

WILDLIFE HABITAT EDUCATION PROGRAM ARKANSAS



4-H LEADER GUIDE



Agencies and organizations participating in this program include:

University of Arkansas Cooperative Extension Service
Arkansas Game and Fish Commission
U.S. Forest Service

Sponsors:

Arkansas Chapter of The Wildlife Society
Arkansas Department of Parks and Tourism
Arkansas Forest Resources Center
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Background and Introduction

The Arkansas 4-H Wildlife Habitat Education Program is an event designed to teach youth about the fundamentals of wildlife management and to develop their life skills. Although the contest portion is competitive, the primary function of this program is education. Natural resources management is learned through participation in the contest and associated programs. Additional benefits come from the development of leadership capabilities and meeting peers and professionals from Arkansas and other states.



In this program, youth will learn that management for wildlife involves management of wildlife habitat and providing for the needs of wildlife. The information provided covers wildlife habitat management concepts for both urban and rural settings and prepares participants for judging events. Participants will increase their knowledge of wildlife management and will develop skills in applying what they've learned. The program addresses these concepts with the six events below:

1. Identify common wildlife species.
2. Identify common wildlife foods.
3. Interpret wildlife habitat from aerial photographs.
4. Prescribe wildlife management practices.
5. Develop a rural wildlife management plan.
6. Develop an urban wildlife management plan.

The contents and activities in the handbook are arranged in the order used by wildlife biologists when deciding how to manage areas for specific wildlife species. Before making recommendations on habitat management, participants should understand the life requirements of the specific animal(s) for which the area is being managed. The *Concepts*, *Wildlife Species*, and *Foods* sections of the participant manual can help participants learn the life requirements of some wildlife.

Next, the biologist must be able to inventory and evaluate the present condition of the habitat and explain the condition to landowners and other interested parties. The aerial photography section is designed to develop understanding of this inventory and evaluation process.

Once the inventory is complete, the biologist decides which management practices can be applied to improve the habitat for specified wildlife species. The on-site management recommendation activity gives the participant some experience with this decision-making effort.

Finally, so others can clearly understand the proposed management decisions, the wildlife biologist must explain the decisions on paper and locate them on aerial photos or some other type of wildlife map. The urban and rural management plan activities encourage participants to explain and illustrate their decisions so others can understand and carry out the recommendations.

Your Role as a Leader

Thank you for agreeing to be a partner with youth who are interested in learning more about wildlife and habitat management. As a leader, you may be working with young people anywhere from 9 to 19 years old. It is important to consider the general characteristics of those in your group, as well as work with them to plan your sessions.

As a leader you will work with your group to plan, arrange and evaluate the learning experiences. Let's explore some of the characteristics of age groups you may be working with, as well as what is meant by: (1) planning, (2) arranging for learning and (3) evaluation.

Youth Learning Characteristics*

Ages 9-11:

Active is the work for this group! Activities should encourage physical involvement, because 9-to-11 year-olds are anything but still and quiet.

Hands-on involvement with objects is helpful. Children need many opportunities to share their thoughts and reactions with others. They are still fairly concrete thinkers and will be more interested if they are both seeing and doing things. Children at this stage are beginning to think logically and symbolically, and are beginning to understand abstract ideas. As they consider an idea, they think it is either right or wrong, great or disgusting, fun or boring. There is very little middle ground.

Your role as the leader is crucial at this stage. These children look to adults for approval and follow rules primarily out of respect for adults. Individual evaluation by adults is preferred over group competition, where only one can be the best. Youngsters want to know how much they have improved and what they should do to be better next time. Encouragement from an adult can have remarkable results.

This is the age of "joiners." They like to be in organized groups of others similar to themselves. They are generally concerned with immediate self-reward. The satisfaction of completing a project often comes from pleasing you, the leader, or the parent, rather than from the value of the activity itself.

Nine-, 10-, and 11-year-olds have a strong need to feel accepted and worthwhile. School and other pressures become demanding. Successes should continue to be emphasized. Comparison with the success of others is difficult for these children. It erodes self-confidence. Instead of comparing children with each other, build positive self-concepts by comparing present to past performances for the individual.

**The information on age characteristics was taken from the North Central Regional 4-H Skills For Life, Animal Science Series developed by the North Central Region and coordinated by Thomas D. Zurcher.*

Ages 12-14:

This is a time of development variety among peers. Growth spurts that begin with adolescence occur over a wide range of ages, with girls maturing before boys. These rapid changes in physical appearance might make teens uncomfortable. Slower-developing teens may also be uneasy about the lack of changes.

Young teens move from concrete to abstract thinking. Playing with ideas is as much fun as playing sports. Ready-made solutions from adults are often rejected in favor of finding their own solutions. Leaders who provide supervision without interference will do well with age group.

Small groups provide the best opportunity for young teens to test ideas. Justice and equality become important issues. Evaluation or scoring their work is now viewed in terms of what is fair, as well as a reflection of the self-worth of the individual. The opinions of peers become more important than opinions of parents or other adults. Group experiences provide opportunities for social acceptance.

As puberty approaches, emotions begin a roller coaster ride. Young teens test values and seek adults who are accepting and willing to talk about values and morals. This period seems to present the biggest challenge to a young person's self-concept. These youngsters face so many changes that they hardly know who they are. Adults can help by providing self-knowledge and self-discovery activities.

Continue to avoid comparing young people with each other, being careful not to embarrass them. They want to be part of something that is important and that provides an opportunity to develop responsibility.

Ages 15-18:

Most teens of this age know their own special abilities and talents. In most cases they have adjusted to the post-puberty body changes by now.

Mid-teens are starting to think about the future and make realistic plans. Their vocational goals influence the activities they select. Teens set goals based on feelings of personal needs and priorities. Any goals set by others are generally rejected. As they master abstract thinking, they can imagine new things in ways that sometimes challenges adults.

These teens can generally initiate and carry out their own tasks without supervision. They can be a great help to young members of the group in planning and completing the younger person's activities, and should be encouraged to take on this role. As a leader, you can be helpful by arranging new experiences in areas of interest to teens, but you must be sure to allow for plenty of input from them. You should be an advisor/coach for independent workers.

Youth in this age group tend to be wrapped up in themselves. Relationship skills are usually more developed. Dating increases. Acceptance by members of the opposite sex is of higher importance.

Planning

For you, as a project leader, planning means becoming familiar with the wildlife habitat project. You can do this by reading the information in this leader guide and reviewing the Arkansas 4-H Contest Handbook. Additional resources are listed in the back of this guide. Consider other sources of information in your community, such as your local library or Cooperative Extension Office. Local experts including naturalists, conservation officers, habitat managers, wildlife biologists, and others also may help.

Get to know your group members. The more you know about their past experiences, needs and interests,, the better able you will be to help them plan meaningful learning activities. Involve them in decision making. For example, ask them to identify locations to do field experiences (give them parameters before they start) and then let them choose the sites and make arrangements and landowners if it is private property.

Arranging for Learning

We encourage you to use an “experiential” or “doing and thinking” learning process. This process can be done in three steps:

1. Involve the youth in an activity (doing);
2. Encourage the youth to consider (or reflect on) what happened and what was important; then
3. Provide an opportunity for them to see what they learned.

The following describes each step of the learning process in more detail.

STEP 1: DOING

Begin with a concrete experience. This can be an individual or group activity, but it involves all youth using one or more of their senses. Some examples of *doing* include: comparing aerial maps, collecting food samples for a specific animal, judging habitats for a single species or building a feeder for a specific bird. You’ll find many additional “*doing*” ideas listed in this guide. *A special caution: if the process stops at the “doing” stage, learning is left to chance.*

STEP 2: REFLECTING

Youth have experienced an activity and are now ready to share what they saw, heard, did and felt during the activity. This step involves finding out what happened with individuals at both the feeling and thinking level. Some ways to encourage reflection include: ask them to share reactions and observations, have them make a list of the steps that were involved or identify the most important points. For example, if the *doing* phase involved judging habitats for a single species, you may ask participants to share a list of things they considered in making their placing.

STEP 3: USING

The key questions here are “so what?” and “now what?” This step involves helping youth to (1) generalize (relate their new knowledge to the “real world”), and (2) apply (plan how to use) what they have discovered. Encourage them to think about how they will use what they have learned in making and developing a habitat plan and how it applies to other parts of their life. Using the judging example, you will want them to think about how they can use what they experienced as they evaluated different habitats for the same species or as they changed species. In addition, think about how their experience might apply to totally unrelated decisions at home, at school, and in the community. Ultimately, we want participants to apply what they have learned. Individuals are more likely to implement their planned applications if they share them with others.

You can use the experiential learning process in almost any teaching/learning situation. The important point is to help participants go beyond the *doing* experience to reflecting and using. Each of the learning activities in this guide includes the three steps. You no doubt will want to create learning activities of your own. As you do this, consider how you’ll help group members in the reflecting and using steps.

STEP 4: EVALUATING

Evaluation is an important part of the learning experience. Encourage youth to reflect on his or her their own progress and accomplishments. This is part of self-evaluation. Besides self-evaluation, they may wish to have feedback from you, peers or a contest judge. Provide them with feedback about strengths of their work to reinforce the continued use of knowledge and skills they have mastered. Also provide participants feedback about possible areas of improvement. Don’t overwhelm them, but instead pick out one or two places where improvement might be warranted. Most importantly, help them think about ways to improve the areas you pointed out.

For those who choose to participate in a contest, take time to visit with them about the judge’s comments. Offer to help them learn how to make the improvements the judge suggested. As a leader, you can reinforce the progress they have during the year and help them see the contest results as only one indicator other progress.

Besides helping youth in the evaluation process, you will want to evaluate your own experience as a leader. Take time to reflect on what you did. Consider what you have learned about the youth and how you can use the information to be more effective.

Learning Activity 1: Connections between Wildlife and Habitat

Learners will understand that wildlife have four basic habitat requirements: food, water, space and cover or shelter. They will also realize that each species has its own set of specific requirements.

Doing

1. Ask the group to come up with a definition of habitat.
2. Point out that habitat must help meet the animal's needs for food, water, space and shelter (cover). Ask group members to give examples of how their personal needs for food, water, space and shelter are met. (Encourage them to think about their homes, schools, parks or public spaces they might use, how they are designed with their needs in mind.)



3. Assign each group member a wildlife species that is common to your area, preferably using species found in the Arkansas WHEP handbook. Let them select a species or draw one out of a hat. Each group member can use the handbook to determine the food, water, space and shelter (cover) needs of the animal they have been assigned.

4. Using the list of habitat needs, work in groups of three to create a Venn diagram to show similarities and differences between three wildlife species (Figure 1, page 7). Each group will need a sheet of paper and pencils or color markers.

Groups draw three overlapping circles on their paper. In the area where the circles overlap, write items that appear on all three lists. Some habitat requirements will only appear on two lists. These should be placed in the area common to those two species. Items which only meet the needs of one species go in the outer circles.

Reflecting

Ask each group to share one or two interesting things about their Venn diagram to the large group. Explain whether it is possible for one area to meet the habitat requirements of one, two, or all three wildlife species in their diagram.

Summarizing

Remind participants: *Wildlife has four basic habitat requirements: food, water, space and cover and shelter. Each species has its own set of specific requirements.*

On Their Own

Ask each youth to select an animal from their contest handbook that is found in their neighborhood. Have them figure out why the animal is found in their neighborhood. (The habitat requirement list should provide them with a number of clues.)

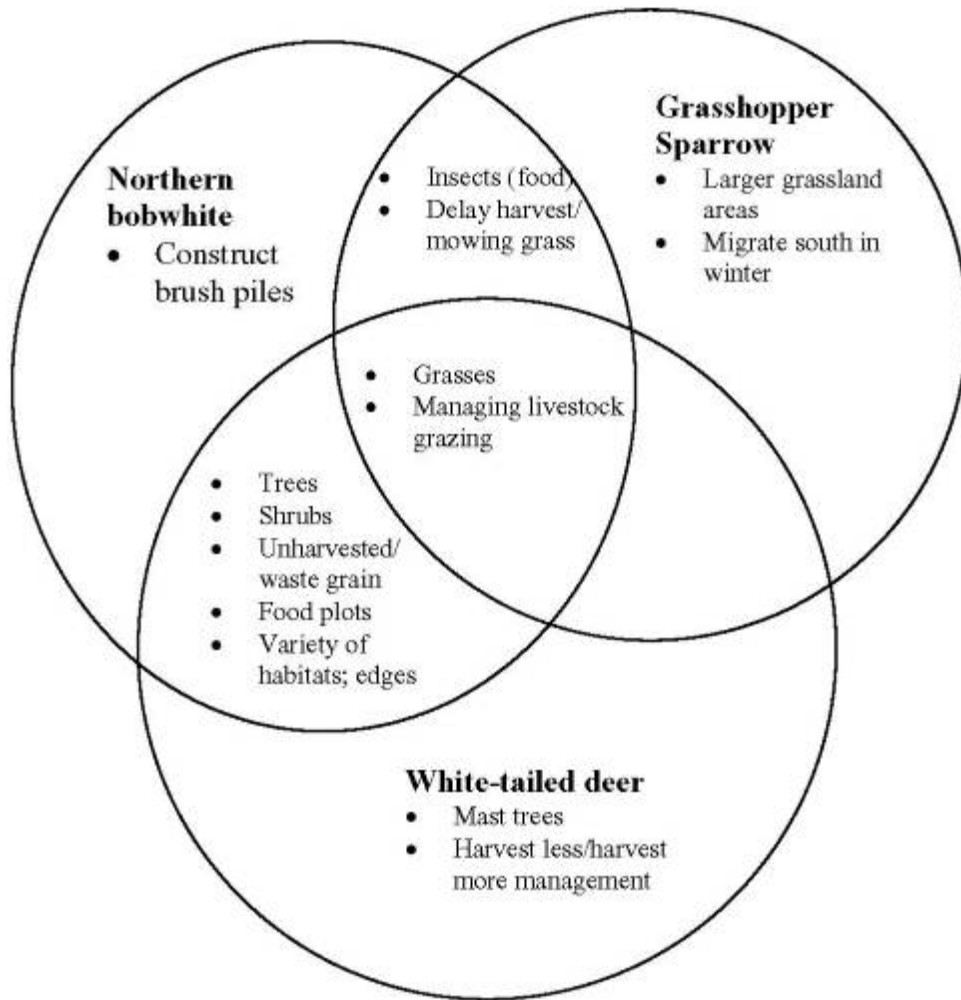
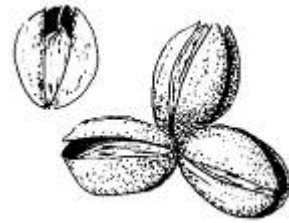


Figure 1. Example of Venn diagram showing similarities and differences in habitat needs of grasshopper sparrows, northern bobwhite, and white-tailed deer.

Learning Activity 2: Wildlife Foods



Learners will be able to identify a wide range of foods and connect them with specific species of wildlife.

Doing

1. Prior to your meeting, assign each youth a different species. Have them collect samples of foods listed for that species in their contest handbook and bring them to your group meeting.
2. On a table covered with paper, provide each youth a numbered space to place the food items they have brought with them. Once they have their samples displayed, have them write the name of their species on a large piece of newsprint or chalkboard without reference to their space number.
3. Have each youth study the spaces with foods. On a piece of paper write, participants write the space numbers and match it with species listed on the newsprint or chalkboard.
4. After everyone is finished, ask those who brought food items to identify each item in their space and the species they were assigned.

Reflecting

As a group, discuss:

- What food items in the spaces surprised you? Why?
- How do the foods that an animal eats affect where they live?

Using

As a group, discuss:

- What are some ways that humans affect the availability of wildlife food? Give specific examples.
- How can you use your knowledge about what a species of wildlife eats to evaluate the suitability of certain area for this species?

On Their Own

Have participants select an area near their home. Encourage them to visit the area and list as many wildlife food items as they can find. Based on what they find, have them list the species which may feed in this area. (Point out that the contest handbook will be a big help in this regard).

Added Hint: You may wish to package the non-living food samples in plastic sandwich bags to use at future sessions. Identification of foods is an important skill in habitat evaluation.

Learning Activity 3: Impacts of Wildlife Management

Learners will understand that almost any wildlife management activity or change in the landscape will benefit some species but may be detrimental to others.

Doing

1. Divide participants into pairs or groups of three. Ask each group to select one wildlife management practice and five wildlife species from the handbook.
2. Each team will create an impact map. Write the wildlife management practice in the center of a piece of newsprint. Next, connect each species to the center using a spoke. Finally, connect the result of the management practice to the species (Figure 2).

An extension of this activity is continuing the map to indicate secondary impacts on other species. For example, if the impact is an increase in the population of white-tailed deer, how does that affect other species? Encourage them to map the consequences to people, too.

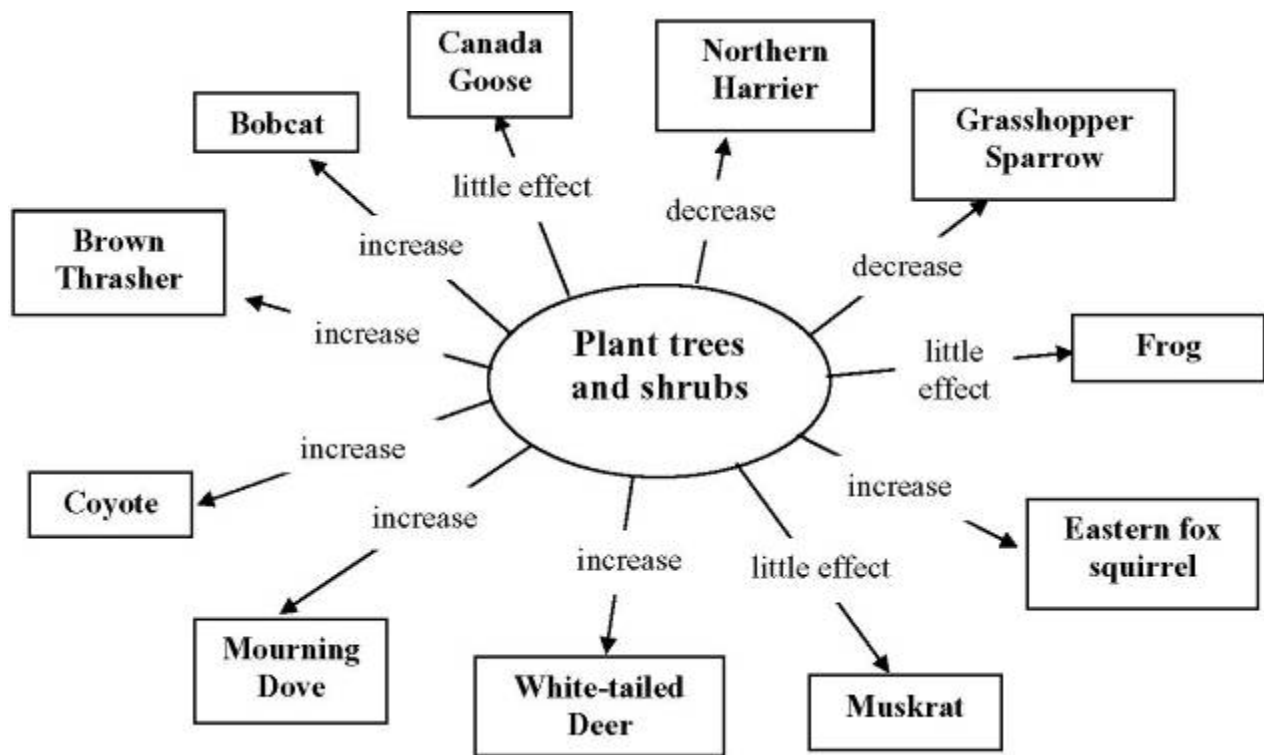


Figure 2. Impact map showing possible impacts of planting trees and shrubs on populations of various wildlife species.

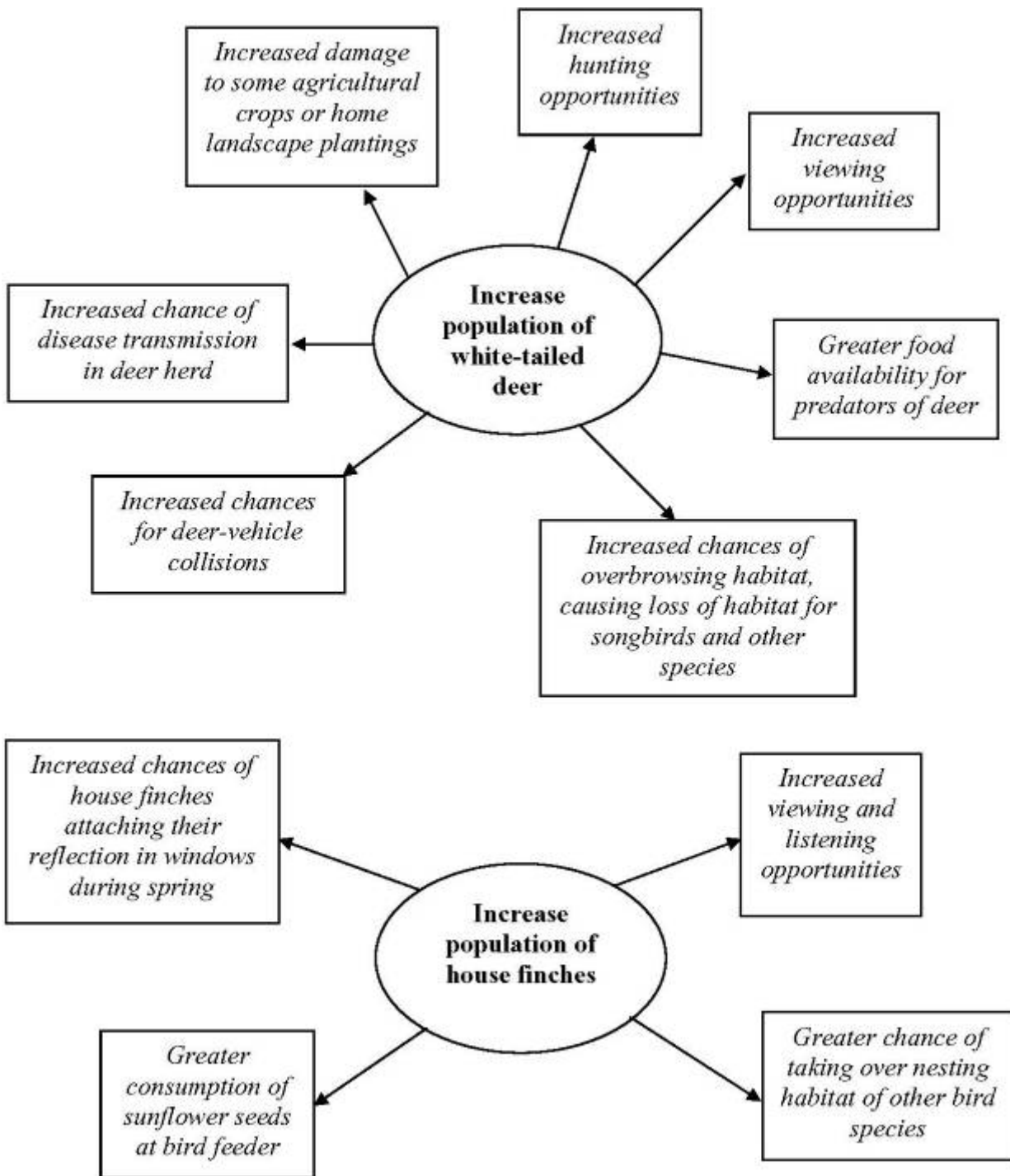


Figure 3. Impact map showing possible impacts of increasing the population of (a) white-tailed deer or (b) house finches. Actual impacts will vary depending on the resulting numbers of white-tailed deer or cardinals in relation to habitat carrying capacity and a variety of other factors.

Reflecting

1. Ask each small group share their map with the entire group.
2. Discuss as a large group:
 - Are all wildlife management practices beneficial to all wildlife species? Why or why not? (Encourage them to think about the habitat requirements they have learned.) For example, planting trees and shrubs will benefit many species, but trees and shrubs reduce habitat suitability for grasshopper sparrows
 - Why is it important to know the impact of a wildlife management practice before using it?

Using

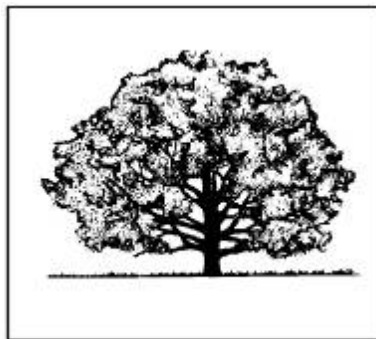
1. Have the group create a list of possible objectives of a wildlife manager. Examples are: to protect an endangered (name the species), to increase the population of (name the species), to decrease the population of (name the species), to have as many game animals or as many songbirds present as possible.
2. After you have a long list, ask individuals or small groups to select one objective. Create a new map by placing the objective in the middle of the page. Connect the objective to practices which could be used to meet the objective. Draw the consequences off of each practice.
3. As a group, talk about circumstances when an action that benefits one group of people (or wildlife species) might have a negative impact on another group of people (or wildlife species).

Summarizing

Remind participants: *Almost any wildlife management activity or change in the landscape will result in benefit for some species, but detriment for others. Thinking about your objective will help ensure the best outcome for your needs.*

On Their Own

Ask each to study the list of management practices in the back of their handbook. Before your next meeting, ask them to sketch their neighborhood and draw as many wildlife management practices as they can find.



Learning Activity 4: Interpreting Aerial Photographs



Learners will have a better understanding of how to interpret wildlife habitat from aerial photographs.

In Advance:

Select an area to meet and obtain an aerial photograph of that area. The local Natural Resources Conservation Service (NRCS) office may be able to supply you with aerial photographs. There are also a number of on-line resources (e.g., Geostor, Terraserver-USA) for aerial photos. On the photograph, mark a number of spots on the map with letters (i.e. a pond, an orchard, bare ground). Post-It notes work well with arrows indicating the map feature. Make enough copies of the aerial photograph for each member in your group. Obtain additional aerial photographs for the *Using* step.

Doing

Meet with your group at the site. Provide each youth an aerial photograph of the site. Walk the area and have them match the spots you have marked on the aerial photo with the actual landscape.

Reflecting

As a group, discuss:

- What were the easiest features to identify on the photograph? Why?
- What were the most difficult features to identify on the photograph? Why?
- Why are aerial photographs important tools for wildlife managers?

Using

1. Divide participants into small groups. Give each group an aerial photograph different from the one in the *doing* step. Describe the photograph in terms of what type of food, water, shelter (cover) and space exists.
2. Considering habitat requirements, ask each group to identify two species they think would be present and two species that likely would be absent from the area. Explain their answers.

On Their Own

Obtain an aerial photograph of a familiar area. Draw a circle on a transparency encompassing about 160 acres on the photo. Place the transparency over the photo, and ask them to rate the circle on the photograph for suitability of five different species. For this rating, you might use a scale of excellent, good, fair or poor habitat for each species. Next, compare habitat suitability with what they know about the wildlife that are present or absent in the area.

Activity 5: Habitat Blocks and Interspersion

Learners will understand the concept of interspersion and be able to differentiate between levels of interspersion in an area when studying an aerial photograph.



Doing

1. Provide aerial photographs which illustrate a wide contrast in the number of successional stages. Ask participants to label different successional stages visible in the photograph.
2. Using one of the photographs, demonstrate the “interspersion index” to measure the amount of interspersion of an area. Count the number of times the habitat changes along an imaginary north-south line across the widest part of the area, then along the widest east-west line. Add these two numbers together for the interspersion index value.
3. Ask youth to determine an interspersion index value for the other aerial photographs. Then place the photographs in order of lowest to greatest interspersion.

Reflecting

As a group, discuss:

- What did you need to know to complete this activity?
- How did using a step-by-step process to measure interspersion help with comparing different habitats?

Using

1. How might you use the interspersion index in evaluating habitat?
2. What types of wildlife benefit from high interspersion and low interspersion? For reference, refer to the concepts “Edge and Contrast” and “Area Sensitive Wildlife” in the Arkansas handbook.
3. In what other situations would it be helpful to use an “index?”

On Their Own

Ask group members to read about the habitat preference of the animals in their handbook. Have them create a list of the animals that prefer habitats with high interspersion (edge species) and of species that prefer areas without interspersion (area-sensitive species).

Activity 6: Evaluating Wildlife Habitat

Learners will be able to use a systematic approach of evaluating a wildlife habitat.

Doing

Visit a site or use aerial photographs. Ask youth to evaluate the site's suitability for different wildlife species.



Reflecting

1. Ask group members to share how suitable the site is and the key points or considerations they used in evaluating the site.
2. Develop a list of considerations or questions they could use to evaluate any site. (For example, does the site provide adequate water for white-tailed deer?)
3. Ask whether their decision would have been easier if they had this list when they started.

Using

1. At the same site or aerial photograph, ask youth to evaluate its suitability for another species using the list considerations they generated as a group.
2. Have the group discuss:
 - What other types of decisions do you have to make at home, at school or in activities in which you are involved?
 - How would having a list of questions or considerations help you make better decisions?
 - How will having a list of questions in your mind concerning a specific site help you make better decisions about managing wildlife habitat?

On Their Own

Have youth identify two or three sites in their community (i.e. their backyard, a farm field, a wildlife refuge). Ask them to visit each site and using the list of questions they generated, evaluate it for two different species. Have them report at the next meeting.

Activity 7: Oral Reasons



Learners will understand a basic format for giving oral reasons.

Doing

1. Ask each group member to think of a time they needed to explain the reasoning behind a decision they made. Get the group started by giving your own example. Let each member share. Explain they will be ranking or placing habitats and will practice explaining the reasons behind their decision.
2. Have a group of four aerial photographs. Make sure there is a wide variation between the photos. Have each youth individually rank the photographs for suitability for a particular wildlife species and prepare oral reason using the suggested format.
3. Make a copy of the oral reasons form (page 16) for each youth to use. Remind them to use the list of considerations or questions they developed in Activity 5. You may want to post the list as a reminder.
4. Ask two or three volunteers to read their reasons to the group. Point out to the group the strengths of each person's reasons. Give each volunteer one suggestion for improvement that will help the entire group.

Reflecting

- Why are your reasons more important than how you placed the sites?
- Why is a standard format used in giving oral reasons?

Using

1. What type of wildlife jobs require explaining reasons to others? Give as many examples as possible.
2. In what other situations might it be helpful to use a similar format to share your reasons for a decision?

On Their Own

Send a set of four aerial photographs home with each youth for them to rank the photographs for a specific species. Ask them to use the format below to prepare a set of oral reasons. Set up a time to have them give their reasons to you. Give each youth feedback on:

- the accuracy of their statements.
- their delivery (e.g., could you hear them, did they use correct grammar, did they look at you, did they stand in straight, comfortable position?).
- organization (e.g., did they follow the suggested format, did they discuss the more important and general points first?)

Suggested Form For Organizing Oral Reasons

I placed this class of aerial photos for (species) _____ habitat

_____. Starting the class, I place _____ over _____

because _____

(Special note: give the most important reasons first).

I grant *(any comparisons where the next place is better)* _____ was

Going to the middle pair, I placed _____ over _____

because _____

I admit _____ was _____.

I placed _____ over _____ in my bottom pair

because _____

I realize _____ was _____

However, I placed _____ last because _____

For these reasons I placed this class of aerial photos for (species) _____ habitat,

_____.

State and Local Contests

Information about state contest rules and guidelines can be found in the contest handbook. Typically, the Arkansas state contest is held in the April and a practice session in February. Check with your local county Extension office for dates and locations. Local contests can be conducted at any time. Sponsors, a suitable location, and enthusiasm are the only things needed. See the “things to do” list below. Coaches may wish to use this as a starting point.

“THINGS TO DO” LIST

Habitat Education Contest

Twelve weeks prior to contest:

- Pick date for contest.
- Select location for contest and meeting room.
- Pick area for rural plan and management practices.
- Contact landowner to get permission to hold the contest.
- Find appropriate judges.
- Provide each judge a handbook

Four weeks prior to contest:

- Hold judge training, preferably at proposed contest site.
- Select food items for food identification activity.
- Collect food items and preserve if necessary.
- Obtain 4 to 6 large aerial photographs.
- Obtain transparencies and cut 16 4-inch circles numbered 1 through 4 (4 sets).
- Select correct wildlife management practices for species and area.
- Select correct species for food items.
- Select correct aerial photo ranking and proper cuts.
- Make grading keys.
- Draw a sketch of area for management practices and rural plan.
- Write a field condition sheet for rural plan.
- Draw a sketch for urban plan.
- Write a field condition sheet for urban plan.
- Develop a written schedule of events.
- Consider ages of juniors and make sure appropriate activities are available for their age levels.

Two weeks prior to contest:

- Make enough copies of all material for all participants, judges, and coaches.
- Obtain liability insurance for participants.
- Obtain medical releases for participants, if needed.
- Send maps to registrants.
- Arrange for adequate staff to monitor all parts of the contest.
- Prepare an award sheet before the contest.

Resource List

Websites

- Arkansas 4-H Wildlife Habitat Contest, www.arnatural.org
- Arkansas Game and Fish Commission, www.agfc.com
- Animal Diversity Web, The University of Michigan Museum of Zoology, <http://animaldiversity.ummz.umich.edu/index.html>
- National 4-H Wildlife Habitat Education Program, <http://www.whep.org/>
- Indiana WHEP contest information, writing a management plan and examples, http://www.four-h.purdue.edu/whep/WHEP_Indiana.htm
- Oklahoma WHEP, powerpoints of wildlife management, species and regions, <http://www.agweb.okstate.edu/fwa/whep/wheppage.html>

Publications

Wildlife Habitat Education Program National Manual (January, 2000) by Ronald E. Masters, James Armstrong, Champ Green, and Charles Lee. Order information: www.whep.org/manual.htm.

Helping Wildlife: Working with Nature (1977, Reprinted 1988, 1993, 1994) by Delwin E. Benson, Extension Wildlife Specialist, Colorado State University. Published by Wildlife Management Institute, 1101 14th Street, N.W., Suite 801, Washington, D.C. 20005. Also available from the Cooperative Extension Resource Center, 115 General Services Building, Colorado State University, Fort Collins, CO 80523 (970) 491-6198, FAX (970) 491-2961.

Managing Wildlife: Managing Wildlife on Private Lands in Alabama and the Southeast (1999) by Greg K. Yarrow and Deborah T. Yarrow with the Alabama Wildlife Federation, published by Sweetwater Press. Alabama Wildlife Federation, 46 Commerce Street, Montgomery, AL 36104, (334) 832-9453, afw@mindspring.com, web site alawild.org.

Private Lands Wildlife Management: A Technical Manual and Correspondence Course (1994) by Charles D. Lee and F. Robert Henderson, Editor, K-State Research & Extension, Call Hall, Manhattan, Kansas 66506, (913) 532-5734. 410 pp.

Wildlife Management for Arkansas Private Landowners (1999) by David Long, Martin Blaney, and Jon Schneider, Arkansas Game and Fish Commission, #2 Natural Resources Drive, Little Rock, Ar 72205 (800-364-4263). www.agf.com. 162 pp. \$7.50

Wildlife of Southern Forests: Habitat and Management (2001) Compiled and edited by James G. Dickson. Hancock House Publishers, (800) 938-1114, www.hancockhouse.com. 480 pp. #50.

Additionally, see field guides to habitats and animals that are listed in the handbook. These provide basic information about plants and animals. They are beneficial as a starting point for learning and they become lasting tools for self-inquiry. Have appropriate guides available to students and encourage them to buy their own.