



# Woodland Fish & Wildlife

## Techniques and Tools for Monitoring Wildlife on Small Woodlands

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Monitoring wildlife can provide many unique insights into the health and productivity of forestland. The drive for monitoring wildlife on your property may stem from personal goals, business objectives or regulatory requirements. Wildlife observations and monitoring can help you understand your property and help you reach management objectives by:

- **Identifying ecologically important areas and habitat features;**
- **Collecting baseline data to compare against future assessments;**
- **Identifying potential problems (e.g., over-browsing, rodent populations, invasive species)**

Observations of wildlife species, population number and habitat conditions can provide indicators of habitat change over time. There are many tools and techniques available to private landowners that will help make informed and practical monitoring decisions.

### Gather Information

Before you begin monitoring wildlife on your forest or woodland, it is important to gather information about the habitats on your property and the species that may inhabit them. First, identify the habitats on your property. You can do so by simply reviewing aerial photographs or maps of the area

and delineating habitat types based on forest stand structures, watercourses and riparian areas, wetlands, or other features. Habitat identification may also be aided by reviewing your property with aerial photography and by reviewing information from various governmental and non-governmental sources. Several online tools can assist you in identifying and delineating habitats within your forest or woodland:

- **The Oregon Conservation Strategy** provides descriptive fact sheets on habitat types and priority species.
- **Washington Priority Habitats and Species**: This rich source maintained by Washington Dept. of Fish and Wildlife provides write ups on specific habitat types and focal species across Washington.
- **Oregon Explorer**: This online mapping tool provides access to a multitude of layers, including known wetlands and land cover data.
- **Western Landscapes Explorer**: Similar to the Oregon Explorer tool, the Western Landscapes Explorer is a mapping tool that provides a variety of data across several western states.
- **County Assessor Web sites**: Many counties have their land base digitally mapped with satellite aerial photos and property lines available on line.

Identifying the habitats available to wildlife is the first part of the equation – the second is identifying the species that exist in your area. This can be as easy as speaking with neighbors, former landowners, timber harvesters, or others that have worked on or near your property. They will likely have anecdotal knowledge of the species that occur in your area. Many other resources are also available to you, including:

- **Oregon Explorer Wildlife Viewer**: This tool will allow you to generate species lists specific to geographic areas, such as your property.
- **Oregon Biodiversity Information Center (ORBIC)**: This organization gathers observational information on threatened, rare and endangered species and maintains a database of location data. For a small fee, you can get a comprehensive list of the species observed within or near your property.



- **Washington Priority Habitats and Species:** <http://wdfw.wa.gov/conservation/phs/>. This web accessible data base maintained by Washington Dept. of Fish and Wildlife provides some information on specific species locations and important habitat usage and types.
- **Washington Natural Heritage Program:** <http://www1.dnr.wa.gov/nhp/refdesk/index.html>. This site is maintained by the Department of Natural Resources and lists known locations of sensitive plants and some habitat types.
- **Local wildlife biologists:** For information about wildlife species on or near your property, you can contact a private consultant or a biologist that works for any number of governmental entities, such as the county extension service, state Departments of Fish and Wildlife, US Fish and Wildlife Service, Bureau of Land Management (BLM), and US Forest Service (USFS), just to name a few.
- **Oregon Forest Resources Institute (OFRI):** OFRI provides a multitude of free publications, including A Guide to Priority Plant and Animal Species in Oregon Forests that correlate wildlife species to forest stands of differing ages. Check out the information at [www.knowyourforest.org](http://www.knowyourforest.org)
- **University Extension Programs:** Forestry Extension programs at Oregon and Washington State Universities have on-line resources and publications on many topics including forest wildlife management:  
OSU: <http://forest-owner.forestry.oregonstate.edu/wildlife/>  
WSU: <http://forestry.wsu.edu>

Similar educational resources are available from Land Grant University Extension Programs in other nearby states.

To generate a list of species that could

potentially occur on your forest or woodland, compare the habitat types found on your property with the species that could be in your area – when habitat and individual species' ranges overlap, there is a good chance that the species will be present. Keep in mind that there may be factors that may limit a species presence such as the size or condition of available habitat, proximity to roadways or water, or other nearby land uses.

### Identify your Objectives

How you monitor for wildlife will vary dramatically based on your objectives. Do you want to satisfy your curiosity? Do you need to fulfill regulatory requirements? Are you interested in creating baseline data to compare with future studies? These questions are important, and will dictate the depth and breadth of monitoring efforts. For instance, surveys for threatened or endangered species must follow specific protocols to fulfill regulatory requirements. However, monitoring wildlife need not be difficult or overly complicated – it can be as simple as keeping a list of the species you encounter on your property over the course of other

work. Incidental observations (whether direct observations via sight or sound, or indirect observations, such as tracks, scat or other sign) can provide key information on wildlife and habitat interactions.

### Techniques

Wildlife monitoring can be conducted at a general, habitat-based scale or can rely on direct or indirect observations. Habitat assessments provide baseline information and allow you to extrapolate the types and species of wildlife that are

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present on your property. Habitat assessments may include formal timber cruises and plant surveys, detailed or general reviews by independent consultants, GIS analysis using digital layers, or simple delineations of habitat from aerial photos and maps combined with short site visits. Simply driving or walking your property and drawing lines on maps where you



see different habitat types, such as early successional forests, wetlands, streams, riparian areas, and other features, can give you an idea of how, and where, wildlife may interact with your property. For example, areas of heavier tree canopy cover will be used by large game for cover and movement, while more open and sunnier areas with an abundance of grasses and brush will be used for foraging. Wildlife trees with cavities can be key habitats for woodpeckers and other cavity-dependent species and can be easily monitored over time for presence/absence of cavities and feeding excavations by woodpeckers.

Habitat assessments may be more targeted in nature. For instance, documenting and monitoring the number of snags left in harvest units will allow you to see succession over time. Establishing photo points in areas of habitat management or other areas of interest can document change over time in a visual manner. Photo points are simply specific locations where photos are taken in the same direction and at the same time on a regular basis (e.g., monthly or yearly).

For more information on establishing photo points, the Oregon Watershed Enhancement Board (OWEB) provides a publication on establishing photo points: [http://www.oregon.gov/OWEB/docs/pubs/photopoint\\_monitoring\\_doc\\_july2007.pdf](http://www.oregon.gov/OWEB/docs/pubs/photopoint_monitoring_doc_july2007.pdf)

**Wildlife monitoring can also be more direct.** Snags and other unique features, such as rock outcrops, streams, wetlands or meadows, may be targeted for observation as they are high-use areas by wildlife. The following techniques will allow for direct monitoring of wildlife:

### **Keep a species list.**

Writing down the species you observe on your property while in the course of other work will provide great information on the quality and types of habitat available on your property. Adding details such as where and when (dates,



times, locations) the observations occur will document changes over time and will provide a feedback loop to your management strategy. Try to identify characteristics such as whether you see species with young, species gender if possible, species size, and specific behaviors. Document whether your property is an important corridor or feeding area. Keeping a wildlife journal in your vehicle will help you keep track of the wildlife you see, where it was located, and when you saw it.

### **Look for and identify signs of wildlife, including tracks, scat, nests, and trails.**

Wildlife can be elusive, especially when there is human noise or disturbance in the area. Keep an eye out for signs of wildlife, and document these. For example, looking for large stick nests in winter when leaves are off the trees makes them much easier to find and locate than in mid-summer with full tree canopies. You may also want to track use of snags and wildlife trees. For more information on tracking wildlife check out ‘Animal Tracks

of Washington and Oregon’ by Ian Sheldon (published by Lone Pine Publishing). <http://www.lonepinepublishing.com/cat/9781551050904>

### **Use remote monitoring techniques.**

Although remote monitoring can require sophisticated and expensive tools, it can also be made easy and affordable. Mounting trail cameras (see “tools” below) along heavily utilized areas for wildlife, such as game trails and stream crossings can allow you to monitor wildlife in a way that would not otherwise be possible, including at night. Look for areas where you see signs of use by wildlife and don’t be afraid to move the camera if you’re not capturing any pictures. It is important not to mount the camera too high or too low – it needs to be at a height that can capture photos of wildlife movement. Trail cameras can also be mounted in areas where damage by wildlife is occurring, in order to see what animal is the culprit and how the damage is happening.



### Walk transects.

Walking transects through your property allows you to cover ground efficiently and thoroughly so that all portions of your forest and woodland are monitored for wildlife. Simple transects located 300 - 700 feet apart affords an adequate coverage for the observation of many species.

### Conduct vehicle (windshield) surveys.

Simply driving your property often and documenting the wildlife you observe (including where and when) either directly or indirectly (tracks, scat, sign) can often be all the wildlife monitoring that is needed. Driving your property at different times of the day and year is especially effective.

### Identify and monitor wildlife crossings.

Any place that wildlife frequently travel, such as at or near stream crossings, are excellent places to establish monitoring. This can be done with trail cameras, as described above, or via track plates – tools which allow you to capture tracks using

sand or other materials for later identification. More information for track plates can be found at this USFS publication: [www.fs.fed.us/psw/publications/4251/taylor1.pdf](http://www.fs.fed.us/psw/publications/4251/taylor1.pdf).

Wildlife monitoring can also be accomplished by creating or enhancing habitats, such as creating nest boxes and wildlife feeders, and monitoring them in the same fashion over time. This type of monitoring is a great way to tell if you are accomplishing the goals you've set for your forest land or woodlot. It is recommended you establish a written protocol so that monitoring will occur the same way each time it is completed, even if it is done by a different individual. There are many online resources available regarding monitoring techniques, such as the Cornell Lab of Ornithology NestWatch website (<http://nestwatch.org>).

Some species of wildlife, especially those that are rare, threatened or endangered, require that precise protocols be followed when they are being monitored. For these species, it is best to contact a wildlife biologist for advice or to hire a consulting biologist to perform the surveys. Oregon Department of Forestry and Washington State University Extension Forestry provide information on contractors:

- [www.orforestdirectory.com/results/forestry-services/wildlife-management](http://www.orforestdirectory.com/results/forestry-services/wildlife-management)
- [forestry.wsu.edu](http://forestry.wsu.edu)

### Tools

Sophisticated tools are not always necessary to monitor wildlife. Although some formal survey protocols call for specific tools, most wildlife monitoring can be accomplished with readily accessible tools, such as:

**Digital Cameras.** Modern digital cameras are easy to use and relatively inexpensive. Cameras can assist in wildlife monitoring in a number of ways, from the establishment of formal photo points

to informal snapshots of habitats and wildlife sign. Photographs can also aid in identification of unknown species or sign. For example, if you run across an animal track that you cannot identify in the field, take several photographs with a ruler or other scaled object in the photo for later identification.

**Trail Cameras.** Trail cameras are rugged units that run on batteries and can be placed on trees, fence posts or other objects and left to take photos on their own when triggered by movement. Most trail cameras allow you to set up the number of photos that will be taken at once. Check trail cameras regularly to download digital files and replace batteries.

**Track plates.** Track plates are devices that use chalk, sand or other materials to make impressions or prints of animal tracks. When in high traffic areas, track plates can provide evidence of passing animals that might not otherwise be captured.

**GPS Units.** GPS units use satellites to triangulate your specific position on the globe. GPS units can accurately capture



the locations of wildlife observations, photo points, survey routes, habitat boundaries, other points of interest. GPS units range from relatively inexpensive recreational-grade devices to expensive and sophisticated resource-grade units, depending on the precision and accuracy of the positions collected.

**Field guides.** There are a multitude of field guides available, for all types of wildlife. Field guides for identifying birds, mammals, and tracks, and even scat are especially valuable when monitoring wildlife and are a great way to involve kids too!

**Binoculars.** Binoculars allow for the identification of animals that would otherwise be too distant or difficult to see. Make it a practice to carry binoculars with you every time you are in your forest! Binoculars allow you to see specific details (e.g., colors, beak shapes, etc.) that can greatly aid in the identification of unknown species.

**Wildlife Callers.** Wildlife callers allow you to broadcast the calls of wildlife in the hopes of eliciting a response. Wildlife callers are most effective in the spring during the breeding season when wildlife are most territorial. Wildlife callers are required for some formal, species-specific surveys.

**Journal.** Keeping a wildlife journal in your work vehicle is a great way to track what you see each time you are in the woods.

Monitoring wildlife can be both rewarding and enlightening. Management objectives can be adapted over time by using the information collected from wildlife monitoring. The tools and techniques described earlier can be especially useful when monitoring records are maintained over time and reviewed prior to management decisions.

### Additional Information Sources:

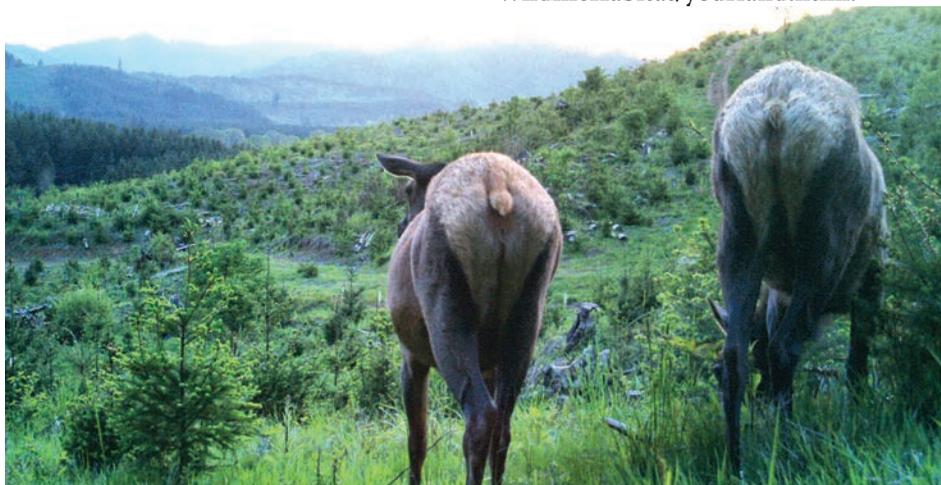
Lots of information for family forest and small woodland owners is available on the new “Know Your Forest website”. [www.knowyourforest.org](http://www.knowyourforest.org).

Oregon and Washington Wildlife Species and Their Habitats by Thomas A. O’Neil and David H. Johnson:

<http://www.nwhi.org/inc/data/GISdata/docs/WHROW/chapter1.pdf>

North American Breeding Bird Survey Information: <https://www.pwrc.usgs.gov/bbs/index.cfm>

Wisconsin Dept. of Natural Resources has an excellent site regarding wildlife inventories including survey forms for specific species: <http://dnr.wi.gov/topic/WildlifeHabitat/yourland.html>.



### Photo Credits:

Elk – Teri Pieper

Deer in plantation – Ken Bevis

Elk looking over plantation – Fran Cafferata

Birds – Jim Rivers

Tree Hole Nest – Ken Bevis

## About The Woodland Fish and Wildlife Group

The Woodland Fish and Wildlife Group is a consortium of public agencies, universities, and private organizations which collaborates to produce educational publications about fish and wildlife species, and habitat management, for use by small woodland owners in the Pacific Northwest.

Currently available publications can be viewed and downloaded, free of charge, at the organization's website:

[www.woodlandfishandwildlife.com](http://www.woodlandfishandwildlife.com)

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