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Silvopasture and Eastern Wild Turkey

Introduction

Trees and livestock account for much of the income production on lands throughout the southern United States. Today many landowners are combining these two operations into one system called silvopasture, where both timber and livestock are produced on the same field.

While economic gain is most often the primary goal of a silvopasture system, wildlife habitat enhancement is commonly seen as an added benefit. This *Agroforestry Note* discusses the habitat requirements of Eastern wild turkey with respect to management considerations for the production of timber and livestock forage within silvopasture systems.

Silvopasture systems typically are laid out by either planting widely spaced rows of trees (usually pines) onto an open pasture or by heavy thinning of a forest to allow sufficient light to reach the ground so that a livestock forage system can be established. See *Agroforestry Notes* 18 and 22. Minor modification can be made to greatly improve the value of a silvopasture system for wild turkey, while still retaining most of the timber and forage production potential.



Silvopastures provide a mix of tree and grass vegetation that is preferred by wild turkeys. Photo courtesy National Wild Turkey Federation.

Habitat Requirements

The effective range of a flock of Eastern wild turkeys can span several thousand acres, depending upon the available food and habitat conditions, and occasionally may exceed 12,000 acres. Because of this large range and the relatively small scale of most silvopasture operations it is unlikely a silvopasture or, for that matter, most farms in the Southeast will fulfill the year-round habitat requirements for Eastern wild turkeys. Silvopastures, however, can be managed to provide significant requirements and help improve the conditions for the turkeys.

Food Species for Eastern Wild Turkey

Trees	Shrubs	Grasses / Forbs	Vines
pine	crabapple	chufa / sedges	honeysuckle
oaks	dogwood	native grasses	Virginia creeper
persimmon	hawthorn	Bahiagrass	poison ivy
pecan	American beautyberry	legumes / clovers	grapes
hackberry	blueberries / briars	orchardgrass	

Turkeys require a mixture of open agricultural and forest land. While turkeys prefer oak forests, they will utilize most types of timber found in the east and prefer mature open grown timber. Sawtimber stands with a basal area of 40 to 60 square feet can allow enough light penetration to provide good foraging in the understory.

Each year, turkeys go through three distinct periods or seasons each requiring somewhat different habitat conditions. These conditions are:

- Spring (nesting)
- Summer / fall
- Winter

Spring (Nesting) Habitat

An ideal nesting site is an area where the ground cover has a woody component of shrubs, small trees, and briars usually less than four feet in height with a strong herbaceous component. The vegetation is often adjacent, or in close proximity, to water such as a pond, spring stream, or livestock tank. Riparian areas, small clearcuts, open grown forests, old fields, or pastures and hayfields where grazing is deferred during March through June, are often used as nesting sites.



Allowing shrub clusters to persist creates turkey nesting cover.

Management considerations for silvopasture to enhance spring (nesting) habitat:

- Manage trees for an open-grown canopy of between 25 to 45 percent cover or grow trees in two or three row sets with 30 to 40 foot alley ways.
- Establish understory vegetation to native warm season grass and defer utilization until July, or if grazed, manage for a grazing height of 8 to 10 inches.
- And/or manage understory to increase shrub and briar component to improve nesting condition. This will usually require shifting 20 to 30 percent of the forage production to shrubs.

Summer / Fall Habitat

Vegetation at this time of the year is more varied and diverse. Once young turkeys hatch, they move to grassy areas and for the first month feed almost exclusively on insects. High quality pastures and recent forest clearcuts are excellent areas for the young turkey to grow. Within approximately one month their diet begins to mimic the adults and include soft and hard mast, and forages, such as grasses and legumes. These conditions are found near forests and in open grown forests containing at least 50 percent light penetration to the forest floor for understory production and an overstory containing oaks and soft mast producing trees. Thinned pine forest also provides ideal turkey habitat.



Rotational grazing creates a variety of forage stand conditions. Silvopastures with shorter forage are excellent brood rearing and feeding areas for young poults. Taller vegetation is good if there is enough open area to allow poults to access the site.



Existing or established motts (clusters) of oak trees scattered within the pine stand produce acorns which benefit turkeys.

Management considerations for silvopasture to enhance summer / fall habitat:

- Establish motts (clusters) of oaks or soft mast producing trees in linear silvopasture planting (see photo above).
- Protect mast producing tree and shrub species, and manage them to comprise 10 to 30 percent of the stand.
- Establish shrubs within, or adjacent to, linear tree sets in silvopastures (see photo above).
- Maintain legumes as a forage component for grazing and wildlife.

Winter Habitat

During this critical time of the year, winter habitat must provide adequate and reliable food, plus cover from inclement weather. Mature hardwood trees preferably oaks are ideal. Oaks provide roosting sites and acorns for food. Riparian areas near or in silvopastures, left in oaks, as well as managed hardwood sites, provide excellent winter habitat. If a significant area of oak trees is not available for winter food, crop residue or food plots adjacent to wooded areas can be established to assure a good food supply.

Management considerations for silvopasture to enhance winter habitat:

- Maintain 10 to 30 percent oak species in block-type silvopasture plantings.
- Establish motts of oak species in linear silvopasture plantings.
- Plant desirable cool season perennial grasses for winter foraging where adaptable.
- Over seed warm season grasses such as bahiagrass and Bermuda grass to wheat or annual rye grass for winter grazing by livestock and foraging by turkeys.
- Over seed adapted cool season legumes for winter and early spring foraging.

Silvopasture forage can be enhanced to provide additional high quality winter feed for turkeys. Adding cool season grasses or legumes in silvopastures near streams and oak motts create a food source close to other habitat components.

As silvopastures mature, they provide a variety of habitat requirements that turkeys will utilize at different times of the year depending on the habitat requirements that are being satisfied. Photo courtesy National Wild Turkey Federation.





An inventory of turkey habitat conditions near the silvopasture area will indicate which management alternatives will best enhance the area for wild turkeys. Photo courtesy National Wild Turkey Federation.

Additional Considerations

Before deciding what management changes are needed, a landowner should:

- Consult a professional wildlife biologist trained in wild turkey and silvopasture management.
- Inventory the habitat condition of the silvopasture, the farm, and adjoining farms that make up the range of the turkeys in the area.
- Keep in mind that turkey diets are varied. Any one food source is not a limiting factor for quality turkey habitat. Furthermore, turkeys respond to vegetation structure as much as, or more than, availability of specific food items.
- Determine grazing, timber, wildlife and other conservation and production objectives for the pasture, forest and silvopasture on the farm.
- Develop a management plan to meet landowner objectives.

Additional Information

Wildlife Management: Eastern Wild Turkey; 2003; by Bob Tjaden; College of Agriculture & Natural Resources, University of Maryland. FS-606. pgs 10.

Wildlife Food Planting Guide for the Southeast, Dean Stewart, Mississippi State University Extension Service Publication 2111.

Turkey Management in Pine Plantations, 2004. by John S Powers, Area Biologist, Division of Wildlife and Freshwater Fisheries. http://www.conservation.alabama.gov/administrative/Turkey_Management.htm

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