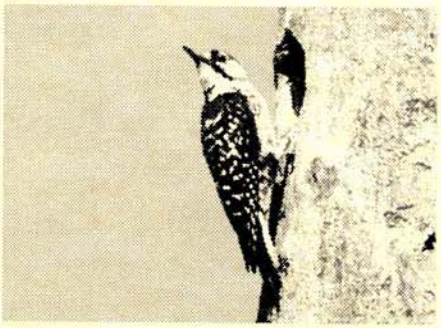
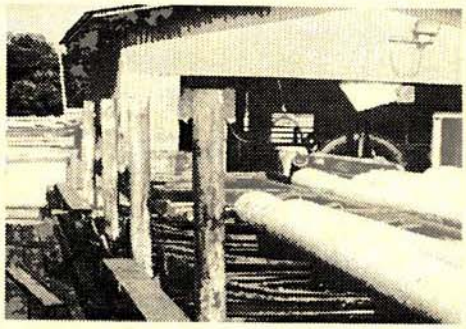
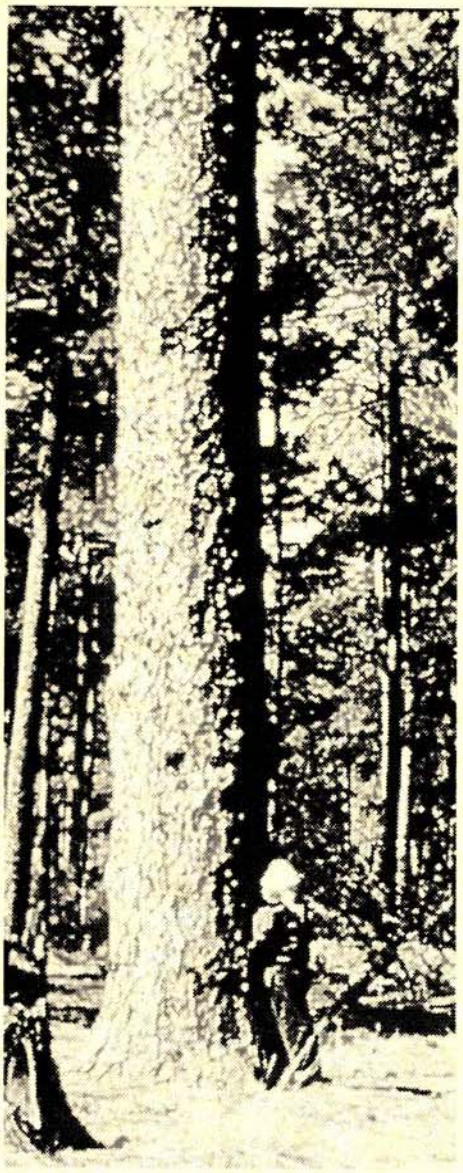




PROCEEDINGS

First Longleaf Alliance Conference



LONGLEAF PINE: A REGIONAL PERSPECTIVE OF CHALLENGES AND OPPORTUNITIES

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THE LONGLEAF ALLIANCE

Operational Longleaf Pine Management at Ichauway

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ABSTRACT - The Joseph W. Jones Ecological Research Center at Ichauway is a 29,000-acre site in southwest Georgia managed for research, education, and conservation. There are almost 15,000 acres of longleaf pine dominated sites (approximately 10,000 acres have a wiregrass component in the understory) along with other pine species, xeric and mesic hardwoods, associated wetlands, and a variety of other habitats. The pine forests were important resources for the timber and naval stores industries through the early 1900's. The area was managed for quail, timber, and agriculture from 1928 through the early 1990's. Current management emphasizes applied ecological research while making sustainable use of the property. Ten to fifteen thousand acres are prescribed burned each year; currently most fires are applied in the traditional dormant season, though an increasing number are in the growing season. Natural regeneration, bareroot seedlings, and containerized seedlings have been used to regenerate longleaf pine. Annual longleaf cone collections are made to provide seed for direct seeding and contract production of containerized longleaf pine seedlings. Operational trials for restoration of agricultural fields using containerized longleaf pine and wiregrass seedlings have been conducted. Timber harvesting is currently limited to special circumstances while management plans are being finalized. Research support, native ecosystem maintenance, quail management, deer management, and endangered/threatened species management are some of major management emphases on the property.

INTRODUCTION

The Joseph W. Jones Ecological Research Center at Ichauway is a 29,000-acre site in southwest Georgia managed for research, education, and conservation. The site has almost 15 thousand acres dominated by longleaf pine with the remaining acres supporting associated wetlands, slash pine, upland and bottomland hardwoods, and a variety of other habitats. The site contains a mixture of virgin groundcover and oldfield groundcover; there are almost 10,000 acres with a wiregrass component in the understory.

For management purposes, the property is being divided into two types of zones. The traditional zones will be managed to maintain and enhance harmonious, inter-related patterns of land use and sustainable productivity of game and non-game wildlife, timber, and agriculture. The benchmark zones will be managed to conserve the natural ecosystems and associated elements of biological diversity over time, and to restore, to the extent possible, the structure and function of a natural landscape. Currently, the landscape is managed for research, endangered/threatened species, and bobwhite quail. A timber management component will be added in the future.

Historical Property Management

The longleaf pine and other forests on site were important resources for the timber and naval stores industries through the early 1900's. The first commercial timber harvesting probably occurred in the mid- to late 1800's. Babcock Timber Company maintained a narrow gauge railroad for timber harvesting from the late 1800's through 1910 on the site. The area was also heavily turpentined as is evidenced by piles of thousands of turpentine cups found in the woods. Peckerwood sawmill operations and timber sales were scattered through the site from 1928 until at least the mid-1950s.

From 1928 through 1991, the property was managed primarily as a quail shooting plantation with revenue from agriculture and timber harvest. There were timber sales on the property every year from 1962 until 1984 with average annual harvests ranging between 1 and 2 million board feet. From 1988 to present, harvest has been limited to firewood, trees that threatened roads or powerlines, and clearing for construction.

From 1991 to present, the property has been managed primarily for applied ecological research while making sustainable use of the property. The intention is to manage a portion of the property mimicking natural structure and function and a portion of the property featuring timber and wildlife utilization without negatively impacting potential long-term ecologic values.

Fire

An average of 10 to 15 thousand acres is burned each year. The intention is to keep the fire type habitats under a three-year rough until the management plan is finalized. Currently most fires are applied in the traditional dormant season, though an increasing number are growing season fires for research or wiregrass seed production. Approximately 8000 acres were burned in the summer of 1987 for seedbed preparation during a large longleaf pine mast event.

Regeneration

Natural regeneration, bareroot seedlings, and containerized seedlings have been used to regenerate longleaf pine on the Ichauway site. During 1978 and 1988 significant acreage of bareroot longleaf and bareroot slash pine were planted in agricultural fields with lower productivity and in unused pasture. During the 1987 seed year approximately 8000 acres were naturally regenerated using a summer site preparation fire.

Annual longleaf pine cone collections have been made since 1991 to provide seed for research, direct seeding, and contract production on containerized longleaf pine seedlings. From 1992 to present, containerized longleaf pine seedlings produced from on-site seed have been planted. These seedlings have been used for both research and operational planting. Operational trials or restoration of agricultural fields using containerized longleaf pine and wiregrass seedlings have been conducted. These seedlings are typically hand-planted in spirals approximating a 12 x 15' spacing. Strips of longleaf pine have been planted across agricultural fields to reduce field size, improve quail habitat, and increase connectivity of pine stands. These operational plantings are typically machine or hand planted in rows at approximately a 10 x 12' spacing. Entire agricultural fields near the river and creek and fields that are counter productive have been planted. A visual screen has been planted adjacent to major roads in agricultural fields.

Site preparation in agricultural fields typically consists of harrowing to level field and allowing soil to settle and soil moisture to increase. When sites were sub-soiled and containerized seedlings planted in the furrow, survival was decreased, apparently because of air pocket development around roots. When seedlings are planted in a furrow now, they are typically packed using rubber-tired equipment after planting. In some fields, the site is prepared and wheat is drilled before the seedlings are planted. Competition control is maintained as necessary by mowing, harrowing, or chemical application until fire is prescribed for the stand.

More containerized planting, natural regeneration, and direct seeding is planned, especially on longleaf sites that are now dominated by off-site pines, hardwoods, or agricultural fields.

Harvests

Timber harvesting is currently limited to special circumstances while management plans are being finalized. Trees that are likely to cause a problem along major roads, powerlines, and building areas may be harvested. Trees that were in the footprint of buildings and roads at the new facilities were harvested. The timber from those trees was milled and used in construction of the new facilities.

Invasive hardwoods at old house sites, along field edges, and immediately adjacent to roadways are being selectively removed to restore fire-maintained vegetation in those locations. Pine plantations have also been thinned for a restoration research project.

As the management plan is finalized, we plan to implement uneven-age management system(s) in the traditional area. These systems will probably be based on patch/single tree selection.

Research support

Management of some of the longleaf pine on this site is to support specific projects that our research staff are conducting with longleaf pine, associated plant and animal species, endangered species, prescribed fire, or a combination of these and other topics. An area that was previously used as a pasture is now managed for longleaf cone collection; other areas are managed for wiregrass seed production. The seeds or seedlings produced from them are used in operational plantings and restoration research. Other work has looked at the plant diversity in longleaf stands on different sites. Some areas were burned seasonally, and oak seedlings and saplings excavated. Plots containing American chaffseed, an endangered plant species, were burned and mowed at different seasons to further our understanding of how to manage this species. With fire playing such an important role in longleaf management, most of the

studies, including many of those above, have a fire component. Fire impacts have included: fire exclusion, fire return interval, comparison of fire effects in old fields and in wiregrass, and season of burn characterizations including chemistry, temperature, and vegetative responses. Other work has involved thinning longleaf plantations and planting wiregrass plugs and seeds. Operational plantings have been made in October and January using both bareroot and containerized longleaf seedlings with varying herbicidal release treatments to provide for long-term research opportunities. All of the prescribed burns and seedling plantings are mapped and included in the Center's geographic information system for long-term documentation, management information, and production of maps.

Multiple Use Management System

Longleaf pine management and research are important components of the Joseph W. Jones Ecological Research Center at Ichauway. The research results being generated have impacts on: timber management, quail management, natural area management, restoration, prescribed fire management, and many other fields. The multiple use management system currently in place at Ichauway provides multiple resources. The principle resource provided is a diversity of habitats and conditions available for research projects to use to address basic and applied ecological and natural resource management questions.

The current standing stock of longleaf pine timber growing on the site is increasing. Highly productive quail and deer populations provide recreational or economic opportunities. Diverse non-game wildlife populations are also present. There are approximately 50 species on site that we consider to be endangered, threatened, special concern, or otherwise protected; many of them, including red-cockaded woodpeckers, indigo snakes, gopher frogs, flatwoods salamanders, and American chaffseeds, are associated with longleaf pine habitats.

CONCLUSIONS

Ichauway contains a diversity of habitats grading from longleaf uplands through hardwood uplands and slash pine flatwoods to bottomland hardwoods and grassy and cypress-gum limesink ponds. The rich cultural history and management of Ichauway has resulted in a landscape that is becoming increasingly rare today. Integrated management of the various habitats on site is necessary to meet the research, conservation, and education objectives of the Jones Center. Management of the longleaf system with fire, regeneration, restoration, and timber harvests is necessary to provide research opportunities, educational demonstrations, game and non-game wildlife habitat (including that for protected species), and timber in a productive and aesthetically pleasing environment.