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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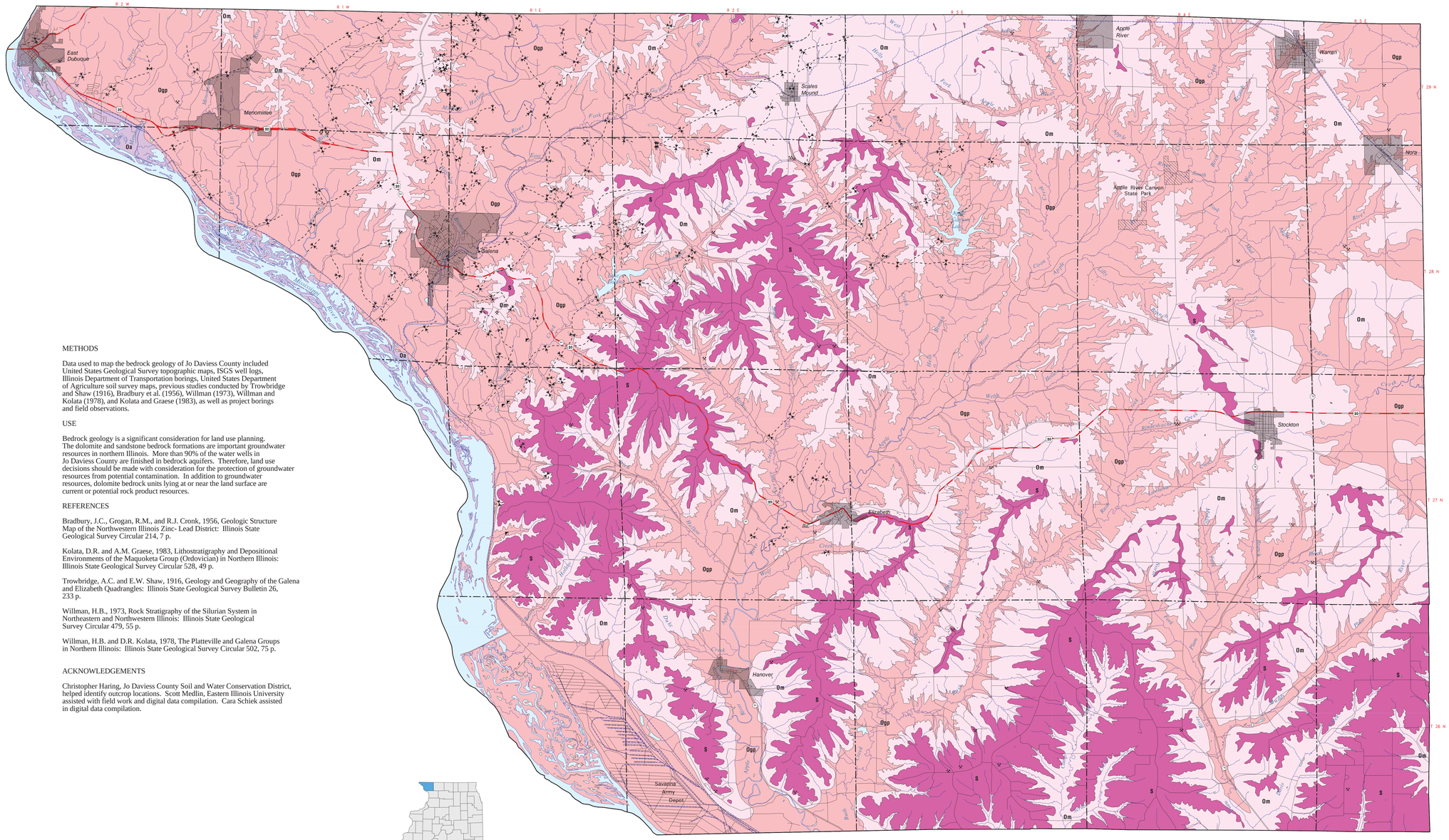

METHODS

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.

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Christopher Haring, Jo Daviess County Soil and Water Conservation District, helped identify outcrop locations. Scott Medlin, Eastern Illinois University assisted with field work and digital data compilation. Cara Schiek assisted in digital data compilation.

SILURIAN SYSTEM

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

ORDOVICIAN SYSTEM

Om Maquoketa Group (0 - 180 feet thick)
Shale; dolomitic; silty; greenish- gray; argillaceous
in the lower half. Although the unit crops out on gentl
county, exposures of this slope- forming rock are scarc
These rocks are well exposed in a railroad cut west of S
roadcut along US Highway 20 east of Elizabeth.

Opp Galena and Platteville Groups (0 - 300 feet thick)
Dolomite and limestone; yellowish- brown and gray
argillaceous beds; clay (K- bentonite) beds. The Platte
grained and thinner bedded than the Galena Group. Th
consists of limestone in the western half of the county.
rocks are exposed in ravines along the Apple River at
Park and in many roadcuts throughout the county (e.g.
of Galena). These rocks contain lead and zinc ore (gale
that has been extensively mined in the region in the pas
shafts are shown on this map; many smaller mine diggi

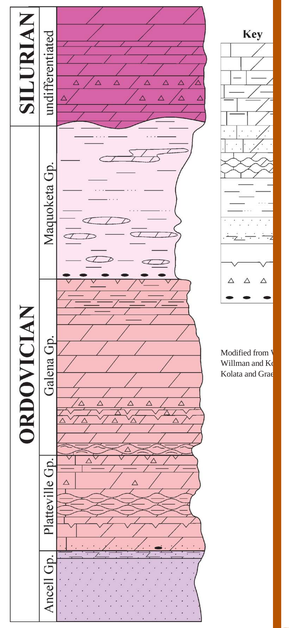
Oa Ancell Group (100 - 200 feet thick)
Sandstone; frosted, fine- to medium- sized quartz g
The upper 25 feet is composed of interbedded dolomite
grained sandstone and shale. These rocks are not expo
in the county, but underlie the sediments in the Mississ

Surface Water

Syncline
Mine Shaft (all are abandoned)
Quarry

Muncipality
State Park

US Highway
State Highway
Other Roads
Railroad
Streams



Key

Limestone/Dolomite
argillaceous
haly bedding planes
andy
ivy, lenticular bedding
Shale
ilty
Sandstone
olomitic, shaly
Corrosion surface
Chert
Phosphatic nodules

Modified from W
Willman and Ko
Kolata and Grae

in (1973),
1978), and
83).

Scale 1:62,500
1 inch equals approximately 1 mile
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 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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