

Geology of Michigan in Brief

The Upper and Lower Peninsulas of Michigan are geographically and geologically distinct. The bedrock of the western half of the Upper Peninsula consists of geologically complex Precambrian rocks. These very old rocks are a part of what is called the Canadian shield which is the bedrock of much of central Canada and the northern parts of Wisconsin and Minnesota. The bedrock of the eastern part of the Upper Peninsula and the entire Lower Peninsula of Michigan is made up of Paleozoic and Mesozoic sedimentary rocks of Cambrian to Jurassic age. These gently dipping rocks constitute a large regional geological structure known as the Michigan basin.

Repeated advances of large continental glaciers during Pleistocene time eroded and broke down soil and rocks and then redeposited this material as sediments as the glaciers melted and retreated. Most of Michigan is covered by glacial sediments or gravels, sands, and clays derived from them. Virtually all the geographic and topographic features of Michigan, particularly of the Lower Peninsula, were shaped by glacial and melt water action.

All the important metallic mineral deposits in Michigan, such as the historic and well known copper and iron ore deposits, are found in the Precambrian rocks. The Paleozoic rocks of the Michigan basin contain important resources of petroleum, limestone, dolomite, shale, salt, and gypsum. The Pleistocene sands, gravels, and clays are excellent sources of important construction materials. The US Geological Survey estimates that Michigan's production of non-fuel minerals in 1996 was valued at over \$1.5 billion, ranking 9th in the nation. Michigan ranks among the top 15 states in production of oil and gas.

The knowledge and understanding of geology is of fundamental importance not only to promote the wise use of mineral and energy resources, but also to protect other resources such as our ground water, to protect against natural disasters such as earthquakes, and to provide information essential for responsible land use.