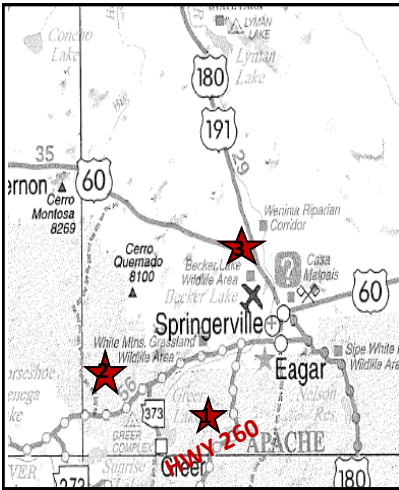


Self Guided Driving / Hiking Tour - Route #1 Off Hwy 260

Turn north off US Highway 260 at Apache Road #4128. (Look for the sign for “Refuse Transfer Station”). The road curves to the left. Turn left at the first dirt road at .3 miles, and follow this into the volcanic field. At 1.3 miles you will see a footpath (Foot access only) on the left that will lead you to the top of a volcanic hill for some stunning views. Looking west you can see Mt. Baldy, one of the highest mountains in Arizona (over 11,000 feet) and Green’s Peak, both formed by volcanoes. Continuing on this road .6 miles you will come to the Grasslands Wilderness Area. Here you can enjoy a moderate 2 1/2 mile hike through volcanic grasslands. (See notes on the Grasslands Wilderness Area hike inside)



Self Guided Driving Tour—Route #2 Off Hwy 260

Turn north off US Highway 260 at Forest Road 117 and follow a dirt road 4 miles. Keep an eye out for skid marks that show on the sides of some volcanic hills—created from pioneer’s harrowing experiences skidding logs off timbered and sometimes icy slopes. Turn right on Road 61, drive 1 mile to the Green’s Peak road turnoff. The road to the top may be rough, but it is possible to (carefully) follow the road to the top of the peak which is an elevation of about 10,000 ft. There is a fire tower lookout and restrooms at the top. Green’s Peak is a relatively young cinder cone, and the topographic high point of the Springerville Field. It provides a great view of the center of the volcanic field. The Green’s Peak flow contains one of the few lava tubes in the field, it’s opening identified by Harris Cave. Younger flows can be seen to the northeast. Surrounding the central concentration of vents, older sheet-like flows extend as much as 20 miles east, their source vents probably lie buried under the stack of younger flows. logs off its timbered and sometimes icy slopes.

US 60, New Mexico—Show Low (60 miles)

As you drive along US Hwy 60, you are driving along the southern rim of the Colorado Plateau region. Unlike along AZ 260, where forest and meadows conceal volcanic flows, this route exposes a broad rolling sea of lava flows, with numerous cinder cones on each side of the highway. Some have preserved craters at their summits; some do not. There are some 200 such cones here. On some, a resistant rim edges the crater, a rim of lava spatter that fell back around the vent while it was still molten enough to stick together. (Taken from “Roadside Geology of Arizona”)



Self Guided Driving/ Hiking Tour—Route #3 Off Hwy 180/191

From the junction of U.S. Routes 60 & 180 travel north approximately 6 miles and stop at Hall Ranch Road. The flow here is one of several flows erupted from the “Twin Knolls” vent complex one mile to the west, the youngest of the flows of the Springerville Field. This double volcano erupted twice, about 700,000 years ago. A small lava flow erupted from the southern of the two overlapping cones and spread out at its base about 300,000 years ago. Follow the dirt road, stopping before you get to the no-trespassing sign where you may want to hike to see some great volcanic rock formations.

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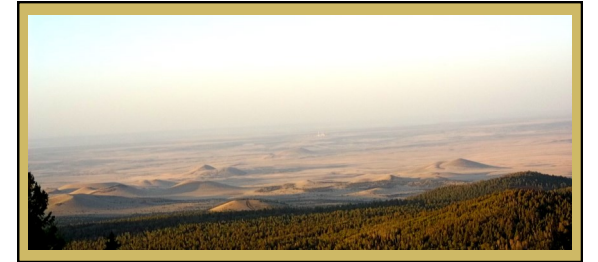
Around 1880, famed anthropologist Frank H. Cushing explored the valleys of the Little Colorado and wrote of lowering himself by rope deep into several cones and finding Indian artifacts and ceremonial objects which he believed to be Zuni in origin. Unfortunately, the items were carried away and sold.

From 1978-1984 three geologists (Larry Crumpler, Jayne Aubele, and Christopher Condit) mapped the Springerville Volcanic Field. This was one of the last large basaltic volcanic fields in the U.S. to be mapped in detail. Ironically, it was the first to be visited by Europeans in what now is the United State. Coronado and his men passed through the center of the field in 1540. A complete map package has been prepared at the USGS. The map and other related products are the most detailed ever done for a volcanic field, and the first map produced by the Survey that is also in digital form. Accessing the Springerville Volcanic Field map and related data on rock type and age is possible by computer.

Several papers about the SVF have been published in scientific journals in recent years, and all three geologists have given talks about the field at scientific meetings. The three led a field trip for international volcanologist through the field in July, 1989, as a part of the annual meeting of the International Association of Volcanology and Chemistry of the Earth’s interior.

ARIZONA’S SPRINGERVILLE VOLCANIC FIELD

1,158 Square Miles of Volcanoes!



The Springerville Volcanic Field has fired the imaginations of visitors and inhabitants of the White Mountain area since prehistoric times.

Famous author Edgar Rice Burroughs used its cones and lava flows as the opening setting of one of his “John Carter on Mars” books in 1935.

Extinct volcanic cinder cones surround Round Valley, and the remains of lava flows can still be seen today, creating interesting shapes and rivers of rock and lava rock structures. These volcanoes have been a part of the people’s lives here. The impressive Casa Malpais Archeological Site was built by early inhabitants over basalt fissures from part of the Coyote Hills lava flow. Ancient rock art pecked into this hard stone is a reminder to us that there were many who explored this land before us, and they are still revered as sacred by some clans of modern day Pueblo tribes. The basalt (lava) rock ranges were called “Malpais” by early Spanish settlers, the name to mean “bad feet” or “bad lands”, a reference to the rough abrasive quality of the rock which wore on the feet and crippled man and beast. Still, practical settlers laboriously built homes and miles of rock fence from the lava. In more recent times, the volcanoes have provided an abundant supply of cinders for paving area highways.

Our Thanks

To Jayne Aubele and Larry Crumpler, Brown University geologists, and Chris Condit, University of Massachusetts geologist, for their assistance and generous permission to reprint much of this information.

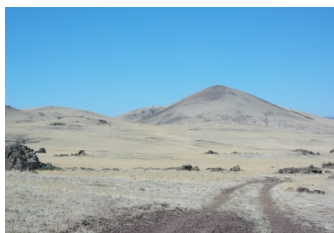
Thanks to these Photographers: P. Wilkins, A. Holt, R. Reed

Springerville and Eagar Regional Chamber of Commerce

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Areas of a large number of volcanoes are called “volcanic fields” by geologists and large volcanic fields with 100’s of volcanoes are quite rare and unusual. The Springerville Field contains 405 vents and covers about 1,158 sq. miles (that is larger than the state of Rhode Island)! The field extends from just east of Springerville to Show Low and from Greer to just south of St. Johns. The large area covered by this volcanic field is also very unusual. There are very few other places in the world where you can drive at interstate highway speeds for one hour (such as between Springerville and Show Low) and still be in the same volcanic field.



The Springerville Volcanic Field is the third largest young volcanic field in the continental United States, surpassed only by the San Francisco Field near Flagstaff, Arizona and the Medicine Lake Field in California. The SVF is one of a series of relatively young volcanic fields that rim the geographic area called the “Colorado Plateau” that covers NE Arizona, NW New Mexico, SW Colorado and SE Utah. The Colorado Plateau is a unique area of high elevation plains. One of the few other places on earth that is similar is the Tibetan Plateau.

When first erupted from a volcano vent, lava is a liquid at temperatures from 1,300 °F to 2,200 °F and flows like water. When it has stopped moving, lava solidifies to form igneous rock which is very hard and heavy.



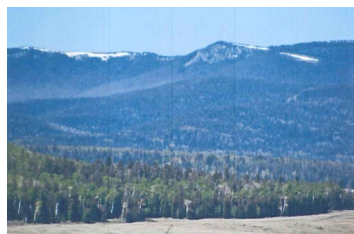
The Springerville Field is late Pliocene to Pleistocene in age. The earliest eruption was about 3 million years ago. The youngest flows are from the Twin Knolls northwest of Springerville. This field is noted for both its size and volume and for its “classic cinder cone field morphology”. 375 vents appear to be simple monogenetic cinder cones. Five additional cones have multiple flows associated with them and several lava tubes have been found.

Most of the volcanoes (including Twin Knolls, Scraper Knoll and others) are a type of volcano called “cinder cones”. They are built up by eruptions of semi-molten volcanic rock and spatter that are blown up into the air as red-hot molten fragments of rock and then weld together due to the extreme heat as they fall back to the ground. Almost all of the cinder cones have associated lava flows of varying sizes that flowed away from the volcanic cone and then solidified into solid rock. Airport Mesa on the edge of Round Valley is one such flow. You can see the thickness of it because part of the edge has been eroded away by the Little Colorado River.



Cliffs along the Little Colorado River

The whole area between Springerville and Show Low is mostly made up of lava flows and every hill or knoll is an individual volcano with the older ones being timbered and the younger ones barely covered with grass, creating an intriguing empty landscape. The fragile top soil formed as the lava breaks down is fertile, and during the short growing season (July-Sept.) can quickly turn from barren to lush green. These productive grasslands attracted cattle and sheep ranchers in the 1870’s in great numbers and cattle still graze here today.



Mt. Baldy

The whole area south of Greer is called the White Mountain Volcanic Field. It is the result of a different type of volcanism. In the center of this field is Mount Baldy, sacred to the Apache people. It is a complex volcano which spewed forth an estimated volume of 280 cubic kilometers (almost 1 trillion cubic feet) of volcanic rock in order to build itself into the second highest point in Arizona today, with a lofty elevation of 11,403 feet. This volume of rock is about the same as was erupted in the entire Springerville Field and makes

Mount Baldy about ten times larger than Mt. St. Helens. Mount Baldy appears to have erupted about 8 million years ago and continued to erupt for a period of about 1/2 million years with an average eruption rate of about 20 million cubic feet of lava and ash per year. Since then, Mt. Baldy has been eroded by rain, wind and mountain glaciers, and the profile you see is primarily due to this erosion.

Cinder cone clusters in the western portion of the field (the Show Low area) are significantly older than clusters in the eastern portion. This suggests vents and clusters migrated from west to east in response to North American plate motion. The volcanic activity slowly migrated eastward at the rate of approximately 2.9 cm/yr. A more youthful eruption occurred about 25 miles further east in the “Red Hill” area of New Mexico along Highway 60, named for its red cinder cone. The south central portion of the field had the most enduring magmatism, and cinder cone density is greatest there.



The volcanoes of the younger Springerville Volcanic Field may be smaller, but they have not been altered as much by erosion and still look much as they did when they erupted.

Continued on back...

GRASSLAND WILDLIFE AREA HIKE

Appropriate footwear and water are a must!

Starting from the well marked trailhead, you can take an approximately 2 1/2 mile moderate hike through volcanic grasslands. Remember to watch for wildlife (including snakes!) The trail gets a little vague in areas, but eventually you will come upon informational signs that let you know you are heading in the right direction. Antelope are abundant in the area, so be sure to bring your binoculars. The wildlife area is open from sunrise to sunset.