

## Variation of Soil pH and its Effects on Nutrient Composition in Plants

Carolina Bravo\* & John Geiger

South Florida's restricted substrate compositions limit the types of plant species that can thrive. The wet and dry seasons, along with Florida's varying nutrient compositions: limestone, sand and some organic soils, allow for a select range of plants to thrive. By comparing the different plant species' morphology and nutrient compositions through our common garden experiment, we will be able to identify major differences and similarities these plants have, why they share or do not share them, and how this can affect the life that surrounds them. Everglades National Park, Archbold Biological Station, and Fairchild Tropical Botanic Garden will be visited to compare the results of our common garden experiment with the plants that have already grown in their proper environments. Specifically, this portion of the project will target the nutrient compositions in which certain plants use to grow. *Pinus elliottii* var. *densa*, *Serenoa repens*, *Sabal palmetto*, *Ceratiola ericoides*, *Pinus clausa*, and *Quercus geminata* will be grown in the common garden experiment. Their nutrient composition and their morphology will be analyzed. The nutrient composition will try to be extracted to understand what basic elements the plant species have to grow. The nutrient composition will be obtained through a soil test kit that tests for PH, Nitrogen, Phosphorus, and Potassium. The significance of this project relies heavily on the types of species that are collected. The effects different species have on plant biodiversity in South Florida will drive the project into the broader outlook on the entire ecosystem it is affecting. This project will impact the ecological realm of biology through its goal of comparing different plant species to observe the effects it has on our community.