

Preliminary Report
Detailed Inventory of Soil Resources

Natural Area Teaching Laboratory



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ACKNOWLEDGEMENTS

The following personnel in the Soil and Water Science Department worked on this project.

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Photos in this report were taken by Dr. Mary E. Collins and Dr. John Galbraith. The photos showing soils were taken outside the NATL, but represent soils similar to those observed in the NATL.

Cover Photo: View from the northeast corner of the NATL, southwest across the SEEP.

Introduction

A detailed inventory of the soil resources in the University of Florida Natural Area Teaching Laboratory (NATL) began in May, 1999. The objectives of this study were to:

- 1) inventory and document the soil characteristics in the upper 2 m at each of the grid intersections;
- 2) classify and correlate the soils with existing soil series at each grid intersection;
- 3) estimate the seasonal high water table depth of the soils at each grid intersection;
- 4) sample soils at representative locations for characterization of physical and chemical properties in the Environmental Pedology and Land Use Laboratory in the Soil and Water Science Department; and
- 5) prepare a soil map of the NATL.

The objectives described above have been completed. Some changes will likely be made in the classification of the soils, and the soil map of the NATL after the laboratory analyses of the chemical and physical characteristics are completed in next phase of the study. In addition, a graduate student in the Soil and Water Science Department (Mark Lander) is conducting a study of chemical properties of the soils within the Storm water Ecological Enhancement Project (SEEP) that will provide additional data on the soil resources.

During the detailed inventory of the soil resources in the NATL, soil borings were made with a bucket auger to a depth of 2 m at each of the grid numbered intersections marked with pvc pipe. The surface layers were closely examined and described using a spade (Fig. 1). A soil description was written, the approximate depth to the seasonal high water table was determined, and the soil was classified at each grid intersection.

Soil samples were collected to a depth of 2 m for characterization of chemical and physical properties at eleven locations chosen to represent the range in soils in the NATL. Soils were sampled near the following grid locations: B10, B12, D6, D10, F6, F8, H6,



Fig. 1. Using a spade to observe the surface soil features.

H8, H12, J5, and J12. A number of sites were sampled in the southern part of the NATL because the soils with the highest clay content (soils formed in the Hawthorn formation) occur in this area, and data are needed to better characterize these soils. Additional sampling may be needed in other areas, depending upon the results of these analyses. The samples will be analyzed in the laboratory for particle size (percent sand, silt and clay, as well as sand sizes), pH, organic carbon content, and base saturation (calcium, magnesium, phosphorus and potassium content). The base saturation is important in classifying the soils, especially in the NATL, as the soils are underlain by clay layers of the Hawthorn geologic formation. This formation typically has higher levels of calcium and magnesium than the overlying sandy surficial deposits in Florida.

The soils inventory was under the direction of Dr. Mary E. Collins, professor in Environmental Pedology, and Dr. John Galbraith, Visiting Soil Scientist. Several staff as well as undergraduate students have been involved in the writing of the soil descriptions, soil mapping, sampling and analyzing of the data. Describing the soils at the NATL was

an invaluable experience to the undergraduate students. Undergraduate students in the Soil and Water Science Department who worked on the soils inventory included, Tara Bardi, Amanda Burdt, Anna Ludin, and Tamara Wells. Scientists from other agencies have also used the NATL for soils training during tours (Fig. 2).



Fig. 2. The Florida Association of Professional Soil Scientists had a tour of the NATL.

Background: Soils mapped in 1985 Soil Survey of Alachua County

In the soil survey that was completed in Alachua County by the USDA-Soil Conservation Service soil scientists (Thomas, et al., 1985) during the late 1970s and early 1980s, eight soil series were mapped within the NATL area. The major soil series that were mapped, in terms of extent, included the Apopka, Blichton, Lochloosa and Millhopper soils. Other soils of smaller extent included the Arredondo, Bonneau, Kendrick, and Zolfo soils. These are all upland soils that are classified as Ultisols, with the exception of the Zolfo soil series.

An error apparently was made during the mapping or in the map compilation process during which the Zolfo soils (soil number 37) were shown in one area in the NATL. Zolfo soils occur in the flatwoods, and would not be expected to occur in the NATL area. Rather, the area shown on the soil survey map as Zolfo soils should have

been identified as soil number 38 (Pits and Dumps). This appears to be the area in which clays and other materials from other areas have been dumped over the years.

Ultisols are defined in Soil Taxonomy (Soil Survey Staff, 1999) as soils that have developed an illuvial argillic horizon in the subsoil, with a low supply of bases. An argillic horizon is a subsurface layer in which soils with a higher clay content have accumulated, and show a significant clay increase in comparison to the overlying surface layers. Base saturation is low in the argillic horizon (<35% base saturation at a depth of 125 cm below the top of the argillic horizon).

Apopka, Arredondo, and Millhopper soils have about 1 to 2 meters of sands overlying the argillic horizon. The argillic horizon in these soils typically is a sandy loam or sandy clay loam. Apopka and Arredondo soils are well drained, and Millhopper soils are moderately well drained with a seasonal high water table between a depth of 1 to 2 m. A general description of the Apopka, Arredondo, and Millhopper soils along with other soils mapped in the NATL during the 1985 Soil Survey, as well as the 2000 Detailed Inventory of the Soil Resources, is in Appendix B.

Bonneau, Kendrick, Blichton and Lochloosa soils have 50 to 100 cm of sands overlying the argillic horizon. Bonneau soils are moderately well drained and Kendrick soils are well drained. Blichton soils occur on sideslopes, and have a sandy clay or clay argillic horizon that is formed in the underlying Hawthorn materials. Blichton soils are typically gray in color in the subsurface layers and subsoil, and are somewhat poorly to poorly drained. The argillic horizon is commonly sandy clay loam in the Lochloosa soils, and natural drainage is somewhat poor.

Analysis of results of the 1999-2000 detailed soil inventory of the NATL

Description of the area

The NATL is located within the Ocala Uplift physiographic region of the Central Florida Ridge. The NATL is in a transitional area that is at a lower elevation than the upland plateau (elevation of about 150 to 200 feet above msl) in the northern and northeastern part of Alachua County, and generally is slightly higher than the limestone plain (elevation of about 50 to 80 feet above msl) in the western part of the county. The sinkhole pond in the southeastern corner of the NATL is at an elevation of <80 feet.

Because the NATL is within a transitional area between the high lying plateau and low lying limestone plain, the area is complex and has some features of each area. The high lying plateau in the northern and northeastern part of Alachua County is underlain by clay layers of the Hawthorn geologic formation. Remnants of the clayey materials of the Hawthorn geologic formation are in the southeastern part of the NATL and occur as smaller pockets in other areas with the NATL. The clayey Hawthorn materials have a distinctive gray to greenish gray or bluish gray color. The clays allow only a very slow downward movement of water. The clays swell when wet and shrink upon drying, as shown in Fig. 3.



Fig. 3. Clays crack when dry and swell when wet.

The soils are generally wetter in the southeast part of the NATL, and some of the soils are poorly drained. The thicker understory vegetation with oak overstory provides some indication of the increased moisture content of the soils.

The Hawthorn Group of materials which underlie the sands in the NATL are marine sediments, and are likely of Miocene age (25 million to 13 million years). The Hawthorn Group of materials consist of sediments of sands and clays interbedded with limestone and dolomite. The Hawthorn materials commonly contain significant amounts of phosphatic nodules. The white nodules shown in Fig. 4 are phosphatic nodules of the



Fig. 4. White areas shown in lower left are phosphatic nodules.

Hawthorn Group. Remnants of a younger geologic formation (Alachua Group) may overlies portions of the Hawthorn materials. The Alachua Group of materials are terrestrial sediments, but are similar to the Hawthorn sediments, and also contain phosphatic nodules. Several old sinkholes and small depressions occur in the southern part of the NATL. These sinkholes and depressions hold water for periods of time following heavy rainfalls. The deep sinkholes have filled over the years with organic and mineral soil materials. The surface elevation is quite irregular in the southeastern part of the NATL because of the presence of the sinkholes. Sinkholes are more common in the lower lying limestone plain that developed in the Ocala limestone in the western part of the county. Although limestone was not encountered above a depth of 2 m in any of the soil borings, the presence of the sinkholes show the influence of the underlying limestone in the area. Ocala limestone underlies all of Florida.

Processes of Soil formation in the NATL

The landscapes and landforms in the NATL have undergone cycles of deposition and erosion throughout geologic time. These cycles have complicated the visualization of soil formation in the area. In the NATL, as shown in the surfer diagram of the topography (Fig. 5), the landscape slopes downward from the highest lying areas in the southeastern part of the area.

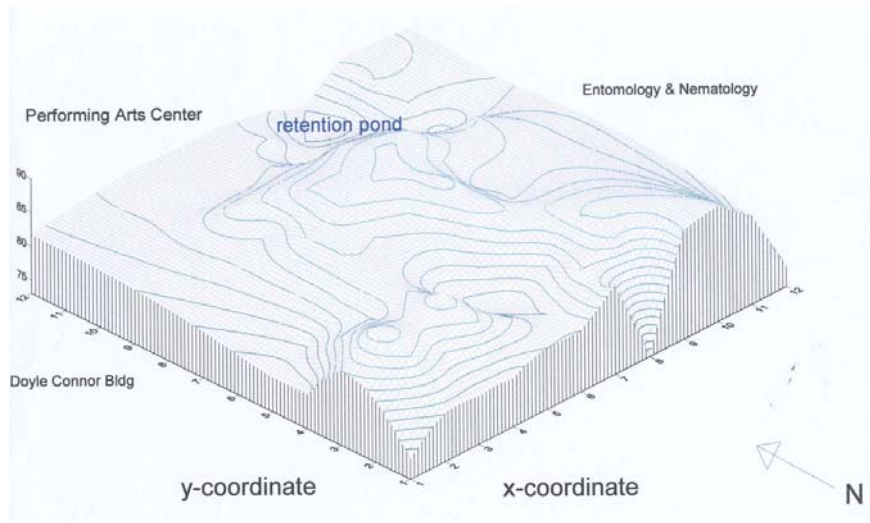


Fig. 5. General topography of the NATL.

Depth to clay or sandy clay layers

Typically, in the Ocala Uplift region, soils with higher clay content occur at the shallowest depths on the higher lying areas. Sands are usually the thickest in the lower lying areas. This relationship occurs because sands erode over the years off the higher lying areas and are deposited in the lower areas. Years ago before the Ocala Uplift occurred, the soil materials with the higher clay content were likely deposited in what at that time was the low lying areas. After the Uplift occurred, the lower lying areas actually became the high lying areas that are present in the NATL today.

The soils in the NATL follow the model expected in the Ocala Uplift area in that the soils in the areas at the highest elevation do have the highest clay content at the shallowest depths. Shown in the surfer diagram in Fig. 6 is the depth to the Bt horizon across the NATL. The Bt horizon, as explained in Appendix A, is a layer with a

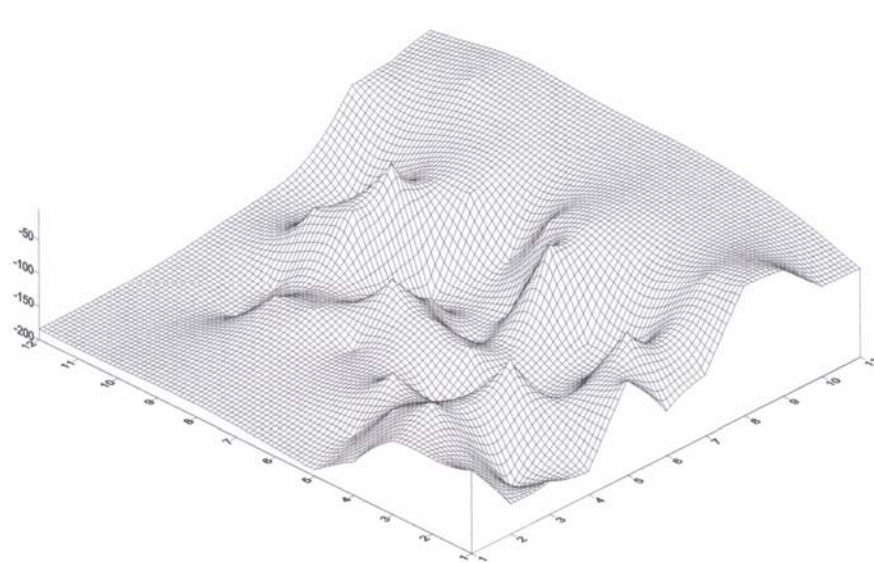


Fig. 6. Depth to Bt horizon.

significant increase in clay content. The “t” suffix is used to note the presence of translocated clay in that soil layer. In the soil descriptions in Appendix A, clay films are usually described in the layers (Bt horizons) in which translocated clays are present. The texture of the upper part of the Bt horizons in much of the NATL is a sandy loam or sandy clay loam. The Bt horizons with the highest clay content at shallowest depths are in the southeast part of the NATL. The distribution of the soils with sandy clay or clay textures is shown in Fig 7. This area occurs mostly in the southeast part of the NATL. The soils mapped in this area are Bivans soils. The depth to the Bt horizons, and depth to the clay textures, along with other soil properties are summarized for each grid

intersection in Table 1.

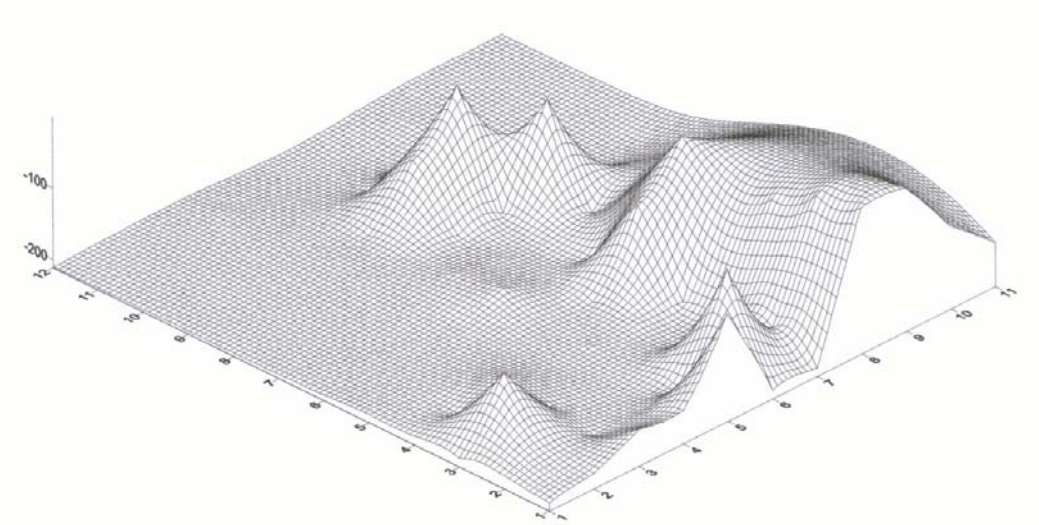


Fig. 7. Depth to clay or sandy clay textures.

The descriptions of the soils at grid intersections H11, H12, and I12 in Appendix A show sands 20 cm in thickness or less overlying sandy clays and clays. The soils at these intersections were identified as Bivans soils. These soils are poorly drained. The Bt horizon in these soils is designated as a Btg horizon. The “g” suffix is used to show gleying in the soils. During periods of heavy rainfall, the water table can be expected to perch above the clay layers at depths of about 10 to 20 cm. The clay layers consist of soil materials formed in the Hawthorn geologic formation. This material has a high content of phosphatic and ironstone concretions.

The Bivans soil series was tentatively identified at grid intersections H11, H12, and I12. Bivans soils are in the Alfisols soil order. Alfisols are similar to Ultisols, but have a higher base saturation. Alfisols are defined in Soil Taxonomy (Soil Survey Staff, 1999) as having a base saturation of 35% or more at a depth of 125 cm below the top of the argillic horizon. The presence of the phosphatic nodules in these soils is usually an indication of the higher content of calcium. The soils at grid intersections H11, H12, and I12 formed in soils of a high clay content that are part of the Alachua or Hawthorn formations. Both these formations are known to contain phosphatic clays and limestone rubble.

Moving away from this high lying area in the southeast part of the NATL, the sands gradually increase in thickness. The soils at grid intersections H10 and J12 have sands 50 to 100 cm in thickness overlying the clays. These soils receive seepage of water from the higher lying clays and are still poorly drained. A smaller area of soils with clay at a shallow depth is at grid intersection H8. The soil at grid intersection H8 is also Bivans. Sands are about 30 cm thick in the area of H8.

Alfisols (soils with a higher base saturation) were also mapped at grid intersections E12, F11, and G8. The soils at these intersections were identified as the Micanopy soil series. Soils are generally named for a small town in the area in which the soils were first described and identified. A number of the soils such as Micanopy, Bivans, Arredondo and Millhopper were first identified in the Alachua County area, and were named for small towns in the county. Micanopy soils are located in the NATL at lower elevations than the Bivans soils, and are not as wet.

Other areas near the high lying southeast area appear to be quite wet because of the adjacent Hawthorn clays, but do not have the high content of phosphatic concretions. These soils were described and mapped as Ultisols rather than Alfisols. Nobleton soils have clay layers at depths of 50 to 100 cm. The Sparr soil series contain sands 1 to 2 m in thickness overlying the more clayey argillic horizons.

Depth to the seasonal high water table

The depth to the seasonal high water table (SHWT) in the NATL generally appears to be closely related to the depth to the clay layers. The thickness of the sands and depth to the underlying clay layers increases moving in a northwesterly direction away from the higher lying southeastern part of the NATL, and the natural drainage of the soils gradually improves. Shown in Fig. 8 is a color shaded surfer diagram to represent the depth to the SHWT. In the diagram, the increase in the intensity of the color corresponds to greater depths to the seasonal high water table.

A number of areas were identified in the southwestern area and central part of the NATL, in which the Hawthorn clays underlie the soils between a depth of about 150

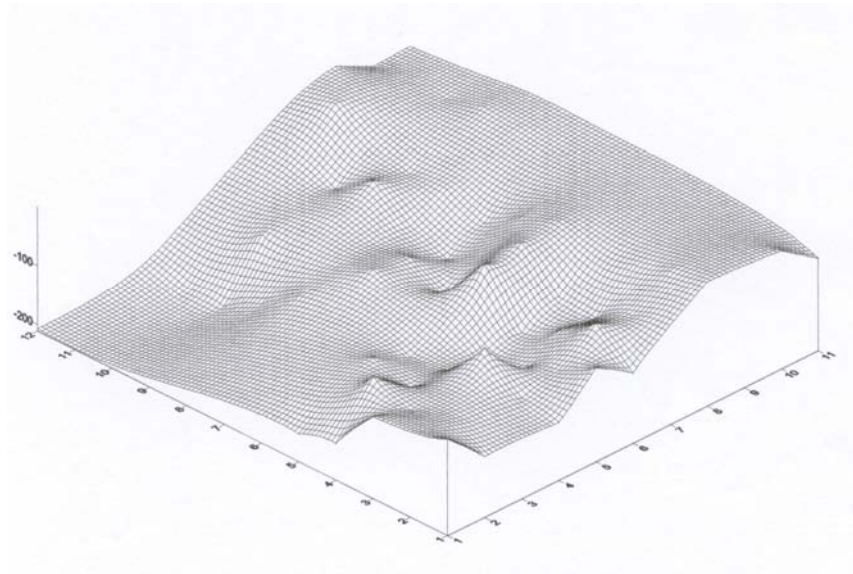


Fig. 8. Depth to the seasonal high water table (SHWT) is shown in this SURFER diagram.

to 200 cm. These areas were described and mapped in this study as clayey subsoil phases of the Millhopper, Sparr, or Lochloosa soil series. Millhopper soils are considered moderately well drained with a seasonal high water table at a depth of about 100 to 180 cm. Sparr and Lochloosa soils are somewhat poorly drained with a seasonal high water table at a depth of about 50 to 100 cm. The gray splotches (redoximorphic features) at a depth of about 60 cm in this photo of a Lochloosa soil (Fig. 9) is an indication of a seasonal high water table at that depth. An area at grid intersection H2 along the west side



Fig.9. Lochloosa soil (Aquic Arenic Paleudult)

of the SEEP appears to be quite wet during periods of high rainfall. The soil in this area was identified as Kanapaha. This is a poorly drained soil in which the sands are 1 to 2 m in thickness overlying soils with a high clay content. This area provided a habitat for the alligator shown in Fig. 10.



Fig. 10. The SEEP is home to many creatures including real GATORS.

The soils at the grid intersections along the edge of the SEEP were classified as Variants of the Lochloosa soil series. The surface layers of the soils in these areas were likely scraped off during the construction of the SEEP. The soils appear to be similar to Lochloosa, but the sandy surface layers are slightly thinner (<50 cm in thickness) than typical for the Lochloosa soil series.

The soils with the best natural drainage (seasonal high water table at the greatest depth) occur in the northwestern corner of the NATL. The soils in this area are sandy to a depth of nearly 2 m. The underlying argillic horizon in this area is low in clay content (loamy sand or sandy loam). The soils at grid intersections D2 and D3 were identified as Arredondo soils. These soils are well drained, and generally do not have a seasonal high water table above a depth of 2 m. Most of the soils in the northwestern area of the NATL were classified as Millhopper soils. The Millhopper soils have a seasonal high water table at a depth of about 1 to 2 m following periods of heavy rainfall. Fig. 11 shows the pine ecosystem in an area of Millhopper soils.



Fig. 11. Pine ecosystem at the NATL. Much of this area is mapped as Millhopper (Grossarenic Paleudult).

The area in the northern part of the NATL that has been used as a dump site over the years for clays and other materials from other areas could not be classified as a soil series due to the variability in the soils. The soils at grid intersections F5, G4, G5, and H5 were classified as Udorthents. A part of this area is shown in Fig. 12 and Fig. 13. The soils in this area are in the Entisol soil order. Entisols are young soils or soils that have been altered and show little or no pedogenetic development.

Entisols were also mapped and classified near the I1 and L12 grid intersections. Grid intersection I1 is within the SEEP, and intersection L12 is in the sinkhole pond



Figure 12. Tractor removing stockpiled soil materials for use in other areas.

located in the extreme southeast corner of the NATL. The soil observed at intersection L12 contains stratified layers of muck and sand, indicative of materials being deposited under very wet conditions.



Fig. 13. A variety of soil materials have been stockpiled in this area over the years.

Thickness of the A horizons

The thickness of the A horizons in the soils observed in transects A, B, C and D were quite uniform, ranging from a thickness of 10 cm at grid intersections D2 and D9, to a thickness of 17 cm at grid intersections A9, C11, and D4. As shown in Fig.14, the thickness of the A horizons was much more variable in the other transects. Very thin as well as thicker A horizons were observed in the other transects. One reason for the variability and the thinness of the A horizons in the other transects is that these transects include the area that has been used for dumping of soil materials over the years. Another reason for the variability and the thickness of the A horizons could be the number of small sinkholes or depressions in the southern part of NATL. At grid intersections G7 and G10, the A horizons were 23 cm in thickness. The thickest surface layers observed were in the grid intersection L12 at sinkhole pond. The surface layer observed at this intersection was 95 cm in thickness, and included O horizons (organic materials) as well as the mineral A horizons.

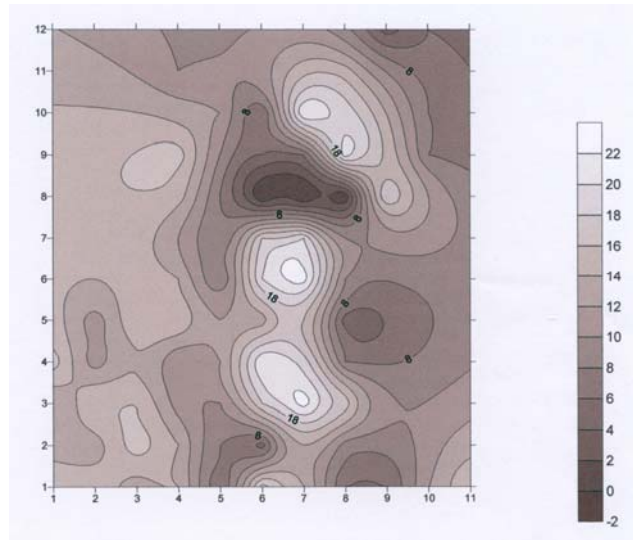


Figure 14. Thickness of A horizon.

**Differences noted between the 1985 Alachua County Soil Survey
and the 1999-2000 detailed inventory of the soil resources**

Many of the differences noted in the soils in these two studies are related to the Alachua or Hawthorn clay materials which occur at shallow depth in the southeastern part of the NATL, and at greater depths in the southern and central areas. The Bivans and Micanopy soils were described and mapped in this study in the areas in which the clay layers were encountered within a depth of 50 cm. The 1985 Alachua County Soil Survey (Fig. 15) did not recognize these soils, possibly because the soils are classified as Alfisols.

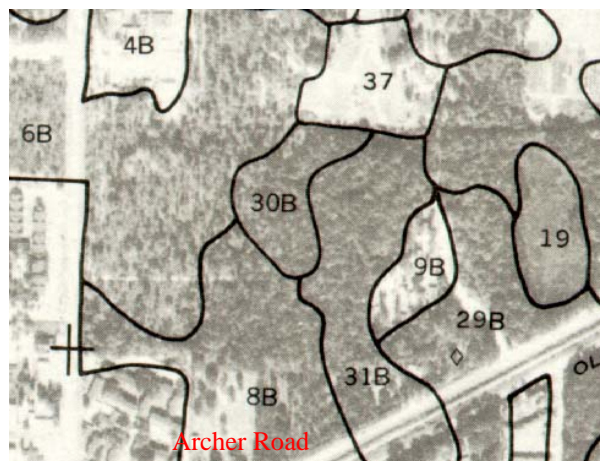


Fig. 15. The 1985 soil map of the NATL in the Alachua County Soil Survey.

Only Ultisols were mapped in the NATL area during the 1985 soil survey. Two areas of Nobleton soils were identified in this study that were not mapped in the 1985 soil survey. Nobleton soils are clayey, similar to Micanopy, but are classified as Ultisols rather than Alfisols because the depth to the clay is greater. A number of areas of Sparr soils were described in this detailed soil inventory. Sparr soils are similar to Millhopper soils, but have a seasonal high water table at a shallower depth. The Sparr soils were not separated from the Millhopper soil series in the 1985 soil survey. This detailed survey (Fig. 16) also located a number of areas in which the soils are similar to Millhopper, Lochloosa or Sparr, but the soils are underlain by the clay layers at depths of about 150 to 200 cm. These areas were not identified in the 1985 soil survey.

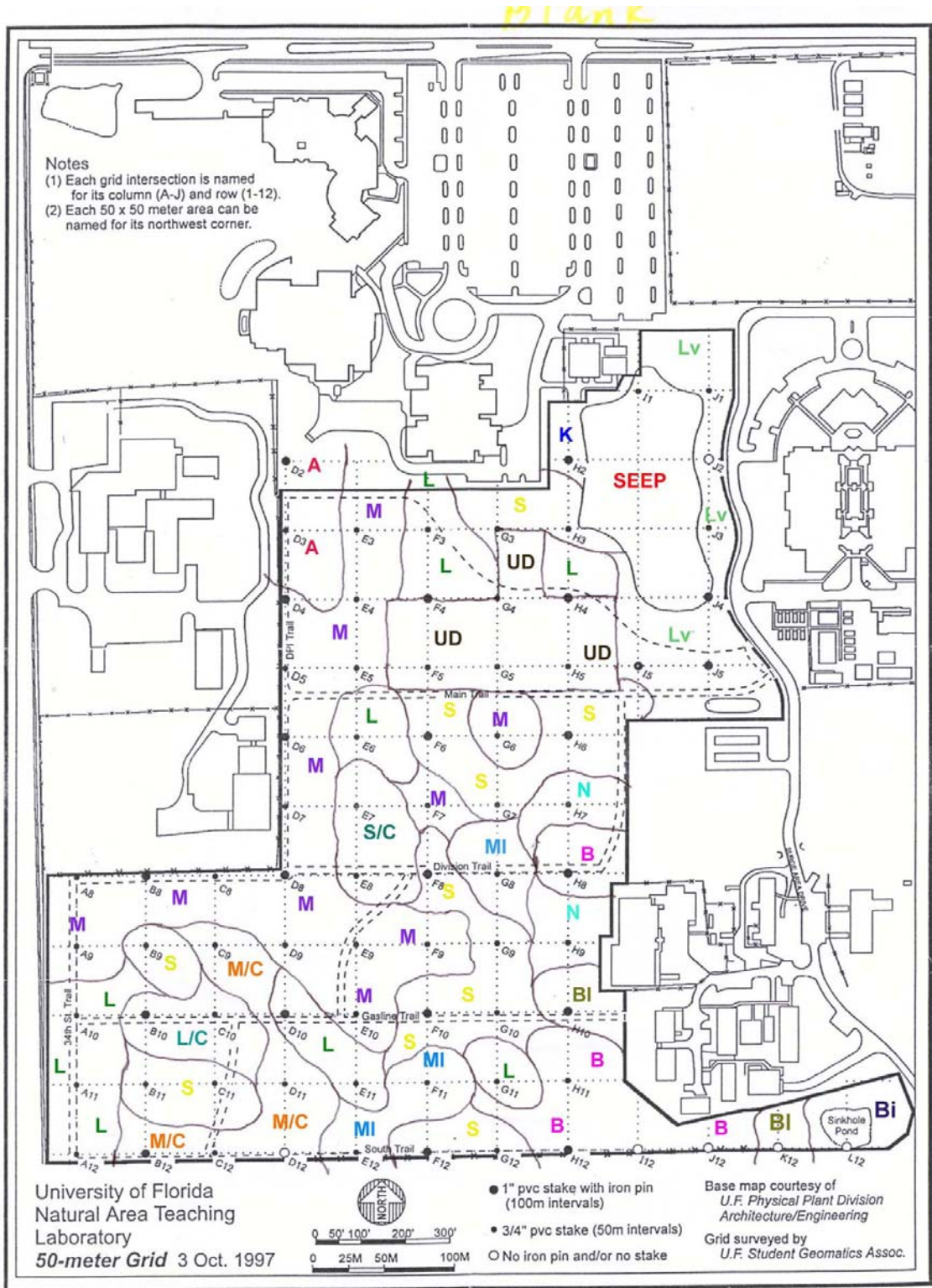


Fig.16. The 2000 soil map of the NATL.

Soils Legend – 2000 Soil Map of the NATL.

A= Arredondo

B = Bibb

Bi = Bivans

Bl = Blichton

K = Kanapaha

L = Lochloosa

L/C = Lochloosa, clayey subsoil phase

Lv = Lochloosa, thin surface variant

M = Millhopper

M/C = Millhopper, clayey subsoil phase

Mi = Micanopy

N = Nobleton

S = Sparr

S/C = Sparr, clayey subsoil phase

Ud = Udorthents

The 1985 soil survey mapped a large area of Apopka soils in the northwestern part of the NATL. Apopka soils were not identified in this detailed inventory. Most of the soils in the area in which the Apopka soils were mapped appear to have a seasonal high water table, and are more similar to the Millhopper soils.

Summary

The detailed inventory of the soil resources at the NATL shows complex landscapes that are being influenced by the underlying clay layers of the Hawthorn or Alachua geologic formations. The soils in the higher lying southeastern area of the NATL have clay layers at the shallowest depths. The soils in this area contain phosphatic clays and have poor natural drainage. Depth to the clays and drainage of the soils changes abruptly with slight changes in the slope configuration of the landscape.

The complexity of the landscapes and associated soils should provide excellent opportunities for challenging research studies by students.

References

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Thomas, B.P., E. Cummings, and W.H. Wittstruck. 1985. Soil Survey of Alachua County, FL., U.S. Dept. of Agriculture, in cooperation with University of Florida, Institute of Food and Agricultural Sciences, Agricultural Experiment Stations and Soil Science Dept., U.S. Govt. Printing Office, Washington, D.C.

Appendix A

GLOSSARY FOR SOILS TERMS USED IN SOIL DESCRIPTIONS

Master Soil Horizon Designations for Soil Descriptions

O Horizon: Layers dominated by organic material. Some are saturated with water for long periods. Some O horizons consist of undecomposed or partially decomposed litter (such as leaves, needles, twigs, moss, and lichens) that has been deposited on the surface. Other O horizons consist of organic material that was deposited under saturated conditions and has decomposed to varying stages. Organic carbon content of the O horizons must be by definition, at least 12 to 18%, depending upon the clay content of the horizon.

A Horizon: Mineral horizons which have formed at the surface or below an O horizon. These horizons have a lower organic matter content than the O horizons, but generally higher than the E horizons.

E Horizon: Mineral horizons, commonly referred to as “eluvial horizon”, in which the main feature is the loss by leaching of silicate clay, iron, or aluminum, or some combination of these, leaving a concentration of sand and/or silt particles.

B Horizon: Mineral horizons which have formed below an A, E, or O horizon, and generally shows an illuvial concentration of silicate clay, iron, aluminum, humus, carbonates, gypsum, or silica, alone or in some combination.

C Horizon: Horizons or layers that are little affected by pedogenic processes and lack the properties of O, A, E, or B horizons.

Subordinate distinctions within Master Horizons

- a** - Used with the O horizon to indicate highly decomposed organic materials(muck).

- b** - Used to indicate a buried surface layer. Commonly occurs in floodplain areas in which the original surface layer that developed has been covered by recent sediments.

- c** – symbol used to indicate a significant accumulation of concretions or nodules.

- e** - Used with the O horizon to indicate organic matter of intermediate decomposition (mucky peat).

- g** - Used to indicate strong gleying (wet conditions in soils). This symbol indicates that either iron has been reduced and removed during soil formation, or that saturation with stagnant water has preserved it in a reduced state.

- i** - Used with the O horizon to indicate slightly decomposed organic material. Commonly used to show the accumulation of an undecomposed leaf or root mat above the Osoil surface.

- t** - Used with the B horizons to indicate the accumulation of silicate clay that either has formed and subsequently translocated within the horizon, or has been moved into the horizon by illuviation, or both.

- w**- Used with the B horizons to show the development of color or structure in the soils, without the illuviation of clay.

Diagnostic subsurface horizons

Argillic horizon - an illuvial horizon which contains significant accumulations of illuviated silicate clays. The argillic horizon must have formed below an eluvial (E) horizon, but may be found at the surface of a partially truncated soil. Shown in the soil descriptions as a Bt horizon. The argillic horizon is commonly called a “clay layer”. Technically this is not correct as the argillic horizon does not need to be, and generally is not a clay texture. Rather the argillic horizon has a significant increase in clay content compared to the overlying eluvial horizon and can be a sandy loam, sandy clay loam, etc. The argillic horizon has the capacity for significant moisture retention, depending largely upon the percent clay content of the horizon.

Cambic horizon – a horizon that shows some development of color and structure, but does not have enough clay accumulation for an argillic horizon, and is not dark enough for an umbric or mollic epipedon.

Site: A8

Geomorphic Position: base of west-facing slope, on lower lying plain.

Slope Gradient: 3%

Aspect: W

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: well -moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 165 cm

Soil Series: Millhopper

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 5/1/00

Oi—0 to 1 cm; leaf and root litter.

A--1 to 15 cm; dark grayish brown (10YR 4/2) sand; about 40% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1—15 to 48 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--48 to 165 cm; light yellowish brown (10YR 6/4) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E3--165 to 190 cm; pale brown (10YR 7/3) sand; common fine distinct light brownish gray (10YR 6/2) redox depletions; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Bt--190 to 210 cm; light yellowish brown (10YR 6/4) sandy loam; common fine distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; few very fine continuous tubular pores; friable.

Site: A9

Geomorphic Position: west-facing slope, on lower lying plain.

Slope Gradient: 3%

Aspect: W

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: well -moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 150 cm

Soil Series: Millhopper

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 5/3/00

Oi—0 to 1 cm; leaf and root litter.

A--1 to 17 cm; dark grayish brown (10YR 4/2) sand; about 40% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1—17 to 38 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--38 to 120 cm; light yellowish brown (10YR 6/4) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E3--120 to 150 cm; pale brown (10YR 7/3) sand; common fine distinct light brownish gray (10YR 6/2) redox depletions; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Bt--150 to 200 cm; light yellowish brown (10YR 6/4) sandy loam; common fine distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; few very fine continuous tubular pores; friable.

Site: A10

Geomorphic Position: near base of west-facing slope, on lower lying plain.

Slope Gradient: 3%

Aspect: W

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: well -moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 75 cm

Soil Series: Lochloosa

Classification: Loamy, siliceous, hyperthermic, Oxyaquic Paleudults.

Soil Described by: John Galbraith

Date described: 5/25/99

Oi—0 to 1 cm; leaf and root litter.

A--1 to 12 cm; dark grayish brown (10YR 4/2) sand; about 40% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1—12 to 40 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--40 to 75 cm; light yellowish brown (10YR 6/4) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E3--75 to 90 cm; pale brown (10YR 7/3) sand; common fine distinct light brownish gray (10YR 6/2) redox depletions; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Bt1--90 to 190 cm; light yellowish brown (10YR 6/4) sandy loam; common fine distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; few very fine continuous tubular pores; friable; gradual smooth boundary.

Bt2--190 to 200 cm; dark yellowish brown (10YR 4/6) sandy loam; many coarse distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; common very fine continuous tubular pores; few ironstone concretions; friable.

Site: A12

Geomorphic Position: near base of low-lying sideslope below lower lying plain.

Slope Gradient: 3%

Aspect: SW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 50 cm

Soil Series: Lochloosa

Classification: Loamy, siliceous, hyperthermic, Aquic Paleudults.

Soil Described by: John Galbraith and Ronald J. Kuehl

Date described: 5/31/99

Date sampled: 4/14/00

Oi—0 to 1 cm; leaf and root litter.

A--1 to 15 cm; dark grayish brown (10YR 4/2) sand; about 40% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1—15 to 22 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--22 to 50 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Eg--50 to 75 cm; light gray (10YR 7/2) sand; loose; single grain; common fine distinct gray (10YR 5/1) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt--75 to 120 cm; strong brown (7.5YR 5/6) and grayish brown (10YR 5/2) sandy loam; common fine distinct gray (10YR 5/1) and light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; few very fine continuous tubular pores; friable; clear smooth boundary.

Btg--120 to 200 cm; light gray (10YR 7/2) sandy clay loam with thin layers of sandy clay; common fine distinct gray (10YR 5/1) redox depletions and yellow (2.5Y 7/8) redox accumulations; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; few very fine continuous tubular pores; very firm.

Site: B8

Geomorphic Position: very gently sloping area on lower lying plain.

Slope Gradient: 3%

Aspect: NE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: well -moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 120 cm

Soil Series: Millhopper

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: John Galbraith

Date described: 5/31/99

Oi—0 to 1 cm; leaf and root litter.

A--1 to 11 cm; dark grayish brown (10YR 4/2) sand; about 40% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E—11 to 34 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

Bw--34 to 60 cm; yellowish brown (10YR 5/4) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E'1--60 to 120 cm; pale brown (10YR 7/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E'2--120 to 170 cm; pale brown (10YR 7/3) and very pale brown (10YR 8/3) sand; loose; single grain; common fine distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt--170 to 210 cm; light yellowish brown (10YR 6/4) sandy loam; common fine distinct gray (10YR 5/1) and light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; few very fine continuous tubular pores; friable.

Site: B9

Geomorphic Position: gently sloping area on lower lying plain.

Slope Gradient: 4%

Aspect: NE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: well -moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 70 cm

Soil Series: Sparr

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: John Galbraith

Date described: 5/31/99

Oi—0 to 1 cm; leaf and root litter.

A--1 to 11 cm; dark grayish brown (10YR 4/2) sand; about 40% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E—11 to 29 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

Bw--29 to 55 cm; yellowish brown (10YR 5/4) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E'1--55 to 70 cm; pale brown (10YR 7/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E'2--70 to 102 cm; pale brown (10YR 7/3) and very pale brown (10YR 8/3) sand; loose; single grain; common fine distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt--102 to 180 cm; light yellowish brown (10YR 6/4) sandy loam; common fine distinct gray (10YR 5/1) and light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; few very fine continuous tubular pores; friable.

Btg--180 to 200 cm; light gray (10YR 7/2) sandy clay loam; common fine distinct gray (10YR 5/1) redox depletions and yellow (2.5Y 7/8) redox accumulations; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; few very fine continuous tubular pores; very firm.

Site: B10

Geomorphic Position: near top of gently sloping knoll on lower-lying plain.

Slope Gradient: 3%

Aspect: NW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 95 cm

Soil Series: Lochloosa, clayey subsoil phase

Classification: Loamy, siliceous, hyperthermic, Arenic Paleudults.

Soil Described by: John Galbraith and Ronald J. Kuehl

Date described: 5/31/99

Date sampled: 4/14/00

Oi—0 to 1 cm; leaf and root litter.

A--1 to 16 cm; dark grayish brown (10YR 4/2) sand; about 40% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E—16 to 62 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

Bt1--62 to 95 cm; dark yellowish brown (10YR 4/6) sandy clay loam; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; few very fine continuous tubular pores; friable; clear smooth boundary.

Bt2-- 95 to 110 cm; brown (10YR 5/3) sandy clay loam; weak medium subangular blocky structure; common fine and medium distinct light gray (10YR 7/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; few very fine continuous tubular pores; friable; clear smooth boundary.

Btg1--110 to 170 cm; light gray (10YR 7/2) sandy clay; common fine distinct gray (10YR 5/1) redox depletions and yellow (2.5Y 7/8) redox accumulations; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; few very fine continuous tubular pores; very firm; gradual smooth boundary.

Btg2--170 to 200 cm; light gray (10YR 7/2) clay; common fine distinct gray (10YR 5/1) redox depletions; very weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous gray (10YR 5/1) clay films on faces of peds; few very fine continuous tubular pores; very firm;

Site: B11

Geomorphic Position: gently sloping sideslope

Slope Gradient: 3%

Aspect: SW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well drained – somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 85 cm

Soil Series: Sparr
Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.
Soil Described by: Ronald J. Kuehl
Date described: 5/1/00

Oi—0 to 1 cm; leaf and root litter.

A--1 to 13 cm; dark grayish brown (10YR 4/2) sand; about 40% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1—13 to 50 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--50 to 85 cm; pale brown (10YR 7/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E3--85 to 115 cm; pale brown (10YR 7/3) and very pale brown (10YR 8/3) sand; loose; single grain; common fine distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt1--115 to 140 cm; dark yellowish brown (10YR 4/6) sandy clay loam; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; few very fine continuous tubular pores; friable; clear smooth boundary.

Btg1--140 to 180 cm; light gray (10YR 7/2) sandy clay loam and sandy clay; common fine distinct gray (10YR 5/1) redox depletions and yellow (2.5Y 7/8) redox accumulations; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; few very fine continuous tubular pores; very firm; gradual smooth boundary.

Btg2--180 to 200 cm; light gray (10YR 7/1) clay; common fine distinct gray (10YR 5/1) redox depletions and yellow (2.5Y 7/8) redox accumulations; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous light gray (10YR 6/1) clay films on faces of peds; few very fine continuous tubular pores; very firm.

Site: B12

Geomorphic Position: lower-lying sideslope below lower lying plain, near apartment complex.

Slope Gradient: 5%

Aspect: S

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 110 cm

Soil Series: Millhopper, clayey subsoil phase

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: John Galbraith and Ronald J. Kuehl
Date described: 5/31/99
Date sampled: 4/14/00

Oi—0 to 1 cm; leaf and root litter.

A--1 to 15 cm; dark grayish brown (10YR 4/2) sand; about 40% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1—15 to 22 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--22 to 60 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E3--60 to 110 cm; pale brown (10YR 7/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Eg--110 to 155 cm; light gray (10YR 7/2) sand; loose; single grain; common fine distinct gray (10YR 5/1) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Btg1--155 to 190 cm; grayish brown (10YR 5/2) sandy loam; common fine distinct gray (10YR 5/1) and light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; few very fine continuous tubular pores; friable; clear smooth boundary.

Btg2--190 to 200 cm; light gray (10YR 7/2) sandy clay; common fine distinct gray (10YR 5/1) redox depletions and yellow (2.5Y 7/8) redox accumulations; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; few very fine continuous tubular pores; very firm.

Site: C8

Geomorphic Position: very gently sloping area on lower lying plain.

Slope Gradient: 3%

Aspect: NE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 100 cm

Soil Series: Millhopper

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: John Galbraith

Date described: 5/30/99

Oi—0 to 1 cm; leaf and root litter.

A--1 to 16 cm; dark grayish brown (10YR 4/2) sand; about 40% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E—16 to 30 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

Bw--30 to 54 cm; yellowish brown (10YR 5/4) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E'1--54 to 80 cm; pale brown (10YR 7/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E'2--80 to 105 cm; pale brown (10YR 7/3) and very pale brown (10YR 8/3) sand; loose; single grain; common fine distinct light brownish gray (10YR 6/2) redox depletions in the lower part; common fine and very fine and few medium roots; clear smooth boundary.

Bt--105 to 170 cm; light yellowish brown (10YR 6/4) sandy loam; common fine distinct gray (10YR 5/1) and light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; few very fine continuous tubular pores; friable.

Btg--170 to 200 cm; grayish brown (10YR 5/2) sandy loam; common fine distinct gray (10YR 5/1) and light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; few very fine continuous tubular pores; friable.

Site: C9

Geomorphic Position: gently sloping area on lower lying plain.

Slope Gradient: 3%

Aspect: NE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: well -moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 120 cm

Soil Series: Millhopper, clayey subsoil phase

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 5/3/00

Oi—0 to 1 cm; leaf and root litter.

A--1 to 14 cm; dark grayish brown (10YR 4/2) sand; about 40% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E—14 to 35 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

Bw--35 to 68 cm; yellowish brown (10YR 5/4) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E'1--68 to 120 cm; pale brown (10YR 7/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E'2--120 to 125 cm; pale brown (10YR 7/3) and very pale brown (10YR 8/3) sand; loose; single grain; common fine distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt--125 to 180 cm; light yellowish brown (10YR 6/4) sandy loam; common fine distinct gray (10YR 5/1) and light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; few very fine continuous tubular pores; friable.

Btg--180 to 200 cm; light gray (10YR 7/2) sandy clay; common fine distinct gray (10YR 5/1) redox depletions and yellow (2.5Y 7/8) redox accumulations; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; few very fine continuous tubular pores; very firm.

Site: C10

Geomorphic Position: near top of gently sloping knoll on lower-lying plain.

Slope Gradient: 3%

Aspect: NW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 90 cm

Soil Series: Lochloosa, clayey subsoil phase

Classification: Loamy, siliceous, hyperthermic, Arenic Paleudults.

Soil Described by: John Galbraith and Ronald J. Kuehl

Date described: 5/4/00

Oi—0 to 1 cm; leaf and root litter.

A--1 to 16 cm; dark grayish brown (10YR 4/2) sand; about 40% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1—16 to 56 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--56 to 90 cm; pale brown (10YR 7/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E3--90 to 95 cm; pale brown (10YR 7/3) and very pale brown (10YR 8/3) sand; loose; single grain; common fine distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt1--95 to 110 cm; dark yellowish brown (10YR 4/6) sandy clay loam; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; few very fine continuous tubular pores; friable; clear smooth boundary.

Bt2-- 110 to 135 cm; brown (10YR 5/3) sandy clay loam; weak medium subangular blocky structure; common fine and medium distinct light gray (10YR 7/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; few very fine continuous tubular pores; friable; clear smooth boundary.

Btg1--135 to 190 cm; light gray (10YR 7/2) sandy clay loam with thin layers of sandy clay; common fine distinct gray (10YR 5/1) redox depletions and yellow (2.5Y 7/8) redox accumulations; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; few very fine continuous tubular pores; very firm; gradual smooth boundary.

Btg2--190 to 200 cm; light gray (10YR 7/2) sandy clay; common fine distinct gray (10YR 5/1) redox depletions and yellow (2.5Y 7/8) redox accumulations; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; few very fine continuous tubular pores; very firm.

Site: C11

Geomorphic Position: lower part of gently sloping sideslope

Slope Gradient: 3%

Aspect: SW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well drained – somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 95 cm

Soil Series: Sparr

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 4/27/00

Oi—0 to 1 cm; leaf and root litter.

A--1 to 17 cm; dark grayish brown (10YR 4/2) sand; about 40% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1—17 to 60 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--60 to 95 cm; pale brown (10YR 7/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E3--95 to 150 cm; pale brown (10YR 7/3) and very pale brown (10YR 8/3) sand; loose; single grain; common fine distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Eg--150 to 190 cm; light gray (10YR 7/2) sand; loose; single grain; common fine distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt--190 to 200 cm; dark yellowish brown (10YR 4/6) sandy loam; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; few ironstone concretions; friable.

Site: C12

Geomorphic Position: lower part of gently sloping sideslope

Slope Gradient: 3%

Aspect: SW

Parent Material: Sandy/loamy/clayey Coastal Plain Sediments

Drainage: moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 110 cm

Soil Series: Millhopper, clayey subsoil phase

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 4/25/00

Oi—0 to 1 cm; leaf and root litter.

A--1 to 13 cm; dark grayish brown (10YR 4/2) sand; about 40% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1—13 to 52 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--52 to 84 cm; pale brown (10YR 7/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E3--84 to 150 cm; pale brown (10YR 7/3) and very pale brown (10YR 8/3) sand; loose; single grain; few fine distinct light brownish gray (10YR 6/2) redox depletions in the lower part; common fine and very fine and few medium roots; clear smooth boundary.

Btg1--150 to 160 cm; light gray (10YR 7/2) sandy loam; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; few very fine continuous tubular pores; friable; clear smooth boundary.

Btg2--160 to 200 cm; light gray (10YR 7/2) sandy clay; common fine distinct gray (10YR 5/1) redox depletions and yellow (2.5Y 7/8) redox accumulations; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; many phosphatic and ironstone concretions; very firm.

Site: D2

Geomorphic Position: convex sideslope on lower lying plain.

Slope Gradient: 4%

Aspect: NW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: >200 cm

Soil Series: Arredondo

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: John Galbraith, Anna Ludin, and Ronald J. Kuehl

Date described: 5/31/99

Date sampled: 4/14/00

Oi—0 to 1 cm; leaf and root litter.

A--1 to 10 cm; dark grayish brown (10YR 4/2) sand; about 60% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

E1—10 to 50 cm; light yellowish brown (10YR 6/4) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--50 to 110 cm; light yellowish brown (2.5Y 6/4) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E3--110 to 155 cm; pale brown (10YR 7/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E/Bt--155 to 180 cm; 80% pale brown (10YR 7/3) sand (E horizon) and 20% yellowish brown (10YR 5/6) loamy sand lamellae (Bt horizon); loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Bt1--180 to 195 cm; yellowish brown (10YR 5/6) loamy sand; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; very friable; clear smooth boundary.

Bt2--195 to 200 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable.

Site: D3

Geomorphic Position: lower lying convex sideslope on lower lying plain.

Slope Gradient: 2%

Aspect: NW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: >200 cm

Soil Series: Arredondo

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 4/24/00

Oi—0 to 1 cm; leaf and root litter.

A--1 to 13 cm; dark grayish brown (10YR 4/2) sand; about 60% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

E1—13 to 78 cm; light yellowish brown (10YR 6/4) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--78 to 130 cm; light yellowish brown (2.5Y 6/4) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E3--130 to 162 cm; pale brown (10YR 7/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E/Bt--162 to 195 cm; 80% pale brown (10YR 7/3) sand (E horizon) and 20% yellowish brown (10YR 5/6) loamy sand lamellae (Bt horizon); loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Bt1--195 to 200 cm; yellowish brown (10YR 5/6) loamy sand; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; very friable; clear smooth boundary.

Bt2--195 to 200 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable.

Site: D4

Geomorphic Position: convex sideslope on lower lying plain.

Slope Gradient: 6%

Aspect: NW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well to well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 165 cm

Soil Series: Millhopper

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: John Galbraith and Anna Ludin

Date described: 5/28/99

Ap--1 to 8 cm; brown (10YR 5/3) sand; about 70% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

A--8 to 17 cm; dark grayish brown (10YR 4/2) sand; about 75% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

E1—17 to 95 cm; light yellowish brown (10YR 6/4) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--95 to 135 cm; light yellowish brown (2.5Y 6/4) sand; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains; clear smooth boundary.

Bt1--135 to 165 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable; clear smooth boundary.

Bt2--165 to 205 cm; yellowish brown (10YR 5/4) sandy loam; common fine distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable.

Site: D5

Geomorphic Position: convex sideslope on lower lying plain.

Slope Gradient: 6%

Aspect: NW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 120 cm

Soil Series: Millhopper

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 4/24/00

Ap--0 to 9 cm; brown (10YR 5/3) sand; about 70% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

A--9 to 15 cm; dark grayish brown (10YR 4/2) sand; about 75% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

E1—15 to 80 cm; light yellowish brown (10YR 6/4) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--80 to 126 cm; light yellowish brown (2.5Y 6/4) sand; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains; clear smooth boundary.

Bt--126 to 160 cm; yellowish brown (10YR 5/6) sandy loam; common fine distinct light gray (10YR 7/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable; clear smooth boundary.

Btg--160 to 200 cm; light gray (10YR 7/2) sandy loam; common fine distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous light gray (10YR 6/1) clay films on faces of peds; friable.

Site: D6

Geomorphic Position: lower-lying sideslope on lower lying plain.

Slope Gradient: 1%

Aspect: NW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 110 cm

Soil Series: Millhopper

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: John Galbraith and Ronald J. Kuehl

Date described: 5/30/99

Oi—0 to 2 cm; leaf and root litter.

A--2 to 12 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

Bw—12 to 22 cm; dark yellowish brown (10YR 4/4) sand; loose; single grain; common fine and very fine and few medium roots; few very fine continuous tubular pores; clear smooth boundary.

E1—22 to 60 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--60 to 115 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains; clear smooth boundary.

E3--115 to 160 cm; pale brown (10YR 7/3) sand; loose; single grain; common light gray (10YR 7/2) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt1--160 to 187 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable; clear smooth boundary.

Bt2--187 to 210 cm; yellowish brown (10YR 5/4) sandy loam; common fine and medium distinct light brownish gray (10YR 6/2) and brown (10YR 5/3) redox depletions; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable.

Site: D7

Geomorphic Position: convex sideslope on lower lying plain.

Slope Gradient: 3%

Aspect: W

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 110 cm

Soil Series: Millhopper

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 4/24/00

Oi—0 to 2 cm; leaf and root litter.

A--2 to 14 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

Bw—14 to 20 cm; dark yellowish brown (10YR 4/4) sand; loose; single grain; common fine and very fine and few medium roots; few very fine continuous tubular pores; clear smooth boundary.

E1—20 to 72 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--72 to 110 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains; clear smooth boundary.

E3--110 to 135 cm; pale brown (10YR 7/3) sand; loose; single grain; common light gray (10YR 7/2) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt--135 to 160 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable; clear smooth boundary.

Btg--160 to 200 cm; light brownish gray (10YR 6/2) sandy loam; common fine and medium distinct light gray (10YR 7/2) and brown (10YR 5/3) redox depletions; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous gray (10YR 5/1) clay films on faces of peds; friable.

Site: D8

Geomorphic Position: lower-lying sideslope on lower lying plain.

Slope Gradient: 2%

Aspect: NW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 130 cm

Soil Series: Millhopper

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: John Galbraith and Amanda Bardt

Date described: 6/1/99

Oi—0 to 1 cm; leaf and root litter.

A--1 to 6 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few very fine tubular pores; abrupt smooth boundary.

E1—6 to 25 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; few very fine tubular pores; clear smooth boundary.

E2--25 to 70 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E3--70 to 130 cm; pale brown (10YR 7/4) sand; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains; clear smooth boundary.

E4--130 to 185 cm; pale brown (10YR 7/3) sand; loose; single grain; common fine and medium distinct light gray (10YR 7/2) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt1--185 to 195 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable; clear smooth boundary.

Bt2--195 to 210 cm; yellowish brown (10YR 5/4) sandy loam; common fine and medium distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable.

Site: D9

Geomorphic Position: lower-lying sideslope on lower lying plain.

Slope Gradient: 2%

Aspect: S

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 120 cm

Soil Series: Millhopper

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 5/24/00

Oi—0 to 1 cm; leaf and root litter.

A--1 to 10 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few very fine tubular pores; abrupt smooth boundary.

E1—10 to 25 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; few very fine tubular pores; clear smooth boundary.

E2--25 to 65 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E3--65 to 120 cm; pale brown (10YR 7/4) sand; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains; clear smooth boundary.

E4--120 to 170 cm; pale brown (10YR 7/3) sand; loose; single grain; common fine and medium distinct light gray (10YR 7/2) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt--170 to 198 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable; clear smooth boundary.

Btg--198 to 220 cm; light gray (10YR 7/2) sandy clay loam; common fine and medium distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous light gray (10YR 6/1) clay films on faces of peds; friable.

Site: D10

Geomorphic Position: higher-lying sideslope on lower lying plain.

Slope Gradient: 3%

Aspect: E

Parent Material: Sandy/loamy/clayey Coastal Plain Sediments

Drainage: moderately well – somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 52 cm

Soil Series: Lochloosa

Classification: Loamy, siliceous, hyperthermic, Aquic Arenic Paleudults.

Soil Described by: John Galbraith

Date described: 6/25/99

Oi—0 to 2 cm; leaf and root litter.

A--2 to 11 cm; dark grayish brown (10YR 4/2) sand; about 40% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few very fine tubular pores; abrupt smooth boundary.

E1—11 to 37 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; few very fine tubular pores; clear smooth boundary.

E2--37 to 55 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains and light brownish gray (10YR 6/2) redox depletions in the lower part; clear smooth boundary.

Bt1--55 to 80 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and

very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable; clear smooth boundary.

Bt2--80 to 120 cm; yellowish brown (10YR 5/4) sandy clay loam; common fine and medium distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; firm; gradual smooth boundary.

Bt3--120 to 150 cm; yellowish brown (10YR 5/4) sandy clay; many fine and medium distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; firm; gradual smooth boundary.

Bt4--150 to 200 cm; light brownish gray (10YR 6/2) sandy clay loam; common fine and medium distinct pale yellow (2.5Y 7/3) redox accumulations and gray (10YR 5/1) redox depletions; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous gray (10YR 5/1) clay films on faces of peds; firm.

Site: D11

Geomorphic Position: higher-lying sideslope on lower lying plain.

Slope Gradient: 3%

Aspect: S

Parent Material: Sandy/loamy/clayey Coastal Plain Sediments

Drainage: moderately well – somewhat poorly

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 105 cm

Soil Series: Millhopper, clayey subsoil phase

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 4/18/00

Oi—0 to 2 cm; leaf and root litter.

A--2 to 14 cm; dark grayish brown (10YR 4/2) sand; about 40% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few very fine tubular pores; abrupt smooth boundary.

E1—14 to 55 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; few very fine tubular pores; clear smooth boundary.

E2—55 to 105 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; few very fine tubular pores; clear smooth boundary.

E3--105 to 130 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains and light brownish gray (10YR 6/2) redox depletions in the lower part; clear smooth boundary.

Bt--130 to 180 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable; clear smooth boundary.

Btg1--180 to 196 cm; light gray (10YR 7/2) sandy clay loam; common fine and medium distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous light gray (10YR 6/1) clay films on faces of peds; firm; gradual smooth boundary.

Btg2--196 to 200 cm; light gray (10YR 7/2) sandy clay; many fine and medium distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous light gray (10YR 6/1) clay films on faces of peds; firm.

Site: D12

Geomorphic Position: sideslope on lower lying plain.

Slope Gradient: 4%

Aspect: S-SW

Parent Material: Sandy/loamy/clayey Coastal Plain Sediments

Drainage: moderately well – somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 115 cm

Soil Series: Millhopper, clayey subsoil phase

Classification: Clayey, smectitic, hyperthermic, Grossarenic Paleudults.

Soil Described by: John Galbraith

Date described: 6/25/99

Oi—0 to 1 cm; leaf and root litter.

A--1 to 14 cm; dark grayish brown (10YR 4/2) sand; about 30% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few very fine tubular pores; abrupt smooth boundary.

E1—14 to 46 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; few very fine tubular pores; clear smooth boundary.

E2--46 to 90 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E3--90 to 115 cm; very pale brown (10YR 7/3) sand; loose; single grain; common fine and very fine and few medium roots; common stripped sand grains in the lower part; clear smooth boundary.

E4--115 to 165 cm; very pale brown (10YR 8/3) sand; loose; single grain; common medium distinct light gray (10YR 7/2) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Btg1--165 to 195 cm; grayish brown (10YR 5/2) sandy clay; many fine and medium distinct gray (10YR 5/1) redox depletions; moderate medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous gray (10YR 5/1) clay films on faces of peds; friable; clear smooth boundary.

Btg2--195 to 215 cm; gray (10YR 5/1) clay; many medium and coarse prominent greenish gray (5GY 6/1) redox depletions; very weak medium subangular blocky structure; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds; very firm.

Site: E3

Geomorphic Position: lower-lying sideslope on lower lying plain.

Slope Gradient: 1%

Aspect: NE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 110 cm

Soil Series: Millhopper

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 4/18/00

Oi—0 to 2 cm; leaf and root litter.

A--2 to 12 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

Bw—12 to 20 cm; dark yellowish brown (10YR 4/4) sand; loose; single grain; common fine and very fine and few medium roots; few very fine continuous tubular pores; clear smooth boundary.

E1—20 to 64 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--64 to 110 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains; clear smooth boundary.

E3--110 to 185 cm; pale brown (10YR 7/3) sand; loose; single grain; common light gray (10YR 7/2) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt--185 to 200 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and

very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable.

Site: E4

Geomorphic Position: lower-lying sideslope on lower lying plain.

Slope Gradient: 1%

Aspect: NE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 110 cm

Soil Series: Millhopper

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 4/18/00

Oi—0 to 2 cm; leaf and root litter.

A--2 to 10 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

Bw—10 to 18 cm; dark yellowish brown (10YR 4/4) sand; loose; single grain; common fine and very fine and few medium roots; few very fine continuous tubular pores; clear smooth boundary.

E1—18 to 56 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--56 to 110 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains; clear smooth boundary.

E3--110 to 150 cm; pale brown (10YR 7/3) sand; loose; single grain; common light gray (10YR 7/2) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt--150 to 200 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable.

Site: E5

Geomorphic Position: lower-lying sideslope on lower lying plain.

Slope Gradient: 1%

Aspect: NE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well - somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 102 cm

Soil Series: Millhopper

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 4/20/00

Oi—0 to 2 cm; leaf and root litter.

A--2 to 8 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

Bw—8 to 16 cm; dark yellowish brown (10YR 4/4) sand; loose; single grain; common fine and very fine and few medium roots; few very fine continuous tubular pores; clear smooth boundary.

E1—16 to 48 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--48 to 102 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains; clear smooth boundary.

E3--102 to 145 cm; pale brown (10YR 7/3) sand; loose; single grain; common light gray (10YR 7/2) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt--145 to 200 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable.

Site: E6

Geomorphic Position: slightly higher-lying sideslope on lower lying plain.

Slope Gradient: 2%

Aspect: NE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 75 cm

Soil Series: Lochloosa

Classification: Loamy, siliceous, hyperthermic, Aquic Arenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 4/20/00

Oi—0 to 2 cm; leaf and root litter.

A--2 to 8 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

Bw—8 to 18 cm; dark yellowish brown (10YR 4/4) sand; loose; single grain; common fine and very fine and few medium roots; few very fine continuous tubular pores; clear smooth boundary.

E1—18 to 40 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--40 to 75 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains; clear smooth boundary.

E3--75 to 80 cm; pale brown (10YR 7/3) sand; loose; single grain; common light gray (10YR 7/2) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt--80 to 180 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable; clear smooth boundary.

Btg1--180 to 190 cm; light gray (10YR 7/2) sandy clay loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and

very fine roots; few thin, discontinuous light gray (10YR 6/1) clay films on faces of peds; firm; clear smooth boundary.

Btg2--190 to 200 cm; light gray (10YR 6/1) sandy clay; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous gray (10YR 5/1) clay films on faces of peds; firm.

Site: E7

Geomorphic Position: slightly higher-lying sideslope on lower lying plain.

Slope Gradient: 2%

Aspect: NE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 90 cm

Soil Series: Sparr, clayey subsoil phase

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 4/21/00

Oi—0 to 2 cm; leaf and root litter.

A--2 to 8 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

Bw—8 to 20 cm; dark yellowish brown (10YR 4/4) sand; loose; single grain; common fine and very fine and few medium roots; few very fine continuous tubular pores; clear smooth boundary.

E1—20 to 55 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--55 to 90 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains; clear smooth boundary.

E3--90 to 112 cm; pale brown (10YR 7/3) sand; loose; single grain; common light gray (10YR 7/2) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt--112 to 170 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable; clear smooth boundary.

Btg1--170 to 180 cm; light gray (10YR 7/2) sandy clay loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous light gray (10YR 6/1) clay films on faces of peds; firm; clear smooth boundary.

Btg2—180 to 200 cm; light gray (10YR 6/1) sandy clay; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous gray (10YR 5/1) clay films on faces of peds; firm.

Site: E8

Geomorphic Position: slightly higher-lying sideslope on lower lying plain.

Slope Gradient: 2%

Aspect: NE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 96 cm

Soil Series: Sparr, clayey subsoil phase

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 4/21/00

Oi—0 to 2 cm; leaf and root litter.

A--2 to 8 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

Bw—8 to 16 cm; dark yellowish brown (10YR 4/4) sand; loose; single grain; common fine and very fine and few medium roots; few very fine continuous tubular pores; clear smooth boundary.

E1—16 to 50 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--50 to 96 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains; clear smooth boundary.

E3--96 to 125 cm; pale brown (10YR 7/3) sand; loose; single grain; common light gray (10YR 7/2) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt--125 to 185 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable; clear smooth boundary.

Btg--185 to 200 cm; light gray (10YR 7/2) sandy clay loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous light gray (10YR 6/1) clay films on faces of peds; firm.

Site: E9

Geomorphic Position: gently sloping sideslope on moderately low lying plain.

Slope Gradient: 3%

Aspect: W

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 135 cm

Soil Series: Millhopper

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 4/21/00

Oi--0 to 2 cm; leaf and root litter.

A--2 to 12 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

Bw--12 to 22 cm; dark yellowish brown (10YR 4/4) sand; loose; single grain; common fine and very fine and few medium roots; few very fine continuous tubular pores; clear smooth boundary.

E1--22 to 60 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--60 to 135 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains; clear smooth boundary.

Eg--135 to 190 cm; light gray (10YR 7/2) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Bt--190 to 200 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable.

Site: E10

Geomorphic Position: gently sloping ridge on moderately low lying plain.

Slope Gradient: 3%

Aspect: W

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 120 cm

Soil Series: Millhopper

Classification: Loamy, siliceous, hyperthermic, Grossrenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 4/21/00

Oi—0 to 2 cm; leaf and root litter.

A--2 to 12 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

Bw—12 to 24 cm; dark yellowish brown (10YR 4/4) sand; loose; single grain; common fine and very fine and few medium roots; few very fine continuous tubular pores; clear smooth boundary.

E1—24 to 50 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--50 to 120 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains; clear smooth boundary.

Eg--120 to 180 cm; light gray (10YR 7/2) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Bt--180 to 200 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable.

Site: E11

Geomorphic Position: gently sloping ridge on moderately high lying plain.

Slope Gradient: 3%

Aspect: SW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: somewhat poorly

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 90 cm

Soil Series: Lochloosa

Classification: Loamy, siliceous, hyperthermic, Aquic Arenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 4/21/00

Oi—0 to 2 cm; leaf and root litter.

A--2 to 10 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

Bw—10 to 22 cm; dark yellowish brown (10YR 4/4) sand; loose; single grain; common fine and very fine and few medium roots; few very fine continuous tubular pores; clear smooth boundary.

E1—22 to 45 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--45 to 90 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains; clear smooth boundary.

Eg--90 to 95 cm; light gray (10YR 7/2) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Bt1--95 to 145 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; friable; clear smooth boundary.

Bt2--145 to 200 cm; strong brown (7.5YR 5/6) and light gray (10YR 7/2) sandy clay loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; firm.

Site: E12

Geomorphic Position: moderately sloping ridge on moderately high lying plain.

Slope Gradient: 6%

Aspect: SW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: somewhat poorly

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 55 cm

Soil Series: Micanopy

Classification: Clayey, smectitic, hyperthermic, Aquic Paleudalfs (may not have a high enough base saturation for an Alfisol).

Soil Described by: Ronald J. Kuehl

Date described: 4/17/00

Oi—0 to 1 cm; leaf and root litter.

A--1 to 8 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

E1—8 to 55 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--55 to 60 cm; pale brown (10YR 6/3) sand; many medium distinct light gray (10YR 7/2) redox depletions; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains; clear smooth boundary.

Btg1--60 to 140 cm; gray (10YR 5/1) clay; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds; many ironstone and phosphatic concretions; very firm; clear smooth boundary.

Btg2--140 to 200 cm; gray (10YR 5/1) and greenish gray (5GY 5/1) clay; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds; many ironstone and phosphatic concretions; very firm.

Site: F3

Geomorphic Position: lower-lying area on gently sloping, lower lying plain.

Slope Gradient: 1%

Aspect: NW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well – somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 95 cm

Soil Series: Lochloosa

Classification: Loamy, siliceous, hyperthermic, Aquic Arenic Paleudults.

Soil Described by: John Galbraith and Anna Ludin

Date described: 6/25/99

Oi—0 to 1 cm; leaf and root litter.

Ap--1 to 6 cm; dark grayish brown and brown (10YR 5/3) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1--6 to 20 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--20 to 66 cm; yellowish brown (10YR 5/4) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Bt1--90 to 110 cm; yellowish brown (10YR 5/4) sandy loam; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; few very fine continuous tubular pores; friable; gradual smooth boundary.

Bt2--110 to 140 cm; yellowish brown (10YR 5/4) sandy clay loam; many coarse distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; common very fine continuous tubular pores; firm; gradual smooth boundary.

Bt3--140 to 200 cm; strong brown (7.5YR 5/6) and light gray (10YR 7/2) sandy clay loam; weak medium subangular blocky structure; common fine distinct light brownish gray (10YR 6/2) redox accumulations; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; firm.

Site: F4

Geomorphic Position: lower-lying area on gently sloping, lower lying plain.

Slope Gradient: 1%

Aspect: NW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well – somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 80 cm

Soil Series: Lochloosa

Classification: Loamy, siliceous, hyperthermic, Aquic Arenic Paleudults.

Soil Described by: John Galbraith and Anna Ludin

Date described: 6/25/99

Oi—0 to 1 cm; leaf and root litter.

Ap--1 to 6 cm; dark grayish brown and brown (10YR 5/3) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1--6 to 20 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--20 to 66 cm; yellowish brown (10YR 5/4) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Bt1--66 to 80 cm; yellowish brown (10YR 5/4) sandy loam; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds; few very fine continuous tubular pores; friable; gradual smooth boundary.

Bt2--80 to 125 cm; yellowish brown (10YR 5/4) sandy clay loam; many coarse distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; common very fine continuous tubular pores; firm; gradual smooth boundary.

Bt3--125 to 190 cm; yellowish brown (10YR 5/4) sandy clay; weak medium subangular blocky structure; common fine distinct gray (10YR 6/1) redox accumulations; few thin, discontinuous gray (10YR 5/1) clay films on faces of peds; common very fine continuous tubular pores; firm; gradual smooth boundary.

Bt3--190 to 200 cm; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; common fine distinct light brownish gray (10YR 6/2) redox accumulations; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; firm.

Site: F5

Geomorphic Position: gently sloping lower lying plain.

Slope Gradient: 2%

Aspect: S - SE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well - somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 95 cm

Soil Series: Unnamed

Classification: Loamy-clayey, hyperthermic, Oxyaquic Udorthents.

Soil Described by: John Galbraith and Ronald J. Kuehl

Date described: 6/27/99

C--0 to 130 cm; a mixture of light olive brown (2.5Y 5/3) sandy clay loam, gray (10YR 5/1) sandy clay, and greenish gray (5GY 5/1) clay; firm to very firm; many phosphatic nodules and ironstone concretions; abrupt wavy boundary.

Eb1--130 to 135 cm; yellowish brown (10YR 5/4) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

Eb2--135 to 140 cm; pale brown (10YR 7/3) sand; common fine distinct light brownish gray (10YR 6/2) redox depletions; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Btbg--135 to 200 cm; light brownish gray (2.5Y 6/2) sandy clay loam; many medium and coarse distinct light gray (10YR 5/1) redox depletions; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous grayish brown (2.5Y 5/2) clay films on faces of peds; many phosphatic nodules and ironstone concretions; common very fine continuous tubular pores; firm.

Site: F6

Geomorphic Position: concave sideslope below higher-lying ridge to the east.

Slope Gradient: 4%

Aspect: E-SE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 85 cm

Soil Series: Sparr

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: John Galbraith

Date described: 6/25/99

Oi—0 to 1 cm; leaf and root litter.

A--1 to 18 cm; brown (10YR 4/3) sand; about 70% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1--18 to 46 cm; yellowish brown (10YR 5/4) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--46 to 85 cm; pale brown (10YR 7/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Eg--85 to 140 cm; grayish brown (10YR 5/2) sand; loose; single grain; common fine and medium distinct gray (10YR 6/1) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt--140 to 155 cm; light olive brown (2.5Y 5/3) sandy clay loam; common medium distinct gray (10YR 5/1) redox depletions; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous grayish brown (2.5Y 5/2) clay films on faces of peds; few very fine continuous tubular pores; firm; about 10% phosphatic nodules and ironstone concretions; gradual smooth boundary.

Btg--155 to 200 cm; light brownish gray (2.5Y 6/2) sandy clay loam; many medium and coarse distinct light gray (10YR 5/1) redox depletions; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous grayish brown (2.5Y 5/2) clay films on faces of peds; about 10% phosphatic nodules and ironstone concretions; common very fine continuous tubular pores; firm.

Site: F7

Geomorphic Position: gently sloping moderately high lying plain.

Slope Gradient: 3%

Aspect: SE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 120 cm

Soil Series: Millhopper

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: John Galbraith

Date described: 6/27/99

Oi—0 to 1 cm; leaf and root litter.

A--1 to 20 cm; brown (10YR 4/3) sand; about 70% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

Bw--20 to 85 cm; yellowish brown (10YR 5/4) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E1--20 to 85 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--120 to 150 cm; pale brown (10YR 7/3) sand; common fine distinct light brownish gray (10YR 6/2) redox depletions; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Eg—150 to 190 cm; grayish brown (10YR 5/2) sand; loose; single grain; common fine and medium distinct gray (10YR 6/1) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt--195 to 200 cm; yellowish brown (10YR 5/4) sandy loam; common medium distinct gray (10YR 5/1) redox depletions; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous grayish brown (2.5Y 5/2) clay films on faces of peds; few very fine continuous tubular pores; firm; about 10% phosphatic nodules and ironstone concretions; gradual smooth boundary.

Site: F8

Geomorphic Position: lower-lying nearly level plain below higher-lying ridge containing Hawthorn sediments to the east.

Slope Gradient: 1.5%

Aspect: NW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: Somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 34 cm

Soil Series: Sparr

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: John Galbraith, Tamara Wells, and Ronald J. Kuehl

Date described: 6/2/99

Date sampled: 4/12/00

A--0 to 13 cm; dark grayish brown (10YR 4/2) sand; about 40% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few very fine continuous tubular pores; clear smooth boundary.

E1--13 to 34 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; few very fine continuous tubular pores; clear smooth boundary.

E2--34 to 65 cm; light olive brown (2.5Y 5/4) sand; loose; single grain; common fine distinct grayish brown (10YR 5/2) redox depletions; few fine and very fine and few medium roots; about 2% phosphatic concretions; clear smooth boundary.

E3--65 to 152 cm; light yellowish brown (2.5Y 6/4) sand; loose; single grain; common fine distinct light gray (10YR 7/2) redox depletions; few fine and very fine and few medium roots; about 6% phosphatic and ironstone concretions; clear smooth boundary.

Btg1--152 to 170 cm; gray (10YR 5/1) loamy sand; very weak medium subangular blocky structure; many medium distinct strong brown (7.5YR 5/8) redox accumulations; common fine and very fine roots; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds; common very fine continuous tubular pores; very friable; gradual smooth boundary.

Btg2--170 to 184 cm; gray (10YR 5/1) sandy loam; weak medium subangular blocky structure; many medium distinct strong brown (7.5YR 5/8) redox accumulations; common fine and very fine roots; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds; common very fine continuous tubular pores; friable; gradual smooth boundary.

Btg2--184 to 200 cm; olive gray (5Y 5/2) sandy clay loam; weak medium subangular blocky structure; common fine distinct light gray (10YR 7/2) redox depletions; common fine and very fine roots; few thin, discontinuous gray (10YR 6/1) clay films on faces of peds; firm; gradual smooth boundary.

Notes: Heavy vegetative understory with thick poison ivy. Seasonal high water table shallower than typical for the Sparr soil series.

Site: F9

Geomorphic Position: gently sloping moderately high lying plain.

Slope Gradient: 3%

Aspect: SE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 120 cm

Soil Series: Millhopper

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: John Galbraith

Date described: 6/22/99

Oi—0 to 1 cm; leaf and root litter.

A--1 to 22 cm; brown (10YR 4/3) sand; about 70% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

Bw--22 to 94 cm; yellowish brown (10YR 5/4) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E1--94 to 120 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--120 to 145 cm; pale brown (10YR 7/3) sand; common fine distinct light brownish gray (10YR 6/2) redox depletions; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Eg—145 to 170 cm; grayish brown (10YR 5/2) sand; loose; single grain; common fine and medium distinct gray (10YR 6/1) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt--170 to 200 cm; yellowish brown (10YR 5/4) sandy loam; common medium distinct gray (10YR 5/1) redox depletions; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous grayish brown (2.5Y 5/2) clay films on faces of peds; few very fine continuous tubular pores; firm; about 10% phosphatic nodules and ironstone concretions; gradual smooth boundary.

Site: F10

Geomorphic Position: sideslope below higher-lying ridge containing Hawthorn sediments to the east.

Slope Gradient: 4%

Aspect: SE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: Somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 85 cm

Soil Series: Sparr

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: John Galbraith

Date described: 6/25/99

A--0 to 18 cm; dark grayish brown (10YR 4/2) sand; about 30% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few very fine continuous tubular pores; clear smooth boundary.

E1--18 to 46 cm; yellowish brown (10YR 5/4) sand; loose; single grain; common fine and very fine and few medium roots; few very fine continuous tubular pores; clear smooth boundary.

E2--46 to 85 cm; pale brown (10YR 6/3) sand; loose; single grain; few fine and very fine and few medium roots; clear smooth boundary.

Eg--85 to 140 cm; grayish brown (2.5Y 5/2) sand; loose; single grain; common medium distinct gray (10YR 6/1) redox depletions; few fine and very fine and few medium roots; clear smooth boundary.

Bt--140 to 155 cm; light olive brown (2.5Y 5/3) sandy clay loam; very weak medium subangular blocky structure; common medium distinct gray (10YR 5/1) redox depletions; few fine and very fine roots; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds; few fine and medium ironstone concretions; firm; gradual smooth boundary.

Btg--155 to 200 cm; light brownish gray (2.5Y 6/2) sandy clay loam; weak medium subangular blocky structure; common medium distinct gray (10YR 5/1) redox depletions; common fine and very fine roots; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds; common fine and medium ironstone concretions; firm.

Notes: There is an old "road pad" in this area containing about 18 cm of fill materials ranging from sands to clay. The 18 cm of overburden was not described in this description to give a more accurate representation of the soil under natural conditions.

Site: F11

Geomorphic Position: moderately sloping ridge on moderately high lying plain.

Slope Gradient: 6%

Aspect: SW

Parent Material: Sandy/loamy/clayey Coastal Plain Sediments

Drainage: somewhat poorly

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 42 cm

Soil Series: Micanopy

Classification: Clayey, smectitic, hyperthermic, Aquic Paleudalfs (may not have a high enough base saturation for an Alfisol).

Soil Described by: Ronald J. Kuehl

Date described: 4/17/00

Oi—0 to 1 cm; leaf and root litter.

A--1 to 5 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

E1—5 to 30 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--30 to 45 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains; clear smooth boundary.

Bt--45 to 55 cm; light olive brown (2.5Y 5/3) sandy clay loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds; many ironstone and phosphatic concretions; very firm; clear smooth boundary.

Btg1--55 to 60 cm; gray (10YR 5/1) sandy clay loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds; many ironstone and phosphatic concretions; very firm; clear smooth boundary.

Btg2--60 to 140 cm; gray (10YR 5/1) clay; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds; many ironstone and phosphatic concretions; very firm; clear smooth boundary.

Btg3--140 to 200 cm; gray (10YR 5/1) and greenish gray (5GY 5/1) clay; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds; many ironstone and phosphatic concretions; very firm.

Site: F12

Geomorphic Position: lower-lying slope below higher-lying ridge containing Hawthorn sediments to the east.

Slope Gradient: 1%

Aspect: NE
Parent Material: Sandy/loamy Coastal Plain Sediments
Drainage: Moderately well to somewhat poorly drained
Depth to Water Table at time of sampling: >200 cm
Depth to Seasonal Water Table: 95 cm
Soil Series: Sparr
Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.
Soil Described by: John Galbraith
Date described: 6/25/99

Oi—0 to 2 cm; root and leaf mat.

A--2 to 19 cm; very dark grayish brown (10YR 3/2 and dark grayish brown (10YR 4/2) sand; loose; single grain; common very fine to coarse roots; clear smooth boundary.

E1--19 to 45 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--45 to 95 cm; light olive brown (2.5Y 5/4) sand; loose; single grain; few fine and very fine and few medium roots; few stripped sand grains in the lower part; about 5% phosphatic concretions and extremely hard ironstone nodules; clear smooth boundary.

E3--95 to 135 cm; light yellowish brown (2.5Y 6/3) sand; loose; single grain; common medium distinct light brownish gray (2.5Y 6/2) redox depletions; about 6% phosphatic concretions and extremely hard ironstone nodules; clear smooth boundary.

Btg1--135 to 178 cm; grayish brown (2.5Y 5/2) sandy clay loam; weak medium subangular blocky structure; common medium distinct gray (2.5Y 5/1) redox depletions; common fine and very fine roots; few thin, discontinuous gray (10YR 5/1) clay films on faces of peds; common very fine continuous tubular pores; firm; gradual smooth boundary.

Btg2--178 to 200 cm; gray (2.5Y 5/1) sandy clay loam; weak medium subangular blocky structure; many medium distinct gray (N 5/0) redox depletions; few thin, discontinuous dark gray (2.5Y 4/1) clay films on faces of peds; firm; gradual smooth boundary.

Site: G3

Geomorphic Position: lower-lying area on gently sloping, lower lying plain, just west of SEEP.
Slope Gradient: 1%
Aspect: E
Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well – somewhat poorly drained
Depth to Water Table at time of sampling: >200 cm
Depth to Seasonal Water Table: 95 cm
Soil Series: Sparr
Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.
Soil Described by: John Galbraith and Anna Ludin
Date described: 6/25/99

Oi—0 to 1 cm; leaf and root litter.

Ap--1 to 22 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1—22 to 65 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--65 to 95 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--65 to 95 cm; very pale brown (10YR 7/3) sand; common fine distinct light gray (10YR 7/2) redox depletions; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Btg--155 to 200 cm; light gray (10YR 7/2) and strong brown (7.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; common fine distinct light brownish gray (10YR 6/2) redox accumulations; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; firm.

Site: G4

Geomorphic Position: convex to plane slope on gently to moderately sloping, lower lying plain.
Slope Gradient: 7%
Aspect: NE
Parent Material: Sandy/loamy/clayey Coastal Plain Sediments
Drainage: somewhat poorly drained
Depth to Water Table at time of sampling: >200 cm
Depth to Seasonal Water Table: 50 cm

Soil Series: Unnamed

Classification: Loamy, siliceous, hyperthermic, Oxyaquic Udorthents.

Soil Described by: John Galbraith, Tamara Wells and Tara Bardi

Date described: 6/14/99

Ap--0 to 6 cm; light yellowish brown (10YR 6/4) sandy loam; weak fine and medium subangular blocky structure; friable; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

Bw--6 to 18 cm; dark gray (10YR 4/1) sandy loam; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; abrupt smooth boundary.

Ab—18 to 25 cm; very dark gray (10YR 3/1) sandy clay loam; moderate fine and medium subangular blocky structure; firm; common fine and very fine and few medium roots; abrupt smooth boundary.

Bt--25 to 50 cm; dark yellowish brown (10YR 4/4) sandy clay loam; weak medium subangular blocky structure; common fine and very fine roots; thin discontinuous brown (10YR 4/3) clay films on faces of peds; few very fine continuous tubular pores; friable; abrupt wavy boundary.

Cg--50 to 95 cm; light yellowish brown (2.5Y 6/3) and greenish gray (5GY 6/1) sandy clay and clay; many coarse distinct light brownish gray (10YR 6/2) redox depletions; massive; very firm; abrupt wavy boundary.

2A'b--95 to 100 cm; dark grayish brown brown (2.5Y 4/2) sand; loose; single grained; abrupt smooth boundary.

2E1--100 to 140 cm; light yellowish brown (2.5Y 6/4) sand; loose; single grained; gradual smooth boundary.

2E2--140 to 210 cm; light yellowish brown (2.5Y 6/3) sand; loose; single grained; common fine distinct light gray (10YR 7/2) redox depletions; gradual smooth boundary.

2Bt--210 to 230 cm; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; common fine distinct light brownish gray (10YR 6/2) redox accumulations; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; firm.

Notes: The upper 95 cm of this soil consists of soil materials that were dumped and spread across this area from another site.

Site: G5

Geomorphic Position: gently sloping lower lying plain.

Slope Gradient: 2%

Aspect: S - SE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well - somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 95 cm

Soil Series: Unnamed

Classification: Loamy-clayey, hyperthermic, Oxyaquic Udorthents.

Soil Described by: John Galbraith and Ronald J. Kuehl

Date described: 6/27/99

C--0 to 150 cm; a mixture of light olive brown (2.5Y 5/3) sandy clay loam, gray (10YR 5/1) sandy clay, and greenish gray (5GY 5/1) clay; firm to very firm; many phosphatic nodules and ironstone concretions; abrupt wavy boundary.

Eb1--150 to 170 cm; yellowish brown (10YR 5/4) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

Eb2--170 to 200 cm; pale brown (10YR 7/3) sand; common fine distinct light brownish gray (10YR 6/2) redox depletions; loose; single grain; common fine and very fine and few medium roots.

Notes: The upper 150 cm of this soil consists of soil materials that were dumped and spread across this area from another site.

Site: G6

Geomorphic Position: gently sloping moderately high lying plain.

Slope Gradient: 3%

Aspect: SE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 120 cm
Soil Series: Millhopper
Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.
Soil Described by: John Galbraith
Date described: 6/15/99

Oi—0 to 1 cm; leaf and root litter.

A--1 to 20 cm; brown (10YR 4/3) sand; about 70% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

Bw--20 to 76 cm; yellowish brown (10YR 5/4) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E1--76 to 120 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--120 to 150 cm; pale brown (10YR 7/3) sand; common fine distinct light brownish gray (10YR 6/2) redox depletions; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Eg—150 to 180 cm; grayish brown (10YR 5/2) sand; loose; single grain; common fine and medium distinct gray (10YR 6/1) redox depletions; common fine and very fine and few medium roots; clear smooth boundary.

Bt--180 to 200 cm; yellowish brown (10YR 5/4) sandy loam; common medium distinct gray (10YR 5/1) redox depletions; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous grayish brown (2.5Y 5/2) clay films on faces of peds; few very fine continuous tubular pores; firm; about 10% phosphatic nodules and ironstone concretions; gradual smooth boundary.

Site: G7

Geomorphic Position: moderately high lying, slightly concave slope.
Slope Gradient: 2%
Aspect: NW
Parent Material: Sandy/loamy Coastal Plain Sediments
Drainage: somewhat poorly drained
Depth to Water Table at time of sampling: >200 cm
Depth to Seasonal Water Table: 80 cm

Soil Series: Sparr

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: John Galbraith and Anna Ludin

Date described: 6/25/99

Oi—0 to 1 cm; leaf and root litter.

Ap--1 to 23 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1—23 to 35 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--35 to 50 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E3--50 to 80 cm; very pale brown (10YR 7/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Eg--80 to 165 cm; light gray (10YR 7/2) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Btg--165 to 200 cm; light gray (10YR 7/2) and strong brown (7.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; common fine distinct light brownish gray (10YR 6/2) redox accumulations; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; firm.

Site: G8

Geomorphic Position: moderately sloping sideslope on high lying ridge.

Slope Gradient: 6%

Aspect: SW

Parent Material: Sandy/loamy/clayey Coastal Plain Sediments

Drainage: somewhat poorly

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 30 cm

Soil Series: Micanopy

Classification: Clayey, smectitic, hyperthermic, Aquic Paleudalfs (may not have a high enough base saturation for an Alfisol).

Soil Described by: Ronald J. Kuehl

Date described: 4/17/00

Oi—0 to 1 cm; leaf and root litter.

A--1 to 6 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt smooth boundary.

E1—6 to 25 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2--25 to 30 cm; pale brown (10YR 6/3) sand; few fine faint light brownish gray (10YR 6/2) redox depletions; loose; single grain; common fine and very fine and few medium roots; few stripped sand grains; clear smooth boundary.

Bt--30 to 52 cm; light olive brown (2.5Y 5/3) sandy clay loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds; many ironstone and phosphatic concretions; very firm; clear smooth boundary.

Btg1--52 to 95 cm; gray (10YR 5/1) sandy clay loam; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds; many ironstone and phosphatic concretions; very firm; clear smooth boundary.

Btg2--95 to 175 cm; gray (10YR 5/1) clay; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds; many ironstone and phosphatic concretions; very firm; clear smooth boundary.

Btg3--175 to 200 cm; gray (10YR 5/1) and greenish gray (5GY 5/1) clay; weak medium subangular blocky structure; common medium and coarse distinct light brownish gray (10YR 6/2) redox depletions; common fine and very fine roots; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds; many ironstone and phosphatic concretions; very firm.

Site: G9

Geomorphic Position: moderately high lying, slightly concave slope on ridgetop.

Slope Gradient: 2%

Aspect: SW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 90 cm

Soil Series: Sparr

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: John Galbraith and Anna Ludin

Date described: 6/27/99

Oi—0 to 1 cm; leaf and root litter.

Ap--1 to 19 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1—19 to 30 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--30 to 45 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E3--45 to 90 cm; very pale brown (10YR 7/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Eg--90 to 150 cm; light gray (10YR 7/2) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Btg--150 to 200 cm; light gray (10YR 7/2) and strong brown (7.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; common fine distinct light brownish gray (10YR 6/2) redox accumulations; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; firm.

Site: G10

Geomorphic Position: slightly lower lying, slightly concave slope on lower plain below ridgetop.

Slope Gradient: 3%

Aspect: SW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 95 cm

Soil Series: Sparr

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: John Galbraith

Date described: 6/28/99

Oi—0 to 1 cm; leaf and root litter.

Ap--1 to 23 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1—23 to 58 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--58 to 95 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E3--95 to 150 cm; very pale brown (10YR 7/3) sand; many medium distinct light gray (10YR 7/2) redox depletions; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Eg--150 to 160 cm; light gray (10YR 7/2) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Btg--160 to 200 cm; light gray (10YR 7/2) and strong brown (7.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; common fine distinct light brownish gray (10YR 6/2) redox accumulations; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; firm.

Site: G11

Geomorphic Position: higher lying, slightly concave slope just below high lying ridgetop.

Slope Gradient: 3%

Aspect: SW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 60 cm

Soil Series: Lochloosa

Classification: Loamy, siliceous, hyperthermic, Aquic Arenic Paleudults.

Soil Described by: John Galbraith

Date described: 6/28/99

Oi—0 to 1 cm; leaf and root litter.

Ap--1 to 14 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1—14 to 40 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--40 to 60 cm; very pale brown (10YR 7/3) sand; few fine faint light gray (10YR 7/2) redox depletions; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Eg--60 to 75 cm; light gray (10YR 7/2) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Btg1--75 to 130 cm; light gray (10YR 7/2) and strong brown (7.5YR 5/6) sandy loam; weak medium subangular blocky structure; common fine distinct light brownish gray (10YR 6/2) redox accumulations; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; firm.

Btg2--130 to 175 cm; light gray (10YR 7/2) and strong brown (7.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; common fine distinct light brownish gray (10YR 6/2) redox accumulations; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; firm.

Btg3--175 to 200 cm; light gray (10YR 6/1) clay; weak medium subangular blocky structure; common fine distinct gray (10YR 5/1) redox depletions; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; very firm.

Site: G12

Geomorphic Position: higher lying, slightly concave slope on slope just below high lying ridgetop.

Slope Gradient: 3%

Aspect: SW

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 45 cm

Soil Series: Sparr

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: John Galbraith and Ronald J. Kuehl

Date described: 6/18/99

Oi—0 to 1 cm; leaf and root litter.

Ap--1 to 14 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1—14 to 26 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--26 to 45 cm; pale brown (10YR 6/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E3--40 to 45 cm; very pale brown (10YR 7/3) sand; many medium distinct light gray (10YR 7/2) redox depletions; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Eg--45 to 110 cm; light gray (10YR 7/2) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Btg--110 to 200 cm; light gray (10YR 7/2) and strong brown (7.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; common fine distinct light brownish gray (10YR 6/2) redox accumulations; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; firm.

Site: H2

Geomorphic Position: low-lying area just west of the SEEP.

Slope Gradient: 1%

Aspect: E

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: Poorly drained

Depth to Water Table at time of sampling: 80 cm

Depth to Seasonal Water Table: 15 cm

Soil Series: Kanapaha

Classification: loamy, siliceous, hyperthermic, Grossarenic Paleaquults.

Soil Described by: John Galbraith and Anna Ludin

Date described: 6/2/99

Oi—0 to 2 cm; black (10YR 2/1) fibric material; moderate thin platy structure; common very fine to coarse roots throughout; abrupt smooth boundary.

A--2 to 15 cm; dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) sand; weak medium subangular blocky structure; common very fine to coarse roots; very friable, abrupt smooth boundary.

E1—15 to 45 cm; light olive brown (2.5Y 5/3) sand; common fine distinct grayish brown (2.5Y 5/2) and gray 10YR 5/1) redox depletions; loose; single grained; common very fine to coarse roots; common rounded iron-manganese redox accumulations; gradual smooth boundary,

E2—45 to 102 cm; light yellowish brown (2.5Y 6/3) sand; common fine distinct gray (10YR 5/1) and light gray (10YR 7/2) redox depletions; loose; single grained; common fine to medium roots; gradual smooth boundary.

E3—102 to 140 cm; very pale brown (10YR 7/3) sand; common fine distinct light gray (10YR 7/2) redox depletions; loose; single grained; common very fine roots; gradual smooth boundary.

Eg—140-170 cm; light gray (10YR 7/2) sand; common fine distinct light gray (10YR 7/1) redox depletions; loose; single grained; common very fine roots; gradual wavy boundary.

Btg--170 to 210 cm; gray (10YR 5/1) sandy loam; common fine distinct gray (10YR 6/1) redox depletions; weak coarse subangular blocky structure; friable; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds.

Site: H3

Geomorphic Position: lower lying, slightly concave slope just west of SEEP.

Slope Gradient: 3%

Aspect: NE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 55 cm

Soil Series: Sparr

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 5/2/00

Oi—0 to 1 cm; leaf and root litter.

Ap--1 to 19 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1—19 to 75 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--75 to 88 cm; very pale brown (10YR 7/3) sand; many medium distinct light gray (10YR 7/2) redox depletions; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Eg--88 to 120 cm; light gray (10YR 7/2) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Btg--120 to 200 cm; light gray (10YR 7/2) and strong brown (7.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; common fine distinct light brownish gray (10YR 6/2) redox accumulations; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; firm.

Site: H4

Geomorphic Position: lower part of nose slope, higher-lying and southwest of SEEP.

Slope Gradient: 2%

Aspect: NE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: Somewhat poorly drained

Depth to Water Table at time of sampling: 180 cm

Depth to Seasonal Water Table: 70 cm

Soil Series: Lochloosa

Classification: Loamy, siliceous, hyperthermic, Aquic Arenic Paleudults.

Soil Described by: John Galbraith

Date described: 5/31/99

Ap--0 to 21 cm; very dark grayish brown (10YR 3/2) sand; about 40% of the sand grains are uncoated, yellowish brown (10YR 5/6); loose; single grain; common very fine to coarse roots; common fine continuous tubular pores; abrupt smooth boundary.

E1--21 to 30 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine continuous tubular pores; clear smooth boundary.

E2—30 to 75 cm; light yellowish brown (2.5Y 6/4) sand; common fine distinct light brownish gray (10YR 6/2) redox depletions in the lower part; loose; single grain; common fine and very fine and few medium roots; common fine continuous tubular pores; clear smooth boundary.

Bt1--75 to 90 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous yellowish brown (10YR 5/4) clay films on faces of peds; common very fine continuous tubular pores; friable; gradual smooth boundary.

Bt2--90 to 127 cm; yellowish brown (10YR 5/4) sandy clay loam; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous brown (10YR 5/3) clay films on faces of peds; common very fine continuous tubular pores; firm; gradual smooth boundary.

Bt3--127 to 150 cm; brown (10YR 5/3) sandy clay loam; common medium distinct gray (10YR 5/1) and light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; few very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; common very fine continuous tubular pores; firm; gradual smooth boundary.

Btg1--150 to 180 cm; light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; common medium distinct light gray (10YR 7/2) redox accumulations; common fine and very fine roots; few thin, discontinuous gray (10YR 6/1) clay films on faces of peds; common very fine continuous tubular pores; firm; gradual smooth boundary.

Btg2--180 to 205 cm; grayish brown (10YR 5/2) sandy loam; weak medium subangular blocky structure; common coarse distinct gray (10YR 6/1) redox accumulations; common fine and very fine roots; few thin, discontinuous gray (10YR 5/1) clay films on faces of peds; friable.

Site: H5

Geomorphic Position: gently sloping slightly higher lying plain.

Slope Gradient: 3%

Aspect: N - NE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: moderately well - somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 70 cm

Soil Series: Unnamed

Classification: Loamy-clayey, hyperthermic, Oxyaquic Udorthents.

Soil Described by: John Galbraith and Ronald J. Kuehl

Date described: 6/26/99

C--0 to 70 cm; stratified dark grayish brown (10YR 4/2), light olive brown (2.5Y 5/3) and yellowish brown (10YR 5/4) sand, loamy sands, and sandy loams; massive; very friable; abrupt wavy boundary.

Cg--70 to 175 cm; gray (10YR 5/1) and greenish gray (5GY 5/1) clay; massive; very firm; abrupt wavy boundary.

Btgb—175 to 200 cm; light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; common medium distinct light gray (10YR 7/2) redox accumulations; common fine and very fine roots; few thin, discontinuous gray (10YR 6/1) clay films on faces of peds; firm.

Notes: The upper 175 cm of this soil consists of soil materials that were dumped and spread across this area from another site.

Site: H6

Geomorphic Position: nose slope, southwest of SEEP.

Slope Gradient: 2%

Aspect: NE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: Moderately well to somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 90 cm

Soil Series: Sparr

Classification: Loamy, siliceous, hyperthermic, Grossarenic Paleudults.

Soil Described by: John Galbraith and Tamara Wells

Date described: 6/25/99

Ap--0 to 10 cm; dark grayish brown (10YR 4/2) sand; about 60% of the sand grains are uncoated, gray (10YR 5/1); loose; single grain; common very fine to coarse roots; common fine continuous tubular pores; abrupt smooth boundary.

E1--10 to 55 cm; light olive brown (2.5Y 5/3) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

E2—55 to 90 cm; light yellowish brown (2.5Y 6/3) sand; few fine faint light brownish gray (10YR 6/2) redox depletions in the lower part; loose; single grain; clear smooth boundary.

Eg—90 to 140 cm; light gray (2.5Y 7/1) sand; few fine faint light brownish gray (10YR 6/2) redox depletions; loose; single grain; clear smooth boundary.

Btg1--140 to 180 cm; light brownish gray (10YR 6/2) sandy loam; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous gray (10YR 5/1) clay films on faces of peds; friable; gradual smooth boundary.

Btg2--180 to 200 cm; grayish brown (10YR 5/2) sandy loam; common medium distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; few thin, discontinuous gray (10YR 5/1) clay films on faces of peds; friable.

Site: H7

Geomorphic Position: higher lying, slightly concave slope just below high lying ridgetop.

Slope Gradient: 3%

Aspect: NW

Parent Material: Sandy/loamy/clayey (Hawthorn) Coastal Plain Sediments

Drainage: somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 48 cm

Soil Series: Nobleton

Classification: Clayey, smectitic, hyperthermic, Aquic Arenic Paleudults.

Soil Described by: John Galbraith and Ronald J. Kuehl

Date described: 6/28/99

Oi—0 to 1 cm; leaf and root litter.

Ap--1 to 10 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1—10 to 35 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--35 to 48 cm; very pale brown (10YR 7/3) sand; few fine faint light gray (10YR 7/2) redox depletions; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Eg--48 to 54 cm; light gray (10YR 7/2) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Btg1--54 to 126 cm; light gray (10YR 7/2) and strong brown (7.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; common fine distinct light brownish gray (10YR 6/2) redox accumulations;

common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; firm.

Btg2--126 to 200 cm; light gray (10YR 6/1) clay; weak medium subangular blocky structure; common fine distinct gray (10YR 5/1) redox depletions; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; very firm.

Site: H8

Geomorphic Position: high lying concave side slope.

Slope Gradient: 3%

Aspect: NW

Parent Material: Sandy/loamy/ clayey (Hawthorn) Coastal Plain Sediments

Drainage: poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 25 cm

Soil Series: Bivans (base saturation probably too low for an Alfisol).

Classification: clayey, smectitic, hyperthermic, Typic Albaquults.

Soil Described by: John Galbraith, Tamara Wells, and Ronald J. Kuehl

Date described: 6/25/99

Ap--0 to 5 cm; dark grayish brown (10YR 4/2) sand; about 60% of the sand grains are uncoated, gray (10YR 5/1); loose; single grain; common very fine to coarse roots; common fine continuous tubular pores; abrupt smooth boundary.

E--5 to 25 cm; olive brown (2.5Y 5/3) sand; common light brownish gray (10YR 6/2) redox depletions in the lower part; loose; single grain; common fine and very fine and few medium roots; common phosphatic and ironstone nodules; clear smooth boundary.

Eg--25 to 30 cm; light olive gray (5Y 6/2) sand; many phosphatic and ironstone nodules; loose; single grain; abrupt wavy boundary.

Btg1--30 to 50 cm; light brownish gray (10YR 6/2) sandy clay; weak medium subangular blocky structure; few fine and very fine roots; many moderately thick, discontinuous gray (10YR 5/1) clay films on faces of peds; very firm; gradual smooth boundary.

Btg2--50 to 165 cm; light olive gray (5Y 6/2) clay; common medium distinct gray (10YR 6/1) redox depletions; weak medium subangular blocky structure; many, thick, nearly continuous gray (10YR 5/1) clay films on faces of peds; very firm; common phosphatic and ironstone nodules; clear wavy boundary.

Btg3--165 to 200 cm; greenish gray (5GY 7/1) clay; common medium distinct gray (10YR 6/1) redox depletions; very weak medium subangular blocky structure; few, thin, discontinuous gray (10YR 5/1) clay films on faces of peds; very firm; common phosphatic and ironstone nodules.

Notes: Few limestone "floaters" in this area.

Site: H9

Geomorphic Position: higher lying, slightly concave slope just below high lying ridgetop.

Slope Gradient: 3%

Aspect: NW

Parent Material: Sandy/loamy/clayey (Hawthorn) Coastal Plain Sediments

Drainage: somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 40 cm

Soil Series: Nobleton

Classification: Clayey, smectitic, hyperthermic, Aquic Arenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 5/2/00

Oi—0 to 1 cm; leaf and root litter.

Ap--1 to 8 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1—8 to 30 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--30 to 49 cm; very pale brown (10YR 7/3) sand; few fine faint light gray (10YR 7/2) redox depletions; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Btg1--49 to 78 cm; light gray (10YR 7/2) and strong brown (7.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; common fine distinct light brownish gray (10YR 6/2) redox accumulations; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; firm.

Btg2--78 to 200 cm; light gray (10YR 6/1) clay; weak medium subangular blocky structure; common fine distinct gray (10YR 5/1) redox depletions; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; very firm.

Site: H10

Geomorphic Position: high lying concave side slope.

Slope Gradient: 7%

Aspect: NW

Parent Material: Sandy/loamy/ clayey (Hawthorn) Coastal Plain Sediments

Drainage: poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 35 cm

Soil Series: Blichton.

Classification: clayey, smectitic, hyperthermic, Arenic Paleaquults.

Soil Described by: John Galbraith, Tamara Wells, and Ronald J. Kuehl

Date described: 6/25/99

Ap--0 to 17 cm; dark grayish brown (10YR 4/2) sand; about 60% of the sand grains are uncoated, gray (10YR 5/1); loose; single grain; common very fine to coarse roots; common fine continuous tubular pores; abrupt smooth boundary.

Bw1--17 to 27 cm; olive brown (2.5Y 5/4) sand; loose; single grain; common very fine to coarse roots; c common fine continuous tubular pores; gradual smooth boundary.

Bw2--27 to 42 cm; olive brown (2.5Y 4/4) sand; common fine distinct light brownish gray (2.5Y 6/2) redox depletions in the lower part; loose; single grain; common very fine to coarse roots; few phosphatic nodules; common fine continuous tubular pores; gradual smooth boundary.

E--42 to 57 cm; olive brown (2.5Y 5/3) sand; common fine and medium distinct light brownish gray (10YR 6/2) redox depletions; loose; single grain; common fine and very fine and few medium roots; many phosphatic and ironstone nodules; clear smooth boundary.

Btg1--57 to 108 cm; dark gray (10YR 4/1) clay; common fine and medium distinct gray (10YR 5/1) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; many moderately thick, discontinuous very dark gray (10YR 3/1) clay films on faces of peds; many phosphatic and ironstone nodules; very firm; gradual smooth boundary.

Btg2--108 to 160 cm; dark gray (10YR 4/1) clay; common fine and medium distinct grayish brown (10YR 5/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; many moderately thick, discontinuous very dark gray (10YR 3/1) clay films on faces of peds; many phosphatic and ironstone nodules; very firm; gradual smooth boundary.

Btg3--160 to 180 cm; grayish brown (2.5Y 5/2) clay; common fine and medium distinct gray (10YR 5/1) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; many moderately thick, discontinuous dark gray (10YR 4/1) clay films on faces of peds; many phosphatic and ironstone nodules; very firm; gradual smooth boundary.

Btg4--180 to 200 cm; light olive gray (5Y 6/2) clay; common medium distinct gray (5Y 5/1) and greenish gray (5GY 6/1) redox depletions; very weak medium subangular blocky structure; many, thick, nearly continuous gray (10YR 5/1) clay films on faces of peds; very firm; many phosphatic and ironstone nodules.

Site: H11

Geomorphic Position: just below the summit which is the highest-lying part of the landscape in the area.

Slope Gradient: 3%

Aspect: SW

Parent Material: Sandy/clayey (Hawthorn) Coastal Plain Sediments

Drainage: Poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 15 cm

Soil Series: Bivans (lacks albic horizon and base saturation is probably too low for an Alfisol).

Classification: Fine, smectitic, hyperthermic, Typic Paleaquults.

Soil Described by: Ronald J. Kuehl

Date described: 5/2/00

Ap--0 to 9 cm; black (10YR 2/1) and grayish brown (10YR 5/2) loamy sand with common mixings of sandy loam and sandy clay loam; weak medium subangular blocky structure; common very fine to coarse roots; friable, clear smooth boundary.

Bw—9 to 20 cm; grayish brown (10YR 5/2) loamy sand, with few mixings of sandy loam and sandy clay loam; weak medium subangular blocky structure; friable; gradual wavy boundary.

Btg1--20 to 70 cm; dark gray (10YR 4/1) and dark gray (10YR 3/1) sandy clay; common fine distinct gray (10YR 5/1) redox depletions; weak medium subangular blocky structure; few thin, discontinuous very dark gray (10YR 3/1) clay films on faces of peds; about 10 to 15% phosphatic concretions; firm; gradual smooth boundary.

Btg2--70 to 105 cm; dark gray (5Y 4/1) clay; common fine distinct dark grayish brown (10YR 4/2) and gray (10YR 5/1) redox depletions; weak medium subangular blocky structure; few thin, discontinuous very dark gray (10YR 3/1) clay films on faces of peds; about 10 % phosphatic concretions; very firm; gradual smooth boundary.

Btg3--105 to 200 cm; olive gray (5Y 5/2) clay; common fine distinct dark gray (10YR 4/1) redox depletions; very weak medium subangular blocky structure; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds; about 10 % phosphatic concretions; very firm.

Site: H12

Geomorphic Position: just below the summit which is the highest-lying part of the landscape in the area.

Slope Gradient: 3%

Aspect: SW

Parent Material: Sandy/clayey (Hawthorn) Coastal Plain Sediments

Drainage: Poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 3 cm

Soil Series: Bivans (lacks albic horizon and base saturation is probably too low for an Alfisol).

Classification: Fine, smectitic, hyperthermic, Typic Paleaquults.

Soil Described by: John Galbraith and Ronald J. Kuehl

Date described: 5/24/99

Date sampled: 4/14/00

Ap--0 to 6 cm; black (10YR 2/1) and grayish brown (10YR 5/2) loamy sand with common mixings of sandy loam and sandy clay loam; weak medium subangular blocky structure; common very fine to coarse roots; friable, clear smooth boundary.

Btg1--6 to 90 cm; dark gray (10YR 4/1) and dark gray (10YR 3/1) sandy clay; common fine distinct gray (10YR 5/1) redox depletions; weak medium subangular blocky structure; few thin, discontinuous very dark gray (10YR 3/1) clay films on faces of peds; about 10 to 15% phosphatic concretions; firm; gradual smooth boundary.

Btg2--90 to 115 cm; dark gray (5Y 4/1) clay; common fine distinct dark grayish brown (10YR 4/2) and gray (10YR 5/1) redox depletions; weak medium subangular blocky structure; few thin, discontinuous very dark gray (10YR 3/1) clay films on faces of peds; about 10 % phosphatic concretions; very firm; gradual smooth boundary.

Btg3--115 to 200 cm; olive gray (5Y 5/2) clay; common fine distinct dark gray (10YR 4/1) redox depletions; very weak medium subangular blocky structure; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds; about 10 % phosphatic concretions; very firm.

Notes: A small, deep sinkhole is located about 25 m northeast of this site.

Site: I1

Geomorphic Position: within the seep, along the northern edge of SEEP.

Slope Gradient: 0%

Aspect:

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: very poorly drained

Depth to Water Table at time of sampling: 40 cm

Depth to Seasonal Water Table: about 45 cm above the surface.

Soil Series: Bibb (difficult to classify due to cutting and filling in the SEEP).

Classification: Loamy, siliceous, hyperthermic, Typic Fluvaquents.

Soil Described by: Mark Lander and Ronald J. Kuehl

Date described: 5/4/00

Oa--0 to 3 cm; black (10YR 2/1) sapric material (muck); about 20% fibers, less than 5% rubbed; many very fine to coarse roots; abrupt wavy boundary.

Cg1--3 to 18 cm; dark gray (10YR 4/1) sand, mixed with olive brown (2.5Y 4/4) sandy loam in the lower part; common fine distinct light brownish gray (2.5Y 6/2) redox depletions in the lower part; loose; single grain; few fine and very fine and medium roots; abrupt wavy boundary.

Cg2—18 to 34 cm; gray (10YR 5/1) and greenish gray (5GY 5/1) clay; massive; very firm; abrupt wavy boundary.

Btgb1--54 to 95 cm; light brownish gray (10YR 6/2) and strong brown (7.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; firm; gradual smooth boundary.

Btgb2--95 to 200 cm; light gray (10YR 7/2) sandy clay loam; weak medium subangular blocky structure; common fine distinct pale brown (10YR 8/3) redox accumulations; common fine and very fine roots; few thin, discontinuous gray (10YR 6/1) clay films on faces of peds; firm.

Site: I5

Geomorphic Position: lower part of nose slope, higher-lying and south of SEEP.

Slope Gradient: 3%

Aspect: NE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: Somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 45 cm

Soil Series: Lochloosa Variant (depth to the Bt horizon is thinner than typical for the Lochloosa series).

Classification: Loamy, siliceous, hyperthermic, Aquic Paleudults.

Soil Described by: John Galbraith

Date described: 5/30/99

Ap--0 to 18 cm; stratified dark grayish brown (10YR 4/2), brown (10YR 5/3) and yellowish brown (10YR 5/6) sand (cut and fill materials); loose; single grain; common very fine to coarse roots; common fine continuous tubular pores; abrupt smooth boundary.

E1--18 to 40 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine continuous tubular pores; clear smooth boundary.

E2—40 to 47 cm; light yellowish brown (2.5Y 6/4) sand; common fine distinct light brownish gray (10YR 6/2) redox depletions in the lower part; loose; single grain; common fine and very fine and few medium roots; common fine continuous tubular pores; clear smooth boundary.

Bt1--47 to 78 cm; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous yellowish brown (10YR 5/4) clay films on faces of peds; common very fine continuous tubular pores; friable; gradual smooth boundary.

Bt2--78 to 110 cm; yellowish brown (10YR 5/4) sandy clay loam; weak medium subangular blocky structure; few fine and very fine roots; few thin, discontinuous brown (10YR 5/3) clay films on faces of peds; common very fine continuous tubular pores; firm; gradual smooth boundary.

Btg--110 to 200 cm; light brownish gray (10YR 6/2) sandy clay loam; thin layers of gray (10YR 5/1) sandy clay; weak medium subangular blocky structure; common medium distinct light gray (10YR 7/2)

redox accumulations; common fine and very fine roots; few thin, discontinuous gray (10YR 6/1) clay films on faces of peds; common very fine continuous tubular pores; firm.

Site: I12

Geomorphic Position: near the summit which is the highest-lying part of the landscape in the area.

Slope Gradient: 3%

Aspect: SE

Parent Material: Sandy/clayey (Hawthorn) Coastal Plain Sediments

Drainage: Poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 6 cm

Soil Series: Bivans (lacks albic horizon and base saturation is probably too low for an Alfisol).

Classification: Fine, smectitic, hyperthermic, Typic Paleaquults.

Soil Described by: Ronald J. Kuehl

Date described: 5/1/00

Ap--0 to 6 cm; black (10YR 2/1) and grayish brown (10YR 5/2) loamy sand with common mixings of sandy loam and sandy clay loam; weak medium subangular blocky structure; common very fine to coarse roots; friable, clear wavy boundary.

Bw--6 to 10 cm; dark gray (10YR 4/1) loamy sand and sandy loam; weak fine subangular blocky structure; friable; abrupt wavy boundary.

Btg1--10 to 65 cm; dark gray (10YR 4/1) and dark gray (10YR 3/1) sandy clay; common fine distinct gray (10YR 5/1) redox depletions; weak medium subangular blocky structure; few thin, discontinuous very dark gray (10YR 3/1) clay films on faces of peds; about 10 to 20% phosphatic concretions; firm; gradual smooth boundary.

Btg2--65 to 100 cm; dark gray (5Y 4/1) clay; common fine distinct dark grayish brown (10YR 4/2) and gray (10YR 5/1) redox depletions; weak medium subangular blocky structure; few thin, discontinuous very dark gray (10YR 3/1) clay films on faces of peds; about 10 to 15% phosphatic concretions; very firm; gradual smooth boundary.

Btg3--100 to 200 cm; olive gray (5Y 5/2) clay; common fine distinct dark gray (10YR 4/1) redox depletions; very weak medium subangular blocky structure; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds; about 10 % phosphatic concretions; very firm.

Site: J1

Geomorphic Position: lower part of nose slope, slightly higher-lying along northeast edge of SEEP.

Slope Gradient: 4%

Aspect: SE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: Somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 46 cm

Soil Series: Lochloosa Variant (depth to the Bt horizon is less than typical for the Lochloosa series).

Classification: Loamy, siliceous, hyperthermic, Aquic Arenic Paleudults.

Soil Described by: Mark Lander and Ronald J. Kuehl

Date described: 5/4/00

Ap--0 to 6 cm; dark grayish brown (10YR 4/2) sand; about 70% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt wavy boundary.

E1--6 to 32 cm; pale brown (10YR 6/3) sand; loose; single grain; common very fine to coarse roots; abrupt wavy boundary.

E2--32 to 48 cm; brown (10YR 5/3) sand, mixed with olive brown (2.5Y 4/4) sandy loam in the lower part; common fine distinct light brownish gray (2.5Y 6/2) redox depletions in the lower part; loose; single grain; few fine and very fine and medium roots; clear wavy boundary.

Bt1--48 to 95 cm; strong brown (7.5YR 5/6) sandy loam; common fine distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous yellowish brown (10YR 5/4) clay films on faces of peds; common very fine continuous tubular pores; friable; gradual smooth boundary.

Bt2--115 to 160 cm; strong brown (7.5YR 5/6) sandy loam; many coarse distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous yellowish brown (10YR 5/4) clay films on faces of peds; common very fine continuous tubular pores; friable; gradual smooth boundary.

Btg--160 to 200 cm; light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; common fine distinct pale brown (10YR 7/3) redox accumulations; common fine and very fine roots; few thin, discontinuous gray (10YR 5/1) clay films on faces of peds; common very fine continuous tubular pores; firm; gradual smooth boundary.

Btg2--135 to 200 cm; light gray (10YR 7/2) sandy clay loam; weak medium subangular blocky structure; common fine distinct pale brown (10YR 8/3) redox accumulations; common fine and very fine roots; few thin, discontinuous gray (10YR 6/1) clay films on faces of peds; firm; gradual smooth boundary.

Site: J3

Geomorphic Position: lower part of nose slope, slightly higher-lying along east edge of SEEP.

Slope Gradient: 3%

Aspect: W

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: Somewhat poorly to poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 38 cm

Soil Series: Lochloosa Variant (Bt horizon is too shallow for the Lochloosa series).

Classification: Loamy, siliceous, hyperthermic, Aquic Paleudults.

Soil Described by: Mark Lander and Ronald J. Kuehl

Date described: 5/4/00

Ap--0 to 6 cm; dark grayish brown (10YR 4/2) sand, mixed with olive brown (2.5Y 4/4) sandy loam; about 70% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt wavy boundary.

E--6 to 16 cm; brown (10YR 5/3) sand, mixed with olive brown (2.5Y 4/4) sandy loam; common fine distinct light brownish gray (2.5Y 6/2) redox depletions in the lower part; loose; single grain; few fine and very fine and medium roots; clear wavy boundary.

Bt1--16 to 57 cm; strong brown (7.5YR 5/6) sandy clay loam; common fine distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous yellowish brown (10YR 5/4) clay films on faces of peds; common very fine continuous tubular pores; friable; gradual smooth boundary.

Bt2--57 to 105 cm; strong brown (7.5YR 5/6) sandy loam; many coarse distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous yellowish brown (10YR 5/4) clay films on faces of peds; common very fine continuous tubular pores; friable; gradual smooth boundary.

Btg--115 to 200 cm; light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; common fine distinct pale brown (10YR 7/3) redox accumulations; common fine and very fine roots; few thin, discontinuous gray (10YR 5/1) clay films on faces of peds; common very fine continuous tubular pores; firm; gradual smooth boundary.

Site: J4

Geomorphic Position: lower part of nose slope, slightly higher-lying along east edge of SEEP.

Slope Gradient: 3%

Aspect: W

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: Somewhat poorly to poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 24 cm

Soil Series: Lochloosa Variant (depth to the Bt horizon is too shallow for the Lochloosa series).

Classification: Loamy, siliceous, hyperthermic, Aquic Paleudults.

Soil Described by: Mark Lander and Ronald J. Kuehl

Date described: 5/4/00

Ap--0 to 8 cm; dark grayish brown (10YR 4/2) sand, mixed with olive brown (2.5Y 4/4) sandy loam; about 70% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; abrupt wavy boundary.

E--8 to 20 cm; brown (10YR 5/3) sand, mixed with olive brown (2.5Y 4/4) sandy loam; common fine distinct light brownish gray (2.5Y 6/2) redox depletions in the lower part; loose; single grain; few fine and very fine and medium roots; clear wavy boundary.

Bt1--20 to 78 cm; strong brown (7.5YR 5/6) sandy clay loam; common fine distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous yellowish brown (10YR 5/4) clay films on faces of peds; common very fine continuous tubular pores; friable; gradual smooth boundary.

Bt2--78 to 115 cm; strong brown (7.5YR 5/6) sandy loam; many coarse distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous yellowish brown (10YR 5/4) clay films on faces of peds; common very fine continuous tubular pores; friable; gradual smooth boundary.

Btg1--115 to 135 cm; light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; common fine distinct pale brown (10YR 7/3) redox accumulations; common fine and very fine roots; few thin, discontinuous gray (10YR 5/1) clay films on faces of peds; common very fine continuous tubular pores; firm; gradual smooth boundary.

Btg2--135 to 200 cm; light gray (10YR 7/2) sandy clay loam; weak medium subangular blocky structure; common fine distinct pale brown (10YR 8/3) redox accumulations; common fine and very fine roots; few thin, discontinuous gray (10YR 6/1) clay films on faces of peds; firm; gradual smooth boundary.

Site: J5

Geomorphic Position: lower part of nose slope, slightly higher-lying and just south of SEEP.

Slope Gradient: 3%

Aspect: N

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: Somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 28 cm

Soil Series: Lochloosa Variant (depth to the Bt horizon is too shallow for the Lochloosa series).

Classification: Loamy, siliceous, hyperthermic, Aquic Paleudults.

Soil Described by: John Galbraith, Tamara Wells, and Ronald J. Kuehl

Date described: 6/28/99

Date sampled: 4/12/00

Ap--0 to 12 cm; dark grayish brown (10YR 4/2) sand; about 40% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; common fine continuous tubular pores; abrupt smooth boundary.

E--12 to 28 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine continuous tubular pores; clear smooth boundary.

Bt1--28 to 90 cm; strong brown (7.5YR 5/6) sandy loam; common fine distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous yellowish brown (10YR 5/4) clay films on faces of peds; common very fine continuous tubular pores; friable; gradual smooth boundary.

Bt2--90 to 120 cm; strong brown (7.5YR 5/6) sandy loam; many coarse distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; common fine and very fine roots; few thin, discontinuous yellowish brown (10YR 5/4) clay films on faces of peds; common very fine continuous tubular pores; friable; gradual smooth boundary.

Btg1--120 to 160 cm; light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; common fine distinct pale brown (10YR 7/3) redox accumulations; common fine and very fine roots; few thin, discontinuous gray (10YR 5/1) clay films on faces of peds; common very fine continuous tubular pores; firm; gradual smooth boundary.

Btg2--160 to 190 cm; light gray (10YR 7/2) sandy clay loam; weak medium subangular blocky structure; common fine distinct pale brown (10YR 8/3) redox accumulations; common fine and very fine roots; few thin, discontinuous gray (10YR 6/1) clay films on faces of peds; firm; gradual smooth boundary.

Btg3--190 to 200 cm; pale yellow (2.5Y 7/3) and light gray (10YR 7/2) sandy clay loam; very weak medium subangular blocky structure; few very thin, discontinuous gray (10YR 6/1) clay films on faces of peds; firm.

Site: J12

Geomorphic Position: slightly lower-lying area below high-lying summit.

Slope Gradient: 3%

Aspect: SE

Parent Material: Sandy/loamy and clayey (Hawthorn) Coastal Plain Sediments

Drainage: Poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 12 cm

Soil Series: Bivans (base saturation is probably too low for an Alfisol).

Classification: Fine, smectitic, hyperthermic, Typic Albaquults.

Soil Described by: John Galbraith, Tamara Wells, and Ronald J. Kuehl

Date described: 5/30/99

Date sampled: 4/14/00

A--0 to 12 cm; dark gray (10YR 4/1) and light gray (10YR 6/1)sand; about 40% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; clear smooth boundary.

Eg1--12 to 27 cm; grayish brown (2.5Y 5/2) sand; loose; single grain; few fine distinct dark gray (10YR 4/1) redox depletions; about 2 % phosphatic concretions; clear smooth boundary.

Eg2--27 to 65 cm; light brownish gray (2.5Y 6/2) sand; loose; single grain; few fine distinct dark gray (10YR 4/1) redox depletions; about 4 % phosphatic concretions; clear smooth boundary.

Btg1--65 to 95 cm; dark gray (10YR 4/1) sandy clay loam; common fine distinct gray (10YR 5/1) redox depletions; weak medium subangular blocky structure; few thin, discontinuous very dark gray (10YR 3/1) clay films on faces of peds; about 8% phosphatic concretions; firm; gradual smooth boundary.

Btg2--95 to 150 cm; dark greenish gray (10Y 4/1) and dark gray (10YR 4/1) clay; common fine distinct dark grayish brown (10YR 4/2) redox depletions; weak medium subangular blocky structure; few thin, discontinuous very dark gray (10YR 3/1) clay films on faces of peds; about 8% phosphatic concretions; very firm; gradual smooth boundary.

Btg3--150 to 208 cm; gray (10YR 6/1) clay; common fine distinct dark gray (10YR 4/1) redox depletions; weak medium subangular blocky structure; few thin, discontinuous dark gray (10YR 4/1) clay films on faces of peds; about 10% phosphatic concretions; very firm; gradual smooth boundary.

Cg--208 to 220 cm; light olive gray (5Y 6/2) clay; common fine distinct greenish gray (5Y 6/2) redox depletions; massive; about 10% phosphatic concretions; very firm.

Site: K12

Geomorphic Position: higher lying, slightly concave slope below high lying ridgetop.

Slope Gradient: 3%

Aspect: SE

Parent Material: Sandy/loamy Coastal Plain Sediments

Drainage: somewhat poorly drained

Depth to Water Table at time of sampling: >200 cm

Depth to Seasonal Water Table: 55 cm

Soil Series: Lochloosa

Classification: Loamy, siliceous, hyperthermic, Aquic Arenic Paleudults.

Soil Described by: Ronald J. Kuehl

Date described: 5/4/00

Oi—0 to 1 cm; leaf and root litter.

Ap--1 to 16 cm; dark grayish brown (10YR 4/2) sand; about 50% of the sand grains are uncoated, (10YR 7/1) light gray; loose; single grain; common very fine to coarse roots; few fine continuous tubular pores; abrupt smooth boundary.

E1—16 to 38 cm; brown (10YR 5/3) sand; loose; single grain; common fine and very fine and few medium roots; common fine and very fine continuous tubular pores; clear smooth boundary.

E2--38 to 55 cm; very pale brown (10YR 7/3) sand; few fine faint light gray (10YR 7/2) redox depletions; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Eg--55 to 66 cm; light gray (10YR 7/2) sand; loose; single grain; common fine and very fine and few medium roots; clear smooth boundary.

Btg1--66 to 102 cm; light gray (10YR 7/2) and strong brown (7.5YR 5/6) sandy loam; weak medium subangular blocky structure; common fine distinct light brownish gray (10YR 6/2) redox accumulations; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; firm.

Btg2--102 to 150 cm; light gray (10YR 7/2) and strong brown (7.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; common fine distinct light brownish gray (10YR 6/2) redox accumulations; common fine and very fine roots; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; firm.

Btg3--150 to 200 cm; light gray (10YR 6/1) clay; weak medium subangular blocky structure; common fine distinct gray (10YR 5/1) redox depletions; few thin, discontinuous grayish brown (10YR 5/2) clay films on faces of peds; very firm.

Site: L12

Geomorphic Position: sinkhole pond

Slope Gradient: 0% (depressional)

Aspect: none

Parent Material: organic sediments overlying sandy Coastal Plain Sediments

Drainage: very poorly drained

Depth to Water Table at time of sampling: 12 cm

Depth to Seasonal Water Table: about 20 cm above the surface.

Soil Series: Bibb.

Classification: sandy, siliceous, hyperthermic, Typic Fluvaquents.

Soil Described by: John Galbraith

Date described: 6/14/99

Oa--0 to 7 cm; black (10YR 2/1) sapric material (muck); moderate thin platy structure; very friable; clear wavy boundary.

A1--7 to 10 cm; dark gray (10YR 4/1) and black (10YR 2/1) mucky sand; very weak fine platy structure; very friable; clear wavy boundary.

A2--10 to 16 cm; black (10YR 2/1) mucky fine sand; weak medium subangular blocky structure; very friable; abrupt wavy boundary.

Cg--16 to 90 cm; gray (2.5Y 6/1) loamy sand and sand stratified with black (10YR 2/1) muck; massive; very friable; few fine distinct light gray (2.5Y 7/2) redox depletions; abrupt wavy boundary.

Ab--90 to 95 cm; very dark gray (10YR 3/1) loamy sand; massive; very friable; abrupt wavy boundary.

C'g--95 to 200 cm; dark gray (10YR 4/1) loamy sand; massive; very friable.

Appendix B

General information on each soil series mapped in the NATL during the 1985 Alachua County Soil Survey and the Detailed Inventory of Soil Resources during 1999-2000.

APOPKA SERIES

Taxonomic Class: Loamy, siliceous, hyperthermic Grossarenic Paleudults

General Information: The Apopka series consists of very deep, well drained, moderately permeable soils that formed in thick beds of sandy and loamy marine or eolian deposits. Slopes range from 0 to 25 percent.

Type Location: Lake County, Florida; 1/2 mile northeast of Indianhouse Lake, 1/4 mile south of Florida Highway 19, 100 feet east of graded road in NW1/4NE1/4, sec. 28, T. 21 S., R. 25 E.

Range in Characteristics: Solum thickness exceeds 60 inches. The soil ranges from very strongly acid to moderately acid except where limed. The Bt horizon has hue of 2.5YR through 10YR, value of 4 to 6, and chroma of 4 to 8. Texture is loamy fine sand, sandy loam, or sandy clayloam but ranges to sandy clay in the lower part of the some pedons.

Competing Series: These are the Arredondo, Millhopper, and Sparr series. Arredondo soils have 5 to 15 percent silt plus clay in the E horizon. Millhopper soils have a seasonally high water table at a depth of 40 to 60 inches, and Sparr soils have a seasonally high water table at a depth of 20 to 40 inches for periods of 1 to 4 months during the year.

Geographic Setting: Apopka soils occur mostly on nearly level to moderately steep slopes in the Lower Coastal Plain. Gradients are 0 to 12 percent, but range to about 25 percent in highly dissected areas. The soil formed in thick beds of sandy and loamy marine or eolian deposits. The mean annual precipitation is about 50 to 60 inches and mean annual air temperature is about 70 to 74 degrees F.

Drainage and Permeability: Well drained; slow runoff; rapid permeability in the A horizon and moderate permeability in the Bt horizon.

Use and Vegetation: Large areas are cleared and used for citrus and tame pasture. Natural vegetation consists of bluejack, turkey, post and live oaks and longleaf pine and an understory of bluestem, dogfennel, paspalum, pineland threeawn, and other native grasses and weeds.

Distribution and Extent: Peninsular Florida. The series is of moderate extent.

ARREDONDO SERIES

Taxonomic Class: Loamy, siliceous, hyperthermic Grossarenic Paleudults



General Information: The Arredondo series consists of well drained soils that are rapidly permeable in the thick sandy surface and subsurface layers and moderate to very slow permeable in the subsoil. They formed from sandy and loamy marine sediments in central Florida on slopes ranging from 0 to 12 percent.

Type Location: Marion County, Florida; 1/2 mile west of junction of Interstate 75 and U. S. 27; 3/4 mile north on paved road; 1/4 mile east on graded road and 1/2 mile north in a pasture about 150 feet west Interstate 75. NE1/4SE1/4, sec. 34, T. 14 S., R. 21 E.

Range in Characteristics: Solum thickness exceeds 80 inches. Soil reaction is very strongly acid to medium acid throughout. Few small weathered nodules and fragments of limestone 2 to 20 mm in size and less than 5 percent of volume are in many pedons. The Bt horizon has textures ranging from sandy loam to sandy clay.

Competing Series: These are the Apopka, Millhopper, and Sparr series. Apopka soils have less than 5 percent silt plus clay between depths of 10 to 40 inches below the soil surface. Millhopper soils are moderately well drained, and Sparr soils are somewhat poorly drained.

Geographic Setting: Arredondo soils are on nearly level to strongly sloping uplands in the Lower Coastal Plain. They formed in sandy and loamy marine deposits on the Ocala uplift. Near the type location, precipitation averages about 59 inches annually and mean annual temperature is about 72 degrees F.

Drainage and Permeability: Well drained, slow runoff. Permeability is rapid in the sandy layer and moderate to very slow in the subsoil.

Use and Vegetation: Large areas are cleared. Citrus, peanuts, watermelons, corn, and improved pasture are the principal crops. Natural vegetation consists of slash, longleaf, and loblolly pines, magnolia; red, live, laurel and water oaks; hickory, sweetgum and dogwood.

Distribution and Extent: Along the Central Florida Ridge from Pasco County through Alachua County. The series is of moderate extent.

BLICHTON SERIES

Taxonomic Class: Loamy, siliceous, hyperthermic Arenic Plinthic Paleaquults



General Information: The Blichton series consists of poorly drained upland soils with moderately slow or slow permeability. The water table is perched in and above the loamy subsoil during wet periods. They formed in sandy sediments overlying thick beds of loamy and clayey marine sediments (Hawthorn Group) on nearly level to sloping areas in central Florida. Slopes range from 0 to 8 percent.

Type Location: Marion County, Florida; about 2 1/2 miles southwest of Ocala; 0.9 mile west, northwest of intersection of Buffington Road and SR 475. SW1/4NE1/4, sec. 38, R. 22 E., T. 15 S. Cataline De Jesus Hijuelos Grant.

Range in Characteristics: Solum is more than 60 inches thick. Pebbles of ironstone range from about 1 to 5 percent by volume in the subsurface and upper subsoil. The upper part of the Bt horizon ranges from sandy loam to sandy clay loam. The lower part includes sandy clay. Clay content in the upper 20 inches is centered on 25 to 35 percent, but ranges from 18 to 35 percent. Silt content is less than 20 percent. Content of plinthite is 5 to 25 percent at depths of 30 to 48 inches below the soil surface.

Competing Series: These are the Lochloosa, Kanapaha and Micanopy soils. Lochloosa contain less plinthite and are somewhat poorly drained. Kanapaha have sandy surface and subsurface layers less than 20 inches thick. Micanopy soils have sandy surface and subsurface layers more than 40 inches thick, and are somewhat poorly drained.

Geographic Setting: Blichton soils are on nearly level to sloping uplands of the Coastal Plain. Gradients are 0 to 8 percent. These soils formed in thick beds of loamy marine sediments. Near the type location, average annual precipitation is about 55 inches and mean annual temperature is about 72 degrees F.

Drainage and Permeability: Poorly drained. Slow runoff. Moderately slow to slow permeability. In undrained areas, the nearly level soils have a water table at depths of less than 10 inches for cumulative periods of 1 to 4 months during most years. In the drier season it recedes to depths of more than 40 inches. Soils that have more than 2 percent slopes are saturated during wet seasons due primarily to seepage.

Use and Vegetation: Most of this soil is in forest. Small areas are used for growing watermelons, peanuts, corn, tomatoes, oranges, and grapefruit. Most of the cleared areas are used for improved pasture. Native vegetation consists of sweetgum, magnolia, hickory, live oak, laurel oak, red maple, dogwood, pineland threeawn, slash, longleaf pine.

BIBB SERIES

Taxonomic Class: Coarse-loamy, siliceous, active, acid, thermic Typic Fluvaquents

General Information: The Bibb series consists of very deep, poorly drained, moderately permeable soils that formed in stratified loamy and sandy alluvium. These soils are on flood plains of streams in the Coastal Plain. They are commonly flooded and water runs off the surface very slowly. Slopes range from 0 to 2 percent.

Type Location: Autauga County, Alabama; 300 yards north of where Martin Boulevard crosses Pine Creek in Prattville, in the SE1/4, SW1/4, SW1/4 of Sec. 26, T. 13 N., R. 16 E.

Range in Characteristics: Reaction ranges from extremely acid to strongly acid throughout. Content of rounded gravel typically ranges from 0 to 10 percent throughout, but may range to 35 percent in thin strata below a depth of 40 inches. Buried soil horizons, present in many pedons, have the same range in color and texture as the Ag horizon. The A or Ap horizon has hue of 7.5YR or 10YR, value of 2 to 5, and chroma of 1 to 3. It is sand, loamy sand, loamy fine sand, fine sandy loam, sandy loam, loam, or silt loam. The Ag horizon, present in most pedons, has hue of 10YR or 2.5Y, value of 3 to 7, and chroma of 2 or less; or it is neutral with value of 3 to 7. Combined thickness of the A and Ag horizons with value of 3 or less is less than 6 inches. Mottles in shades of brown and yellow range from none to common. Texture is sand, loamy sand, loamy fine sand, fine sandy loam, sandy loam, loam, or silt loam. The upper part of the Cg horizon is sandy loam, fine sandy loam, loam, or silt loam; or is stratified with these textures. Thin strata of finer or coarser textured material are in most pedons. Texture of the lower part of the Cg horizon includes sand, loamy sand, and loamy fine sand in addition to those of the upper part.

Competing Series: Competing series in closely similar families are the Kinston and Osier series. Kinston soils are fine-loamy. Osier soils are sandy throughout.

Geographic Setting: Bibb soils are on flood plains of streams in the Coastal Plain. Slopes are generally less than 2 percent. The soil formed in loamy and sandy alluvium. They flood frequently unless protected, and are subject to scouring and uneven deposition of overwash.

Drainage and Permeability: Very poorly to poorly drained; very slow runoff; moderate permeability. The water table is within 8 inches of the surface from 6 to 11 months each year.

Use and Vegetation: Dominantly native woodland of sweetgum, loblolly pine, red maple, water oak, willow oak, green ash, baldcypress, swamp tupelo, and black willow. A few areas have been cleared, drained, and used for pasture.

BIVANS SERIES

Taxonomic Class: Fine, smectitic, hyperthermic Typic Albaqualfs

General Information: The Bivans series consists of very deep, poorly drained, slowly or very slowly permeable soils on the rolling uplands of central Florida. They formed in thick beds of clayey and sandy marine sediments in central Florida. Near the type location, the mean annual temperature is about 72 degrees F., and the mean annual precipitation is about 55 inches. Slopes range from 0 to 12 percent.

Type Location: Alachua County, Florida. Approximately 0.25 mile east of U.S. Hwy 441 and 0.9 mile northwest of the Alachua-Marion County line. SE1/4, NW1/4, sec. 31, T. 11 S., R. 21 E.

Range in Characteristics: Solum thickness is more than 50 inches. Soil reaction ranges from extremely acid to moderately acid in all horizons except where the surface has been limed. Nodules and fragments of ironstone and limestone, less than 5 percent by volume, are throughout the solum. The A or Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2; or is neutral with value of 2 to 4. Texture is sand, fine sand, loamy sand, or loamy fine sand. The E horizon has hue of 10YR, value of 5 to 7, and chroma of 2 or less; or is neutral with value of 5 to 7. In some pedons, the E horizon has been mixed with the Ap horizon. Texture is sand, fine sand, loamy sand, or loamy fine sand. The Btg horizon has hue of 10YR, value of 4 to 7, and chroma of 2 or less; or is neutral with value of 4 to 7. Redoximorphic features in shades of gray, yellow, brown, or red range from few to common. Texture is sandy clay loam, sandy clay, or clay. Weighted average clay content of the upper 20 inches of the Btg horizon ranges from 35 to 59 percent. The Cg horizon has hue of 5Y to 10YR, value of 5 to 7, and chroma of 2 or less; or is neutral with value of 5 to 7. Redoximorphic features in shades of yellow, brown, red, or gray range from none to common. Texture is sandy clay loam, sandy clay, or clay.

Competing Series: These include the Blichton and Kanapaha soil series. Blichton and Kanapaha soils have thicker layers of sands overlying the clays, and have a lower base saturation.

Geographic Setting: Bivans soils are on areas of the rolling uplands of central Florida. They formed in thick beds of clayey and sandy marine sediments. Slopes range from 0 to 12 percent. The average annual temperature ranges from 70 to 74 degrees F., and the average annual precipitation is about 50 to 60 inches.

Drainage and Permeability: Poorly drained; rapid permeability in the A and E horizons and slow or very slow permeability in the Btg horizons.

Use and Vegetation: Most cleared areas of Bivans soil are used for pasture. The natural vegetation consists of loblolly, longleaf, and slash pine, sweetgum, maple, hickory, magnolia, water oak, live oak, laurel oak, and holly.

BONNEAU SERIES

Taxonomic Class: Loamy, siliceous, semiactive, thermic Arenic Paleudults

General Information: The Bonneau series consists of very deep, well and somewhat excessively drained, moderately permeable soils that formed in loamy marine sediments. Slopes range from 0 to 12 percent.

Type Location: Berkeley County, South Carolina; 3.5 miles north of Bonneau on Secondary State Highway 447 and 100 feet south of highway.

Range in Characteristics: Solum thickness ranges from 60 to more than 80 inches. The soil is extremely acid to slightly acid in the A and E horizons and extremely acid to moderately acid in the Bt horizon. Content of silt in the particle-size control section is less than 30 percent. Some pedons have a few plinthite nodules in the lower part of the Bt horizon. The Bt horizon has hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 3 to 8. Mottles with chroma of 2 or less are within a depth of 60 inches.

Competing Series: These are the Blanton, Fuquay, Lucy, Norfolk, Ocilla, and Troup soils. Blanton and Troup soils have a sandy epipedon more than 40 inches thick. Fuquay soils contain more than 5 percent plinthite within 60 inches. Lucy soils have a Bt horizon that is redder. Norfolk soils do not have a sandy epipedon as thick as 20 inches. Ocilla soils have mottles of chroma 2 or less within 30 inches of the surface or in the upper 5 inches of the Bt horizon.

Geographic Setting: Bonneau soils are on nearly level to strongly sloping low ridges of the Coastal Plain. Slope gradients range from 0 to 12 percent. The soils formed in marine and fluvial sediments. The mean annual temperature ranges from 62 to 66 degrees F., mean annual precipitation ranges from 42 to 50 inches, and frost-free season ranges from 220 to 250 days.

Drainage and Permeability: Well drained and somewhat excessively drained; slow runoff; moderate permeability. On the sloping areas of these soils, wetness is the result of lateral seepage instead of an apparent high water table.

Use and Vegetation: Most areas are cleared and used for growing corn, soybeans, small grain, pasture grasses, and tobacco. Forested areas are mixed hardwood and pine, including longleaf and loblolly pine, white, red, turkey, and post oak, dogwood, and hickory.

Distribution and Extent: Coastal Plain of Florida as well as Alabama, Georgia, North Carolina, South Carolina, and Virginia. The series is of moderate extent.

KANAPAHA SERIES

Taxonomic Class: Loamy, siliceous, hyperthermic Grossarenic Paleaquults

General Information: The Kanapaha series consists of poorly drained soils with a slowly or moderately slowly permeable subsoil. The soils formed in thick beds of sandy and loamy marine sediments. They are on nearly level to gently sloping landscapes of upland position in the lower Coastal Plain. Slopes range from 0 to 5 percent.

Type Location: Marion County, Florida, about 3 miles southwest of Ocala; 1/2 mile south of intersection of State Highway 475 and Buffington Road; about 600 feet west of southwest Seventh Avenue. NW1/4NE1/4 sec. 6, T. 15 S., R. 22 E.

Range in Characteristics: Solum thickness is 60 or more inches. The soil is very strongly acid to medium acid in all horizons. Content of plinthite, weathered phosphatic pebbles and iron concretions ranges from 0 to 5 percent in the solum.

The A or Ap horizon has hue of 10YR, value of 3 to 6, and chroma of 1 or 2. Texture is sand or fine sand. The E horizon has hue of 10YR, value of 5 to 8, and chroma of 1 or 2, with or without mottles or streaks in shades of gray, yellow, and brown. Texture is sand or fine sand. The Btg horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2; or is neutral with value of 4 to 6. It has few to many mottles in shades of red, yellow, and brown. Texture is sandy loam to light sandy clay. The weighted average clay content in the upper 20 inches of the Btg horizon is 16 to 35 percent.

Competing Series: These are the Palmetto soil series in the same family, and the Holopaw series which is closely similar. Palmetto and Holopaw soils are in the lowlands. Palmetto soils have a Bh horizon and Holopaw soils have more than 35 percent base saturation in the argillic horizon.

Geographic Position: Kanapaha soils are on low, nearly level or gently sloping landscapes of upland position in the lower Coastal Plain. Slopes range from 0 to 5 percent. The soils formed in thick beds of sandy and loamy marine sediments. Near the type location, average annual rainfall is about 59 inches and mean annual air temperature is about 72 degrees F.

Drainage and Permeability: Poorly drained; moderately slow or slow permeability; slow runoff. The water table in these soils is at depths of less than 10 inches for 1 to 3 months and it recedes to depths of 10 to 40 inches for 3 to 4 months during most years. It is at depths greater than 40 inches during drier periods.

Use and Vegetation: Most of these soils are in forest. Most of the cleared areas are used for improved pasture. Native vegetation consists of sweetgum, maple, live and water oaks; magnolia, hickory, slash, longleaf and loblolly pine.

KENDRICK SERIES

Taxonomic Class: Loamy, siliceous, hyperthermic Arenic Paleudults

General Information: The Kendrick series consists of well drained, slowly to moderately slowly permeable soils formed in thick beds of loamy marine sediments on nearly level to sloping areas in the Coastal Plain. Slopes range from 0 to 8 percent.

Type Location: Marion County, Florida; about 1/4 mile east of Shady Road; 2 1/2 miles south of State Highway 200, SE1/4NW1/4, sec. 1, T. 15 S., R. 21 E.

Range in Characteristics: The solum is 60 or more inches thick. It is very strongly acid to medium acid in all horizons. Weathered phosphatic pebbles and iron concretions, 2 to 10 mm in size, range from 0 to 3 percent in the solum. The A or Ap horizon has hue of 10YR, value of 2 to 5, and chroma of 1 or 2. The A horizon is sand, fine sand, loamy sand, or loamy fine sand. The E horizon has hue of 10YR, value of 5 or 6, and chroma of 3 to 8. The E horizon is sand, fine sand, loamy sand, or loamy fine sand. The Bt horizon has hue of 10YR, value of 4 or 5, and chroma of 3 to 8; or hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 4 to 8. It is sandy loam, fine sandy loam, or sandy clay loam.

Competing Series: These include the Blichton, Hague, and Kanapaha soils. Blichton and Kanapaha soils are on lower parts of the landscape, and are poorly drained. In addition, Kanapaha soils have more than 40 inches of sandy materials overlying the argillic horizon. Hague soils have 35 percent or more base saturation in the lower argillic horizon and decrease in clay content by more than 20 percent of the maximum within depths of 60 inches.

Geographic Setting: Kendrick soils occur on nearly level to sloping uplands in the Coastal Plain. Slopes range from 0 to 8 percent. These soils have formed in thick beds of loamy marine sediments. Near the type location, average annual precipitation is about 59 inches and mean annual air temperature is about 72 degrees F.

Drainage and Permeability: Well drained; slow to moderately slow permeability.

Use and Vegetation: Most of these soils are cleared and used for corn, peanuts, watermelons, citrus, tomatoes, and improved pasture. Natural vegetation is longleaf, loblolly, and slash pines; hickory, magnolia, dogwood; and laurel, live, and water oaks. Understory consists of several bluestem species, indiagrass, hairy panicum, and annual forbs.

Distribution and Extent: Central Florida, primarily on the Ocala Uplift from Hillsborough through Alachua Counties and on outliers in adjoining Sumter, Pasco, and Polk Counties. The series is of moderate extent.

LOCHLOOSA SERIES

Taxonomic Class: Loamy, siliceous, hyperthermic Aquic Arenic Paleudults

General Information: The Lochloosa series consists of somewhat poorly drained, slowly permeable soils formed in thick beds of sandy and loamy marine sediments in central Florida. Slopes range from 0 to 8 percent.

Type Location: Marion County, Florida. About 8/10 mile south of Fellowship; 200 feet east of paved road. NW1/4NE1/4, sec. 34, T. 14 S., R. 20 E.

Range in Characteristics: Solum thickness is 60 or more inches. The soil is very strongly acid or strongly acid. Content of weathered phosphatic pebbles, nodules of ironstone, or fragments of siliceous rock, 2 to 76 mm in size, range from 0 to 5 percent by volume in the solum. Plinthite occurs in the Bt horizon in some pedons and ranges from 1 to 5 percent. The Bt horizons have hue of 10YR, value of 5 to 7, and chroma of 3 to 8. Mottles are in shades of gray, red and yellow. Texture of the Bt1 horizon ranges from loamy sand to very fine sandy loam. Texture of the Bt2 horizon is fine sandy loam, sandy loam, or sandy clay loam. Content of clay in the upper 20 inches of the argillic horizon is 15 to 30 percent.

Competing Series: These are Blichton, Millhopper and Sparr soils. Blichton soils are poorly drained. Millhopper and Sparr soils have sandy surface and subsurface layers more than 40 inches thick.

Geographic Setting: Lochloosa soils are on nearly level to sloping landscapes in the Coastal Plain. Slopes range from 0 to 8 percent. These soils formed in thick beds of sandy and loamy marine sediments. Average annual precipitation is about 50 to 60 inches and mean annual temperature is about 70 to 74 degrees F.

Drainage and Permeability: Somewhat poorly drained; slow runoff; slow permeability. The water table is at depths of 30 to 60 inches for periods of 1 to 4 months during most years. It rises to depths of about 15 inches for 1 to 3 weeks. It recedes to depths of more than 60 inches during the drier seasons. Wetness in these soils on slopes is caused by seepage.

Use and Vegetation: Most of these soils are cleared. Tame pasture is the dominant use of these areas. Some cleared areas are used for corn, citrus, peanuts, tomatoes, and watermelons. Native vegetation consists of slash and loblolly pine, dogwood, hickory, live, laurel and water oak, sweetgum, red maple, and magnolia.

Distribution and Extent: Mainly in central Florida within the hyperthermic temperature zone. The series is of moderate extent.

MICANOPY SERIES

Taxonomic Class: Fine, mixed, hyperthermic Aquic Paleudalfs

General Information: The Micanopy series consists of somewhat poorly drained, slowly to very slowly permeable soils formed in thick beds of sandy and clayey marine sediments on uplands in the Coastal Plain. Slope ranges from 0 to 8 percent.

Type Location: Marion County, Florida; about 3 miles northwest of Blichton on U.S. Highway 27 and 1/2 mile northeast on field road. NE1/4SE1/4, sec. 25, T. 13 S., R. 19 E.

Range in Characteristics: Solum thickness is 60 or more inches. It ranges from extremely acid to moderately acid in all horizons. Content of rock fragments, coarser than 2 mm is 0 to 5 percent throughout the soil. The A or Ap horizon has hue of 10YR, value of 2 to 5, and chroma of 1 or 2; or is neutral with value of 2 to 5. Texture ranges from sand to loamy fine sand. The E horizon has hue of 10YR, value of 4 to 6, and chroma of 3 or 4, with or without mottles of gray, brown, or yellow. Texture ranges from sand to loamy fine sand. The Bt horizons have hue of 10YR, value of 5, and chroma of 3 to 6, or value of 6 or 7, and chroma of 3 or 4. Texture is sandy clay loam or sandy clay.

Competing Series: These include the Flemington, Nobleton and Zuber soils. Flemington soils are gray throughout the argillic horizon. Nobleton soils have sandy epipedons 20 to 40 inches thick and low base saturation. Zuber soils are well drained

Geographic Setting: Micanopy soils are on nearly level to sloping landscapes on uplands in the Coastal Plain. Slope gradients are 0 to 8 percent. These soils formed in thick beds of sandy and clayey marine sediments. Average annual precipitation is about 50 to 60 inches and mean annual temperature is about 70 to 74 degrees.

Drainage and Permeability: Somewhat poorly drained; medium runoff; slow to very slow permeability. The soil is saturated in the mottled zone for periods of 1 to 3 months.

Use and Vegetation: Most of the acreage is cleared and is used for tame pasture. A few cleared areas are used for citrus crops, corn, peanuts, and watermelons. Native vegetation consists of loblolly, slash, and longleaf pine, magnolia, hickory, dogwood, and laurel, live, and water oaks. Understory vegetation consists of creeping bluestem, indiagrass, chalky bluestem, toothachegrass, and numerous annual forbes.

Distribution and Extent: Central Florida, primarily on the Ocala Uplift from Hillsborough through Alachua Counties and on outliers of the Ocala Uplift in Pasco, Sumter, and Polk Counties. The series is of moderate extent.

MILLHOPPER SERIES

Taxonomic Class: Loamy, siliceous, hyperthermic Grossarenic Paleudults



General Information: The Millhopper series consists of very deep, moderately well drained, moderately permeable soils that formed in thick beds of sandy and loamy marine sediments. They occur in northcentral Florida. Slopes range from 0 to 8 percent.

Type Location: Alachua County, Florida; in planted pine plantation 200 feet north of graded road (Power Line Road), 0.8 mile west of State Road 121 and about 1 mile east of Devil's Millhopper, 1/4, SE1/4, sec. 14, T. 9S., R. 19 E.

Range in Characteristics: The solum is 80 or more inches thick. Soil reaction ranges from very strongly acid to slightly acid in the A and E horizons, and very strongly acid to medium acid in the Bt, Btg and BCg horizons. A few ironstone and leached phosphatic limestone nodules about 1 to 15 mm in size occur in many pedons but are less than 5 percent by volume. Some pedons have up to 2 percent cobbles in the solum.

Competing Series: These are the Apopka, Arrendondo, and Sparr series. Apopka and Arrendondo soils are well drained. Sparr soils have a seasonally high water table at a depth of 20 to 40 inches for periods of 1 to 4 months during most years.

Geographic Setting: Millhopper soils are on upland areas of central and southern Florida. Dominant slope gradients range from 0 to 8 percent. These soils formed in thick beds of sandy and loamy marine sediments. Average annual precipitation is about 50 to 55 inches, and the mean annual temperature is about 70 to 74 degrees F.

Drainage and Permeability: Moderately well drained; slow runoff. Permeability is rapid in the A and E horizons, and slow to moderate in the Bt horizons. The water table is at a depth of 40 to 60 inches for 1 to 4 months and at 60 to 72 inches for 2 to 4 months during most years. It may be at 30 to 40 inches for cumulative periods of 1 to 3 weeks during some years.

Use and Vegetation: Many areas are cleared and used for improved pasture or for cultivated crops. Native vegetation consists of live oak, laurel oak, post oak, water oak, sweetgum, cherry laurel, few hickory, and slash and longleaf pine. The understory is chiefly lopsided indiagrass, hairy panicum, low panicum, greenbrier, persimmon, fringleaf paspalum, chalky and creeping bluestems, and pineland threeawn.

Distribution and Extent: Central Peninsular Florida.
The series is of moderate extent.

NOBLETON SERIES

Taxonomic Class: Clayey, mixed, hyperthermic Aquic Arenic Paleudults

General Information: The Nobleton series consists of deep, somewhat poorly drained, moderately slowly permeable soils that formed in thick sandy and loamy sediments of marine origin. These soils are on broad nearly level and gently sloping coastal plain areas in Peninsular Florida. They have a perched water table above the argillic horizon during the summer rainy season. Water runs off the surface slowly. Slope ranges from 0 to 5 percent.

Type Location: Hernando County, Florida; about 0.6 mile north of Government Road and 100 feet west of U. S. Highway 41 on Plant Materials Center; SE1/4NW1/4 sec. 30, T. 21 S., R. 20 E.

Range in Characteristics: Solum thickness is 60 inches or more. Reaction ranges from very strongly acid to medium acid in the A horizon and from strongly acid to extremely acid in the Bt horizon. The A or Ap horizon has color in hue 10YR, value 3 through 5, chroma 1 or 2. The E horizon has color in hue 10YR, value 5 through 7, chroma 3 or 4, with or without mottles. Total thickness of the A and E horizons is 20 to 40 inches. Texture is fine sand or loamy fine sand. The Bt horizon has color in hue 10YR, value 5 through 7, chroma 3 through 8; or hue 7.5YR, value 5 or 6, chroma 6 through 8. Few to common mottles with chroma 2 or less are within this horizon. Texture of the Bt horizon is sandy clay loam or sandy clay.

Competing Series: These include the Blichton, Fuquay, Kendrick and Lochloosa soils. All these soils have loamy particle class and siliceous mineralogy. Fuquay soils have temperatures less than 72 degrees F. at depths 20 inches below the soil surface. In addition, Blichton and Fuquay soils have more than 5 percent plinthite within depths of 60 inches below the soil surface. Kendrick soils lack chroma 2 mottles in the upper 5 inches of the argillic horizon.

Geographic Setting: Nobleton soils are on broad nearly level and gently sloping Coastal Plain uplands in Peninsular Florida. Slopes range from 0 to 5 percent. Mean annual precipitation ranges from about 50 to 55 inches, but is not evenly distributed throughout the year. Heaviest rainfall occurs during the summer from about July to October. Mean annual temperature is about 73 degrees F.

Drainage and Permeability: Nobleton soils are somewhat poorly drained. Runoff is slow, and permeability is moderately slow. A perched water table is at depths of 20 to 40 inches for 1 to 4 months during the summer rainy season in most years.

SPARR SERIES

Taxonomic Class: Loamy, siliceous, hyperthermic Grossarenic Paleudults



General Information: The Sparr series consists of very deep, somewhat poorly drained soils formed in thick beds of sandy and loamy marine sediments. The subsoil has slow to moderately slow permeability. Slopes range from 0 to 8 percent.

Type Location: Marion County, Florida; about 4.1 miles south of Ocala; 1/4 mile west of U.S. Highway 441. NW1/4SE1/4, sec. 4, T. 16 S., R. 22 E.

Range in Characteristics: Solum thickness is 60 or more inches. Soil reaction ranges from extremely acid to slightly acid in all horizons, except where limed. Some pedons have up to 2 percent cobble or stone-size chert fragments at the soil surface or within the solum. The A or Ap horizon has hue of 10YR, value of 2 to 5, and chroma of 1 or 2. Texture is sand or fine sand. The E horizon has hue of 10YR, value of 4 to 8, and chroma of 1 to 4. Chroma of 1 or 2 generally occurs in the lower part. The EB horizon, where present, has hue of 10YR, value of 5, and chroma of 4 to 8, or value of 6, and chroma of 4 with gray mottles indicative of wetness. Texture is sand or fine sand. The Bt horizon has hue of 10YR, value of 5, and chroma of 3 to 8, or value of 6 or 7, and chroma of 3 or 4 with mottles in shades of brown, yellow, gray, and red. Texture is sandy loam, fine sandy loam, or sandy clay loam. The Btg horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2; or hue of 7.5YR value of 5, and chroma of 2; or neutral with value of 5 to 7.

Competing Series: These include the Apopka, Arredondo and Millhopper series. Apopka and Arredondo soils lack a seasonal high water table within 80 inches of the soil surface. Millhopper soils have a seasonal high water table at a depth of more than 40 inches.

Geographic Setting: Sparr soils are on nearly level to sloping uplands in the Coastal Plain. Slopes are 0 to 8 percent. The soil formed in thick beds of sandy and loamy marine sediments. The average annual rainfall is about 50 to 60 inches and mean annual air temperature is about 70 to 74 degrees F.

Drainage and Permeability: Somewhat poorly drained; slow runoff; slow to moderately slow permeability in the subsoil. The water table in these soils is at depths of 20 to 40 inches for periods of 1 to 4 months.

Use and Vegetation: Most areas of this soil are cleared and used for corn, citrus, peanuts, watermelons, truck crops, and tame pasture. Native vegetation consists of longleaf, slash, and loblolly pine, magnolia, dogwood, hickory, and live, laurel, and water oaks.

Distribution and Extent: Peninsular Florida. The series is of moderate extent.

