

Marquette County, Michigan | Case Studies

Iron ore is the primary mineral substance for the world's iron and steel industries. Michigan is the second-largest producer of iron ore in the country behind Minnesota. All of Michigan's iron-production operations are located in the northern reaches of the state, in Marquette County.

Geology and history

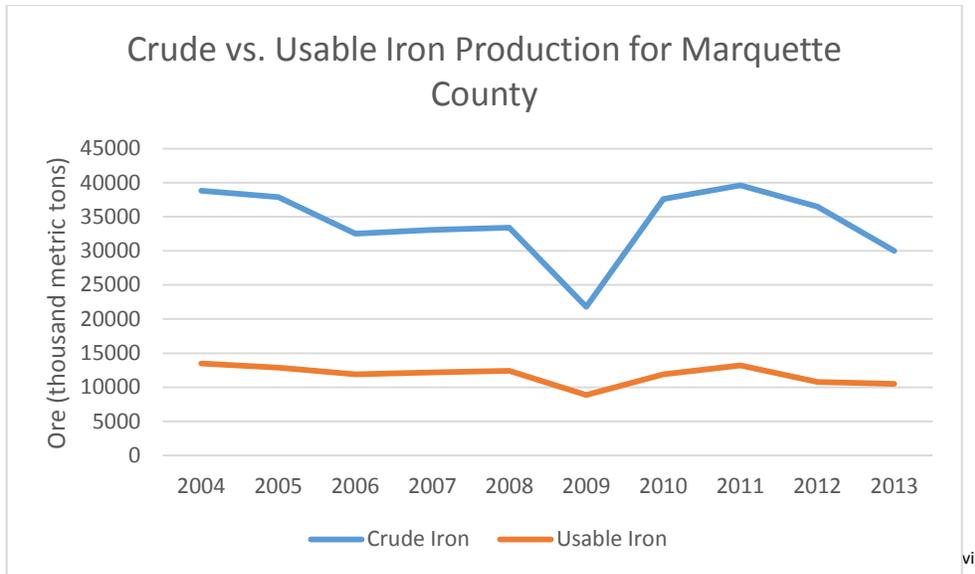
Marquette County generated 18% of the national iron output in 2013.ⁱ This iron ore is located in the Marquette Iron Range, a narrow basin of iron formations running approximately 33 miles through the towns of Negaunee and Ishpeming. Discovered in 1844, this range houses Michigan's oldest iron-mining operations; the Jackson Mining Company began extraction here in 1848. In the following decades, the development of critical infrastructure — including roads, railroads, and a canal connecting Lake Superior and Lake Huron — spurred additional mining activity. It was iron mining that originally drew settlers to the area.

Although increased production costs and a diversified global supply of iron drove down output in the first half of the twentieth century, the development of new technology in the 1950s made it economically feasible to produce lower-grade taconite, which increased output.ⁱⁱ

Production

Today's iron mining along the Marquette Iron Range is centered on the Empire and Tilden Mines, operated by Cliffs Natural Resources Inc. In 2013, these two mines generated a combined 10.5 million metric tons of usable iron ore, which produced a total of 6.4 million metric tons of iron, a decrease of 3% from 2012.^{iii iv} Marquette County's usable iron ore output had remained relatively constant over the preceding ten years, averaging 12 million metric tons out of a total annual capacity of 13 million metric tons.^v As shown in the chart below, the 2009 economic crisis drove down iron-ore production, but it rebounded the following year.

Major corporate landowners own a significant portion of the land used for natural resource extraction in Marquette County; lands in public ownership make up only 25% of the county.^{vi}



Employment

According to the Bureau of Labor Statistics (BLS), total private sector employment in Marquette County stood at 22,172 out of a total population of 67,757 in 2013.^{viii ix} The iron-mining industry employed 1,300 individuals in 2013, down from 1,500 in 2012^x. Mining employment has remained steady at 6% of the total employment in recent years. Iron-ore reserve estimates project a thirty-year supply at Tilden Mine, suggesting continued employment opportunities for the near future.^{xi} Empire Mine is slated to be shut down, with its approximately 400 employees expecting to receive layoff notices in 2016.^{xii}

Revenue

The State of Michigan assesses mining operations under the same state and local taxes as other commercial ventures in the state (for example, sales, use, and property taxes). However, the state does collect a specific tax on low-grade iron ore at a rate of 1.1% of the value per gross ton produced.^{xiii} In 2015, Marquette County collected \$2,820,000 from that tax, comprising 11% of the total \$25,340,726 General Fund operating budget for that year.^{xiv} The low-grade iron ore tax revenue constituted a decrease of \$229,0250 from 2012.^{xv} These funds supported public services, such as law enforcement, health care, childcare, aging services, and the county's international airport.^{xvi}

It was estimated that \$126,000 for all county millages were generated from the 2014 ad valorem levy on the Eagle Mine operation. The Eagle Mine began mineral extraction in late 2014. Severance tax revenue was not to be collected until 2015. Marquette County's administrator recommended that the board restrict the use of those funds for the following purposes: space need changes as decided by the Board of

Commissioners; courthouse / annex facility recommended maintenance; unfunded liabilities; and the Sawyer Stabilization Fund.^{xvii}

Costs

Public sources specifying the fiscal costs of iron-ore mining in Marquette County were not found.

Data availability

The table below highlights the data sources used to compile this narrative, as well as any gaps in publicly available data.

Measure	Data availability	Data gaps
Production	The U.S. Geological Survey published iron ore extraction data at the county level for 2004–2013. Data for 2014 was not yet published.	
Employment	BLS published Marquette County private employment totals for 2013. The U.S. Geological Survey published average employment data for Michigan in 2013. Data from the Marquette County Comprehensive Plan and a public press release from The Mining Journal shed light on future employment prospects in the local iron ore industry.	Neither BLS nor the U.S. Census Bureau has ten-year employment-trend data for the mining industry at the Marquette County level for 2004–2014. There are several years and subindustries without data. More recent total employment data is available at BLS, however only 2013 data was displayed to enable comparison with the most recent mining employment data available.
Revenue	Revenue information was gathered from a range of state and county government sources for 2012 through 2013, including the Michigan House of Representatives Fiscal Agency and the Marquette County Administrator’s Budget.	The most recent update to Marquette, MI’s Economy Comprehensive Planning Document is 2012.

Measure	Data availability	Data gaps
Costs		Data on connections between county transportation, emergency services, reclamation, and water-infrastructure investments and extractive industries was not found.

Notes

ⁱ U.S. Geological Survey, [2013 Minerals Yearbook: Iron Ore \(PDF\)](#), p. 39.12, table 2

ⁱⁱ Marquette County, Department of Planning, [Economy Chapter of the Marquette County Comprehensive Plan \(PDF\), 2012](#)

ⁱⁱⁱ U.S. Geological Survey, [2013 Minerals Yearbook: Iron Ore \(PDF\)](#), p. 39.11, table 3

^{iv} U.S. Geological Survey, [2012 Minerals Yearbook: Iron Ore \(PDF\)](#), p. 39.11, table 3

^v U.S. Geological Survey, [Iron Ore Statistics Information](#), 2003–2012, p. 39.11, table 3

^{vi} Marquette County Michigan, [Chapter of the Marquette County Comprehensive Plan \(PDF\)](#), 2009, p. 3

^{vii} U.S. Geological Survey, [Iron Ore Statistics Information](#), 2003–2012, p. 39.11, table 3

^{viii} Bureau of Labor Statistics, [Marquette County employment total, 2013 Annual Average](#)

^{ix} U.S. Census Bureau, [American Fact Finder](#)

^x U.S. Geological Survey, [2013 Minerals Yearbook: Iron Ore \(PDF\)](#), p. 39.12, table 2

^{xi} Marquette County Michigan, [Chapter of the Marquette County Comprehensive Plan \(PDF\)](#), 2012, p. 10

^{xii} The Mining Journal, [Empire Mine Closing](#), March 24, 2016

^{xiii} Michigan House of Representatives Fiscal Agency, [State of Michigan Revenue: State Source and Distribution, 2015 \(PDF\)](#), p 43

^{xiv} [Marquette County Administrator's 2015 Budget Summary \(PDF\)](#), p. 3

^{xv} Ibid.

^{xvi} Ibid.

^{xvii} Ibid.