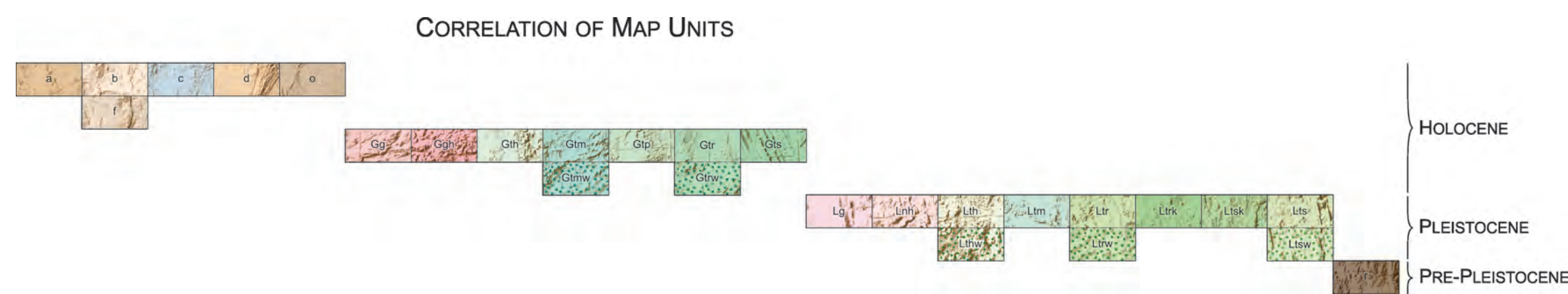
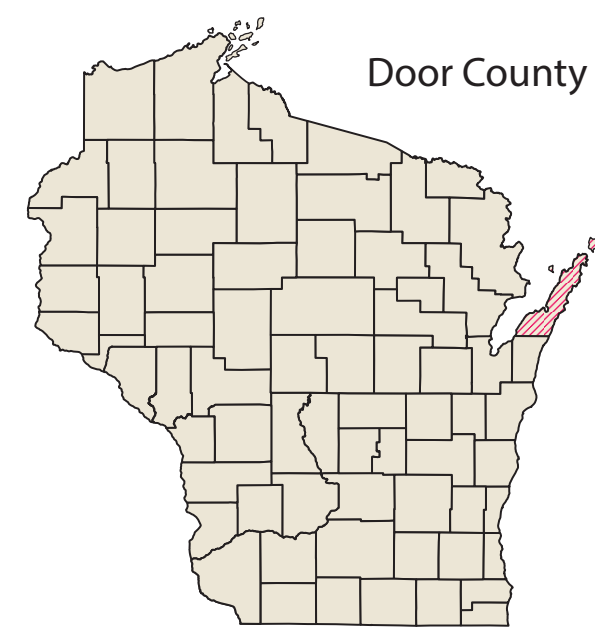


Quaternary Geology of Door County, Wisconsin

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Explanation

Postglacial deposits and bedrock

- Postglacial sand and silt. Commonly a mixture of sand, silt, and clay containing varying amounts of organic matter; found mostly along the edges of modern streams and at the base of extensive slopes. Contacts between this unit and postglacial organic sediment have been drawn arbitrarily in many places.
- Beach and nearshore sediments. Includes beach ridges, gravel, sand, and fine sand deposits. May also include patches of wave-washed till. Unit b: Sediment cover is more than 5 ft (1.5 m) deep. Unit f: Bedrock is typically within 5 ft (1.5 m) of the surface and has been submerged by water from high lake levels. Sediment is either thin beach and nearshore deposits or wave-washed till.
- Silty clay. Silty clay deposited in ice-dammed lakes or behind beach complexes.
- Dune deposits. Dune sand associated with modern and former shorelines.
- Postglacial organic sediment. Peat and muck; thickness ranges from less than 3 ft (1 m) to about 15 ft (5 m); underlain by deposits of streams, glaciers, or lakes; generally found in low parts of the landscape on flat to gently sloping surfaces.
- Rock. Bedrock exposure along steep slopes with discontinuous patches of till.

Keweenaw Formation

Glenmore Member

- Gravel and sand. Poorly to well-sorted sand, gravel, and cobbles deposited at the glacier margin and in outwash plains within bedrock valleys.
- Gravel and sand in areas of hummocky topography. Surface has moderate to high relief of more than 30 ft (10 m). Deposited on and beneath glacial ice by meltwater stream near ice margin. Sediment later collapsed to produce hummocky topography as underlying ice melted.
- Till in areas of hummocky topography. The hummocks in this unit may be made up primarily of Liberty Grove till with a thin cap of Glenmore till.
- End moraine. Unit Gm: Rolling to hummocky till deposit marking the marginal position of the glacier at the maximum of a major or minor advance. Unit Gtmw: Areas of Gtm that were submerged by water from high lake levels.
- Thin till on well-sorted silt, sand, and gravel. Reddish-brown, clayey till overlying palimpsest landscape of lake deposits and/or outwash plains. Till is commonly so thin that sand and gravel is at the surface.
- Till in areas of rolling topography. Reddish-brown unstratified deposit of sandy, silty clay with scattered gravel. Generally compact, uniform basal till, but in some areas may be covered with a thin layer of less red, more sandy, supraglacial or debris flow deposits. Unit Gtr: Rolling topography with moderate relief; most relief due to the underlying palimpsest landscape. Unit Gtrw: Areas of Gtr that were submerged by water from high lake levels; may be overlain by a very thin layer of lake clay or sand.
- Till in areas of streamlined topography. Reddish-brown unstratified deposit of sandy, silty clay with scattered gravel. Generally compact, uniform basal till, but in some areas may be covered with a thin layer of less red, more sandy, supraglacial or debris flow deposits. Streamlined forms produced by sliding at the glacier bed; till is often very thin or absent on surfaces streamlined by Glenmore ice.

This geologic map was funded in part by the USGS National Cooperative Geologic Mapping Program, under StateMap awards in 1999, 2000, and 2001. The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Government.

Logic of unit descriptors

Stratigraphic unit/material/landform

G = Glenmore Member, t = till, m = end moraine, w = submerged
Postglacial deposits only use a single letter descriptor.

Stratigraphic units (first letter)

Keweenaw Formation
G Glenmore Member
H Holy Hill Formation
L Liberty Grove Member

Materials (second letter)
g gravel and sand
t till
n sand and gravel

Landforms (third and fourth letters)

h hummocky
k thin, unconsolidated sediment cover
m end moraine
p palimpsest feature
r rolling
s streamlined
w formerly submerged

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.

Symbols

Geologic contact
Position shown on map is judged to be generally within 0.2 km of actual position.

Beach ridge
Wave deposited gravel and cobbles marking former shoreline positions. Symbol marks the crest of the ridge.

Drumlin
Length of arrow on symbol proportional to length of drumlin axis; arrow points in the direction of ice flow; cross-line on symbol proportional to drumlin width.

Esker
V points in direction of meltwater stream.

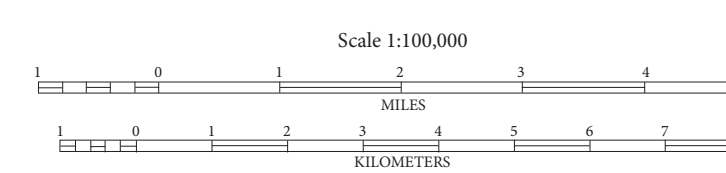
Meltwater stream

Niagara Escarpment

Holy Hill Formation

Liberty Grove Member

- Gravel and sand. Poorly to well-sorted sediment deposited at the glacier margin and in outwash plains.
- Sand, gravel, and till in patchy hummocky topography. Well-sorted to poorly sorted sediment deposited by meltwater and as debris flows from melting ice. Patchy hummocks and discontinuous fluvial channels were produced by melting blocks of ice and subsequent debris flows.
- Till in areas of hummocky topography. Unit Lth: Brown to light yellowish-brown, crudely stratified or unstratified gravelly, clayey, silty sand; generally compact, uniform basal till, except in upper 10 ft (3 m), where sand lenses and other discontinuities may be found in mudflow sediments. Surface has moderate relief (less than 30 ft; 9 m), hummocky topography. Unit Ltw: Areas of Lth that were submerged by water from high lake levels.
- End moraine. Rolling to hummocky till deposit marking the marginal position of the glacier at the maximum of a major or minor advance.
- Till in areas of rolling topography. Light yellowish-brown, crudely stratified or unstratified, gravelly, silty sand, with little clay; generally compact, uniform basal till. Unit Ltr: Rolling topography with moderate relief. Unit Ltrw: Areas of Ltr that were submerged by water from high lake levels; may be overlain by a very thin layer of lake clay or sand.
- Areas of thin till cover on rolling topography with very low relief. Bedrock typically within 5 ft (1.5 m) of the ground surface; sediment is Liberty Grove till, but in the southern part of the county may be covered with scattered patches of Glenmore till. In many places sediment has been completely altered by soil-forming processes making identification of parent material difficult.
- Areas of thin till cover on streamlined topography. Low-relief land surface with drumlins and/or flutes on bedrock. Bedrock typically within 5 ft (1.5 m) of the ground surface. In many places sediment has been completely altered by soil-forming processes making identification of parent material difficult.
- Till in areas of streamlined topography. Light yellowish-brown, crudely stratified or unstratified, gravelly, silty sand, with little clay; generally compact, uniform basal till. Unit Lts: Streamlined forms produced by sliding at the glacier bed; in areas with thin till cover, streamlined forms are composed entirely of till, but essentially lie directly on bedrock. Unit Ltsw: Areas of Lts that were submerged by water from high lake levels; may be overlain by a very thin layer of lake clay or sand.



Wisconsin Transverse Mercator Projection 1981 adjustment to the North American Datum of 1983 (NAD 83/91).
The base map was constructed from U.S. Census Bureau TIGER/Line data (2010 and 2013) and modified by the Wisconsin Geological and Natural History Survey (2014). LIDAR-derived data was provided by the Door County Land Information Office and processed by the Wisconsin Geological and Natural History Survey (2006).

Cartography by D.L. Patterson with contributions from M.L. Czechanski and K.K. Zeller.

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