

4-H WILDLIFE PROJECT LEADER'S GUIDE



This manual is intended to be a resource
for 4-H Wildlife leaders and judges

Special Thanks

- ... to the 4-H youth and leaders who pilot tested the new wildlife curriculum and made many suggestions for improvements.
- ... to the Extension Educators in the pilot counties who organized the pilot testing, collected evaluations, and shared feedback.

Check the 4-H Projects Web site.

www.four-h.purdue.edu/projects

Click on “Wildlife” for wildlife project resources.

Then, click on “Wildlife” again for:

Exhibit guidelines

Scorecards

Record sheets

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The youth manuals are available at your County Extension Office or from
Purdue University Agricultural Communication Service, Media Distribution Center.
www.extension.purdue.edu/new

Order numbers are:

Level A	4-H 903
Level B	4-H 904
Level C	4-H 905
Level D:	4-H 906

Notes and Answers to Questions in Youth Manuals

Level A

This is the first book in the 4-H Wildlife series and is intended for youth in third and fourth grades. The authors hope to teach some basic, introductory wildlife terminology and concepts. The same twelve animals are used throughout the manual so youth concentrate on these species.

Section 1: Where You'll Find Us

Note to adult volunteer helper: There are no clear-cut answers for this activity. Wildlife biologists disagree — which is why there are different answers given here. Most animals are opportunists and may be seen in any of the habitats when looking for food, etc.

The answers given in the first chart match the habitat information given in the back of the manual (Information About Featured Species, pages 27-30).

The list given in the second table match the numbers the youth are given for clues and were taken from another reference.

This is sure to be confusing to the youth (and adults), so please be general about this and explain that although animals generally have a preferred habitat, they may be seen in other habitats.

Woodland

Cottontail rabbit
Coyote
Eastern garter snake
Eastern wild turkey
Opossum
Raccoon
Red fox
Red-tailed hawk
Striped skunk
White-tailed deer

Grassland

Bobwhite quail
Cottontail rabbit
Coyote
Eastern garter snake
Eastern wild turkey
Opossum
Red fox
Red-tailed hawk
Striped skunk
White-tailed deer

Wetland

Beaver
Cottontail rabbit
Eastern garter snake
Eastern wild turkey
Opossum
Raccoon
White-tailed deer

Woodland

Eastern garter snake
Opossum
Raccoon
White-tailed deer

Grassland

Bobwhite quail
Cottontail rabbit
Coyote
Eastern garter snake
Red fox
Red-tailed hawk
Skunk
White-tailed deer
Wild turkey

Wetland

Beaver
Cottontail rabbit
Opossum
Raccoon
White-tailed deer

Section 2: Animal Shadows

Youth should be able to identify the twelve featured species by looking at the body outlines.

Beginning on the left hand of page 6 the animals are:

F. Cottontail rabbit, **R.** Skunk, **O.** Red-tailed hawk, **M.** Garter snake, **S.** Beaver, **U.** Coyote, **N.** Red fox, **F.** Opossum, **H.** Eastern wild turkey, **I.** Raccoon, **N.** Bobwhite quail, and **E.** White-tailed deer.

The corresponding letters tell where shadows come from: FROM SUNSHINE.

Section 3: Herbivores, Omnivores, and Carnivores

This activity may be confusing since many animals will fall into more than one category. Furthermore, animals will occasionally eat foods in a non-typical category, particularly if food is scarce. The lines should help youth determine the correct categories.

Herbivores

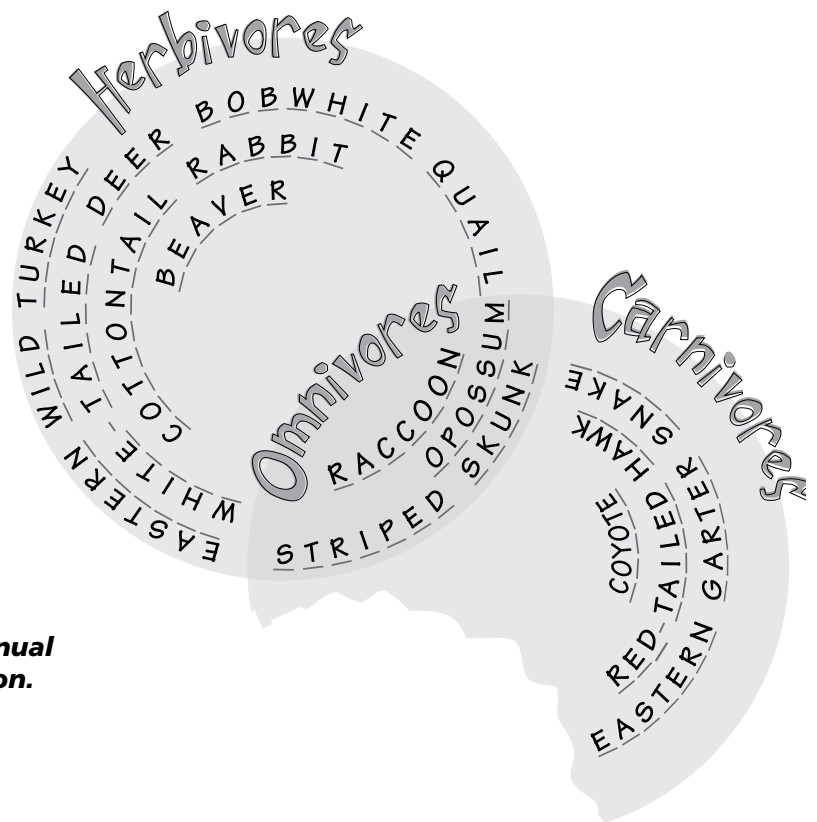
White-tailed deer, beaver, cottontail rabbit, eastern wild turkey, bobwhite quail

Omnivores

Raccoon, opossum, striped skunk

Carnivores

Coyote, eastern garter snake, red-tailed hawk



NOTE: No space was allowed in the youth manual for red fox. It belongs in the Omnivores section.

Section 4: What am I?

Across

4. rabbit
5. snake
7. beaver
8. herptile
9. raccoon
11. carrion
12. fox
15. omnivore
16. decomposers
19. mammal

Down

1. turkey
2. quail
3. deer
6. vertebrate
8. herbivore
10. marsupial
13. opossum
14. coyote
17. skunk
18. hawk



Section 5: Animals in their Home Range

Answers for Page 10:

Opossum: Fifteen to 40 acres

White-tailed deer: Generally less than one mile

Eastern wild turkey: Range is eastern and south-western United States (range is used rather than 'home range' for birds to indicate where they are likely to be found)

Bobwhite quail: Range is central and eastern United States (range is used rather than 'home range' for birds to indicate where they are likely to be found)

Striped skunk: Approximately 120–150 acres

Answers for Page 13:

Red fox: Generally one to two miles

Raccoon: One-half to two miles

Beaver: Generally less than 6 miles

Cottontail rabbit: Three to 20 acres

Coyote: Generally about 10 miles but may hunt up to 100 miles

Not pictured:

Eastern garter snake: Range is southern Canada to the Gulf of Mexico in the eastern and midwestern United States (no information available on 'home range')

Red-tailed hawk: Range is all the United States and most of Canada (range is used rather than 'home range' for birds to indicate where they are likely to be found)

Section 6: Animal Identification

Answers for page 12:

**Eastern
garter
snake**

**Wild
Turkey**

**Bobwhite
quail**

Coyote

Beaver

Answers for page 13:

**Cottontail
rabbit**

Opossum

Raccoon

**Red-
tailed
hawk**

**Striped
skunk**

**White-
tailed
Deer**

Red Fox

Section 7: How We Grow

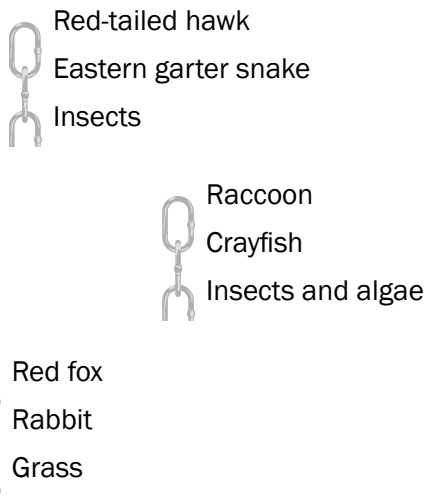
Thanks to D. VanDeman for all her help with this activity.

Matching animal pictures with the names of young animals.

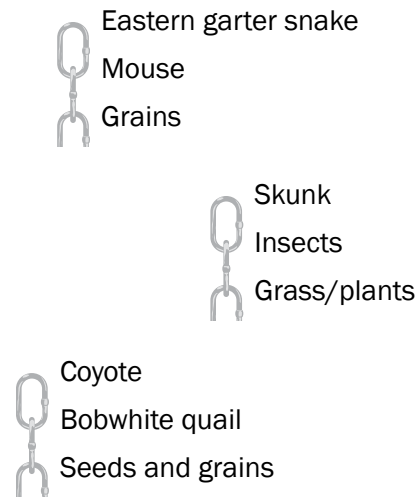
Animal picture	Name of young
Beaver	kit, kitten
Bobwhite quail	chick
Cottontail rabbit	bunny, kit, kitten
Coyote	pup
Eastern garter snake	neonate
Wild turkey	chick
Opossum	embryon, pouch young, joey (like kangaroos)
Raccoon	cub
Red fox	kit, cub, pup
Red-tailed hawk	eyas
Striped skunk	kit
White-tailed deer	fawn

Section 8: Food Chains

Answers for page 16:



Answers for page 19:



Note that food chains can have many links, not just three as it appears in this activity!

Sections 9-12 (pp. 18-24) have no right or wrong answers. These are data collection activities.

Sections 9 through 12

There are no right or wrong answers to these activities.

Sections 9-11 all involve watching birds and recording what they see. Birds are often the most rewarding wildlife for youngsters to watch because they are so beautiful and are accessible to youth in cities, suburbs, and rural areas. Section 12 involves observing how animal needs are met.

Section 9: Bird Feeder Observations

Section 10: Bird Bath Observations

Section 11: Feeding Hummingbirds

Section 12: Observation Skills

Note about bird feeding:

When youth decide to encourage birds to come to a specific place by putting feed there, they must also take the responsibility for keeping the birds safe. Cats can be a problem around any bird feeder. If you have a cat that poses a threat to the feeding birds ask an adult to help you think of ways to keep the birds safe (deterrents or move your bird feeder to a safer place).

You may also want to discuss the following questions about problems with placing bird feeders near a window:

Questions

Q1: Why might birds fly into your window near your bird feeder?

Q2: Can you think of some ways to reduce the chances that a bird will fly into a window near your feeder?

Q3: What can you do to help a bird that hits a window and is stunned (not killed)?

Answers:

A1: Birds sometimes will hit a window for one of three reasons: the angle of the window reflects an expansive scene such as a large lawn or woodland; the windows are aligned in a house so that it appears to birds that they can fly through the house; or birds may see their reflection and think it is a competing bird.

A2: You can reduce window accidents by placing a mobile, wind chime, or other reflection-breaking object in the window or by moving feeders to windows that have fewer reflections.

A3: If a bird hits a window and is only stunned, place it inside a cardboard box with a secure lid and take it indoors to a warm, quiet place. If the bird is going to survive, it will be walking around in the box within a few hours. This treatment gives the bird a chance to recover without the added danger of prowling cats or dogs. After recovery, release the bird near a dense thicket or hedge where it can find cover.

NOTE: There is a typographical error on page 28 of the Level A manual in "Information About Featured Species," in the first paragraph of the Opossum section. Baby opossums are called embryos (not embryos).

Activity 2: Flyways

Thanks to Dr. B. Dunning, Dept. Forestry and Natural Resources, Purdue University, for the information about flyways.

The flyway concept gives a general idea of the migration pathways of some birds. It is mostly associated with waterfowl. Some species use more than one flyway, especially those with very widely dispersed populations. The majority of the individuals that breed in a particular location (eastern Canada for instance) probably use a specific flyway (Atlantic, in that example). However, banding returns show some mixing.

There are mallards in all flyways, and different subspecies of Canada goose use different flyways. For instance, the Aleutian Canada goose uses the Pacific flyway. Typical species in each flyway are given below.

Answers to page 7 – Unscrambled words shown in bold:

Atlantic Flyway:

CANVASBACK
TUNDRA SWAN
WOOD DUCK

Other birds that use the Atlantic Flyway are:

American black duck

Brant (eastern races)

Snow goose (eastern Canada populations)

Mississippi Flyway:

LESSER SCAUP
NORTHERN PINTAIL (central Canada populations)
BLUE-WINGED TEAL

Other birds that use the Mississippi Flyway are:

Mallard

Wood duck

Pacific Flyway:

TUNDRA SWAN
TRUMPETER SWAN (Alaska populations)
AMERICAN WIGEON (western populations)

Other birds that use the Pacific Flyway are:

Northern pintail (western populations)

"Black" brant

Cinnamon teal

Central Flyway:

MALLARD
SNOW GOOSE (western arctic Canada populations)
RUDDY DUCK

Other birds that use the Central Flyway are:

Greater white-fronted goose

Northern shoveler

Section 3: Who's Eating Whom?

This activity is a game intended to teach youth about the interactions between producers and consumers and how chance may affect the life of an animal.

Section 4: Stump Your Family and Friends

This activity is intended to encourage youth to study five different animals in some depth. When looking for interesting questions to ask their friends, youth will need to know enough about each animal so the questions are not too easy. If the youth tally the answers, they can compare which questions were easier to answer and who knew the most about wildlife.

Answers to examples from page 8:

- The black bear was extirpated from Indiana Yes
- Monarch butterflies migrate to Mexico each winter True
- The Department of Natural Resources began reintroducing river otters in Indiana in 1996 Yes

Section 5: We Don't Live Here Anymore

Youth will learn the different degrees of wildlife endangerment and what animals are in the different categories. Clues are given to help the youth place the correct species in the different categories.

Extinct	Endangered	Threatened	Extirpated	Reintroduced	Returned	Introduced
Carolina parakeet	Gray bat	Badger	Black bear	River otter	Coyote	Ring-necked pheasant
Ivory billed woodpecker	Indiana bat	Franklin's ground squirrel	Red wolf	Wild turkey	Beaver	Sparrow
Heath hen	Bobcat		Porcupine	Bald eagle		Russian boar
Great auk			Wolverine	White-tailed deer		European starling
Passenger pigeon			Mountain lion			
Labrador duck			Elk			
			Bison			

NOTE: No clue was given in the youth manual for Labrador Duck (extinct).

Section 6: Write a Life History

This activity is intended to encourage youth to study a species of wildlife and learn as much as they can about it. Suggested resources are given.

Section 7: Population Growth

Animal populations are affected by many different factors. The population growth activities show youth how a species population may vary over a year.

Section 8: The Food Web

Consumers, producers, and decomposers, are all related through the food web. Food webs start with the sun energy that flows through each level of the web. Food webs also occur on and in water habitats.

Possible connections

(Note that the picture does not show all these items and youth will probably not make all the connections):

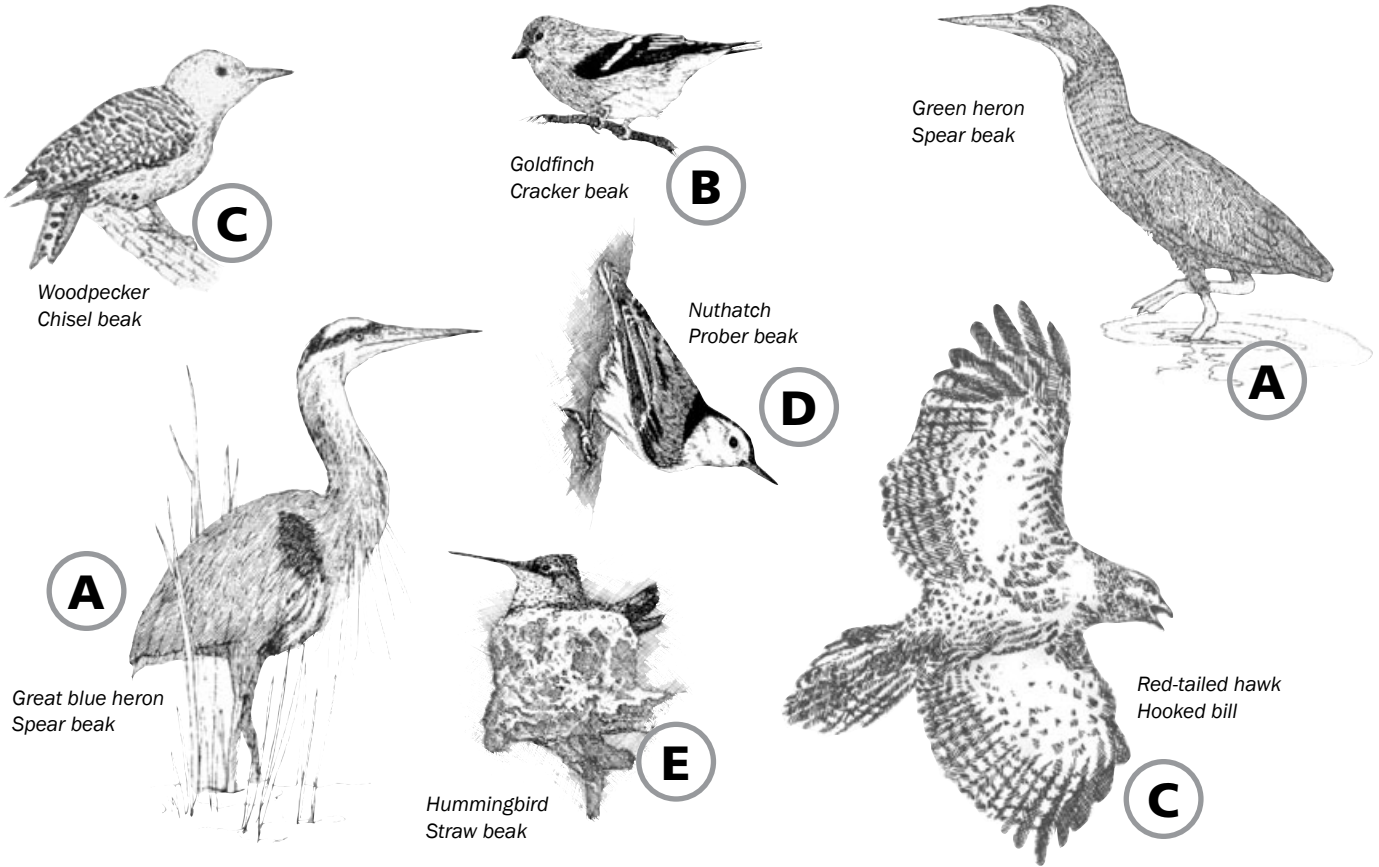
Cottontail rabbit	Bark, buds, forbs (greens), fruit, grain, grass, leaves, twigs, and seeds
Grasshopper	Grass and forbs
Mouse	Grains, fruit, refuse, stored food, and vegetables
Raccoon	Chickens, crayfish, eggs, fish, frogs, fruit, grains, mice, nuts, and snakes
Red fox	Birds, carrion, crayfish, eggs, frogs, fruit, insects, lizards, mice and other small mammals, salamanders, and snakes
Red-tailed hawk	Birds, carrion, crayfish, fish, frogs, insects, lizards, mice and other small mammals, salamanders, and snakes
White-tailed deer	Bark, buds, ferns, forbs (greens), fruit, grain, grass, leaves, lichens, mushrooms, nuts, and twigs

Aquatic Food Web:

Green plants	(Producers)
Herbivorous invertebrates	(Primary Consumers)
Non-fish carnivores	(Secondary Consumers)
Omnivorous fishes	(Secondary Consumers)
Herbivorous fishes	(Primary Consumers)
Carnivorous fishes	(Secondary Consumers)

Section 9: Beaks and Bills

Youth will learn that birds have evolved different beaks or bills that are appropriate for the type of food they eat.



Section 10: Bird Legs and Feet

Youth will learn that different bird feet have evolved for different uses.

Killdeer Wading	Wood Duck Swimming	Loon Swimming
Woodpecker Climbing	Merganser Swimming	Goldfinch Perching
Robin Perching	Red-tailed hawk Grasping	Owl Grasping

Section 11: Animal Legs and Feet

Activity 1 *Youth are to sketch the legs and feet of five of the animals listed. They may wish to refer to the pictures in the 4-H Wildlife, Level A manual.*

Activity 2 *Youth should be encouraged to use their imaginations to create an animal. When answering the questions about their animal they should think carefully about how the parts (feet, ears, etc.) could be used.*

Section 12: Animal Ears, Eyes, and Teeth

Activity 1 *Youth sketch the heads of four animals showing the ears, eyes, and teeth.*

Activity 2 *Youth should be encouraged to use their imaginations to create an animal. When answering the questions about their animal, they should think carefully about how the parts (eyes, ears, etc.) could be used.*

Section 13

Activity 1 **Wildlife in the Media:** *Youth are to report about a wildlife story that they have heard on the radio, seen on TV or found on the Internet. The story should have local tie. They are not to report about the rain forests or other far-away concerns. The story should at least be an Indiana story, if not a county story.*

Write a Life History: *This extra page was provided for youth wishing to write another animal life history. Refer to page 14 for guidance.*

Notes and Answers to Questions in Youth Manuals

Level C

Section 1: Your Wildlife Journal

All Level C youth are encouraged to begin keeping a wildlife journal. Keeping records of their observations and thoughts will help them remember things they have seen and how they felt about it. Wildlife notes can be fun to reread in future years and can provide a basis for comparisons of local changes.

Section 2: Signs of Wildlife Activity

Activity 1 *Youth set up an area to collect animal tracks. They should draw and identify the tracks that they see in their journal (or on a piece of paper that they keep in a wildlife folder).*

Activity 2 *Youth will look for signs of animals as they naturally occur, without setting up an area to collect tracks as they did in Activity 1. They may actually see some animals, especially birds, while they build nests, feed their young, or eat. Searching for signs of mammals is generally more challenging because we are not as familiar with the signs and generally we don't see mammals eating or feeding. Youth should draw and identify the wildlife signs that they see in their journal (or on a piece of paper that they keep in a wildlife folder).*

Activity 3 *Youth make plaster casts of animal tracks so that they have a permanent record of wildlife in their area by following the directions given (or finding similar directions). They may want to extend this activity and make rubber models from their plaster cast. The IN 4-H Geology I manual, 4-H 985, explains how to make molds, casts, and models of fossils (Activities 17 & 18).*

Section 3: Habitat

Habitat Requirements

Activity 1 *The figure on page 6 is part of the aerial plate shown on page 39. It is intended to help youth identify features from an aerial photograph. Some of the major features that should be identified are given below:*

- River
- Trees
- Farm fields
- Roads
- Airport (lower left corner)
- Residential areas

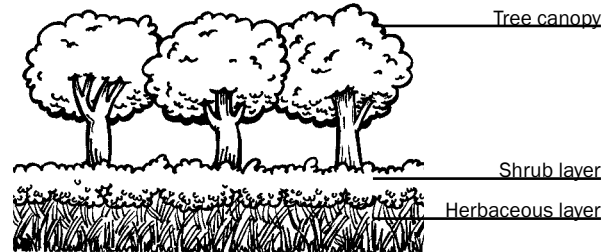
Activity 2 *Youth are to sketch a map of the area where they live. They may find it difficult to sketch a 'plan view' of the area they live in because they may never have seen property from an aerial view. This activity can help them start thinking about how different landmarks are related to each other. A county map or topographic map may help them get started. Your County Extension Office may be able to help locate local maps or if you have internet access you can check out either of the following sites: <http://www.topozone.com>, <http://terraserver.microsoft.com>.*

Plant Succession

Activity 3 Youth are to write an essay about plant succession in a local area. They do not need to write about a long-term succession, although they can if they are willing to do the necessary research. An easy successional change to observe is what happens to plowed ground that is left fallow. They can write about the stages in their project manual, journal, or make their own page.

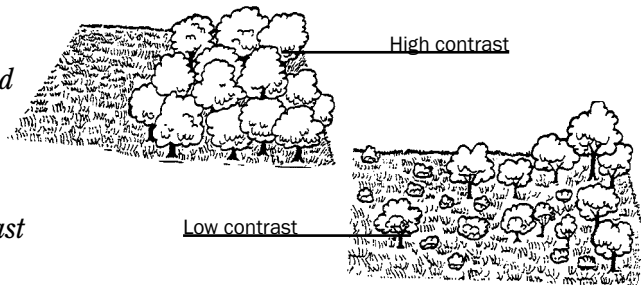
Layering

Activity 4 Youth are to consider how plants and wildlife use layering to reduce competition for the same (vertical) space.



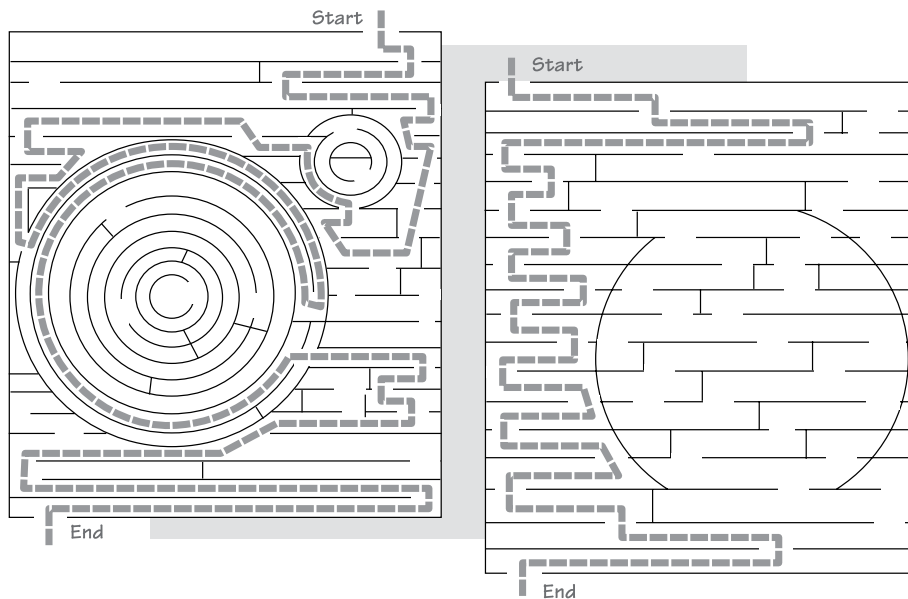
Edges and Contrast

Activity 5 Youth should begin to understand how edges and contrast affect wildlife. First they need to understand the difference between low contrast and high contrast. Then they can begin to learn which species prefer edges with low contrast and those that prefer edges with high contrast. Examples are shown to the right.



Corridors

Activity 6 This activity is intended to help youth understand how wildlife uses corridors to move safely between habitats (or to get to food and water). They may share this information with younger 4-Hers by making a maze and explaining how wildlife use corridors or they can draw a corridor-maze on paper.



Shelter

Activity 7 Youth are to make a brush shelter, which might be used by birds or small mammals. They should take time to observe the brush pile, watch for wildlife activity, and report it in their journal or wildlife folder.

Section 4: Wildlife by Numbers

Carrying Capacity

Activity 1a *This activity is intended to help youth understand how population numbers affect food supplies. Since this activity depends on the roll of a dice (to show how chance occurrences affect populations) it will probably vary each time it is done. An example trial is shown on page 15 of the manual. Youth do not need to keep a tally sheet but they may find one useful to keep track of the addition of new animals. They can copy the tally sheet from page 16 if they wish.*

Population Dynamics

Activity 1b *This is a repeat of the previous activity (1a) with the addition of removing animals (to simulate deaths in a population). Youth should be encouraged to try different methods to simulate the removal (death) of animals from the population and to think what these methods represent (i.e. death of new-borns, lack of food, loss of habitat, etc.).*

Activity 2 *Youth are asked to use the Scientific Method (see page 38 of the manual) in order to complete Activity 1 in a more formal manner. An example tally sheet is given on page 15 of the manual.*

Reproduction Rates

Activity 3 *Youth are to quantify animals by the two basic strategies for reproduction, high (r-selected) and low (k-selected). Understanding which general category a species is in gives youth an understanding of how this species maintains its population (under natural circumstances). Note that these categories are not clear-cut and wildlife biologist will disagree depending on where they place priorities in classification.*

Examples:

Animal	Selection	Animal	Selection
Beaver	k	Opossum	k
Bobwhite quail	r	Raccoon	k
Cottontail rabbit	r	Red fox	k
Coyote	k	Red-tailed hawk	k
Eastern garter snake	r	Striped skunk	k
Wild turkey	r	White-tailed deer	k

Critical Life Stages

Activity 4 *One of the major challenges of wildlife management is providing specific habitat during critical life stages. A habitat that meets all an animals needs but with a single, critical exception will probably not be used. Similarly if a species requires a particular breeding, nesting, or hunting habitat and that habitat is destroyed the species will likely be destroyed as well. Youth are to identify critical needs of different species in this activity in order to understand that there are sometimes very specific habitat requirements that may be required to support a species.*

Examples:

Species	Actions that threaten species
Sandhill cranes	The loss of the Jasper-Pulaski wetland would endanger this species because a high percentage of sandhill cranes use this wetland each fall.
Conner blue butterfly . .	The Conner blue butterfly uses lupines (found in sandy habitats in northern Indiana). The loss of these lupines would likely signal the loss of these butterflies in Indiana
Indiana bat	Entire colonies of the Indiana bat (endangered) often nest under the loose bark of a single tree. The removal of a tree that provides a nesting place for the bat would lead to the loss of the entire colony.
Wood rat	The wood rat (endangered) lives only in cliffs along the Ohio River in Indiana. The destruction of the cliffs would cause the loss of these animals.

Section 5: Animal Interactions

Activity 1 *The map of Indiana in 1864 shows only a small portion of the state is not forested (the dark, dry prairie portion in the northwest). Today only a small portion of the state is still forested — primarily in the southern part of the state. Youth are asked to write about how the forested areas in the state have changed and how that affects wildlife.*

Activity 2 *Youth are to discuss signs they see of human impact on wildlife. They may want to add how they feel about these changes and what they think will happen in the future.*

Activity 3 *Youth will need to do some research to complete this activity. They are asked to describe their county (from a wildlife habitat point-of-view) 100-150 years ago. They may be able to find valuable information in a county historical museum or in old newspapers. A local librarian may be able to put them in touch with local people that are interested in the county history.*

Activity 4 *This activity is very similar to Activity 2.*

Activity 5 *This activity will require some research, analysis, and writing. Youth should plan a topic outline before they begin their research so they know what to look for and are not overwhelmed by the amount of information available. The leader or a parent can be a big help with this. A suggested outline might include: Overview, Background, Introduction to the Issues, Development of the Topic, Conclusions, and References. (Remind youth to keep track of titles, authors, and publication dates.)*

Activity 6 *Youth are to interview someone in their area that works with wildlife. You may know of someone to suggest, you can ask the county Extension Educator for suggestions, or you can check the IDNR Internet site (see page 32 of the Level C Youth manual for the address) to find the closest wildlife biologist who may be willing to be interviewed.*

Section 6: Who Manages Indiana Wildlife?

- Activity 1** *Encourage 4-Hers to use their imagination to create a new Indiana environmental license plate. They can use any design and colors that they wish.*
- Activity 2** *This is a group activity that helps to explain why regulations are used to help control wildlife populations. This activity is a great one to you with younger children or youth.*
- Activity 3** *A diorama is a three-dimensional, scale model. Youth are to build a diorama of a particular habitat with at least five common Indiana species.*
- Activity 4** *Single species management is a method used to maximize the population of one animal by providing all of its needs. Youth are to study one of the animals listed and describe how they would manage for that species by giving the required information. They are also asked to consider how this management might affect other species in the ecosystem.*
- Activity 5** *Youth are to interview a wildlife professional to find all they can about one of the questions listed. They should take careful notes and write an essay about the topic they studied.*

Section 7: Careers

- Activity 6** *Youth are asked to find a wildlife job listing (preferably one that interests them) and write down the pertinent information (title, pay, qualifications, duties, and contact).*

The Scientific Method: *The Scientific Method is an organized way to study problems and to possibly find solutions. Remind youth, however, that one experiment does not prove, or disprove, a hypothesis. Your observations may support your hypothesis, but only when scientists have completed many, many trials do they begin to feel that they understand the topic they are studying.*

Notes and Answers to Questions in Youth Manuals

Level D

4-H 906

Section 1: Wildlife Management

Activity 1 *This activity, developing a wildlife management plan, is intended to be the culmination of the wildlife project. Youth first studied a few specific species (4-H Wildlife, Level A), basic wildlife concepts and species categorization (4-H Wildlife, Level B), and were introduced to some of the more complex interactions between species (4-H Wildlife, Level C). Writing a wildlife plan draws all this information together, and more, as youth are required to make choices in an attempt to maximize conditions for a number of species.*

*Youth should give the information requested on page 4 and refer to Appendices C and D to make sure they have thought about many options for management. Youth may work on their management plan for multiple years, but will need to evaluate their previous work, what worked and what didn't, and expand on their plan by adding land, species to be managed, or making corrections to the original plan. The online publication, *Developing a Wildlife Management Plan (4-H 991-W)* is available at: www.four-h.purdue.edu/whep.*

Activity 2 *Youth are to use the information that they have learned about wildlife to create, evaluate, or improve an outdoor lab at a school. A local elementary school may already have such a lab or be interested in developing one. Outdoor labs are excellent tools for helping students learn environmental stewardship.*

Activity 3 *The Wildlife Habitat Evaluation Contest (Career Development Event) offers youth the opportunity to work with others to learn about wildlife management and compete against teams from across Indiana. Indiana contest activities are: Evaluating Aerial Photographs, Identifying Wildlife Foods, and Writing a Wildlife Management Plan. The top 4-H team earns a trip to the National Wildlife Habitat Evaluation Contest. Contact your County Extension Youth Educator for more information.*

Activity 4 *Youth (just like adults) can learn a great deal by teaching others. This activity is intended to encourage the interaction of older 4-Hers with younger youth. They can set up a contest for a 4-H club meeting, field days, Ag Days, or an action demonstration at the fair. They can use any of the contest activities that they feel comfortable with and can get resources for. Some County Extension Offices will have access to local aerial photographs that can be used for teaching and the contest.*

Youth might need to do a teaching section (for example, explain about wildlife foods and what different species eat) before asking the younger youth to try to identify wildlife foods. Score sheets and basic information about the contest are available at the website: <http://www.four-h.purdue.edu/wildlife/whep>

Section 2: Careers

Activity 1 *Youth should think about what kinds of experience and expertise are needed for wildlife jobs, from employers point-of-view. Then they are asked to fill out the application that they developed and write a cover letter to accompany the application.*

- Activity 2** Youth will need to research job listings to get an idea of what types of jobs are available in the area of wildlife management. They are then asked to think about what type of job they would like to have a different points in their lives so that they will begin to understand the importance of career planning.
- Activity 3** As in the previous activity, youth will need to research job listings to get an idea of what types of jobs are available in the area of wildlife management. They are asked to find specific information for three different jobs. They can copy the page in the manual (pg. 8) or make their own.
- Activity 4** Youth are to interview a person working with wildlife. This is similar to the activity from Level C (Section 6, Activity 5) but with the intention that the interview will be much more focused towards helping the youth decide if wildlife is a career area that they wish to pursue.
- Activity 5** Youth can learn even more about what a career in wildlife might be like by 'job shadowing,' following someone who works in their area of interest for an extended period (day or days). If youth can find an adult willing to work with them they may be able to find out that a career in wildlife is their passion - or absolutely not for them. They may also find that they need to do more research into other areas of wildlife studies that they are interested in. In any case, it is important to have as much information as possible before they spend time and money on post-secondary education.

Section 3: Current Wildlife Topics

- Activity 1** Youth are to learn all that they can about a specific wildlife issue. They may choose a subject that they are particularly interested in, take one of the topics listed on page 10 of the manual, or look in newspapers and magazines for topics. They are expected to present the issue in an unbiased manner and to explore the different viewpoints presented. The outline in Appendix E (page 28) can be used to help with the case study.
- Activity 2** The focus of this activity is for youth to consider urban wildlife issues. They are asked to find answers to specific questions. They may also wish to write a case study (as described in Activity 1) about an urban wildlife issue.
- Activity 3** Youth (just like adults) can learn a great deal by teaching others. This activity is intended to encourage the interaction of older 4-Hers with younger youth. A lesson plan outline is given. Leaders should try to attend the teaching activity since the high school youth would also benefit from positive, constructive feedback from their 4-H Leader about the presentation.
- Activity 4** Youth will research about a specific Indiana extirpated wildlife species and write a species history. The manual did not specify that the species history needs to be the history of the species in Indiana, but youth may want to focus on Indiana to keep this topic manageable.
- Activity 5** Poaching can be a big problem for wildlife managers because wildlife populations are affected by illegal means (so no data is available). Poaching affects both endangered and non-endangered species. Youth are to study this problem and to address specific questions.

Section 4: Resources

The resource section may be useful to youth working on any of the activities in the Level D manual. Internet sites and some publications are listed. If youth do not have Internet access at home or school their county Extension office may be able to help them locate a place they can view some of the sites and/or may print out some of the pages listed so the 4-H member can have them for reference.

Poster Exhibit Guidelines and Suggestions

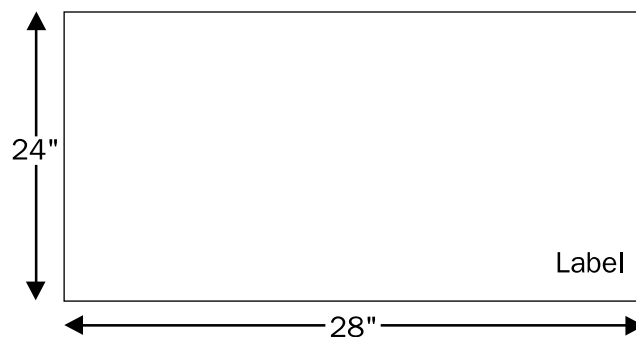
Poster Exhibit Guidelines

- Display a poster relating to something you learned from your project manual.
- You must choose a new topic each year. Choose a creative title for your poster that gives viewers an idea of your topic. Include a name label in the lower right hand corner.

Note the suggestions for creating a great poster, below.

The following suggestions are from Roger Sherer, Extension Educator, Wells County:

1. **Poster board.** Use white when required and experiment with other colors when not required. All posters must be 22" x 28" unless otherwise specified.
2. **Mounting adhesives.** The best is rubber cement (it leaves no marks and won't wrinkle paper). White glue should be used only in cases where wrinkling or damage will not occur.
3. **Colored pencils.** The best are soft leaded – they are easy to color and blend easily – strokes will not show if handled properly – hard leaded pencils are less expensive but are more difficult to use. (Soft leaded pencils can be purchased at art stores.)
4. **Labels.** Plain 3" x 5" file cards (cut to the proper size) work exceptionally well – they have a smooth finish, are sturdy enough for gluing and removing smudges.
5. **Stiff backing.** Any material that will keep the poster from bending forward will work. Some examples are: very stiff cardboard, plywood (this can make the poster very heavy); and Masonite (1/8" thick found to work well and could be used year after year). If you can find foam core board in the correct size, it can take the place of poster and backing.
6. **Acetate or other clear plastic covering.** This is required for most posters to keep them clean before judging and keep fair-goers from touching them. Coverings generally come in various thickness (3, 5, 7¹/₂, and 10 mil) in rolls or sheets.
7. **Plastic tape.** This is not necessary, but it makes attaching poster board to the stiff backing easy. Tape is available in many colors, cloth or plastic, and a variety of widths. The 1" wide tape can give the poster a border. Available at discount stores.
8. **Lettering.** Stencils, self-adhesive letters, or press-type letters may be purchased at discount or art stores. Some youth prefer to type their labels and title using a computer.
9. **County ID labels.** An identification label should be placed at the lower right hand corner of poster projects. Labels are available from your leader or at the County Extension Office. The label should include township, article, project, year, and your name.
10. Your poster should read like a dollar bill:



Poster Exhibit Guidelines and Suggestions, continued

The following suggestions are from Amy Nierman, Extension Educator, Washington County and Angela Apple, who shared her ideas at the 1998 Indiana State Leader's Conference:

A good poster

- Attracts attention
- Is simple and clear
- Interests someone in your subject or some aspect of your subject

When forming ideas for your poster

- Know the project requirements
- Read the manual – look for ideas
- Brainstorm ideas and make a list
- Think of titles with alliteration (repeating a sound in words)
- Look at other posters for ideas – but don't copy

Tips to remember

- Don't use too many words
- Use a combination of illustrations and words
- Be as neat as you can
- Cut evenly, cement carefully, blend colors when using crayons or colored pencils
- Leave white space on the poster
- Make sure the poster is balanced
- Choose colors carefully. Note the following general guidelines:
 - » Black tends to be more formal, neat, rich, strong
 - » Blue is cool, melancholy, or depressed
 - » Purple is considered royal, rich, imperial
 - » Red stands for love as well as anger and hatred
 - » Orange is generally used for Halloween and is festive
 - » Yellow tends to be warm, light, or ripe
 - » Green is fresh, young, or growing
 - » White means pure, clean, and neat

Things you should never do

- Make a vertical poster
- Use plastic food wrap to cover
- Use staples, tacks, or tape
- Use fluorescent posters
- Create a poster that is all words or a poster that is all pictures

Steps to follow when making a poster:

1. Read your project manual
2. Read your county project requirements
3. Decide on information to include on the poster
4. Sketch out your idea
5. Collect supplies
6. Mark guidelines for lettering and pictures (lightly)
7. Layout letters, pictures, etc. on the poster.
8. Cement (glue, etc.)
9. Clean up the poster so it is neat. Erase any guidelines that are showing. Remove excess rubber cement or glue.
10. Glue poster to backing
11. Cover poster with plastic
12. Take your poster to the fair on the right day and time

You may also want to read 4-H 689 4-H Communication Activities for more suggestions.

Action Demonstration Guidelines

What is an action demonstration (action demo)?

An action demo is a fun way to share what you have learned in your 4-H project with others. It's a kind of "show and tell" but with more action. Action means that you need to get the audience involved in what you are doing, not just showing them.

An action demo is not like a regular demonstration where the audience sits and listens to a prepared talk. An action demo lets the audience get involved.

Action demonstrations can be given anywhere there are a lot of people, such as a county or state fair, shopping mall, street fair, or any 4-H event. Your job as a demonstrator is to interest the audience in your topic so that they stop and learn something new or try their hand at what you are doing.

How do I choose a topic for my action demo?

An action demo can be on almost any subject. The topic should be something that you enjoy and are knowledgeable about. Consider the following questions when choosing a topic:

- Can you complete the action demonstration in 3 to 5 minutes?
- Can it easily be repeated over and over again to fill the assigned time?
- Is your action demo showing something that would interest the general public?
- Is there a good way to involve your audience in your action demo ("hands-on" or answering questions)?
- Can the supplies for the "hands-on" section be used over and over again, or will they need to be replaced? (Remember – if the materials must be replaced, it will cost more to do the demonstration.)

How can I get the audience involved?

The first thing you need to do is be enthusiastic and attract people's attention as they walk by your table. You might have a colorful tablecloth or poster to spark their interest. You might ask them a question, like: "Would you like to play this game?" or "Have you ever made pretzels? Would you like to try?" The best way to attract their attention is having people around your table doing something. People love to do hands-on activities, so once you get a few people at your table, they will attract others.

Involve your audience by having them:

- Do what you are doing.
- Do a "hands-on" section.
- Judge the quality of various items.
- Play a game.
- Answer questions.

Remember – the key to a good action demo is getting your audience involved.

How long does my action demo have to be?

Action demos may vary in length, but the demonstration itself should last only 3-5 minutes because most people do not like to stop to watch very long presentations. Be prepared to repeat your action demo over and over again with different people during your assigned time.

Checklist for a Good Action Demo

Topic	Yes	No
Was the topic interesting to the general public; causing them to stop, watch, or participate?		
Did the topic stimulate questions from the audience?		
Was the topic of suitable length?		
Did the topic include something “hands-on” for the audience to do?		
Organizing the Content	Yes	No
Was the topic organized into short “show and tell” segments, which are done repeatedly?		
Were segments presented in logical order?		
Were segments explained so that the audience understands “why?”		
Was it evident that the 4-Her was knowledgeable about the subject and could answer questions?		
Did visuals, pictures, posters, or actual objects clarify the important ideas?		
Presenting the Demonstration	Yes	No
Did the 4-Her seem enthusiastic?		
Did the 4-Her encourage the audience to become involved in the demonstration?		
Did the 4-Her speak directly to the audience?		
Did the 4-Her show evidence of practice and experience?		
Did the 4-Her show that she/he enjoys talking to the audience?		
Did the 4-Her show enthusiasm, friendliness, and a business-like manner?		
Did the 4-Her tell about what they learned through this 4-H project?		

Comments:

Appendix A: Habitat Preferences for Selected Animals

Adapted from the Wildlife Habitat Evaluation booklet

Providing vegetation (for food and cover) and water are the basis of habitat management. Every acre of soil and water has a definite sequence in plant cover that occurs over time. The different stages of this sequence are called **Successional Stages**. We can usually predict the type of vegetation that will occur in an area at each stage until a final or “climax” stage is reached. When not disturbed, the climax vegetation is stable and will remain the same for long periods of time. If the soil or water level is disturbed (by humans or natural forces) succession may be set back and the cycle will continue forward from the new starting point.

In general, the stages of plant succession that occur in the Eastern Deciduous Forest are as follows:

- Successional Stages**
1. Bare ground
 2. Annual forbs and grasses
 3. Perennial forbs and grasses
 4. Shrubs
 5. Young woodland
 6. Mature woodland

Some wildlife need large unbroken areas in a certain successional stage to provide some or all of their habitat requirements. The area between two successional stages is called edge. A balance of edge with blocks of vegetation in one successional stage is desirable. Areas with unbroken blocks that are 10 to 40 acres in size are considered to have a good balance of edge and unbroken blocks. In large forests, blocks of up to 100 acres may be desirable.

American kestrel — Stages 2 and 3 of plant succession for feeding, and stages 4, 5, and 6 for nesting. Use large open areas where adequate nesting sites are available. Kestrels obtain necessary water from diet and do not need water for drinking.

American robin — Found in urban settings with large open areas and nearby trees and shrubs. Parks, golf courses, and lawns in residential areas are favorites. Robins require water daily in warm seasons. They can obtain water from yard irrigation, rain filled gutters, low-lying areas, ponds, etc.

Beaver — Riparian areas in stages 4 and 5 of plant succession, and wetlands that have permanent water with a variety of shrubs and trees adjacent to the water. Water should be at least 5 feet deep to allow free movement under ice in winter. (In some areas beavers are a nuisance. They can cut down trees that people want to save, and they can dam up ditches and streams in undesirable places.)

Black-capped chickadee — Stages 4, 5, and 6 of plant succession. Chickadees obtain necessary water from snow and surface water, usually in sufficient supply.

Bluegill — Ponds, lakes, and slow moving rivers. Require an adequate quantity and quality of water.

Brown thrasher — Use stages 3 and 4 of plant succession. Prefer dense, woody vegetation associate with shrub thickets, hedgerows, shelterbelts, forest edges, riparian areas, and young forests. Water requirements are unknown.

Bullfrog — Inhabit permanent bodies of standing or slow-moving water. Prefer shorelines with dense vegetation, adjacent to shallow open water areas dominated by floating and submerged aquatic vegetation. All habitat requirements are often found in and around a single pond. Need stable water levels for hibernation and egg development.

Butterflies — In urban areas are found in gardens, yards, and parks planted with shrubs and flowers that attract butterflies. Often lay eggs on a specific kind of plant.

Appendix A, continued

Canada goose — (breeding habitat) Nest and rear young in or near stage 2 wetlands interspersed with some stage 3 wetlands. Wetlands containing 20 percent tall emergent aquatic vegetation and 80 percent open water are usually good habitat. Also frequent riparian areas adjacent to rivers.

Eastern bluebird — Stages 2 and 3 of plant succession interspersed with stages 5 and 6 vegetation. Obtain necessary water from diet, but will use other water sources when available.

Eastern cottontail — Use stages 3 and 4 of plant succession. Ideally, habitat components are made up of 1/3 grassland, 1/3 cropland, and 1/3 shrub cover all interspersed together. Also use parks, golf courses, and stream corridors in urban areas. Obtain necessary water from diet.

Eastern fox squirrel — Stages 5 and 6 of plant succession with interspersed small openings (stages 2 and 3 of plant succession). Riparian areas are important in the Midwest. They also use urban areas with lots of trees. In warm seasons require water daily.

Eastern gray squirrel — Deciduous woodland in stages 5 and 6 of plant succession. In warm seasons require water daily.

European starling — Prefer older urban residential areas with large trees and shrubs. Most urban areas that have large trees or old buildings with holes and cavities are used. Require water during warm seasons.

Note: Starlings were introduced to the United States from Europe and are considered pests since they are numerous and often out-compete native birds for available habitat. In such situations the management objectives may be to reduce the quality and quantity of available habitat. However, in the inner cities where there are few wildlife species, you might manage for starlings as the only wildlife that exists.

Frogs — Weeds and aquatic vegetation on the edges of ponds, lakes, and slow moving streams. Mud bottoms are needed so frogs can bury themselves for hibernation during the winter. Need water to hide. Many kinds of frogs will dry up and die if their skin is not kept moist.

Hairy woodpecker — Stages 4, 5, and 6 of plant succession are best habitat. Will use stage 3 of plant succession if areas with mature trees are nearby. Also use wooded urban and riparian areas. Water is not a limiting concern, as they probably obtain necessary water from diet.

House finch — Found in a wide variety of urban areas that have trees, shrubs, and some open areas. Not as abundant in inner cities. Require water daily in warm seasons.

House sparrow — This introduced species is found in a wide variety of urban categories that have buildings, trees, shrubs and some open areas. Require water daily in warm seasons. (Note: House sparrows compete with native house finches and other birds for habitat requirements. They can become a nuisance, and management objectives may be to reduce the quality and quantity of available habitat.)

House wren — In urban setting, prefer older residential areas with large shrubs and trees. Wrens obtain necessary water from diet.

Hummingbird — Found in or near mixed woodlands and forests rich in flowering plants. Prefer stages 5 and 6 of plant succession mixed with areas in stages 2, 3, and 4. In urban setting, prefer areas with large trees and nearby flowering plants. Hummingbirds obtain necessary water from diet.

Largemouth bass — Use ponds, lakes, and slow moving rivers. Require an adequate quantity and quality of water.

Appendix A, continued

Mallard — (Breeding Habitat) Nest in tall forb and grass vegetation, or in shrubby cover. Need open water (stage 2 of wetland succession) with associated emergent aquatic vegetation (stage 3) to raise young. Need open water areas mixed with aquatic emergent vegetation through the breeding season. (Winter Habitat) Wetlands with open water, harvested grain crops, and riparian areas with open water. Need water for resting and shallow water where aquatic vegetation can grow.

Mourning dove — Stages 2 and 3 of plant succession with some shrubs and trees nearby. Often use agriculture areas for feeding. Require water daily. Prefer shorelines and banks without vegetation.

Northern bobwhite — Stages 2, 3, and 4 of plant succession interspersed. Ideally, habitat components are made up of 1/4 grassland, 1/3 cropland, 1/8 shrub cover, and 1/8 woodland. Require water daily in warm seasons.

Ovenbird — Associated with stages 5 and 6 of plant succession. Lives on or very near the ground. Usually obtain necessary water from diet, but will use other water sources when available.

Raccoon — Most abundant near water, riparian areas and lands adjacent to wetlands. Also found in urban areas. Prefer areas interspersed with different successional stages. Riparian areas in stages 5 and 6 of plant succession are ideal. Require water frequently during warm seasons.

Rainbow trout — Need cold-water lakes, ponds, and fast moving streams, and rivers. Rainbow trout need high quality water.

Red-tailed hawk — Use open areas (stages 2 and 3 of plant succession) interspersed with trees (stages 4, 5, and 6 of plant succession). Single trees in open areas are often utilized. Obtain necessary water from diet.

Red-winged blackbird — (Breeding Habitat) Stage 3 wetlands dominated with emergent aquatic vegetation. Frequent areas associated with water. (Note: This species can be a pest in agricultural areas where they may damage crops. In such situations management objectives may be to reduce the quality and quantity of habitat. It is often more appropriate to manage for this species in urban wetlands and other areas where crop damage is not common.)

Ring-necked pheasant — Stage 2 and 3 of plant succession interspersed with croplands used for growing grain crops. Use in warm seasons when available. Usually is not a limiting factor.

Rock dove (pigeon) — In urban areas, prefer large buildings and nearby parks and open areas. Require water frequently in warm seasons. Usually can fly far enough to find water. (Note: In some areas rock doves become so numerous that they are considered pests. In such situations the management objectives may be to reduce the quality and quantity of available habitat. However, in the inner cities where there are few wildlife species, management may include providing for the only wildlife that exists.)

Ruffed grouse — Stages 4, 5, and 6 and plant succession. Optimum habitat includes all three stages interspersed in close proximity to each other. Obtain necessary water from diet.

Turkey — One-half to 3/4 of range in stages 5 and 6 of plant succession interspersed with areas in stages 3 and 4 of plant succession. Require water frequently. Usually will not travel over 1/4 to 1/2 mile for water.

White-tailed deer — Stages 3, 4, and 5 of plant succession all interspersed together. Drink water when it is available, but can go for long periods without water.

Wood duck — Stage 5 woodlands flooded with water, and open water adjacent to stage 5 and 6 woodlands. Or, stage 3 and 4 wetlands dominated by trees adjacent to stage 2 wetlands.