

## Abstract #4708

### **Towards the identification of the soil microbiome community associated with Longleaf Pine**

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#### **Abstract Text:**

This project is part of a larger study looking at the restoration of the Long-leaf Pine ecosystem in certain Wildlife Management Areas (WMA) in Northwest Georgia. As part of this larger study another group of researchers has been looking at changes in the plant community in the same plots used for this soil microbiome research. Our long-term aim is to look for potential associations between the above and below-ground community structures.

Although research has shown that the health and composition of the microbiome surrounding the roots of plants has a significant impact on the ability of plants to fight and survive various stressors (Wei et al. 2019), the full extent of the complex system of feedback mechanisms between the rhizosphere and soil microbiome, and the above ground plant communities is not yet understood.

We collected soil samples from six plots located in the Sheffield WMA located in Paulding County, GA. Except for two plots at the savanna site, with slopes south or west facing; soil samples were collected from either north or south facing hillsides. Within each plot, samples were collected in sterile plastic tubes at the center of the plot and 10 m above and below from the center. Five random sub samples were taken from each tube for DNA extraction using a commercially available kit.

Given that plant communities appear to differ between north and south facing slopes, we hypothesize that the soil microbiome will also differ significantly in north versus south facing areas. We also hypothesize that the microbiome in the savanna plots, which are actively being restored for Longleaf pine, will be distinct from all others.

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#### **Would you like to apply for an award?:**

No

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