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Managing Native Vegetation for Wildlife[1]

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The forests and woodlands of the southeastern United States have a great diversity of plants, many of which are very beneficial to wildlife. Increasing numbers of landowners are interested in managing their property to benefit native wildlife, especially, in many cases, white-tailed deer, turkey and quail because of the potential income available from leasing lands to recreational users and/or hunting clubs. Abundant wildlife populations (primarily game species) generally equate to higher lease fees and income to the landowners.

Wildlife populations thrive in areas where the vegetation supports animals' nutritional needs and provides them with areas to rest. Landowners can improve the wildlife habitat on their property by manipulating the native plants. The biggest benefit of managing native vegetation is that you should be able to promote a wide variety of plant species, so that food will be available to wildlife all year. This is superior to traditional methods for food plots, where plants are generally available for only part of the year. Also, native vegetation is available in large quantities that can sustain wildlife populations, whereas food plots intended to supplement native foods are usually not planted in sufficient quantities to sustain wildlife populations.

Let's examine how managing native plants can improve the forage quality available on your property. While this paper will not discuss all of the native plants growing in northwest Florida and southeast Alabama, it will cover some key plants that are beneficial to several species of wildlife.

Plant Identification and Description

Highbush blackberry (*Rubus argutus* Link) is an erect or cane-like shrub often growing in patches. Blackberry is armed with broadbased and hook-like thorns. The flowers of blackberry are white and generally occur from April through July. The fruit is an aggregate fruit of drupelets that start off green in color and change to red and finally blue-black as the fruit matures (Figure 1). Blackberry plants are commonly found in wooded areas, at forest edges and along fencerows. A plant often mistaken for blackberry is southern dewberry, (*Rubus trivialis* Michx.). Southern dewberry does not grow as tall as blackberry and has red-purplish hairs and reddish thorns along the stem that are not found on blackberry plants. Dewberry plants flower between March and April with fruit maturing in April and May, which is slightly earlier than blackberry. Southern dewberry habitat differs from blackberry habitat in that it is usually more open. Southern

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dewberry are commonly found in new clearcuts and abandoned fields, and along roadways and railroad tracks. These plants can tolerate poor soils and are quick to reclaim disturbed sites. Collectively, the various species of *Rubus* arguably are the most important group of plants for the sustenance and protection of wildlife in the Southeast (Miller and Miller 1999).

White-tail deer will consume stems and leaves, although they prefer tender new growth. Turkeys, quail and other wildlife species consume the fruit. In addition, blackberry patches provide excellent escape cover from predators for quail and young turkeys.

Figure 1. Photo on left is a blackberry plant with mature fruit and the photo on the right is a dewberry plant with ripening fruit (still red in color). Note the reddish appearance of the dewberry stems. (All photos by Rick Williams.)

Another plant genus important to wildlife is *Smilax*. Several *Smilax* species with different leaf shapes are commonly referred to as greenbrier; I will refer to all of these species as greenbrier. Greenbrier is an evergreen climbing vine that may or may not have thorns depending upon the species (Figure 2). Small greenish flowers are produced in late spring through early summer, and, if pollination occurs, reddish to black-colored berries are produced. Greenbrier is found throughout the forest along forest edges and disturbed areas. Wildlife use all of the greenbrier species as a food source throughout the year. White-tailed deer browse the stems and leaves of greenbrier while birds consume the berries. Deer eat the tender shoots and leaves as they emerge and in late winter when other food sources have disappeared, deer will eat older, more mature leaves and stems (Hart 2006).

Muscadine grape (*Vitis rotundifolia* Michx.) is a commonly occurring woody vine growing to 40

Figure 2. Catbrier (*Smilax bona-nox*), one of the greenbrier varieties.

meters in length. The leaves are heart shaped, deciduous, palmately veined and alternately occurring along the stem (Figure 3). Muscadine grape has inconspicuous yellow-green flowers from April through June. The fruit is a berry that ripens between July and September. The fruit is at first green and turns red to purple to black when ripening (Miller and Miller 1999). Muscadine grape vines are found from full sun to partial shade. A good place to find Muscadine grape is along disturbed areas in the forest and along the forest's edge.

White-tailed deer readily consume the leaves and twigs and the ripe fruit that grow within their reach or that have fallen from the vine. White-tailed deer will eat wild grapes no matter where they grow or what variety (Hart 2006). Turkey and quail also consume the muscadine fruit that have fallen to the ground.

American beautyberry (*Callicarpa americana* L.) is a multi-branched deciduous shrub with opposite leaves. Flowers grow in dense axillary clusters and they are lavender to pinkish in color. The fruit is a drupe that grows in clusters and is distinctly bright lavender and occasionally white in color (Figure 4). Beautyberry is a common understory plant in pine stands and in forest openings. White-tailed deer consume the leaves and twigs of beautyberry year

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Figure 3. Muscadine leaves showing the general heart shape and palmate veination.

round and the berries in late fall and winter. Quail and turkey will feed on the berries, and in fact more than 40 species of birds consume the fruit of beautyberry. The consumption of the fruit by birds is a major method of seed dispersal (Miller and Miller 1999).

Figure 4. Beautyberry in early fall with mature fruit.

Benefits of Native Plants

Native vegetation is well suited to your location because it is adapted to the local weather and soil conditions. White-tailed deer eat dozens, if not hundreds, of varieties of wild plants although they do have plants they prefer. Some plants that are high on the preferred list of deer have been identified in this paper. These plants may already be growing on your land, in which case you won't have any planting expenses, but you will need to locate the plants and determine their condition. With a little management you can increase the number of native plants on your property and boost their nutritional value, thus improving the habitat for many wildlife species.

What Can I Do?

The capacity of land to support deer or other wildlife is influenced largely by vegetation types and condition, soil productivity, and weather patterns. Land may be manipulated to improve the quantity and quality of plants available to existing wildlife species (Stribling 1996). The simplest management alternative, of course, is to do nothing. A small step up from doing nothing can reap big benefits. The first step is to take inventory of the native plants growing on your land and to determine what might be limiting their abundance, for instance, too much dense shade or too many older, less productive plants.

You can increase the nutritional content and production of native plants by managing the area to get more light to the forest floor, by applying fertilizer periodically, and by taking steps to keep your plant population young and vigorous.

Burning to Manage the Understory

One excellent way to improve the wildlife habitat is to conduct a prescribed burn. Most native plants respond favorably to burning. Another option is to bush hog or disc these plants to remove the older stems. The burning off or disking of older, less productive stems promotes the new, tender growth deer and other species favor because it is succulent and more digestible. If the area is not disturbed periodically by prescribed burning or disking, plants tend to grow out of reach of deer and other wildlife, and the open structure at ground level will not be maintained, decreasing the effectiveness as wildlife habitat (Harper et al. 2004). Open structure is the area between the ground and the plants where small animals and ground birds can travel under and around plants. When this structure is closed, its effectiveness as wildlife habitat is lost. Burning, disking and mowing on a periodic basis keep plants from

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becoming overmature and maintain effective structure for wildlife habitat.

Thinning to Manage the Overstory

Another management option is to thin or cut some overstory trees to allow sunlight to reach the forest floor. Extensive stands of large trees allow very little sunlight to reach the forest floor. As a result, little plant growth is found at heights where deer and most wildlife feed. Thinning some of the larger trees will allow sunlight to reach the forest floor and, consequently, food abundance and availability will increase. If thinning is not a viable option, selected individual trees could be girdled mechanically using a chainsaw or chemically using a hatchet and a spray bottle. Some common herbicides used to remove selected trees using "hack-'n'-squirt" include imazapyr (Arsenal® AC, Polaris® AC and E-Pro® 4) and triclopyr (Garlon® 3A). Using a hatchet to make cuts into the bark in a band circling the tree, apply one of the identified herbicides into the cut areas. Removing some of the trees using mechanical or chemical methods allows more light to reach the forest floor and provides snags and cavities for birds and animals. An additional benefit is that the remaining trees will add wood growth and ultimately reach sizes to produce higher valued timber products like sawtimber or poles.

Fertilizing to Boost Nutrient Production

Fertilizing woodlands and patches of native vegetation is an effective but underused method for improving wildlife habitat and attracting wildlife (Stribling 1996). Part of the West Florida Research and Education Center (REC) forest containing blackberry, greenbrier, muscadine grape, and beautyberry was selected and managed as a native food area for wildlife in order to test the efficacy of the various management methods, including fertilization. Half of this area was fertilized with 100 pounds of 13-13-13 fertilizer and the other half was not fertilized. A month later, vegetation samples were collected from each area and analyzed for nutrient content. All of the plants responded positively to the fertilizer with increased levels of crude protein and digestibility (Figures 5 and 6).

Landowners can combine two or more of these management alternatives to improve the quality and quantity of desirable plants growing on their land. At the West Florida Research and Education Center (REC), all of these management alternatives are being used to improve wildlife habitat, with promising results.

Other Plants to Encourage

Some additional native plants that we have successfully improved with increased protein and digestibility through fertilization include teaweed, Florida pusley, and yellow jasmine. Generally, animals select food according to its availability, nutritional value and taste. The preferred food of deer may vary from area to area and may change seasonally as plants mature. Table 1 lists some of the foods deer eat with a preference ranking from low to high (Stribling 1996). Knowing which plants are popular with deer is useful: if you see browse occurring on plants with low preference, then the wildlife habitat on your land is in need of improvement. White-tailed deer need a minimum level of nutrition from the plants they consume for proper growth and development. Plants with at least 16 percent protein are necessary for deer to reach optimum body size and for antler growth (Cook and Gray 2003, Yarrow and Yarrow 2005). The plants discussed in this paper all meet or exceed the minimum required protein levels for white-tailed deer growth and development.

Conclusions

Native shrubs and vines provide quality wildlife habitat for a variety of wild animals. They provide food and cover throughout the year. In the spring they provide nesting cover. Throughout the summer they provide brood rearing areas and sources of food. In late summer and early fall, the palatability and quality of native forage decreases (Harper 2004). In the winter and fall, areas containing these shrubs and vines become critical habitat by providing food and protection from harsh winter conditions and predators.

You can improve wildlife habitat on your property by using the relatively easy, low-cost methods described in this paper to increase cover,

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diversity and nutrition of your native plants. Throughout the year, white-tailed deer and other species of wildlife rely on native plants as their primary food source. The plants mentioned in this paper are good sources of food, and they can be improved in quality and digestibility when fertilized and encouraged. With a little help from you, native plants and wildlife will thrive in your domain.

Table 1. Deer-Browse Plants

Common Name	Scientific Name	Rating
Common persimmon	*Diospyros virginiana*	High
Blackberry, dewberry	*Rubus* spp.	High
Greenbrier	*Smilax* spp.	High
Wild grapes	*Vitis* spp.	High
Trumpet creeper	*Campsis radicans*	Medium
Yellow jessamine	*Gelsemium sempervirens*	Medium
Sweetleaf	*Symplocos tinctoria*	Medium
American beautyberry	*Callicarpa americana*	Medium
Sassafras	*Sassafras albidum*	Low
Blueberry, huckleberry	*Vaccinium* spp.	Low (leaves and stems)
Rhododendron	*Rhododendron* spp.	Low

If you need help or assistance in managing your land for wildlife, check with your local county extension agent or state wildlife officer.

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