

2011 Maryland Soil Survey Work Planning Conference

What are Soil Map Units and Web Soil Survey

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Resource Soil Scientist
USDA-NRCS

Objectives

- **Explain the concepts of scale and map unit design**
- **Identify the official source of soil survey information**
- **Describe Web Soil Survey and explain how it can be used to develop soil maps and reports**

Soil Survey

- Soil surveys describe **kinds of soils** that exist in an area
- Soils are described in terms of their
 - location on the landscape
 - profile characteristics
 - relationships to one another
 - suitability for various uses
 - needs for particular types of management
- Soils are **grouped into map units** for display purposes

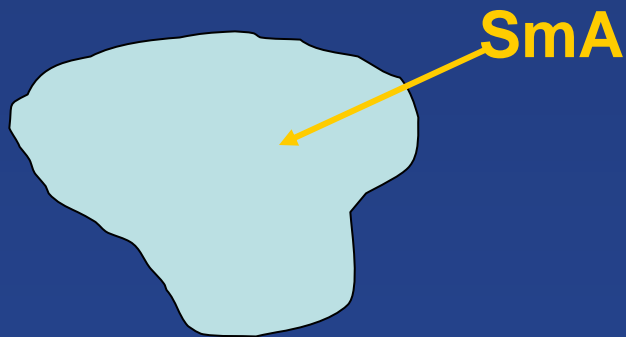
Soil Map Units

- A soil map unit is a collection of areas **defined and named the same** in terms of their soil components (e.g., series) or miscellaneous areas or both
 - **Fallsington sandy loam, 0 to 2% slopes**
 - **Marr-Dodon complex, 2 to 5% slopes**
- Soil map units are **the basic unit of a soil map**
- Each soil map unit **differs in some respect** from all others in a survey area

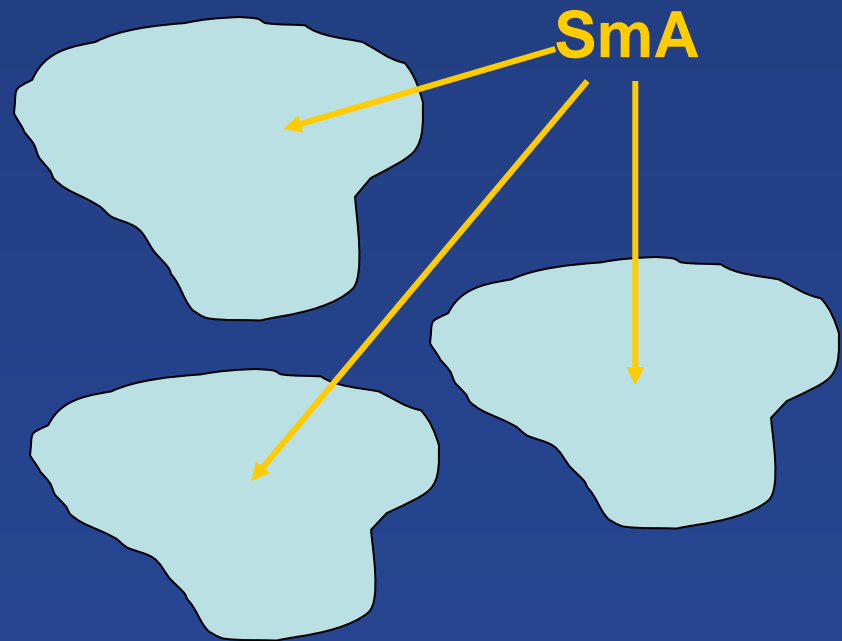
Soil Map Units

- Each map unit has a unique symbol (numbers or letters) on the soil map
 - FaA
 - MnB
- “**Mono-taxa**” units are dominated by a **single** soil type
- “**Multi-taxa**” units include **two or more** main soil types

Which is a “Map Unit”?



A Delineation



**A collection of delineations
named the same, a.k.a. a Map Unit**

Types of Map Units

- **Consociations**
 - Delineated areas are dominated by a ***single soil component and similar soils***
 - FaA Fallsington sandy loam, 0 to 2% slopes
 - CrC Croom gravelly sandy loam, 5 to 10% slopes

Types of Map Units

- **Complexes and Associations**
 - Delineated areas consist of *two or more dissimilar components that occur in a consistent, repeating pattern*
 - Major components in a complex **CAN NOT** be separated at mapping scale
 - Major components in an association **CAN** be separated at mapping scale
 - MnA Marr-Dodon **complex**, 2 to 5% slopes
 - GbB Galestown-Urban land **complex**, 0 to 5% slopes

Types of Map Units

- **Undifferentiated Groups**
 - Delineated areas consist of *two or more soil components that are not related in a consistent, repeating pattern*
 - The overriding factor is often some factor that limits use and management (e.g., steepness, stoniness, flooding)
 - ZS Zekiah **and** Issue **soils**, frequently flooded
 - HZE Howell **and** Dodon **soils**, 15 to 25% slopes

Working with Multi-Taxa Map Units

- In older soil surveys, interpretations were given for each map unit based on the ‘most limiting’ interpretation or the **dominant component**
- NASIS now provides properties and interpretations for **each component** in a map unit, along with % composition
- User may decide how to aggregate the data
 - **dominant condition, dominant component, most limiting, least limiting, weighted average**
- Web Soil Survey and Soil Data Viewer contain tools to help users analyze data

Mapping Scale

- Scale depends on the intricacy of the soil pattern in relation to the expected intensity of land use
 - It may not be necessary to delineate complex soil patterns in areas of low intensity land use
- Most modern surveys are conducted at scales of 1:24,000 or 1:12,000
- The amount of detail displayed on a soil map is limited by the legibility of that map at publication scale
 - As map scale decreases, minimum delineation size increases

Mapping Scale

- Minimum delineation size for many MD surveys is ~ 1.4 acres
 - Areas smaller than this **will not** be delineated
 - Larger soil delineations may contain areas of soil that are quite different than the named soil map unit (**dissimilar soils**)
- Care must be taken when viewing or using these maps at scales **larger** than the mapping scale
 - Line placement may not be **accurate** at larger scales
 - Mapping concepts reflect the mapping scale; **additional complexity** visible at larger scales is not accounted for

Reporting Problems with Soil Survey Data

- **Send an email to the State Soil Scientist**
 - Include the location, a description of the problem, and if possible, a map
- **The State Soil Scientist will forward problems to the appropriate MLRA Soil Survey Office**

Official Soil Survey Data

- Digital soil data (“SSURGO”) warehoused on NRCS’s Soil Data Mart is the **official source of soil survey data**
- Data stored on the Soil Data Mart ***supersedes*** all other sources of soil survey information
- Where digital soil survey data does not exist, the most recent hard copy publication contains the official soil survey data

Web Soil Survey

- Web Soil Survey is the National Cooperative Soil Survey's **principal data exploration and delivery tool**
- Web Soil Survey has **replaced traditional hard copy** publications as the primary means of distributing soil survey data

<http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>

Why Use Web Soil Survey?

- Immediate access to the most up-to-date soil data... **WSS is NEVER out of date!**
- Develop **custom reports** that address specific soil questions or concerns
 - for a soil survey area
 - for a specific property (< 10,000 acres) or **“Area of Interest”**
- Reduce publication and storage costs
- Reduce environmental impact

Requirements for Running WSS

- **Display Resolution**
 - 1024 x768 or higher
 - Will work for resolutions as low as 800 x 600, but not optimal
- **JavaScript must be enabled**
- **Cookies**
 - Session Cookies required to maintain a WSS session
 - Persistent Cookies not required, but do allow you to save your WSS preferences
- **Popup Blocker should be configured to allow popups from this site**

Web Soil Survey - Home - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>

Home About Soils Help Contact Us

You are here: Web Soil Survey Home

Search

Enter Keywords

All NRCS Sites

Browse by Subject

- Soils Home
- National Cooperative Soil Survey (NCSS)
- Archived Soil Surveys
- Status Maps
- Official Soil Series Descriptions (OSD)
- Soil Series Extent Mapping Tool
- Soil Data Mart
- Geospatial Data Gateway
- eFOTG
- National Soil

The simple yet powerful way to access and use soil data.

I Want To...

- Start Web Soil Survey (WSS)
- Know the requirements for running Web Soil Survey
- Know whether Web Soil Survey works in my web browser
- Know the Web Soil Survey hours of operation
- Find what areas of the U.S. have soil data

Welcome to Web Soil Survey (WSS)

Web Soil Survey (WSS) provides soil data and information produced by the National Cooperative Soil Survey. It is operated by the USDA Natural Resources Conservation Service (NRCS) and provides access to the largest natural resource information system in the world. NRCS has soil maps and data available online for more than 95 percent of the nation's counties and

anticipates having 100 percent in the near future. The site is updated and maintained online as the single authoritative source of soil survey information.

Three Basic Steps

1 Define...

Area of Interest (AOI)

Use the Area of Interest tab to define your area of interest

Announcements/Events

- Web Soil Survey 2.1 has been released! View description of new features.

I Want Help With...

Click here to start WSS

Trusted sites

How to Use Information

Welcome to Web Soil Survey (WSS)

Web Soil Survey (WSS) provides soil data and information produced by the National Cooperative Soil Survey. It is operated by the USDA Natural Resources Conservation Service (NRCS) and provides access to the largest natural resource information system in the world. NRCS has soil maps and data available online for more than 95 percent of the nation's counties and anticipates having 100 percent in the near future. The site is updated and maintained online as the single authoritative source of soil survey information.

Three Basic Steps

1 Define.

Area of Interest (AOI)

Use the **Area of Interest** tab to define your area of interest.

Click to view larger image.

2 View/Explore.

Soil Map

Click the **Soil Map** tab to view or print a soil map, or click the **Soil Data Explorer** tab to access soil data for your area and determine the suitability of the soils for a particular use. The items you want saved in a report can be

- Know whether Web Soil Survey works in my web browser
- Know the Web Soil Survey hours of operation
- Find what areas of the U.S. have soil data

Announcements/Events

- Web Soil Survey Release History

I Want Help With...

- How to use Web Soil Survey
- How to use Web Soil Survey Online Help
- Known Problems and Workarounds
- Frequently Asked Questions
- Citing Web Soil Survey as a source of soils data

Tips & Shortcuts

Basic Steps

- Define your **Area of Interest (AOI)**
- View and/or print your **Soil Map**
- Explore your **Soils Information** (map, tables, reports)
- Add to **Free Shopping Cart** and Check Out

Web Soil Survey Functions

Contact Us **Download Soils Data** Archived Soil Surveys Preferences Logout Help

Area of Interest (AOI) Soil Map Soil Data Explorer Shopping Cart

Quick Navigation

Navigate By...

- 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: Continental U.S.

Scale: (not to scale)



0 1007.9mi

Navigate to an Area of Interest (AOI)

The screenshot shows the USDA Web Soil Survey interface. At the top, there is a navigation bar with links for 'Contact Us', 'Download Soils Data', 'Archived Soil Surveys', 'Preferences', 'Logout', and 'Help'. Below this is a secondary navigation bar with buttons for 'Area of Interest (AOI)', 'Soil Map', 'Soil Data Explorer', and 'Shopping Cart'. The main content area is divided into two panels. The left panel, titled 'Quick Navigation', contains a 'Navigate By...' dropdown menu with 10 options: 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. A red circle highlights this list. The right panel, titled 'Area of Interest Interactive Map', features a map of the United States with state abbreviations. It includes a 'View Extent' dropdown set to 'Continental U.S.', a 'Scale' dropdown set to '(not to scale)', and a scale bar at the bottom indicating 0 to 1007.9m. A legend is visible between the two panels.

10 different ways to find a location

Zoom to a Location or Region

Contact Us | Download Soils Data | Archived Soil Surveys | Soil Survey Status | Glossary | Preferences | Logout | Help

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

Search

Quick Navigation

Navigate By...

Address

View ?

Address: 16608 Brandywine Road

City: Brandywine

State: Maryland

Zip Code: 20613

Show Postal Code Layer in Map

View

State and County


Soil Survey Area

Latitude and Longitude

Area of Interest Interactive Map

Legend

View Extent: Contiguous U.S. | Scale: (not to scale)



0 697mi

1. Define the Area of Interest (AOI)

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

Search

Quick Navigation

Navigate By...

Address

View ?

Address: 16608 Brandywine Road

City: Brandywine

State: Maryland

Zip Code: 20613

Show Postal Code Layer in Map

View

State and County

Soil Survey Area

Latitude and Longitude

Area of Interest Interactive Map

Legend

View Extent: Contiguous U.S. | Scale: (not to scale)

0 1207ft

Draw the AOI

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

Search

Quick Navigation

Navigate By...

Address

View

Address: 16608 Brandywine Road

City: Brandywine

State:

Zip Code: 20613

Show Postal Code Layer in Map

View

State and County

Soil Survey Area

Latitude and Longitude

Area of Interest Interactive Map

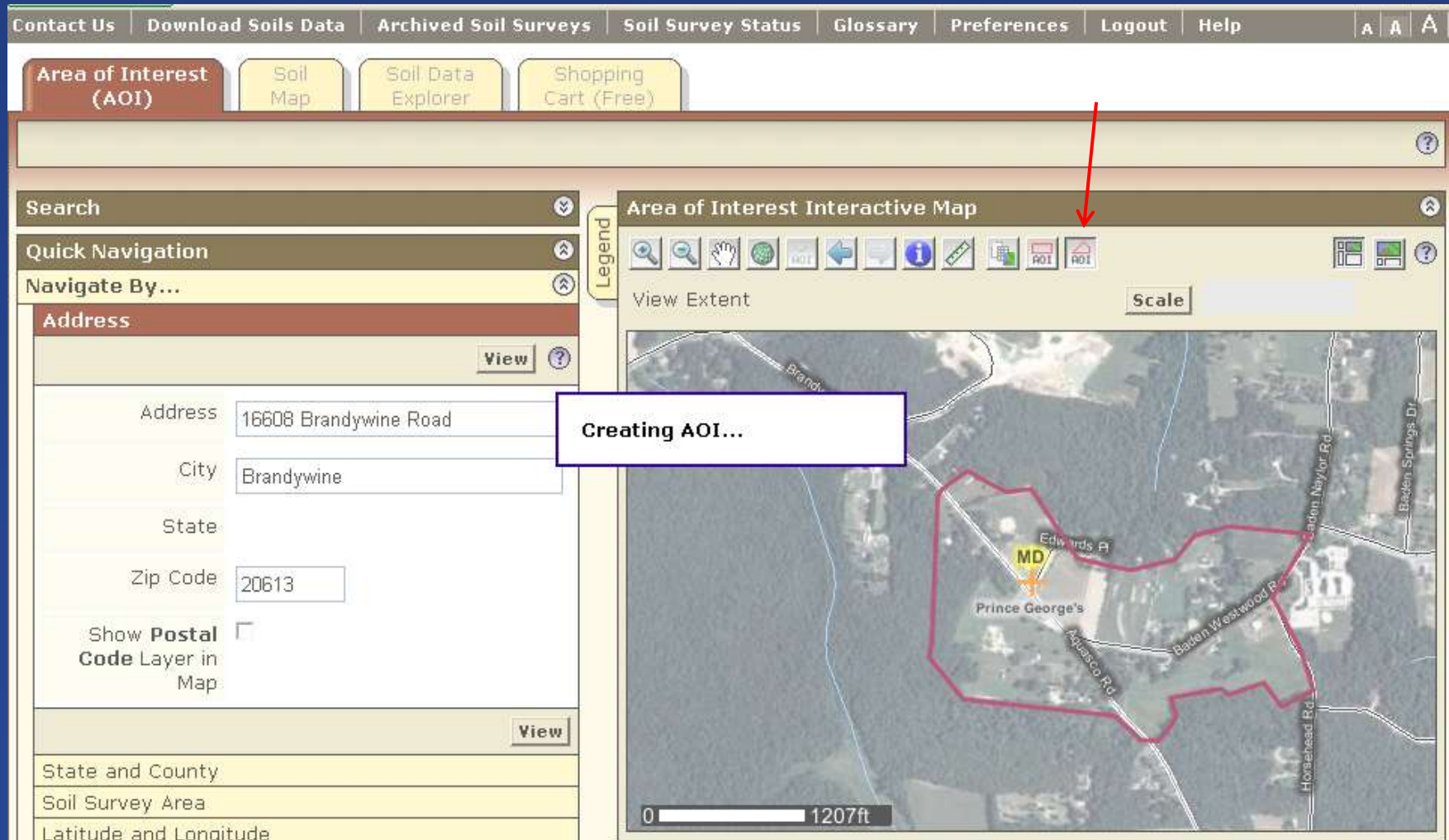
Legend

View Extent

Scale

0 1207ft

Creating AOI...



View and Label the AOI

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

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Area of Interest Properties

Clear AOI

AOI Information

Name: Baden Fire House Area

Map Unit Symbols

- Use Soil Survey Area Map Unit Symbols
- Use National Map Unit Symbols

Area (acres): 96.7

Soil Data Available from Web Soil Survey

Prince George's County, Maryland (MD033)

Soil Maps	Version 7, Dec 16, 2009
Soil Data	Version 8, Dec 16, 2009


Clear AOI

Quick Navigation

Area of Interest Interactive Map

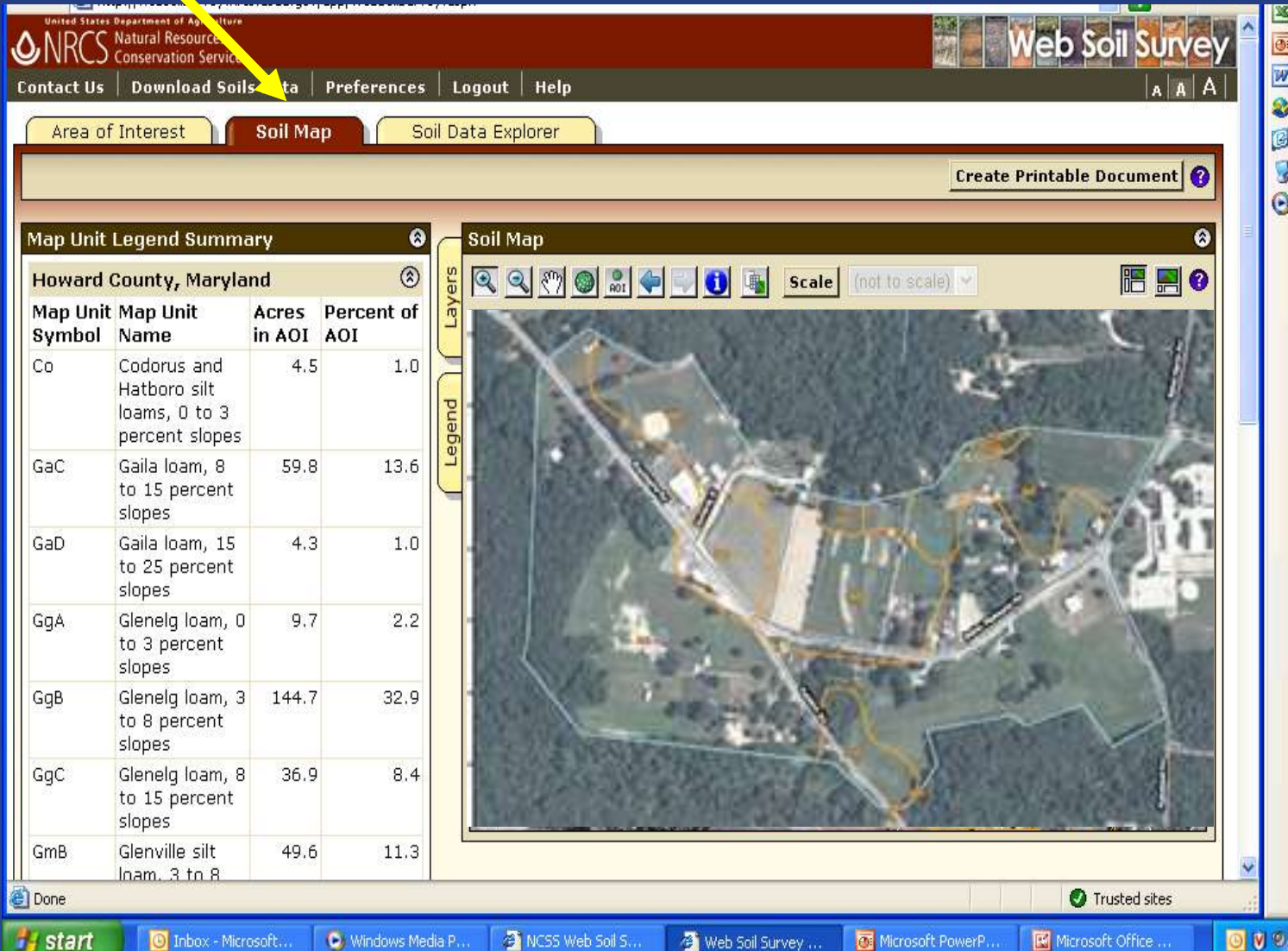
Legend

View Extent: Contiguous U.S. | Scale: (not to scale)



0 852ft

2. Create and View a Soil Map



The screenshot displays the NRCS Web Soil Survey interface. At the top, the navigation bar includes links for 'Contact Us', 'Download Soil Data', 'Preferences', 'Logout', and 'Help'. A yellow arrow points to the 'Download Soil Data' link. Below the navigation bar, there are tabs for 'Area of Interest', 'Soil Map', and 'Soil Data Explorer'. The 'Soil Map' tab is active, showing a map of Howard County, Maryland, with various soil units overlaid. To the left of the map is a 'Map Unit Legend Summary' table. The table lists the following soil units:

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Co	Codorus and Hatboro silt loams, 0 to 3 percent slopes	4.5	1.0
GaC	Gaila loam, 8 to 15 percent slopes	59.8	13.6
GaD	Gaila loam, 15 to 25 percent slopes	4.3	1.0
GgA	Glenelg loam, 0 to 3 percent slopes	9.7	2.2
GgB	Glenelg loam, 3 to 8 percent slopes	144.7	32.9
GgC	Glenelg loam, 8 to 15 percent slopes	36.9	8.4
GmB	Glenville silt loam, 3 to 8	49.6	11.3

The map area includes a toolbar with navigation tools and a 'Scale' dropdown menu set to 'not to scale'. The bottom of the screen shows the Windows taskbar with several open applications, including 'Inbox - Microsoft...', 'Windows Media P...', 'NCSS Web Soil S...', 'Web Soil Survey ...', 'Microsoft PowerP...', and 'Microsoft Office ...'.

View Map Unit Descriptions

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

Search

Map Unit Legend

Prince George's County, Maryland (MD033)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
ApA	Aquasco silt loam, 0 to 2 percent slopes, occasionally ponded	59.0	61.0%
BaA	Beltsville silt loam, 0 to 2 percent slopes	4.7	4.9%
BaB	Beltsville silt loam, 2 to 5 percent slopes	11.7	12.1%
BaC	Beltsville silt loam, 5 to 10 percent slopes	0.6	0.6%
GgB	Grosbeck silt loam, 0 to 2 percent slopes	0.0	0.0%
GgC	Grosbeck silt loam, 2 to 5 percent slopes	0.0	0.0%

Map Unit Description

Printable Version

Report — Map Unit Description

Prince George's County, Maryland

BaB—Beltsville silt loam, 2 to 5 percent slopes

Map Unit Setting

Elevation: 10 to 400 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 180 to 210 days

Map Unit Composition

Beltsville and similar soils: 70 percent
Minor components: 30 percent

Description of Beltsville

Setting

Landform: Broad interstream divides
Landform position (three-dimensional): Interfluvium
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Silty eolian deposits over loamy fluvio-marine deposits

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: 20 to 40 inches to fragipan

Click on a map unit in the legend for a description

3. Print a Soil Map

Search

Map Unit Legend

Prince George's County, Maryland (MD033)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
ApA	Aquasco silt loam, 0 to 2 percent slopes, occasionally ponded	59.0	61.0%
BaA	Beltsville silt loam, 0 to 2 percent slopes	4.7	4.9%
BaB	Beltsville silt loam, 2 to 5 percent slopes	11.7	12.1%
BaC	Beltsville silt loam, 5 to 10 percent slopes	9.6	9.9%
GgB	Grosstown gravelly silt loam, 2 to 5 percent slopes	7.1	7.4%
GgC	Grosstown gravelly	1.3	1.3%

Printable Version Options

Report Options

Title: Soil Map; Prince George's County, Maryland

Subtitle (optional):

- Area of Interest Name: "Baden Fire House Area"
- Custom Subtitle:
- None

Map Options

Map Scale: Automatic

Printed Sheet Size: A (8.5" x 11") — 1 sheet

Show UTM Coordinate Ticks:

Cancel View

0 852ft

http://websoilsurvey.sc.egov.usda.gov/wssproduct/gyzhb045thvax545tecgbgnp/PV_00000/Soil_Map-Pri - Microsoft Internet Explorer

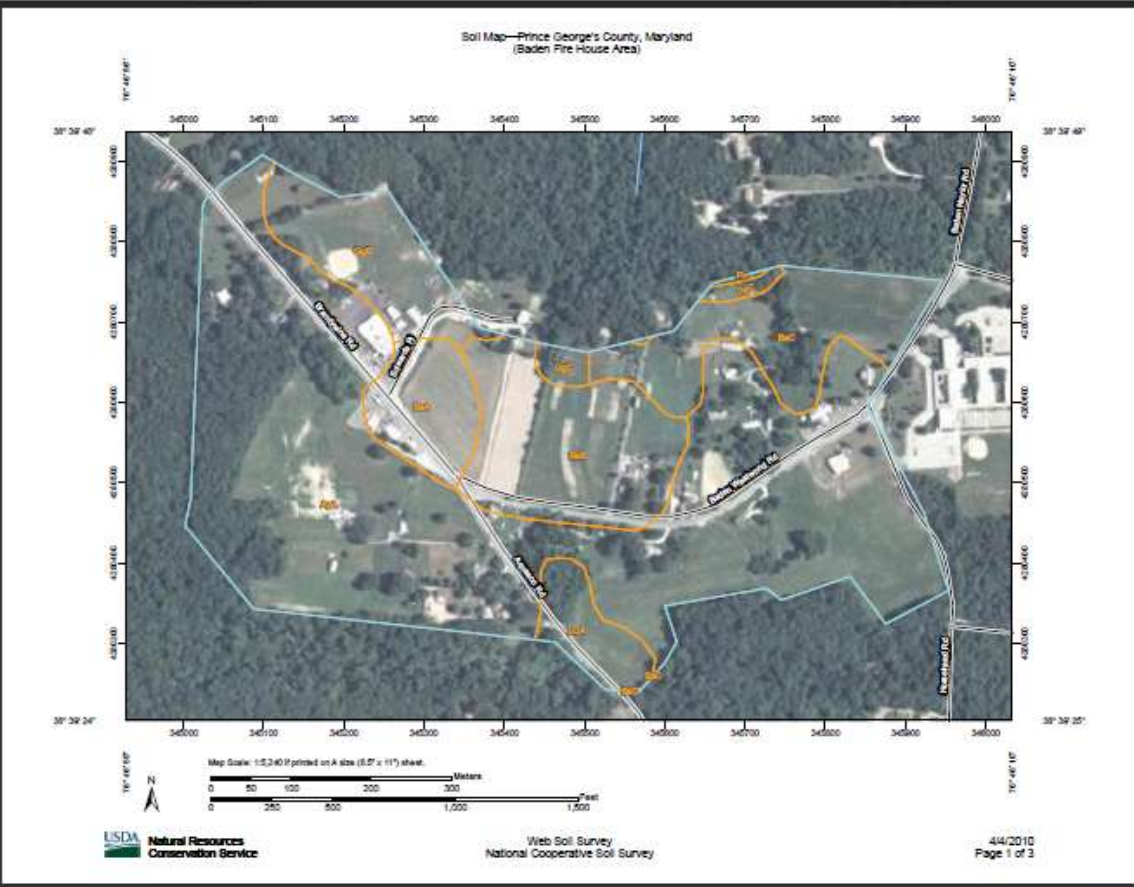
File Edit Go To Favorites Help

Back Forward Stop Refresh Home Search Favorites RSS Print Mail News RSS Print Mail News RSS

Address http://websoilsurvey.sc.egov.usda.gov/wssproduct/gyzhb045thvax545tecgbgnp/PV_00000/Soil_Map-Prince_Georges_C Go Links Convert Select

McAfee SiteAdvisor

1 / 3 54.1% Sign Find



Explore and Analyze Soil Data with WSS Soil Data Explorer

- Learn the terminology and concepts associated with soils, soil interpretations, and land uses
- Create maps and reports of soil interpretations and properties
- Minimal learning curve and hardware requirements

4. Explore Soil Data

Contact Us | Download Soils Data | Archived Soil Surveys | Soil Survey Status | Glossary | Preferences | Logout | Help | A A A

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

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Suitabilities and Limitations Ratings ?

Open All Close All ?

- Building Site Development ?
- Construction Materials ?
- Disaster Recovery Planning ?
- Land Classifications ?
- Land Management ?
- Military Operations ?
- Recreational Development ?
- Sanitary Facilities ?
- Vegetative Productivity ?
- Waste Management ?
- Water Management ?

Soil Map ?

Scale: 1:6,540 ± 1 %

0 876ft

Soil Data Explorer – Intro to Soils

United States Department of Agriculture
Natural Resources Conservation Service

Web Soil Survey

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Area of Interest | Soil Map | **Soil Data Explorer**

View Soil Information for: All Uses

Intro to Soils | Suitabilities and Limitations for Use | Soil Properties and Qualities | Soil Reports | Soil Survey Publications

Table of Contents

- Introduction to Soils
 - Soils 101
 - What is soil? (less technical)
 - What is soil? (more technical)
 - How does soil form?
 - Parent Material
 - Climate
 - Living organisms
 - Landscape position
 - Time
 - What are soil horizons?
 - What is a soil scientist?
 - What is a soil survey?
 - Who uses a soil survey?
 - What is a map unit?
 - What is a consociation, complex, association, undifferentiated group, or miscellaneous area?
 - What is an Official Series Description?

Intro to Soils

Viewing Topics

A Table of Contents appears in the navigation panel to the left.

- Click an item in the Table of Contents to make it the **active topic** and view its content.
- To view an entire section, click the name of the section that contains the topics you want to view.

Saving or Printing Topics

Choose the topics you want to view, so they appear in the view panel, and then click **Create Printable Document**.

Determine Appropriate Uses for a Soil

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Suitabilities and Limitations Ratings

Open All Close All

- Building Site Development
- Construction Materials
- Disaster Recovery Planning
- Land Classifications
- Land Management
- Military Operations
- Recreational Development
- Sanitary Facilities
- Vegetative Productivity

W W

Soil Map

Scale: 1:6,540 ± 1 %

Legend

876ft

•Approximately 80 interpretations

Generate maps that show what kinds of soils are suitable for specific land uses

Land Capability Class Example

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Suitabilities and Limitations Ratings

Open All Close All

- Building Site Development
- Construction Materials
- Disaster Recovery Planning

Land Classifications

- Conservation Tree and Shrub Group
- Ecological Site ID
- Ecological Site Name
- Farmland Classification
- Forage Suitability Group ID (Component Table)
- Hydric Rating by Map Unit
- Irrigated Capability Class
- Irrigated Capability Subclass
- Nonirrigated Capability Class
- Nonirrigated Capability Subclass**
- Soil Taxonomy Classification

Land Management

Soil Map

Scale: 1:6,540 ± 1 %

0 876ft

Land Capability Class Map

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Ecological Sit
Farmland Cla
Forage Suita
Hydric Rating
Irrigated Cap
Irrigated Cap
Nonirrigated

View Options

Map Legend

- Area of Interest (AOI)
 - Area of Interest (AOI)
- Soils
 - Soil Survey Areas
 - Soil Map Units
 - Soil Ratings
 - Capability Class - I
 - Capability Class - II
 - Capability Class - III
 - Capability Class - IV
 - Capability Class - V
 - Capability Class - VI
 - Capability Class - VII
 - Capability Class - VIII
 - Not rated or not available
 - Special Point Features
 - Special Line Features
- Political Features

Map — Nonirrigated Capability Class

Legend

Scale 1:6,540 ±1%

0 876ft

Table: Nonirrigated Capability Class Summary By Map Unit

Area of Interest (AOI)

Soil Map

Soil Data Explorer

Shopping Cart (Free)

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Intro to Soils

Suitabilities and

Soil Properties and

Description – Nonirrigated Capability Class

Map Legend

Map Legend

- Area of Interest (AOI)
 - Area of Interest (AOI)
- Soils
 - Soil Survey Areas
 - Soil Map Units
 - Soil Ratings
 - Capability Class - I
 - Capability Class - II
 - Capability Class - III
 - Capability Class - IV
 - Capability Class - V
 - Capability Class - VI
 - Capability Class - VII
 - Capability Class - VIII
 - Not rated or not available
 - Special Point Features
 - Special Line Features
- Political Features

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations that show suitability and limitations of groups of soils for rangeland, for woodland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels-capability class, subclass, and unit. Only class and subclass are included in this data set.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have few limitations that restrict their use.

Class 2 soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland,

fromland, or wildlife habitat.

View Soil Properties and Qualities

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

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Intro to Soils | Suitabilities and Limitations for Use | **Soil Properties and Qualities** | Ecological Site Assessment | Soil Reports

Search [v]

Properties and Qualities Ratings [^]

[Open All] [Close All] [?]

- Soil Chemical Properties [?] [v]
- Soil Erosion Factors [?] [v]
- Soil Physical Properties [?] [v]
- Soil Qualities and Features [?] [v]
- Water Features [?] [v]

Soil Map [^]

Legend [v]

Scale 1:6,540 ±1%

0 876ft

•Approximately 46 reports

Soil Erosion Factors

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Properties and Qualities Ratings

Open All Close All

- Soil Chemical Properties
- Soil Erosion Factors**
- K Factor, Whole Soil**
- K Factor, Rock Free
- T Factor
- Wind Erodibility Group
- Wind Erodibility Index
- Soil Physical Properties
- Soil Qualities and Features
- Water Features

Soil Map

Scale 1:6,540 ±1%

0 876ft

Soil Erosion Factors

The screenshot displays the NRCS Soil Data Explorer interface. At the top, navigation links include 'Contact Us', 'Download Soils Data', 'Archived Soil Surveys', 'Soil Survey Status', and 'Glossary'. Below these are tabs for 'Area of Interest (AOI)', 'Soil Map', 'Soil Data Explorer', and 'Shopping Cart'. A dropdown menu shows 'View Soil Information By Use: All Uses'. Navigation buttons include 'Intro to Soils', 'Suitabilities and Limitations for Use', 'Soil Properties and Qualities', and 'Ecological Site Assessment'. A search bar is present, and a list of categories is shown, with 'Soil Erosion Factors' expanded to show: K Factor, Rock Free; K Factor, Whole Soil; T Factor; Wind Erodibility Group; Wind Erodibility Index; Soil Physical Properties; Soil Qualities and Features; and Water Features. The 'Soil Map' section shows a map with a legend and a scale bar (0 to 876ft). A 'View Options' panel is open, showing checked options for 'Map', 'Table', 'Description of Rating', and 'Rating Options'. Under 'Advanced Options', 'Aggregation Method' is set to 'Dominant Condition', 'Tie-break Rule' is set to 'Higher', and 'Layer Options' includes 'Surface Layer' and 'Depth Range'. The 'Depth Range' section has input fields for 'Top Depth' and 'Bottom Depth', with 'Centimeters' selected as the unit.

View Description View Rating

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

View Soil Information By Use: All Uses

Intro to Soils Suitabilities and Limitations for Use Soil Properties and Qualities Ecological Site Assessment

Search

Properties and Qualities Ratings

Open All Close All

Soil Erosion Factors

- K Factor, Rock Free
- K Factor, Whole Soil
- T Factor
- Wind Erodibility Group
- Wind Erodibility Index
- Soil Physical Properties
- Soil Qualities and Features
- Water Features

Soil Map

Legend

0 876ft

View Options

- Map
- Table
- Description of Rating
- Rating Options
- Detailed Description

Advanced Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: []

Tie-break Rule: Lower Higher

Layer Options: Surface Layer Depth Range

Top Depth: []

Bottom Depth: []

Inches Centimeters

All Layers

Kw: Surface Horizon

[Contact Us](#) | [Download Soils Data](#) | [Archived Soil Surveys](#) | [Soil Survey Status](#) | [Glossary](#) | [Preferences](#) | [Logout](#) | [Help](#)

[Area of Interest \(AOI\)](#) | [Soil Map](#) | **Soil Data Explorer** | [Shopping Cart \(Free\)](#)

View Soil Information By Use: All Uses Printable Version Add to Shopping Cart

[Intro to Soils](#) | [Suitabilities and](#) | **Soil Properties** | [Ecological Site Assessment](#) | [Soil Reports](#)

Search

Properties and

Soil Chemical Pr

Soil Erosion Fa

K Factor, Rock

K Factor, Who

View Options

M

Ta

Description

Rat

Rating Opti

Advanced Op

Map Legend

- Area of Interest (AOI)
- Area of Interest (AOI)
- Soils
- Soil Survey Areas
- Soil Map Units
- Soil Ratings
- .02
- .05
- .10
- .15
- .17
- .20
- .24
- .28
- .32
- .37
- .43
- .49
- .55
- 6.4

Map — K Factor, Whole Soil

Scale: 1:6,540 ±1%

0 876ft

Tables — K Factor, Whole Soil — Summary By Map Unit

Kw: Surface Horizon

[Contact Us](#) | [Download Soils Data](#) | [Archived Soil Surveys](#) | [Soil Survey Status](#) | [Glossary](#) | [Preferences](#) | [Logout](#) | [Help](#)

[Area of Interest \(AOI\)](#) | [Soil Map](#) | **Soil Data Explorer** | [Shopping Cart \(Free\)](#)

View Soil Information By Use: All Uses

[Intro to Soils](#) | [Suitabilities and](#) | **Soil Properties**

Search

Properties and

Soil Chemical Pr

Soil Erosion Fa

K Factor, Rock

K Factor, Who

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Description

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Rating Opti

Advanced Op

Map Legend

- Area of Interest (AOI)
 - Area of Interest (AOI)
- Soils
 - Soil Survey Areas
 - Soil Map Units
 - Soil Ratings
 - .02
 - .05
 - .10
 - .15
 - .17
 - .20
 - .24
 - .28
 - .32
 - .37
 - .43
 - .49
 - .55
 - .64

Description — K Factor, Whole Soil

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Rating Options — K Factor, Whole Soil

Aggregation Method: Dominant Component
Component Percent Cutoff: None Specified
Tie-break Rule: Higher
Layer Options: Surface Layer

Map Unit	Description	K Factor	Area (%)	Weighted K
LQA	Lenni and Quindocqua soils, 0 to 2 percent slopes	.37	3.2	3.3%
Px	Potobac-Issue complex, frequently flooded	.28	0.1	0.1%
Totals for Area of Interest			96.7	100.0%

0 876ft

Table — K Factor, Whole Soil — Summary By Map Unit

Soil Properties and Qualities

Available Water Supply 0-100cm

Search [?]

Properties and Qualities Ratings [?]

Open All Close All [?]

Soil Chemical Properties [?]

Soil Erosion Factors [?]

Soil Physical Properties [?]

Available Water Capacity

Available Water Supply, 0 to 100 cm

View Description View Rating

View Options [?]

Advanced Options [?]

Aggregation Method **No Aggregation Necessary**

Tie-break Rule Lower Higher

View Description View Rating

Available Water Supply, 0 to 150 cm

Available Water Supply, 0 to 25 cm

Available Water Supply, 0 to 50 cm

Bulk Density, 15 Bar

Bulk Density, One-Tenth Bar

Bulk Density, One-Third Bar

Map — Available Water Supply, 0 to 100 cm [?]

Legend [?]

Scale (not to scale)



0 1487ft

Tables — Available Water Supply, 0 to 100 cm — Summary By Map Unit [?]



Summary by Map Unit — Talbot County, Maryland [?]

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
CoA	Corsica mucky loam, 0 to 2 percent slopes	21.84	2.9	0.6%

Soil Physical Properties

Soil Physical Properties  
Available Water Capacity
Available Water Supply, 0 to 100 cm
Available Water Supply, 0 to 150 cm
Available Water Supply, 0 to 25 cm
Available Water Supply, 0 to 50 cm
Bulk Density, 15 Bar
Bulk Density, One-Tenth Bar
Bulk Density, One-Third Bar
Linear Extensibility
Liquid Limit
Organic Matter
Percent Clay
Percent Sand
Percent Silt
Plasticity Index
Saturated Hydraulic Conductivity (Ksat)
Saturated Hydraulic Conductivity (Ksat), Standard Classes
Surface Texture
Water Content, 15 Bar
Water Content, One-Third Bar

Soil Qualities and Features

Soil Qualities and Features	 
AASHTO Group Classification (Surface)	
Depth to a Selected Soil Restrictive Layer	
Depth to Any Soil Restrictive Layer	
Drainage Class	
Frost Action	
Frost-Free Days	
Hydrologic Soil Group	
Map Unit Name	
Parent Material Name	
Representative Slope	
Unified Soil Classification (Surface)	

View Soil Reports

Contact Us | Download Soils Data | Archived Soil Surveys | Soil Survey Status | Glossary | Preferences | Logout | Help

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

View Soil Information By Use: All Uses Printable Version Add to Shopping Cart

Intro to Soils | Suitabilities and Limitations for Use | Soil Properties and Qualities | Ecological Site Assessment | **Soil Reports**

Search

Soil Reports

Open All Close All

- AOI Inventory
- Building Site Development
- Construction Materials
- Land Classifications
- Land Management
- Recreational Development
- Sanitary Facilities
- Soil Chemical Properties
- Soil Erosion
- Soil Physical Properties
- Soil Qualities and Features
- Vegetative Productivity
- Waste Management
- Water Features

Soil Map

Scale: 1:6,540 ±1%

0 876ft

Approximately 40 reports

Soil Erosion Reports

Intro to Soils
Suitabilities and Limitations for Use
Soil Properties and Qualities
Ecological Site
Soil

Search

Soil Reports

Open All
Close All

- AOI Inventory
- Building Site Development
- Construction Materials
- Land Classifications
- Land Management
- Recreational Development
- Sanitary Facilities
- Soil Chemical Properties
- Soil Erosion
- RUSLE2 Related Attributes
- Options
- Include Minor Soils
- View Description
View Soil Report

- Soil Physical Properties
- Soil Qualities and Features
- Vegetative Productivity
- Waste Management

Report — RUSLE2 Related Attributes

Prince George's County, Maryland

Map symbol and soil name	Pct. of map unit	Hydrologic group	Kf	T factor	Representative value		
					% Sand	% Silt	% Clay
ApA—Aqasco silt loam, 0 to 2 percent slopes, occasionally ponded							
Aqasco	80	C	.37	3	15.9	68.7	15.4
BaA—Beltsville silt loam, 0 to 2 percent slopes							
Beltsville	75	C	.37	4	40.6	51.5	7.9
BaB—Beltsville silt loam, 2 to 5 percent slopes							
Beltsville	70	C	.37	4	40.6	51.5	7.9
BaC—Beltsville silt loam, 5 to 10 percent slopes							
Beltsville	70	C	.37	4	40.6	51.5	7.9
GgB—Grosstown gravelly silt loam, 2 to 5 percent slopes							
Grosstown	80	B	.37	4	23.7	64.2	12.1
GgC—Grosstown gravelly silt loam, 5 to 10 percent slopes							
Grosstown	90	B	.37	4	23.7	64.2	12.1
LQA—Lenni and Quindocqua soils, 0 to 2 percent slopes							
Lenni, undrained	50	D	.37	3	24.0	60.6	15.4
Quindocqua, undrained	30	C/D	.02	5	0.0	0.0	1.0
Px—Potobac-Issue complex, frequently flooded							
Potobac	70	D	.28	5	34.7	42.8	22.5
Issue	25	C	.37	5	24.0	60.6	15.4

Create a Printable Report

RUSLE2 Related Attributes—Prince George's County, Maryland

Bedon Fire House Area

RUSLE2 Related Attributes

This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factors Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the surface horizon.

Report—RUSLE2 Related Attributes

RUSLE2 Related Attributes—Prince George's County, Maryland							
Map symbol and soil name	Pct. of map unit	Hydrologic group	Kf	T factor	Representative value		
					% Sand	% Silt	% Clay
ApA—Aquasco silt loam, 0 to 2 percent slopes, occasionally ponded							
Aquasco	80	C	37	3	15.9	66.7	15.4
BaA—Belleville silt loam, 0 to 2 percent slopes							
Belleville	75	C	37	4	40.6	51.5	7.9
BaB—Belleville silt loam, 2 to 5 percent slopes							
Belleville	70	C	37	4	40.6	51.5	7.9
BaC—Belleville silt loam, 5 to 10 percent slopes							
Belleville	70	C	37	4	40.6	51.5	7.9
GgB—Grostown gravelly silt loam, 2 to 5 percent slopes							
Grostown	80	S	37	4	23.7	64.2	12.1
GgC—Grostown gravelly silt loam, 5 to 10 percent slopes							
Grostown	80	S	37	4	23.7	64.2	12.1
LQA—Lannd and Quintoque silt, 0 to 2 percent slopes							
Lannd, undrained	50	D	37	3	24.0	50.6	15.4
Quintoque, undrained	30	GD	22	5	0.0	0.0	1.0
Ph—Potomac-Isle complex, frequently flooded							
Potomac	70	D	38	5	34.7	42.8	22.5
Isle	25	C	37	5	24.0	50.6	15.4

5. Build Your Own Soil Survey

Contact Us | Download Soils Data | Archived Soil Surveys | Soil Survey Status | Glossary | Preferences | Logout | Help

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

View Soil Information By Use: All Uses Printable Version Add to Shopping Cart

Intro to Soils | Suitabilities and Limitations for Use | Soil Properties and Qualities | Ecological Site Assessment | **Soil Reports**

Search

Soil Reports

Open All **Close All**

- AOI Inventory
- Building Site Development
- Construction Materials
- Land Classifications
- Land Management
- Recreational Development
- Sanitary Facilities
- Soil Chemical Properties
- Soil Erosion
- Soil Physical Properties
- Soil Qualities and Features
- Vegetative Productivity
- Waste Management
- Water Features

Soil Map

Legend

Scale: 1:6,540 ±1%

0 876ft

Add Content to Shopping Cart

Contact Us | Download Soils Data | Archived Soil Surveys | Soil Survey Status | Glossary | Preferences | Logout | Help

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

View Soil Information By Use: All Uses Printable Version **Add to Shopping Cart** (?)

Intro to Soils | Suitabilities and Limitations for Use | Soil Properties and Qualities

Add to Shopping Cart Options (?)

Title: RUSLE2 Related Attributes
Subtitle (optional):

Cancel OK

Search

Soil Reports (?)

AOI Inventory (?)

- Component Legend
- Map Unit Description
- Map Unit Description (Brief)
- Map Unit Description (Brief, Generated)
- Selected Soil Interpretations
- Selected Survey Area Interpretation Descriptions
- Survey Area Data Summary

Building Site Development (?)

Construction Materials (?)

Land Classifications (?)

Land Management (?)


Recreational Development (?)

Sanitary Facilities (?)

Soil Chemical Properties (?)

Soil Erosion (?)

Legend



Parts of a Custom Soil Survey

Search	
Report Properties	
?	
Title	
Title	Custom Soil Resource Report for Prince George's County, Maryland
Subtitle	<input checked="" type="radio"/> Area of Interest Name: "Baden Fire House Area" <input type="radio"/> Custom Subtitle: <input type="text"/> <input type="radio"/> None
Size	
Total Size	964 KB (0.9 MB)
Map Options	
Map Scale	Automatic
Printed Sheet Size	A (8.5" x 11") — 1 sheet
Show UTM Coordinate Ticks	<input checked="" type="checkbox"/>

Table of Contents	
?	
<input checked="" type="checkbox"/> Custom Soil Resource Report for Prince George's County, Maryland: Baden Fire House Area	964 KB
<input checked="" type="checkbox"/> Cover	518 KB
<input checked="" type="checkbox"/> Preface	3 KB
<input checked="" type="checkbox"/> Contents	0 KB
<input checked="" type="checkbox"/> How Soil Surveys Are Made	5 KB
<input checked="" type="checkbox"/> Soil Map	427 KB
<input checked="" type="checkbox"/> Soil Map	374 KB
<input checked="" type="checkbox"/> Map Unit Legend	4 KB
<input checked="" type="checkbox"/> Map Unit Description	50 KB
<input checked="" type="checkbox"/> Soil Data Explorer	7 KB
<input checked="" type="checkbox"/> All Uses	7 KB
<input checked="" type="checkbox"/> Soil Reports	7 KB
<input checked="" type="checkbox"/> Soil Erosion	7 KB
<input checked="" type="checkbox"/> RUSLE2 Related Attributes	7 KB
<input checked="" type="checkbox"/> References	3 KB
<input type="checkbox"/> Glossary	113 KB

Check Out

Contact Us | Download Soils Data | Archived Soil Surveys | Soil Survey Status | Glossary | Preferences | Logout | Help | A A A

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

Check Out ?

Search ?

Report Properties ?

Title

Title	Custom Soil Resource Report for Prince George's County, Maryland
Subtitle	<input checked="" type="radio"/> Area of Interest Name: "Baden Fire House Area" <input type="radio"/> Custom Subtitle: <input type="text"/> <input type="radio"/> None

Size

Total Size	964 KB (0.9 MB)
------------	-----------------

Map Options

Map Scale	Automatic ▾
Printed Sheet Size	A (8.5" × 11") — 1 sheet ▾
Show UTM Coordinate Ticks	<input checked="" type="checkbox"/>

Checkout Options ?

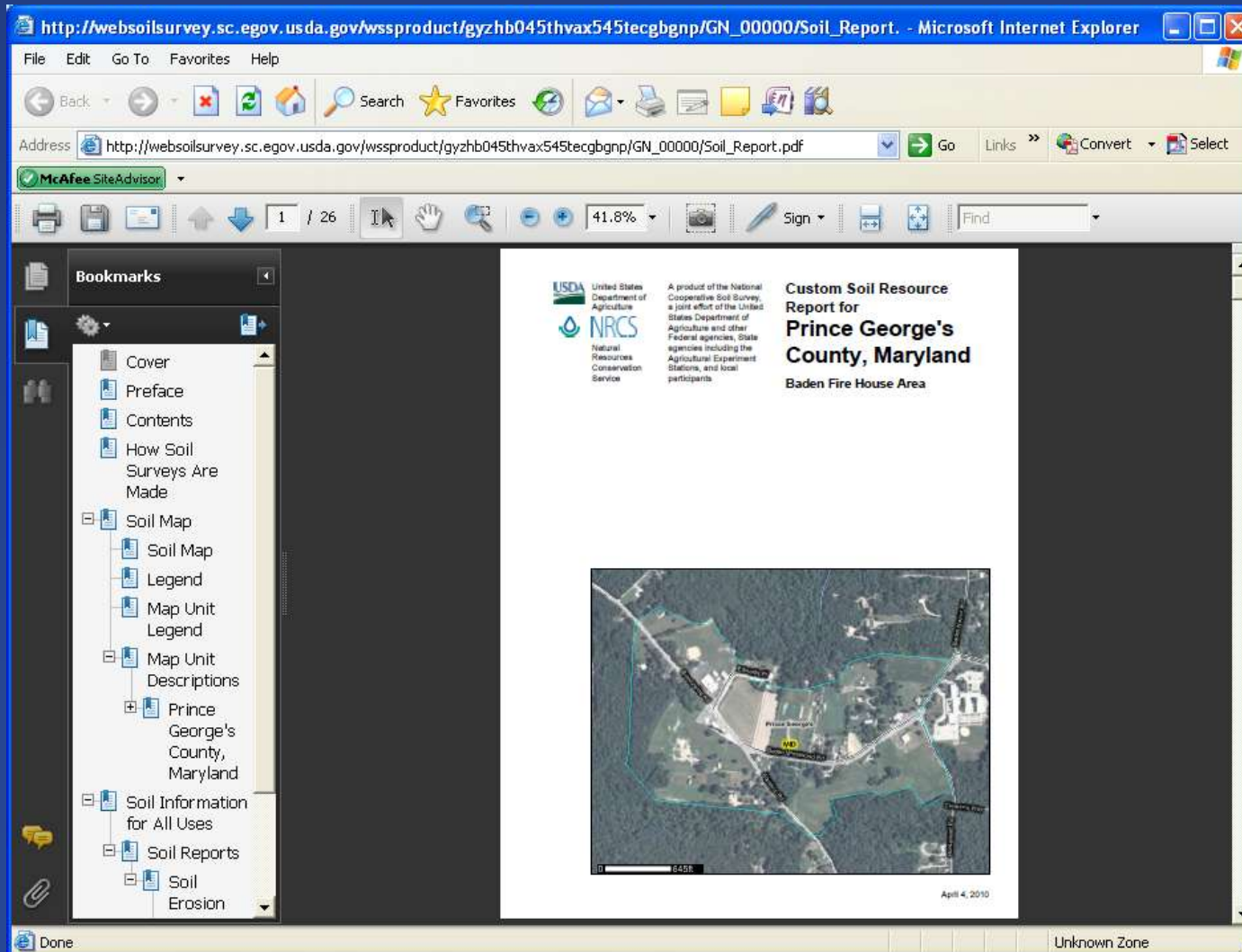
Delivery Options

Select a Delivery Method

- Get now
- Download later

Cancel **OK**

My Soil Survey...



The screenshot shows a Microsoft Internet Explorer browser window displaying a web page from the USDA's websoilsurvey.sc.egov.usda.gov. The address bar shows the URL: http://websoilsurvey.sc.egov.usda.gov/wssproduct/gyzhb045thvax545tecgbgnp/GN_00000/Soil_Report.pdf. The browser interface includes a menu bar (File, Edit, Go To, Favorites, Help), a toolbar with navigation and utility icons, and a status bar at the bottom showing "Done" and "Unknown Zone".

The web page content is a "Custom Soil Resource Report for Prince George's County, Maryland" for the "Baden Fire House Area". The page features the USDA and NRCS logos, a descriptive paragraph about the National Cooperative Soil Survey, and a satellite map of the area. The map shows a road network and a highlighted area labeled "Baden Fire House Area". A scale bar at the bottom of the map indicates 0 to 645 feet. The date "April 4, 2010" is printed at the bottom right of the page.

A left-hand navigation pane titled "Bookmarks" is visible, listing the following sections:

- Cover
- Preface
- Contents
- How Soil Surveys Are Made
- Soil Map
 - Soil Map
 - Legend
 - Map Unit Legend
- Map Unit Descriptions
 - Prince George's County, Maryland
- Soil Information for All Uses
 - Soil Reports
 - Soil Erosion

6. Download SSURGO Soil Data

Download Soils Data for your AOI

Select Data to Download

Tabular Data

Template Database

Select Template Database

State	Microsoft Access Version	Template Database Version	Template Database Name
<input checked="" type="radio"/> US	Access 2002	33.1	soildb_US_2002
<input type="radio"/> US	Access 2002	33.1	soildb_NPS_2002
<input type="radio"/> US	Access 2000	33.1	soildb_US_2000
<input type="radio"/> US	Access 97	32	soildb_US_97
<input type="radio"/> AK	Access 2002	32.15	soildb_AK_2002
<input type="radio"/> CA	Access 2002	33.2	soildb_CA_2003
<input type="radio"/> CA	Access 2000	33.2	soildb_CA_2000
<input type="radio"/> CA	Access 2002	32.1	soildb_CA_2002

Spatial Data

Select Spatial Coordinate System

UTM Zone 18, Northern Hemisphere (NAD 83)

Delivery Options

Your Web Soil Survey download request will be placed in the order queue and processed in turn. These requests are processed every day between 6:00 AM CDT and 11:00 PM CDT.

[Check Out](#)

- Download SSURGO data just for your area of interest

Coming Soon...

- **In the next release of WSS (sometime this spring), users will be able to save, export, and import Area of Interest boundaries in shapefile format**
- **In a subsequent release, the AOI size limit will be increased to 40,000 acres**

Questions?

