



Lesson 1: What Are Rangelands and What Kinds of Rangelands Are Found in Nebraska?

What are Rangelands?

Rangelands are found on diverse, complex landscapes and can be called prairie, steppe, pampas, swards, and meadows. According to the Natural Resources Conservation Service (NRCS), rangelands are lands on which the native vegetation is predominately perennial grasses, grass-like plants, forbs, and shrubs or dispersed trees. Existing plant communities can include both native and introduced plants. Disturbed lands that have been revegetated naturally or artificially are included.

North American rangelands include grasslands, shrublands, woodlands, savannas, and deserts.

Grasslands are rangelands which are dominated by grasses and grass-like plants. There are several types of Grassland biomes including Tallgrass Prairie, Shortgrass Prairie, Alpine Meadows, California Annual Grasslands, Palouse Prairie, Southern Mixed Prairie, Marshes, Wet Meadows, Tundra Grasslands, and Desert Grasslands.

Shrublands are lands with a plant community dominated by shrubs. The plant community also has an understory of grasses and herbaceous plants. In North America, rangeland Shrubland biomes include Chaparral, Sagebrush-steppe, Salt-desert Shrublands, Tundra Shrublands, and Mountain Browse.

Woodlands and **Savannas** are dominated by widely-spaced trees including junipers, oaks, mesquite and pines with an understory of grasses and forbs. In North America, the most extensive rangeland Woodland is the Pinyon-Juniper Woodland.

Deserts are dry rangelands that are subject to water shortages and unpredictable precipitation. The plant communities are dominated by shrubs and cacti with an understory of herbaceous vegetation. The rangeland desert biomes in North America are in the

southwest and include the Mojave, Sonoran and Chihuahuan deserts.

Pastureland, or land that has been seeded to non-native grasses, is not rangeland. Pastureland may have periodic cultivation to maintain the grasses, is planted to introduced (non-native) plants and agronomic inputs such as irrigation, weed control and fertilization are applied on a regular basis.

How extensive are Rangelands?

According to USDA, in 2012, approximately 770 million acres of rangelands (or 41.4% of the land area) are found in the US. More than half of US rangelands are owned by private landowners. Federal, state and local government agencies own the rest of the rangelands in the US. Rangelands make up 27% of the land in the lower 48 states. Most rangelands are located west of the Mississippi River.

In Nebraska, approximately 22.6 million acres or 46% of the land area is made up of rangeland. Nebraska's rangelands provide a valuable forage resource for livestock.

What types of Rangeland biomes are found in Nebraska?

The four most common rangeland types found in Nebraska are the Nebraska Sandhills, Western Mixed and Shortgrass Prairie, Mixed Grass Loess Prairie, and Tall Grass Prairie. There also are many locally important prairie types throughout the state.

The **Nebraska Sandhills** is a unique rangeland type. It is the largest stabilized complex of sand dunes in the western hemisphere and is one of the largest contiguous areas of grassland in the United States. It is made up of 19.75 million acres. Over 90% of the land



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area in the sandhills is native prairie. The sandhills region is a complex of high dunes and low lying interdune meadows. The plant communities on the upland dunes are composed of a mixture of grasses. The dominant grasses are sand bluestem, prairie sandreed, little bluestem, switchgrass, blue grama and needleandthread. There is a diverse mixture of forbs present. The meadows have a plant community with prairie cordgrass, big bluestem, Indiangrass, switchgrass and many grass-like plants. The area is underlain by the High Plains Aquifer and contains numerous wetlands within the interdune areas. About 720 plant species are found in the Nebraska Sandhills, the majority of which are native to the State.

Tallgrass Prairie is found in the eastern part of Nebraska (east of the 98th meridian). The area has high precipitation, fertile soils and gently sloping topography. Because of this, much of the tallgrass prairie in Nebraska (and across its range in the US) has been broken out and farmed. The largest area of remaining tallgrass prairie is found in the Flint Hills. Tallgrass prairie plant communities are dominated by big bluestem, Indiangrass, switchgrass, little bluestem, sideoats grama, porcupinegrass, and prairie dropseed. There is an abundance of forbs on most tallgrass prairie sites.

Mixed-grass Loess Prairie is found in the Central part of Nebraska (but not in the Sandhills) between the 98th and 101st meridian. As the name implies, this prairie type is found on loess soils and supports a plant community that is a mixture of tall, mid, and short grasses. The plant diversity is high because of this mixture of plant types. The primary grasses include those found in the tallgrass prairie as well as western wheatgrass, blue grama and green needlegrass. This high diversity helps build resilience and allows the mixed-grass prairie to withstand drought and other disturbance.

Western Mixed-grass and Shortgrass Prairie is found in the central and southern Panhandle of Nebraska. The plant communities include some of the grasses found further east in the Mixed-grass Prairie, such as prairie sandreed and little bluestem, but most plant communities are predominantly short grasses and grass-likes such as blue grama, sideoats grama, threadleaf sedge, western wheatgrass and buffalograss.

Other Prairie Types found in Nebraska include Sand Sage Prairie, Missouri River Grassland, Northwestern Mixed Grass Prairie and Silver Sagebrush Shrub Prairie. See the Terrestrial Ecological Systems and Natural Communities of Nebraska for more information about Nebraska's Prairie types.

What are Biologically Unique Landscapes and How Do They Relate to Rangelands?

Twenty Biologically Unique Landscapes or rangeland prairie types have been identified in Nebraska. These are identified in the Nebraska Natural Legacy Project, State Wildlife Action Plan.

A biologically unique landscape is a prairie (or wetland) ecosystem that has been identified as deserving special attention because it is home to rare or declining species, because it has been reduced in extent due to farming or drainage activities, or because it has been degraded by overgrazing or other activities. Often several of the listed conditions exist in a biologically unique landscape.



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Activities

Review the Nebraska Natural Legacy Project, State Wildlife Action Plan (<http://outdoornebraska.gov/wp-content/uploads/2015/09/NebraskaNaturalLegacyProject2ndEdition.pdf>) to become familiar with Biologically Unique Landscapes in your area or in contest areas.

Learn more about prairie types found in Nebraska.

http://www.landscape.org/explore/ecosystems/disappearing_landscapes/tallgrass_prairie/

<http://outdoornebraska.gov/naturallegacyproject/>

<https://globalrangelands.org/topics/rangeland-ecology/rangeland-plant-communities>

Example Questions

The largest area of remaining tall grass prairie can be found in the Flint Hills. In what States are the Flint Hills found?

True or False. Nebraska's Biologically Unique Landscapes are found only in Eastern Nebraska because much of the rangeland in that area have been converted to farmland.

The type of prairie found in the Nebraska Panhandle is _____.

Which of the following rangeland type is not found in Nebraska: a). Mixed Grass Loess Prairie, b). Tall Grass Prairie, c). Desert Grassland, d). Sand Sage Prairie

True or False. The Mixed-grass Loess Prairie is a very diverse system because it contains plant species from both the tall grass prairie and short grass prairie ecosystem.