

# **National Parks Wonders Slide Show**

# 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)



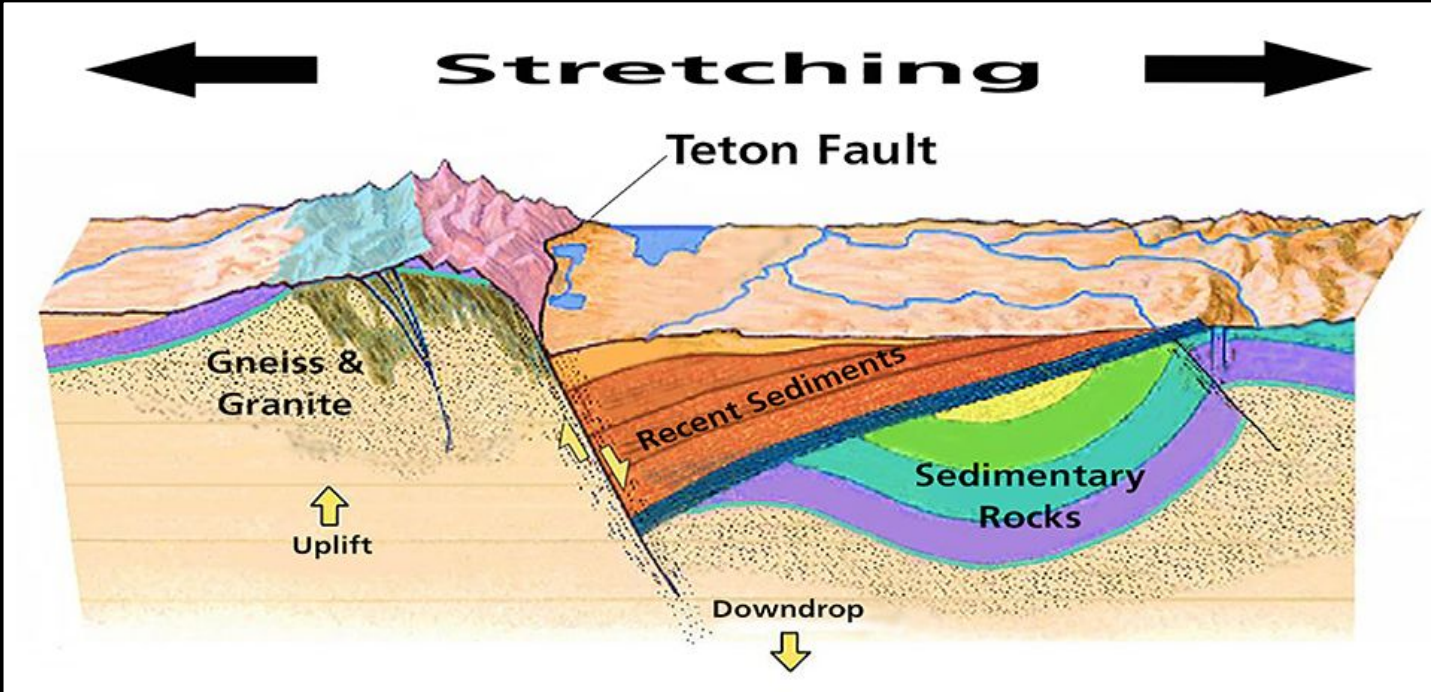
# Grand Teton Range



## **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

# 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

# Jackson Lake Lodge

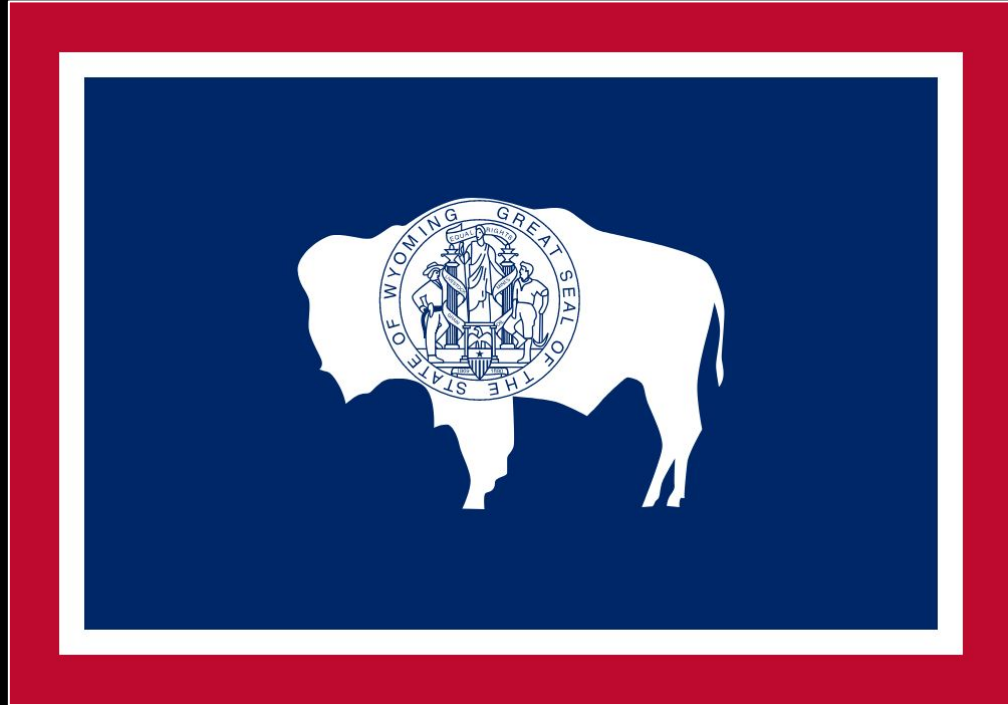




## **Jackson Lake Lodge**

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

# 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

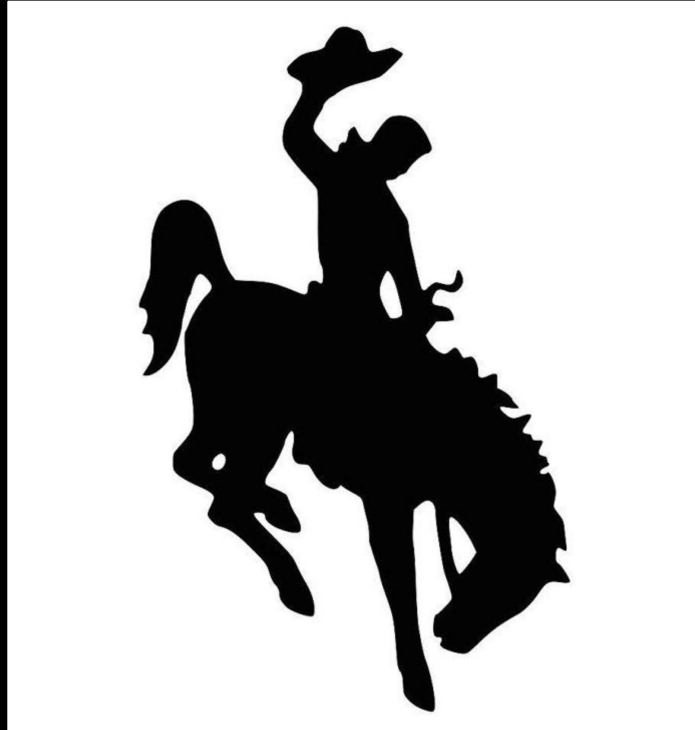




# Sport: Rodeo



# Wyoming Registered



# Wyoming Registered Trademark



# 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



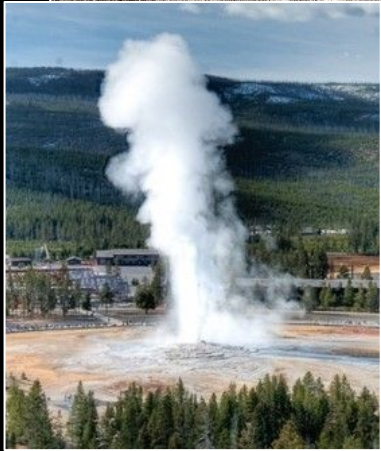
# Yellowstone National Park



## 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)

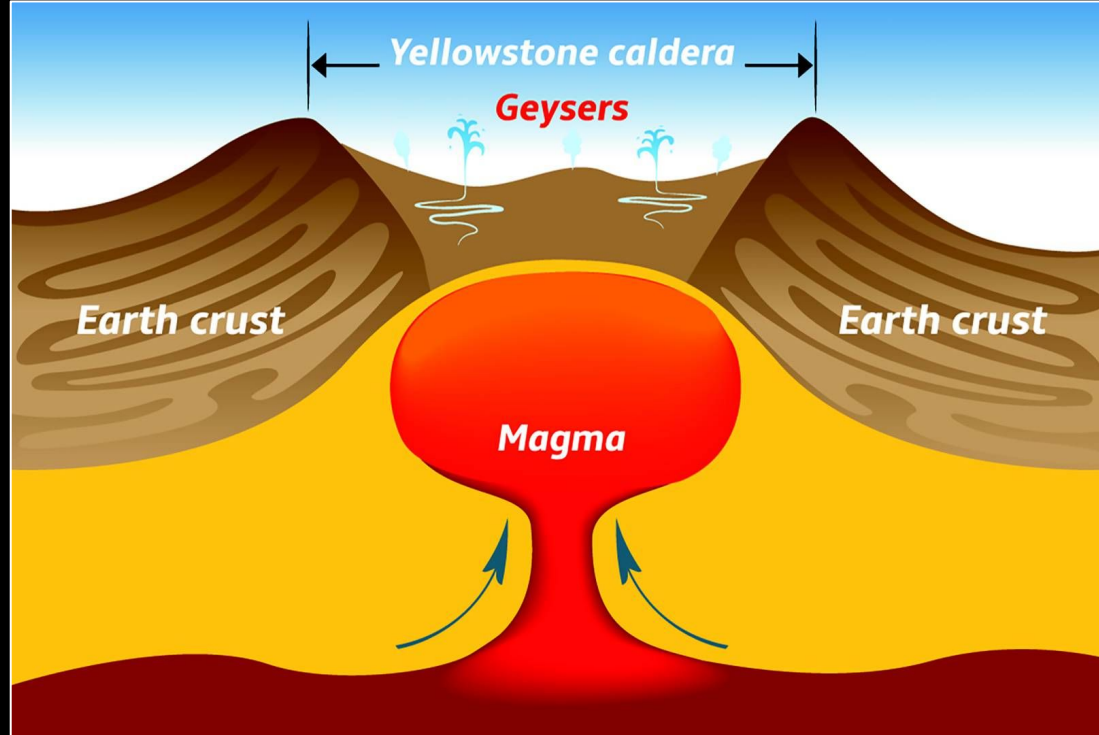
# Yellowstone Geology



## 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

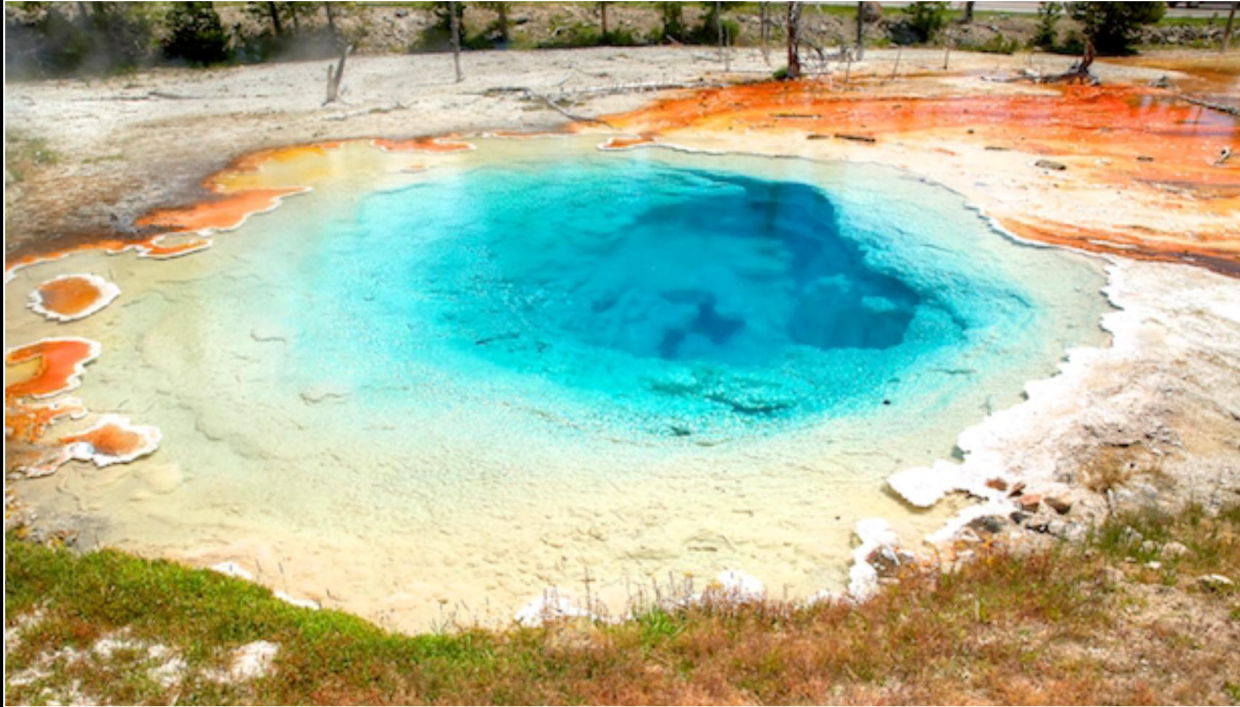




## Grand Prismatic Spring

- 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

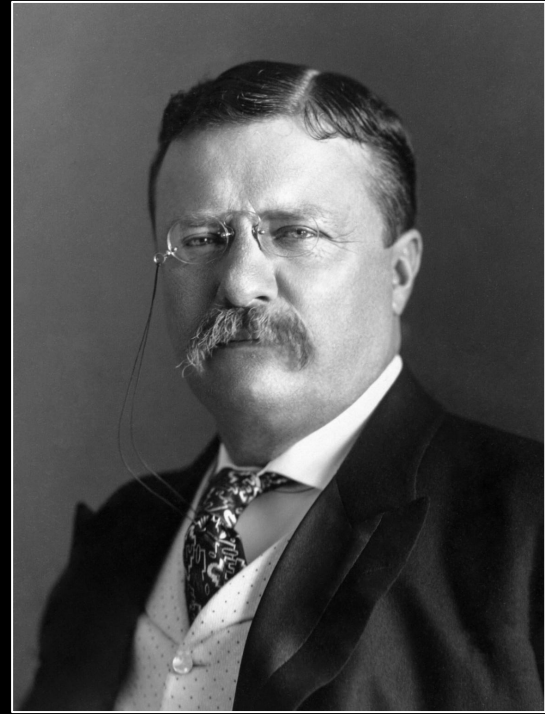
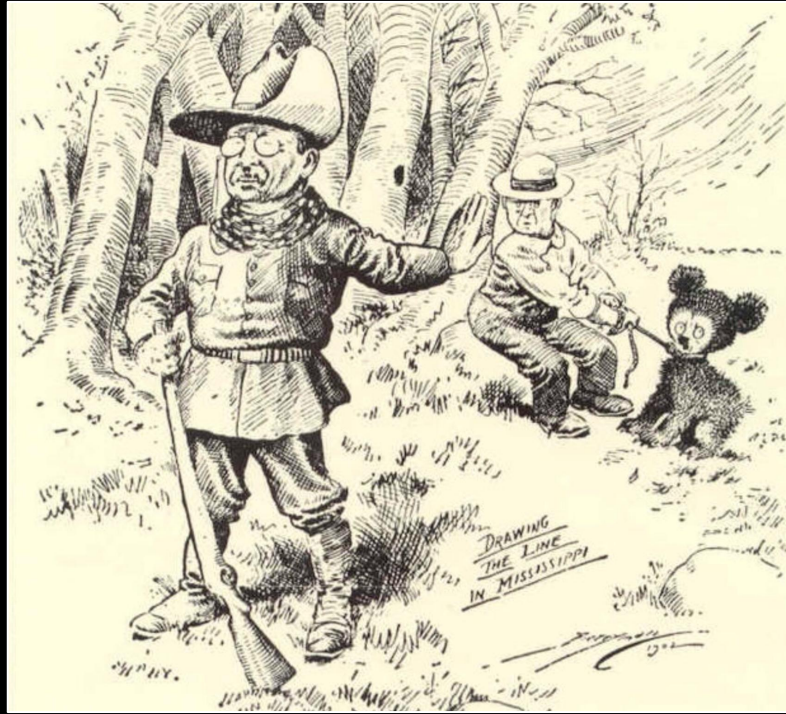
# Albright Visitor Center



# 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

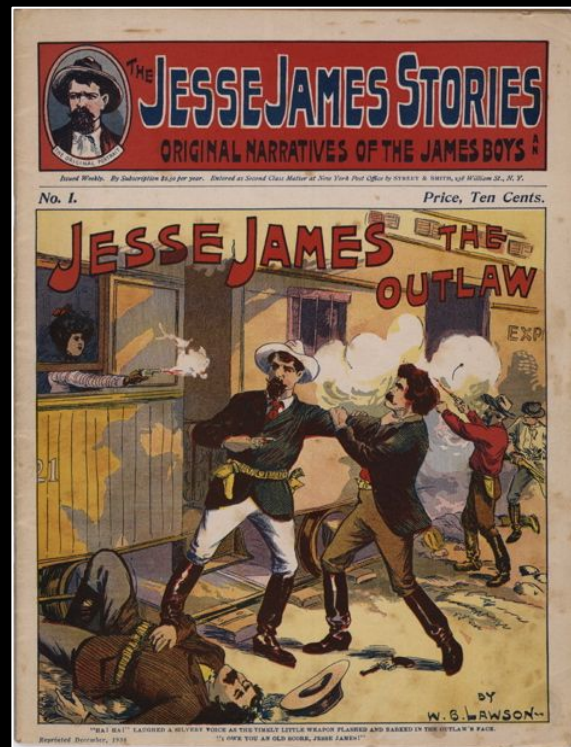
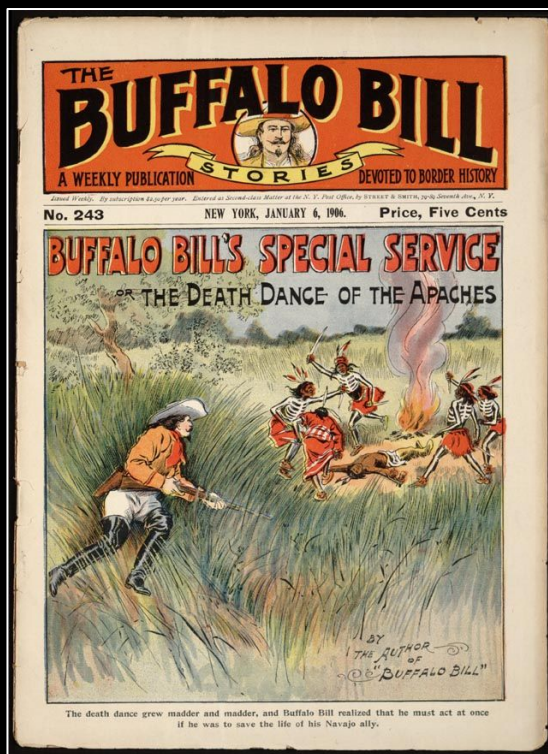
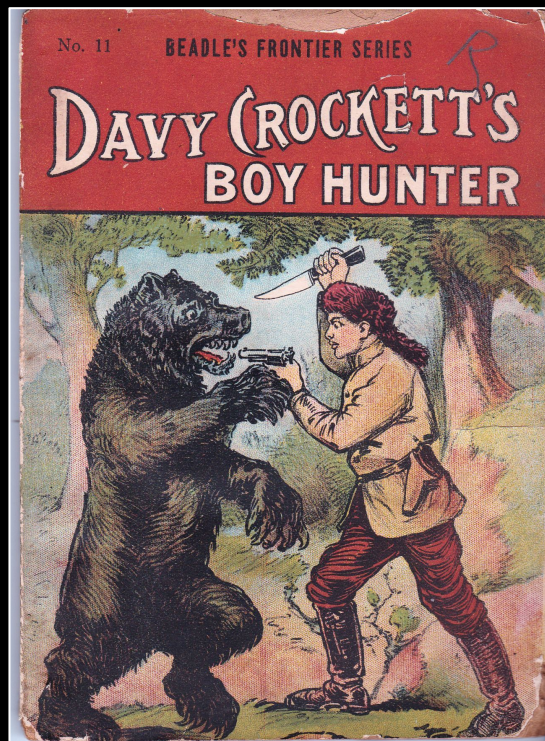


## Hayden Valley

- 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)



# Bighorn Mountains



## **Bighorn Mountains**

- Northeast spur of the Rocky Mountains
- 200 miles long
- Running north/south through Wyoming and Montana

# P.O. News & Flagstaff Cafe



## **Connect With Locals: P.O. News & Flagstaff Cafe**

- In business over 100 years
- Started as a tobacco store which sold newspapers
- Cafe added later
- Usually only open for breakfast and lunch
- Tonight open for our private dining experience



# 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



# 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)

# Devil's Tower





## **Devil's Tower**

- Height: 867ft (265m)
- Formed: 60-40 million years ago
- Formed: hot, liquid magma pushed up toward the surface between sedimentary rock, but never reached the surface
- Cooled down to become an igneous rock formation
- Softer surface rock eroded away to reveal Devil's Tower
- Rock type: phonolite porphyry (gray color)
- Greenish color comes from lichen growing on surface

# Devil's Tower



## Devil's Tower

- Appears to have long scratches down side
- As magma cooled, it developed vertical cracks
- These cracks formed hexagonal strips 6 feet in diameter
- Easy to see the hexagons in rubble around base
- 1st National Monument (1906 Antiquities Act)
- 400,000 visitors each year
- Several thousand climbers (no climbing in June)

# Devil's Tower





## Devil's Tower

- Native Americans hold land sacred
- Regional gathering place for religious ceremonies
- Many stories how it was formed
- Kiowa: 7 sisters & 1 brother walking in woods - brother turns into a bear - chases sisters on top of a tree stump - tree stump rises - brother bear claws sides of stump - sisters are shot into the sky to become the the Big Dipper constellation

# 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





# 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

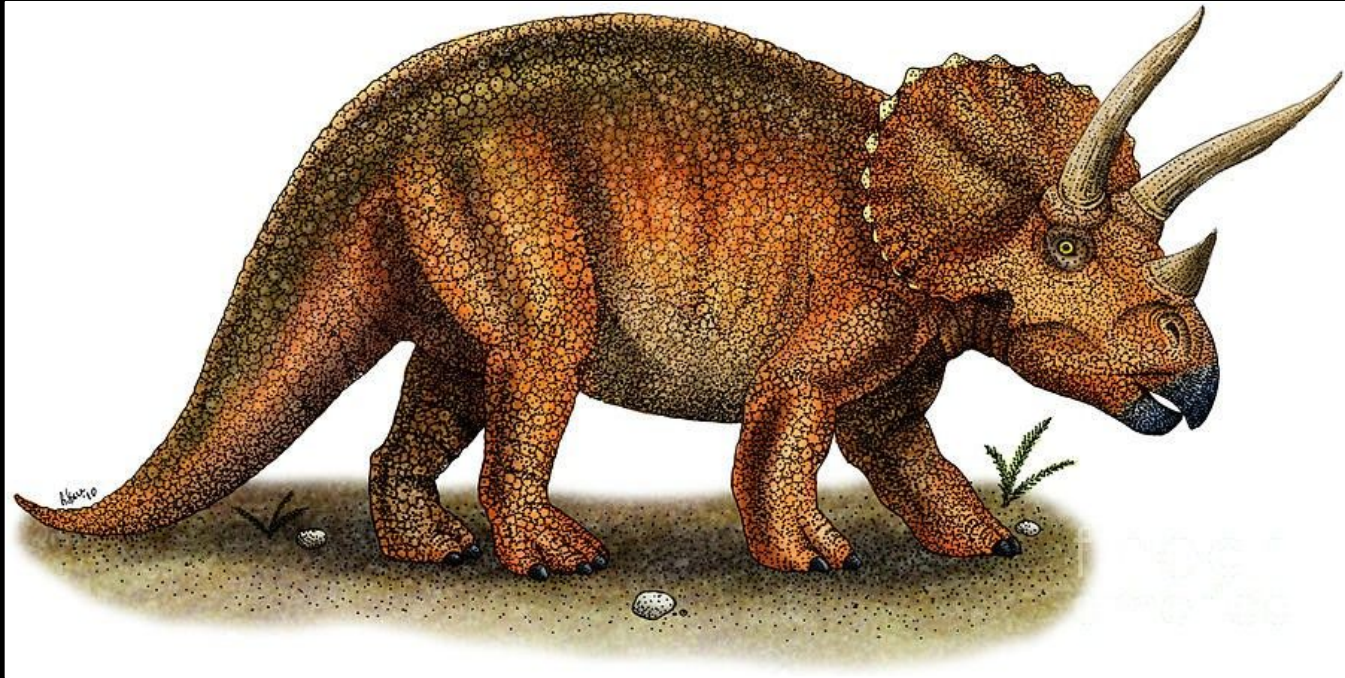
# State Mineral: Rose Quartz



# 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



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# Deadwood, South Dakota



## Deadwood, South Dakota

- 1876: Sprung up when gold was discovered
- Quintessential Wild West mining town
- Brothels, gambling dens, outlaws, gunslingers
- Mining changed from planning to deep mining
- No longer mine for gold
- Today: Tourism & legalized gambling

# Wild Bill Hickok



## Wild Bill Hickok

- Frontiers man, wagon driver, lawman, gunfighter, gambler
- Wild West celebrity in his own life
- Living & gambling in Deadwood in 1876
- Shot in the back by a disgruntled gambler
- Holding 2 Aces & 2 Eights (Dead Man's Hand)

# Sturgis, South Dakota

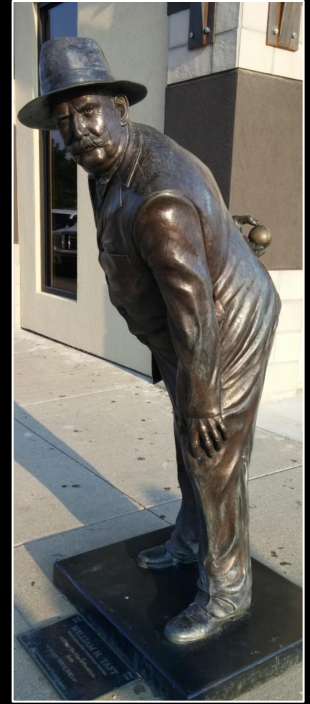




## Sturgis, South Dakota

- Small town of 6,000
- Sturgis Biker Rally: first week in August
- 1938: Started as an Indian motorcycle brand gathering
- WWII halted for gasoline rationing
- Picked up after the war - buddies meeting up in central location
- Annually: 400,000 bikers
- Revenue: \$800 million into South Dakota economy

# 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

# 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

# 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

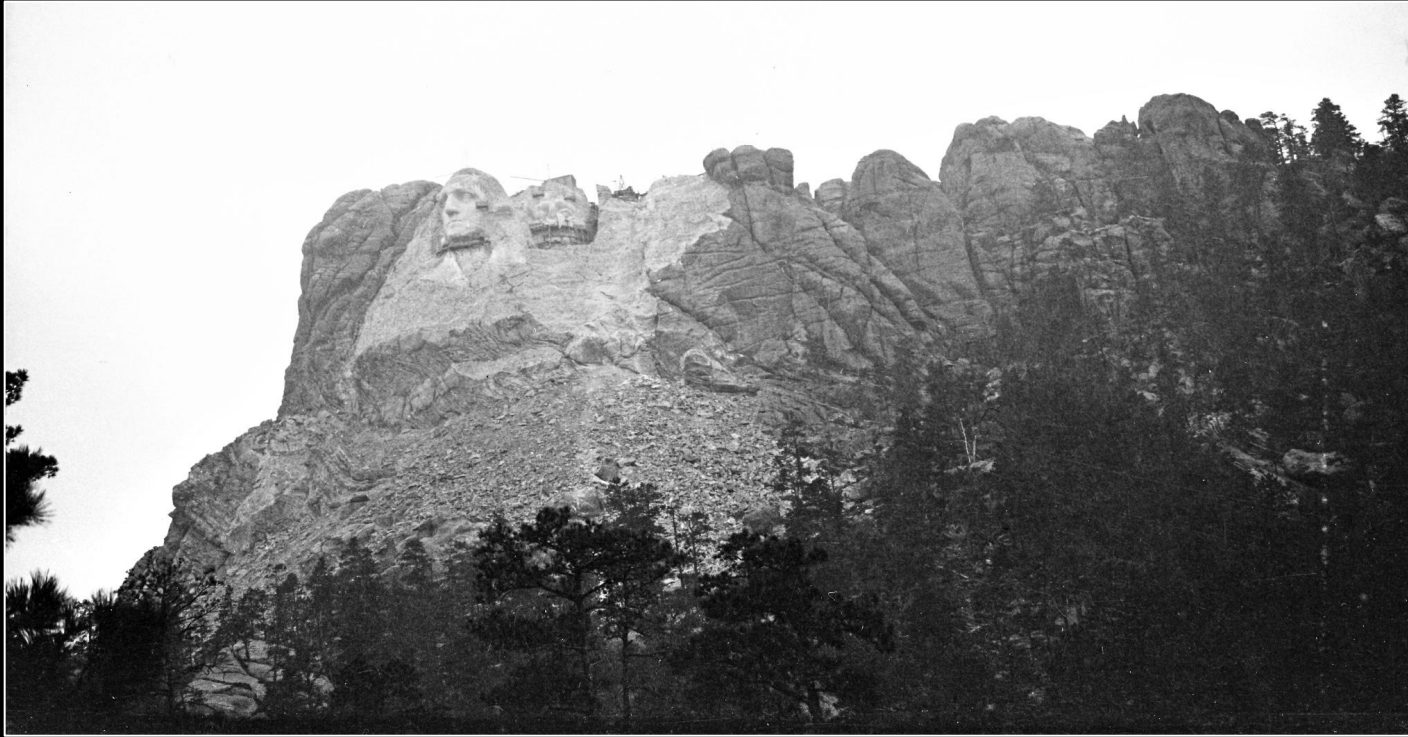




## Mount Rushmore Presidents

- **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





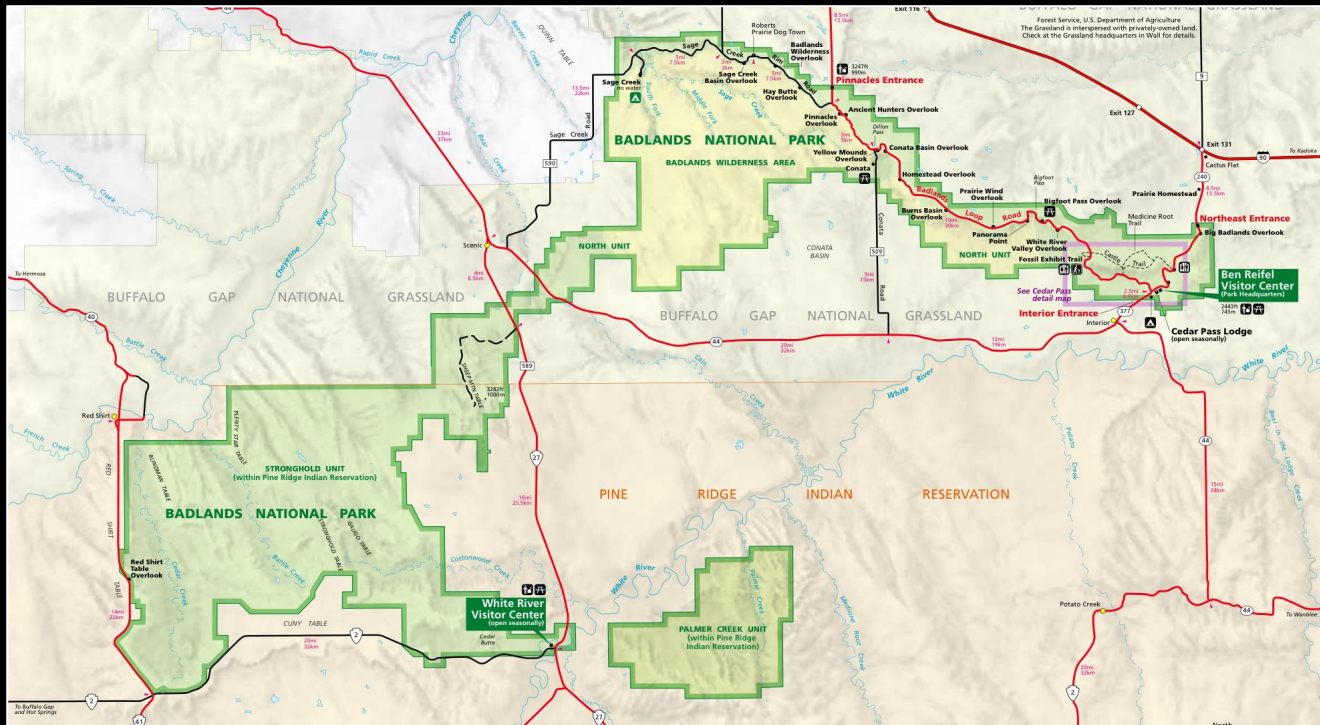
# Badlands National Park



## **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

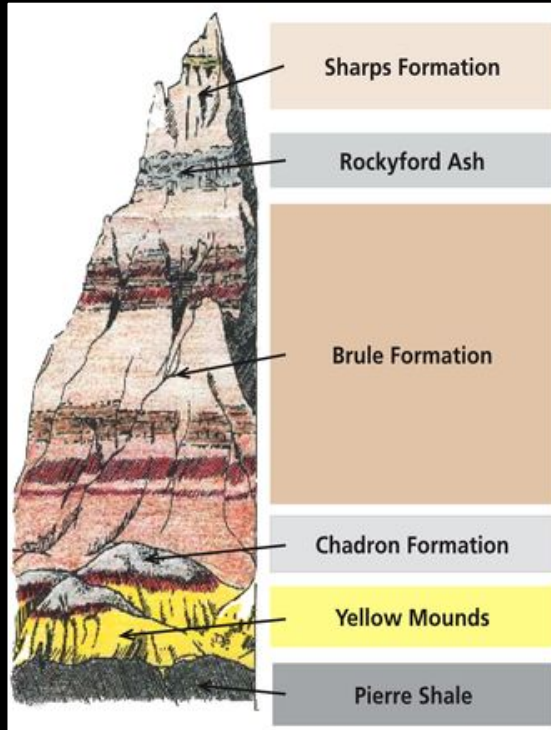




# Prairie Dog Town



# 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



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- Native to North American grasslands
- Type of ground squirrel
- Name comes from sound they make - “barking squirrels”
- Burrows:
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  - 6-9 feet deep
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