Department of Natural Resources
ILLINOIS STATE GEOLOGICAL SURVEY
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William W. Shilts, Chief
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BEDROCK GEOLOGY MAP, JO DAVIESS COUNTY, ILLINOIS

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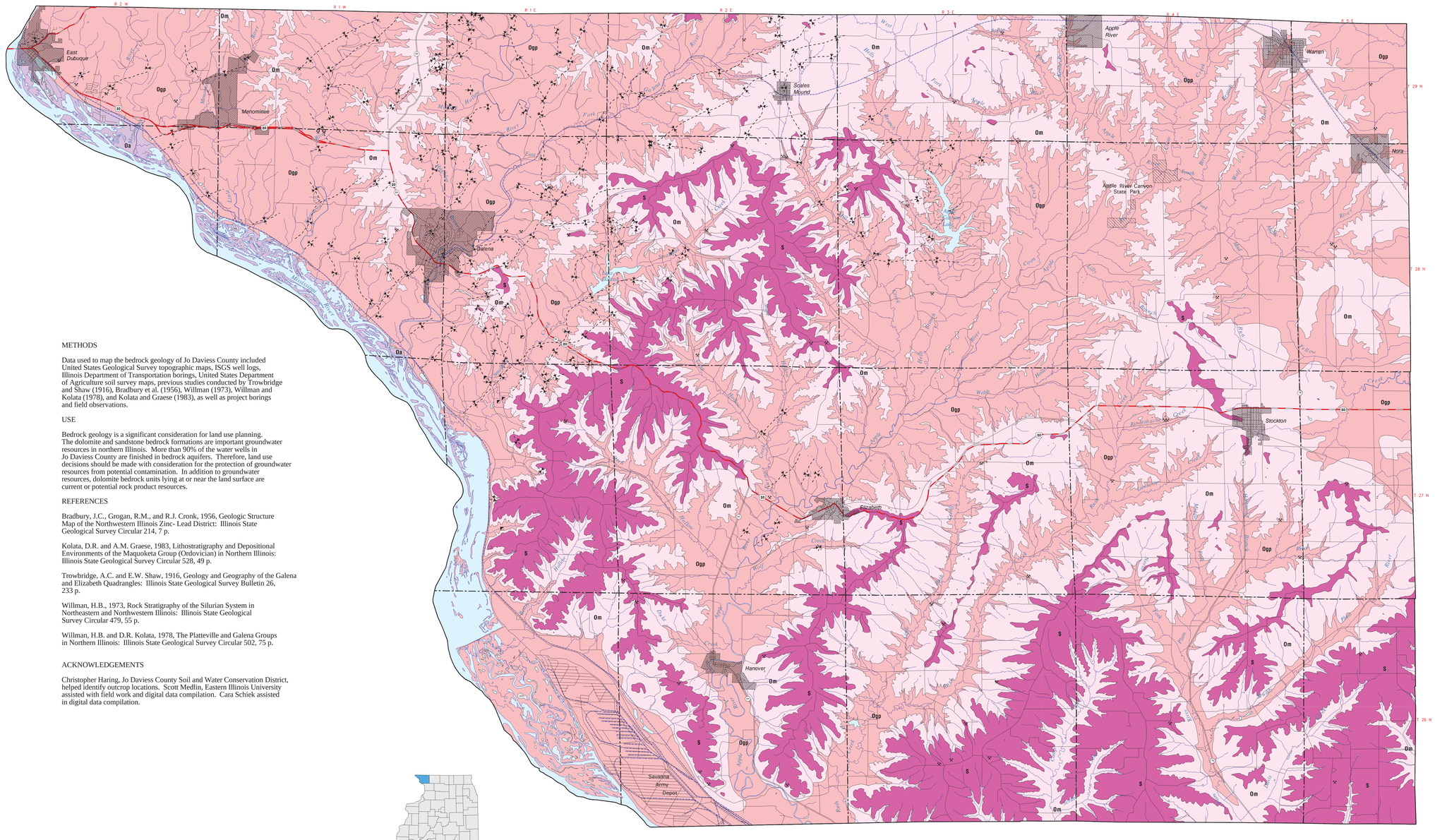

METHODS

Data used to map the bedrock geology of Jo Daviess County included United States Geological Survey topographic maps, ISGS well logs, Illinois Department of Transportation borings, United States Department of Agriculture soil survey maps, previous studies conducted by Trowbridge and Shaw (1916), Bradbury et al. (1956), Willman (1973), Willman and Kolata (1978), and Kolata and Graese (1983), as well as project borings and field observations.

USE

Bedrock geology is a significant consideration for land use planning. The dolomite and sandstone bedrock formations are important groundwater resources in northern Illinois. More than 90% of the water wells in Jo Daviess County are finished in bedrock aquifers. Therefore, land use decisions should be made with consideration for the protection of groundwater resources from potential contamination. In addition to groundwater resources, dolomite bedrock units lying at or near the land surface are current or potential rock product resources.

REFERENCES

Bradbury, J.C., Grogan, R.M., and R.J. Cronk, 1956, Geologic Structure Map of the Northwestern Illinois Zinc- Lead District: Illinois State Geological Survey Circular 214, 7 p.

Kolata, D.R. and A.M. Graese, 1983, Lithostratigraphy and Depositional Environments of the Maquoketa Group (Ordovician) in Northern Illinois: Illinois State Geological Survey Circular 528, 49 p.

Trowbridge, A.C. and E.W. Shaw, 1916, Geology and Geography of the Galena and Elizabeth Quadrangles: Illinois State Geological Survey Bulletin 26, 233 p.

Willman, H.B., 1973, Rock Stratigraphy of the Silurian System in Northeastern and Northwestern Illinois: Illinois State Geological Survey Circular 479, 55 p.

Willman, H.B. and D.R. Kolata, 1978, The Platteville and Galena Groups in Northern Illinois: Illinois State Geological Survey Circular 502, 75 p.

ACKNOWLEDGEMENTS

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SILURIAN SYSTEM

S undifferentiated (0 - 150 feet thick)
Dolomite; brownish- gray; some beds contain white chert; very argillaceous at base. This cliff- forming rock crops out in the uplands of much of Jo Daviess County (e.g. Horseshoe Mound, east of Galena and Ward's Grove, southeast of Stockton). These rocks are exposed along the Mississippi River valley, west of Hanover, and in numerous roadcuts on ridge tops along US Highway 20.

ORDOVICIAN SYSTEM

Om Maquoketa Group (0 - 180 feet thick)
Shale; dolomitic; silty; greenish- gray; argillaceous dolomite lenses in the lower half. Although the unit crops out on gentle slopes throughout the county, exposures of this slope- forming rock are scarce due to vegetation. These rocks are well exposed in a railroad cut west of Scales Mound and a roadcut along US Highway 20 east of Elizabeth.

Ogp Galena and Platteville Groups (0 - 300 feet thick)
Dolomite and limestone; yellowish- brown and gray; some cherty beds; some argillaceous beds; clay (K- bentonite) beds. The Platteville Group is finer grained and thinner bedded than the Galena Group. The Platteville Group consists of limestone in the western half of the county. These cliff forming- rocks are exposed in ravines along the Apple River at Apple River Canyon State Park and in many roadcuts throughout the county (e.g. along US Highway 20 west of Galena). These rocks contain lead and zinc ore (galena and sphalerite) that has been extensively mined in the region in the past. Only larger mine shafts are shown on this map; many smaller mine diggings exist.

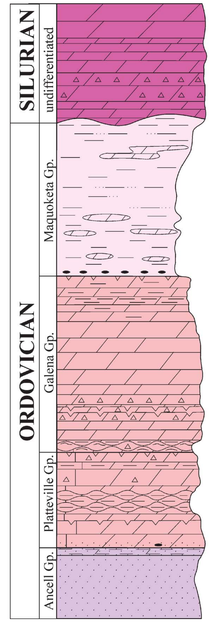
Oa Ancell Group (100 - 200 feet thick)
Sandstone; frosted, fine- to medium- sized quartz grains; well sorted; pur The upper 25 feet is composed of interbedded dolomite, fine- to medium- grained sandstone and shale. These rocks are not exposed at the land surface in the county, but underlie the sediments in the Mississippi River valley.

Surface Water

Syncline
Mine Shaft (all are abandoned)
Quarry

Muncipality
State Park

US Highway
State Highway
Other Roads
Railroad
Streams



Modified from Willman (1973), Willman and Kolata (1978), and Kolata and Graese (1983).

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

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This map was prepared by the Illinois State Geological Survey, in cooperation with the Illinois Department of Commerce and Community Affairs and the Jo Daviess 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 edited to meet the quality standards of maps in the ISGS Map Series.

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