

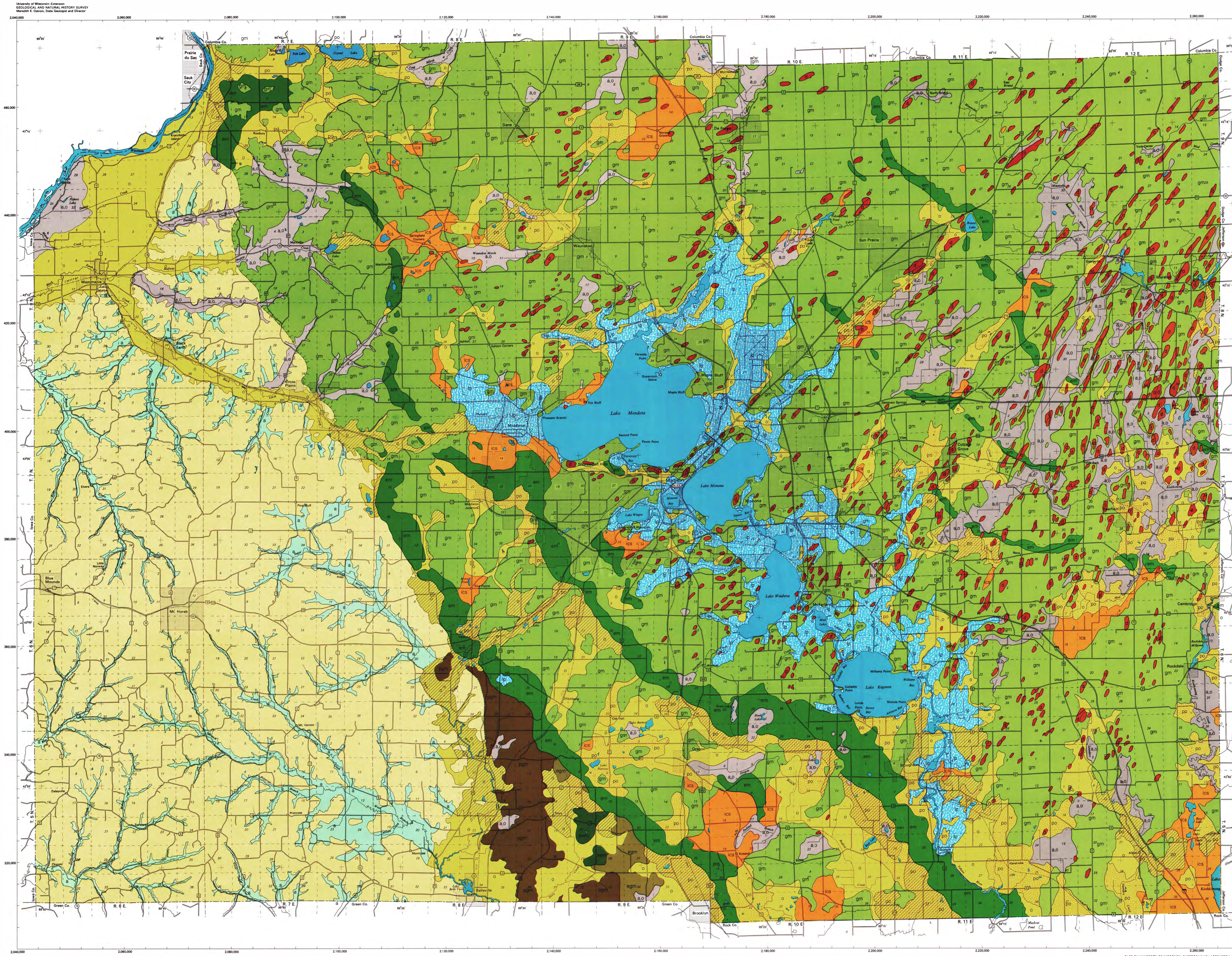
GLACIAL GEOLOGY OF DANE COUNTY, WISCONSIN

by D.M. MICKELSON & M.C. McCARTNEY

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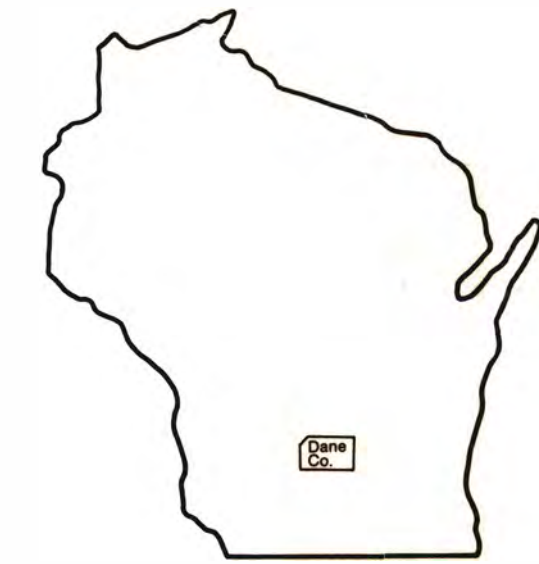
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UNIVERSITY OF WISCONSIN-EXTENSION
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EXPLANATION

- HOLOCENE** (approximately 10,000 years B.P. to present)
- 8** **ALLUVIUM, COLLUVIUM IN DRIFTLESS AREA**
Materials deposited by rivers or streams (alluvium) and materials moved downslope by gravity (colluvium) mixed and probably interbedded. Alluvial deposits are water-worked and are, therefore, usually well sorted and stratified. Colluvial deposits are a mixture of grain sizes, though in this area usually high in silt removed from the uplands.
 - 8.0** **ALLUVIUM, COLLUVIUM, ORGANIC DEPOSITS OFTEN OVER OUTWASH**
Organic deposits such as peat and muck in combination with alluvium and colluvium (see above) often over sand and gravel which was deposited by glacial meltwater. Includes deposits of small, short-lived glacial lakes.
- PLEISTOCENE WISCONSINAN**
- MID-WOODFORDIAN** (approx. 17,000 years B.P. to 13,000 years B.P.)
- em** **END MORAINE**
Ridge (100 feet to 1 mile wide) marking the terminal zone of a glacier. Usually is composed of till (material deposited directly by ice) but often includes poorly sorted stratified material in places. Surface generally hummocky, containing kettles in places, and often littered with boulders.
 - gm** **GROUND MORAINE**
A relatively flat or rolling till surface which was created along the base of the glacier.
 - d** **DRUMLIN**
An elongate hill approximately oval in outline. This streamlined form can be made of till, till over stratified drift, till over a bedrock core, stratified drift or bedrock. The drumlins are really a type of ground moraine in that the forms are created beneath the glacier by erosion or deposition by ice.
 - ics** **ICE-CONTACT STRATIFIED DEPOSITS**
Sand and gravel deposited in contact with ice. Includes such forms as kames and kettles, crevasse fillings and eskers. These have very variable characteristics but generally are more poorly sorted than outwash. They have good potential for aggregate, especially for asphalt aggregate.
 - o** **OUTWASH PLAIN OR VALLEY TRAIN**
Sand and gravel deposited by meltwater in an apron in front of the ice margin or in valleys leading away from the margin. Generally coarse aggregate near moraines and finer away. Better sorted and more predictable than ice-contact deposits but often have high water table. Generally better for concrete aggregate.
 - po** **PITTED OUTWASH PLAIN**
Outwash plain with kettle holes which formed by melting buried ice blocks. Materials similar to outwash but deposited on ice which later melted, creating kettle holes or depressions.
 - lp** **LACUSTRINE PLAIN**
Glacial lake bottom. Materials generally fine-grained silt and clay although sand is present near former shorelines and near stream inlets. Often flat, poorly drained areas with peat accumulation.
- EARLY WOODFORDIAN** (approx. 22,000 years B.P. to 17,000 years B.P.)
- em** **END MORAINE**
Subdued ridge which marks the terminal position of an earlier advance. Composed mostly of till of slightly different character than of Mid-Woodfordian moraine.
 - gm** **GROUND MORAINE**
Similar to above but much more bedrock control of topography. Drift generally thin and many bedrock exposures present.
- PRE-WOODFORDIAN** (more than 22,000 years old)
- gm** **GROUND MORAINE**
Similar to above but much more bedrock control of topography. Drift generally thin and many bedrock exposures present.
 - br** **BEDROCK, WIND-BLOWN SILT AND RESIDUUM IN DRIFTLESS AREA**
No evidence of glacial deposits.
- Other Symbols**
- ca** **COARSE AGGREGATE POTENTIAL**
Areas with high potential for sand and gravel production. Outwash and pitted outwash are less variable than ice contact stratified drift. Site examination must be done to determine economic feasibility (e.g. thickness and quality of deposit and depth to water table).
 - **MAXIMUM EXTENT OF ICE WHERE NO MORAINE WAS FORMED**
In places ice was nearly free of debris and no ridges were formed at the margin.
 - **CONTACT**
 - **INFERRED CONTACT**
 - **BOUNDARY BETWEEN GLACIAL LAKES MIDDLETON AND YAHARA**
 - **WATER**



SCALE
1:100,000
0 1 2 3 4 Miles
0 1 2 3 4 5 Kilometers
LAMBERT CONFORMAL CONIC PROJECTION 4000 FOOT GRID
BASED ON WISCONSIN COORDINATE SYSTEM SOUTHERN ZONE

REFERENCES
Alden, W.C. 1918. The Quaternary geology of southeastern Wisconsin. U.S.G.S., Prof. Paper 106, 356 p.
Soil Conservation Service. 1972. Dane County soils report, advanced field sheets.
Wisconsin Geological and Natural History Survey. 1972. Surficial materials maps. 1:24,000 open file report

This map shows the distribution of glacial and some post-glacial landforms and associated materials. All of the county was covered by wind-blown silt after glacier ice retreated, but we have ignored this deposit which is often several feet thick at the surface. Since boundaries of underlying materials are often covered, all contacts are approximate and many are based on interpretation of landform.