Institute of Natural Resource Sustainability
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Soils and Parent Materials of Oak Hill Quadrangle

Peoria County, Illinois

Illinois Geologic Quadrangle Map
IGQ Oak Hill-SPM

C. Pius Weibel and François Hardy

2009

Base map compiled by Illinois State Geological Survey from digital (Digital Line Graph) data provided by the United States Geological Survey. Compiled by photogrammetric methods from imagery dated 1969. Field checked 1971. Revised from imagery dated 1993, 1995, and other sources. Field checked 1996.

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 16

Recommended citation:
Weibel, C.P., and F. Hardy, 2009, Soils and Parent Materials of Oak Hill Quadrangle, Peoria County, Illinois: Illinois State Geological Survey, Illinois Geologic Quadrangle Map, IGQ Oak Hill-SPM, 1:24,000.

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 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

Transfer of soil map units by Soil Survey staff, Natural Resources Conservation Service, Rock Falls, Illinois.

Digital cartography by Jennifer E. Carrell, Zahra Golshani, and Jane E.J. Domier, Illinois State Geological Survey.

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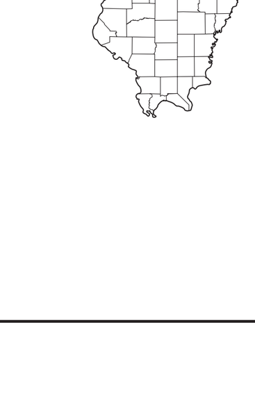

1	2	3
4		5
6	7	8

ADJOINING QUADRANGLES
1 Laura
2 Princeville
3 Edelstein
4 Elmwood
5 Dunlap
6 Farmington East
7 Hanna City
8 Peoria West

1½°
TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION, 2009

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

Soils and Parent Materials

Soils and Parent Materials of Oak Hill Quadrangle was developed from a recompilation of the *Soil Survey of Peoria County* (Walker 1992). The recompilation was produced specifically for the Illinois State Geological Survey (ISGS) under an agreement with the U.S. Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS). The soil map unit boundaries (soil series) were transferred onto mylar overlays superimposed on 1:12,000-scale (quarter-quadrangle) prints of the 1998/99 Digital Orthophoto Quadrangles and the 1996 U.S. Geological Survey digital line graphics of the hypsography (contour lines). The mylar overlays with hand-drawn boundaries were then digitally scanned. The resulting raster image was translated into vector data using ArcInfo software at the ISGS. This process created a digital database to which various attributes of the soil series were added.

The soil series displayed on this map are organized by their parent materials in the map legend using a soil key provided by the NRCS office in Champaign, Illinois (table 1). The map labels consist of numbers or of a combination of numbers and a letter. The initial numbers represent the number of each soil series. An uppercase letter following these numbers on the map indicates the class of slope: A, 0–2%; B, 2–5%; C, 5–10%; D, 10–15%; E, 15–25%; F, 25–35%; G, 35–60%. Map labels without a slope letter are for flat areas. A final number of 2 following the slope letter on the map indicates that the soil is moderately eroded, and a final number of 3 indicates that the soil is severely eroded. Because soil properties are closely related to the characteristics of their parent materials, the individual soil series are categorized within a USDA parent material class following the classification scheme of Fehrenbacher et al. (1984) and by reviewing updated soil series description sheets. The parent material classes and their descriptions were modified as needed to conform to information gathered during fieldwork for mapping the surficial geology of the quadrangle (Hardy and Weibel 2008). These classes generally correspond with the ISGS surficial geology mapping units.

Within each parent material class, the soil series (table 1) were further organized based upon the thickness of a silty or loamy surface cover, vegetation type under which they formed, and USDA drainage class. Each soil map unit is color-coded according to the soil association (table 2) in which it belongs. Fehrenbacher et al. (1984) defined soil associations as a grouping of soils on the basis of the parent materials, their surface-soil color, degree of development, and natural soil drainage. Each association was named from two or more of the major statewide soils within the association (Fehrenbacher et al. 1984). Associations also contain numerous minor soils, some of which are in more than one association. The soils in an association tend to form a characteristic pattern on the landscape that is often repeated.

Acknowledgments

Map review was provided by Roger Windhorn, Natural Resources Conservation Service, Champaign, Illinois.

References

Fehrenbacher, J.B., J.D. Alexander, I.J. Jansen, R.G. Darmody, R.A. Pope, M.A. Flock, E.E. Voss, J.W. Scott, W.F. Andrews, and L.J. Bushue, 1984, Soils of Illinois: University of Illinois at Urbana-Champaign, College of Agriculture, Agricultural Experiment Station and U.S. Department of Agriculture, Soil Conservation Service, Bulletin 778, 85 p.

Hardy, F., and C.P. Weibel, 2008, Surfical geology of Oak Hill Quadrangle, Peoria County, Illinois: Illinois State Geological Survey, Illinois Preliminary Geologic Map, IPGM Oakhill-SG, 1:24,000, report, 3 p.

Walker, M.B., 1992, Soil survey of Peoria County, Illinois: United States Department of Agriculture Soil Conservation Service, 225 p.

Table 1 Soil series (map unit) by parent materials and drainage class.

Parent material class	Parent materials in soil profile (USDA)	Natural soil drainage[1]: Excessively to well drained	Natural soil drainage[1]: Moderately well drained	Natural soil drainage[1]: Somewhat poorly drained	Natural soil drainage[1]: Poorly drained
Loess; windblown silt deposit; dark grayish brown to yellowish brown; silt to silt loam; blankets upland areas; absent from lower, active geomorphic surfaces (e.g., stream channels and floodplains)	Loess (>80 inches thick)	Tama (36)P		Ipava (43)P	Sable (68)P
		Elkhart (567)P			Denny (45)P
		Downs (386) TR		Clarksdale (257)TR	
		Rozetta (279)T		Keomah (17)T	Rushville (16)T
		Fayette (280)T			
		Sylvan (19)T			
	Loess (20–40 inches thick) on paleosols		Assumption (259)P		
			Elco (119)T		
Glacial till; sediment composed of a mixture of clay, silt, sand, and larger clasts of various sizes, deposited by glaciers; brown to grayish brown; loam and clay loam; hard to firm; blankets the area; absent where dissected by streams or removed by postglacial erosion	Loess (20–40 inches thick) over glacial till	Dodge (24)T			
	Loess (0–20 inches thick) over glacial till	Hickory (8)T			
		Strawn (224)T			
Glacial outwash; stratified to massive, proglacial fluvial sediments deposited by glacial meltwater; dominantly sand and gravelly sand, with minor loamy sand to silt loam and scattered cobbles, stones, and boulders; dark brown to yellow to grayish brown; found in terraces, channel bars, and floodplain and channel deposits in stream valleys; includes fine- to medium-grained sand deposits that have been reworked by aeolian processes	Loess (40–80 inches thick) over glacial outwash	Plano (199)P		Elburn (198)P	Drummer (152)P
		St. Charles (243)T		Virgil (104)TR	
	Loess (20–40 inches thick) over glacial outwash	Proctor (148)P			
		Harvard (344)TR		Brenton (149)P	
		Camden (134)T		Starks (132)T	
	Loamy materials (20–40 inches thick) over sand and gravel	Warsaw (290)P			
	Fine sand or loamy fine sand	Chute[2] (282)TR			
Colluvium; crudely stratified to massive deposits on slopes of valleys and depressions at base of slopes; dominantly formed by creep and secondarily by debris slides; dark grayish brown to yellowish brown silty or clayey deposits composed of remobilized loess, outwash and remobilized till and, where drift is thin, minor amounts of bedrock	Loamy sand (20–40 inches thick) over sand and loamy sand	Alvin (131)T			
	Silty materials (>80 inches thick)	Worthen (37)P			
	Silty and clayey materials (>40 inches thick)				Peotone (330)P
Organic deposit; peat, organic silt, and mire; very dark gray to black; water saturated; accumulates in abandoned channels and depressions on stream floodplains	Sapric materials (muck) (>50 inches thick)				Lena (210)
Alluvium; recently (postglacial) deposited sediments, including buried soils, occurring on stream floodplains and terraces, channels, and upland drainages; includes fan-shaped deposits in areas where streams and ravines emerge from uplands onto lower-gradient floodplains; includes areas that are seasonally flooded; dark grayish brown to brown; yellowish brown to dark gray; massive to stratified; silty clay loam to sand and gravelly sand, may include remobilized humus, small calcareous shells, and dispersed small to large wood fragments	Sand to loamy sand (>40 inches thick)	Sarpy[2] (92)			
	Loamy materials (20–40 inches thick) over loamy sand and sand	Landes (304)			
	Alluvium (silty)	Jules (28)		Paxico (406)	
		Dorchester (239)		Orion (415)	
		Huntsville (77)		Lawson (451)	
				Radford (74)	Beaucoup[3] (3070)
					Sawmill (107)
Bedrock residuum; weathered bedrock; may include thin mantle of loess, till, or remobilized till; yellowish brown to olive-gray to grayish brown; massive; silt, silty clay loam, and clay loam mixed with fragments of shale, siltstone, and sandstone	Loess or loamy deposits on sandstone, siltstone, and shale	Marseilles (549)T			
Mine land regolith; material composed of a mixture of fine loamy sediments, till clasts, and fragments of bedrock (shale, sandstone, siltstone, coal, and limestone); gray to black, red to brown to yellow; occurs in areas where drift and uppermost bedrock have been excavated and deposited during surface mining activities; may include areas that have been reclaimed	Mine spoil (loamy)	Lenzburg (871)			
Earth fill (loamy); materials generally in cut-and-fill areas; in the cut areas, topsoil has been removed and subsoil or underlying material has been exposed; in fill areas, additional loamy material has been placed on the original surface and in many cases has been mixed with the original soil	ORTHENTS[4] (2802)				
Man-made land (human-disturbed deposits); areas from which gravel, sand, or both have been removed, including the surrounding area in which the mining by-products have been placed	GRAVEL PITS (865)				

[1] Type of natural vegetation cover often associated with each soil series: P, prairie; TR, transitional cover; and T, timber (forested).

[2] Soils that are excessively to somewhat excessively drained.

[3] Frequently flooded phase of Beaucoup (70).

[4] Urban land complexes of Orthents (802).

Table 2 Soil associations of Illinois in the Oak Hill Quadrangle (Fehrenbacher et al. 1984).

Soil parent materials	Prairie (dark and moderately dark)	Timber (light and moderately dark)
Thick loess (>80 inches)	Tama-Ipava-Sable	Fayette-Rozetta-Stronghurst Clinton-Keomah-Rushville
Moderately thick to thin loess or silty material (20–80 inches) on medium-textured, Wisconsin Episode outwash	Plano-Proctor-Worthen (Drummer-minor soil)	St. Charles-Camden-Drury
Thin loess (10–40 inches) on loam, Wisconsin Episode till	Saybrook-Dana-El Paso (Peotone-minor soil)	Dodge-Russell-Miami
Thin loamy or silty materials on gravelly Wisconsin Episode outwash	Lorenzo-Warsaw-Wea	
Thick, sandy Wisconsin Episode outwash and aeolian materials		Oakville-Lamont-Alvin
Thin loess or loamy materials with or without residuum on interbedded sandstone, siltstone, and shale		Derinda-Schapville-Eleroy
Sandy to clayey alluvial sediments on bottomlands	Lawson-Sawmill-Darwin	
Organic materials (peat and mucks)	Houghton-Palms-Muskego	