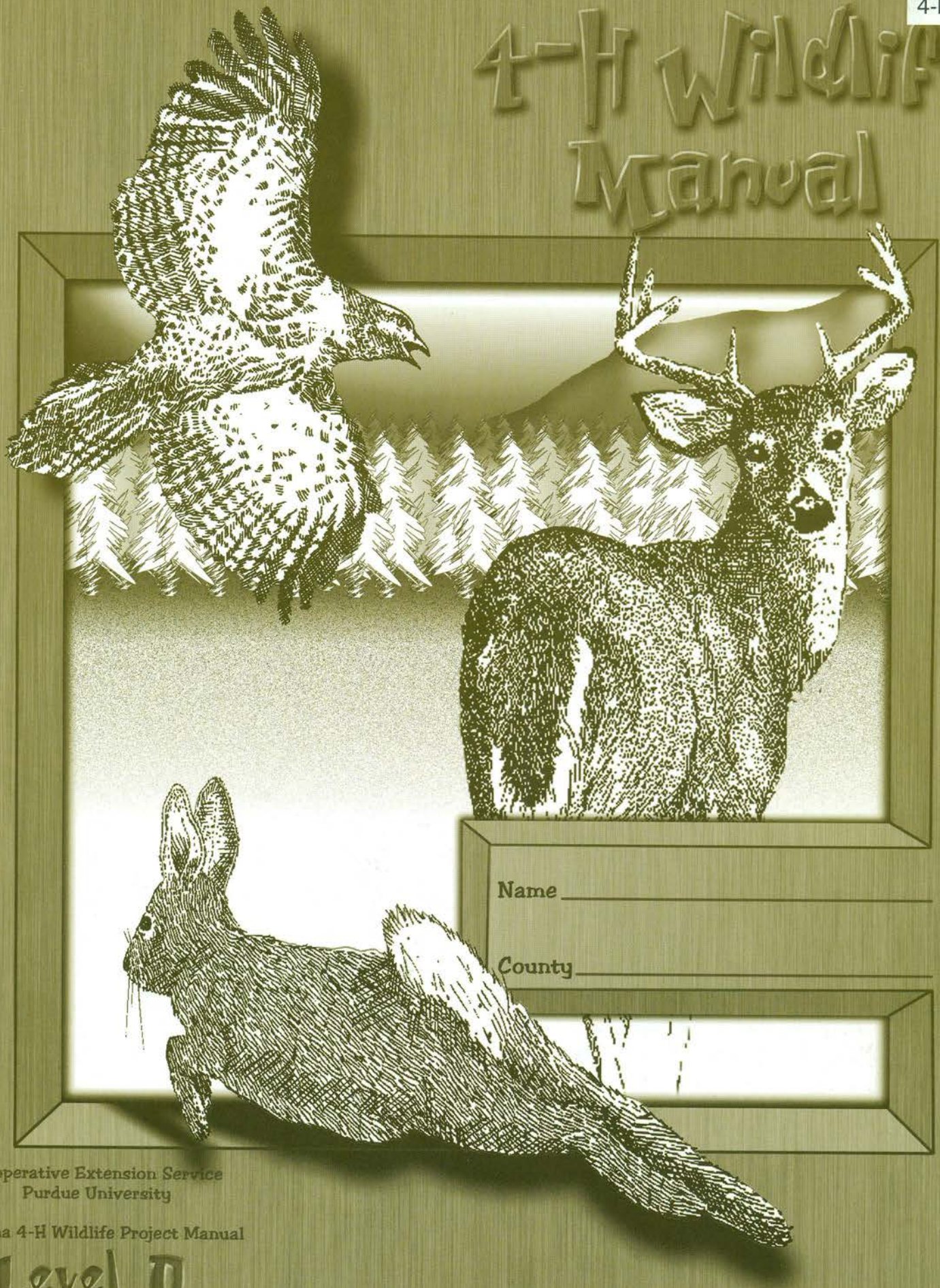
4-H906

4-H Wildlife Manual



Name _____

County _____

Cooperative Extension Service
Purdue University

Indiana 4-H Wildlife Project Manual

Level D
Grades 10 - 12

4-H WILDLIFE MANUAL (LEVEL D)

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 clues of mammals around you, although they are generally more difficult to see than birds or bugs.

The Indiana 4-H Wildlife project was written for youth that 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.

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 SAFE: Sporting Arms Family Education (Hunting and Wildlife).

Authors: Natalie Carroll, Ph.D., 4-H Youth Department, Randy Dickson, Marshall County Extension, Jonathan Ferris, Jay County Extension, Brian Miller, Department of Forestry and Natural Resources
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TABLE OF CONTENTS

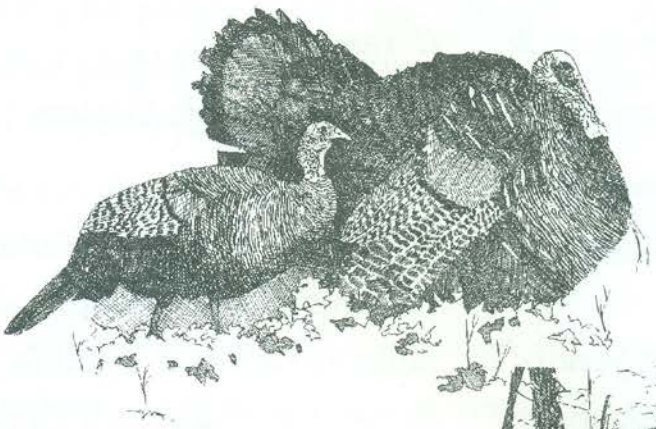
LEARNER OBJECTIVES:

- Begin to understand complex wildlife management techniques
- Consider a career in wildlife management

SECTION 1

WILDLIFE MANAGEMENT

A wildlife management plan is a document that identifies a wildlife goal and the methods used to achieve this goal. The initial step in writing a wildlife management plan is to define what kind of wildlife you want to manage. The next step is to determine how to accomplish your management goals. If you want more deer, turkey, salmon, garter snakes, hawks, or song birds on your land you need to manipulate the habitat to make it suitable to the species for which you wish to manage. The following activities will help you discover what it means to be a wildlife manager.



Activity 1: Develop a Wildlife Management Plan

Use the Wildlife Management Plan outline (page 6) to write your own wildlife management plan for an area of interest to you. You can choose an urban property or rural property. Urban properties that can be managed for wildlife include: urban forests, corridors, neighborhood parks, school grounds, vacant land, open spaces, residential areas with individual homes, apartment green space, and business lots. Rural properties can be large or small. You can choose to manage a single species or use an ecosystem management approach and consider many species.

Begin with your objectives - what is it that you wish to accomplish? Then consider what needs to be done to meet your objectives. Appendix C lists some general information and wildlife management practices that may be helpful in writing your wildlife management plan. Write your management plan using complete sentences and as much detail as you can so your goals are clear. You should refer to the management score sheet in Appendix D to check that you are including the important parts of the plan.

This activity can be done every year. Successive years should be managed on a different property or by adding a new management goal for the property. If you are continuing to manage the same property you should make careful notes of how your previous management has worked out.

You may choose to break down an extensive management plan into manageable parts. Or you may find that previous management changes that you made did not work out as you wished and need to be redone. Be sure to make careful notes to evaluate your management.

If you don't have an area to manage:

Get ideas from a district biologist or a manager of a State Park, reservoir, or forest near you. They may have a management plan and aerial photographs that they are willing to share with you. You can discuss what steps of the plan have already been taken and what still needs to be done. If you work on a plan that the professional is interested in you may be able get some expert help and advice. Be sure to include any special considerations and constraints that are required for these public lands.

Read the news release about the return of trumpeter swans (Appendix A). Assume that you are the Muscatatuck property manager. Write a management plan to make sure the refuge provides the habitat that the swans need. Then see if you can find out how the swans are doing now.

Write a management plan for one of the following imaginary scenarios:

Scenario 1 - You have a State wildlife area that has always been managed for migratory birds. But you, as manager, would like to manage for wild turkey. What would you need to do? Describe how the area has been managed for migratory birds. Explain what changes would need to be made and the procedures and steps you would take to develop the area for wild turkeys.

Scenario 2 - Landowner, Ima Wildlifer, wants to better develop her 130 acre property for wildlife, particularly so she can see more wild turkeys and wood ducks. She also has a nephew who enjoys turkey hunting, and wants to hunt here. A few wild turkeys are observed, mostly in the spring and summer. Wood duck pairs are seen on the pond only early in the spring. Neither waterfowl nor turkey hunting is permitted at present. Ima has $1,000, which she would be willing to spend this year. Additional funds for habitat improvement must be generated from management of the property.

To find the nearest park, reservoir, or forest, look in your phone book under State - Department of Natural Resources (DNR) or check the DNR website (http://www.state.in.us/dnr/). You can also find this information on the DNR website listed on the Resources Page at the back of this book.

Wildlife Management Plan

Objectives: _____

_____

_____

Species you will manage this property for: _____

List wildlife management practices needed for the species you are managing. Include any special considerations for these species (for example, 'the area will only be used by bluebirds during certain times of the year'). _____

_____

_____

_____

_____

Sketch the property that you wish to manage:

If you are managing for more than one species, list any compromises that need to be made (often the various species you are managing for will have competing needs): _____

_____

_____

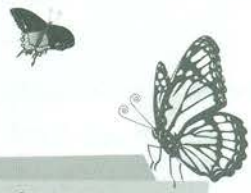
_____

_____

Activity 2: Create, evaluate, or improve an outdoor lab. If there is already an outdoor lab at your school you might create lesson plans for a teacher to use with the outdoor lab. Teachers, your county Extension Youth Educator, the District Wildlife Biologist, or a Soil & Water Conservation District educator would be valuable sources of information for this project.

Activity 3: Participate in the Indiana Wildlife Habitat Evaluation Contest. This is a team event so you will need to locate some other wildlife enthusiasts. You will be required to participate in three activities: Identifying common wildlife foods, evaluating wildlife habitat from aerial photographs (with oral reasons for two species), and writing a wildlife management plan. (Contact your Youth Extension Educator for information about this contest.)

Activity 4: Set up your own Wildlife Habitat Evaluation Contest for other 4-H Youth. You can do any of the activities that you wish. It would be a good idea to work with a professional to write and/or review any management plans that you intend to use in the contest.



Wildlife Habitat Evalution Contest Activities:
1. Identify wildlife foods
2. Compare habitat using aerial photographs
3. Write a wildlife management plan.

Contests are held every year in the spring.

SECTION 2

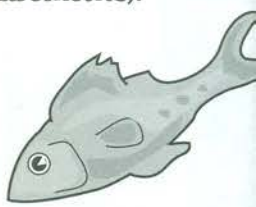
CAREERS

If you are interested in wildlife you should consider a career working with wildlife. It is never too early to begin to explore your career alternatives. The activities listed below will help you explore wildlife careers.

Activity 1: You are a state wildlife biologist who needs to hire additional summer help.

1. Study the type of job advertisements you see in your local paper and consider what type of skills and education that are needed by the person you will hire.
2. Write a job announcement including the qualifications, job duties, and salary range for the person you wish to hire.
3. Develop an application for job seekers. Be sure to ask for all the information you need to have to make your decision on whom to interview. You may not ask any personal information other than name and address. (For example, you may not ask about age, race, religious affiliation or other personal questions.)
4. Now pretend that you are applying for this job by:
    1. Filling out the application
    2. Writing a cover letter to go with your application. Be sure to explain why you are the best person for this job based on your experience and education (assume that you meet all the requirements).

Science and mathematics are important subjects to be good at. Being good in these subjects keeps your options wide open.



Activity 2: Examples of natural resource manager job announcements.

There are publishers that specialize in natural resource job announcements. Two job announcement publications are listed on the next page with a sample job listing. Look for a natural resource job listing publication* and list the entire job announcement of a job you would like to have at the following points in your life (you may hope to have the same job all your life - that's your choice):

summer job while in school _____

first job out of college _____

job when you are 30 years old _____

the job you would like to have at 50 years old _____

* Note - you may be able to find these on the Internet or you can call the publishers listed and ask for back copies of their publication. You may also be able to find natural resource job publications at a bookstore or library

DIRECTOR OF CORAL CONSERVATION

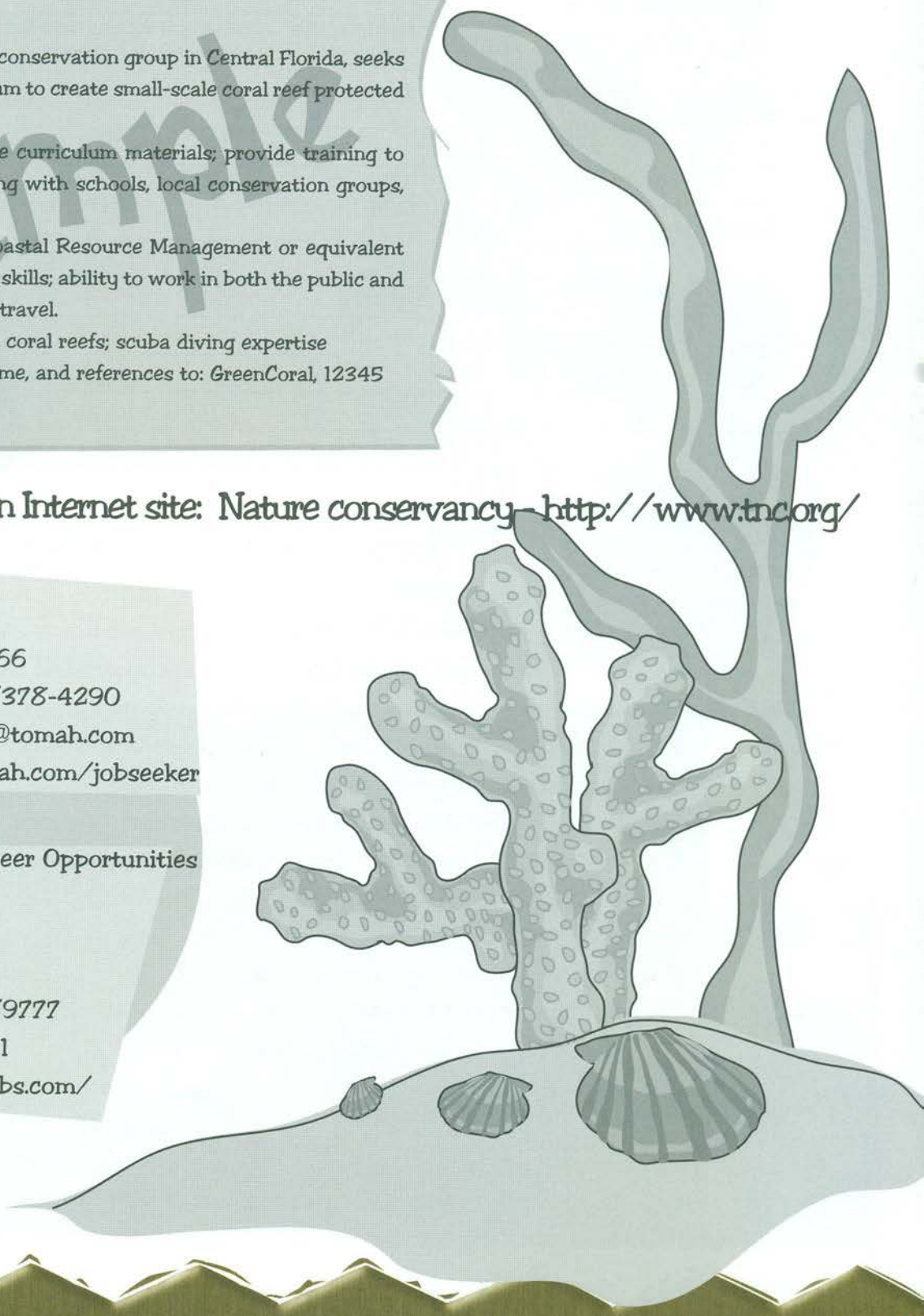
GreenCoral, a non-profit marine conservation group in Central Florida, seeks an individual to manage a program to create small-scale coral reef protected areas in Florida.

Duties include: helping to create curriculum materials; provide training to staff and volunteers; and working with schools, local conservation groups, and government agencies.

Required: Masters degree in Coastal Resource Management or equivalent experience; strong interpersonal skills; ability to work in both the public and private sector; a willingness to travel.

Desired: field experience is with coral reefs; scuba diving expertise

To apply, send cover letter, resume, and references to: GreenCoral, 12345 4-H Way, Riverton, FL



Example Conservation Internet site: Nature conservancy - http://www.tnc.org/

Job Announcement Publications

The Job Seeker
28672 Cty EW
Warrens, WI 54666
Phone/Fax 608/378-4290
email - jobseeker@tomah.com
http://www.tomah.com/jobseeker

Environmental Career Opportunities
HCR 4
Box 65
Leon, VA 22725
Phone: 800/315/9777
Fax 540/547-3371
http://www.ecojobs.com/

Activity 3: Search for environmental, conservation, and wildlife organizations on the Internet and/or in your public library. Find the following information for at least three (3) organizations:

Organization name: _____

_____

_____

Mission: _____

_____

_____

Location(s): _____

_____

_____

Size (number of employees): _____

_____

_____

Type of jobs: _____

_____

_____

Other information: _____

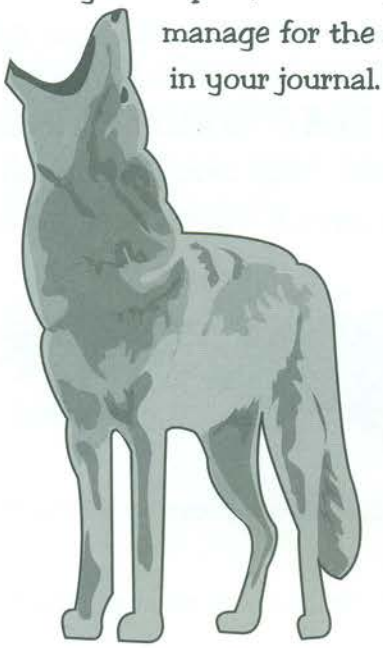
_____

_____

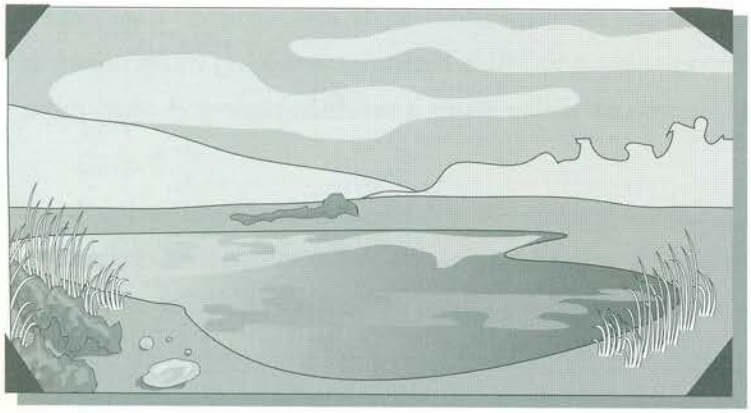
Types of organizations that you might look for are:

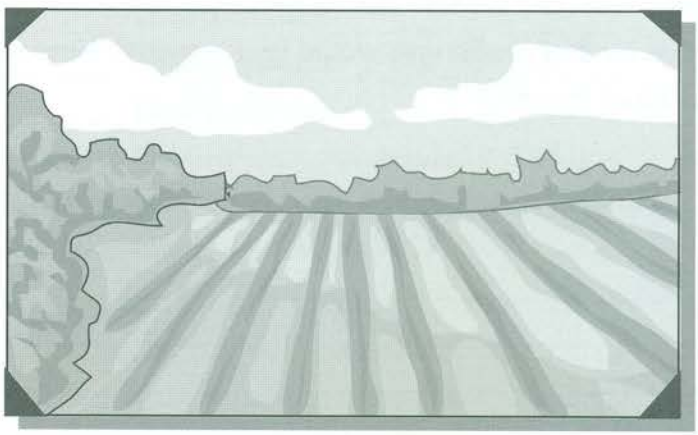
1. Companies dealing with wildlife (utilities, forestry companies, mining companies, or other companies holding large tracts of land)
2. Environmental consulting firms (look in a phone book, if there are none in your phone book you may need to find a phone book for a large city)
3. Law firms specializing in environmental law (you will probably need to look in phone books of very large cities for these organizations)
4. Conservation organizations (such as Ducks Unlimited, Quail Unlimited, the National Turkey Federation, Pheasants Forever, Rocky Mountain Elk Foundation, etc.)
5. Environmental organizations (such as the Nature Conservancy, Sierra Club, Izaak Walton League, the National Arbor Day Foundation, etc.)

Activity 4: Interview a district biologist, conservation officer, or manager of a park, reservoir, or forest. Find out what they do to manage for the species in their area. Keep notes in your journal.



Activity 5: Job Shadowing - Contact a district biologist, conservation officer, or other wildlife manager and ask if you can spend a workday with them. You will need to discuss what day would fit both your schedules and which day would be best to learn about the work they do. Remember to bring along your journal and make notes of what you see and do. A camera to take pictures of the work the professional does is advised.





SECTION 3 CURRENT WILDLIFE TOPICS

Activity 1: Write a case study about a wildlife issue. Find an article (newspaper, magazine, or television) about a wildlife issue. Your topic may be of local, national, or international interest. After reading the article determine how you can find more information about the issue. Determine who the stakeholders are and how their views differ. Write your own case study about the issue. A case study should present all sides of the issue equally and not draw any conclusions - let the reader decide. You will need to do additional research to try to get all sides of the story. Reading the news article is just a place to start. Your county Extension Youth Educator can help you identify other good sources of information. The form given in Appendix E can serve as a guide to help you write your case study.

Note - some current topics that might be addressed are:

- gray wolf reintroduction
- wildlife population control
- bobcats coming back to IN
- otter re-introduction
- bald eagle return
- purple loosestrife
- gypsy moths
- zebra mussels
- hunting vs. anti-hunting
- trapping vs. anti-trapping
- timber harvest - discuss the positive and negative impacts on wildlife
- wetland conservation vs. development and agricultural issues
- green space vs. development

Activity 2: List some urban wildlife management issues. Suggested topics include: What type of animals need to be controlled in cities, towns, and suburbs? What animals are encouraged? How and why do these species differ from the wildlife that is managed in rural areas? If you were a wildlife biologist working in an urban area what kind of challenges would you expect? How would your work differ from a wildlife biologist working at a national forest?

Activity 3: Choose an activity from one of the 4-H Wildlife manuals and develop it for a younger audience. Present at a 4-H club or in a classroom. Use the lesson plan to prepare for your presentation.

You may want to create student worksheets so you can evaluate how well the students listened and learned from your presentation. Try to include the students in your presentation - most people learn better and have more fun when they are involved in the learning process.

Sample Lesson Plan Outline:

Activity: _____

Wildlife manual this activity was adapted from: _____ Page: __

Your goals for this lesson: _____

_____

_____

Materials needed: _____

_____

_____

_____

_____

Steps in the lesson (include time estimate for each):

Step 1. _____ Time Estimate: _____

Step 2. _____ Time Estimate: _____

Step 3. _____ Time Esitmate: _____

Step 4. _____ Time Esitmate: _____

Step 5. _____ Time Estimate: _____

Evaluation (analysis of how the lesson went): Did the youth learn what you intended? Did you reach all your goals? What would you do differently next time? (You might discuss this informally, give a pre-test and post-test, or ask an adult to evaluate the lesson.)

_____

_____

_____

_____

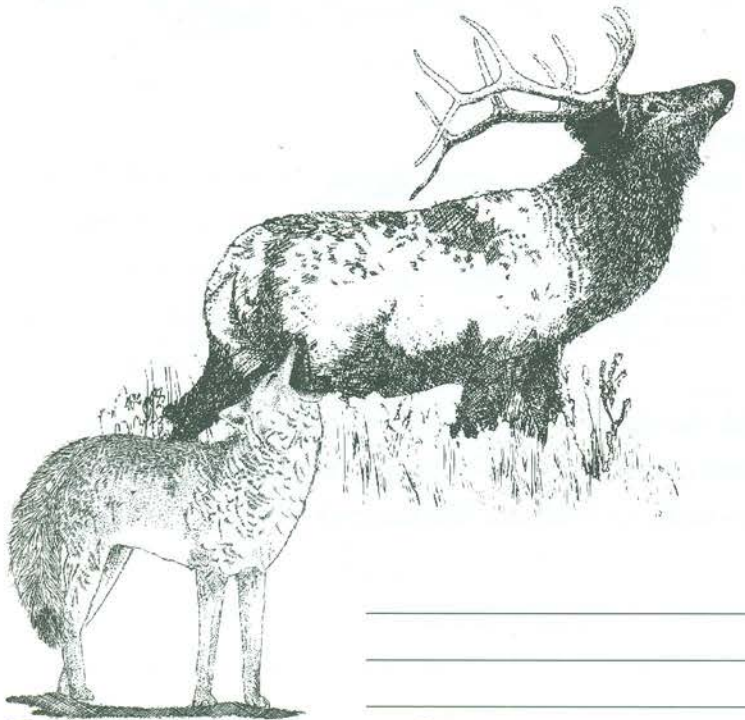
Activity 4: Write a detailed history of one of Indiana's extirpated species. Include the following information:

- why the animal became extirpated
- when the animal became extirpated
- if the species was reintroduced, explain when and why it was reintroduced
- if the species was reintroduced, explain how conditions have changed so that the species is expected to thrive
- other interesting information that you find

Extirpated Species:

- deer
- coyotes
- bear
- buffalo
- badger
- elk
- wolf
- passenger pigeon
- wild turkey
- bald eagle
- peregrine falcon
- otter
- trumpeter swan

Species History: _____



Activity 5: Study the problems of poaching, the illegal taking of game out of season or taking non-game animals at any time. Present your findings at a 4-H meeting or write a paper discussing the problem. Be sure to include the following:

- background about the animal you studied
- the extent of the poaching problem
- the location of the poaching problem (local or statewide)
- why this animal is taken illegally

SECTION 4 RESOURCES

Internet Sites

You can find a great deal of wildlife information on the Internet. Visit some of the sites listed to see what kind of information is available. When copying Internet site addresses, it is important copy every letter and character exactly as it is listed below. These sites were checked before this manual was published but occasionally the site addresses and content will change.

Indiana State Sites

Indiana Department of Natural Resources - http://www.state.in.us/dnr/

Indiana Division of Fish and Wildlife - http://www.state.in.us/dnr/fishwild/index.htm

Indiana State Parks - http://www.state.in.us/dnr/statepar/other/index.htm

Indiana National Parks - http://nps.gov/parklists/in.html

Indiana Department of Environmental Management - http://www.state.in.us/idem/

Indiana Migratory Bird Conservation - http://www.fws.gov/r3pao/mig_bird/indiana.html

Wetland Information - http://www.state.in.us/idem/own/planbr/401/FAQS.html

Hoosier National Forest - http://www.llbean.com/parksearch/parks/html/4191gd.htm

Indiana Dunes

Indiana Dunes State Park - http://www.state.in.us/dnr/statepar/parks/indunes/indunes.htm

Indiana Dunes National Lakeshore Home Page - http://www.nps.gov/indu/

Indiana Dunes National Lakeshore's Resource Management - http://www.nps.gov/indu/rm/index.htm

Illinois/Indiana SeaGrant - http://ag.ansc.purdue.edu/il-in-sg/home.htm

Indiana Colleges and Universities

The following list gives selected natural resource related departments and is not intended to be all-inclusive. For a more extensive listing of Indiana Colleges and Universities please go to the web site http://tlc.ai.org/indiana.htm and scroll down to the section on Schools and Education (near the bottom).

> Note: There are many good Internet sites that provide a lot of information. Colleges and Universities are good places to look because this information is research-based and no product is being promoted. Furthermore, these sites are maintained for timeliness and accuracy. Often you may find a particular college or university specializes in a specific area and may have a great deal of information on those topics.

Purdue University
Department of Forestry and Natural Resources
Forestry Building
West Lafayette, IN 47907
Telephone: (765) 494-3591; FAX: (765) 495-2422
http://www.fnr.purdue.edu/
http://www.ansc.purdue.edu/sgnis/ (Sea Grant Project)
http://www.AGRY.purdue.edu/Agronomy/nres/esc/ncwesc.html

Indiana State University
Department of Life Sciences
Science Building Room 256
Terre Haute, IN 47809
Telephone: (812) 237-2400; FAX (812) 237-4480
http://biology.indstate.edu/dls/

Indiana University
Department of Biology
Jordan Hall
Bloomington, IN 47405
Telephone: (812) 855-7323; FAX (812) 855-6705
http://www.biology.iupui.edu/index.html
biology.iupui.edu

Federal Sites - Department of Interior

US Fish and Wildlife Service

Home page:	http://www.fws.gov/
History: US Fish and Wildlife Service:	http://www.fws.gov/who/history.html
Ecosystem Approach to Fish and Wildlife Conservation:	http://www.fws.gov/ecoreport/
USFWS Region 3:	http://www.fws.gov/r3pao/index.html
Bloomington Ecological Services Field Office:	http://www.fws.gov/r3pao/bloom/
Muscatatuck National Wildlife Refuge:	http://www.fws.gov/r3pao/muscatuk/
National Park Service:	http://www.nps.gov/
Armed Forces -	
Crane Naval Surface Weapons Center:	http://sonobuoy.crane.navy.mil/indexhome.htm
Camp Atterbury Job Corp Center:	http://www.ajcc.org/ajccmap.htm and http://www.ajcc.org/main.htm

Conservation Organizations:

• Sierra Club	http://www.sierraclub.org/
• The Nature Conservancy	http://www.tnc.org/welcome/index.html
• Audubon Society	http://www.audubon.org/
• National Wildlife Federation	http://www.nwf.org/nwf/
• Backyard Wildlife Habitat	http://www.nwf.org/nwf/habitats/

Some county Extension offices have CD-ROMS with aerial photos of your county.
Local USDA offices - NRCS & Farm Service Agency may have aerial photos you can copy.
They will also have a county Soil Survey book which may have pictures in the back.
Internet sites: http://terraserver.microsoft.com http://www.topozone.com
Topography maps at Purdue: call Glenda at (765)496-3209. Topo maps are $4 each.
USDA, Farm Services Agency
Aerial Photography Field Office
2222 West 2300 South
Salt Lake City, Utah 84119-2020 (801)975-3500 ext 238

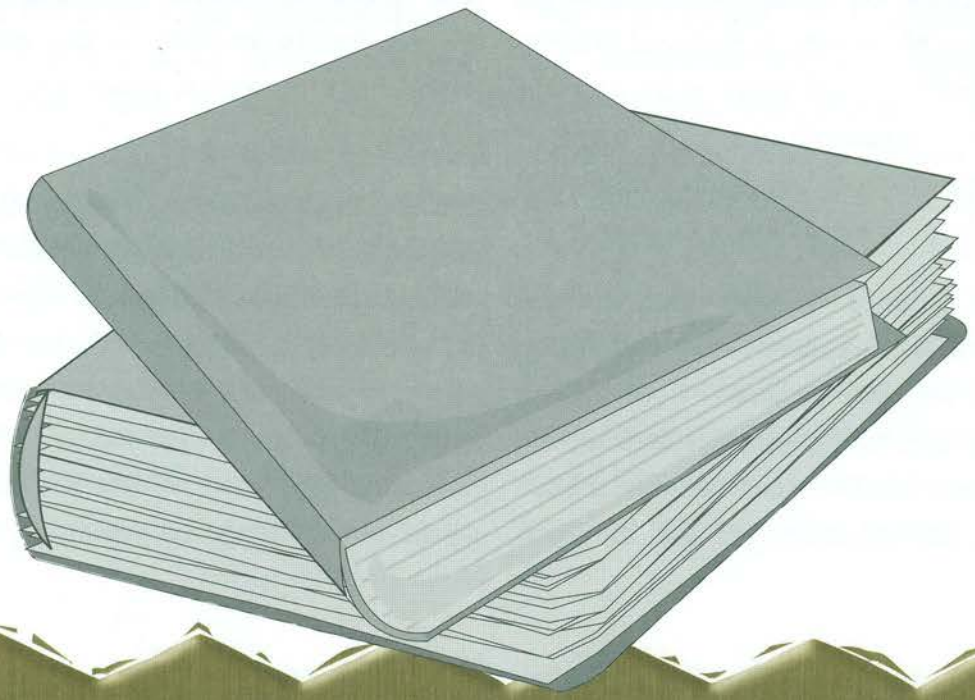
Type in your county name (ie Tippecanoe County) and choose 'Search.' You can see your county map and find out the opographic quad, which is necessary for ordering maps.

Books and Publications

Purdue University, Forestry and Natural Resources Publications - a publication listing is available in your county Extension office or you can call 1-888-EXT-INFO (398-4636).

Popular texts:

A Sand County Almanac - Aldo Leopold	ISBN number 0345345053
Game Management - Aldo Leopold	ISBN number 0299107744
Silent Spring - Rachael Carson	ISBN number 0395683297
Wolves of Minong - Durward Allen	ISBN number 047208237x
First Field Guide to Mammals, Audobon books	ISBN number 0590054899
Peterson's Field Guide to Birds	ISBN number 0395911761



APPENDIX A RARE AVIAN VISITORS COMI

Wildlife Management in Indiana News Release

Subject: RARE AVIAN VISITORS COMING BACK HOME TO INDIANA
Date: Thu, 17 Dec 98 11:27:06 -0700

FOR IMMEDIATE RELEASE
December 15, 1998
EA98-89

Contact: (USFWS) Georgia Parham
812-334-4261 x 203
E-mail: Georgia_Parham@mail.fws.gov
Contact: (IDNR) Jon Marshall 317-232-4080

RARE AVIAN VISITORS COMING BACK

HOME TO INDIANA

Trumpeter Swans Follow Ultra-light Aircraft from Canada to Southern Indiana

In an experimental project reminiscent of the movie "Fly Away Home," a group of young trumpeter swans departed Ontario, Canada, on December 4, following an ultra-light aircraft to Muscatatuck National Wildlife Refuge in southern Indiana. The flight is an attempt by the Migratory Bird Research Group, a team of private Canadian researchers, to establish a migrating flock of the huge birds in eastern North America.

The U.S. Fish and Wildlife Service and Indiana Department of Natural Resources are providing technical assistance for the project. Four young swans are making the 675-mile journey from Sudbury in southeastern Ontario, where researchers have been working throughout the summer and fall to teach them to follow an ultra-light aircraft. Their travel route has taken them along the east coast of Lake Huron, crossing into the United States near Detroit, Michigan. The swans will follow the aircraft south into Ohio, travel south to near Cincinnati, and then move into Indiana along U.S. Route 50. The birds' final destination is Muscatatuck National Wildlife Refuge near Seymour, Indiana, later this week. The site was chosen for its location in the southern part of the trumpeter's historical range and its ideal wintering habitat.

Although the project may seem similar to the popular movie "Fly Away Home," in which Canada geese were raised by humans and taught to migrate by following an ultra-light aircraft, Wayne Bezner Kerr, lead scientist with the Migratory Bird Research Group, said this project approaches the challenge in a different way. Past efforts involving swans, Canada geese, and endangered whooping cranes have relied

G BACK HOME TO INDIANA

on birds "imprinted" or closely associated with human handlers. According to Bezner Kerr, some of the swans being trained were not imprinted on humans but on adult trumpeter swans after hatching last June. "We're experimenting with several groups of swans, some of which have been imprinted not on humans but on other trumpeter swans," Bezner Kerr said. "We hope to learn if they will be more likely to behave like swans, maintain their sense of caution around humans, and successfully migrate back to Canada next spring."

Through a series of training steps, taking advantage of young birds' desire to group together and follow a leader, they are taught to follow the ultra-light aircraft. They begin by following a floatplane across a lake, progress to taking short hops with the plane in the lead, and eventually follow the aircraft for extended flights.

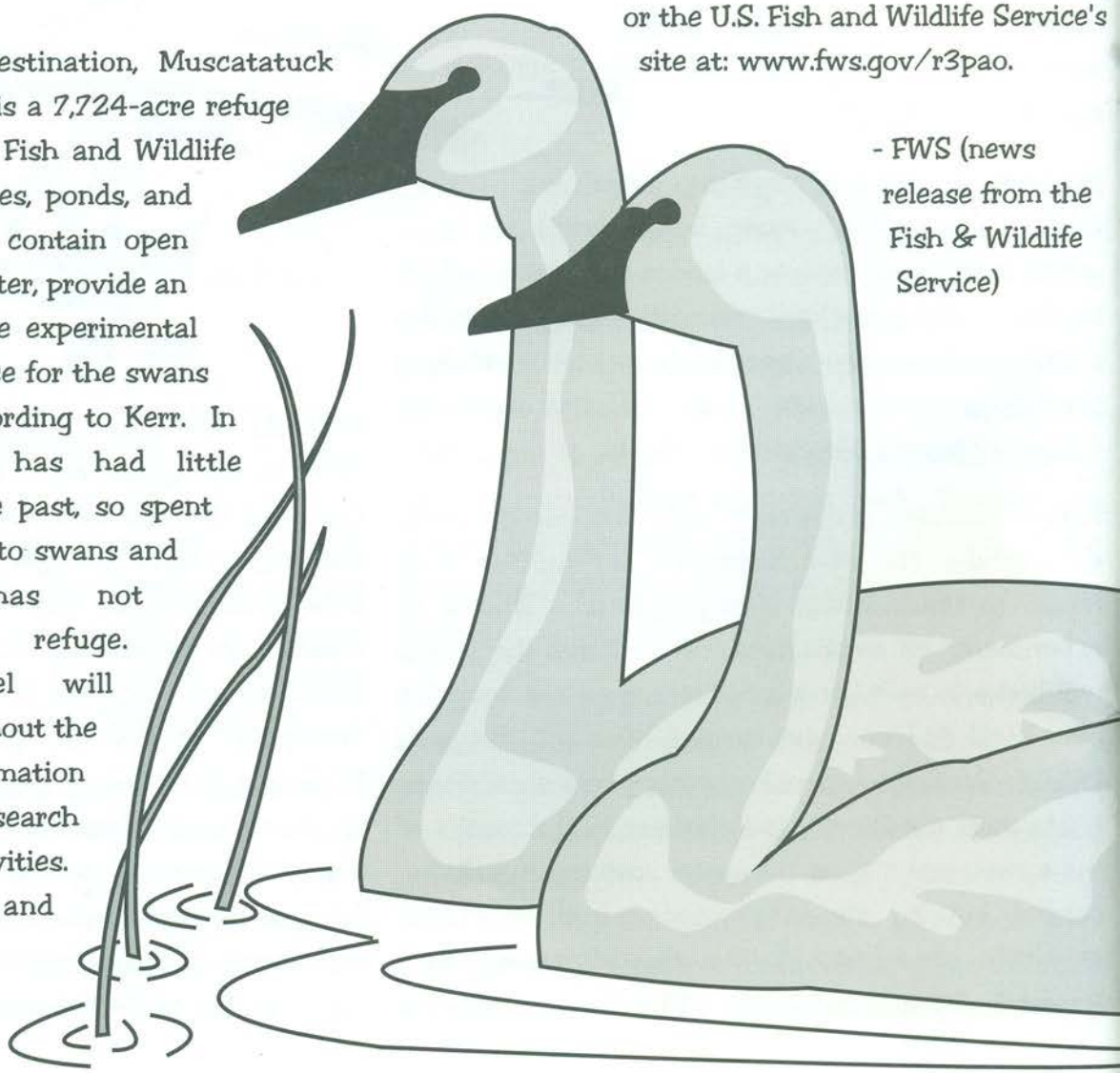
Bezner Kerr says if the birds make the journey south successfully, the next milestone is whether they return to Ontario next spring to nest. "This is an experiment," he emphasized. "We believe the swans will home in on a geographic area they see from the air. We'll find out next spring." The U.S. Fish and Wildlife Service's regional migratory bird chief, Steve Wilds, says the Service is interested in the results of the experiment. "Most trumpeter restoration is being carried out by states, provinces, and efforts of scientific organizations like the Migratory Bird Research Group," said Wilds. "The Service supports efforts to reestablish species like the trumpeter swan that need special help." Trumpeter swans were once found throughout the United States and Canada, but uncontrolled hunting and loss of habitat caused the birds to decline. Today, most trumpeters are found along the Pacific Coast, migrating from Alaska, along coastal British Columbia to southern Washington. Some trumpeters are also found in Great Basin regions of Alberta, Washington, Nevada, Montana, and Wyoming. In the Mid-west, they once ranged as far south as Indiana, Illinois, and Missouri. Restoration efforts are underway in several areas including Minnesota, Wisconsin, Iowa, Michigan, Ohio, and Ontario. Because their flight path will take the trumpeters through areas where waterfowl hunting seasons are underway, the Service and DNR officials are cautioning hunters to be on the lookout for the huge white birds to avoid accidental shootings. Trumpeter swans are protected by the federal Migratory Bird Treaty Act, as well as, by state and provincial laws. "Swans are so much larger than other waterfowl that it is almost impossible to mistake them for sport-hunted birds. We encourage all hunters to make sure of their target before shooting to avoid harming this protected species," said Gary Doxtater,

Director of the Indiana DNR's Division of Fish and Wildlife. Trumpeters are one of three swan species found in North America, along with the tundra swan and the non-native mute swan. Trumpeters, named for their deep, resonating calls, are the largest waterfowl in North America and the world's largest swan species. Though similar in appearance to tundra swans, trumpeters are nearly twice their size, weighing about 30 pounds and sporting an 8-foot wingspan. Trumpeters' plumage is entirely white, and they have jet-black bills and feet.

The trumpeters' final destination, Muscatatuck National Wildlife Refuge, is a 7,724-acre refuge administered by the U.S. Fish and Wildlife Service. The refuge's lakes, ponds, and wetlands, which usually contain open water throughout the winter, provide an excellent endpoint for the experimental migration and a good place for the swans to spend the winter, according to Kerr. In addition, Muscatatuck has had little waterfowl hunting in the past, so spent lead shot, which is toxic to swans and other waterfowl, has not accumulated on the refuge. Muscatatuck personnel will monitor the birds throughout the winter and provide information to the Migratory Bird Research Group on the swans' activities. Birdwatchers, hunters, and others who spot a trumpeter swan in southern Indiana this fall and winter are encouraged to contact the Research Group via e-mail at:

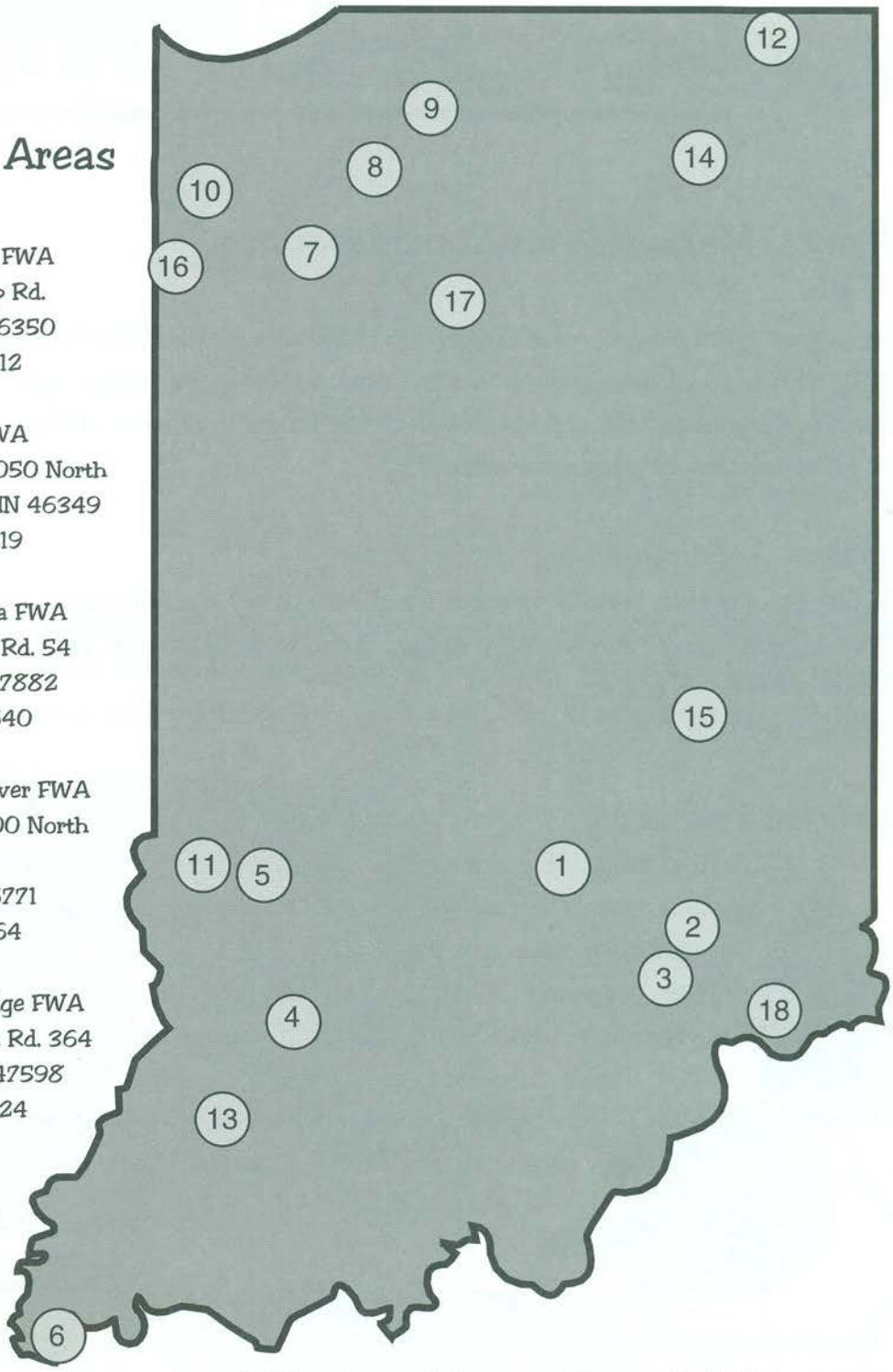
trumpeter.swan@sympatico.ca
or Muscatatuck National Wildlife Refuge at:
mike_oliver@mail.fws.gov or 812-522-4352.
In addition, the birds' progress throughout the winter can be monitored on the Internet by accessing either the DNR's website at:
www.state.in.us/dnr/fishwild/index.htm
or the U.S. Fish and Wildlife Service's site at: www.fws.gov/r3pao.

- FWS (news release from the Fish & Wildlife Service)



Appendix B

Indiana Fish and Wildlife Areas



1) Atterbury FWA
7970 S Rowe Street
Edinburgh, IN 46124
(812) 526-2051

2) Brush Creek FWA
Managed by Crosley FWA
(812) 346-5596

3) Crosley FWA
2010 South St. Rd. 3
North Vernon, IN 47265
(812) 346-5596

4) Glendale FWA
R.R. 2, Box 300
Montgomery, IN 47558
(812) 644-7711

5) Hillenbrand FWA
Managed by Minnehaha FWA
(812) 268-5640

6) Hovey Lake FWA
1298 W. Graddy Rd.
Mt. Vernon, IN 47620
(812) 838-2927

7) Jasper-Pulaski FWA
5822 Fish and Wildlife Lane
Medaryville, IN 47957
(219) 843-4841

8) Kankakee FWA
4320 W. Toto Rd.
P.O. Box 77
North Judson, IN 46366
(219) 896-3522

9) Kingsbury FWA
5344 S. Hupp Rd.
LaPorte, IN 46350
(219) 393-3612

10) Lasalle FWA
4752 West 1050 North
Lake Village, IN 46349
(219) 992-3019

11) Minnehaha FWA
2411 East St. Rd. 54
Sullivan, IN 47882
(812) 268-5640

12) Pigeon River FWA
8310 East 300 North
Box 71
Mongo, IN 46771
(219) 367-2164

13) Sugar Ridge FWA
2310 East St. Rd. 364
Winslow, IN 47598
(812) 789-2724

14) Tri-County FWA
8432 North 850 East
Syracuse, IN 46567
(219) 834-4461

15) Wilbur Wright FWA
2239 North St. Rd. 103
New Castle, IN 47362
(765) 529-9581

16) Willow Slough FWA
2042 South 500 West
Morocco, IN 47963
(219) 285-2704

17) Winamac FWA
R.R. 4, Box 115
Winamac, IN 46996
(219) 946-4422

18) Splinter Ridge FWA
Managed by Crosley FWA
(812) 346-5596

GENERAL MANAGEMENT

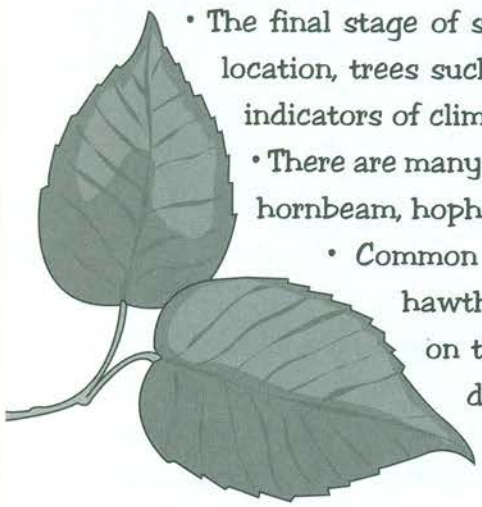
General Management Considerations

The following information was taken from the National 4-H Wildlife Evaluation Handbook (National 4-H Council 1991). This manual lists Indiana in the Eastern Deciduous Forest with Ohio, Kentucky, West Virginia, most of Illinois and Pennsylvania and about half of the Lower Peninsula of Michigan. The Eastern Deciduous Forest has the following general characteristics:

Physical Description:

- Most of the terrain is rolling except for the Appalachian Mountains which are steep.
- The average annual precipitation ranges from 35 to 60 inches and is well distributed throughout the year.
- Summers are hot and dry.
- Winters are cold.

Dominant Vegetation:



- The final stage of succession is dominated by tall broadleaf trees. Depending on the geographic location, trees such as oaks, beech, basswood, buckeye, hickory, walnut, maple, and birch can be indicators of climax vegetation.
- There are many lower canopy trees and deciduous shrubs that are important including American hornbeam, hophornbeam, sassafras, eastern redbud, flowering dogwood, and striped maple.
- Common shrubs are pawpaw, spicebush, arrow-wood, black huckleberry, blueberry, hawthorn, witch-hazel, and viburnum. A wide variety of perennial forbs are also found on the forest floor. Grasses and annual forbs are mostly limited to areas recently disturbed.

Farming and Ranching:

- Large areas of this region have been cleared of the native vegetation for the production of crops and livestock forage.
- In many areas, only steep slopes, frequent floods, or water associated with rivers and swamps have prevented the total clearing of native forests.
- Depending on how croplands are managed, some species of wildlife benefit from farming, especially if trees and shrubs are nearby.

CONSIDERATIONS

Plant Succession Stages:

Stage 1 - bare ground
Stage 2 - annual forbs and grasses
Stage 3 - perennial forbs and grasses
Stage 4 - shrubs
Stage 5 - young woodland
Stage 6 - woodland

Wildlife Management Practices:

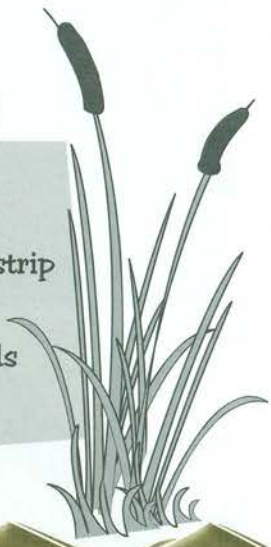
There are many recommended wildlife management practices that can be used. The challenge for the manager is to know which practices to use for which species in a particular situation. When you are developing a wildlife management plan you should consider the possible benefits of many different practices.

Land management

- Brush chopping/mowing
- Brush piles
- Controlled (prescribed) burning
- Disking
- Grain - leave unharvested
- Harvest less
- Harvest more
- Lime ponds and fields
- Livestock grazing management
- Nesting boxes/structures/platforms
- Plant food plots
- Plant grass and legumes
- Plant mast trees
- Plant trees or shrubs
- Tillage, eliminate in fall
- Timber harvest, clear-cut
- Timber harvest, selective-cut
- Water control structures

Pond management:

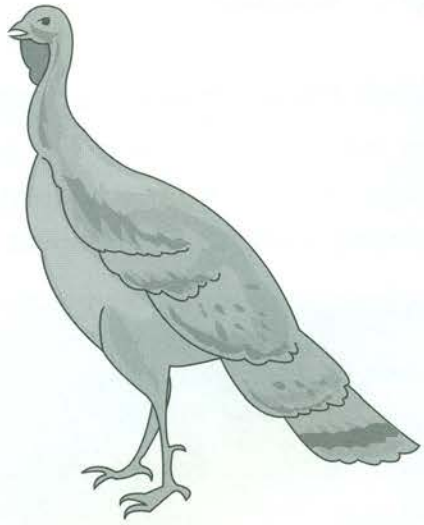
- Create artificial reefs
- Clear muddy water
- Construction
- Small dikes for temporary flooding
- Deepen edges
- Determine proper population balance
- Diversion ditches
- Fertilize
- Remove trees near dike
- Repair spillway
- Reseed watershed/filter strip
- Restock
- Shallow ponds or wetlands
- Stop leaks



Management Practices Score Sheet

Management practices recommended structure for writing a management plan. (adapted from the 4-H/FF Wildlife Habitat Evaluation Career Development Event, 1999).

1. Plan Background
    - A. Species to be managed listed
    - B. Management objectives (providing food, shelter, and water cover)
2. Plan Development
    - A. Habitat assessment
    - B. Wildlife management practices recommended
3. Plan Implementation
    - A. Where, when, and how practices applied
    - B. Affects on habitat
4. Plan Evaluation
    - A. Evaluation of management's affect on populations



Example Wildlife Management Plan

(From the 1999 4-H Wildlife Habitat Evaluation Contest held in Manhattan, Kansas)

Please note: Write your management plan using complete sentences and state your goals clearly. Use as much detail as possible.

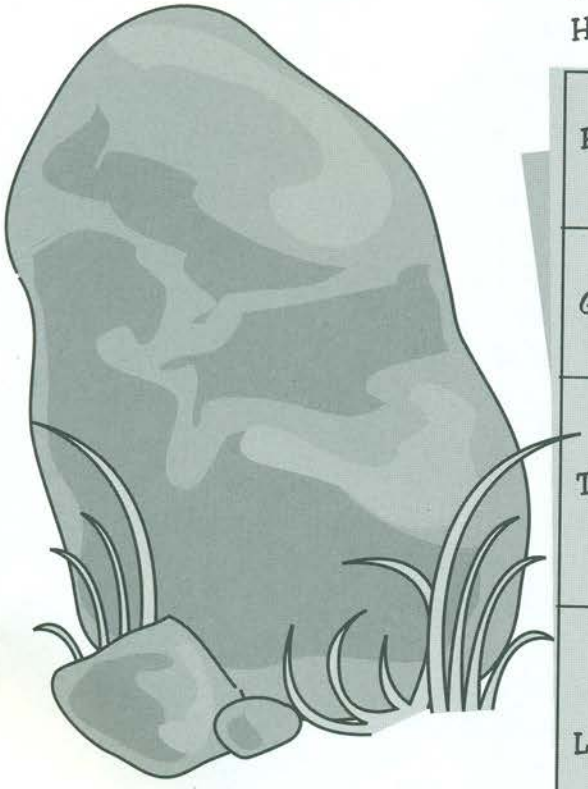
ES SCORE SHEET

Plan Background

The landowner wants to manage the property for huntable populations of rabbit, greater prairie chicken, and turkey. The pond should be managed for largemouth bass. The landowner plans to continue the livestock grazing on the property.

Considerations

Species needs; which needs are currently being met? What are the limiting factors? What needs are not being met?



Plan Development

(Outline)

Habitat Assessment - limiting factors

Eastern Cottontail	• lack of cover • no cultivated food • livestock grazing could be detrimental
Great Prairie Chicken	• livestock grazing needs to be monitored • no cultivated food to attract them
Turkey	• lack of stage 5 and 6 succession • livestock grazing detrimental to forbs • lack of supplemental food • lack of soft mast and cover
Largemouth Bass	• aquatic vegetation problem • clear water • erosion du to livestock • eroding spillway • unknown population

Management Plan Implementation Example

Cottontail	• establish brush piles • plant trees and shrubs • establish annual food plots (1 plot/15 acre max.) • protect from grazing • protect area from over grazing • monitor forest
Great Prairie Chicken	• leave some grass area ungrazed during nesting season (May - June) • plant food plots to attract (milo) • monitor harvest (6 inch high grass for displaying during booming season*)
Turkey	• plant mast trees • plant trees and shrubs • plant food plots (milo) • protect from over grazing
Largemouth Bass	• deepen pond edges • fertilize, determine balance (seines) • repair spillway (reshape and reseed) • livestock should be fenced from pond and develop watering trough

*Booming Season - The time when males collect at a site (booming ground), display for hens, and making a 'booming' sound.

Plan Evaluation

The landowner will closely monitor the harvest of both fish and wildlife through record keeping. He/she will also closely monitor the effects of grazing, and keep yearly evaluation records.

Are you interested in Wildlife?

Are you interested in wildlife and providing wildlife habitat?
Do you enjoy team work, decision making, and leadership?
Would you like to earn a trip to a National 4-H Wildlife Event?

If you answered 'yes' to these questions you should consider getting a team together to compete in the 4-H/FFA Wildlife Habitat Evaluation Contest!

Contest - Spring
For 4-H & FFA members

Contest Activities:

Aerial Photos	tell which habitat is best for a particular species by looking at aerial photographs
Foods	identify common wildlife foods
Management Plans	(team effort) discuss and evaluate how well an area meets wildlife habitat needs

Note: The contest will be held in the central part of the state. The state contest costs $10 per participant which includes lunch for participants. The top 4-H team qualifies to attend the National Wildlife Habitat Evaluation contest, all expenses paid, except transportation to the site. Participants must be enrolled in 4-H and aged 14-19.

Contact your county Extension youth educator for more information, including:

- registration forms, which must be completed (including coach and participant names and addresses) signed by an Extension educator, and mailed to the State 4-H Department by the deadline. Contest location, a map, and additional details will be mailed to coaches after the deadline.
- an introductory video that explains the contest
- to purchase a copy of the National Wildlife Evaluation Handbook.
- aerial photos and worksheets at the 4-H website (or visit http://www.four-h.purdue.edu/wildlife/wildlife)

APPENDIX

CASE STUDY OUTLINE

Case Study Outline

(The following questions, were adapted from the Case Study Response Form, Baldwin, et al., The Ag Bioethics Forum, Vol.10, No. 2, November 1998)

1. Write an ethical question of interest to you that concerns wildlife. (Your question should include a normative word, such as "should" or "ought." For example: "Should otters be reintroduced in Indiana?"

2. What is your initial reaction to this question? Do you agree with the current policy (if there is one) or not?

3. List three reasons for the answer to the question you wrote in #2.

4. List the facts that support your answer to #3.

5. List at least one moral principle that you feel supports your answer to #2. (For example: "We have a responsibility to correct the loss of wildlife that habitat destruction has caused.")

6. Write an argument that supports your initial reaction (#2) using at least one of the reasons you listed in #3, at least one of the facts from #4, and the moral principle(s) you listed in #5.

7. List two potential objections to your argument.

8. Describe how you would respond to each objection you listed in #7.

Holding an Ethical Discussion

Ethical discussions can be interesting, engaging, challenging and informative. Having a discussion about your case study with a friend can help you improve your work because your friend may bring up many ideas that you did not consider. It is important, however, to keep these discussions from becoming arguments, since arguments are not fun (quite the opposite).

You can simply read the question (#1) and ask for your friend's reaction. Or, if you would like to have a more detailed discussion, you could ask your friend to fill out the case study outline (#s 2 - 8) and discuss each item before holding a general discussion. Some guidelines that may help you with ethical discussions are given by Brian Woodruff and paraphrased here (Woodrow Wilson Biology Institute, WWNFF Institute, July 1992):

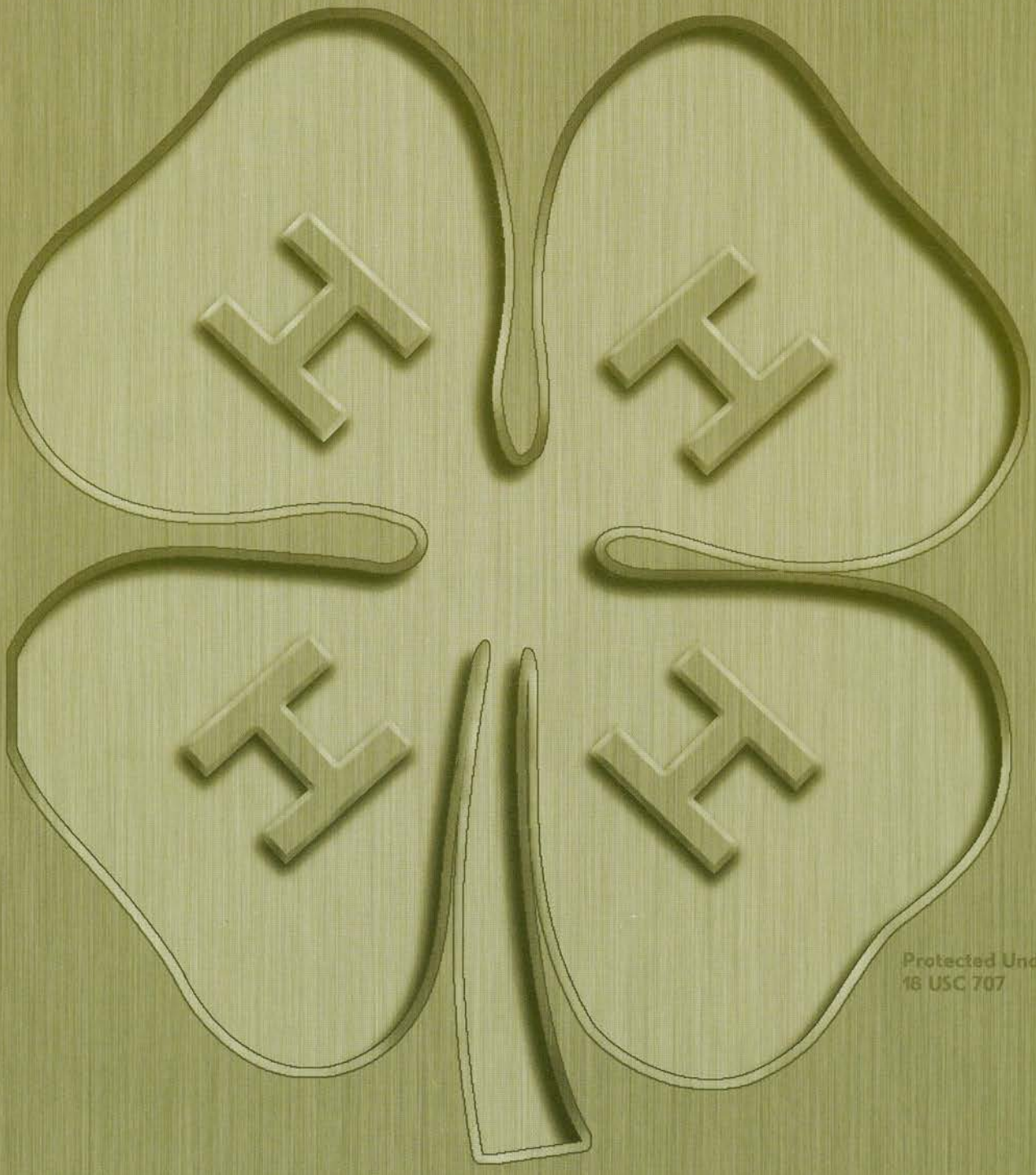
• Use an open-ended approach: There is no single "right answer" to ethical questions. The goal is not to reach agreement but to critically discuss the reasons used to justify a recommended action. Emphasis should be on why some reasons may be more appropriate than others based on customs, mores, and traditions.

• Keep a free exchange of ideas: You should feel comfortable in expressing your thoughts. Each person should have an opportunity to contribute to the discussion within a nonjudgmental atmosphere.

• Work to develop both your listening and verbal skills: Each person should be intimately engaged in the discussion activity, building and expanding on one another' ideas as well as examining each response critically.

• Focus on reasoning: Reasons are to emphasize the prescriptive "should" rather than "would" arguments.

• Remember that dilemmas produce conflict: Conflict heightens your involvement and interest will increase the amount that you learn. Resolution of internal conflict is a precondition for advancement to higher stage reasoning.



Purdue University