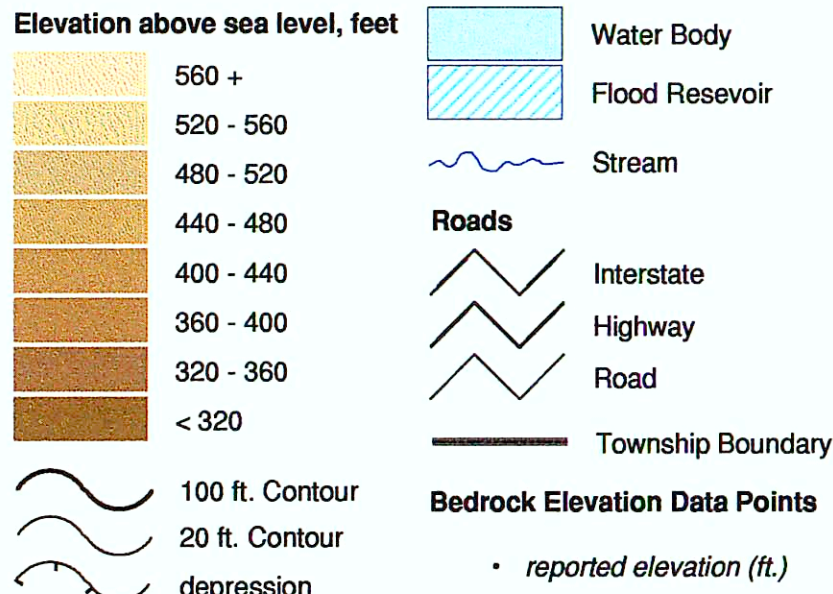
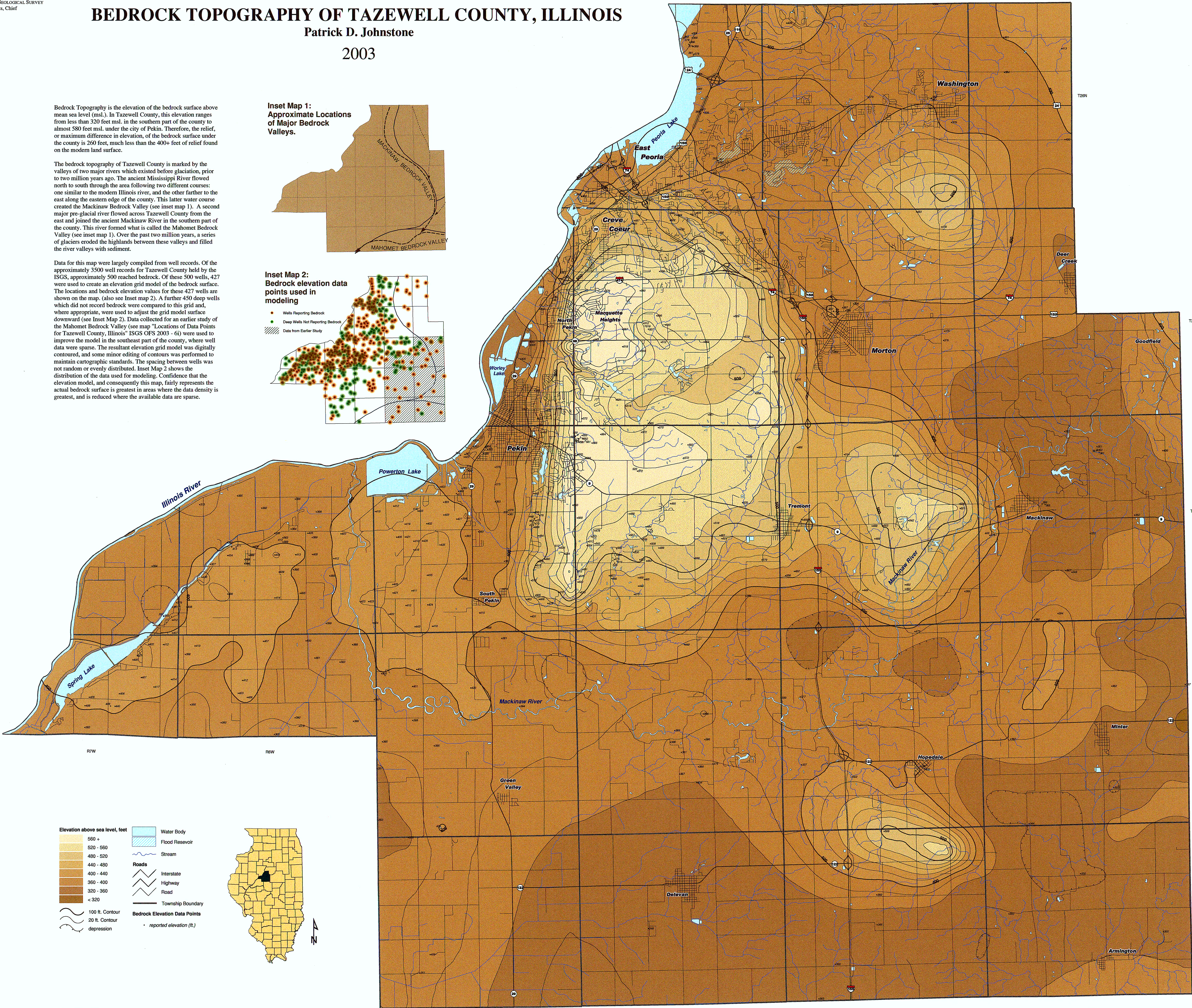
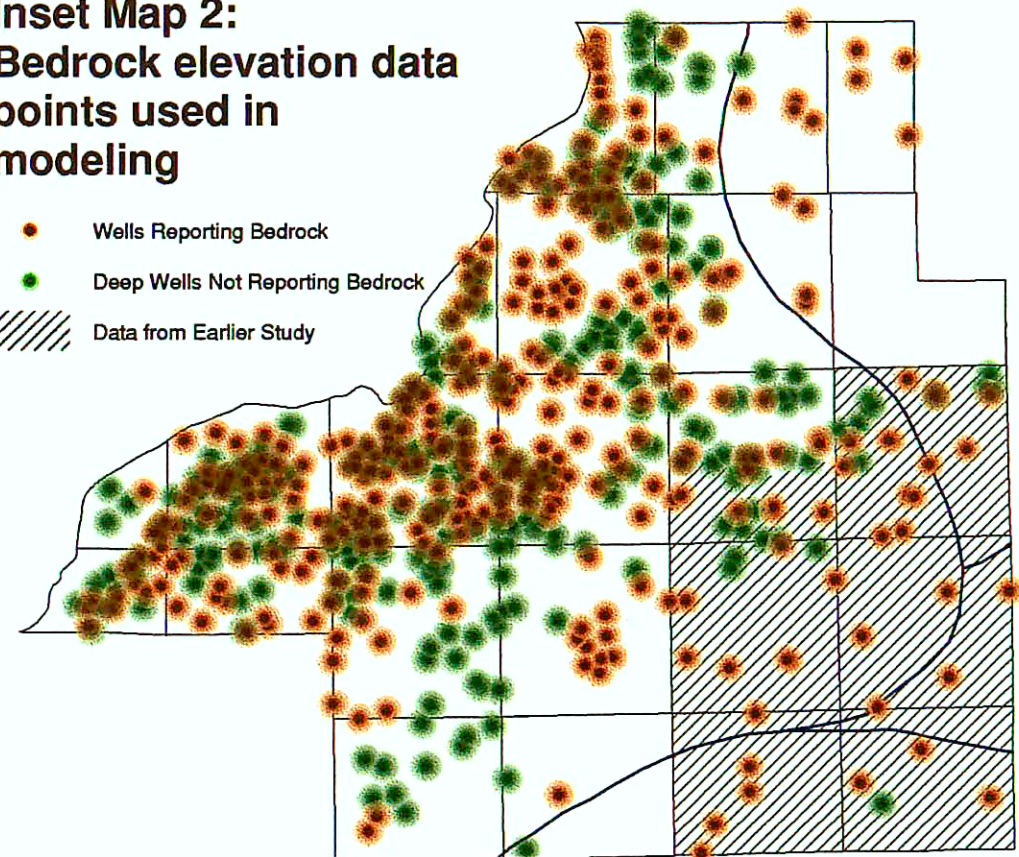
The bedrock topography of Tazewell County is marked by the valleys of two major rivers which existed before glaciation, prior to two million years ago. The ancient Mississippi River flowed north to south through the area following two different courses: one similar to the modern Illinois river, and the other farther to the east along the eastern edge of the county. This latter water course created the Mackinaw Bedrock Valley (see inset map 1). A second major pre-glacial river flowed across Tazewell County from the east and joined the ancient Mackinaw River in the southern part of the county. This river formed what is called the Mahomet Bedrock Valley (see inset map 1). Over the past two million years, a series of glaciers eroded the highlands between these valleys and filled the river valleys with sediment.

Data for this map were largely compiled from well records. Of the approximately 3500 well records for Tazewell County held by the ISGS, approximately 500 reached bedrock. Of these 500 wells, 427 were used to create an elevation grid model of the bedrock surface. The locations and bedrock elevation values for these 427 wells are shown on the map. (also see Inset map 2). A further 450 deep wells which did not record bedrock were compared to this grid and, where appropriate, were used to adjust the grid model surface downward (see Inset Map 2). Data collected for an earlier study of the Mahomet Bedrock Valley (see map "Locations of Data Points for Tazewell County, Illinois" ISGS OFS 2003 - 6) were used to improve the model in the southeast part of the county, where well data were sparse. The resultant elevation grid model was digitally contoured, and some minor editing of contours was performed to maintain cartographic standards. The spacing between wells was not random or evenly distributed. Inset Map 2 shows the distribution of the data used for modeling. Confidence that the elevation model, and consequently this map, fairly represents the actual bedrock surface is greatest in areas where the data density is greatest, and is reduced where the available data are sparse.

Inset Map 1:
Approximate Locations
of Major Bedrock
Valleys.

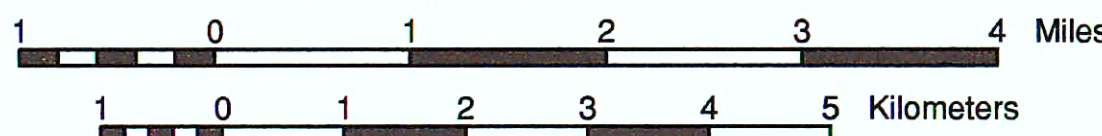


Inset Map 2:
Bedrock elevation data
points used in
modeling



1:62,500

(1 inch equals approximately 1 mile)



Lambert Conformal Conic Projection



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This document has been carefully reviewed and edited and meets the scientific/technical standards of the Illinois State Geological Survey. It is suited to the purposes and uses intended by its author and presents reasonable interpretations of the bedrock topography of the area based on the data then available. The interpretations are based on data that may vary with respect to accuracy of geographic location, the type and quantity of data available at each location, and the scientific/technical qualifications of the data sources. This map is not meant to be enlarged. Enlarging the scale of a published map, by whatever means, does not increase the inherent accuracy of the information and scientific interpretations it portrays.

This document provides a conceptual model of the bedrock topography of the area on which further work can be based. Any large-scale (1:62,500-scale) map(s) and/or cross section(s) shown herein may be used to screen the region for potentially suitable sites for a variety of purposes, but use of this document for such screening does not eliminate the need for detailed studies to fully understand the geology of a specific site. The Illinois State Geological Survey, the Illinois Department of Natural Resources, and the State of Illinois make no guarantee, expressed or implied, regarding the correctness of the interpretations presented in this document and accept no liability for the consequences of decisions made by others on the basis of the information presented here.