Introduction to Wildlife Management

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Fact Sheet 16 | Forestry and Natural Resources | Revised May 2009

The term wildlife means different things to different people. To a backyard wildlifer, it may mean chickadees, nuthatches, and cardinals. To a hunter, it may mean white-tailed deer, bobwhite quail, and gray squirrels. To a sheep producer, it may mean coyotes. To a poultry producer, it may mean mink, weasels, skunks, and raccoons. To a gardener, it may mean hummingbirds and butterflies.

What is Wildlife?

It is important to identify and define what we mean by the term "wildlife" before we can answer the question, "What are wildlife management and conservation?" Early definitions of wildlife focused on wild animals (undomesticated free-ranging animals) that could be hunted for sport or food (a partial list of wildlife in the South is listed in Table 1). Early definitions restricted the term wildlife to vertebrates (animals with a backbone). From that time forward, the message has been clear: there is a separation of those organisms termed wildlife, not only from other vertebrates, but most certainly from other groups of lower animals and plants.

If you were to ask a professional biologist to define wildlife, he or she would probably identify two distinct vertebrate groups: birds and mammals. Even state and federal organizations, in their names, make a distinction between fish and wildlife: the various state wildlife agencies and the United States Fish and Wildlife Service.

Much has happened in the field of wildlife management since early times and this is reflected in new definitions of wildlife based on a more holistic viewpoint. The beginnings of this new viewpoint of wildlife began in the 1960s. Wording in the Endangered Species Act (ESA) of 1973 recognized fish and wildlife as any member of the animal kingdom, including without limitation any mammal, bird, fish, amphibian, reptile, mollusk, crustacean, arthropod, or other invertebrates (animals without a backbone).

About the same time, many states began adopting nongame wildlife programs. These programs were aimed at managing protected, endangered or threatened, and nonhunted wildlife with respect to the definition of fish and wildlife provided in the ESA.

From a purely objective standpoint, wildlife should include all animals and their associated habitats. If we are to look at the big picture, it seems unnecessary to define the term wildlife along the usually rigid and nonfunctional lines of a taxonomist (a person who identifies and classifies living organisms).

How can we understand the ecology of a great blue heron without a thorough knowledge of the heron's food source (small minnows, amphibians, etc.)? Likewise, a picture of coyote ecology would be incomplete without an understanding of how that animal's diet shifts from small mammals and carrion in the winter to insects and fruits during the summer. Further, the relationship of an animal to its habitat (including competitors, predators, prey items, vegetation, and soil) is so interconnected as to add confusion in attempts to restrict the term wildlife. A definition of wildlife should include all living organisms out of the direct control of man, including undomesticated or cultivated plants and animals.

Although it may be inappropriate to restrict wildlife to a few kinds of organisms, common usage, public perceptions, funding allocations, and history have resulted in a practical definition of wildlife as undomesticated free-ranging vertebrates. Furthermore, because of professional distinctions, fish are generally excluded from the definition of wildlife. Therefore, the definition of wildlife is left as essentially undomesticated, free-ranging terrestrial vertebrates (reptiles, amphibians, birds, and mammals).

The overwhelming preponderance of research and management efforts, as well as public attention, has caused the definition of wildlife to focus on birds and mammals.

There is yet another dilemma for resource managers in defining wildlife today: introduced, non-native wildlife or exotics, such as the European starling, house sparrow, wild boar, and fallow deer. Hundreds of plants, fish, and terrestrial animals have been introduced into this country, some by accident and others on purpose.

To the wildlife biologist, exotics may have severe consequences for native wildlife (starlings and house sparrows competing for eastern bluebird nesting sites). They may be considered successful or a passing fad.

Professional biologists will debate the pros and cons of exotic introductions for years to come. Regardless of an individual's views on the subject, certain exotics will continue to be a permanent addition to our natural communities. Professional biologists must continue to evaluate the ecological role of exotics in biological communities. Hence,

if exotics are free-ranging, little is gained from excluding them from a definition of wildlife.

What is Wildlife Management?

Now let's move on to the question, "What is wildlife management?" The definitions of wildlife management are about as numerous as authors and professional biologists. There are some differences, to be sure, but three common ideas are present in every definition of wildlife management, including: 1) efforts directed toward wild animal populations, 2) relationship of habitat to those wild animal populations, and 3) manipulations of habitats or populations that are done to meet some specified human goals.

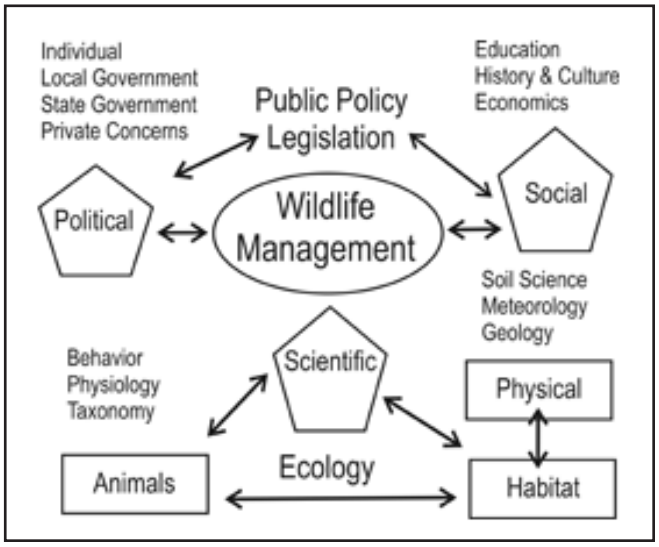
Early wildlife biologists viewed wildlife management as the art of making the land produce adequate game for recreational use (hunting, fishing, or trapping). Later definitions emphasized wildlife management as the science of manipulating wild animal populations and their habitats for specific human goals. Current definitions stress wildlife management as applied animal ecology that benefits the habitat and both the wildlife and human populations.

Wildlife management can be a complex process whereby a landowner or biologist:

- conducts habitat and wildlife population inventories and evaluations;
- determines what the people desire from the wildlife resource and superimposes human goals on the natural system based on initial inventories and evaluations.

The eventual outcome in meeting desired management goals is accomplished by:

1) manipulating the habitat,
2) manipulating animal populations, or
3) managing people.



The Process of Wildlife Management

Wildlife management on private lands is largely habitat management for two reasons:

- most private landowners do not control the kind of acreage necessary to totally sustain some wildlife populations (e.g., approximately 1,000 acres are required to effectively manage white-tailed deer ; and
- private landowners do not have to consider the political and public ramifications of management decisions (as state and federal agencies do).

Preservation, Conservation, and Management

We should now examine the differences between preservation, conservation, and management because many people mistakenly confuse wildlife management with wildlife preservation.

Conservation is an effort to maintain and use natural resources wisely in an attempt to ensure that those resources will be available for future generations. Therefore, wise use of resources could vary from actively managing white-tailed deer populations by hunting to protecting and preserving spotted owl populations and habitat.

Preservation is a component or part of conservation in which natural systems are left alone without human disturbance or manipulation. Preservationists (people who believe in preservation) feel natural resources should be protected, unspoiled, and untouched by humans. The goal of preservation is often maintaining the integrity of the ecosystem as exemplified by nature preserves or wilderness areas.

Passive management strategy is sometimes used in wildlife management when animal populations dwindle to the point they are in danger of extinction. The passive management strategy for red-cockaded woodpeckers (an endangered species) in South Carolina is to alter traditional timber management to ensure breeding and foraging habitat.

It is important to note, however, that an undisturbed ecosystem is not necessarily a stable one. Natural changes in the plant community constantly create different habitats for different species of wildlife. Therefore, as the system changes over time, conditions may not remain suitable for the continued existence of some wildlife species in that community.

As a regenerated forest is allowed to mature, for instance, the presence and abundance of bobwhite quail will decline because the habitat is no longer suitable for them.

Management is also a component of conservation that usually means controlling, directing, or manipulating wildlife populations and/or their habitats (active management strategy). Wildlife managers usually seek to:

1) increase a population (by planting food and cover plots for quail or cutting small tracts of timber for wild turkey);

2) decrease a population (by harvesting deer when they are damaging orchard trees or soybean crops); or

3) stabilize a population so that individuals can be removed on a continuing basis, making sure that enough individuals remain in the population to replace those that are removed (sustained yield).

There are two different approaches to managing wildlife on private lands. The first approach is to provide as varied a habitat as possible in an attempt to support as many different wildlife populations as possible. This is called the species richness approach to managing wildlife. Under this system, a landowner would try to manage his or her property to provide a mixture of areas in different plant stages, areas with large amounts of edge interspersed with some unbroken tracts of forest, and forested areas with vertical layering of trees, shrubs, and broadleaf weeds.

The second approach to managing wildlife is called the featured species approach. The goal of this approach is to provide habitat for one selected (featured) species. Therefore, a landowner might choose to manage for white-tailed deer or bobwhite quail exclusively. The key to featured species wildlife management is to identify the precise habitat requirements of the featured species and select management practices that provide the requirements that are in the shortest supply.

Why Manage for Wildlife?

Landowners can obtain both tangible and intangible benefits from managing wildlife. Tangible benefits may accrue from leasing rights for hunting and other forms of outdoor recreation involving wildlife. Fees collected from these activities can provide income to pay property taxes and other management costs. The provision of various services (e.g. guides, dogs, lodging, meals, etc.) associated with hunting can also provide another source of income. Although public demand for wildlife-related outdoor recreation (e.g., hiking, camping, birdwatching, canoeing, etc.) has not yet reached the point of providing significant income for the private landowner in the South, the potential exists and will increase in the future.

Intangible benefits from wildlife management can include the excitement derived from observing wildlife, the satisfaction of providing desirable habitat for these species, and the pride from receiving recognition for conservation efforts.

Options for Wildlife Management

Any discussion of wildlife resources must begin by recognizing the potential management opportunities for a variety of wildlife species groups. These include game and nongame species, threatened and endangered species, and even nuisance species. Managing wildlife resources as the primary objective requires, in some instances, that other resources be managed at a reduced intensity. For example, timber harvests will be designed primarily to improve wildlife habitat, with maximum wood production a secondary benefit. In this case management strategies could include or accomplish the following:

- create, enhance or improve sufficient habitat to support suitable populations of desired species;
- maintain healthy game populations selected by the landowner in a manner consistent with habitat carrying capacity;
- provide diverse and abundant populations of desired nongame wildlife species, particularly those that are dependent on mature timber; and
- manage habitat and populations to protect flora and fauna listed as threatened or endangered.

The key is that all resource management decisions are based on creating and maintaining sufficient habitat.

Where wildlife management is a secondary objective to other resources, the compatibility of various management options becomes important. Those wildlife species whose habitat requirements are compatible with practices designed to enhance the landowner's primary management objective will thrive. All plans should include ways to accomplish the following:

- enhance, maintain or create habitat for desired species in a manner that is consistent with the primary objective for the land;
- achieve and maintain a natural diversity and abundance of game and nongame wildlife species including those dependent on mature timber (special consideration and/or protection should be afforded resident threatened and endangered species); and
- manage other resources in ways that provide habitat needs of desired wildlife species, considering the species and the entire property.

Regardless of the landowner's goals, providing suitable wildlife habitat should be considered when performing any management activity.

Developing a Wildlife Management Plan

Who would consider building a house without a blueprint or taking a trip without a road map? Landowners and managers who are successful at managing wildlife carefully plan and target management activities to accomplish their objectives, minimize expenses, and ensure the long-term productivity of their property for wildlife and other resources. A wildlife management plan is simply a written guide for how, when, and where to implement habitat improvement practices. Developing a management plan yourself, or contracting a natural resource professional to develop a plan for forest or farm land, is a wise investment of time and money. Components of an effective wildlife management plan include 1) land management goals and objectives (by priority), 2) a resource inventory, 3) site-specific habitat improvement recommendations, 4) a schedule for conducting management practices, and 5) record keeping and evaluation of management efforts and their impacts on wildlife habitat. A carefully developed plan provides a logical approach for using an assortment of habitat improvement practices. Some government cost-sharing

Table 1. Partial Listing of Wildlife in the South		
Upland Game Animals		
Wild Turkey	Ruffed Grouse	Bobwhite Quail
Mourning Dove	American Woodcock	Common Snipe
Cottontail Rabbit	Swamp Rabbit	Marsh Rabbit
Woodchuck	Eastern Gray Squirrel	Fox Squirrel
Waterfowl		
Snow Goose	Greater White-fronted Goose	Canada Goose
Mallard	Black Duck	Gadwall
American Widgeon	Green-winged Teal	Blue-winged Teal
Northern Pintail	Northern Shoveler	Canvasback
Wood Duck	Redhead	Ring-necked Duck
Lesser Scaup	Common Goldeneye	Bufflehead
Hooded Merganser	Common Merganser	American Coot
Furbearing Mammals		
Coyote	Red Fox	Gray Fox
Raccoon	Bobcat	Beaver
Spotted Skunk	Striped Skunk	Opossum
Mink	Muskrat	Nutria (I)
Big Game Mammals		
White-tailed Deer	Black Bear	Wild Hog (I)
(I) indicates the species was introduced into this country. (e)indicates the species is endangered.		

programs also require that a management plan be written before cost-sharing funds are provided to landowners.

Steps in Writing a Plan

No two wildlife management plans are exactly the same. Plans vary depending on management objectives, habitat and site characteristics, financial resources, existing land uses (such as forestry or farming), and the individual(s) writing the plan. Assistance for developing and writing plans is available from a variety of sources such as private consulting firms, state Department of Natural Resources (DNR) and Forestry Commissions (FC), and the USDA Natural Resources Conservation Service (NRCS). Natural resource professionals from government agencies can provide advice and guidance in developing wildlife habitat management plans at no cost to the landowner. A multi-agency effort, called the Forest Stewardship Program, can also provide management plan assistance for forest owners interested in managing their lands for a diversity of natural resources. Some forest industry landowner assistance programs also provide guidance in developing management plans. In addition to agency and forest industry assistance programs, natural resource consultants also provide management plan expertise and services for a fee. Consultants should be professionally trained and designated as registered foresters and/or certified wildlife biologists.

Wildlife habitat management plans can be prepared in a variety of ways depending on available resources. Large timber companies often have sophisticated computer programs for recording, analyzing and displaying land use/management information. The advantage of using a computer-based recording and reporting system is that a large amount of diverse information can be quickly updated and easily accessed in a variety of formats (maps, charts, text) for making management decisions. The disadvantage is that these systems are usually cost-prohibitive for the average landowner, although some private consulting firms offer these services. More typically, management plans include a written and visual description (sketch) of the land and other resources with recommendations for habitat improvements.

Whatever the approach, it is important that management plans be usable and flexible documents that guide forest and farm owners toward improving their land for wildlife. The following are important steps that should be considered when developing a sound wildlife habitat management plan.

Step 1. Identify Objectives

Landowners who neglect to identify and prioritize their management objectives are often disappointed with their efforts and results because they never clearly defined what was important or what they wanted to accomplish. As one wildlife manager stated, "If you have no idea where you are going, how do you know when you get there?"

The first and most important step in developing a management plan is to clearly define, in writing, wildlife habitat management objectives and expectations. Objectives should be as specific as possible and include wildlife specie(s) to be managed as well as the expected outcome. For example, one objective may be to manage farm or forest land for quality deer with an expected outcome of healthy deer with large antlers and heavy body weights. Habitat improvement practices that improve the abundance and nutritional quality of native and planted deer foods can then be developed and incorporated into the plan to help meet management objectives.

Objectives should also be measurable. This helps in evaluating the success or failure of habitat improvement efforts. Plans that lack measurable objectives are often ineffective, because there is no way to know if management objectives were ever reached. The ability to determine whether or not management objectives were accomplished helps identify successful habitat improvement practices. Plans can then be modified to include only those habitat improvement practices that have successfully met management objectives.

Landowners also need to consider how their wildlife management objectives fit with other land use objectives such as farming or timber operations. Rarely do forest and farm owners have only one land use or management objective. Landowners should prioritize their land use/management objectives to have a clear understanding of where wildlife habitat enhancement efforts fit with other land management operations. In most cases, wildlife habitat improvement practices are compatible with other land management activities. If wildlife and

habitat improvements are a top priority, then some concessions and modifications may have to be made in timber, agricultural, or other land uses. Opportunity costs, or potential revenue foregone from other land management operations in favor of wildlife, should be a consideration when prioritizing land management objectives. However, if improving lands for wildlife is a secondary objective, then some concessions in wildlife habitat improvements may have to be made to accommodate other land uses. Defining and prioritizing land management objectives, as well as expected outcomes, helps landowners determine the best approach to managing their lands for wildlife and other resources.

Step 2. Resource Inventory

A resource inventory is the process of identifying, locating, and recording land and other physical characteristics that have a potential to support wildlife or meet other land management objectives. An inventory helps to determine what you already have or will need to meet your objectives. It should include, for example, an assessment of the property and existing habitat, wildlife present on the property, equipment (tractors, disks, planters, etc.), facilities (lodging, barns, skinning and equipment sheds, etc.), labor requirements (by you and others), estimated management expenses and income, cost-sharing options, and sources of technical assistance. Information derived from a resource inventory and/or timber appraisal, in combination with management objectives, is the foundation for selecting and implementing habitat improvement recommendations.

Management plan objectives should be revisited and examined after a resource inventory and may need to be modified, depending on inventory results. A land survey may have revealed management limitations that would make accomplishing certain objectives difficult or unrealistic. The resource inventory may have also identified management opportunities that were not apparent when the objectives were first developed. This is also an opportune time to reexamine personal resources. In light of the resource inventory, are objectives realistic in terms of time and money needed to achieve them? A review of management objectives, inventory information, and financial resources is prudent before selecting the type and intensity of habitat improvement practices.

A Look at Your Property

A survey of the property will determine availability and quality of existing habitat and the potential for improvement. A property inventory is a two-step process that includes: 1) identifying physical features (vegetative types, water sources, terrain, soils, and other natural and man-made features) from various maps and aerial photographs; and 2) a more detailed in-the-field survey of land features that are not easily identified from maps or aerial photographs. Information from maps, aerial photographs, and field observations should be included as a sketch or computer-generated base map and as a written description in the management plan.

Most land features can be identified using topographical quadrangle maps from the U.S. Geological Surveys, recent aerial photographs from the county USDA Farm Services Agency office, soil surveys and soil maps from the county USDA Natural Resource Conservation Service office, and property blueprints (plats) from the county tax assessor's office. These items are invaluable tools for developing a wildlife habitat management plan. The sketch map and written description should include information from maps, surveys, and aerial photographs such as property location, soil types and capabilities, topography, current land use, vegetative cover types, streams and other water sources, boundary lines, rights-of-ways, road systems, and other important features. If there is too much information to include on one sketch map, separate maps should be drawn. One map could include major features such as soil and vegetation cover types, while a second map could include other pertinent information. Transparent acetate sheets can also be used as overlays on sketch maps to provide additional information on sketches.

The next step is to add additional information to the sketch and written description that could not be identified from resource maps or aerial photographs. This is accomplished by walking over the property with the sketch map and noting unique features that might enhance or restrict wildlife habitat management efforts. Special attention should be given to the presence, arrangement and condition of natural vegetation that provides food and cover for wildlife of interest. Landowners and managers should also note existing timber and mast-producing trees and other vegetation on the property, as well as other areas that could support additional trees, shrubs, grasses, and legumes that benefit wildlife.

On-the-ground inventories should be made at least twice, at dawn and dusk, because these are peak activity periods for many species of wildlife. Walking over the property during these times helps determine what wildlife species are present on the land. Other signs of wildlife, such as scats or droppings, tracks and travel lanes, feeding areas, beds, nests, dens, burrows, and sounds can also help identify wildlife species that use your land. Special attention should be devoted to determining if threatened or endangered species are present on the property. Sites that support threatened or endangered species should be noted on the sketch map. These areas will require special attention and specific management considerations.

What Equipment and Facilities Do You Have?

Most farm and forest owners have some equipment and facilities that can be used for wildlife habitat improvement practices. A farm tractor can be used for establishing food plots, creating and maintaining fire lanes, and disking natural openings. If no equipment is available, some habitat improvement practices can be contracted out to local farmers and others who own tractors, disks, and planting equipment. Consultants usually have a list of vendors that own management equipment and provide habitat improvement practices. Every effort should also be made to integrate wildlife habitat improvement practices with existing farm and forestry operations to lower costs. The key is advanced planning and coordination with other land management activities.

Existing facilities, such as an old house or barn, are useful for housing management personnel and storing equipment. While management activities are being conducted, labor personnel can stay on the property for extended periods to reduce travel and expenses. Old barns and sheds can also be used to store seeds, fertilizers, lime, equipment and other management tools and materials. Barns and old houses can also be refurbished and used as lodging for hunters or other guests.

Financial Considerations

Management expenses depend on objectives, availability of labor and equipment, current land conditions, and whether or not wildlife habitat enhancement practices can be integrated with other land management operations such as forestry or farming. Where possible, wildlife habitat improvement practices should be planned and coordinated with other land management practices to reduce costs and disturbance to wildlife.

Management practice costs should be a criteria for selecting the level and intensity of wildlife habitat improvement practices. In general, intensive management practices are more costly. Management cost for some species of wildlife, like bobwhite quail, that require early successional stage habitat (grasses and forbs), is quite high because of the intensity and frequency of management efforts to maintain habitat at preferred stages. Management practices like prescribed burning and disking may have similar effects on enhancing vegetative growth, but in general, an area can be burned at a lower cost than it can be disked. Management costs per acre are lowered as they are applied over a larger area. In other words, management costs per acre are lower on large land tracts than on small tracts of land. Management costs can also be reduced if they qualify for cost-sharing assistance. For more information on cost-sharing assistance programs contact your local county USDA NRCS or Farm Services Agency office.

Step 3. Designating Management Compartments

Farms and woodlands are seldom uniform in the distribution of plant species, soils, productivity, and management potential. Because of these differences, a variety of management strategies are necessary for enhancing wildlife habitats across an individual farm or forest ownership. Land tracts should be divided up into management units called "compartments" to make the process of recommending and conducting habitat improvement practices over a large and diverse area easier and more efficient. Compartments are areas that have similar characteristics such as vegetation, soils, topography, productivity, or other features. Compartments may be a pine plantation, hardwood stand, swamp, riparian forest, old homesite, or any particular field or field system. Because of their uniqueness, compartments can usually be identified from aerial photographs and maps.

After dividing a land tract into compartments, each compartment's potential for producing quality wildlife habitat should be evaluated using information from the resource inventory. This information should be used to develop site specific management objectives and recommendations for each compartment. Wildlife habitat improvements should focus first on compartments that have the greatest potential (productivity) for providing wildlife habitat.

Information to Include in a Written Inventory of Compartments (Description of features identified on the sketch)
Compartment Number (identified compartment on land tract)
Management Objectives (wildlife, timber, and other land uses)
Location of Compartment
Description of Compartment
Size of compartment (number of acres)
Soil type(s) and capabilities
Site index
Drainage
Aspect
Dominant vegetation
Timber Inventory
Timber species distribution
Age classes
Stand density (number of trees per acre or basal area)
Average sizes
Timber volume/basal area
Timber management history
Special trees (number of mast-producing trees, den trees, snags)
Game and Nongame Habitats
Wildlife feeding areas and plant composition
Brush piles and windrows
Nesting sites and water
Unique Areas
Special places and historical sites
Threatened and endangered species habitat
Areas Presenting Special Problems and Opportunities
Stream banks
Streamside management zones (SMZs)
Steep slopes
Glades
Coves
Wetlands

Step 4. Selecting Habitat Improvement Practices

After the current conditions and management potential of each compartment are determined, habitat improvement practices should be reviewed and selected for each compartment. As you read resource materials that describe various habitat improvement practices, write

down practices that would be most appropriate for your land, and then discuss them with a natural resource professional (a certified wildlife biologist or registered forester). When considering management alternatives, be sure to consider the impacts of each practice, timing, costs, and the potential for each practice to complement or conflict with on-going land management operations on your tract and adjacent tracts managed by others.

Compartment Record Sheets

Compartment record sheets (see next page) are vital components of a wildlife management plan. They are standardized information forms (8½" x 11," 3-hole punch) that record compartment management objectives, compartment descriptions, management recommendations, schedules of management activities, and records of management activities and impacts. Below is an example compartment record sheet that can be modified to meet landowner needs.

Important Tools for Developing a Wildlife Habitat Management Plan

Aerial photographs are used to locate and identify natural and man-made features such as vegetation and forest types, land use, water sources, roads, rights-of-ways, buildings, and other features. They are also useful in delineating management compartments. Aerial photographs are available in black and white, color or color infrared and in various scales. An ideal scale for management plans is 1"= 660'. Aerial photographs can be obtained from the county USDA Farm Services Agency or USDA Natural Resource Conservation Service office, or can be contracted to be taken by private natural resource firms.

Topographical maps help to locate property in relation to physical features such as elevation, roads, water sources, and other land characteristics. Topographic maps can be obtained from the U. S. Geological Survey or local map vendors.

County soil surveys provide a description and map of soil types in a county. Soil surveys also provide soil suitability and productivity ratings for growing timber, producing wildlife habitat, and other land uses.

The Process of Developing and Implementing a Wildlife Habitat Management Plan
Identify management objectives for property.
Revisit and modify objectives (if necessary).
Conduct resource inventory.
Designate management compartments.
Record objectives and descriptive information by compartment.
Select habitat improvement practices and schedule of activities by compartment.
Implement management practices by compartment.
Refine management practices based on results.
Record keeping and evaluation.

They often include a description of the vegetation on various soil types. Soil surveys can be obtained from the county USDA. Natural Resource Conservation Service office. USDA also has soil surveys and a powerful mapping tool for landowners on their website Web Soil Survey (www.websoilsurvey.nrcs.usda.gov).

A field notebook and tape recorder are useful for recording observations during the field inventory. Information recorded in the field can be transferred later from field notes and a tape recorder to the management plan.

Field guides are useful for identifying wildlife, trees, shrubs, vines and herbaceous vegetation during the field inventory. Guides with detailed descriptions and color photographs are ideal.

Landscape architecture templates are useful for drawing trees, shrubs, and other natural and man-made features on sketch maps. Templates can be found at most draftsman supply stores.

A camera can be used to document wildlife habitat conditions before and after management practices.

Information from earlier land management plans is invaluable in describing, recommending, and scheduling wildlife habitat improvement practices.

Record Keeping and Evaluation

Management plans are dynamic documents that should be evaluated and updated periodically. Evaluations should be made annually for each compartment so that effective practices can continue to be implemented, while those that produce few or no results can be modified or discarded. Recording impacts of management efforts on compartment sheets is important in helping to evaluate the effectiveness of certain management practices. Keeping a log book of observations and changes that occur in compartments can also provide valuable information for evaluating management efforts. Recorded observations should include estimates of vegetative responses to management practices as well as wildlife responses, such as deer and turkey use of food plots. Food plots that are not heavily utilized by wildlife in one area should be discontinued and moved to more suitable sites after an appropriate amount of time to allow wildlife to accept them. There is no substitute for good record keeping as a basis for evaluating the effectiveness of wildlife management practices.

Additional Wildlife Habitat Management Plan Considerations

- Where possible, integrate wildlife habitat improvement practices with other land management such as forestry or agriculture. If conducted properly, most silvicultural (forest management) practices are also good wildlife habitat improvement practices. Examine existing forest and farm management plans and modify them to include practices that also benefit wildlife. Wildlife habitat improvement practices should be an integral part of a total forest or farm master plan.

Compartment No. _____

Management Objectives (includes priorities for wildlife, timber and other land uses)

Wildlife_____

Timber _____

Other _____

Location of Compartment _____

_____

Description of Compartment (Narrative description of compartment)

_____

_____

_____

Size of Compartment _____acres

Compartment Characteristics:

Soil type and capabilities _____ Site index _____

Drainage _____ Aspect _____

Tree species composition _____ Volume/basal area of timber _____

Trees per acre _____ Mean DBH _____ (diameter of tree at breast height)

Mast-Producing Trees _____

Fruit-bearing shrubs and herbaceous plants_____

Den Trees and Snags _____

Specific wildlife habitat information _____

_____

_____

_____

Activities to be Conducted (in a calendar year from start to finish)

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

Record of Wildlife, Timber and Other Management Activities:

Activity	Year

Impact of Management Activities

_____

_____

_____

_____

_____

- Landowners should know the types and condition of wildlife habitat and current management practices on neighboring lands. In some cases neighboring land use/management may complement your objectives. Management practices, such as prescribed burning, can be conducted jointly with neighbors. Adjacent property may also provide habitat components not found on your land. Whenever possible, planning, development, and implementation of wildlife habitat improvement practices should be coordinated with neighboring landowners.
- Management plans (forestry, farming, and wildlife) should be shared with user groups such as hunters, horseback riders, and other outdoor enthusiasts, especially if these groups pay an access fee to your property. Informing user groups of land management objectives and future management activities reduces potential conflicts and misunderstandings. User groups that are aware of management activities may also be willing to donate labor, such as hunters who may be interested in establishing and maintaining food plots, wildlife openings or helping with other labor needs of the property.
- Game population objectives and harvest strategies should also be included in the management plan.
- Nuisance wildlife problems (such as beavers or depredating deer) and control methods should be included in the management plan. Controlling nuisance wildlife requires a detailed plan of action.
- Technical assistance should be sought from consultants or agency professionals to design and implement a wildlife management plan. Natural resource professionals should ideally be registered foresters or wildlife biologists certified by The Wildlife Society.

Format for a Simple Wildlife Habitat Management Plan

The following is a suggested format for organizing a management plan into a 3-ring loose-leaf notebook. This makes it easier to add materials to the plan. At a minimum, the plan should contain the 6 sections below. These sections can be marked in the notebook with colored index tabs for easy access:

1. **General Description of the Entire Property:** Includes a brief description of the entire property such as location in the county, number of acres, past and current land uses, general forest and vegetation conditions, and number of compartments.
2. **Land Use and Management Objectives:** Includes a priority listing of wildlife and other land use and management objectives. This section should also include a brief index of each compartment's management objectives.
3. **Sketch Map:** Provides a visual description (sketch) of the property. May include several maps such as 1) a base map that shows boundaries, roads, and other man-made features; 2) a type map that differentiates cover types (timber stands, agricultural fields, and open fields); 3) a soils map that shows the location of different soil types; and 4) a compartment map that indicates where habitat improvement practices have taken place or will take place.
4. **Compartment Record Sheets:** Contains descriptive information and wildlife habitat improvement recommendations for each compartment. Also includes a schedule of recommended management activities for the compartment for a 10-year period.
5. **Field Notes Section:** Provides a commentary of impacts of management activities and wildlife observations taken directly from log books and archived in the 3-ring binder. The most appropriate place for storing field notes is by compartment.
6. **Resource Materials Section:** Contains copies of aerial photographs, topographic and soil maps used to draw the base map. This section should also include reference materials such as bulletins, leaflets, and articles on wildlife habitat management. The names, addresses, and telephone numbers of resource professionals who helped prepare the management plan and who will be conducting management practices should be included here.