

Stratigraphic Chart for Rocks Visible from Pryor Mountain Road

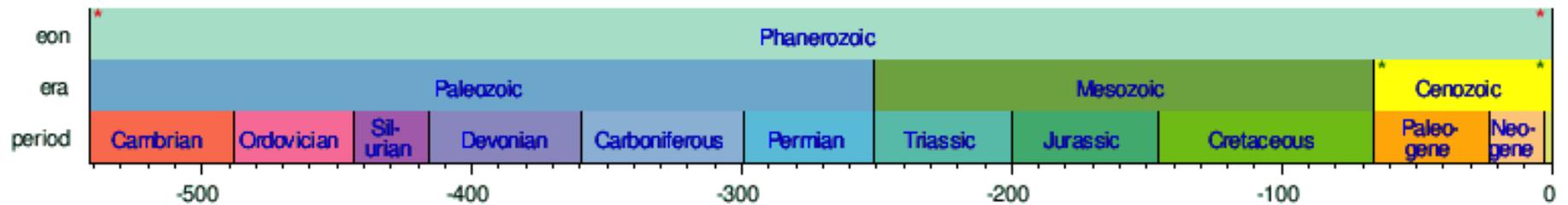
Geologic age (million years ago)	Formation Name	Photo mile	Thickness (feet)	Rock types	Depositional Environment	Fossils
Late Cretaceous (100 to 66 mya)	Frontier (93 to 89 mya)	2.6 2.8 3.3 6.1	500	inter-layered sandstone, mudstone, and coal	river delta and seafloor offshore	marine ammonites, oysters, and other mollusks; non-marine plant fossils
	Belle Fourche (99 to 93 mya)	6.1	350 to 400	gray to black shale	seafloor well offshore	ammonites and bivalves
	Mowry Shale	6.1	250	light gray to silver-gray shale interbedded with thin beds of siltstone and sandstone. Bentonite beds common	seafloor well offshore	Fish scales and bones abundant in some beds
	Thermopolis	6.1	600	dark gray shale	offshore seafloor mud on a stagnant oxygen-deprived sea floor	shark teeth and plesiosaurs
Early Cretaceous (146 to 100 mya)	Fall River Sandstone	5.0 6.6	Less than 50	tan sandstones interbedded with gray shale	rivers and on the near shore seafloor	bivalves and plants
	Upper Kootenai	7.2	200 to 250	reddish, purplish, and greenish shale interbedded with tan sandstone and thin gray limestone	rivers and lakes	plants, freshwater mollusks, and dinosaurs; <i>Deinonychus</i> was first identified near Pryor Mountain Road.
	Lower Kootenai (Pryor Conglomerate)	4.4 7.4	20 to 60	brown conglomerate and pebbly sandstone	rivers and lakes	essentially no fossils
	Morrison	5.6 5.9	300	tan sandstone, gray to reddish shale, coal, and thin gray limestone	rivers, lakes and swamps	dinosaurs are common; Fossils of eight juvenile <i>Diplodocus</i> -like sauropods were found in near Pryor Mountain Road.
Late Jurassic (161 to 146 mya)	Swift	5.9	100	tan sandstone and some gray shale	seafloor nearshore	oysters and belemnites
	Rierdon	5.9	150	gray shale and thin gray limestones	seafloor well offshore	abundant oyster-like mollusks and belemnites, as well as fish and ammonites
	Piper	5.9 7.9 8.0, 8.3	100	reddish shale, gray shale, gray limestone and white gypsum	shale: fresh or brackish lakes limestone: shallow seafloor gypsum: highly saline water	oysters and other bivalves, corals, and crinoids
Early Jurassic, Middle and Late Triassic (245 to 176 mya)						
Early Triassic (251 to 245 mya)	Chugwater	4.4, 5.9 7.9, 8.0 26.3	500	red shale, siltstone, and sandstone	ephemeral lakes and small streams	essentially without fossils
Permian (299 to 251 mya)	Phosphoria		10	gray limestone and hard tan sandstone embedded with gray chert masses	shallow sea floor	brachiopods, bryozoans

Pennsylvanian (Late Carboniferous) (318 to 299 mya)	Tensleep	11.8 16.3	200	white to light tan, fine-grained, quartz-rich sandstone	shallow seafloor nearshore and wind laid dunes near the shore	protozoans
	Amsden	16.6	200	reddish shale, gray shale, and gray limestone	shallow seafloor	Brachiopods and protozoans
Late Mississippian (326 to 318 mya)						
Middle Mississippian (345 to 326 mya)	Madison Group	9.4 16.6 17.5 21.1	1000	gray limestone, Mission Canyon: massive and thick-bedded Lodgepole: thin-bedded	shallow seafloor	brachiopods, crinoids, corals, and bryozoans
Late Devonian (385 to 345)	Jefferson		250	gray and brownish dolostone	shallow seafloor and tidal flats	corals
Early Devonian, Silurian and Late Ordovician (461 to 385 mya)						
Middle Ordovician (472 to 461 mya)	Bighorn Dolomite		500	gray to white dolostones and limestones	shallow seafloor	corals, brachiopods, crinoids, and bryozoans



Shaded cells indicate unconformity. Most unconformities represent time when the land was above sea level and no sediment was being deposited. Instead, erosion was removing top layers of sediments previously deposited when the area was below sea level. The time for which there are no strata is called a hiatus, and the hiatus includes the time during which those now missing sediments were deposited. Most of the named formations (between the unconformities) represent times when the sea covered the land (a few formations represent river, lake, and swamp deposits on land in coastal areas). Sediments were being deposited on the sea floor and in coastal areas of material eroded and carried by rivers from inland.

Geologic Time Scale:



Scale in million years before present (mya). The Carboniferous period is sometimes divided into the Mississippian and the Pennsylvanian periods.