Stratigraphy of Dinosaur National Monument

AGE		UNIT NAME	THICKNESS	ROCK TYPE
CENOZOIC	QUATERNARY	surficial materials		talus debris landslides; sand dunes; river terrace gravels
CENOZOIC	TERTIARY	Browns Park Formation	8000'; 490+ ft.	modern river gravels; volcanic tuff—9 m.y.; ancient sand dunes; volcanic tuff—12 m.y.; mammal fossils (bones and jaws)
CENOZOIC	TERTIARY	Bishop Conglomerate	200 - 490 ft.	volcanic tuff—29 m.y.
MESOZOIC	CRETACEOUS	Mancos Shale	5080 ft.	Gilbert Peak Erosion Surface; altered volcanic ash (bentonite) 90 m.y.
MESOZOIC	CRETACEOUS	Frontier Formation	80 - 140 ft.	"cannonball" concretions (15' in diameter)
MESOZOIC	CRETACEOUS	Mowry Shale	130 ft. 7000'	coaly shale; black shale
MESOZOIC	CRETACEOUS	Dakota Sandstone	50 - 100 ft.	scales of marine fish, silver-gray shales
MESOZOIC	CRETACEOUS	Cedar Mountain Fm	30 - 60 ft.	
MESOZOIC	JURASSIC	Morrison Formation	850 ft.; 6000'	Dinosaur Quarry; fossil logs; multicolored mudstones
MESOZOIC	JURASSIC	Stump Formation	70 - 210 ft.	marine fossils (clams, oysters, belemnites)
MESOZOIC	JURASSIC	Entrada Sandstone	40 - 160 ft.	ancient sand dunes
MESOZOIC	JURASSIC	Carmel Formation	0 - 130 ft.	redbeds, reptile/dinosaur tracks; chert pebbles at unconformity
MESOZOIC	JURASSIC	Glen Canyon Sandstone	590 - 660 ft.; 5000'	ancient sand dunes—equivalent to Navajo and Wingate Sandstones of Colorado Plateau
MESOZOIC	TRIASSIC	Chinle Formation	300 ft.	reptile tracks, bones, teeth; logs in channel-fills
MESOZOIC	TRIASSIC	Moenkopi Formation	560 - 790 ft.; 4000'	Gartra Sandstone Member; redbeds; reptile tracks; gypsum beds; marine fossils (brachiopods, snails, clams); phosphorite
PALEOZOIC	PERMIAN	Park City Fm	30 - 160 ft.	
PALEOZOIC	PENNSYLVANIAN	Weber Sandstone	920 - 1150 ft.; 3000'	Steamboat Rock; Grand Overhang; ancient sand dunes
PALEOZOIC	PENNSYLVANIAN	Morgan Formation	1 - 920 ft.; 2000'	red sandstones, gray to lavender limestones; marine fossils (brachiopods, crinoids, bryozoans, fusulinids); red chert; coral; source of landslides; Jones Hole Spring—source of Jones Creek
PALEOZOIC	PENNSYLVANIAN	Round Valley Ls	290 - 390 ft.	marine fossils (brachiopods, corals, bryozoans); red chert
PALEOZOIC	MISSISSIPPIAN	Doughnut Formation	100 ft.	plant fossils
PALEOZOIC	MISSISSIPPIAN	Humbug Formation	230 ft.	
PALEOZOIC	MISSISSIPPIAN	Madison Limestone	1000'; 590 - 650 ft.	caves; warm springs in Split Mountain Canyon, corals, brachiopods; gray chert; Equivalent to the Redwall Limestone of the Grand Canyon
PALEOZOIC	CAMBRIAN	Lodore Formation	230 - 590 ft.	trilobites and brachiopods; Dunns Cliff
Precambrian Proterozoic		Uinta Mountain Group	6900+ ft. bottom unexposed	Rb-Sr radiometric age of 1090 m.y. in shale bed; dark gray dike near Pot Creek —483 m.y. Rb-Sr age

ISLAND PARK SECTION
DINOSAUR QUARRY SECTION
DEERLODGE PARK SECTION
SPLIT MOUNTAIN SECTION
WHIRLPOOL CANYON SECTION
YAMPA CANYON SECTION
LODORE CANYON SECTION

Compiled by Emmett Evanoff, 1988