

Web Soil Survey and Soil Classification Information March 2014

David Hammonds

Environmental Consultant

Florida Department of Health

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OBJECTIVES

- Define and describe web soil survey and its use
- Describe USDA NRCS soil classification system

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Where do you find information on soils?

- USDA NRCS web soil survey
- Legacy Soil Surveys (paperback books)

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United States
Department of
Agriculture



Natural
Resources
Conservation
Service

In cooperation with
the University of Florida,
Institute of Food and
Agricultural Sciences,
Agricultural Experiment
Stations, and Soil and
Water Science
Department; the Florida
Department of Agriculture
and Consumer Services;
the Gadsden County Board
of County Commissioners;
and the Gadsden County
Soil and Water
Conservation District

Soil Survey of Gadsden County, Florida



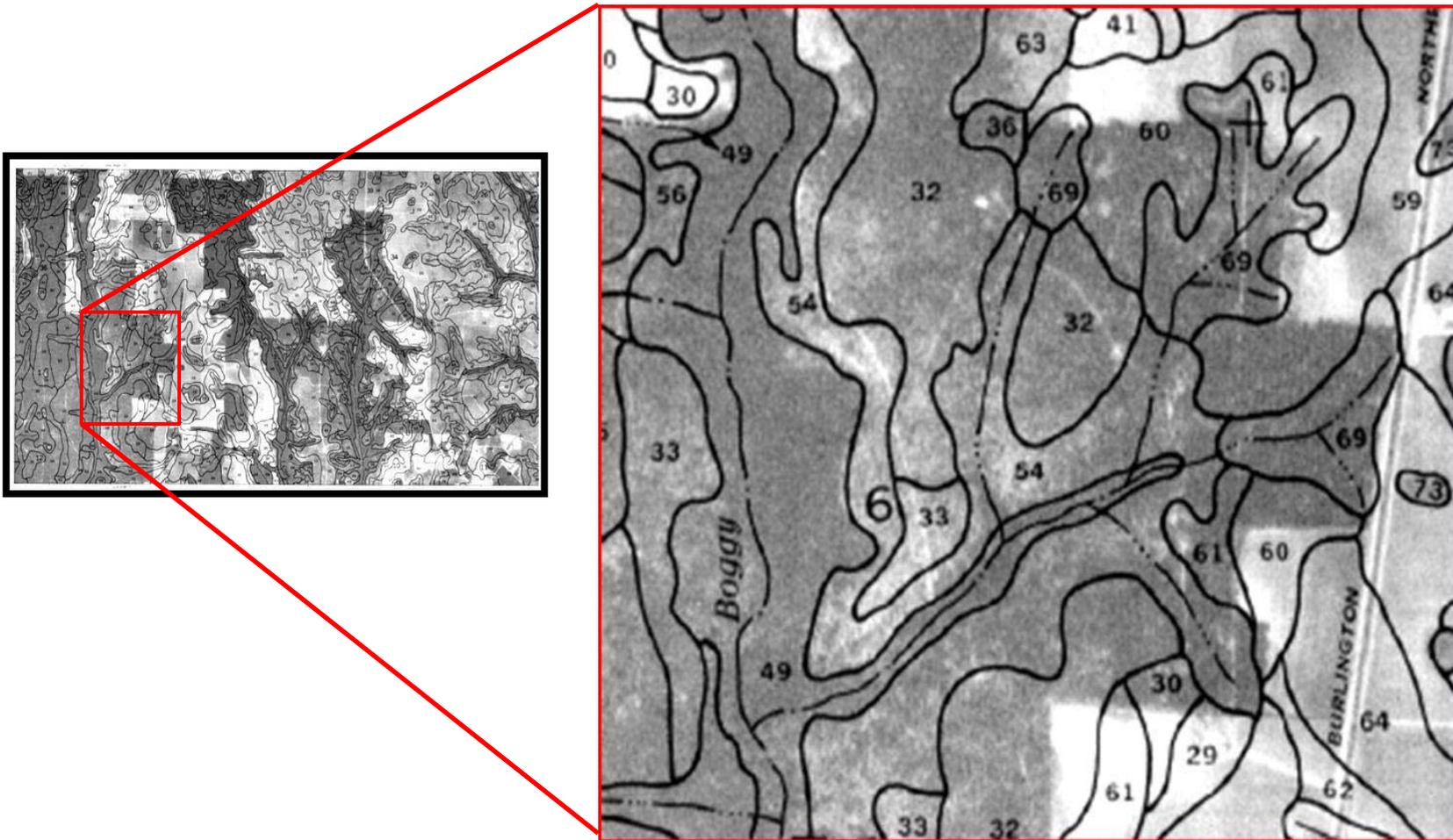
Soil Survey (Legacy Documents)

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Soil Map from a Published Soil Survey



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Soil Surveys

- One for each county
- Format: paper, pdf, GIS, Web
- Paper: most are out of print and hard to find (but very useful)
- pdf: a digital replica of the paper, but only for a few counties

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Soil Surveys

- GIS: geo data layers and attribute tables for use in GIS software
- WSS: (web soil survey) a website delivering the GIS data through a web browser so anyone can use it (more later)

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Soil Survey

- Excellent for planning and recon
- Soil survey not meant for field-scale
- Cannot be used for on-site delineation due to issues of scale and accuracy
- Therefore must use soil indicators for on-site delineation
- Excellent for field use, especially when you are learning and find a soil other than what is actually mapped

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Using Web Soil Survey (WSS)

- *Now the official soil survey*
- Replaces traditional paper copies of soil survey reports
- Most soil surveys in US are available
- Additional interpretations available

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Using Web Soil Survey (WSS)

- Interpretive tables refined and presented in new format, now has DOH drainfield interpretation
- Designed for parcels or projects – not entire county

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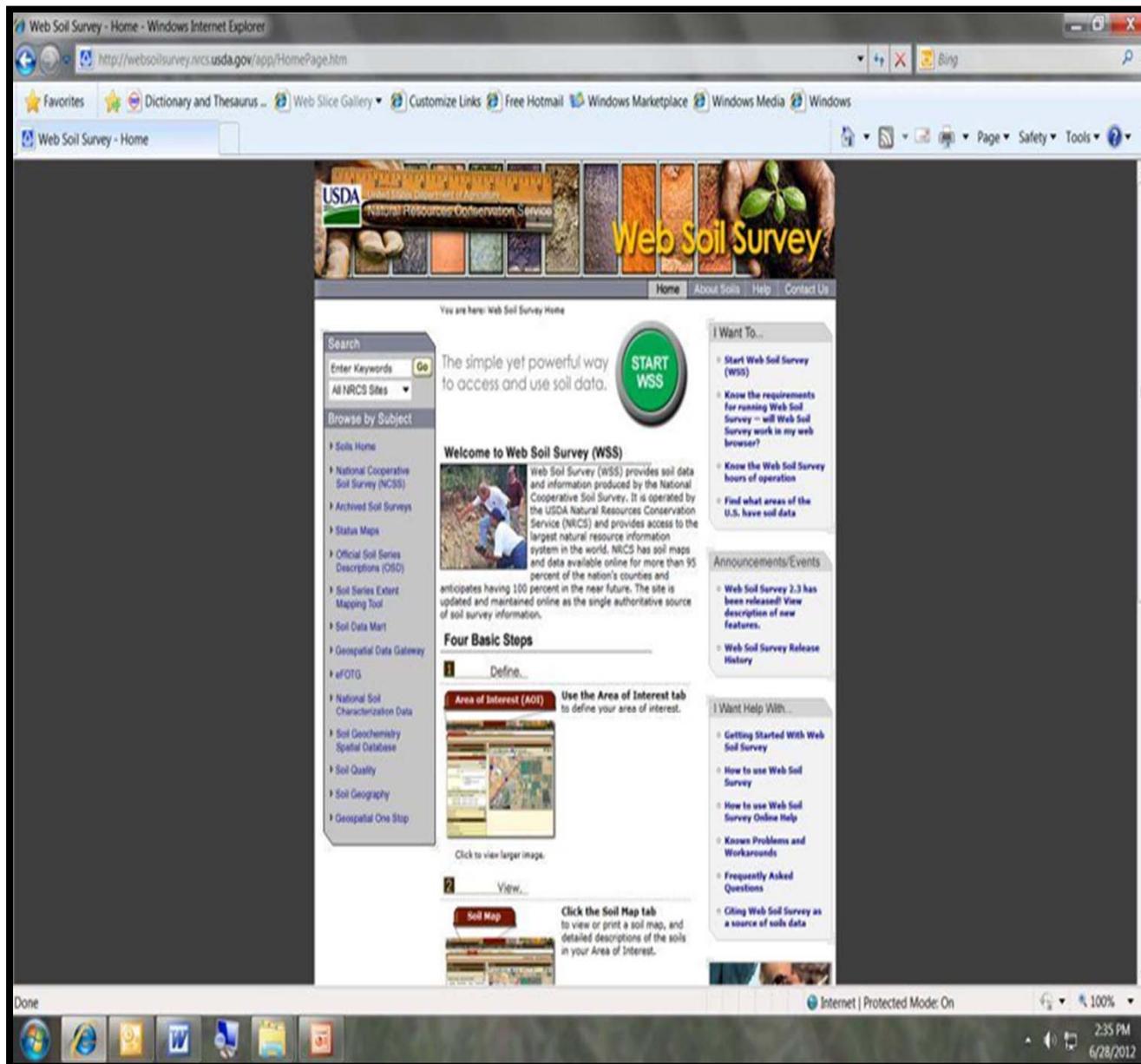
New Web Soil Survey 3.0

- How to use the new WSS:
<http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>
- Has improved maps and imagery, uses Bing Maps
- Editable map properties
- Improved special line features
- Review changes at your leisure

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**WEB SOIL
SURVEY 3.0**

**Updated
8/2/13**

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WEB SOIL SURVEY HOME

The screenshot shows the Web Soil Survey website in a Windows Internet Explorer browser window. The address bar displays the URL <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. The browser's Favorites bar includes links for PDF Architect, Dictionary and Thesaurus, Web Slice Gallery, Customize Links, Free Hotmail, Windows Marketplace, Windows Media, and Windows. The website's navigation menu includes links for Contact Us, Subscribe, Archived Soil Surveys, Soil Survey Status, Glossary, Preferences, Link, Logout, and Help. The main content area features a search bar and a sidebar with navigation options: Search, Area of Interest, Import AOI, Quick Navigation, Address, State and County, Soil Survey Area, Latitude and Longitude, PLSS (Section, Township, Range), Bureau of Land Management, Department of Defense, Forest Service, National Park Service, and Hydrologic Unit. The central map, titled "Area of Interest Interactive Map", shows a satellite view of the contiguous United States with state boundaries and abbreviations. The map interface includes a legend, a "View Extent" dropdown set to "Contiguous U.S.", and a "Scale" dropdown set to "not to scale". The browser's status bar at the bottom indicates "Done", "Internet | Protected Mode: On", and the system clock shows 6:45 AM on 9/12/2013.

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Navigation

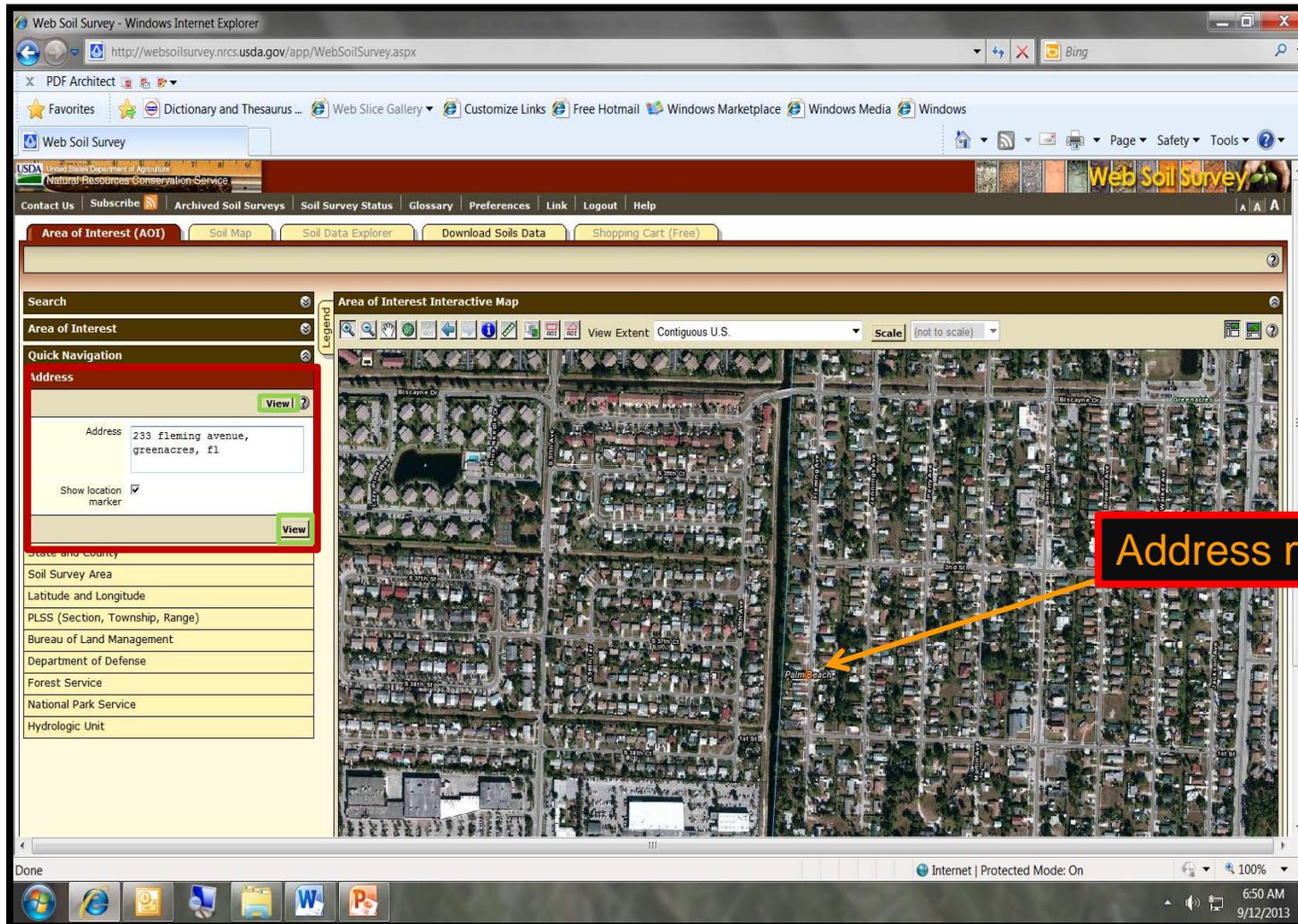
The screenshot shows the Web Soil Survey application in Internet Explorer. The browser's address bar displays the URL <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. The application interface includes a search bar, a map of the United States, and a sidebar with navigation options. A red box highlights the 'Address' input field with the text 'Address box' and an arrow. A green box highlights the 'Quick Navigation' list with the text 'Other ways' and an arrow. The browser's status bar at the bottom shows 'Internet | Protected Mode: On' and the system tray includes the date and time '6:46 AM 9/12/2013'.

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Input address, “view” looks like this:



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Then begin navigation by Area of Interest (AOI)

**How is this
done?**

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This is how-----

Several ways to navigate to AOI

- Quick Navigation Options
- Magnifying Tool

Two ways to define AOI

- Rectangle
- Polygon

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Soil Map

- Only available if AOI is defined
- Soil Map tab will not activate until AOI is defined
- You will forget to define AOI
- You will think WSS does not work
- You will (finally) realize you did not define your AOI

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Parcel Observation

- Do not zoom into one small area
- AOI should cover several acres with your site in the middle
- Allows for observation of surrounding soils
- Calibrate the scale on survey
- Warning will show if scale is much smaller than mapped scale

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Calibration of Scale on WSS

**Click on Scale Button and
follow directions**

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Web Soil Survey - Windows Internet Explorer
 http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

PDF Architect | Dictionary and Thesaurus... | Web Slice Gallery | Customize Links | Free Hotmail | Windows Marketplace | Windows Media | Windows

Web Soil Survey

USDA United States Department of Agriculture
 Natural Resources Conservation Service

Contact Us | Subscribe | Archived Soil Surveys | Soil Survey Status | Glossary | Preferences | Link | Logout | Help

Area of Interest (AOI) | Soil Map | Soil Data Explorer | Download Soils Data | Shopping Cart (Free)

Search | Area of Interest | Quick Navigation | Address | State and County | Soil Survey Area | Latitude and Longitude | PLSS (Section, Township, Range) | Bureau of Land Management | Department of Defense | Forest Service | National Park Service | Hydrologic Unit

Area of Interest Interactive Map | Legend | View Extent: Contiguous U.S. | Scale: (not to scale) ← **Scale Indicator**

Calibrate map scale to your monitor's screen resolution
 Current value: 70 pixels per inch. (default)

If you calibrate your screen resolution, the application will:

- indicate the current map scale in the scale dropdown, and
- allow you to select a particular map scale using the scale dropdown.

If you don't need these features, just click the **Cancel** button.

To calculate map scale, the application needs to know your screen resolution (pixels per inch).

To set pixels per inch, make the black line segment exactly one inch long:

1. Hold a ruler (in inches) up to your screen so that the zero point is aligned with the left edge of the black line segment (inside the end bar).
2. Click in the gray space where your ruler measures one inch, or drag the line segment to resize it.
3. When the black line segment is exactly one inch long, between the end bars, press **OK**.

When you change your screen resolution, the application resets the calibration to "(not to scale)", but it remembers the previous value of pixels per inch until you explicitly change it, because it will still be valid if you return to the previous screen resolution.

How to calibrate scale ←

Cancel | OK

Internet | Protected Mode: On | 100% | 6:59 AM | 9/12/2013

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Warning language

The screenshot shows a web browser window titled "Web Soil Survey - Windows Internet Explorer". The address bar displays "http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx". The browser's address bar and menu bar are visible. The main content area shows a satellite map of a residential area with a green rectangular area of interest (AOI) overlaid. A red arrow points from the left side of the map to a warning box at the bottom of the map. The warning box contains the following text:

Warning: Soil Map may not be valid at this scale.

You have zoomed in beyond the scale at which the soil map for this area is intended to be used. Mapping of soils is done at a particular scale. The soil surveys that comprise your AOI were mapped at 1:20,000. The design of map units and the level of detail shown in the resulting soil map are dependent on that map scale. Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

At the bottom of the browser window, there is a footer with links for "FOIA", "Accessibility Statement", "Privacy Policy", "Non-Discrimination Statement", "Information Quality", "USA.gov", and "White House". The taskbar at the bottom shows the system tray with the date "9/12/2013" and time "7:09 AM".

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What you see after you make your Area of Interest and click on the Soil Map Tab

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Web Soil Survey - Windows Internet Explorer

http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

PDF Architect

Web Soil Survey

USDA United States Department of Agriculture Natural Resources Conservation Service

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Area of Interest (AOI) | **Soil Map** | Soil Data Explorer | Download Soils Data | Shopping Cart (Free)

Printable Version | Add to Shopping Cart

Search

Map Unit Legend

Palm Beach County Area, Florida (FL611)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
6	Basinger fine sand	18.9	27.3%
21	Myakka fine sand	34.2	49.3%
22	Myakka-Urban land complex	16.2	23.4%
Totals for Area of Interest		69.2	100.0%

Soil Map

Scale: 1:15,800 ± 1%

Area of Interest (AOI)

Soil Information

Area of Interest (AOI)

Done

Internet | Protected Mode: On

7:19 AM 9/12/2013

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Soil Information

- Includes the types and amounts of soil (and water) that is included in your AOI, including the acreage mapped
- Clicking on a map unit name will give you the following information

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Web Soil Survey - Windows Internet Explorer
 http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

PDF Architect
 Favorites
 Dictionary and Thesaurus ...
 Web Slice Gallery
 Customize Links
 Free Hotmail
 Windows Marketplace
 Windows Media
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Web Soil Survey

USDA United States Department of Agriculture
 Natural Resources Conservation Service

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Area of Interest (AOI) | Soil Map | Soil Data Explorer

Search
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Totals for Area of Interest		69.2	100.0%

Soil Map

Map Unit Description

Printable Version

Report — Map Unit Description

Palm Beach County Area, Florida

21—Myakka fine sand

Map Unit Setting
 Mean annual precipitation: 48 to 56 inches
 Mean annual air temperature: 70 to 77 degrees F
 Frost-free period: 358 to 365 days

Map Unit Composition
 Myakka and similar soils: 80 percent
 Minor components: 20 percent

Description of Myakka

Setting
 Landform: Flatwoods on marine terraces
 Landform position (three-dimensional): Talf
 Down-slope shape: Convex
 Across-slope shape: Linear
 Parent material: Sandy marine deposits

Properties and qualities
 Slope: 0 to 2 percent
 Depth to restrictive feature: More than 80 inches
 Drainage class: Poorly drained
 Capacity of the most limiting layer to transmit water (Ksat):
 Moderately high to high (0.57 to 5.95 in/hr)
 Depth to water table: About 6 to 18 inches
 Frequency of flooding: None
 Frequency of ponding: None
 Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
 Sodium adsorption ratio, maximum: 4.0
 Available water capacity: Low (about 4.9 inches)

Interpretive groups
 Farmland classification: Farmland of unique importance
 Land capability (nonirrigated): 4w
 Hydrologic Soil Group: A2

Printable Version | Add to Shopping Cart

10th
 Walker Ave
 Weymouth St
 Canal 10 Rd
 Elaine Dr
 809
 Almar Rd
 Fern St
 A St
 42nd Way S
 Mike Rd

Done
 Internet | Protected Mode: On
 7:22 AM
 9/12/2013

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The screenshot shows a Windows Internet Explorer browser window displaying a soil survey report. The address bar shows the URL <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. The page title is "Web Soil Survey". The report content is as follows:

Interpretive groups
Farmland classification: Farmland of unique importance
Land capability (nonirrigated): 4w
Hydrologic Soil Group: A/D

Typical profile
0 to 7 inches: Sand
7 to 26 inches: Sand
26 to 47 inches: Sand
47 to 72 inches: Sand

Minor Components

Immokalee
Percent of map unit: 4 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear

Basinger
Percent of map unit: 4 percent
Landform: Drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave

Oldsmar
Percent of map unit: 4 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear

Pomello
Percent of map unit: 4 percent
Landform: Ridges on marine terraces, knolls on marine terraces
Landform position (three-dimensional): Interfluvium
Down-slope shape: Convex
Across-slope shape: Linear

Wabasso
Percent of map unit: 4 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf

The browser's taskbar at the bottom shows the system tray with the date and time: 7:24 AM, 9/12/2013. The taskbar also includes icons for Internet Explorer, Protected Mode: On, and a volume icon.

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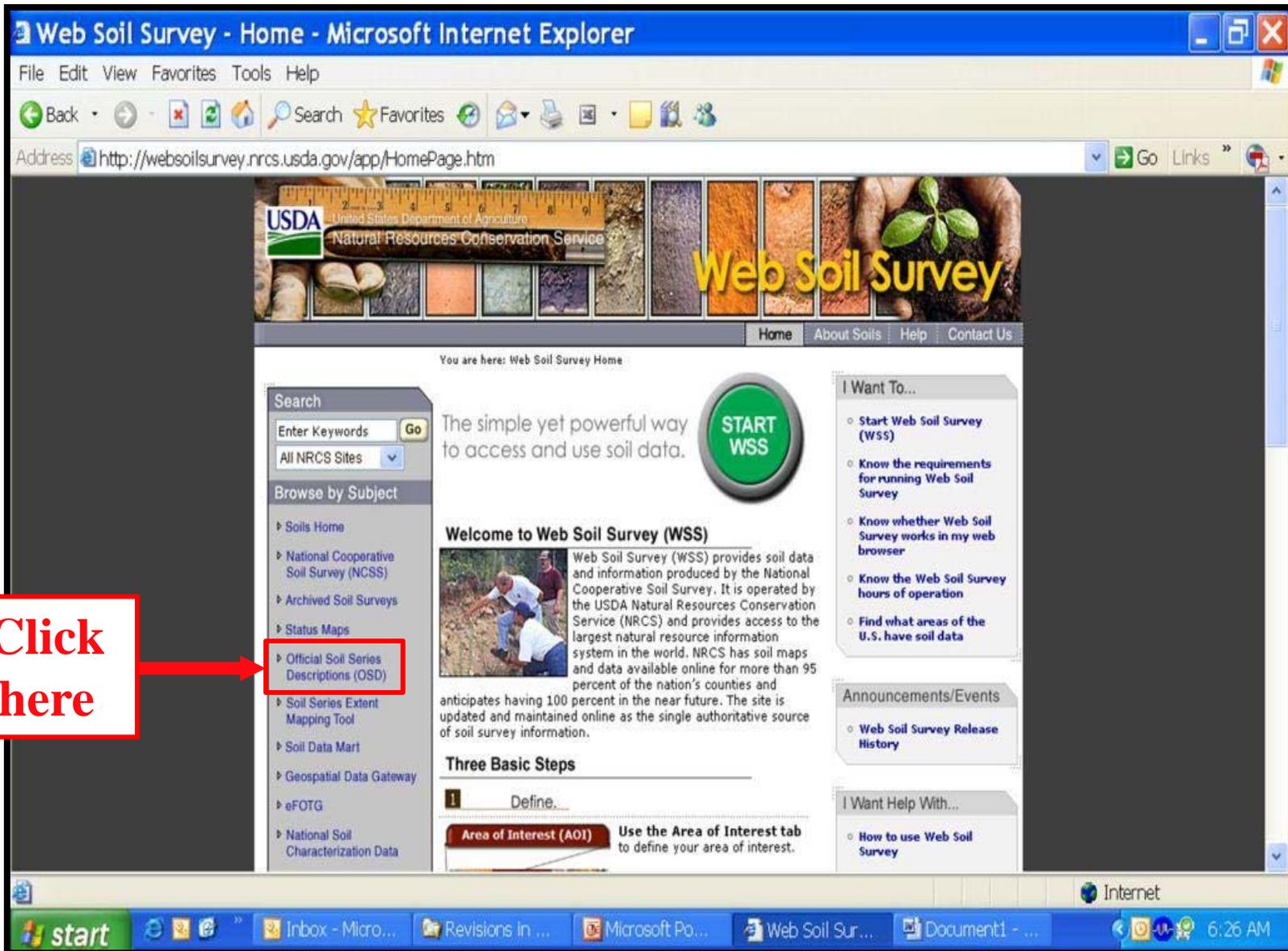
Map Unit Descriptions

- This information is not that helpful for what we do, does not supply necessary detail for our purposes
- We need to access the current soil classification information
- This is found at a USDA NRCS website, *Soil Series Name Search*

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Official Soil Series Descriptions (OSD) | NRCS Soils - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://soils.usda.gov/technical/classification/osd/index.html>

United States Department of Agriculture
NRCS Natural Resources Conservation Service

Soils Home About Us Soil Survey Soil Use Soil Education Photo Gallery Technical References Partnerships Contact Us

Search
Soils
Enter Keywords GO

Technical References
Back to Technical References

Soil Classification
Soil Taxonomy
Keys to Soil Taxonomy
Official Soil Series Descriptions (OSD)
Soil Classification Database (SC)
Distribution Maps of Dominant Soil Orders
International Taxonomy Committees
Soil Taxonomy Forum
Rationale for Concepts in Soil Taxonomy

Official Soil Series Descriptions (OSD) with series extent mapping capabilities

[Introduction](#)
[OSD Fact Sheet](#)
Database Access

- [View OSD by Series Name \(with best-match feature\)](#)
- [View OSDs by List of Series Names \(with FTP option\)](#)
- [View OSDs by Query \(with FTP option\)](#)
- [Soil Series Name Search](#)

Recommended Citation

When referencing the online Official Soil Series Description information in publications, the following citation is recommended:

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions [Online WWW]. Available URL:

Soil Name Search Internet

start Inbox - Micro... Revisions in ... Microsoft Po... Official Soil S... Document1 - ... 6:29 AM

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SAVE THIS TO “FAVORITES”

USDA-NRCS Official Soil Series Description Query Facility - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://ortho.ftw.nrcs.usda.gov/cgi-bin/osd/osdnamequery.cgi> Go Links

Soil Series Name Search

USDA-NRCS Soil Survey Division *Query Facility*

DIRECTIONS

The following entry field may be used to retrieve a list of soil series names that match a partial string you enter with wildcard characters. This query facility will search the Soil Classification database for those names that match and create a list of the series names found. All names found will be included. Those soils that have an Official Soil Description will be linked.

Enter a series name with *wildcards*:

Process Clear Form

Done Internet

start | Incho - Micro... | Revisions in ... | Microsoft Po... | USDA-NRCS ... | Document1 - ... | 6:21 AM

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Input soil name then “Process”

USDA-NRCS Official Soil Series Description Query Facility - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://ortho.ftw.nrcs.usda.gov/cgi-bin/osd/osdnamequery.cgi> Go Links

Soil Series Name Search

USDA-NRCS Soil Survey Division *Query Facility*

DIRECTIONS
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Enter a series name with [wildcards](#):

Done Internet

start | Inbox - Micro... | Revisions in ... | Microsoft Po... | USDA-NRCS ... | Document1 - ... | 6:32 AM

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Soil displayed/View description of soil

USDA-NRCS Official Soil Series Description Query Facility - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address: <http://ortho.ftw.nrcs.usda.gov/cgi-bin/osd/osdnamequery.cgi?P>

USDA-NRCS [Series Name Query Facility](#) Soil Survey Division

Your query was:

```
select distinct seriesname
from   sc_series
where  ( seriesname like 'PLUMMER' )order by seriesname
```

which selected 1 soil series.

PLUMMER LOAMY, SILICEOUS, SUBACTIVE, THERMIC GROSSARENIC PALEAQUULTS

[View Description](#) [View Extent Map](#)

[Start Over](#)

Click Here

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Soil Classification Information

Official Series Description - PLUMMER Series - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://www2.ftw.nrcs.usda.gov/osd/dat/P/PLUMMER.html>

LOCATION PLUMMER GA+AL FL MS NC SC TX VA

Established Series
KSL/Rev. JAK
03/2009

PLUMMER SERIES

MLRA(s): 133A-Southern Coastal Plain, 133B-Western Coastal Plain, 153A-Atlantic Coast Flatwoods, and 153B-Tidewater Area
Depth Class: Very deep
Drainage Class (Agricultural): Poorly or very poorly drained
Internal Free Water Occurrence: Very shallow, persistent
Flooding Frequency and Duration: None
Ponding Frequency and Duration: None to frequent, long or very long periods
Index Surface Runoff: Negligible to low
Saturated Hydraulic Conductivity: Moderately high
Shrink-swell Potential: Low
Landscape: Upper, middle, and lower coastal plains
Landform: Flats, depressions
Geomorphic Component: Talfs, dips
Hillslope Profile Position: Not assigned
Parent Material: Marine or fluviomarine deposits
Slope: 0 to 5 percent, dominantly less than 1 percent

Done Internet

start | Inbox - Micro... | Revisions in ... | Microsoft Po... | 2 Internet ... | Document1 - ... | 6:22 AM

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Official Series Description - PLUMMER Series - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://www2.ftw.nrcs.usda.gov/osd/dat/P/PLUMMER.html> Go Links

Hillslope Profile Position: Not assigned
Parent Material: Marine or fluvio-marine deposits
Slope: 0 to 5 percent, dominantly less than 1 percent
Elevation (type location): Unknown
Frost Free Period (type location): 240 days
Mean Annual Air Temperature (type location): 19.2 degrees C (66.5 degrees F.)
Mean Annual Precipitation (type location): 1240 millimeters (49 inches)

TAXONOMIC CLASS: Loamy, siliceous, subactive, thermic Grossarenic Paleaquults

TYPICAL PEDON: Plummer sand on a 1 percent slope, in woodland. (Colors are for moist soil unless otherwise stated.)

A--0 to 23 centimeters (about 0 to 9 inches); dark gray (N 4/) sand; weak fine granular structure; very friable; many medium and fine roots; many clean sand grains in lower part; very strongly acid; clear wavy boundary. (10 to 30 centimeters thick)

Eg1--23 to 71 centimeters (about 9 to 28 inches); gray (5Y 6/1) sand; single grain; loose; few roots in upper part; common root holes with brown stains; very strongly acid; gradual wavy boundary.

Eg2--71 to 127 centimeters (about 28 to 50 inches); light gray (5Y 7/1) sand; single grain; loose; very strongly acid; gradual irregular boundary. (Combined thickness of the E horizon is 90 to 170 centimeters)

Btg--127 to 200 centimeters (about 50 to 80 inches); light gray (5Y 7/1) sandy loam with bodies of sandy clay loam; common medium and fine prominent yellowish brown (10YR 5/6) masses of oxidized iron; weak medium granular and subangular blocky structure; friable; sand grains bridged with clay; very strongly acid.

Done Internet

start | Inbox - Micro... | Revisions in ... | Microsoft Po... | 2 Internet ... | Document1 - ... | 6:22 AM

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Official Series Description - PLUMMER Series - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://www2.ftw.nrcs.usda.gov/osd/dat/P/PLUMMER.html> Go Links

TYPE LOCATION: Wayne County, Georgia; about 2.6 miles east of Gardi along U.S. Highway 341 and south on county road 4.2 miles to crossroads; 0.2 mile east.

RANGE IN CHARACTERISTICS:

Depth to top of argillic horizon: 100 to 195 centimeters (about 40 to 75 inches), commonly 125 to 180 centimeters (about 50 to 70 inches)
Depth to base of argillic horizon: 150 to 200 centimeters or more (about 60 to 80 inches), commonly more than 2500 centimeters (about 100 inches)
Depth to bedrock: Greater than 200 centimeters (about 80 inches)
Depth to seasonal high water table: 0 to 25 centimeters (about 0 to 10 inches) December to July
Thickness of the sandy surface and subsurface layers: Greater than 100 centimeters (about 40 inches)
Content and size of rock fragments: 0 to 10 percent, by volume throughout, mostly fine quartz gravel or ironstone nodules or concretions
Effective Cation Exchange Capacity: 3 to 10 milliequivalents per 100 grams of soil in the A horizon; 1 to 3 in E horizons; and 3 to 5 in the B horizon
Soil Reaction: Extremely acid to strongly acid, except where limed

RANGE OF INDIVIDUAL HORIZONS:

Oa horizon (where present):
Color--hue of 10YR, 2.5Y or 5Y; value of 2 to 4, chroma of 1 or 2; or is neutral with value of 2 to 4
Texture--muck, 2 to 20 centimeters thick

A horizon:
Color--hue of 10YR to 5Y; value of 2 to 4, chroma of 1 or 2; or is neutral with value of 2 to 4. Where moist value and chroma are 3 or less, thickness of the A horizon is less than 25 centimeters (about 10 inches).
Texture--sand, fine sand, loamy fine sand or, loamy sand, or their mucky analogues
Clay content: 1 to 10 percent

Eg horizon:
Color--hue of 10YR to 5Y; value of 5 to 8, chroma of 1 or 2; or is neutral with value of 5 to 8

Done Internet

start | Inbox - Micro... | Revisions in ... | Microsoft Po... | 2 Internet ... | Document1 - ... | 6:23 AM

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Official Series Description - PLUMMER Series - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://www2.ftw.nrcs.usda.gov/osd/dat/P/PLUMMER.html> Go Links

Clay content: 1 to 10 percent

Eg horizon:
Color--hue of 10YR to 5Y, value of 5 to 8, chroma of 1 or 2; or is neutral with value of 5 to 8
Texture--sand, fine sand, loamy fine sand, or loamy sand
Clay content: 1 to 10 percent
Redoximorphic features--iron depletions in shades of brown, yellow, or gray and masses of oxidized iron in shades of red, yellow, or brown. Iron depletions may be zones of uncoated sand grains.

BEG horizon (where present):
Color--hue of 10YR to 5Y, value of 5 to 7, chroma of 1 or 2; or is neutral with value of 5 to 7
Texture--loamy sand or loamy fine sand
Clay content: 1 to 12 percent
Redoximorphic features--iron depletions in shades of brown, yellow, or gray and masses of oxidized iron in shades of red, yellow, or brown. Iron depletions may be zones of uncoated sand grains.

Btg horizon:
Color--hue of 10YR to 5Y, value of 5 to 7, chroma of 1 or 2; or is neutral with value of 5 to 7
Texture--sandy loam, fine sandy loam or sandy clay loam and may have pockets of loamy sand or sandy clay
Clay content: 12 to 35 percent
Redoximorphic features--iron depletions in shades of brown, yellow, or gray and masses of oxidized iron in shades of red, yellow, or brown

COMPETING SERIES:
[Sturke](#) soils--have an umbric epipedon

GEOGRAPHIC SETTING:

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Official Series Description - PLUMMER Series - Microsoft Internet Explorer

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Address <http://www2.ftw.nrcs.usda.gov/osd/dat/P/PLUMMER.html>

GEOGRAPHIC SETTING:
 Landscape: Upper, middle, and lower coastal plains
 Landform: Flats, depressions
 Geomorphic Component: Talfs, dips
 Hillslope Profile Position: Not assigned
 Parent Material: Marine or fluviomarine deposits
 Slope: 0 to 5 percent, dominantly less than 1 percent
 Elevation: 5 to 135 meters (about 15 to 450 feet)
 Mean Annual Air Temperature: 14 to 21 degrees C. (about 59 to 70 degrees F.)
 Mean Annual Precipitation: 965 to 1320 millimeters (about 38 to 52 inches)
 Frost Free Period: 190 to 275 days

GEOGRAPHICALLY ASSOCIATED SOILS:
[Alapaha](#) soils--have an arenic epipedon and have plinthite in the Bt horizons
[Atmore](#) soils--have 6 to 18 percent clay in upper 50 centimeters of the Bt horizon and plinthite in the lower Bt horizon
[Ellabelle](#) soils--have an umbric epipedon
[Johnston](#) soils--have a thick umbric epipedon
[Leefield](#) soils--have combined A and E horizons of less than 100 centimeters thick
[Leon](#) soils--have a spodic horizon
[Lynn Haven](#) soils--have a spodic horizon
[Mascotte](#) soils--have a spodic horizon
[Ocilla](#) soils--have combined A and E horizons of less than 100 centimeters thick
[Olustee](#) soils--have a spodic horizon
[Osier](#) soils--do not have an argillic horizon
[Pelham](#) soils--have an arenic epipedon
[Pine](#) soils--have combined A and E horizons of less than 100 centimeters thick

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Address <http://www2.ftw.nrcs.usda.gov/osd/dat/P/PLUMMER.html> Go Links

[Pelham](#) soils--have an arenic epipedon
[Rains](#) soils--have combined A and E horizons of less than 100 centimeters thick
[Rutlege](#) soils--have an umbric epipedon
[Surrency](#) soils--have an umbric epipedon
[Torhunta](#) soils--have a thick umbric epipedon

DRAINAGE AND PERMEABILITY:
Drainage Class (Agricultural): Poorly or very poorly drained
Internal Free Water Occurrence: Very shallow, persistent
Flooding Frequency and Duration: None
Ponding Frequency and Duration: Depressional areas are occasionally or frequently ponded for long or very long periods
Index Surface Runoff: Negligible to low
Saturated Hydraulic Conductivity: Moderately high (4.2 to 14.1 micrometers per second)
Shrink-swell Potential: Low

USE AND VEGETATION:
Major Uses: Woodland
Dominant Vegetation: Where wooded--mixed stands of slash, loblolly, and longleaf pine with swamp tupelo and bald cypress and an understory of gallberry, waxmyrtle, southern bayberry, wiregrass, pitcher plants, and bracken fern. Where cleared--pasture.

DISTRIBUTION AND EXTENT:
Distribution: Georgia, Alabama, Delaware, Florida, Maryland, Mississippi, North Carolina, South Carolina, and Virginia
Extent: Large

MLRA OFFICE RESPONSIBLE: Raleigh, North Carolina

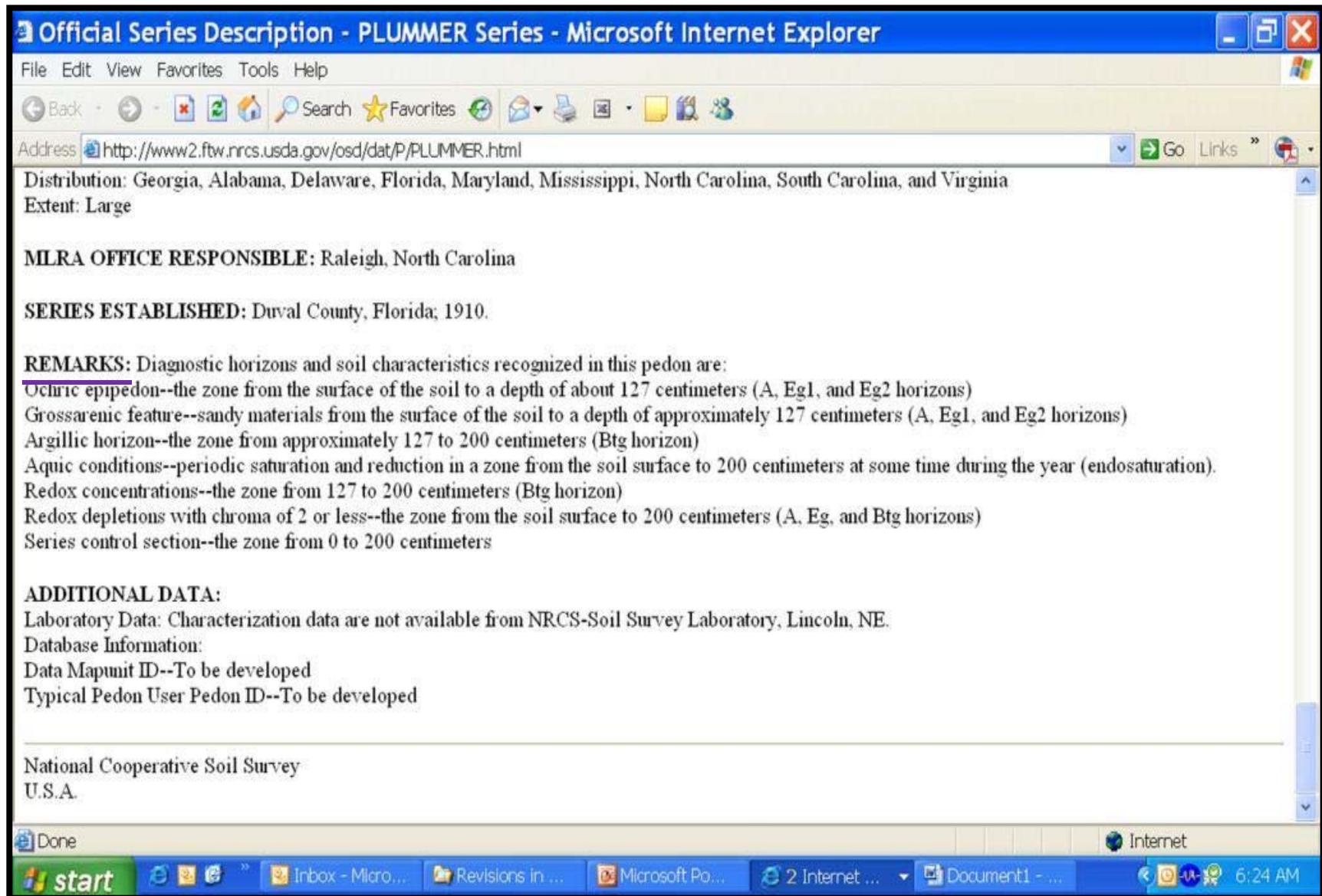
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Soils Mapped by Counties

- Minimum acreage of soil must be present in county to be mapped
- May actually find a soil not mapped or recognized in your county (presuming same temperature region)
- Look up the named soil using the Official Soil Series Description to determine information

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NOTE

- Soils vary across the landscape
- At the mapping scales used by USDA NRCS, only ACREAGE can be mapped
- While one major soil type is mapped there are INCLUSIONS within each map unit
- Have SIMILAR and DISSIMILAR inclusions

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- Major soil map unit may not be found in your drainfield area
- Depends on soil forming factors, including landscape position
- Soils on knolls may be better drained, deeper SHWT
- Soils in depressions more poorly drained, higher SHWT
- Drainfields: 250 to >14,000 square feet

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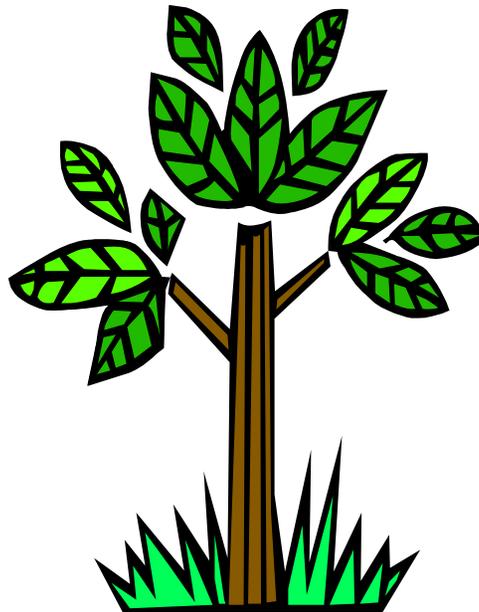
QUESTIONS?

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VEGETATION AND SOILS



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VEGETATION AND SOILS

- Intimate relationship between soil types and natural vegetation
- Plants have varying nutrient water and nutrient requirements
- Recognizing vegetative clues can help predict certain soil characteristics such as seasonal high water table

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Ecological Plant Communities

- Coastal Strand
- Sand Pine Scrub
- Longleaf Pine-Turkey Oak Hills
- Mixed Hardwood and Pine
- Flatwoods (*contains Pine and Saw Palmettos*)

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Ecological Plant Communities

- Upland Hardwood Hammocks
- Wetland Hardwood Hammock
- Swamps
- Bottomland Hardwoods
- Pitcher Plant Bogs

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Ecological Plant Communities

- Sawgrass Marsh
- Freshwater Marsh
- Salt Marsh
- Sloughs
- Cutthroat Seeps

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Sand Pine

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Camphor Tree

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Cattail (without seeds)

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Sand Oak and Saw Palmetto

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Everglades

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Turkey Oak

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Pine Flatwoods



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Saw Palmetto, *Serenoa repens*



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**Cabbage
Palm**

***Sabal
Palmetto***

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Cypress and Cabbage Palm in floodplain

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Red Maple *Acer rubrum*

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Red Maple Samara (fruit)

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**Black Titi
(*Cliftonia
monophylla*)
in bloom**

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Black Titi close-up

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Salt Marsh

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Sawgrass

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FLORIDA WETLAND PLANTS

AN IDENTIFICATION MANUAL

Dr. John D. Tobe
Kathy Craddock Burks
Richard W. Cantrell
Mark A. Garland
Maynard E. Sweeley
Dr. David W. Hall
Pete Wallace
Guy Anglin
Gil Nelson
Dr. James R. Cooper
David Bickner
Katherine Gilbert
Neil Aymond
Ken Greenwood
Nina Raymond



DEP Plant Identification Manual (for wetter areas)

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FLORIDA WETLAND PLANTS

- Available from UF
- UF/IFAS Publications, PO Box 110011
Gainesville, FL 32611
- \$35 plus S/H
- Sales tax if Florida citizen
- Purchase orders, checks, credit card

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METHODS OF SOIL INVESTIGATION



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METHODS OF SOIL INVESTIGATION

Obtaining Soil Survey Data

Evaluation of Surroundings

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PROBLEM SOILS

Filled Areas

**Local Knowledge of Area
Soils**

**Consult OSTDS Program
Office**

Consult Soil Scientist



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End of Presentation

QUESTIONS?

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