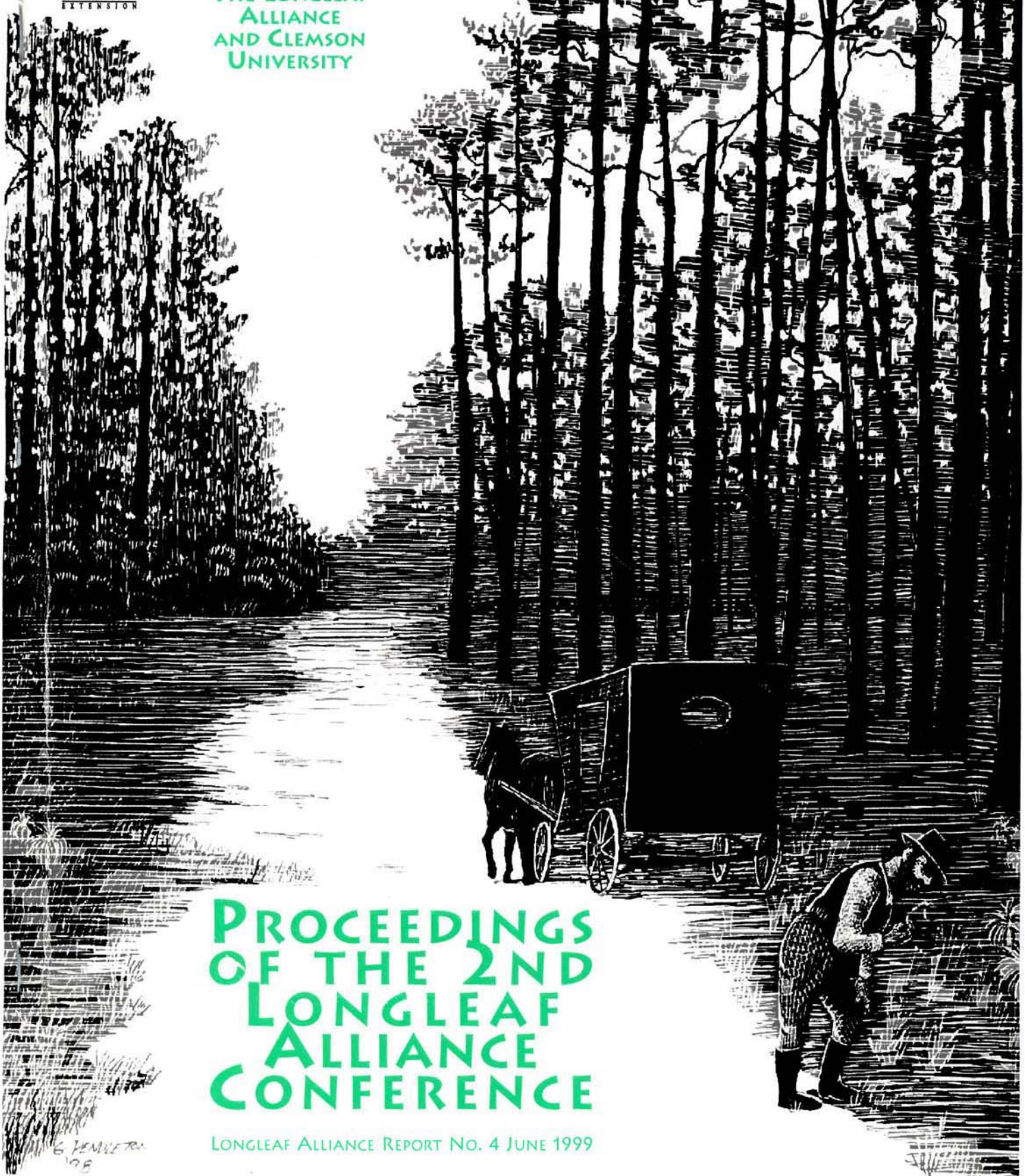




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NOVEMBER 17-19, 1998
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LONGLEAF
ALLIANCE
CONFERENCE

LONGLEAF ALLIANCE REPORT NO. 4 JUNE 1999

6 JUNE 1999

Longleaf pine and wildlife management

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INTRODUCTION

There are several animal species that are often associated with longleaf pine systems. Some of these include red-cockaded woodpecker, Bachman's sparrow, fox squirrel, gopher tortoise, indigo snake, gopher frog, striped newt, flatwoods salamander, and bobwhite quail. Wild turkey and white-tailed deer are not closely tied to longleaf pine, but longleaf pine stands can be managed to benefit them. While all of these species use longleaf pine stands, many of these species often use or even require other types of habitat also.

Why Longleaf Pine for Wildlife?

The adaptations of longleaf pine to fire are probably the principal reason that longleaf pine is easier to manage than other pine species for some wildlife objectives. When wildlife is a primary objective, prescribed fire becomes an important part of the management regime in most of the southeastern Coastal Plain. Fire can be an important part of the management regime whether the goal is deer, turkey, quail, or a diversity of animals. Unlike other southern pines, young longleaf pines are relatively fire tolerant, and being able to burn young, artificially-regenerated stands also benefits many wildlife species by helping to maintain old-field conditions until crown closure.

For most landowners who value wildlife more than timber volume production, aesthetics are also important, which usually means that at least a portion of the property should be considered for long-rotation timber management. Once a decision is made to carry an older stand of pine timber for quail, aesthetics, rare species habitat, or some other reason, then longleaf has two advantages over most of the other southern pines. The first is that it is usually longer-lived than loblolly or slash pine. The second is that longleaf is more resistant to attacks from *lps* and southern pine beetles.

An advantage to planting longleaf pine, rather than other southern pines, for wildlife is that longleaf pine has a grass stage. While an area of grass stage seedlings provides no timber volume, it does provide old-field habitat for species like white-tailed deer, wild turkey, bobwhite quail, cotton-tailed rabbits, many small mammals, and many birds. This old-field habitat is provided until the saplings reach crown closure, which typically occurs at an older age than in loblolly or slash pine plantations of similar density. As noted earlier, prescribed fire can be used in young longleaf plantations. Fires in these young plantations often seem to control competing vegetation, allowing longleaf to bolt from the grass stage more rapidly.

Because of the branch and needle structure, longleaf pine canopies seem to intercept less light than other southern pines. Once the crowns of saplings in a young plantation do close, more sunlight reaches the forest floor in a longleaf pine stand than a slash or loblolly pine stand with the same stem density. This sunlight is important for maintaining understory plants. The structure and composition of this vegetation can then be managed to provide habitat for many wildlife species.

Improving Longleaf Stands for Wildlife

The term wildlife in the Southeast encompasses many species. Management activities to improve the habitat for one species may degrade the habitat of another species. Forest edge species benefit from the inclusion of lots of small fields and patch cuts, while forest interior species need larger areas of unfragmented forest. The activities chosen to improve longleaf stands for wildlife depend on two main things: 1) what wildlife species you want to favor and 2) the condition of the existing stand and surrounding habitats.

The first technique to improve longleaf stands as wildlife habitat may be to establish longleaf pine plantations. On some tracts this type of habitat does not exist. If old-field habitats or habitats that can support frequent fire do not exist and are a benefit to the wildlife of interest, then thoughtfully planting a few longleaf pine stands can be done.

When planting longleaf to provide habitat for wildlife that benefits from old field habitats or dense ground cover, planting at densities that are lower than for maximum fiber or wood production may be beneficial. Besides the benefit of remaining in the grass stage, the young trees at wider spacings take longer to reach

crown closure and allow the old field habitat to be maintained over a longer time period. At particularly wide spacings, fire or manual pruning of lower limbs may be needed to help maintain high stem quality and to improve future timber values.

Frequent, large-scale, high-intensity disturbances tend to homogenize habitat, while patchier disturbances often diversify habitat and aid many species of wildlife. Historically, the major disturbance in longleaf pine has been fire. Today, it may be prescribed fire, drum chopping, mowing, herbicide application, grazing, or some combination. Deciding which type of disturbance will provide the habitat modification at the lowest cost can be challenging. While the type of disturbance is critical, other factors, such as how often to repeat the disturbance, what time of the year to apply it, and how much area and in what pattern to treat each year, also affect the quantity and quality of habitats created.

While longleaf pine is often viewed as a pine-grassland system, the scattered individuals and clumps of hardwood shrubs and trees play an important role for many wildlife species. For many wildlife species, they provide important escape cover, nesting habitat, foraging habitat, and mast. A diversity of fuel conditions created in this mosaic also affects the way that fires move through the area, often resulting in scattered patches of unburned cover of different ages and conditions. These unburned areas are especially important to many wildlife species while the burned vegetation resprouts.

Even where wildlife management is a priority, timber management is usually a secondary goal, either for income production or to improve wildlife habitat. The density and structure of the longleaf pines affects the other vegetation that makes up the wildlife habitat. Depending upon the habitat conditions, thinnings, patch cuts, and clearcuts can be used to maintain or improve habitat for certain species.

Planting food plots within or adjacent to longleaf pine stands may improve the habitat for some species. Deer, turkey, quail, songbirds, and small mammals are some species that may benefit from the addition of food plots to a longleaf pine stand. Plants that produce forage at key times (late summer and winter) may help manage deer populations. Plantings that produce seed can be important for game and non-game birds, especially in late winter. The insects associated with the food plot plants and weeds may be more important to young quail and turkey than the seed that is produced as the plants mature. If food plots are planted, thought should be given to what the limiting factor for the animal of interest is. Whatever the limiting factor, a food plot that contains a combination of warm-season and cool-season plants, perennial and annual plants, and current agriculture and fallow components generally adds more diversity to the area and benefits more species than a food plot of annual cool- or warm-season plants that is replanted each year.

How to improve a longleaf stand for wildlife depends on the species of interest and the existing habitat conditions. Establishing stands of longleaf may improve habitat for some species. Establishing stands at densities below those traditionally used for fiber production benefits most wildlife species more than dense stands. Using some type of patchy, periodic disturbance, such as fire, timber harvests, or food plots, to sustainably produce habitats for the species of interest is probably the most critical component of managing longleaf to benefit wildlife.

Summary

When some sort of wildlife, whether it be bobwhite quail, white-tailed deer, wild turkey, or a diversity of non-game animals, is a goal and the site conditions are appropriate, some type of longleaf stand can often be used to help meet habitat needs.