

Wildlife Habitat Management: A Comprehensive Year-Around Approach

By Tom Counts, Jarel Hilton, & Bob McCollum

“**N**ow that hunting season and winter is over, it's time to relax and do a little fishing and enjoy the changes that accompany spring and summer - wildlife will take care of themselves until next fall.”

Intentionally or unintentionally that is the approach that many of us take. Actually, this end signals the beginning of a new year for management of game and non-game animals. This is the time that we should really go to work to insure that we seize opportunities to provide the critical habitat elements that wildlife need during the summer while they raise their young and prepare for next winter. True wildlife management requires attention and action throughout the year.

Establishing an approach to year-round wildlife management can be accomplished in many ways. Some landowners may choose to hire a consultant to help them develop a year-round wildlife management plan for their property. Others may attend seminars or read literature to learn how to create and manage wildlife habitats on their own. Whether you are working with a small plot in your backyard or a thousand acres of timberland, there are many essential items to think about as you consider actions to meet particular needs of wildlife and your wildlife management goals.

Wildlife Habitat Management Plan

A wildlife habitat management plan is the foundation of a successful wildlife management program. Plans serve as a guide for how, when, and where to conduct wildlife habitat improvement practices.

At a minimum, written plans should include the following:

- 1) Management objectives,
- 2) Descriptive information about current land conditions and available resources,
- 3) Habitat improvement recommendations,
- 4) Timetables for conducting management practices, and
- 5) A method for keeping records to evaluate the success of management efforts.

Wildlife habitat management plans should be viewed as flexible and dynamic documents that can be updated and revised periodically as habitat conditions and landowner objectives change. If forest or farm plans already exist, wildlife plans should be integrated into these plans to provide a coordinated and comprehensive total land management plan.

**Excerpt from Managing Wildlife, page 29.*

Sources of Information and Assistance for Developing Management Plans

Alabama Department of Conservation
and Natural Resources (ADCNR)
Division of Wildlife and Freshwater Fisheries
64 North Union Street
Montgomery, AL 36109
(334) 242-3456

USDA Farm Services Agency
P.O. Box 235013
Montgomery, AL 36123-5013

Alabama Cooperative Extension System
109 Duncan Hall
Auburn University, AL 36849-5612
(334) 844-4444

USDA Natural Resources Conservation Services
P.O. Box 311
Auburn, AL 36830
(334) 887-4560

Alabama Forestry Commission (AFC)
513 Madison Avenue
Montgomery, AL 36130-0601
(334) 240-9378

U.S. Fish and Wildlife Service
P.O. Drawer 1190
Daphne, AL 36526
(334) 441-5181

Geological Survey of Alabama
420 Hackberry Lane
P.O. Box O
Tuscaloosa, AL 35486-9780
(205) 349-2852

Source: Managing Wildlife, page 27



Claude Jenkins, a land stewardship biologist, personally visits landowners who own 10 or more acres of forestland and provides advice free of charge through a partnership between the Alabama Wildlife Federation (AWF), Alabama Forestry Commission (AFC), & Alabama TREASURE Forest Association (ATFA).

(See page 9 for more details.)

Planning for all seasons

Many of the items that we purchase come with an owner's manual to describe the operation and features of the product. In many ways, a person with land and a desire to manage for wildlife is like someone who has purchased a new computer or new electronic gadget. Even though it may appear complicated to set up and use your new gadget, everything will work if you have good instructions and follow the diagrams in your owner's manual. The only catch is, when you spend good money to lease a tract of land for hunting or purchase a piece of rural or suburban property, an operations manual is not included. So, to establish and implement a wildlife management program that will be capable of producing and sustaining wildlife, you first need a plan for managing the property to produce the best possible habitat.

How do you go about developing a plan for timing the presence and proper arrangement of essential food, water, cover, and space habitat components for wildlife? The first step is to approach the project from a year-round point of view. It is sometimes difficult for a hunter or wildlife enthusiast to see the big picture of managing land to provide for wildlife during all seasons. Truly managing wildlife to their fullest potential consists of much more than simply providing food. Potential sources for assistance with your year-round plan are wildlife biologists and natural resource managers who work for state and federal natural resource agencies, conservation organizations, and private consultants.

Always remember that if you lease the property where you

hunt or enjoy wildlife, meet with the landowner to determine what management practices can be conducted on their land. Never undertake land management practices on property that you do not own unless you have clear approval. But just because you do not own the land, it should not be the end of your efforts to encourage development of a year-round habitat management plan. In fact, your encouragement might help them see that good wildlife management compliments other land management objectives important to a particular landowner. More often than not, good wildlife management is good forestry management. Likewise, soil and water conservation practices for crop land often create or maintain excellent wildlife habitat. Some common management practices utilized in Alabama include thinning timber, prescribed burning, establishment of field borders, planting native warm season grasses, establishment of permanent fire lanes, strip disking, and many others. Each of these practices is applied for a specific reason – to improve a certain aspect of habitat. Most of these practices cover large areas, thus providing a great benefit. The exact practices planned will, of course, depend upon the wildlife species or groups of species that is most desired.

Outcomes of well planned year-round management can be dramatic. Given some improved reproductive habitat, responses of small animals such as quail and rabbits to habitat modifications can be amazing. Implementing good habitat management practices may allow wildlife to meet all of their seasonal needs on your property and allow you to have a better chance to observe or harvest them.

Example Objectives for Comprehensive Year-Around Wildlife Habitat Management

January-February	March-April	May-June	July-August	September-October	November-December
Disk in open areas to encourage native species.	Order spring and summer planting materials.	Plant summer legumes for deer and turkey	Order seeds and fertilizer for winter deer fields.	Plant winter deer fields in October.	Begin winter disking.
Disk strips in partridge peas and follow with light wheat planting.	Lightly disk and fertilize last year's partridge Pea strips by March 15.	Prepare Egyptian and sorghum patches for quail. Plant by early June.	Begin mowing strips in dove field by mid-late August.	Mow &/or disk fallow field areas & plant wheat in dove fields.	Plant any necessary wheat or partridge pea plots.
Plant pine strips, shrubs, and trees, and begin burning operations in late February.	Burn off bermuda pastures for herbiciding.	Prepare seed bed for Chufas, fertilize, and plant Chufas by mid June.	Plant late planting of browntop in dove fields.	Start planting containerized seedlings now through February.	Plant or transplant bare root seedlings now through February.
Order Chufas for summer planting for wild turkey.	Burn pine stands.	Drain duck ponds and Plant duck pond fields.	Begin thinning mature pines.	Freshen exterior firelanes.	Freshen interior firelanes and establish cover blocks.
Clean out and repair your nest boxes by the end of February.	Cease woodland burning operations by end-April.	Begin preparing dove fields.		Keep your humming bird feeders up year-around.	

Measure the success of your plan at various stages throughout the process.

Once you have a plan in mind, be sure to include a way to measure the success of your actions and their bearing on achieving your wildlife management objectives and goals. One way to measure the success of your plan is through adaptive management practices. Adaptive management is a process involving *ecological* monitoring so the landowner can measure the success of a management action or actions towards reaching his/her overall objective. It also provides evidence for management change or continuation.

Adaptive management monitors actions taken and applied toward a certain goal, and then information is collected to see if those actions are actually achieving the desired effect. As more information and experience is gained, management can be focused on actions that are most beneficial to achieving your desired goals and objectives.

The adaptive management cycle involves four steps:

- (1) objectives are developed to describe the desired condition;
- (2) management is designed to meet the objectives, or existing management is continued;
- (3) the response of the resource is monitored to determine if the objective has been met;
- (4) management is adapted or **changed** if objectives are not being reached.

Monitoring is essential to raise a warning flag that the current course of action is not working. It can be a powerful tool for identifying problems in the early stages, before money and resources are wasted and the situation turns into a crisis. If identified early, problems can be addressed while cost-effective solutions are still available. For example, an invasive or exotic species that threatens your habitat is much easier to control at its initial stages than once it is well established.

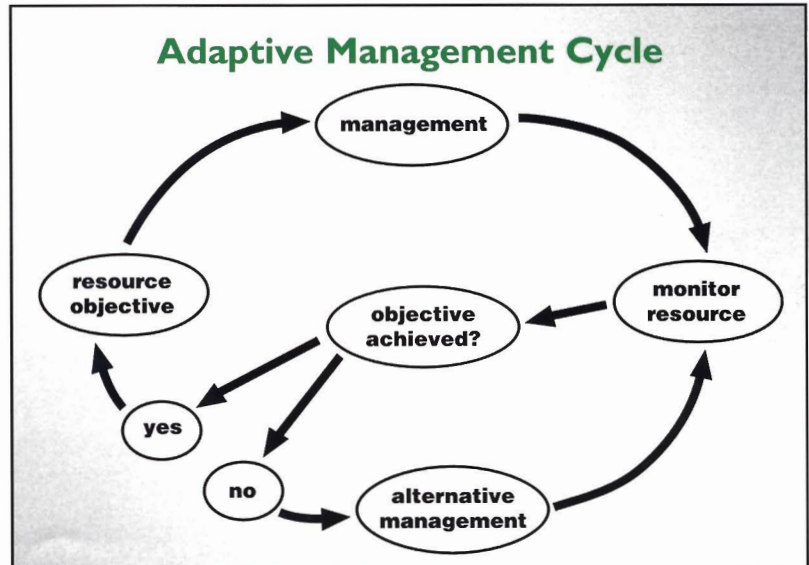
Monitoring is also critical for measuring management success. Good monitoring can demonstrate that the current management approach is working and provide tangible evidence supporting the continuation of current management practices.

There are two types of monitoring: resource monitoring and habitat monitoring. Resource monitoring focuses on the wildlife resource itself and monitors some aspect of that resource such as population size, health, average density, cover, or frequency. Habitat monitoring describes the vegetative responses and whether or not these changes meet the objectives or standards for the habitat.

An example of habitat monitoring may be to set a threshold level of the percentage of your open fields that are reverted to weedy field borders.

Another example may be to measure how well a system of grazing may meet plant height and species composition. Neither of these examples measures the response of the single resource or wildlife species, but instead the objective describes the habitat structure.

In resource monitoring, the actual causes of wildlife population conditions and trends are unknown. Changes in numbers or health could be the result of management actions taken, but they could also result from weather patterns, insect infestations, changes in herbivory or other uncontrolled factors. For instance, planting summer bean fields may yield an increase in body size of harvested deer, but to be more certain the deer harvest data must be recorded and monitored over a couple of years in order to evaluate changes in the deer herd.



Annual monitoring revealed dramatic increases in the number of clumps of pitcher plants, flowers, and fruit following restoration activities of logging, fencing, and prescribed fire.

Photo provided by the Alabama National Heritage Program.

Account for all Habitat Components - food, water, cover, and space

As previously mentioned, the seasonal needs of wildlife during fall and winter receive the most attention in the day-to-day wildlife management many of us practice. Food plots, bird feeders, and other actions focused on providing ample food during the periods we tend to perceive as most critical is fairly well understood and usually accounted for.

Spring and summer, however, are often overlooked in our customary wildlife management activities. Actually, this period may well be the most important time for both game and non-game wildlife because this is when young are born and raised, antlers are grown, and body weights are increased in preparation for winter. Most land already supports all of the wildlife that it is capable of supporting in its present condition, but summertime habitat is often the key factor limiting various wildlife populations, even on land where ample management is employed to meet the fall and winter needs of desired wildlife species.

If you want to improve summer habitat characteristics to enhance wildlife, there are some basics that you need to understand. The habitat needs of wildlife are one of the most important things you should know when attempting to provide the maximum benefit for wildlife. Habitat is a combination of food, water, cover, and space and how they are arranged. The better the quality, quantity, and arrangement of these habitat components, the better the wildlife populations will be.

Take a look around your property. What is the existing habitat? What trees, shrubs, and herbaceous plants are there to provide food or cover? What's missing? What can you plant to help the wildlife on your property? Do you have a pond? Is there a stream flowing through your property? Are there any dead or hollow trees? Are there any rocky areas? Any mushy, muddy areas? What about dry, dusty areas?

Diversity in structure and food is what will attract a diversity of wildlife.

This is where it is helpful to bring in a wildlife biologist to help determine what practices and seasonal management activities would create the needed habitat components and arrangement that would actually benefit the wildlife species for which you would like to manage.

Food

Some animals need fruits, others seeds, and others insects. Some plants have fruits that persist into the winter and can provide food at critical times. Trees, shrubs and herbs that are food for insects will provide meals for birds that eat insects. Quail and turkey are two examples of species that need abundant insect populations during the spring and summer to help raise their young. Insuring that the right plant communities are present in spring and summer to provide the needed insect populations is an important component of seasonal planning to meet the year-round needs of wildlife.

Small and large mammals may also need fruits and seeds, leafy vegetation or insects. If you are trying to attract butterflies to your property, butterflies and moths need leafy vegetation as caterpillars and nectar as adults. Many caterpillars are host specific meaning that they can only thrive on one plant species. Butterflies prefer single flowers to multiple flowering plants because the nectar is easier to extract. Therefore, providing butterfly attractors, in groups rather than as individual plants, is another example of meeting spring and summer needs.

If you want to provide habitat for a variety of non-game wildlife, leave rocks or fallen logs on your property. Sheltered, moist areas under rocks or fallen logs harbor worms, slugs and insects that in turn are food for small mammals, birds, reptiles and amphibians.



Photo by Bob McCollum

Black cherry attracts caterpillars for insect-eating birds like the yellow-billed cuckoo and provides berries for fruit-eating birds and squirrels.

Basic Biology and Habitat Requirements for Bobwhite Quail

By Stan Stewart, Wildlife Biologist, ADCNR, Division of Wildlife and Freshwater Fisheries

A common experience in my work is seeing effort and money ineffectively invested on practices to enhance wildlife. This happens because the practitioner does not understand basic habitat requirements and behavior of wild animals. Anyone who manages wildlife successfully must know the habitat types required by particular species and understand how those habitats influence wildlife population response.

Before a practice is employed, a manager should consider how the practice relates to habitat structure and if it meet a need of wildlife. Does the practice supply a missing or faulty part of an animal's environment? As an example, the first and often only practice I see performed by landowners interested in quail is the cultivation of food patches. Food is assumed to be the missing part of the quail habitat. Other habitat needs are not considered. But, in my experience, quail populations most often do poorly because of deficient nesting cover. This critical habitat type is seldom provided or allowed to develop extensively in today's landscape. A food patch cannot increase the quail population when the faulty part of the habitat is nesting cover.

I would advise anyone to invest time learning the basic biology and habitat requirements of a species prior to investing time and money on management practices.

**Excerpt from Managing Wildlife, page 37*

Water

Water is a vital component of habitat and can really attract wildlife if it is scarce in a particular area. Birds obviously need water to drink, but almost as important is its use for bathing. A bird owes its livelihood to its feathers, and if feathers become soiled, the bird will have great difficulty eluding predators and foraging for food. When water levels in ponds recede, butterflies drink and extract salts from moist soil, which will also provide robins and swallows with mud for nest building in the spring.

Besides offering a cool drink or a bath to birds and mammals, water also offers essential habitat for aquatic creatures like frogs, dragonflies and crayfish. If you are fortunate enough to have a pond, either man-made or beaver-made, on your property as a permanent water source, then you can provide the crucial habitat that amphibians need to grow from eggs into adults. Seasonally flooded areas that do not hold water year round can be especially important to many species of frogs and salamanders that need predator-free (i.e. no fish) water in which to lay eggs so their young can survive. Tadpoles and other larvae can elude predators in the vegetation-choked areas of permanent water sources and thrive there as well.

Cover

It is often important to provide layers of cover starting with low weedy plants and areas with shrubby and woody plants on up to large mature trees. Mammals may need cover in the form of den trees or thick vegetation. Reptiles and amphibians can benefit from lots of hardwood trees that provide leaf litter and fallen branches. They can benefit as well from low shrubs that provide shade during the heat of the day. Some birds nest in cavities which may be natural or man-made. If you use nest boxes, have them cleaned, in place, and in good repair by the end of February, well before nesting season begins. Hazardous snags should be removed, but any dead or hollow trees that are well away from roads or buildings can be kept for cover and for nest sites for cavity nesting birds and as dens for mammals.

Cover can be supplemented by placing brush piles throughout your property. Brush piles are attractive to cottontails, mice, reptiles, amphibians and some birds like white-throated spar-



Moist soil provides drinking water for butterflies.



Water is a necessary habitat component for all wildlife.

Photo by Bob McCollum

Photo by Paul T. Brown

rows, and Carolina wrens. There will always be plenty of raw material available for brush piles, since tree trimmings, old Christmas trees, leaves and other refuse are all that is needed. Begin a brush pile with layers of logs or sturdy limbs, with each layer at right angles to the next. Add small limbs and branches over this with the cut ends in the middle and the branch tips pointing outward. In this way the middle is dense, but the outer edges are open enough for quick access. Add more branches from time to time and encourage "viney" growth over a brush pile to improve appearances. In time, other vegetation will grow up around brush piles as birds deposit seed laden droppings in and around them. A living brush pile can be created by cutting a live tree partly through and pushing it over. The portion still attached to the stump will continue to provide nutrients to the rest of the tree. Maple and sweetgum trees are fairly hardy and good candidates for this rough treatment.

Certain types of escape cover are beneficial to quail and require certain types of trees, shrubs, or thicket based plant complexes to provide that cover. Turkey nesting habitat requires the right combination and arrangement of open and shrubby components as well.

Other habitat requirements that may be provided include dusting areas for turkeys and other birds and small mammals, as well as areas of grit and gravel for birds. Dust baths help birds maintain their feathers by absorbing excess oil and discouraging parasites. Many birds need to swallow small rocks or grit to help their gizzards grind up the seeds they eat.

Gravel or dirt roadways can be ideal sources of grit and dusting areas.

If you are going to supplement the plants on your property to benefit wildlife, another consideration in choosing what to plant is aesthetic value. While you are providing variety for wildlife, you can provide variety for yourself in color, texture and other visual aspects. Plan for a pleasing combination of evergreens and deciduous trees, and a variety of reds, yellows and oranges in the fall. Plant trees and shrubs with different leaf shapes, barks, and trunk textures, shapes and sizes. You can also plant a mixture of wildflowers that span the color spectrum.

Now that you know where to start, get to work now before spring and summer slip away and you lose the opportunity to address some of your most critical wildlife habitat management needs. Along the way, attend a seminar on forestry and wildlife management. There are many held across the state on a frequent basis by conservation groups like the Alabama Wildlife

Federation and Alabama TREASURE Forest Association, and state natural resource agencies like the Alabama Department of Conservation and Natural Resources and the Alabama Forestry Commission. There are others as well who provide similar opportunities from time to time.

And remember the most important steps:

- 1) Plan for all seasons,
- 2) Measure the success of your efforts and adapt as necessary, and
- 3) Provide for the essential habitat components in the proper arrangement.

Then, enjoy the results you have worked to produce.

Cover can be supplemented by placing brush piles throughout your property. Brush piles are attractive to cottontails, mice, reptiles, amphibians and some birds like white-throated sparrows, and Carolina wrens.



Photo by Dennis Holt

Key Habitat Types for Wild Turkey

Nesting

Provides visual protection of hen and eggs from predators in forest stands having open overstories and well-developed understories. Characterized by abundant grass, herbaceous and shrub vegetation up to 3 feet in height. Often turkeys nest near logging slash or brush with vines over nests or nests at the base of a tree. Frequently near brood-rearing habitat and openings. Can be created by retaining three- to five-year-old abandoned fields, three- to seven-year-old timber regeneration sites, utility rights-of-way, edges between forest and fields, or other areas that provide well-developed herbaceous and shrub vegetation.

Brood-Rearing

Provides poults with insects that are easily accessible with enough cover for hiding but low enough (about 2 feet) to allow the hen unobstructed vision for detecting predators. Characterized by openings having grass and forb vegetation interspersed with forest. Several types of openings are used by broods for insect feeding including improved pastures, burned pine stands, hayfields, grainfields, cutover hardwoods, wildlife openings, utility rights-of-way, and old grass-dominated fields. Landowners should have several openings for insect foraging within the 75-acre weekly home range of broods.

Roosting

Provides protection against predators and is necessary throughout the year. Roosting characteristics are not specific; however, turkeys prefer to roost between 30 and 100 feet above the ground. There also is a preference for roosts that are near or above water. Heavily hunted turkeys use denser, more remote roosts. During winter when temperatures are below freezing, roosts tend to occur on south-facing slopes away from prevailing north winds. Landowners should retain mature hardwoods and pines across the yearly range as potential roosting sites.

Fall and Winter

Provides food and roosting cover for young and adult turkeys. Turkeys increase their use of forested cover during this time and decrease their use of open areas. Hardwood stands containing a diversity of mast-producing trees, interspersed with pines and field edges should be retained by landowners.

Escape Cover

Sometimes provides emergency cover for turkeys pursued by avian predators or from heavy hunting pressure. Found in timber-cutting slash and dense vegetation.



Photo by Paul T. Brown