

4-H Wildlife Manual



Name _____

County _____

 Cooperative Extension Service
 Purdue University

Indiana 4-H Wildlife Project Manual

Level B
Grades 5 & 6


4-H WILDLIFE MANUAL (LEVEL B)

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 the time, you can find mammals around you, although they are generally more difficult to see than birds or bugs.

The Indiana 4-H Wildlife project was written for young people who enjoy wildlife and for those who want to learn more about Indiana wildlife. 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: Basic wildlife concepts are introduced. Youth are challenged to observe differences between species.

Note: If you are interested in wildlife studies, there are many other 4-H projects that you may enjoy: Forestry, Entomology, Soil and Water Conservation, Sport Fishing, and Shooting Sports Education (Hunting and Wildlife).

Note 2: Many of the "Go Outside" and "Challenge" activities involve record keeping. A special wildlife notebook or folder will help you keep your notes. (See Section 1 in Level C for more information about record keeping.)

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.

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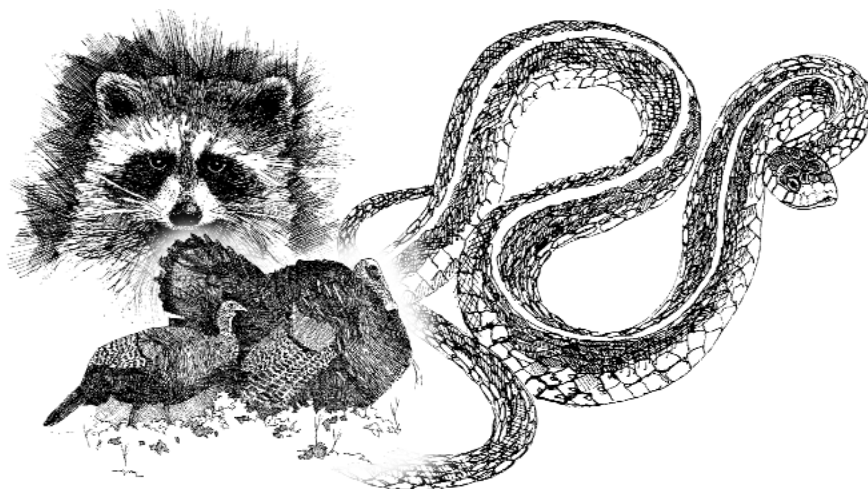
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LEARNING OBJECTIVES:

- Understanding wildlife concepts: habitats, migration, life cycle, populations, the food web and adaptations
 - Learn more information about one or two species



We will be featuring the 12 species that you studied in Level A: Beaver, Bobwhite Quail, Cottontail Rabbit, Coyote, Eastern Garter Snake, Opossum, Raccoon, Red Fox, Red-Tailed Hawk, Striped Skunk, White Tailed Deer, and Wild Turkey.

SECTION 1

HABITATS

An animal's habitat must provide food, water, shelter, and space—the necessities for life. Different animals require different types of food, shelter, and water. A grassland will provide the best habitat for some animals, while wetlands or woodlands will provide the best home for other animals.

Activity 1: Choose three of your favorite wildlife species. Show good habitat and poor habitat for these animals. You may pick any animal that you want.

Animal _____



Animal _____



You can learn a lot by simply observing animals in their natural habitat. Note what they are doing and eating. Taking notes in a journal will help you to remember what you see.

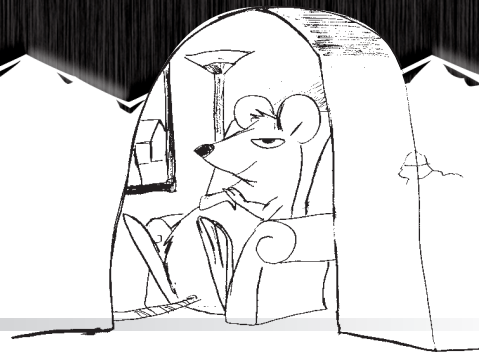
You might want to try to create a special habitat near your home.



Animal _____

Go Outside!

Pick an animal you are interested in and read all about its habitat needs. Take a walk with an adult to see if your animal could satisfy its needs where you live.



Activity 2: Habitat Game

Choose any animal that you would like to be. At the start of the game your habitat provides all your animal's needs for: food, shelter, water, and space.

Use two dice. Roll the dice and add the pips (dots). Look at the table to determine your fate for each month of the year. You have 12 turns (one for each month). Keep track of what happens to you over the year and write a story about it. In your story include what these events mean to you as an animal.

Note: If you roll a '7' at any time the game is over since you did not live throughout the entire year.

Use this chart to keep track of the number you rolled.

January	February
March	April
May	June
July	August
September	October
November	December

- Natural disaster destroys shelter
- Find good shelter
- Food supply destroyed
- Bulldozer destroys woods
- Find new food supply
- Eaten by a predator
- A new pond is dug in your habitat
- Escape from a predator
- Your pond (water source) dries up due to drought
- Your nest/den is destroyed
- Landowner plants important food source

Your Story:

SECTION 2

TRAVELING AROUND

Have you ever noticed the different birds you see at different times of the year? Where do you suppose the Canada goose is going when you see it flying north or south? Where do monarch butterflies go during the winter? These animals, and many others, migrate to other areas during the winter. Migration is the word that explains seasonal or periodic movement of entire species of animals to and from their natural breeding areas. An example of migration is the annual movements of birds between summer and winter ranges. Migration patterns generally follow a flyway. The four recognized flyways are shown on page 7.



Activity: Find the animals listed.

Mallard duck	L	D	K	A	O	N	D	H	B	K	F	Q	J	A	N	J	M	C	G	S
Monarch butterfly	P	Q	G	E	E	D	B	V	L	D	V	S	A	C	O	N	E	H	Y	Q
	O	L	O	Z	E	O	N	J	A	N	H	W	A	Z	R	X	P	L	L	U
Snow goose	A	Q	D	Z	S	Z	N	R	C	G	X	N	O	B	T	P	F	L	M	F
Canada geese	E	K	C	R	O	L	A	G	K	M	A	D	L	M	H	R	I	Z	R	L
	B	J	A	S	O	K	Y	T	C	D	O	K	Z	X	E	W	J	C	N	D
Northern pintail	O	Z	V	B	G	F	R	E	A	Z	Q	U	P	T	R	E	H	C	R	P
	C	J	L	C	W	D	D	G	P	Z	R	K	T	O	N	O	V	I	M	Z
Hummingbird	I	K	Y	B	O	Z	E	B	P	E	M	U	O	A	P	H	B	X	P	T
	V	K	Z	K	N	E	M	W	E	V	B	P	R	C	I	G	N	I	R	N
Sandhill crane	N	S	N	H	S	W	A	D	D	H	P	C	C	J	N	P	J	Q	N	Z
	P	I	Y	E	P	I	L	P	C	I	L	D	G	I	T	U	Z	N	T	Q
Robin	F	E	Y	R	T	L	L	R	H	L	C	X	M	Y	A	P	J	T	Q	V
	V	T	X	M	I	A	A	W	I	C	H	M	F	E	I	Q	X	G	U	U
Whippoorwill	U	P	A	K	E	N	R	H	C	Z	U	M	O	K	L	O	Y	R	Q	I
	M	U	J	D	O	S	D	V	K	H	K	Q	K	F	F	Z	K	F	E	F
Killdeer	Q	C	K	M	H	N	D	I	A	R	T	B	U	A	V	X	D	O	R	E
	I	F	G	D	A	P	U	D	D	O	E	Y	D	T	B	Y	E	Q	T	A
Junco	Z	K	C	S	M	I	C	K	E	D	I	C	P	L	Y	V	W	S	H	N
	R	S	E	R	F	J	K	T	E	N	I	G	L	M	H	D	C	B	E	V
Blackcapped chickadee																				

Go Outside!

Watch for migrating birds in the spring and fall. Record the date, location, types, and approximate number of birds that you see.

Many birds that you may see in the summer in Indiana live in different areas during the winter because of a lack of food sources. Birds that feed on insects, berries, worms, fish and frogs usually fly to warmer climates during the winter so they can find these foods.

Activity 2: Use the word bank to unscramble the letters to find the birds that use these different flyways.

Word bank: American wigeon, blue-winged teal, canvasback, lesser scaup, mallard, northern pintail, ruddy duck, snow goose, tundra and trumpeter swans, tundra swan, wood duck

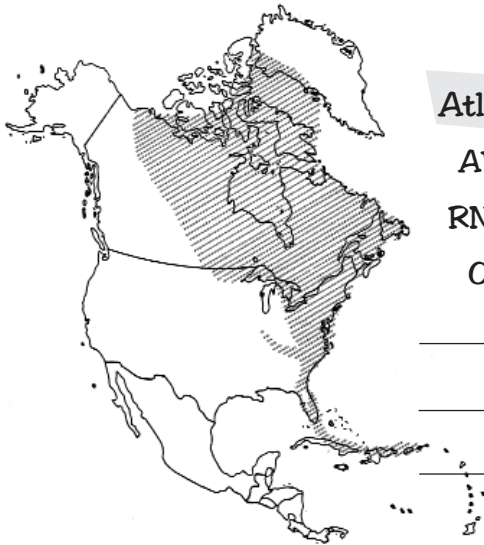
Note: Other birds using these flyways:

Atlantic: American black duck, brant (eastern races), snow goose (eastern Canada populations)

Mississippi: mallard, wood duck

Pacific: northern pintail (western populations of both), "black" brant, tundra swan.

Central: greater white-fronted goose, northern shoveler



Atlantic Flyway:

AVSAKCBANC

RNTUDA ANSW

OWDO CUDK

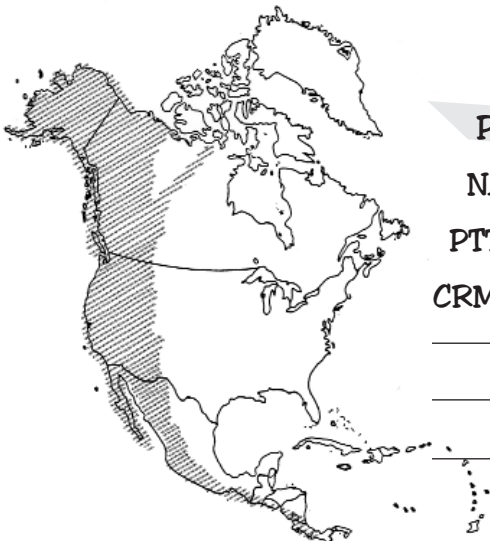


Mississippi Flyway:

SRESEL APUCS

NENTORRH AIINLTP

ULBE-NDIWEG ALTE

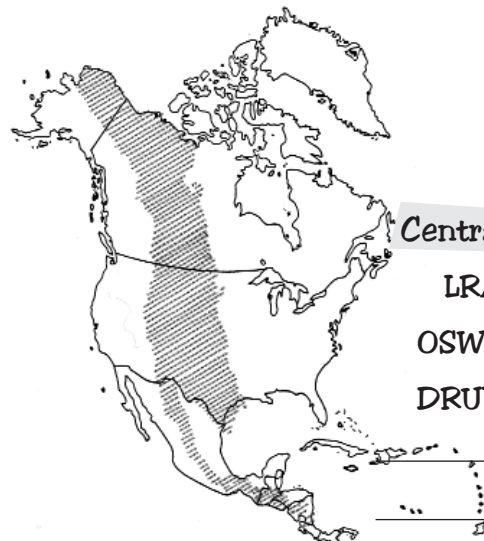


Pacific Flyway:

NACNINOM ETLA

PTTEREMRU SNAW

CRMNAIEA GNOEWID



Central Flyway:

LRADLAM

OSWN OGSEO

DRUYD CKUD

WHO'S EATING WHAT?

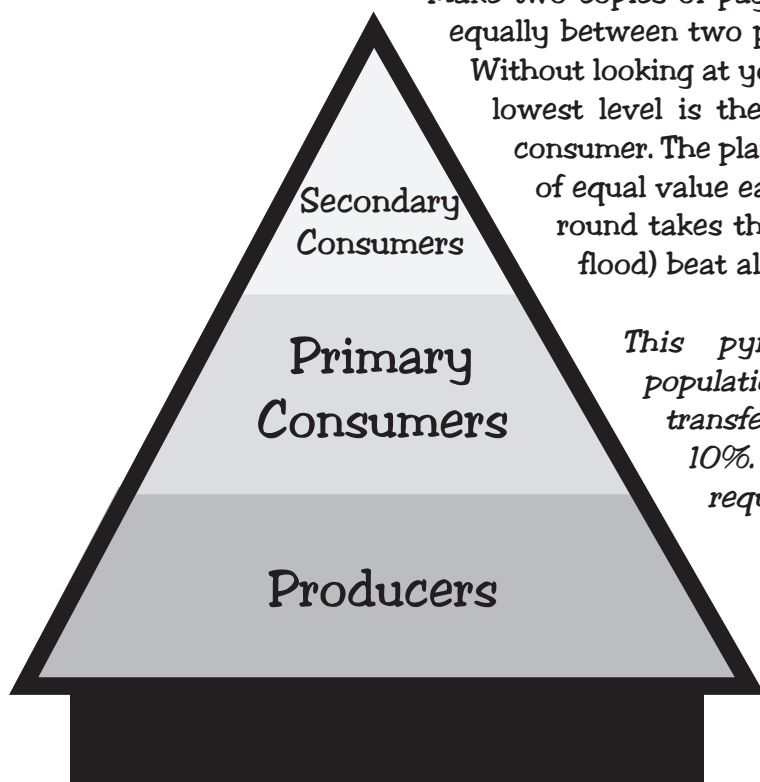
All living creatures have the same basic requirements: food, water, shelter, and space. Animals meet these daily needs by competing with other animals in their habitat. Every animal is either a predator (an animal that hunts other animals) or prey (the hunted animal). Some animals are both predator and prey. Young rabbits (prey) may be eaten by mink (predator). Coyotes (predator) hunt mink (prey). The rabbit is an herbivore and likes to eat plant material.

Some animals are favored food for other species. For example, rabbits are consumed by wolves, mountain lions (pumas), badgers, weasels, and feral (wild) cats. Larger predators generally seek larger prey.

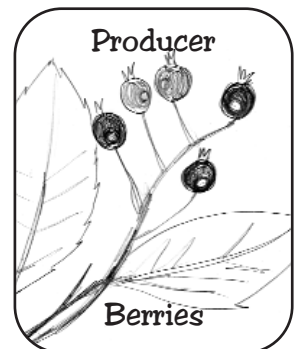
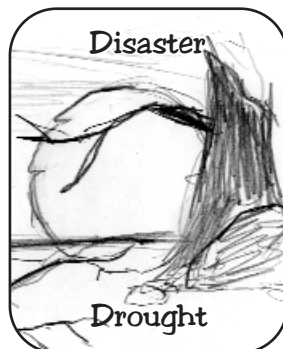
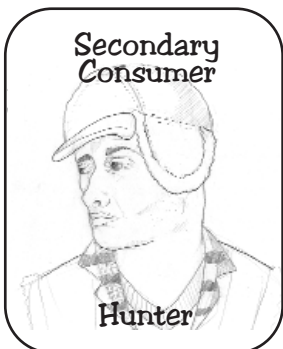
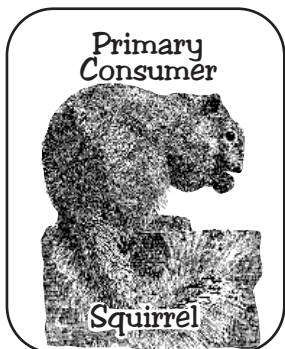
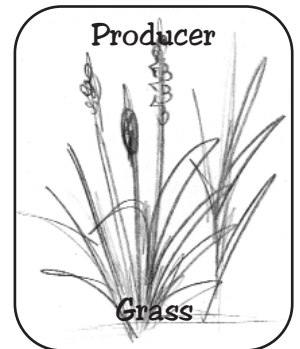
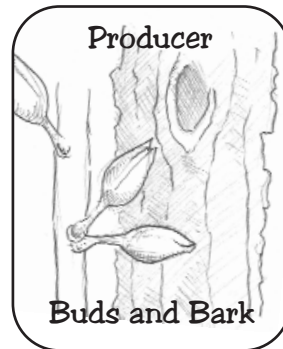
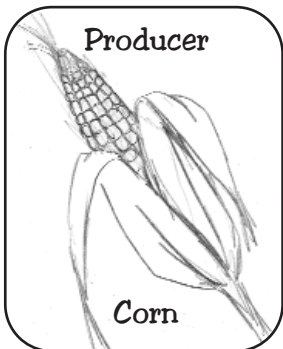
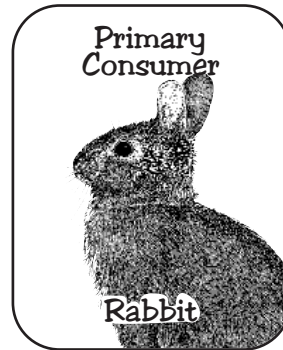
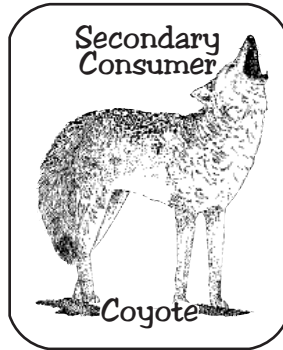
Animals also compete for water, cover, and space. Over the centuries, a balance has been worked out. This explains why some animals are abundant and some are not (See Section 5—We Don't Live Here Anymore). It can be a tough world for both predators and prey. Experience this competition by playing Look Out!

Activity: Look Out!

Make two copies of page 7 and cut out the cards. Mix them up and divide equally between two players. Play with a friend like the card game "war." Without looking at your cards each player places a card on the table. The lowest level is the producer, then primary consumer, and secondary consumer. The player with the highest level card wins. If both cards are of equal value each player plays another card and the winner of that round takes the tie cards as well. The disaster cards (drought and flood) beat all other cards.



This pyramid shows the approximate energy and population relationship of plants and animals. The energy transfer from a lower level to the next level is approximately 10%. Therefore, at least ten times more organisms are required at lower levels than in the subsequent level.



4 SECTION

STUMP YOUR FRIENDS

Did you know that Southern Flying Squirrels eat bird eggs?

Did you know that over 60 animals consume poison ivy?

Animals are fun to study. You can learn many interesting facts about animals by reading about them in an encyclopedia or a book about the species. You can also have fun by sharing with others the facts you learn.

Activity: Amaze your friends with fun, interesting, and unusual facts by making a game to share with others. Pick five of the twelve featured species (page 3) and write two interesting facts about each one. You may already know some facts or you might find them in your encyclopedia, dictionary, or the Information

About the Featured Species in this manual. Write these facts as questions on a sheet of paper or a card. You can write yes/no, true/false, or multiple-choice questions. Ask five people your questions. Count how many questions they answered correctly (put number in the last column).

Some examples of questions you might ask are:

- The black bear has been extirpated from Indiana. (Yes or No?)
(Note: extirpated is defined on page 10)
- Monarch butterflies migrate to Mexico each winter. (True or False?)
- Did You Know: The Department of Natural Resources began reintroducing river otters in Indiana in 1996. (Yes or No?)

Did You Know?

River otter

Family: Mustelidae

Genus: *Lutra*

Species: *canadensis*



Habitat: Along streams and lake borders. Dens in banks, with entrance below water or other suitable places. Home ranges 15 miles or more. Aquatic but may travel several miles over land to reach another stream or lake. A sociable animal, usually two or more travel together.

Range: North American west coast from Alaska south to northern California and Utah; on the East Coast from Newfoundland to Florida.

Diet: Eats fish, frogs, crayfish, and other aquatic invertebrates.

Appearance: Head and body; 26-30 inches. Tail: 12-17 inches. A large weasel-like mammal with rich brown above and silvery sheen below, small ears, and broad snout; webbed feet. It has thirty-six teeth.

AND FAMILY



TALLY SHEET		Name Of Person Interviewed					Number If Correct Answers
ANIMAL	QUESTION ONE:						
	QUESTION TWO:						
	QUESTION ONE:						
	QUESTION TWO:						
NAME OF	QUESTION ONE:						
	QUESTION TWO:						
WRITE	QUESTION ONE:						
	QUESTION TWO:						
NAME	QUESTION ONE:						
	QUESTION TWO:						
OF	QUESTION ONE:						
	QUESTION TWO:						
ANIMAL	QUESTION ONE:						
	QUESTION TWO:						

Calculate the mean: add the number of correct answers (last column) and divide by total number of questions you asked. The mean will be between 0 and 1. A value close to 1.0 indicates that most people knew the correct answers.

Total: _____

Mean: _____

WE DON'T LIVE HERE

During pioneer times, Indiana had abundant forests and prairies. Many animals that were commonly found here are no longer around because of the loss of their natural habitat and the influx of people. Animals or plants are considered endangered when they are in immediate danger of becoming extinct. There are degrees of endangerment.

Federal Definitions:

Extinct—Animals that were once on earth and no longer exist.
(Example: dodo bird)

Endangered—Any species that is in danger of extinction throughout all or a significant portion of its range. (Example: sperm whale)



State Definitions: The Indiana Department of Natural Resources has the following system for classifying animals on the state level.

Endangered—Any species that is in danger of extinction throughout Indiana.

Threatened—Any species that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

DID YOU KNOW?

American Kestrel

The American Kestrel is the smallest falcon found in North America. Most of the birds breeding in Canada and the northern United States migrate south in the winter, although some males stay as year round residents.

American Kestrels are found in a variety of habitats including parks, suburbs, opened fields, forest edges, alpine zones, and deserts. In addition to requiring open space for hunting, American Kestrels seem to need perches for hunting from, cavities for nesting, and a sufficient food supply.

In summer, Kestrels feed on insects which they catch either on the ground or in the air. They will also eat small rodents and birds. Wintering birds feed primarily on rodent and birds.

Extirpated—Any animal species that was once in Indiana but no longer occurs naturally in the state. This does not mean the animal is extinct—only that it is no longer found in Indiana.

Reintroduced—Animals that were once commonly found in Indiana but had been extirpated and then were reintroduced by wildlife management agencies.

Introduced—Animals that are not native to Indiana but have been brought to the state, (sometimes on purpose and sometimes by mistake) and have formed self-sustaining populations.


Returned—Some extirpated animals have begun to return to Indiana on their own because of improving conditions.

ANymORE



Activity—Sort the animals listed into the correct categories using the clues given.

Passenger Pigeon	European Starlings	Russian Boar	Franklin Ground Squirrel
Bobcat	Wild Turkey	Carolina Parakeet	Labrador Duck
River Otter	Ivory Billed Woodpecker	Great Auk	Red Wolf
Coyote	Black Bear	Gray Bat	Porcupine
Bald Eagle	Heath Hen	Beaver	Wolverine
White-Tailed Deer	Peregrine Falcon	Indiana Bat	Mountain Lion
Ring-Necked Pheasant	Sparrows	Badger	Elk
			Bison

Extinct	Endangered	Threatened	Extirpated	Reintroduced	Returned	Introduced
_____ keet	_____ y B _____	B _____	_____ k B _____	_____ ver _____	_____ o yo _____	R _____ _____ ant
_____ Billed _____	B _____	_____ rou _____	R _____ _____ f	_____ key	_____ a v _____	Spa _____
Hea _____ _____	_____ bc _____		Por _____	Ea _____		_____ ian _____
G _____ t _____			_____ ine	Wh _____ _____ ee _____		Eu _____ _____
_____ eng _____ _____			_____ nta _____ _____	_____ ine _____ con	<p>Note: The status of the animals (column headings) are listed for Indiana populations in 2000. Some of the animals may be in one category (e.g., endangered or threatened) in Indiana but common elsewhere (for example, bobcats and badgers). As things change, a species may be moved from one category to another.</p>	
Lab _____ _____ k			_____ k			
			_____ i _____			

WRITE A LIFE HISTORY

You can learn a lot about an animal by studying its life history. The more you know about an animal, the more interested you will become.

Activity—Choose one of the animals listed below to study in detail. Describe the animal's life stages from birth through when they produce offspring. You must include the items listed in the "Life History" box. Also include any other information that you find interesting. Your report should be one page long and in paragraph or short answer format. Use descriptive words (colors, adjectives, adverbs, etc.) to make your story interesting. You can find some of the required information in the Information About Featured Species in the back of this manual. You will also need to look in encyclopedias and other reference books.

Beaver
Bobwhite quail
Cottontail rabbit
Coyote
Eastern garter snake
Wild turkey
Opossum
Raccoon
Red fox
Red-tailed hawk

Striped skunk
White-tailed deer
Bluegill
Channel catfish
Walleye
Largemouth bass
Carp
Snapping turtle
Box turtle
Painted turtle

Spotted salamander
Tiger salamander
Hognose snake
Black rat snake
Cardinal
Blue jay
Canada goose
Mallard duck
Hummingbird

Life History

Be sure to include:

- life stages
- life span
- the approximate size of the mature animal
 - typical habitat
 - mode of travel
 - food sources
- migration (distance), if applicable
 - population range
- number of eggs laid and the incubation period
 - live birth—give the gestation period
 - Interesting information

Your report should be one page long in paragraph or short answer format

Possible Resources:

• The Department of Forestry and Natural Resources at Purdue University has many excellent publications about specific animals. Ask your Extension Youth Educator for the Purdue publications catalog for a current list. Look under Forestry and Natural Resources and Animal Damage Control.

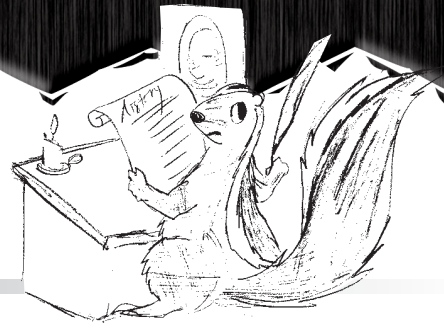
• The Indiana Department of Natural Resources, Division of Fish & Wildlife "Life Series" is an excellent resource for animal information. If you can access the Internet, you can see what animals are listed and order at:

<http://www.state.in.us/dnr/fishwild/publications/fish.htm>

If you do not have Internet access or have a question or would like more information on a subject contact:

Division of Fish and Wildlife
Public Affairs Section
402 W. Washington St., Rm. W273
Indianapolis, Indiana 46204
phone (317) 232-4080

You can write an additional life history on page 28.



My Animal:

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

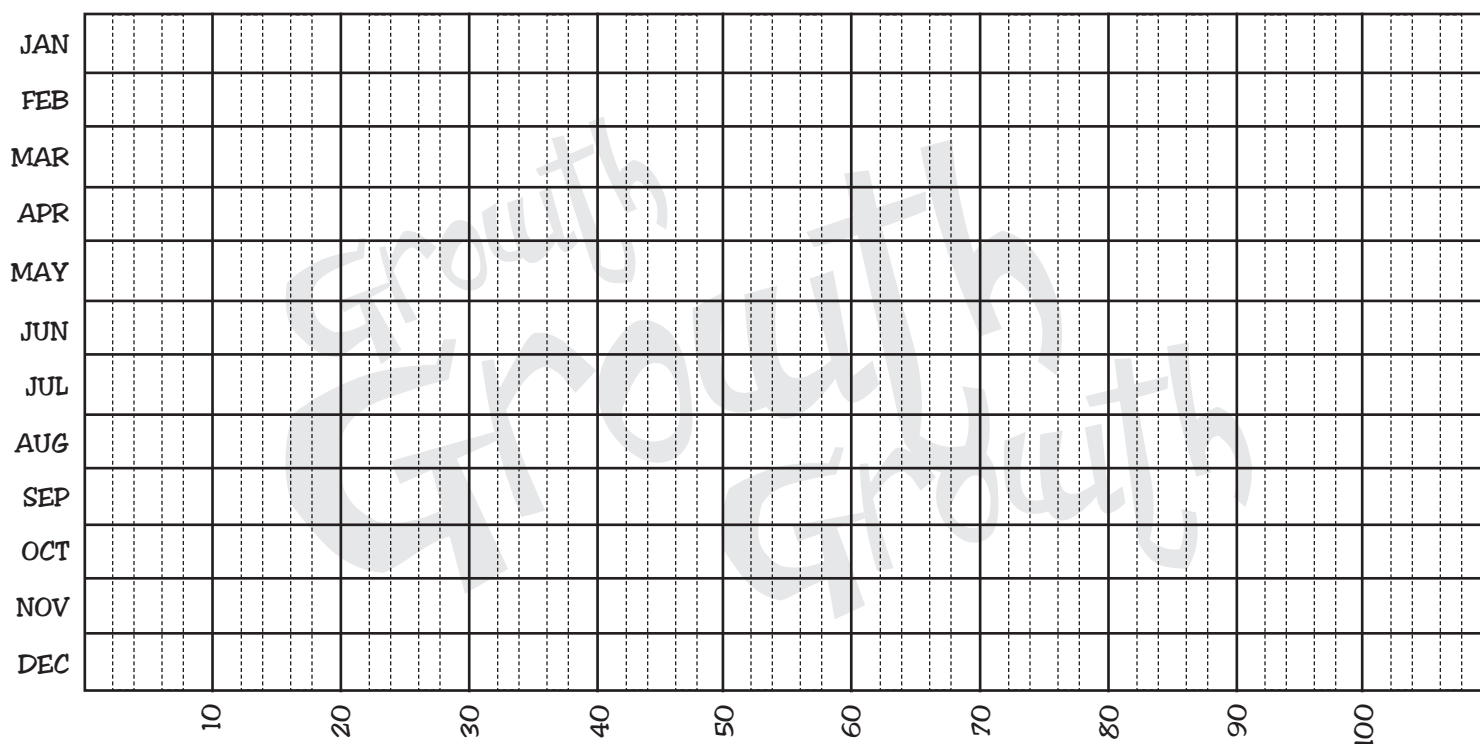
POPULATION GROWTH

Animal populations fluctuate because of birth (natality) and death (mortality) rates. When considering a specific area (city, state, park, farm, nature preserve, etc.) populations are also affected by immigration (animals moving into the area) and emigration (animals moving out of the area).

Activity 1: Study the population growth of a group of mice. You are to make the following assumptions:

- There are five adult females and five adult males at the start of your study in January.
- The area under consideration is one acre.
- Each female has three litters of four young each year.
- Assume they are born on the tenth day of March, May, and July.
- Mice born this year will not reproduce until next year.
- Due to a fire on September 15 in a nearby area, thirty mice immigrate into your study area.
- Twenty mice die during the year. (Remove one male and one female (you choose young or adult) at the end of each month, except January and August).
- Twenty mice emigrate on October 15, because of food shortages.

Complete the following chart (or make your own) and show how many mice are in this population on the first day of each month.



Month	Males	Females
January	5	5
#added		
# subtracted		
February		
#added		
# subtracted		
March		
#added		
# subtracted		

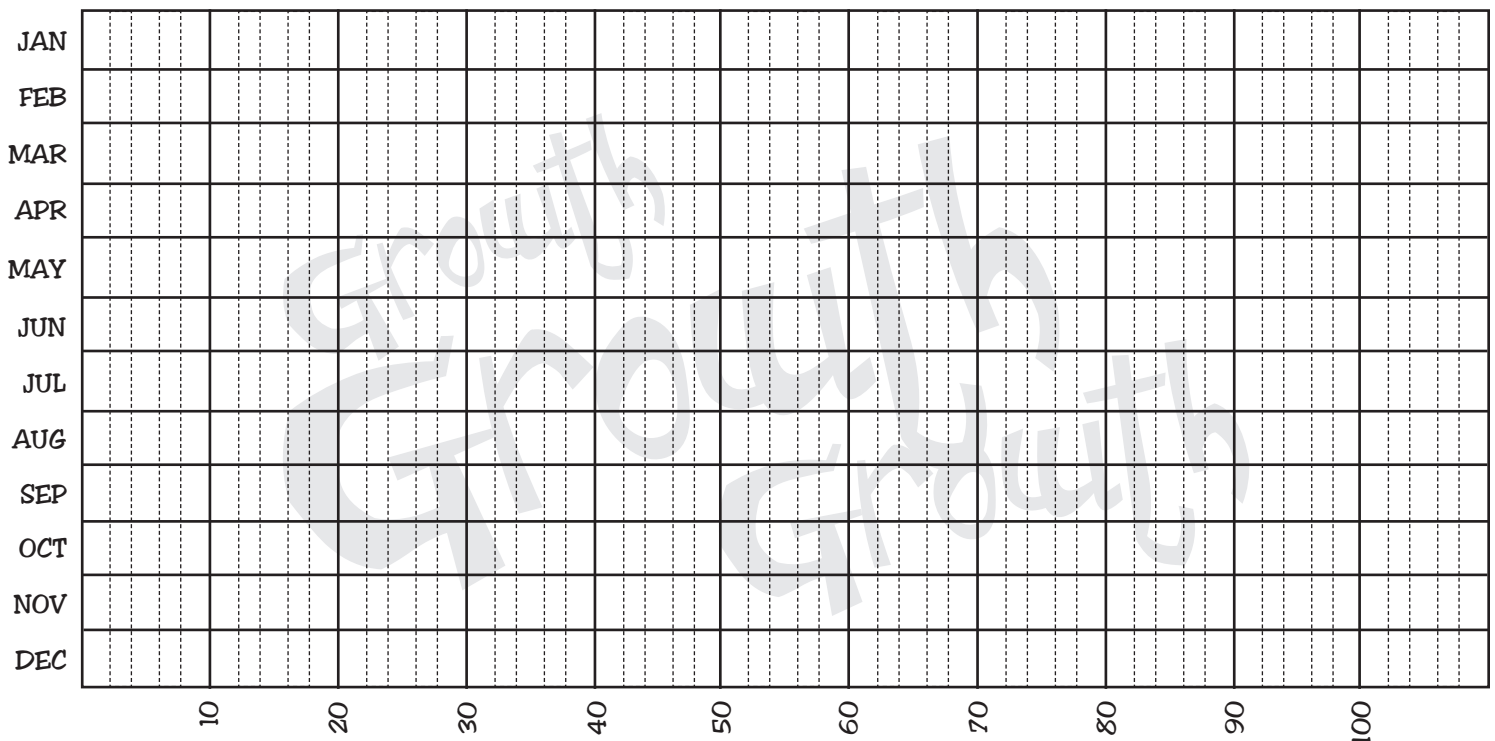


Species: _____

- There are five adult females and five adult males at the start of your study in January.
- The area under consideration is one acre.
- Each female has three litters of ____ young each year.
Assume they are born on the first day of March, May, and July.
- ____ born this year will not reproduce until next year.
- Due to a fire on September 15 in a nearby area, ____ immigrate into your study area.
- ____ die during the year. (Remove ____ at the end of each month, except January and August).
- ____ emigrate on October 15, because of food shortages.



How many individuals are in this population at the end of the year?



SECTION 8

THE FOOD WEB

Energy flows from the sun through all life and is constantly recycled. This energy flows through an ecosystem by a series of inter-related steps that are called a Food Web. Energy is transferred by consumption and decomposition. An ecosystem includes producers (green plants), consumers (herbivores, omnivores, and carnivores), decomposers (fungi and bacteria), and the non-living parts (dead organic matter and nutrients in the soil and water).

Activity 1: Draw a line with an arrow from each plant or animal below to what might eat it. Some species will be producers, some are consumers, and some are both. Use the Information About Featured Species in the back of this manual to help you.



Bobwhite quail



Mouse



Cottontail rabbit



Raccoon



Coyote



Red fox



Eastern garter snake



Red-tailed hawk



Grass, clover, vegetables



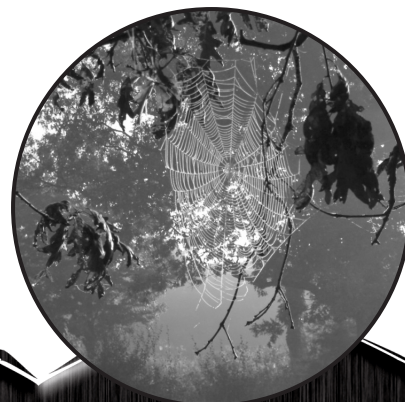
Twigs, leaves, bark



Insects



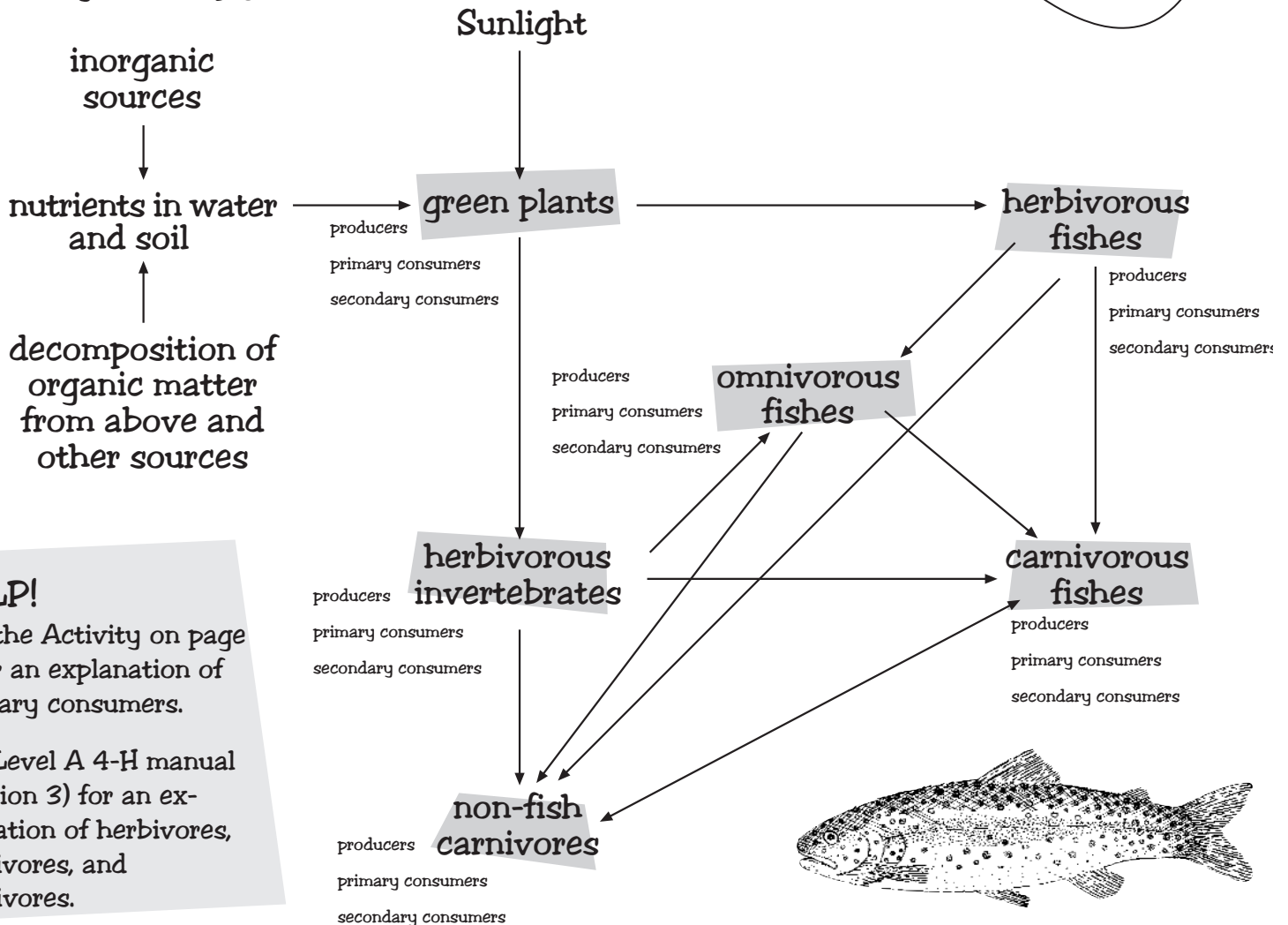
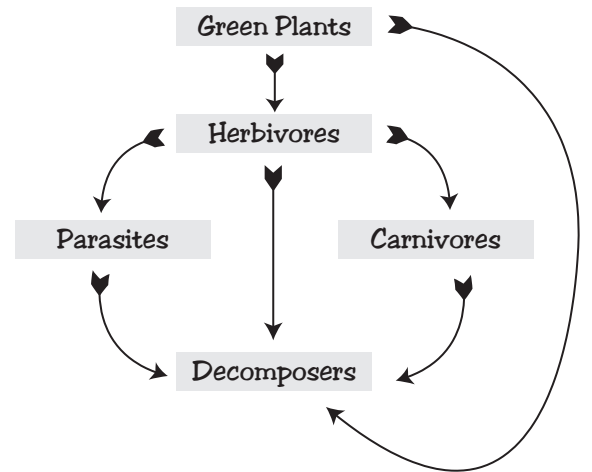
White-tailed deer





Aquatic Food Web

Activity 2: Circle the food web level for the six (6) aquatic plants or animals below (shaded). The diagram on the right will help you.



HELP!

See the Activity on page 6 for an explanation of primary consumers.

See Level A 4-H manual (section 3) for an explanation of herbivores, omnivores, and carnivores.

9

SECTION

BEAKS AND BILLS

Birds can be identified by many different physical features. One such feature is their beak (or bill), which are similar to human jaws. Birds use them to find, prepare, and swallow food. Birds have no teeth, so they use their beaks to break up food. A bird's beak gives you a clue to the type of food that bird eats. Birds that eat seeds have a short, thick, wedge-like beak to break the hard shell of many seeds. Water birds often have long bills so they can reach under water and poke into soft mud and sand for food. Birds that eat small mammals must have strong hooked beaks to tear up the meat before swallowing it. Birds that peck at the ground looking for insects have strong, short, pointed beaks. Birds that get nectar and insects from flowers have long needle-like beaks.

Activity: Match the bird pictures with the type of beak it has. The following definitions may help you.

- A Chisel Beak** Used to cut holes in trees for their nests and to dig out wood-boring insects for food
- B Cracker Beak** Strong bills used for cracking the hard shells of seeds
- C Dabblers** Bills are used to scoop food from water (most ducks)
- D Hooked Beak** . . . Used to tear meat
- E Prober Beak** Probes in soil for insects and insect larvae
- F Straw Beak** Tongue is used to suck nectar from tubular flowers
- G Straight Beak** . . . Used for spearing fish

Go Outside!

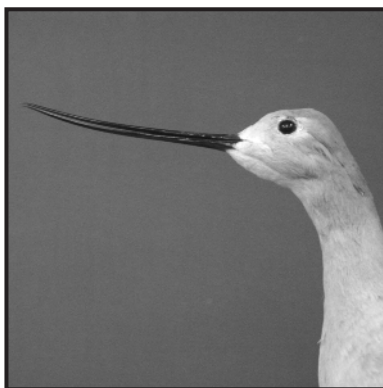
Watch birds, with binoculars, if possible. Take pictures or draw the different bird beaks and bills you see. Record the date and place that you saw each bird and note any additional interesting information.



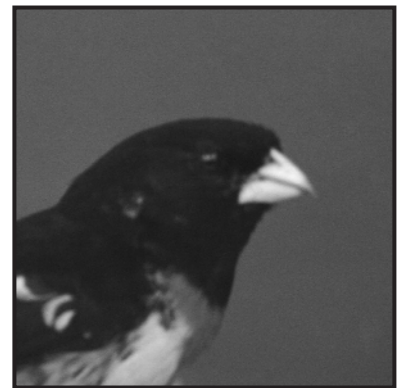
Cracker Beak



Chisel Beak



Prober Beak



Straw Beak



Hooked Beak



Dabbler



Straight

10

SECTION

BIRD LEGS AND FEET

Looking at bird legs and feet can give you valuable information about a bird, such as the type of food it eats and how much flying it does. Some birds eat while flying and have very small, delicate feet and legs. Birds that fly little and scratch the ground when searching for food have strong feet and legs. Birds that swim have webbed feet. Birds that use their feet to capture small mammals have large, strong feet with sharp claws (talons). Some birds in snowy regions develop scales on the sides of their toes so their feet become like snowshoes. Perching birds have feet that can firmly grab a tree limb.

The legs of birds with webbed feet give you a clue to how these water birds find their food. Those with short legs, located near the back of their bodies, generally dive under water to search for fish. Birds with long legs are waders and swimmers have webbed feet.

Activity 1: Indicate if the birds shown on the next page have climbing, grasping, perching, swimming, or wading feet and legs. Circle the foot type under each picture. The definitions given below may help you.

Climbing—sharp curved claws help climb and clutch the bark of trees. Two toes point forward and two point backward.

Grasping—sharp, curved claws (talons) catch, crush, and carry prey.

Perching—clamp onto branches to hold the bird firmly on a branch. Three toes point forward and one points backward. (All songbirds have this type of foot.)

Swimming—webbed feet allow these birds to paddle through the water.

Wading—long legs make it possible for these birds to wade into ponds and streams to catch and eat small water animals. Most wading birds do not have webbed feet. They may have long toes.

DID YOU KNOW?

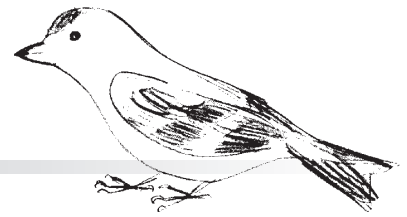
The Cardinal

Indiana's State Bird

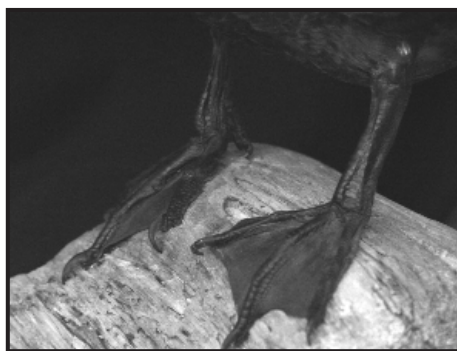
- Named after the red robes worn by Roman Catholic Cardinals
- Both males and females sing year round
- Members of the finch family of birds
- Primarily eat seeds, but may eat insects during breeding season
- Often will visit bird feeders during the winter

Go Outside!

Watch animals, with binoculars, if needed, to observe the many different legs and feet that they have. Take pictures or draw what you see. Record the date and place and note any additional interesting information.



Climbing • Grasping • Perching
Swimming • Wading



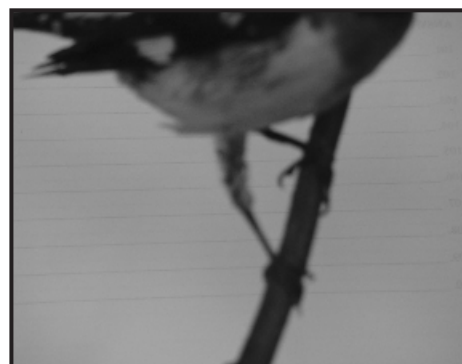
Climbing • Grasping • Perching
Swimming • Wading



Climbing • Grasping • Perching
Swimming • Wading



Climbing • Grasping • Perching
Swimming • Wading



Climbing • Grasping • Perching
Swimming • Wading

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SECTION

ANIMAL LEGS AND FEET

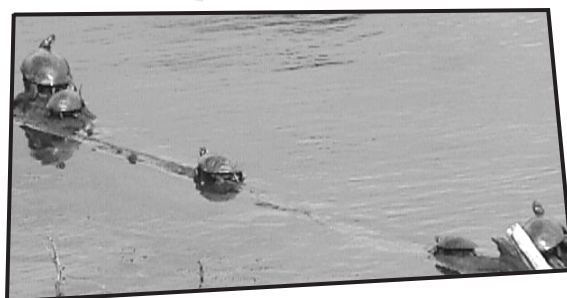
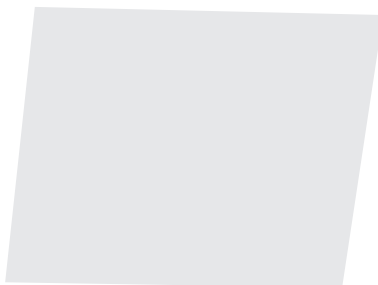
Looking at animal feet and legs can give you clues about how the animal moves, its defenses, and its speed. Otters have short, webbed feet that are adapted for swimming. Deer have long legs for running and jumping. Bears have claws that they use for digging and grasping prey.

Activity 1: Sketch the feet and legs of five of the animals listed below. Use any reference materials (books, the Internet, magazines, etc.) you can find to help you. Sketch your animals in the spaces provided.

Beaver
Bobwhite Quail
Cottontail Rabbit
Coyote

Eastern Wild Turkey
Opossum
Raccoon
Red Fox

Red-Tailed Hawk
Striped Skunk
White-Tailed Deer



Go Outside!

Watch animals, with binoculars, if needed, to observe the many different legs and feet that they have. Take pictures or draw what you see. Record the date and place and note any additional interesting information.



Activity 2: Create a Creature

Sketch and color an imaginary animal using different animal parts. You may combine mammal, bird, fish, and herptile parts if you wish. Then use what you have learned to discuss how your animal will live.

Name: _____

Foods (What will it eat?)

Live birth or eggs?

Gestation/incubation period

Habitat (Where will it live?)

Where does it sleep?

Expected
Lifespan:

How will your animal feed and care for its young? Which parent, or both, will care for the young?
How long will the young stay with their parent(s)?

Other information about your animal. You might write about summer and winter ranges, population growth etc.

SECTION 12

ANIMAL EARS, EYES & TEETH

You can identify many animals by looking at their eyes and ears, which they use to search for food and avoid attack. Teeth are used for eating and sometimes for protection. Animals have developed the eyes, ears, and teeth that best fit their needs.

Activity 1: Sketch the heads of four of the animals listed. Use any reference materials you can find to help you. Sketch your animals in the space below.



Beaver
Bobwhite Quail
Cottontail Rabbit
Coyote

Eastern Garter Snake
Eastern Wild Turkey
Opossum
Raccoon

Red Fox
Red-Tailed Hawk
Striped Skunk
White-Tailed Deer

AND TEETH

Go Outside!

Watch animals, with binoculars, if needed, to see the different types of eyes and ears. Take pictures or draw what you see. Record the date and place and note any additional interesting information.



Activity 2: Create and sketch two imaginary animals. Use eyes, ears, and teeth from different animals. You can sketch just the head or the entire body.

Name of animal:

Name of animal:

Teeth Notes:

- Lions and tigers eat only meat and have long, pointed teeth to tear their prey apart
- Herbivores generally have short, flat teeth that grind leafy foods
- Birds, turtles, some anteaters, and adult baleen whales do not have teeth
- Many animals use their teeth as weapons and to hold captured prey
- Many insects have hard jaws that they use for chewing by moving their jaws sideways. Some insects (dragonflies) have sharp teeth for biting and chewing
- Fish teeth are generally finely pointed. Fish use them for grasping food, not for chewing. Some fish have teeth for crushing and grinding food.
- Elephant tusks are long, curved teeth. They are the largest teeth of any land animal and are used as weapons and to find food
- A snake's fangs fold back when it closes its mouth. Venom spurts through grooves in the fangs when a snake bites
- Beaver teeth grow continuously to replace areas that wear down due to constant use.
- Human adults have the following thirty-two teeth:
 - Incisors—eight teeth for cutting and shearing (like a knife or scissors)—the front teeth
 - Canines—four for strong, pointed teeth (like sharp tines of a fork)—to tear food into small pieces—next to incisors
 - Bicuspid (premolars)—eight teeth to crush food into coarse, grainy mass (like a nutcracker)—next to canines
 - Molars—twelve teeth to grind food into a thin, fine pulp (like a millstone)—behind the bicuspids—back teeth

WILDLIFE IN THE

News stories in papers, and magazines and on TV sometimes feature wildlife or human actions that affect wildlife.

Activity 1: Report the details of a news story that you read or heard. Include a sketch or the actual article if it is from a printed source.

What: _____

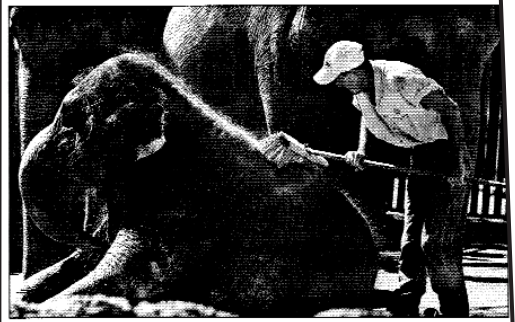
Where: _____

When: _____

How: _____

Why: _____

BRUSHED BY ONE OF THE BEST



Jason Barr, the Fort Worth Zoo's lead elephant keeper, brushes Bluebonnet with a broom as Babe (right) waits her turn recently. Barr was chosen as a national semifinalist for the Ultimate Zookeeper campaign, an online contest involving 12 zookeepers across the country. Barr was instrumental in the 1998 birth of Bluebonnet, the zoo herd's first calf.

MEDIA



Activity 2: Write a news story about a wildlife animal that might live near you.

What: _____

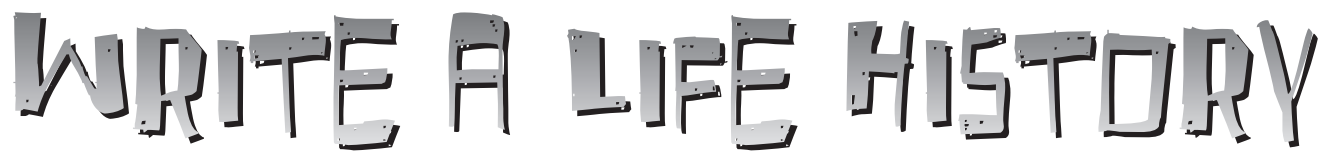
Where: _____

When: _____

How: _____

Why: _____

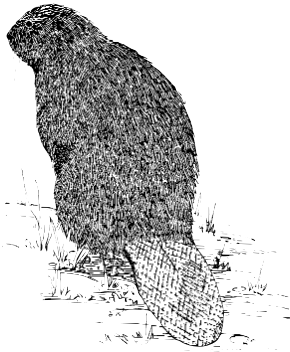
Wildlife News

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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

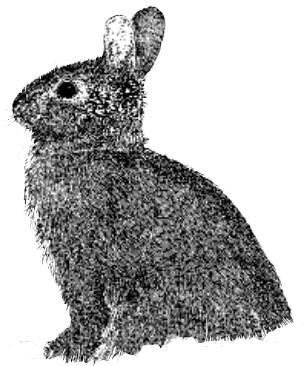


flushed they fly rapidly with a loud whirring sound, but quickly drop back to earth

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

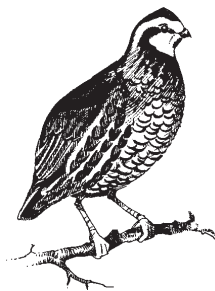
Cottontail Rabbit

- 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 back-looking 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



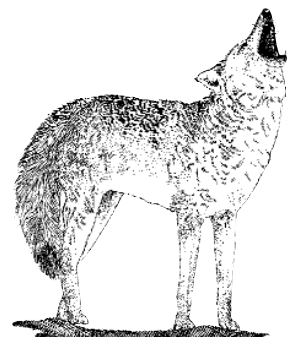
Bobwhite Quail

- 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



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 forty 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

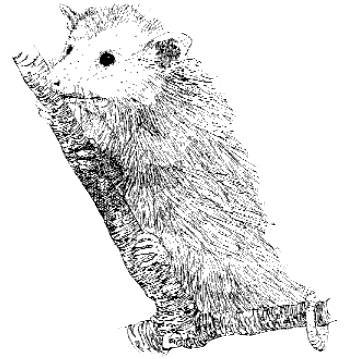
Eastern Garter Snake

- 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 tongue)
- Periodically shed their skin and outer covering of the scales as they grow, usually in one piece, including the spectacle—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 embryos 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 forty 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

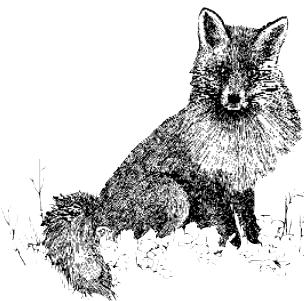
forehead; the rest of the face is pale gray with dark eyes and white whiskers

- 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— $1\frac{1}{2}$ 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)

- The fur has many color phases. The most common coat is a bright, rusty red or a reddish-brown, 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

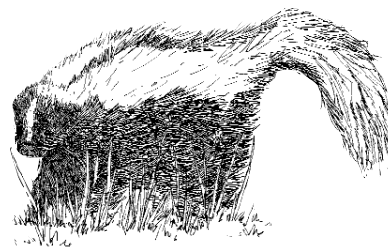
Red-Tailed Hawk

- Large, stocky hawk with a whitish breast, and a rust-colored 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 threatened, which can be detected for half a mile. Consequently, they are left alone by most mammalian predators, although great horned owls regularly prey upon striped skunks
- Front legs are much shorter than its hind legs—this gives the skunk a peculiar gait
- Front feet have long, strong claws which are used to dig 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



GLOSSARY



Term	Definition
Decomposers:	organisms that cause a breakdown (rotting and decay) of dead plants and animals
Endangered:	animals in immediate danger of becoming extinct
Extirpated:	an animal that is no longer found in a habitat it once lived in
Flyway:	migratory paths of birds
Food chain:	the step-by-step passage of matter and energy through an ecosystem, including many levels: producers, consumers, and decomposers
Food web:	the network of interlocking food chains
Forbs:	herbaceous plants other than grass
Gestation period:	the length of time that young are carried in the uterus before birth
Grassland:	land on which the natural dominant plant forms are grasses and forbs
Habitat:	the place where a plant or animal naturally lives and grows
Incubation period:	the length of time between when eggs are laid and when they are hatched
Lifespan:	the expected length of life for an average individual in a species
Life stages:	significant, separate parts of an individual's life (examples are newborn, youth, adult, and old age)
Migration:	to pass, periodically, from one region or climate to another for feeding or breeding
Mortality:	death rate; the state of being mortal; the proportion of deaths to population; the number lost or rate of loss in a population
Natality:	birth rate
Population range:	the natural amount of area over which animals live and feed
Predator:	an animal that hunts other animals for food,
Prey:	a hunted animal that is caught and eaten
Primary consumers:	herbivores, animals that eat plants
Producers:	plants that are eaten
Secondary consumers:	predators that feed on primary consumers
Tertiary consumers:	predators that feed on both primary and secondary consumers
Venomous:	animals that have poisonous venom or other fluids that can harm other animals
Wetland:	an area that remains wet long enough to support typical vegetation under normal conditions
Woodland:	an area that is covered with trees

PURDUE EXTENSION

Revised 12/05

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4-H-904

Knowledge to Go

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