

Colchester Coal Depth

DOUGLAS

County

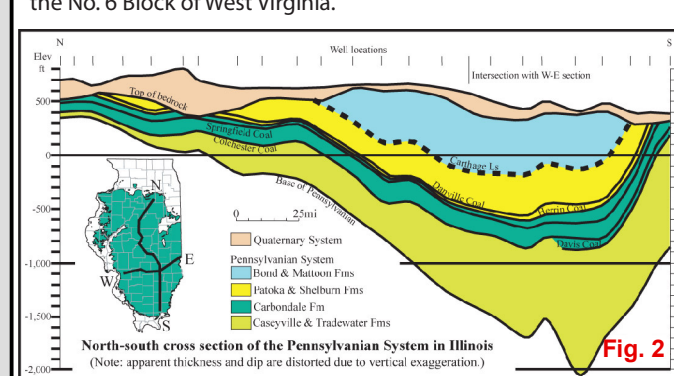
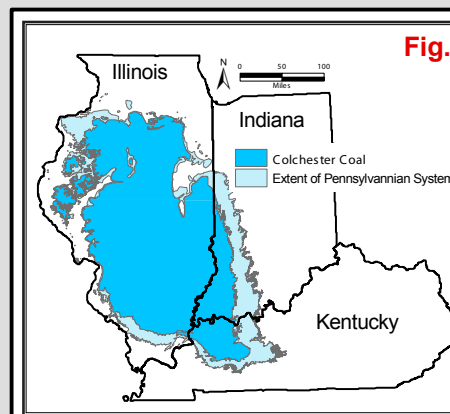
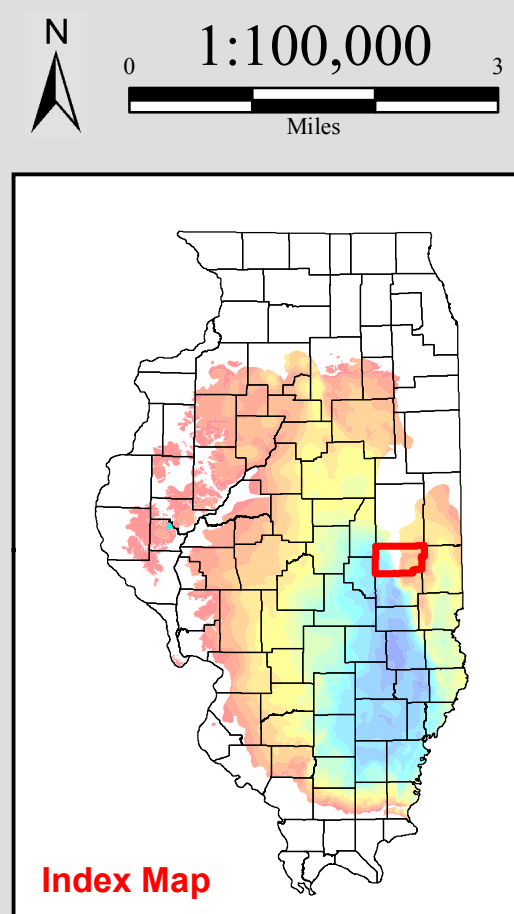
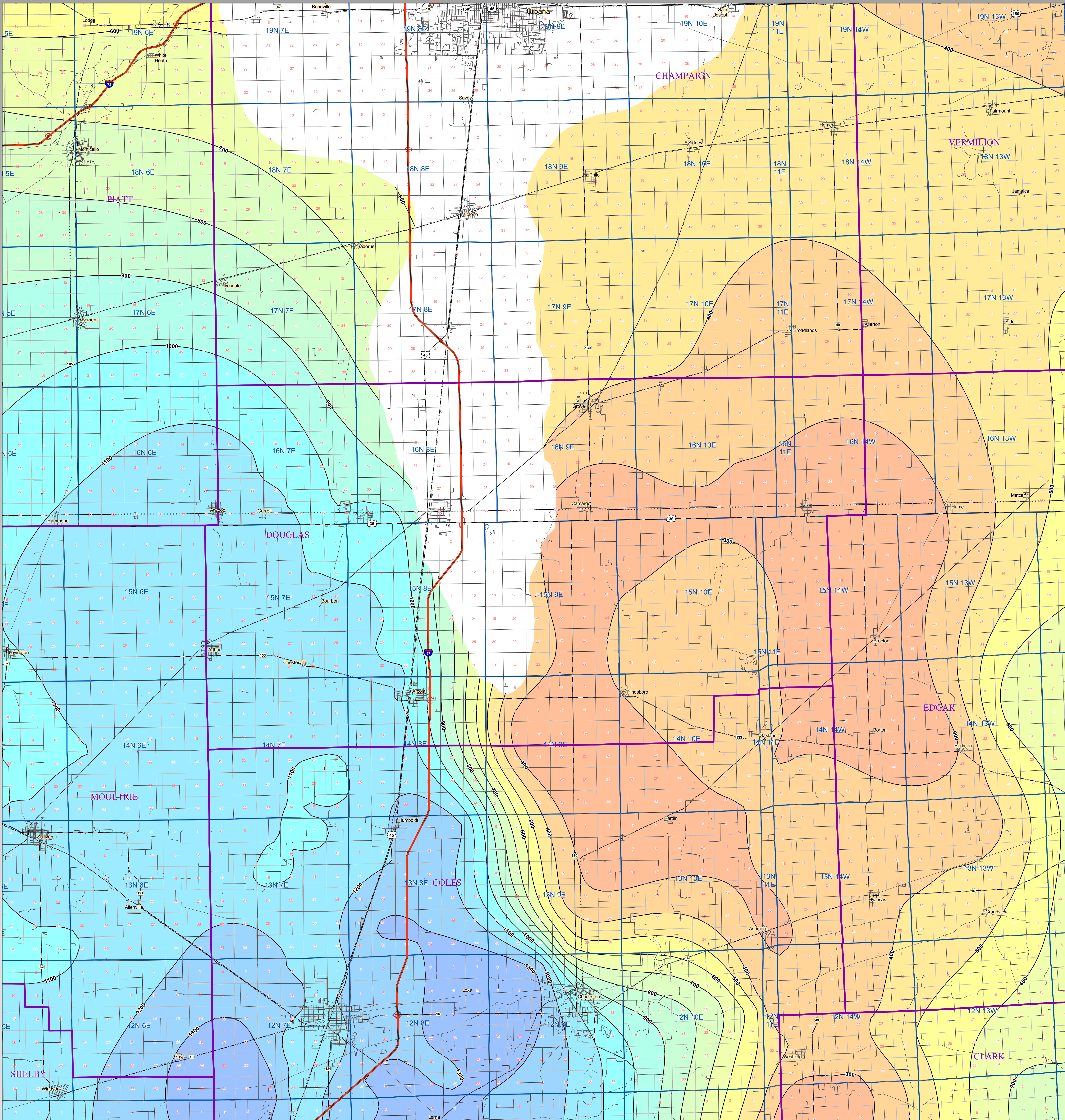


Fig. 1 The Colchester Coal underlies much of Illinois as well as portions of western Indiana and western Kentucky. The coal crops out along the margins of the Illinois Basin and reaches a maximum depth in Illinois of about 1,500 feet. See Fig. 1 and Fig. 2 for the Colchester Coal and its overlying black shale, the Mecca Quarry Shale. The Colchester Coal is a member of the Des Moines Series (See Fig. 4) and is a key marker bed that has been traced throughout the basin. In southern, central, and eastern Illinois, the Colchester is generally thin, ranging from less than one inch to 18 inches thick. Throughout most of its northern and western extent, the Colchester is 2 to 3.5 feet thick (locally 4 feet) where it has been mined. The Colchester Coal is perhaps the most widespread minable seam in North America and is correlated with the Crowburg Coal of Missouri and Kansas, the Schultztown Coal Member (Ill.) of Indiana, the Lower Kittanning Coal of Ohio, the Princess No. 6 of eastern Kentucky, and the No. 6 Block of West Virginia.

In much of northern Illinois, thickness patterns of the Colchester show a strong relationship to geologic structures thinning to 1 to 2 feet along the LaSalle Anticlinorium crests and thickening to as much as 3 or 4 feet in basinal troughs. There is significant variation in the flora of the Colchester Coal on top of the anticlinal crests versus that found in the troughs. The flora variation is interpreted as drier conditions stemming from higher topographic elevations that resulted from structural uplift and its effect on the paleoenvironment of the local Colchester swamp. This finding implies that these geologic structures were developing during peat formation and that the deeper, wetter synclinal troughs accumulated more peat than the higher, drier anticlinal crests.

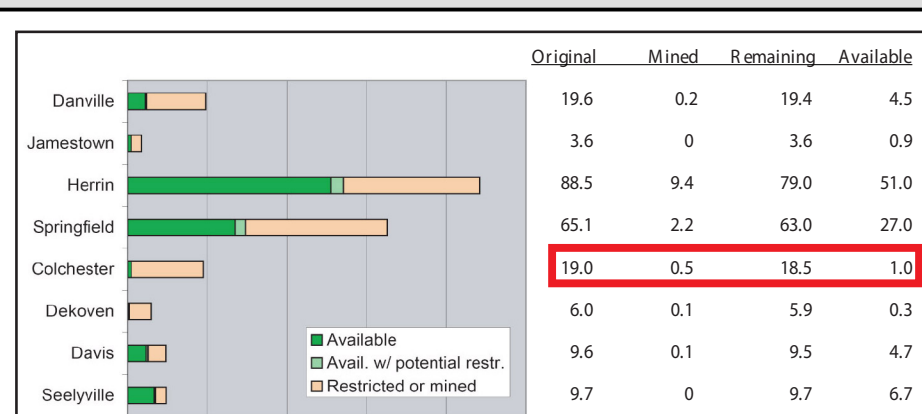


Fig. 3 The original resource of the Colchester coal in the State of Illinois totals 19 billion tons, 0.5 billion of which has been mined. Approximately 5% of the original resources, 0.5 billion tons, were considered available for mining (See Fig. 3).

Directly overlying the Colchester Coal in many parts of western and northern Illinois is the Francis Creek Shale, a medium gray, silty shale that locally exceeds 80 feet thick. The Francis Creek Shale is a transgressive marine deposit that is even more widespread than the Colchester, present throughout most of the basin and adjacent states and is a stratigraphic marker because of its distinctive low resistivity signature on electric logs and very high gamma-ray log readings.

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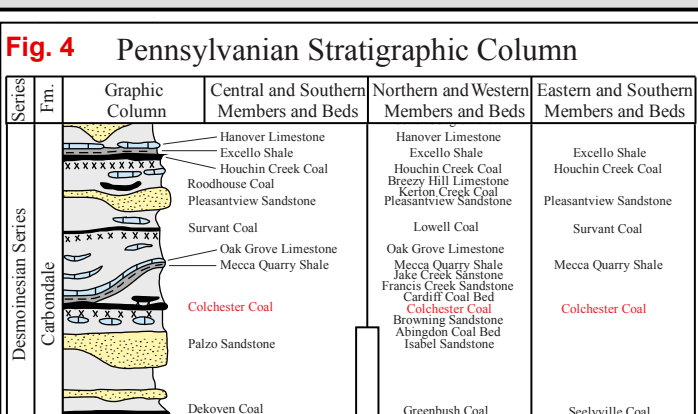
(All text modified from ISGS Pub. IM 127, Korose, et al.)

and flora (including many soft bodied organisms that are rarely preserved and known nowhere else, such as the Illinois State Fossil, the "Tully Monster", see below left) that give clues to the depositional environments of the Francis Creek.

The Mecca Quarry Shale (See Fig. 4) overlies the Francis Creek Shale and rests directly on the Colchester Coal where the Francis Creek is absent. It is a hard, fissile, black shale that locally reaches 4 feet in thickness but generally ranges from 1 to 2 feet thick. The Mecca Quarry is a transgressive marine deposit that is even more widespread than the Colchester, present throughout most of the basin and adjacent states and is a stratigraphic marker because of its distinctive low resistivity signature on electric logs and very high gamma-ray log readings.

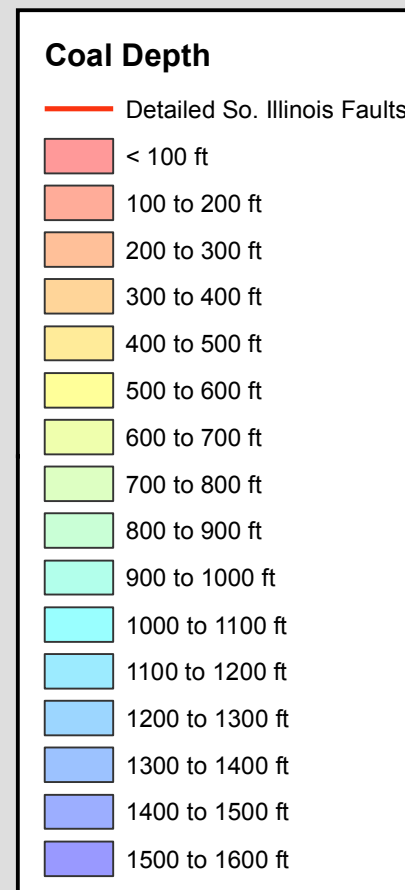
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Map Explanation

The maps and digital files of this study were compiled from data from a variety of public and private sources and have varying degrees of completeness and accuracy. They present interpretations of the geology of the area and are based on available data. However, these interpretations are based on data that may vary with respect to accuracy of geographic location, type, quantity, and reliability, as they were supplied to the Illinois State Geological Survey. Consequently, the accuracy of the interpreted features shown in these files is subject to the limitations of the data and varies from place to place.

Contoured features less than 7 million square feet (about 1/2 mile square) in area may not be accurately portrayed or resolved. This data set provides a large-scale conceptual model of the geology of the area on which to base further work. These data are not intended for use in site-specific screening or decision-making. Data included in this map are suitable for use at a scale of 1:100,000.

Disclaimer

The Illinois State Geological Survey and the University of Illinois make no guarantee, expressed or implied, regarding the correctness of the interpretations presented in this data set and accept no liability for the consequences of decisions made by others on the basis of the information presented here.

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