

### BEFORE YOU BEGIN

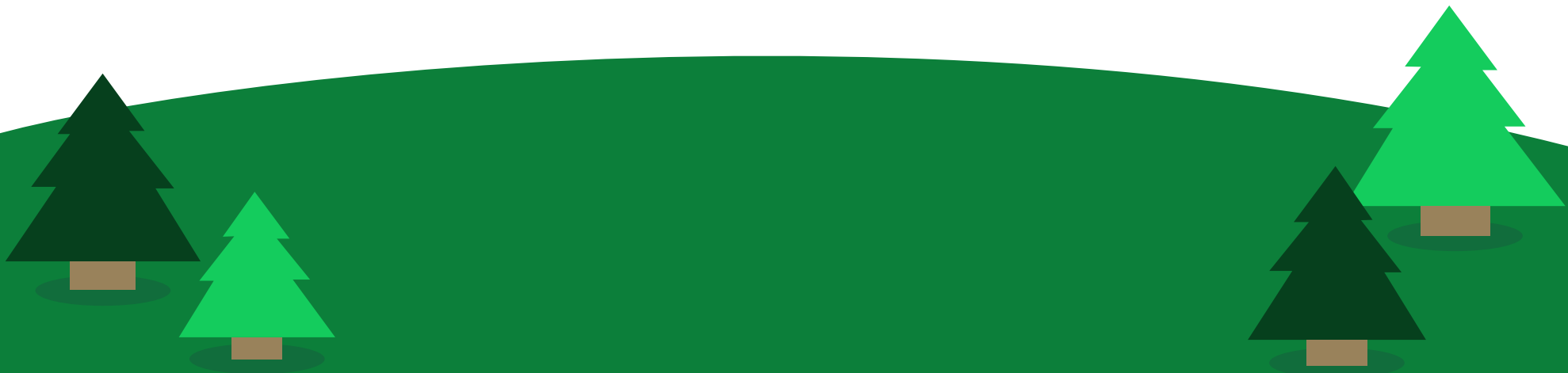
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# OKLAHOMA

**From Mesas and Prairies to Pine Covered Forests**



# How to Play

## Welcome to the Oklahoma State Parks Nature Study Challenge!

A great way to see Oklahoma's natural world is to visit a state park. If you're unable to travel, this Nature Study Challenge takes you on virtual trips to special places across Oklahoma.

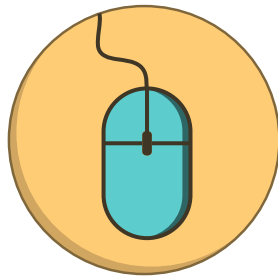
The Challenge has two parts; the "Oklahoma Pathfinder" and the "State Park Scientist."  
You can complete one or both!



**You'll earn rewards for each  
part that you complete!**

# Activity Buttons

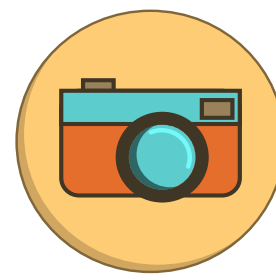
Throughout the Challenge you will see buttons like these. Make sure to click on them to continue your discovery.



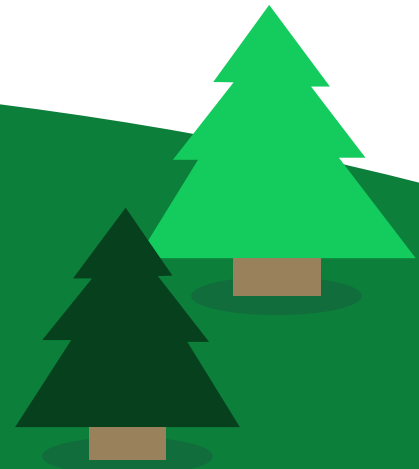
**Link**



**Video**



**Photo**



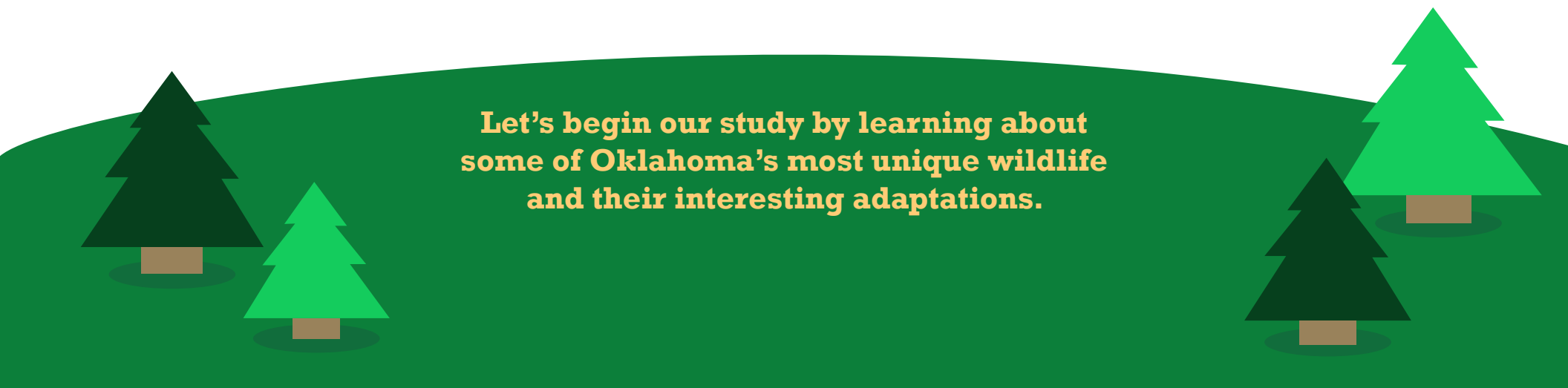


# State Park Scientist

You are about to begin an exciting journey. Just like a scientist, you will carefully study some of Oklahoma's wildlife and diverse ecosystems.

You will be asked questions throughout the activity that can only be answered by reading and exploring the web resources. Be sure to record your observations in the spaces provided.

Lastly, be sure to "save" your State Park Scientist challenge often.



**Let's begin our study by learning about some of Oklahoma's most unique wildlife and their interesting adaptations.**



# Bird Beaks Provide Clues

A **shore bird's** slender beak is used to find and catch aquatic insects, snails and other crustaceans from shallow water or a muddy shore.



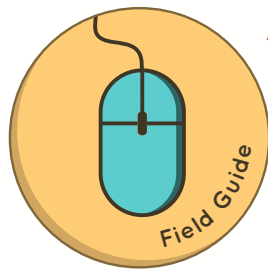
**Nectar-feeding** birds have long, hollow beaks, like a straw. Their beak protects their long tongue, which is used to sip nectar from a flower.



A **songbird's** sharp, pointed beak is used to catch insects or to pull a worm from the ground. Their short, strong triangular beak is used to crack open seeds.

# Bird Beaks Provide Clues

Use the **Field Guide** to learn more about the interesting world of birds. Pay close attention to the size and shape of each bird's beak.



**Can you name 2 kinds of birds who use their beaks to break open seeds?**

Answer

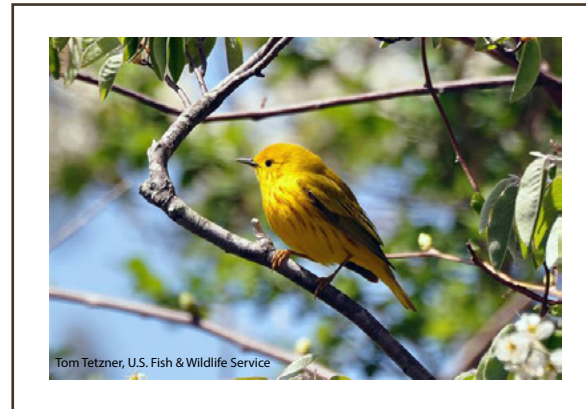
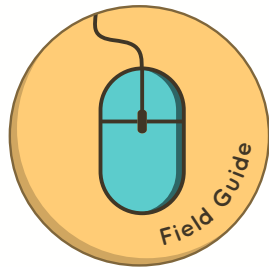


**Now, can you name 2 kinds of birds that use their beaks to dig in the mud?**

Answer

# Flight Schedule

Click on the **Field Guide** to learn about the **Chuck-will's-widow**. This bird is called a **Neotropical bird**; it spends the winter in South America and breeds and raises its young in North America.



Studies show that some **Neotropical birds** arrive in Oklahoma during the same week in April each year. These birds also begin their journey back to South America the same week in July every year.

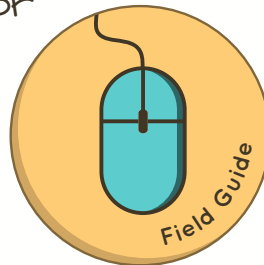
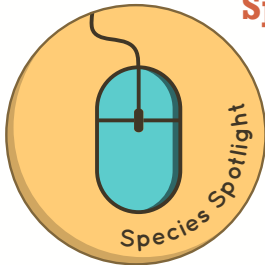
**How do you think these bird species stay on schedule? How do they know when it's time to travel? Hint: Could the sun be a clue?**

Answer

# An Animal's Decision: To Stay in A Group or to Live Alone

Select at least two or three of your favorite mammals from either the

**Species Spotlight** or  
the **Field Guide**  
to answer  
the following  
questions.



**What may be a reason that some animal species choose to live alone?**

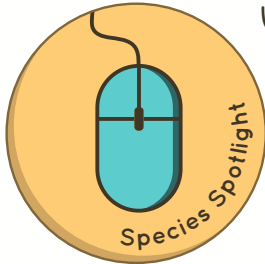
Answer



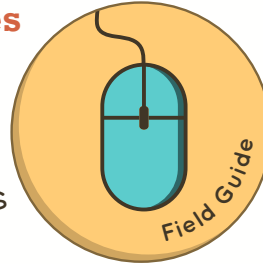
**Can you give two reasons you think certain animal species live in a group?**

Answer

# Oklahoma Wildlife Species



Use the **Species Spotlight** and **Field Guide** to answer the questions below.



**Which of these animals spend all year in a group?**  
**Which only spend the fall and winter in a group?**

Year Round

White-tailed Deer  
Badger  
Bobcat  
American White Pelican  
Black-Tailed Prairie Dog  
Mexican Free-tailed Bat  
Western Diamondback Rattlesnake  
Coyote

Fall and Winter

White-tailed Deer  
Badger  
Bobcat  
American White Pelican  
Black-Tailed Prairie Dog  
Mexican Free-tailed Bat  
Western Diamondback Rattlesnake  
Coyote

**Which of these animals don't live in a group and why?**

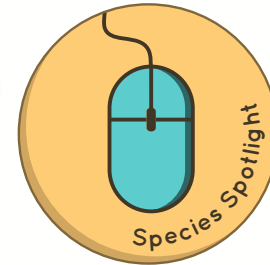
Answer



# Scissortail Flycatcher



Use the **Species Spotlight** to learn about Oklahoma's State Bird, the Scissortail Flycatcher, then answer the question below.



**As part of their courtship, the male Scissortail Flycatcher goes through great effort trying to attract the attention of a female Flycatcher. Describe what he does.**

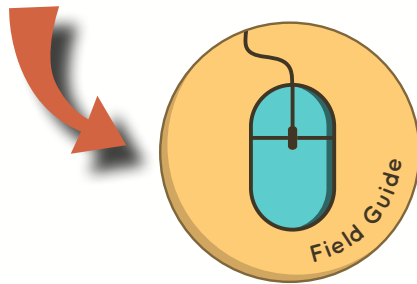
Answer

# Plains Killifish

Now let's use the **Field Guide** to learn about the very unique Plains Killifish, then answer the following questions.



U.S. Fish & Wildlife Service



**Where in Oklahoma are Plains Killifish found?**

Answer

**What things do Killifish like to eat?**

Answer

**Hot, salty water kills many kinds of fish. Has the Plains Killifish adapted to living in these kinds of water conditions?**

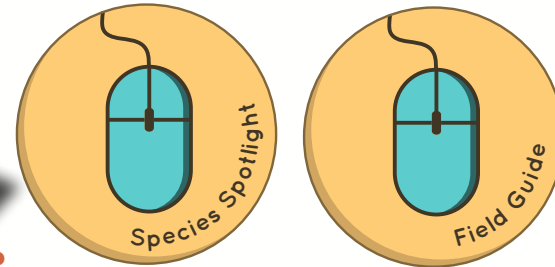
Answer

**While most small fish escape danger by hiding, what is one unusual behavior the Plains Killifish uses to escape a predator?**

Answer

# Monarch Butterflies

Use the **Species Spotlight** and the **Field Guide** to learn about Monarch Butterflies. When you are finished complete the questions below.



**What kind of plant is extremely important to the survival of Monarch caterpillars?**

Answer

**Can you name the four life stages (metamorphosis) of a Monarch?**

- 1.
- 2.
- 3.
- 4.

Did you know that Monarch butterflies migrate up to 3,000 miles every year?



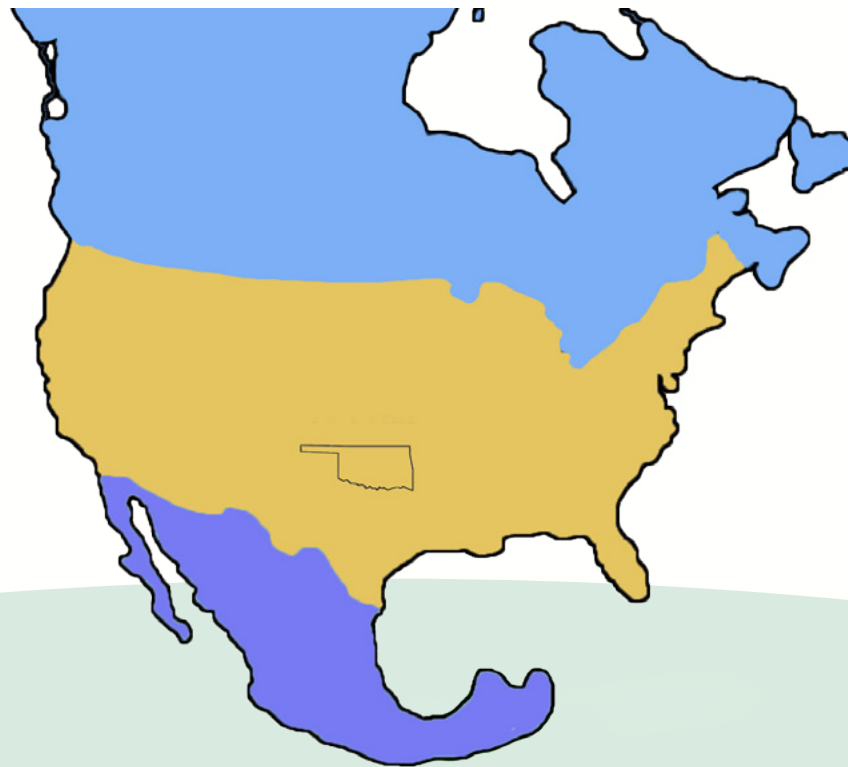
**Observing the photo of the Monarch in the Field Guide, can you tell if this is a male or female? How can you tell?**

Answer



# Monarch Butterflies

Take a look at the amazing journey Monarch butterflies travel each year by pressing the "right" button to see their flight patterns from Mexico to Canada!



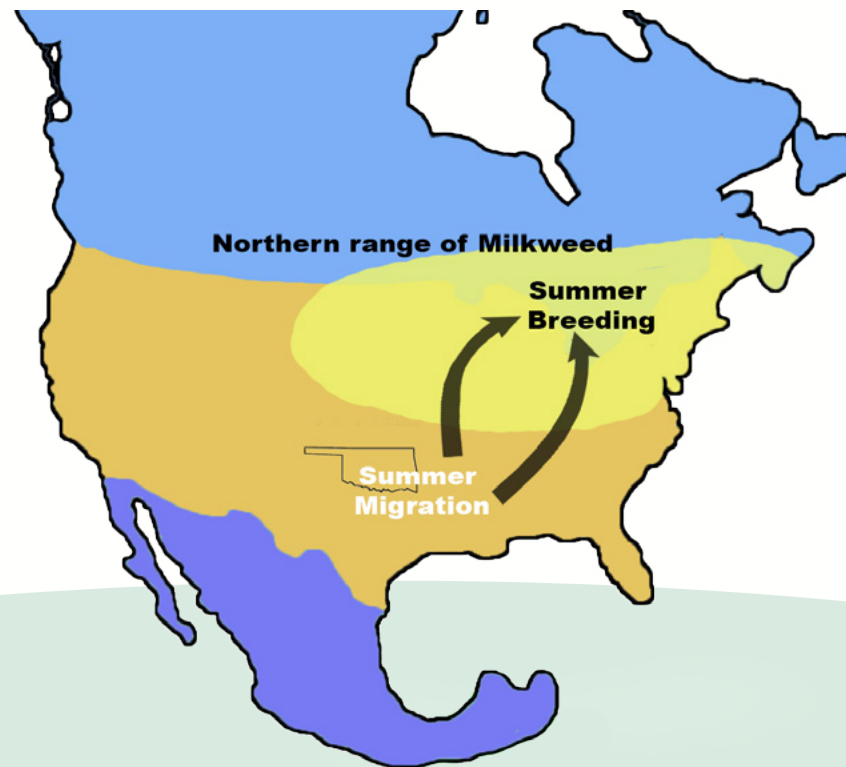
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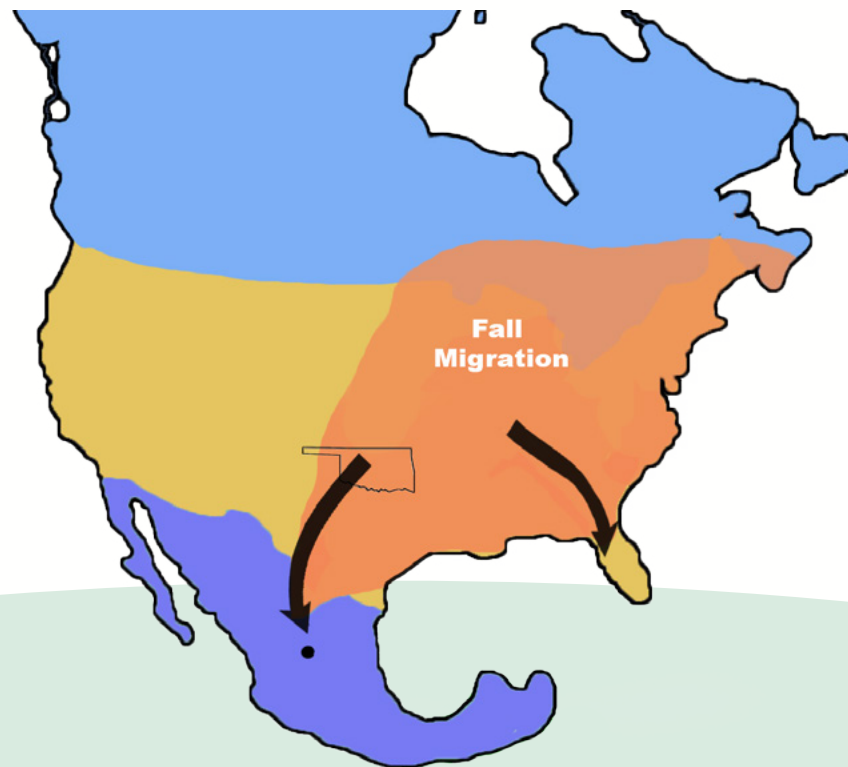
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# Monarch Butterflies

Monarch Butterflies are threatened by habitat loss. You can help by growing plants essential to their life cycle and migration. Here's a list of Oklahoma plants that are important to the Monarch butterfly that you can plant at home.

## Milkweed

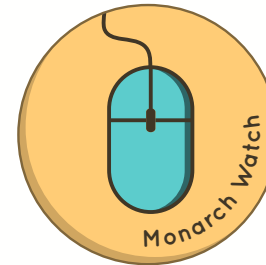
Butterfly Milkweed  
Common Milkweed  
Prairie Milkweed  
Swamp Milkweed

Click here to  
learn about  
Oklahoma  
Milkweed!



## Nectar Plants

Prairie Verbena  
Zinnia  
Black-eyed Susan  
Cosmos  
Purple Aster  
Purple Coneflower  
Ohio Spiderwort  
Goldenrod  
Lantana  
Sunflower



See what you  
can do to help  
the Monarchs!



# Cicadas

Oklahoma is home to an amazing insect, the cicada.



In May, 2015, millions of Periodical Cicadas emerged from the ground in Osage Hills State Park. The next generation of these 17 year cicadas will appear in the Spring of 2032.

Most cicadas live underground for two or eight years before they emerge as an adult insect. However, the Periodical Cicada has a 17 year life cycle. They are the oldest insect in North America.



Check out these links to discover more about the interesting world of the cicada!



**Why do Periodical Cicadas emerge at the same time and wait so long to do it?**

Answer



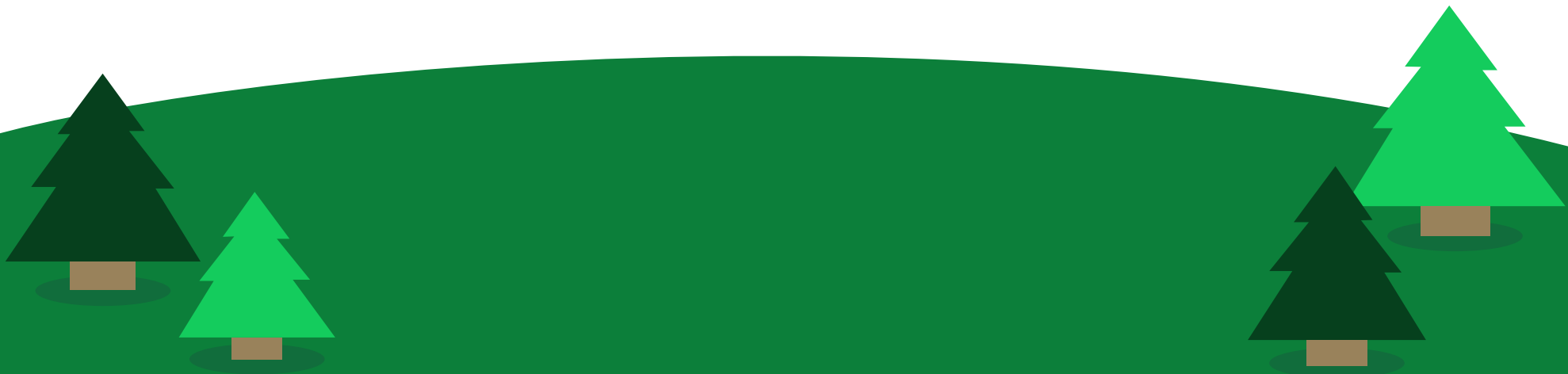


## A Brief Look at Oklahoma's Biodiversity

Oklahoma has great biodiversity. Many different kinds of native plants and animals live here. One reason is that within Oklahoma there are many kinds of habitats - places where animals find food, water, shelter and places to raise their young.

In this portion of the Challenge, we're going to observe some different habitats. Each habitat is home to certain kinds of plants and animals.

As we travel across the State, we will see that State Parks and other natural areas are great places to observe and enjoy Oklahoma's biodiversity.

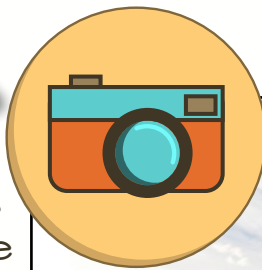




# A Brief Look at Oklahoma's Biodiversity

## Black Mesa - Shortgrass Prairie

Take a look at this shortgrass prairie at the Switchback Trailhead!



Prairie plants are adapted to this region's dry climate. Their root systems retain water. This helps a plant survive periods of drought.

**What prairie animals do you think might find shelter here on a hot summer day, or in a cold winter storm?**

Answer

Take a look at the Vista Hiking Trail. The boulders, shrubs and trees along this hillside provide shelter for certain animals.



# A Brief Look at Oklahoma's Biodiversity

## Four Canyon Preserve - Mixed-Grass Prairie

The Preserve is owned by the Nature Conservancy. It is called a mixed grass prairie. Some of the prairie plants that grow at Black Mesa also grow here. But there's a difference: the Four Canyon Preserve has taller grasses and more trees than we see at Black Mesa.



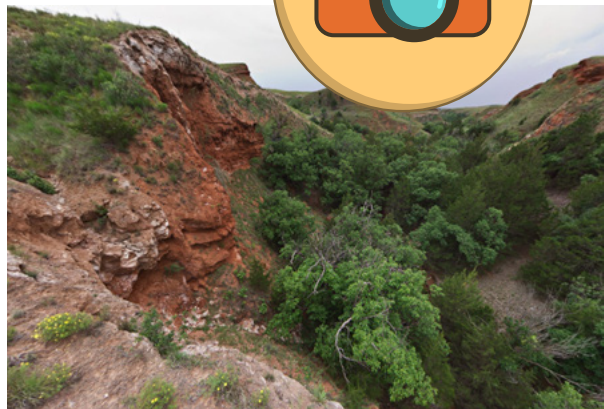
Check out the Ogallala-Permian Ecotone. As you observe the plants on this upland, notice the red wildflowers. These are Indian Blanket, also called Gaillardia. It's Oklahoma's official State Wildflower.



# A Brief Look at Oklahoma's Biodiversity

## Four Canyon Preserve - Mixed-Grass Prairie

Take a look at Cinnamon Canyon. These groves of cottonwood, oak and red cedar trees provide shelter for prairie animals.



Unlike state parks, which are open to visitors throughout the year, the Four Canyon Preserve is only open to visitors during the Nature Conservancy's scheduled field trips. Each year there are normally two field trips to Four Canyon Preserve, one in the spring and again in the fall.

**On this cloudy day, what are some animals that might be hiding in the canyon?**

Answer

# A Brief Look at Oklahoma's Biodiversity

## Tallgrass Prairie Preserve - Tallgrass Prairie

Check out the North Scenic Turnout to get a good view of the vast prairie. While this is called a tallgrass prairie, there are many kinds of plants that grow near here.



There are four kinds of Native grasses here, known as the "Big 4". Those grasses are Little Bluestem, Big Bluestem, Indiangrass and Switchgrass.

# A Brief Look at Oklahoma's Biodiversity

## Tallgrass Prairie Preserve - Tallgrass Prairie

Now click on this scene and select the camera icon that says "Bison Wallows."



**What is a benefit that wallowing provides to bison; also what is one benefit that wallows provide to other animals that live on the prairie?**

Answer

**How do some plants use bison to move their seeds?**

Answer

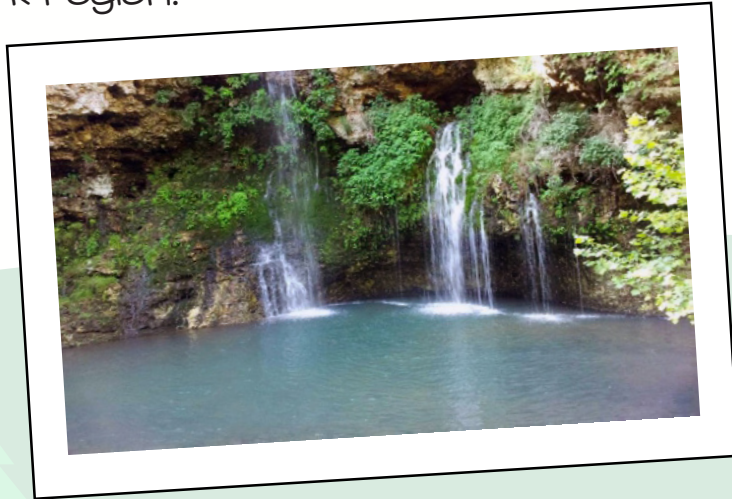
Over 100 years ago there were very few bison; they were nearly exterminated by buffalo hunters. Now there are thousands of bison!



# A Brief Look at Oklahoma's Biodiversity

## Natural Falls State Park - Ozark Highlands

Natural Falls State Park is located within the Ozark Highlands. The sides of this waterfall are limestone rock. Limestone is a fairly soft rock. It was formed long ago within an ocean environment. Water continually erodes limestone, forming caves and sinkholes that occur throughout the Ozark region.



Take a look at the falls. Different kinds of plants grow on this moist cliff.

# A Brief Look at Oklahoma's Biodiversity

## Natural Falls State Park - Ozark Highlands

One way to identify ferns is by their leaves and stems, called fronds and rachis. Simple fronds have a single rachis with leaflets attached to it, while compound fronds have many rachis.

Is the Ebony Spleenwort Fern



Simple or Compound?

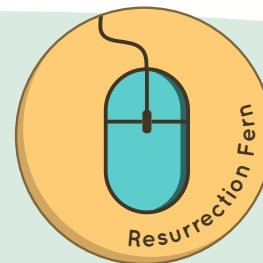
There are  
17 different  
kinds of wild  
ferns at Natural Falls!



Is the Hairy Lip Fern



Simple or Compound?



Click here to  
learn about the  
Resurrection Fern!



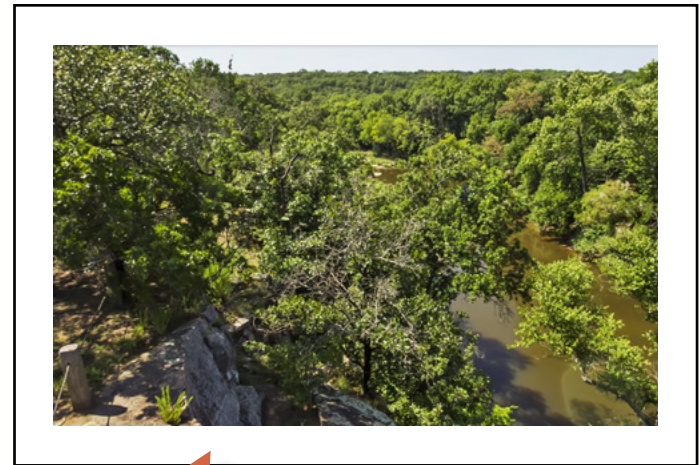
# A Brief Look at Oklahoma's Biodiversity

## Osage Hills State Park - Cross Timbers

The most common trees at Osage Hills State Park are post oak and blackjack oak. These trees are tough and can survive long periods of drought.

Check out the  
Cross Timbers  
Forest.

Long ago pioneers gave it this name because they had to cross this dense forest before they could reach the prairie. The Cross Timbers stretch north to south across the central part of Oklahoma.



Look at this  
view from the  
rappelling cliffs.

Oklahoma's oldest trees, some between 100 to 300 years old, are found in the Cross Timber Forest!



# A Brief Look at Oklahoma's Biodiversity

## Robbers Cave State Park- Pine Hardwood Forest

After looking at Robbers Cave  
answer the questions  
below.



**As you view the forest that's growing on  
this ridgetop, in what ways is it different  
from the Cross Timber Forest that you saw  
at Osage Hills State Park?**



Answer

**Both Osage Hills and Robbers Cave have lots of oak trees, but Robbers Cave  
also has some different trees. What kind of trees do you see here that were not  
at Osage Hills State Park?**

Answer

# A Brief Look at Oklahoma's Biodiversity

## Robbers Cave State Park- Pine Hardwood Forest

Some plants, like those that grow in the shortgrass prairie of the Oklahoma Panhandle, don't need much moisture each year. Other plants, like many of those that grow in southeast Oklahoma, need lots of rainfall each year to survive.

**Why do you think pine trees are here at Robbers Cave, but not at Osage Hills?**

Answer



Each year this region of Oklahoma normally receives a lot more rainfall than what occurs at Osage Hills. Eastern and southeastern Oklahoma normally receive the most rainfall in the state.

# CONGRATULATIONS!

You've completed the State Park Scientist challenge! Save your answers by clicking "file" and "save as" and email it to [Tom.Creider@TravelOK.com](mailto:Tom.Creider@TravelOK.com) to receive your prizes. You'll soon receive your Oklahoma State Park Scientist certificate and two wildlife trading cards! Great job!

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Name

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Email

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Mailing Address

City, Zip Code

