



## 4-H Activity Guide

# Spying on Wildlife

### Skill Level

Advanced

### Learner Outcomes

Learn to set up and use trail cameras

Document and identify wildlife

Learn about animal behavior

### Education Standard(s)

Use tools and technology to collect data

### Success Indicator

Set up and use trail cameras to document wildlife species and behaviors

### Life Skill(s)

Critical Thinking,

Responsible Citizenship

### Tags

Wildlife

Trail Camera

### Materials List

Trail Camera

### Lead-in Question(s) or Statement

If you walk through the woods during the day, you have probably seen gray squirrels, chipmunks, various birds and maybe a white-tailed deer or wild turkey. However, have you ever wondered what other species are out there?

### Introduction

Although some are readily seen, others are more secretive and tend to hide if they see, smell or hear us walking through the woods. Some species are only active at night, so we rarely see them. We call those animals *nocturnal*. Raccoons, coyotes and opossums are examples of species that are active mostly at night. Species that are active during the day are called *diurnal*. Squirrels, groundhogs, wild turkeys and songbirds are examples of species that are only active during the day. There are other species that are most active during the twilight hours. We call them *crepuscular*. White-tailed deer are most active in the morning and evening, but are also active during the day and night.

In order to find out which wildlife species are using an area, we must be able to identify species that are active during all times. Traditionally, this has been done by identifying tracks or using spotlights along trails or roadways. However, many species are not detected with these methods. Today, wildlife managers often use infrared-triggered cameras, also called trail cameras. These cameras enable managers to get pictures of animals that are active both day and night. These cameras can be used in most any location — in the woods, along roads, beside fields, even along creeks or lakes. You, too, can use these cameras to identify the wildlife species that occur in the woods or fields where you live.



### Learning about trail cameras

Trail cameras can be attached to a tree, fence post or stake driven into the ground. When they sense the heat or motion of an animal, they take a picture. This is an easy and fun way for you to find out what wildlife species occur on your property or on another area where you have permission to visit. Trail cameras have a variety of different features. Some models have an incandescent flash, which is what is used in most digital hand-held cameras. This type of flash is good because it takes color pictures at night, and the pictures are generally high-quality. Other cameras use red-light illumination instead of a flash. These take black-and-white pictures at night, and use less battery power than an incandescent flash. Another feature is the camera delay. This is the amount of time between each picture taken by the camera. You should set the camera delay according to where you put your camera and which species you are targeting. For most setups, you will want to use a one-minute delay or less. Trail cameras can also be programmed to take multiple pictures at a time, and some even take short videos. Using the video option is a fun way to learn about wildlife behavior. Most modern cameras use a memory card to store pictures and videos. This card allows your camera to take many pictures without having to replace film or develop pictures. Trail cameras operate with batteries. It is beneficial, but not necessary, to use rechargeable batteries. While they may cost more, they can be recharged and used repeatedly to save money over the long term. You should test your camera before you take it to the field, make sure it has fresh batteries, and correct the time/date stamp. If the stamp is set correctly, each picture will have the date and time of the day or night it was taken printed in the corner or bottom of the photo. If you have never used trail cameras before, it can be useful to set up your camera in your backyard before taking it to the woods. You can test your camera using a live moving object — you!

In today's market, there are a wide variety of trail cameras, and they can be purchased at most places where hunting supplies are sold. There are many different models available, and they have a variety of different features. Some of the more expensive cameras may have a better trigger time, flash range, detection range or picture quality. There are even cameras that automatically send a picture to your phone when it is triggered! Trail cameras usually cost between \$80 and \$250; however, the price can vary greatly. Some popular brands include Bushnell, Reconyx, Moultrie, Stealth Cam and Cuddeback.

### Glossary Words

**Trigger time:** The amount of time a camera takes to take a picture once the animal has entered the detection zone in front of the camera.

**Flash range:** The greatest distance a camera's flash can capture an animal at night.

**Detection range:** The furthest distance a camera can detect heat and/or motion.

**Picture quality:** Clarity and quality of the photos. Look for samples online to determine which look best.



## Where do you put your camera?

What do you want to find with your camera? If you want to try and identify as many wildlife species as possible using your camera, you will need to put your camera in lots of locations — along trails, on top of logs, beside a creek, at the edge of a food plot, under a tree that is dropping acorns or other mast, or where animal movement is “funneled” by a fallen tree, ditch or some other structure. You will have to think about this. Identify game trails, which are characterized by beaten down vegetation and animal tracks. Look for a place where two or more trails intersect. Some animals, such as deer and coyotes, will also use old logging roads as travel corridors. Try placing your camera along one of these roads. Many mammals, such as mink, beaver, raccoons, river otters and muskrats, are associated with water and will often travel alongside creeks and ponds.

Walk along a creek bank and look for tracks. Wherever you see sign of wildlife, place your camera and see what kind of pictures you get. It is exciting and fun to anticipate what you will see! Of course, if you have multiple cameras, you can place them in various locations and see which locations provide the most pictures.



Figure 1. Many mammals, such as mink, beaver, raccoons (pictured here), river otters and muskrats, are associated with water and will often travel alongside creeks and ponds.

## What is a funnel?

A funnel is anything that forces wildlife to travel through a narrow area. These are great places to set up cameras because there may be a relatively high number of animals passing through a small area. Some examples of funnels include:

- A fence line.
- A fallen tree that has damaged a section of fence. Wildlife will cross the fence here.
- A strip of vegetation between two water sources.
- A tree or log that has fallen across a creek.
- A culvert that passes underneath a road.
- A thin strip of timber or other vegetation that connects two larger tracts of lumber.

## Other Vocabulary Words

Nocturnal

Diurnal

Crepuscular

Wildlife Diversity



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### Where do you put your camera?

When deciding where to put your camera, think about where various wildlife species are found. Deer commonly follow trails. Raccoons and mink walk along creek banks. Male ruffed grouse drum on top of logs. Coyotes walk along woods roads. Turkeys often feed in fields. Think about where different species might occur and how you can set-up your camera to get pictures. Some examples include:

- Near a pond, lake or creek bank. Look for tracks or beaver slides.
- Facing a bluebird or wood duck nesting box.
- Facing the carcass of a deer or other animal. This is a great way to get pictures of scavengers such as hawks, vultures, bobcats and coyotes. If you are targeting birds, place the carcass where it can be seen from the sky. Anchor the carcass to a tree so it cannot be dragged away by a feeding scavenger.
- Where table scraps are thrown out. This is a great way to find out what wildlife species occur around your house.
- Field edge. This is a good place to get pictures of animals feeding in or traveling through the field.
- A fallen tree. Ruffed grouse drum on fallen logs (in the mountains), and small mammals, such as squirrels, travel across them.
- Wild turkey strutting or dusting areas.
- A deer scrape or rub. Deer often visit these sites.
- Locate a bird nest and see if you can attach a camera near it. You may also get photos of nest predators!
- On a stake, place a camera just above the surface of a pond to get pictures of waterfowl or swimming mammals.
- The intersection of two game trails where deer or coyotes travel.
- Facing a hole in the ground that is a likely den site.
- Wallow sites where wild pig tracks are found.
- Facing a post in a field where birds may perch. Set the camera close so it picks up small songbirds.



Figure 2. To capture a coyote on camera, try setting the camera up along woods roads.



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### Camera setup

How you set up your camera is critical to getting good pictures. For some setups, it is important to face the camera to the north or south so it is not facing the sun. The height of the camera is also important. If you are trying to get pictures of small animals near the ground, the camera needs to be near the ground or pointing downward. For example, if you have your camera set up along a creek, or another location where you expect small animals, you may want to point it lower than normal. However, if you are hoping to get pictures of white-tailed deer along a trail or feeding under an oak tree and you don't want pictures of squirrels or raccoons, for example, you should position the camera about 2 feet above ground. Angle the camera appropriately so it points toward the spot where you expect the animal to occur. When setting up your camera, it is also important to consider the distance from the camera to the animal. Decide on the distance based on the animal you are targeting. For example, if you are trying to get pictures of deer, coyote or turkeys, you will want to set the camera about 12 feet away from where you expect them to appear. This setup will ensure you get the entire animal in the shot, and give you the opportunity to get pictures of multiple individuals. If you are hoping for pictures of smaller animals, such as squirrels or raccoons, set the camera near the ground or along or on top of a log. Always lock your camera using a chain or cable to protect it against thieves.



Figure 3. It is not unusual to get pictures of bucks you have not seen while hunting. Trail cameras add excitement to hunting by showing you the animals that are using the property.

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## 4-H Activity Guide

### TALK IT OVER:

Share ...

In which area (trail, creek, woods road, food source, etc.) did you get the most pictures?

What time of day (daytime, twilight, night) did you get the most species?

Did you get pictures containing multiple species? If so, what were they? Make a list identifying species interactions you observed.

At each location, how many days did it take until the camera stopped getting pictures of new species?

Reflect ...

Which area had the most species?

Did some areas contain species that other areas did not?

Generalize ...

How do you think this relates to wildlife diversity?

Why did some areas contain more species of wildlife?

Apply ...

What could you do to promote wildlife diversity?

How could you attract new wildlife to the area?

Why is wildlife diversity important?

Programs in agriculture and natural resources, 4-H youth development, family and consumer sciences, and resource development.

University of Tennessee Institute of Agriculture, U.S. Department of Agriculture and county governments cooperating.

UT Extension provides equal opportunities in programs and employment.

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