

# MINERAL RESOURCE MAP OF GEORGIA

LESTER MADDOX, GOVERNOR  
 GEORGIA DEPARTMENT OF MINES,  
 MINING AND GEOLOGY  
 A. S. FURCRON, DIRECTOR

COMPILED UNDER THE DIRECTION OF A. S. FURCRON BY  
 JAMES W. SMITH, MARTHA A. GREEN, S. M. PICKERING, JR.,  
 JESSE H. AUVEL, AND JAMES W. FURLOW

CARTOGRAPHY BY  
 CHARLES E. WILLIAMSON AND WILLIS G. HESTER

1969



SCALE  
 0 10 20 30 40 50 MILES

## EXPLANATION

**ASBESTOS** (a fibrous magnesium-iron silicate) found in the crystalline rock area and has been mined in White, Habersham, Rabun, Barrow, and Meriwether Counties.

Use: insulation, chemical filters, plastics, fireproof materials.

**BARITE** (barium sulphate) found in Bartow, Floyd, Cherokee, Gordon, Murray, and Whitfield Counties and mined extensively in the Cartersville district of Bartow County.

Use: well drilling muds, barium chemicals, paint, rubber fillers, glass manufacture.

**BAUXITE** (aluminum oxide) found in Walker, Chattooga, Gordon, Bartow, Polk, and Floyd Counties (Paleozoic sediments); Sumter, Stewart, Macon, Schley, Twiggs, Wilkinson, Baldwin, and Washington Counties (Coastal Plain); and Meriwether County (crystalline rocks).

Use: alum, fire brick, artificial abrasives, aluminum metal products.

**COAL** (bituminous) occurs in Dade, Walker, and Chattooga Counties of the Paleozoic sedimentary area.

Use: fuel

**COPPER ORES** (chalcopyrite and bornite) have been mined from deposits of pyrite in Fannin, Cherokee, Paulding, and Haralson Counties, also in Lincoln County; and also occurs in Lumpkin and Fulton Counties.

Use: electrical wire, brass, castings, roofing, coinage, jewelry.

**CORUNDUM** (aluminum oxide) found in the crystalline rock area in a northeast trend from Troup County to Rabun County.

Use: gemstone and abrasive.

**DOLOSTONE** (a sedimentary magnesium-calcium carbonate rock) found primarily in the Paleozoic sediments but also occurs locally in the Coastal Plain and in the Brevard zone of the crystalline rock area.

Use: agricultural lime, aggregate.

**FELDSPAR** (an aluminum silicate group with various amounts of potash, soda, lime) found in pegmatites and granitic rocks throughout the crystalline rock area; also obtained from crushed granite.

Use: ground feldspar for glass, pottery, enamels, glazes, scouring powders and soaps.

**FULLER'S EARTH** (clay) mined in large quantities in two sections of the Coastal Plain, Jefferson and Twiggs Counties and Decatur, Grady, and Thomas Counties. Georgia is a top producer of Fuller's Earth.

Use: bleaching petroleum and edible vegetable and animal oils; insecticide carriers, floor sweeps, soap, medicines, drilling muds, kitty litter.

**GOLD** occurs in two major belts in the crystalline rock area. The larger belt begins in Rabun County, continues southwest to Carroll County, and into Alabama; an eastern belt extends through Habersham, Hall, Forsyth, and north Fulton Counties; a smaller belt trends west southwest through southern Lincoln, northern McDuffie, and eastern Taliaferro Counties.

Use: jewelry, electrical uses, industrial uses for special equipment in rockets.

**GRANITE AND GNEISS** (intrusive and metamorphic rocks composed of feldspar, quartz, mica, and accessory minerals), found throughout the crystalline rock area, are important resources of Georgia. Large quarries are operated in the Atlanta and Elberton districts.

Use: dimension stone for building stone, monumental stone, curbing, paving blocks; crushed stone for concrete aggregate, road material, chicken grit.

**HEAVY MINERALS** found in a 50-mile wide belt along the coast.

**Ilmenite, Leucosene, Rutile** (titanium minerals) used for paint pigment, for titanium metal.

**Monazite** (rare earth phosphate) used for its thorium content, contains other rare useful metals.

**Zircon** (zirconium silicate) used for refractories, molding sand.

**IRON ORE** Brown iron ores (limonite, goethite) occur throughout the State but are mined in Bartow and Polk Counties (Paleozoic sediments); also in Dooly and Pulaski Counties and in Marion, Quitman, Webster, and Stewart Counties (Coastal Plain). Red fossil iron ore (red hematite) contains fossil sea shells and occurs in Dade, Walker, Catoosa, and Chattooga Counties (Paleozoic sediments).

Use: ores of iron, red pigment.

**KAOLIN** (sedimentary, hydrous aluminum silicate) occurs primarily in those counties in the extreme northern Coastal Plain and is mined almost entirely within the Coastal Plain in Twiggs, Wilkinson, Washington, McDuffie, Richmond, and Glascock Counties. Also, Georgia is the leading producer in the United States. (Primary kaolin is found in the crystalline rock area.)

Use: soft kaolin for coating and filler for high-grade white paper, filler for paints and plastics, filler in rubber, base for white porcelain ware; hard refractory kaolin for fire brick, mortar, cement. Kaolin may be used for the manufacture of aluminum.

**KYANITE** (an aluminum silicate) is mined at Graves Mountain in Lincoln County and was mined in Habersham County; also known to occur in Rabun, Dawson, Pickens, Cherokee, and Upson Counties.

Use: refractories and other ceramic products, glass tank blocks, gemstones.

**LIMESTONE** (calcium carbonate) occurs in a hard form in the Paleozoic sedimentary area and in a soft to medium-hard form in the Coastal Plain.

Use: aggregate for concrete and highway construction, portland cement, agricultural lime.

**MANGANESE ORES** (pyrolusite, psilomelane, etc.) occur in the Paleozoic sedimentary and crystalline rock areas and are mined in the Cartersville district.

Use: manganese steel, ferroalloys, dry cell batteries, lavender tint for glass; manufacture of chlorine, oxygen, etc.

**MARBLE** (recrystallized calcium carbonate) quarried in Pickens and Gilmer Counties. The beauty and variety of Georgia marble is well known.

Use: dimension stone for buildings, monuments, interior decorations, statuary, novelties; crushed stone for terrazzo, stucco, lime, and a mineral filler.

**MUSCOVITE MICA** (hydrated potassium aluminum silicate) is the colorless or transparent commercial variety of mica. In small flakes it is found in every county of the crystalline rock area. Sheet mica has been mined or prospected in 31 counties of this region. In recent years most of our sheet mica has been produced from Upson, Lamar, Monroe, Cherokee, Pickens, Lumpkin, Union, Rabun, Hart, and Elbert Counties. Mica for grinding of smaller size is mined in Hart County.

Use: sheet mica for electrical uses; ground mica for roofing materials, joint cement, well drilling compounds, rubber, paint, wallpaper.

**OCHER** (a very fine powdery variety of hematite (red) or limonite (yellow)) mined east of Cartersville near the Etowah River in the Paleozoic sedimentary area.

Use: pigment for paints and mortars, filler in linoleum.

**PHOSPHATE** (a sedimentary rock containing calcium phosphate) occurs in Miocene sands as a wide belt along the coast of Georgia, particularly in Chatham, Lowndes, Lanier, Echols, Berrien, and Clinch Counties.

Use: fertilizers; phosphoric chemicals for detergents, silk industry, baking powder, water softeners, animal food supplement; pharmaceuticals; ceramics; dental cements; fireproofing; sugar refining; fermentation; incendiary bombs; smoke screens.

**PYRITE** (iron di-sulphide) may be found in minute quantities over the entire State, but particularly good deposits exist in a belt covered by Carroll, Paulding, Haralson, Cobb, Cherokee, Dawson, Lumpkin, White, and Towns Counties.

Use: sulfuric acid, iron sinter, source of sulfur.

**QUARTZITE** (a metamorphic rock consisting essentially of quartz) found throughout the crystalline rock area.

Use: road material, aggregate, industrial sand.

**SAND AND GRAVEL** occurs over most of the State. Extensive deposits are found south of Columbus, Talbot-Taylor County area, south of Gaillard, southeast of Macon, south of Augusta, and in Thomas County.

Use: sand for structural work, molding purposes; gravel for roofing, road surfacing, high-grade sands for the production of glass are found principally in the Coastal Plain.

**SANDSTONE** (a sedimentary rock consisting principally of quartz) common in the Paleozoic sedimentary area and Coastal Plain.

Use: building stone, road material.

**SHALE** (a consolidated sedimentary clay) mined extensively in the Paleozoic sedimentary area.

Use: brick, tile, sewer pipe, road material, lightweight aggregate.

**SILLIMANITE** (an aluminum silicate) occurs extensively in the crystalline rock area, especially in Hart, Elbert, and Madison Counties.

Use: high temperature refractories.

**STRUCTURAL CLAYS** are taken from flood plains of streams and large rivers, from under swamp areas, from shale formations of the Paleozoic sedimentary area, and from weathered phyllite from the crystalline rock area. Also some kaolins of the Coastal Plain are used for structural products.

Use: brick, tile, pottery, lightweight aggregate.

**TALC AND SOAPSTONE** Talc is a magnesium silicate, soft white to green mineral which grinds to a white slick product; soapstone is impure talc. Talc and soapstone are found throughout the crystalline rock area and are mined in Murray County. Use: roofing, filler in rubber, steel marking pencils, paint, carrier for insecticides, refractory articles, cosmetics, paper.

**VERMICULITE** (a variety of mica) occurs in Rabun, Towns, and other North Georgia Counties.

Use: expanded for insulating material.

## MISCELLANEOUS MINERALS

**M1** Large areas occur over crystalline rocks where there has not been much mining because large deposits of useful minerals have not been found. Ores and other desirable minerals are covered with soil thus do not crop out. Further search and prospecting will undoubtedly disclose more mineral deposits than have yet been recognized. Specimens of the following ores, industrial minerals, and rocks are known to occur: asbestos, barite, clays, chromite, copper ores, feldspar, flagstone, gemstones, gold, graphite, kyanite, mica, molybdenite, pyrite, quartzite, sand and gravel, sericite, talc, soapstone, and vermiculite.

**M2** Surface is covered with thick layers of sediment which may conceal possible desirable mineral deposits. Minerals found in other parts of South Georgia, such as industrial sand, chert, jasper, chalcedony, industrial clays, and road fill are known to occur in this area.

## LEGEND

BAUXITE	GRANITE AND RELATED ROCK AREAS	IRON, MANGANESE, BARITE, OCHER	MARBLE	PHOSPHATE: Area of known concentration.	SILLIMANITE
COAL, IRON	GRANITE AND RELATED ROCK OUTCROP	KAOLIN	MICA	PHOSPHATE: Miocene Phosphate deeper than 200 feet on hatched side of line.	STRUCTURAL CLAY
FELDSPAR	HEAVY MINERALS	KYANITE	MICA, FELDSPAR, GRANITE	PYRITE, COPPER	TALC
FELDSPAR, MICA	HEAVY MINERALS CONCENTRATED AND WELL LEACHED	LIMESTONE	QUARTZITE	SAND	TALC, SOAPSTONE, AND RELATED ROCKS (MAY CONTAIN ASBESTOS, CORUNDUM, OLIVINE, VERMICULITE)
FULLER'S EARTH	IRON	LIMESTONE, DOLOSTONE, SHALE, SANDSTONE	PHOSPHATE: Extent of phosphatic Miocene.	SAND, GRAVEL	MISCELLANEOUS MINERALS
GOLD	IRON, MANGANESE				