

Use caution and common sense when stopping along any highway in Arkansas!

Take a right in Havana on Highway 309. Proceed north to Mount Magazine State Park.

Geologic formations present within the park.

Mount Magazine State Park is underlain by sandstones and shales in the Atoka Formation, Hartshorne Sandstone, McAlester Formation and the Savanna Formation. All of these formations can be seen when beginning the climb to the top of Magazine Mountain from Havana on Highway 309. For purposes of this field trip, the geologic descriptions of the area will start approximately 3 miles north of Havana on Highway 309. At this location good exposures of the upper part of the Atoka Formation can be seen.

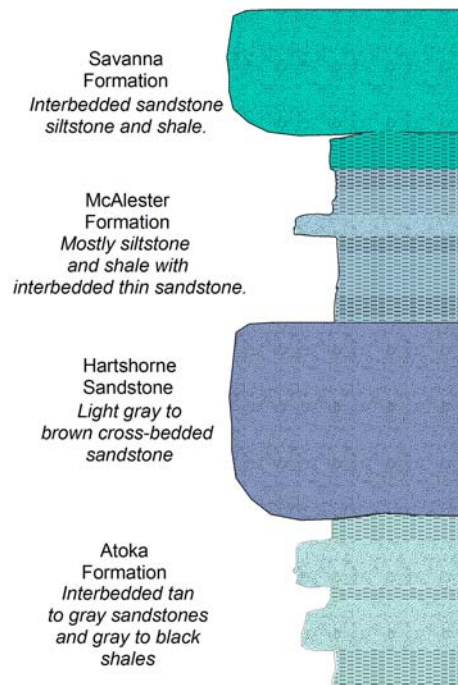


Figure 1.. Columnar section showing rock formations within the park.

Atoka Formation

The Atoka Formation is divided into upper, middle and lower members based on regionally mappable shale or sandstone intervals. The upper part of the formation generally contains a higher proportion of gray black shale than other parts of the Atoka Formation (Cohoon and Vere, 1988). Ironstone concretions and small coal seams occur in some intervals. Along Highway 309 the Atoka consists of gray to black shales that are less resistant than the overlying Hartshorne Sandstone. The contact between the two formations is very sharp and well exposed along the highway.



Figure 2. Shale in the Atoka Formation along Highway 309.

Hartshorne Sandstone

The Hartshorne Sandstone is one of the most persistent sandstone units in Arkansas (Haley, 1961). This unit is a prominent ledge former in the area and consists of gray to brown fine- to medium-grained sandstone. Sometimes an occasional shale bed is interbedded within the sandstone and in some areas it has a thin coal bed at its base.



Figure 3. Contact between Hartshorne Sandstone and Atoka Formation along Highway 309.



Figure 4. Hartshorne Sandstone along Highway 309.

McAlester Formation

The McAlester Formation consists of mostly a shale sequence that can contain three or more coal beds, in particular the Lower Hartshorne coal bed which is near the base of the formation (Haley, 1961). This unit is mostly covered along Highway 309, but some shale with interbedded thin sandstones is seen approximately 4-5 miles north of Havana.



Figure 5. McAlester Formation along Highway 309.

Savanna Formation

The Savanna Formation consists of both shale and sandstone, however the most noted portion of the unit is the sandstone capping the mountain and forming the bluff line that is viewed at the overlooks.

A good exposure of the Savanna Sandstone occurs at the last sharp curve climbing the mountain just before the Petit Jean Valley Overlook on Highway 309.



Figure 6. Savanna Formation along Highway 309.

STOP 2A – Mount Magazine Lodge

Directions: Turn left off of Highway 309 in front of Visitor Center. Follow signs to Lodge at Mount Magazine

The Lodge at Mount Magazine State Park

This resort mountain lodge uses local stone work throughout the building and in the landscaping on the grounds. Swartz Stone Company in Paris, Arkansas provided a large supply of ornamental stone especially those used for the rockwall in front of the lodge. Some stone also came from a quarry in the Danville area (Don Simonds, Mount Magazine State Park, personal communication). Most likely the rock was quarried from the Hartshorne Sandstone and the Atoka Formation. Notice the decorative stone throughout the interior of the lodge as well. Be sure to take a stroll on the backside of the lodge and see the view of Blue Mountain Lake. The large mountain beyond the lake is Poteau Mountain and the axis of the Poteau Syncline.



Figure 7. The Lodge at Mount Magazine State Park.



Figure 8. Rock wall made of Arkansas stone.

STOP 2B – Signal Hill – Highest Point in Arkansas

Signal Hill

The highest point in Arkansas is located at Mount Magazine State Park, specifically on Signal Hill with an elevation of 2,753 ft. The hike to this point is a short one – only 15-20 minutes one way and well worth it. There are three different trails to this point. I suggest taking either the one nearest the lodge which is .6 miles or the trail starting at the entrance to Cameron Bluff Campground which is .4 miles. Once you reach the summit, a rock “patio” (highpoint monument) in the shape of Arkansas sits below a sign announcing the highest point. Be sure to sign the guest book!



Figure 9. Signal Hill – Highest point in Arkansas. Notice the rock monument.

STOP 2C – Cameron Bluff Overlook Drive

Cameron Bluff Drive provides spectacular views north of the mountain into the river valley. Notice some of the structures typical of the river valley called anticlines and synclines. The Savanna formation is well exposed creating a bluff line viewed at several of the overlooks on this drive.



Figure 10. The Savanna Formation along the bluff line of Overlook Drive.