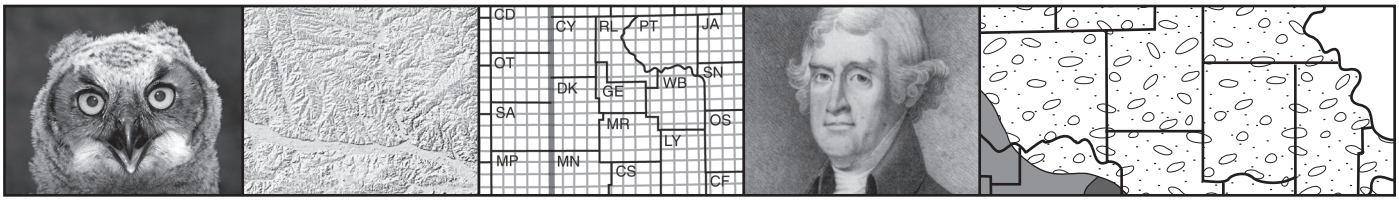


Unit 1) Kansas Overview

A biome is a major regional community of distinctive plants and animals produced and maintained by fairly uniform climatic and environmental conditions. Conditions have led to certain plant life thriving there; consequently, a biome usually derives its name from the dominant plant life. The plant environment creates a culture for certain animals to live, creating interdependence.

The major biomes of the world are tundra, coniferous forest, temperate deciduous forest, the great plains or temperate grasslands, the desert, tropical forest, rain forest, deciduous-tropical forests, grasslands or savanna, chaparral, and equatorial.

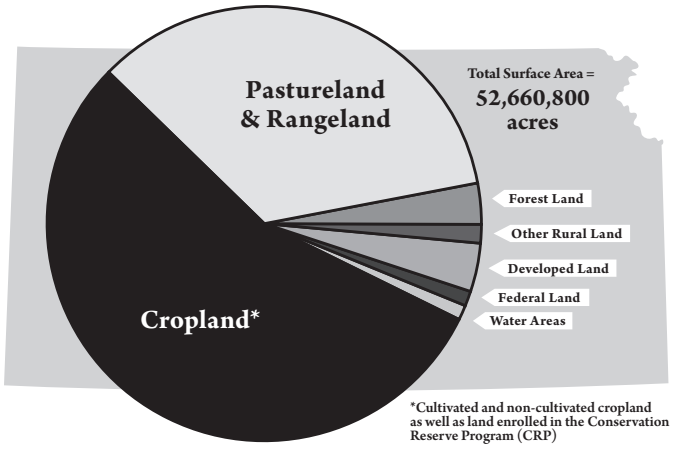
Biomes in Kansas

The major biomes in Kansas include the prairie grasslands, forests, and croplands. Water ecosystems in Kansas include streams, rivers, ponds, lakes, wetlands, and their watersheds, as well as aquifers.

"As to scenery… while I know the standard claim is that Yosemite, Niagara Falls, the Upper Yellowstone, and the like afford the greatest natural shows, I am not so sure but the prairies and plains, while less stunning at first sight, last longer, fill the esthetic sense fuller, precede all the rest, and make North America's characteristic landscape."

Walt Whitman, American poet and author

Surface Area of Kansas – Land and Water



Source: 2003 Natural Resources Inventory, USDA Natural Resources Conservation Service

Key Words

Biome – a major regional community of distinctive plants and animals produced and maintained by fairly uniform climatic and environmental conditions; the name usually is derived from the dominant plant life; the largest geographical natural living system.

Ecosystem – a system formed by the interaction of all the living organisms and the physical and chemical factors in the environment in which the organisms live; ecosystems may be large or small.

Environment – the total of all the external conditions and factors, both living and non-living, that affect the existence of an organism.

Habitat – an area that has the minimum required arrangement of food, water, shelter, and space for a particular species.

Kansas

The state of Kansas may never be a tourist's typical dream destination or a place with dramatic, knock-you-over-the-head type of scenery. But, while Kansas students often study the tropical rainforests of South America or the oceans' depths, there are vibrant and complex ecosystems just outside their classroom windows, waiting to be examined and appreciated firsthand. Without education, it seems impossible that one Kansas wheat field can yield its vast amount of grain. To fully appreciate why this takes place, students must recognize that this can only be achieved because the farmer works *with* the land instead of *against* it.

Kansas has a history and a future unlike any other state. Through closer examination, students in Kansas should have pride and peace in knowing that this richly exciting ecosystem–*their* richly exciting ecosystem–is the heart of America in more ways than one.

Kansas Facts

- The Kansas Territory opened for settlement on May 30, 1854.
- Kansas became the 34th state in the Union on January 29, 1861.
- Today, there are 105 counties and 627 incorporated cities in the state of Kansas.
- According to the most recent census (April 1, 2000), the population of Kansas is 2,688,418 people.
- The east-west span of Kansas is great enough that the sun rises and sets on the western border 30 minutes later than on the eastern side of the state.

Kansas Geography

"The distinction between past, present, and future is only a stubbornly persistent illusion."
Albert Einstein, physicist

History

Kansas is continually changing, mostly shifting so slowly that changes are imperceptible. Every time it rains or the wind blows, the process of erosion is moving soil and rocks. Dramatic, noticeable changes happen, too, like earthquakes and floods. Over millions of years, the landscape of Kansas has been altered many times. Its 82,276 square miles of area has seen many changes.

The earth is approximately four and a half billion years old. The features of Kansas indicate that the state has been at different times an ocean, a frozen sheet of ice, and a desert. Every alteration has had an effect on the climate, the terrain, the soil, and the inhabitants of the area at the time it occurred, as well as an effect on what can thrive there today.

The landscape in Kansas hasn't changed much in the past 4,000 to 5,000 years, with the exception of the changes brought about by humans who have moved in. Although American Indians affected the environment, they were hunters and gatherers, mostly living in harmony with nature. When settlers came, farmers plowed the soil, and roads were built and buildings were erected.

How Big is Kansas?

Statistics about the actual size of the state of Kansas vary according to the different sources.

The size of Kansas is set at 82,276 square miles in this educator's guide, based on information provided by the Kansas Geological Survey.

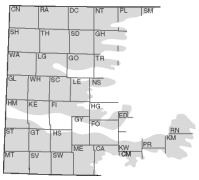
In this guide, statistics based on two additional sources are used to illustrate land use and crop production:

- The Natural Resources Inventory, conducted by the U.S. Department of Agriculture's Natural Resources Conservation Service, reports land use in Kansas based on 52,660,800 acres (82,282 square miles).
- Crop production statistics, provided by the Kansas Agricultural Statistics Service office of the U.S. Department of Agriculture's National Agricultural Statistics Service, are reported based on the U.S. Bureau of Census statistic for the land area of Kansas, which is 52,361,520 acres (81,815 square miles).

Geographical Regions

The state has been divided into regions based on rock type and age, landscape, and landforms. Some regions may appear alike, but their soils were formed at different times. Differences are also found within a single region.

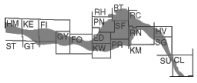
High Plains



Source: KGS

The High Plains of Kansas, the western one-third of the state, is an open area of flatlands and gently rolling hills. It was mostly covered by shortgrass prairie, but now much of the region is cropland. There is a permeable, porous, sponge-like bed of rock underneath the High Plains known as the Ogallala Formation. When it rains in the High Plains, the water seeps into the ground and is stored in the rock. Since there is little rain in the region, wells bring water to the surface for humans, livestock, and crop irrigation.

Arkansas River Lowlands



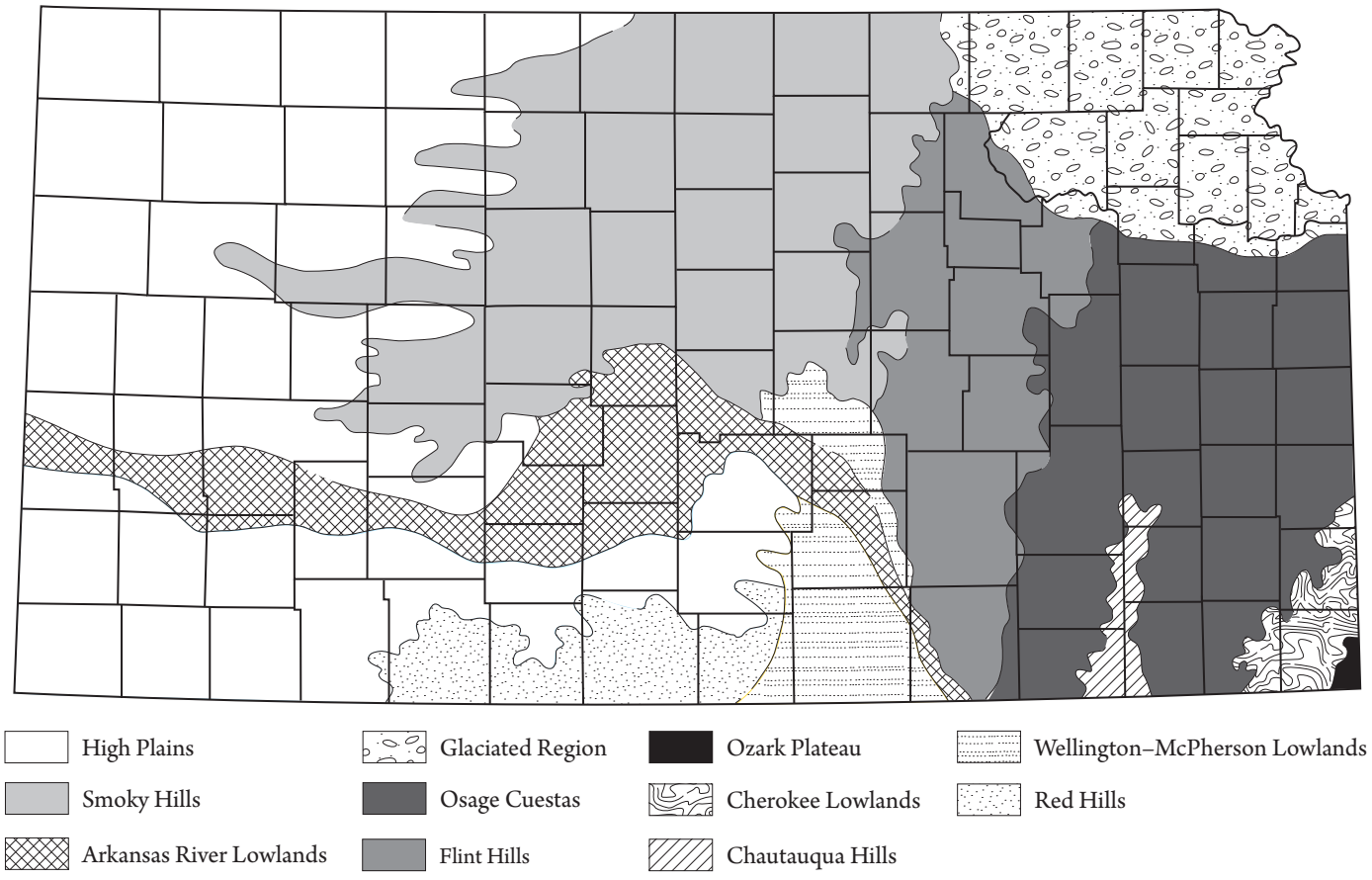
Source: KGS

The Arkansas River cuts through western and central Kansas. The river often flooded and created a flat floodplain for several miles on either side. The Arkansas River starts in the Rocky Mountains, so it has deposited mountain sand and other sediment over the years, creating and re-carving sand dunes in the area.

Kansas Geography Facts

- The shape of the state of Kansas is rectangular– 208 miles (north to south) by 411 miles (east to west).
- The geodetic center of North America is located in Osborne County. This spot is used as the central reference point for all maps produced by the government.
- The geographic center of the 48 conterminous states is located near Lebanon in Smith County.
- According to the Kansas Geological Survey, the geographic center of Kansas is located less than two miles southeast of Bushton in northwestern Rice County.

Geographical Regions of Kansas



Source: Kansas Geological Survey

Red Hills

Source: KGS

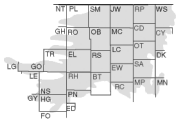
The Red Hills in south-central Kansas are unique to the state. The soil and the shale in the region contain iron oxide, or rust, so they lend a red hue to the region. The hills have flat tops like mesas and buttes found in the desert southwest.

Wellington-McPherson Lowlands

Source: KGS

Oceans present during the Permian Era, more than 250 million years ago, receded and left behind thick layers of salt. It was buried by sediment and remained hidden in these lowlands until the 1880s when an oil driller located the large salt bed. Today, salt mining is a major industry in Reno, Rice, and Ellsworth counties. The salt is used in industry, to melt ice from roads in the winter, or for table salt.

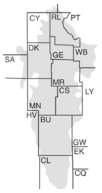
Smoky Hills



Source: KGS

In north-central Kansas, the Smoky Hills have rocks which were formed from sediment deposited on the sea floor. The eastern Smoky Hills are capped with sandstone. The hills in the middle of the Smoky Hills region are topped with limestone. Because wood was scarce, settlers quarried limestone to use as fence posts and for erecting buildings, lending this area of the Smoky Hills its nickname, "Post Rock Country." Fossils of seashells and sharks' teeth from the Cretaceous Period, more than 65 million years ago, can be found in the area. When the seas dried up in the western Smoky Hills, thick layers of sediment were left behind and formed chalk. In some areas, tall steep-sided chalk formations, such as Castle Rock and Monument Rock in Gove County, were left after erosion. Chalk bluffs can be found along the Smoky Hill River in Logan, Trego, and Gove counties.

Flint Hills



Source: KGS

The Flint Hills region, running north and south through east-central Kansas, is one of the few large areas of native prairie grassland left in the United States. The Flint Hills have rolling grasslands and are named for the flint, or chert, that is embedded in the limestone in the hills. The ground was too rocky to plow so many settlers kept heading west, leaving the area for grazing cattle. Millions of cattle are sent to the Flint Hills for summer grazing.

Flint Hills Facts

Around the Manhattan exit on I-70, the hilltops are flat and about the same elevation. At one time, those hilltops were the floor of an ocean. Over time, erosion created the valleys and stream channels seen today.

The hills between Wamego and Manhattan are the remnants of an ancient mountain range.

Source: Phil Balch, The Watershed Institute

Glaciated Region

Source: KGS

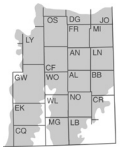
Several glaciers, huge masses of ice, covered much of the northern United States hundreds of thousands of years ago. The glaciers grew and melted as the climate changed. Most didn't reach Kansas, but at least two dipped down into the northeast corner. When the glaciers retreated, they left behind rocks and soil from other areas. Fertile loess soil, finely ground silt, was left as sediment and makes rich soil for farming in this area.

Chautauqua Hills

Source: KGS

The Chautauqua Hills are known for their thick layers of sandstone and dense vegetation of oak and timber. During the Pennsylvanian and Permian periods, 230 to 310 million years ago, rivers and streams flowed into the seas in this area. Sand and sediment collected at the mouths of the rivers and became shale. Eventually, erosion exposed some outcrops of sandstone and shale.

Osage Cuestas



Source: KGS

The Osage Cuestas region in southeast Kansas is named for the landforms called "cuestas," the Spanish word for cliffs. A cuesta (pronounced kwesta) has a steep slope on one side, called an escarpment, and a gentler slope on the other sides. Cuestas were formed by uplift, or changes in the Earth, when the seas receded and grew during the Pennsylvanian and Permian periods. There is variety in the region; not all the hills in the region are cuestas. This region also has rolling hills and flatlands.

Cherokee Lowlands

Source: KGS

In the late 1800s and early 1900s, the Cherokee Lowlands in the southeastern part of Kansas were home to coal mining and cement, glass, brick, and tile plants which used the natural resources of coal, zinc, clay, and limestone. Some industry still exists there today, but the peak is over. Some of the mined land was reclaimed – companies smoothed the ditches over and planted trees and grass when they finished strip mining. It is used for farming and grazing today.

Ozark Plateau

Source: KGS

In the farthest southeastern tip of Kansas lies the Ozark Plateau. The Ozarks of Missouri, Arkansas, Oklahoma, and Kansas are a hilly and densely forested area. The limestone and flint found in the region are the oldest surface rocks in the state. They were formed during the Mississippian Period, 350 million years ago. Piles of crushed rock, called chat, are left over from the lead and zinc once mined there.

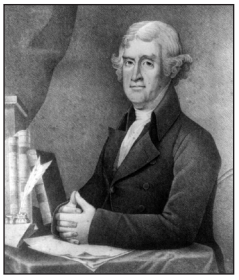
Kansas

The names of the state of Kansas and the Kansas River were taken from the name of the Kansa Indians. ***Kansa*** (pronounced KAN-sah) means "people of the south wind."

The Kansas River is also referred to as the Kaw River.

Establishing Kansas

"Kansas is a kind of open window through which one can look and really see America."
Life magazine, February 14, 1944


Thomas Jefferson
Source: Library of Congress

Thomas Jefferson was one of the most powerful influences on the history–and layout–of the state of Kansas. Jefferson, a delegate to the Continental Congress from Virginia, made many contributions to the laws of the new central government, including the procedure for creating new states and the process for surveying land.

After the Revolutionary War, the Continental Congress needed income to pay war debts and organize the new country. In 1783, the British ceded all land holdings, including the territory west of the Appalachian Mountains to the Mississippi River, to the Americans. The sale of this land helped pay national debts and finance the new federal government.

Prior to the adoption of Jefferson's plans, each state had its own methods of measuring land, often using geographical identifiers such as rivers or streams to establish property boundaries. Disputes over land ownership, and even state borders, were common since the methods used by the states were not consistent.

Surveying Public Lands

In the plans adopted by the Continental Congress, the borders of new states were to be defined by parallels of latitude and meridians of longitude, except where rivers or lakes shaped the borders. All land would be surveyed before it could be purchased from the federal government, eliminating many disputes over ownership and enabling a person to buy a piece of property without actually having seen or set foot on the land. The land would be divided into simple squares, aligned with each other so that no land was left vacant.

In 1785, Congress passed an ordinance setting out the division of land in new territories into townships of six miles square, with the 36-square-mile townships divided into one-square-mile lots. Four of the square-mile lots, described as "sections," in each township were to be reserved for the government for the maintenance of public schools. (In 1796, the requirement was reduced to one "school" section per township.)

To measure the land, surveyors used chains containing two perches (rods) of 16 ½ feet each, each divided into 25 equal lengths (links) that were 7.92 inches in length. This measuring device was based on "Gunter's chain" developed by Edmund Gunter in England in the 1500s. Gunter's chain was exactly 22 yards in length (8 perches or rods), divided into 100 links each 7.92 inches in length. One mile (5,280 feet) equaled eighty lengths of Gunter's chain. Other instruments and devices were used to establish the lines of latitude and longitude, which were adjusted at regular intervals due to the curvature of the Earth.

The length of the surveyor's chain was the first U.S. unit of measurement written into law in the United States. Each surveyor's chain contained two perches (rods) of 16 ½ feet each, each divided into 25 equal lengths (links) that were 7.92 inches in length.

Creating a New State: Kansas

The borders of the state of Kansas were established by applying the same principles adopted by Congress in 1785. In 1830, the creation of the state of Missouri determined the eastern border of what later became the state of Kansas, although the creation of additional counties in northwestern Missouri in 1837 set the new boundary as the mid-channel of the Missouri River in that region. In 1854, the north-south borders of the Territory of Kansas were set at 40° North and 37° South (latitude). The western border was not set until 1859.

The land was surveyed and divided into townships (six miles square) and sections (one-square-mile lots containing 640 acres). The Kansas–Nebraska border and the 6th principal meridian (108 miles west of the Missouri River) served as the baselines (controls) for the public surveys in Kansas. The legal description of all land in Kansas is derived from those two baselines. All townships in Kansas are numbered according to their placement south of the northern baseline, from 1 South (first tier of townships south of the Kansas–Nebraska border) to 35 South (the southern tier of townships that lie alongside the Kansas–Oklahoma border). The east–west designation for each township, known as the "range line," begins at the 6th principal meridian. Range lines extend to 43 West in the far southwestern corner of the state and 25 East in the far southeastern corner of the state. The thirty-six sections in each township are numbered–beginning with Township 1 South in the northeast corner of the township and ending with Township 36 South in the southeast corner. The numbers travel west and then return east before turning back west again, correlating with how a man would plow back and forth across a field at the time. North–south guidelines (meridians) were located 48 miles apart. East–west "parallels" located 30 miles apart (in Kansas) adjusted for surveying inaccuracies. North–south adjustments for the curvature of the Earth were made at the parallels, which often created abrupt jogs in roads laid out on section lines. The legal description of land is recorded as section, township, range, (i.e. 640 acres in 17–22 S–19 W or the northwest 160 acres of 4–1 S–13 E).

Kansas Border – Missouri River Channel

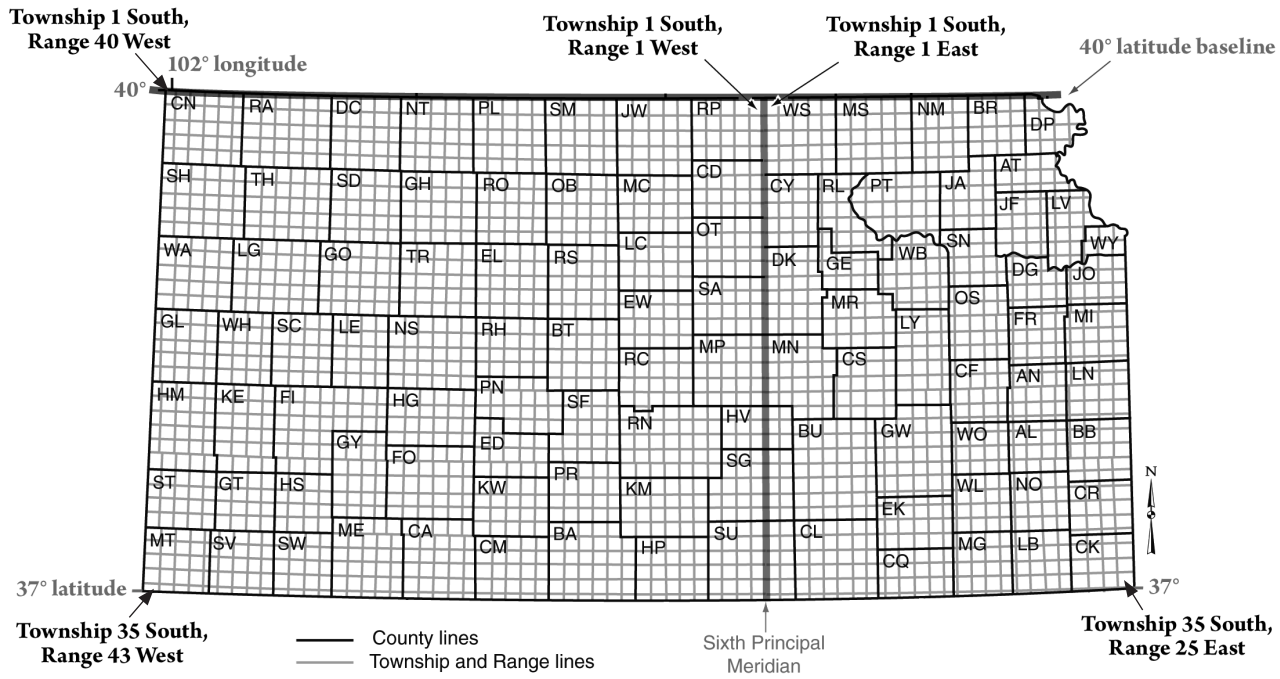
Source: U.S. Geological Survey, EROS Data Center

Section Numbers in a Township

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Credit: BJ Wooding, Cartographer, Barton County Appraiser's Office

Kansas Counties and Townships



Source: Kansas Geological Survey

The Kansas Borders

The eastern border of the state of Kansas was determined when Missouri became a state. Later, changes moved the northeastern border of the state of Kansas to the mid-channel of the Missouri River. Under the Kansas–Nebraska Act of 1854, the north and south boundaries of the Territory of Kansas were set at 40° latitude (north) and 37° (south). Those east, north, and south boundaries became the state's borders when Kansas became a state in 1861.

Under the Kansas–Nebraska Act, the continental divide in the Rocky Mountains (west of Denver, Colorado, today) was set as the western boundary of the Territory of Kansas. As steps were taken to form a state, the settlers struggled with setting the western border of Kansas. At the Wyandotte Constitutional Convention in 1859, the delegates (none of whom lived farther west than Manhattan or Council Grove) decided to exclude the Rocky Mountains, and the miners in the gold fields there, from the new state. The delegates considered several options, including the 26th meridian (roughly following the eastern border of New Mexico north to Sterling, Colorado), the 23rd meridian (approximately a line from Hill City to Dodge City), and the 25th meridian. The delegates compromised by setting the state's western border at the 25th meridian (today's Kansas–Colorado state line).

From 1850 to 1912, lines of longitude in the United States were measured from the Naval Observatory in Washington, D.C. Later, the Prime Meridian (zero) was set at the Greenwich Observatory in London, England. This means that the western border of the state of Kansas, originally set at the 25th meridian, is now about 2.8 miles west of the 102nd meridian–rounded to 102.05 degrees west longitude.

Once Kansas gained statehood, the state legislature determined when counties had reached sufficient population to be named and county governments could be organized. While county borders followed section lines, they did not always follow township lines. In many cases, counties were organized–only to be abandoned later. In those cases, the land was absorbed into other counties.

The grid of states and townships that Jefferson promoted made it possible for individual land ownership, which gave individuals independence and encouraged their interest in creating law-abiding communities. At the time, the opportunity to own land made the United States unique in a world in which all land was either owned by a central government or members of the aristocracy.

The First Kansans

Jefferson's procedures also led to the continual removal of American Indian tribes from areas as new territories and states were organized. There were always people seeking additional land and pushing into unorganized areas. The resulting conflicts over land usually led to treaties that removed the American Indians and relocated them, generally to land further west. During his term as President, Jefferson signed 32 treaties that transferred American Indian titles to the federal government.

President Jefferson also led efforts to acquire additional land for the United States. In 1803, needing money to finance a war in Europe, Napoleon Bonaparte sold the United States a large area of land that France had purchased from Spain earlier. Known as the Louisiana Purchase, this area west of the Mississippi River included the Great Plains.

Southwest Kansas History

After 1763, the international border between the Spanish and English territories in America was the Mississippi River. In 1800, the Spanish returned the province of Louisiana (and New Orleans) to the French. In 1803, the French sold this territory to the United States but the boundaries of the "Louisiana Purchase" were not clearly defined. The United States claimed the western drainage basin of the Missouri River as the boundary until an 1818 treaty with Spain through which the United States acquired Florida. In the 1818 treaty, about 7,500 square miles in the southwestern corner of what later became the state of Kansas (south of the Arkansas River to the 100th meridian) was officially returned to Spain.

However, in 1810, Mexico had declared independence from Spain and claimed ownership of that same area. Then, in 1836, the Republic of Texas (a province of Mexico) achieved independence as a nation. In 1845, the United States annexed the Republic of Texas as the state of Texas, leading to the Mexican-American War. A portion of the territory claimed by the Republic of Texas was ceded to the U.S. government in return for the assumption of debts when Texas became a state. That territory included land that is now part of the states of Colorado, Oklahoma, New Mexico, Wyoming, and the southwestern corner of the state of Kansas.

The prairie grasslands of the Great Plains were so different from the forested areas of the eastern United States that early explorers thought the soils were poor because there were so few trees. Following his 1806 expedition thru the southwestern region of the Louisiana Purchase, Lt. Zebulon Pike described the Great Plains as the Great American Desert, a label used by mapmakers and published in textbooks. It took nearly 50 years for government officials to realize the potential of the plains. In the meantime, as it became necessary to accommodate the expansion of the country's population, the American Indians were moved to areas not likely to be desired by settlers– including the region identified as the Great American Desert.

In the 1700s, explorers and traders in what is now the state of Kansas recorded meeting the Padoucas. "Padouca" is the Siouan name of the Comanche. In the late 1700s and through the 1800s, the Kiowa and Comanche dominated the southwest area of Kansas until agreeing to relinquish all claims in Colorado, Kansas, and New Mexico and relocate to reservations in southwestern Oklahoma and Texas in October of 1865.

The Louisiana Purchase

Source: U.S. Geological Survey, national*atlas*.gov

The Great Plains

Source: Commission for Environmental Cooperation

The People of Quivira

In the early 1530s, Spanish authorities in Mexico associated the name "Quivira" with a province in the interior of the continent reported to include seven wealthy cities made of gold. In 1541, Francisco Vázquez de Coronado mounted an expedition to find the province. Instead, Coronado found an agricultural society along the Arkansas River in what is now central Kansas (mainly Rice and Reno counties). The people were given the name "Quivira."

A French trader identified the same people as the "Wichita" in 1719. The region occupied by the Wichita ranged from the middle Arkansas River (east of Great Bend) to the Brazos River in Texas. The Wichita were forced westward and southward by the Osage and Chickasaw. By the 1850s, they were living around the Wichita Mountains in southwestern Oklahoma. In 1859, the Wichita were relocated to a reservation.

During the Civil War, the Wichita fled to Kansas where they lived near the present-day site of Wichita from 1863 to 1867. They returned to their homes on the reservation after the war was over.

In the late 1700s, the three main American Indian tribes or nations in what is now the state of Kansas were the Kansa, Osage, and Pawnee. The Kansa claimed the area from what is now Nebraska to the Arkansas River. The Osage claimed a large portion of what is now Missouri, with hunting grounds extending into southeastern Kansas. The Pawnee claimed the whole region of the Platte River, from the Rocky Mountains down across Kansas and Nebraska, as well as the watersheds of the forks of the Kansas River. The Northern Pawnee were located along the Platte River and had villages along the banks of the Republican River. The Southern Pawnee lived along the Arkansas River.

In 1825, the Kansa and Osage nations agreed to treaties restricting their territories. The federal government set aside the remainder of the Osage and Kansa lands for the reservations of tribes removed from other areas, mainly those from north of the Ohio River. (Those living south of the Ohio River were generally assigned lands in the area that became Oklahoma.) In 1833, the Pawnee ceded all land south of the Platte River.

The Cheyenne and Arapaho included most of western Kansas in their traditional hunting grounds. In 1851, a treaty granted them a large portion of the country that became southeastern Colorado and western Kansas. Beginning in 1858, mining discoveries in the mountains of Colorado drove the Cheyenne and Arapaho out of the mountains to the valleys and plains of the Arkansas and Republican rivers. In 1861, all their lands, except one tract, were ceded to the United States government. Under the terms of an October 1865 treaty, the Cheyenne and Arapaho were removed from their reservation in southeastern Colorado to ones in Kansas and the Indian Territory (Oklahoma). In a separate treaty at the same time, the Apache were detached from the Kiowa and Comanche and attached to the Cheyenne and Arapaho. When the tribes were moved to reservations in the Indian Territory (Oklahoma) in 1867, they retained hunting privileges as far north as the Arkansas River in Kansas.

Most tribes moved to Kansas in the 1830s, following the implementation of the Indian Removal Act of 1830. Most of the moves were completed before 1846. The Missouri Shawnee were the first to move to the territory and the Wyandot tribe was one of the last to relocate in Kansas. Others assigned to lands in Kansas included the Delaware, Kaskaskia and Peoria, Piankeshaw and Wea, Sauk (Sac) and Fox of Mississippi, Iowa, Kickapoo, Cherokee, New York Indians (composed of representatives of the Seneca, Onondaga, Cayuga, Tuscarora, Oneida, St. Regis, Stockbridge, Munsee, and Brothertown residing in the state of New York), Ottawa, Chippewa, Pottawatomie (Potawatomi), Miami, Quapaw, and Sauk (Sac) and Fox of Missouri.

However, the pressure to open Indian lands to adventurous settlers led to new treaties that resulted in the relocation of the tribes to the Indian Territory (Oklahoma). This allowed the federal government to sell the land previously held by the tribes. Even the Kansa and Osage tribes were forced to move in the 1870s. After 1871, all laws affecting American Indians required Congressional action and treaties were no longer made with Indian nations.

The legacy of the tribes is commemorated in the names of cities, counties, rivers and streams, and other landmarks in Kansas. The Ottawa tribe donated 20,000 acres for a university to ensure the education of their children to the Baptists, who had established missions on their land in Franklin County. This was the foundation of Ottawa University in Ottawa, which still provides a tuition-free undergraduate education to descendants of the Kansas Ottawa.

Today, there are three federally recognized American Indian reservations in the state of Kansas: the Iowa Reservation at White Cloud, the Kickapoo Reservation west of Horton in Brown County, and the Prairie Band Potawatomi Reservation south of Holton in Jackson County. The Sac and Fox Tribe of Missouri holds tribal lands in northeastern Brown County, Kansas.

Missions and Mission Schools

As the former territories of the Kansa and Osage nations were set aside for various American Indian tribes or bands being moved from lands farther east, over 30 missions and mission schools were established by various churches in Kansas. None were located farther west than Council Grove.

In St. Paul, the infirmary of the Osage Mission–St. Ann's Academy Infirmary and Guest House–is now a bed and breakfast.

Haskell Indian Nations University

Lawrence, Kansas, is home to Haskell Indian Nations University, a national center for American Indian education, research, and cultural preservation. This unique college enrolls over 1,000 students each semester who represent federally recognized tribes from across the United States. American Indian and Alaska Native culture is integrated into the curriculum.

Early in its history, the school promoted assimilation into the American mainstream but that is no longer the case. In 1884, the first elementary students enrolled in the school, known then as the United States Indian Industrial Training School. Ten years later, the school expanded beyond the elementary grades. By 1927, the high school was accredited by the state of Kansas but the school soon began to evolve into a post-high school vocational technical school. The last high school class graduated in 1965.

In 1970, the school became Haskell Indian Junior College. In 1993, it became Haskell Indian Nations University. Currently, the college offers two-year and four-year degree programs in elementary school education, American Indian studies, business administration, and environmental science.

Source: Haskell Indian Nations University

Native American Heritage Museum

The Native American Heritage Museum is a state historic site near Highland, Kansas. Originally established as a Presbyterian Mission in 1845, known as the Iowa, Sac, and Fox Mission, the school emphasized industrial and domestic arts as well as farming. Those three tribes signed a treaty in 1837 giving up their land in Missouri in exchange for land in what is now northeastern Kansas and southeastern Nebraska.

From the 1830s–1860s, wagon trains bound for Oregon and the California gold fields passed the mission, which was on the St. Joseph branch of the Oregon–California Trail. The tribes built a log bridge across Wolf Creek, near the mission, and charged a toll for wagons and traffic using the bridge. However, the emigrant traffic killed many members of the tribes when they were exposed to diseases such as cholera and smallpox.

With the passage of the Kansas–Nebraska Act of 1854, the government negotiated a new treaty with the tribes that reduced their lands and placed the mission too far away from the reservations for the children to attend the school. The mission closed in 1863 but operated as the Indian Orphanage Institute from 1863 to 1866. In 1941, the mission building became the property of the state of Kansas. Today, the Kansas State Historical Society administers the property as a museum, showcasing the arts and history of the emigrant tribes of American Indians in northeastern Kansas.

Source: Kansas State Historical Society

Kansas Elevation Extremes

The lowest point in Kansas, 679 feet above sea level, is located in the Verdigris River channel in Montgomery County.

The highest point in Kansas, 4,039 feet above sea level, is at the top of Mount Sunflower in Wallace County.

Kansas Environmental Factors

"(This land is) the best I have ever seen for producing all the products of Spain."

Francisco Vasquez de Coronado, Spanish explorer
(In 1541 while exploring the territory which later became Kansas)

Coronado was searching for Quivira, the legendary province with seven cities of gold, when he came across the region and made this pronouncement. Instead of precious metal, he found a surprising bounty of vegetation, wildlife, and possibilities for agricultural production. Kansas is certainly not Spain, but the Kansas climate is a key factor to the abundance and variety of plant growth and animals in the state. Four distinct seasons of weather provide excellent growing conditions for a large variety of crops and native plant life.

Climate

Weather is the state of the atmosphere for a given site at a given time. This includes air temperature, air movement, evaporation rate, cloud formation, and precipitation. Climate is the average weather conditions of a given point during a given set of dates.

Kansas contains three climate types, according to the Koppen climate classification: humid continental, semiarid steppe, and humid subtropical.

The eastern two-thirds of the state have a humid continental climate with cold winters and hot summers, with most of the precipitation falling in the summer and spring.

The western one-third of the state has a semiarid steppe climate. Summers are hot, and often very hot. Winters are cold in the northwest and cool to mild in the southwest. The region is semiarid, receiving on average only 16 inches or less of precipitation per year. In the winter, chinook winds–dry warm winds that blow down the eastern slopes of the Rocky Mountains–can warm western Kansas all the way into the 60s, 70s, and even 80s.

The far south-central and southeastern reaches of the state have a humid subtropical climate, with long, hot summers and short, mild winters and much more precipitation than the rest of the state.

Precipitation ranges from 44 inches a year in the southeastern corner of the state, to less than 16 inches a year in the southwest. The average temperature is 55 degrees Fahrenheit, and the growing season varies from 154 days in the northwest to 200 days in the southeast.

Kansas ranks as the ninth or tenth sunniest state in the country, depending on the source. No state east of Kansas, including Florida, is sunnier on average. Western Kansas has as many sunny days in a year as parts of California and Texas.

Snowfall ranges from around five inches in the fringes of the south to 35 inches in the far northwest.

Frost-free days range from more than 200 in the south to 130 in the northwest.

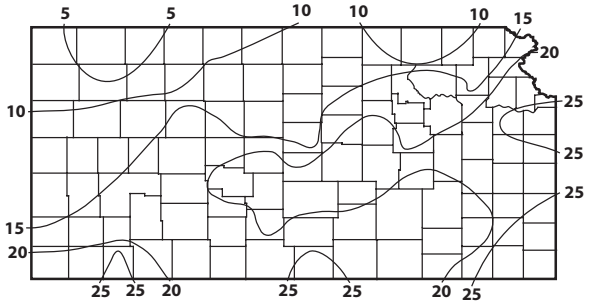
Weather– the state of the atmosphere for a specific site at a specific point in time, including air temperature, air movement, evaporation rate, cloud formation, and precipitation.

Climate– the average weather conditions of a specific site during a particular set of dates.

The Growing Season in Kansas

The normal frost-free period shortens from 200 days at the southeast corner of the state to only 154 days in extreme northwestern Kansas. The shortening of the growing season is due to the rise in altitude from 679 feet above sea level in the southeastern corner of the state to 4,039 feet above sea level at the highest point in western Kansas. From the southern to northern border of the state, the change in distance from the equator (latitude) also affects the length of the growing season. On average, the growing season shortens about one day for each additional eight miles north of the southern border of the state of Kansas.

Average First 32° F Freeze in October



Source: K-State Research and Extension

Wildlife

Scientists are fascinated by the biodiversity, or variety of differing organisms in a given area, of wildlife in Kansas. Kansas is home to 798 species of vertebrates (mammals, birds, reptiles, amphibians, and fish). In addition, there are approximately 24,000 species of invertebrates (insects, mussels, and crustaceans) in Kansas.

White-tailed Deer
Credit: Scott Bauer, USDA ARS

Terrestrial (land-dwelling) animals include the bison, which provided food, shelter, and clothing for American Indians. Bison still forage the prairie in domesticated herds in Kansas. Deer and antelope run wild in the state and prairie dogs scamper in and out of their underground homes. Beaver, bobcat, raccoon, opossum, skunk, muskrat, mink, badger, fox, and coyote are other Kansas mammals.

There are 144 species of fish in the Kansas streams, rivers, ponds, and lakes.

Great Horned Owl
Credit: Roger Hill, USDA NRCS

The Kansas biomes are home to 468 species of birds, including wild turkeys, chickadees, hawks, owls, prairie chickens, and meadowlarks.

In Kansas, there are 53 species of reptiles and 30 species of amphibians, including rattlesnakes, ringneck snakes, horned lizards, and salamanders.

Livestock

Beef Calves
Credit: Wayne Stoskopf

Many domesticated animals can be found in Kansas. Ruminants, animals with a four-compartment stomach, are able to digest plants and grasses that humans cannot. These animals convert grasses into meat and milk, which are high-quality, complete proteins for human consumption. With 20 million acres of grass, Kansas is ideal for grazing animals. In one year, over six million cattle graze throughout the state. Some move to feedyards in western Kansas; these provide the base for the state's multibillion-dollar beef industry. Dairy, sheep, goat, swine, and poultry farms can be found throughout the state and contribute to a thriving livestock industry.

Vegetation

The types of vegetation or plants in the state are unique and varied. As they have adapted, native species have grown in response to the changes in precipitation and soil throughout the state. From east to west, the occurrence of native tallgrass, mixed-grass, and shortgrass prairies can be charted almost exactly with the rain and snowfall changes. The richness and type of soil the vegetation grows on contributes greatly to what can grow there.

Kansas has over 300 different soil types. According to the Kansas Agricultural Statistics Service, cropland accounts for 56 percent of the land use (over 29 million acres) while range and pasture lands account for 37 percent (over 19 million acres). Kansas' soils directly impact the economic well-being of its people. Soils help rank Kansas at or near the top of the 50 states annually in wheat production, grain sorghum production, sorghum silage production, and red meat production.

Harney silt loam was designated the official state soil in 1990. It possesses the ideal qualities of a prairie soil, including the best combination of physical and chemical characteristics for producing food and fiber. Harney silt loam covers almost four million acres in 26 west-central Kansas counties.

One acre is approximately the same size as a high school football field (without the end zones).

State Species, Plants, and Soil

***State animal*– American bison**
***State reptile*– ornate box turtle**
***State amphibian*– barred tiger salamander**
***State bird*– Western meadowlark**
***State insect*– honeybee**
***State flower*– sunflower**
***State tree*– cottonwood**
***State soil*– Harney silt loam**

Over two million acres in Kansas are considered woodlands or forests by the Kansas Forest Service–over four percent of the land area in the state. There are over 78,000 windbreaks in Kansas, and more than 70 active sawmills.

The cottonwood tree has been designated the state tree. It is a soft wood, and can grow over 100 feet tall and 12 feet in circumference. Its presence can stabilize soil erosion and filter pollution. Other trees found in the state include hackberry, ash, black walnut, and bur oak. The presence of Eastern red cedar is increasing, mostly from lack of fire.

Cottonwood Leaves
Credit: Mary Anne Stoskopf

Kansas Culture

"We've been through a valley. We now stand atop a hill, looking toward the horizon and all the promise it has to offer. To shrink from those challenges would go against everything it means to be a Kansan. We wouldn't be here… if the pioneers who settled our state had looked out upon the wide, open prairie and turned back saying the challenge was just too difficult. Instead, with conviction in their hearts and hope for the future, they moved forward."

Kathleen Sebelius, 44th governor of the state of Kansas

Population

Kansas has a population of over 2.7 million, according to the Kansas Secretary of State's office. One-half of the counties in Kansas are experiencing decreasing populations. The U.S. Census Bureau reports that the 22 counties that are growing in population are experiencing many changes. Since 2000, over 71 percent of the population growth in Kansas has occurred among the state's Hispanic population. Asian populations are also increasing across the state.

Early Kansas settlers represented many countries and cultures. Many Kansans and Kansas communities celebrate that heritage, which includes that of the people who came directly to Kansas from other countries as well as the people who moved to Kansas from other states. Many Kansas citizens are descendants of early settlers from Western Europe, including many of German or British ancestry.

Economy

In 2006, according to the U.S. Department of Commerce, the gross domestic product of the state of Kansas was over $94.6 billion and the state's per capita personal income was $34,743, 96% of the national average. In April 2007, the state's unemployment rate was 4.0% according to the Kansas Department of Labor. Agriculture is the number one industry in the state, employing nearly one in five people. In fact, the U.S. Department of Commerce reports that the agricultural industry accounts for a larger share of employment in the Plains states than in any other region of the United States.

Kansas is the nation's second largest producer of beef cattle, and it leads the nation in the production of several crops, including wheat and grain sorghum. Other major agricultural products include corn, soybeans, hay, sunflowers, cotton, and hogs. The state's industrial and manufacturing outputs include transportation equipment, commercial and private aircraft, food processing, publishing, chemical products, machinery, pharmaceuticals, and mineral resources. Kansas ranks first among the states in helium production, fifth in the production of natural gas and eighth in petroleum production. Other leading mineral resources include cement, salt, coal, building stone, sand and gravel, and clay and shale products according to the state's website. In 2006, the top exports from the state of Kansas were food products and transportation equipment, with total exports from the state of $8.6 billion. In 2006, exports from the state of Kansas went to 192 foreign destinations. According to the U.S. Department of Commerce, the top markets for Kansas exports in 2006 were Canada, Mexico, the United Kingdom, Germany, Japan, China, Australia, Singapore, Hong Kong, and Brazil.

In 2004, the Kansas Legislature established the Kansas Bioscience Authority in an effort to make bioscience a major part of the Kansas economy. The mission of the Kansas Bioscience Authority is to make Kansas a national leader in bioscience. In October of 2006, Kansas State University dedicated the Bioscience Research Institute, a food security research facility, built on the KSU campus in Manhattan. The K-State Olathe Innovation Campus, a KSU food safety and security center, is planned in Olathe, Kansas, where research will focus on animal health, forensics science, and bioenergy.

Historical and Cultural Resources

Cultural resources are evidence of past human activity. In Kansas, these may include pioneer homes, buildings, roads, or wagon ruts like the Santa Fe Trail ruts near Council Grove. They may be structures with unique architecture like the state Capitol in Topeka. These are nonrenewable resources and yield unique information about past societies and environments. They can help provide perspectives and answers for modern day social and conservation practices. The history of the state, its distinctive communities, and the people of Kansas surrounds everyone living here today.

Fort Larned National Historic Site
Credit: Wayne Stoskopf

The Kansas State Historic Preservation Office can provide information about cultural resources in each area in the state.

Striking a Balance

"The throwing out of balance of the resources of nature throws out of balance also the lives of men."

Franklin D. Roosevelt, 32nd President of the United States

People, wildlife, and all life forms exist together on one earth in a balancing act. People have developed a complex culture. Using technology and strength, humans can dominate much of the environment. But with great power comes a responsibility–people must ensure that they continue to respect their environment and do not diminish the diversity of the planet. Kansans must act as stewards of the natural environment, balancing human interests with those of nature.

Threatened and Endangered Species

Congress passed the Endangered Species Act in 1973. The U.S. Fish and Wildlife Service in the Department of the Interior and the National Marine Fisheries Service in the Department of Commerce administer the federal law. The U.S. Fish and Wildlife Service has primary responsibility for terrestrial (land) and freshwater organisms, while the responsibilities of the National Marine Fisheries Service are mainly marine (ocean) species, such as salmon and whales.

In 1975, the Kansas Legislature passed the Kansas Nongame and Endangered Species Conservation Act. This state law places the responsibility for identifying and undertaking appropriate conservation measures for state and federally listed species on the Kansas Department of Wildlife and Parks. Statewide and countywide lists of protected species are available on the Kansas Department of Wildlife and Parks' website: *www.kdwp.state.ks.us*.

One of the great stories of conservation comes from the Dust Bowl of the 1930s. The "dirty thirties," like an earthquake or tsunami, shocked the nation's citizens into realizing that they lived in a fragile world. In 1935, the U.S. Congress passed Public Law 46 which is the basis for all conservation programs today. The Soil Conservation Service was established. Trained scientists began working with agricultural producers to teach them about the relationships between their actions and the subsequent effects on the earth.

To recognize and preserve some of the cultural and natural resources of the country, the government has created several programs, including the National Register of Historic Places and the National Historical and Preservation Act. In addition, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service administer the federal Endangered Species Act.

In 1975, the Kansas Legislature passed the Kansas Nongame and Endangered Species Act which allowed the Kansas Department of Wildlife and Parks to establish an official list of threatened and endangered species in the state.

Much of the clash of nature and people has come because of human population increases around the world. Kansas is a state with a low population and can share its products with those in need–the people of Kansas can feed themselves and others as well. This can benefit Kansans economically and the consumers as well. All Kansans should respect and recognize their responsibilities. A partnership between the land and its caretakers must exist to ensure that generations of people, plant life, and animals will continue to thrive on the planet Earth.

References

Blackmar, Frank, ed. *Kansas: A Cyclopedia of State History, Embracing Events, Institutions, Industries, Counties, Cities, Towns, Prominent Persons, Etc.* 2 vols. Chicago: Standard Pub. Co., 1912. Blue Skyways, Carolyn Ward, 2002, Kansas State Library. <http://skyways.lib.ks.us/genweb/archives/1912/>.

Linklater, Andro. *Measuring America: How the United States was Shaped by the Greatest Land Sale in History*. New York: Penguin Group, 2002.

Mechem, Kirke, ed. *The Annals of Kansas 1886-1925*. 2 vols. Topeka, Kansas: Kansas State Historical Society.

Rich, Everett, ed. *The Heritage of Kansas: Selected Commentaries on Past Times*. Lawrence, Kansas: University of Kansas Press, 1960.

Teacher's Resources

Books:

* *Teachers & Advanced Readers;* AR - *Accelerated Reading Level*

Birds in Kansas, Vol. 1 *
Thompson, Max C. and Charles Ely. 1989

Birds in Kansas, Vol. 2 (songbirds) *
Thompson, Max C. and Charles Ely. 1999

Birds in Your Backyard
Herkert, Barbara. 2001 (AR - 4.4)

Black Pioneers: An Untold Story
Katz, William Loren. 1999 (AR - 9.4)

Corps of Discovery
Hamilton, John. 2002 (AR - 7.2)

Explorers of the Frontier, Vol. 2
Sundling, Charles W. 2000 (AR - 5.3)

Giants in the Earth
Rolvaag, O.E. 1999 (AR - 8.4)

Great Plains Nature Center, Wichita, KS (*www.gpnc.org*)

A Pocket Guide to Common Kansas Mammals *
Potts, George and Bob Gress
online version: ***www.gpnc.org/den.htm***

A Pocket Guide to Kansas Raptors *
Gress, Bob and Vanessa Avara
online version: ***www.gpnc.org/raptors.htm***

A Pocket Guide to Kansas Snakes *
Collins, Joseph T. and Suzanne L. Collins
online version: ***www.gpnc.org/snakes.htm***

A Pocket Guide to Kansas Threatened and Endangered Species *
Miller, Edwin J. and Bob Gress
online version: ***www.gpnc.org/refuge.htm***

The Homestead Act
Landau, Elaine. 2006 (AR - 4.9)

I Have Heard of a Land
Thomas, Joyce Carol. 2000 (AR - 3.1)

Teacher's Resources (continued)

Kansas Geology: An Introduction to Landscapes, Rocks, Minerals and Fossils *
Buchanan, Rex. 1984

Kansas: The History of the Sunflower State, 1854-2000 *
Miner, Craig. 2005

Missouri River
Hamilton, John. 2002 (AR - 6.2)

Peder Victorious: A Tale of the Pioneers 20 Years Later *
Rolvaag, O. E. 1982

Raptor!: A Kid's Guide to Birds of Prey
Laubach, Christyna M., Rene Laubach, and Charles W. Smith. 2002 (AR - 7.3)

Roadside Kansas: A Traveler's Guide to Its Geology and Landmarks*
Buchanan, Rex and James R. McCauley. 1987

Sarah, Plain and Tall
MacLachlan, Patricia. 2005 (AR - 3.4)

Sarah, Plain and Tall: Scholastic Literature Guide *
Beech, Linda Ward. 1997

Watching Kansas Wildlife: A Guide to 101 Sites *
Gress, Bob and George Potts. 1993

Wagon Wheels
Brenner, Barbara. 1993 (AR - 2.6)

Weather: Frequently Asked Questions
Wyatt, Valerie. 2000 (AR - 5.7)

West of Wichita: Settling the High Plains of Kansas, 1865-1890 *
Miner, Craig. 1986

Words West: Voices of Young Pioneers
Wadsworth, Ginger. 2003 (AR - 7.0)

Photography Books about Kansas:

Faces of the Great Plains: Prairie Wildlife
Gress, Bob. 2003

The Four Seasons of Kansas
Dancer, Daniel D. 2001

Kansas in Color: Photographs Selected by Kansas! Magazine
Glenn, Andrea. 1982

Kansas Simply Beautiful
Avery, Scott C., Charles Gurche, and Steve Mulligan. 2001

Living Landscapes of Kansas
Reichman, O.J. 1995

Websites:

Biomes of the World
Missouri Botanical Garden
www.mbgnet.net/

Blue Planet Biomes
www.blueplanetbiomes.org/climate.htm

From Sea to Prairie: A Primer of Kansas Geology
Catherine S. Evans, ed.
Kansas Geological Survey
www.kgs.ku.edu/Publications/primer/primer01.html

Great Plains Nature Center
www.gpnc.org

Jefferson's West: The Louisiana Purchase
Monticello
www.monticello.org/jefferson/lewisandclark/louisiana.html

Kansas Indian Tribes
Access Genealogy
www.accessgenealogy.com/native/kansas/index.htm

Map Maker
National Atlas of the United States
http://nationalatlas.gov

Weather Tools
The Weather Channel
www.weather.com/wxclass/education/

Notes: