WOLF CONSERVATION CENTER'S

BACKYARD EXPLORERS

ACTIVITY GUIDE

Become a Backyard Explorer! Learners are encouraged to use this guide to facilitate close observation and appreciation of the diverse wildlife naturally occurring around them, from their windows, in their backyard, local parks, and more!

This guide contains:

- **Reading skill checks**
- **Fun activities**
- **Answer keys for parents/guardians**
- **And more!**

Name: _____

OUR WILD WORLD

Whether they’re basking in the backyard, scurrying through city streets, playing in the park, or cavorting in the country, wild species are truly all around us. Sometimes we become so accustomed to their presence we might not even notice, or perhaps they're so skilled at hiding we don't see them at all. Whether we pay close attention or not, there are complex interactions and behaviors occurring among them at any given moment.

Learning to take a closer look and observe nature can teach us so much about the world around us. It's like looking at a jigsaw puzzle: each piece plays a role in creating a larger picture, and if a piece is missing it simply won't function as it should. A piece placed in the incorrect location might skew the entire image, in ways subtle or obvious. All the pieces are connected and interwoven in some way or another. The same applies to an ecosystem; it functions best when its species are where they belong, interacting with their environment in the ways they naturally should.

A red fox vixen (female) feeding her kits

Did you know?

Baby foxes can be called kits, pups, or cubs! Fox kits don't open their eyes until they're about 10 days old. They stay safely tucked into their dens for the first month of their lives with their mom, while their dad hunts and brings her food. Sometimes multiple fox families will even share the same den!

HEY, THAT'S MY HABITAT!

Each species of animals occupies an important role within the ecosystem they inhabit. This is called their ecological niche. A niche is how the species impacts the environment, and how the environment impacts that species. In other words, it's their "way of life". What they eat, where they live, when they're active, and even who their predators are, are all factors that constitute their ecological niche. If multiple species occupy the same niche, there will be interspecies competition. This competition is ultimately harmful to the species involved, as it makes their survival more difficult. The competitive exclusion principle posits that two species cannot occupy the same niche; to avoid this often-deadly competition, they will have to evolve for different resources, habitats, or time of day. For example, hawks catch rodents during the day, and owls do so at night. These changes to reduce competition are called resource partitioning. Below we can see an example of various species of Puerto Rican anoles (a type of lizard) coexisting by selecting different habitat preferences: sunny/dry vs. shady/moist, height of vegetation, type of vegetation, etc. This enables them to increase their chances of survival by reducing direct competition.

What types of animals use your backyard or neighborhood as their habitat?

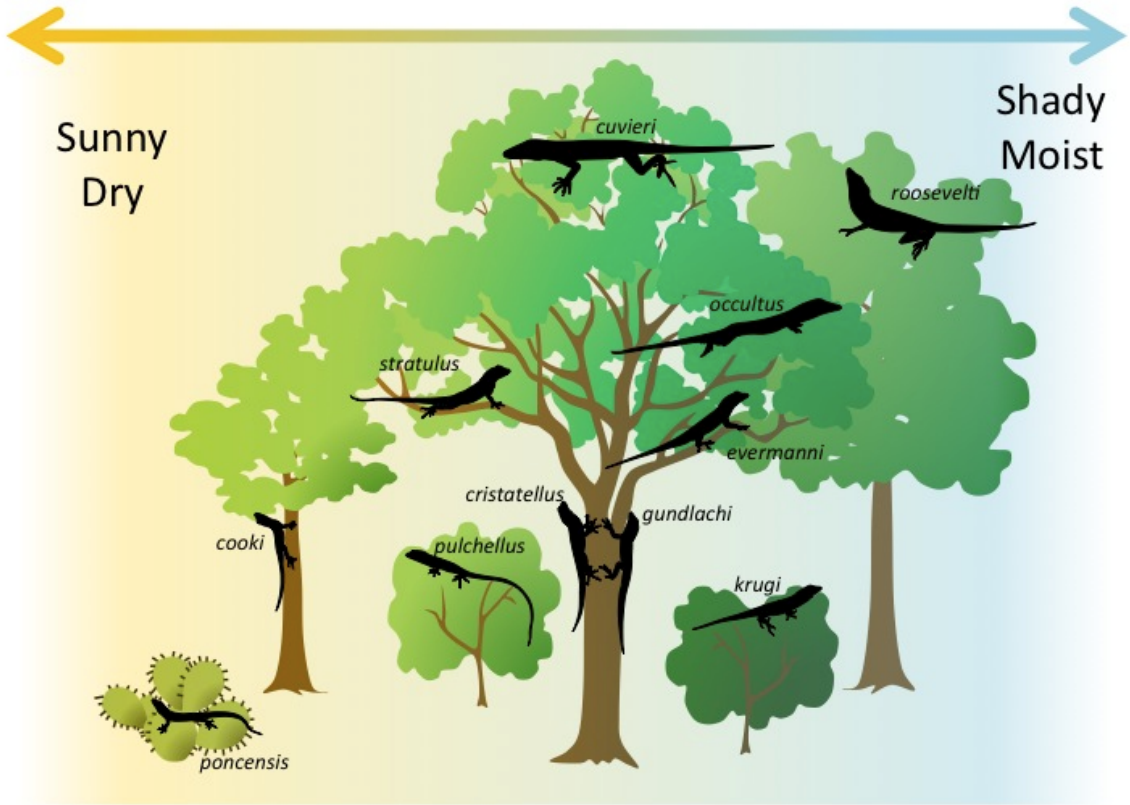


Image by Eva Horne modified from (Williams, E.E. 1983. Ecomorphs, faunas, island size, and diverse end points in island radiations of Anolis. In Lizard Ecology: Studies of a Model Organism. Eds. R.B. Huey, E.R. Pianka, and T.W. Schoener. Harvard University Press).

A PROPER PLACE

Every species has an important role within the appropriate ecosystem. Native species are those that occur in a certain area naturally. They have evolved alongside that ecosystem in a way that makes them highly capable of surviving there, and even supporting other local species. However, sometimes a species is introduced to a new area, either accidentally or on purpose. These are called non-native species. Whether a non-native species can succeed in a new area will vary between species. Yet sometimes they are a little *too* skilled at surviving in their new habitat and might even out-compete the native flora and fauna. In these cases, they are called invasive species. Because these species often lack predators or competition in these introduced locations, they might breed quickly, out-compete native species for resources, introduce diseases, or prey upon native plants and wildlife. Invasive species can cause massive harm to the new area both economically and environmentally.

An example of an invasive species in North America is the European starling. The European starling is an iridescent black songbird with seasonal white speckled patterning. In the 1890s, about 100 of them were released in Central Park NYC by Shakespeare enthusiasts. Today, their population throughout North America is estimated at 200 million. Though beautiful, their large flocks are known to damage crops, drive other birds such as owls and woodpeckers from their nests, and spread invasive seeds. However, one has to admire their adaptability as well as their incredible talent for mimicry of other birds' calls. While European starlings have as much intrinsic value as any other creature, their impact on their *introduced* environment classifies them as one of North America's most prominent invasive species.

Though some invasive species are more harmful than others, they are overall one of the main threats to wildlife. According to the National Wildlife Federation, "approximately 42% of threatened or endangered species are at risk due to invasive species."

VOCABULARY MATCH

Draw a line to connect the vocabulary term with the correct definition.

ECOLOGICAL NICHE	when multiple species occupy the same niche
INTERSPECIES COMPETITION	species that occur in an area naturally
COMPETITIVE EXCLUSION	how the species impacts the environment, and how the environment impacts that species
NATIVE SPECIES	introduced species that cause harm to their new environment
INVASIVE SPECIES	the principle that two species cannot occupy the same ecological niche

Hawks primarily hunt rodents during the _____ , while owls hunt at _____ . This strategy to reduce competition is an example of _____ _____ .

What is the provided example of a North American invasive species?

_____

What are some of the ways this invasive species (above) causes economic/environmental harm to their introduced area?

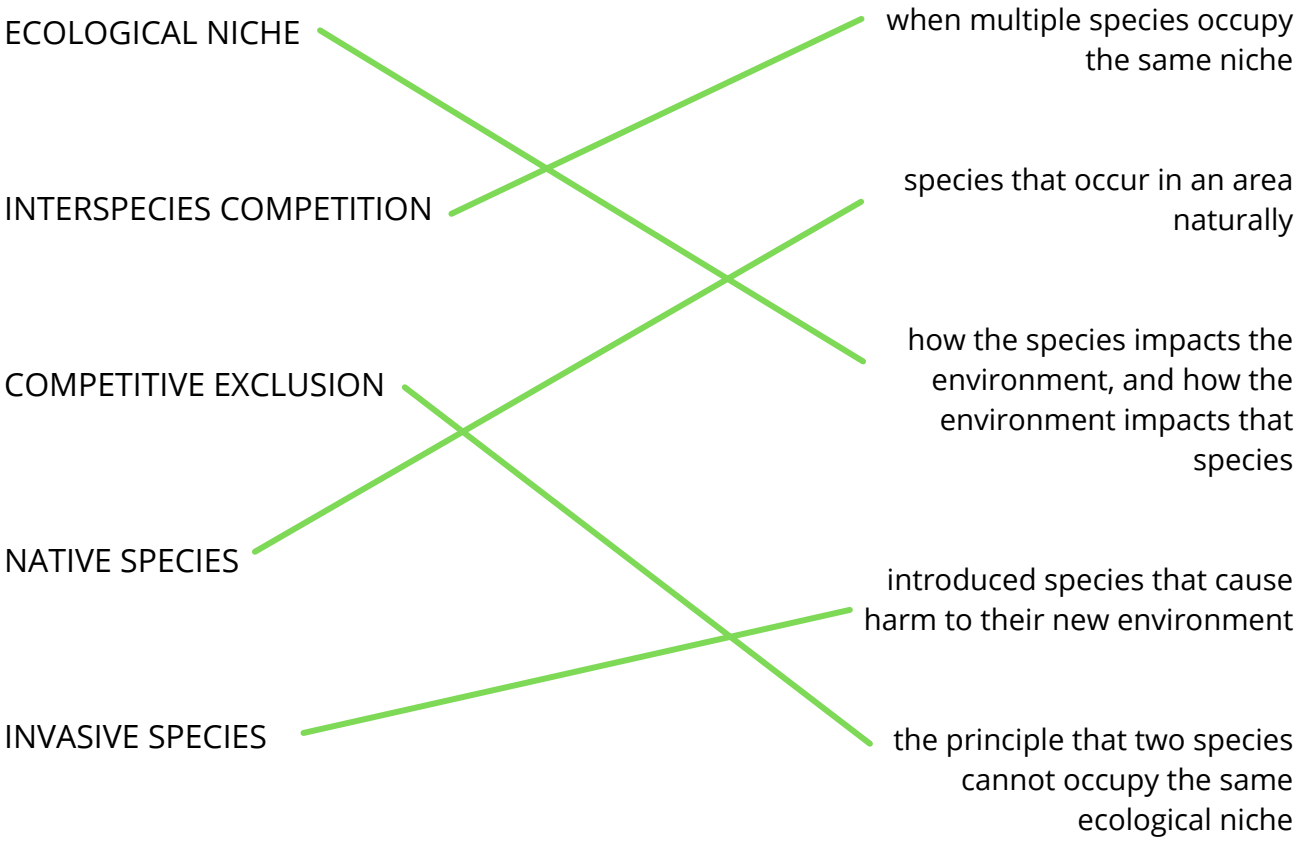
_____

_____

_____

VOCABULARY MATCH

ANSWER KEY



Hawks primarily hunt rodents during the day, while owls hunt at night. This strategy to reduce competition is an example of resource partitioning.

What is the provided example of a North American invasive species?

European starling

What are some of the ways this invasive species (above) causes economic/environmental harm to their introduced area?

1) Damage crops

2) Drive out certain birds (cavity nesters) from their nests

3) Spread invasive seeds

SEASONAL CHANGES

As the seasons change, local species will adjust along with them. Changes in fur and feathers, activity level, behavior, and diet are a few examples.

Many mammals, such as coyotes, foxes, deer, and even mice, develop a thick winter coat as the days grow longer in late fall. This seasonal layer - their undercoat - is thick and quite warm. It effectively traps in their body heat so they can stay comfortable during the harsh winter months. Come springtime, they begin to shed that undercoat in order to remain cooler during the warmer seasons. They repeat this cycle every year!

Many bird species will experience seasonal changes to their plumage (feathers) as well. During breeding season, male birds often have much brighter features in order to attract females. While some maintain these more vibrant colors and patterns year-round, many will revert back to a duller variation once breeding season has ended. While bright colors may effectively attract mates, they might also attract predators!

Do you notice seasonal changes in the birds, plants, and animals near you?

Male American goldfinch, breeding plumage

Male American goldfinch, non-breeding plumage

Spot the difference! Compare these two photos of a male American goldfinch in breeding season versus non-breeding season. What differences do you see in their coloration? Note them below:

_____ _____

_____ _____

_____ _____

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Male American goldfinch, breeding plumage

Male American goldfinch, non-breeding plumage

ANSWER KEY

Bright yellow feathers, black forehead, black wings, orange bill, bright white markings on wings

Drab brown/olive color, dark bill, blends in well with environment, black/white striping on wings

THERE'S NO PLACE LIKE HOME

BACKGROUND

All animals require three main components for their survival: food, water, and shelter. In order for them to truly thrive in their chosen habitat, they must have easy access to all three. Exactly what these elements of survival are will vary among species. In fact, certain animals are able to obtain the water they need directly from their food (bobcats, for example).

INSTRUCTIONS

Look out your window, go to your backyard, or go to a local park with permission or accompanied by a guardian. Try to identify some of the following examples of food, water, and shelter and check them off as you go. Remember that animals have different preferences and needs, so wherever you are (in the suburbs, the city, the country, a park, etc.), you will likely find evidence of these crucial habitat elements. Does your area seem like it provides adequate wildlife habitat? What animals do you think live here?

FOOD:

- [ ] Berries on trees/bushes, nuts, seeds
- [ ] Insects
- [ ] Grasses
- [ ] Bird feeders

WATER:

- [ ] Pond/stream
- [ ] Fish pond
- [ ] Birdbath
- [ ] Fountain

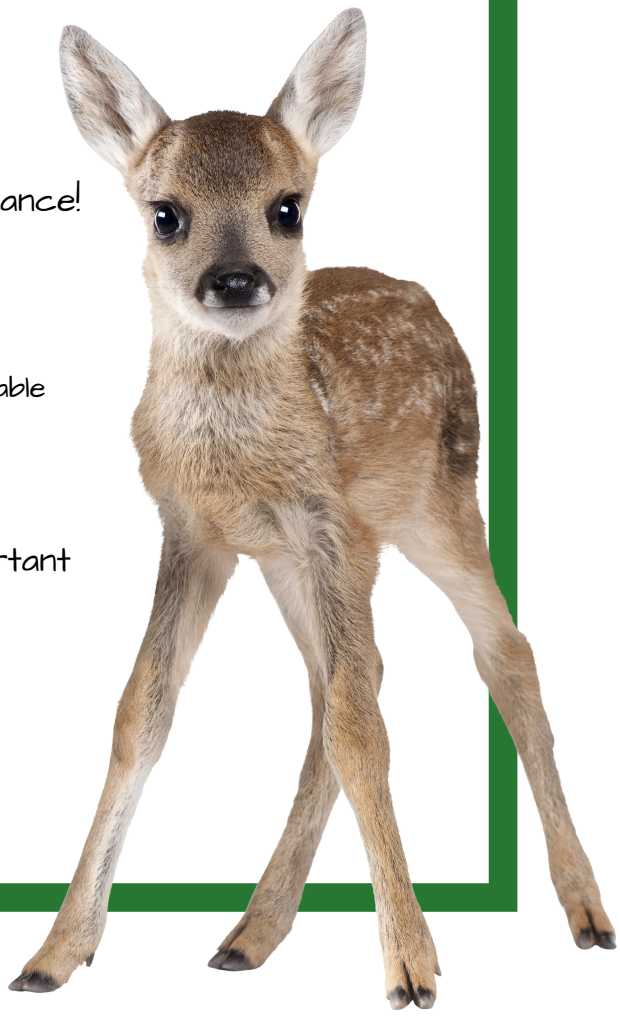
SHELTER:

- [ ] Rock wall/pile
- [ ] Trees/shrubs
- [ ] Brush piles
- [ ] Dense brush/brush piles
- [ ] Bird/bat house
- [ ] Pond/stream

HOW CAN WE HELP?

With mass habitat loss, climate change, and pollution, among other threats, the natural world is in many ways fighting an uphill battle. However, there are a multitude of ways we can support our backyard/neighborhood ecosystems that can make an enormous positive impact. One of best ways to help our natural world is to start locally! Below are a few potential actions to take to help your local ecosystem - and the species that occupy it - thrive!

- Research native plants for your garden/window ledges. Plant them rather than choosing non-native species!
  - TIP: Looking to attract specific animals, such as butterflies or hummingbirds? With a parent or guardian, go online and do some research to see what your local species prefer and see if you can attract them!
- Let insects live! Don't apply insecticides (poisons) or squish them.
  - TIP: Capturing an insect that has found itself indoors can be gently accomplished by using a cup and a piece of paper. Once captured, you can release outside. Ask a parent or guardian to help!
- Help wildlife remain wild. In other words, don't approach or feed them! The best thing we can do for them is give them plenty of space and admire from a distance!
- Properly sort trash and recycling, and (safely) pick up litter you might see.
  - TIP: If you're out and about and have disposable waste, hang on to it until you can find the proper place to put it!
- Teach others all about why it's so important to support our local wild species!
- Sign the pledge on the next page



Wolf Conservation Center's

BACKYARD PROTECTOR PLEDGE

I, _____ , hereby pledge to protect my backyard and neighborhood wildlife to the best of my ability, to cherish the plants and animals with whom I share the landscape, to not intentionally litter, nor harm, nor remove wild species from their natural homes.

Through my education as a Backyard Explorer, I will share my enthusiasm for the environment and wonder for the world with friends, family, and acquaintances.

I commit to fostering excitement and curiosity about our changing world and to keep exploring however I am able.

I pledge to make every effort to continue learning and trying to make the world a better and more beautiful place for all beings.

Name: _____

Date: _____

Print this badge and tape it to your shirt, wear it on a piece of string, or proudly display it for all to see! Congratulations, Explorer!