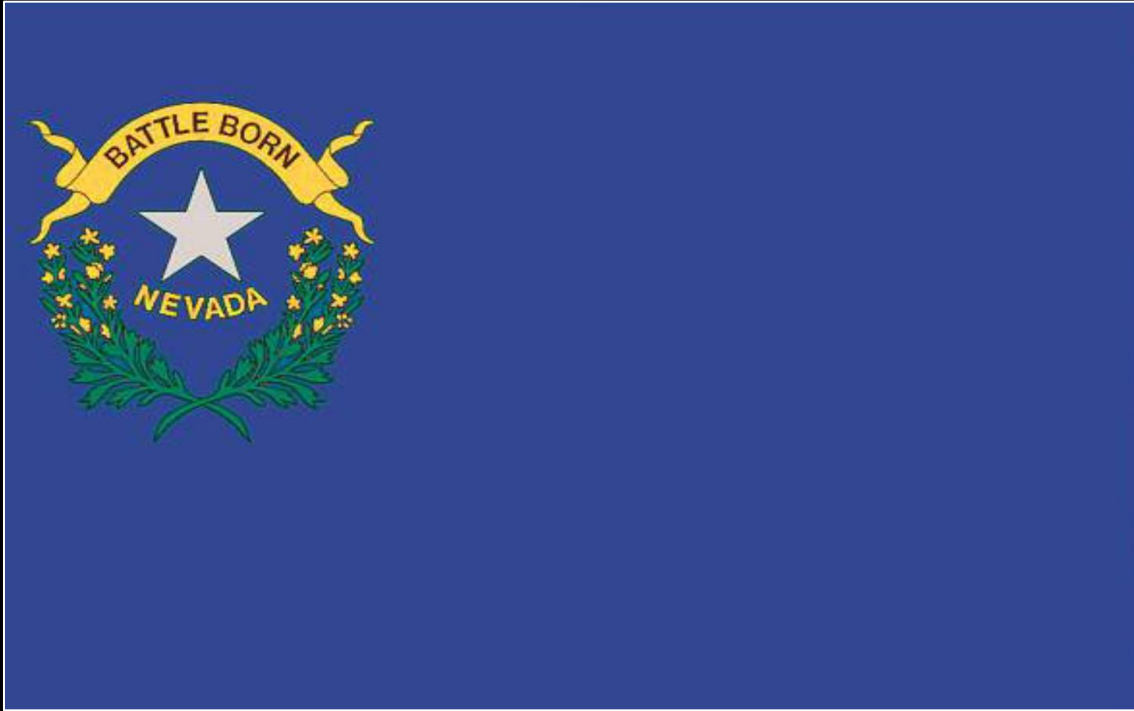


# **Scenic Parks Explorer Slide Show**

# Nevada





## Nevada

- Statehood: 1864
- Capital: Carson City
- Name: Spanish for “snow covered mountain”
- Nickname: Silver State, Sagebrush State, Battle Born State
- Moto: All for Our Country
- Today’s economy: Tourism (legalized gambling), Mining (gold)

# State Metal: Silver



# State Flower: Sagebrush



# State Gemstone: Opal



# Mojave Desert



## Mojave Desert

- Driest Desert in North America
- Rain: 13 inches (330mm)
- Very hot in summer 120+F (49+C)
- Death Valley: -280 feet (-85m), 134F (56C)
- High desert 2000-5000 feet (600-1500m)
- Animals: snakes, lizards, chipmunks, rabbits, mule deer, etc
- Plants: 1700+ species
- Borders: Where Joshua Tree grows

# Joshua Tree



## Joshua Tree

- Yucca family
- Only grow in Mojave Desert
- Height: up to 50 feet (15m)
- Roots: 36 feet (11m)
- Native American uses: sandals & baskets, seeds & flowers
- Name: Mormon settlers - Joshua raising his hands in prayer



# Arizona



## Arizona

- Statehood: 1912
- Capitol: Phoenix
- Name: Spanish word for “little spring”
- Nickname: Grand Canyon State
- Motto: God enriches
- Today's Economy: copper  $\frac{2}{3}$  US production, tourism, healthcare, transportation

# Gemstone: Turquoise



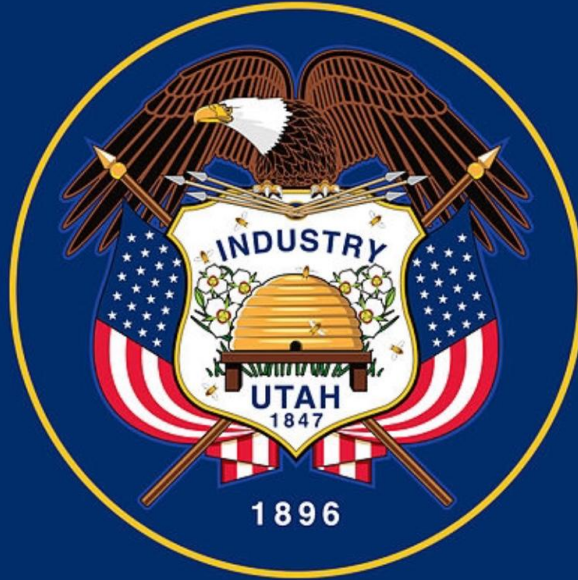
# Reptile: Ridge-nosed Rattlesnake



# Neckwear: Bolo Tie



# Utah



## Utah

- Statehood: 1896
- Capitol: Salt Lake City
- Name: Ute Indians - “people of the mountains”
- Nickname: Beehive State
- Motto: Industry
- Settled by Mormons
- Today’s Economy: tourism, computer software, steel, copper, cattle, corn, wheat

# State Insect: Honey Bee





# State Rock: Coal



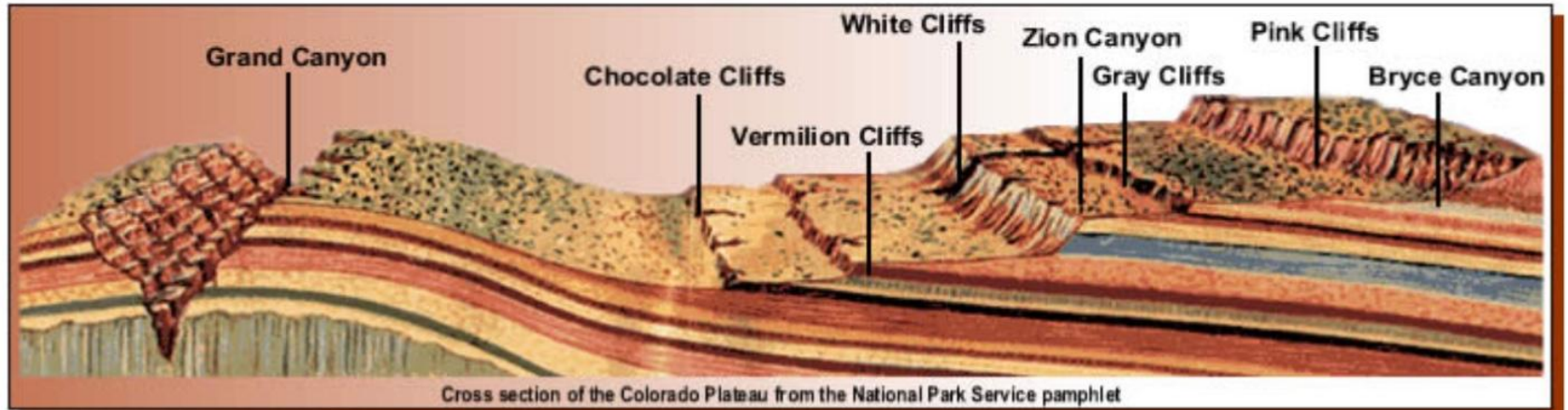
# State Dance: Square Dance



# Colorado Plateau



# Colorado Plateau Grand Staircase



## **Colorado Plateau:**

- CO Plateau large tracts of land mostly flat sedimentary rock sections rising up towards Rocky Mountains
- Elevation: 4900-11,000 feet (1500-3350 m)
- 5 Sections are edged with massive cliffs as they go lower
- Color names: Chocolate, Vermillion, White, Gray, Pink



# Zion National Park



# Virgin River



## **Zion National Park**

- 1919
- 229 sq miles (590 sq km)
- Zion Canyon: 15-miles of towering red sandstone & white limestone cliffs carved by Virgin River
- River: 4000 feet - Rock formations: 7000+ feet
- Hanging Gardens: water seeps through rock, plants grow high
- Religious settlers named valley and many of the formations (Court of the Patriarchs, West Temple, Great White Throne)
- Main park road closed to buses & private vehicle traffic - complimentary Park Shuttles only (every 15 mins)



# Scenic Byway 12



## **Scenic Byway 12**

- 122 miles long
- Regularly on “Top Scenic Drive of America” lists
- Dixie National Forest
- Red Rock Canyon National Conservation Area

# Bryce Canyon National Park



## **Bryce Canyon National Park**

- 1928
- High elevation: 8000-9000 feet (2400-2700 m)
- Not technically a canyon
- Collection of giant natural amphitheaters along side of Paunsaugunt Plateau
- 56 sq miles (145 sq km)
- Not a large park, but impactful due to brilliant orange pinnacles

## **Bryce Canyon People History**

- Native Americans 10,000 years
- 1300+ Paiute
- 1850s Mormon Settlements
- 1874 - Ebenezer Bryce built a homestead



# Bryce Canyon Geology



## **Bryce Canyon Geology**

- Not carved by flowing water
- Mostly ice erosion and rainfall
- High elevation = cold temps = ice & frost
- Water seeps into cracks, freezes, ice expands, pieces fall off
- Summer rains wash debris down cliff

# Hoodoo





## Hoodoo

- Red rock is soft sandstone
- White rock is harder limestone (acts as cap protecting sandstone below)
- Can be as tall as 200 feet (60 m)
  
- Paiutes: “Red rocks standing like men”
- Legend: people were tricked by trickster god & turned into stone
- Possibly as punishment for living “too heavily” on the land

# Sunset Point



# Panguitch Quilt Walk



## Panguitch Quilt Walk

- 1863: Settlers arrive
- Crops planted, but season was short and they didn't mature
- 1864: winter extremely cold with deep snow
- Settlers were desperate for supplies
- Closest towns: 115 miles north or 40 miles west over mountain
- 7 men set out west to save the town
- Had to abandon their wagon and proceed on foot
- Snow so deep, they had to lay down quilts and walk across
- Annual festival is: Quilt Walk Festival

# Panguitch Quilt Walk





# Salt Lake City



## Salt Lake City

- Capital of Utah
- Population: 2 million (largest city)
- Settled in 1847 by Mormon pioneers - religious persecution
- Situated between the Great Salt Lake and the Wasatch Front
- Salt Lake City - Provo - Park City
- Known for great skiing (2002 Winter Olympics)
- Known for Sundance Film Festival
- Known as center of Mormon religion



# Great Salt Lake



## Great Salt Lake

- Largest salt water lake in Western Hemisphere
- Remnant of massive prehistoric Lake Bonneville (salt flats)
- No outlet except evaporation
- Very shallow, average depth 16 feet (5 m)
- Size fluctuates
- Average length: 75 mi (120 km)
- Average width: 28 mi (45 km)
- Habitat for brine shrimp and native birds
- Shallow, warm water causes lake-effect snows (skiing)

# Mormon Religion



## **Mormon Religion**

- Church of Jesus Christ of Latter Day Saints (LDS)
- Restorationist Christianity
- Founded: 1830, New York, Joseph Smith
- Persecution led to relocation to Utah Territory in 1840s
- Strong sense of community
- Very family oriented - sealed together in afterlife
- No addictive substances (alcohol, caffeine, tobacco)
- Polygamy: 1852-1890

## Mormon Religion Today

- 16 million worldwide
- 6.5 USA
- Require missionary service
- Women 18 months, men 2 years
- Doubles in membership every 15 years
- In Utah: 60% claim Mormon, 40% practice
- In Salt Lake City: 35% Mormon, rural ar as much higher

# Brigham Young



## Brigham Young

- 1801-1877
- Second president of LDS - after founder Joseph Smith
- President: 1847-1877
- Moved congregation to Utah
- Founded Salt Lake City
- First governor of Utah Territory
- 55 wives
- 56 children from 16 of the wives



# Eagle Gate



## Eagle Gate

- Originally erected 1859
- Commemorates entrance to Brigham Young's property
- 3rd Eagle Gate on this spot (1960)

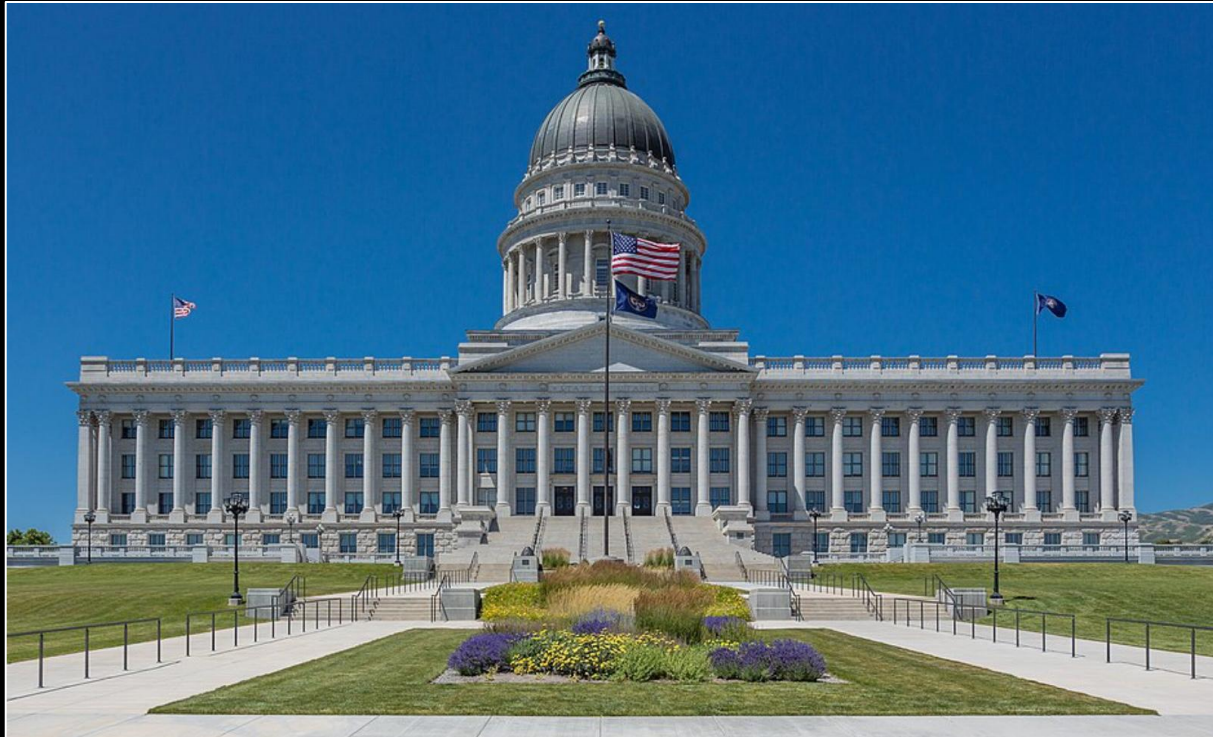
# Beehive House



## **Beehive House**

- Built in 1854
- Official residence of Brigham Young
- “Executive residence” - lived and worked
- Outgrew house so he moved next door to Lion House
- Name: beehive sculpture on top

# Utah State Capitol





## Utah State Capitol

- 1916
- Style: Neoclassical Revival
- Made of Utah granite (same as Mormon Temple)
- 90% of Legislature is Mormon
- “95% of the bills, the LDS Church has no stand, no opinion, and doesn’t care.”
- Alcohol, gambling, assisted suicide, gay rights

# Temple Square





## Temple Square

- 10 acre complex
- Center of Mormon religion - equivalent to Mecca (Muslim), Vatican (Catholic), Jerusalem (Jews)
- Contains: Temple, Tabernacle, Assembly Hall, 2 Visitor Centers
- Surrounded by other Mormon buildings

# Mormon Temple



## Temple

- Built: 1893
- Largest Mormon Temple in world
- 222 feet high
- 250,000 feet interior
- Utah Granite, 6 gothic spires
- Hosts weekly church leader meetings
- Sacred to Mormons - no public tours
- “Mormons in good standing” can petition to visit

# Temple Interior



# Temple Interior





# Temple Interior



# Mormon Tabernacle





## Tabernacle

- Built: 1867
- Unique dome design results in amazing acoustics
- 7,000 people
- Main Sunday church service
- Home of the Tabernacle Choir

# Tabernacle Choir



## **Tabernacle Choir**

- 360 members
- 25-55 years old
- Live within 100 miles
- “Mormon in good standing”

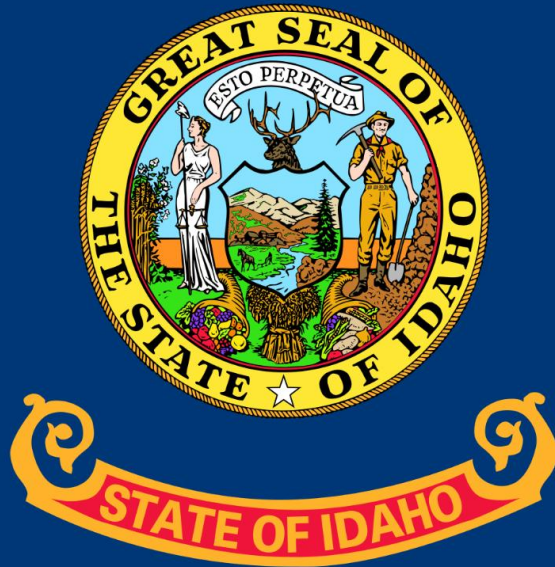
# Bear Lake



## Bear Lake

- Natural border between Utah and Idaho
- Known as the “Caribbean of the Rockies”
- Calcium carbonate deposits suspended in the water
- Length: 18 miles
- Width: 7 miles
- Depth: 208 feet
- Local area known for raspberries

# Idaho



## Idaho

- Statehood: 1890
- Capitol: Boise
- Name: ??? - possibly made up by lobbyist in 1860s
- Nickname: Gem State
- Motto: “Let it be perpetual”
- Today’s Economy: high tech manufacturing (around Boise), agriculture (wheat & potatoes  $\frac{1}{3}$  USA production)



# State bird: Mountain Bluebird



# State fish: Cutthroat Trout



# State Gem: Star Garnet

- Only found in Idaho & India
- Rutile mineral inclusion
- 4 or 6 pointed star



# Oregon & California Trail



## Oregon & California Trail

- 2000 miles (3400 km)
- East-west emigrant trail
- Connected Missouri River to Oregon and California
- 1811-1840 - fur trappers and traders
- 1830s-1860s - wagon trains
- Hundreds of thousands of settlers, farmers, miners, ranchers
- Headed west for new opportunities (land)

# Huckleberry

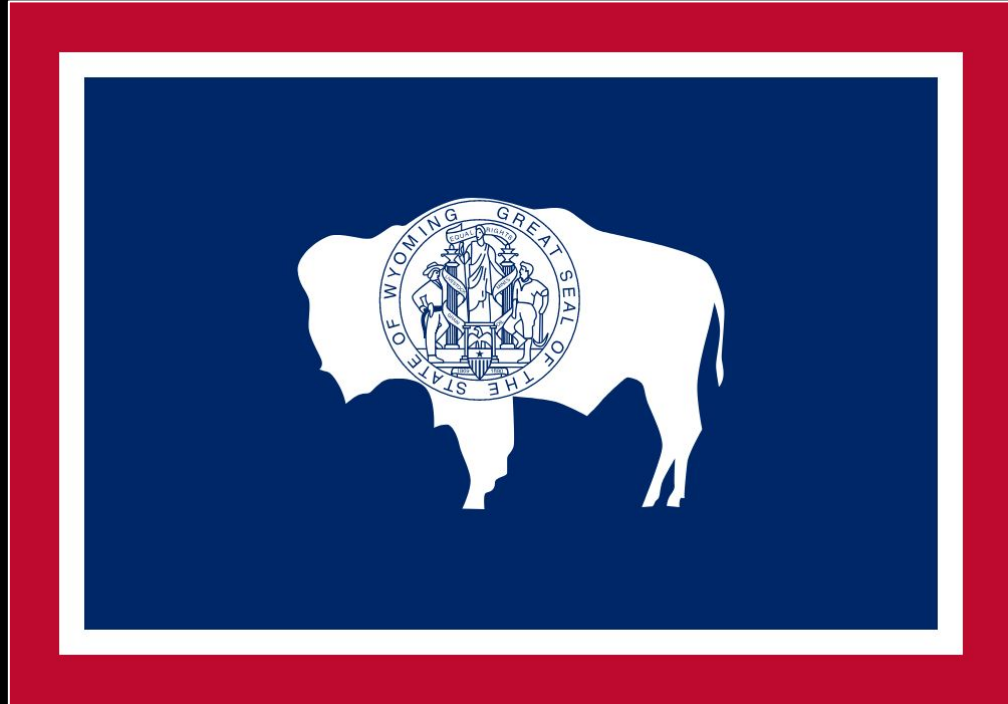


## Huckleberry

- Small, bluish purple berry
- Taste: similar to a blueberry, but slightly tart
- Growing region: Northwest USA & Western Canada
- Traditional medicine: pain relief, heart ailments, infections
- Traditional food: jams, candy, pie, ice cream, salad dressing, pancakes mix, tea, etc.
- Makes a great souvenir



# Wyoming



## Wyoming

- Statehood: 1890
- Capitol: Cheyenne
- Name: Native American word “mountains & valleys alternating”
- Nickname: Equality State
- Motto: Equal Rights
- Economy: cattle, wheat, mining (coal, sodium carbonate)
- Population: 580,000

# Mammal: American Bison



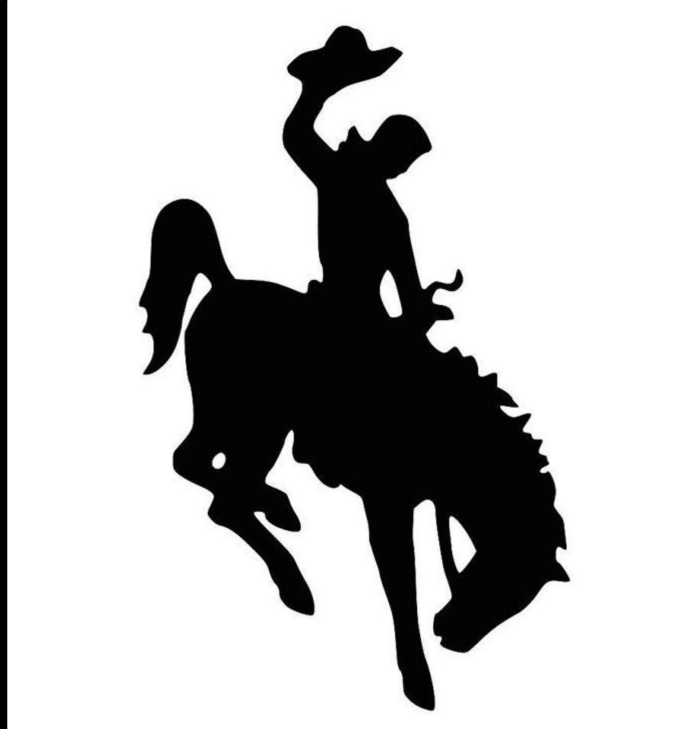
# Flower: Indian Paintbrush



# Sport: Rodeo



# Wyoming Registered





# Wyoming Registered Trademark



# Jackson, Wyoming



## Jackson, Wyoming

- “Hole” is the fur trapper name for a valley
- Rivers and streams make good beaver habitats
- Davy Jackson - 1820s fur trapper
- Town: 1914
- Population: under 10,000
- Winter: 3 ski resorts
- Summer: Close to Grand Teton and Yellowstone National Parks
- Known for art galleries and cowboy culture



# Jackson Hole



# National Elk Refuge



## National Elk Refuge

- Created: 1912
- Purpose: protect habitat of wild elk herd
- Migrate down from Yellowstone each winter
- Winter population: 7,500
- Boy Scouts annual Elkfest
  - Scouts collect fallen antlers from Refuge
  - May auction in Jackson
  - 75% of proceeds go back to Elk Refuge



# Rocky Mountains



## Rocky Mountains

- 3000 mile (4800 km) - mountain chain
- “Backbone of the United States”
- British Columbia in Canada to New Mexico in USA
- 80-55 million years ago
  - Tectonic plates sliding at shallow angle, made wide range
  - Glaciers carved dramatic peaks & valleys
- Today: mining and tourism (skiing)

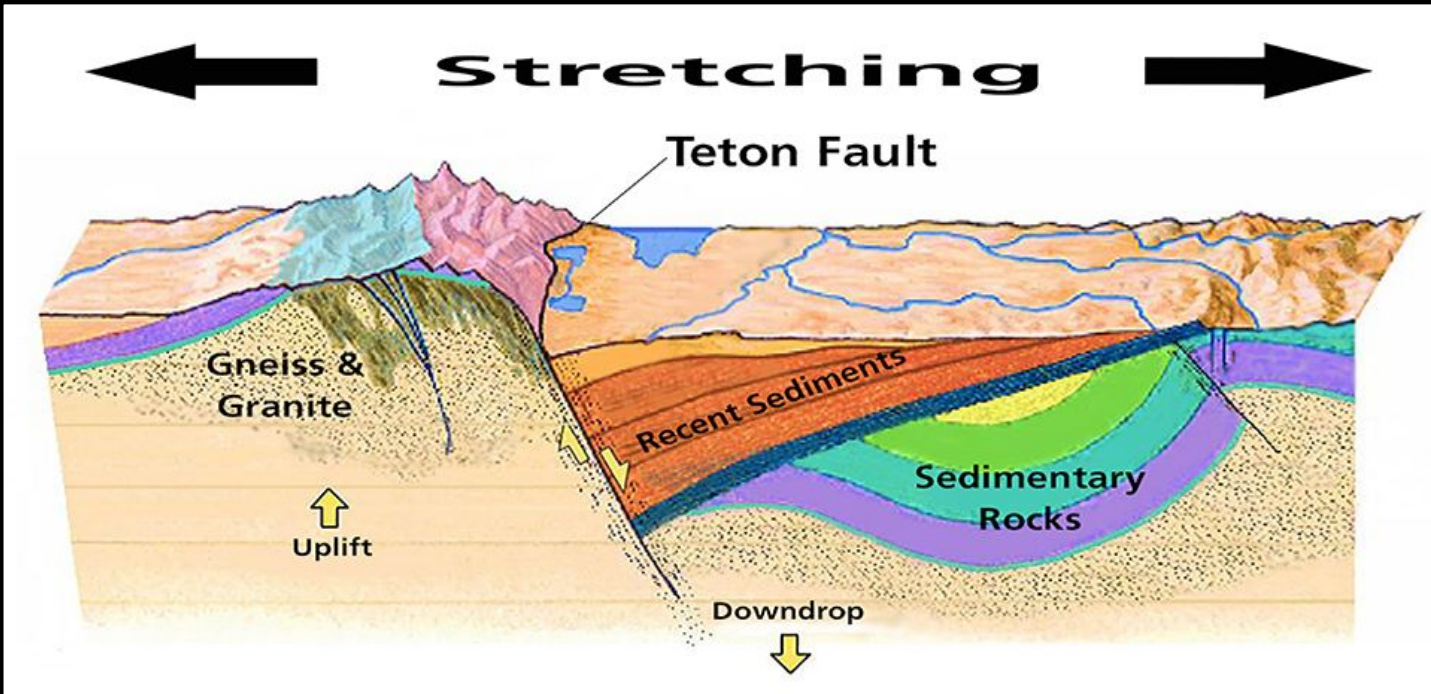
# Grand Teton Range



## **Grand Teton Range**

- Small range in Rocky Mountains
- Length: 40 miles
- Height: 13,775 feet
- Distinguishing feature: no foothills
- Valley is a faultline

# Grand Teton Geology





# Grand Teton National Park





## Grand Teton National Park

- 1929
- 310,000 acres
- 10 miles south of Yellowstone
- John D. Rockefeller, Jr. Parkway
- Name: French Trappers “Les Trois Tetons”

# Chapel of the Transfiguration



## Chapel of the Transfiguration

- Built: 1925
- Cowboy church
- Today: Episcopal chapel
- Wedding location fee: \$2500

# Jackson Lake



## **Jackson Lake**

- Creation: 12,000 years ago by glacier gouging
- Fed by: Snake River
- Length: 15 miles
- Width: 7 miles
- Depth: 438 feet
- Elevation: 6700 feet
- 15 islands



# Jackson Lake Lodge





## **Jackson Lake Lodge**

- Built: 1955
- Great Room with floor to ceiling windows overlooking Tetons
- Walking trail
- Gift shops

# Lewis and Clark Expedition



## Lewis and Clark Expedition

- 1803: President Thomas Jefferson “Louisiana Purchase”
- 1804-06: Meriwether Lewis & William Clark
- Start: St. Louis (Missouri River)
- End: Washington State (Columbia River)
- Objective: map newly acquired territory
- Objective: find practical route to Pacific Ocean
- Objective: establish trade with local Native American tribes

# Yellowstone National Park



## Yellowstone National Park

- 1872: America's first national park (world's first)
- 2.2 million acres: half the size of Massachusetts
- Wyoming, Montana, Idaho
- Known for: unique geothermal features (geysers, hot springs)  
Half of the world's geothermal features are in Yellowstone
- Known for: animals (bison, Black & Grizzly bears, wolves, elk)



# Yellowstone Geology

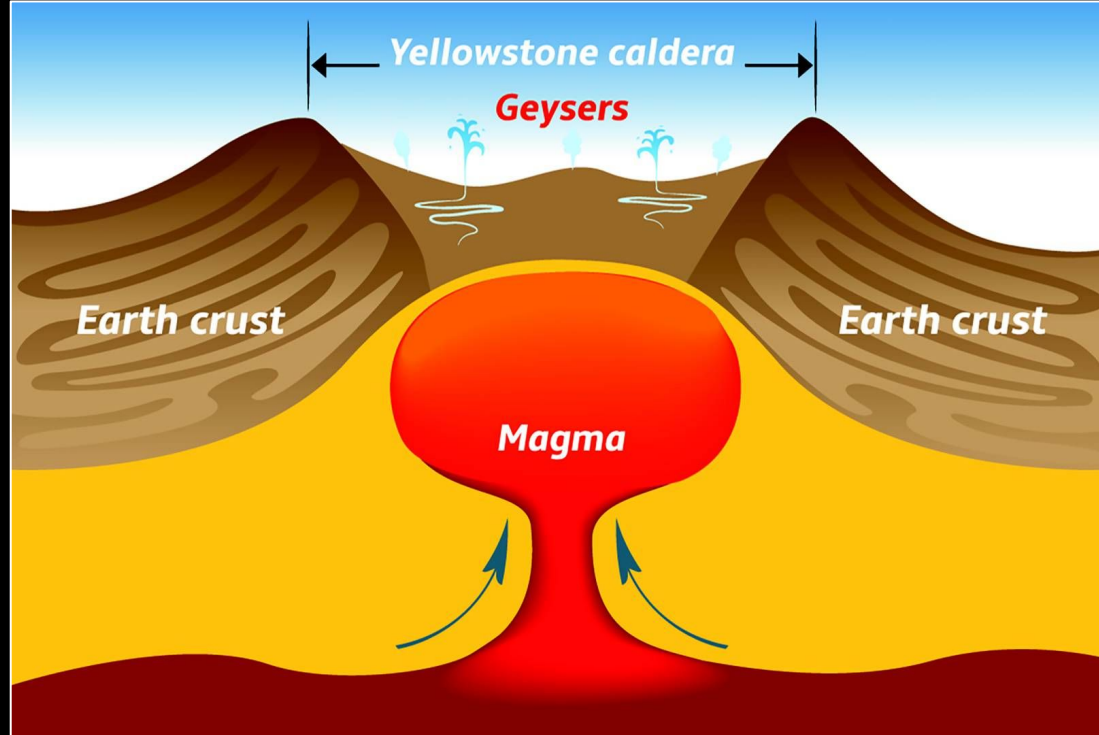




## Yellowstone Geology

- Earth's crust usually 25-30 miles deep
- Yellowstone 3-8 miles
- Liquid hot magma close to surface
- Rain & snow melt seep into cracks & create park's unique geothermal features
- Hot springs, fumaroles, mud pots, geysers

# Yellowstone Caldera



## Yellowstone Caldera

- Super volcano - largest in North America
- 45 x 34 miles across
- 3 eruptions in past 2.1 million years (1.3 mil/640,000)
- Caldera: volcano erupts so quickly the land collapses down onto the empty magma chamber
- Magma chamber fills back up with molten rock - waiting for the next explosion
- Earth is constantly shifting under Yellowstone
- 2000 measurable earthquakes every year

# Fumaroles



- no water at surface
- flash boils rain/snow melt resulting in hissing steam vent

# Mud Pots



- hydrogen sulfide gas eaten by microorganisms
- convert to sulfuric acid which breaks down rock into clay

# Hot Springs



- Water at surface
- Different colors = microorganisms living at different temperatures



# Geyzers



## Yellowstone Geysers

- Geysers: plumbing system
- Surface water goes down a narrow passage, starts to collect lower down the pipe where it boils into steam, but steam bubbles can't escape because of water pressing down on it.
- Reaches a critical point: trapped steam forces its way to top, forcing water up and out of the geyser
- Some are pretty regular, but most go off whenever they need
- Old Faithful: about every 90 minutes (exception, not rule)
- Steamboat Geyser: 11 eruptions in 28 years, 21 since March (Sept 30) (tallest geyser in park)

# Yellowstone Animals





# Elk



# Baby Elk



# Bison





# Baby Bison



# Wolves



# Baby Wolf





# Black Bear



# Baby Black Bears



# Grizzly Bears





# Baby Grizzly Bear



# Yellowstone Forest Fires



# Yellowstone Forest Fires





# Yellowstone Forest Fires



# Regrowth





# Regrowth



# Lake Yellowstone



## Lake Yellowstone

- Largest high elevation lake in North America
- Centered over the Yellowstone Caldera
- Elevation: 7,700 feet
- 20 x 15 miles across
- Depth: 390 feet
- Boating & fishing allowed
- Lake Trout invasive species

# West Thumb Geyser Basin





# Old Faithful





## Old Faithful Geyser

- Frequency: 44-125 minutes (about every 90 minutes)
- Height: 106-185 feet
- Duration: 3-10 minutes
- Discharge: 3,700 gallons of water
- Reliability because it is not connected to any other thermal features - no water is being siphoned off to other springs or geysers

# Old Faithful Inn



# Old Faithful Inn



## Old Faithful Inn

- 1904
- Log cabin castle
- Largest log hotel in the world
- Golden age of “rustic resort architecture”
- Main lobby is a work of lodgepole pine art
- Four stories of balconies
- 85 foot fireplace
- Nearly destroyed in the 1988 fire - saved by firefighters, volunteers, roof sprinkler system installed the year before



# Grand Prismatic Spring

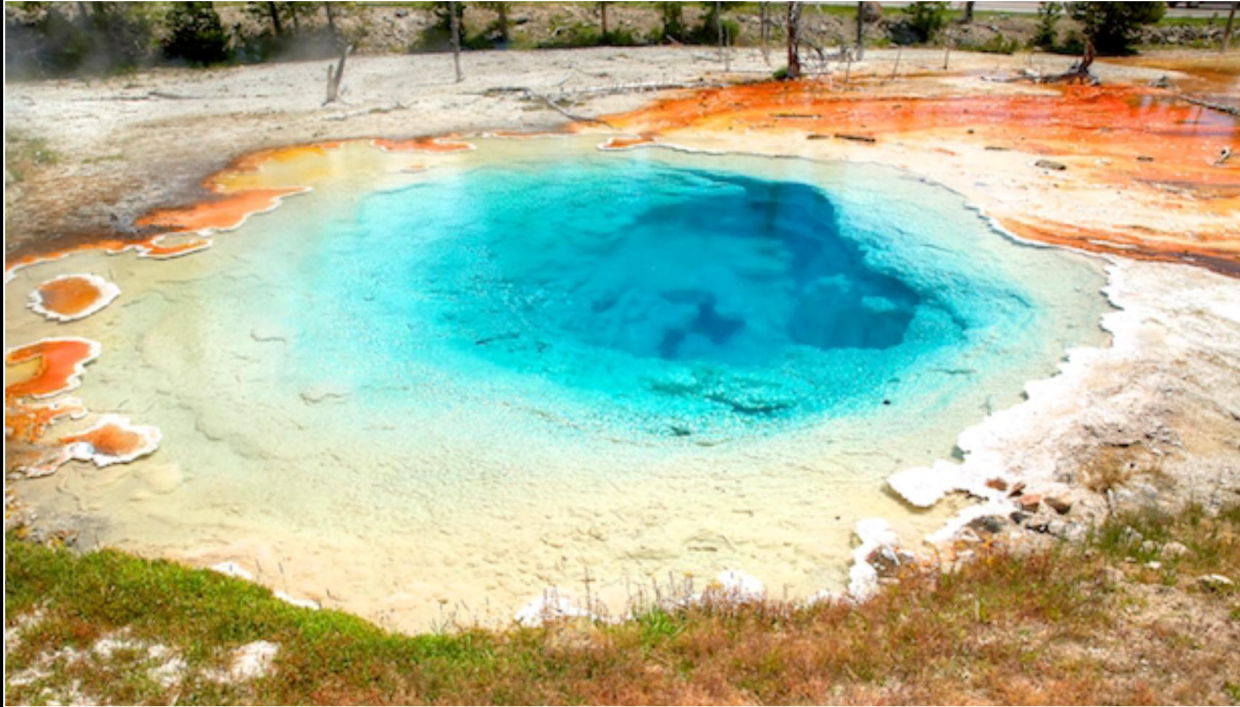




## Grand Prismatic Spring

- Largest hot spring in Yellowstone (3rd in world)
- Diameter: 370 feet
- Depth: 160 feet
- Temp: 160 F
- Dramatic color: microorganism thrive at different colors  
(ratio of chlorophyll to carotenoids)

# Fountain Paint Pots



## **Fountain Paint Pots**

- Upper Geyser Basin
- Contains each of Yellowstone's four main geologic features
- Hotspring, mudpot, fumaroles, geyser

# Mammoth Hot Springs



## Mammoth Hot Springs

- One of the best preserved examples of travertine terraces
- Hot water + dissolved carbon dioxide = weak carbonic acid
- Rises through rocks & dissolves calcium carbonate in limestone
- At surface, calcium carbonate is deposited in form of travertines
- Constantly changes - living sculpture
- Shaped by volume of water, slope of ground, objects in way
- Water follows path of least resistance



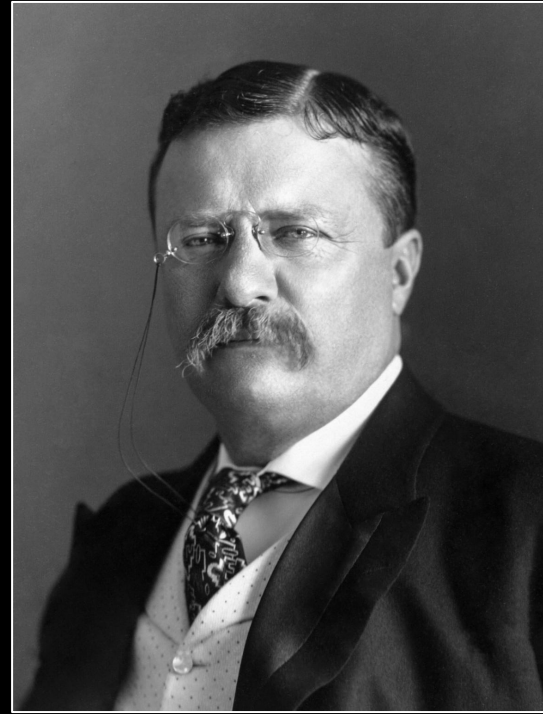
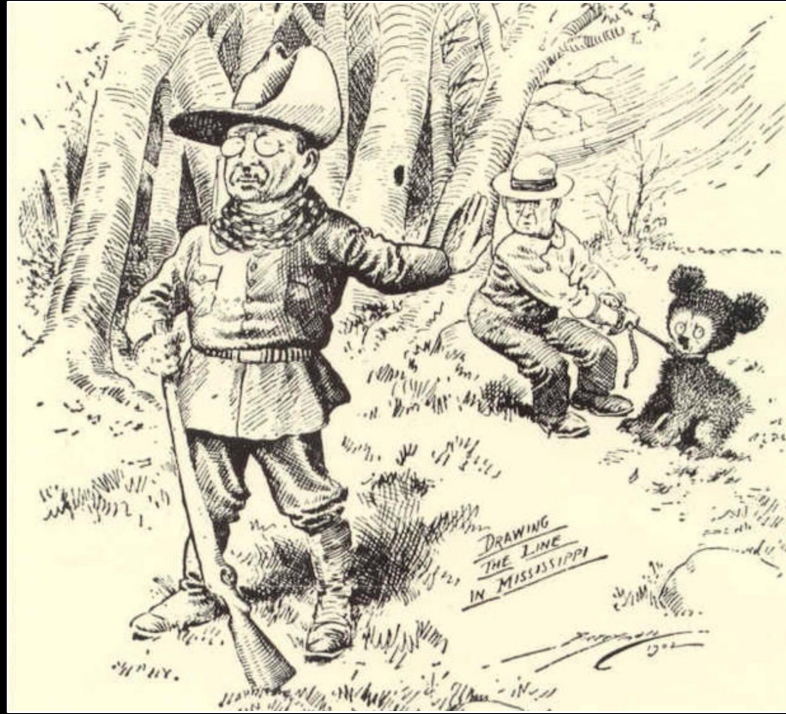
# Albright Visitor Center



# Teddy Bear



# Theodore Roosevelt





# Yellowstone Falls



## Yellowstone Falls

- Grand Canyon of Yellowstone
- Length: 20 miles
- Depth: 1000 feet
- Yellow color: Rhyolite
- Lower and upper Falls
- Lower Falls height: 308 feet



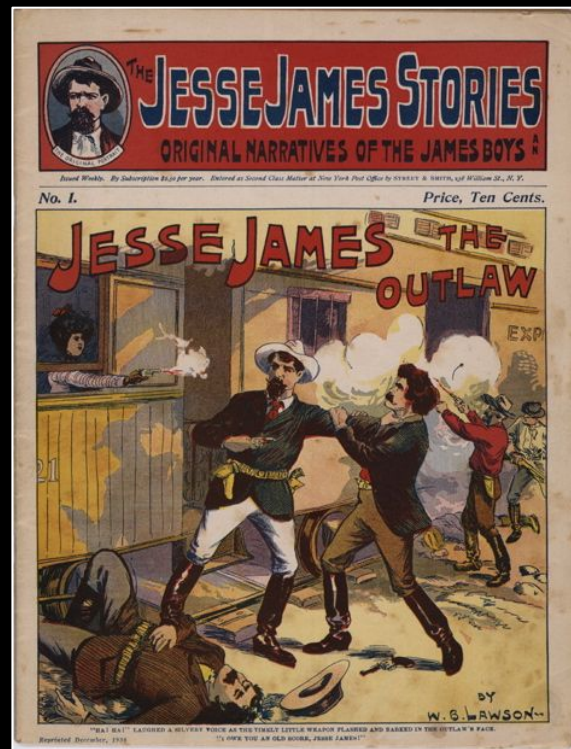
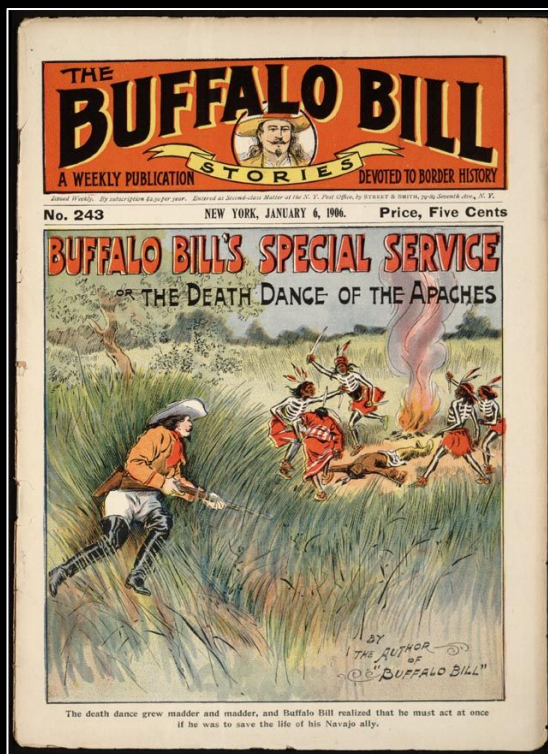
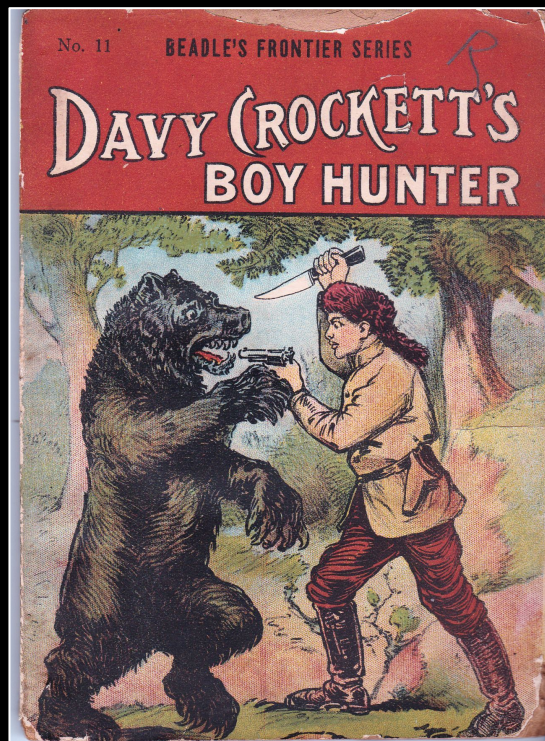
# Hayden Valley



## Hayden Valley

- Large, sub-alpine valley
- Ancient lakebed
- Trees don't grow, so excellent views of wildlife (bison)
- Views of Yellowstone River

# Dime Novels



## Dime Novels

- Popular, inexpensive paperback fiction mid to late 1800s
- Cheesy representations of western life
- Extremely over dramatized (often fictitious)
- Themes: Good vs evil
- Gunslingers
- Lawmen
- Cowboys & Indians
- Train & Bank robberies
- Saving the damsel in distress
- Comic Books of their day



# Buffalo Bill Cody





## **Buffalo Bill Cody**

- William Frederick Cody
- 1846-1917
- One of the most colorful figures of the American West
- Most famous American in the world
- American scout, bison hunter, showman
- Pony Express Rider, Civil War union soldier, civilian scout during Indian Wars,
- Name: hunted buffalo to provide meat to the railroad workers
- 1869: First appearance in a dime novel (mostly fiction)

## **Buffalo Bill Cody Shows**

- 1872: Invited to Chicago to perform with “Scouts of the Prairie” Wild West stage show
- Dime novels on the stage
- Started his own troupe - more and more sophisticated
- Performed part of the year and was a plains scout the rest
- 1873: “Scouts of the Plains” touring stage show
- 1883: “Buffalo Bill’s Wild West” - circus-like attraction
- 1893: “Buffalo Bill’s Wild West and Congress of the Rough Riders of the World”
- Toured for 30 years around American and Europe
- 1887: Performed at Queen Victoria’s Golden Jubilee

## **Buffalo Bill Cody Shows**

- Deadwood stage coach robbery
- Buffalo hunt
- Rodeo style skills - roping, horse tricks
- Sharp shooting demonstrations (Annie Oakley)
- Cowboys vs Indians battles
- Famous western figures (Sitting Bull)
- World Horse cultures: Turks, Arabs, Mongols (costumes)

# Buffalo Bill Cody & the Rough Riders of the West



Cast of Buffalo Bill's Wild West in 1887, including Buffalo Bill and Annie Oakley. MS6 William F. Collection. P.6.205 (detail)

# Cody, Wyoming





## Cody, Wyoming

- 1901: Helped start the town of Cody, Wyoming
- Close to Yellowstone
- On a newly opened railroad line
- 1902: Irma Hotel, named after his daughter

# Cody, Wyoming



# Buffalo Bill Center of the West



## **Buffalo Bill Center of the West**

- Affiliate of the Smithsonian Museum
- Five museums in one
- Buffalo Bill: his life and show
- Plains Indians: how they lived
- Western Art Gallery
- Natural History: plants and animals
- Firearms: thousands of guns (partially under renovation)

# Montana

**MONTANA**

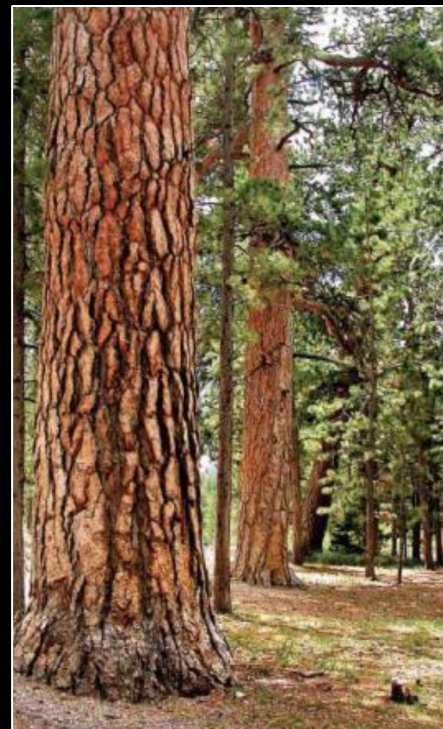




## Montana

- Statehood: 1889
- Capital: Helena
- Name: Spanish for “mountain”
- Nickname: Big Sky Country & The Treasure State
- Motto: “Silver and Gold”
- Today’s economy: cattle ranching, cereal grain farming, oil, lumber

# State Tree: Ponderosa Pine



# State Mammal: Grizzly Bear



# Billings, Montana



## **Billings, Montana:**

- Founded: 1882
- Built on a railroad line
- Named after Frederick Billings (North Pacific Railroad President)
- Population: 100,000 (largest city in Montana)
- Industry: Oil refining, railroad
- Nickname: “Magic City” - due to rapid and sustained growth



# Native Americans



## **Native Americans**

- 30,000 BC - land bridge between Asia & Alaska
- Hunters followed animal herds
- Settled further south through North & South America
- Regional development of housing, tools, beliefs
- Common indigenous practices: sacredness of land, revere ancestors, connection between natural & supernatural

## **Native Americans, continued**

- 1492 - Christopher Columbus
- 1500-1600s - Disease kills 90% - chicken pox, measles
- European settlement - pushed westward
- 1830 - Indian Removal Act
- 1845 - Manifest Destiny - US territorial expansion justification
- 1851 - Indian Appropriations Act - Reservation System
- 1860s-1890s - Post Civil War

## **Native Americans Today**

- 573 federally recognized tribes
- 5.2 million people
- 326 reservations
- 22% live on reservations
- Total lands: 87,000 sq miles (227,000 sq km) - size of Idaho
- 12 larger than the state of Rhode Island
- Poorest demographic
- Tribal sovereignty - casinos

# Battle of the Little Bighorn





## **Battle of the Little Bighorn**

- Date: June 25-26, 1876
- Location: Little Bighorn River in southern Montana  
(Named “Greasy Grass” by Native Americans)
- Background: Indians were required to live on reservations to protect the lands of white settlers, some refused and roamed the plains as they always had
- Large group of mix tribes formed large, wandering village in southern Montana
- 1876 US Army summer campaign to force Lakota & Cheyenne back to reservations, came upon village & underestimated size

## Native Americans

- Lakota, Dakota, Cheyenne, Arapaho
- Notable commanders: Sitting Bull, Crazy Horse
- Strength: 2,500 warriors
- Casualties: 31

## US Army

- 7th Cavalry
- Notable commanders: George Armstrong Custer
- Strength: 700 Cavalry
- Casualties: 268

## **Battle of the Little Bighorn**

Battle result:

- Overwhelming Native American victory
- Annihilation of 5 companies of the 7th Cavalry
- Death of George Armstrong Custer

Aftermath:

- Army hardened its resolve to crush Native American resistance
- Beginning of the end for free Native Americans
- Custer & 7th Cavalry became folk heroes
- Endless military strategy debates

# George Armstrong Custer



## George Armstrong Custer

- Cavalry Commander in Civil War and American Indian Wars
- Raised in Michigan & Ohio before attending West Point
- 1861+: First Battle of Bull Run, Battle of Gettysburg, present at Appomattox where South surrendered to the North
- 1867+: Dispatched to the west's 7th Cavalry Regiment to fight Indian Wars
- 1874: Black Hills Expedition
- 1876: Battle of Little Bighorn ("Custer's Last Stand")
- Why does everyone remember him? Very skilled at public relations - used print media of his time effectively



# Sitting Bull & Buffalo Bill



# Crazy Horse



# South Dakota



## South Dakota

- Statehood: 1889
- Capitol: Pierre (pronounced: “peer”)
- Name: Sioux word “dakhota,” meaning “friend”
- Nickname: Mount Rushmore State
- Motto: Under God the People Rule
- Population: 840,000

# State Mineral: Rose Quartz





# State Insect: Honeybee



# State Fossil: Triceratops



# Black Hills Gold



## The Black Hills

- 1870s in Black Hills
- Henri LeBeau - French goldsmith
- Dream: grape clusters, vines, leaves
- Pink: Yellow gold + copper
- Green: Yellow gold + silver
- 1980 court case:  
Gold can come from anywhere in the world  
Jewelry must to be manufactured in Black Hills



# The Black Hills





# The Black Hills



## The Black Hills

- Small, isolated mountain range in the Great Plains
- “Island of trees, in a sea of grass.”
- Look black from a distance because of pine trees
- Mostly gray granite rock

## The Black Hills Human History

- 11,500 BC: evidence Clovis culture
- 1500-1700's: modern tribes Cheyenne, Crow, Kiowa, Pawnee
- 1776: Lakota Sioux arrived from Minnesota & drove others out
- Europeans & Americans steadily encroached on lands
- 1868 Fort Laramie Treaty: established Great Sioux

Reservation, specifically forbidding white settlement of the Black Hills “forever”

## **The Black Hills Human History**

- 1874: General George Armstrong Custer of the 7th US Cavalry led gold-finding expedition
- 1875-1878: Gold Rush
- 1876: Black Hills War (Great Sioux War) - last major Native American War in the Midwest
- 1877: US Government reclaimed the Black Hills
- 1889: Great Sioux Reservation dismantled, forcibly relocated to five smaller reservations

# Sioux Tribe





## Sioux Tribe

- Upper Midwest
- Nomadic hunters - buffalo
- Expert horsemen (Spanish import)
- Housing: Teepee buffalo hides and poles
- Clothing: buffalo skins
- Weapon: Bow and arrow

## Sioux Tribe, today

- Sioux refers to any ethnic group within the Great Sioux Nation
- 3 major divisions based on language: Lakota, E & W Dakota
- Maintain 24 separate tribal governments scattered across several reservations
- North & South Dakota, Nebraska, Minnesota, Montana, Canada
- Population: 170,000
- Half of enrolled members live off the reservation ( $\frac{1}{4}$  ancestry)

# Crazy Horse Memorial



## Crazy Horse Memorial

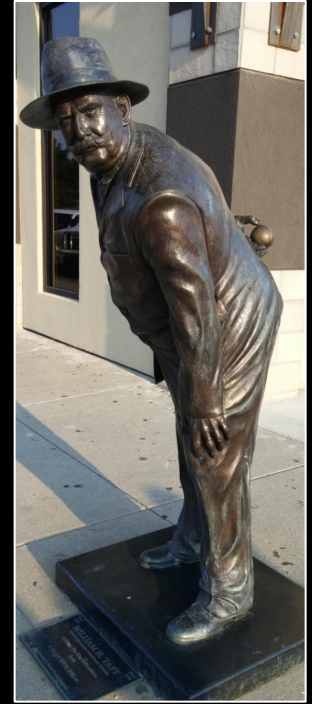
- Mountain monument currently under construction
- When done: largest sculpture in the world
- 17 miles from Mount Rushmore
- Will depict Crazy Horse astride a horse, pointing in the distance
- Face: 87 feet tall (Mount Rushmore heads 60 feet)
- Entire carving: 563 feet high, 641 feet long  
Pyramid of Giza (455 feet)
- Started: 1948
- Estimated Completion Date: ??? (50 years to complete arm)
- Refuse to accept government funds

## Crazy Horse

- Born in the Black hills around 1840
- Revered warrior and strategist
- Participated in Battle of the Little Bighorn
- Never surrendered or submitted to living on a reservation
- Died: 1877, killed by US soldier while under a flag of truce
- Don't have a photo of him



# Rapid City, South Dakota



## Rapid City

- Nickname: “City of Presidents”
- Gateway to the Black Hills
- Population: 70,000
- Main industry: tourism
- Ellsworth Air Force Base

# Mount Rushmore



## Mount Rushmore

- Granite sculpture faces of 4 presidents
- Mount Rushmore named after New York City lawyer, Charles Rushmore (1885 inspected mining claims)
- 1923: State Historian proposed carving western heroes in Black Hills as a tourist attraction - approached sculptor Gutzon Borglum
- 1925: Borglum decided to appeal to a national audience and proposed presidents as the subject - fundraising begins
- 1927: Carving begins
- 1941: Completion (Borglum dies)

## Mount Rushmore

- 400 workers
- 14 years
- Head: 60 feet
- Nose: 20 feet
- Eyes: 11 feet wide
- Original plan to carve figures to the waist (Washington's jacket)



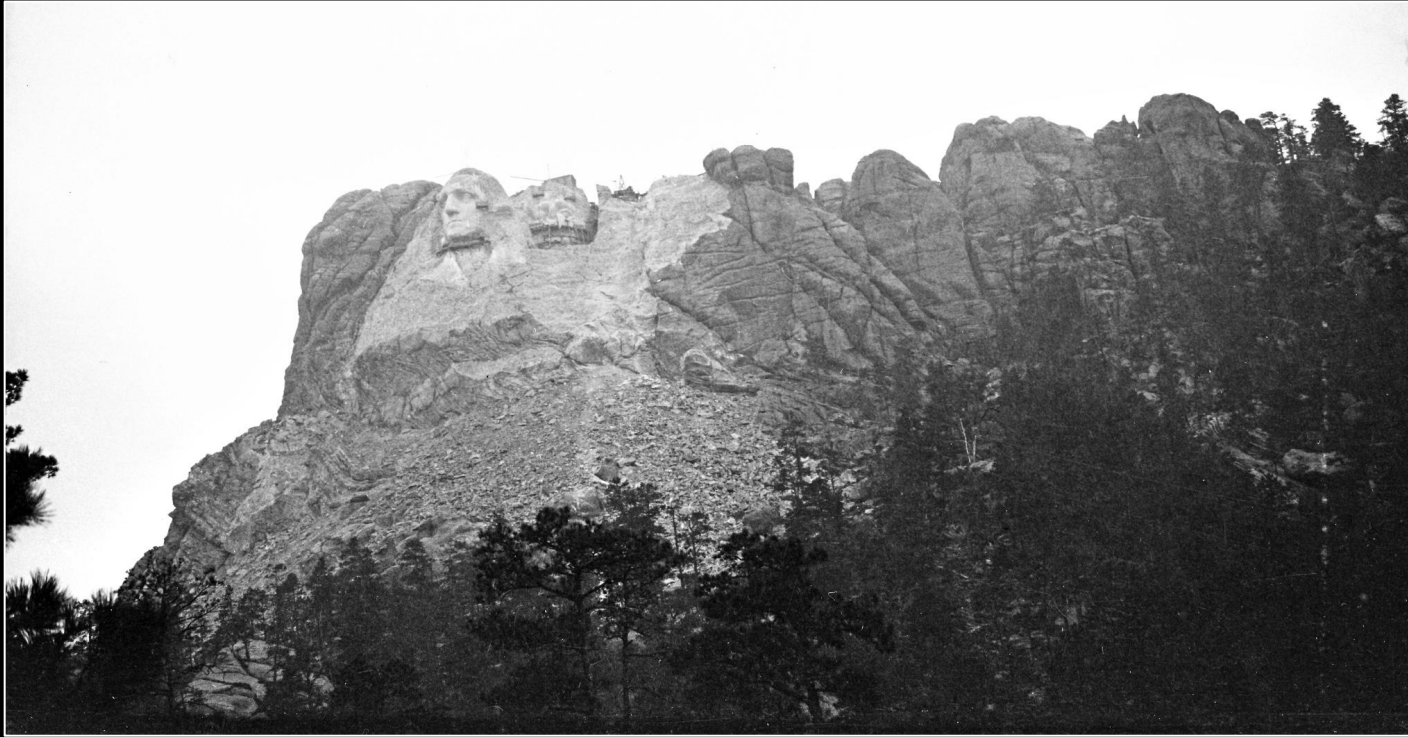
# Mount Rushmore



## Mount Rushmore Presidents

- **George Washington** - commander of US Army in Revolution, first president (founding father of our country)
- **Thomas Jefferson** - 3rd president, author of the Declaration of Independence, Louisiana Purchase
- **Abraham Lincoln** - kept America together during the Civil War
- **Theodore Roosevelt** - Conservation legislation, set aside millions of acres of public land (friend of sculptor), controversy (22 years)

# Under Construction



# Wall Drug, South Dakota



## Wall, South Dakota

- The drug store that took over the town
- One of the most genius advertising campaigns in the world
- 1931: Dorothy & Ted Hustead opened Wall Drug Store
- Small town of 300 people - business poor
- 1936: Idea to advertise “free ice water” on Highway 16
- Business boomed - hired 8 girls the first summer
- Put up even more signs the next year
- Now the drug store takes up most of Main Street
- Billboards stretch 650 miles along Interstate 90
- 2 million visitors per year



# The Jackalope



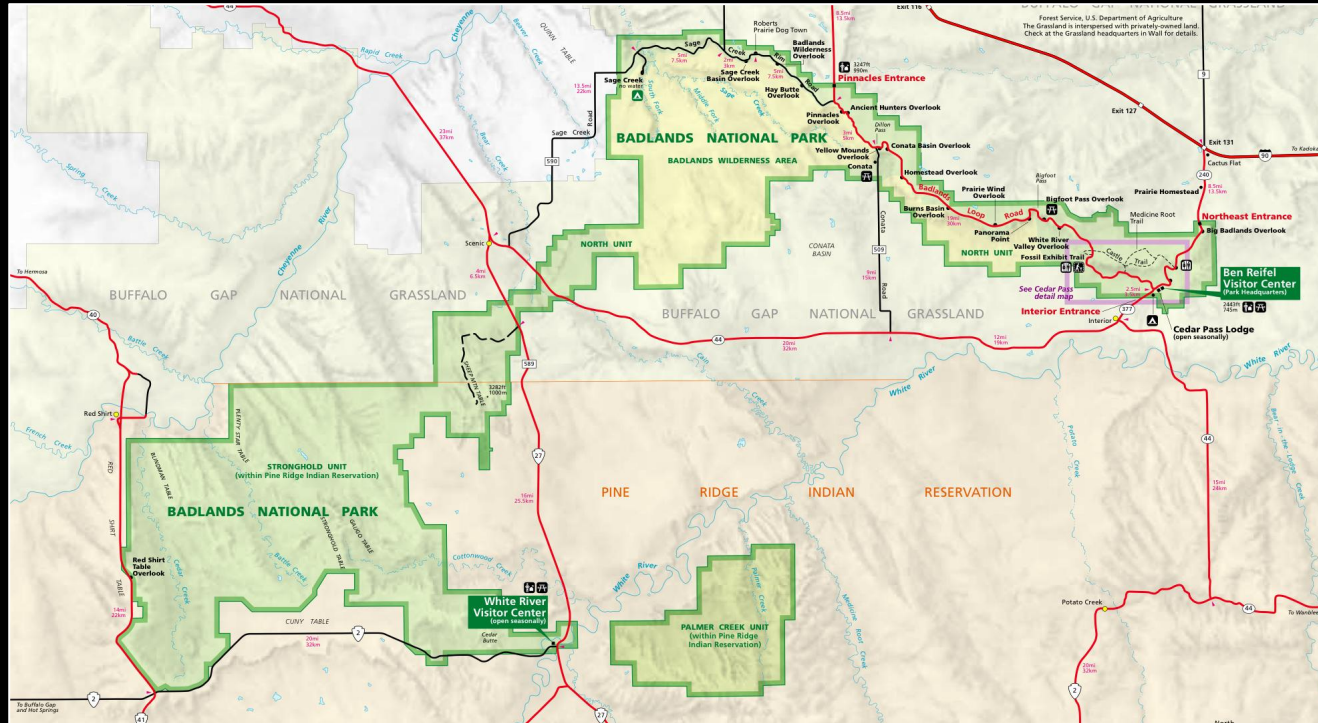
# Badlands National Park



## **Badlands National Park**

- French trappers: “bad land to cross”
- Sharply eroded buttes and pinnacles
- 240K acres
- National Park Services manages
- Largest undisturbed mixed grass prairie in US
- 1939 NM
- 1978 NP
- Dances With Wolves partially filmed in park

# Badlands National Park





# Pinnacles Overlook





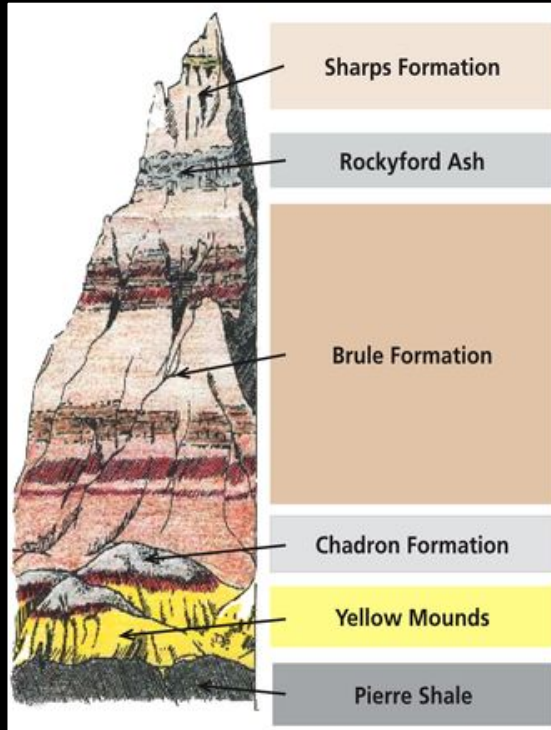
# Yellow Mounds



# Prairie Dog Town



# Badlands Geology



## Badlands Geology

- Ocean covered western US
- 25 million years ago: Upheaval rose ocean floor up, water drained away
- Broad, marshy plain with flowing rivers depositing layers of sediment
- Prehistoric animals died and sank into marshland: fossils
- Saber tooth cats, three toed horses the size of dogs, camels, crocodiles, dinosaurs
- 1-4 million years ago, erosion started to out pace deposits
- We are witnessing erosion - rain and wind

## **Badlands Geology**

- Different colors = different sediment deposits
- Gray: silt and clay
- Orange: Iron
- Purple: manganese
- White: volcanic ash
- Yellow: sulfur
  
- Fossiles regularly being unearthed



# Badlands Plants



## **Badlands Plants**

- 60 species of grass
- Supports animals who eat grass
- Rapid erosion won't allow roots to grow for trees & shrubs
- This increased erosion rate even more

# Badlands Animals



## **Badlands Animals**

- Rabbits
- Snakes
- Coyotes
- Deer
- Porcupines
- Mice
- Buffalo
- Bighorn Sheep
- Prairie Dogs

# Bighorn Sheep





## Bighorn Sheep

- Native to North America
- Males have distinctive large, curled horns
- Weighing up to 30 lbs
- Female horns are smaller
- During mating season, they crash horns together for dominance displays
- Well adapted to climbing steep terrain (predator evasion)
- Eat grass and shrubs

# Black-footed Ferret



## **Black-footed Ferret**

- Once thought to be extinct
- Small colony found in Wyoming and reintroduced in 1994
- Primary food source: prairie dogs

# Prairie Dogs



## Prairie Dogs

- Native to North American grasslands
- Type of ground squirrel
- Name comes from sound they make - “barking squirrels”
- Burrows:
  - Multiple chambers
  - 6-9 feet deep
  - 15-30 feet long
  - Up to 6 entrances
- Highly social - live in colonies “towns”



# Prairie Dogs Kiss



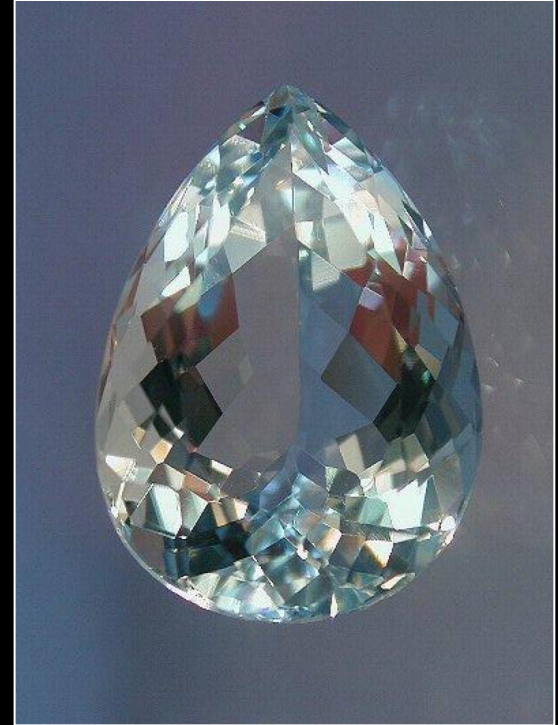
# Colorado



## Colorado

- Statehood: 1876
- Capitol: Denver
- Name: Spanish for Rio Colorado which carried ruddy (reddish) silt down river
- Nickname: The Centennial State
- Motto: Nothing without providence
- Geography: east = flat, west = Rocky Mountains
- Today's economy: cattle, mining, tourism (skiing), government (US Air Force Academy and NORAD (North American Aerospace Defense Command))

# Gemstone: Aquamarine



# Flower: Rocky Mountain Columbine





# Sport: Pack Burro Racing



# Denver, Colorado



## Denver

- Capital of Colorado
- Most populous city in state - 2.8 million
- Nickname: “Mile High City” - 5,690 feet (1,731 meters)
- Nickname: “Queen City of the Plains” - 500 mi from nearest city
- Nickname: “Wall Street of the West”
- Lifestyle: active and outdoorsy - 300 days of sunshine
- Forbes Magazine list of best places for business and careers



# 16th Street Pedestrian Mall



## **16th Street Pedestrian Mall**

- 1982 downtown revitalization
- 1.25 mile pedestrian street
- 350 shops and restaurants
- Street performers
- Free bus - every 3-15 mins



# Rocky Mountains



# Rocky Mountains



## Rocky Mountains

- 3000 mile (4800 km) - mountain chain
- “Backbone of the United States”
- British Columbia in Canada to New Mexico in USA
- 80-55 million years ago
  - Tectonic plates sliding at shallow angle, made wide range
  - Glaciers carved dramatic peaks & valleys
- Today: mining and tourism (skiing)



# Interstate Highway System



## Interstate Highway System

- Dwight D. Eisenhower National System of Interstate and Defense Highways
- Controlled-access highways across USA
- Championed by President Dwight D. Eisenhower
- Construction authorized by the Federal Aid Highway Act of 1956
- Total length: 48,000 miles (77,000 km)
- Construction cost in today's money: \$500 billion



# Eisenhower Tunnel



## Eisenhower Tunnel

- Interstate 70 tunnels under Continental Divide
- Completed 1979
- Length: 1.6 miles (2.7 km)
- Elevation: 11,158 feet (3,401 m)
- Highest vehicular tunnel in USA

# Continental Divide



## **Continental Divide**

- Follows line of high peaks in Rocky Mountains
- Separates watersheds which drain into Pacific & Atlantic

# Vail, Colorado





# Vail, Colorado



# Vail, Colorado



## **Vail Ski Resort**

- World famous ski resort
- 5,000 acres of skiable land
- Ski Lifts: 33
- Marked Trails: 193
- 3 faces of mountain: front side, back bowls, Blue Sky Basin
- Open mid-November to mid-April
- 200+ inches of snow each year
- Vail Mountain elevation: 11,570 feet

## Vail, Colorado

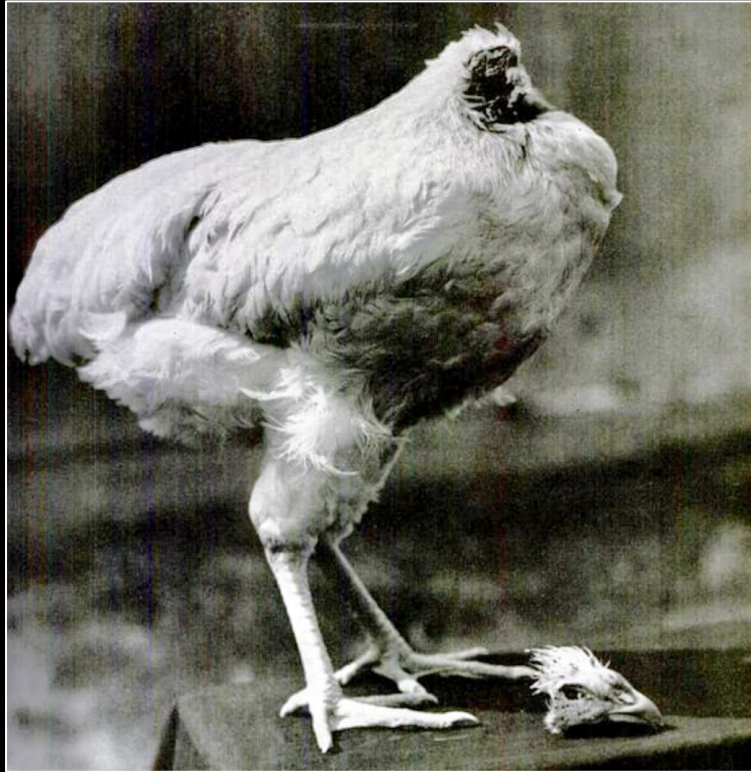
- Town Population: 5,000
- Elevation: 8,000 feet (2400 m)
- Founded by: Pete Sibert - WWII Army 10th Mountain Division

Returned home with plan to build a ski resort

- Named for: Charles Vail - Colorado Interstate highway engineer
- Summer economy: hiking, mountain biking, fishing, golf



# Miracle Mike





## **Mike the Headless Chicken**

- “Miracle Mike”
- 1945 - Farmer Lloyd Olsen's dinner
- Missed jugular and brainstem
- Brainstem responsibilities: breathing, heart rate, reflexes
- Headless Mike lived for 18 months
- Fed mashed corn with an eye dropper
- Career as a touring side show act
- Fruita, Colorado annual town festival

# Miracle Mike



# Colorado River



# Red Rock Canyon Country

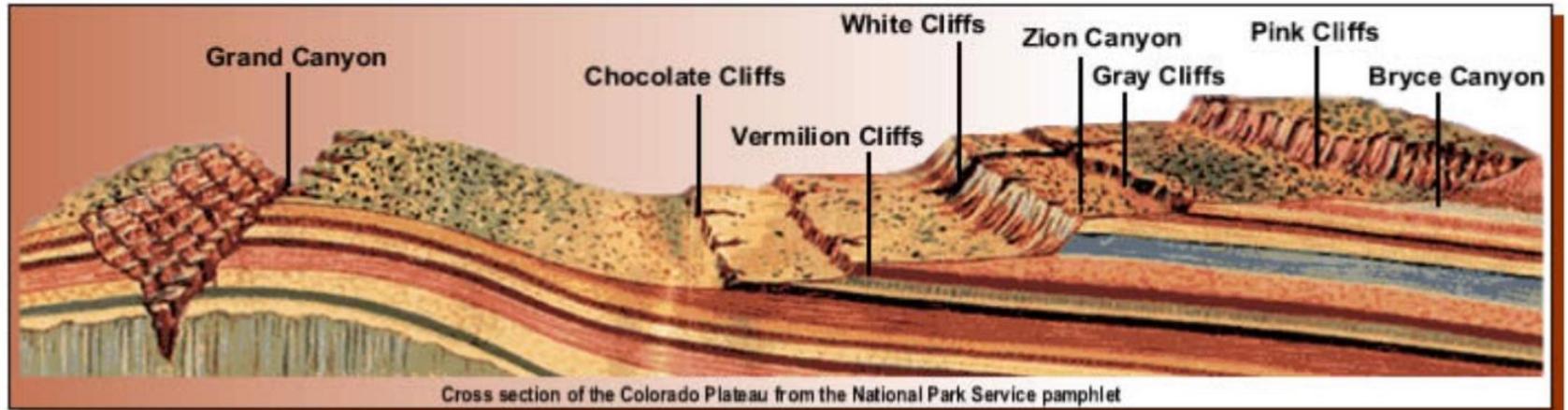


# Colorado Plateau





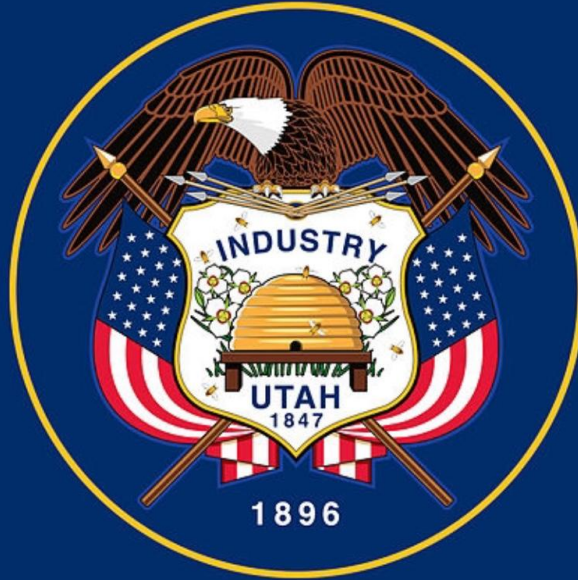
# Colorado Plateau Grand Staircase



## **Colorado Plateau:**

- CO Plateau large tracts of land mostly flat sedimentary rock sections rising up towards Rocky Mountains
- Elevation: 4900-11,000 feet (1500-3350 m)
- 5 Sections are edged with massive cliffs as they go lower
- Most of the rock is sandstone or limestone
- Red color comes from a high iron content

# Utah



## Utah

- Statehood: 1896
- Capitol: Salt Lake City
- Name: Ute Indians - “people of the mountains”
- Nickname: Beehive State
- Motto: Industry
- Settled by Mormons
- Today’s Economy: tourism, computer software, steel, copper, cattle, corn, wheat

# State Insect: Honey Bee





# State Rock: Coal



# State Dance: Square Dance



# Native American Petroglyphs



## **Native American Petroglyphs**

- Symbols carved into rock
- Lasts for hundreds/thousands of years
- Found all over the world
- No written language, so meaning are guesses
- Nomadic animal routes?
- Warnings?
- Religious instruction?
- Recording significant events?



# Desert Varnish





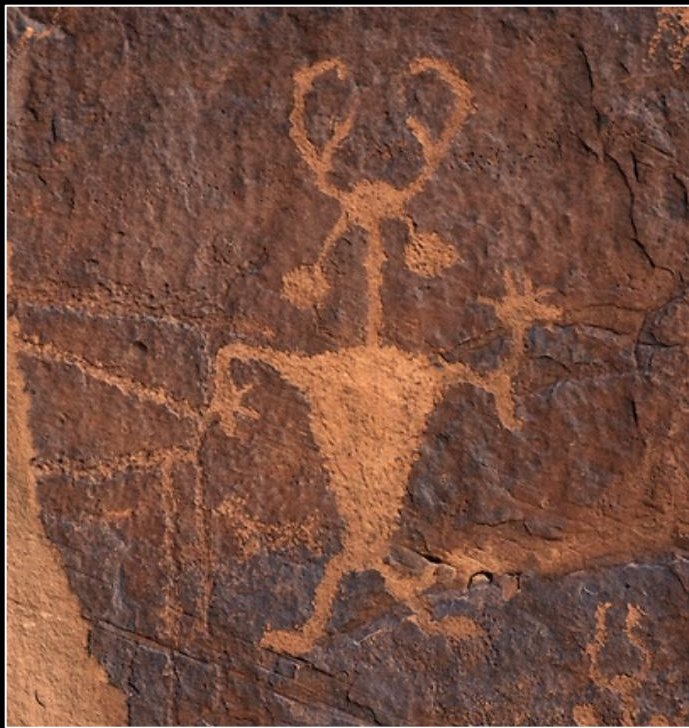
## Desert Varnish

- Orange or black coating on rock surfaces in arid climates
- Only form on physically stable rocks not subject to erosion
- Particles of clay & iron & manganese oxide & organic material
- Clay acts as a fly trap to catch trace elements in wind
- Native Americans chipped away dark varnish to reveal light rock beneath

# Golf Course Rock Art



# Golf Course Rock Art





# Golf Course Rock Art



## **Golf Course Rock Art**

- Artists: Anasazi & Fremont Native Americans
- Dates: 1-1275 AD
- Depicts: elk, canines, bighorn sheep, men, aliens?
- Lower half naturally broke off
- On semi-public lands (owned by local golf course) - not protected



# Moab Man



# Moab, Utah



## Moab, Utah

- Small village on the Colorado River
- Population 5000
- Started as an agriculture center (fresh water)
- 1950s - “Uranium Capital of the World” - end of Cold War decline
- Today’s Economy: Tourism
- Gateway to Arches & Canyonlands National Parks
- Base for extreme mountain biking and off-road vehicle sports
- Moab Jeep Safari - annual 4 wheel drive festival (Easter)

# Arches National Park

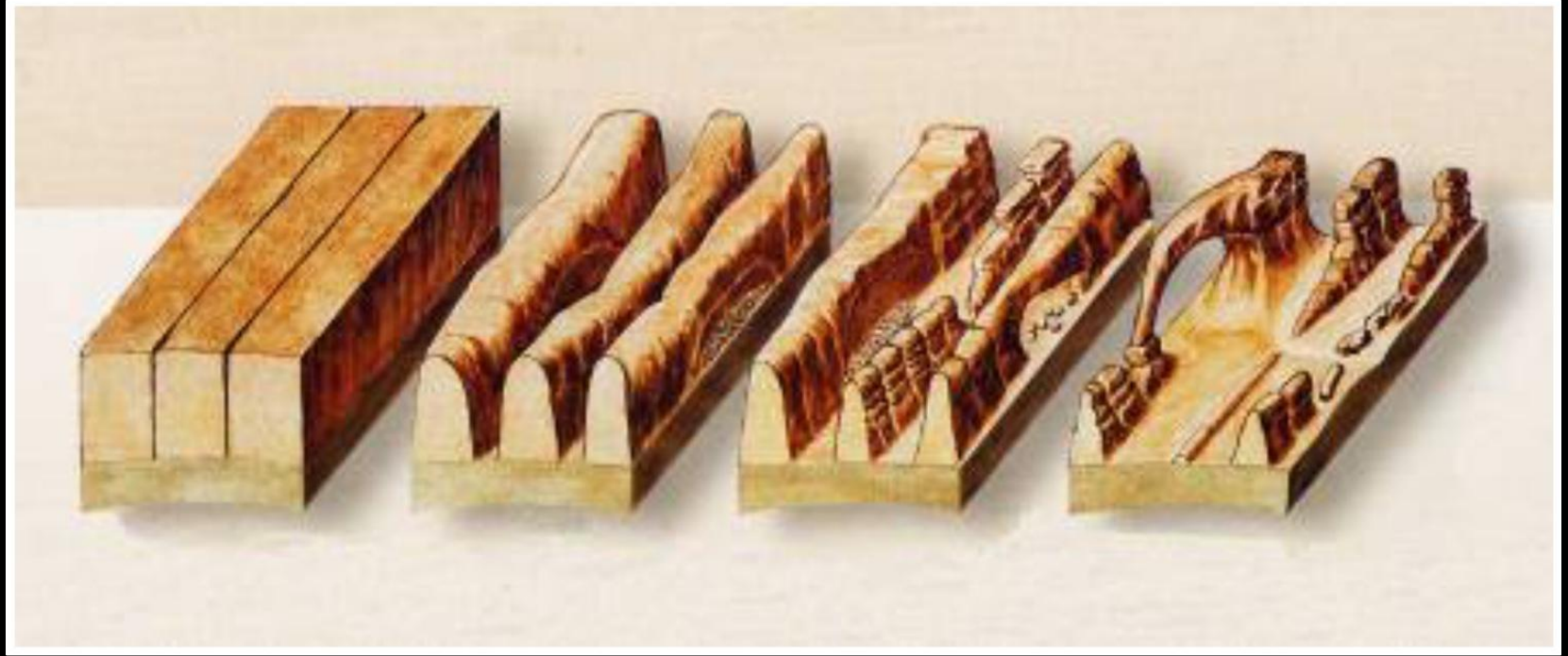


## **Arches National Park**

- National Park: 1960
- Size: 120 sq miles (76,000 acres)
- Claim to fame: 2000 natural arches
- Highest density of arches in the world
- Heights: 3 feet to 306 feet
- Since 1977, 43 arches have collapsed



# Arches Geology



## Arches Geology

- Expanding & retreating oceans deposited sandstone & mudstone
- Entrada Sandstone (top - salmon color)
- Navajo Sandstone (bottom - buff color)
- Geologic forces underground caused land to crack in long fissures
- Long rock “fins” developed
- Ice erosion expands cracks, wind erosion carries away material
- Under the right conditions (rock hardness/balance) arches form

# Arches Plants & Animals



## **Arches Plants & Animals**

- Active at dawn or dusk: mule deer, coyotes, porcupines, jackrabbits & many songbirds
- Active during day: squirrels, chipmunks, lizards, snakes, hawks & eagles
- Drought resistant plants: cacti, yucca, mosses
- Spring or rainy times: grasses and wildflowers



# Biological Soil Crust





## **Biological Soil Crust**

- Tiny living organisms
- Helps ground retain moisture
- Creates nutrients
- Provides grasses and shrubs a foothold in the sand
- Can take years to grow back when stepped on :(

# Ephemeral Pools



## Ephemeral Pools

- Small “potholes”
- Gather rain and collect plant & animal debris
- Develop tiny ecosystems which harbor microscopic invertebrates
- They exist for a short time and then evaporate

# Balanced Rock



## **Balanced Rock**

- Height: 128 feet (39 m)
- Weight: 3600 tons
- Estrada Sandstone rock on top
- Mudstone pedestal



# Delicate Arch



## **Delicate Arch**

- Height: 60 feet (18 meters)
- Most well known Arch in the park
- On the Utah license plate
- 2002 Winter Olympic torch passed through it
- Nicknames: “The Chaps” & “The School Marm’s Bloomers”
- Hour difficult hike to get there
- We are going to viewpoint (200 feet walk)

# Utah License Plate



# Double Arch



## Double Arch

- Two arches next to each other
- Fabulous photo opportunity
- Tallest: 104 feet (32 m) height, 148 feet (45 m) across
- ½ mile walk over sandy soil - can turn around at any time



# The Windows



## The Windows

- Long fin of connected arches
- North and South Windows
- ½ mile walk over sandy soil - can turn around at any time
- “Rustic” restrooms

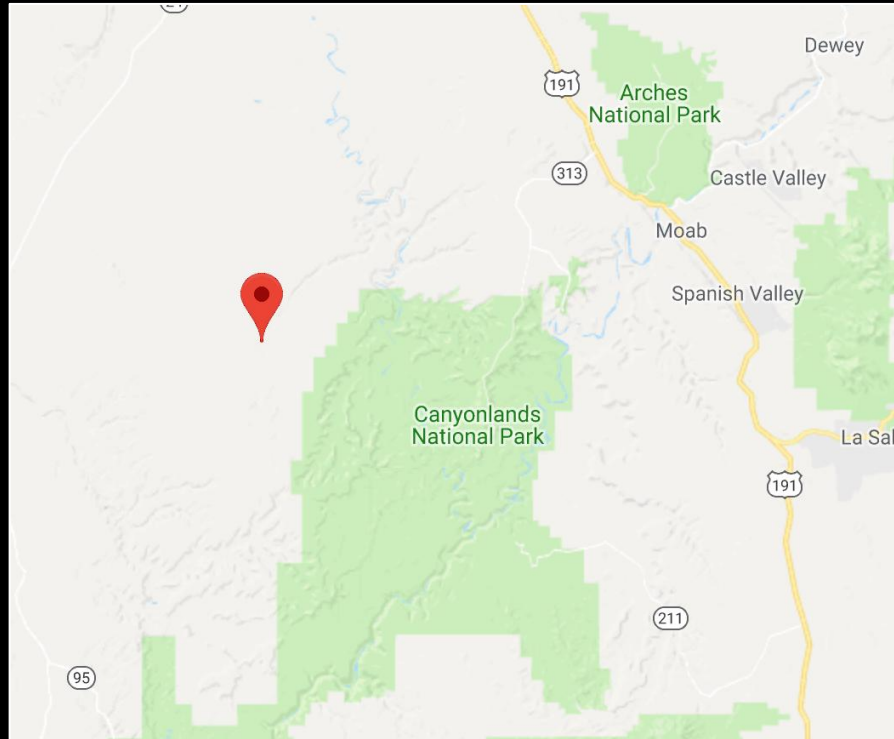
# 127 Hours Movie



## **127 Hours Movie**

- True story of Aron Ralston
- Hiking in Blue John Canyon (west of Canyonlands)
- Fell through a crack & a boulder pinned his right hand
- Stuck for 127 hours
- Cut off arm below elbow
- Taken by helicopter to Moab Hospital

# Blue John Canyon





# BETWEEN A ROCK AND A HARD PLACE

THE NEW YORK TIMES BESTSELLER



ARON  
RALSTON

# Canyonlands National Park



## **Canyonlands National Park**

- 1964
- 527 sq miles (330,000 acres)
- Claim to fame: colorful eroded landscape of canyons, mesas & buttes
- Carved by the convergence of Green River & Colorado River
- 3 districts: Island in the Sky, Needles, the Maze

# Needles



## **Needles**

- Southeast side of park
- Named for colorful spires of Cedar Mesa Sandstone
- Very rugged backcountry
- One short road
- Used for long day hikes & week-long camping trips
- Extreme 4-wheel drive off-roading



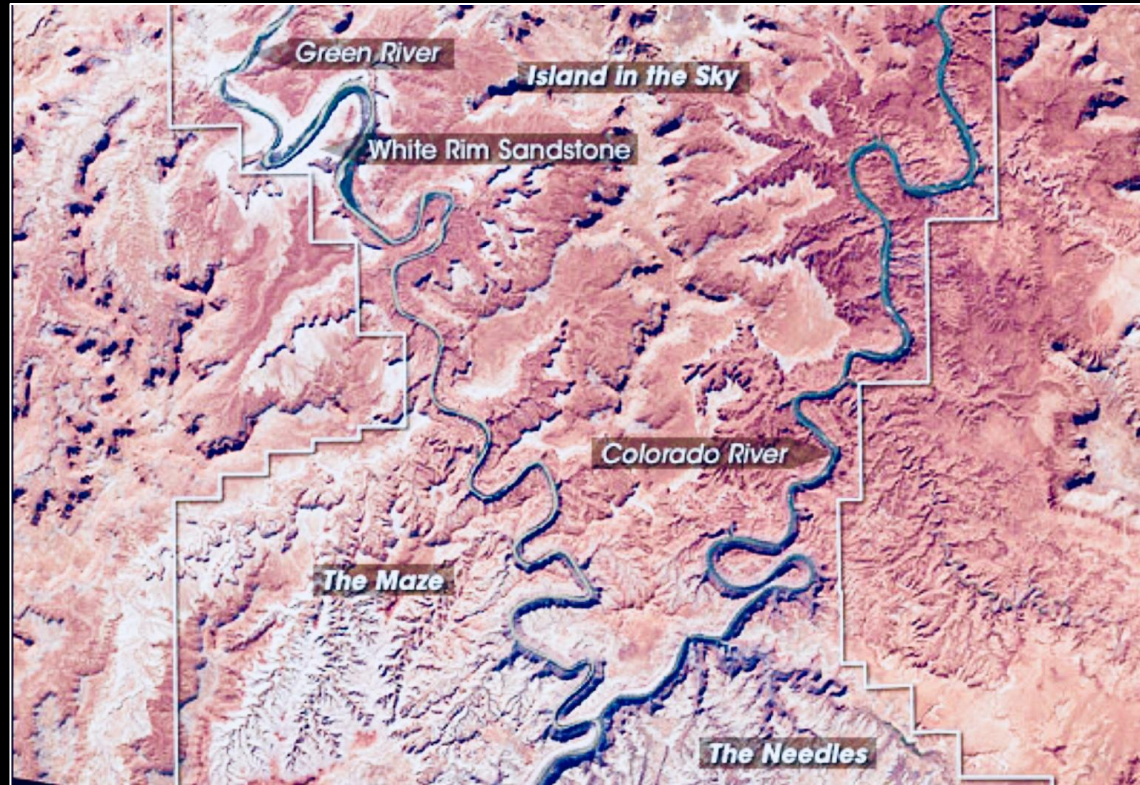
# The Maze



## The Maze

- Southwest side of park
- Big, wild & untamed
- Least accessible part of Canyonlands
- One of the most difficult places to get to in US
- Zero amenities: no food, water or gasoline

# Island in the Sky

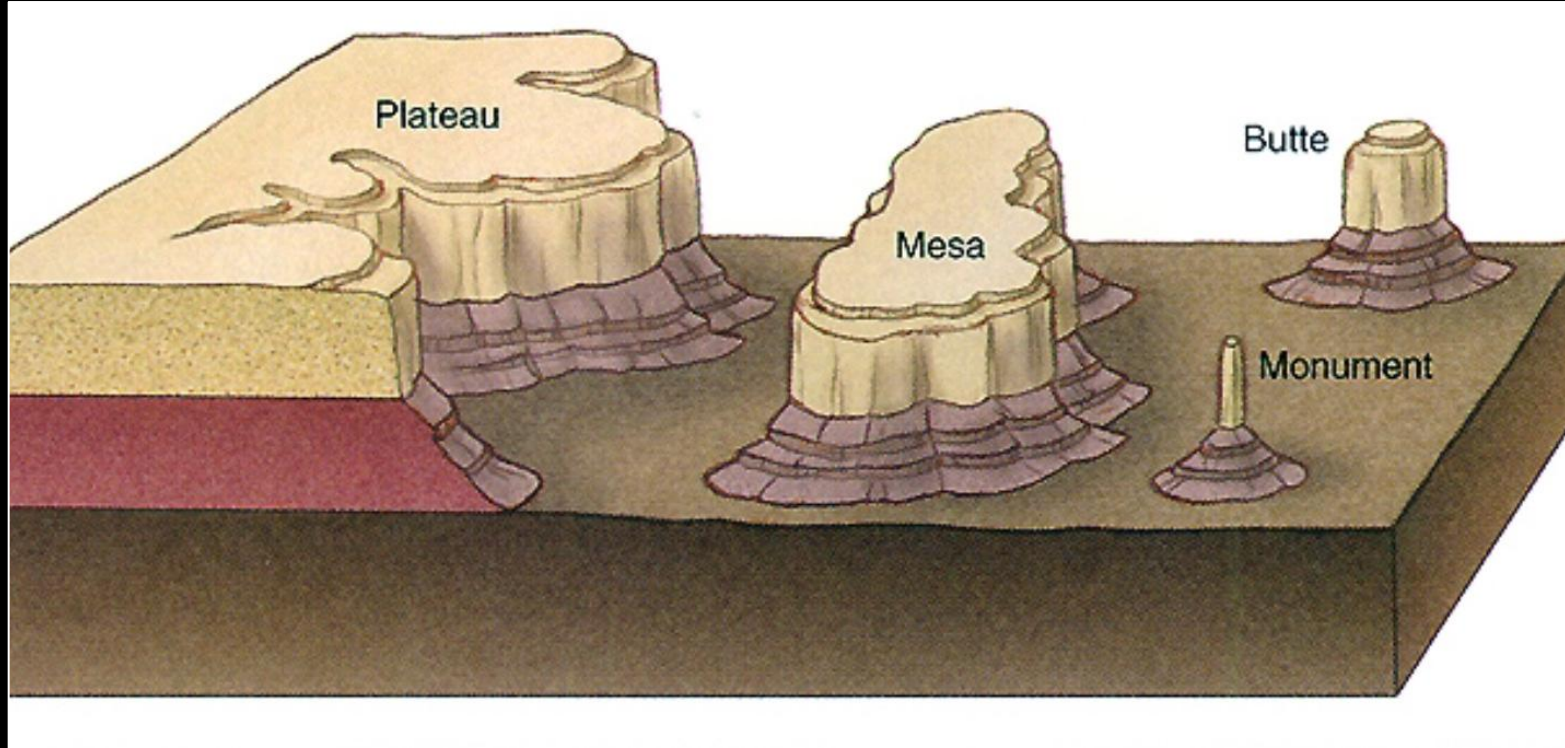


## Island in the Sky

- North side of park
- Most accessible part
- Arrowhead shaped mesa, formed by the meeting of the Green & Colorado Rivers
- Stunning views overlooking much of Canyonlands



# Plateau, Mesa, Butte, Monument





# Green River Overlook



## **Green River Overlook**

- Major tributary of the Colorado River
- Starts in central Wyoming
- Meets Colorado River in Canyonlands National Park

# Grand View Overlook



## **Grand View Overlook**

- Elevation: 6000 feet
- Canyon below: 3800 feet
- End of the paved roads in the park
- Green River to right
- Colorado River to left
- Meet in the middle



# Native Americans





## Native Americans

- 30,000 BC - land bridge between Asia & Alaska
- Hunters followed animal herds
- Settled further south through North & South America
- Regional development of housing, tools, beliefs
- Common indigenous practices: sacredness of land, revere ancestors, connection between natural & supernatural

## **Native Americans, continued**

- 1492 - Christopher Columbus
- 1500-1600s - Disease kills 90% - chicken pox, measles
- European settlement - pushed westward
- 1830 - Indian Removal Act
- 1845 - Manifest Destiny - US territorial expansion justification
- 1851 - Indian Appropriations Act - Reservation System
- 1860s-1890s - Post Civil War

## Native Americans Today

- 573 federally recognized tribes
- 5.2 million people
- 326 reservations
- 22% live on reservations
- Total lands: 87,000 sq miles (227,000 sq km) - size of Idaho
- 12 larger than the state of Rhode Island
- Poorest demographic
- Tribal sovereignty - casinos

# Kachina Dolls



## **Kachina Dolls**

- Spirit being in the religious beliefs of the Pueblo people
- Personification (spirit) of things in the real world
- Three different aspects:
  - The supernatural being
  - The kachina dancers (masked members of the community who represent kachinas at religious ceremonies)
  - Kachina dolls (carved in the likeness of kachinas)



## **Kachina Dolls, continued**

- Can represent anything in the natural world (revered ancestor, an element, location, quality, natural phenomenon, or concept)
- Not worshipped per se
- Viewed as a powerful being to give veneration & respect
- In return, the being uses its particular power for human good, bringing rainfall, healing, fertility, or protection

# Dream Catchers



# Kokopelli



## Kokopelli

- Many theories & stories
- Fertility deity depicted as a humpbacked flute player (presides over both childbirth & agriculture)
- A trickster god who vengefully lures away children (Pied Piper)
- Hunchback who tricks the village beauty into sleeping with him
- Possible Aztec origins: traders who brought their goods in sacks slung across their backs & played a flute to announce themselves as friendly

# Mesa Verde National Park





## **Mesa Verde National Park**

- Best preserved Ancestral Puebloan archaeological sites in US
- 4,300 sites - 600 cliff dwellings
- Dating from 650 AD - 1300 AD
- National Park: 1906
- Area: 52,000 acres

# Mesa Verde = Green Table



# Cliff Dwellings



# Ancestral Pueblo People



## **Ancestral Pueblo People**

- 550-750 - Basketmaker period
- 750-1150 AD - Pueblo period
- 1150-1300 AD - Classic Pueblo period (Cliff Dwellings)
- Hunting: rabbits, deer, turkey
- Agriculture: corn, squash, beans
- Crafts: basket making, pottery, jewelry
- Traded with other tribes in the area
- Disappeared from Mesa Verde after 1300 (drought? danger?)



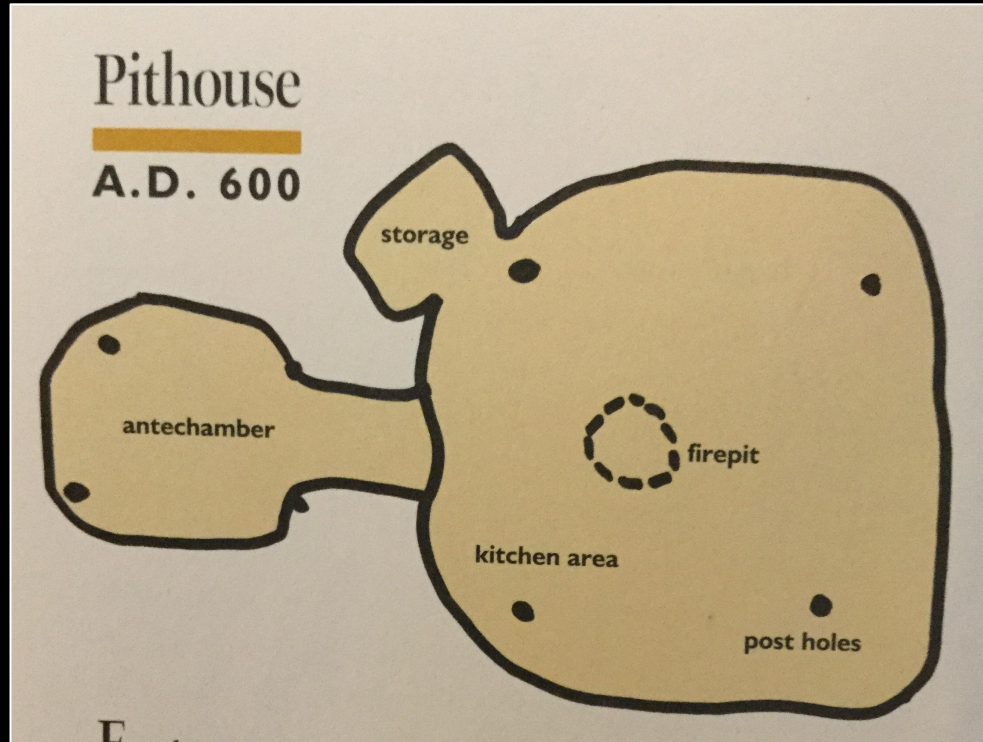
# Pit Houses



## Pit Houses

- 550-750 AD - “Basketmakers”
- Dug into ground
- Four corner poles that supported roof
- Mud roof and walls
- Hole in roof for fire
- Small antechamber for storage

# Pit Houses



# Cliff Dwellings



## Cliff Dwellings

- Cut stone bricks and mortar, multistory buildings
- Set in sandstone rock alcoves
- Access very difficult
- 600 on Mesa Verde
- Usually a few rooms only, some over 100 rooms
- Interior walls were plastered and painted with designs
- All contained kivas



# Kivas



## Kivas

- Round room built into the ground of the cliff
- Used for religious ritual, political meetings, social gatherings
- 6 upright stone pillars supporting roof
- Stone bench seating between the pillars
- Fire pit in center
- Ventilation shaft
- Entry was a ladder through the roof

# Cliff Palace Overlook



## Cliff Palace

- 1260-1280 AD
- Largest cliff dwelling in Mesa Verde
- 215 feet wide, 90 feet deep, 60 feet high
- 150 rooms, 23 kivas
- 125 residents
- Probably the central hub among the 60 nearby cliff dwellings



# Sun Temple

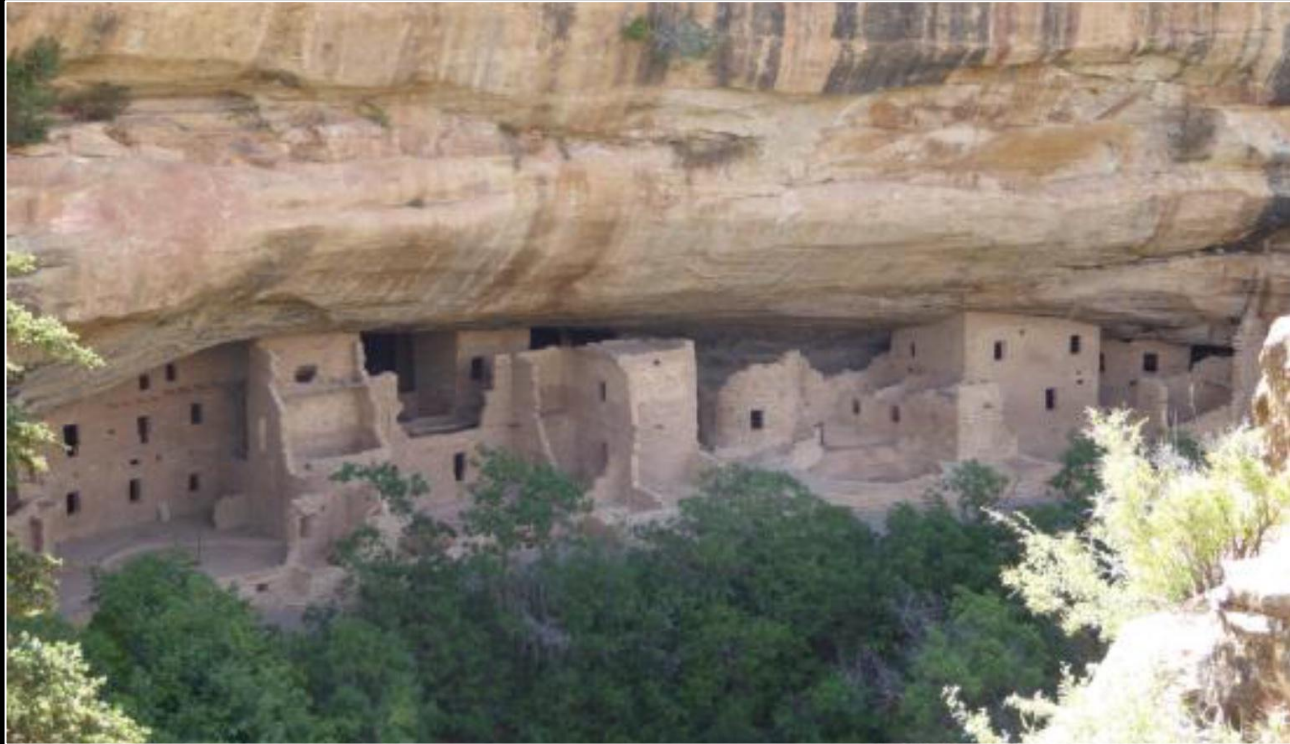




## Sun Temple

- 1250 AD
- 30 rooms
- Built as a center of worship / astronomical observatory
- Conspiracy theories (advanced geometry)
- Believed to have been abandoned before finished  
(no roof beams or household goods)

# Spruce Tree House Overlook



## **Spruce Tree House**

- 1200-1280 AD
- 3rd largest cliff dwelling on Mesa Verde
- 130 rooms, 8 kivas
- 60-90 residents
- Built near a spring

# Navajo People



## Navajo People

- Call themselves: The *Dine*
- 300,000 tribal members - 2nd largest after Cherokee
- 1400 BC
- Herd sheep & goats
- Spinning & weaving wool blankets



# Navajo Reservation



# Navajo Reservation



## Navajo Reservation

- Largest reservation
- 27,000 sq miles (71,000 sq km)
- Similar in size to West Virginia
- Arizona, Utah, New Mexico
- Population: 200,000

# Code Talkers



## Code Talkers

- WWII - 1940s
- Mission: transmit secret tactical messages using a code based on their Navajo language
- 400-500 Code Talkers
- Code was never cracked



# Monument Valley



## Monument Valley

- Located on the Navajo Tribal Lands - Tribal Park
- Known for extensive sandstone buttes (1000 feet high)
- Valley floor elevation: 5000-6000 feet (1,500-1800 m)
- Elevation used to be at top of the buttes
- 65 million years ago: layers of sand covered by layer of shale
- Cracks and wind/water erosion created valley
- Top shale layer of buttes is a cap of harder stone, protecting the buttes below from erosion

# John Ford Movies



## John Ford Movies

- American Film Director
- Used Monument Valley for “western” films
- Defined what most people think of when they envision “The West”
  - Stagecoach (1939)
  - My Darling Clementine (1946)
  - She Wore a Yellow Ribbon (1949)
  - The Searchers (1956)
  - How the West Was Won (1962)

## Other Monument Valley Movies

- Easy Rider
- National Lampoon's Vacation
- Thelma and Louise
- Back to the Future III
- Mission Impossible II
- The Lone Ranger (2013)
- Forrest Gump



# Goulding Lodge



# Open-air Truck Tour



# Navajo Taco

## How it's made:

White flour  
Baking powder  
Salt  
Warm water  
Deep fried

## Served with:

Stew  
Navajo Taco  
As a side dish



# Arizona



## Arizona

- Statehood: 1912
- Capitol: Phoenix
- Name: Spanish word for “little spring”
- Nickname: Grand Canyon State
- Motto: God enriches
- Today's Economy: copper  $\frac{2}{3}$  US production, tourism, healthcare, transportation



# Gemstone: Turquoise



# Reptile: Ridge-nosed Rattlesnake



# Neckwear: Bolo Tie



# Cameron Trading Post



## **Cameron Trading Post**

- 1911: Bridge built across Little Colorado River
- 1916: Richardson brothers established a Trading Post
- Navajo & Hopi Traded wool/blankets/livestock for dry goods
- Important connection point between east and west
- Grand Canyon east entrance tourism convenient stop
- Today: Large selection of Native American goods



# Desert View Watchtower



## **Desert View Watchtower**

- East entrance of Grand Canyon
- 70 foot observation tower
- Built: 1932
- Architect: Mary Coulter
- Designed to resemble ancient Puebloan Peoples watchtowers

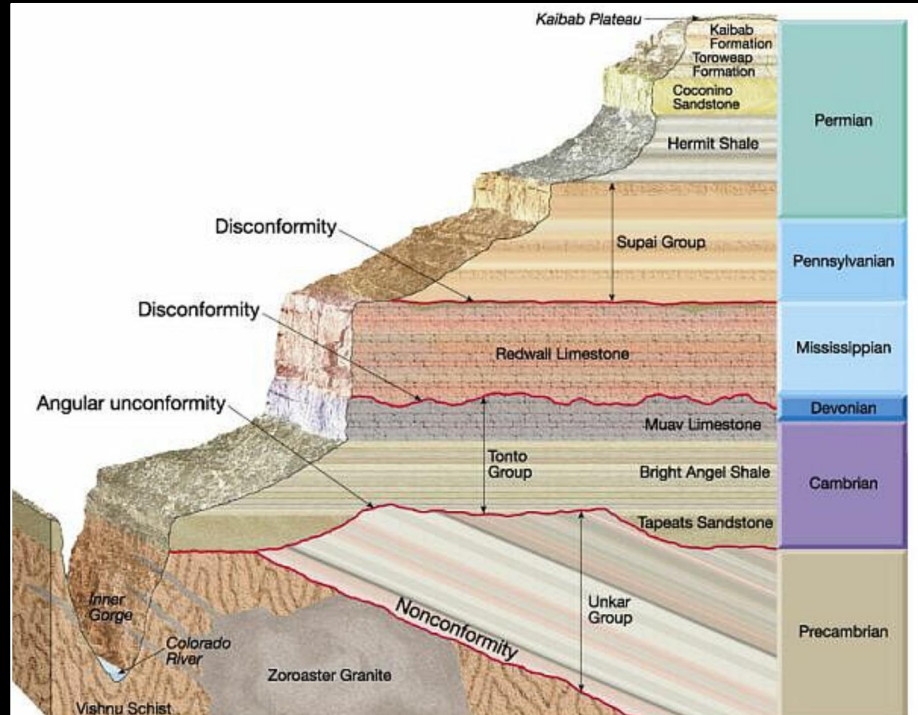
# Grand Canyon National Park



## Grand Canyon

- Length: 277 miles (446 km)
- Average width: 10 miles (16 km)
- Widest point: 18 miles (29 km)
- Depth: over a mile, 6000 feet (1850 m)
- Carved by Colorado River + wind/ice erosion
- Age: 6 million years

# Grand Canyon Geology





## Grand Canyon Geology

- Rock layers deposited by oceans expanding and contracting
- 70 million years ago: Colorado Plateau starts to lift
- 6 million years ago: Rocky Mountains form
- Colorado River becomes steeper
- Fast river carves through soft sandstone and limestone
- Side canyons formed by small streams
- Canyon widens due to ice and wind erosion

# Grand Canyon National Park



## **Grand Canyon National Park**

- 1908 National Monument
- 1919 National Park
- 1.9 million sq miles (4.9 mil sq km)
- South Rim - most Park services
- North Rim - difficult access

# Grand Canyon Plants



## **Grand Canyon Plants**

- Piñon Pine
- Ponderosa Pine
- Juniper
- Mixed conifer
- Desert shrubs
- Cacti



# Ponderosa Pine



## Ponderosa Pine

- Most widely distributed pine tree in North America
- Tall with thick, flaky bark (fire protection)
- Young: blackish brown (blackjack)
- Old: reddish (yellow bellies)
- Smell: stick your nose in the bark and sniff
- That was not a joke
- Theory: chemical in sap warmed by the sun

# Grand Canyon Piñon Pine



## Piñon Pine

- Edible pine nuts
- Staple of Native American diet
- Extraction: knock cones off tree with stick, stack in pile, light on fire to burn away sticky resin and loosen nuts
- Can't be harvested on public lands, except by Native Americans

# Grand Canyon Juniper





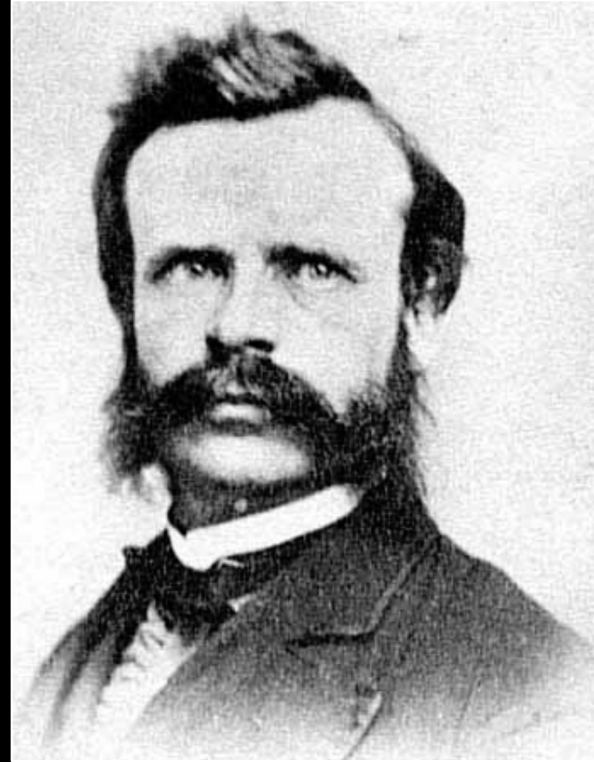
## Juniper

- Berries: cooking spice, gives flavor to gin
- Native American remedies: epilepsy, asthma, female contraceptive
- Calcium in ash: 1 teaspoon = 1 glass of milk
- Bark: sandals and baskets

# Grand Canyon Juniper



# Grand Canyon Human History



## **Grand Canyon Human History**

- 12000-9000 - Paleo-Indian
- 800-1300 - Ancestral Puebloan
- 1540 - Francisco Coronado, Spanish explorers looking for gold
- 1869 - John Wesley Powell expedition to map Colorado River
- 1901 - Railroad from Williams, AZ brings tourists

# Route 66





# Route 66



# Interstate Highway System



## Route 66

- 1926 - Chicago to Los Angeles (2500 miles)
- 1920s-30s: Great Depression (25% unemployment)
- 1930s: Dust Bowl (extended drought)
- California needed workers for their fruit and vegetables farms
- Families packed up everything to head west for new opportunity
- Route 66 was the main road that all small roads fed into
- Small towns along way had hotels, restaurants, gas stations
- 1956 Interstate Highway Act
- Bypassed towns and they began to wither
- 1986: "Historic Route 66 Association" created
- Nostalgia celebrates: small town America, the great American Road Trip, a simpler time & way of life, hard work/determination

# Hoover Dam





# Hoover Dam





## Hoover Dam

- Type: concrete arch-gravity dam
- Dates: 1931-1936
- Height: 726 feet (221 m)
- Length: 1244 feet (379 m)
- Width at top: 45 feet (14 m)
- Width at bottom: 660 feet (200 m)
- Cost: \$639 million (in today's money)

## Hoover Dam

- Dams the Colorado River
- Spans across Black Canyon
- Created Lake Mead
- Purpose 1: control river's seasonal flooding
- Purpose 2: water for irrigation & desert cities
- Purpose 3: hydroelectric power
- Border between Nevada & Arizona

# Nevada



## Nevada

- Statehood: 1864
- Capital: Carson City
- Name: Spanish for “snow covered”
- Nickname: Silver State, Sagebrush State, Battle Born State
- Moto: All for Our Country
- Today's economy: Tourism (legalized gambling), Mining (gold)
- Fun (?) Fact: Only state with legalized prostitution

# State Metal: Silver





# State Flower: Sagebrush



# State Gemstone: Opal



# Mojave Desert



## Mojave Desert

- Driest Desert in North America
- Rain: 5 inches
- Very hot in summer 120+F (49+C)
- Death Valley: -280 feet (-85m), 134F (56C)
- High desert 2000-5000 feet (600-1500m)
- Animals: snakes, lizards, chipmunks, rabbits, mule deer, etc
- Plants: 1700+ species

# Las Vegas





## Las Vegas:

- Name: Spanish for “the meadows”
- Natural oasis in the Mojave Desert
- 1905 - Railroad depot (Los Angeles to Salt Lake City)
- 1930 - Hoover Dam construction begins (20 miles away)
- 1946 - Bugsy Siegel: The Flamingo
- 1950s-1960s - Rat Pack era

## Las Vegas:

- Food (buffets & celebrity chefs)
- Shows (Cirque du Soleil)
- Concerts (super star residencies)
- Conventions
- Weddings
- “What happens in Vegas, stays in Vegas”

# Fremont Street Experience



# Bellagio Water Fountains





# New York, New York





# Venetian



# High Roller



# Mob Museum





# Neon Museum



# **Scenic Parks Explorer Slide Show**