



Fact Guide for Capitol Reef National Park

TABLE OF CONTENTS

Capitol Reef Geology & Rock Layers	Page 2
Ecology	Page 7
Weather	Page 10
Culturally Associated Tribes	Page 12
Site Disclosure Policy	Page 13
Cultural Chronology	Page 15
Clarification, Distances, & Statistics	Page 25
References	Page 37

Interpretation Team

Updated 2019

CAPITOL REEF GEOLOGY & ROCK LAYERS

This table gives guidance for the official names and ages of Capitol Reef’s exposed rock layers. Dates for periods are from the 2017 International Chronostratigraphic Chart from the International Commission on Stratigraphy as well as a cursory review of recent geological research (see sources below) and should be interpreted as a typical age near the middle of the formation (Fm) or rock layer. It should be noted that much controversy exists in the scientific community over the exact date ranges for all of the following. Figures are constantly being revised.

Rock layer	Approximate Age (Ma: Millions of Years Ago)	Period and Era
Tarantula Mesa Sandstone	80-76 Ma 78 Ma	Cretaceous (Late) Mesozoic
Masuk Fm	81-78 Ma 80 Ma	Cretaceous (Late) Mesozoic
Muley Canyon Sandstone	84-80 Ma 82 Ma	Cretaceous (Late) Mesozoic
Mancos Shale	96 – 72 Ma 90 Ma	Cretaceous (Late) Mesozoic
Dakota Sandstone	100 – 94 Ma 95 Ma	Cretaceous (Late) Mesozoic
Cedar Mountain Fm (discontinuous)	120 – 100 Ma 117 Ma	Cretaceous (Early) Mesozoic
<i>Unconformity</i>		
Morrison Fm	155 – 148 Ma 150 Ma	Jurassic (Late) Mesozoic
Brushy Basin Member <i>Unconformity</i>	150 – 148 Ma 149 Ma	
Salt Wash Member <i>Unconformity</i>	154 – 150 Ma 152 Ma	

FACT GUIDE for CAPITOL REEF NATIONAL PARK

Tidwell Member		
<i>Unconformity</i>		
Summerville Fm	159 – 157 Ma 158 Ma	Jurassic (Late) San Rafael Group Mesozoic
Curtis Fm	161 – 159 Ma 161 Ma	Jurassic (Late) San Rafael Group Mesozoic
Entrada Sandstone	161 – 166 Ma 163 Ma	Jurassic (Middle) San Rafael Group Mesozoic
Carmel Fm	170 - 166 Ma 168 Ma	Jurassic (Middle) San Rafael Group Mesozoic
Page Sandstone (discontinuous)	170 Ma	Jurassic (Middle) San Rafael Group Mesozoic
<i>Unconformity</i>		
Navajo Sandstone	200 – 175 Ma 180 Ma	Jurassic (Early) Glen Canyon Group Mesozoic
Kayenta Fm	200 – 195 Ma 193 Ma	Jurassic (Early) Glen Canyon Group Mesozoic
Wingate Sandstone	205 - 200 Ma 200 Ma	Triassic/Jurassic (Early) Glen Canyon Group Mesozoic
<i>Unconformity</i>		

FACT GUIDE for CAPITOL REEF NATIONAL PARK

Chinle Fm	220 - 208 Ma 215 Ma	Triassic (Late) Mesozoic
Shinarump Member (discontinuous)	218 Ma	
<i>Unconformity</i>		
Moenkopi Fm	252- 247 Ma 249 Ma	Triassic (Early) Mesozoic
<i>Unconformity</i>		
Kaibab Limestone	283 – 268 Ma 270 Ma	Permian (Early) Paleozoic
<i>Unconformity</i>		
White Rim Sandstone	283 - 273 Ma 275 Ma	Permian (Early) Paleozoic

Periods:

Jurassic-Cretaceous boundary: 145.0 Ma

Triassic-Jurassic boundary: 201.3 Ma

Permian-Triassic boundary: 251.9 Ma

Eras:

Paleozoic : 541.0 to 251.9 mya; meaning ‘ancient life’ (Greek)

Mesozoic: 251.9 to 66.0 mya; meaning ‘middle life’ (Greek); also called the age of reptiles.

Cenozoic: 66.0 mya – present; meaning ‘new life’ (Greek)

Capitol Reef Geology & Rock Layers continued

Extrusions of lava associated with igneous activity west of the Waterpocket Fold produced 20 Ma basalt flows that presently cap Boulder and Thousand Lakes Mountains. Debris slides, floods, alluvial processes, and glacial intervals transported boulders, cobbles, and gravel from approximately 150,000 to 5,000 years ago.

The Laramide Orogeny was a period of [mountain building](#) in western [North America](#), which started in the [Late Cretaceous](#), 75 Ma, and ended about 35 Ma. The exact duration and ages of beginning and end of the orogeny are in dispute. The Laramide orogeny occurred in a series of pulses, with quiescent phases intervening. The phenomenon is named for the [Laramie Mountains](#) of eastern [Wyoming](#). A secondary uplift occurred no more than 30 mya, possibly related to isostasy (rebound of the crust as materials erode).

Other expressions of time:

Ga (billion years ago)

Ma (million years ago)

ka (thousand years ago)

Capitol Reef's Fossil Record

Spans 200 million years of Earth's past, encompassing the entire Mesozoic Era (251 to 65.5 Ma), marked by rapid diversification of life, highlighted by the rise of the dinosaurs.

Triassic Trackways and swim traces of two crocodile-like species, *Chirotherium* and *Rotodactylus*, are found as sandstone casts in mudstone layers of the Moenkopi Fm. These trackways indicate that these species lived in a coastal mudflat environment.

Plant Megafossils are found within the Chinle Fm. Large plant fossils – preserved as impressions, petrifications, and casts – contain representatives from most major groups of vascular plants including ferns, horsetails, and conifers. The types of plant species found in the Chinle suggest that 200 Ma, southern Utah was a land of rivers and swamps with a wet, tropical climate.

Giant Stromatolites are found within the desert-formed Navajo Sandstone. Stromatolites are layered structures formed by the accumulation of cyanobacteria as a growing mat of bacterial filaments. They are the oldest fossils on Earth (dating back over three billion years), were the dominant life form for more than two billion years, and are thought to be primarily responsible for the oxygenation of the atmosphere. 15-ft-high stromatolites here suggest that the desert of the Navajo Formation had large bodies of standing water, indicating interdunal playa deposits and challenging former assumptions that it was entirely dry.

Oyster Shells reflect a time when a shallow seaway inundated this area and created brackish marine conditions. These shells were concentrated in the coastal plain depositional system preserved as the Dakota Sandstone.

Glossary of Useful Terms for Understanding Capitol Reef Geology

Basalt - A dark extrusive igneous rock composed chiefly of calcium plagioclase and pyroxene.

Crystal - The multi-sided form of a mineral, bounded by planar growth surfaces, that is the outward expression of the ordered arrangement of atoms within it.

Diagenesis – All of the changes which happen to sediment after deposition, excluding weathering and metamorphism. Diagenesis includes compaction, cementation, leaching and replacement.

Eolian – A term used in reference to the wind. Eolian materials or landforms deposited by or created by the wind.

Erosion – The removal and transportation of earth materials by gravity, wind, water and ice.

Formation – A formation is a rock unit that is distinctive enough in appearance that a geologic mapper can tell it apart from the surrounding rock layers. It must also be thick enough and extensive enough to plot on a map. Formations can be lumped together into larger rock units called groups, and divided into smaller units called members.

Gem – A natural mineral or organic substance that is prized for its substantial beauty, rarity, and durability. *“Gemstones are the sexy minerals. If minerals are like different sorts of people, gemstones are the supermodels.” -Andrew Alden*

Igneous rock – Rock formed from the cooling and crystallization of lava or magma, above or below the surface.

Laccolith – An igneous intrusion that has domed the overlying rock.

Lava – Molten rock that flows at the Earth’s surface.

Lithification – The processes through which sediment is converted into sedimentary rock, including compaction and cementation.

Magma – Molten rock beneath the Earth’s surface.

Mineral – An inorganic solid that has a characteristic chemical composition and specific crystal structure, e.g., quartz, feldspar, gypsum.

Ore – An economically viable mineral deposit, most commonly metallic minerals.

Rock – A solid Earth material composed of minerals, rock fragments, cement, or glass, e.g., sandstone, limestone, basalt.

Strata – Visually distinct layers of sedimentary rock.

Uplift – Upward movement of the Earth's crust.

Volcanic – Any of various processes and phenomena associated with the surficial discharge of molten rock, pyroclastic fragments, or hot water and steam, including volcanoes, geysers, and fumaroles.

Weathering – The physical disintegration and chemical decomposition of rocks at the Earth's surface.

CAPITOL REEF ECOLOGY

List of Eco zones, key species, information on air quality designation, night sky levels, river information including cfs flows and quality, snowfall, rainfall, flashfloods, ESA and orchard information.

Data from [Irma.nps.gov](http://irma.nps.gov) and Northern Colorado Plateau Network.

(239) Bird Species

(71) Mammal Species

(15) Reptiles

(5) Amphibians

(13) Fish, Native #, Non-native #

(909) Vascular Plants 29 locally endemic, 124 introduced species

Total species: 1252

(6) Vegetation Communities

Riparian & Wetland community

Mixed shrub community

Grassland community

Badlands community

Pinyon-Juniper woodland community

Mixed Conifer woodland community

(33) Ecological Systems

Rocky Mountain Aspen Forest and Woodland

Southern Rocky Mountain Mesic Montane Mixed Conifer Forest and Woodland

Southern Rocky Mountain Dry - Mesic Montane Mixed Conifer Forest and Woodland

Southern Rocky Mountain Ponderosa Pine Woodland

Inter-Mountain Basins Subalpine Limber - Bristlecone Pine Woodland

Inter-Mountain Basins Curl-leaf Mountain Mahogany Woodland and Shrubland

Colorado Plateau Pinyon-Juniper Shrubland

Colorado Plateau Pinyon-Juniper Woodland

Colorado Plateau Mixed Bedrock Canyon and Tableland

Rocky Mountain Gambel Oak - Mixed Montane Shrubland

Rocky Mountain Lower Montane - Foothill Shrubland

Great Basin Semi-desert Chaparral

Inter-Mountain Basins Montane Sagebrush Steppe

Inter-Mountain Basins Big Sagebrush Shrubland

Colorado Plateau Mixed Low Sagebrush Shrubland

Colorado Plateau Blackbrush - Mormon-tea Shrubland

Inter-Mountain Basins Semi-desert Shrub-Steppe

Southern Colorado Plateau Sand Shrubland

Inter-Mountain Basins Active and Stabilized Dune

Inter-Mountain Basins Greasewood Flat

Inter-Mountain Basins Mixed Salt Desert Scrub

Inter-Mountain Basins Shale Badland

Inter-Mountain Basins Wash

Inter-Mountain Basins Semi-desert Grassland

Rocky Mountain Subalpine - Montane Riparian Woodland

Rocky Mountain Lower Montane - Foothill Riparian Woodland and Shrubland

North American Warm Desert Riparian Woodland and Shrubland

North American Arid West Emergent Marsh

Colorado Plateau Hanging Garden

Natural Features of Special Interest

Unvegetated Geologic Exposures

Developed Areas

Open Water

(9) Threatened (T), Endangered (E), and Candidate (C) Species

Plants:

Barneby reed-mustard	<i>Schoenocrambe barnebyi</i>	E
Jones cycladenia	<i>Cycladenia humilis v. jonesii</i>	T
Last Chance townsendia	<i>Townsendia aprica</i>	T
Ute ladies- tresses	<i>Spiranthes diluvialis</i>	T
Winkler cactus	<i>Pediocactus winkleri</i>	T
Wright fishhook cactus	<i>Sclerocactus wrightiae</i>	E

FACT GUIDE for CAPITOL REEF NATIONAL PARK

Animals:

Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	T
Southwestern Willow Flycatcher	<i>Empidonax traillii extimus</i>	E
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	C

Utah Division of Wildlife has a sensitive species list. State Natural Heritage Program has a list of sensitive plant species.

WEATHER

Capitol Reef National Park has an arid climate with precipitation averaging 7.98 inches annually at the park visitor center weather station.

Monthly temperatures vary 5°F - 10°F on either side of the average high or low

Data collected by the National Weather Service from 1986 - 2010

	Av. High (°F)	Av. Low (°F)	Record High (°F)	Record Low (°F)	Av. Precip. (inches)	Max Precip. (inches)	Average Snowfall (inches)	Max Snowfall (inches)
January	41.0	20.3	62.0	-2.0	0.6	0.9	4.9	14.0
February	46.8	25.5	71.0	-7.0	0.5	1.5	1.7	6.5
March	57.3	33.3	80.0	11.0	0.7	1.5	2.3	7.0
April	65.7	39.7	89.0	22.0	0.5	1.3	0.5	2.0
May	75.6	48.6	97.0	29.0	0.6	0.9	0.0	0.4
June	86.2	57.7	103.0	35.0	0.5	1.0	0.0	0.0
July	91.6	64.7	104.0	48.0	0.9	1.4	0.0	0.0
August	88.0	62.5	101.0	50.0	1.3	1.5	0.0	0.0

FACT GUIDE for CAPITOL REEF NATIONAL PARK

September	80.0	54.2	96.0	35.0	0.8	0.8	0.0	0.0
October	66.3	43.0	88.0	23.0	0.9	1.8	0.1	0.8
November	51.3	30.3	75.0	11.0	0.5	0.9	1.0	4.0
December	40.8	21.2	67.0	-7.0	0.3	0.9	2.7	8.0

CAPITOL REEF TRADITIONALLY ASSOCIATED TRIBES

The following list provides information on Capitol Reef's Associated Tribes, as well as further information about this terminology.

Thirty-two tribes have demonstrated ongoing association with Capitol Reef through current and/or historic traditional uses, occupation of the area predating EuroAmerican settlement, and/or descent from archeologically identified cultural groups. Tribes are federally recognized entities that went through a special acknowledgement process with the federal government.

- Jicarilla Apache Nation
- Skull Valley Band of Goshute Indians of Utah
- Kaibab Band of Paiute Indians
- Las Vegas Tribe of Paiute Indians
- Moapa Band of Paiute Indians
- San Juan Southern Paiute Tribe of Arizona
- Paiute Indian Tribe of Utah
- Pueblo of Acoma
- Pueblo of Cochiti
- Hopi Tribe
- Navajo Nation
- Pueblo of Isleta
- Pueblo of Jemez
- Kewa Pueblo
- Pueblo of Laguna
- Pueblo of Nambe
- Ohkay Owingeh
- Pueblo of Picuris
- Pueblo of Pojoaque
- Pueblo of Sandia
- Pueblo of San Ildefonso
- Pueblo of Santa Ana
- Pueblo of Santa Clara
- Pueblo of Taos
- Pueblo of Tesuque
- Pueblo of Zia
- Zuni Tribe of the Zuni Reservation
- Confederated Salish and Kootenai Tribes of the Flathead Reservation
- Ute Indian Tribe of the Uintah and Ouray Reservation
- Ute Mountain Tribe of the Ute Mountain Reservation
- Southern Ute Indian Tribe of the Southern Ute Reservation

Traditionally Associated Peoples are defined as social/cultural entities such as tribes, communities, and kinship units, as well as park neighbors, traditional residents, and former residents who remain attached to a park area despite having relocated, are “traditionally

associated” with a particular park when (1) the entity regards park resources as essential to its development and continued identity as a culturally distinct people; (2) the association has endured for at least two generations (40 years); and (3) the association began prior to establishment of the park.

The term **Traditionally Associated Peoples** potentially applies to other groups with enduring associations but includes tribes and so, when we are specifically referring to tribes, we say Tribes instead of Peoples.

The term **Culturally Affiliated** is a specific term defined in the Native American Graves Protection and Repatriation Act. In that context it has a specific legal use that relates to modern tribal peoples cultural relationship to people who were here before.

CAPITOL REEF NATIONAL PARK’S ARCHEOLOGICAL RESOURCES DISCLOSURE POLICY

(Office Order CARE 25) outlines disclosure of sites, features and artifacts, documentation of unsolicited objects, and stewardship practices concerning archeological resources and their stewardship in the park.

Class I Sites are well-documented, publicized, widely known, easily accessible, closely monitored and do not pose a significant safety risk to visitors. Park staff may direct visitors to these sites:

- 42WN184 and 190 Fruita Highway Panels (along boardwalk)
- 42WN157 Hickman Bridge Trail Pithouse
- 42NW1104 Hickman Bridge Trail Petroglyph (snake)
- 42NW159 Hickman Bridge Trail Granary (view from trail; do not enter)
- 42WN191 Capitol Gorge Images
- Pioneer Register

Class II Sites are somewhat well-known, can endure some visitation but cannot endure heavy traffic without incurring damage. These site locations may be disclosed privately only when visitors request information by site name, and only after site etiquette rules have been reviewed.

Class III Sites are not to be disclosed to anyone, including friends, family and staff members. Resources protected by the Archeological Resource Protection Act are not subject to the Freedom of Information Act. Persistent requests should be referred to the park Cultural Resources Program Manager, Chief of Visitor and Resource Protection or Chief of Resource Management and Science.

Collection of any archeological artifact is prohibited. In the event a visitor brings in an object or reports a site location, the ranger receiving the object and/or information must document it

on the appropriate form (Site Discovery Form or Artifact Report Form), given immediately to the Cultural Resources Program Manager. All instances of collection must be reported to a Visitor and Resource Protection Ranger. Provide visitors with a site etiquette message so that they will be educated for the future.

For additional information addressing researchers, suspicious inquiries, or requests by educational groups, see Capitol Reef National Park's Archeological Resources Disclosure policy (Office Order CARE-25).

CAPITOL REEF CULTURAL CHRONOLOGY

Gradual transitions existed between the succession of cultural groups. Some changes were based on environmental causes. Note the current preferred use of B.C.E./C.E (before common era/common era).

Paleo-Indian – Protohistoric

Paleo-Indian: **10,000-7000 B.C.E.**

Hunter-gatherers. Small nomadic groups, hunting large, now extinct, game (Giant Bison, Mammoth) in addition to easier game, such as caribou. Diagnostic artifacts include Clovis and Folsom spear points. Cool, moist environment. Diagnostic artifacts found in the area immediately adjacent to Capitol Reef.

Archaic: **7000-500 B.C.E.**

Hunter-gatherers. Small groups, hunting game common now (big horn sheep, deer, elk, antelope). Nomadic with annual regional migrations. Diagnostic artifacts include atlatls (spear- or dart-throwing sticks) and distinctive stone points. Lived in alcoves, with late Archaic making pit houses. Warmer and moister climate initially, then trending towards a dryer climate overall. Archaic petroglyphs and pictographs, point scatters, and Archaic-age campsites are found in Capitol Reef.

Formative (farmers): **300-1300 C.E.**

Fremont Culture: 300-1300 C.E. evidence showing their presence

600-1200 C.E. time of prosperity

We say “The people called the Fremont Culture by archeologists lived in the area for 600 years”

Capitalize on corn, beans and squash as a food source while continuing hunting/gathering. Develop pottery and utilize the bow and arrow introduced from the north. The Fremont River Canyon (namesake) in Capitol Reef is the type locale (where their culture was identified and defined by archeologists) for Fremont Culture. Dwellings consisted of pit houses, alcoves and summer camps. Anthropomorphic petroglyphs and pictographs have characteristically trapezoidal-shaped bodies, and there are numerous geometric bighorn sheep figures and linear symbols. Diagnostic artifacts include granaries, grinding stones, distinctive projectile points and tools, one-rod-and-bundle basketry, moccasins, black-on-grayware coil pots (some with applique), ceramics, and unfired clay figurines.

Ancestral Puebloan: **600-1300 C.E.**

Largely sedentary farmers who coexisted here with Fremont Culture. Ancestral Puebloans predominantly (but not exclusively) occupied the southern portion of the park, with Capitol Reef at the northern periphery of their range. Primarily found in south of the Colorado River with MEVE a prime example of Ancestral Puebloan culture. Six Ancestral Puebloan developmental stages from Late Basketmaker II through Pueblo IV demonstrate a progression of dwellings from pit houses to above-ground masonry structures for aggregate communities, and changes in basketry and pottery styles and predominance.

Late Prehistoric: 1250-1540 C.E.

Ancestral Puebloan and Fremont Culture migrated, possibly due to resource overuse, drought, disease, cold, and/or dispersal into area cultural groups.

Evidence left by ancestors of today's Ute and Paiute (Numic-speaking) people appears in the archaeological record during this time (and perhaps earlier). They largely followed a hunter-gatherer lifeway and lived in wicki-ups.

Protohistoric: 1540-1800s C.E.

Ute, Paiute, Hopi, Zuni and Navajo claim cultural association via Fremont and Ancestral Puebloan ancestors. These indigenous people interact with whites for the first time. A summary of their cultures can be found in the park's General Management Plan.

Sources for Capitol Reef Cultural Chronology dating of prehistoric Native American Indian cultures:

Janetski, Joel C.; Lee Kreutzer; and Richard K. Talbot, *Life on the Edge: Dating Fremont Culture in Capitol Reef National Park* (Museum of Peoples and Cultures, Brigham Young University, 2005), 373.

Simms, Steven R. and Francois Gohier. *Traces of the Fremont: Society and Rock Art in Ancient Utah* (University of Utah Press, 2010), 18-20.

Other:

“Land of the Sleeping Rainbow” per Cindy Micheli, may be lore that has found a place through time. It has been passed down that one Navajo day-laborer called it “Land of the Sleeping Rainbow” and now is used by many. Lurt Knee created “Sleeping Rainbow Ranch” at Pleasant Creek.

The Paiute name for the Waterpocket Fold is *Tempi'avich*, or “rock lying down.” The Navajo name is *Tó bit yildzis*, or “the depression with water.”

Historic (1854-1900)

Historic Period of the Fruita Rural Historic District: 1880-1941 C.E.

Chronology of dates and events for Capitol Reef, Fruita, Capitol Reef National Monument and Capitol Reef National Park from 1884 to 1991 (from the Administrative History of Capitol Reef National Park, Utah, by Bradford J. Frye)

- 1854 John C. Fremont's 5th and last cross-country expedition passed through Upper Cathedral Valley. Solomon Nunes Carvalho, the expedition's daguerreotypist, took the first known photograph of Capitol Reef.
- 1865 The Black Hawk War breaks out between the Mormon Battalion and members of the Ute, Paiute, Navajo, and other tribes. Early Wayne county pioneer settlements were abandoned during this time. The canyons of Capitol Reef were used by Native American tribes to flee from the Mormon Battalion and hide stolen cattle during the war.
- 1866 Captain James Andrus and adjutant Franklin B. Woolley led a group of mounted militia charged with exploring territory west of Capitol Reef. The party observed the Capitol Reef area from Bowns Point on Boulder Mountain and then returned to the west.
- 1869 First Grand Canyon expedition led by John Wesley Powell; Dirty Devil River was named.
- 1872 Almon Harris Thompson, Powell's brother-in-law, led the first expedition to explore and map Capitol Reef and the Henry Mountains. They discovered and named the Escalante River, and also observed Capitol Reef from Bouldertop. The group descended the mountain and apparently passed through the reef via Pleasant Creek, eventually crossing the Henrys and making it to the mouth of the Dirty Devil, where Powell had left a boat. Half the group rowed to Lees Ferry, the other half returned through the fold. Thompson climbed the high point of the Henrys, and named it after his wife, Ellen.
- 1873 A treaty was signed by the Ute and Paiute tribes at Council Grove, UT, ending the Black Hawk War. This opened the area east of Richfield to pioneer settlement.
- 1875 Albert Thurber brought part of the Richfield cooperative (church managed) cattle herd to the Rabbit Valley. Subsequently, individual ranchers added their own cows to the herd, then towns were established: Thurber (now Bicknell) in 1875; Fremont in 1876; Loa and Teasdale in 1878; East Loa (now Lyman) in 1879; Grover in 1880; and Torrey in 1884.
- 1875-6 GK Gilbert investigated the geology of the Henry Mountains, reporting in 1877. He traveled from Salt Lake City, noting a scattering of ranches in the Rabbit Valley, and

FACT GUIDE for CAPITOL REEF NATIONAL PARK

correctly predicting that towns would soon be established. On his way to the Henrys he described and sketched Capitol Reef country. During the second year, he traveled through Halls Creek Narrows. Clarence Dutton soon followed and produced the epic 'Geology of the High Plateaus of Utah' in 1880.

- 1879-80 The Hole-in-the-Rock party traveled during the winter from Escalante to Bluff through very difficult country to settle extreme southeast Utah.
- 1881 Charles Hall was chosen to find a better route to Bluff and established the path through Lower Muley Twist and Halls Creek to the Colorado River. Hall operated a ferry there for just three years.
- 1881 or 1882 Ephraim K. and Thisbe Read Hanks settled along Pleasant Creek
- 1882 The federal Edmunds Act outlawed polygamy.
- 1882 Behunin cabin built
- 1883 Elijah Cutler Behunin cleared the road through Capitol Gorge.
- 1883 Cass Hite discovered gold on a sandbar in the Colorado River, setting off a mini gold rush that caused the cattle trail on the east side of the park to be improved to a wagon road.
- 1886-7 A brutal winter killed hundreds of thousands of cattle and sheep. The market crashed, and several years of severe drought followed.
- Late 1880s Original homestead claims in Fruita were filed by Nels Johnson, Leo Holt, Elijah Cutler Behunin, and Hyrum Behunin.
- 1890 Jack Sumner discovered gold in the Bromide Basin in the Henrys, starting another mini gold rush. The town of Eagle City arose and was a ghost town by 1900.
- 1896 The Fruita School was built by the community on land donated by Elijah Cutler Behunin or Amasa Pierce. The gable roof was added in 1914 and interior plaster in the 1930s. The building also served as a community center and occasionally for Sunday school and church services. When dances were held, the band was usually inside, and the dancers outside.
- 1890s-1930s Two lime kilns operated in Fruita (one west of the VC along Sulphur Creek – it collapsed in 2013; the other is along the Scenic Drive in the tent area of Loop B of the campground). Lime was used for mortar, plaster, whitewash, and possibly as an insecticide for the orchards. The last production was for mortar for the Caineville school.

Historic (1900-1954)

- 1900 Elijah Cutler Behunin became the first presiding elder of the Fruita branch of the Torrey Ward.
- 1900-1934 50,000 sheep were shorn each year at the Notom and Sandy ranches.
- 1901 Thomas Pritchett and HJ McClellan filed the Nightingale Claim on the area now known as the Oyler Mime. By 1937 the same area had been filed upon approximately 80 times.
- 1910 There were 19 adults and 42 children living in Fruita.
- 1910s Copper, lead, and iron were mined on Miners Mountain.
- 1920-1 First oil drilling in the area (near Wagon Box Mesa) resulted in a dry hole.
- 1921 A local boosters club was formed by Joe Hickman, principal of the high school, and Ephraim Pectol, Torrey merchant, to promote Wayne Wonderland, a term attributed to Pectol. Later, this group merged with the Richfield Chamber of Commerce, Salina Lions Club, and Wayne Commercial Club to become the Wayne Wonderland Club.
- 1925 Hickman, now a legislator, carried a bill to create the Utah Board of State Park Commissioners, but no funding was allocated. Nonetheless, a rumor circulated that Wayne Wonderland State Park had been created, and a large celebration was held on July 18-19. Governor George Dern attended and spoke on the 19th in general terms extolling the beauty of the area, but he was reluctant to propose funding for state parks. A week later, Joe Hickman drowned in Fish Lake, and momentum for the creation of a park was lost.
- 1931 The first NPS consultation with local boosters occurred when Zion superintendent Thomas Allen Jr. met with interested citizens.
- 1933 The Utah legislature passed a resolution urging fast federal action to create a Wayne Wonderland National Park or Monument.
- 1934 The Taylor Grazing Act asserted the first federal control over grazing.
- 1934 Roger Toll, superintendent at Yellowstone, and designated investigator of proposed NPS sites in the western United States, issued a report recommending the creation of Wayne Wonderland National Monument, with boundaries similar to those adopted in 1937.

FACT GUIDE for CAPITOL REEF NATIONAL PARK

- 1934 A report to the Utah State Planning Board suggested a much larger park than Toll proposed.
- 1935 An NPS proposal suggested adding the Fremont River Gorge and Fish Creek Cove to the monument.
- 1935 The Utah revised plan for recreation continued to propose a large (360 square mile) park.
- 1935 The first decreed water rights on the lower Fremont River were declared. Seven Fruita residents were allocated 8 cubic feet per second (cfs) from the 56 cfs available. The Fremont very frequently had flows far less than 56 cfs.
- 1935 Preston Patraw, Zion superintendent, made two visits to the area, primarily to sort out boundaries for the new monument. His report included the results of the first aerial inspection of the park, and for the first time, replaced the Wayne Wonderland name with Capitol Reef, so that a national monument would not be named for a specific county. Patraw's report was more detailed than Toll's and formed the basis for Capitol Reef National Monument (CRNM).
- 1936 CRNM status was postponed while the proposed huge Escalante NM was discussed. The ENM was to cover all the ground from the Green River south to Arizona, and from Moab and Blanding west to Escalante. Opposition reduced the proposal to a strip along the Colorado River which eventually became Glen Canyon National Recreation Area.
- 1937 Franklin Delano Roosevelt created CRNM under the Antiquities Act.
- 1938-42 The Chimney Rock CCC camp was established. Their work included construction of the ranger station, stream bank stabilization, road construction, and improvements to the Hickman Bridge Trail. During this time the State Road Commission paved the road from Sigurd to Torrey.
- 1940 Lurton (Lurt) and Margaret Knee purchased the Floral Ranch on Pleasant Creek, and converted it to the Sleeping Rainbow Guest Ranch. The park bought pieces of the ranch from 1974-78 and Lurt and Alice Knee were granted a life estate on a small part of the property. Lurt Knee died in 1995; Alice moved to a nursing home at that time, making her the last resident of Capitol Reef.
- 1943 The phone line from Notom, through Capitol Gorge and Fruita up to Torrey was abandoned; it had been unreliable throughout its existence.
- 1943 The park acquired the Alma Chesnut property, and with it, the first water rights. Charles Kelly and wife Harriette Greener Kelly were invited to reside in the house, primarily

so the water would continue to be used and the rights to it maintained.

- 1944 Charles Kelly was named volunteer custodian of the park.
- 1946 Construction of the Capitol Reef Lodge began. It was modeled on Zion Lodge, but the money soon ran out and the structure was modest.
- 1948 The Atomic Energy Commission (AEC) bulldozed a rough track up the Burr Trail switchbacks, and in 1953 blasted and improved the road.
- 1948 The first electric line reached Fruita.
- 1949 A master plan for CRNM was developed by Zion superintendent Charles Smith. In the document Smith notes, "The choice building sites are in private ownership within the monument and private enterprise is at present developing a hodge-podge of cabin camps, beer joints and cheap shops on private land."
- 1950 On May 1, CRNM was officially activated, with a budget of \$6500, which included Charles Kelly's salary as the first ranger. Kelly was 61 at the time.
- 1950 More than two dozen people filed claims on the Oyler Mine, thus effectively preventing any actual mining.
- 1950 Visitation (a road count actually) was estimated at 8000.
- 1952 In response to the uranium boom, paving of the road from Green River to Hanksville began.
- 1952 A large piece of the main petroglyph panel fell down, and pieces of it were collected by residents.
- 1953 Visitation was 16000.
- 1953 The first interpretive exhibit was installed in the CCC ranger station.
- 1954-mid 60s The Rainy Day Mines, 4 miles south of the Burr Trail switchbacks, produced a considerable amount of uranium ore. By 1986 these claims, the last in CRNP, were declared null and void.

Historic (1955-1978)

- 1955 The future of Fruita was determined by Superintendent Franke of Zion. Some NPS personnel suggested that Fruita be removed from the monument boundaries, but Franke strongly resisted this idea. He said, "It is difficult for me to accept permanent abandonment and alienation of desirable lands within the area merely for the reason that funds for acquisition would be difficult to obtain. History has taught me that in our National parks and monuments we usually strangle ourselves by too little land with the result that objectives highly important are lost forever...History also teaches that a compromise with ideals and retreat to a line that can be defended before local citizens is a good method for increasing the 'headaches'. If a National park or monument is worthy let's fight for it. If the area is not worth that national status let's recommend its abolishment." Franke's position was eventually confirmed.
- 1956 All uranium prospecting in CRNM was done, as the AEC stopped underwriting prospecting. However, the Yellow Joe and Yellow Canary claims south of the Grand Wash Road were worked from 1955 until the early 1960s. The NPS acquired the claims in 1967 and did some restoration work.
- 1956 The Mission 66 Prospectus outlined the transition of CRNM to a "...fully functioning, increasingly popular unit of the National Park System."
- 1956 Visitation was 67,500.
- 1956-62 The future of the orchards was very uncertain. They survived largely due to happenstance and local circumstance until Mission 66 was implemented.
- 1957 The road from Torrey to Fruita was paved.
- 1958 The first permanent ranger, Grant Clark, was employed. By this time Charles Kelly had been appointed superintendent.
- 1958 The NPS agreed to not charge an entrance fee on highway 24 whenever the road was built.
- 1959 Charles Kelly retired.
- 1959 National Park Service initiated condemnation proceedings on tracts of land owned by Dean Brimhall, Max Kreuger, Cora Oyler Smith, and Elizabeth Sprang in preparation for Highway 24.
- 1960 CRNM became independent of Zion's coordinated supervision on February 1.

1960 The electric line was completed through the Fremont River canyon.

1960 Visitation exceeded 100,000.

1961 The NPS received a declaration of taking (condemnation) for the properties of Max Krueger and Cora Smith in order to build highway 24. Other properties necessary were purchased. These parcels carried with them 3.84 cfs of water.

Early 1960s As the park acquired water through purchase of inholdings, it had to be used in order for the rights to be maintained. Worthen Jackson was given a special use permit for \$100 to operate the orchards and keep whatever profit ensued. He and his son Kent ran them until 1971. The next year Robert Sweet of Taylorsville maintained the orchards. In 1973 the Torrey Ward harvested the cherries; Colleen Shelley the peaches and apricots; and the Wayne County Jeep Posse got the apples and pears. In 1974 the National Guard did the harvesting, but hunting season diverted attention and a lot of apples and pears rotted on the ground. In 1973 Kent Jackson and Richard Jensen were hired as orchard seasonal, and Emmet Clark was the full time manager from 1975 until his retirement in 1985.

1960s Power and phone service were extended to the Sleeping Rainbow Ranch.

1962 Paved highway 24 was completed through the Fremont River canyon.

1962 The Capitol Gorge road was closed, touching off considerable local controversy.

1962 Phone service became available in Fruita.

1962 Visitation exceeded 200,000.

1963 The water treatment plant and campground in its present location were finished. Until this time the only park buildings were the CCC ranger station, and the Alma Chesnut house where Charles Kelly had lived.

1964 Six houses and the apartment building in the housing area were constructed, and the maintenance building completed.

1964 Clair Bird obtained a lease on state land ¼ mile west of the current visitor center and built a gas station. In 1970 he began mining ripple rock there. He also owned the lodge, where his attention to Park Service concessionaire rules was spotty. The quarry for rock set off years of friction with the park until in 1978 the NPS asked the US Senate's Interior and Insular Affairs Committee to issue a declaration of taking for all of Bird's property, including the lodge. Compensation was \$400,000. He was ordered to vacate by

FACT GUIDE for CAPITOL REEF NATIONAL PARK

- June 15, and soon after the gas station and lodge were razed and the quarry reclaimed.
- 1965 The visitor center opened in June, though the building was not completely finished. Exhibits and AV programs were installed in 1967.
- 1966 The Scenic Drive was improved to a gravel surface with culverts.
- 1966 By this time all of the following were gone: Inglesby house and cabins; all buildings on the William and Dicey Chesnut property; and the log cabin, fruit cellar, sheds, and corrals on the Cass Mulford place.
- 1967 The Burr Trail switchbacks were improved again; the Notom-Bullfrog Road was extended to Bullfrog; and route 276 was built and paved from highway 95 to Bullfrog.
- 1969 President Lyndon Johnson added approximately 200,000 acres to CRNM, igniting local opposition, especially from ranchers fearful that their grazing leases would be lost. Within the added acreage there were 39 permittees authorized for 6077 AUMs. (An AUM is an animal unit per month, defined as a cow and calf.)
- 1970 Interstate 70 was completed through the San Rafael Swell (though only two lanes), thereby greatly reducing the amount of truck traffic through the park.
- 1971 PL 92-207 created CRNP, along with Arches NP. The bill stipulated that grazing leases would be honored until their expiration date, and could then be renewed one time for a period of 10 years.
- 1973-5 The park irrigation system was upgraded with a settling pond, new intake structure, and underground pipe, thereby significantly reducing maintenance requirements.
- 1974 75% of the park was recommended for wilderness status, an amount that was increased to 90% in 1984. These proposals were gathered with those from other parks and presented to Congress in 1978, but were never acted upon. According to NPS policy, however, the areas have been managed as wilderness since.
- 1976 The huge Intermountain Power Project proposal was resurrected. The plan was to build a 3000 MW coal-fired power plant at Factory Butte. The Clean Air Act, passed the same year, designated all national parks as class 1 airsheds which effectively killed the project. A plant half that size was eventually constructed near Delta.
- 1977 Land, including the Behunin cabin and the UDOT waterfall, was purchased from Wonderland Stages for \$275,000.

FACT GUIDE for CAPITOL REEF NATIONAL PARK

1978 The park proposed to cut down about a third of the orchard trees, but a local meeting in Loa expressed strong sentiment to retain them, which was done.

Historic (1980-Present)

1982 PL 97-341 delayed the grazing phase out for 10 additional years.

1982 The first General Management Plan for the park was drafted.

1982 Viking Exploration proposed building a pipeline down the fold, across Halls Creek and up to the abandoned airfield to transport oil from a well just west of the park. All permit applications were denied.

1984 George Davidson began a comprehensive oral history program.

1987 NPS buyouts of grazing allotments were allowed by the department solicitor. That year 69% of CRNPs allotments were purchased by the park for \$220,000. By 1994 only 3 allotments were still active.

1987 The Scenic Drive was paved to its present length.

1991 The Burr Trail was paved from Boulder to the park.

CLARIFICATIONS, DISTANCES, AND STATISTICS

Clarifications

Desert: Capitol Reef NP is classified as desert in terms of weather with less than 10” of precipitation annually; but in terms of ecosystem classification the park is steppe-shrub.

Park Fee: Capitol Reef charges an entrance fee for the area of the park accessed by the Scenic Drive. The park does not collect an entrance fee on Highway 24 under an agreement with the State of Utah. In addition, because of considerations associated with the Fruita Historic District, the park does not collect an entrance fee between the visitor center and campground. Commercial road based tours are not required to pay a fee unless they travel beyond the entrance fee station. Entrance fees may be paid at the visitor center or entrance station. Annual and lifetime passes are sold at the visitor center.

Addresses:

USPS (mailing address): HC 70 Box 15, Torrey UT 84775

UPS & FedEx (physical location): 52 West Headquarters Drive. All deliveries go to the Administration building. Access the compound by the ‘authorized vehicles only’ entranceway.

FACT GUIDE for CAPITOL REEF NATIONAL PARK

For Emergency identification only: Visitor center: 16 South Scenic Drive

Distances

Roads and Trails Designations and distances:

TRAILS	<u>Length (Feet)</u>	<u>Length (Miles)</u>	<u>Length (Meters)</u>	<u>Length (KM)</u>
Trail distances on the detailed list below were obtained through Gary Lenhart from CARE GIS data, March 2014. These are planar, two-dimensional measurements; i.e., they do not account for elevation change, and therefore may be slightly shorter than the actual "on-the-ground" distance. The amount of variance increases with the steepness of the trail.				
Chimney Rock Trail				
--trailhead to west end of loop	<u>2659</u>	<u>0.50</u>	<u>810.5</u>	<u>0.81</u>
--north segment of loop (ending at jct. w/ Chimney Rock Canyon Route)	<u>4502</u>	<u>0.85</u>	<u>1372.2</u>	<u>1.37</u>
--south segment of loop (ditto)	<u>9204</u>	<u>1.74</u>	<u>2805.4</u>	<u>2.81</u>
Goosenecks viewpoint				
--trailhead to viewpoint	<u>487</u>	<u>0.09</u>	<u>148.4</u>	<u>0.15</u>
Sunset Point Trail				
--trailhead to end of trail	<u>2064</u>	<u>0.39</u>	<u>629.1</u>	<u>0.63</u>
Hickman/Rim Overlook/Navajo Knobs				
--trailhead to first jct.	<u>1529</u>	<u>0.29</u>	<u>466.0</u>	<u>0.47</u>
--first jct. to the point where trail passes under Hickman Bridge	<u>3029</u>	<u>0.57</u>	<u>923.3</u>	<u>0.92</u>
--first jct. to Rim Overlook viewpoint	<u>9782</u>	<u>1.85</u>	<u>2981.6</u>	<u>2.98</u>
--Rim Overlook viewpoint to end of trail at Navajo Knobs	<u>12923</u>	<u>2.45</u>	<u>3939.0</u>	<u>3.94</u>
Cohab Canyon				
--west trailhead to jct. w/ viewpoint trail	<u>5767</u>	<u>1.09</u>	<u>1757.8</u>	<u>1.76</u>
--east trailhead to jct. w/ Frying Pan Trail	<u>2446</u>	<u>0.46</u>	<u>745.5</u>	<u>0.75</u>
--Frying Pan Trail jct. to viewpoint trail jct.	<u>153</u>	<u>0.03</u>	<u>46.6</u>	<u>0.05</u>
--viewpoint trail from jct. w/ main trail to fork	<u>1242</u>	<u>0.24</u>	<u>378.6</u>	<u>0.38</u>
--viewpoint trail fork to north viewpoint	<u>374</u>	<u>0.07</u>	<u>114.0</u>	<u>0.11</u>
--viewpoint trail fork to south viewpoint	<u>1271</u>	<u>0.24</u>	<u>387.4</u>	<u>0.39</u>

FACT GUIDE for CAPITOL REEF NATIONAL PARK

Frying Pan Trail

--Cohab Trail jct. to Cassidy Arch Trail jct. 15009 2.84 4574.8 4.57

“VC Trail”

--VC parking lot to Fremont Gorge Overlook trailhead (at Blacksmith Shop) 4293 0.81 1308.5 1.31

--Fremont Gorge Overlook trailhead to Scenic Drive bridge over Fremont River 1245 0.24 379.5 0.38

Fremont Gorge Overlook Trail

--trailhead to end of trail. Includes 832' along service road 11780 2.23 3590.6 3.59

Fremont River Trail

--Scenic Drive bridge over Fremont River to Fremont River trailhead (@ amphitheater parking lot) 1005 0.19 306.3 0.31

--Fremont River trailhead (@ amphitheater parking lot) to gate/fenceline 1394 0.26 424.9 0.42

--gate/fenceline to end of trail 3920 0.74 1194.8 1.19

Grand Wash/Cassidy Arch

--upper Grand Wash trailhead to Cassidy Arch Trail jct. 1011 0.19 308.2 0.31

--Cassidy Arch Trail jct. to lower trailhead (Hwy 24) 10275 1.95 3131.9 3.13

--Cassidy Arch Trail jct. to Frying Pan Trail jct. 5579 1.06 1700.5 1.70

--Frying Pan trail jct. to Cassidy Arch/end of trail 1988 0.38 605.9 0.61

Old Wagon Trail

--trailhead to beginning of loop 4627 0.88 1410.3 1.41

--beginning of loop to viewpoint/knoll on north side of loop 3950 0.75 1204.0 1.20

--remainder of loop from viewpoint/knoll to start of loop via south side of loop 6601 1.25 2012.0 2.01

Capitol Gorge

--Capitol Gorge trailhead to Pioneer Register 2544 0.48 775.4 0.78

--Pioneer Register to Tanks jct. 1859 0.35 566.6 0.57

--Tanks jct. to end of Tanks spur trail 863 0.16 263.0 0.26

FACT GUIDE for CAPITOL REEF NATIONAL PARK

--Tanks jct. to east boundary 7118 1.35 2169.6 2.17

Golden Throne Trail

--Golden Throne trailhead to end of trail 9863 1.87 3006.3 3.01

Length Length Length Length
(Feet) (Miles) (Meters) (KM)

ROADS

Road distances on the detailed list below were obtained through Gary Lenhart from CARE GIS data, March 2014. These are planar, two-dimensional measurements; i.e., they do not account for elevation change, and therefore may be very slightly shorter than the actual "on-the-ground" distance. The amount of variance increases with the steepness of the road. However, roads are typically not steep enough to cause any significant difference between the 2-D and 3-D measurements.

Hwy 24 (west of VC)

--Scenic Drive jct. to Goosenecks Road jct. 12585 2.38 3836.0 3.84
 --Goosenecks Road jct. to Panorama Point parking area 538 0.10 164.0 0.16
 --Panorama Point parking area to end of Goosenecks road @ parking area 4063 0.77 1238.4 1.24
 --Goosenecks Road jct. to Chimney Rock jct. 3353 0.64 1022.0 1.02
 --Chimney Rock jct. to west boundary 16345 3.10 4982.0 4.98
 --west boundary to Hwy 12 jct. 19160 3.63 5840.0 5.84

Hwy 24 (east of VC)

--Scenic Drive jct. to schoolhouse parking area 4000 0.76 1219.2 1.22
 --schoolhouse parking area to petroglyphs parking area 1645 0.31 501.4 0.50
 --petroglyphs parking area to Hickman trailhead parking area 4248 0.80 1294.8 1.29
 --Hickman parking area to lower end of Grand Wash 13842 2.62 4219.1 4.22
 --Grand Wash to Behunin Cabin 7379 1.40 2249.1 2.25
 --Behunin Cabin to Notom Road jct. 16282 3.08 4962.8 4.96

FACT GUIDE for CAPITOL REEF NATIONAL PARK

--Notom Rd jct. to Hartnet Rd. jct.	<u>14310</u>	<u>2.71</u>	<u>4361.7</u>	<u>4.36</u>
--Hartnet Rd. jct. to Cathedral Rd. jct.	<u>35975</u>	<u>6.81</u>	<u>10965.3</u>	<u>10.97</u>
Scenic Drive				
Scenic Drive (from Hwy 24 to the end of the pavement) this does not include Capitol Gorge spur or Grand Wash spur or Pleasant Creek				
--VC/Hwy 24 jct. to Ripple Rock	<u>4616</u>	<u>0.87</u>	<u>1407.0</u>	<u>1.41</u>
--Ripple Rock to Gifford House	<u>1325</u>	<u>0.25</u>	<u>403.9</u>	<u>0.40</u>
--Gifford House to campground A/B loop	<u>691</u>	<u>0.13</u>	<u>210.6</u>	<u>0.21</u>
--campground A/B loop to C loop	<u>1022</u>	<u>0.19</u>	<u>311.5</u>	<u>0.31</u>
--campground C loop to fee station	<u>915</u>	<u>0.17</u>	<u>278.9</u>	<u>0.28</u>
--fee station to Grand Wash jct.	<u>9511</u>	<u>1.80</u>	<u>2899.0</u>	<u>2.90</u>
--Grand Wash jct. to Grand Wash trailhead	<u>6654</u>	<u>1.26</u>	<u>2028.2</u>	<u>2.03</u>
--Grand Wash jct. to Slickrock Divide	<u>9503</u>	<u>1.80</u>	<u>2896.5</u>	<u>2.90</u>
--Slickrock Divide to Old Wagon trailhead	<u>6706</u>	<u>1.27</u>	<u>2044.0</u>	<u>2.04</u>
--Old Wagon trailhead to Capitol Gorge jct./end of pavement	<u>7558</u>	<u>1.43</u>	<u>2303.7</u>	<u>2.30</u>
--end of pavement to Capitol Gorge trailhead	<u>12420</u>	<u>2.35</u>	<u>3785.7</u>	<u>3.79</u>
--(Pleasant Creek Rd) end of pavement to Pleasant Creek crossing	<u>14744</u>	<u>2.79</u>	<u>4494.0</u>	<u>4.49</u>
South Draw Road				
--Pleasant Creek crossing to park boundary	<u>26398</u>	<u>5.00</u>	<u>8046.2</u>	<u>8.05</u>
--park boundary to Hwy 12	<u>56574</u>	<u>10.71</u>	<u>17244.0</u>	<u>17.24</u>
Sulphur Creek Rd (Candy Ranch Rd)				
--west end @ Hwy 24 to park boundary	<u>9976</u>	<u>1.89</u>	<u>3040.7</u>	<u>3.04</u>
--park boundary to east end @ Hwy 24/Twin Rocks pulloff	<u>9941</u>	<u>1.88</u>	<u>3030.1</u>	<u>3.03</u>
Hartnet Road				
--Hwy 24 jct. to Lower South Desert Overlook jct.	<u>74275</u>	<u>14.07</u>	<u>22639.3</u>	<u>22.64</u>
--Lower South Desert Overlook jct. to end of spur road	<u>5991</u>	<u>1.13</u>	<u>1826.1</u>	<u>1.83</u>
--Lower South Desert Overlook jct. to Upper South Desert Overlook jct.	<u>68798</u>	<u>13.03</u>	<u>20969.9</u>	<u>20.97</u>
--Upper South Desert Overlook jct. to end of spur road	<u>419</u>	<u>0.08</u>	<u>127.7</u>	<u>0.13</u>

FACT GUIDE for CAPITOL REEF NATIONAL PARK

--Upper South Desert Overlook jct. to Upper Cathedral Valley Overlook jct.	<u>1744</u>	<u>0.33</u>	<u>531.6</u>	<u>0.53</u>
--Upper Cathedral Valley Overlook jct. to end of spur road	<u>1565</u>	<u>0.30</u>	<u>477.0</u>	<u>0.48</u>
--Upper Cathedral Valley Overlook jct. to Hartnet Junction	<u>1901</u>	<u>0.36</u>	<u>579.4</u>	<u>0.58</u>
--Hartnet Junction to park boundary	<u>4119</u>	<u>0.78</u>	<u>1255.5</u>	<u>1.26</u>

Cathedral Road

--Hwy 24 jct. to Temples jct.	<u>80676</u>	<u>15.28</u>	<u>24590.3</u>	<u>24.59</u>
--Temples jct. to end of spur road (Temple of the Moon)	<u>9463</u>	<u>1.79</u>	<u>2884.4</u>	<u>2.88</u>
--Temples jct. to Oil Well Bench Rd. jct.	<u>27504</u>	<u>5.21</u>	<u>8383.3</u>	<u>8.38</u>
--Oil Well Bench Rd. jct. to Gypsum Sinkhole jct.	<u>21297</u>	<u>4.03</u>	<u>6491.4</u>	<u>6.49</u>
--Gypsum Sinkhole jct. to end of spur road	<u>5469</u>	<u>1.04</u>	<u>1667.0</u>	<u>1.67</u>
--Gypsum Sinkhole jct. to Baker Ranch Rd. jct.	<u>507</u>	<u>0.10</u>	<u>154.5</u>	<u>0.15</u>
--Baker Ranch Rd. jct. to Cathedrals trailhead	<u>14712</u>	<u>2.79</u>	<u>4484.3</u>	<u>4.48</u>
--Cathedrals trailhead to Morrell Cabin trailhead	<u>3420</u>	<u>0.65</u>	<u>1042.4</u>	<u>1.04</u>
--Morrell Cabin trailhead to Cathedral Valley campground jct.	<u>7782</u>	<u>1.47</u>	<u>2372.0</u>	<u>2.37</u>
--campground jct. to Hartnet Junction	<u>1667</u>	<u>0.32</u>	<u>508.1</u>	<u>0.51</u>

Notom-Bullfrog Road

--Hwy 24 jct. to Henry Mtns./McMillan Sprs. jct.	<u>71232</u>	<u>13.49</u>	<u>21711.8</u>	<u>21.71</u>
--Henry Mtns. Jct to Cedar Mesa CG jct.	<u>40325</u>	<u>7.64</u>	<u>12291.2</u>	<u>12.29</u>
--Cedar Mesa CG jct. to Burr Trail jct.	<u>59485</u>	<u>11.27</u>	<u>18131.2</u>	<u>18.13</u>

Burr Trail

--Hwy 12 jct. to west park boundary	<u>159961</u>	<u>30.30</u>	<u>48756.7</u>	<u>48.76</u>
--west boundary to Upper Muley jct.	<u>11470</u>	<u>2.17</u>	<u>3496.1</u>	<u>3.50</u>
--Upper Muley jct. to Notom Rd. jct.	<u>16380</u>	<u>3.10</u>	<u>4992.7</u>	<u>4.99</u>
--Notom Rd. jct. to Post jct.	<u>11816</u>	<u>2.24</u>	<u>3601.6</u>	<u>3.60</u>
--Post jct. to end of spur road (Post Corral)	<u>2846</u>	<u>0.54</u>	<u>867.5</u>	<u>0.87</u>
--Post jct. to jct. w/ paved road leading to Bullfrog	<u>44998</u>	<u>8.52</u>	<u>13715.6</u>	<u>13.72</u>
--jct. w/ paved road to Halls Creek turnoff	<u>4752</u>	<u>0.90</u>	<u>1448.4</u>	<u>1.45</u>
--Halls Creek turnoff to Halls Creek Overlook	<u>14783</u>	<u>2.80</u>	<u>4505.9</u>	<u>4.51</u>

Trail Elevation Changes: Taken from the website; need to be confirmed

Trail	Elevation Change in Feet (m)	Difficulty	Description
Capitol Gorge	<50 (<15)	Easy	Mostly level walking in a narrow wash bottom with sheer canyon walls and Pioneer Register; waterpockets or "tanks" require a short climb with an elevation increase of 80 feet (25 m)
Goosenecks	<50 (<15)	Easy	Views of Sulphur Creek Canyon; panoramas.
Grand Wash	200 (60)	Easy	From the Highway 24 trailhead, very gradual climb of 200 feet (60 m) along narrow wash bottom with sheer canyon walls on both sides. From the Grand Wash Road trailhead, the trail travels down the wash.
Sunset Point	<50 (<15)	Easy	Panoramic view of cliffs and domes; dramatic lighting a day's end.
Cohab Canyon	400 (120)	Moderate	A hidden canyon with spur trails and overlooks. Strenuous climb of 320 feet (100 m) from west to east up 0.25 mile (0.4 km) switchbacks, then moderate. More gradual climb of 440 feet (135 m) from east to west.
Fremont River	480 (145)	Moderate	Self-guiding nature trail beginning at bridge across from the road from the picnic area. Very easy first 0.5 mile (0.8 km) along river and orchards; strenuous climb to valley overlook thereafter.

FACT GUIDE for CAPITOL REEF NATIONAL PARK

Hickman Bridge	400 (120)	Moderate	Self-guiding nature trail leads to the base of a 133 foot (40.5 m) natural rock bridge. Strenuous at first then moderate.
Cassidy Arch	670 (205)	Strenuous	Trail begins on north side of canyon 300 yards (275 m) from the parking lot at Grand Wash Road. Climbs steeply with some exposure along high cliffs, ending on top of the arch.
Chimney Rock Loop Trail	810 (245)	Strenuous	Strenuous climb of 240 feet (75 m) up 0.25 mile (0.4 km) switchbacks; then moderate hike afterwards. Views of Chimney Rock and panoramas.
Fremont Gorge Overlook	1,090 (330)	Strenuous	Steep initial climb to Johnson Mesa, level across mesa, then steep climb to viewpoint 1,000 feet (305 m) above the Fremont River.
Frying Pan	1,000 (305)	Strenuous	Access from the end of Cassidy Arch Trail, then 670 foot (205 m) additional gain. From Cohab Canyon junction, a 960 foot (290 m) gain; numerous geological features.
Golden Throne	730 (220)	Strenuous	Climbs from the bottom of gorge to tops of cliffs and ends with a view of Golden Throne.
Navajo Knobs	2,400 (730)	Strenuous	Follow trail to Rim Overlook; then continue another 2.5 miles (4.0 km) for a 360-degree panorama.
Old Wagon Loop Trail	1,100 (335)	Strenuous	Follows old wagon route on Miners Mountain; panoramic views of the Waterpocket Fold.
Rim Overlook	1,110 (335)	Strenuous	Ends on top of 1,000 foot (305 m) cliffs with views of the orchards, campground to the south and domes to the east.

FACT GUIDE for CAPITOL REEF NATIONAL PARK

Distances and elevation gains below taken from Capitol Reef National Park the Complete Hiking and Touring Guide (Stinchfield, 2010)

Area: Trail/Route:	distance:	elevation gain	notes:
Fruita District Routes:			
Sulphur Creek	8 mi (12.9km)	550' (167.6m)	one-way
Lower Spring Canyon	9.9 mi (15.9km)	290' (88m)	one-way
Upper Spring Canyon	18.5 mi (29.8km)	1730' (527m)	one-way
Pleasant Creek	7.6 mi (12.2km)	450' (137m)	round-trip
Cathedral District Trails and Routes:			
Jailhouse/Temple rocks	4.5 mi (7.2km)	270' (82m)	round-trip
Lower Cathedral Valley Overlooks	2.4 mi (3.9km)	320' (98m)	round-trip
Upper South Desert Overlook	0.4 mi (0.6km)	80' (24m)	round-trip
Cathedral Valley Overlook Trail	0.2 mi (0.3km)	40' (12 m)	round-trip
Morrell Cabin Trail	0.4 mi (0.6km)	30' (9m)	round-trip
Cathedrals Trail	2.4 mi (3.9km)	375' (114m)	round-trip
Waterpocket District Routes:			
Burro Wash	7.5 mi (12.2km)	550' (168m)	round-trip
Cottonwood Wash	6 mi (9.7km)	420' (128m)	round-trip
Sheets Gulch (Need measurements for a through-hike to Tantalus Flat through hike)	13.8 mi (22.2km)	700' (213m)	round-trip
Red Canyon Trail	4.5 mi (7.2km)	440' (134m)	round-trip

FACT GUIDE for CAPITOL REEF NATIONAL PARK

Upper Muley Twist (includes Strike Valley Overlook trail but not Upper Muley Twist Road of 3 mi (4.8km)	9.9 mi (14.5km)	1,100' (335m)	round-trip
Lower Muley Twist	17 mi (27.4km) 19 mi (30.6km)	1,000' (305m) 1240' (378m)	round-trip in-and-out
Hamburger Rocks adds	2 mi (3.2km)	160' (49m)	round-trip
Surprise Canyon	2 mi (3.2km)	240' (73m)	round-trip
Headquarters Canyon	3.2 mi (5.1km)	320' (98m)	round-trip
Halls Creek Narrows	23 mi (36km)	1,500' (457m)	round-trip

Statistics

Height of Temple of the Sun: 422 feet (129 m)

Height of Temple of the Moon: 265 feet (81 m)

Height of Jailhouse Rock: 523 feet (159 m)

Length of the Waterpocket Fold: Tom Morris says "more than 90 miles" in his book, *Exploring the Geology of Capitol Reef*.

Park acreage:

244,601 acres inside current external boundary

- 680 acres of non-park-owned inholdings

243,921 total acres of park-owned land, excluding inholdings (~381 square miles; 98,711 hectares)

Park acreage eligible for wilderness designation: 236,808 acres (97% of park)

Highest elevation: 8960' (2731 m) in upper Deep Creek drainage near Billings Pass;

Lowest elevation: 3880' (1183 m) where Halls Creek drainage exits the park

Width/height of "windows" of:

Hickman Bridge: 133 feet (40.5 m) wide

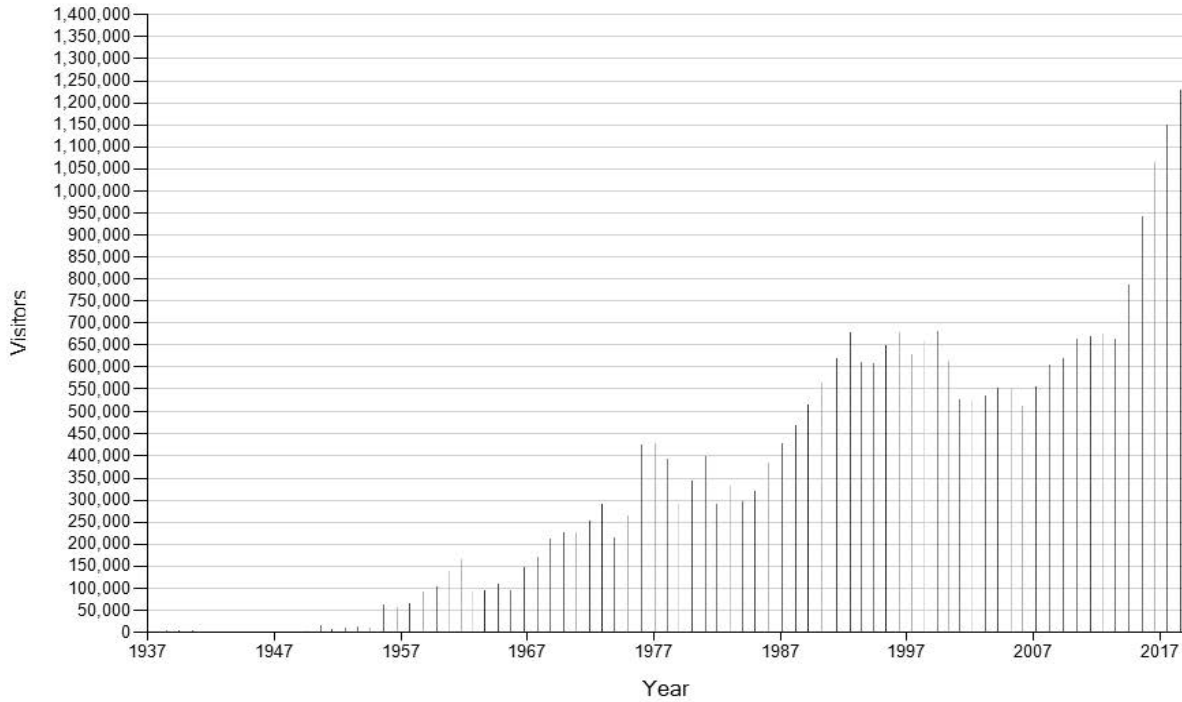
Summit elevations:

Capitol Dome: 6120 feet (1865 m)

Golden Throne: 7042 feet (2146 m)

CARE Total Annual Visitation

Total Recreation Visitors



Year	Annual Visitation
1938	1,500
1939	1,500
1940	2,000
1941	1,975
1942	0
1943	0
1944	0
1945	0
1946	0
1947	0
1950	3,066
1951	13,192
1952	6,411
1953	9,991
1954	12,900
1955	7,500
1956	62,500
1957	56,900
1958	65,000
1959	89,600
1960	102,500
1961	136,800
1962	163,500
1963	93,200
1964	92,500
1965	108,500
1966	94,000
1967	146,600
1968	171,000
1969	210,600
1970	225,900
1971	225,500
1972	251,163
1973	288,800
1974	214,100
1975	263,400
1976	425,100
1977	428,800
1978	392,428
1979	288,860
1980	342,788
1981	397,789
1982	289,486
1983	331,734
1984	296,230
1985	320,503
1986	383,742
1987	428,808
1988	469,556
1989	515,278
1990	562,477
1991	618,056
1992	675,837
1993	610,707
1994	605,324
1995	648,864
1996	678,012
1997	625,680
1998	656,026
1999	680,153
2000	612,656
2001	527,760
2002	525,646
2003	535,441
2004	549,708
2005	550,255
2006	511,511
2007	554,907
2008	604,811
2009	617,208
2010	662,661
2011	668,834
2012	673,345
2013	663,670
2014	786,514
2015	941,029
2016	1,064,904
2017	1,150,165
2018	1,227,627
2019	1,283,392

REFERENCES

Geology: Black boulders washing down Boulder and Thousand Lakes Mountains for at least the last 150,000 years: Repka et al., 1997 & Eddleman et al., 2007

Dates for geologic periods and eras: USGS 2010 Divisions of Time – Major Chronostratigraphic and Geochronologic Units (<http://pubs.usgs.gov/fs/2010/3059/pdf/FS10-3059.pdf>, accessed 9/12/14)

Rock layer ages – sources from 2014 edition of Style & Fact Guide:

Mesaverde Fm – Hintze & Kowallis, 2008

Dakota Fm – Gresson

Cedar Mountain Fm – Gresson et al., 2010

Morrison Fm – Hintze & Kowalis, 2009

Summerville Fm - Wilcox & Curric, 2008

Curtis Fm - Wilcox & Curric, 2008

Entrada Sandstone – Dossett, 2014

Carmel Fm – Sprinkel et al., 2011

Navajo Sandstone – Gregson, Chupe & Sprinkel, 2010

Kayenta Fm – Blakey & Ranney, 2008

Wingate Sandstone, Blakey & Ranney, 2008

Sources/Results from Ben Alford's Summer 2017 Literature Review:

- 1.) White Rim Sandstone – Early Permian (Kungurian) – 283.5 Ma to 272.9 Ma, *275 Ma
- 2.) Kaibab – Early-to-Middle Permian (Kungurian to Roadian) -- 283.5 Ma to 268.7 Ma, *270 Ma
- 3.) Moenkopi – Early Triassic (Induan to Olenakian) --251.9 Ma to 247.1, *249 Ma
 - a. [Thomson and Lovelace, 2014](#)
 - b. [Heckert, et al. "Stratigraphy, Correlation..."](#)
 - c. [Kein, 2010](#)
 - These are the dates locally for the Moenkopi. However, if we expand our purview to include Moenkopi elsewhere in the southwest, we would say: Early-to-Middle Triassic (Induan to Anisian) – 251.9 Ma to 241.9 Ma, *247 Ma
- 4.) Chinle – Late Triassic (Norian) – 220 Ma to 208.4, *215 Ma
 - a. Shinarump is the lowest member of the Chinle and appears to be from approximately 220 Ma
 - b. [Irmis et al "High Resolution..." 2011](#)
 - c. [Heckert, Lucas et al "The Late Triassic..." 2012](#)
- 5.) Wingate Sandstone – Triassic/Jurassic Boundary to Early Triassic (Rhaetian to Hettangian) – 208.5 Ma to 199.2 Ma, *200 Ma
 - a. [Harris, Lucas et al. "The Triassic-Jurassic Terrestrial Transition" 2006](#)
 - b. [McCall et al "Anisotropy-based inclination correction for the Moenave formation..." 2014](#)
 - c. [Lucas et al. "Position of the Triassic-Jurassic Boundary..." 2011](#)
- 6.) Kayenta Formation – Early Jurassic (Sinemurian to Pliensbachian) – 199.3 Ma to 182.6 Ma, *193 Ma
 - a. [Gay et al. "The First Report of an Archosaur..." 2015](#)
 - b. There appears to be an unconformity between the Kayenta and Wingate. This is not shown on our Fact Guide. ([Lucas et al. "Regional Lower Jurassic Unconformity..." 2011](#))
 - c. [Steiner et al. "Magnetostratigraphy and paleopoles of the Kayenta formation" 2014](#)
- 7.) Navajo Sandstone – Early Jurassic (Pliensbachian to Toarcian) – 190.8 Ma to 174 Ma, *180 Ma
 - a. [Lucas et al. "Arizona's Jurassic Fossil Vertebrates..." 2005](#)
 - b. [Porchetti et al. "First Record of Otozoum..." 2015](#)
 - c. [Parrish. "Carboniferous Trees" 2007](#)
- 8.) Page Sandstone – Middle Jurassic (Bajosian to Bathonian) – 170.3 Ma to 166 Ma, *170 Ma
 - a. [Pierce et al. "Geomodeling of Aeolian Reservoir Analogues..." 2016](#)
 - b. [Dickenson et al. "U-Pb..." 2010](#)
- 9.) Carmel Formation – Middle Jurassic (Bajosian to Callovian) – 170.3 Ma to 161.2 Ma, *168 Ma
 - a. [Sprinkel. "The Middle Jurassic Temple Cap Formation..." 2009](#)
 - b. [Sprinkel et al. "Early Results of a Study..." 2011.](#)
 - c. [Dossett. "...Ages and Tephrochronologic Framework..." 2014](#)
- 10.) Entrada Sandstone – Middle-to-Late Jurassic (Bathonian to Callovian) – 168.1 Ma to 161.2 Ma, *163 Ma
 - a. [Dossett. "...Ages and Tephrochronologic Framework..." 2014](#)

FACT GUIDE for CAPITOL REEF NATIONAL PARK

- 11.) Curtis Formation – Late Jurassic (Oxfordian) – 161.3 Ma to 157.2 Ma, *161 Ma
 - a. [Dossett. "...Ages and Tephrochronologic Framework..." 2014](#)
- 12.) Summerville Formation – Late Jurassic (Oxfordian) – 161.3 Ma to 157.2 Ma, *158 Ma
 - a. [Dossett. "...Ages and Tephrochronologic Framework..." 2014](#)

As with the Muley, Masuk and Tarantula below, I will defer to the 2014 fact guide. Geologists have been debating the age of the Morrison for a century. It seems the important thing is that it straddles the Kimmeridgeon/Tithonian boundary.

- 13.) Morrison Formation – Late Jurassic (Kimmeridgeon/Tithonian) – 157.3 Ma to 145 Ma, *150
 - a. Tidwell Member
 - b. Salt Wash Member
 - c. Brushy Basin Member
 - d. SOURCES:
 - [Greenhalgh. "New Pb Age Control..." 2006.](#)
 - [Trujillo et al. "A U/Pb Age for the Mygatt..." 2014](#)
- 14.) Cedar Mountain Formation – Early Cretaceous (Barremian to Albian) --
 - a. [Britt. "Detrital Zircon Ages..." 2007.](#)
 - b. [Greenhalgh. "New Pb Age Control..." 2006.](#)
 - c. [Eberth et al. "Dalton Wells." 2006.](#)
- 15.) Dakota Sandstone – Late Cretaceous (Cenomanian) – 100.5 Ma to 93.8 Ma, *95 Ma
 - a. [Antia et al. "Sequence stratigraphy of a condensed..." 2011](#)
- 16.) Mancos Shale – Late Cretaceous (Cenomanian to Turonian) --
 - a. [Antia et al. "Sequence stratigraphy of a condensed..." 2011](#)

For the following, I will defer to the Fact Guide. These dates align fairly well with what recent research is saying.

- 17.) Muley Canyon Sandstone – Late Cretaceous (Campanian) –
 - a. [Seymour. "High Resolution Correlation..." 2012.](#)
- 18.) Masuk Formation – Late Cretaceous (Campanian) --
 - a. [Corbett et al. "Stratigraphy of a Cretaceous Coastal Plain..." 2011](#)
 - b. [Seymour. "High Resolution Correlation..." 2012.](#)
- 19.) Tarantula Mesa Sandstone – Late Cretaceous (Campanian) –
 - a. [Fielding et al. "A field guide to the cretaceous..." 2010](#)
 - b. [Seymour. "High Resolution Correlation..." 2012.](#)

Dates for the Laramide Orogeny are (big surprise!) difficult to pin down. Here are some useful sources:

- [Copeland et al. "Location, Location, Location..." 2017](#) Onset as far back as 90 Ma and end as recent as 30 Ma
- [Gates et al. "Mountain building triggered..." 2012.](#) Onset between 80 Ma and 70 Ma.