

References for Using Soil Survey Databases from the NRCS/USDA

June 2, 2009

<http://soildatamart.nrcs.usda.gov/>

<http://soils.usda.gov/technical/classification/osd/index.html> (View Official Series Descriptions by Series Name with best match feature.) This will show what a soil looks like in scientific notation.

Robert.wilson@az.usda.gov 480 988 1078 x106 or 602 280 8828 or cell 480 353 6785

Web Soil Survey User Guide for Arizona

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



Web Soil Survey allows the user to view and print soil survey maps and reports from a web browser without the need for additional software.

Web Soil Survey contains special icons that you need to understand:

Help Screens can be recognized and opened by clicking on a blue circle containing a “question mark” , typically located in the upper right corner of a window. When a Help screen is opened, the “question mark” turns upside-down . Close the Help screen by selecting it. “Up-caret”  buttons collapse Menus and Views. Select the “down-caret”  to expand Menus and Views.

Creating soil maps and reports:

1. **Log on** to <http://websoilsurvey.nrcs.usda.gov/app/> to access the Web Soil Survey home page.
2. **Read** the “3 Basic Steps” for using Web Soil Survey (WSS).
 1. **Define** – Define your area of interest on a map.
 2. **View** – View a map of the soils in your area.
 3. **Explore** – Explore the soil properties for your area.
 4. **Select “Start WSS” to begin**

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



“Start WSS” will open displaying four tabs:

1. The “Area of Interest” tab is currently the active tab.
2. The Soil Map tab is used to overlay the soil map over the photo base
3. The Soil Data Explorer opens a series of choice lists that allow you to develop and print thematic maps and reports
4. Shopping cart will allow you to develop several maps and place them in a queue and print them as a packaged report.

The “Area of Interest Interactive Map” appears on the right side and on the left side of the screen is the “Quick Navigation” menu.

3. Select the method of “Quick Navigation” in one of ten ways:

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	

4. Define the general vicinity and select the AOI (Area of Interest). (Using “Address” and “PLSS” as examples of a navigation method) Note: You are limited to 10,000 acre area in this version of WSS.

For this first example, the **Address** method of defining the area will be used.

- a. Select “Address” under “Select Criteria”.
- b. Type in a specific address i.e. 805 E. Warner Rd, Chandler 85225 and select the state from the pull-down menu; or just enter a zip code and that zip area will be shown.
- c. Select “View” button. This brings up a photo base map of the immediate area of the address you entered, with the address at the center.

Quick Navigation 

Navigate By... 

Address



Address

City

State

Zip Code

Show **Postal Code** Layer in Map



State and County

Soil Survey Area

Latitude and Longitude

PLSS (Section, Township, Range)

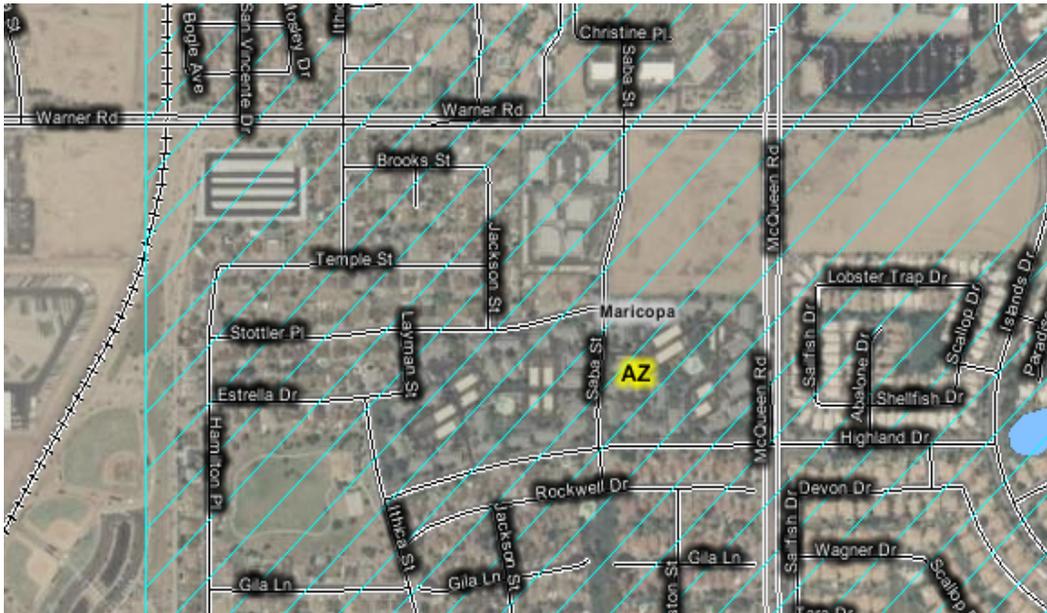
Bureau of Land Management

Department of Defense

Forest Service

National Park Service

Hydrologic Unit

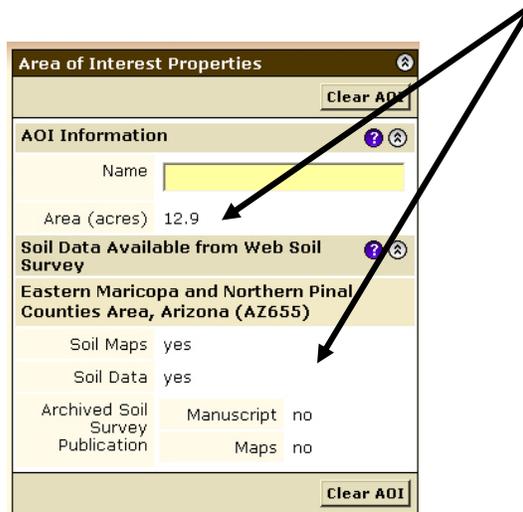


- d. In the toolbar, use one of the AOI buttons   to define the area of interest in the view.

The red rectangle  AOI button is used to select a rectangular area on the map. The triangle shaped  AOI button is used to outline oddly shaped areas by clicking on the map.

Select on the map to begin drawing the area, click at each turning point, and double-click to close the area.

The box on the left side of the screen will show if the map and report data are available and the total acres selected in the AOI.



This window also allows the user to create a name for the map.

In this second example we will use the PLSS selection feature. This feature is most useful in range areas that do not have a street address. To locate sections, the user must be familiar with the section layout within the Township/Range.

(Click on the “Clear AOI” button if you had a previously selected area.)

- a. Select: Navigate By...“PLSS (Township and Range)”.
- b. Select the state.
- c. Select Principle Meridian: Gila/Salt River or Navajo (in Arizona).
- d. Enter the Section 1 thru 36
- e. Enter the Township and select “North” or “South”
- f. Enter the Range and select “East” or “West”
- g. Check the Box: “Show **Township and Range** Layer in Map”
- h. Select “View”. The map will be displayed with a bold line depicting the township and range. The sections will not be displayed.
- i. Draw your area of interest using the “AOI” buttons.   as in the previous example.

PLSS (Section, Township, Range)

?

State:

Principal Meridian:

Section:

Township: North
 South

Range: East
 West

Show PLSS Section and PLSS Township and Range Layers in Map:

5. Select the “Layers” tab to make visible the available layers. Select the “Layers” tab again to close the layers menu.

Note:
To adjust the map view, use the following buttons:



Zoom In



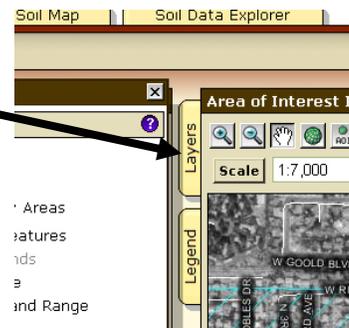
Zoom Out



Pan

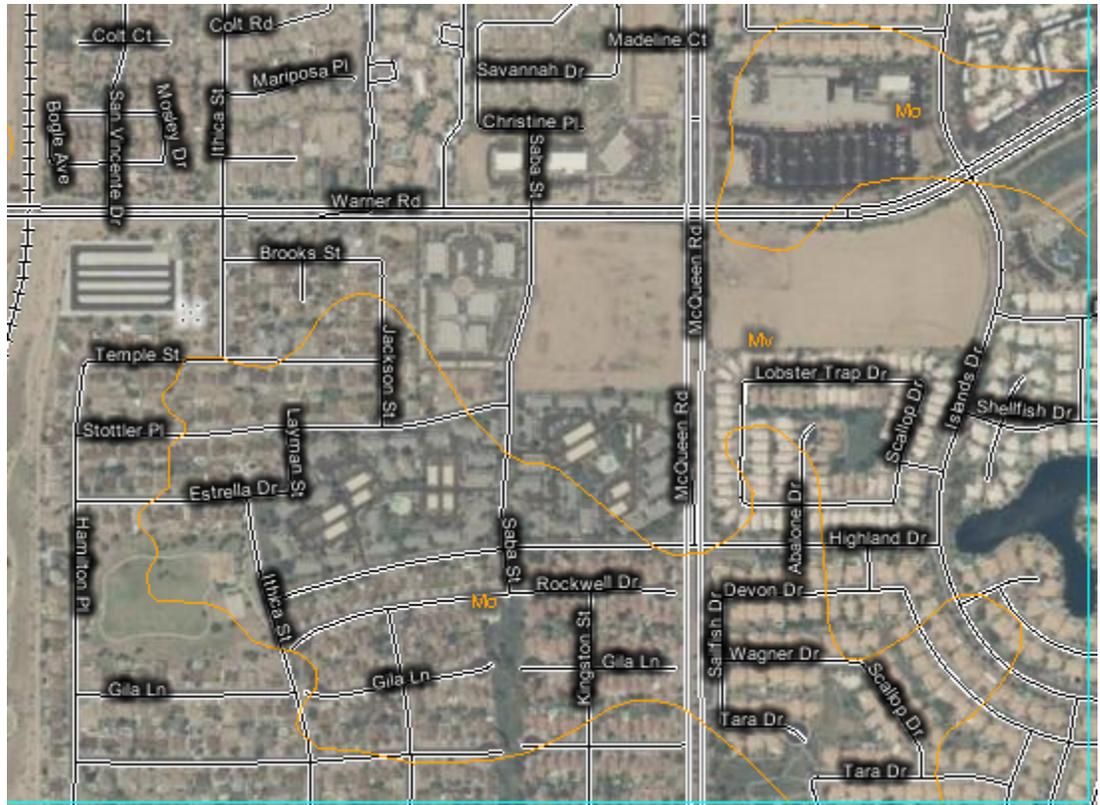


Zoom to the AOI extent



6. Create the basic Soil Survey Map of the AOI.

- a. Select the “Soil Map” tab near the top of the window and the soil map will be overlaid on the photo base. The lines and soil map unit symbols will be displayed. (This information is displayed as yellow lines and text.)
The map unit legend and acre summary for the AOI is displayed in the box to the left of the map.



- 7. Create reports and thematic maps** depicting selected soil interpretations or properties for the AOI .
- a. Select the **“Soil Data Explorer”** tab near the top of the window and these browsers will open.



- b. Select the type of report to be generated from this window. From the tabs, select **“Intro to Soils”**, **“Suitability and Limitations for Use”**, **“Soil Properties and Qualities”**, **“Soil Reports”**, or **“Soil Survey Publications”**.

1. **“Intro to Soils”** tab lists text and definitions.
2. **“Suitability and Limitations for Use”** tab lists suitabilities and limitations ratings to select from in order to produce maps and reports.

- Examples:
1. *Building Site Development*
 2. *Construction Materials*
 3. *Land Management*
 4. *Water Management*

3. **“Soil Properties and Qualities”** tab lists soil properties and qualities ratings to select from in order to produce maps and reports.

- Examples:
1. *Soil Chemical Properties*
 2. *Soil Erosion Factors*
 3. *Soil Physical Properties*
 4. *Water Features*

4. “Soil Reports” tab displays a choice list.
5. “Soil Survey Publications” displays a link to the PDF version of the published soil survey, if it exists.

c. To create and print custom soil **reports**:

1. Select the “Soil Reports” tab.
2. Select the report to be created from the choice list on the left side of the window.
3. Select appropriate options.
4. Select “View Soil Report” and an Acrobat Reader will display the soil report.
5. Select “File” then “Print” to print the report.

d. WSS has the ability to produce rangeland reports that identify ecological sites, common plants and production per acre based on “favorable”, “average” and “unfavorable” years.

1. To create custom reports after selecting the AOI of <10,000 acres:
 - a. Select “Soil Data Explorer”.
 - b. Select “Suitabilities and Limitations for Use” tab, then “Vegetative Productivity”.
 - c. Select the Range Production conditions to be used – (Favorable, Normal or Unfavorable Year)
 - d. Under “View Options” select “Map”, “Table”, “Description of Rating”, and/or “Detailed Description”..
 - e. Select “View Ratings” button.
 - f. The map, report and descriptions will be displayed on the right side of the screen.
2. To create a report based on **Ecological Sites**:
 - a. Follow steps “1 & 2” from section “C” above.
 - b. Select “Vegetative Productivity” from the soil reports list.
 - c. Select “Rangeland Productivity and Plant Composition”.
 - d. Select “View Soil Report” button.
 - e. The report will include the “Soil Map Unit Symbol, “Characteristic Vegetation” “Percent Composition” and “Total Dry Weight Production.”

e. To create custom color **thematic maps** of soil suitability's, limitations, properties or qualities:

1. Follow the steps for selecting an AOI.
2. Select "Soil Data Explorer" once the area is delineated and the soil lines are displayed.
3. Select "Suitability and Limitations for Use".
4. Select the map to be created from the choice list on the left side of the window.
5. Select appropriate options.
6. Select the "View" button.
7. A thematic map will be developed on the right side of the screen and the report will be displayed below the map.
8. Select "File" "Print" to print the map.