DATES TO REMEMBER

- **COURSE EVALUATION PERIOD NOW OPEN**
  Go to [www.hunter.cuny.edu/evaluation](http://www.hunter.cuny.edu/evaluation)
  - Check your Hunter email account for notice from the Dean of Students.

- **May 12:** Last day to hand in **REQUIRED LANDSCAPE EXERCISE without penalty**

- **May 15:** Last class lecture and last day to hand in extra credit research paper (new date for paper).

- **May 22:** Exam III: The Final Exam
  - From 1:45 to 3:45 PM << note different time from class
  - Same format as exams I and II
  - Last day to hand in Exam III extra credit exercise and “Geography in the News” extra credit option.

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**Perception of the Plains**

**Favorable**

- Native Americans were to first to live on the plains. They found it a good place to live. They moved with the seasons and followed the animals.

- Spanish explorer Coronado (He was raised in dry Spain in the 1500s): “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.”

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**Unfavorable**

- Early 1800s, Easterners and Northern Europe-an immigrants saw it as "wholly unfit for cultivation and habitation."

- No trees = Bad for farming.

- 1850s-1930s: Area was called the Great American Desert.

- 20th century views: Shaped by literature (novels) and Holly-wood (movies): a dry waste land inhabited by Indians, buffalo and cattlemen.

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**Plains Indians**

- Lived a nomadic lifestyle (hunting and gathering).
  - Buffalo (bison) hunting main livelihood.
  - Mobility was limited at first.

- Acquired horses in 1500s (left by Spanish)
  - Allowed diffusion throughout the Great Plains.
  - Increase access to food and shelter.
  - Were able to follow the buffalo herds.
  - Teepees were traveling homes.

- Pushed out of the Great Plains by American westward expansion
  - Loss of buffalo (their food) to trophy hunting.
  - Land claimed by farmers and ranchers.

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**Bison (American Buffalo)**

- [Bison Skull Pile](#) c. 1870

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**Head-Smashed-In Buffalo Jump**

- World Heritage Site, Fort MacLeod, Alberta

- The buffalo jump was used for 5,500 years by the indigenous peoples to kill buffalo by driving them off the 35 ft high cliff.
First American Settlers

First arrivals (Pioneers):
- Settlement hindered by a lack of trees for building, fencing, fuel and by a lack of water.
- Agriculturalists bypassed this area (perception?)
  - Favoring Rocky Mt. foothills and west coast tracts where there were trees.
People moved through the area in convoys called “wagon trains.”
- See maps on p.36 and 46 of the atlas.

Wagon Trains

Provided an organized movement westward through the Great Plains.
- Started as supply lines for fur traders, later for settlers. Followed the rivers (consult map).
- Became a means for settlers to get to the Rocky Mts., California and Oregon.
  - Wagon wheels created ruts in the prairie sod.
  - Trail masters followed the ruts on their trips across the Great Plains.
  - Geologic landmarks were important guide posts and gauges of distance traveled.

Overland Trails

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

Landmarks along the Oregon Trail

Settling on the Plains

- Land was pre-divided according to the Township and Range rectangular survey system.
- Homesteaders would select a parcel on a map in the local Land Office and then go out to find the surveyors’ markings and see if they liked the parcel.
- Homesteaders claimed best land. Surface water was more important than soil quality.
- All property lines (fences and fields) ran in east-west and north-south directions.
- “Checkerboard” is the original characteristic landscape pattern.

Cultural Concentrations

The settlers of the northern plains were people from central and northern Europe, as the Swiss, Germans, Norwegians, who transplanted their culture: toponomy, religion, farming and architecture.
- On the Canadian Prairie there are concentrations of Eastern Europeans with Eastern Orthodox traditions.
The settlers of the southern plains were people from the US South and Mexico. Dryness of the region created a unique cultural landscape: the cowboy. Hispanic culture returns closer to the Mexican border.
**Checkerboard Landscape**

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

**Settling on the Plains**

- First towns (1840s) were established along navigable streams by river freight companies.
- Main Street fronted the waterfront and the focus was the docks. Towns spread along the riverbank then inland.
- The eastern railroads ventured onto the Plains (1850s) after the settlement of the agricultural core, the annexation of Texas and the end of the Mexican War (which added California to the US).
- After receiving government land grants or purchasing land for their rights-of-way, the railroads established towns along their tracks. This was to both service its operation and to lure business but led to conflict with farmers and ranchers. They leased RR land along the tracks to local businessmen.

**Growth of the Railroads (1860-1880)**

First transcontinental railroad linked Council Bluffs, Iowa with San Francisco, CA in 1869.

**Main Line Railroads**

- Towns were built by the railroad companies as freight depots or worker housing. Laid out before people arrived.
- A RR agent was put in charge of settlement to bring the right mix of businesses to town.
- RR towns ignored the T&R grid to align with the tracks.
- Common pattern was a T-shaped layout which focused on the train station or freight depot. Main Street business district at a right angle to the tracks.
- On the High Plains, the only railroad service was from the main east-west transcontinental railroad. Towns were far apart. No north-south lines. Why?

**Railroad Routes and the Settlement Landscape of the Plains**

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

**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.)
- Homesteaders gave away their poorest sections for schools, churches, cemeteries.
- 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.
Major Modern Land Routes

- Land transportation choices across the Great Plains are still governed by the Township and Range land division system, the historic routes of the wagon trains and the first transcontinental railroads.
- There is a lack of options to travel “on the diagonal” across the region. Boxy pattern limits easy and fast connections between places.

Agricultural Settlement

Intense agricultural settlement was delayed until the development of technologies to deal with the plains environment:
- Sod houses (occupied until replaced by frame houses made from wood transported in by railroads)
- Barbed wire (for fencing)
- Deep well digging to get to the water and windmills to pump up the water
- Mechanization of grain farming, esp. steel plows

Canadian Prairie Provinces
Northern 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 the St. Lawrence Seaway.

American Granary
Central Plains

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

Landscapes of Grain Storage and Distribution

Storage. Small grain elevators or open-air mounds.
Distribution. By rail and truck to ports for shipment via water to processing centers.

Open Range
Southern Plains

Focus is on ranching in Oklahoma and Texas.
- Cattle and sheep introduced to Texas by Spanish.
- Area became part of the US in 1846.
- Cattle ranchers use the land extensively (as opposed to intensively). Plentiful grasslands for cattle grazing.

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 of 1887 and 1888.
- Influx of farmers.
Ranching
An extensive land use activity

“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.

19th Century Cattle Drive

The movement of cattle on hoof (overland) by cowboys on horseback.
- A major economic activity in the West (1866-1886) when cattle were “driven” from Texas north to rail head “cow towns.”
- Established the vernacular image of the western landscape and cowboy as an iconic American figure.

Cattle Drive Trails

Cattle drives moved herds to terminals along the east-west Transcontinental Railroads. Conflicts with land and water right owners ensued.

The Chisholm Trail

The Chisholm Trail became famous as the main route for cattle drives from Texas to the railheads in Kansas.

Modern Cattle Feed Lots

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

Most important resource of the Great Plains.

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

Influenced the location of farms and settlements.

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

Contributed to the “Cattle Wars”

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

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.)
  - 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. It must be continually used and kept up or else it would be lost, and
    3. All disputes were settled on a first in time, first in right basis.

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

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.

Modern Landscape Pattern

Pivot irrigation circles are superimposed on the Township and Range grid.

There is a water well in the center of every circle.

Can you see the looming problem?

Pivot Irrigation Equipment

Pivot Irrigation Landscape
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. Contains “fossil” water over a million years old. Water is used for irrigation, livestock watering and domestic uses.

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

**Aquifer Depletion**
In places, the water table has been lowered more than 100 ft. as a result of pumping. Shallow wells and natural springs are dry. Other wells have to be drilled deeper. Stronger pumps are needed to bring the water to the surface.

**Energy Resources**
- **Natural gas**
  - Panhandle Field (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

**Texas Wind Farms**
New landscape feature of the Plains.

**Population Trends**
- N and S portions have a high percent of people with immigrant heritage. (Atlas p. 49)
- Out-migration to cities
  - To larger cities within region
  - To cities beyond Great Plains periphery
- Mechanized farms need less labor.
- Younger people leaving; older folks staying.
- Energy boom in Northern Plains luring workers.
- Transportation routes do little to integrate the region.
  - Perception of routes is to get to another place.
  - Interstate highways speed people through the region.
- Historic/scenic sites now draw tourists.

**Population Change**
Young people are leaving.
Older people staying.
Farm mechanization reducing jobs.
New energy-relating activities drawing people to AB, ND, WY and TX.