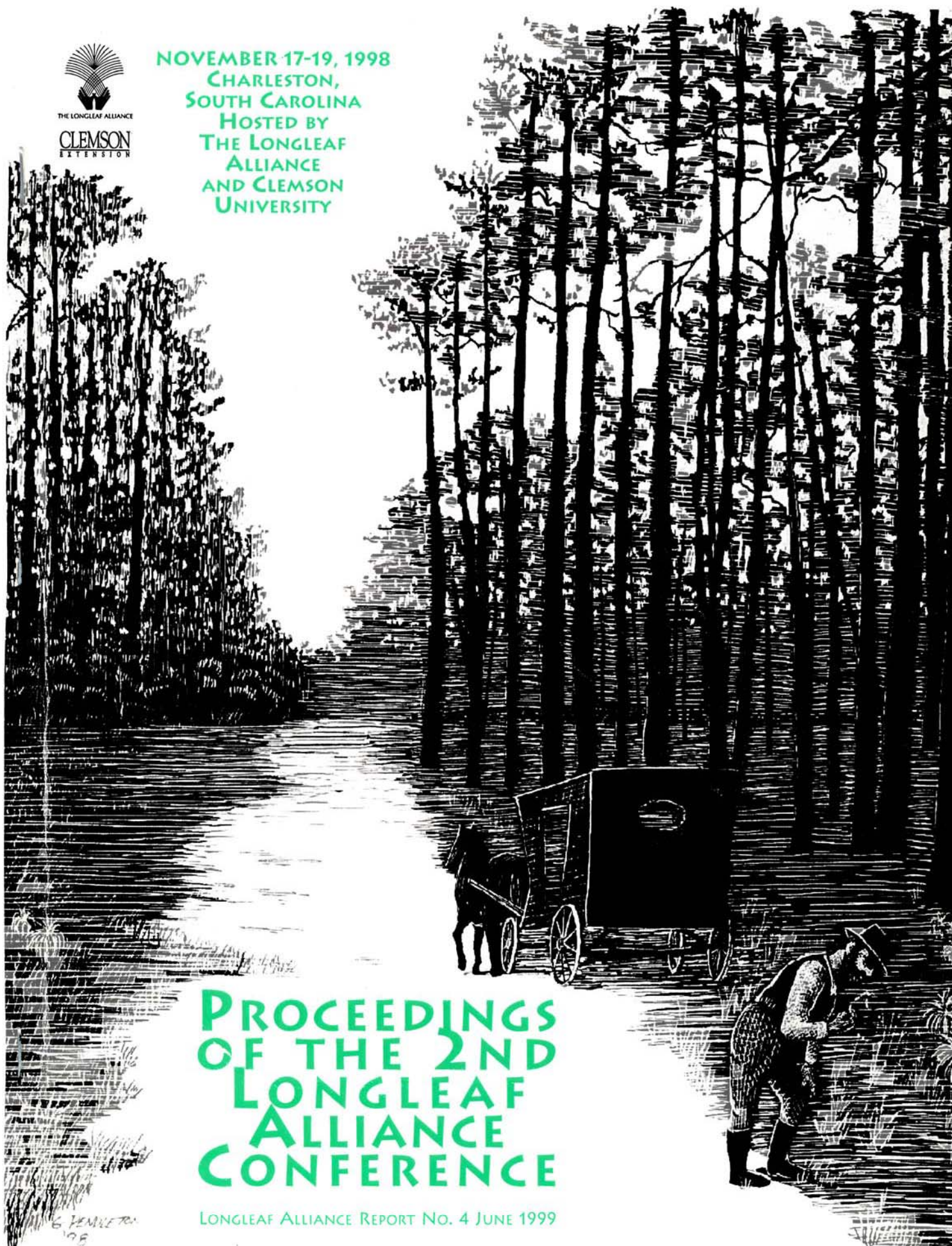




THE LONGLEAF ALLIANCE

CLEMSON
EXTENSION

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Understory vegetation recovery following silvicultural harvest in longleaf pine/wiregrass stands

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ABSTRACT: The high species richness in the understory of the once dominant longleaf pine/wiregrass ecosystem of the southeastern US Coastal Plain is maintained by frequent fire; however, little is known about the resilience of the plant community to soil/vegetation disturbances from silvicultural harvest operations and how recovery mechanisms differ from that of responses to natural canopy gaps. Specifically, objectives were to: 1) compare rates of revegetation between gap sizes and differing distances from forest edge; 2) examine the role of the seed bank in recovery; and 3) compare impacts on species/area relationships and loss/gain of species due to disturbance. We examined initial patterns of vegetation recovery in harvested areas varying in size (canopy gaps 0.1, 0.4, 1.6 ha). Our first year findings suggest that this perennial-dominated understory is substantially resilient to this disturbance through clonal or resprouting responses. However, percent cover of wiregrass declined with disturbance. Cover of the woody component of the understory and other species increased with gap size. Gap size influenced the above-ground biomass and cover for grasses, legumes and forbs, but not the woody species. Species area relationships were similar for disturbed and control sites. The seed bank does not play a large role in the disturbance response. Alteration of the amount of important fuel (canopy needle fall and wiregrass) may substantially alter fire regimes and could have more effect in the long-term than initial indications suggest.