

1-H WILDLIFE MANUAL (LEVEL A)

Studying and learning about wildlife is fun for people of all ages. Wildlife exists all around you, wherever you live. Some people enjoy studying insects, while others like to observe and study birds. If you take time you can find signs of mammals around you, although they are generally more difficult to see than birds and insects.

The Indiana 4-H Wildlife Manual was written for young people who enjoy wildlife and for those who want to learn more about Indiana wildlife. The first manual introduces some important, general wildlife concepts and features 12 common species.

The key to learning, as with any 4-H project, is for you to enjoy your studies and to learn at your own pace. The authors hope this study is just the start of a lifetime of wildlife enjoyment.

Goal: This book introduces youth to 12 animal species and encourages them to explore basic animal concepts by studying information about the featured species.

Leader's Guide: The experiential learning model, answers to questions, record sheets*, and other information for adults are available online at www.four-h.purdue.edu/leader/

* Record sheets are also available on the Internet at: http://www.four-h.purdue.edu/. Choose "Search" and enter "record" in the "Description" line and scroll down to the green arrow to go to the next page with the wildlife record sheets.

Animals to be featured throughout this manual:

1. Beaver

2. Bobwhite Quail

3. Cottontail Rabbit

4. Coyote

5. Eastern Garter Snake

6. Opossum

7. Raccoon

8. Red Fox

9. Red-Tailed Hawk

10. Striped Skunk

11. White-Tailed Deer

12. Wild Turkey

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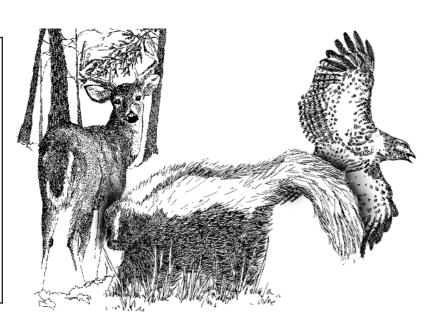
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Note: You will probably come across some new words in this manual. Check the Glossary for definitions.

LEARNING OBJECTIVES:

- Enjoy learning about wildlife by observation and study
- Learn about differences in wildlife species
- Understand the basic concepts of habitats and food chains

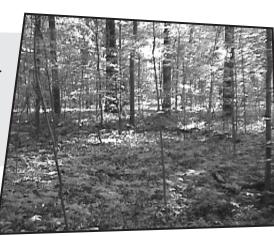


An animal's home is its habitat. We will concentrate on the three general habitats that are found in Indiana: **Grasslands**, **Woodlands**, and **Wetlands**. Most animals have a preferred habitat. Many have a second habitat that they can also live in. Some animals have adapted to multiple habitats.

Activity: Write the animal names in the Venn diagram spaces showing which habitat(s) they live in. The numbers tell how many habitats you would expect the animal to use.

Definition

Venn diagram: a graph that uses circles to show relationships by inclusion, exclusion, and intersection of the circles.



Facts

Rabbits bear four to eight litters each year and give birth to three to eight young per litter.

Go Outside!

Sit quietly outside for one hour and watch for animals. List or draw what you see (mammals, insects, birds, etc.). Note the time and date that you made your observations.



Grassiano Raccoon 2

Coyote 2 2 Red Fox

er 1000 M



2 Striped Skunk

Cottontail Rabbit 2

Eastern 3 Wild Turkey

White-Tailed Deer 3

Red-Tailed Hawk

FNIME SILHUETTES

Activity: Name each animal from its silhouette. Put the letter by each animal in the circle by its shadow. Follow the path to spell out the answer to the mystery question.

LIST OF ANIMALS SHOWN

S. Beaver

N. Bobwhite Quail

F. Cottontail Rabbit

U. Coyote

M. Garter Snake

H. Eastern Wild Turkey

S. Opossum

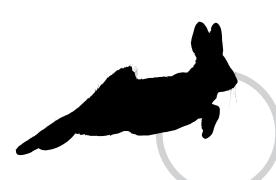
I. Raccoon

N. Red Fox

O. Red-Tailed Hawk

R. Striped Skunk

E. White-Tailed Deer

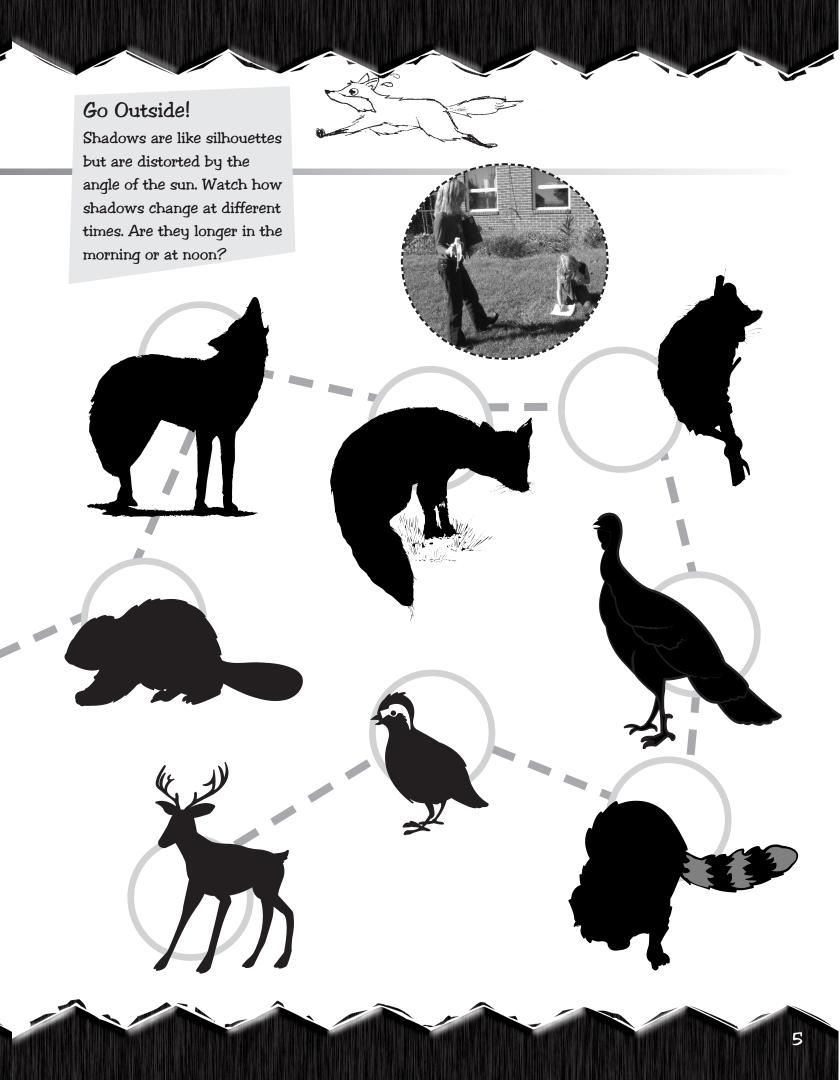








Mystery Question: Where do shadows come from?





Activity: Use the spaces to help you determine what group each animal belongs in.

Bobwhite Quail
Opossum
Red-Tailed Hawk
White-Tailed Deer
Striped Skunk
Coyote

Eastern Garter Snake
Eastern Wild Turkey
Beaver
Cottontail Rabbit
Raccoon
Red Fox

Write the names in the spaces on the circles on the next page.

Thins Facts

A snake can dislocate it's lower jaw so that it can swallow food larger than its head and body.



Think About It!

List some people and animals you know.

Make a table and indicate if they are
herbivores, carnivores, or omnivores.

Which category has the most?



MINOROS,

Note:

Many species will occasionally eat foods in other categories, particularly when food is scarce.

Definitions

Carnivore-Prefers meat

Herbivore-Prefers plants

Omnivore-Eats both plants and meat

SECTION

Activity: As you begin to learn more about wildlife, you will learn more facts. See what you already know, or can figure out, by completing the crossword puzzle.

beaver herbivore carrion herptile rabbit coyote mammal raccoon decomposers marsupial skunk deer



omnivore gnake fox opossum turkeu hawk quail vertebrate



- 4. I am a small, furry mammal with long ears and a short tail. Many people are surprised to find how well I can swim.
- 5. I am a cold-blooded reptile and I periodically shed my skin.
- My tail is thick and shaped like an oar.
- The category of animals including both reptiles and amphibians.
- 9. You might recognize me by my mask and the dark rings around my tail.
 - 11. Dead and rotting flesh.
 - 12. I am the smallest member of the dog family. I have a very keen sense of smell.
 - 15. A plant-and meateating animal.
 - 16. Organisms that feed on dead animals and return the nutrients to the ecological cycle.
 - 19. Animals that produce milk and are covered with skin and/or hair.

own

- I am a very large bird, and may grow to 25 pounds.
- 2. I like to gather in coveys and I am found in every county in Indiana.
- 3. I like to live in the forest in the daytime but in the evening I often graze in pastures.
- Animals that have a spinal column.
- 8. I am a plant-eating animal.
- 10. Animals with pouches in which to feed and carry their
- 13. I am the only marsupial mammal found in the United States.
- 14. I am a carnivore, closely related to the wolf, and you might have heard me howl at night.
- 17. Most animals leave me alone because of my unique method of protection, which smells bad to them.
- 18. I am a bird of prey.

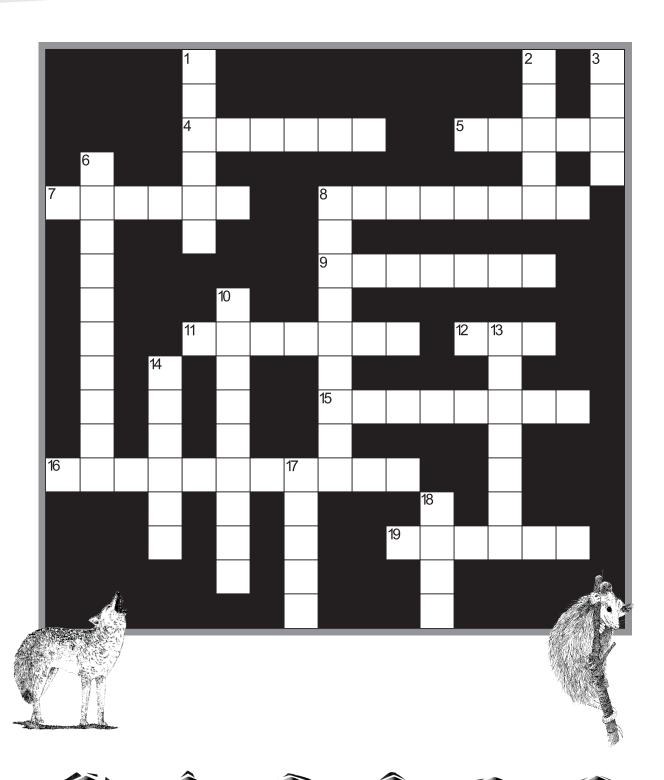


White-Tailed

Challenge!

Make your own crossword puzzle. List six to twenty wildlife words. Start with the longest word and build the other words from there. You can make many different puzzles using the same words.

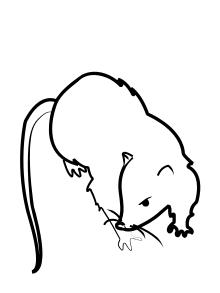


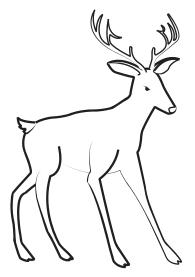


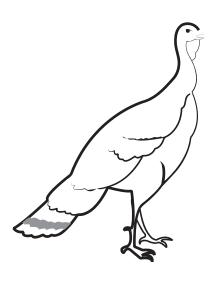
FINIMALS IN THEIR HIDINGS

Activity: Color the pictures of the featured animals. Write the size of its home range (see pages 25-28) below each picture.

Note: A poster (20 x 14 inches) showing the twelve featured species and three habitats is available from the Purdue Department of Agricultural Communication (order #4-H 903A, available in package of fifteen. See bottom of inside front cover for phone number and website).







Challenge!

Draw a map showing important places in your life. You might include your home, school, grocery store, friend's homes, and relative's homes.



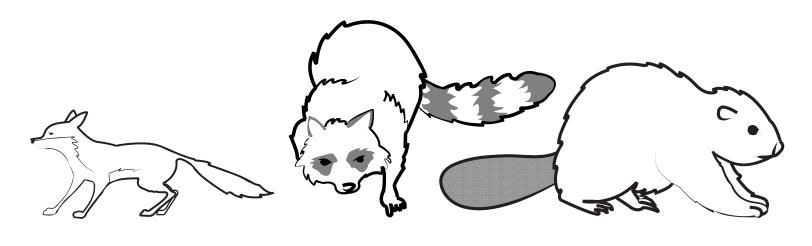


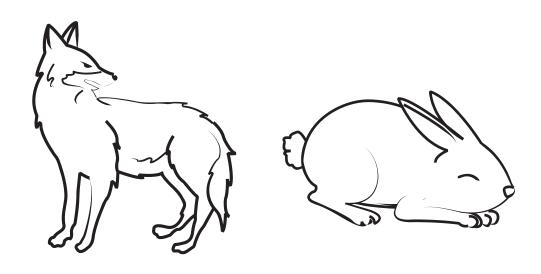




Home range: the area an individual animal commonly requires to satisfy its needs (food, water, shelter, and space)

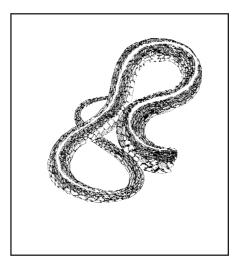
Note: An animal may need to travel over a much larger area than usually expected for its home range, especially when food or water is scarce or its habitat is fragmented. For example, in heavily farmed areas an animal may need to travel four to six miles to find the food and shelter it could get in one square mile of unfarmed habitat.

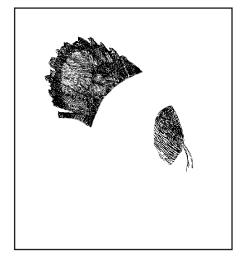


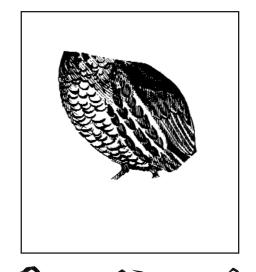


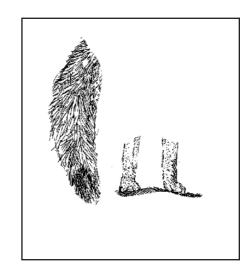
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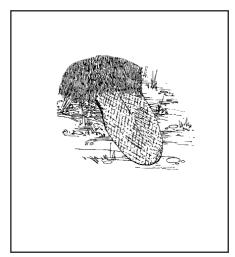
Activity.
Use the twelve
featured species and write each
featured species and write each
animal name in the box showing
animal name in the box showing
the parts that match it most
the parts that match it most
closely. You will find pictures of
all these animals somewhere in
all these animals.









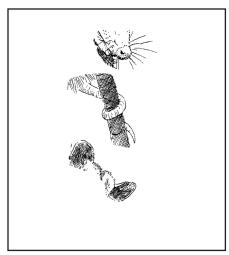


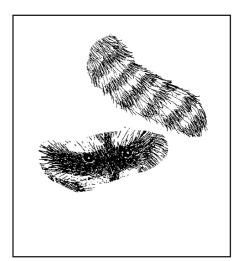
Challenge!

Cover the faces in a family photograph and see if other family members can recognize who is who. What clues are they using to identify each person?

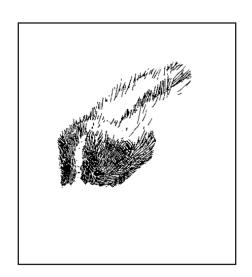


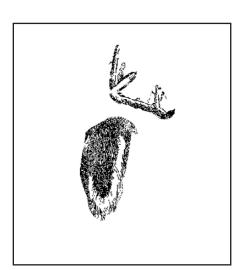


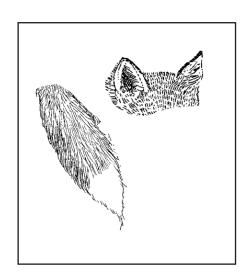










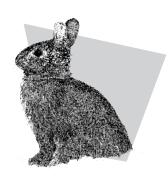


HONE GIN

Activity: Connect the picture of each animal to the name for the young of that animal (see pages 25-28 for help).



Poult



Bunny, Kit, or Kitten



Chick

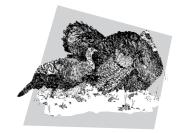
Pup



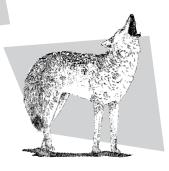
Kit or Kitten



Make a list of the young animals you have seen and indicate where you saw them.



Neonate



Did You Know?

Young ducks are called ducklings. Young geese are called goslings.



Eyas







Cub

Fawn











Embryon Pouch Young Joey





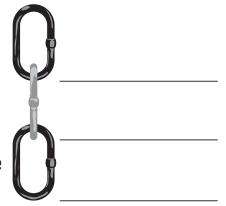
FOID SIFINS



A "food chain" shows the feeding relationship between specific animals, insects, and plants. Each organism in a given food chain receives its food (energy) from all the organisms below it.

Insects
Red-Tailed Hawk

Eastern Garter Snake



Challenge!

Make food chains with four, five, and six links

Raccoon

Insects and algae

Crayfish



Grass

Red Fox

Rabbit



Note: Food chains can have

three, four, five, or more links.

Activity: Put each group of animals in their "food chain order."

The animal at the top of each food chain should be on the highest line.



Grains

Eastern Garter Snake

Mouse

Insects

Skunk

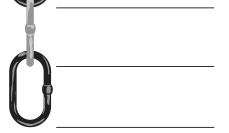
Grass/Plants



Coyote

Bobwhite Quail

Seeds & grains



BIRD FEEDER DBSER

You can learn a lot about birds by observing them while they eat. You may purchase or make a feeder to hang from a tree near your home or you can throw birdseed on the ground or sidewalk. Locate feeding stations where birds will be safe from predators and where you can easily watch them while they eat.

Activity: Make a chart and keep records of what kinds of birds visit your feeding station. Copy the chart below, or make your own. You can set up multiple feeding stations with different types of feed.

Be sure to check the feeder at the same time each day. If you just have one feeder, you can check it at a number of times during the day to see what types, and numbers, of birds visit.

Feeder #1	
Type of Feeder:	
Placement of Feeder:	
Time of Observation:	
Duration of Observation (minutes/day):	

	Number	Bird Species	Date
الإلام المراجع المارية الإلام المراجع ا			

VATIONS

You can make a bird feeder!

Recycled materials

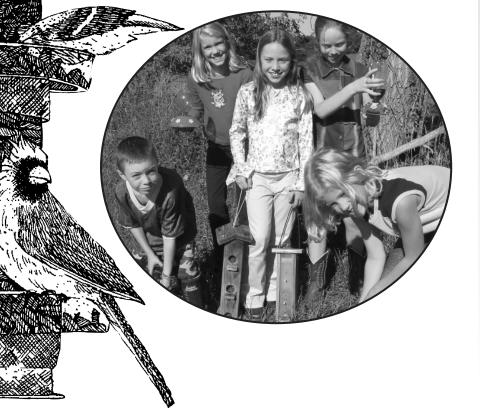
Milk carton feeder—cut two holes about one inch above the bottom of the milk carton, put feed in the bottom, and hang the feeder in a tree. A dowel can be used for a perch

- Use a 2-liter pop bottle in place of a milk jug.
- Tray feeder—use a piece of plywood (any size), attach a border that holds feed on the tray (rises about 1/2 inch above the tray), drill a few small holes for water drainage, and mount on a pedestal, or window, or hang in a tree.



- Use linseed oil or exterior latex paint to protect pine or other softwoods.

 Do not use creosote, which is extremely toxic to birds.
- Bird feeders built from cedar, redwood, or exterior plywood will last the longest.
- Bird feed can be made by mixing peanut butter, cornmeal, and seed. Do not add salt.
- Keep grain dry and clean-up spilled grain before it can rot, to reduce mold growth.
- Feeding the preferred seeds (sunflower, white proso millet, and fine cracked corn) will cause less waste and less opportunity for molds to grow in wet grain.
- It is best to feed birds from enclosed feeders in winter rather than feeding on tables or the ground. These surfaces often get covered with snow which leads to waste.



BIRDBATH DBSERV

Although birds get much of the water they need from their food, and some birds will eat snow, they all need some water for drinking. Birds (from hummingbirds to eagles) will bathe year-round if they can. It can be difficult to provide clean water, at the proper depth, and in the correct habitat. Providing open water is one of the most useful management tools for attracting birds and improving a wildlife habitat.

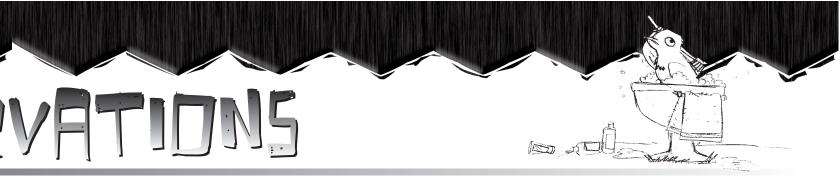


Activity—Make a birdbath, and keep a record of what kinds of birds visit it. Copy the chart below or make your own for your records.

Type of Birdbath:	
Placement of Birdbath:	
Time of Observation:	
Duration of Observation (minutes/day):	

Date	Bird Species	Number

Marsh



Making a Birdbath

Birdbaths may be purchased or made from metal garbage can lids (plastic tends to be too slick) supported with bricks, or secured on top of a ceramic drain tile with a weight tied to the handle. A cake pan with stones for perching makes a fine birdbath. Another way to provide water for birds is to keep water in natural puddles you may have.

- Water supplies should be dependable. Birds will visit the bath as part of their daily routine when water is consistently available. Unpredictable water sources are rarely visited.
- Be sure the water is clean. It should be changed every few days, and the bath surface should be scrubbed clean of algae that may begin to grow.
- Birds are especially attracted to water that has some motion, especially dripping or qurqling water.
 - Manufactured water drip systems are available, but you can make a simple drip system by hanging a bucket of water, with a small hole in the bottom, over the bath. You may need to enlarge the size of the hole until water drips at a rate of about twenty to thirty drips per minute. Keeping the bucket covered will reduce evaporation and reduce debris that might fall into the bucket and plug the hole.

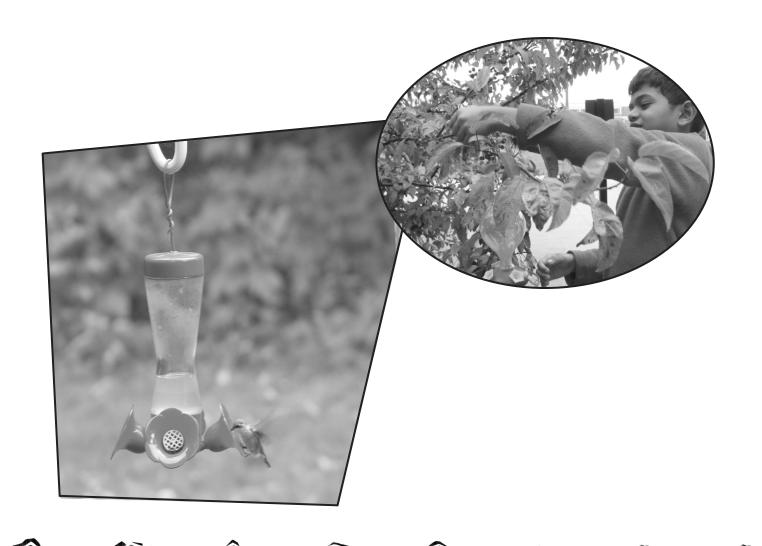
Birdbath Tips

- A predator-safe birdbath that offers water all year long will help attract birds that seldom visit feeders.
- The location of the bath is important and sometimes determines the type of birds that are attracted to the birdbath. Bold species (robins and bluejays) will visit birdbaths in open areas or near shrubs.
- Raised birdbaths offer protection from predators, such as house cats, but many birds appear to prefer baths at ground level.
- The sides of the birdbath should have a gradual incline (many manufactured birdbaths have sides that are too steep, and birds may not use them).
- Secretive birds (warblers, wood thrush) are more likely to visit baths that are tucked into a shady, protected spot. Note that baths in a shady, protected spot make, the birds more susceptible to cats. If there are cats around, birdbaths should be in an open area and at least 3 feet off the ground.

FEDING HUMANGOS

Hummingbirds are fascinating to watch. These small birds hover by flowers and feeders to drink nectar and eat small insects and spiders. The most natural way to attract hummingbirds is to plant masses of orange and red tubular or trumpet flowers (columbine, dahlias, gladiolus, hollyhocks, morning glories, nasturtiums, petunias, etc.).

You will probably see more hummingbirds, however, if you use a feeder you have purchased. An artificial feeding solution can be made to attract hummingbirds to a feeder, but be aware that sugar solutions are not complete diets. Care must be taken to properly dilute the feed so birds eat natural foods such as flower nectar. You will also need to be careful to replace the feed regularly so it does not mold. You need to be sure to put the feeder in a safe place for the birds.





Activity: Observe hummingbirds feeding at flowers or a hummingbird feeder. Keep track of the number of birds you observe at the feeder and what they are doing.

Hummingbird Feed

Mixtures of water and granular white or brown sugar make the best food. (Honey is more nutritious than granular sugar, but when mixed with water it ferments faster and cultures mold that can kill hummingbirds). To make a sugar and water solution mix the sugar (white or brown) in equal portions and boil the mixture to retard fermentation and to dissolve all sugar. Then dilute the sugar to a 1:4 ratio by adding three parts cold water. Fill the bird feeder and store the unused portion in a refrigerator.

Although sugar/water mixtures do not ferment as quickly as honey/water mixtures, feeders must be cleaned with a bottle brush and hot running water and refilled every two to three days. Once you have attracted the hummers with the 1:4 sugar/water mixture, decrease proportions to a 1:6 ratio to minimize the dangers of liver damage. This will encourage the birds to feed on more natural foods. The sugar solution described is readily eaten by orioles, mockingbirds, grosbeaks, tanagers, and several warblers. Feeders of various sizes, placed in different locations, will help to minimize competition. Many commercial hummingbird feeders are available, and a mouse or hamster watering bottle can be used as an oriole feeder.

You can discourage ants by hanging your hummingbird feeder on a fishing line or fine wire. You can discourage wasps by coating the feeding portals with salad oil.

Date	Time/Length of Viewing	Number of Hummingbirds	Observations

Suggested format for recording your observations. You may use this format or develop your own.

JOSEPH TION SKILLS

You can learn a lot about wildlife by observing the living things around you. Watch for interactions within a species and between species. Note what animals eat, where they sleep, and how they hide from predators or prey.

Activity: Visit a natural area, park or nature sanctuary. See how the four primary animal needs of food, shelter (cover), water, and space are satisfied. Make a chart to record your observations. You may need to look in a reference book or ask a friend or adult to help. (Note: Animals in captivity are provided the food, water, and shelter that they require.)

Date:	Loca	tion:			
Animal	Food Sources	Shelter (cover)	Water Sources	Home Range	

INFORMATION ABOUT FEATURED SPECIES

Beaver

- Largest rodent in North America
- Mostly nocturnal
- The tail is thick, flat, and shaped like a boat oar. It is used to smack the water surface as a warning signal, as a support when the beaver is standing on

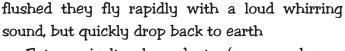


its hind legs, and as a rudder while swimming

- Feet are webbed and all the digits (toes)
 have claws
- Most beavers build lodges of sticks and mud with underwater entrances in ponds they have built by damming smaller streams. Some may burrow in river banks to make dens
- Uses its large front teeth to gnaw down trees (usually two to eight inches in diameter, but may be as large as thirty inches in diameter)
- Eats inner bark of trees, and may eat water and marsh plants or agricultural products
- Young are called kit or kitten
- Habitat—wet lands, streams and lakes with trees on the bank
- · Home range-generally less than six square miles

Bobwhite Quail

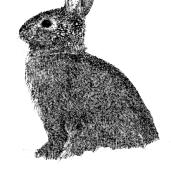
- Usually seen in groups, called coveys
- Habitat-grassland, road sides, wood edges, brushy open country and farmlands
- If frightened, bobwhites (like most quail) prefer to run from danger, and when



- Eats agricultural products (corn, soybeans, wheat), weeds (raqweed, foxtail), and insects;
- Young are called chicks
- Range—Central and Eastern U.S. to Guatemala and Cuba

Cottontail Rabbit

- Nest on the ground surface, usually in dense vegetation
- Adapted to civilized conditions more easily than many other animals;
- Ears will often show its state of mind-backward indicates calm; lifted straight up indicates



- attention and anxiety; one forward and one backlooking and listening
- Eats grass, clover, vegetables, and other herbs in the summer; eats bark from saplings, low hanging branches, stems of brambles and vines in winter
- Young are called bunnies (newborn rabbits are called kits or kitten)
- Habitat-grasslands and open woodlands
- Home range—three to twenty acres

Coyote

- Carnivore, closely related to the wolf
- Ears are erect and pointed
- Green, wolflike eyes





- · Thick coat and a prominent bushy tail
- Most active at night and often emit sharp barks and prolonged howls
- Eat carrion, birds, large insects, and rodents
- Can reach speeds of more than fourty miles per hour when running down prey
- · Young are called pups
- · Habitat-grassland and open woodlands
- Home range—generally about ten miles but may hunt up to one hundred square miles

Eastern Garter Snake

- A reptile with a greatly elongated, cylindrical body covered with scales
- Cold-blooded, so will hibernate when temperatures fall below fifty degrees Fahrenheit



- Vision is well developed and the sense of smell is excellent (odors are picked up by the tonque)
- Periodically shed their skin and outer covering of the scales as they grow, usually in one piece, including the spectacie—a transparent covering of the eye. Young snakes grow rapidly and shed their skins more often than adults
- Carnivorous, eating insects, spiders, snails, frogs, toads, mice, and rats. Can go for long periods of time without food but must have water
- · Young are called neonate
- Habitats—wetlands, woodlands, and grasslands
- Range-Southern Canada to the Gulf of Mexico in the Eastern and Midwestern U.S.

Opossum

 The only North American marsupial much of the fetal development occurs in the mother's pouch, the young resemble advanced embryons at



birth when they crawl to attach themselves to a nipple in the mother's pouch

- · Has a long, hairless tail
- The front feet have five toes with long sharp nails to help it climb trees; on the hind feet the four outer toes have claws and the innermost toe is "opposable" (like a thumb) and nailless
- Sleeps in a hole, brush pile, hollow log, or tree during the day
- Feeds primarily at night. Most opossum species are omnivorous, usually preferring a diet of insects and carrion. They will eat young birds, frogs, fish, eggs, insects, and fruit (wild grapes, cherries, mulberries, and persimmons)
- · Habitat-grasslands, woodlands, and wetlands
- The opossum may appear to be dead ("playing possum") if surprised or it may hiss, snap, or attempt to bite. Do not trust a possum that appears to be "dead" as it can switch to a biting opossum very quickly. This is an instinctive behavior of fainting into a coma-like state
- · Young are called embryos, pouch young, or joey
- Home range—fifteen to fourty acres

Raccoon

 Has a black patch across the face and around the eyes and a black line extending from the tip of the nose directly up the



INFORMATION ABOUT FEATURED SPECIES

forehead; the rest of the face is pale gray with dark eyes and white whiskers

- Flat-footed animals (like people and bears) with hairless soles
- Habitat—woodlands, wetlands, hollow trees, dens, or caves
- Winters in a den, usually high in a hollow tree, sleeping (not hibernating) but waking and coming out during relatively warm periods
- Hunts at night—eats most anything that is easily obtained, including corn and other grains, fish, turtle eggs, crayfish, snakes, frogs, and sometimes chickens. Also eats fruit, especially berries and wild grapes, and nuts. Raccoons will also eat pet food and scavenge through trash
- · Young are called cubs
- Home range-1/2 to 2 square miles

Red Fox

- Most commonly seen fox in Indiana and the smallest member of the dog family (also includes wolves, coyotes, jackals, and dogs)
- wolves, coyotes, jackals, and dogs)
 The fur has many color phas
- The fur has many color phases. The most common coat is a bright, rusty red or a reddishbrown, sprinkled with light-tipped hairs. All color phases have a white tip on their tails, black ears, and black feet. The silver fox, valued for its black, frosted fur, is a variant of the red fox coloration
- Very alert, with keen senses of smell, hearing, and sight, which enable it to live close to humans without being easily noticed
- Eats mice, voles, rabbits, bird eggs, large insects, and carrion

- Preferred habitat is farmland with woodlots and open fields which provide cover and abundant rodents, especially field mice
- · Most active at night
- · Young are called kits, cubs, or pups
- Home range—generally one to two square miles

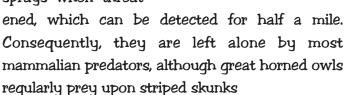
Red-Tailed Hawk

- Large, stocky hawk with a whitish breast, and a rustcolored tail
- Young birds are duller, more streaked, and lack the rust-colored tail of the adult
- Call is a high-pitched descending scream with a hoarse quality
- · Habitat-woodlands and grasslands;
- · Feeds mainly on small rodents
- Young are called eyas
- · Range-U.S. and most of Canada

Striped

Skunk

 Best known for the offensive odor it sprays when threat-



- Front legs are much shorter than its hind legsthis gives the skunk a peculiar gait
- Front feet have long, strong claws which are used to diq burrows, usually in light soil



- Omnivorous, eating small mammals, birds, eggs, earthworms and insects; also like honey and bees
- Young are called kits
- · Habitat-mixed woods, grassland
- Home range—approximately one hundred twenty to one hundred fifty acres

White-Tailed Deer

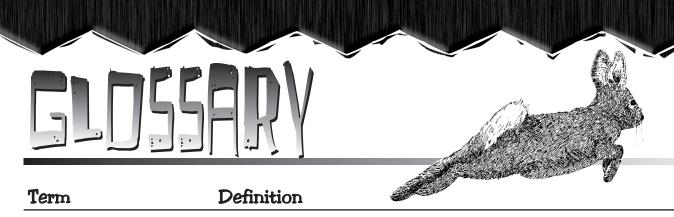
- Have supple, compact bodies and long, powerful legs suited for rugged woodland terrain
- Ruminants (cud chewers)
 with a four-chambered
 stomach (like cattle)
- The young are called fawns and have a series of large white spots on their backs which are lost when they get their brown winter coats
- Deer forage on twigs, leaves, bark, and buds of bushes and saplings and on grasses and other plants and are most active in early morning and early evening
- Find shelter in thick, large wooded tracts and river bottoms
- Habitat—woodlands, wetlands, and grasslands
- · Home range-generally less than a square mile

Wild Turkey

 The Eastern Wild Turkey is native to the United States.
 These birds have a featherless head and neck, and their tail is tipped with chestnut



- Preferred habitat is woodlands with grassy openings, agriculture fields, and wetlands;
- Not normally shy, but become secretive when hunted
- Benjamin Franklin suggested the wild turkey as our national bird
- Intense hunting almost led to extinction, but with habitat management, controlled hunting seasons, and careful reintroductions, it has again become fairly common in many parts of its former range
- · Eats acorns, fruit, and seeds
- Young are called chicks
- Range-Eastern and Southwestern U.S. to Mexico



Amphibian: Cold-blooded animals that have qills when they are young but breathe air

as adults.

Birds: Warm-blooded animals with wings and feathers.

Carnivore: An animal that eats other animals.

Carrion: Dead and rotting flesh.

Cold-blooded: Animals (reptiles, fish, amphibians, and insects) that can not regulate their

body temperature.

Consumer species: A species that must rely on another for food.

Decomposers: Organisms that feed on dead plants and animals and return the nutrients to

the ecological cycle.

Deciduous forests: Forests whose trees lose their leaves at some point in the year.

Ecosystem: A community and all components of its environment as a unit of nature. Fish:

An aquatic animal that is cold-blooded and gets oxygen through its gills.

Grasslands: Land with grasses as the primary vegetation.

Habitat: Place where an animal lives and grows.

Herbivore: Plant-eating animal.

Herptiles: The category of animals including both reptiles and amphibians.

Invertebrate: An animal that does not have a spinal column.

Litter: The young carried and born during one pregnancy.

Mammal: Animals that produce milk and are covered with skin and/or hair.

Marsupial: Animals with pouches in which to feed and carry their young.

Omnivore: An animal that eats plants and animals.

Producer species: Organisms that produce food through photosynthesis.

Reptile: Animals that move close to the ground and are covered with scales or plates.

Vertebrate: Animals that have a spinal column.

Warm-blooded: Animals with an internally regulated body temperature and insulated bodies.

Their body temperature stays nearly constant, except when they are ill.

Wetlands: Land that is soft and wet, at least most of the year.

Woodland: Land that is primarily covered with trees.

