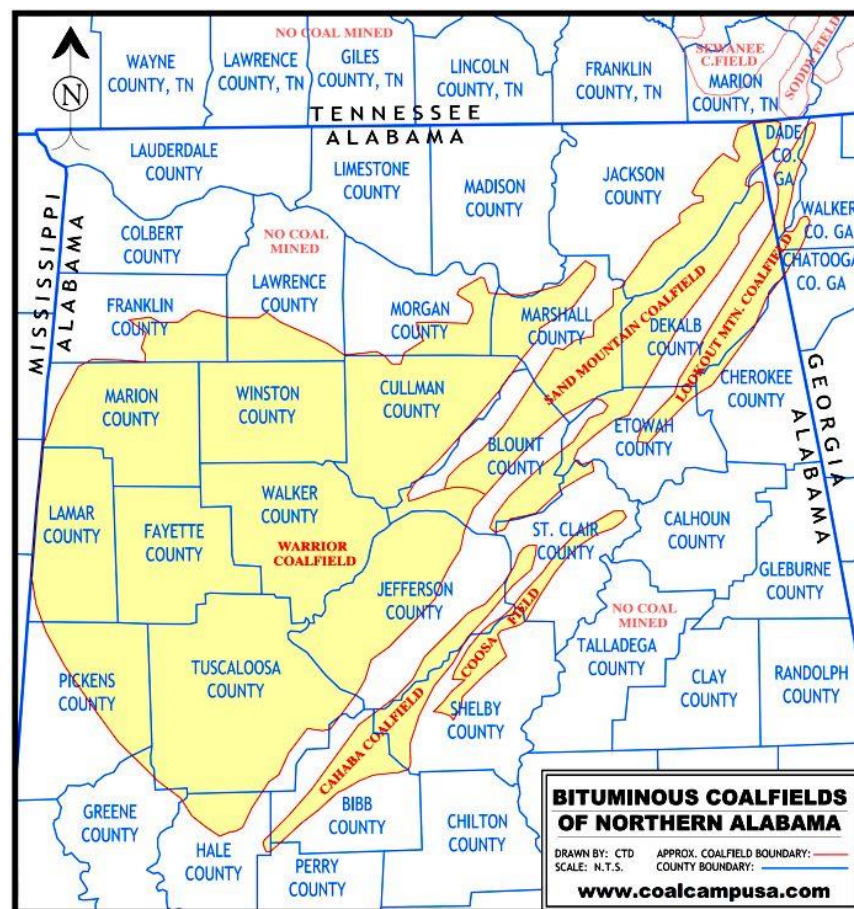


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Brief History of Birmingham, Alabama Coal Mining

There are four bituminous coalfields in the Birmingham area and northwestern Alabama, the Cahaba, Coosa, Plateau, and Warrior. Like the iron ore formations, the coalfields are located in the southern end of the Appalachians with their bituminous coal deposits extending northward into Pennsylvania. In Alabama, the largest coalfield by far is the Warrior which extends northwestward from the outcrop in Jefferson County, near Birmingham as part of the Appalachian Plateau.



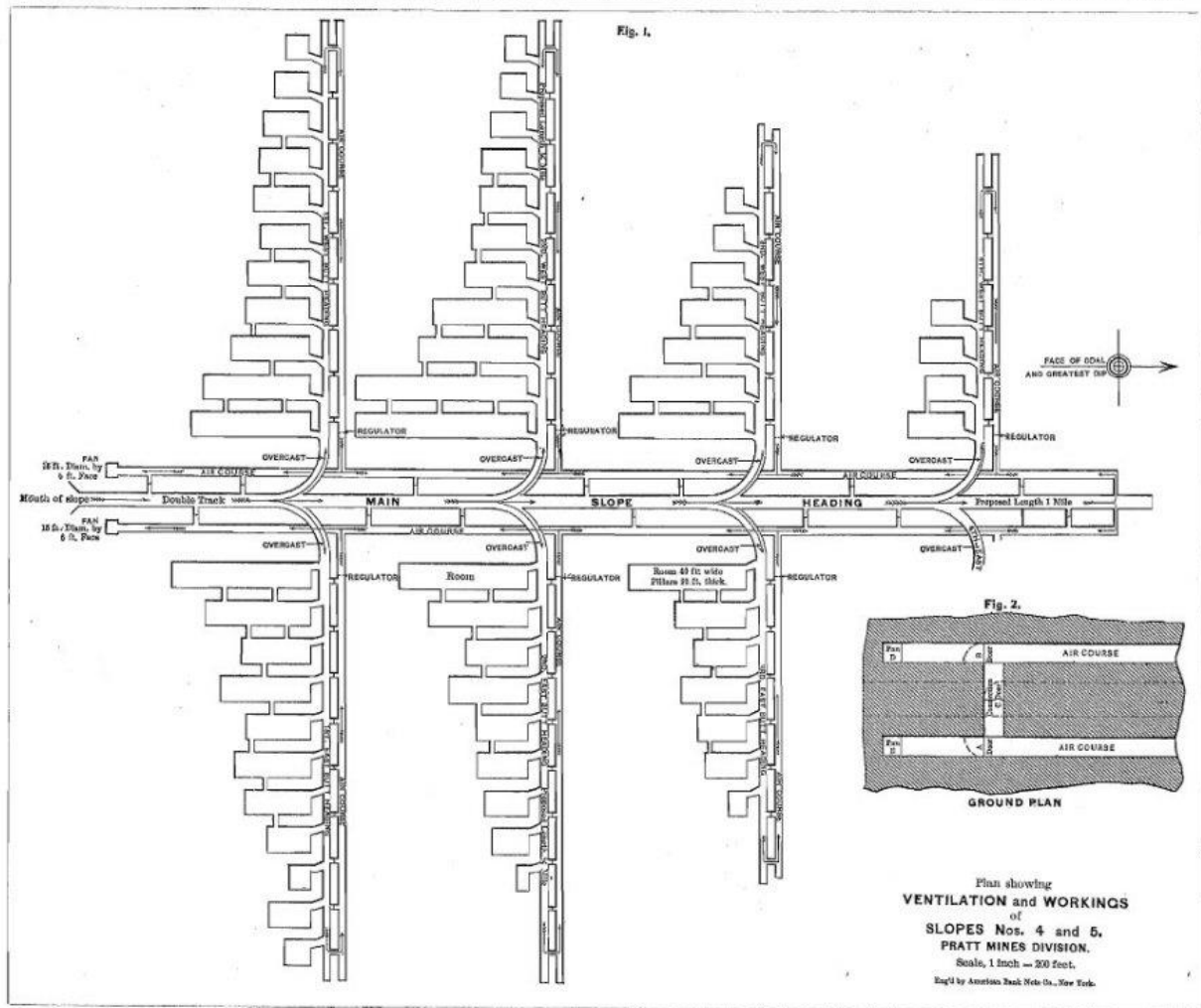
Northern Alabama Coal Fields. (coalcamps.com)

There were reports of small scale coal mining in the early 1800s but systematic mining started in the 1850s. In the 1870s coal mining expanded greatly to meet the needs of the growing iron companies. By the turn of the century all of the major companies operated coal mines. The largest producer was TCI which had opened its Slope No. 1 Mine in the Pratt Seam in 1879. The Pratt Seam was about 57 inches thick including 10

inches of waste rock. A standard gauge railroad was built to carry the coal to Birmingham, 6 miles away. Additional slope mines, shaft mines, drift mines, and coke plants followed in rapid succession. All were located near the outcrop of the Warrior coalfield. Although the dip of the coal seams could be as much as 20° at the outcrop, it became more gradual at depth making slopes a preferred method for hoisting coal. (See Ramsay, 1890, for a more complete description of coal mining in the late 1800s.)

Initially individual mines used many variations of room and pillar mining designed to maximize the amount of coal mined and minimize the amount left in place and lost forever. In the zeal to capture all of the coal, some of these practices created unsafe conditions causing fatalities.

By the late 1890s the TCI mines had adapted a more standardized approach to mine layouts. A double tracked inclined slope provided hoisting and fresh air intake. Parallel to it were headings that served as air returns to the surface. At about 300 foot intervals, a pair of butt headings were driven on each side of and perpendicular to the slope to create panels where the coal was mined in rooms separated by coal pillars. Exhaust fans pulled air through the mine workings. Overcasts and regulators were used to separate the fresh air from the exhaust air as it flowed from the main slope through the butt headings and into the rooms. The exhaust air then followed a similar flow back to the surface. As the mines got deeper, pumps and pipes were installed to remove water.



A typical Alabama coal mine layout, ca1890. (AIME Transactions)

Early coal mining involved a great deal of manual labor. The miners would first use picks to cut a 3 foot deep slot along each rib (side) of the coal face or an undercut at the bottom of the coal face. Hand augers were used to drill holes in the face for explosives. Blasting broke the coal from the face so that it could be picked free of slate and hand loaded into cars which were trammed by mules to the slope for hoisting. At the tippie at the top of the slope, cars or skips were dumped into bins or directly into waiting railroad cars. Some coal mines used leased convict labor to keep costs down. Child labor was also practiced in some mines. Over the years, pick and shovel hand-mining methods gave way to mechanized mining using coal cutting machines and electric haulage locomotives. (See Erskine Ramsay, 1890, for a more complete description of coal mining methods in the 1800s.)



Miners at the tipple of the Blocton Coal Mine. (Encyclopedia of Alabama)



Mechanized coal cutting machines improved safety and productivity. (Library of Congress)

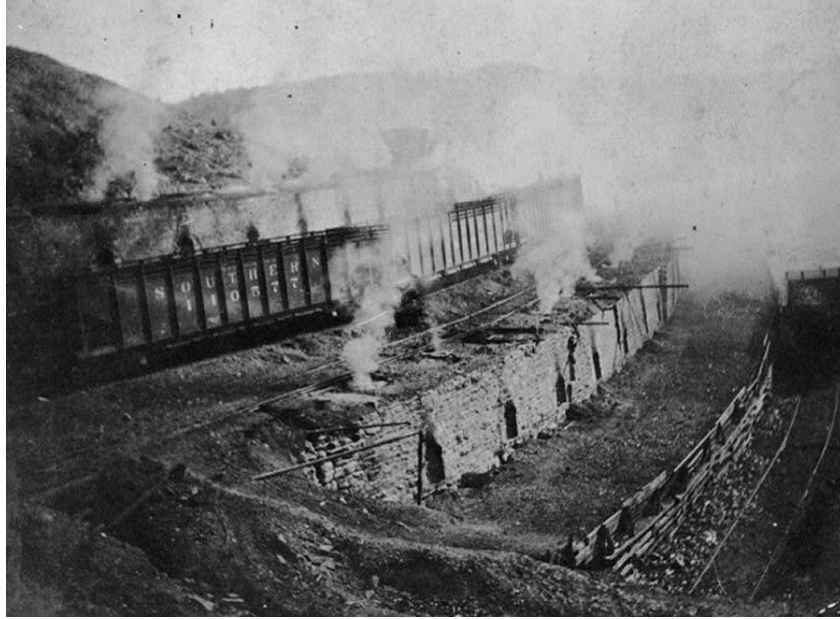


Child Labor, ca1910, at the Shloss-Sheffield Bessie mine. (Library of Congress)



Alabama coal miners heading into the mine, ca1937. (Library of Congress)

Coal from many of the mines went to banks of hundreds of beehive coke ovens located near the mines or at the furnaces. In later years, coke ovens were redesigned to enable recovery of valuable chemical by-products. This brought a new mining-related industry to Birmingham.



Coke Ovens at the Brookside Mine provided coke for the Sloss Furnaces, ca1885. (Library of Congress)

From the 1890s on, increasing amounts of coal required beneficiation (cleaning) to remove waste material and make it suitable for coke production. By 1943, during World War II, over 79 percent of the 18 million tons of Alabama coal produced was being upgraded in preparation plants. Coal mining and cleaning technology improved as the years passed and that improvement continues today. Today, several deep underground mining operations employ highly automated longwall mining systems.



Longwall Mining at an Alabama Coal Mine, ca2020. (Alabama Mining Assn.)

The demise of the iron and steel plants in the 1970s and the more recent closures of coal fired power plants caused many mine closures and company bankruptcies. However, coal mining continues to serve the remaining electrical power plants and the strong global demand for metallurgical coal exported through Mobile, Alabama. Mobile has a long history as a coal port. In 2019 it was the largest Port of Entry for coal imports to the U.S. and the 3rd largest export port.



Coal loading dock, Mobile, AL, ca1900. (Alabama Archives)

The U.S. Energy Information Administration (EIA) reported that in 2019, 14,124,000 short tons of coal were produced. Eighty percent of that total came from 7 underground mines and 22 surface mines. Only ten percent of the coal produced in Alabama is consumed in the state. To meet air quality regulations, sixty percent of the coal consumed for electrical power generation in Alabama now comes from Wyoming.

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