

Quaternary Geology of Waupaca County, Wisconsin

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Map Series 509
Plate 1 • 2023



HOLOCENE		
w	p	s
wlo	pg	
wgk	po	
	ps	

CORRELATION
OF MAP UNITS

PLEISTOCENE		
lo	sa	gk
low	su	gkw
	sc	gklo
		gks
		gkc
PRE- PLEISTOCENE		
	sa	gh
	su	ghw
	sc	ghs
		ghc
		r

Explanation

Postglacial deposits

w **Windblown sand.** Well-sorted sand composing dunes and sheets; between 2 and 7 m thick; most sand deposited immediately following deglaciation. Unit **w**: Abundant dunes, generally no more than 5 m high; Unit **wlo**: Sand sheets and infrequent dunes; overlies lake sediment. Unit **wgk**: Sand sheets and infrequent dunes; overlies red, clayey and silty till of the Kirby Lake Member of the Kewaunee Formation.

p **Peat.** Sediment of low, typically wet areas consisting of peat and muck. Unit **p**: Peat occupying low-lying, flat to low-relief surfaces; thickness varies, but typically between 1 and 3 m thick. Unit **po**: Peat over lake sediment of glacial Lake Oshkosh; usually in areas that are less than 244 m above sea level. Unit **pg**: Peat overlying the sandy till of the Horicon Member of the Holy Hill Formation or clayey and silty till of the Kirby Lake Member of the Kewaunee Formation. Unit **ps**: Peat overlying postglacial or meltwater-stream sediment consisting of silty and sandy sediment with occasional channel sand and silt.

s **Stream sediment.** Commonly consists of silty and sandy sediment with occasional channel sand and silt; typically between 1 and 15 m thick; deposited in floodplains adjacent to postglacial streams; most of this sediment was probably deposited during the last part of the Holocene.

Glacial deposits, undifferentiated

lo **Lake sediment.** Commonly consists of sand, silt, and clay. Unit **lo**: Sediment deposited in glacial Lake Oshkosh usually at elevations below 244 m above sea level; consists largely of silt and clay where deposited in deeper water grading to sand near the shoreline; typically between 1 m and tens of meters thick; sediment deposited near the shoreline may include wind-blown sediment, washed hillslope sediment, and patches of peat that could not be mapped separately. Unit **low**: Glacial Lake Oshkosh sediment covered with thin patches of windblown sand generally less than 2 m thick.

sa **Meltwater-stream sediment.** Sand and gravel deposited directly by streams originating from the margin of the Green Bay Lobe; commonly between 1 m and several tens of meters thick. Unit **sa**: Meltwater-stream sediment deposited in an alluvial fan or delta immediately adjacent to a moraine or ice-contact face. Unit **su**: Meltwater-stream sediment deposited in proglacial river channels or in tunnel channels beneath the margin of the Green Bay Lobe. Unit **sc**: Collapsed meltwater-stream sediment deposited in alluvial fans, deltas, and proglacial river channels.

Kewaunee Formation, Kirby Lake Member

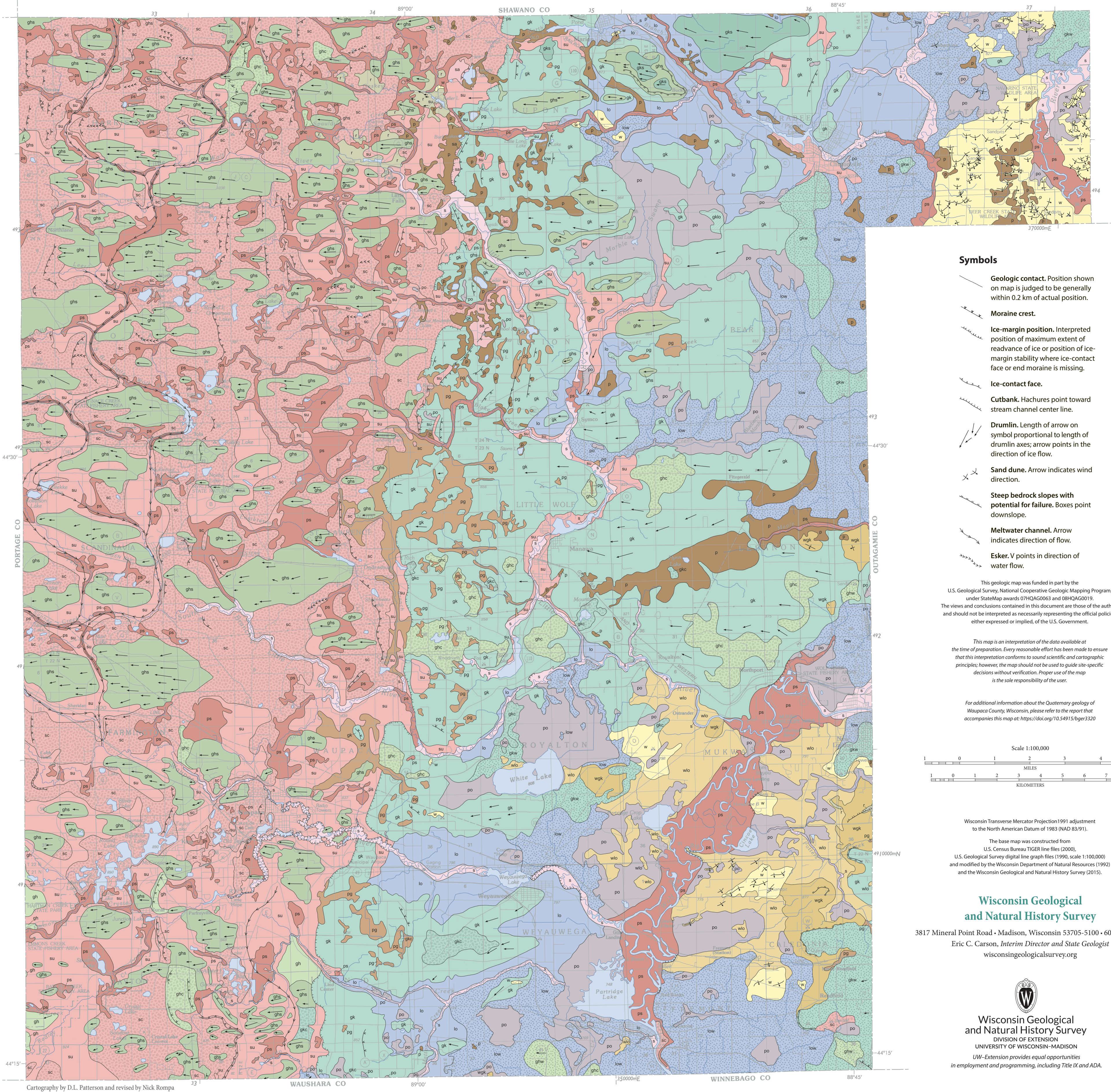
gk **Till.** Reddish brown, clayey silt with some gravel deposited by readvances of the Green Bay Lobe; generally at least 3 m thick. Unit **gk**: Low-relief, non-descript glacial topography; generally draped over pre-existing topography; till in places less than 3 m thick. Unit **gkw**: Similar to **gk**, but covered with thin patches of windblown sand less than 2 m thick. Unit **gklo**: Similar to **gk**, but covered with thin patches of glacial Lake Oshkosh sediment generally less than 2 m thick. Unit **gks**: Rolling topography that was subglacially molded; contains streamlined landforms, including drumlins and flutes; many of these landforms are at least partly composed of other sediment, including gravel, sand, and silt. Unit **gkc**: Collapsed till overlying meltwater-stream sediment.

Holy Hill Formation, Horicon Member

gh **Till.** Brown to reddish-brown, gravelly, clayey, silty sand deposited by the Green Bay Lobe; generally at least 3 m thick; includes many small to large inclusions of windblown sediment, hillslope sediment, and glacial lake sediment that could not be separately mapped. In many areas, the modern surface reflects the landscape before the last part of the Wisconsin Glaciation. Unit **gh**: Generally has rolling topography in areas lacking drumlins. Unit **ghw**: Similar to **gh**, but covered with thin patches of windblown sand less than 2 m thick. Unit **ghs**: Rolling topography that was subglacially molded; contains streamlined landforms, including drumlins and flutes; many of these landforms are composed of stratified sand and gravel rather than Horicon till. Unit **ghc**: Collapsed till overlying meltwater-stream sediment.

Bedrock

r **Bedrock.** Dolomite, sandstone or granite; glacially scoured areas of bedrock near the ground surface covered by less than 1 m of glacial sediment.



Symbols

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

Moraine crest.

Ice-margin position. Interpreted position of maximum extent of readvance of ice or position of ice-margin stability where ice-contact face or end moraine is missing.

Ice-contact face.

Cutbank. Hachures point toward stream channel center line.

Drumlin. Length of arrow on symbol proportional to length of drumlin axes; arrow points in the direction of ice flow.

Sand dune. Arrow indicates wind direction.

Steep bedrock slopes with potential for failure. Boxes point downslope.

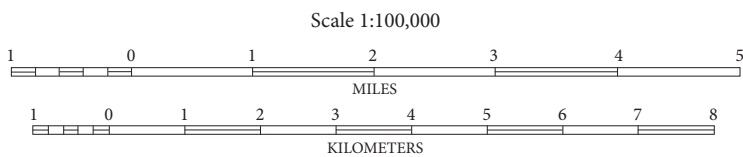
Meltwater channel. Arrow indicates direction of flow.

Esker. V points in direction of water flow.

This geologic map was funded in part by the U.S. Geological Survey, National Cooperative Geologic Mapping Program, under StateMap awards 07HQAG0063 and 08HQAG0019. 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.

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For additional information about the Quaternary geology of Waupaca County, Wisconsin, please refer to the report that accompanies this map at: <https://doi.org/10.54915/bger3320>



Wisconsin Transverse Mercator Projection 1991 adjustment to the North American Datum of 1983 (NAD 83/91).

The base map was constructed from U.S. Census Bureau TIGER line files (2000), U.S. Geological Survey digital line graph files (1990, scale 1:100,000) and modified by the Wisconsin Department of Natural Resources (1992) and the Wisconsin Geological and Natural History Survey (2015).

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