



Ten Tips for Encouraging the Use of Your Pine Plantations By Game Species¹

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Many forest landowners are interested in managing their property to achieve more than one objective. A common combination of objectives for Florida forest landowners is producing timber products while also providing habitat for wildlife that can be hunted. These two objectives are compatible, but some tradeoffs may be required because strategies that maximize timber production are not always the same as those that provide superior habitat for game species.

Before implementing any forest management activities, it is important to think through your objectives and decide which is the higher priority: wildlife, or timber production? Individuals who prioritize wildlife over hunting may sacrifice some income that could have been attained through timber, but they may recoup this if they charge for hunting leases after they have improved the habitat for game species.

Habitat is a species-specific concept. What makes a particular area good habitat for one species may make it less useful for other species. Therefore, it is impossible to manage a single stand of trees to provide quality habitat for all wildlife species

simultaneously. However, many of the popular game species in Florida have similar habitat needs, so it is possible to implement strategies that are likely to benefit several of the species you may want to attract across your entire acreage. Here we provide brief tips on how to make pine plantations more suitable for game species, and list additional resources where further details can be found. Information on increasing the wildlife diversity in pine plantations is available in "Ten Tips for Increasing Wildlife Biodiversity in Your Pine Plantations," at <http://edis.ufl.edu/UW319>.

Tip #1 – Increase Spacing Among Trees

Forest owners interested in maximizing growth rates of pines typically plant at high densities (often 726 trees per acre, or tpa). Stands planted at high densities allow little sunlight to reach the forest floor. This greatly limits the amount and variety of herbaceous plants (i.e., grasses, legumes and forbs) that can grow within the stand. Because most game species rely on herbaceous plant growth on the forest floor for food (grazing, seed eating, bugging) or

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cover, dense tree spacing may prevent use of these stands by these animals.

Two modifications can increase the suitability of pine plantations for game species. First, pines can be planted initially at lower densities (350 to 500 tpa). Alternatively, pines can be planted at high densities and then thinned several times early in the life of the stand. The first thinning should occur when trees reach a merchantable size (usually around 15 years for pulpwood). Subsequent thinning can be planned every 5 to 10 years thereafter. Thinning according to this schedule will not only increase food availability and cover for game, but will also improve growing conditions for the remaining trees.

Tip #2 – Use Herbicides to Selectively Control the Hardwood Midstory

Pine stands with wide spacing can develop a dense midstory of hardwood shrubs and trees if these are left to grow. A dense midstory prevents sunlight from getting to the ground. It also creates competition between the pines, the hardwoods, and the non-woody plants that occur at the ground level. As mentioned in tip #1, the herbaceous plants that occur at the ground level provide an extremely important source of food for game species.

Herbicides can be used to selectively remove the midstory hardwood layer while not disturbing the desirable plants. See "Controlling Hardwoods in Longleaf Pine Restoration," at <http://edis.ifas.ufl.edu/FR181>, for specific details on controlling hardwoods in pine stands.

Tip #3 – Use Fire to Stimulate Non-Woody Groundcover and to Control Hardwoods

Natural fires were historically a common occurrence in Florida, and they alter forests in ways that benefit wildlife. Prescribed burning is a technique that can be used to obtain the same benefits that would occur after a wildfire, but under more controlled conditions.

Fire increases habitat quality in pine stands for game species in several ways: it reduces the hardwood midstory, increases the quantity and diversity of herbaceous plants, and improves the quality of herbaceous plants as wildlife food. Younger herbaceous plants tend to be more palatable and more nutritious than older plants, so fire benefits wildlife by creating a flush of highly nutritious food plants. Also, fire increases seed, fruit, and flower production of many species, which results in a greater diversity and increased quantity of food for wildlife. Varying the time of year when burns are implemented and the return intervals between fires will favor different plants. See "Prescribed Burning Regulations in Florida," at <http://edis.ifas.ufl.edu/FR055>, for additional information on prescribed burning.

Tip #4 – Maximize the Amount of Edge Habitat

Game species thrive in areas where multiple habitat types meet. Most game species feed on herbaceous plants that are typically more abundant outside of planted pine stands than within, but they rely on the forest to provide cover from predators. Thus, by creating numerous small forest stands rather than a few large stands, a large amount of this transition area—called "edge habitat"—is created. Forest stands planted next to one another should be at least 8–10 years apart in age to maximize the difference in food and cover resources available from each.

Edges can be either "hard" or "soft". Hard edges are abrupt transitions between habitats, whereas soft edges are more gradual transitions. Because abrupt habitat transitions are less beneficial to game species than more gradual transitions, efforts should be made to make hard edges softer. This could involve a gradual thinning of trees between a dense forest stand and a grassy area or the promotion of weedy and shrubby areas between grassy areas and forest stands.

Tip #5 – Maintain a Diversity of Food Sources

Certain hardwood trees and shrubs provide hard mast (nuts) and soft mast (fruit) that serve as important sources of food for game species. Hardwood drainages and bottomland forests are examples of areas where hardwoods naturally predominate, and where a variety of food sources are typically available to wildlife. These areas should not be converted to pines, but should be allowed to stay as is so that a sequence of varying food resources becomes available throughout the year. If any hardwoods are harvested from these areas, care should be taken to retain those individual trees that consistently produce large crops of mast. See "Managing Oaks to Produce Food for Wildlife," at <http://edis.ifas.ufl.edu/UW293>, for additional information on managing oaks for wildlife.

Tip #6 – Create Travel Corridors

Most animals do not feel comfortable moving through exposed, treeless areas during the day, which can limit their ability to obtain food and find cover. Planting narrow lanes of trees to connect isolated stands of trees in open agricultural landscapes will increase animal movement among stands. Similarly, if trees and shrubs are allowed to grow along fence lines, these linear routes will be used more frequently as travel corridors than if all natural vegetation is regularly removed. See "Fences: Let 'em Grow," at <http://edis.ifas.ufl.edu/UW241>, for more information on creating natural fence lines to facilitate wildlife movement.

Tip #7 – Create and Maintain Permanent Forest Openings

As mentioned in tips #1 and 2, naturally occurring herbaceous plants are an important source of food for game species. Because the amount of groundcover that will grow within pine stands is limited, the areas next to pine stands can be managed to provide additional food resources. Roads, firebreaks, power line easements, and rights-of-way are areas that need to be maintained in fairly open conditions to serve their primary purpose, and can easily be managed in ways that increase food availability for wildlife.

Periodic disking, mowing, or prescribed burning will prevent growth of trees and shrubs while stimulating herbaceous plants as well as the seeds and insects associated with them that are food for young turkey and quail. Disturbing the soil at different times of year will stimulate different plants: October disking will promote heavy-seeded annuals, April disking will promote seed-producing grasses, and June disking will promote plants that attract insects. Disturbing different areas at different times of the year makes a variety of food available to wildlife.

Tip #8 – Use Logging Decks Strategically

Make decisions regarding the location of logging decks carefully. These areas can serve as permanent openings that provide food for wildlife. They should be positioned strategically—to intersperse food and cover into large blocks of forests; to increase edge; to add contrasting habitat in areas where upland forest and drains converge; and to encourage aggregation in locations convenient for hunting and viewing and in places where the soil is conducive to grow the type of cover or forage desired.

You will reap the greatest benefits from logging decks that are properly maintained. It is wise to assess what you can do to your logging decks up-front to reduce your maintenance costs later on. Carefully consider soil conditions when siting your decks, and invest in up-front weed control and liming if needed. Be sure to discuss with loggers how stumps will be removed and where debris will be piled for later burning. If you don't plan this out before the logging begins, a great deal of time and effort may be required to clear stumps and debris later.

Tip #9 – Create Food Plots

Poor soil fertility typically results in natural vegetation which is low in nutritional quality. Most of Florida's soils are low in natural fertility compared to soils elsewhere in the United States. Low soil fertility makes it difficult to grow protein-rich forages in food plots in Florida. Planting food plots with nonnative varieties known to be palatable to game species can be a good strategy for providing a way to

aggregate game for viewing and hunting at certain times of the year when native foods are scarce and/or less nutritious. But food plots will not significantly improve the nutritional status and reproductive rate of game beyond the fertility of the soil in your area. High protein supplemental feeds are a better option if that is your goal.

A great deal of information is available on how, where, and when to plant food plots as well as which plants to include in a food plot. See "Establishment of Food Plots for White-Tailed Deer in Central and South Florida," at <http://edis.ifas.ufl.edu/UW262>, "2007 wildlife forages for North Florida - Part I: cool season food plots," at <http://edis.ifas.ufl.edu/AG140>, and "Supplemental Feeding and Food Plots for Bobwhite Quail," at <http://edis.ifas.ufl.edu/UW264> for information tailored to specific species and regions of the state.

Tip #10 – Leave Some Brushy Areas

Although it is important to prevent hardwoods from forming a continuous canopy under your pines across large acreages, leaving a few small areas of brushy vegetation is a good idea. Turkeys use small shrubby areas as nesting habitat. Also, small patches of low brushy vegetation in and around pine stands can provide escape cover for bobwhite quail. Disturbing such areas on a periodic basis (every 3 to 5 years) will stimulate early-successional, mast-producing species such as blackberries and dewberries, while preventing the establishment of woody trees.

Additional Information

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