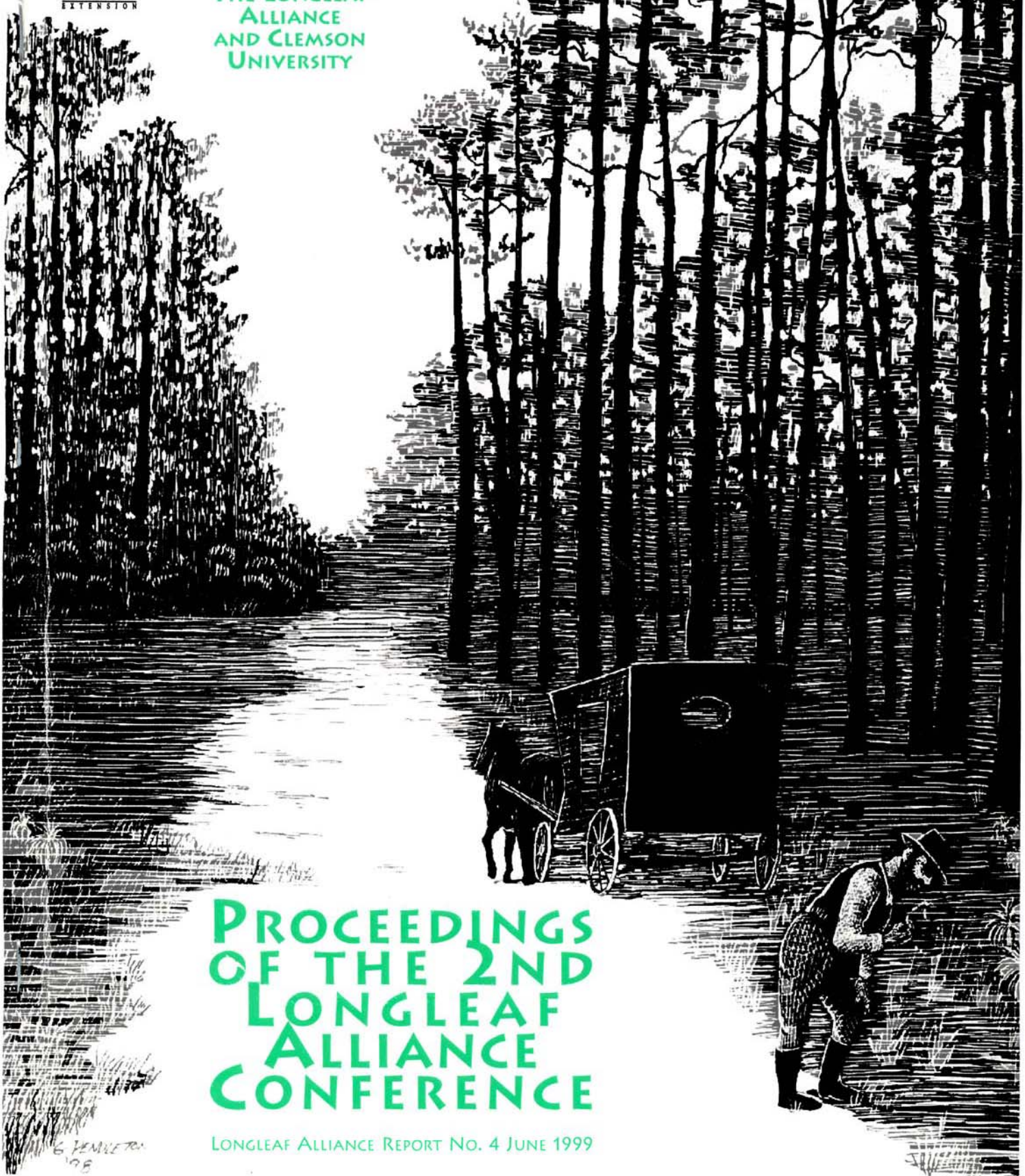




THE LONGLEAF ALLIANCE

CLEMSON  
EXTENSION

NOVEMBER 17-19, 1998  
CHARLESTON,  
SOUTH CAROLINA  
HOSTED BY  
THE LONGLEAF  
ALLIANCE  
AND CLEMSON  
UNIVERSITY



# PROCEEDINGS OF THE 2ND LONGLEAF ALLIANCE CONFERENCE

LONGLEAF ALLIANCE REPORT NO. 4 JUNE 1999

6 JUNE 1999

## Restoration of plant diversity of longleaf pine forests using an adaptive management approach

P. Bowman (Joseph W. Jones Ecological Research Center, Route 2 Box 2324, Newton, GA 31770)

L. Katherine Kirkman (Joseph W. Jones Ecological Research Center, Route 2 Box 2324, Newton, GA 31770)

Robert Mitchell (Joseph W. Jones Ecological Research Center, Route 2 Box 2324, Newton, GA 31770)

Carol Helton (Joseph W. Jones Ecological Research Center, Route 2 Box 2324, Newton, GA 31770)

**ABSTRACT:** Once the dominant community of the Southeastern Coastal Plain, longleaf-wiregrass (*Pinus palustris/Aristida stricta*) forests now occupy less than 5% of their original range. Much of this forest has been replaced with slash pine (*Pinus elliottii*) plantations. We are attempting to restore the longleaf-wiregrass system in two slash pine plantations: a 60-year old plantation on an upland site in southwest Georgia, and a 30-year old plantation in the flatwoods along the Gulf Coast of the Florida panhandle. At both sites, we are addressing the following issues: a) How canopy cover regulates shrub community structure in slash pine plantations; b) To what extent is shrub density problematic to reaching restoration goals; c) How can shrub density be reduced while maintaining species richness. Following preliminary vegetation sampling of the herbaceous layer for species richness and biomass, the use of mowing and herbicide will be examined as management options to reduce shrub density in varying canopy densities. The canopy treatments involve selective harvest of overstory slash pines to create gaps for the planting of longleaf and wiregrass seedlings. These selective harvests will be periodic, at an interval of approximately 10 years. It is hoped that through this method, an uneven-aged longleaf stand can be created while maintaining the functions of the existing slash pine forest. The combinations of overstory and understory treatments should identify the most effective methods for controlling woody vegetation and promoting diversity in the herbaceous community.