

DATES TO REMEMBER

- ❑ **Until May 26: Course evaluation period.**
Check your Hunter e-mail for instructions.
Smartphone: www.hunter.cuny.edu/mobilete Computer: www.hunter.cuny.edu/te
- ❑ **May 12: Last day** to hand in **REQUIRED ROADTRIP EXERCISE** without late penalty.
- ❑ **May 16:** Last class lecture **and last day for pre-approved extra credit** (paper or other project).
- ❑ **May 23: Exam III: The Final Exam**
 - From 9 to 11 AM << note different time from class
 - Same format as exams I and II.
 - **Last day** to hand in Exam III extra credit exercise and "Landscape Analysis" extra credit option.

Regional Landscapes of the United States and Canada


The Great Plains and Prairies

Part 2

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American Landscape: **Ch. 9**
also review **Ch. 2 and 7.**
Historical Atlas: **Sect. 6**



Perception of the Great Plains

Favorable	Unfavorable
<ul style="list-style-type: none"> ❑ Native Americans were to first to live on the plains. They found it a good place to live, moving with the seasons and following the animals. ❑ Spanish explorer Coronado (he was raised in dry Spain in the 1500s): <i>"This region is the best I've seen for producing the crops of Spain. [It is] very flat and black [and] well watered by the rivulets and springs."</i> 	<ul style="list-style-type: none"> ❑ Early 1800s, Easterners and Northern European immigrants saw it as "wholly unfit for cultivation and habitation." <i>No trees = Bad for farming.</i> ❑ 1850s-1930s: Area was called the "Great American Desert." ❑ 20th century views: Shaped by literature (novels) and Hollywood (movies): dry waste land inhabited by Indians, buffalo and cattlemen.

Plains Indians

Lived a **nomadic lifestyle** (hunting/gathering).





- **Buffalo** (bison) **hunting** main livelihood.
- **Mobility was limited at first.**

Acquired horses in 1500s (from Spanish)

- Allowed diffusion throughout the Plains.
- Increase access to food and shelter.
- Were able to follow the buffalo herds.
- Tepees were traveling homes.

Pushed out of the Great Plains by American westward expansion

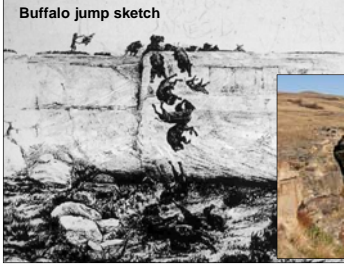
- Loss of buffalo (their food) to **trophy hunting.**
- Transcontinental RR allowed Easterners access to area.
- Land claimed by farmers and ranchers.

Head-Smashed-In Buffalo Jump

World Heritage Site, Fort MacLeod, Alberta

Buffalo jump sketch



The buffalo jump was used for 5,500 yrs by the indigenous peoples to kill buffalo by driving them off the 35 ft high cliff (escarpment).



First American Settlers

See maps on pp.36 and 46 of the atlas.


First arrivals (pioneers) in 1820s:

- Settlement hindered by a lack of trees for building, fencing, fuel and by a lack of water.

Agriculturalists bypassed this area (perception!)

- Called it the *"Land to get across."*
- Favored Rocky Mt. foothills and west coast tracts where there were trees.

People moved through the area convoys called wagon trains.






Wagon Trains

- ❖ **Wagon trains provided an organized movement westward across the Great Plains.**
 - Started as supply lines for fur traders.
 - Later used to take settlers across the plains by following the rivers west (consult maps).
 - Became a means for settlers to get to the Rocky Mts., Oregon and California.

➤ **Wagon wheels created ruts in the ground.**

Trail masters **followed the ruts** on their trips across the Great Plains and mountains.



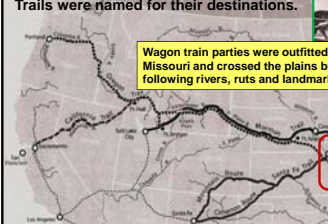



Wagon wheel ruts cut into the soil. Wagon wheel ruts cut into soft rock. 7

Overland Trails

Trails were named for their destinations.



Wagon train parties were outfitted in Missouri and crossed the plains by following rivers, ruts and landmarks.



KANSAS HISTORICAL MARKER

SANTA FE TRAIL RUTS 1821-1872

Looking south, up and over the base of the ruts, one can see the wagon ruts of the Santa Fe Trail. The rut shows a difference in the color and texture of the ground. The rut is approximately 10 feet wide and 10 inches deep. The ruts are most visible in the spring when the ground is soft. The ruts are most visible in the spring when the ground is soft. The ruts are most visible in the spring when the ground is soft.

Landmarks along the Oregon Trail

Geologic landmarks were important as guide posts and gauges of daily distance traveled.







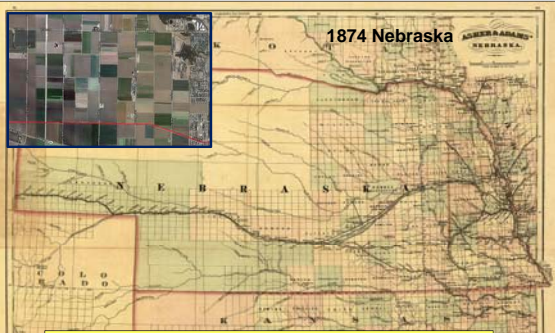

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Settling on the Plains

- ❖ **Homestead Act (1862) opened up the plains to settlers.**
 - ✓ Land was **pre-divided** according to the Township and Range rectangular survey system.
 - ✓ "**Homesteaders**" would select a parcel on a map at the local Land Office and then go out to find the surveyors' markings and see if they liked the parcel.
 - ✓ **Best land claimed first.** Surface water was more important than soil quality. **Valley bottoms favored** (water + better soil = good farming).
 - ✓ **All property lines** (fences and fields) followed T&R grid (east-west and north-south directions).
- "**Checkerboard**" is the original landscape pattern of the region.

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Checkerboard Landscape



Land was divided according to the Township & Range Survey system.

Cultural Concentrations

Canadian Prairies: Concentrations of Eastern Europeans with Eastern Orthodox traditions.

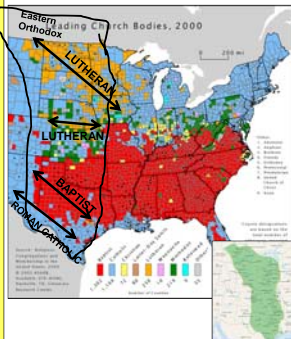
- ✓ Sizable Métis population; many had a French heritage/culture.

Northern Plains: Settled by Swiss, Germans and Norwegians

- ✓ They brought their culture with them: toponomy, religion, farming methods and architecture.
- ✓ Limestone outcrops allowed them to build stone structures.



Southern Plains: Settled by residents of Southern states (including freed slaves) and **Spanish/Mexicans.**

- ✓ Regional physical characteristics created a **unique cultural landscape: COWBOY.**
- ✓ Hispanic culture predominates closer to the Mexican border.







Towns and Rivers

- ❖ **First towns (1840s) were established along navigable waterways by river freight companies.**
- **Main Street fronted the river (waterfront) and the focus was the docks.**
- **Towns first spread along the riverbank (called frontage) then inland.**





Railroads and the Plains (1860-1880)

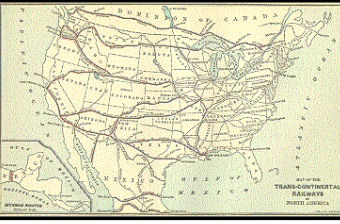
- **The railroads ventured onto the Plains (1850s) after the settlement of the agricultural core, the annexation of Texas and the end of the Mexican War (desire to get to Calif. after it was ceded to the US).**
- **The RRs set up towns along their tracks after getting gov't land grants or purchasing land for their rights-of-way.**
- **They leased RR land along the tracks to local businessmen.**

Rail Lines: 1870 vs 1890





The railroad rights-of-way followed the routes of the wagon trains from the Mississippi Valley to the Pacific coast.






- 1869: Transcontinental Railroad (Union Pacific and Central Pacific)
- 1876: Southern Pacific Railroad
- 1883: Northern Pacific Railroad
- 1885: Canadian Pacific Railway

Towns and Rail lines

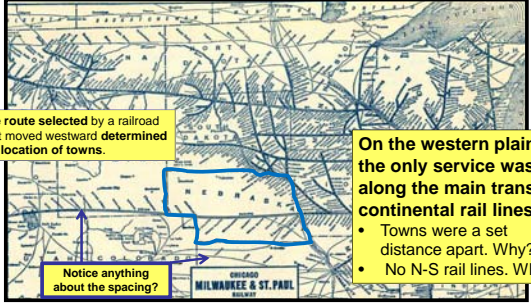
- ❖ **Towns were built by the RR companies for freight depots or worker housing. Town was laid out before people and businesses arrived.**
 - RR agent was put in charge of settlement to bring in the right mix of businesses to the town.
 - RR towns ignored the grid to align with the tracks.
 - Street pattern was "T-shape" which focused on the train station or freight depot.
 - Main Street business district was at a right angle to the tracks.

Garfield, Kansas

Railroad Routes and the Settlement Landscape of the Plains



The route selected by a railroad as it moved westward determined the location of towns.

On the western plains the only service was along the main transcontinental rail lines.

- Towns were a set distance apart. Why?
- No N-S rail lines. Why?

Notice anything about the spacing?

Problem Landscape Develops

- **Township & Range had no allowance for public roads and varieties in the topographic landscape.** *(Canada adopted T&R in 1871 and incorporated roads of a specific width along alternate boundary lines.)*
- **All roads were laid straight** even if the grade was steep.
- **Very few curved/irregular lines** are found on area maps.
 - Results in longer travel distance between places (time/distance factor).
- **Railroads can't do right angles, tight curves and steep slopes.** Companies purchased parcels that would allow for curved track sections.
- **The checkerboard landscape was "cemented"** by the designation of state highways and paving of rural roads.
 - **Location of civic and religious places** is a result of Homesteaders giving away their poorest sections.

Settlement and Technology

In western areas intense agricultural settlement was delayed until the development of technologies to deal with the plains environment:

- **Wood brought in by freight trains** allowed for frame buildings and other construction projects.
- **Barbed wire** (for fencing)
- **Deep-well borers to get to the water** and **windmills to pump up the water.**
- **Mechanization** of grain farming, esp. **steel plows.**

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Canada's Prairie Provinces

Northernmost section of the Plains

Originally controlled by the Hudson's Bay Co.


- Discouraged settlement as interfering with trapping/fur trade

Became part of Canada in 1870

- **Adopted and modified Township and Range in 1871.**
- Encouraged settlement but conditions limited its use for farming.
- RR came in 1885 but many people just "**passed through**" on their way to the Rockies and West Coast.
- Leases, rather than land grants, controlled the land.

Today focus is on grain production.

- **Manitoba, Saskatchewan and Alberta are Canada's main wheat producers.**
- Most is exported to Europe via Hudson Bay or St. Lawrence Seaway.





American Granary

Central Plains

Agricultural focus is on a variety of grains.

- Covers the area from Canadian border to northern Texas.
- Temperature, growing season and precipitation determines the type of grain grown.
- **Oats and barley** in the colder, drier areas as Montana, North Dakota, and South Dakota.
- **Wheat** (several varieties) is the chief crop: Nebraska to northern Texas.

N

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Landscapes of Grain Storage and Distribution

Skyscrapers of the Plains.

Storage. Small grain elevators or open-air mounds.

Distribution. By rail and truck to ports for shipment via water to processing centers.

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Open Range

Southmost Section of the Plains

Focus is on ranching in Oklahoma and Texas.

- **Cattle and sheep introduced by the Spanish.** (This area became part of the US in 1846.)
- **Cattle ranchers** use the land **extensively** (as opposed to intensively). Plentiful grasslands for cattle grazing but too warm/dry for 1800s farming technology.

Expansion after Civil War (1866-1886)

- ✓ Unbranded cattle running loose during Civil War.
- ✓ Railroads linking east and west coasts.
- ✓ Cattle drives north to rail heads in Kansas.

Collapse in late 1880s.

- Overgrazing.
- New cattle-raising operations in Midwest.
- Slipping national economy
- Blizzards (1887/1888) killed cattle.
- Influx of farmers with new technologies.

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Ranching

An extensive land use activity

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“The Wars”

- ❖ **Range Wars: Conflict between cattlemen and land owners and farmers.**
 - Cattlemen needed to move cattle north to the transcontinental railroad depots in Kansas.
 - Needed water and grass for the herds.
 - Conflict of rights: land ownership precepts, water rights and open range concepts.
- ❖ **Sheep Wars: Conflict between cattle and sheep ranchers in Southern Plains.**
 - Revolved around disputes over land and water rights.
 - Cattlemen’s disdain of sheep: overgrazing the range and polluting watering places used by cattle.

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Cattle Drive

❖ The movement of cattle on hoof (overland) by cowboys on horseback.

Cattle drives moved herds to terminals (cow towns) along the east-west transcontinental railroads.

Conflicts with owners of land and water right ensued.

✓ Established the vernacular image of the western landscape and cowboy as an iconic American figure even though it lasted just 20 years (1866-1886).

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Modern Cattle Feed Lots

Ranchers now ship cattle by truck and train to feed lots where they await being sold.

Water and air pollution are major issues.

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WATER

Most important resource of the Great Plains.

Influenced the perception of the area’s usefulness by Pioneers.

Fueled conflict between land owners who had water and people who needed water.

Contributed to the “Cattle Wars”

Chief factor in the location of farms and settlements

Numerous water rights cases have been brought before the United States Supreme Court.

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Control of Water

❖ **Riparian Rights**
(English Common Law and East Coast implementation applied where water is abundant).
Requires all parties be given reasonable use of the water.

❖ **Right of Prior Appropriation**
Developed in the mid-1800s as a way to treat mining claims in the West. Later it was applied to settle claims to surface water in areas where water is scarce.

The guidelines that governed mineral claims under the Right of Prior Appropriation are:

1. *The claim must be officially recorded and posted.*
2. *Must be continually used and kept up or else it would be lost*
3. *All disputes were settled on a first in time, first in right basis.*

This effectively closed out later settlers from using available surface water and caused conflict especially in times of drought.

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Missouri River Watershed

The Missouri River and its tributaries have been dammed to create an **extensive reservoir system** which provides farmers with water for irrigation.

Problem: Flat terrain creates long, wide but shallow reservoirs.

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Modern Landscape Pattern

Pivot irrigation circles are superimposed on the T&R grid. **There is a water well in the center of every circle.**

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Ogallala Aquifer

The **Ogallala Aquifer** is an area of Dakota Sandstone, 100-400 ft deep, extending from South Dakota to Texas, containing water that originated in the Rocky Mts.

Called "fossil" water: over a million years old.

Water is used for irrigation, livestock watering and domestic uses.

Aquifer: water-bearing rock formation through which water slowly moves.

In places the water table has been **lowered more than 100 ft.** as a result of pumping. **Stronger pumps are needed** to bring the water to the surface.

What happens when bedrock is reached?

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Energy Resources

Natural gas

- Panhandle Field is (w Texas, Oklahoma, Kansas) world's largest field

Petroleum

- Panhandle Field
- Wyoming, North Dakota (deep formations)
- Alberta (Athabasca Tar Sands)

Coal

- Thick seams, easily mined
- Low-sulfur (less polluting)
- Expensive to ship
- Wyoming now leading coal-producing state

Wind

- Inexpensive production
- Excellent potential
- But far from areas of need

Wind Power: Certainty Rating of the Wind Resources in the US.

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Texas Wind Farms

New landscape feature of the Plains.

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Population Change

Population Change 2000-2010

Where people are moving to 2010-2013

- Young people are leaving. Older people staying.
- Farm mechanization reducing jobs.
- New energy-related activities drew people to AB, ND, WY and TX in early 2000s, now reduced exploration and production.
- Few pull factors, including the transportation system.
- Areas attempting to lure people in with history, tourism and recreation.

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N E X T

**Mountains and Plateaus:
The Empty Interior**

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