

Map Unit Properties Table

Age	Unit Name (Symbol)	Features and Description	Erosion Resistance	Suitability for Development	Hazards	Paleontological Resources	Cultural Resources	Mineral Occurrence	Habitat	Recreation	Geologic Significance	
QUATERNARY (Holocene)	Alluvium (Qal)	Unconsolidated to poorly consolidated silt, sand, & gravel. Found in valley bottoms.	Low	High except in flood-prone areas	Flooding	None	Possible Native American sites	Sand & Gravel	Grasslands: >50 grass species, yucca, cactus, agave, scrub oak	Bonita Creek & Silver Spring hiking trails; campground; Visitors Center	None	
QUATERNARY (Pleistocene-Holocene)	Aluvial- fan deposits (Qaf)	Poorly sorted deposits of silt- to boulder- size material. Aprons adjacent to topographic highlands. Limited exposures in the Monument.	Variable but relatively low	High	None documented	None	Possible Native American sites	None	Yucca, cactus	Bonita Creek Trail	None	
	Colluvium (Qc)	Poorly sorted silt- to boulder- size material. Mostly gentle slope deposits.	Fine sediment are less resistant than boulders	Contains the road into the Visitor Center	None documented	None	Possible Native American sites	None	Yucca, cactus	Whitetail Trail in NE; roadside scenery	None	
QUATERNARY & TERTIARY	Landslide deposits (QTls)	Deposits formed by gravity sliding or flowing. Cuspate breakaway scarps (hachured on map) exposed at heads of some deposits. Degree of erosion & alteration, as well as proximity to Tertiary faults & to margin of Turkey Creek caldera, suggests a Tertiary age for some deposits. Found primarily in NE part of Monument & SE of the Monument.	Depends on slope stability & slide reactivation potential	Designated as wilderness areas	Potential for large landslides	None	Unknown	None	Blocks encrusted with lichen; habitat for small animals	Climbing may trigger rock slides	None	
TERTIARY (Oligocene)	Conglomerate (Tcg)	Weakly indurated, poorly sorted conglomerate & gritty sandstone. Clasts are principally derived from the underlying Rhyolite Canyon Tuff. Form fan deposits NW of Chiricahua National Monument.	Moderate. Not exposed in the Monument.	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	
	ROCKS OF THE TURKEY CREEK CALDERA Mainly lava flows, relatively thin ash- & pumice- rich deposits (pyroclastic flows or tuffs), & lesser amounts of sed rocks deposited within the Turkey Creek caldera, between the uplifted central region & the caldera wall (the moat of the caldera). Divided into 3 eruptive units on the basis of stratigraphic position, petrographic differences, & distinct trace- element geochemistry.											
	Moat deposits (Tmt3, Tmr2, Tmt2, Tmr1, Tmtr1)	Tmt3: Rhyolite tuff. Lavender to reddish- gray rhyolite ash- flow tuff; fine- grained or aphanitic & lithic- poor, except near the base where quartz, sanidine, & plagioclase xenocrysts & rhyolitic lithic fragments are found; 24-79 m (80-260 ft) thick. Exposed S & SW of the Monument.	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Rhyolite composition. Rocks originally made of volcanic glass that contained few crystals; now mainly light gray, rather than black (like obsidian), because glass crystallized to fine- grained minerals. Tmr1: Two ⁴⁰ Ar/ ³⁹ Ar ages on sanidine: 26.64±0.13 million years & 26.93±0.17 million years
		Tmr2: Rhyolite lava. Light- gray to reddish- gray, phenocryst- poor rhyolite lava; flow layered & intricately flow folded, locally massive; aphanitic or sparsely porphyritic with small (less than 1 mm) phenocrysts of sanidine, qtz, & opaque oxide minerals; accessory biotite & zircon; devitrified, except at basal flow contact where black or green glassy breccia or flow- layered perlite is locally exposed; secondary qtz & feldspar crystals. Maximum thickness about 300 m (980 ft). Forms ledges & massive cliffs in the exhumed moat S & SW of the Monument.	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	
		Tmt2: Tuff. Ash- flow deposits & intercalated air- fall tuff & volcanoclastic sedimentary rocks. Light- gray to orange or pink, poorly to densely welded, crystal- poor rhyolite ash- flow tuff; very sparsely porphyritic; phenocrysts are quartz & sanidine (both <1 mm); similar to Tmr2 but some ash flows have more abundant (about 1%) phenocrysts, including plagioclase, sanidine, opaque oxides, & biotite; individual ash flows & intercalated volcanoclastic sedimentary beds range from <1 m (3 ft) to about 30 m (100 ft) thick. Max thickness about 100 m (330 ft). Forms multiple low- relief cliffs or slopes below the steeper cliffs of Tmr2 S & SW of the Monument.	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	
Tmr1: Rhyolite lava. Light- gray to reddish- gray or brown rhyolite lava; typically aphanitic; contains sanidine, quartz, & opaque oxide minerals; local xenocrysts of plagioclase, hornblende, & clinopyroxene; similar to Tmr2, except for more variable phenocryst assemblage, less evolved trace- element composition & stratigraphic position; devitrified, except at basal flow contact where perlitic glass locally contains spherulitic zones & geodes; breccia locally exposed at margins of lava flows; flow interiors recrystallized to granophyre & contain quartz & feldspar in amygdules. Flow layered & intricately flow- folded but locally massive. Maximum thickness 150 m (490 ft). Exposed S & SW of the Monument.		Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	

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		Tmtr: Tuff. Pyroclastic flow & surge deposits. Gray to dark- brown or purplish- brown, densely to poorly welded, typically aphanitic rhyolite ash- flow tuff & light- gray surge beds; basal vitrophyre grades upward into devitrified rheomorphic tuff with convoluted flow banding; thickness 0–30 m (0–100 ft). Exposed S & SW of the Monument.	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	Not exposed in the Monument	
	Dacite of Sugarloaf Mountain (Tdpl)	Dacite porphyry lava; black to gray lava- flow; equivalent of dacite that forms lava flows at the base of the moat sequence as well as the resurgent intrusion within the Turkey Creek caldera; 10- 15% small (< 2 mm) phenocrysts (mainly plagioclase, clinopyroxene, & minor orthopyroxene); formerly glassy groundmass is variably devitrified; thickness about 70 m (230 ft). Preserved only as the remnant of a lava flow atop Sugarloaf Mountain.	High	Limited exposures; foundation for Sugarloaf Mountain lookout	None documented	None	None documented within the Monument	Crystal clots to 1 cm (0.4 in) across of plagioclase, clinopyroxene, & opaque oxides; sparse, large 2–5 mm (0.08–0.2 in) alkali feldspar & small 0.5 mm (0.02 in) quartz xenocrysts	Grasses at summit; scrub oak, manzanita, cactus on slopes	Sugarloaf Mountain hiking trail	26.9 million years old; may have flowed down an ancient valley from near Barfoot Peak, SE of the Monument
	Outflow facies of the Rhyolite Canyon Tuff (Trco, Trcu, Trcm, Trd, Trcv, Trca)	<p>Light- gray, welded ash- flow deposit; rhyolite ash, pumice, crystals, & rock fragments erupted from Turkey Creek caldera & transported by hot ash- rich clouds (ash flows); divided into intracaldera (exposed S of the Monument) & outflow facies; Lower, Middle, & Upper Members of outflow facies separated by ash- cloud & surge deposits; abundant white streaks represent flattened pumice blocks (fiamme); small quartz & feldspar crystals (forms subhedral, lath- shaped phenocrysts, typically 1–4 mm (0.04–0.16 in) in length). Phenocrysts of sanidine (feldspar) & quartz; sanidine has a bluish luster in sunlight (chatoyant); quartz is rounded & embayed, 1–3 mm (0.04–0.12 in) diameter; also contains accessory opaque oxide minerals & trace amounts of clinopyroxene, biotite, hornblende, zircon, & apatite; eutaxitic & vitroclastic; locally spherulitic; composite thickness of entire outflow facies in Chiricahua National Monument about 490 m (1,600 ft).</p> <p>Trco (undivided): Most exposures probably equivalent to Middle Member (Trcm).</p> <p>Trcu: Upper Member. White, ash- rich surge beds overlain by gray, densely to mod welded tuff; surge beds cut by vertical fossil fumarole pipes & over- printed by low- angle secondary Liesegang bands; trace augite, zircon, & biotite tend to be more common than in most samples of Lower & Middle Members; welded tuff has both white fiamme & dark- gray to maroon lensoidal masses of sanidine- megacrystic rhyolite, thought to represent poorly vesiculated magma clots; upper 6 m (20 ft) is moderately to poorly welded & poorly exposed; thickness 24 m (80 ft) at Sugarloaf Mt. Exposed as erosional outlier near the top of Sugarloaf Mt & isolated outcrop NW of the Monument.</p> <p>Trcm: Middle Member. Voluminous, gray, densely welded, pumiceous ash- flow tuff; prominent vertical columns (hoodoos); jointing attributed primarily to contraction related to cooling; internally homogeneous; but, slight variation in welding & weathering profile suggest multiple ash flows erupted in rapid succession & cooled together; base locally marked by a 0–1 m (0–3 ft) thick section that consists of pumiceous ash- flow, ash- cloud, & surge deposits that were welded as a result of emplacement of the overlying main body; overlies the white, poorly welded, top of Lower Member; thickness 320 m (1,050 ft) at Sugarloaf Mountain where top exposed. Forms hoodoos; primary rock unit exposed in Chiricahua National Monument.</p> <p>Trcl: Lower Member. Pumiceous & locally lithophysal ash- flow tuff & related ash- cloud deposit. Red- brown densely welded lower zone & gray moderately welded middle zone. Middle zone grades upward into white, pumice- bearing, poorly welded ash- cloud deposit. 0–180 m (0–600 ft) thick. Forms a wedge that thickens to South & East of the Monument.</p> <p>Trcv: Vitrophyre. Black perlitic glass locally exposed at base of the Middle Member where it directly overlies basement rocks of Faraway Ranch Fm (Tfr) in W part of the Monument. Not present at base of Middle Member in central part of outcrop area where Middle Member is thick & overlies Lower Member; typically < 3 m (10 ft) thick. NOTE: No letter symbol is used on the source map.</p> <p>Trca: Basal ash. Line on map denotes top of white, crystal- poor ash found locally at the base of Trcl. NOTE: No letter symbol is used on the source map.</p>	Dense, welded tuff is highly resistant to erosion, but the white ash bed at the base of Trcu is easily eroded, undercuts cliff, & causes slumps; a recent slump closed Sugarloaf Mountain Trail for 1.5 years	Trails, roads, buildings, parking areas are presently developed in unit	Potential for rockfall & slides on scree slopes	None	Potential Native American sites	<p>Trcm/Trcl: marble- like spherulites called “hailstones” weather out of volcanic tuff along the Hailstone Trail</p> <p>Cottonwoods, sycamores, willows along narrow riparian corridor in canyon bottoms</p> <p>Trcm: lichen on hoodoos</p>	Exposed at an elevation of 1,500–2,000+ m (5,000–7,000+ ft): pine- fir forests whose prominent species are manzanita, Arizona Sycamore, alligator juniper, oaks, pines, Arizona cypress, madrone, acacia.	No climbing is allowed in the Monument, including the hoodos (Trcm). Many hiking trails: Natural Bridges Trail, Sugarloaf Trail, Echo Canyon Trail, Massai Point Trail, Inspiration Point Trail, Heart of Rocks Loop Trail, Hailstone Trail, Sarah Deming Trail, Rhyolite Trail	Chiricahua National Monument is the type locality for the Rhyolite Canyon Tuff Radiometric ages for sanidine samples show 26.94±0.16 million years for the Upper Member (Trcu) & 26.93±0.12 million years for the Lower Member (Trcl)
ROCKS THAT PREDATE THE TURKEY CREEK CALDERA											

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	Jesse James Canyon Tuff (Tjj, Tjif)	Tjj: Light- gray or pinkish- gray, lithic poor, mod crystal poor, biotite- bearing quartz- sanidine rhyolite ash- flow tuff from undetermined source; similar to Trcm, & Trcl; distinguished by trace amounts of bronze biotite & sphene, smaller & less abundant phenocrysts of sanidine & quartz, higher ratio of sanidine to quartz (3:1 or greater), forms a simple cooling unit; poorly welded upper zone grades downward into densely welded, eutaxitic lower zone; basal vitrophyre exposed locally. About 240 m (790 ft) thick near Jesse James Canyon; thins to N, NW, & NE. Forms steep slopes beneath Trcl (S & SW); bounded by normal faults in NE Chiricahua National Monument. Tjif: Found locally at top of Tjj; overlain by about 1.5 m (5.0 ft) of white, crystal poor, biotite- bearing ash where present. NOTE: No letter symbol is used on the source map.	Variable: densely welded part is more resistant than poorly welded part of unit	Forms steep slopes; most exposures are within wilderness boundary	Rockfall & scree slide potential on steeper slopes	None	Potential Native American sites	None documented	Exposed at an elevation of 1,720–1,900 m (5,640–6,200 ft); sparsely vegetated; transition zone from interior chaparral shrubland to pine–fir forests	Steep slopes; crossed by Rhyolite Trail	Type locality is in the Monument. Deposited in an ancient valley shortly before Tr deposition	
	Faraway Ranch Formation (Tfre, Tfpe, Tfrh, Tfph)	An assemblage of interfingering rhyolite, dacite, & andesite lava flows, near- source pyroclastic rocks, & clastic sedimentary rocks. Exposed in W part of Chiricahua National Monument. Tfre: Rhyolite of Erickson Ridge. Light- gray or red- brown (devitrified) to black (glassy) biotite rhyolite; phenocrysts of plagioclase (3–7%) & biotite (1–2%); trace sphene forms euhedral phenocrysts; prominent flow layering; thickness variable; as much as 150 m (500 ft) thick near Faraway Ranch. Forms small lava domes & flows with black glassy breccias as well as ridges & cliffs.	High	Some exposures in wilderness designation; forms slopes on either side of Faraway Meadow	Rockfall potential beneath cliffs	None	Potential Native American sites	Phenocrysts of plagioclase, biotite, sphene	Exposed at an elevation of 1,600–1,800 m (5,200–5,860 ft): chaparral shrubland; desert plants; pointleaf manzanita, scrub oak	Ridges & slopes border Faraway Meadow; low elevation hiking	Type locality: W side of the Monument in section 27, T16S, R29E Age dated at 28–32 million years old	
		Tfpe: Pyroclastic flow deposits of Erickson Ridge. Light- gray to orange block- &- ash flow, ash- fall & surge deposits, & ash- rich lahars interbedded with Tfre; locally includes reworked volcanoclastic sedimentary deposits; thickness 0–60 m (0–200 ft).										
		Tfrh: Rhyolite of Hands Pass. Light- gray, qtz- sanidine rhyolite; subhedral sanidine & quartz phenocrysts & accessory biotite & opaque oxide minerals, typically in a spherulitic to granophyric devitrified groundmass; thickness 0–130 m (0–430 ft). Forms a prominent lava dome overlain by Trc near Hands Pass.										
		Tfph: Pyroclastic flow deposits of Hands Pass. Light- gray to orange block- &- ash- flow, ash- fall, ash- rich lahar, & volcanoclastic sed deposits; 0- 70 m (0- 230 ft) thick. Forms a pyroclastic apron next to Tfrh.										
	ROCKS THAT PREDATE THE FARAWAY RANCH FORMATION											
	Sedimentary rocks of Bonita Peak (Tbp)	Distinctly red- weathering, poorly sorted, clast- supported conglomerate, & interbedded volcanoclastic arenite, siltstone, & claystone; contains gypsum veinlets near Bonita Park; graded beds & channel deposits common; poor sorting, hematitic alteration, & channel bedding consistent with alluvial- fan deposition; forms red clay- rich soil; underlies QTls deposits in Bonita Park & W of Whitetail Pass; less than 49 m (160 ft) thick. Limited exposures in Bonita Park; well exposed in road cuts.	Variable due to differing rock types	Limited exposures; partially in wilderness designation	None	None	None documented; most exposures are in road cuts	Extensively altered to clay minerals & hematite	Limited exposures in fault slices in Bonita Park, NE part of the Monument	Accessible roadside exposures	Deposited from streams flowing on the floor of an ancient basin	
	Welded tuff of Joe Glen Ranch (Tjg)	Gray to pink, lithic- poor (<10% lithics) & moderately crystal- rich biotite- quartz- sanidine rhyolite ash- flow tuff; 10–15% sanidine, 5–7% quartz, 1- 3% biotite, & about 1–2% plagioclase; stratigraphic assignment made on basis of similarity in mineral assemblage & chemical composition to exposures of welded tuff of Joe Glen Ranch in the southern Chiricahua Mountains & in the Pedregosa Mountains; thickness about 130 m (430 ft); top eroded. Forms moderately welded remnant of outflow sheet atop ridges SW of Riggs Spring at Pinery Creek, S of Monument.	Exposed S of the Monument in Pinery Canyon	Exposed S of the Monument in Pinery Canyon	Exposed S of the Monument in Pinery Canyon	Exposed S of the Monument in Pinery Canyon	Exposed S of the Monument in Pinery Canyon	Exposed S of the Monument in Pinery Canyon	Exposed S of the Monument in Pinery Canyon	Exposed S of the Monument in Pinery Canyon	Exposed S of the Monument in Pinery Canyon	
	Intermediate & mafic lava flows (Tim)	Interfingering lava flows, flow breccia, & near- source pyroclastic rocks; red to brown, hornblende- & biotite- bearing plagioclase porphyritic dacite that locally overlies Tbp & dark- gray aphanitic to glassy, clinopyroxene- bearing andesite & basalt; thickness >120 m (400 ft) locally, base not exposed. Underlie Tfre & most rhyolitic rocks in the Chiricahua Mountains and exposed around perimeter of Monument & in NE fault block. Timp: Spheroidal weathering & curvilinear vesicle trains in celadonic plagioclase- clinopyroxene basaltic andesite suggest pillow basalt (eruption underwater). Exposed SE of Bonita Park. Tims: Zones of silicification. NOTE: No description or letter symbol is on the source map. Tq: Quartz vein. Occurs only within Tim. NOTE: Not shown on the source map.	High	Few exposures in Chiricahua National Monument; gentle slopes support roads	None documented	None	Potential Native American sites	None documented	Desert plants & grasses on alluvial fans	Most accessible exposures are along the road through Faraway Meadow; alluvial fan hiking	Erupted before most rhyolitic rocks of the Chiricahua Mts; range in age from about 28 million years to about 34 million years old	
	Rhyolite dikes (Tr)	(Oligocene?) Light- gray to pink or tan aphanitic or quartz & (or) feldspar porphyritic rhyolite dikes; intrude pre- Turkey Creek caldera rocks. Form narrow, vertical, tabular sheets of rhyolite.	High	Low since exposures are linear features	None	None	None documented	None documented	Linear exposure in NE part of the Monument	Near unmaintained trail in NE part of Monument	Cut across other map units	

Age	Unit Name (Symbol)	Features and Description	Erosion Resistance	Suitability for Development	Hazards	Paleontological Resources	Cultural Resources	Mineral Occurrence	Habitat	Recreation	Geologic Significance	
CRETACEOUS (Lower)	Bisbee Group	Mural Limestone (Kbls)	Tan, thin- bedded, laminated silty limestone, interbedded with siltstone & shale. Too few exposures to map in Chiricahua National Monument.	Moderate	Insignificant exposure	Insignificant exposure	Insignificant exposure	None documented	None documented	Exposures too limited to map	Exposures too limited to map	None
		Morita Formation (Km)	Maroon- weathering siltstone, sandstone, shale, & conglomerate. Limited exposures in fault slices in the NE part of Chiricahua National Monument.	Monderate	Wilderness designation	None	None	Unknown	None documented	Exposed at elevations of 1,770–1,840 m (5,800–6,040 ft): pine- fir forests	Unmaintained hiking trail	Bounded by normal faults
		Glance Conglomerate (Kg)	Cobble, pebble, & boulder conglomerate composed of subrounded to subangular clasts of Paleozoic limestone, sandstone, & quartzite; thickness 0–200 m (0–660 ft). Exposed in NE Chiricahua National Monument in slopes & fault slices.	High, but less resistant where influenced by faults	Wilderness designation	None	None	Unknown	None documented	Upper elevation vegetation (2,000–2,400 m; 7,000–7,800 ft)	NE boundary; off- trail hiking	Very few exposures
CRETACEOUS & JURASSIC	Volcaniclastic & volcanic rocks (KJv)	Dark- green to gray volcanic & sedimentary rocks—lava flows & sedimentary rocks rich in volcanic debris (metagraywacke, meta- andesite & metabasalt); variably metamorphosed to green- schist- facies assemblages of chlorite, calcite, albite, epidote, & magnetite; metagraywacke is typically siltstone & fine- to medium- grained volcanic sandstone, but coarse- grained sandstone & breccia beds are near inferred volcanic centers; metabasalt forms lava flows, which are locally pillowed, dikes, & possibly sills in exposures to the SE; overlies Kbls but recent work to SE suggests a Jurassic age for at least part of unit; thickness greater than 300 m (980 ft). Forms slopes & ridges in NE part of the Monument; well exposed along the road to Onion Saddle, SE of the Monument.	High	Mostly in wilderness designation; has one unimproved road	Rockfall, scree slopes	None	Potential Native American sites	King of Lead Mine (sec 18, T16S, R30E) at contact with Phu; NE border; galena, & sphalerite specimens	Upper elevation vegetation (about 2,000–2,100 m; 5,900–7,000 ft): pine- fir forests	Traversed by 4WD road to King of Lead Mine	Contact with Kbls poorly exposed so not known if units are in depositional or structural contact	
PERMIAN (Lower)	Concha Limestone (Pcn)	Dark- gray, thick- bedded, fossiliferous, cherty limestone; thickness 190–200 m (620–660 ft). Form steep slopes in NE part of Monument.	High	Wilderness designation	Rockfall, scree slopes	Large productid brachiopods	Unknown	None	Upper elevation vegetation	Limited exposures on slopes	About 265–270 million years old	
	Scherrer Formation (Ps)	Light- gray to pinkish- gray, fine- grained, nearly massive sandstone & quartzite; thickness greater than 49 m (160 ft). Form steep slopes in NE part of Monument.	High	Wilderness designation	Rockfall, scree slopes	None	Unknown	None	Upper elevation vegetation	Limited exposures on slopes	About 270–272 million years old	
	Epitaph Dolomite & Colina Limestone, Undivided (Pec)	Dark- gray, coarse- grained, sparsely fossiliferous, slightly cherty limestone & local light- gray, fine- grained, limy dolomite; thickness 160 m (540 ft). Form steep slopes in NE part of Monument.	High	Wilderness designation	Rockfall, scree slopes	Large echinoid spines & gastropods	Unknown	None	Upper elevation vegetation	Limited exposures on slopes	About 272–275 million years old	
	Earp Formation (Pea)	Pale- red siltstone & argillaceous limestone; interbedded with light- gray to yellowish- gray limestone; thickness >300 m (>1,000 ft). Very limited exposures on steep slopes in NE edge of the Monument.	High	Wilderness designation	Rockfall, scree slopes	Marine invertebrate fossils (fusulinids)	Unknown	None	Upper elevation vegetation	Very few exposures in the Monument	About 280–299 million years old	
	Horquilla Limestone (Upper Member) (Phu)	Light- gray, thin- to thick- bedded, fine- grained calcilutite, coarse- grained bioclastic & fossiliferous cherty limestone, & inter- bedded pink siltstone; thickness about 400 m (1,300 ft). Very limited exposures on steep slopes in NE edge of the Monument.	High	Wilderness designation	Rockfall, scree slopes	Marine invertebrate fossils (fusulinids)	Unknown	King of Lead Mine (sec 18, T16S, R30E) at contact with KJv; NE border; galena & sphalerite specimens	Upper elevation vegetation	Very few exposures in the Monument	About 285–299 million years old	

Interpretive map and guide to the volcanic geology of Chiricahua National Monument and vicinity, Cochise County, Arizona