

Bedrock stratigraphic units in Wisconsin

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The column on the reverse side illustrates all of the rock layers present in Wisconsin. There is no single place in the state that includes the entire column: some rock units were only laid down in certain regions, and some wide-spread units have been removed locally by erosion.

The study of layered rocks (strata) is called stratigraphy. Geologists describe and classify strata throughout the world, to map their distribution and to determine their ages and modes of origin. Strata in Wisconsin are similar to those throughout the northern Midwest, but rocks of the same age elsewhere in the world can be quite different.

Showing all the rocks in a single drawing allows us to better understand the geology of our state. It also helps us interpret the rock layers we see in an outcrop, a well hole, or a rock core.

The stratigraphic diagram shows three related concepts: geologic time, major rock units, and the rock column.

Geologic time. Geologists divide the past 500 million years of Earth's history into intervals based on the kinds of fossils present in the rock. The evolution and extinction of species gives each interval its unique group of fossils. Era, period, and epoch are the formal time subdivisions; the ages of their boundaries in millions of years are shown on the far left. There are two major gaps in the Wisconsin record, for which no rocks remain: between 1,050 and 501 million years, and from 359 million years to the modern day.

▶ Reading the rock column

The rock column contains a great deal of information, from rock type to presence of fossils. It even hints at the shape of the ancient land surfaces.

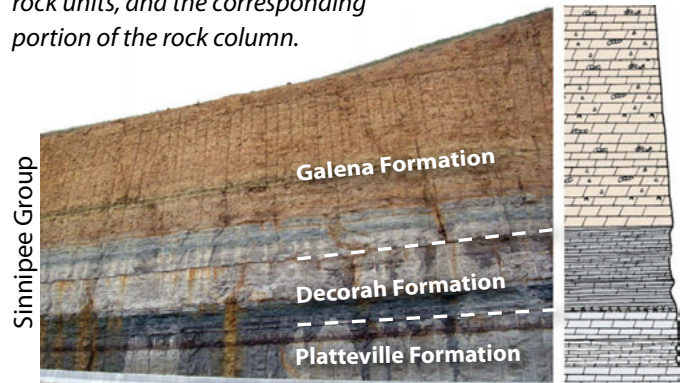
Color. To make it easier to read, rock unit names share the same background color as the corresponding rock type.

Patterns. The patterns show at a glance what type of material makes up a rock unit. The patterns also reveal details about the nature of the rock, such as whether it's a sandy limestone, a coarse sandstone, or a massive dolomite.

Shapes. Most of the contacts between rock types are horizontal; where they are wavy, an erosional surface is implied.

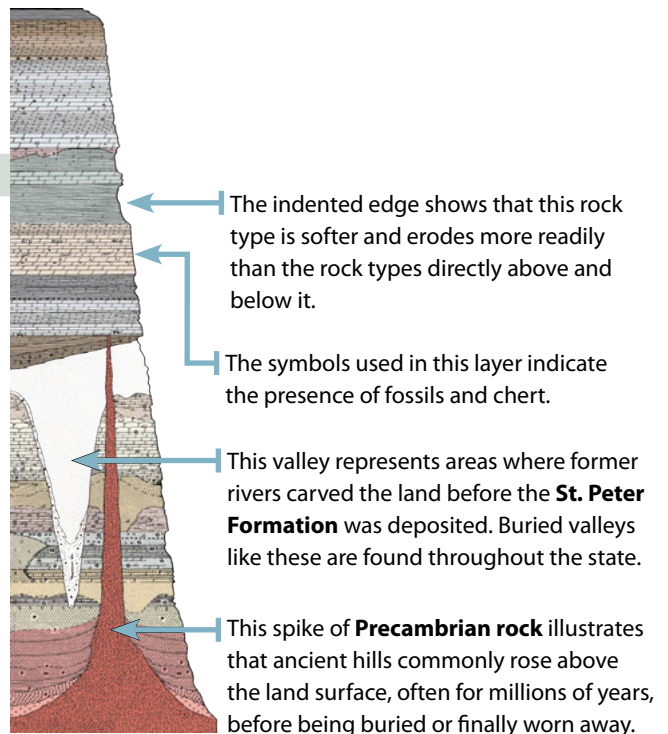
Edge. The ragged right edge gives a sense of the hardness of each rock type.

▶ A roadcut exposure revealing three rock units, and the corresponding portion of the rock column.

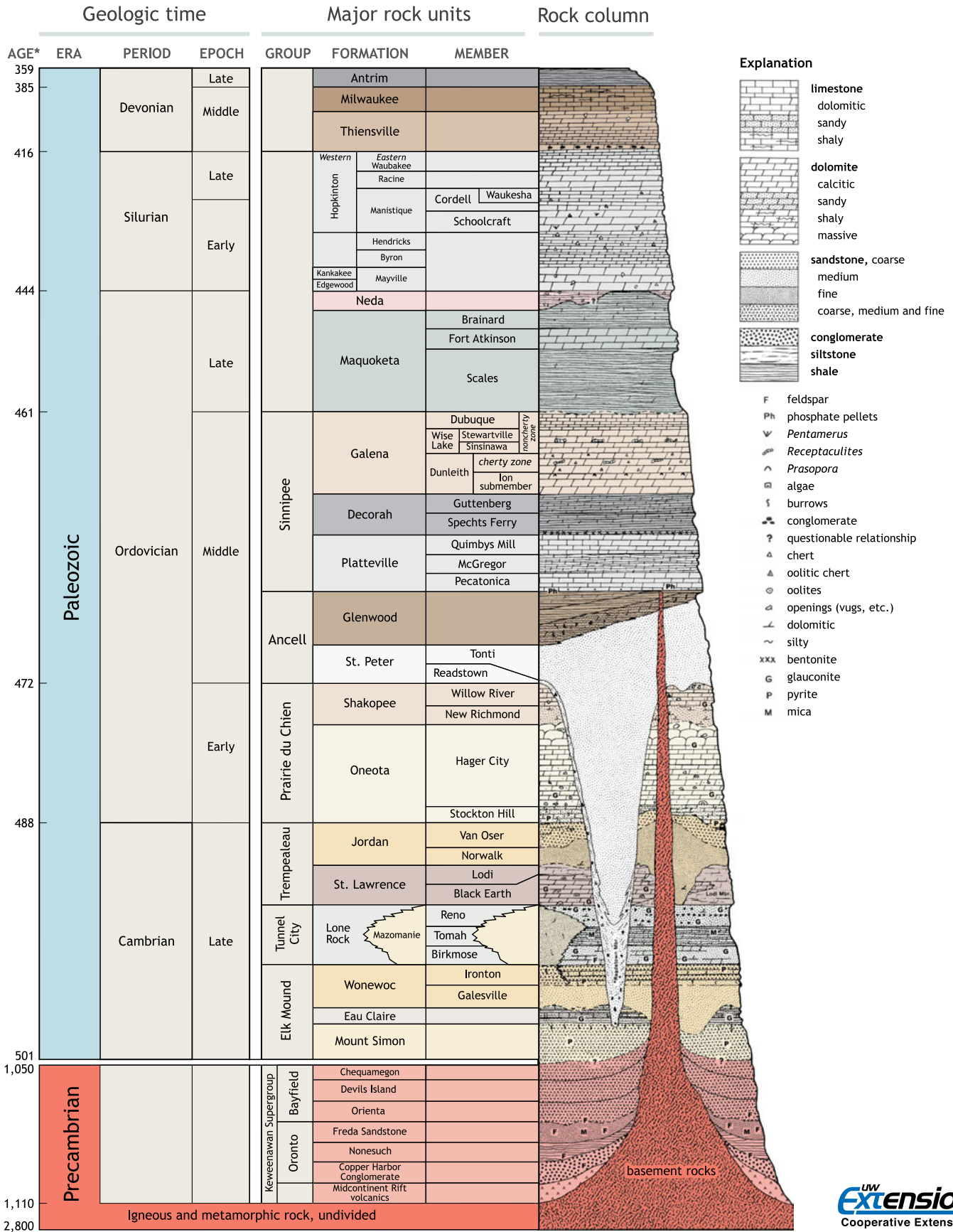


Major rock units. Packages of strata that are distinct and continuous enough to map are called formations. Formations may be combined into groups and/or subdivided into members. Each unit is given a geographic name, based on a locality where the rocks can be seen and often where the unit was first described.

Rock column. The dominant kind of rock in each unit is shown by the pattern sketched on it; the key to the various patterns is to the right of the column. The main rock types in Wisconsin are sandstone and dolomite.



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* Absolute age dates in million years are based on the Geological Society of America Geologic Time Scale, 2009.

Modified from Ostrom, M.E., 1968, Paleozoic Stratigraphic Nomenclature for Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 8.