

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.

## Large Rivers

**What is a large river?** Arkansas has almost 12,000 miles of rivers, creeks, and streams, so which ones are big enough to be called large rivers? The five rivers listed on the poster as “large” rivers have watersheds of several thousand square miles and flow through more than one type of geographic or natural region of the state. These rivers are made up of many smaller rivers, which are, in turn made up of even small tributaries — and each of these has their own watershed too.

**What is a watershed?** A watershed is all the land that drains into a particular body of water. Everyone lives in a watershed and everything we do affects the soil, water, air, plants, and animals that depend on that watershed.

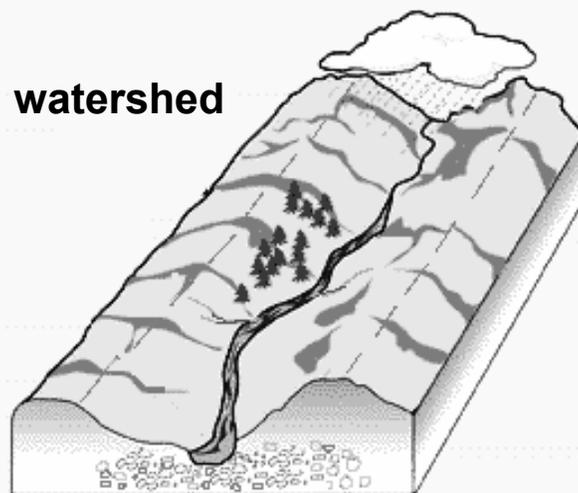
The watersheds of the five large rivers on the poster extend into the states surrounding Arkansas.

They serve as major transportation corridors today but also brought early settlers to our state. Most of

the major cities and population centers of Arkansas, including the state capitol Little Rock, developed along these large rivers. As we put these waters to use for irrigation, municipal and industrial water supplies, electrical energy production, and recreation, we impacted the plants and animals that are adapted to life in and along large waterways. Now we are facing critical decisions about how to balance the many human needs with the natural communities that depend on this aquatic habitat.



watershed



### 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 (since 1980).

### More Information



- Vocabulary words
- Resources
- Framework correlations

## Vocabulary Words

What is that bald eagle in the poster eating and why is it near a river?

The bald eagle is eating a fish. Bald eagles are excellent fishermen and usually strike fish on the surface of the water. They will also take fish away from other predators, such as osprey.

**Channel**—the bed where a natural stream of water runs; the deeper part of a river

**Dredge**—to deepen a waterway with mechanical equipment

**Floodplain**—level, low land that may be submerged by river floodwaters

**Marsh**—tract of soft, wet land usually characterized by grasses or cattails

**Oxbow**—something, such as a bend in a river, resembling the U-shaped frame forming a collar about an ox's neck and support the yoke

**Riparian**—relating to or living or located on the bank of a river

**Slough**—a place of deep mud or mire; an inlet in a river

**Tributary**—a stream feeding a larger stream or lake

*Rivers run through our history and folklore, and link us as a people. They nourish and refresh us and provide a home for dazzling varieties of fish and wildlife and trees and plants of every sort. We are a nation rich in rivers.*

Charles Kuralt,

## 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 pilosa*

**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** - *Haliaeetus*—Greek for “sea eagle”
- **Species** - *leucocephalus* - “white headed”

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 word “bald” in the bald eagle's name is

from an old English word what means “white” and has nothing to do with being hairless!

The persimmon got its name from the Algonquin Indian word for the fruit of tree which they called “pasimanan” or “putchaminin”.

The honeylocust is named for its smell and the fact that bees do make honey from its pollen.



honeylocust

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 rivers are protected?

None of the large rivers in Arkansas are protected as scenic rivers, with the exception of the lower Arkansas River, which is listed on the Nationwide Rivers Inventory and is one of the largest remaining free-flowing segments of a major river in the Mississippi River Valley.

State legislation designates four rivers for protection from dredging and damming: the Cossatot, The Little Missouri, the Strawberry, and the Lower Saline Rivers. These are important tributaries of large Arkansas rivers. In addition, eight rivers are designated as National Wild and Scenic Rivers: the Mulberry, the Buffalo, the Big Piney, Richland Creek, Sylamore Creek, and Hurricane Creek—and the Cossatot and Little Missouri are designated as both.

#### Caviar

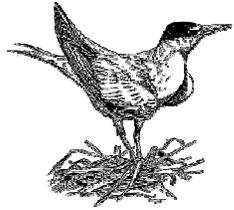
The eggs of the American paddlefish are valued as a form of caviar and may sell for as much as \$20 per ounce in unrestricted markets.

### 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

### Rare Species

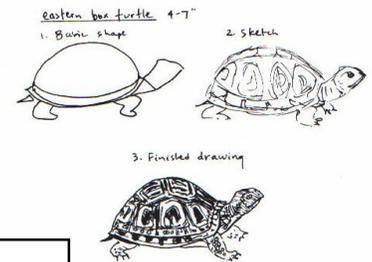
The Interior Least Tern is an example of a large river-dependent species that is now endangered. This tern nests exclusively on gravel bars along large rivers and when this habitat is disturbed or destroyed, the birds do not survive.



More rare, threatened and endangered species information can be found by visiting the Arkansas Natural Heritage Commission's website at [www.naturalheritage.org](http://www.naturalheritage.org). Look for the Rare Element Search Engine at [www.naturalheritage.com/program/element-search/](http://www.naturalheritage.com/program/element-search/)

### 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.



## Resources

### Books

[A River Ran Wild: An Environmental History](#) by Lynne Cherry  
[The River \(Our Changing World Series\)](#) by [David Bellamy](#)  
[Lifelines, The Case for River Conservation](#) by [Tim Palmer](#)  
[Global Perspectives in River Conservation](#) by [P. J. Boon](#) (Editor), [B. R. Davies](#) (Editor), [Geoffrey E. Petts](#) (Editor), [Bryan Davies](#)

### Websites

<http://www.naturalheritage.com>  
*Arkansas Natural Heritage Commission—lesson plans, books, rare species info, maps*  
<http://www.rivernetwork.org/>  
*national river conservation organization geared to local watershed groups*  
<http://www.epa.gov/owow/watershed/>  
*the Environmental Protection Agency's site on rivers and watersheds*  
<http://www.americanrivers.org/>  
*another national conservation group with information about large rivers and conservation*