

Lesson Strategy for the Louisiana Purchase Bicentennial
Instructor Copy

Arkansas and Louisiana Purchase Wetlands

Grades: 1-12

Suggested Time Frame: One, 50-minute class period

Objectives:

- Students will appreciate the importance of wetlands
- Students will identify functions and values of wetlands

Ties to Arkansas Science Curriculum Frameworks:

4.1.8., 4.1.9., 4.1.18., 4.1.19., 4.1.20., 4.1.28., 5.1.3., 5.1.16.

Ties to the Arkansas History Guidelines of 1997:

1.1.2., 1.1.4., 1.1.7., 1.1.9., 1.1.12., 2.1.1., 3.1.10., 3.1.13.,
4.1.1., 4.1.5.

Materials To Be Supplied by Teacher:

Boxes of various sizes
Sponge, small pillow, soap, egg beater, sieve or
strainer, coffee filter, antacid tablets, small box/bag of
cereal or rice.



The Journey Began
In Arkansas



Recommended Resources For Teachers and Students:



(denotes children's books)

Anderson, Margaret. *Leapfrogging Through Wetlands* (Middleton, WI: Dog-Eared Publications, 1998).



Arnosky, Jim. *Wild and Swampy* (Singapore: Tien Wah Press/HarperCollins, 2000).

Foti, Thomas and Gerald Hanson. *Arkansas and the Land* (Fayetteville: University of Arkansas Press, 1992).



Greenaway, Theresa. *Swamp Life* (New York: Dorling Kindersley, 1993).



Hickman, Pamela. *Wetlands* (Toronto: Kids Can Press Ltd, 1993).



Luenn, Nancy. *Squish! A Wetland Walk* (New York: Athenum, 1994).



National Wildlife Federation. *Wading Into Wetlands* (New York: McGraw-Hill, 1997).

Slattery, Britt Eckhardt. *WOW! The Wonders of Wetlands* (St. Michales, MS: Environmental Concern Inc. and The Watercourse, 1995).

Vocabulary:

Wetland (in this lesson): areas where the periodic or permanent presence of water controls the characteristics of the environment and associated plants and animals.

Floodplain: level land that may be submerged by high river water; a plain built up by river deposit.

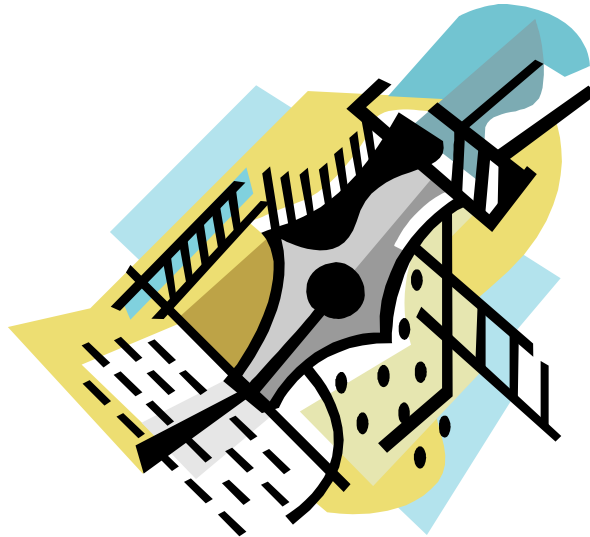
Oxbow Lake: old river bend now isolated from main river channel.

Toxic: relating to or caused by poison.

Silt: loose sedimentary material (dirt) with rock particles.

Erosion: to wear away by the action of water, wind or glacial ice.

Tributary: a stream that feeds a larger stream or river.



Background Information:

Louisiana Purchase Wetlands

By Jane Jones-Schulz

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The small state park and natural area that surrounds the Louisiana Purchase marker site has ecological significance as well as historical importance. The marker site is located in a **wetland** in east Arkansas's delta region. The wetland is formed by Little Cypress Creek and is an unusual type of wetland called a **headwater swamp**.



The region known as the Delta is actually part of the Gulf Coastal Plain that has been extensively modified by the Mississippi and Arkansas Rivers, and other flowing waters. It occupies most of eastern Arkansas. The active streams running through the Delta include **floodplains** subject to frequent overbank flows, as well as broad backwater areas, **oxbow lakes**, and shallow depressions.

Wetlands are areas where the periodic or permanent presence of water controls the characteristics of the environment and associated plants and animals. Today wetlands cover approximately eight percent of Arkansas's land surface. The vast expanses of wetlands that occupied the Delta prior to European settlement have been dramatically reduced by flood



**Arkansas Wetlands
circa 1870**



**Arkansas Wetlands
Today**

control, drainage projects and agricultural development.

Headwater Swamps:

Headwater swamps occur in ancient glacial outwash channels that are similar to shallow basins or bowls. These swamps are unusual because they are self-contained within these “bowls.” The water level in these swamps remain fairly consistent, instead of fluctuating like other bottomland swamps. The edges of the bowl may be wet for shorter periods of time, while the center of the swamp remains fairly deep.

Because these headwater swamps encompassed the watershed of the stream which fed them, they were very easy to drain and almost none of them remain today. The headwater swamp at the Louisiana Purchase marker is one of the largest remaining headwater swamps in the entire Mississippi River Valley.



The Louisiana Purchase State Park is located in a bottomland hardwood swamp. Courtesy of the Arkansas Natural Heritage Commission, an agency of the Department of Arkansas Heritage.

Value of Wetlands:

Wetlands provide breeding, resting, and wintering habitat for thousands of migratory birds, including the millions of ducks important to duck hunting in east Arkansas. A wide variety of other animals depend on wetlands for food, shelter and water.

Wetland plants absorb nutrients and help keep the water's nutrient concentrations from reaching **toxic** levels. Wetlands have a unique ability to purify the environment. They are amazing filter systems which trap and neutralize waste, allow **silt** to settle, and promote the decomposition of many toxic substances.

Wetlands help to prevent flooding by serving as a holding basin for excess water. Holding this water allows it to soak into the ground slowly which prevents flooding and **erosion**.

Wetlands replenish groundwater. Water slowly moving through the swamp has the potential to seep into the soil and ultimately into the groundwater beneath the surface. This helps to replace water that we remove for drinking water and irrigation of crops.

Most of Arkansas's wetlands are associated with the floodplains of the Mississippi River and its major **tributaries**. All together, these wetlands are referred to as "bottomland hardwood forests." The value of these wetlands is tremendous. The Mississippi is the third largest river in the world and drains two thirds of the continental United States. While the Mississippi has been altered itself by a series of levies, many of its tributaries in Arkansas support the best of these remaining bottomland hardwood forests.

Suggested Activity:

Introduce information on wetlands, their functions and values. This can be done through posters, books, videos, etc. (see reference list). How do students feel about wetlands? Do they think wetlands are important? Why or why not?

Divide the class into groups (depending on number of items in your "wetlands box"). Ask a representative from each group to pick an item from the wetlands box. Each group must then decide how the object could represent what a wetland is or does. Allow time for students to discuss their answers in groups before each group presents its object and ideas to the class.

Use the table on page 5 for some examples of objects for your wetlands box. An extension activity could include researching additional wetland values and develop more items.

OBJECT	FUNCTION
sponge	Absorbs excess water caused by runoff
pillow	Resting place for migratory birds
egg beater	Mixes nutrients and oxygen in water
strainer	Strains silt and debris from water
coffee filter	Filters smaller impurities from water
antacid	Neutralizes toxic substances
cereal or rice	Provides nutrient-rich food for wildlife and humans
soap	Helps to clean the environment

Recommended Internet Sites:

American Wetland's Month

<http://www.iwla.org/SOS/awm/> (a site which describes activities for American Wetlands Month (May) sponsored by the Izaak Walton League)

Arkansas's Multi Agency Wetlands Planning Team

www.mawpt.org/default.asp (includes lots of Arkansas-specific information and a special "teachers" section)

Environmental Protection Agency

<http://www.epa.gov/owow/wetlands/> (lots of good information with national perspectives; special student and teacher sections)

Terrence Institute

<http://www.terrene.org/> (a private conservation group that produces materials for wetland and watershed education)

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