

SYSTEM	SERIES	FORMATION AND MEMBER	THICKNESS, IN FEET			
CRETACEOUS	TERTIARY					
	Paleocene					
	Upper Cretaceous	Livingston formation		7000±	Largely tuff, tuffaceous sandstone and shale, and breccia. Lower 2000 feet is largely green to brown tuff and thin breccia. Upper 5000 feet is less tuffaceous and consists mainly of tuffaceous sandstone and shale. Upper 300 feet marked by few thin beds of conglomerate	
		Virgelle sandstone and undivided younger rocks		100-1330	Sandstone and shale	
		Boulder River sandstone member		100±	Sandstone, gray, ledge forming	
	Lower Cretaceous	Colorado shale		2045	Sandstone and shale; chert-pebble conglomerate in lower 300 feet	
Kootenai formation			100±	Sandstone, gray to brown, cliff-forming		
JURASSIC	Upper Jurassic	Morrison formation		815	Shale, gray, basal; 30 feet or less thick overlain by about 30 feet of flaggy siltstones and sandstones. Overlying beds, shale and thin beds of sandstone; shale becomes silty and sandy in upper part	
		Swift formation		300	Basal conglomerate as much as 130 feet thick, contains pebbles of chert and quartzite. Overlying beds mostly concealed but include several lenticular beds of sandstone and some mudstone	
		Rierdon formation		400	Largely concealed; soil in lower part is red; lenses of sandstone in middle and more massive near top	
	Middle Jurassic	Ellis group	Piper formation		80	Sandstone, brown-weathering, calcareous, glauconitic and fossiliferous
					95	Limestone, basal 10 feet oolitic dense gray; overlain by mostly concealed shale
CARBONIFEROUS SYSTEMS	PENNSYLVANIAN	Quadrant quartzite		240	Shale, greenish-gray in lower part on yellow basal sandstone. Gray dense limestone near middle. Upper beds deeply weathered, probably red shale in large part	
		Amsden formation		100	Quartzite, light-yellowish- to reddish-gray, fine-grained	
	MISSISSIPPIAN					
		Madison limestone		140	Mostly concealed. Thin beds of red and gray limestone near middle lie above some red shale and siltstone	
DEVONIAN	Upper Devonian	Three Forks shale		80	Limestone, dense and finely crystalline, light- to medium-gray. Generally divisible in ascending order into (1) basal 55 feet interbedded limestone and chert, making excellent marking beds; (2) about 235 feet of thin-bedded to massive, variably argillaceous to sandy limestone; unit very fossiliferous, many beds have abundant crinoid stem fragments; (3) a 50-foot zone of argillaceous limestone with bioherms; unit widespread in area; (4) about 180-feet of light-gray dense limestone, includes several argillaceous and silty layers and several crinoidal limestones, (5) about 340 feet of dense light-gray limestone, partly brecciated and cherty	
		Jefferson limestone		390	Largely concealed; yellow to brown soil from shale and thin orange dolomite	
ORDOVICIAN		Bighorn dolomite		200	Limestone, argillaceous and silty, brownish-gray in lower half; is overlain by gray to greenish-gray limestone and limestone breccia	
CAMBRIAN	Upper Cambrian	Grove Creek formation		50	Dolomite, cliff-forming, dense, light-gray and light-yellowish-gray. Upper few feet is thin-bedded dolomitic limestone	
		Snowy Range formation		175	Limestone and shale, limestone in part conglomerate with rounded pebbles	
		Pilgrim limestone		175	Shale, basal, greenish-gray; middle unit is limestone and upper unit is limestone and shale	
	Middle Cambrian	Park shale		380	Upper two-thirds massive dense and finely crystalline mottled limestone. Lower one-third largely edgewise limestone conglomerate and limestone breccia that weather green	
		Meagher limestone		65	Shale, greenish- and reddish-gray, and thin beds of gray crystalline limestone	
		Wolsey shale		105	Shale, greenish-gray, and thin beds of dense gray limestone, make small ledges, weathers to light-yellowish-gray soil	
		Flathead quartzite		0-75	Shale, greenish-gray, and a little thin-bedded limestone	
PRE-CAMBRIAN		Gneiss, schist, granite		Sandstone and quartzite, gray to reddish-gray, and conglomeratic near base		

GENERALIZED STRATIGRAPHIC COLUMN OF ROCKS EXPOSED NEAR LIVINGSTON, PARK COUNTY, MONTANA