



WILDLIFE MANAGEMENT

Balancing the Needs of Wildlife and People

Have you ever wondered what tracking elephant herds in Kenya, protecting manatees in Florida, and installing birdhouses in your own backyard have in common? These are all examples of wildlife management, which is the applied science and art of managing wildlife and its habitat to benefit the environment, animals, and humans. Wildlife management is an engaging field that finds solutions to problems involving the furs, fins, and feathers with which we share the world.

If you think wildlife management just involves biology, think again. To tackle the major issues between wild animals and people, wildlife professionals use skills from statistics, chemistry, biology, ecology, climatology, and geography to achieve the best results. Plus, wildlife management involves more than just a small network of people. More than 10 federal agencies, numerous state agencies, and various nonprofit groups work to protect and manage wildlife in some way. Although many people and resources are already involved, every individual (especially Scouts) can play an important role in protecting wildlife.

Through Scouting's outdoor adventures, Scouts often get a closer appreciation for the wildlife they may encounter. Furthermore, Scouts promise to be kind (in the Scout Law), to be conservation-minded (in the Outdoor Code), and to respect wildlife (in the principles of Leave No Trace). This month, you can put those promises into action as you learn what wildlife is, how we manage animals and their habitats, and ultimately what role we play in the future of wildlife.

Objectives

This month's activities should:

- Help Scouts understand what wildlife is.
- Explain to Scouts why we manage wildlife.
- Show examples of how we manage wildlife.
- Introduce Scouts to the Endangered Species Act.
- Highlight how recreational fishing and hunting fit into wildlife management.
- Emphasize that each Scout plays a role in the future of wildlife.

RELATED ADVANCEMENT AND AWARDS

- Tenderfoot requirement 2
- Second Class requirements 3a and 6
- First Class requirement 3
- Bird Study, Environmental Science, Fish and Wildlife Management, Fishing, Fly-Fishing, Mammal Study, Nature, Oceanography, Reptile and Amphibian Study, and Sustainability merit badges
- Ranger: Conservation core requirement; Fishing, Hunting, and Plants and Wildlife electives



Leadership Planning

As a leadership team, you may want to discuss the following items during your planning meetings when choosing Wildlife Management as your program feature:

1. What do we know about wildlife?
2. What wildlife is managed in our community?
3. Whom do we know whose career involves managing and protecting wildlife?
4. What agencies manage wildlife in our community?
5. What wildlife management-related merit badge could we focus on?
6. What will our main event be?
7. How can we involve parents?
8. How should we change the sample meeting plans to better fit our needs?

PARENTS CAN HELP WITH THE WILDLIFE MANAGEMENT PROGRAM FEATURE BY:

1. Helping gather or provide material for this month's games
2. Recruiting subject matter experts to participate in the weekly meetings
3. Becoming more familiar with wildlife found in the area
4. Sharing any hunting or fishing knowledge
5. Providing transportation for the main event

SPECIFIC WILDLIFE MANAGEMENT INFORMATION



What Is Wildlife?

Depending on whom you ask, the definition of wildlife can vary. To a homeowner, it can mean Steller's jays, chickadees, or gray squirrels. A hunter might tell you white-tailed deer, elk, or turkeys. To a rancher, it might mean coyotes and wolves. Although these are all different examples of animals people associate as wildlife, a similarity they all share (and a good definition of wildlife) is that they are *free-ranging, nondomesticated animals usually in their natural environment*. Even though wild mammals and birds are often the focus of management efforts, it is important to realize all wild animals fall under the term wildlife.





Are Fish Wildlife?

Fish and wildlife are frequently talked about separately, even though fish do fall under the definition of wildlife. This distinction stems from the early days of wildlife management, but it has begun to fade recently with agencies and groups recognizing the term “wildlife” as comprehensive.

Why Manage Wildlife

During most encounters with wildlife, we may see only one or a few individual animals that are doing fine, giving the impression everything is normal with the species. However, just because the few animals you see do not have problems, that does not mean the population—the grouping of all individuals of a certain species in a designated area—is doing well, too. Wildlife populations can face a variety of problems, stemming from diverse causes. Often when a wildlife population is declining (or occasionally growing too big), wildlife professionals intervene to help adjust the population to a sustainable number. They are especially keen on working to conserve and/or preserve wildlife when humans have jeopardized their populations.

Besides addressing population problems, wildlife managers also try to prevent and solve human-wildlife conflicts. Whether it's a bear eating out of trash cans in a neighborhood or birds flying into planes near a busy airport, wildlife can interfere with daily life, thus creating human-wildlife conflicts.

These conflicts usually happen when urban development spreads into previously wild areas, displacing wildlife due to loss of habitat. Since these human-wildlife conflicts benefit neither people nor animals, wildlife managers look for solutions.

Types of Management

Wildlife management can come in as many shapes and sizes as the animals it aims to protect; however, there are two general categories:

1. **Active (or direct) management** works directly on the population level, changing its numbers by direct actions. Examples include breeding programs and adjusted hunting levels, or altering numbers through indirect actions such as protecting the animal's habitat, removing predators, and vaccinating individuals against disease. Active management is generally implemented when a wildlife species slides to a dangerously low level or increases to an unsustainably high level.
2. **Inactive (custodial or passive) management** works to be preventive and/or protective of the wildlife population. It seeks to help minimize outside factors on the population and its respective habitat. Wildlife refuges, national parks, and marine sanctuaries are all examples of passive management. Other methods include monitoring population levels and preventing interference to migratory routes or nesting grounds.





Endangered Species Act

The Endangered Species Act of 1973 is arguably the most powerful law protecting wildlife in the United States. The act reinforces the idea that every plant or animal species and its niche—an organism's role within its community—are important. Some major points of the act include the following:

- The act outlines the process for categorizing an animal if its population is dangerously low. A species can be listed as "endangered," meaning it is in danger of extinction throughout all or a significant portion of its range, or "threatened," meaning it is likely to become endangered in the foreseeable future.
- The act protects critical habitats for endangered or threatened animals.
- The act makes it illegal to harm endangered or threatened animals or their habitat.
- The act is enforced by the U.S. Fish and Wildlife Service and National Marine Fisheries Service.

Hunting and Fishing

Although it might seem strange that killing animals can help a species, hunting and fishing play important roles in wildlife management. Annually, state wildlife managers determine what number of a particular species can be harvested or taken via hunting and fishing regulations for their respective state, helping states reach their goals for certain wildlife populations. Revenue from hunting and fishing licenses and permits also help cover the wildlife management budgets at the state and federal levels.

NOTICE



FISHING LICENSE REQUIRED





WILDLIFE MANAGEMENT GAMES

Wildlife Tracks Game

Equipment: 10 to 20 pictures or silhouettes of local wildlife's footprints or tracks; an answer key indicating which track goes with which species

Method: Individually or in teams, Scouts look at a track and take turns matching the track to the animal. A judge informs them whether or not they are correct. Once a track is correctly identified, they move on to the next track.

Scoring: 1 point is awarded to the individual or team for each correctly identified track.

Notes: Simple Internet searches can pull up "common" wildlife (raccoons, rabbits, deer, etc.). If you have unique local wildlife, try to include those tracks. If you want to make the game harder, include exotic wildlife species like elephants.



Predator and Prey

Equipment: A group of Scouts, preferably 10 or more; an outdoor area

Method: This is a modification of tag in which some members of the group are chosen as "predators" and the rest of the group is designated "prey." The goal of the game is for the predators to capture all the prey by tagging them in a given round (lasting five minutes or so) within a designated area. After each round, the number of predators should vary (e.g., decrease number of predators down to two, increase up to eight; players can switch roles). At the end, a debriefing should be held where Scouts are asked about how the prey population did in relation to the number of predators in each round.

Scoring: Scouts who are "prey" and tagged by a "predator" are considered out and should wait until the next round. They can either "take a knee" or step to the sidelines.

Fish ID Game

Equipment: 10 to 15 pictures of fish found in the local area; an answer key indicating the correct common name of each fish pictured

Method: Scouts individually or in teams take turns guessing the common name for each fish pictured; a judge informs them whether or not they are correct. Once a fish is correctly identified, move on to the next fish.

Scoring: 1 point is awarded to the individual or team for each fish correctly identified.

Notes: Pictures of common fish in your state or area can be easily found online, but the difficulty can be increased by adding species from around the country or world (sturgeon, yellowfin tuna, etc.).

Wildlife Scat-Candy Game

Equipment: Chocolate sprinkles, chocolate macaroons, brown M&Ms, chocolate-covered raisins, licorice-flavored jelly beans, Hershey's Kisses, and Tootsie Rolls; pens or pencils and sheets of paper for writing answers

Method: Scouts look at the "scat" (candy) individually or in teams and write down which animal they think made which scat. A word box with the possible species listed could be provided to assist players. After all guesses are in, the correct answers are revealed, and the Scouts can eat the candy (if they still want to!).

Scoring: Points are awarded for each correct match.

Notes: The following types of candy best represent these animals by appearance:

chocolate sprinkles = mouse

chocolate macaroons = beaver

M&Ms = rabbit

chocolate-covered raisins = deer

jelly beans = rat

Hershey's Kisses = elk

Tootsie Rolls* = raccoon

*The candy can be quickly warmed up in a microwave oven and shaped to seem more realistic.



E.D.G.E. Ideas

Explain how it is done—Tell them.

Demonstrate the steps—Show them.

Guide learners as they practice—Watch them do it.

Enable them to succeed on their own—Have them practice/teach it.

EXPLAIN

- Talk about evidence or signs a mammal has been in an area (e.g., scat, tracks, fur).
- Discuss the common bird species found in your area.
- Explain what a fishing license is and what regulations exist on common sport fish.
- Show an online video from either an agency or respected group overviews what an endangered species is.
- Discuss the importance of protecting wildlife habitat in your local community and globally.

GUIDE

- Have Scouts practice examining clues or signs and determining what mammal left them.
- Provide an opportunity for Scouts to practice identifying birds in an outdoor setting.
- Guide Scouts on a fishing trip, ensuring all the appropriate regulations are followed.
- Have older Scouts research an endangered species in your county or state.
- Have Scouts help with a habitat conservation project or cleanup.

DEMONSTRATE

- Demonstrate how to identify mammals from the clues they leave behind.
- Show how to identify common bird species with binoculars or a spotting scope and a field guide.
- Walk through the process of getting a fishing license for a youth or adult.
- Demonstrate how to look up endangered species through the U.S. Fish and Wildlife Service's database, www.fws.gov/endangered.

ENABLE

- Ask Scouts on outings to list what mammals they think have been in the area.
- Encourage Scouts to go on birding trips or keep a personal bird list.
- Have older Scouts help lead younger Scouts on a fishing trip.
- Challenge Scouts to give a presentation on an endangered species.
- Encourage Scouts to participate in existing conservation projects or create their own.

MAIN EVENT SUMMARIES

● ESSENTIAL

Day Activity

Refuge or hatchery tour—Have your unit visit a national wildlife refuge or state fish hatchery near your community or in your area. Arrange ahead of time to have a staff member meet your unit and provide an overview of how the refuge or hatchery aids in wildlife management.

■ CHALLENGING

Overnight Activity

Habitat conservation or restoration—Go on a weekend camping trip during which the unit completes a service project benefiting wildlife habitat. The service project should focus on habitat conservation or restoration and should benefit public lands or lands held by a respected nonprofit organization (e.g., The Nature Conservancy).

◆ ADVANCED

Overnight Activity

Wildlife survey or research project—Have the unit work with an agency or research group on conducting a wildlife survey or research project. Examples could be doing a mammal or bird count, monitoring for the presence or absence of a species, or helping with fieldwork. This activity is geared toward a small group of older Scouts and could span several weekends.



WILDLIFE MANAGEMENT

Meeting Plan: What Is Wildlife?



Week 1 Date _____ Week 2 Date _____

ACTIVITY	DESCRIPTION	RUN BY	TIME*
Preopening 15 minutes before meeting	Display a variety of wildlife identification books and field guides. Encourage Scouts to research species they're interested in and share information they learn.		6:45 p.m.
Opening Ceremony 10 minutes	Flag presentation Oath and Law Uniform inspection		7 p.m.
Group Instruction 10 minutes	Discuss the definition of wildlife and how different people perceive wildlife differently.		7:10 p.m.
Skills Instruction 40 minutes	<ul style="list-style-type: none">Identify common wildlife in your town.Talk about how different wildlife species interact.Share examples of wildlife from other parts of the country or world.		7:20 p.m.
	<ul style="list-style-type: none">Talk about what a habitat is.Discuss why habitat is important to wildlife.Share examples of wildlife from other parts of the country or world.		
	<ul style="list-style-type: none">Identify agencies involved with wildlife.Discuss habitat loss and some of its causes.Talk about society's perception of predators.		
Breakout Groups 15 minutes	<ul style="list-style-type: none">New members work on basic Scout skills.Older members look at merit badges that might overlap with wildlife management topics.Review the last main event, and discuss what could have made it better.		8 p.m.
Game 10 minutes	Play Wildlife Tracks Game (described earlier).		8:15 p.m.
Closing 5 minutes	Announcements Leader's minute Closing		8:25 p.m.
Total 90 minutes of meeting			
After the Meeting 15 minutes	Leadership team reviews plans for the next meeting and for the main event.		

*All times are suggested.



WILDLIFE MANAGEMENT

Meeting Plan: Why We Manage Wildlife



Week 2 Date _____

ACTIVITY	DESCRIPTION	RUN BY	TIME*
Preopening 15 minutes before meeting	Lay out on a table the leaves from various plants and trees, and place corresponding cards facedown identifying the respective plant or tree. Let Scouts guess before looking at the answer.		6:45 p.m.
Opening Ceremony 10 minutes	Flag presentation Oath and Law Uniform inspection		7 p.m.
Group Instruction 10 minutes	Discuss the following: <ul style="list-style-type: none"> What a population is Problems faced by wildlife populations The definition of a human-wildlife conflict 		7:10 p.m.
Skills Instruction 40 minutes	<ul style="list-style-type: none"> Discuss an animal's "niche." Give examples of wildlife species with important jobs (scavengers, pollinators, etc.). Highlight the ways every animal is connected and the problems that occur when there are too many or too few of a certain species. 		7:20 p.m.
	<ul style="list-style-type: none"> Talk about the ways humans affect wildlife populations. Discuss why it's important to try and save declining populations. 		
	<ul style="list-style-type: none"> List examples of some human-wildlife conflict in your community or area. Discuss the ways wildlife management relates to solving this problem. 		
Breakout Groups 15 minutes	<ul style="list-style-type: none"> Continue to work on advancement or electives. Make plans for participation in the main event; outline a start and end time, and coordinate transportation. 		8 p.m.
Game 10 minutes	Play Wildlife Scat-Candy Game (described earlier).		8:15 p.m.
Closing 5 minutes	Announcements Leader's minute Closing		8:25 p.m.
Total 90 minutes of meeting			
After the Meeting 15 minutes	Leadership team reviews plans for the next meeting and for the main event.		

*All times are suggested.



WILDLIFE MANAGEMENT

Meeting Plan: How We Manage Wildlife



Week 3 Date _____

ACTIVITY	DESCRIPTION	RUN BY	TIME*
Preopening 15 minutes before meeting	Set up a table displaying different fishing lures and flies. Have signs that explain which fish or environment each one is used for.		6:45 p.m.
Opening Ceremony 10 minutes	Flag presentation Oath and Law Uniform inspection		7 p.m.
Group Instruction 5 minutes	Teach the two general types of wildlife management and the role hunting and fishing play in management.		7:10 p.m.
Skills Instruction 45 minutes	<ul style="list-style-type: none">Walk through different examples of wildlife management and have Scouts sort them into the two categories.Show videos of wildlife management in action.		7:15 p.m.
	<ul style="list-style-type: none">Talk about different careers that involve wildlife management.Explain the process of getting a fishing license.Cover regulations on popular sport fish.		
	<ul style="list-style-type: none">Discuss the two general types of management and situations when one might be preferred over the other.Review the process of getting a hunting license.Discuss the different categories of hunting and general safety precautions.		
Breakout Groups 15 minutes	<ul style="list-style-type: none">Continue work on advancement or electives.Continue plans for participation in the main event; assign responsibilities and create a packing list.		8 p.m.
Game 10 minutes	Play Fish ID Game (described earlier).		8:15 p.m.
Closing 5 minutes	Announcements Leader's minute Closing		8:25 p.m.
Total 90 minutes of meeting			
After the Meeting 15 minutes	Leadership team reviews plans for the next meeting and for the main event.		Closing 5 minutes

*All times are suggested.



WILDLIFE MANAGEMENT

Meeting Plan: The Future of Wildlife



Week 4 Date _____

Week 3 Date _____

ACTIVITY	DESCRIPTION	RUN BY	TIME*
Preopening 15 minutes before meeting	As Scouts arrive, show Internet videos about the National Wildlife Federation's Certified Wildlife Habitat program. (Find some at youtube.com/user/NationalWildlife .) Talk about how unit families could make the area more welcoming to wildlife.		6:45 p.m.
Opening Ceremony 10 minutes	Flag presentation Oath and Law Uniform inspection		7 p.m.
Group Instruction 5 minutes	Discuss the following: <ul style="list-style-type: none"> The Endangered Species Act of 1973 The definition of endangered species The definition of a threatened species 		7:10 p.m.
Skills Instruction 40 minutes	<ul style="list-style-type: none"> Talk about prominent endangered species globally. Ask Scouts why we should try saving an endangered species. Share the success story of the recovery of the bald eagle. 		7:15 p.m.
	<ul style="list-style-type: none"> Share information about endangered or threatened species that live in your area or state. Demonstrate how to look up information about endangered species. Talk about the efforts underway to save the species. 		
	<ul style="list-style-type: none"> Discuss the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Brainstorm ways you can help with saving endangered species in your daily life. Ask Scouts how they can help ensure a better future for wildlife. 		
Breakout Groups 15 minutes	<ul style="list-style-type: none"> Continue work on advancement or electives. Finish plans for participation in main event; confirm the final details, and walk through the sequence of events. 		7:55 p.m.
Game 15 minutes	Play Predator and Prey (described earlier).		8:10 p.m.
Closing 5 minutes	Announcements Leader's minute Closing		8:25 p.m.
Total 90 minutes of meeting			
After the Meeting 15 minutes	Leadership team reviews plans for the next meeting and for the main event.		

*All times are suggested.



WILDLIFE MANAGEMENT

Main Event: Refuge or Hatchery Tour



Date _____

Logistics

Location: _____

Departure time: _____

Return time: _____

Duration of activity: Daytime, 4 to 6 hours

Budget: Completed _____ Approved _____

Camping: Duty roster _____ Menu _____

Transportation: Group _____ Self _____

Tour and activity plan: Completed _____ Submitted _____

Essential (Tier I)

Have your unit visit a national wildlife refuge or state fish hatchery near your community or in your area. Arrange ahead of time to have a staff member meet your unit and provide an overview of how the refuge or hatchery aids in wildlife management.

Equipment List

- Uniform (as decided upon earlier)
- Pen and paper for taking notes
- Camera or cell phone as appropriate
- Lunch (Decide on individual or group.)
- Scout Basic Essentials (Review the list and take what you need.)

Activity

- Find a national wildlife refuge or state fish hatchery in your area.
- Check hours and availability and whether you have to coordinate a visit.
- Decide on a date, start and end times, and transportation.
- Arrange to have a staff member meet with your group.
- Figure out any plans for lunch or food.

Safety

- Always use the buddy system.
- Keep a first-aid kit on hand, but also know where medical assistance is available.
- Have a cell phone and numbers available for emergencies.
- Take any other precautions as indicated for the activity type.

Notes



WILDLIFE MANAGEMENT

Main Event: Habitat Conservation or Restoration



Date _____

Logistics

Location: _____

Departure time: _____

Return time: _____

Duration of activity: Overnight

Budget: Completed _____ Approved _____

Camping: Duty roster _____ Menu _____

Transportation: Group _____ Self _____

Tour and activity plan: Completed _____ Submitted _____

Challenging (Tier II)

Go on a weekend camping trip during which the unit completes a service project benefiting a wildlife habitat. The service project should focus on habitat conservation or restoration and should benefit public lands or lands held by a respected nonprofit organization (e.g., The Nature Conservancy).

Equipment List

- Work clothes
- Tools and equipment (check to see if provided)
- Camping gear (individual and group)
- Scout Basic Essentials (Review the list and take what you need.)

Activity

- Identify an agency or group you could partner with for a service project.
- Figure out location of project and where you could camp nearby.
- Decide on a date, start and end times, and transportation.
- Plan a typical weekend campout for your group, keeping in mind how long the project will take.

Safety

- Always use the buddy system.
- Keep a first-aid kit on hand, but also know where medical assistance is available.
- Have a cell phone and numbers available for emergencies.
- Follow BSA guidelines for tool use, and review appropriate personal protective equipment.
- Take other precautions as indicated for the activity type.

Notes



WILDLIFE MANAGEMENT

Main Event: Wildlife Survey or Research Project



Date _____

Logistics

Location: _____

Departure time: _____

Return time: _____

Duration of activity: Day or overnight

Budget: Completed _____ Approved _____

Camping: Duty roster _____ Menu _____

Transportation: Group _____ Self _____

Tour and activity plan: Completed _____ Submitted _____



Advanced (Tier III)

Have the unit work with an agency or research group on conducting a wildlife survey or research project. Examples could be doing a mammal or bird count, monitoring for the presence or absence of a species, or helping with fieldwork. This activity is geared toward a small group of older Scouts and could span several weekends.

Equipment List

- Appropriate clothing
- Equipment needed for research
- A communication plan
- Camping gear as needed
- Computers, if needed
- Power source, if needed
- Scout Basic Essentials (Review the list and take what you need.)

Activity

- Contact colleges/universities, agencies, or nonprofits for research opportunities.
- Invite a researcher to visit with the group.
- Determine how your group will assist with the research.
- Make appropriate assignments, and consider safety needs.
- Determine whether or not it will be completed through day outings or campouts.
- Work on research project as planned.
- Submit research results and observations as directed.

Safety

- Identify possible risks of research activity, and discuss them with the researcher(s).
- Always use the buddy system.
- Keep a first-aid kit on hand, but also know where medical assistance is available.
- Have a cell phone and numbers available for emergencies.
- Take other precautions as indicated for the activity type.

Notes



WILDLIFE MANAGEMENT

REFERENCES

Books

Bird Study, Environmental Science, Fish and Wildlife Management, Fishing, Fly-Fishing, Mammal Study, Nature, Oceanography, Reptile and Amphibian Study, and Sustainability merit badge pamphlets

Krausman, Paul R. *Introduction to Wildlife Management: The Basics*. Prentice Hall, 2001.

Leopold, Aldo, and Curt Meine, ed. *Aldo Leopold: A Sand County Almanac and Other Writings on Conservation and Ecology*. Library of America, 2013.

Mackay, Richard. *The Atlas of Endangered Species*. University of California Press, 2008.

Sodhi, Navjot S., and Paul R. Ehrlich. *Conservation Biology for All*. Oxford University Press, 2010.

Agencies, Organizations, and Websites

Convention on International Trade in Endangered Species (CITES)

Website: <http://www.cites.org>

National Audubon Society

Website: <http://www.audubon.org>

National Marine Fisheries Service

Website: <http://www.nmfs.noaa.gov>

National Wildlife Federation

Website: <http://www.nwf.org>

The Nature Conservancy

Website: <http://www.nature.org>

U.S. Fish and Wildlife Service

Website: <http://www.fws.gov>

World Wildlife Fund

Website: <http://www.worldwildlife.org>

Related Program Features

Fishing, Nature and Environment, Outdoor Ethics, Science, and Sustainability

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