



# Geology Column

TABLE 1. Sequence of rock strata in Big Bend National Park.

GEOLOGIC AGE		ROCK UNITS				
PERIOD	AGE	GROUP	FORMATION	THICKNESS (feet)	ROCK TYPE	
CENOZOIC	QUATERNARY		Alluvial deposits	100-500	Clay, silt, sandstone, and conglomerate covering extensive slopes surrounding most mountains	
	TERTIARY	RECENT and PLEISTOCENE		Cal Qteg		
OLIGOCENE or YOUNGER			Big Bend Park	Tsr	1,000-1,500	Thick ledge-forming lava flows exposed high in Chisos Mountains, ash beds, tuff, flow breccia, irregularly bedded sandstone and conglomerate
EOCENE		Upper		Chis Formation	1,500-2,600	Indurated tuff interbedded with clay, mudstone, tuffaceous sandstone, ash beds, lavas, sandstone, and conglomerate; crops out median and lower slopes in Chisos Mountains
			also: Tomb Taob Tacb Tmet			
			Canoe Formation	1,170	Base is a massive yellow cross-bedded ledge-forming sandstone overlain by tuff, mudstone, tuffaceous sandstone, indurated tuff, and lavas	
65 MY		Lower	Tornillo	Hannold Hill Formation	356-770	Soft, gray, and yellowish-gray conglomeratic sandstone and varicolored and mottled clay mostly in valleys
				Black Peaks Formation	850	Varicolored clay interbedded with ledge-forming cross-bedded, yellow, buff, and gray sandstone and lenses of conglomerate
MESOZOIC		CRETACEOUS	Tornillo	Javelina Formation	350-850	Gray, dull green, blue, red, yellow, purple, brown, black, and white clay, with thin layers of sandstone. Clay commonly bentonitic and forms badlands. Contains fossil wood and dinosaur bones
				Aguja Formation	800-1,300	Upper part, 300-700 feet thick. Nonmarine dark-gray carbonaceous clay and some silt and layers of coal interbedded with brown and yellowish-brown sandstone. Contains fossil wood and dinosaur bones Lower part, 500-700 feet thick. Marine sandstone and clay, a shelly sandstone generally present at the base
				Pen Formation	Kpf	220-600
	BOQUILAS FORMATION				Kbof(2) San Vicente Member	330-400
				Kbof(1) Ernst Member	475	Gray, buff, and yellowish-brown flaggy limestone interbedded with gray and buff marl; crops out in slopes
	Buda Limestone			Kbu	100	Whitish, dense, brittle limestone and nodular limestone interbedded with marl, ledge forming
	Del Rio Clay			Kdr	1-125	Light gray and yellow clay, clay-shale, and thin-bedded limestone; forms slopes
	Sania Elena Limestone			Kse	750-850	Mostly massive, thick-bedded, dense, cherty, ledge-forming limestone, with thin-bedded marly limestone near base
	Sue Peaks Formation			Ksp	75	Shale, marl, and thin marly, nodular limestone ledges; forms slope below the Santa Elena Limestone
	Del Carmen Limestone			Kdc	350-450	Massive, heavy-bedded, dense, cherty, ledge-forming limestone
COMANCHEAN	Telephone Canyon Formation	Ktc	40-130	Thin, nodular, marly limestone and marl; forms slope below the Del Carmen Limestone		
	Maxon Sandstone	<del>Not Apparent</del>	<del>10</del>	Medium-grained, calcareous sandstone		
	Glen Rose Formation	Kgr	600	Dense limestone interbedded with calcareous shale, erodes to form step-like benches. Basal conglomerate and coarse sandstone exposed on flanks of Perimmon Gap and the Solitario		
	Paleozoic sedimentary rocks (undifferentiated)	Pu	Unknown	Strongly folded rocks, including slightly metamorphosed shale, chert, novaculite, and limestone. Exposed at Perimmon Gap and in the Solitario		
	Metamorphic rocks	<del>Not Apparent</del>	Unknown	Fine-grained schist, metaquartzite, phyllite, and marble exposed in the Sierra del Carmen escarpment of Boquilla, Coahuila, Mexico		