

Learning Series: Alabama's Rocks and Minerals – The “Super Sites”

Background

Physiographically, the state is divided into five sections: the Highland Rim, Cumberland Plateau, Valley and Ridge, Piedmont Upland, and East Gulf Coastal Plain. Each of these is characterized by rocks of specific geologic age and composition, and the resultant landforms reflect these rock types.

Highland Rim

- has moderate relief and primarily consists of Paleozoic limestone and chert
- sometimes called the Interior Low Plateau
- flat land, good for growing soybeans, cotton, and corn

Cumberland Plateau

- characterized by Paleozoic sandstone, shale, and limestone underlying the valleys, whereas more resistant sandstone supports the ridges
- also called the Appalachian Plateau
- varied land forms including tree-covered mountains, flat land, and rolling hills
- rises to 1,800 feet above sea level in the northeast; slopes southwest down to about 500 feet above sea level

Alabama Valley and Ridge

- characterized by diverse Paleozoic sedimentary rocks and consists of a series of folded and faulted ridges and valleys that run generally northeast-southwest
- rich in iron ore, coal, and limestone
- part of the Appalachian Mountains

Piedmont Upland

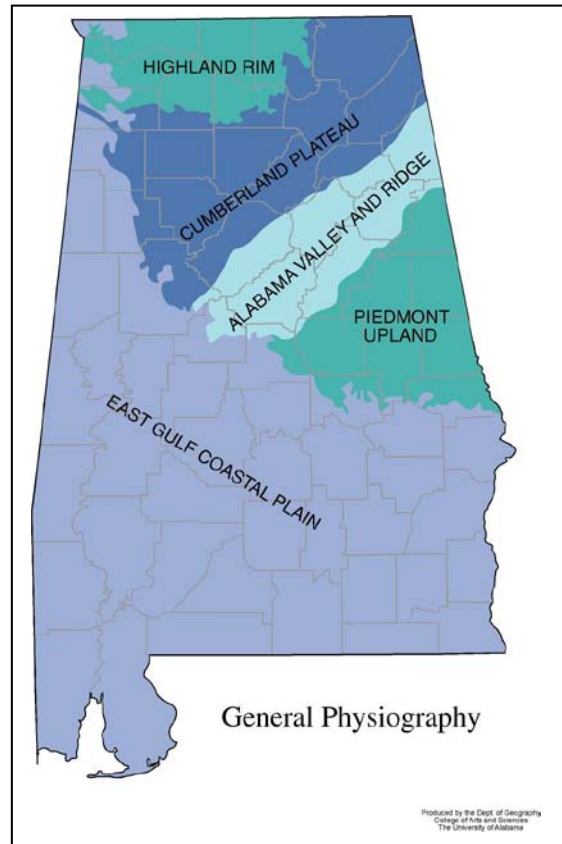
- composed of faulted crystalline metamorphic and igneous rocks that represent the oldest rocks in the state, dating back to the Precambrian
- tree-covered, low rolling hills and sandy valleys
- hills contain iron ore, limestone, and marble
- Cheaha Mountain, Alabama's highest point, is found in this area

East Gulf Coastal Plain

- an area of Mesozoic and Cenozoic sediments that occupies the southern two-thirds of the state and curves northward almost to the Tennessee border on the western side where generally unconsolidated sediments overlap rocks of the other sections
- hilly terrain, but most of its land is less than 500 feet above sea level
- consists of pine forests, swampy areas, wiregrass and areas of rich, loamy soil
- contains oil and gas resources

Most of the state is covered with sedimentary rocks, with exposures of igneous and metamorphic rocks being confined to the east-central part of the state in the Piedmont Upland. The sediment left behind from ancient oceans, swamps, and other near-shore environments composes most of the state's bedrock: limestone, sandstone, shale, and chalk.

Several varieties of metallic and nonmetallic minerals have been successfully mined from Alabama's igneous and metamorphic rocks, including gold, lead, zinc, mica, talc, asbestos, and kaolin. Marble (the official state rock) and granite have also been quarried successfully from the Piedmont Upland.



Rock and Mineral Collecting Sites

In addition to being useful, many of the minerals discussed above are of interest to collectors. Alabama is home to a variety of gemstones and other specimen-quality minerals that are sought after just for their appearance and characteristics. The diverse geologic makeup of the state is reflected in the large number of different mineral species found in Alabama with more than 190 mineral species occurring in the state.

According to the “Rocks and Minerals of Alabama – A Guidebook for Alabama Rockhounds” (Circular 38, 1966), specimen-quality minerals are spread throughout 37 of Alabama’s 67 counties, with the preponderance of them being exposed in Chambers, Clay, Cleburne, Coosa, Randolph, Tallapoosa, and parts of Chilton, Elmore, and Lee counties—notably, the counties that comprise the Piedmont Upland region of the state.

Alabama’s “Super Sites” for Rock and Mineral Collecting

Of those 37 Alabama counties, 12 have communities that seem especially blessed with desirable specimens. Referred to in this Learning Series as “Super Sites”, these gem- and mineral-rich counties and communities offer from two to six specimens within the same general collecting vicinity. Considered on a county level, three have as many as 14 different rocks and minerals in the same geographic area (Clay – 10; Coosa – 14; and, Tallapoosa – 10). For the next year, we will explore the rocks and minerals found in these 12 Super Sites, county by county.

County	Community	Rocks and Minerals
Bibb	"Sinks Area"	barite, fluorite
Calhoun	Angel Station	galena, sphalerite
Clay	Ashland	biotite, garnet, muscovite, schist
	Coleta	azurite, malachite
	Pyriton	marcasite, pyrite
	Rebecca-Tallega	conglomerate, quartzite
Cleburne	Micaville	feldspar, muscovite, pegmatite, tourmaline
Coosa	Mitchell Dam	actinolite-tremolite, gneiss, hornblende
	Pentonville	beryl, kaolinite, pegmatite
	Rockford	cassiterite, feldspar, muscovite, phyllite, tantalite, tourmaline
	Thomas Crossroads	diorite, granite
Franklin	Russellville	limonite-goethite, siderite
Lee	Auburn	gneiss, dolomite, marble, quartzite
Limestone	Elkmont	calcite, fluorite, gypsum, limestone, pyrite
Randolph	Cragford	galena, sphalerite
Tallega	Sylacauga	calcite, marble, pyrite
Tallapoosa	Alexander City	quartz, tantalite
	Dadeville	anthophyllite, corundum, hornblende, talc
	Dudleyville	anthophyllite, chlorite, diorite, hornblende
	Easton	actinolite-tremolite, anthophyllite, hornblende, magnetite, talc
	Windcreek	chlorite, garnet, schist
Tuscaloosa	Brookwood	bituminous coal, chalcedony
	Rickey	limonite-goethite, siderite

Sources:

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