

SOIL PARENT MATERIALS OF THE MIDDLE ILLINOIS RIVER VALLEY BUREAU, LASALLE, MARSHALL, PEORIA, PUTNAM, and WOODFORD COUNTIES, ILLINOIS

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Discussion

The *Soil Parent Materials* map for the area of the middle Illinois River valley (from south of Chillicothe to just south of the big bend of the Illinois River) was developed for the Illinois Route 29 project under a contract with the Illinois Department of Transportation. The map shows geological materials that compose the uppermost five feet beneath the land surface as interpreted from U.S. Department of Agriculture (USDA) soil maps for Peoria (Walker 1992), Bureau (Zwicker 1992a), Putnam (Zwicker 1992b), Woodford (Teater 1999), Marshall (USDA-Natural Resources and Conservation Service 2000), and LaSalle (Deniger 2008) Counties. The *Soil Parent Materials* map provides a detailed depiction of the various geologic materials that constitute the parent materials from which developed the profile of the modern soil. It differs from the original soil maps by emphasizing parent material but does not retain other components of soil series map unit classification, such as slope, horizon thickness, or drainage class.

The uppermost geological materials were determined by grouping 122 soil series in the mapping area into 14 soil parent material groups (see map legend). The groups, summarized below, are differentiated on the basis of soil series compositions and on their positions on the landscape.

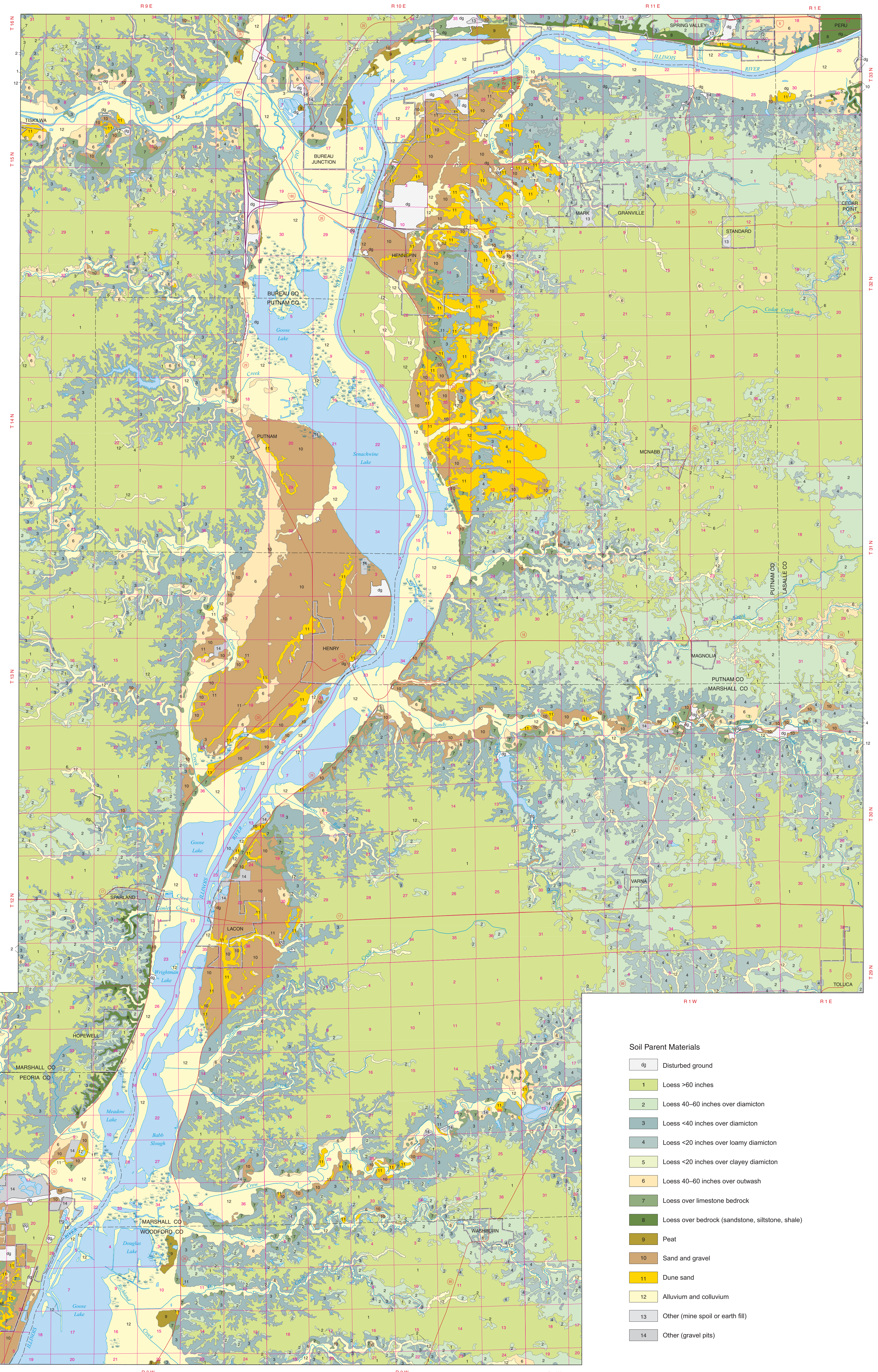
- Thick loess (wind-deposited silt) soil series, including Tama, Muscatine, and Downs, are all developed in loess more than 60 inches (152 centimeters) thick and mostly occur on uplands overlying diamicton (glacially deposited mixture of sand, silt, clay, and gravel that is commonly called "hill").
- Soils developed in 40 to 60 inches (102 to 152 centimeters) of loess occur over diamicton or sand and gravel. Five soil series, including Flanagan and Catlin, are characterized by loess overlying diamicton that occurs mostly on uplands and on the upper portions of slopes. Seven soil series, including Virgil and Batavia, have loess overlying sand and gravel that occurs mainly along the sides of streams tributary to the Illinois River and also in the main Illinois River valley.
- Seventeen soil series, including Blount, Miami, and Senachwine, usually are characterized by less than 20 inches (51 centimeters) of loess overlying diamicton and occur on slopes of streams tributary to the Illinois River as well as on slopes adjacent to the main Illinois River valley. Thirteen soils, including Camden and Brenton, have less than 40 inches (102 centimeters) of loess (or silty alluvium) overlying sand and gravel. These soils occur along the sides of streams tributary to the Illinois River and also in the main Illinois River valley. Marcellus, which is characterized as loess overlying shale bedrock, occurs in lower slope positions in northeastern Peoria County and extends northward into Marshall County.
- Sandy soils are divided as follows: (1) The Metea series, characterized by less than 20 inches (51 centimeters) of sand overlying diamicton, occurs only east of the Illinois River, where it was probably derived from sand in the Illinois valley that was blown by wind onto the adjacent uplands. (2) Other dune soils (eight series), including Bloomfield, Sparta, and Oakville, are all characterized by more than 60 inches (152 centimeters) of sandy windblown sediments that occur on terraces in the Illinois River valley or on the uplands east of the valley. (3) Twelve sand and gravel soil series, including Rodman, Warsaw, and Dakota, occur mainly on terraces in the Illinois River valley and in some of the larger streams tributary to the Illinois River.
- Alluvial and colluvial soils are composed of fine and coarse sediments that often overlie silty materials or sand and gravel. Peotone, Slacwater, and Ravenwash are colluvial soils that occur along lower slopes as slopewash and gravity deposits, and in depressions on uplands. Sawmill, Lawson, and Huntsville, for example, are soils that formed in alluvial valleys of modern streams and rivers. Some alluvial soils, such as Worthen and Terri, occur as alluvial fans that emanated from tributary streams and were deposited on terraces along the Illinois River.
- Peat (Lena series) occurs in restricted areas of the Illinois River flood plain.
- Soils on urban land, dumps, fill, and pits are characterized as disturbed ground.

The *Soil Parent Materials* map was used to help define geological boundaries for the *Surficial Geology of the Middle Illinois River Valley* map (McKay et al. 2010), particularly between (a) thick (>60 inches) and thin (<60 inches) loess overlying diamicton, (b) alluvium and colluvium in valleys, and (c) diamicton and bedrock on valley sides.

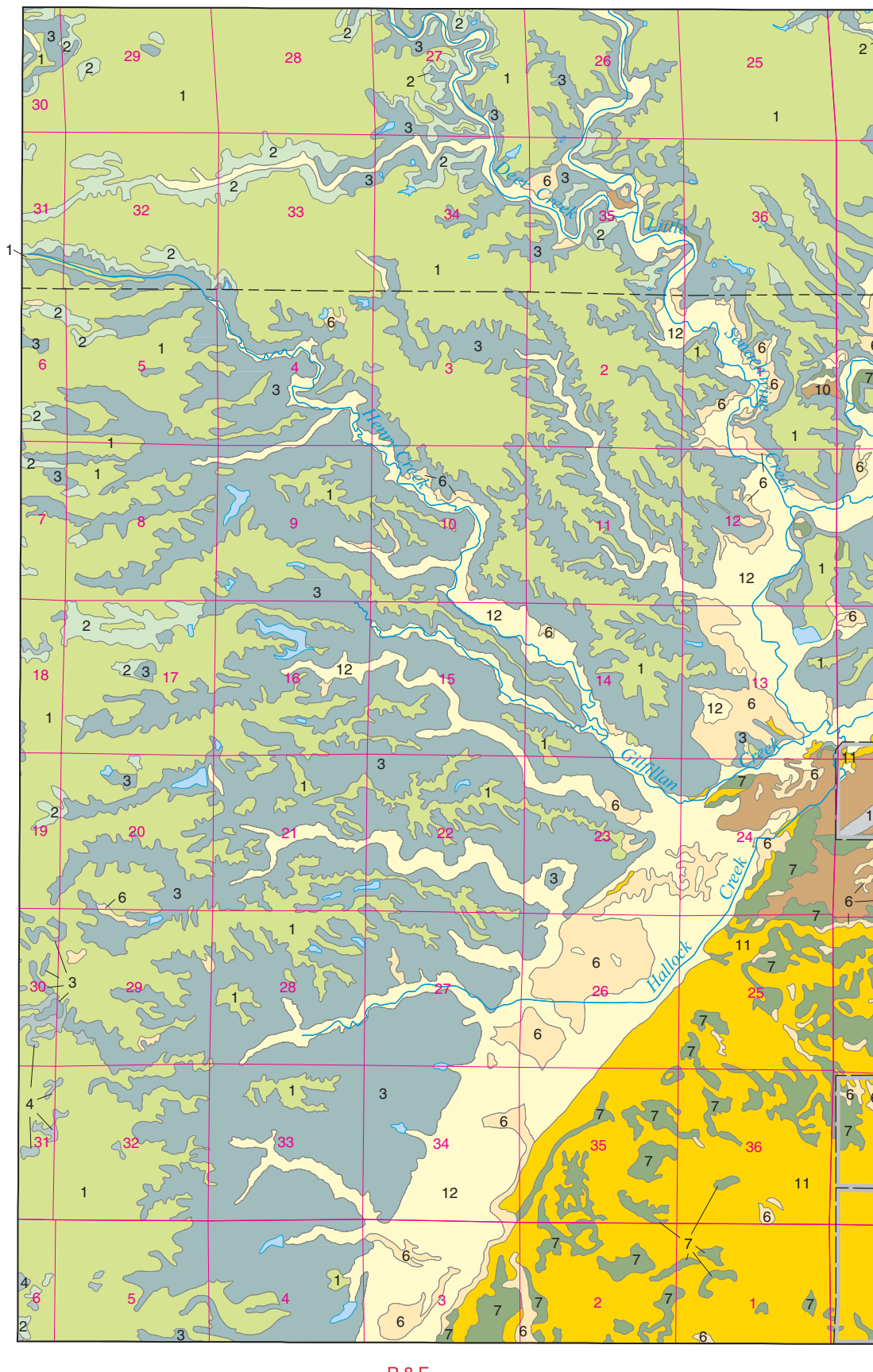
The *Soil Parent Materials* map complements the *Surficial Geology of the Middle Illinois River Valley* map (McKay et al. 2010), which delineates geologic materials classified by both their lithology (sediment type or rock type) and stratigraphy (relative position and age).

References

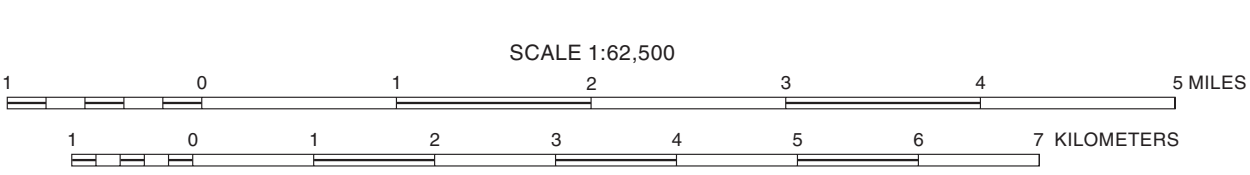
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Soil Parent Materials	
9	Disturbed ground
1	Loess >60 inches
2	Loess 40-60 inches over diamicton
3	Loess <40 inches over diamicton
4	Loess <20 inches over loamy diamicton
5	Loess <20 inches over clayey diamicton
6	Loess 40-60 inches over outwash
7	Loess over limestone bedrock
8	Loess over bedrock (sandstone, siltstone, shale)
9	Peat
10	Sand and gravel
11	Dune sand
12	Alluvium and colluvium
13	Other (mine spoil or earth fill)
14	Other (gravel pits)



Base map compiled by the Illinois State Geological Survey from digital and paper data provided by the United States Geological Survey.
North American Datum of 1983 (NAD 83)
Projection: Transverse Mercator



Digital cartography by Barbara J. Stiff, Brittany M. Walbright, Jennifer E. Carrell, and Dettie Lund, Illinois State Geological Survey.

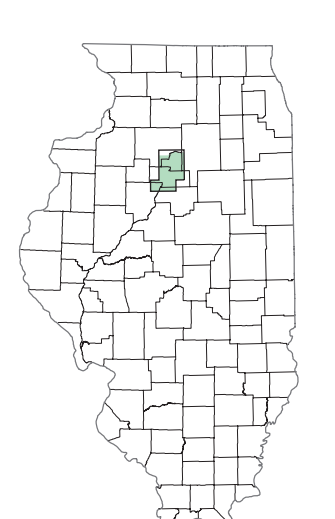
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QUADRANGLES	
1	Philothen South
2	DePue
3	Spring Valley
4	Putnam
5	Flora
6	McHabb
7	Lacon
8	Henry
9	Varna
10	Rome
11	Chillicothe
12	Warburton

APPROXIMATE MEAN DECLINATION, 2015

- Municipal boundary line
- County line
- Swampy lowland areas
- Rivers and water bodies
- Interstate route
- U.S. route
- State route