

Mining Part 2: Important Minerals, Gems, and Rocks Mined in North Carolina ^[1]

Mining

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See also: [Bechtler Mint](#) ^[2]; [Big Ore Bank](#) ^[3]; [Cabinet of Minerals](#) ^[4]; [Gold Hill Mine](#) ^[5]; [Gold Rush](#) ^[6].

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Important Minerals, Gems, and Rocks Mined in North Carolina

[Amethyst](#) ^[9]. Violet quartz gemstone colored by inclusions of hematite or other minerals, found in Stokes, Burke, Lincoln, Iredell, Moore, Warren, and Franklin Counties. Southeast Macon County's Tessentee Creek was originally operated by Tiffany and Company of New York around 1900. Other mines such as the Connally and Rhodes Mines also operated in Macon County.

[Argillite](#) ^[10]. Fine-grained, gray-to-dark colored sedimentary rock. By the 1980s argillite (such as that quarried in [Davidson County](#) ^[11]) was becoming widely used in the hearths of manufactured homes and in prefabricated fireplaces.

[Asbestos](#) ^[12]. Silky, fibrous form of silicate minerals first discovered in 1871. Its nonflammable character found applications in insulation (shingles and siding) and served other heat-resistant needs (firefighters' products). Though asbestos was reported in Wilkes and Polk Counties by 1900, production in [Yancey County](#) ^[13] in 1919 was among the highest in the nation that year. The mining of anthophyllite (used as asbestos) remained a minor industry in Yancey through the late 1970s.

[Beryl](#) ^[14]. Very hard mineral (beryllium aluminum silicate) found in granitic rocks and pegmatites. Discovered in Macon County in 1871, aquamarine (blue beryl) and golden beryl were mined in [Mitchell County](#) ^[15] in the early 1900s; by the end of the century, Macon County's Littlefield Mine and Yancey County's Ray Mine continued to produce modest amounts for amateur collectors.

[Chromium](#). Found as [chromite](#) ^[16] (chromium oxide) in olivine-rich rock called "dunite." Known to exist since 1870, [chromite](#) ^[17] is found in Yancey County's Day Book Mine and in [Buncombe County](#) ^[18]'s Democrat Mine, as well as in deposits in Iredell, Macon, and Jackson Counties. After mining between 1880 and 1900 and during both world wars, chromite came to be considered a reserve mineral.



Emeralds and aquamarine gemstones found in North Carolina, 1907. Image from Google Books.

^[19]**[Copper](#)**. Element found as sulfides such as chalcocite, chalcopyrite, and bornite in the mountain belt (Ashe, Jackson, Swain, and Haywood Counties), Guilford, Granville, and Person Counties, and other areas throughout the state. Exploited as early as 1585, when Roanoke Island explorers reported its use by Indians, copper was first mined commercially in [Granville County](#) ^[20] in 1852 (one of the first such mines in the nation). The industry, though never flourishing, continued until 1962.

[Corundum](#) ^[21]. A form of aluminum oxide, second only to the diamond in hardness, found in [Madison County](#) ^[22] in 1846. Mining began in 1871 in [Macon County](#) ^[23], where corundum soon found greater application as an abrasive than a gemstone. By 1895 nearly all of the corundum produced and used in the United States came from the counties west of the Blue Ridge, though the use of artificial abrasives after 1900 brought an end to the industry.

[Diamond](#) ^[24]. The hardest known mineral, found only rarely in western North Carolina. Thirteen diamonds have been reported from the region, beginning in 1843 with a 1.33 carat octahedral crystal from Brindletown Creek Ford in [Burke County](#) ^[25]. The largest, discovered in 1886, was a 4.33 carat green-gray crystal from Dysartville in [McDowell County](#) ^[26] (now in the American Museum of Natural History in New York). The last North Carolina diamond was found in 1893 at [King's Mountain](#) ^[27].

[Emerald](#) ^[28]. Green gem variety of beryl, first found in [Alexander County](#) ^[29] in 1874 and later in Mitchell County in 1894–95. The 1880s saw the largest emerald at that time, an eight-and-one-half-inch crystal. In 1969 the Rist Mine yielded the largest crystal seen in North America, a 1,438 carat piece; a 13.14 carat "Carolina Emerald" also was acquired by Tiffany and Company of New York. In 1973 the emerald was adopted as the [state's official gemstone](#) ^[30].

Feldspar ^[31]. Abundant group of aluminum silicates found commercially in pegmatites and feldspar-rich granitic rocks called “alaskite.” Important in the glass and ceramics industries, the first feldspar was mined as early as 1744 in present-day Macon County; systematic exploitation began late in the nineteenth century. The Spruce Pine area mines of Deer Park and Chalk Mountain helped North Carolina become the nation’s leading feldspar producer, a position held since 1917.

Gold ^[32]. Precious metal found as grains and nuggets in the middle and western counties. With the first authenticated discovery in 1799 in **Cabarrus County** ^[33] (followed by finds in Stanly, Union, Davidson, Guilford, and Randolph Counties), North Carolina produced the nation’s gold supply from 1803 to 1848. Mining continued up to 1971, although little gold was found after 1900.

Hiddenite ^[34]. Grass-green gemstone and variety of spodumene unique to Alexander County, where it was discovered in 1880. A novel gem that sold well above its real value, hidden (later hiddenite) was exhibited at the Charleston Exposition in 1901–2. The community of Salem Church changed its name to Hiddenite in its honor and is now home to the Hiddenite Center, an important folk and cultural arts center.

Kyanite ^[35]. Aluminum silicate, often in flattened blue crystals, found in metamorphic rock and some pegmatites. It was commercially produced in the Spruce Pine district southeast of Burnsville from 1934 to 1944 for use as a refractory. Kyanite has continued to interest mineral collectors, and occasionally gem-grade material is found.

Lithium ^[36]. Element used in aluminum making, glass, ceramics, greases, and other products, mined from pegmatites as spodumene in Cleveland, Gaston, and Lincoln Counties. Major production began in 1942 near King’s Mountain in **Cleveland County** ^[37]. Together, Gaston and Cleveland Counties contain more than 80 percent of the known reserves in the nation, and in 1980 North Carolina produced over 50 percent of the world’s estimated output.

Marble ^[38]. Crystalline form of limestone, found in a narrow belt centered on Murphy in **Cherokee County** ^[39]. Much of it is too broken by jointing to be good as a **dimension stone** ^[38], but in 1902 the National Marble Company was in operation at Regal, shipping blocks to Canton, Ga., for finishing work. In 1980 three active companies were reported in Cherokee County.

Mica ^[40]. Group of aluminum silicates occurring in the Blue Ridge Mountains and western piedmont, notable for its perfect cleavage into thin, elastic sheets. Used early on as a form of window glass (called isinglass), mica was first mined in Mitchell County in 1858 and in **Jackson County** ^[41] in 1867. North Carolina produces two-thirds of the nation’s scrap mica, which found numerous industrial uses in the late nineteenth and early twentieth centuries.

Olivine ^[42]. Pale green igneous rock with a sandy texture. Found in the mountains, deposits of olivine rock were known as early as 1875 as “crysolytic sandstone” and later as “olivine” or “dunite.” Beginning in the 1930s olivine has been used as a basic refractory in the steel industry and as a molding sand in foundry work. North Carolina is the nation’s major olivine producer, with mines in Jackson, Mitchell, and Yancey Counties.

Phosphate ^[43]. Dark, nodular mineral found in the coastal counties. Castle Hayne north of Wilmington has produced phosphate rock commercially since about 1900, when the mineral was manufactured into fertilizer. In 1958 a vast deposit was discovered in **Beaufort County** ^[44] and christened the “Pungo River Formation” in 1964. Since then North Carolina has become the second-highest phosphate producer in the nation (the state’s sole producer is Texasgulf, Inc.).

Pyrophyllite ^[45]. Soft white silicate associated with the metavolcanic sedimentary rock of the Carolina slate belt. Used in ceramics, insecticides, and other products, pyrophyllite was first identified in 1856 in **Moore County** ^[46]. In 1921 a processing plant was built near Robbins on what proved to be the largest deposit in the state and the only underground workings. North Carolina is the nation’s largest domestic producer, with mines in Moore and Orange Counties.

Quartz. One of the most widespread minerals, found in all classes of rock. Quartz (silicon dioxide) comes in many varieties, such as milky quartz. Rock crystal, a glass-clear variety, is sought by collectors in the western counties; one **Ashe County** ^[47] piece (now in New York’s Metropolitan Museum of Art) was displayed at the 1900 Paris Exposition. Avery, **Mitchell** ^[48], Yancey, and Cleveland Counties produce quartz sand for industrial use.

Rhodolite ^[49]. Pink variety of garnet unique in North America to North Carolina. Pale pink rhodolite was reported in Asheville in 1893 and discovered in 1895 during mining for ruby corundum in the Cowee Valley. A mixture of 2/3 pyrope garnet to 1/3 almandine garnet, it was named for its color’s resemblance to the blooms of rhododendron. Between 1900 and 1926 rhodolite was mined on Sugarloaf Mountain in Jackson County for use as an abrasive.



Various gems found in North Carolina, 1907. Image from Google Books.

^[50]**Ruby**. Blood-red gem variety of corundum. The Cowee Valley in Macon County, site of the first efforts to recover the gemstone from gravel in 1895, yielded only flawed rubies. Though the ruby industry never enjoyed the success of corundum, tourists can still purchase buckets of gravel with sluices and sieves to search the contents for rubies.

Sandstone. Sedimentary rock formed mainly of quartz grains, quarried for dimension stone beginning in the late nineteenth century (when “brownstone” was popular) in counties such as Anson, Lee, Montgomery, Stokes, Burke, and Wilkes. The Wilmington Post Office, Moore County Courthouse, and early

Sapphire. Gem corundum of any color except blood-red (reserved for the ruby). Sapphires were first mined regularly at the Corundum Hill Mine in Macon County in 1871, then in Jackson County in 1892 (400 tons yielded 25 percent nearly pure crystals). Notable sapphires, such as a 1,025 carat blue star sapphire found near Canton in 1888, have been found on occasion, and tourists still enjoy searching through buckets from old sapphire mines with screens and sluices.

Silver. Precious metal mined in North Carolina as a secondary product to gold and copper. The modern-day Silver Hill Mine opened as the Kings Mine in 1838 in Davidson County near Lexington and later operated as the Washington Silver Mine between 1840 and 1855. During the Civil War it produced lead for bullets and was worked intermittently for silver, lead, and zinc until 1898. Some silver production was reported from 1954 to 1963, but the metal is of minor importance to the state.

Soapstone. Soft, slippery rock containing talc (a hydrous magnesium silicate). The Indians used soapstone ^[52], or talc, to carve utensils; early settlers shaped it into sills and wainscoting. The stone was also used to line the fireplaces in the State Capitol and many private homes because of its ability to hold heat for a considerable time. Soapstone has been found in about a third of the counties, but deposits have generally been too small and erratic for commercialization.

Thorium ^[53]. Derived from the rare mineral monazite (thorium phosphate) and found in alluvial deposits called black sands. Mined from sediments in a belt covering Alexander, Burke, Catawba, Cleveland, Iredell, Lincoln, and Rutherford Counties from 1886 to 1910, thorium enjoyed a period of demand as a necessary component of the Welsbach incandescent gaslight.

Tin. Mined as cassiterite (tin oxide), occurring in pegmatites and as alluvial deposits. Discovered in 1883 near King's Mountain, cassiterite remains a widespread but uneconomical reserve throughout the Cleveland-Gaston-Lincoln Counties area. In 1982 three companies—Texasgulf, Billiton (Royal Dutch/Shell subsidiary), and asarco Inc.—were all engaged in explorations for cassiterite in southern Rutherford County ^[54].

Tungsten ^[55]. Hard, malleable metal (found as tungstates) with great tensile strength. It was recognized in gold mines as early as 1875 in Cabarrus County and reevaluated there in 1956 by the Carolina Tungsten Company. A large deposit in Vance County ^[56] (first reported in 1890) prompted the building of the Tungsten Queen Mine in 1942. Considerable reserves remain.

Unakite ^[57]. Igneous rock found in Madison and Mitchell Counties as narrow veins of green epidote with red feldspar and quartz in schistose granite. It is chiefly of interest to collectors, since it makes a colorful polished stone.

Uranium. Element essential to the production of nuclear energy, existing in potential reserves of 5–10 million pounds in the Wilson Creek gneiss and Grandfather Mountain Formation^[58] in the western counties of Avery and Caldwell. Rare minerals containing uranium (torbernite, gummite, autunite, and uraninite) can be found in Mitchell County.

Vermiculite ^[59]. Alteration product of hydrothermal activity on magnesium and iron mica. Closely associated with olivine, it can be found in the western counties, particularly Macon and the Swannanoa area of Buncombe. Used for its insulating properties and as a packing material, vermiculite was of little interest before 1933, when a small industry developed in the state.

Zircon ^[60]. Mineral found as a silicate of the rare element zirconium. First discovered in 1869, zircon was rediscovered in the 1880s as a component in gas mantles and electric lighting, but deposits are of no commercial importance. Zircon is often flawed by the radioactivity of trace elements, but some crystals are heat-treated to gain bright, desirable colors. Cubic zirconia, from zirconium dioxide, has a brilliance that challenges natural diamonds.

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"Plate No. III." Kunz, George Frederick. *North Carolina Geological and Economic Survey Bulletin No.12: The History of the Gems Found in North Carolina* Raleigh [N.C.]: E.M. Uzzell & Co. 1907. <http://books.google.com/books?id=OhgtAAAAIAAJ&pg=PA194#v=onepage&q&f=false> ^[62] (accessed December 6, 2012).

"Plate No. 1." Kunz, George Frederick. *North Carolina Geological and Economic Survey Bulletin No. 12: The History of the Gems Found in North Carolina*. Raleigh [N.C.]: E.M. Uzzell & Co. 1907. <http://books.google.com/books?id=OhgtAAAAIAAJ&pg=PA194#v=onepage&q&f=false> ^[62] (accessed December 6, 2012).

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