

A natural community is a group of native plants and animals that interact with each other and their environment in ways not greatly altered by modern human activity. On the presettlement landscape, they were distributed according to climate, soil, and landform patterns. Natural disturbances such as fires, drought, windstorms, and floods helped to shape them.

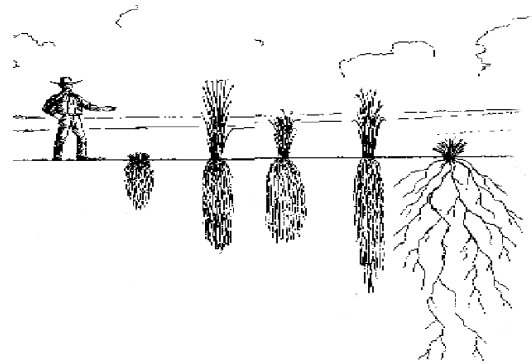
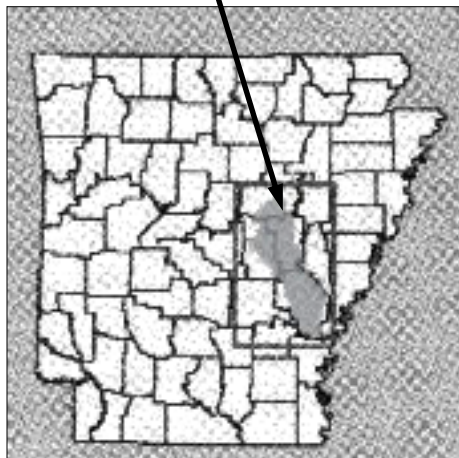
Tallgrass Prairie

Prairies are a type of grassland, a landscape dominated by plants other than trees, especially grasses. Prairies occur in many areas of the world. At one time almost 40% of the earth's surface was covered by grasslands. Today, approximately 70% of the food produced from humans comes from these regions.

Grasslands are the largest vegetation type in North America, covering approximately 15% of the land area. Prairies are the grasslands found in the central part of North America. The first European settlers moving westward from the forests of the eastern U.S. described the prairies as "vast oceans of grass". Wind caused waves on the surface of the grass further adding to the image of an ocean. One type of pioneer wagon was even called a "prairie schooner", a reference to a ship.

In Arkansas, early settlers found 320,000 acres of tallgrass prairie in the eastern region of the state, known as the Grand Prairie. Today only 430 acres remain.

Arkansas's Grand Prairie



The soil underneath the prairie is a dense tangle of roots, rhizomes, and bubs. While the above ground part of most prairie plants die back each year; the plants are kept alive by these underground structures. The roots of prairie plants often extend deeper into the ground than the stems rise above it. Some of the roots die and decompose each year, adding large amounts of organic matter to the soil and making the prairie very fertile.

Species Key - *binomial nomenclature*

The standard convention used for naming species is called *binomial nomenclature*. As the word "binomial" suggests, the scientific name of each species is the combination of two names: the genus name and the species name. The names are usually derived from Latin, although some are from ancient Greek, local languages, and often from the name of the person who first described (discovers) a species.

The value of the binomial system includes:

- The same name is used in all languages.
- Every species can be clearly identified with just two words.
- The system has been adopted internationally in botany (since 1753; zoology (since 1758), and bacteriology

More Information



- Vocabulary words
- Resources
- Framework correlations

Vocabulary Words

The little mammal in the tunnel (# 1) is a vole.

What's the difference in a vole and a mole?

The vole is rodent (related to mice) and eats plant material.

The mole is an insectivore (related to shrews) and eats worms and grubs.

Adaptation – adjustment to environmental conditions

Camouflage – concealment or hiding by blending into or mimicking surrounding environment

Drought – a long period of dryness (without rain or moisture)

Encroachment - entering by gradual steps and/or beyond the usual limits

Fauna – the animal life of a region

Flora – the plant life of a region

Forb – a plant or herb other than a grass

Perennial – living for several years with new herbaceous growth

Remnant – a small surviving part

Suppression – the act of stopping or restraining from the usual course of action

Tawny – a warm sandy color that is a brownish orange to light brown

Transect – a sample area, usually in the form of a long, continuous strip

Additional Information and Activities

Continue exploring **scientific names and binomial nomenclature**. One interesting rule to note: animal names allow genus and species to repeat the same word; plant names do not. Species names can also be further subdivided into subspecies (3 names are called *trinomial nomenclature*). Animals can only be divided into subspecies, with 3 names; but plants can be divided into subspecies, variety, and subvariety. Look at some of the names in the Species Key on the poster and discuss the relationships between the scientific names and common names

Examples:

Ornate Box Turtle is

Terrapene oranta

Henslow's Sparrow is

Ammodramus henslowii

Downy Phlox is *Phlox pilsa*

Species names are important in the science of *taxonomy* (classifying organisms). The Linnean system we use today was developed more than 200 years ago by the Swedish botanist

Carolus Linnaeus. Explore his work with students and look at its overall organization, using examples from the poster:

Red-tailed Hawk—*Buteo jamaicensis*

- **Kingdom** - *Animalia*—animals
- **Phylum** - *Chordata*—vertebrate
- **Class** - *Aves*—bird
- **Order** - *Falconiformes*—diurnal birds of prey
- **Family** - *Accipitridae*—eagles, hawks, kites
- **Genus** - *Buteo*—hawks with broad, rounded wings
- **Species** - *jamaicensis*

Explore additional aspects of taxonomy and observation skills by challenging students to find representatives from the four classes of vertebrates in the poster (reptile, bird, mammal, amphibian), or to identify vertebrate and invertebrates.

Common names—don't forget the fun of also exploring the origins of common names for plants and animals. For example, the King Rail is called "king" because it is

the largest member of the rail family in North America.

The dickcissel's name is based on what someone thought its called sounded like.

The compass plant is named for its large leaves which align themselves north and south as they face the morning and afternoon sun.



Compass plant

The ornate box turtle's name is a key to one way it is different from the regular three-toed box turtle you might see in your yard (another key is its appearance in this prairie poster!)

Students can research the origins of other names. A good web source is "Animal Diversity Web" <http://animaldiversity.ummz.umich.edu/site/index.html>

Sometimes the most fun is creating new names based on information about the plant or animal.

Additional Information and Activities

What is a grass?

A grass is an herbaceous (nonwoody) plant that does not form wood tissue or increase in girth like trees. Grasses have hollow, round stems and small, nondescript flowers. They can be classified by their blooming periods (warm season or cool season). Most are pollinated by wind . Many of our important food crops, such as oats, wheat, rice, and corn, are grasses.

Fire on the Prairie

Prairies evolved with frequent fires, ignited by lightning or early Native Americans, so the plants and animals have adapted to, and in many cases, depend on fire. Fires prevent the encroachment of trees on the prairie and keep grasses dominant. The deep roots of the prairie grasses are buffered by the

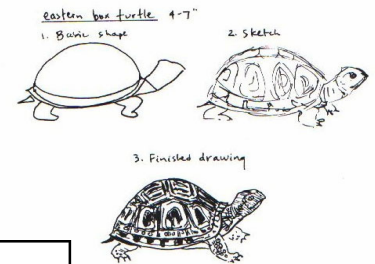
soil as the fire moves quickly over them. The plant material burned by the fire releases nutrients in the soil. The dark burned surface of the prairie absorbs more sunlight and warms quickly, speeding seed germination. Some seeds depend on the heat of fire to split their seed coats open. Many prairie animals also go underground to escape the fire.

Rare Species

One such burrowing animal on the prairie is also rare, or technically a "species of special concern: the prairie mole cricket. Natural Areas owned and managed by the Arkansas Natural Heritage Commission (ANHC) include prairie remnants that protect these crickets. A complete list of Arkansas's rare species can be found on the ANHC website at www.naturalheritage.com

Art and Nature

The illustrations on the posters were done by Missouri artist Linda Ellis, who has also illustrated technical publications for the Missouri Botanical Gardens. The natural world is a wonderful art subject for students, whether it's sketching in a journal, as illustrated below, or more formal drawing, painting, or sculpture. Students can also explore other cultural representations of nature through history and early nature artists such as John James Audubon, who discovered and first illustrated the Henslow's sparrow in the poster. He named the bird after a Cambridge professor named Henslow.



Extirpated

We say the greater prairie chicken and the snowy orchid have been "extirpated" from Arkansas because they are no longer known to exist here but still exist elsewhere.

Correlations to Arkansas Science Frameworks

The posters and notes can be used to supplement Strand 2 - Life Science Systems
L.S.2.4; L.S.2.5;
L.S.2.8; L.S.2.9;
L.S.2.11; L.S.2.12
Strand 3 - Connections & Applications in Life Sciences
L.S.3.2; L.S. 3.3

Resources

Books

- Arkansas and the Land by Thomas Foti & Gerald Hanson
- A Walk in the Prairie by Rebecca Johnson & Phyllis Saroff
- Tallgrass and Trouble: A Story of Environmental Action by Ann Sigford
- America's Prairies & Grasslands: Guide to Plants & Animals by M.D. Wallace
- A Prairie Alphabet by Jo Banna-Cugnet
- If You're Not from the Prairie by David Bouchard

Websites

- <http://www.naturalheritage.org>
Arkansas Natural Heritage Commission—lesson plans, books, rare species info, maps
- http://www.agfc.state.ar.us/critters/endangered_species.html
Arkansas Game & Fish Commission—endangered animals in Arkansas
- <http://educators.fws.gov/>
U.S. Fish & Wildlife Service—federal lists of endangered species, information for educators
- <http://www.museum.state.il.us/muslink/prairie/index.html>
Illinois State Museum—prairie info, lesson plans, on-line prairie restoration game