

Cumberland Plateau Hardwood Silviculture and Ecology Studies

Callie Schweitzer, Research Forester

1. Study 82- Stand Development and Reproductive Potential Under Thinning and Prescribed Burning on the William B. Bankhead National Forest, Alabama

Co-PI for the following related studies:

- Effect of Prescribed Fire and Tree Removal on Herpetofaunal Community at Bankhead National Forest
- Herbaceous Layer Response to Prescribed Burning and Overstory Removal
- Songbird Breeding Ecology- Response to Forest Management
- Fuel Assessment and Fire Behavior Modeling of Prescribed Burns on Three Thinning Treatments on the Bankhead National Forest
- Molecular Phylogeography of Red Oaks (*Quercus* spp., section *Erythrobalanus*) of the Southern Cumberland Plateau

2. Study 83- Application of Single Tree Selection in a Mixed Mesophytic Forest on the Cumberland Plateau in Jackson County, Alabama

- Case studies involving single tree selection, clearcut, shelterwood with reserves, and diameter-limit cuts

3. Study 84- Response of an Upland Hardwood Forest to Varying Levels of Overstory Tree Retention

Co-PI for the following related studies:

- Response of Forest Herpetofauna to Varying Levels of Overstory Tree Retention in Northern Alabama
- Forest Type Mapping and Forest Site Classification of Northeastern Alabama Using Remote Sensing and Geographic Information System Applications
- Songbird Response to Gradations of Overstory Canopy Cover in the Cumberland Plateau Oak-Hickory Forest of Northern Alabama
- Response of Outplanted Northern Red Oak Seedlings Under Two Silvicultural Prescriptions in North Alabama
- Influence of Overstory Retention Practices on Ground-dwelling Arthropods Occupying Upland Hardwood Forests of the Cumberland
- Distribution, Abundance and Habitat Requirements of Cerulean Warblers in Northern Alabama
- Herpetofaunal Contribution to Biomass and Carbon Cycling Under Differing Forest Canopy Covers

4. Study 85- Regeneration response to moderate and heavy traffic under mechanical harvesting in an Oak-Hickory forest located on the Cumberland Plateau, north Alabama

5. Study XY- Silvicultural Approaches and Operational Dimensions to Sustain Oak Ecosystems and Improve Forest Health on the Daniel Boone National Forest.

Multiple investigators, including, D. Loftis, S. Clark, K. Gottschalk, B. Rummer, B. Jones and J. Stringer.

Co-PI for the following related studies:

- Understory Microsites Resulting From a Range of Silvicultural Treatments on Dry-xeric and Dry-mesic Oak Forest Sites on the Cumberland Plateau
- Dendroecology of Non-Leucobalanus Trees in a Managed Forest: A Baseline Dataset for Forest Management in an Altered Climate

Stacy Clark, Research Forester

1. Study 84b- Response of Planted American Chestnut Seedlings to Two Levels of Overstory Tree Retention

Co-PI on the following related study:

- Predicting sites for American Chestnut within the Cumberland Plateau Region.

2. Study XX- Temporal Stand Dynamics of an Old-Growth Forest on the Mid-Cumberland Plateau, Sewanee, Tennessee

Co-PI on the following related study:

- Community Ecology and Silviculture of Southern Highland Hardwood Forests: Forest Dynamics, Spatial Patterns, Species Abundance and Diversity, Growth, and Development in Old-Growth and Managed Stands

3. Study XY- Silvicultural Approaches and Operational Dimensions to Sustain Oak Ecosystems and Improve Forest Health on the Daniel Boone National Forest.

Multiple investigators, including, D. Loftis, C. Schweitzer, K. Gottschalk, B. Rummer, B. Jones and J. Stringer.

Co-PI on the following related study:

- Dendroecology of Non-Leucobalanus Trees in a Managed Forest: A Baseline Dataset for Forest Management in an Altered Climate
- Effects of silviculture on residual oaks, fuel loading and potential fire behavior

4. Study XX- Improving Degraded Stands with Artificial Regeneration Methods

5. Study 82b- Fuel Assessment and Fire Behavior Modeling of Prescribed Burns on Three Thinning Treatments on the Bankhead National Forest