



Soil and Water Science

Research Brief

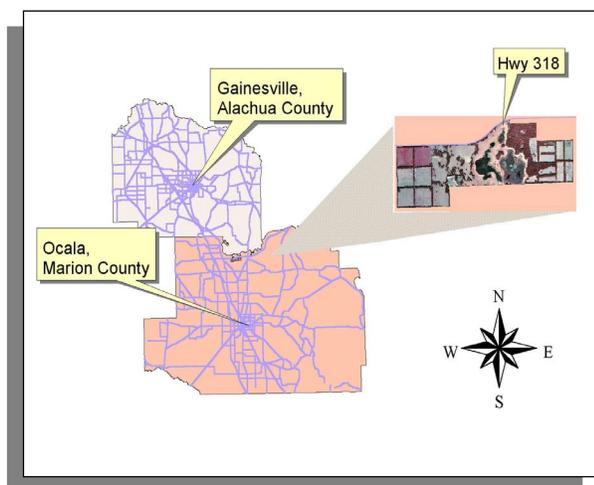
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Soil Investigations at the IFAS Plant Science Research and Education Center (Pine Acres, Citra, FL)

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Located in northern Marion County, the Pine Acres Research Site is about 1,100 acres of land set aside for research in various departments. Recently, interest and activity in Pine Acres has increased dramatically. In addition, the need for accurate and reliable data has increased.



and P, underlies the surficial sand deposits at varying depths. Acting as an aquatard (layer impermeable to water), the Hawthorn controls lateral subsurface water flow. Exhibiting drastic depth fluctuations within a small area, the Hawthorn is incredibly influential in building construction, landscape analysis, and plant nutrition. An additional complication to the undulating Hawthorn is the proliferation of sinkholes located at Pine Acres.

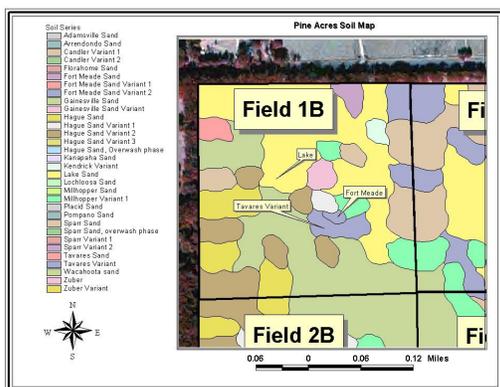


By studying the pedology of Pine Acres and collecting a wide range of soil data for the entire site, productive research can be accomplished faster and more efficiently.

At first glance, the geology of Pine Acres seems deceptively simple. However, hidden by the elementary landscape are geologic secrets of substantial magnitude. The Hawthorn Formation, a marine deposit high in clay

Presently, soil data is being collected from all fields in Pine Acres. At 45-meter intervals, soil samples are collected from the "A" horizon and analyzed for pH, Ca, P, K, Fe, and organic carbon content.

In addition, soil mapping is nearing completion on the Pine Acres property. By describing soils at the same 45-meter increments, a high-resolution soil map will be available shortly.



Hawthorn formation, and Ocala Limestone.

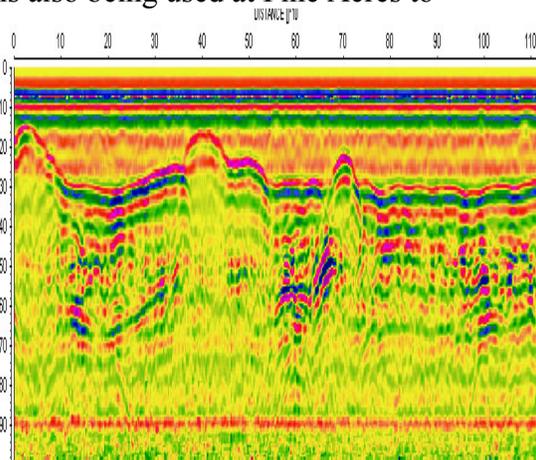


With the addition of Global Positioning Systems and Geographic Information Systems software and hardware, each sampling point will be geo-referenced and converted to a usable map. In conjunction with collected soil chemical and pedologic data, GIS software programs, such as ArcView, will instantly provide easily interpreted graphical images to the user.

In the near future, an astonishing amount of data will be available for any researcher wishing to conduct experiments at Pine Acres. The availability of such data will undoubtedly make Pine Acres a premier research site for soil science, agronomy, turfgrass management, and any other related fields.

Also, ground-penetrating radar (GPR) is also being used at Pine Acres to

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identify variations in subsurface horizons. With optimum soil conditions, analysis can reach almost 100 ft in depth. Examples of horizons interpreted by GPR at Pine Acres include horizons of increased clay accumulation, the