

Wildlife Habitats in Texas



Grades: 3-8, Biology, Environmental Systems

TEKS:

3: 1B, 2A, 7C, 9A, 9B, 10A

4: 1B, 2A, 7C, 9A, 9B, 10A

5: 1B, 2B, 9A, 9B, 10A

6: 1B, 2A, 12E, 12F

7: 1B, 2A, 10A

8: 1B, 2A, 11A, 11B

BIO: 1B, 10C, 12B, 12C

ES: 1B, 4G

Topics:

Adaptations

Basic Needs

Biotic (living)/Abiotic (nonliving)

Food Chains/Webs

Habitats and Ecosystems

Human Activity/Environmental Impacts

Interdependence

Landforms

Organisms/Population/Communities

Plants

Wildlife

Methodologies:

Critical Thinking

Poster/Visual Aid

Research

Setting: Classroom

Activity Time: 45-60 minutes

Additional Subjects: Art, ELAR, Social Studies

Objective:

Students will identify the parts of an ecosystem as they create drawings of Texas ecoregions. Emphasis is placed on the components of ecosystems and animal habitats, and their relation to stewardship responsibilities.

Materials:

Provided

PowerPoint

C.A.R.E Acronym page

Not Provided

Per group:

Large paper or poster board

Pencils

Crayons or markers

Computers

Field guides

Materials Provided in Discovery Trunk:

Critters of Texas Pocket Guides

Vocabulary:

abiotic, adaptation, basic needs, biotic, carnivore, community, conservation, consumer, decomposer, diurnal, ecoregion, ecosystem, environment, food chain, food web, habitat, herbivore, interdependence, living, nocturnal, nonliving, omnivore, organism, population, predator, prey, producer, wildlife

Wildlife Habitats in Texas

Background:

An ecoregion is a recurring pattern of ecosystems associated with combinations of landforms, wildlife, and plants that characterize that region. The ecosystems of an ecoregion can be as large as a forest or as small as a puddle of water. All consist of living (biotic) and nonliving (abiotic) things that interact. In addition, an ecosystem can be made of more than one habitat. An animal's habitat is the specific place it lives, and the ecosystem it lives in provides homes or habitats for many. An ecosystem consists of various kinds of organisms or single living things. Organisms of the same kind or species make up a population. Several populations living together in the same area make up a community. All living things require the basic needs of food, water, shelter, and space to survive. Living things need shelter to provide a place to raise their young and to hide from danger.

Adaptation refers to the way a living thing can change or adjust to different conditions in order to survive. Adaptations can include any type of body shape, body covering, or behavioral change that helps an animal live. Many animals can only live in certain places. Over time, some may adapt or change to survive in their environment and some may move to another location. Adaptations may occur for many reasons, such as finding food, improved or special movement, and protection.

Ecoregions, ecosystems, and habitats throughout Texas need stewards to protect and conserve natural resources. Land stewardship is defined as the responsible planning and management of resources such as land, water, and animals. Therefore, all Texans can become stewards through actions intended to protect and conserve natural resources.

Activity Preparation:

- Find field guides, such as the *Critters of Texas Pocket Guide*, or similar books with information regarding the ecoregions of Texas, including its animals.

Procedure:

Discussion

1. Engage students by using the PowerPoint, with examples of habitats found within ecoregions of Texas. Tell students that each slide represents different ecoregions, containing ecosystems and habitats, within the state of Texas. Explain that Texas is a very large state and each of its ten ecoregions has a variety of plants and animals. *Note: Slide seven is for the K-2 version of this lesson.*
2. Ask students if they know what the term "wildlife" means. Introduce or review the term as animals that live in nature without having caretakers.
3. If needed, provide students with the information from the Background Section.
4. Write *ecosystem*, *habitat*, and *ecoregion* on the board and ask students to put them in order from largest to smallest. Utilize the PowerPoint slides and the background information to initiate a brief discussion to help students put the words into the correct order. *The correct order is ecoregion, ecosystem, and habitat.*

5. Introduce or review consumers (animals, fungi, and many protists and bacteria) as living things that eat or receive their energy from other living things. Consumers are found in every food chain or path of energy transferred from one living thing to another within an ecosystem. Food webs are made up of overlapping food chains.
 - Herbivore – a living thing that eats mostly plants
 - Carnivore – a living thing that eats mostly meat
 - Omnivore - living thing that eats plants and meat
 - Decomposer - receives energy by breaking down once-living things

Activity

1. Arrange students in groups of 3-4. Provide each group with a poster board or large piece of paper, and crayons or markers.
2. Assign each group one of the 10 ecoregions: Blackland Prairies, Cross Timbers, Edwards Plateau, Gulf Prairies, High Plains, Pineywoods, Post Oak Savannah, Rolling Plains, South Texas Plains, and the Trans-Pecos.
3. Explain to students that each group will work together to design and draw an ecosystem with specific characteristics from one ecoregion. Students may use the Internet, library books, or field guides with information about ecoregions. Searching for “Texas ecoregions” and “Texas natural regions” on the Texas Parks and Wildlife Department’s website (<http://tpwd.texas.gov/>) is a great resource and starting point for students.
4. Drawings are to include the following information.
 - Living and nonliving components (biotic and abiotic for older students)
 - Animal habitats
 - Representation of basic needs
 - Landforms
 - Two food chains (food web for older students to analyze)
 - Adaptations the animals or plants need for survival
 - If desired, request older students to write a paragraph including the required information.
5. When complete, individual groups will share and compare their drawings with others in the class. As each group completes their presentation, display their drawing in the classroom.

Wrap-up

1. To check for understanding, ask the following questions after the presentations are completed.
2. How do animals interact and depend upon living (biotic) and nonliving (abiotic) things to survive? When different living things depend on each other to survive, it is known as interdependence. *Examples: Some animals find dead leaves, twigs, or grass to build nests. Some find food in nearby water sources, some dig burrows for shelter. They breathe air.*
3. What adaptations do plants and animals need in their ecosystem that may differ from other ecoregions? *Example: Cacti are adapted for drought and heat in the Texas Panhandle and pine trees are adapted to plentiful rainfall in the Pineywoods.*
4. Are there/were there specific animals or plants found in more than one ecosystem?
5. If a species from any of the ecoregions were to become extinct, can you predict changes that may alter the food chain? How might extinction affect other populations of living things?

6. Compare habitats with one drawing to another. How are they different? How are they alike?
7. Why do you think stewardship is important to maintaining the components of any ecosystem? *Water, plants, animals, air, light, and soil all work together to maintain balanced ecosystems. If there is not enough light or water, or if the soil does not have the right nutrients, the plants will die. If the plants die, animals that depend on them will die. If the animals that depend on the plants die, any animals that depend on those animals will die, and the food chains identified in the drawings will be broken.*
8. Are all ecoregions, ecosystems, and habitats of living things managed or maintained in the same way? Why or why not?
9. What can you do to protect and conserve the characteristics of the ecosystem in which you live?
Optional: Introduce the *C.A.R.E. acronym*.

<i>C</i>	<i>Care for the protection of wildlife and their habitats.</i>
<i>A</i>	<i>Act to become a caretaker or steward of water, land, and animals.</i>
<i>R</i>	<i>Represent stewardship by being a positive role model for others.</i>
<i>E</i>	<i>Educate others about stewardship and conservation.</i>
10. Land in Texas is about 95% privately owned. However, is taking care of the land and wildlife the responsibility and right of only private landowners or all the citizens of Texas? Allow for discussion and reference the provided Parks and Wildlife Code to read the current law regarding wildlife in the state of Texas. *Texas law states that all wildlife, including aquatic wildlife, belongs to the people of Texas.*

Extension

Return drawings to groups and ask older students to do the following.

- Add additional animals of the same species to their drawings, close to where they placed the first one. Introduce the word “population,” which is a group of the same kind of animals living together in the same area or ecosystem. Ask students to draw a circle around the group of animals and label it “population.”
- Next, instruct student groups to add snakes, mallards, or any other animals to their drawings, close to where they placed their first ones. Introduce the word “community,” which is made up of several groups of different members or populations living in the same area or ecosystem. Ask students to draw a circle around their community and label it as such.
- Last, ask students to define “organism.” An organism is a single living thing. Instruct students to circle a single animal and to label it “organism.”