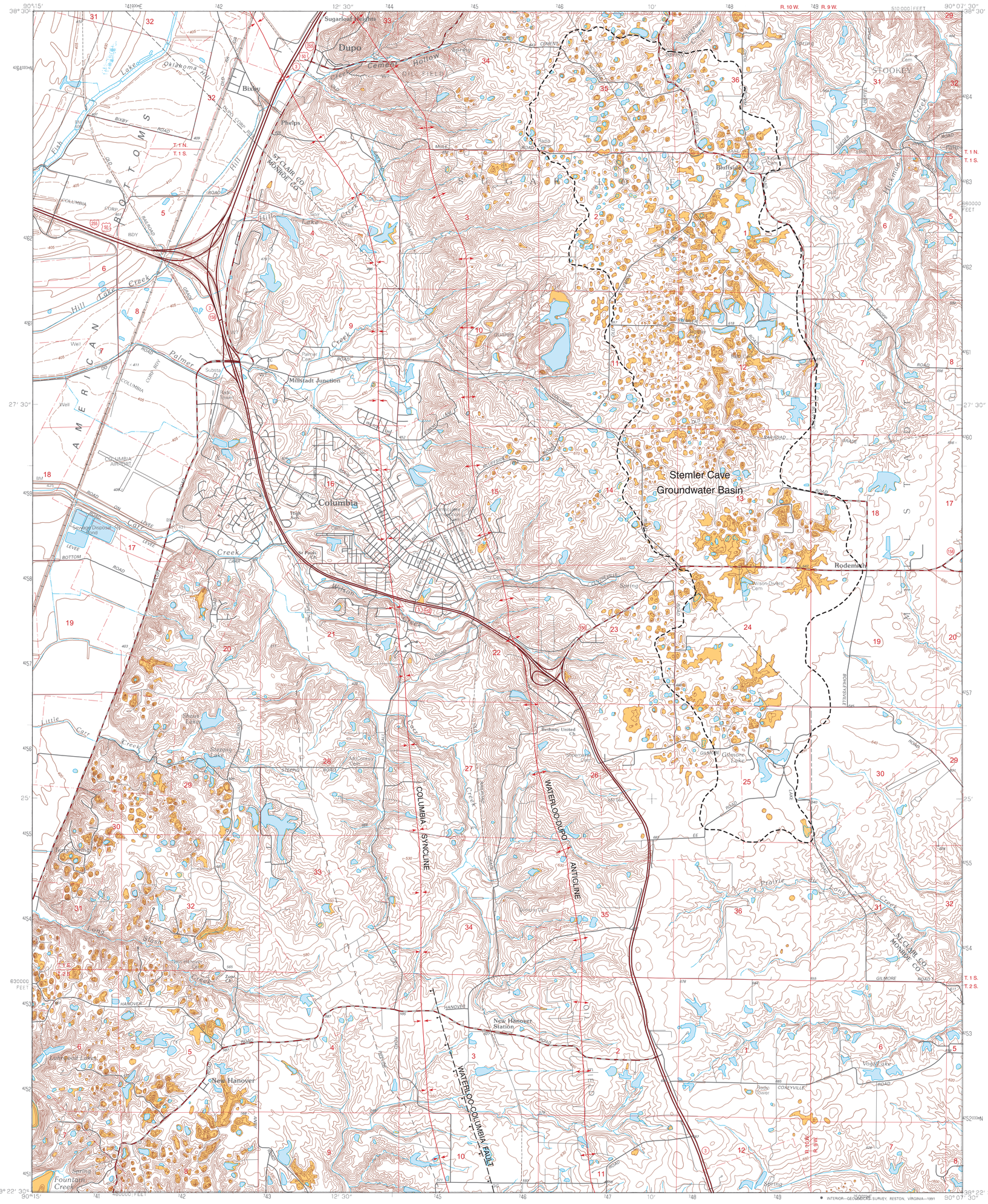
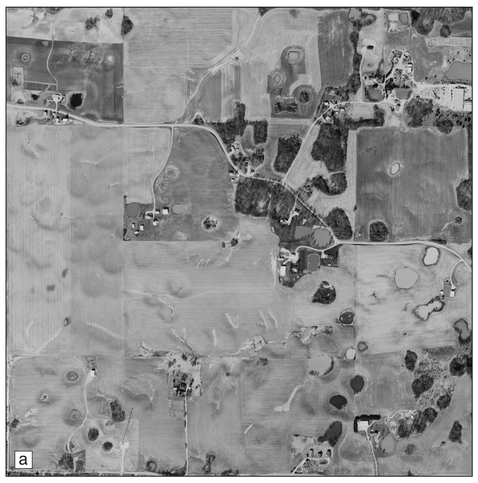
Sinkhole Distribution and Density of Columbia Quadrangle
Monroe and St. Clair Counties, Illinois

Illinois Department of Natural Resources
ILLINOIS STATE GEOLOGICAL SURVEY
William W. Shilts, Chief

Samuel V. Panno, Julie C. Angel, Dan O. Nelson, C. Pius Weibel, and Donald E. Luman
2008

Illinois Geologic Quadrangle Map
IGQ Columbia-SD





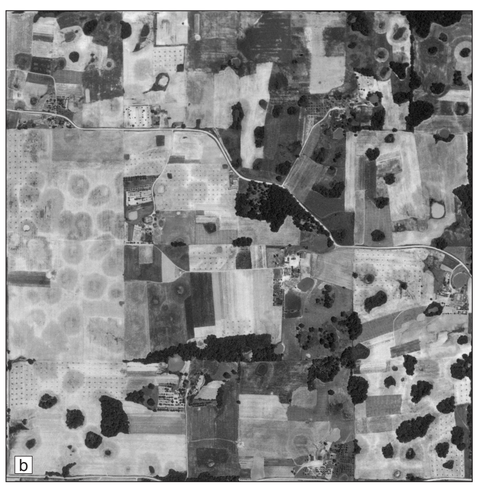


Figure 1 Aerial photographs of a particularly karstified section of the Columbia Quadrangle, taken over half a century apart, show how agricultural activities have changed the terrain. Figure 1a is derived from a U.S. Geological Survey Digital Orthophoto Quarter Quadrangle (DOQQ) produced from aerial photography acquired on March 3, 2005, showing the eastern portion of Section 34 and the western portion of Section 35, T1N, R10W. Figure 1b is from a digitized U.S. Department of Agriculture aerial photograph taken on July 5, 1940, and illustrates the same one-square-mile area. Comparison of these two images reveals a number of changes that have occurred on the landscape during the 65-year interval. The 2005 image shows sinkholes that have been remediated using stand pipes and then later filled in to increase cropland area. Subtle, near-surface circular patterns diagnostic of sinkholes are quite apparent in the 1940 image, especially in the agricultural fields located on the western portion of this image. Note how these patterns have largely been erased in the 2005 image because of decades of use with modern, large-scale farming equipment and further obscured by the widespread adoption of conservation tillage methods. Scale 1:12,000.

Symbols

- Sinkhole areas
- Groundwater basin/watershed boundary
- Normal fault, bar and ball on downthrown side, inferred
- Anticline
- Syncline

Base map compiled by Illinois State Geological Survey from digital data provided by the United States Geological Survey. Topography compiled by photogrammetric methods from aerial photographs taken 1986. PLSS current as of 1991. Planimetry derived from imagery taken 1998.

North American Datum of 1983 (NAD 83)
Projection: Transverse Mercator
10,000-foot ticks: Illinois State Plane Coordinate system, west zone (Transverse Mercator)
1,000-meter ticks: Universal Transverse Mercator grid system, zone 15

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SCALE 1:24,000

1 1/2 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 .5 0 1 KILOMETER

BASE MAP CONTOUR INTERVAL 10 FEET
SUPPLEMENTARY CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

Released by the authority of the State of Illinois: 2008

Geology based on field work by S.V. Panno, J.C. Angel, D.O. Nelson, and C.P. Weibel, 2000.

Digital cartography by J. Domier, D. Nelson, M. Jones, M. Widener, S. Geegan, and S. Radil, Illinois State Geological Survey.

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For more information contact:
Illinois State Geological Survey
615 East Peabody Drive
Champaign, Illinois 61820-6964
(217) 244-2414
http://www.isgs.uiuc.edu

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ADJOINING QUADRANGLES
1 Webster Groves
2 Cahokia
3 French Village
4 Oakville
5 Millstadt
6 Valmeyer
7 Waterloo
8 Paderborn

APPROXIMATE MEAN DECLINATION, 2008
½° MAGNETIC NORTH TRUE NORTH

ROAD CLASSIFICATION
Primary highway, hard surface
Secondary highway, hard surface
Light-duty road, hard or improved surface
Unimproved road
Interstate Route
U.S. Route
State Route