

SINKHOLE DISTRIBUTION AND DENSITY OF WATERLOO QUADRANGLE MONROE COUNTY, ILLINOIS

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

Illinois Geologic Quadrangle Map
IGQ Waterloo-SD

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2008

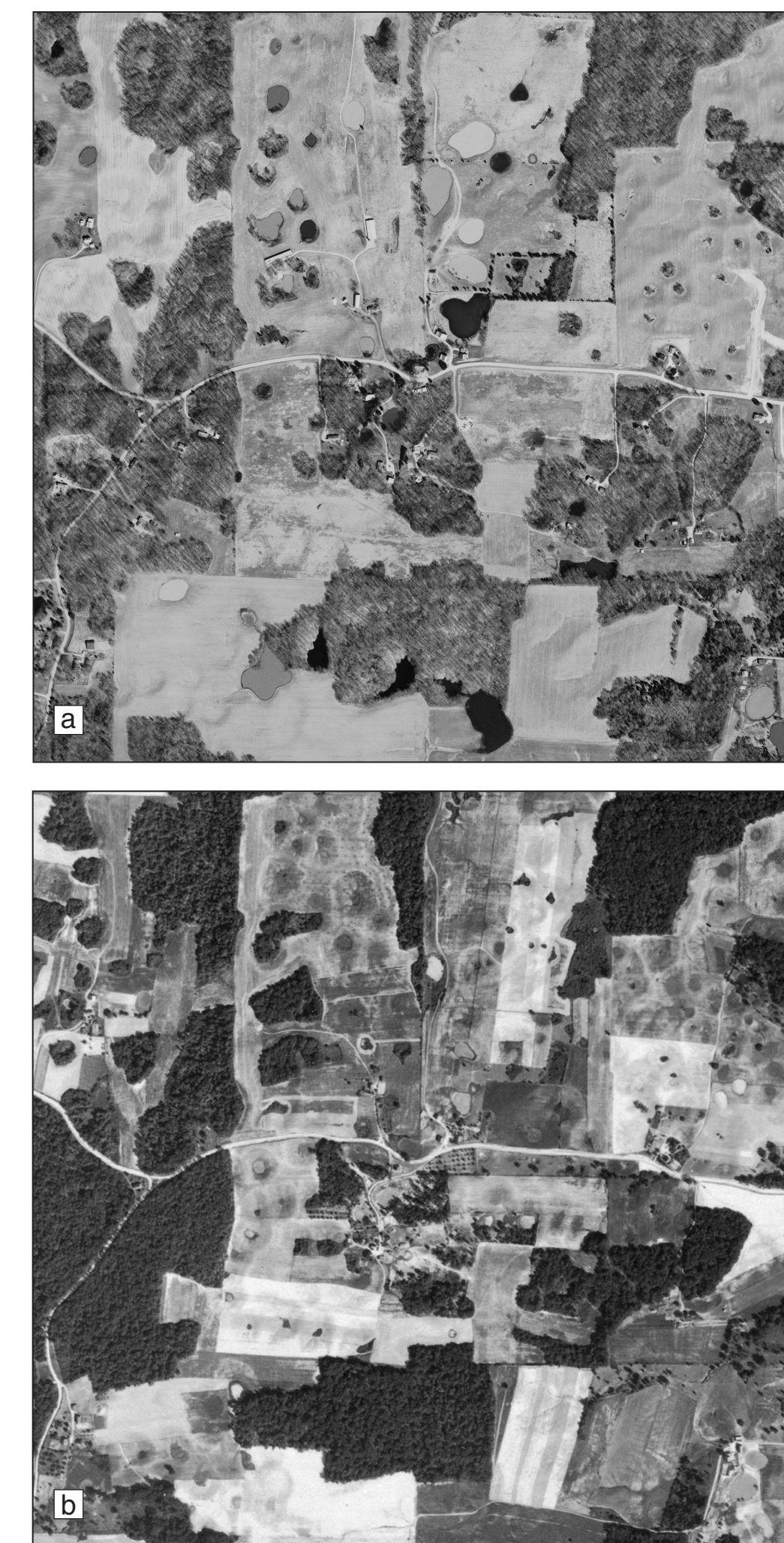
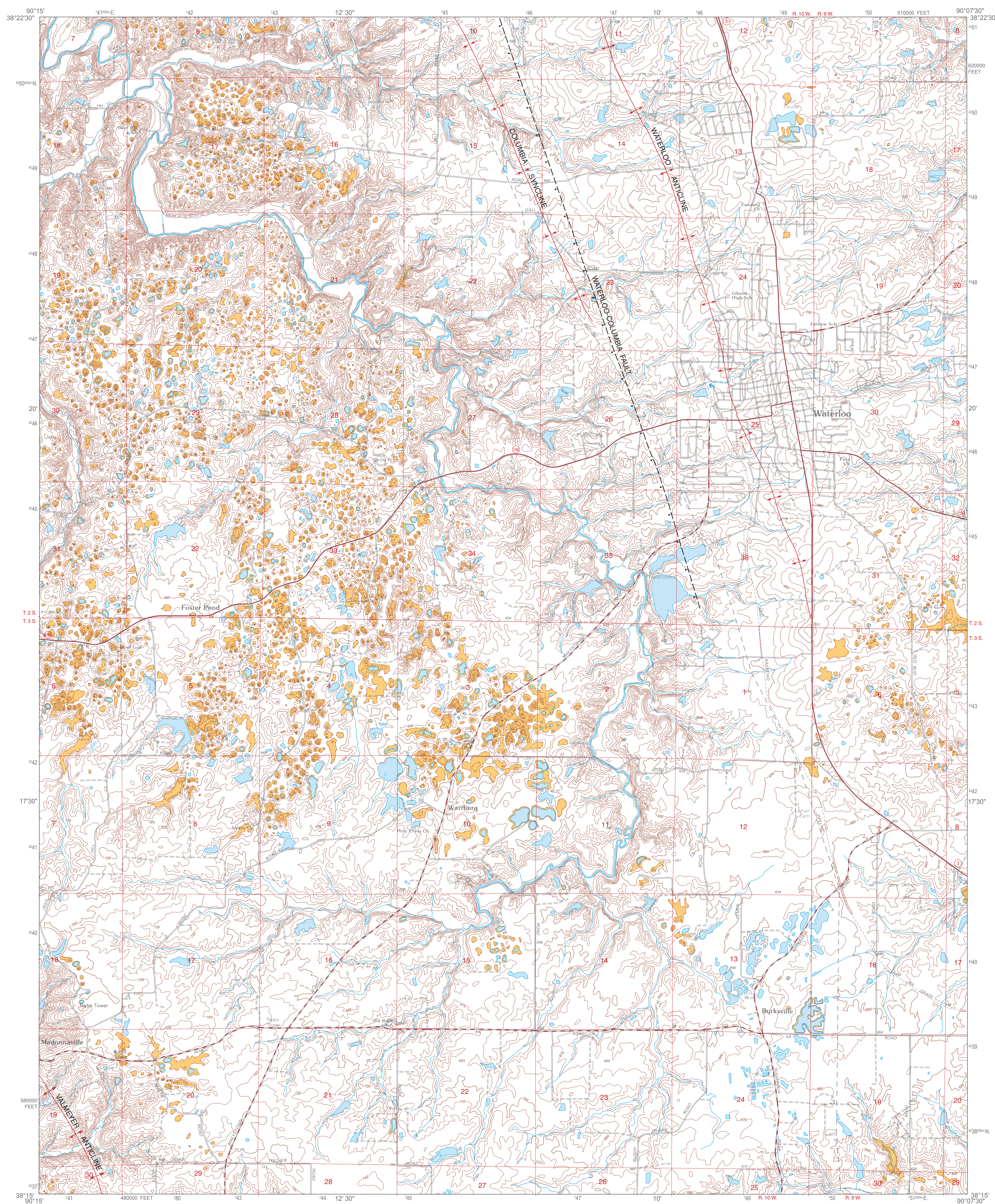


Figure 1 Aerial photographs of a particularly karstified section of the Waterloo Quadrangle, taken over half a century apart, show how agricultural activities have changed the terrain. Figure 1a is derived from a U.S. Geological Survey Digital Orthophoto Quarter Quadrangle (DOQQ) produced from aerial photography acquired on March 6, 2005, showing Section 29, T2S, R10W. Figure 1b is from a digitized U.S. Department of Agriculture aerial photograph taken on September 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. It is interesting to note that because of the early, leaf-off acquisition date of the 2005 image, sinkholes can be discriminated within many of the wooded areas. In comparison, subtle, near-surface circular patterns diagnostic of sinkholes are quite apparent in the 1940 image in many of the agricultural fields on this image. Note how these distinctive 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.

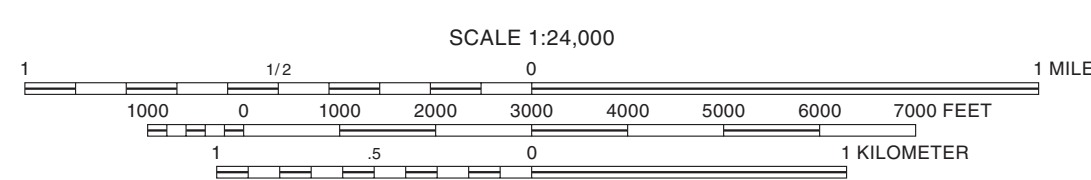
Symbols

- Sinkhole areas
- 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. Planimetry derived from imagery taken 1996. PLSS current as of 1989.

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

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

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

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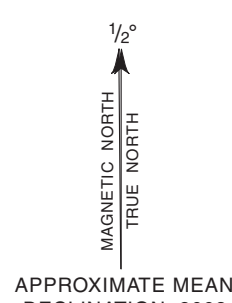


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ADJOINING QUADRANGLES		
1	2	3
4	5	
6	7	8

1 Oakville
2 Columbia
3 Millstadt
4 Valmeyer
5 Paderborn
6 Selma
7 Renault
8 Ames



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