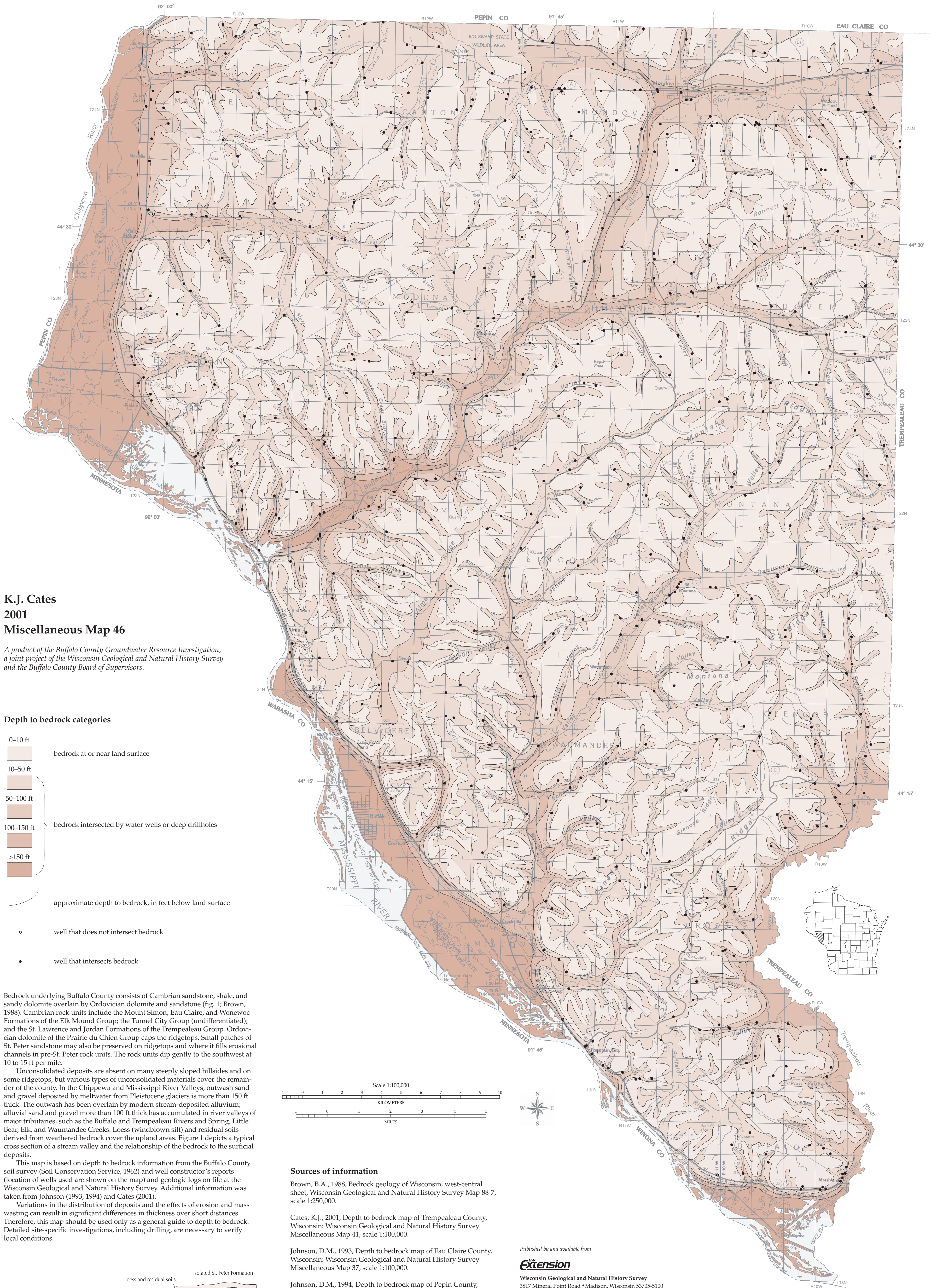


Depth to Bedrock Map of Buffalo County, Wisconsin



K.J. Cates
2001
Miscellaneous Map 46

A product of the Buffalo County Groundwater Resource Investigation, a joint project of the Wisconsin Geological and Natural History Survey and the Buffalo County Board of Supervisors.

Depth to bedrock categories

- 0-10 ft bedrock at or near land surface
- 10-50 ft
- 50-100 ft
- 100-150 ft bedrock intersected by water wells or deep drillholes
- >150 ft
- approximate depth to bedrock, in feet below land surface
- o well that does not intersect bedrock
- well that intersects bedrock

Bedrock underlying Buffalo County consists of Cambrian sandstone, shale, and sandy dolomite overlain by Ordovician dolomite and sandstone (fig. 1; Brown, 1988). Cambrian rock units include the Mount Simon, Eau Claire, and Wonewoc Formations of the Elk Mound Group; the Tunnel City Group (undifferentiated); and the St. Lawrence and Jordan Formations of the Trempealeau Group. Ordovician dolomite of the Prairie du Chien Group caps the ridgetops. Small patches of St. Peter sandstone may also be preserved on ridgetops and where it fills erosional channels in pre-St. Peter rock units. The rock units dip gently to the southwest at 10 to 15 ft per mile.

Unconsolidated deposits are absent on many steeply sloped hillsides and on some ridgetops, but various types of unconsolidated materials cover the remainder of the county. In the Chippewa and Mississippi River Valleys, outwash sand and gravel deposited by meltwater from Pleistocene glaciers is more than 150 ft thick. The outwash has been overlain by modern stream-deposited alluvium; alluvial sand and gravel more than 100 ft thick has accumulated in river valleys of major tributaries, such as the Buffalo and Trempealeau Rivers and Spring, Little Bear, Elk, and Waumandee Creeks. Loess (windblown silt) and residual soils derived from weathered bedrock cover the upland areas. Figure 1 depicts a typical cross section of a stream valley and the relationship of the bedrock to the surficial deposits.

This map is based on depth to bedrock information from the Buffalo County soil survey (Soil Conservation Service, 1962) and well constructor's reports (location of wells used are shown on the map) and geologic logs on file at the Wisconsin Geological and Natural History Survey. Additional information was taken from Johnson (1993, 1994) and Cates (2001).

Variations in the distribution of deposits and the effects of erosion and mass wasting can result in significant differences in thickness over short distances. Therefore, this map should be used only as a general guide to depth to bedrock. Detailed site-specific investigations, including drilling, are necessary to verify local conditions.

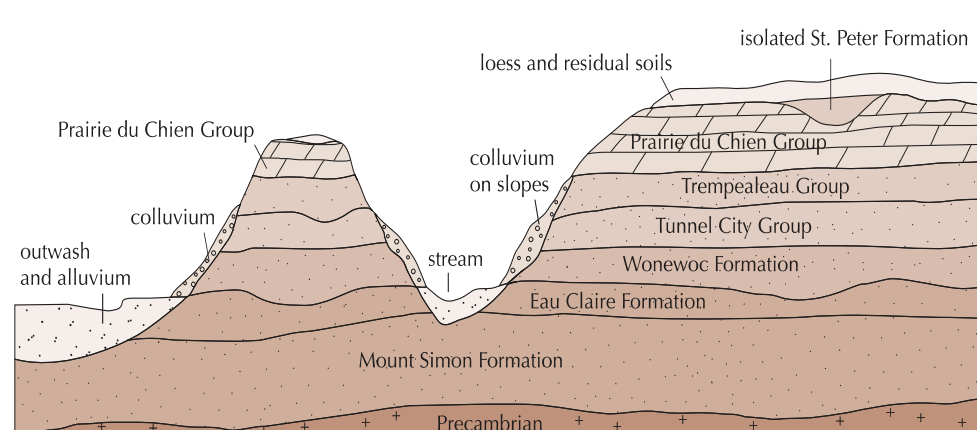
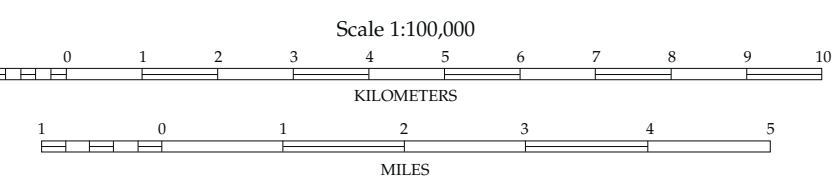


Figure 1. Cross section of a typical stream valley in Buffalo County.



Sources of information

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This map is an interpretation of the data available at the time of preparation. Every reasonable effort has been made to ensure that this interpretation conforms to sound scientific and cartographic principles; however, the map should not be used to guide site-specific decisions without verification. Proper use of the map is the sole responsibility of the user.

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Base map constructed from U.S. Geological Survey Digital Line Graph files (1990, scale 1:100,000), modified by Wisconsin Department of Natural Resources (1992) and Wisconsin Geological and Natural History Survey (2000).