Native Understory Restoration in Longleaf Pine Savannas
Anita Brooke McCalip

Committee Members: Drs. Brian Oswald, Rebecca Kidd, Yuhui Weng, and Kenneth Farrish

Longleaf Pine Savannas were once dominant in East Texas and parts of western and central Louisiana. Native understory species have since been either weeded out, or lessened by exotic plants that were introduced. Native understory species can still be seen today, but not always in the historical savanna setting that is desirable in Longleaf Pine Ecosystems. This project is aiming to record both the native and non-native herbaceous understory species within selected longleaf pine sites in the Western Gulf Coast. This will allow us to determine whether the area needs to be planted with native desirable understory species such as little bluestem (*Schizachyrium scoparium*) and prairie dropseed (*Sporobolus heterolepis*), or if the area needs to be managed or altered to drive the native understory species to what it once was historically.

Methods
This study took place at the Boykin Springs Recreation Area in Zavalla, TX on the Angelina National Forest. I established both random and set plot locations within the study area under suitable understory conditions which included a lush, herbaceous understory with a low or non-existent midstory. Using a topographic map of the area, aspect or the direction of the slope was recorded into a cumulative excel file. The slope of the landscape was recorded using a clinometer. The observer stands down slope of the other person or a selected object and measures the angle of the land from 5, 10, and 15 meter distances. A 5 meter transect was randomly placed within the plot to account for little bluestem (*Schizachyrium scoparium*) percentage. A meter square PVC pipe was also randomly thrown in the plot to measure understory plant type and percentage. The overstory was measured using a spherical densiometer according to the manufacturer’s instructions. Soil was collected at each plot to account for a viable seedbank along with soil texture to determine any correlation, if any, between soil texture and plant presence or abundance. Seedbank samples were placed into appropriately labeled bins and placed into a growth chamber at Stephen F. Austin State University. The growth chamber samples were watered daily and any growth was recorded onto a datasheet. I will be using the soil type and basal area data from Ryan Svehla’s study in order to further explain the necessary growing conditions for desirable species.