

Glacial landforms of the southern Green Bay Lobe, southeastern Wisconsin

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Wisconsin Geological and Natural History Survey Miscellaneous Map 52

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About 18,000 years ago, the Green Bay Lobe reached its maximum position; by about 16,000 years ago, it began receding. The Green Bay Lobe created a landscape dominated by drumlins, moraines, and eskers. This map shows the distribution of glacial landforms created by the southern Green Bay Lobe.

This map shows an area of approximately 27,000 km², between 42°30′ and 44°00′ N latitude, 88°00′ and 90°00′ W longitude. The present-day topography of this region consists of a broad lowland divided by a bedrock upland in Dane and Columbia Counties (see geomorphic regions map, lower left). To the east of this lowland the Silurian escarpment and the Kettle Moraine separate the Green Bay lowland from the Lake Michigan lowland to the east. The sand plain of glacial Lake Wisconsin lies west of the Green Bay lowland beyond the hummocky outer moraines. To the southwest lie the Baraboo Hills and the Driftless Area.

I compiled this map from my interpretations of topographic maps (scale 1:24,000), aerial photographs (scale 1:20,000 and 1:40,000), and existing surficial geologic maps (scale 1:100,000 to 1:250,000). An earlier version of this map can be found in Colgan (1996).

Additional reading about the geology of the Green Bay lowland

Alden, W.C., 1918, The Quaternary geology of southeastern Wisconsin, with a chapter on the older rock formation: U.S. Geological Survey Professional Paper 106, 356 p.

Attig, J.W., Clayton, Lee, and Mickelson, D.M., 1985, Correlation of late Wisconsin glacial phases in the western Great Lakes area: Geological Society of America Bulletin, v. 96, p. 1585–1593.

Battista, J., 1990, Quaternary geology of the Horicon Marsh area: Master's thesis, University of Wisconsin, Madison, 132 p.

Clayton, Lee, 1986, Pleistocene geology of Portage County, Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 56, 19 p.

Clayton, Lee, 1987, Pleistocene geology of Adams County, Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 59, 14 p. Clayton, Lee, and Attig, J.W., 1989, Glacial Lake Wisconsin: Geological Society of

America Memoir 173, 80 p.

Clayton, Lee, and Attig, J.W., 1997, Pleistocene geology of Dane County,
Wisconsin: Wisconsin Geological and Natural History Survey Bulletin 95, 64 p.

Clayton, Lee, Attig, J.W., Mickelson, D.M., and Johnson, M.D., 1992, Glaciation of

Wisconsin: Wisconsin Geological and Natural History Survey Educational Series 36,

4 p.

Colgan, P.M., 1996, The Green Bay and Des Moines Lobes of the Laurentide Ice
Sheet: Evidence for stable and unstable glacier dynamics 18,000 to 12,000 BP:

Ph.D. thesis, University of Wisconsin, Madison, 293 p.

Colgan, P.M., 1999, A reconstruction of the Green Bay Lobe, Wisconsin, United States, from 26,000 to 13,000 radiocarbon years B.P., in Mickelson, D.M., and Attig, J.W. [eds.], Glacial processes past and present: Geological Society of America Special Paper 337, p. 137–150.

Colgan, P.M., and Mickelson, D.M., 1997, Genesis of streamlined landforms of the Green Bay Lobe, Wisconsin USA: Sedimentary Geology, v. 111, p.14–25.

Colgan, P.M., Mickelson, D.M., Clayton, Lee, and Attig, J.W., 1997, Glacial geomorphology and glaciology of the Green Bay Lobe during the last deglaciation, southeastern Wisconsin, in Mudrey, M.G., Jr. [ed.], Guide to field trips in Wisconsin and adjacent areas of Minnesota, 31st Annual Meeting of the North-Central Section, Geological Society of America, Madison, Wisconsin, p. 73–83.

Lundqvist, J., Clayton, Lee, and Mickelson, D.M., 1993, Deposition of the late Wisconsin Johnstown Moraine, south-central Wisconsin: Quaternary International, v. 18, p. 53–59.

Maher, L.J., Jr., 1982, The palynology of Devils Lake, Sauk County, Wisconsin, in Knox, J.C., Clayton, Lee, and Mickelson, D.M. [eds.], Quaternary history of the Driftless Area: Wisconsin Geological and Natural History Survey Field Trip Guide Book Number 5, p. 119–135.

McCartney, M.C., and Mickelson, D.M., 1982, Late Woodfordian and Greatlakean history of the Green Bay Lobe, Wisconsin: Geological Society of America Bulletin, v. 93, p. 297–302.

Mickelson, D.M., 1987, Central Lowlands, in Graf, W.L. [ed.], Geomorphic systems of North America: Geological Society of America, Centennial Special Volume 2, p.

Mickelson, D.M., Clayton, Lee, Baker, R.W., Mode, W.N., and Schneider, A.F., 1984, Pleistocene stratigraphic units of Wisconsin: Wisconsin Geological and Natural

Pleistocene stratigraphic units of Wisconsin: Wisconsin Geological and Natural History Survey Miscellaneous Paper 84-1, 15 p.

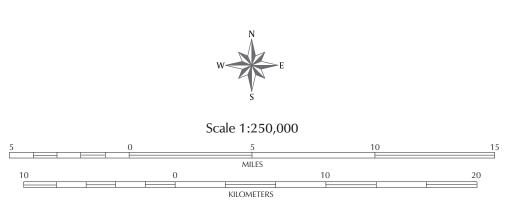
Mickelson, D.M., and McCartney, M.C., 1979, Glacial geology of Dane County,

Wisconsin: Wisconsin Geological and Natural History Survey, 1:100,000. Socha, B.J., 1984, The glacial geology of the Baraboo Area, Wisconsin, and application of remote sensing to mapping surficial geology: Master's thesis, University of Wisconsin, Madison.

Syverson, K.M., 1988, The glacial geology of the Kettle Interlobate Moraine Region: Washington County, Master's thesis, University of Wisconsin, Madison, 123 p.

Thwaites, F.T., 1943, Pleistocene of part of northeastern Wisconsin: Geological Society of America Bulletin, 54: 87–144.

Upham, W., 1894, The Madison type of drumlins: American Geologist, v. 14, p. 69–83.



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.

<u>Extension</u>

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Digital base created from U.S. Geological Survey 1:100,000 base maps. Lambert Projection. State Plane Coordinate System. 1929 North American Datum