

Bedrock Geology of Grant County, Wisconsin

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Explanation

- QUATERNARY**
Quaternary undivided
Oa Cross section only. Undivided surficial alluvium, loess, and colluvium.
- SILURIAN**
Silurian undivided
Su Mostly yellow, crystalline dolomite. Chert is common in much of the unit. The basal 20 ft contains shale partings with some interbedded dolomite. Silurian-aged rocks only occur at Sinsinawa Mound in southern Grant County, where 140 ft of section is exposed.
- ORDOVICIAN**
Maquoketa Group
Om Dark-blue, brown, or gray shale with lesser interbedded dolomite. 135 ft thick at Sinsinawa Mound in southern Grant County.
- Galena Formation
Og Tan dolomite. Thin-bedded shale and dolomite are common near the top. The unit is often vuggy and weathers to a honeycomb appearance. Chert beds are common in the lower 100 ft. The Galena Formation has a total thickness of approximately 225 ft.
- Decorah Formation
Od Gray to bluish-gray limestone and dolomite. Limestone is more common in western Grant County and dolomite in the east. Typically 35 to 40 ft thick. **Ion Member**, Tabular, thin- to medium-bedded limestone and dolomite with shale laminations marking beds. **Guttenberg Member**, Thin, wavy-bedded limestone and dolomite with interbedded chocolatey-brown shale. **Spechts Ferry Member**, Green shale with interbedded limestone and dolomite.
- Platteville Formation
Opc Gray, bluish-gray, or tannish-brown limestone and dolomite. Typically 40 to 56 ft thick. **Quimbys Mill Member**, Very fine-grained limestone and dolomite with distinctive conchoidal fracture. Also contains common chocolatey-brown organic-rich shale laminae. **McGregor Member**, Thin-, mottled-, or wavy-bedded limestone and dolomite. Limestone is more common in western Grant County and dolomite in the east. **Pecatonica Member**, Medium- to thick-bedded dolomite.
- Anceel Group
Oa **Glenwood Formation**, Green sandy shale to dolomitic shale. 1 to 6 ft thick in Grant County. **St. Peter Formation**, Generally a white to tan quartz arenite. The base of the formation contains a mixture of sandstone, shale and conglomerate. Ranges in thickness from less than 20 ft to around 330 ft and overlies a major unconformity.
- Prairie du Chien Group
Opc Gray to tan dolomite with lesser dolomitic sandstone. Oolitic beds and glauconite are common near the base of the unit. Unconformable contact at the top of the unit. The combined thickness of the Anceel and Prairie du Chien groups ranges from 270 ft to 380 ft.
- CAMBRIAN**
Jordan Formation
Cj Tan, pink, or white fine- to coarse-grained quartz arenite. Local dolomite cement present. Typically 35 to 80 ft thick.
- St. Lawrence Formation
Cul **Lodi Member**, Green to tan siltstone interbedded with white to tan very fine-grained, carbonate cemented sandstone. **Black Earth Member**, Tan to gray dolomite. Less vuggy than overlying Prairie du Chien Group. The St. Lawrence Formation has an estimated thickness ranging from 75 to 135 ft.
- Tunnel City Group
Ctc White, tan, or green fine- to medium-grained sandstone. Carbonate cement and green shale partings are common. Green, glauconitic beds interbedded with non-glauconitic sandstone characterize this unit. Typically around 100 ft thick.
- Elk Mound Group
Cem Not exposed, but it occurs at the bedrock surface along parts of the Mississippi and Wisconsin rivers. Mostly sandstone, but contains interbedded shale within the Eau Claire Formation. The Elk Mound Group has a thickness of up to 1,005 ft.

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Symbols

- Approximate contact
- Normal fault—ball and bar on downthrown block
- Anticline—mapped based on structure contours
- Syncline—mapped based on structure contours
- Monocline—mapped based on structure contours
- High-angle fault—uncertain dip direction, D on downthrown block, U on upthrown block
- Platteville Formation structure contour—major contour interval 100-feet, minor contour interval 20-feet
- Inclined joint—showing strike and dip. Subset of data points displayed for clarity.
- Vertical joint—showing strike. Subset of data points displayed for clarity.
- Inclined bedding—showing strike and dip. Subset of data points displayed for clarity.
- Outcrop fold axis
- Outcrop—subset of data points displayed for clarity
- Geologic log—from Mineral Development Atlas. Subset of data points displayed for clarity.
- Well construction report—subset of data points displayed for clarity

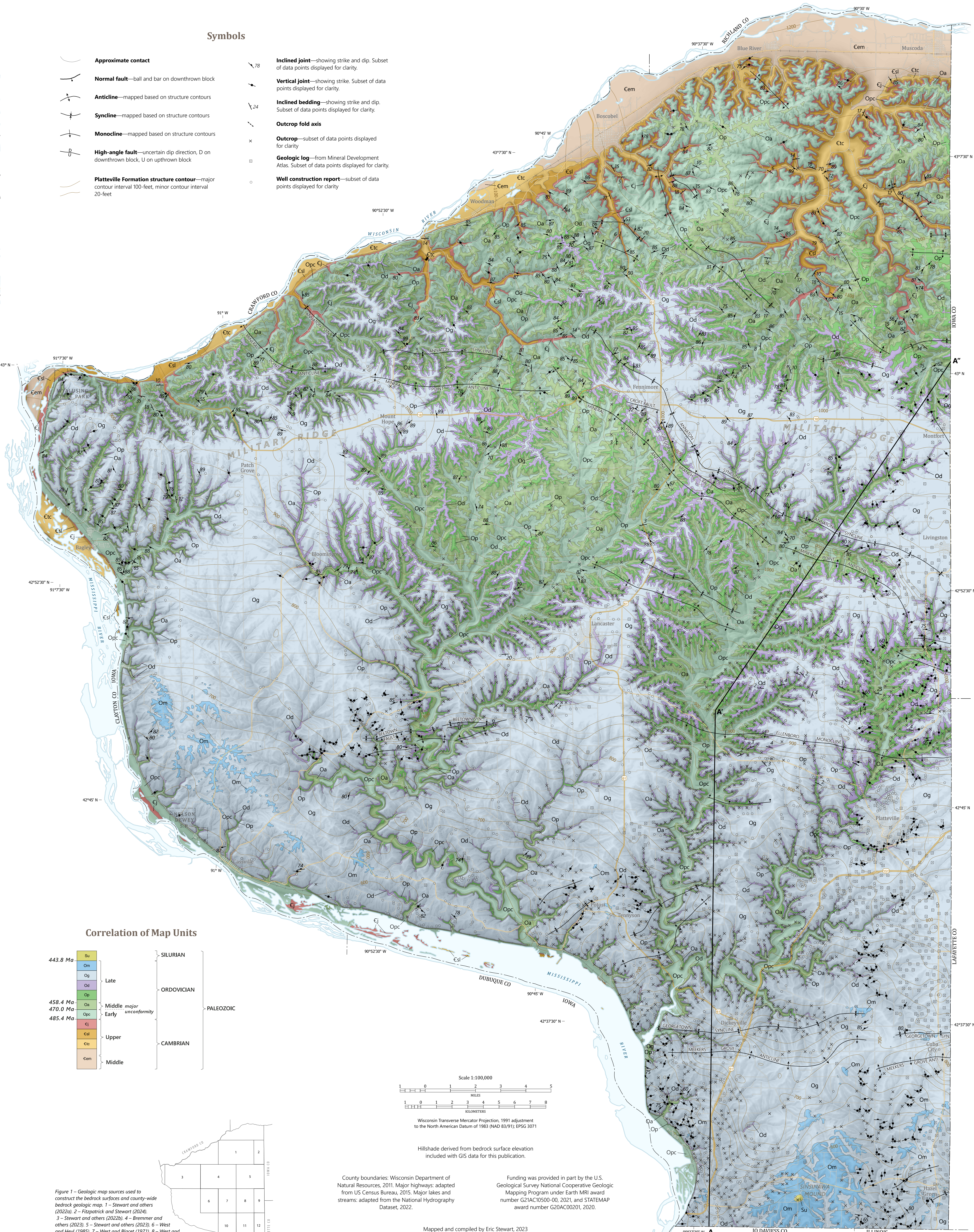


Figure 1 – Geologic map sources used to construct the bedrock surfaces and county-wide bedrock geologic map. 1 – Stewart and others (2022a). 2 – Fitzpatrick and Stewart (2024). 3 – Stewart and others (2022b). 4 – Bremmer and others (2023). 5 – Stewart and others (2023). 6 – West and Heyl (1985). 7 – West and Blacet (1971). 8 – West and others (1971). 9 – Taylor (1964). 10 – Whitlow and West (1966a). 11 – Whitlow and West (1966b). 12 – Agnew (1963). 13 – Whitlow and Brown (1963). 14 – Whitlow and West (1966c). 15 – Mullens (1964). Areas outside of boxed areas are new mapping.

