



RIVER FIELDS

Lesson Plan

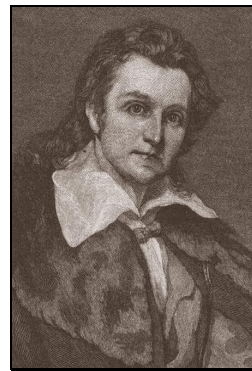
John James Audubon and Habitat Protection ©

Introduction

"Louisville extends along the river for seven or eight miles . . . The rumbling sound of the waters, as they tumble over the rock paved bed of the rapids, is at all times soothing to the ear. Fish and game are abundant. But above all, the generous hospitality of the inhabitants . . . had induced me to fix upon it as a place of residence."

John James Audubon (1785-1851), "The American Woodsman," ornithologist, naturalist and painter. "Rediscover Audubon: The Kentucky Bicentennial" will be celebrated in 2008-2010 in several locations, including the Louisville area, by a coalition of hosting organizations, including River Fields, Inc.

John James Audubon was born in Haiti, educated in France and moved to the United States in 1803 to avoid Napoleon's war draft. He and his new bride, Lucy Bakewell Audubon, moved to Louisville, KY, in 1808, where he ran a general store—when he wasn't pursuing birds. Their first child, Victor Gifford Audubon, was born there. The family moved to Henderson, KY, in 1810.



Audubon traveled throughout the Eastern United States, studying and painting birds and, to a lesser degree, other wildlife. Reflecting a then-common misperception of eternal abundance, he ironically often shot dozens of a species for his models until he had a satisfactory image.

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Abandoning the custom of painting wildlife in stiff poses on empty backgrounds, Audubon revolutionized wildlife painting by using wire to hold his specimens in lifelike poses and portraying them in their natural habitats. When accompanied by Swiss painter George Lehman, Audubon frequently cut out his best painting of a bird and glued it onto one of Lehman's landscapes, yet rarely credited Lehman for his contributions.

Audubon dedicated himself to publishing books of hand-colored engravings of his paintings of every bird species in North America. Because he insisted that each bird's portrayal be life-sized, the books had "double elephant" pages, that measured 39.5 inches by 28.5 inches!

To raise funds to print his books, he had to sell advance subscriptions. Yet only the wealthy could afford such a luxury two centuries ago. So Audubon shrewdly tapped European fascination with the American frontier. Dressed in buckskins and telling a few tall tales, the "American Woodsman" made the rounds among European socialites' parties and charmed his way into enough subscriptions to realize his dream. Once the first volume was published, Audubon and his paintings became sensations.



The **Passenger Pigeon** is thought to have numbered in the billions in Audubon's day, and to have perhaps once been the most populous species on Earth. Flocks of more than 100 million birds at a time migrated through Kentucky, darkening skies for hours and creating what Audubon described as "the roar of distant thunder." Hunters only needed to aim their rifles upward and pull the triggers to put delicious food on their tables. Farmers shot as many as they could to feed to their hogs.

Toward the end of the 19th Century, conservationists began to warn that this seemingly inexhaustible population could be wiped out by excessive hunting. However, Audubon had studied the sociable Passenger Pigeon carefully and disagreed. He understood that they lived in large groups and needed forests of

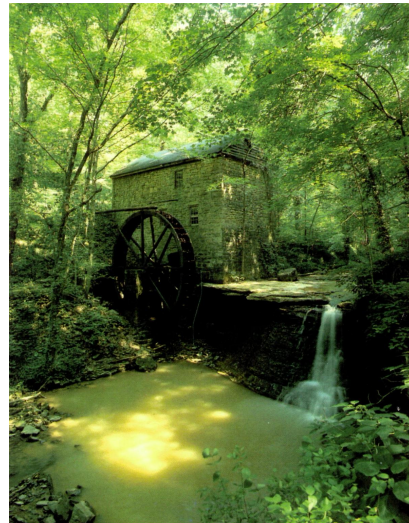
strong trees for roosting. Audubon argued that the loss of habitat from the felling of so many trees—also seen as inexhaustible in that era—was the biggest threat to this fowl’s existence.

The last wild Passenger Pigeon was shot in Ohio by a hunter in 1900, and the species became extinct in 1914 when the last one in captivity died at the Cincinnati Zoo. Today’s experts disagree as to whether the main cause of that extinction was over-hunting or, as Audubon argued, loss of habitat, but all agree that the loss of habitats around the world poses the biggest threats of extinction to modern-day plant and animal species.

Conservationists of the 21st Century use various methods to protect wildlife—often by preserving its habitats. One method is the **conservation easement**, a legal agreement between a landowner and a non-profit land conservation organization, such as River Fields, Inc., or a government agency. Landowners permanently give up certain property rights, such as the right to intensively develop or subdivide the property. The landowner still owns and uses the property, while the wildlife habitat is permanently protected. Where it holds such easements, River Fields ensures that the agreement is forever followed.

Besides preserving wildlife habitat, conservation easements protect streams and other water bodies from pollution. When property is developed, rainfall runs off houses, roads and parking lots, carrying oil, salt and litter to downstream waterways. Those pollutants reduce the biodiversity of both the riparian and aquatic ecosystems.

On land protected by a conservation easement, development is prevented and rain filters into the soil. There, it nourishes trees and other habitat-creating vegetation, and recharges streams and groundwater.



A River Fields easement in Jefferson County protects water quality in an area of intense development.

This lesson plan was written for students in 4th through 6th grade, but could easily be adjusted for younger or older students.

Applicable Core Content for Assessment

4th Grade

SC-04-4.7.1 Students will make . . . inferences based on patterns of evidence related to the survival . . . of organisms in particular environments.

SC-04-4.7.2 Students will describe human interactions in the environment where they live; classify the interactions as beneficial or harmful to the environment using data/evidence to support conclusions.

SS-04-4.1.2 Students will use geographic tools to locate . . . landforms, bodies of water [and] places . . . in Kentucky by their absolute and relative locations.

AH-04-4.4.1 Students will create artwork using the elements of art and principles of design.

5th Grade

SC-05-4.7.1 Students will draw conclusions about the effects of changes to populations in an ecosystem.

AH-05-4.4.1 Students will create artwork using the elements of art and principles of design.

AH-05-3.4.1 Students will describe or explain how art fulfills a variety of purposes [including] . . . document[ing] important or historical events.

6th Grade

SS-06-5.1.1 Students will use a variety of tools (e.g., primary and secondary sources) to describe and explain historical events and conditions and to analyze the perspectives of different individuals and groups in present day regions.

AH-06-3.4.1 Students will identify or explain how art fulfills a variety of purposes [including] . . . document[ing] important or historical events [and] artworks that promote ideas [or] philosophies.

AH-06-4.4.1 Students will create art for specific purposes using the elements of art and principles of design to communicate ideas.

Procedure

I. Familiarize the students with the following terms and their meanings, as grade appropriate. Assign students to look them up in a dictionary and to write sentences using them and/or to draw a picture illustrating a grade-appropriate number of them. Include them on spelling tests.

- Easement
- Ecology
- Extinction
- Habitat
- Interaction
- Land Conservation
- Migration
- Percolation
- Riparian
- Species
- Subscription
- Symbiosis

II. Teach the following concepts, ideally in context with other lessons:

- a. Some humans and animals migrate (in terms of frequency, distance and the reasons why they do so).
- b. The habitat needs of humans, pets and wildlife if they are to survive versus thrive.

III. Tell students about Audubon as presented in the introduction above.

IV. Show the students Audubon's painting of the Evening Grosbeak, and ask what they might interpret from it about that species and its habits. For example, ask how big this bird is and whether we can use the painting to interpret where this bird lives, e.g., in Kentucky, Alaska and/or Florida. (One of his earlier paintings, it lacks the details and context that would tell us very much information about this species. We can see what color it is, but not how big it is, where in the US it lives, whether it builds its nests, how it interacts with other birds and other species, what it eats or how it is adapted to its environment.)



- V. Repeat with Audubon's painting of American Robins, a bird common in the Ohio River Valley. (Because it was a later painting and depicts more information, one might interpret that robins build nests of dried grass, in beech trees and have more than one baby at a time. Also, that the adults eat berries and feed their babies insects, and that the father birds feeds the babies. Ensure that the students understand that this information does not exclude other attributes, e.g., we don't know from it if the mother birds also feed the babies.)



- VI. Repeat with Audubon's painting of the Great Blue Heron, a bird that can be found throughout the Ohio River Valley. (Because it was also a later painting, one may interpret that its preferred habitat is shallow riparian zones along water bodies and rivers, and that it eats aquatic organisms, perhaps insects and/or fish. With such long legs, it can wade into water for its food.) Ask the students whether they think water pollution would likely harm this bird and/or its food supply.)



- VII. Repeat with Audubon's painting of Passenger Pigeons (above on page 2). (The painting suggests that they were sociable and roosted in trees.)
- VIII. Ask the students to hypothesize as to how birds fare when they lose their habitats. As a group, discuss their hypotheses.
- IX. Present a picture of a conservation easement. Explain that they involve a landowner voluntarily giving up the right to develop that land into, say, a subdivision or shopping center. Ask the students to hypothesize how the easement could allow people to use their land in some ways, yet preserve wildlife habitat and protect water quality. Discuss their hypotheses.

- X. Give each student a sheet of paper. Instruct them to compose a drawing of a conservation easement (along the Ohio River or other local stream) that, like John James Audubon painted, depicts one or more animal species in its natural habitat (and to write their names on the back).

Assessment

Instruct students to write (or present an oral) description of the following elements depicted in their drawings:

- | | |
|------------------|---|
| a. People | e. Water features |
| b. Plants | f. Their interactions |
| c. Animals | g. How each of the above elements benefit |
| d. Land features | from being in a conservation easement |

Score illustrations on ecological complexity: the more appropriate living and earth features, the higher the points. Score explanations on that complexity, understanding of the interactions, writing quality, punctuation and spelling.

Resources

River Fields, Inc., (RFI) is the largest and oldest river conservancy on all 950 miles of the Ohio River, and one of the nation's few land trusts tackling both regional advocacy work and land conservation. Its mission is to protect, preserve and enhance the natural and cultural resources on both sides of the Ohio River corridor between Westport and West Point, KY. Through careful management of the corridor's resources, RFI strives to create harmony between nature and the people who live here. Its primary focus areas are land conservation, advocacy and education. For more information, contact:

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643 W. Main St., Suite 200, Louisville, KY 40202
502-583-3060
info@riverfields.org

For public-domain images of Audubon's painting in electronic format, this CD-ROM is affordable (\$22.95) and easy to use: 120 Audubon Bird Prints, 2008, Dover Publications, ISBN 0486998541, 64 pp.

Extensions

1. Assign each student to cut and paste newspaper pages into a double-elephant folio page (39.5" x 28.5"). Then, assign them to compute the area of their folio pages, in units of in², ft², yd² and m². [Answers: 1125.75 in², 7.82 ft², 0.87 yd² and 0.73 m²]
2. Ask students to compute the answer to the following question: If a flock of passenger pigeons was 1 mile (1.6 km) wide and 300 miles (500 km) long, which they commonly were in Audubon's day, what percentage of Jefferson County, KY, would have been darkened. Hint: Jefferson County has an area of 385 mi² (997 km²). [Answer: 78%]
3. Perhaps working with the school's art teacher, assign the students to choose a species of bird and draw or paint it and its habitat on their folio pages. Alternately, teach them to model a bird from clay or paper maché, and to draw or paint only its habitat to display behind their birds.
4. Visit the Portland Museum (<http://www.goportland.org/>, 2308 Portland Avenue, Louisville, KY 40212) after working with its staff to connect the visit to this lesson and other content being covered in the classroom.
5. Assign students to read about Audubon (see Bibliography of Middle Readers) and to write an essay to compare and contrast the various ways by which he traveled 200 years ago versus how we travel nowadays.

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