Web Soil Survey (WSS) 2.3

How to Use It

Web Soil Survey -- purpose

- Web application that provides customers (producers, agencies, Technical Service Providers, and others) electronic access to relevant soil and related information needed to make wise land use & management decisions

Web Soil Survey -- purpose

- Provides alternative to traditional hardcopy publication
- Provides means for quicker delivery of information
- Provides interactive access to most current data

Web Soil Survey -- purpose

- Allows customer to get just information they want/select
  - Map units for their geographic area of interest (AOI)
  - Information relevant to their land use concerns – e.g. rangeland or cropland

WSS Products

- Soil Map on color imagery or topographic map backdrop for the AOI from SSURGO data (where available)
- Soil Data Mart tables by AOI
- Custom Soil Resource Report
- Download of SSURGO data clipped to the limit of the defined AOI

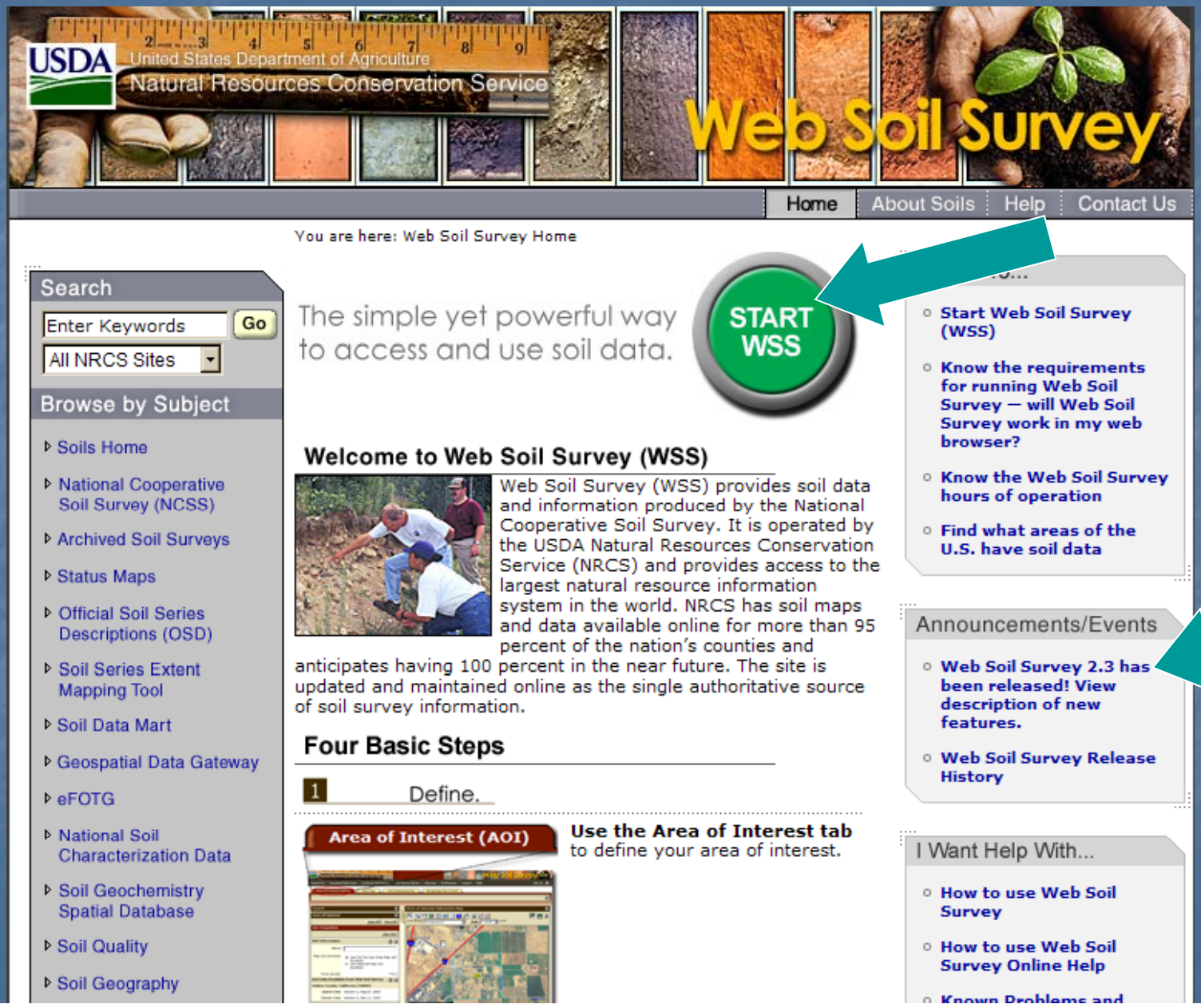
WSS Products

- Custom Soil Resource Report (PDF) via the free Shopping Cart
  - By AOI
  - Soil map, map unit legend, map unit descriptions
  - Content specifically chosen by user
    - Thematic Maps (with tables and text)
    - Tabular data tables
    - Introductory material

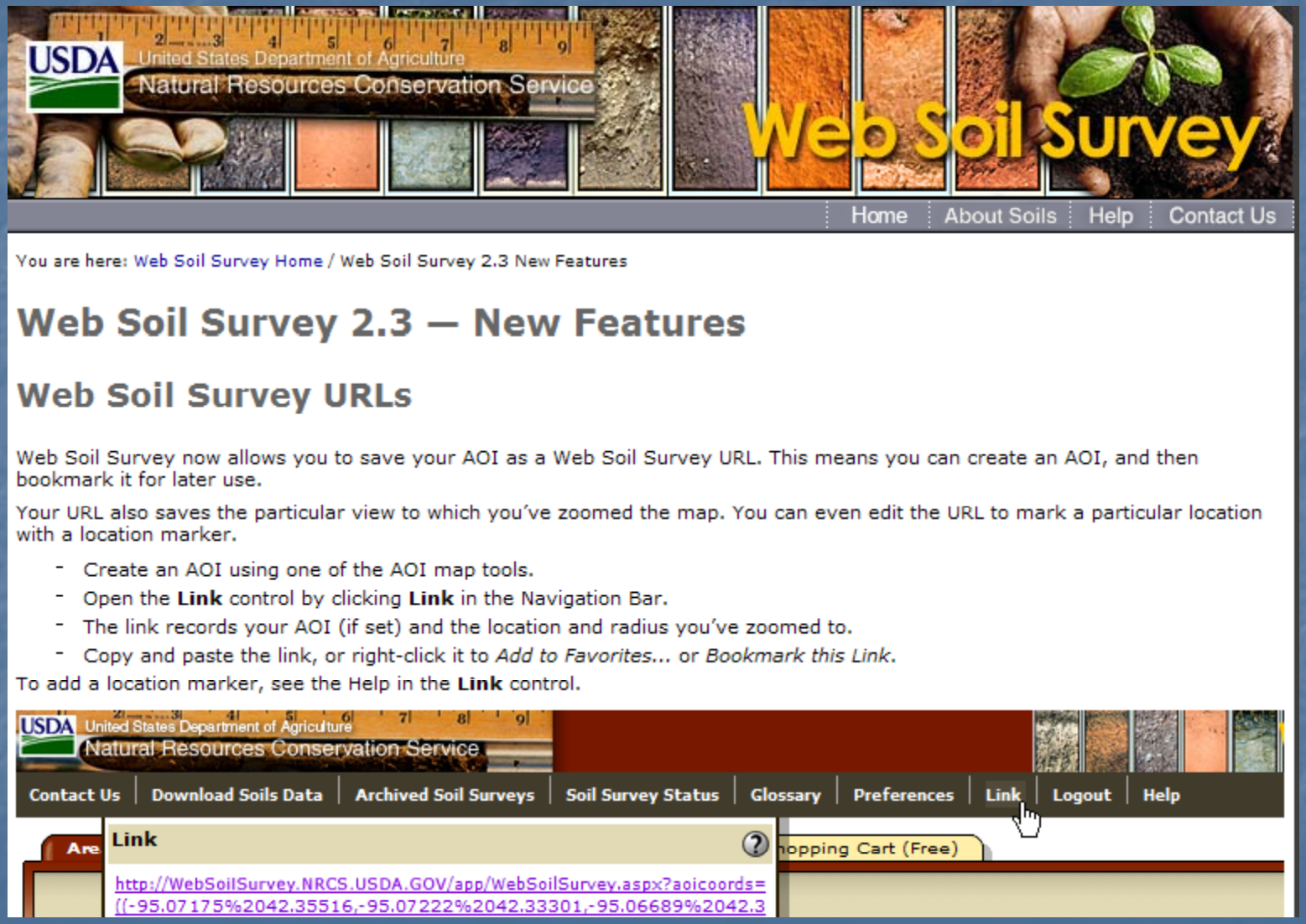
Pathway through WSS

- Define area of interest – you must specifically set the AOI before you can view any maps or reports
- View Soil Map – if available for AOI
- Browse/Explore soil data and related information
  - Generate thematic maps
  - Access Soil Data Mart data tables
- Build custom soil resource report in Shopping Cart
- Print/download the selected map or report

WSS 2.3 Homepage



View List of New Features

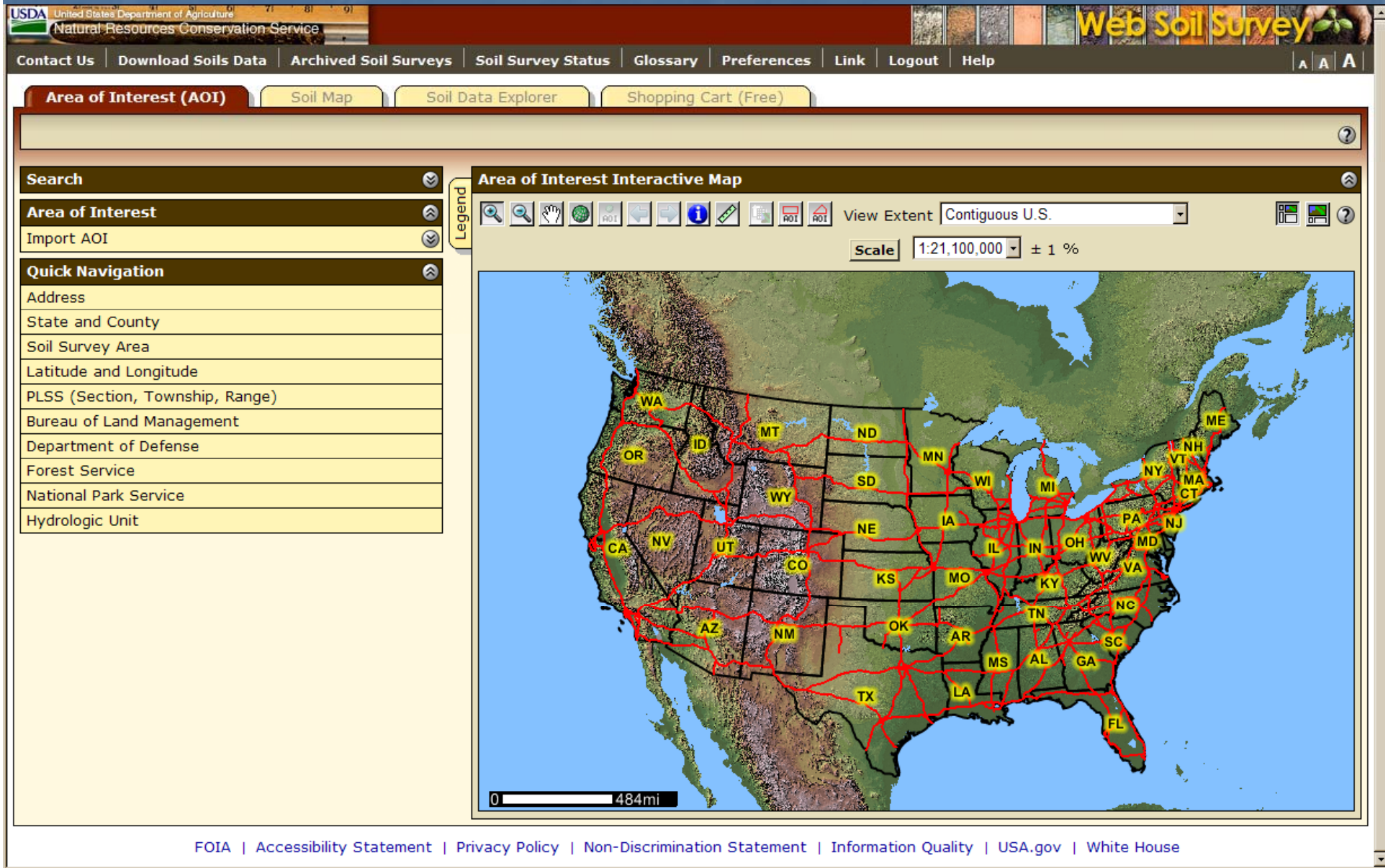


- **Scroll down the screen to see all new features**

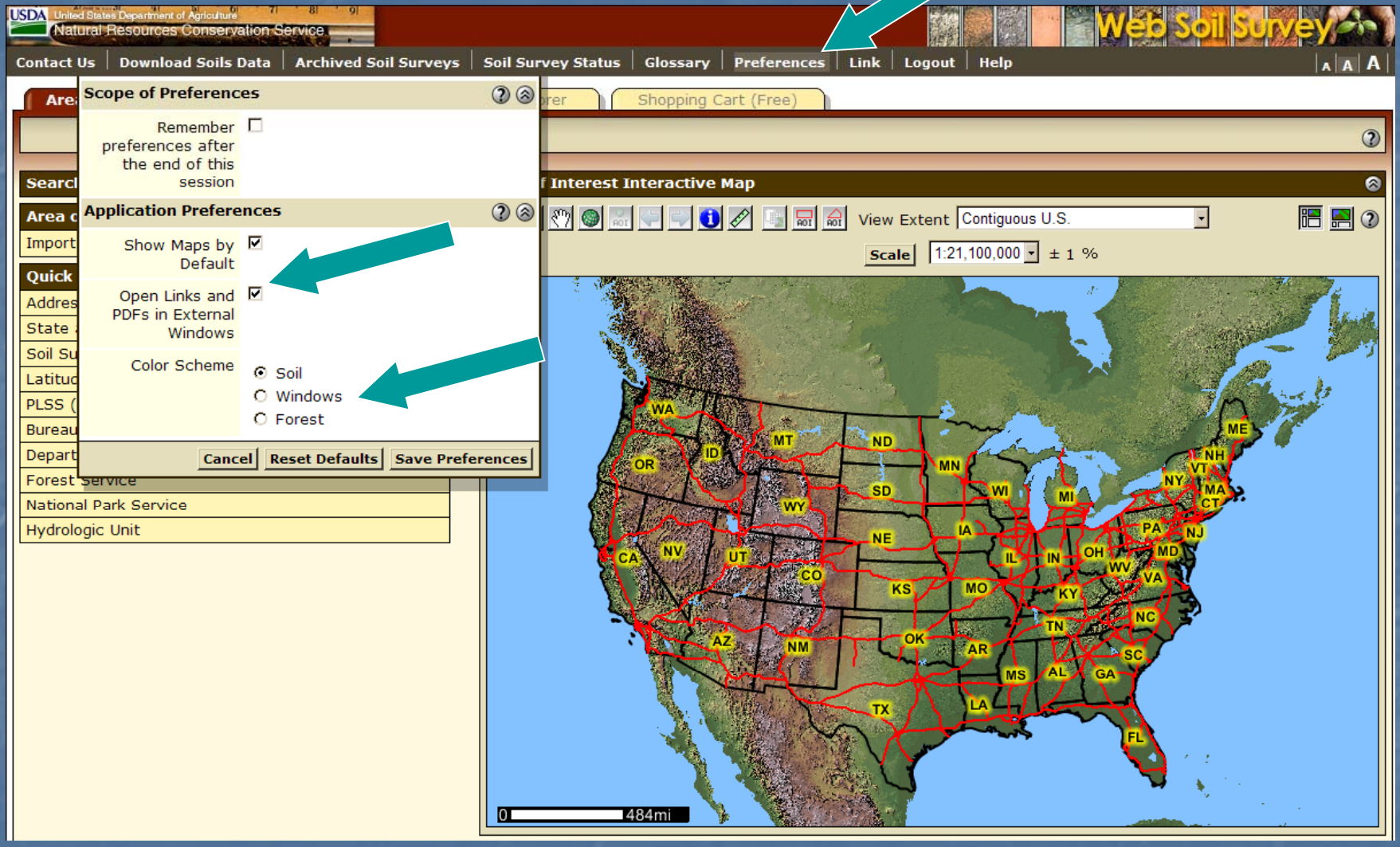
New Features in WSS 2.3

- Export your AOI boundary to your local computer for reuse in a later WSS session.
- Import an AOI boundary file – either saved from an earlier WSS session, or created in some other application.
- Zoom to coordinates of a desired AOI by embedding them in the URL in your browser window.
- Set the AOI to coordinates embedded in the URL in your browser window.
- Save a link/bookmark to an AOI for use in a later WSS session.
- Navigate by street address and county/state for U.S. territories.
- Enter latitude and longitude coordinates all on one line, in various formats.

WSS Opening Screen

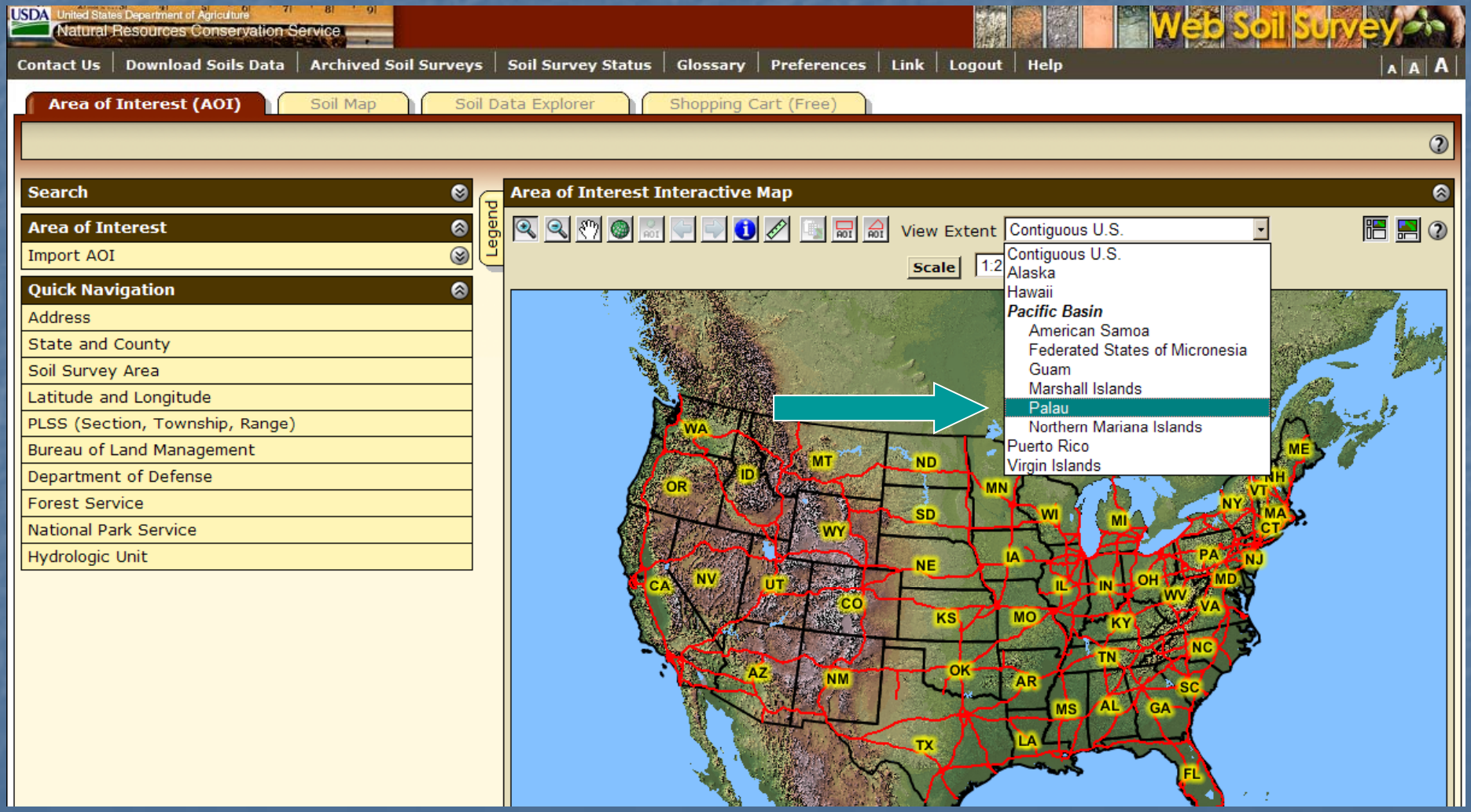


Set User Preferences

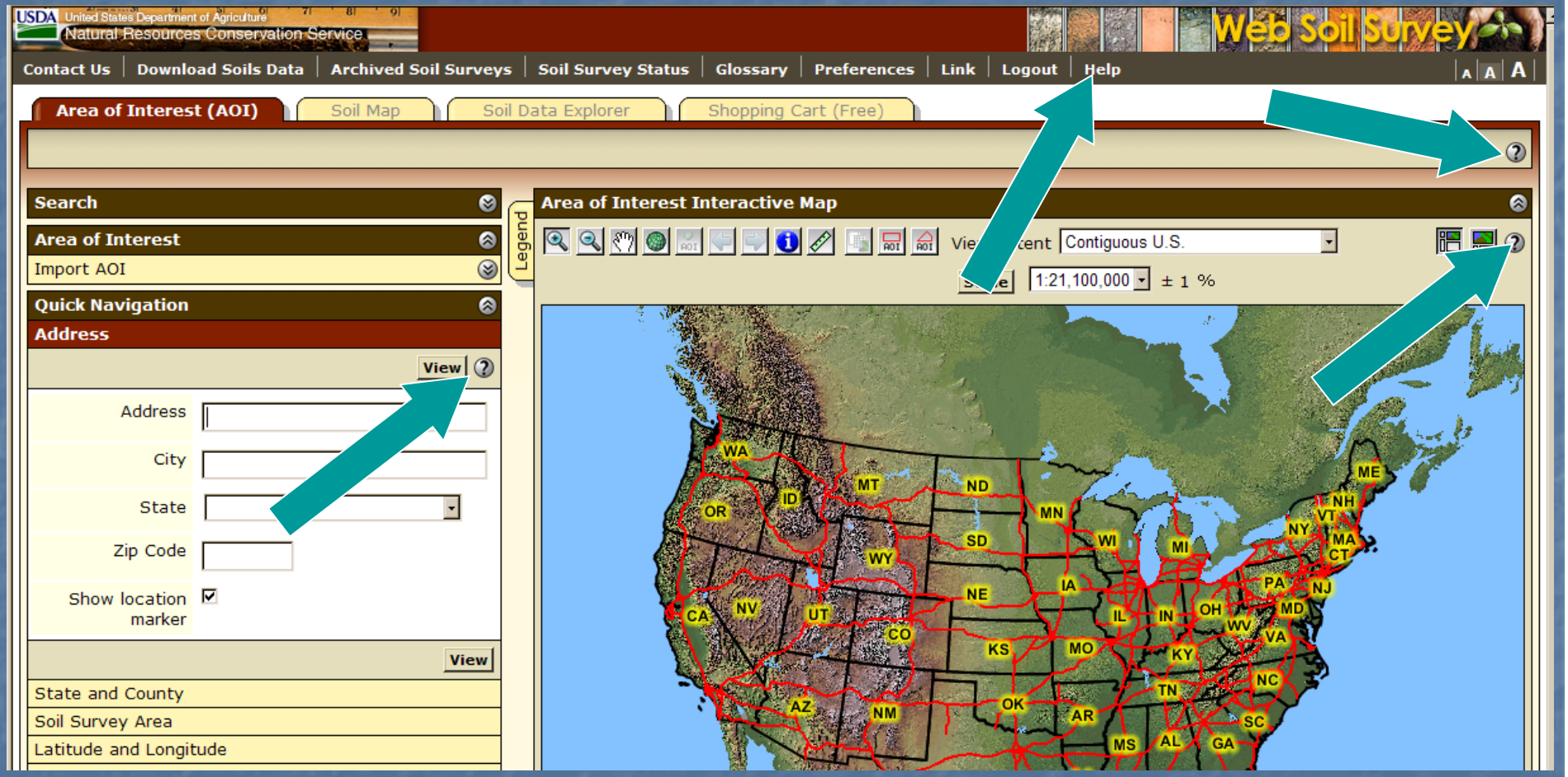


- View PDFs and links in the same browser window as WSS, or in different window.
- Choose “Soils,” “Windows” or “Forest” color scheme.

View Other Geographic Areas

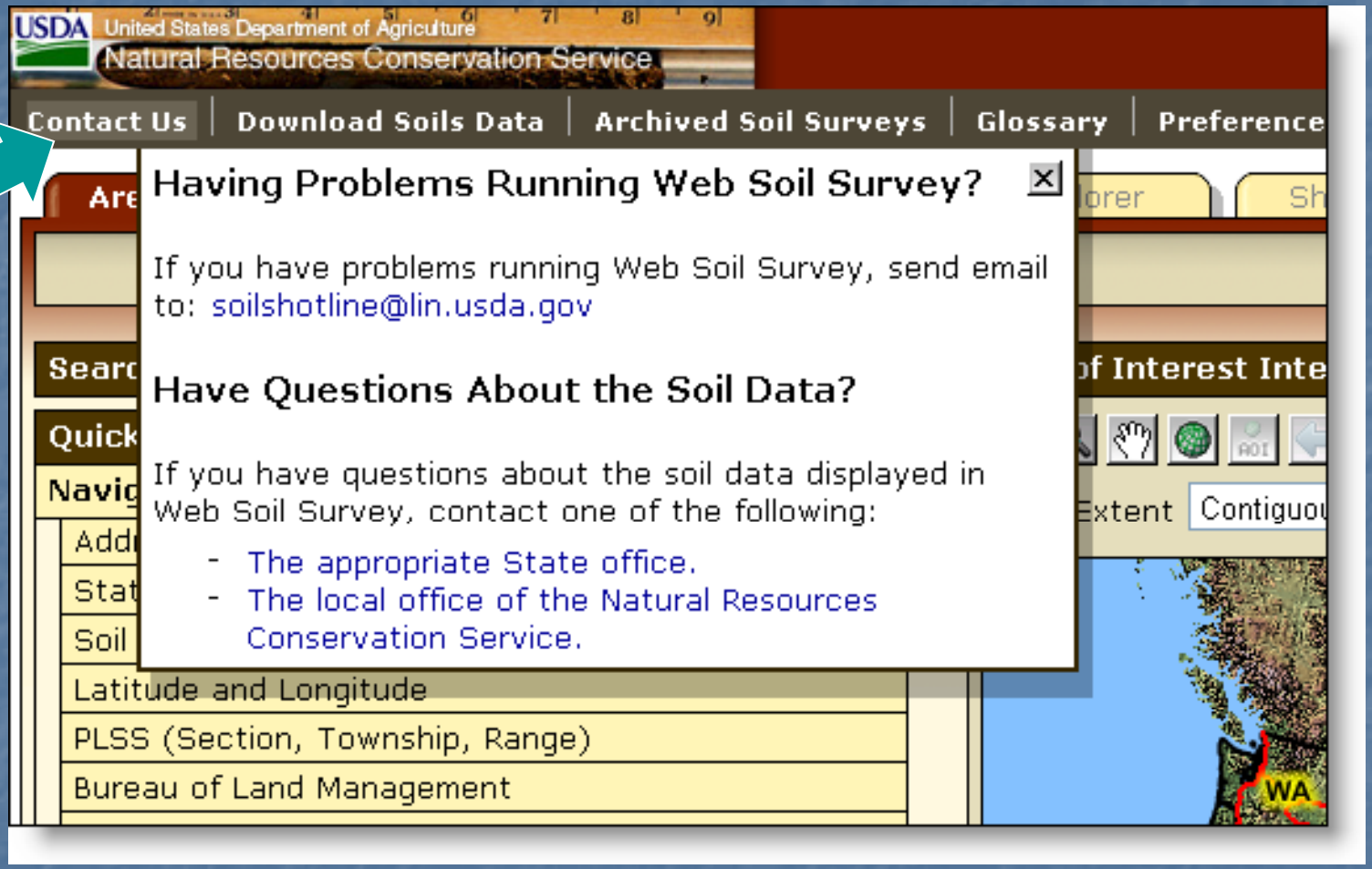


Get Online Help



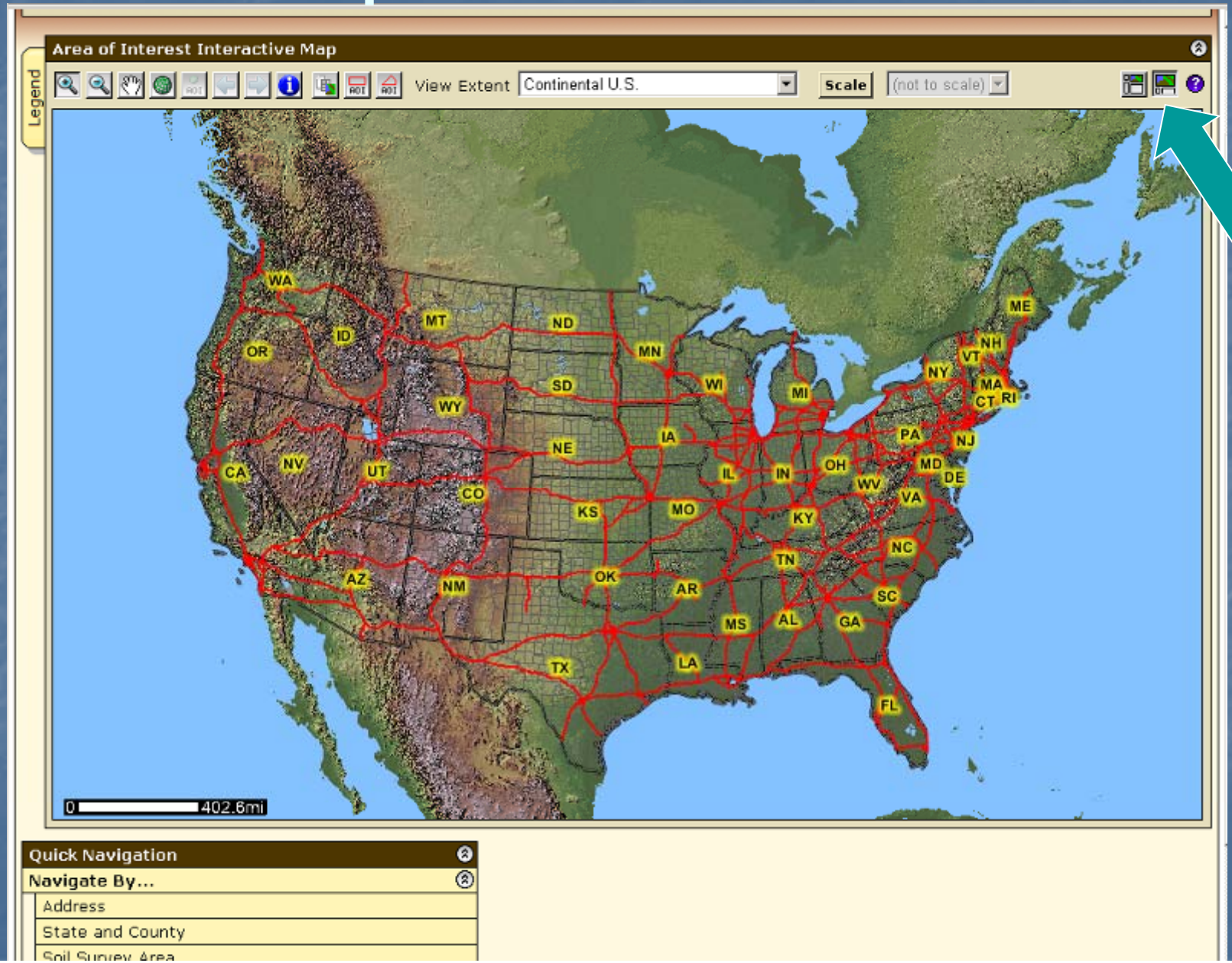
- **Click on Help or a “?” for online help.**

More ways to get Help

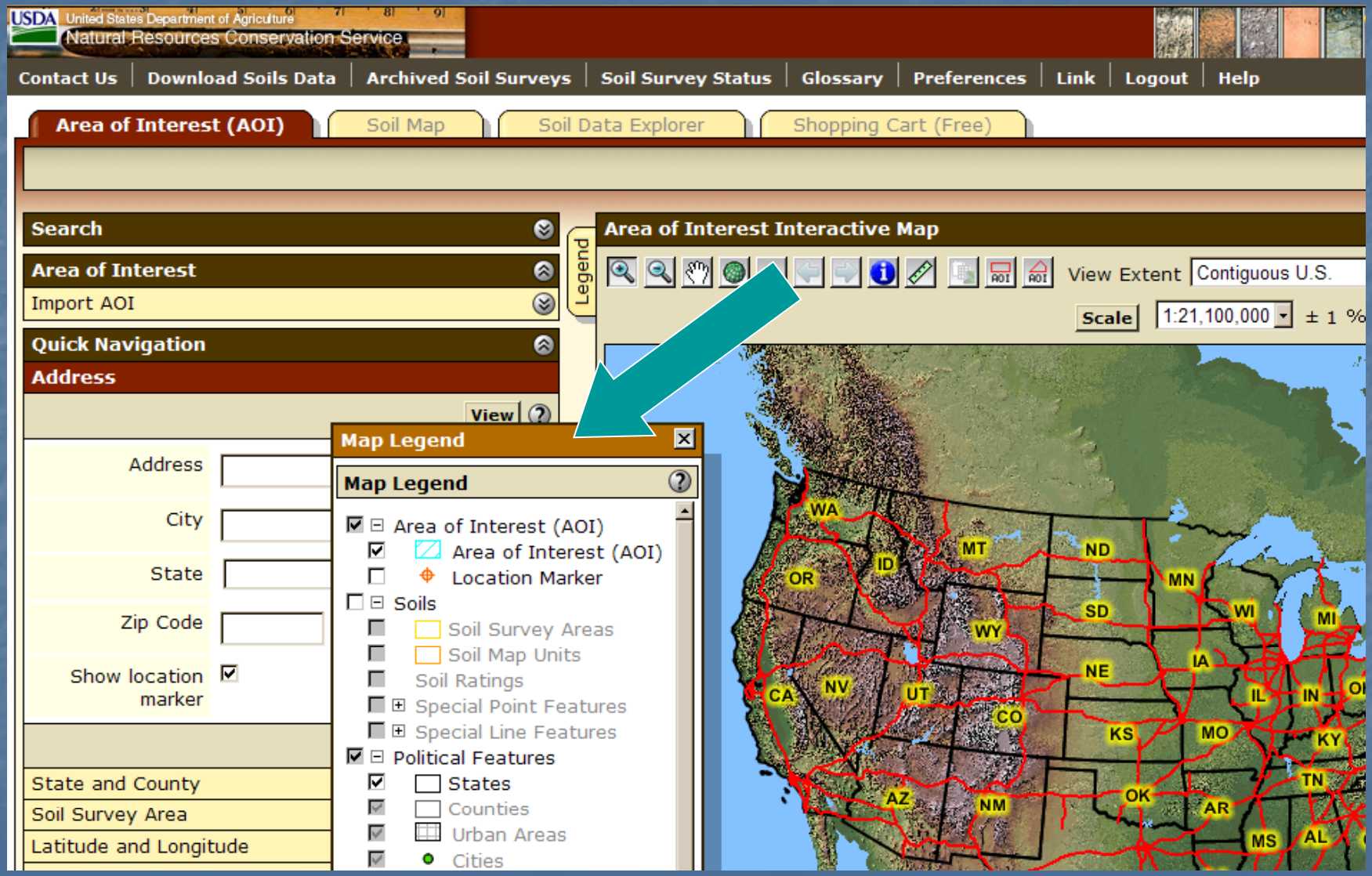


- **Click on “Contact Us”.**

View Map at Full Screen Width

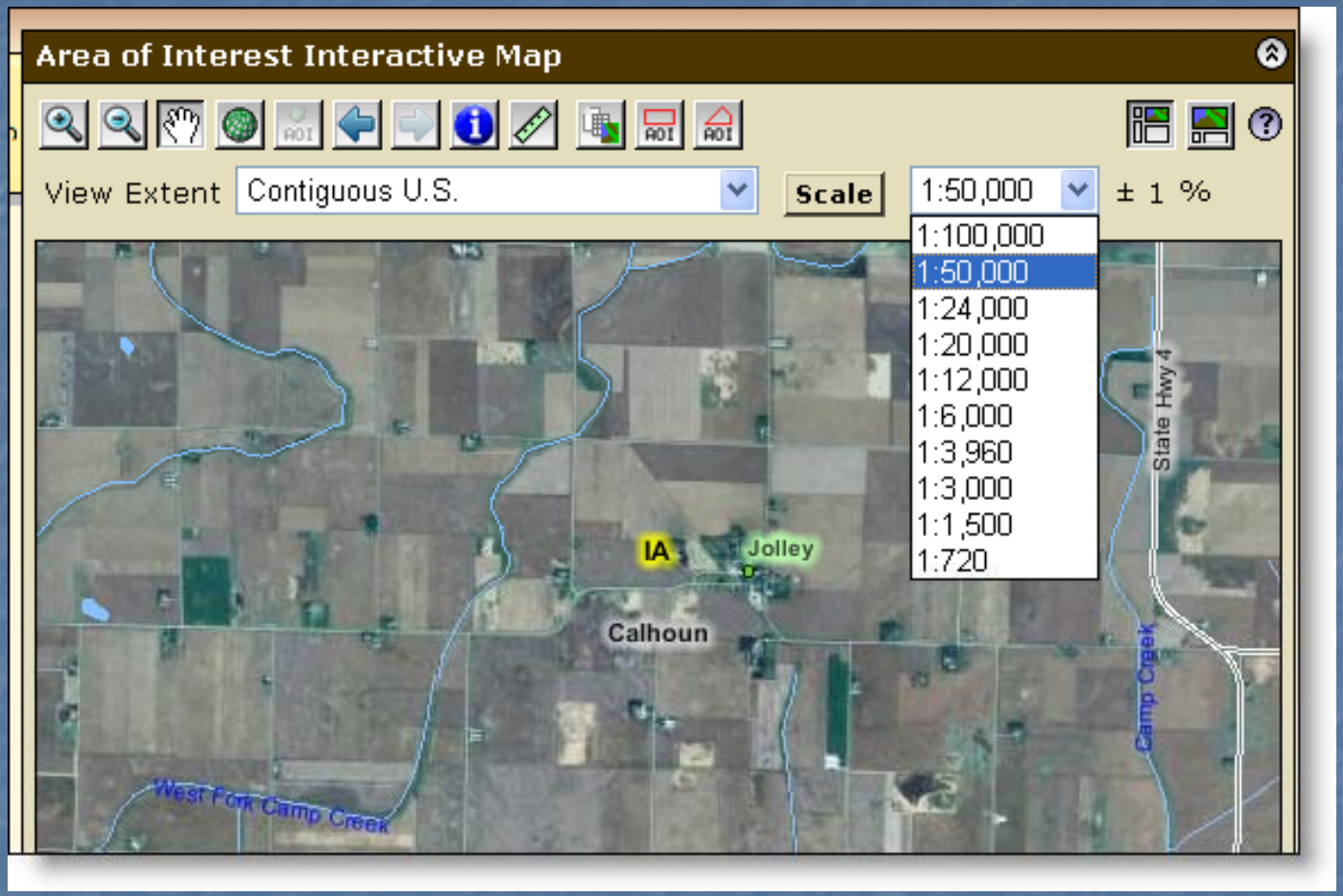


Floating Windows



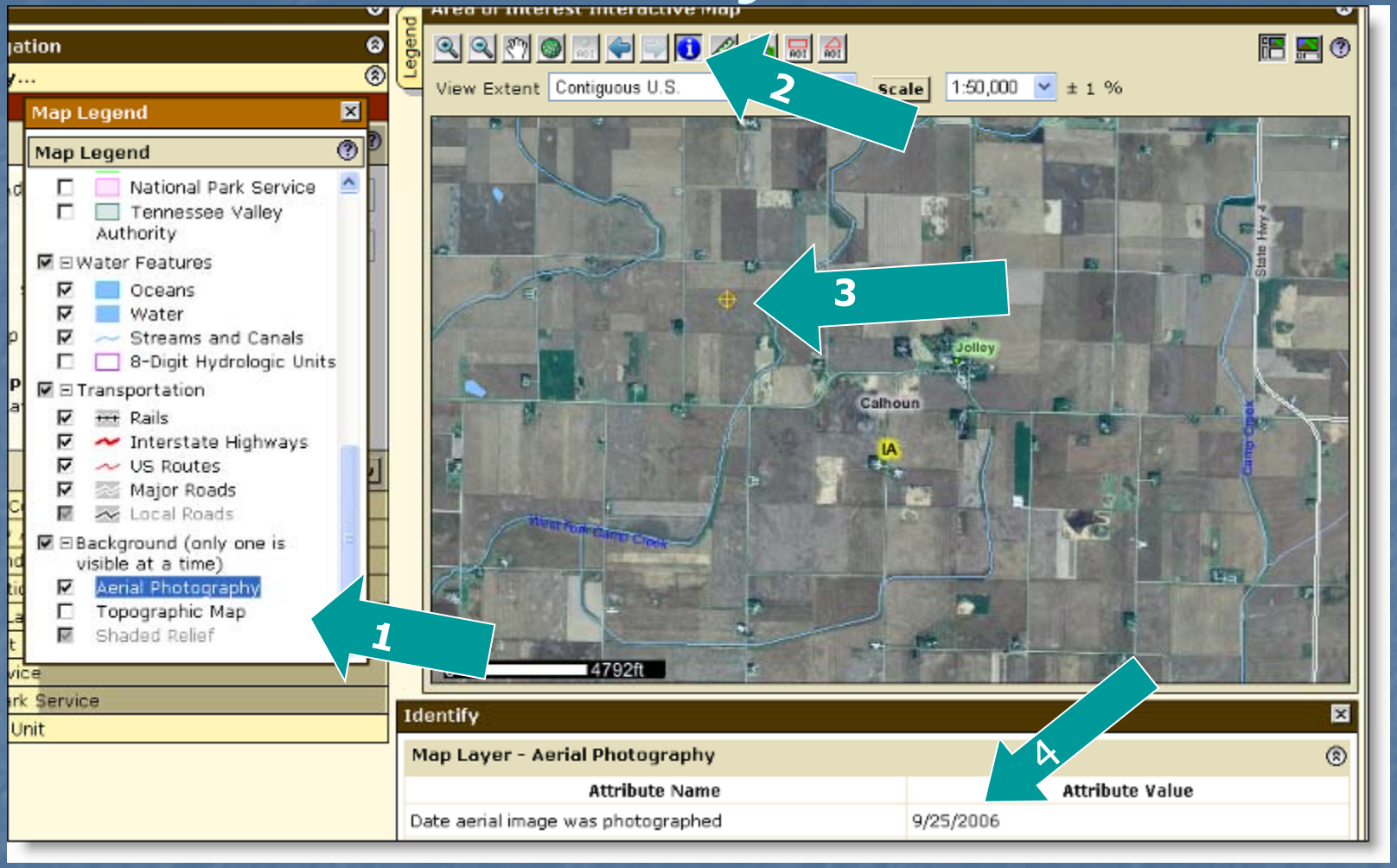
- **You can click and drag the Map Legend window around wherever you want.**

Set Viewable Map Scale



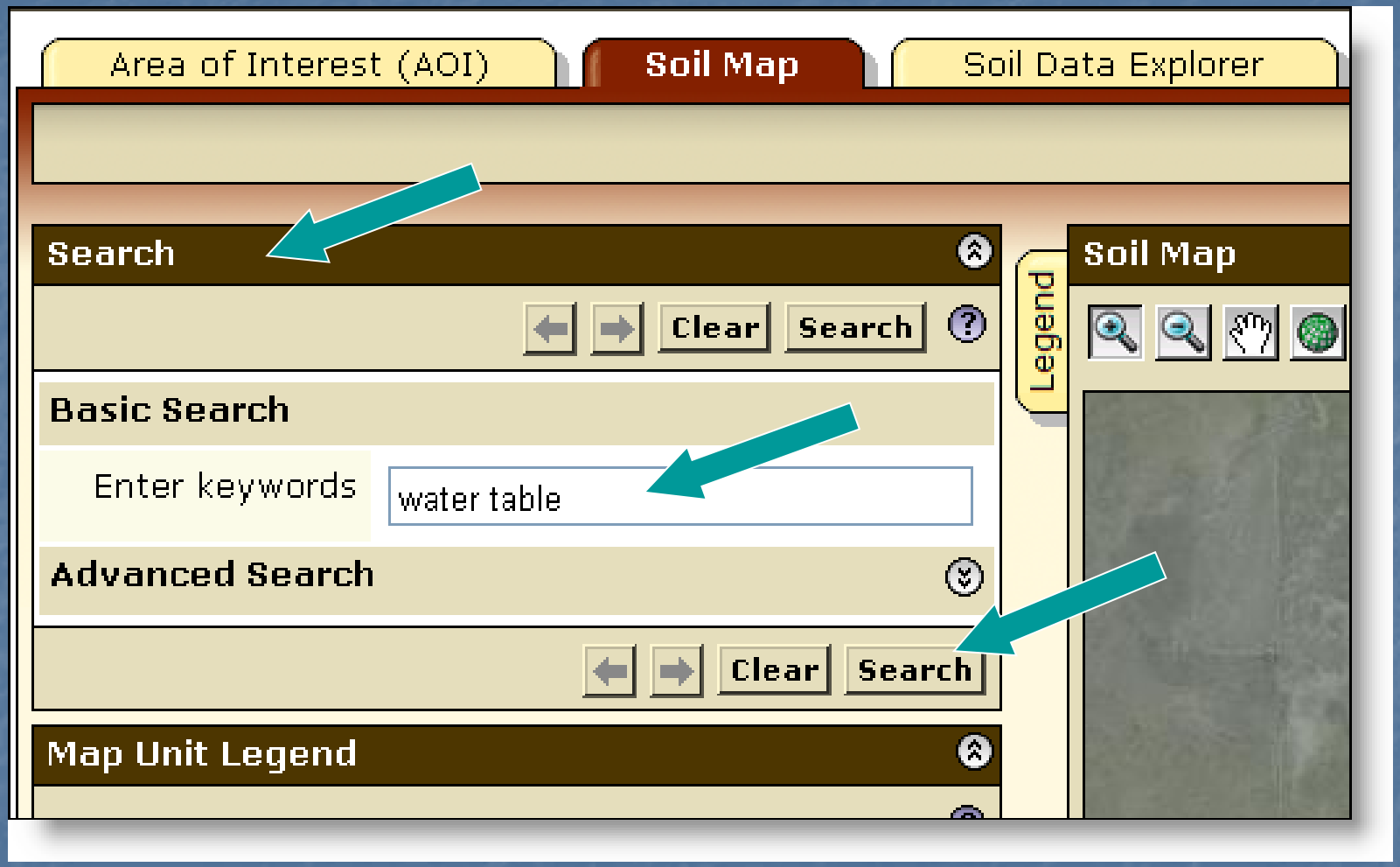
- **First calibrate your monitor by clicking Scale button**
- **Use the map scale feature to see the scale you've zoomed to and to change to a different map scale.**

Identify Tool



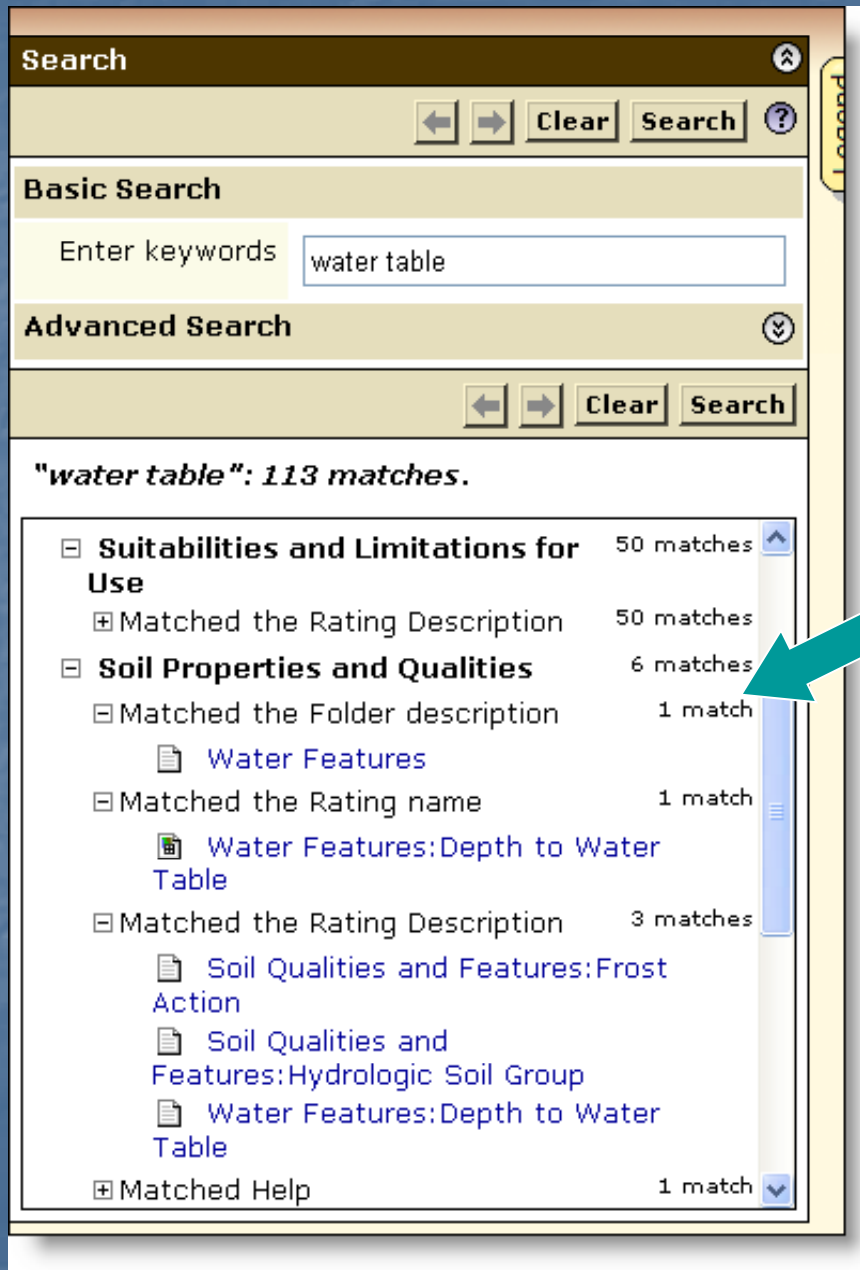
- **1) Highlight the desired data layer, 2) click the identify tool. 3) Marker identifies the point you clicked on. 4) See the Attribute Value for information on the layer – e.g. date of photography.**

Search Function



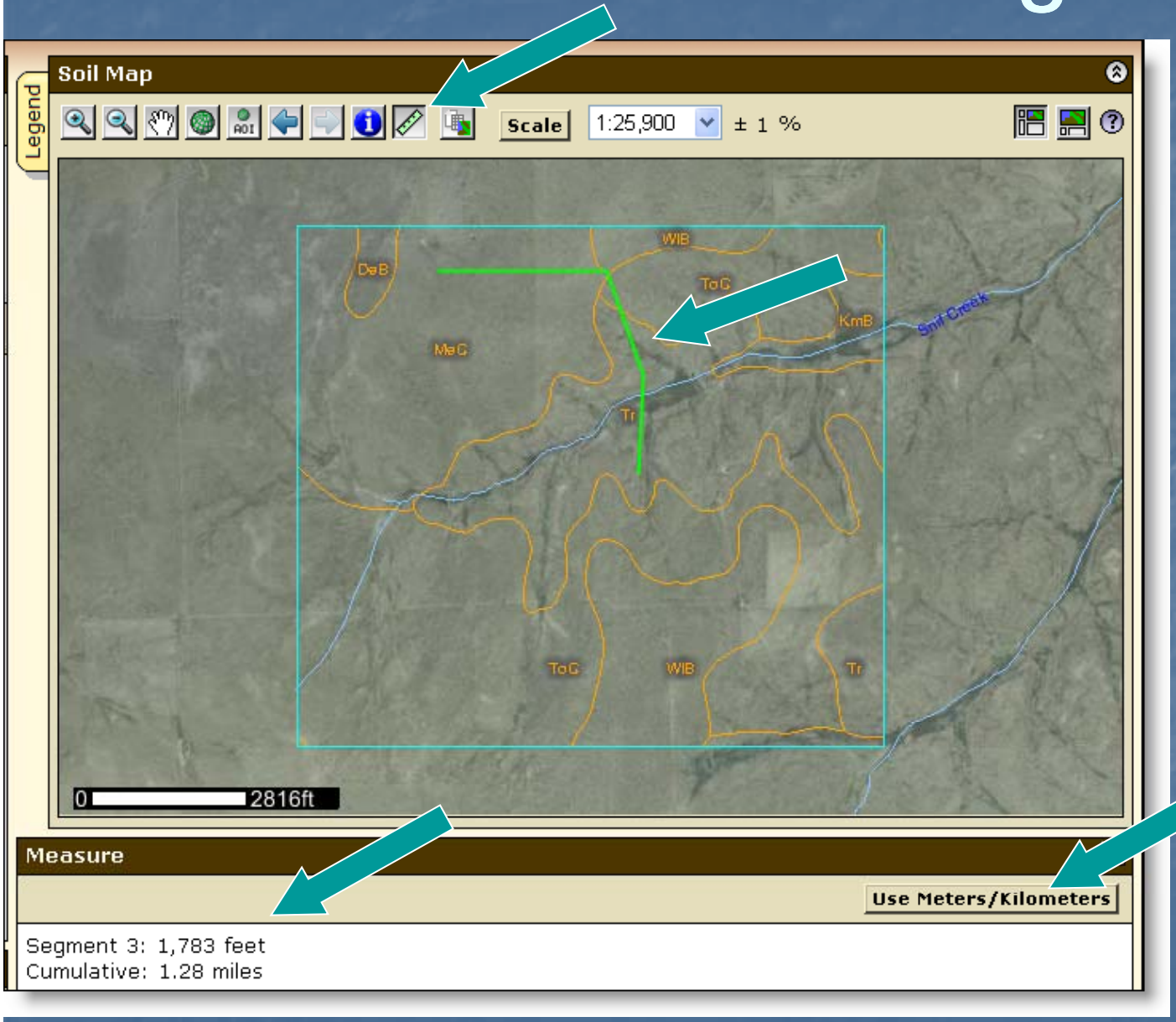
- **Click Search title bar to open it; enter key word(s); click Search button**

Search Results



- **Search results are displayed with links to parts of Web Soil Survey where the key word(s) can be found**
- **Click on a link to go to that section.**

Linear Measuring Tool



- **Click ruler tool button**
- **Click to begin and end linear segments**
- **Segment length and cumulative length displayed**
- **Choose metric or English**

Area of Interest (AOI) Features

- Navigate to an AOI using basic map navigation themes
  - Transportation
  - Ortho photo
  - Hydrography
  - Political features
- Use available zoom in/out tools

Area of Interest Features, cont.

- Navigate to an AOI using selection criteria:
  - Street address
  - State and County
  - Soil Survey Area
  - Latitude and Longitude
  - PLSS (Township, Range and Section)
  - Federal Land Boundaries
  - Hydrologic Unit
  - Embed coordinate(s) in URL

Area of Interest Features, cont.

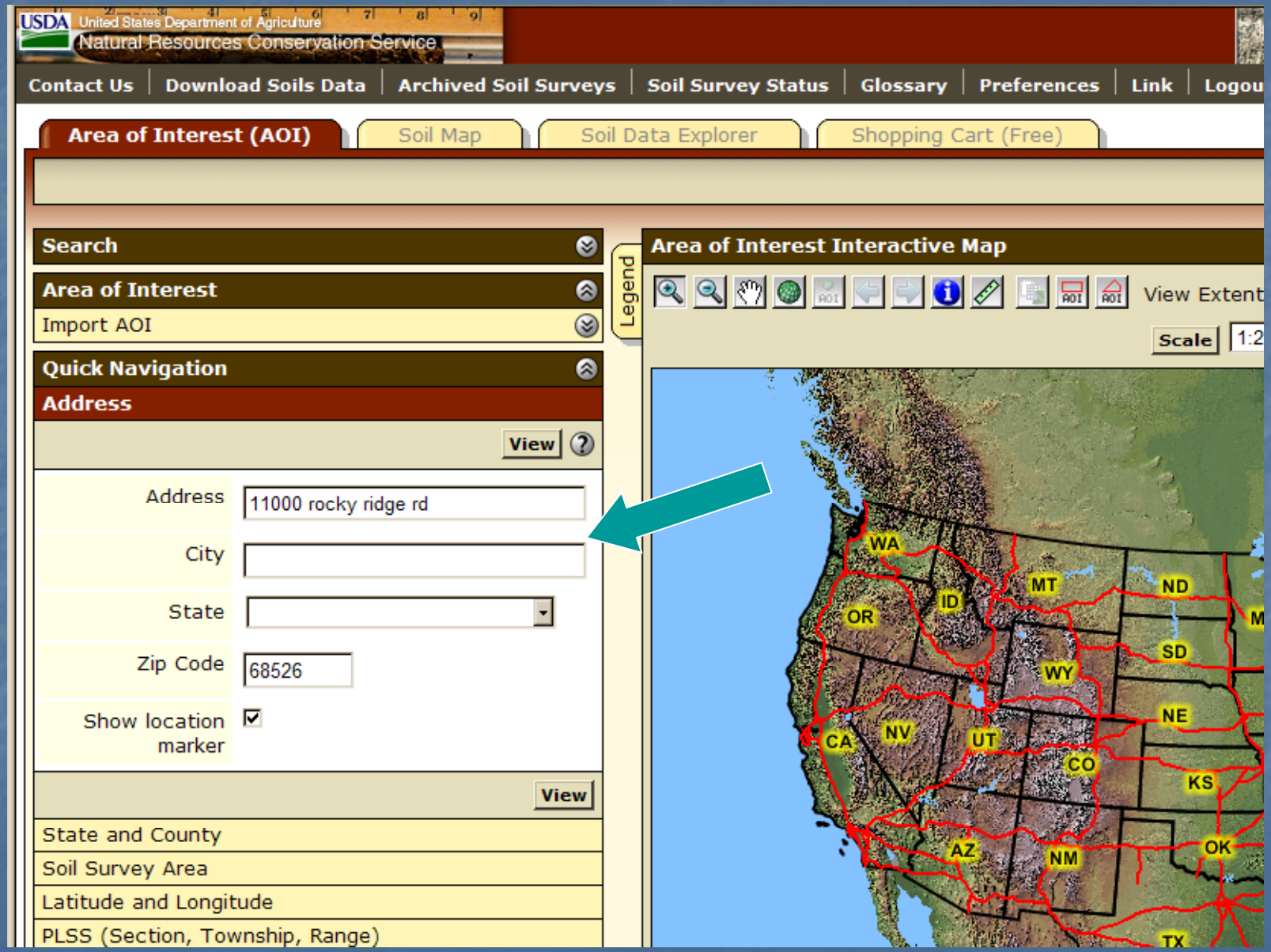
- Define an AOI by
  - Drawing a polygon on a map
    - expanding rectangle, or
    - digitize multi-sided polygon
  - Selecting a soil survey area
  - Importing an AOI boundary file
  - Embedding bounding coordinates in URL
- Clear AOI

Area of Interest Features, cont.

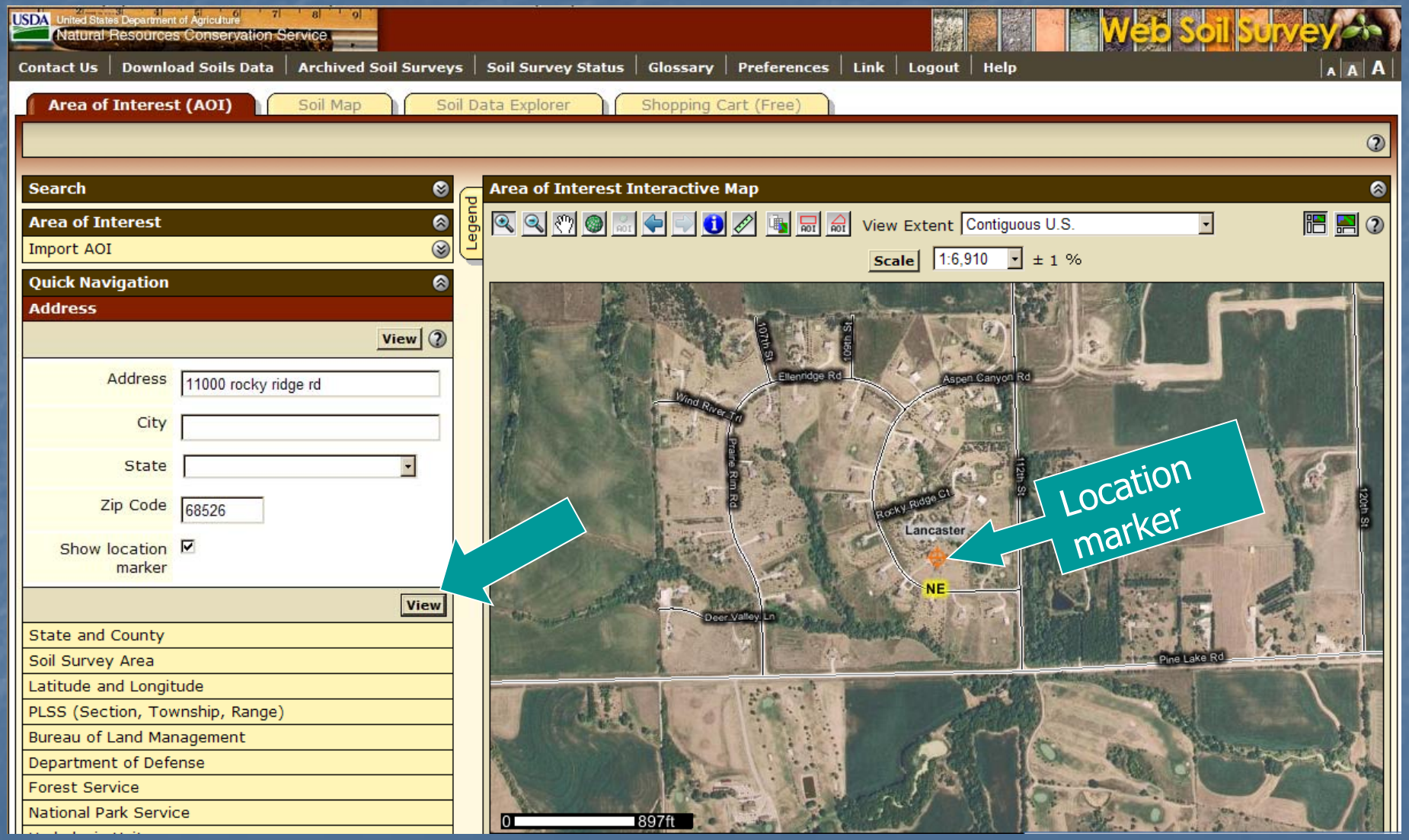
- Display data available for defined AOI
  - Soil data – from Soil Data Mart
  - Soil maps – from Soil Data Mart
- Name your AOI (optional)
- Save your AOI for later use either by exporting the boundary file, or by saving a link/bookmark to it in your browser.
- Choose either standard or national map unit symbols

Locate Area of Interest (AOI)

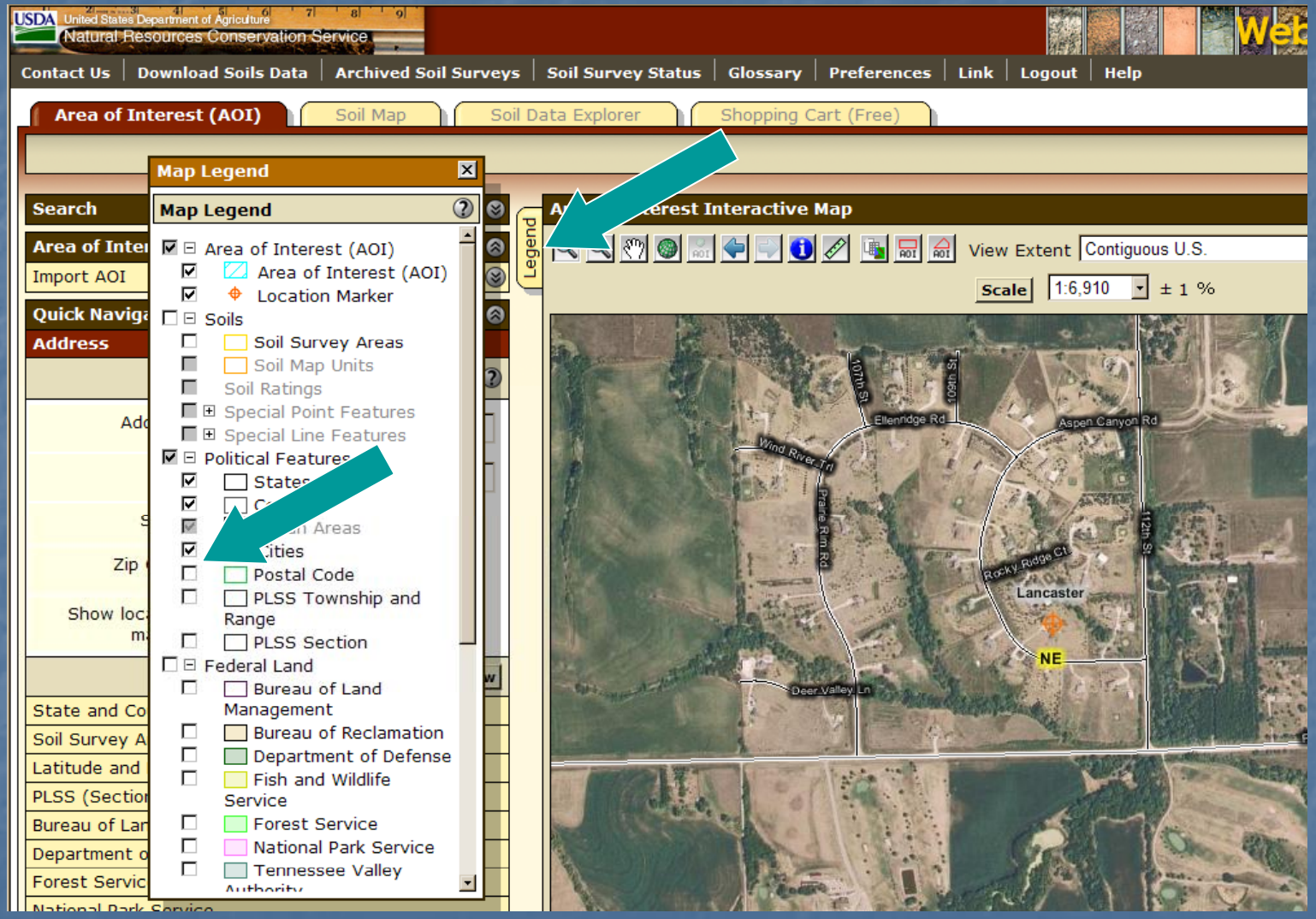
Navigate to AOI by Street Address



View by Street Address



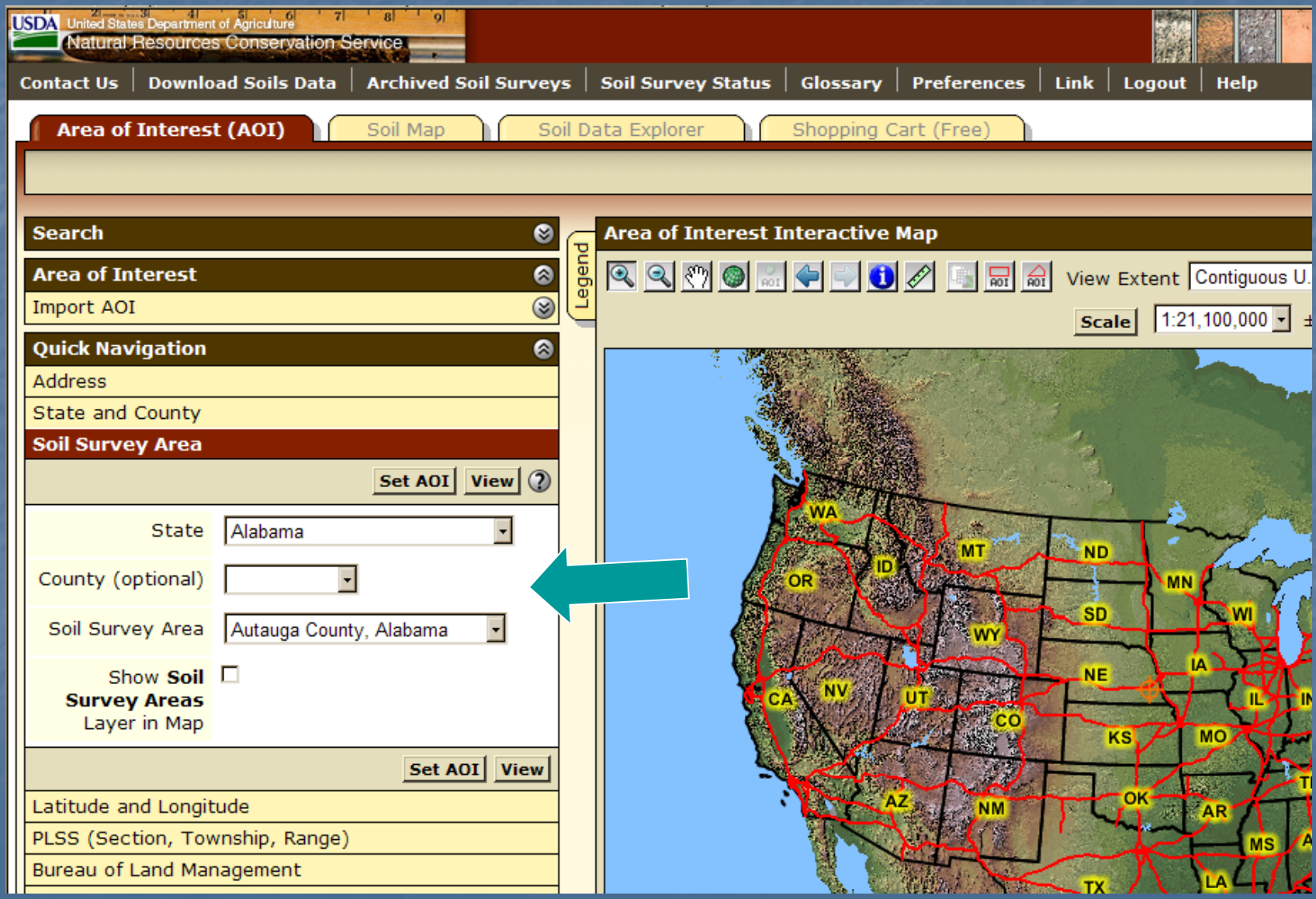
Manage Displayed Data Layers



- **Open Legend tab**
- **Turn layers on or off by checking or unchecking box at left**

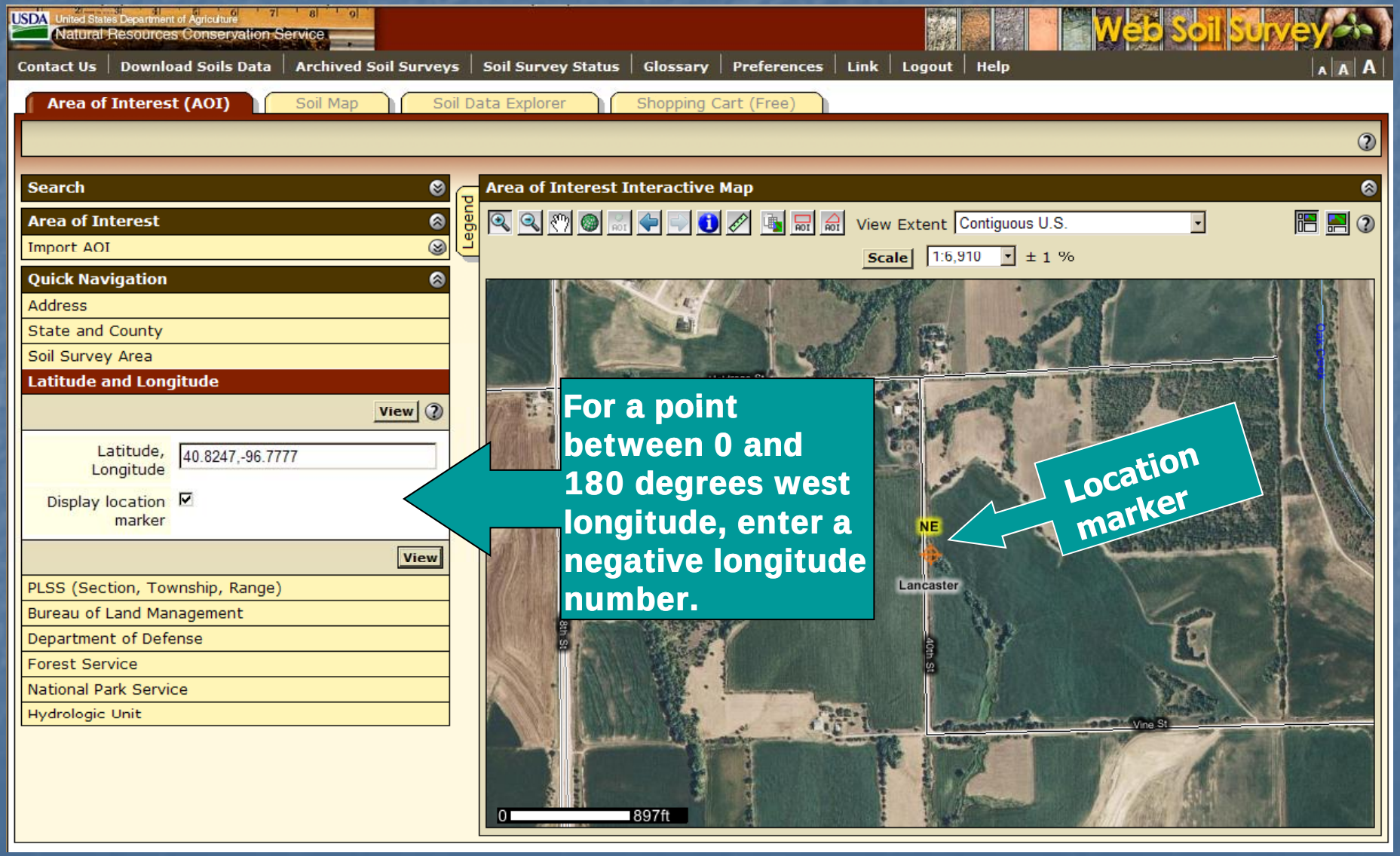
Navigate to AOI by County

Navigate by Soil Survey Area



Navigate by Latitude and Longitude

(see next slide for allowable formats)

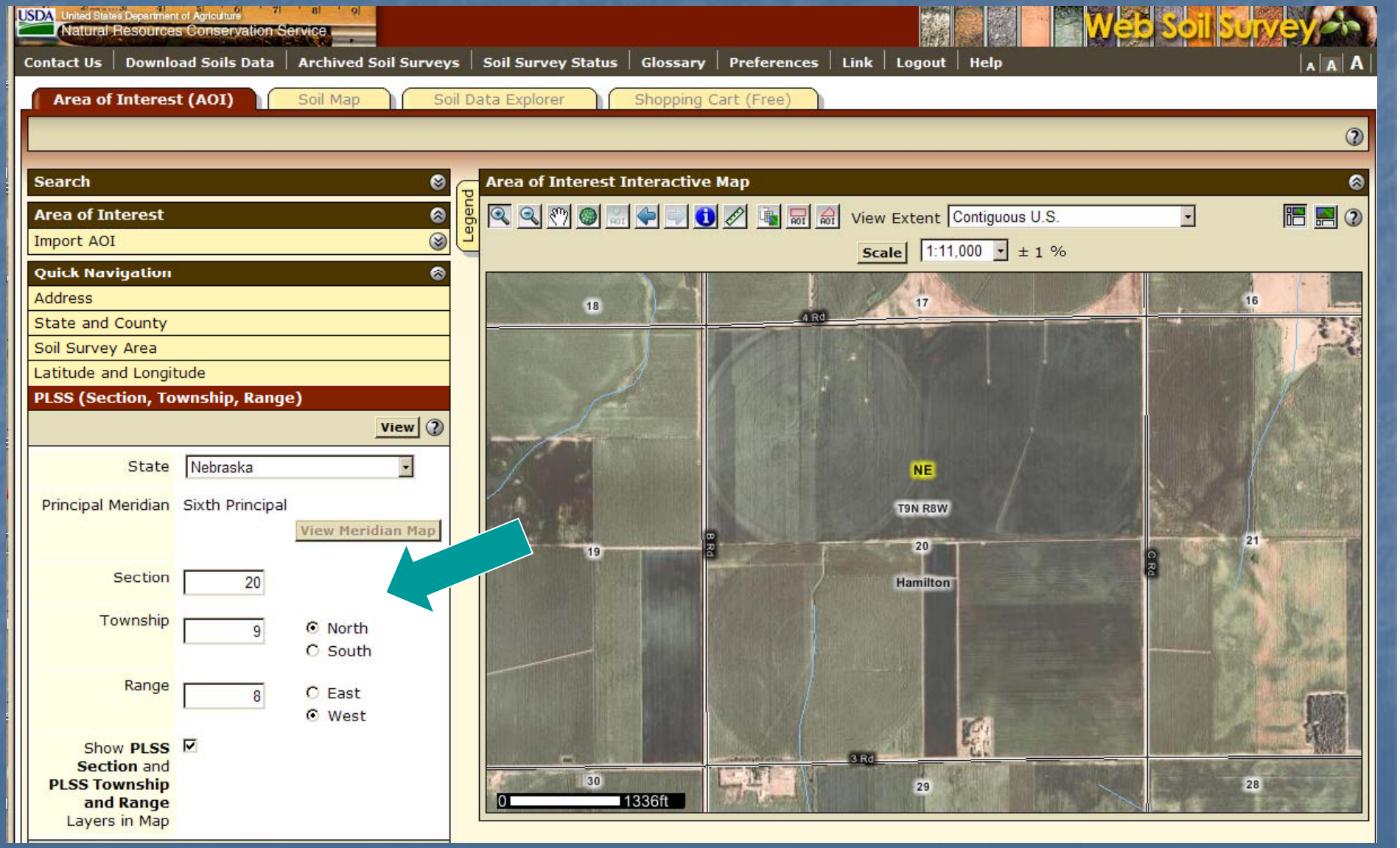


Latitude and longitude coordinates may be entered in the following formats

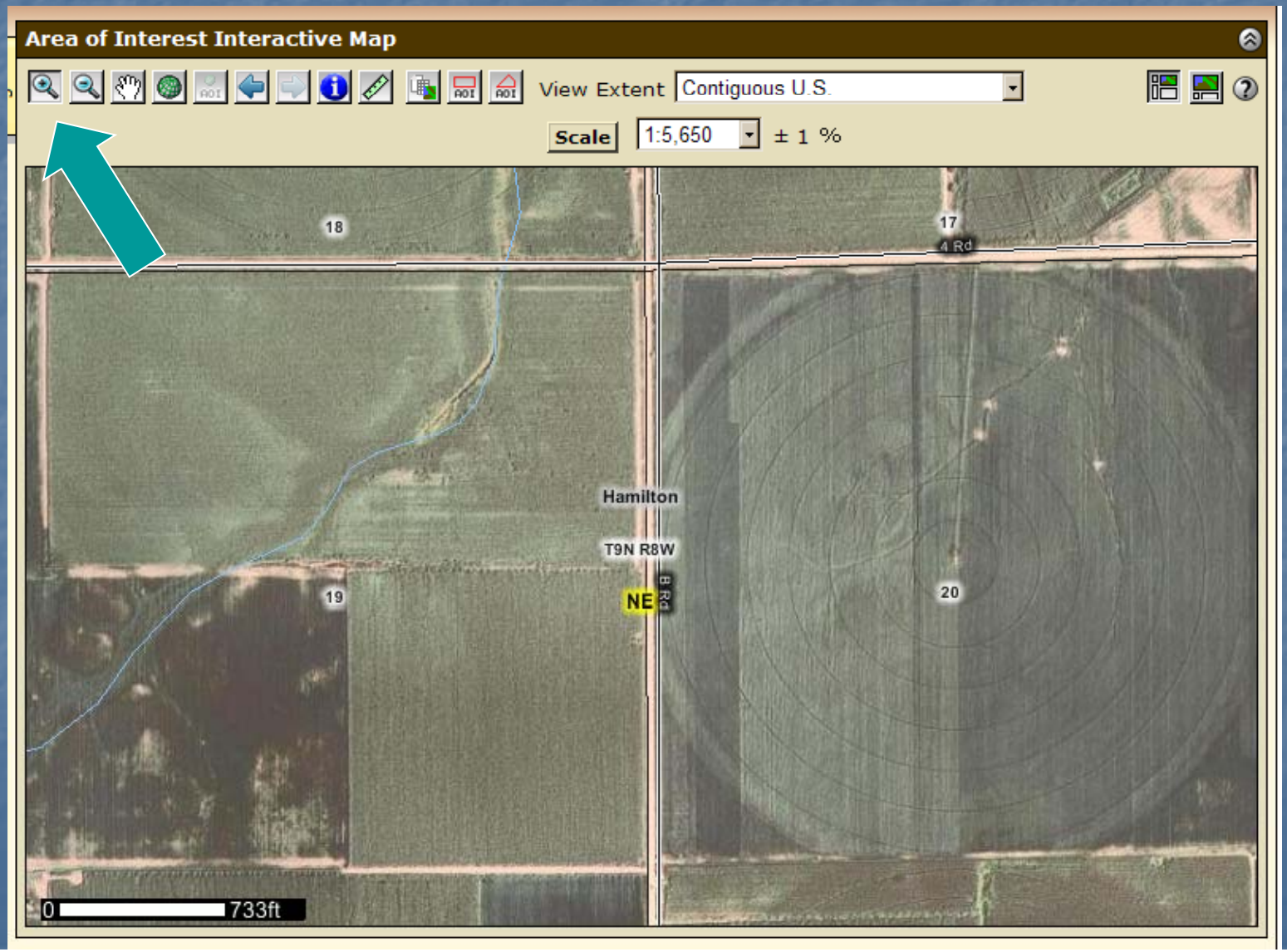
All coordinates are assumed to be specified with reference to the NAD83 spatial reference. Latitude always comes first, except in the Well-Known Text (WKT) format.

- **Decimal Degrees**
  - 46.8075,-100.78306
  - 46.80750 N 100.78306 W
  - 46.8075~-100.78306
  - 46.8075° -100.78306°
- **Degrees / Minutes / Decimal Seconds**
  - 46° 48' 27" N, 100° 46' 59.016" W
  - 46d 48' 27" N 100d 46' 59.016" W
  - 46°48'27"N,100°46'59.016"W
  - 46:48:27N 100:46:59.016W
- **Degrees / Decimal Minutes**
  - 46° 48.45', -100° 46.9836'
- **GPS**
  - N 46 48.45 W 100 46.9836
- **GNIS**
  - 464827N 1004659W
- **WKT**
  - (-100.78305 46.80749)
  - (-100.78305%2046.80749)

Navigate by Public Land Survey System (PLSS) (Section, Township and Range)



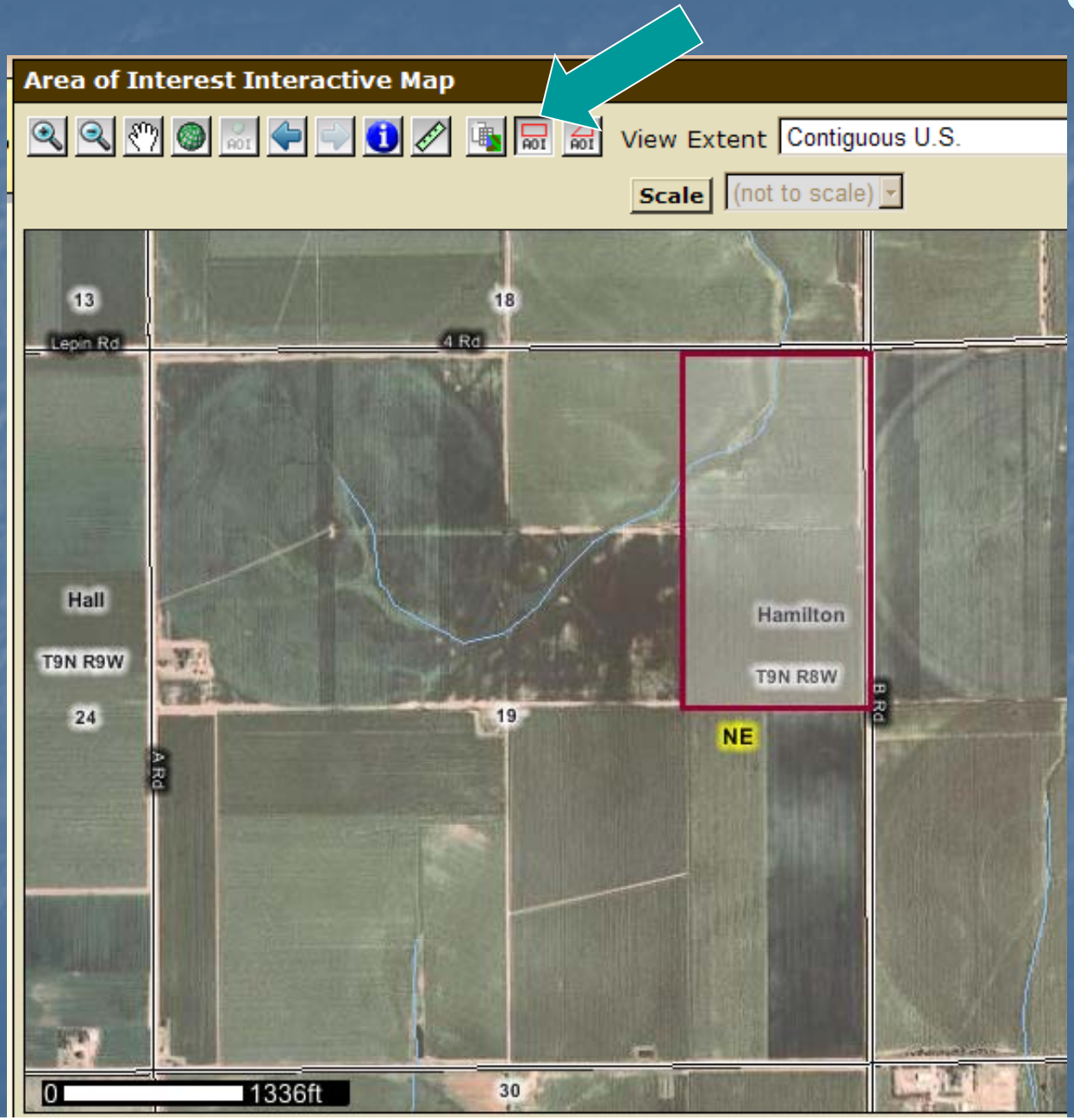
Zoom In Tool – expanding rectangle



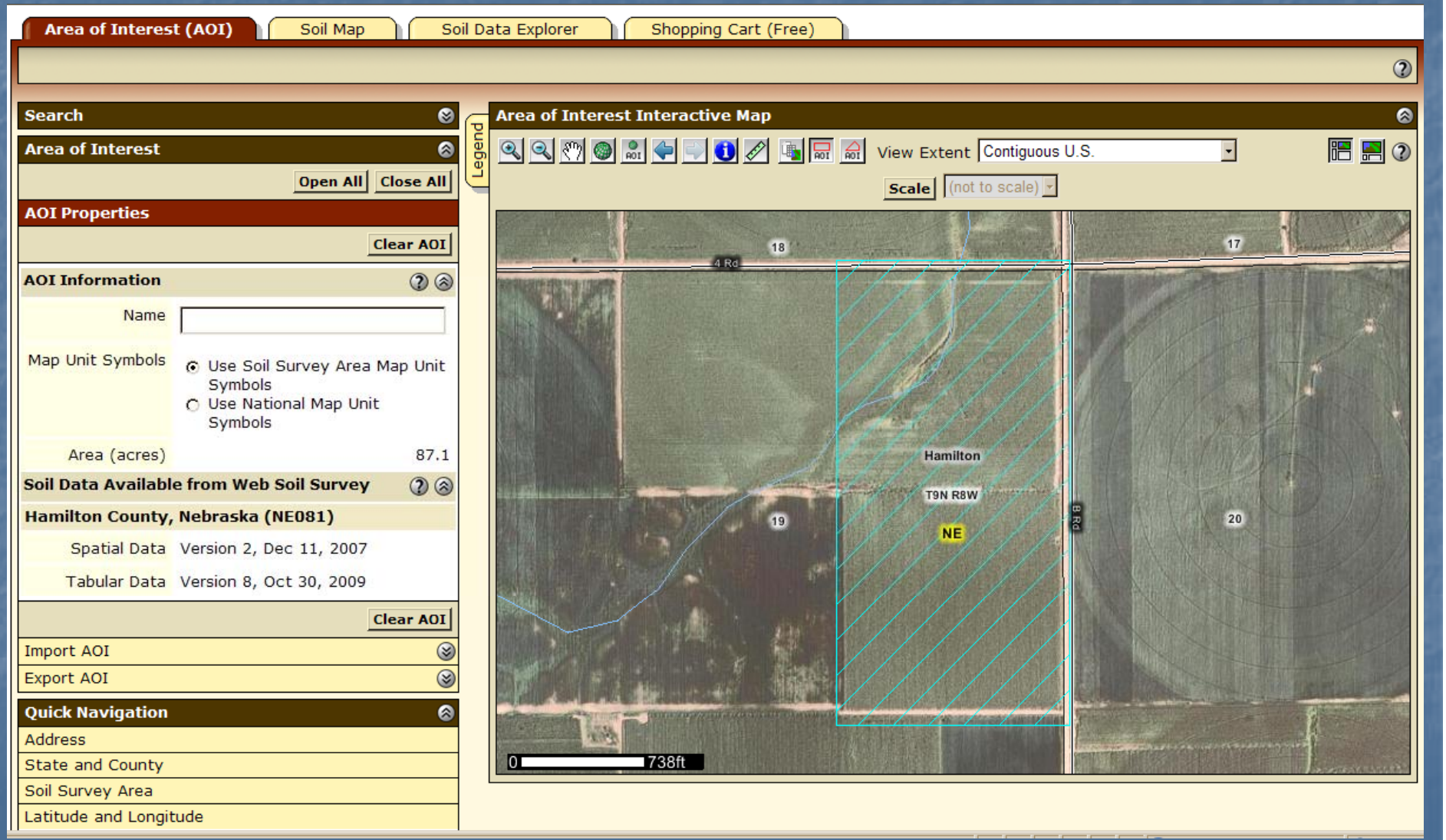
Define AOI

- Remember - you must specifically set the AOI before you can view any maps or data.
  - Use one of the AOI buttons on toolbar
    - Expanding rectangle
    - Multi-sided polygon
  - Select the area by choosing a Soil Survey Area, then clicking the Set AOI button.
  - Import an AOI boundary file
  - Use previously bookmarked link

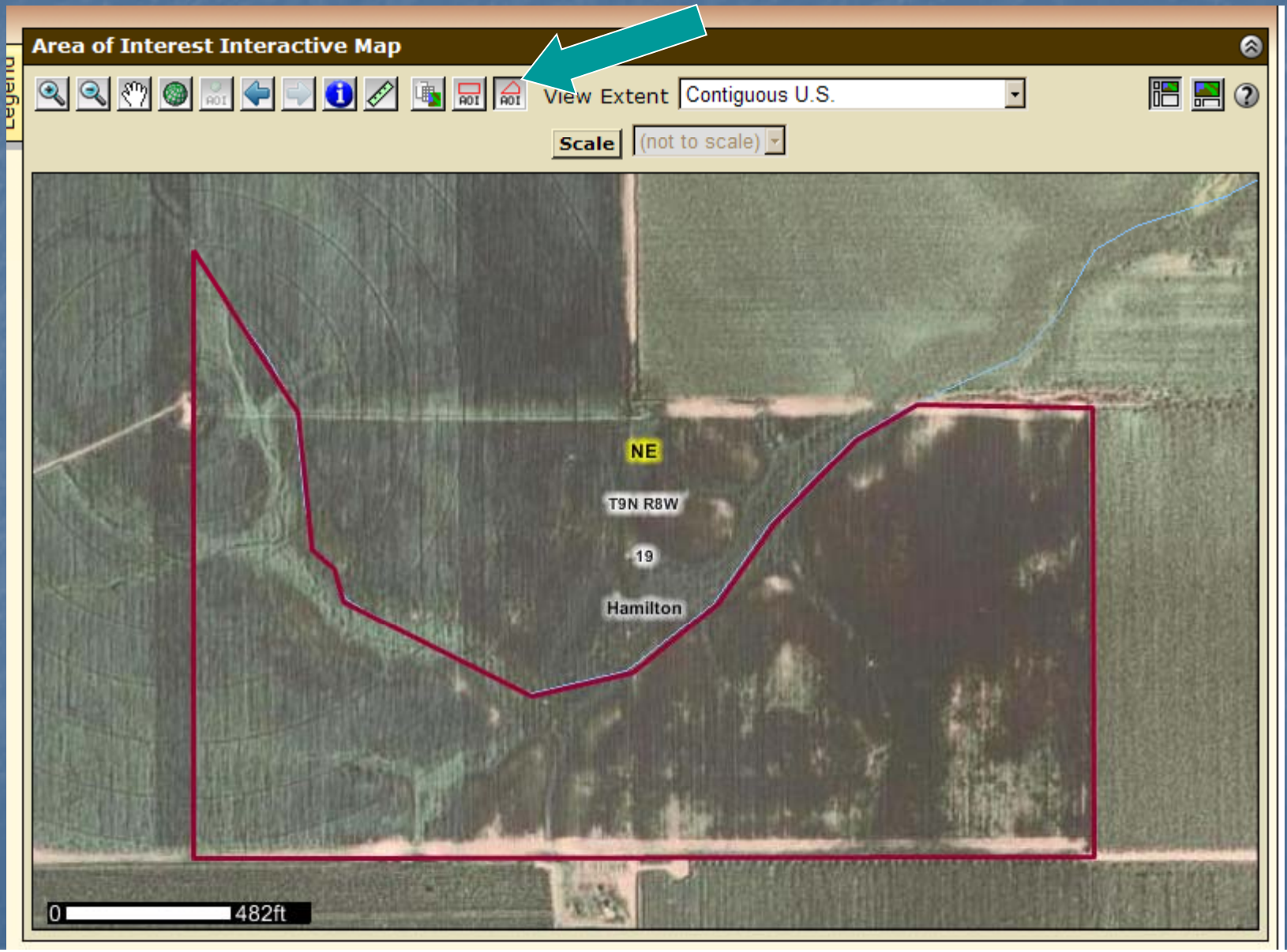
Define AOI – draw rectangle



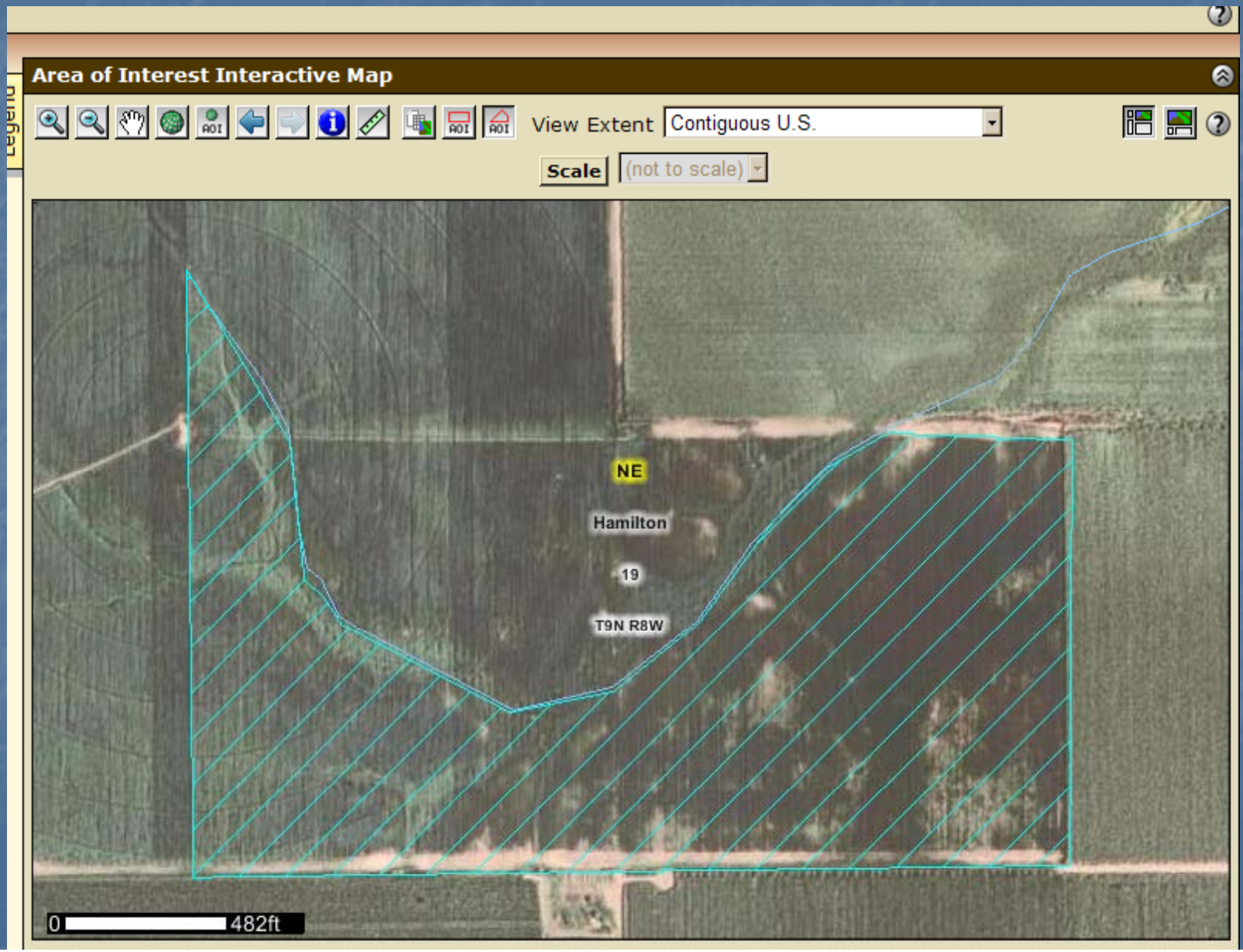
Selected AOI



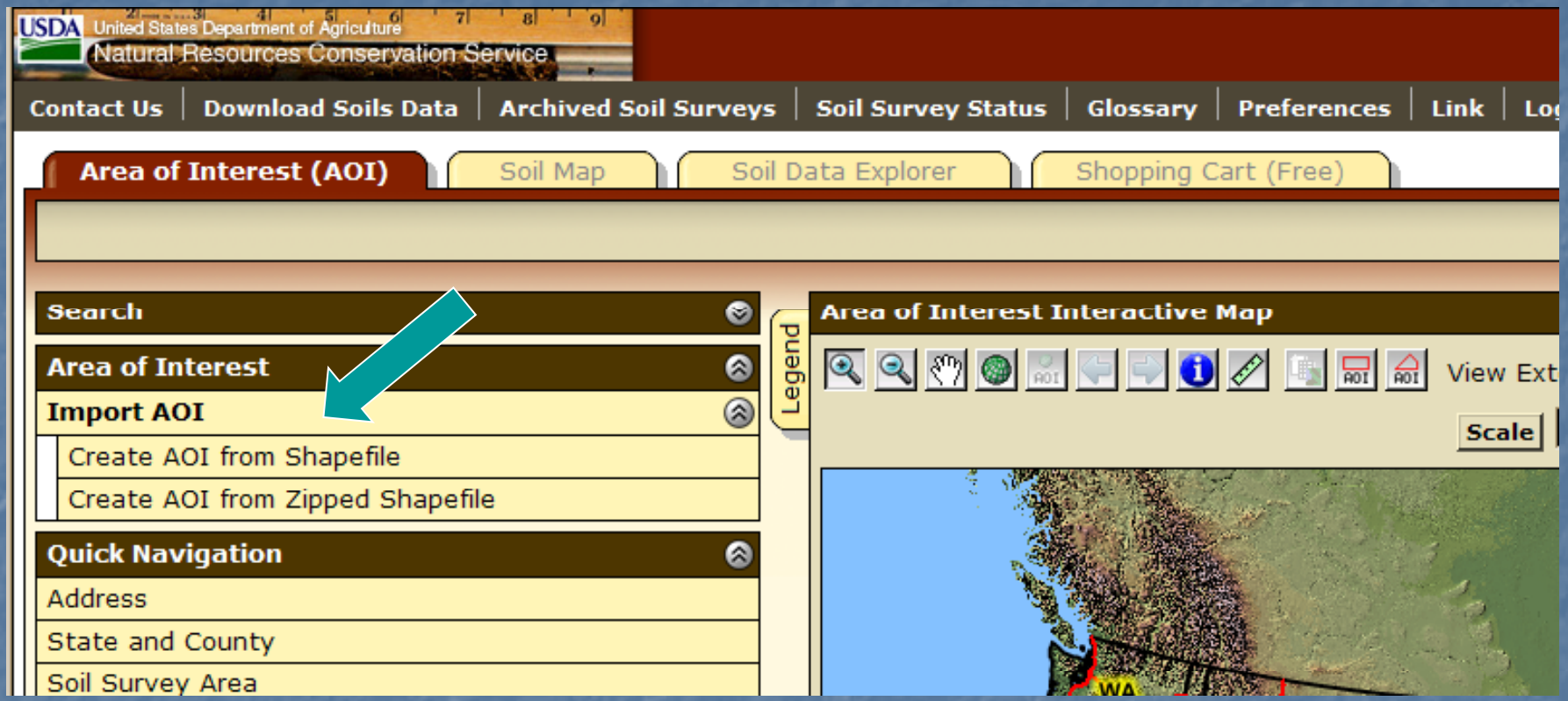
Define AOI – multi-sided polygon



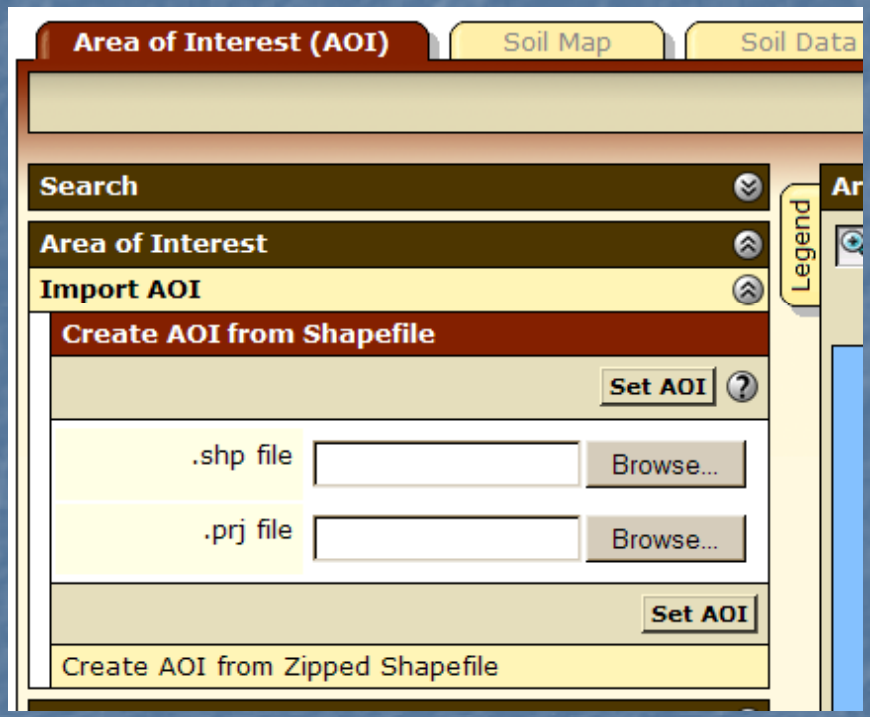
Selected AOI

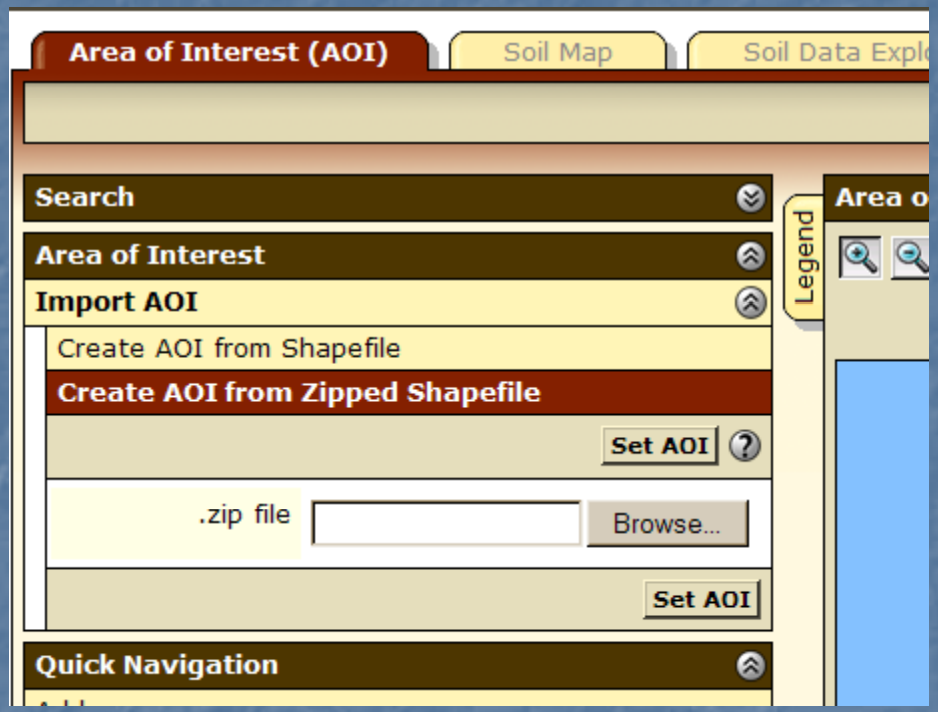


Define AOI – import boundary



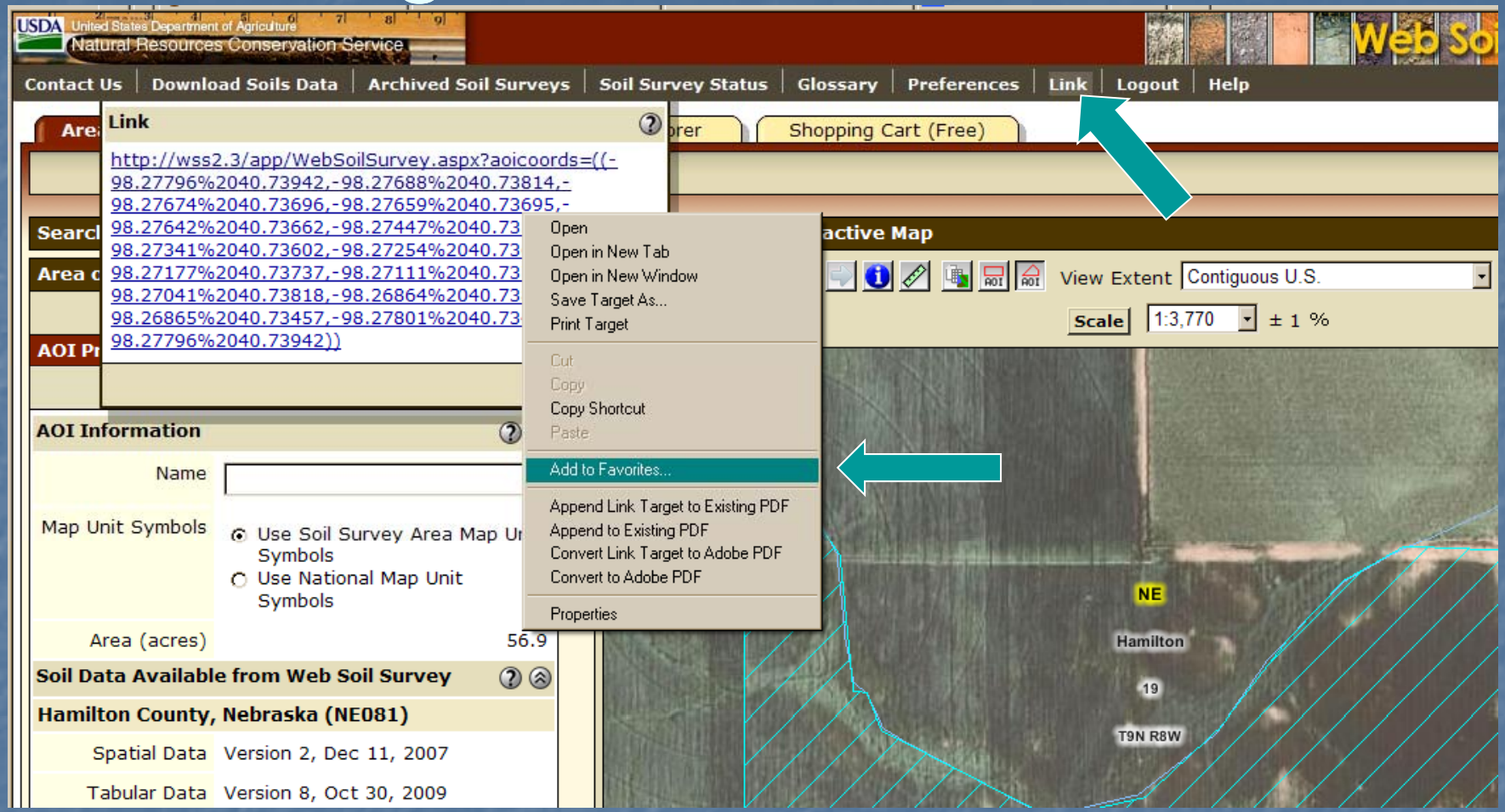
Define AOI – import boundary





- **Shapefiles can be imported from your local computer**
- **Shapefiles can be imported as zipped or unzipped files**
- **Use Browse button to find appropriate file(s)**
- **After file(s) have been identified, click Set AOI button**

Saving AOI Link/bookmark

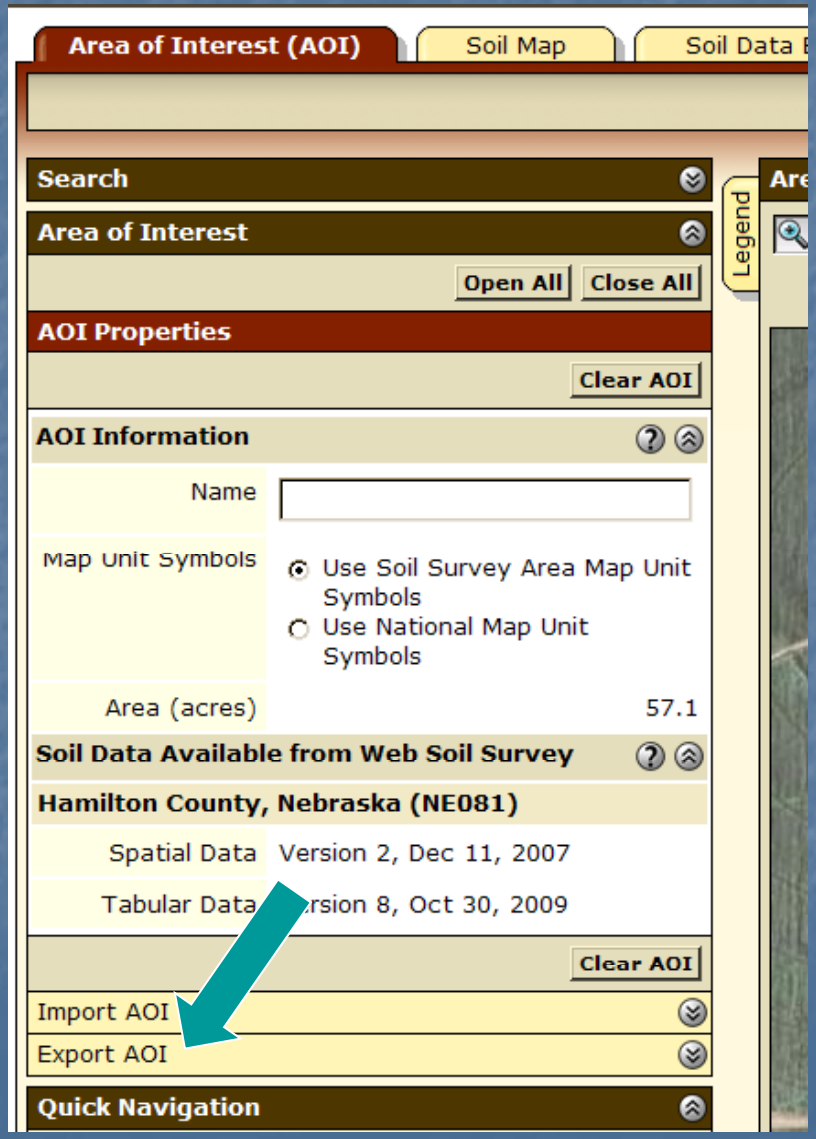


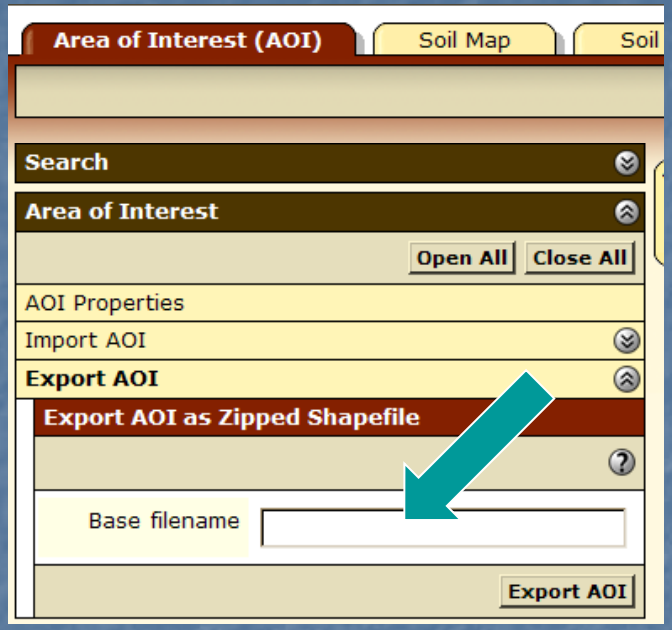
- **Click Link option on Navigation bar. Dialog box opens showing URL of your WSS session with coordinates of the AOI boundary.**
- **Right click on the URL displayed and select Add to Favorites. Rename as appropriate.**

Define AOI – use bookmarked link

- Find and select a bookmark that you have saved from an earlier WSS session.
- Web Soil Survey will open in your browser and the previously defined AOI will be set.

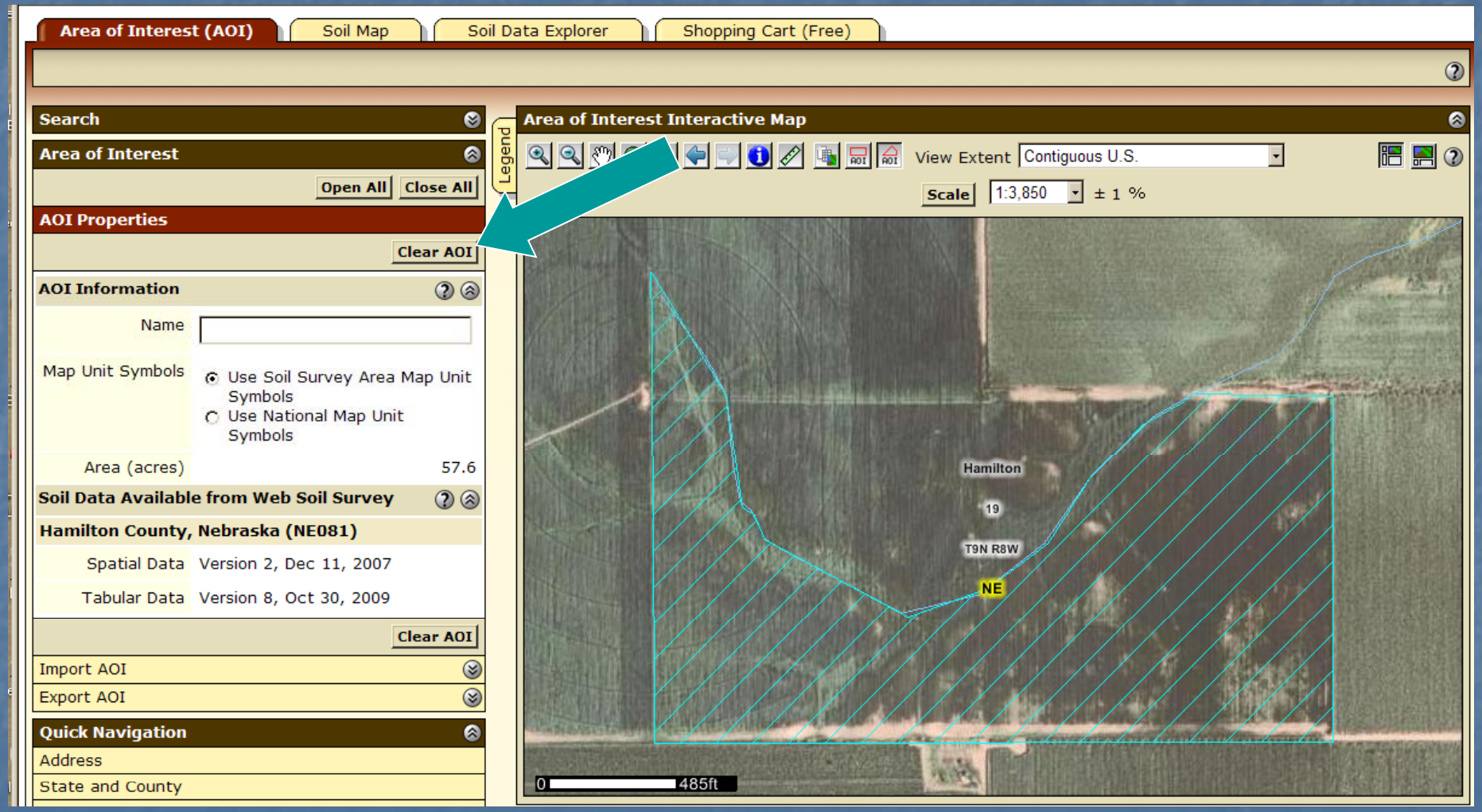
Export AOI boundary



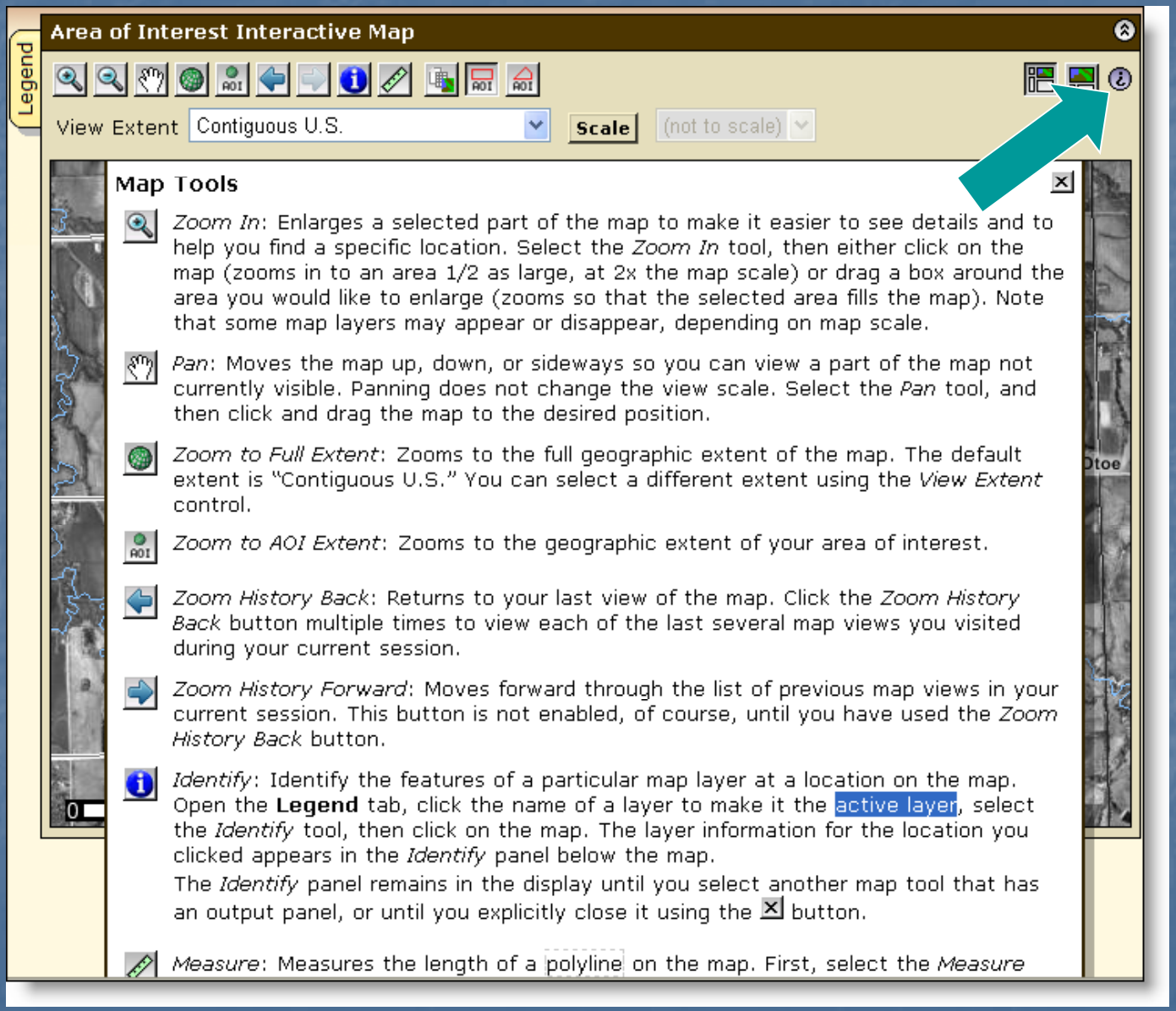


- **Once an AOI has been established, you can export the AOI boundary as a Shapefile**
- **Click Export AOI option under the AOI Properties section.**
- **Assign a filename; file is saved to your local computer.**
- **This file can later be imported into a future WSS session to return to this same AOI.**

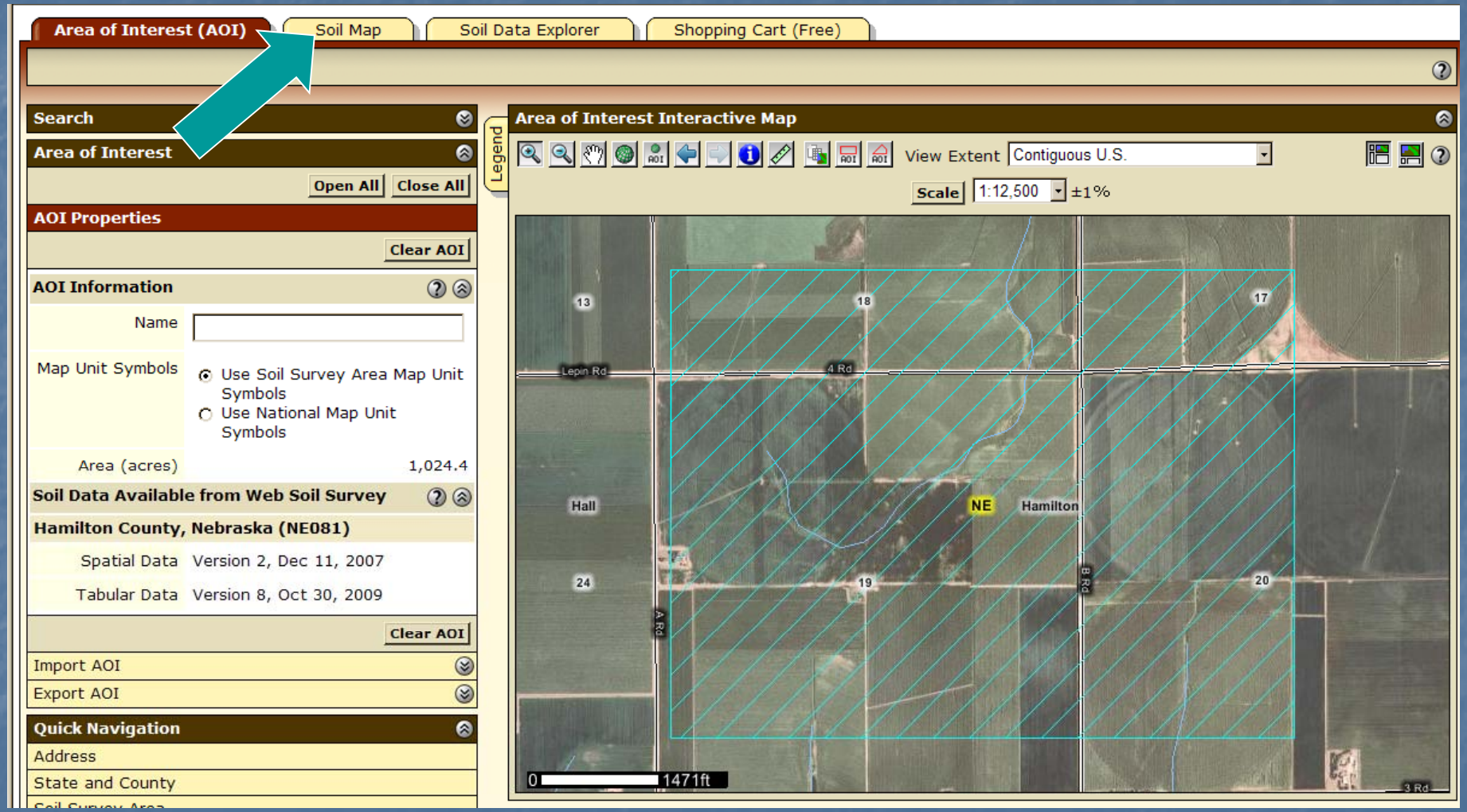
Explicitly clear the AOI



AOI Interactive Map - Help

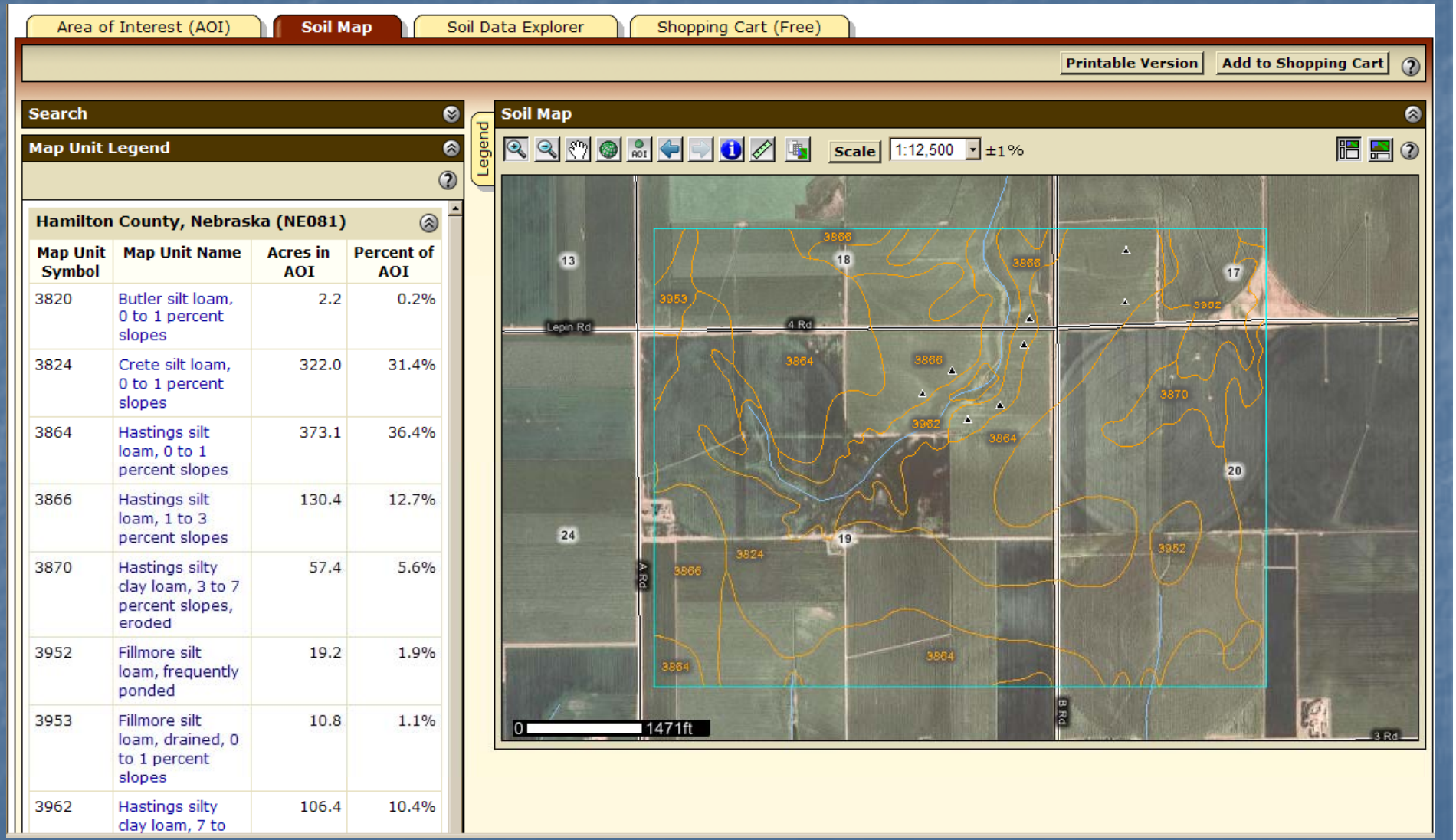


View Soil Map

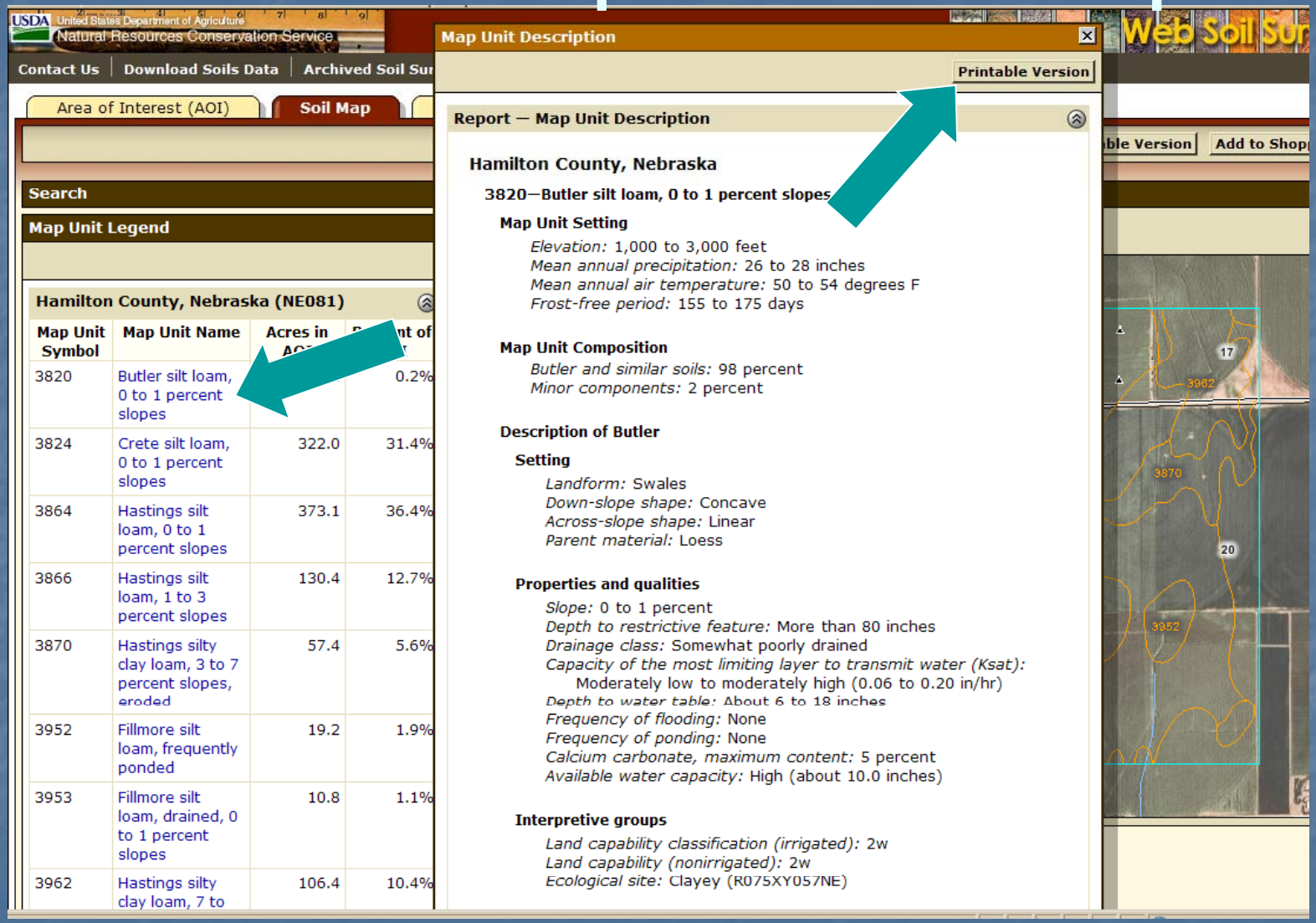


- **Click Soil Map tab**

Soil Map

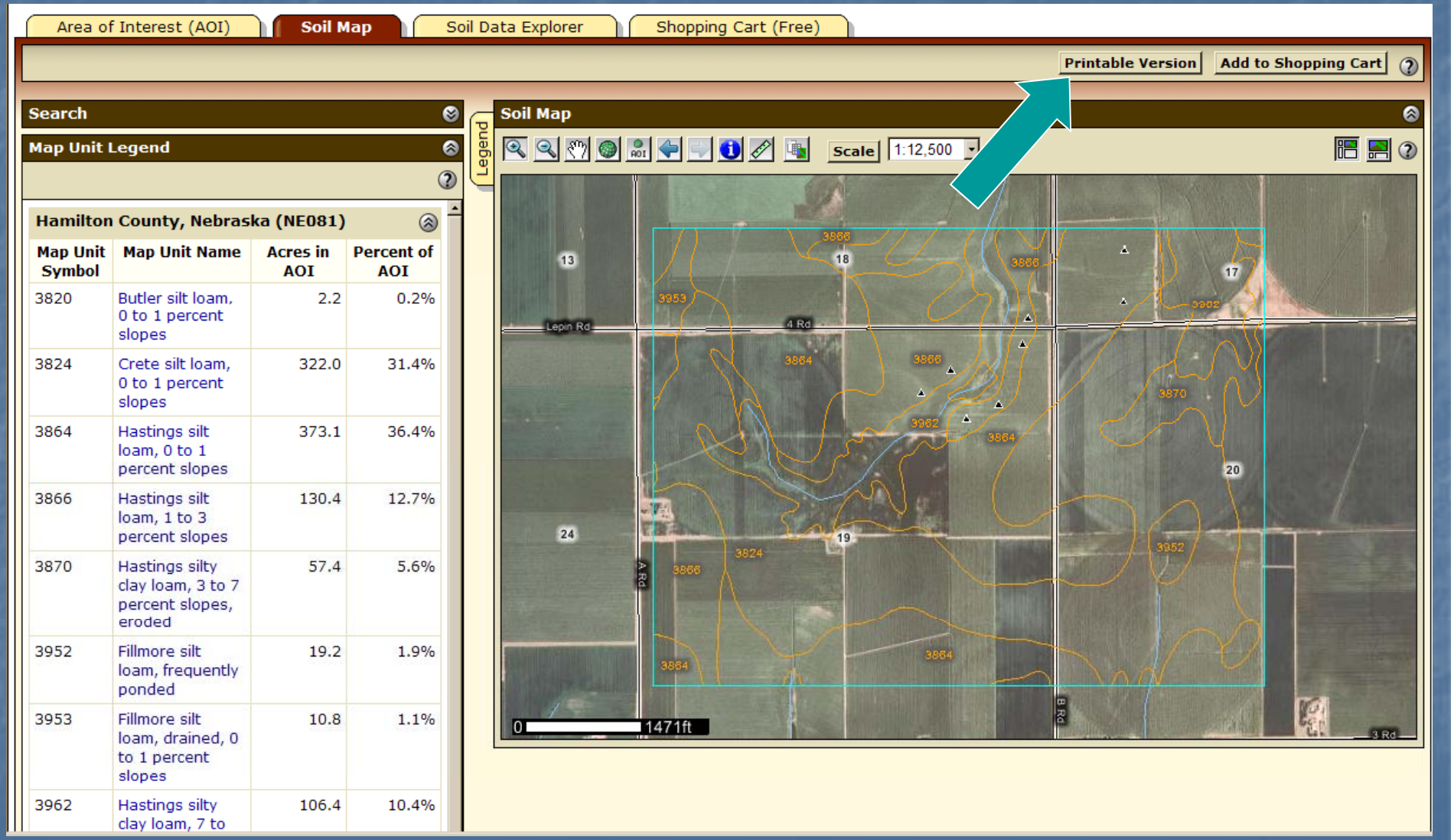

Area of Interest (AOI)
Soil Map
Soil Data Explorer
Shopping Cart (Free)
Printable Version
Add to Shopping Cart
Search
Map Unit Legend
Legend
Soil Map
Scale
1:12,500
±1%
Hamilton County, Nebraska (NE081)
Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI
3820 | Butler silt loam, 0 to 1 percent slopes | 2.2 | 0.2%
3824 | Crete silt loam, 0 to 1 percent slopes | 322.0 | 31.4%
3864 | Hastings silt loam, 0 to 1 percent slopes | 373.1 | 36.4%
3866 | Hastings silt loam, 1 to 3 percent slopes | 130.4 | 12.7%
3870 | Hastings silty clay loam, 3 to 7 percent slopes, eroded | 57.4 | 5.6%
3952 | Fillmore silt loam, frequently ponded | 19.2 | 1.9%
3953 | Fillmore silt loam, drained, 0 to 1 percent slopes | 10.8 | 1.1%
3962 | Hastings silty clay loam, 7 to | 106.4 | 10.4%
Lepin Rd
4 Rd
A Rd
B Rd
3 Rd
0
1471ft

View/Print Map Unit Description

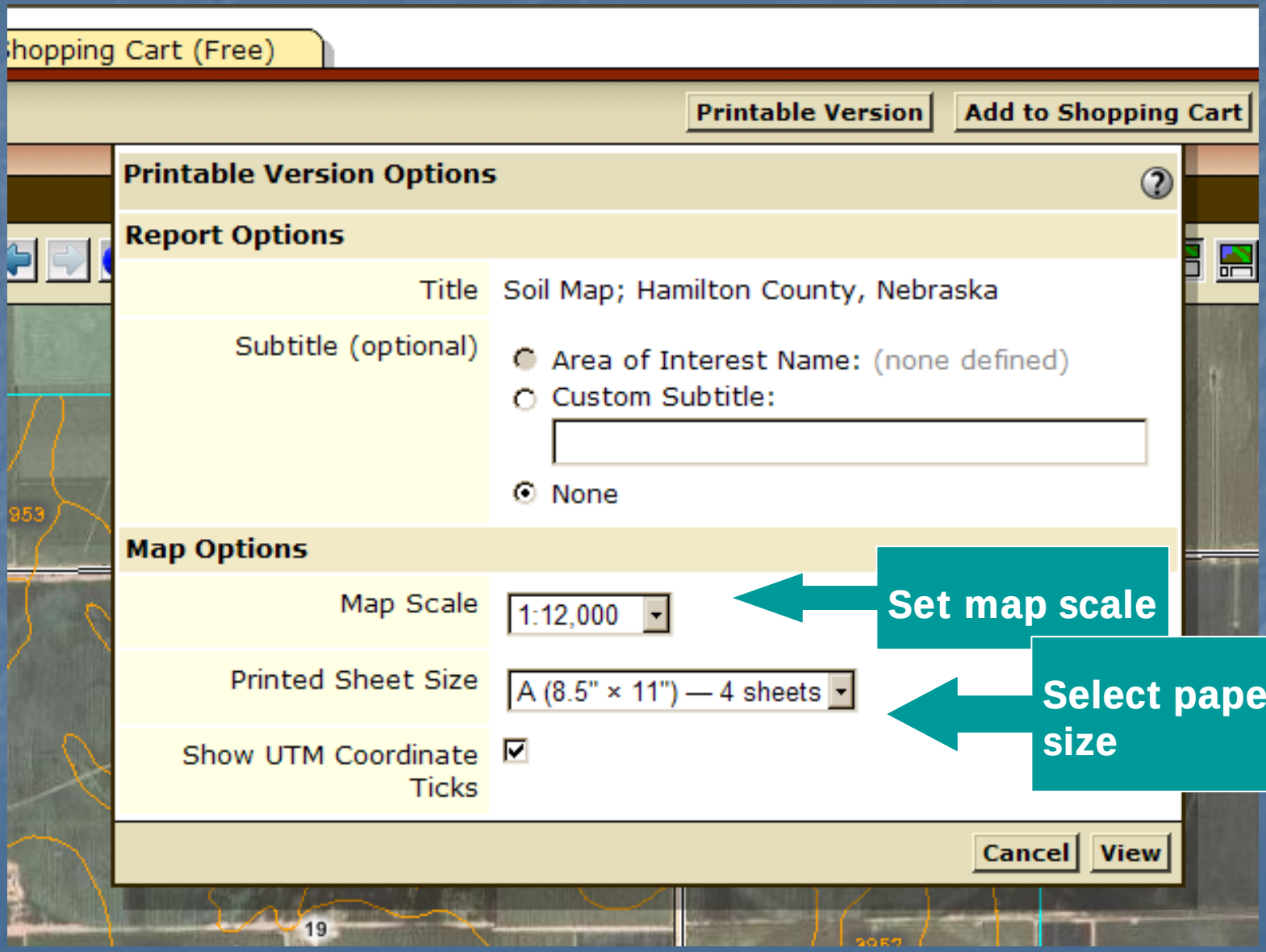


- **Click on map unit name at left to view map unit description report**
- **Click Printable Version to print – produces PDF file**

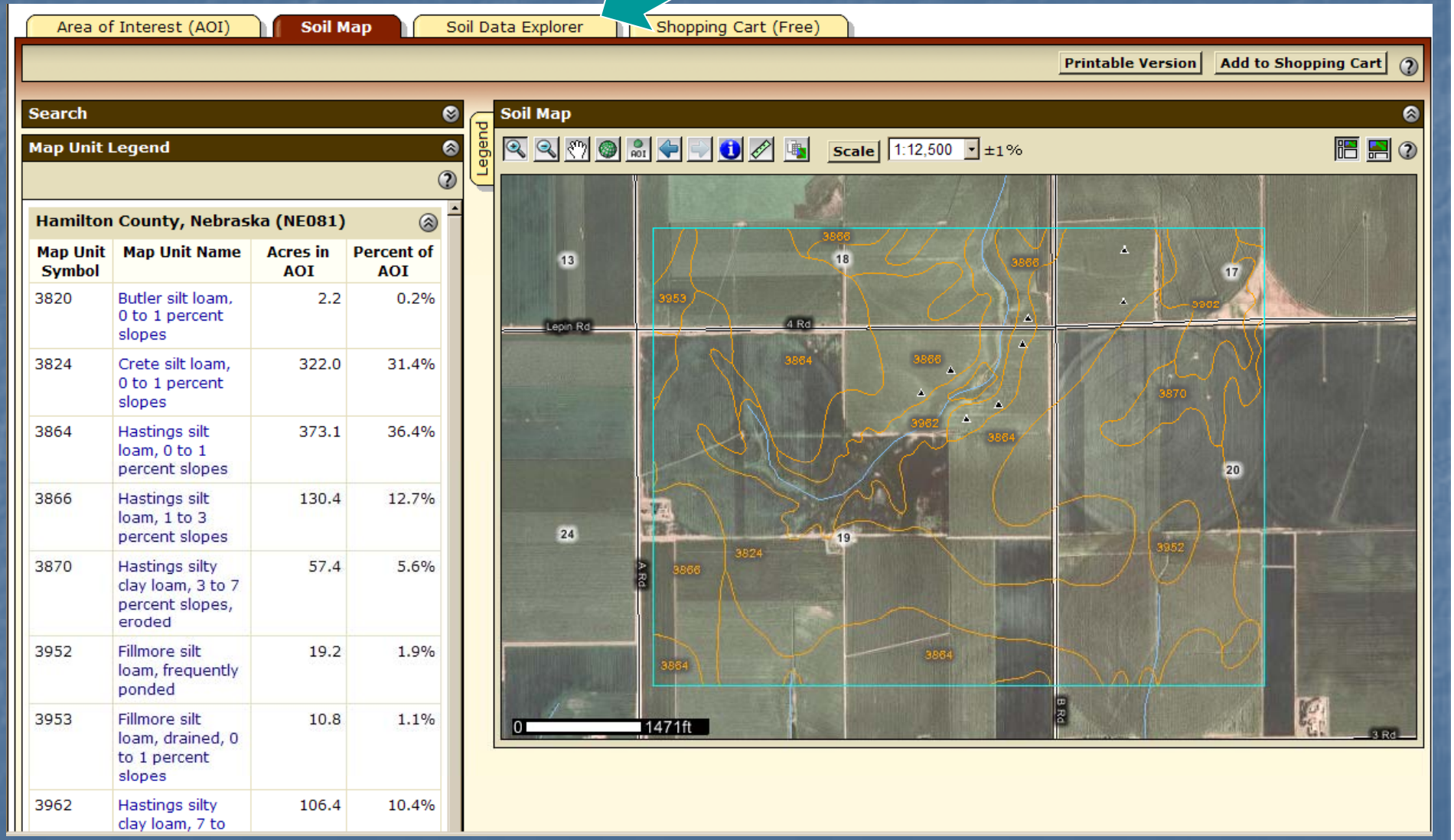
Print Soil Map



Print Options



Explore Soil Information



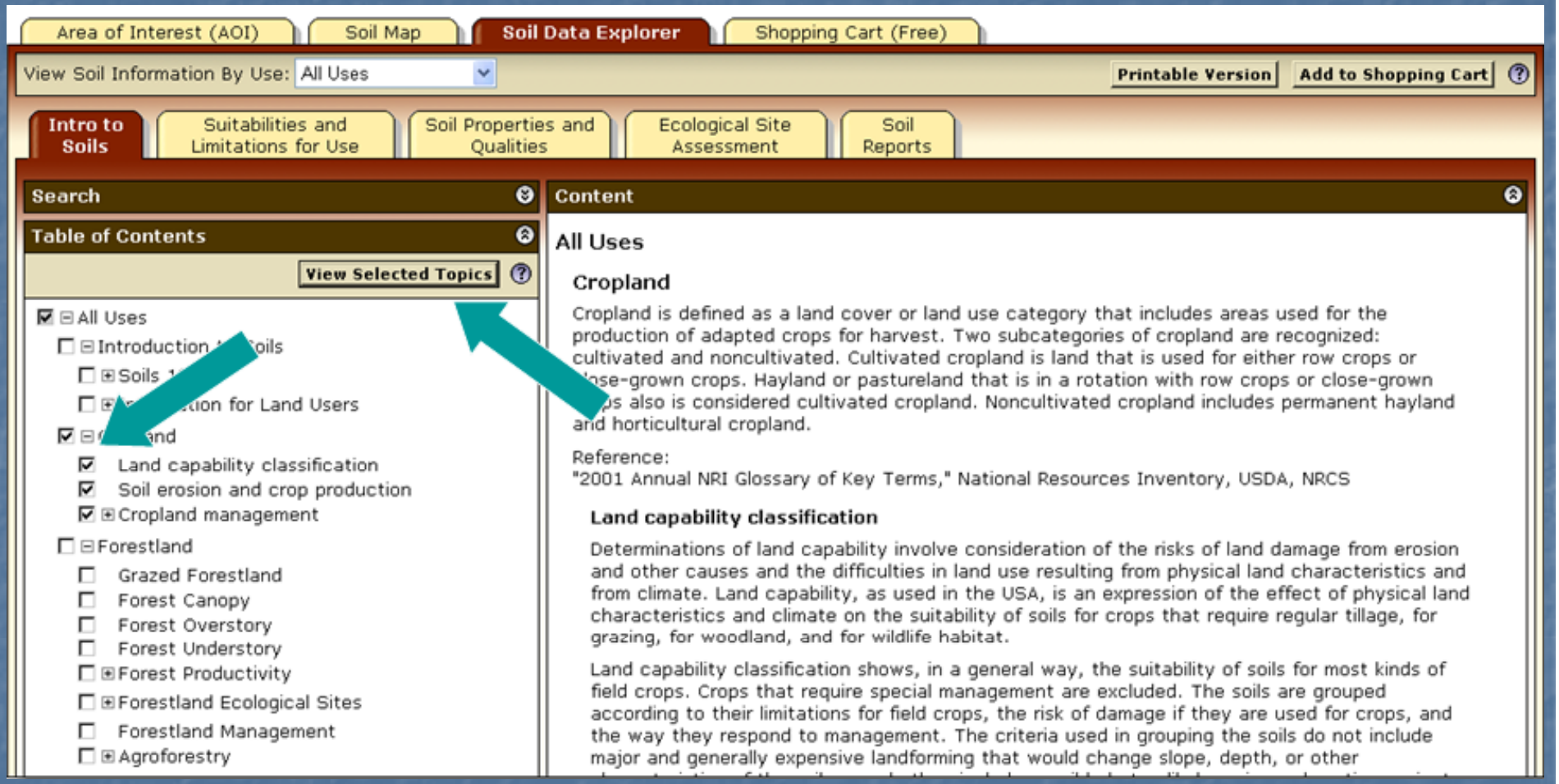
Soil Data Explorer Features

- Filter the soil information by land use category
- Learn the terminology and concepts of soils and specific land uses
- View interpretive soil data and soil properties in the form of thematic maps, tables, and text description
- Access ecological site information
- Print individual maps and reports
- Add content to free Shopping Cart

Soil Data Explorer - Help

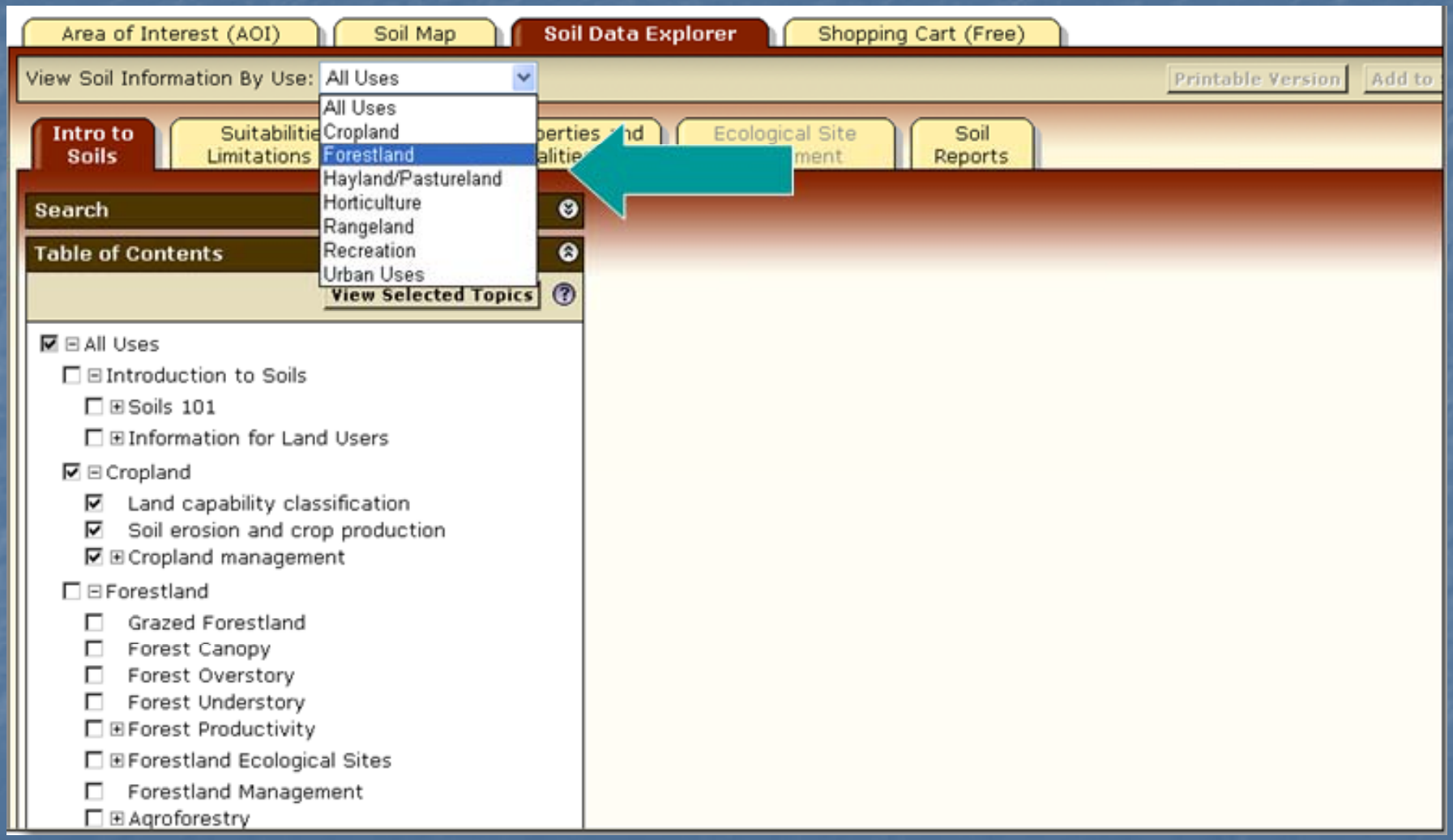
Soil Data Explorer - Intro

Soil Data Explorer - Intro



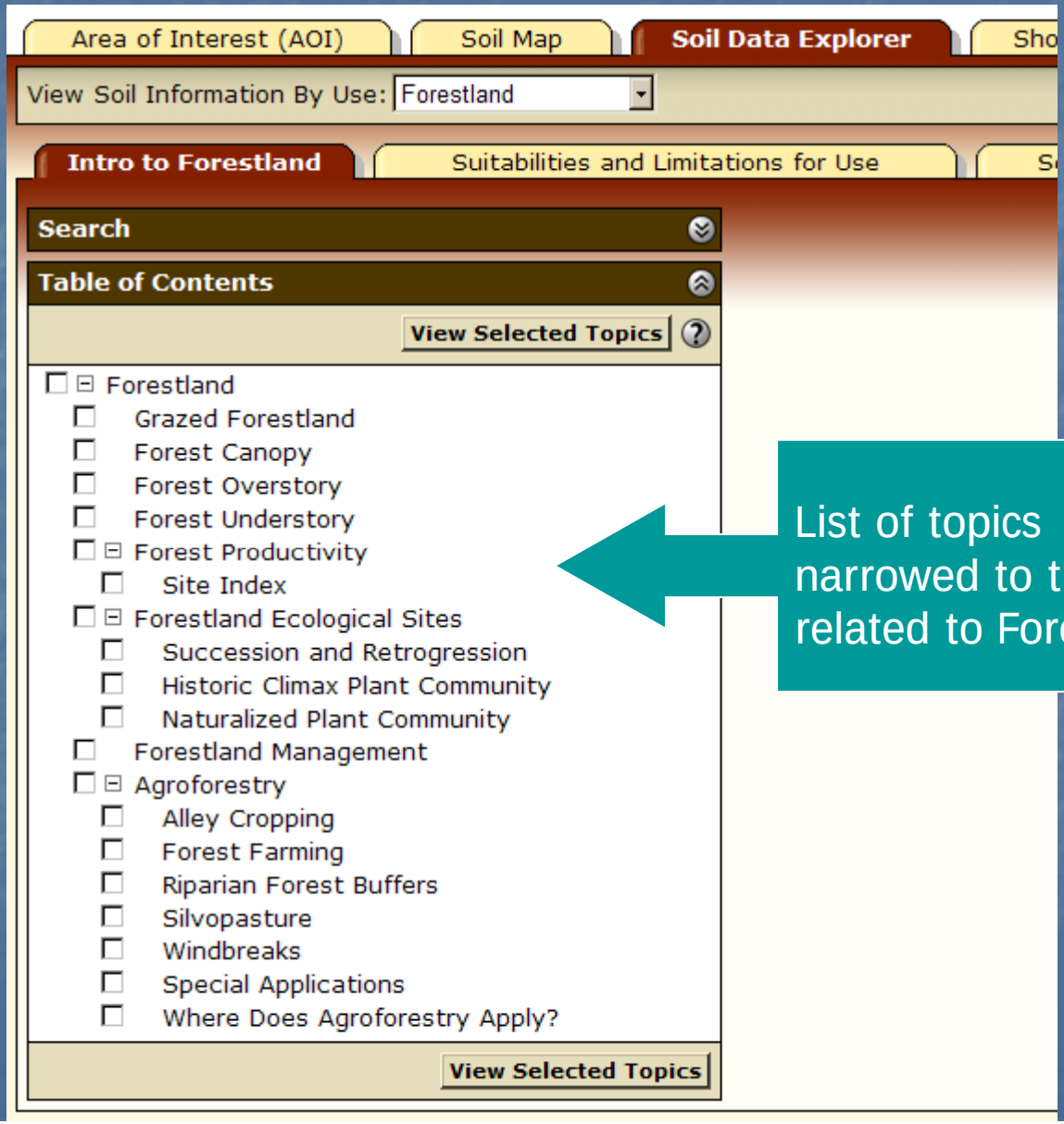
- **Check item(s) in list, then click View Selected Topics to display text**

Filter Information by Land Use



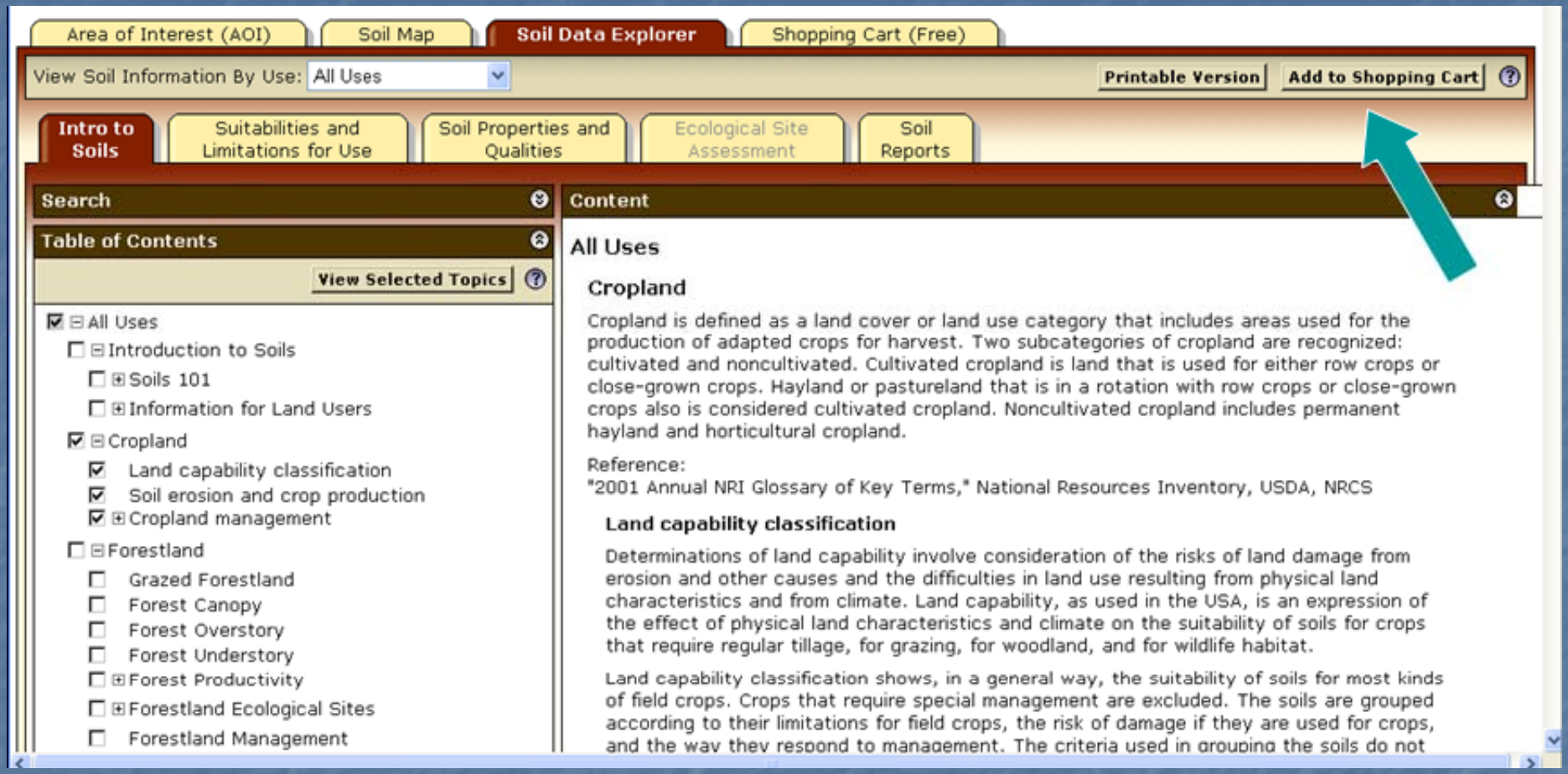
- **Select a specific land use from drop down list to filter content on the Soil Data Explorer tab.**

Forestland Information



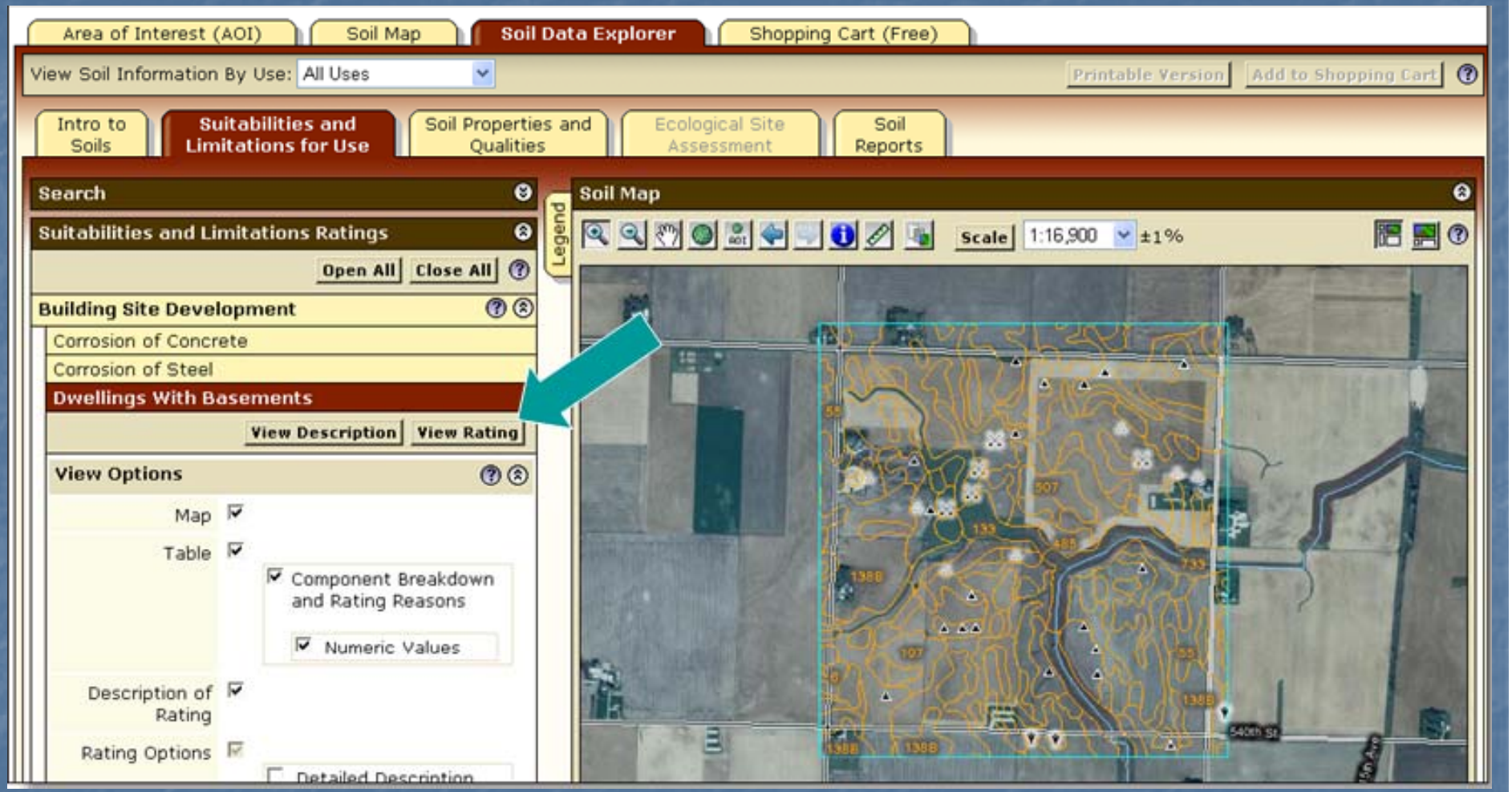
List of topics narrowed to those related to Forestland.

Shopping Cart



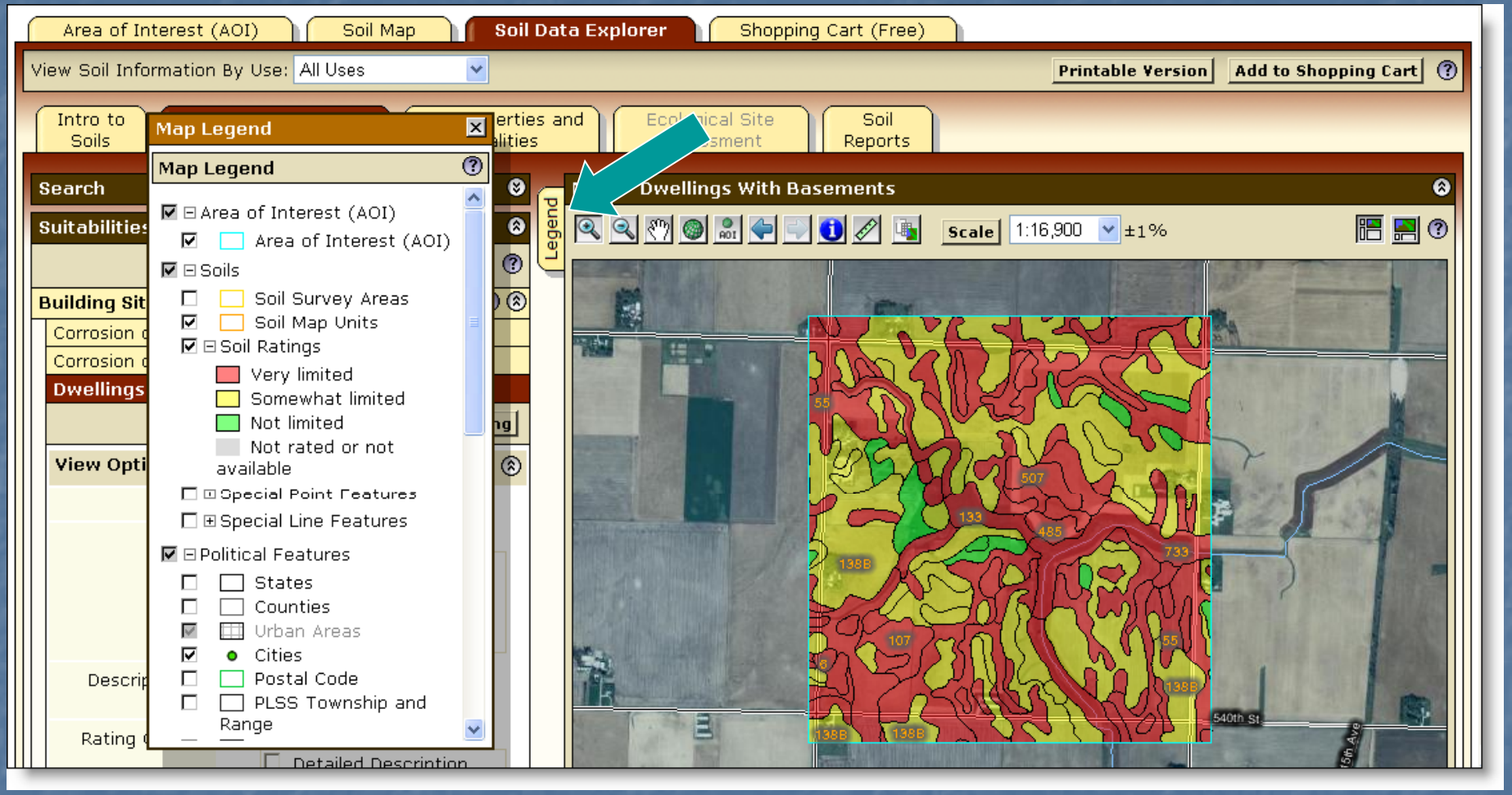
- **Any material displayed in right-hand panel (intro text, maps, tables, etc) can be added to the free Shopping Cart for later retrieval. All added content is bundled into a single PDF file for download or printing.**

Suitabilities and Limitations



- **Display a variety of interpretations as a thematic map.**
- **Open a category folder, then select desired interpretation. Click View Rating**

Display Interpretive Map



- **Click Legend tab to display map legend. Table below map shows rating and limiting features of each soil in Summary Report.**

Summary Report

Tables — Dwellings With Basements — Summary By Map Unit

Summary by Map Unit — Buena Vista County, Iowa

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
6	Okoboji silty clay loam, 0 to 1 percent slopes	Very limited	Okoboji, ponded (95%)	Depth to saturated zone (1.00)	2.7	0.3%
				Shrink-swell (1.00)		
				Ponding (1.00)		
			Knoke, ponded (5%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Shrink-swell (1.00)		
34B	Estherville sandy loam, 2 to 5 percent slopes	Not limited	Estherville (90%)		1.3	0.2%
55	Nicollet loam, 1 to 3 percent slopes	Very limited	Nicollet (90%)	Depth to saturated zone (1.00)	201.2	25.5%
62C	Storden loam, 5 to 9 percent slopes	Not limited	Storden (85%)		25.3	3.2%
62D	Storden loam, 9 to 14 percent slopes	Somewhat limited	Storden (85%)	Slope (0.63)	10.8	1.4%
62E	Storden loam, 14 to 18 percent slopes	Very limited	Storden (85%)	Slope (1.00)	2.2	0.3%
73C	Salida gravelly	Not limited	Salida (90%)		1.1	0.1%

Interpretation Description and Rating Options Used

Description — Dwellings with Basements

Dwellings are single-family houses of three stories or less. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet.

The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

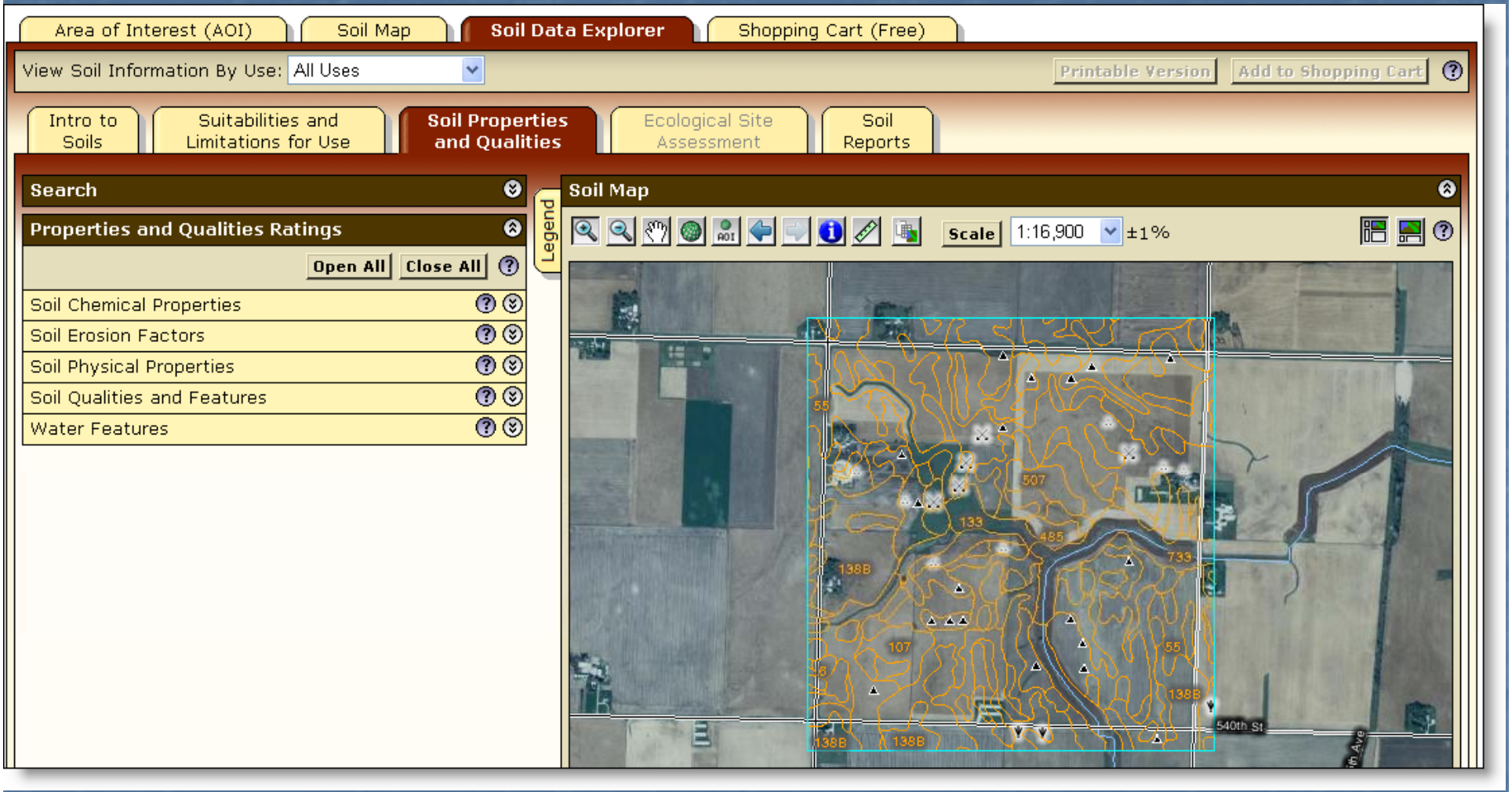
Rating Options — Dwellings with Basements

Aggregation Method: Dominant Condition

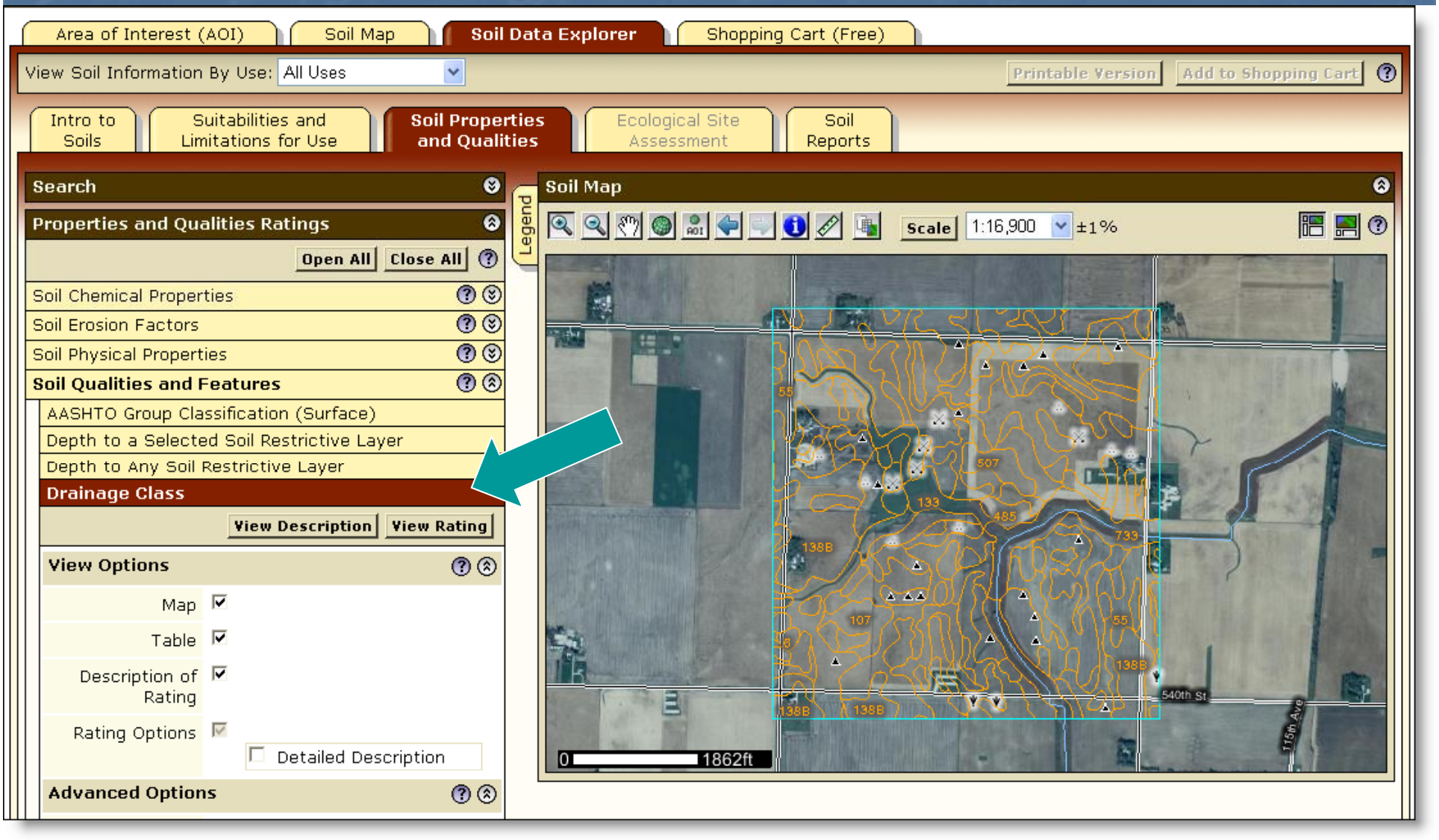
Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

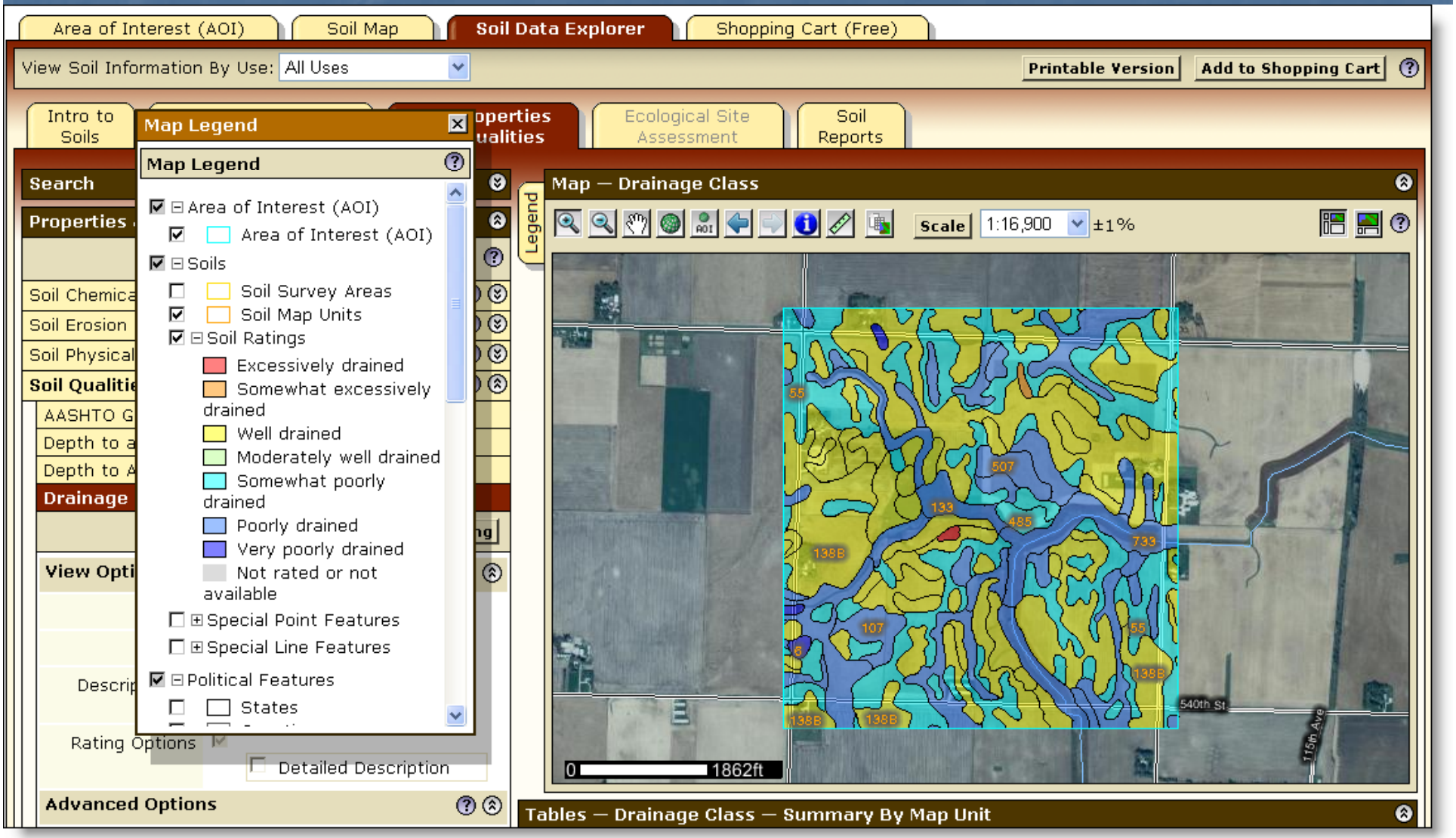
Soil Properties and Qualities



Select Property or Quality



Display Results

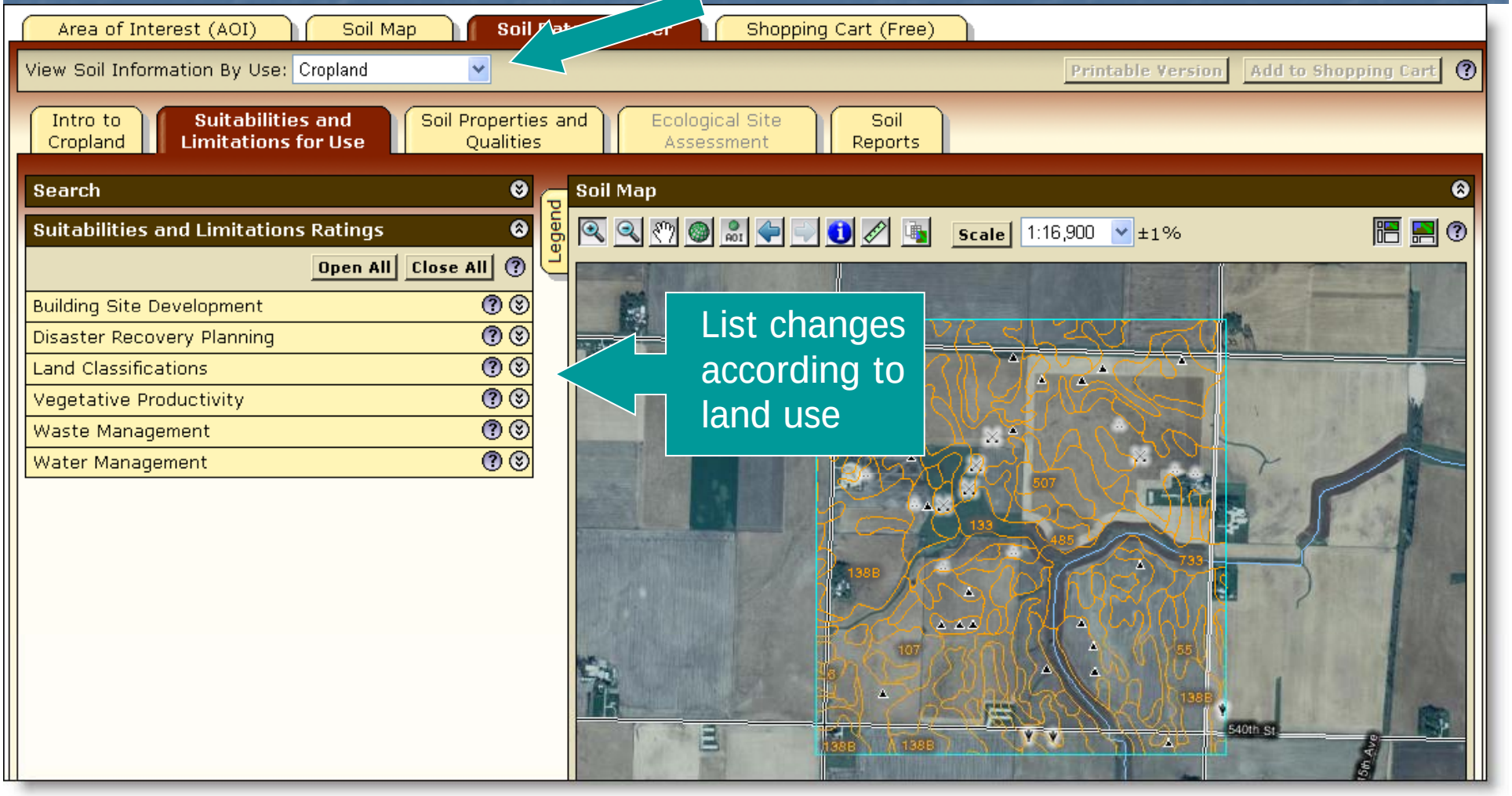


Tables — Drainage Class — Summary By Map Unit

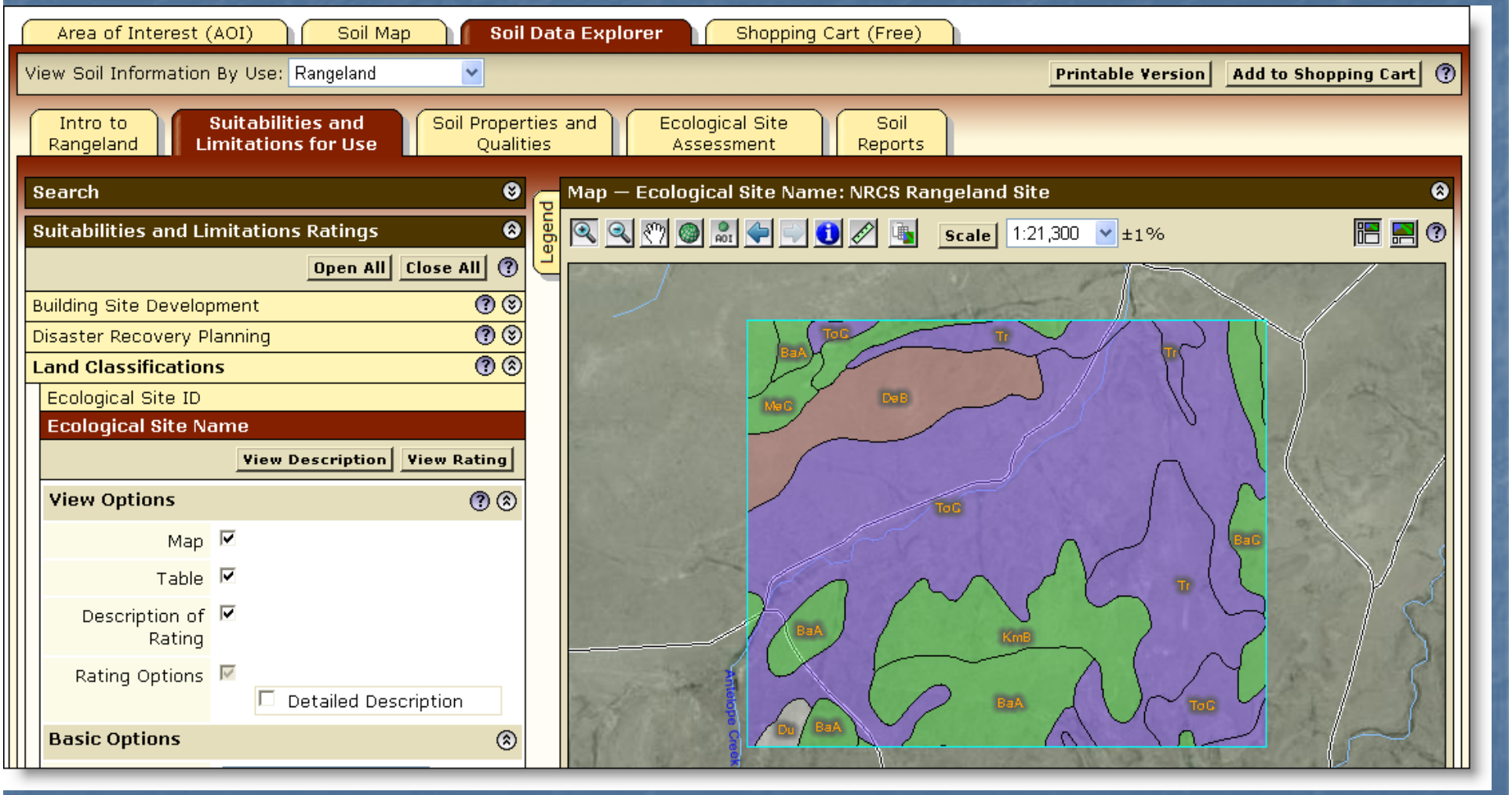
Summary by Map Unit — Buena Vista County, Iowa

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
6	Okoboji silty clay loam, 0 to 1 percent slopes	Very poorly drained	2.7	0.3%
34B	Estherville sandy loam, 2 to 5 percent slopes	Somewhat excessively drained	1.3	0.2%
55	Nicollet loam, 1 to 3 percent slopes	Somewhat poorly drained	201.2	25.5%
62C	Storden loam, 5 to 9 percent slopes	Well drained	25.3	3.2%
62D	Storden loam, 9 to 14 percent slopes	Well drained	10.8	1.4%
62E	Storden loam, 14 to 18 percent slopes	Well drained	2.2	0.3%
73C	Salida gravelly sandy loam, 5 to 9 percent slopes	Excessively drained	1.1	0.1%
107	Webster silty clay loam, 0 to 2 percent slopes	Poorly drained	93.3	11.8%
133	Colo silty clay loam, 0 to 2 percent slopes	Poorly drained	14.2	1.8%
138B	Clarion loam, 2 to 5 percent slopes	Well drained	277.7	35.2%
138C2	Clarion loam, 5 to 9 percent slopes, moderately eroded	Well drained	54.5	6.9%
203	Cylinder loam, deep, 0 to 2 percent slopes	Somewhat poorly drained	3.2	0.4%

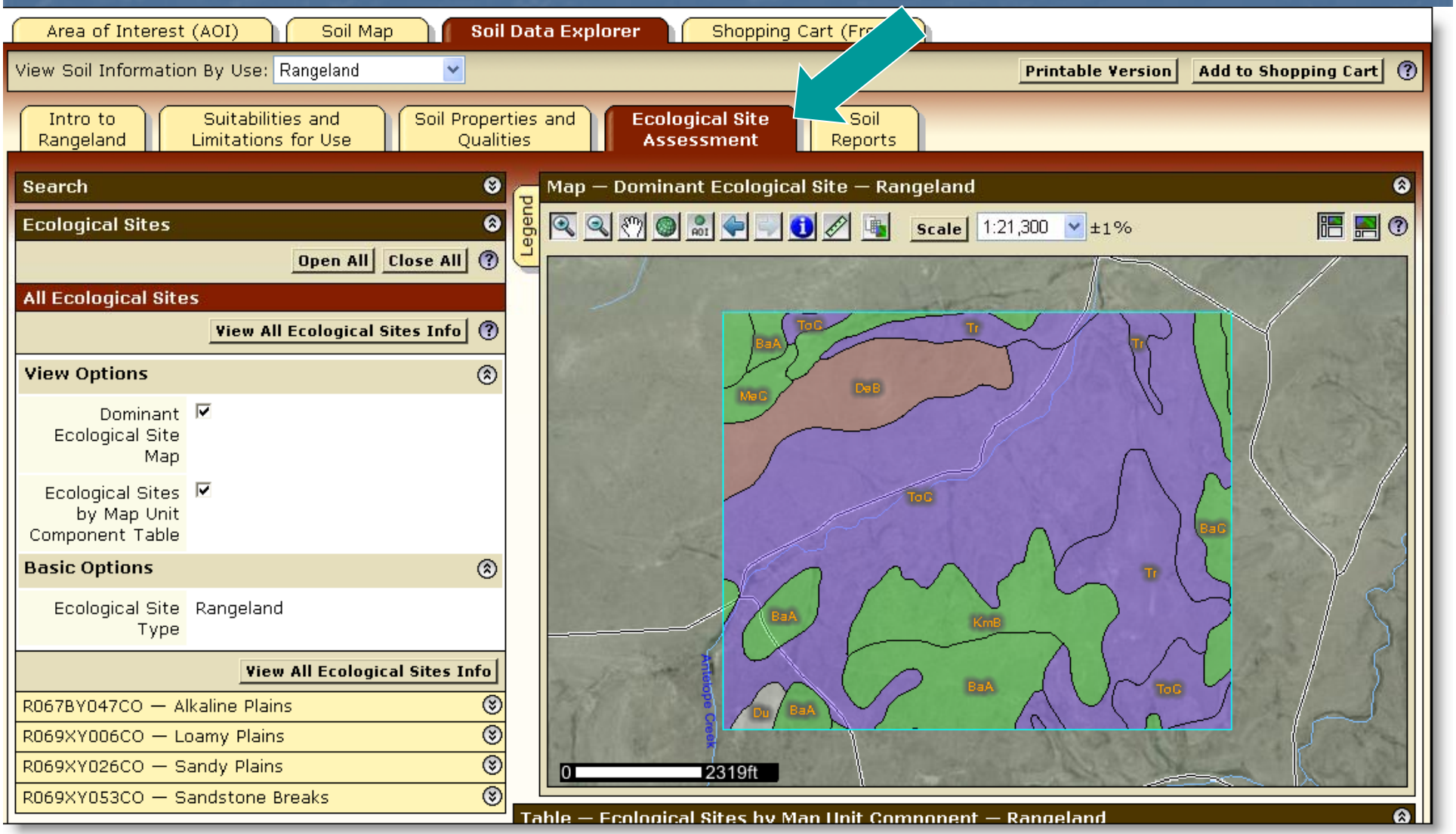
Change Land Uses



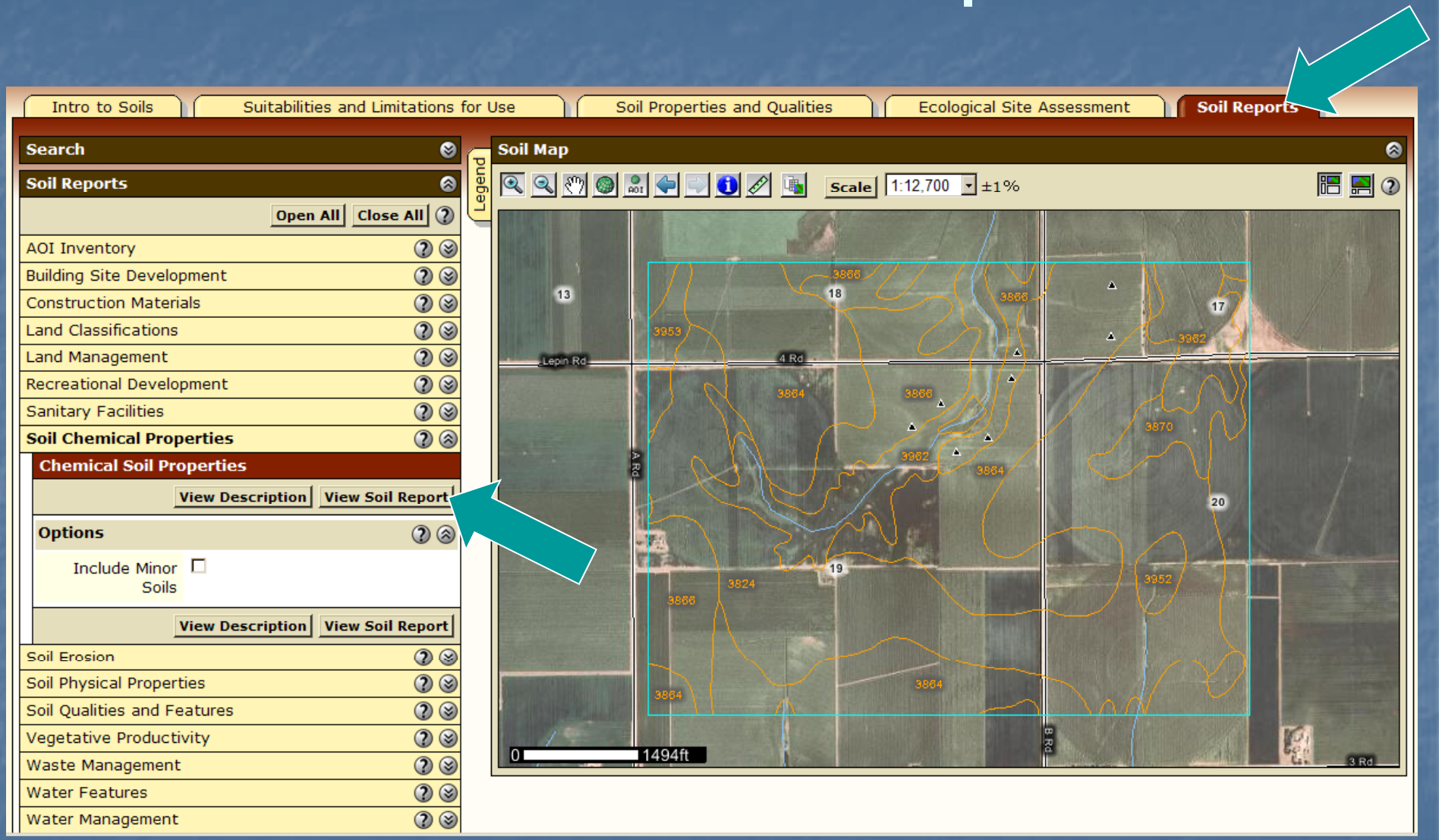
Ecological Site Name Map



Ecological Site Assessment



View Soil Data Reports



Chemical Soil Properties Report

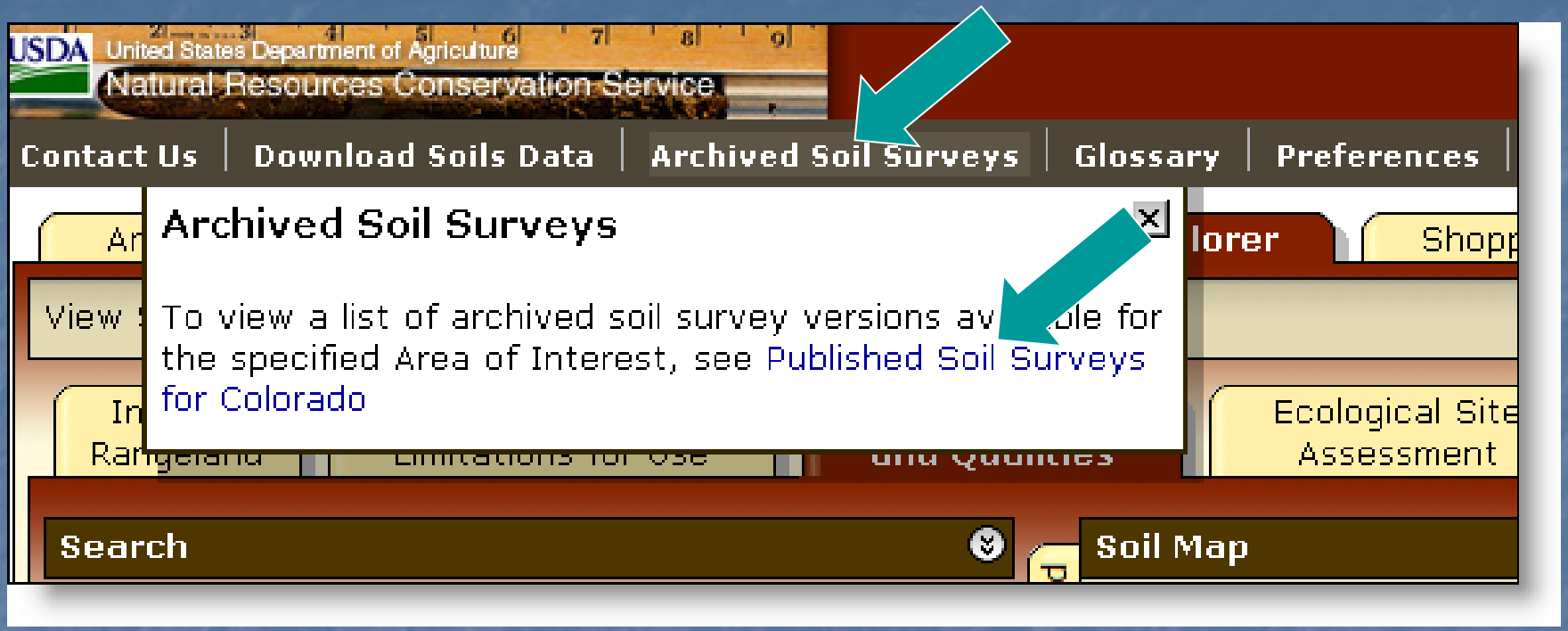
Report — Chemical Soil Properties

Hamilton County, Nebraska

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	*meq/100g*	*meq/100g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
3820—Butler silt loam, 0 to 1 percent slopes								
Butler	0-11	18-27	—	5.1-6.5	0	0	0	0
	11-32	30-40	—	5.6-7.8	0	0	0	0
	32-80	20-35	—	6.6-8.4	0-5	0	0	0
3824—Crete silt loam, 0 to 1 percent slopes								
Crete	0-11	16-23	—	5.1-6.5	0	0	0	0
	11-14	20-31	—	5.6-6.0	0	0	0	0
	14-27	29-41	—	5.6-7.8	0	0	0	0
	27-30	19-33	—	7.4-8.4	1-5	0	0	0
	30-80	10-20	—	6.6-8.4	0-10	0	0	0-1
3864—Hastings silt loam, 0 to 1 percent slopes								
Hastings	0-12	22-31	—	5.1-6.5	0	0	0	0
	12-32	27-33	—	6.1-7.8	0	0	0	0
	32-40	25-30	—	6.1-8.4	0-5	0	0	0
	40-80	24-27	—	6.6-8.4	0-5	0	0	0
3866—Hastings silt loam, 1 to 3 percent slopes								
Hastings	0-12	22-31	—	5.1-6.5	0	0	0	0

- **Report is displayed below the soil map.**

Access Archived Soil Survey Publications



- **A listing of previous soil survey report publications for the Area of Interest is stored on an external web site. Click the highlighted link to go there.**

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- Soil Geochemistry Spatial Database
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- Find a Service Center
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Published Soil Surveys for Colorado

Soil surveys are being completed and published on a continuing schedule. As time passes, the data in published surveys become dated. The official information about the soils in a given area is available from the Soil Data Mart, which provides the most current data about the soils. If spatial data are available, the Web Soil Survey also provides access to the most current information. In the "Date" column, the word "current" is used for those surveys having both tabular and spatial data in the Soil Data Mart. "Archived PDF online" refers to any surveys published as PDF files on the Web, including new surveys as well as old ones dating back to 1899.

PDF files require Acrobat Reader.

Follow these instructions to download both text and maps.

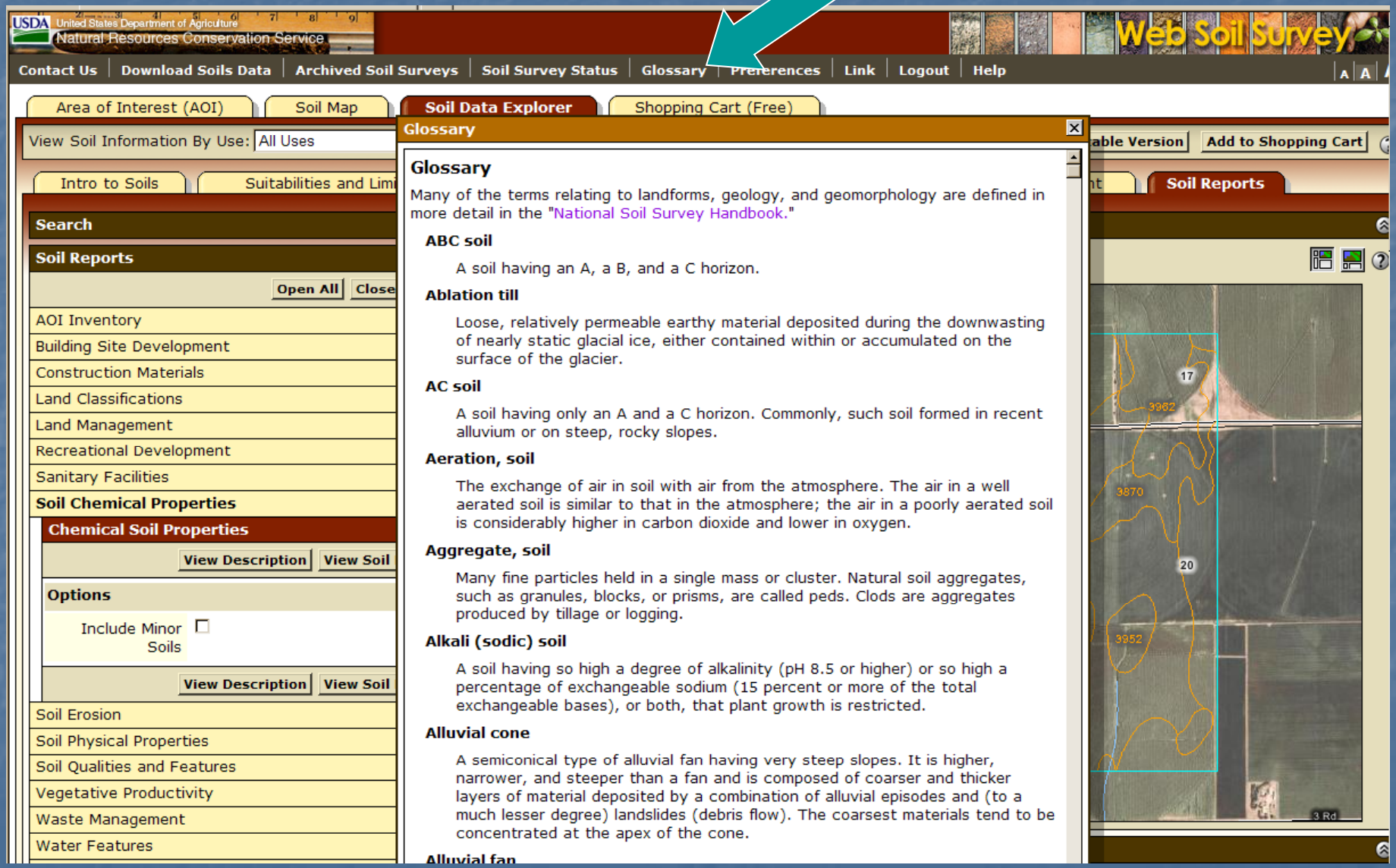
How to Save an Archived Soil Survey Publication to Your Local Machine (PDF; 2.8 MB)

For information about areas not included on the following list of soil survey publications or for ordering or obtaining information about reference copies (CD-ROM or paper copy), contact:

State Conservationist
655 Parfet Street
Room E200C
Lakewood, CO 80215-5521
Phone: 720-544-2810
FAX: 720-544-2965

Soil survey name (Follow links for online surveys.)	Date	Paper copy available	CD-ROM	Archived PDF online	Web Soil Survey (generated from official soil data)
Adams Area, Parts of Adams and Denver Counties	Current	No	No	No	Yes
Adams County	1974	No	Yes	Yes	No

Access Glossary of Terms



Access the Free Shopping Cart

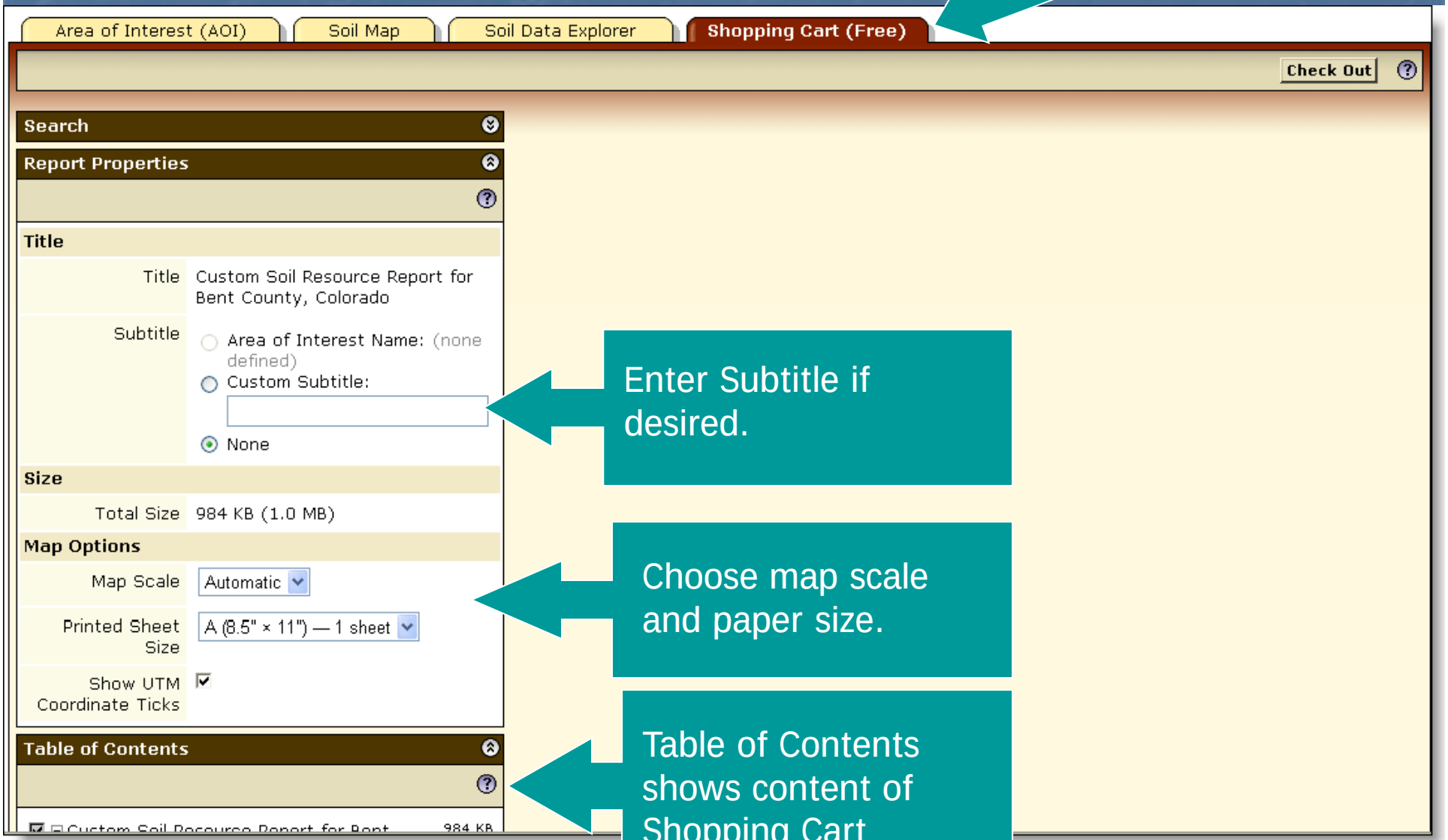
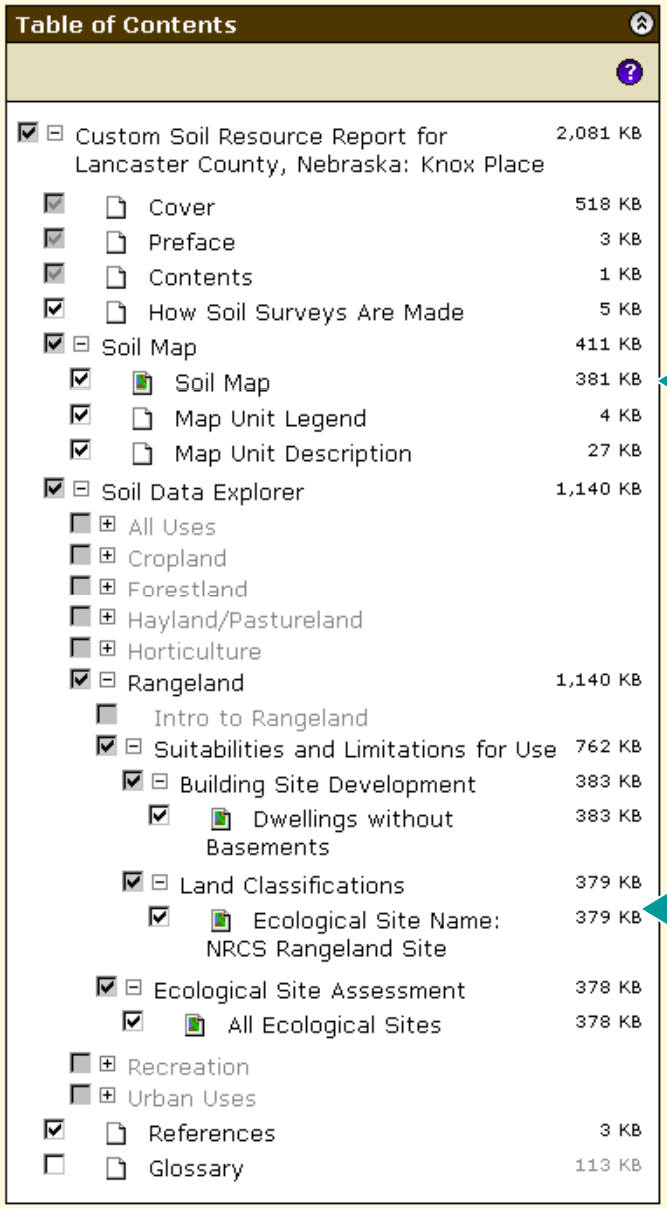


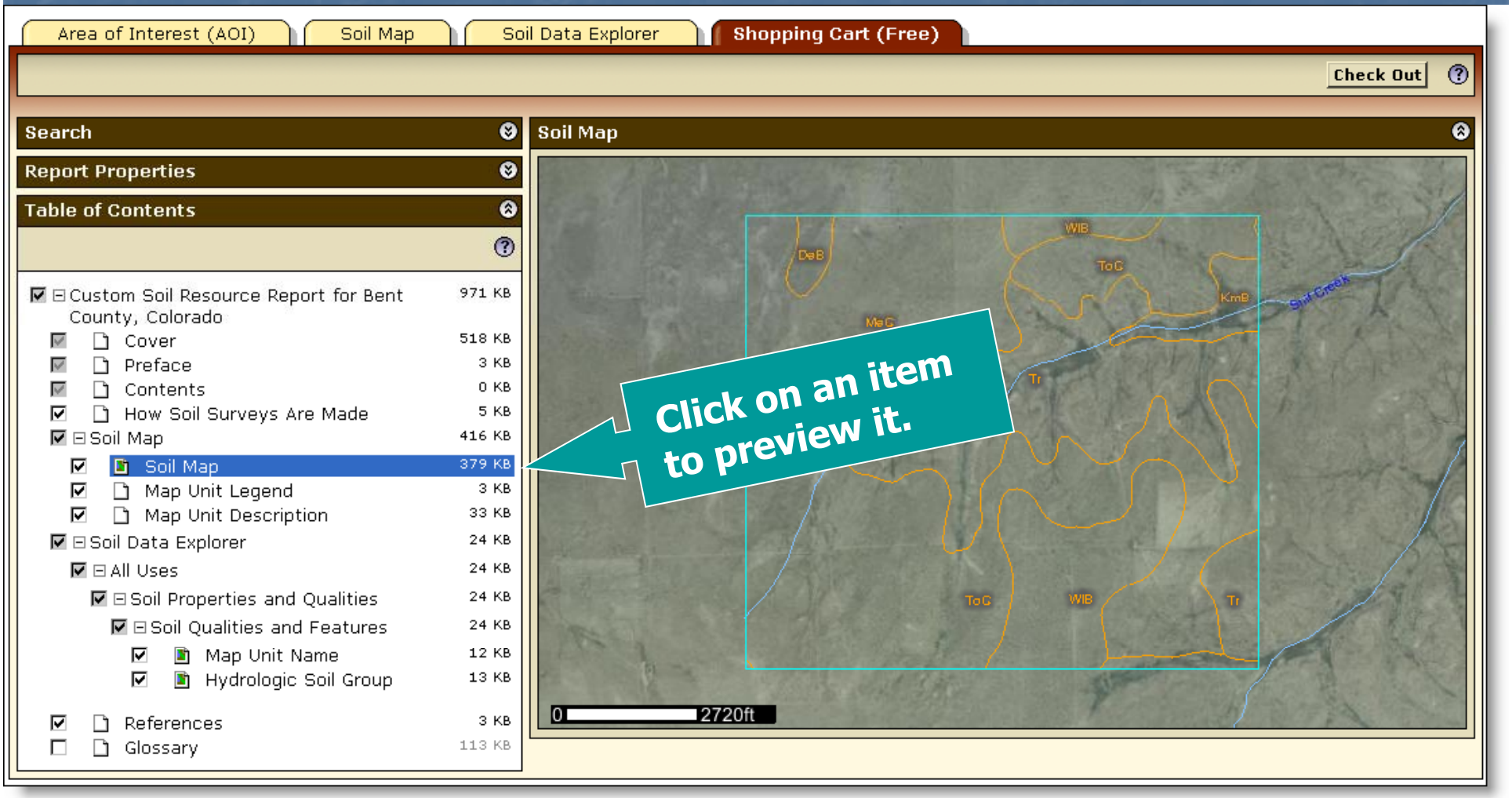
Table of Contents



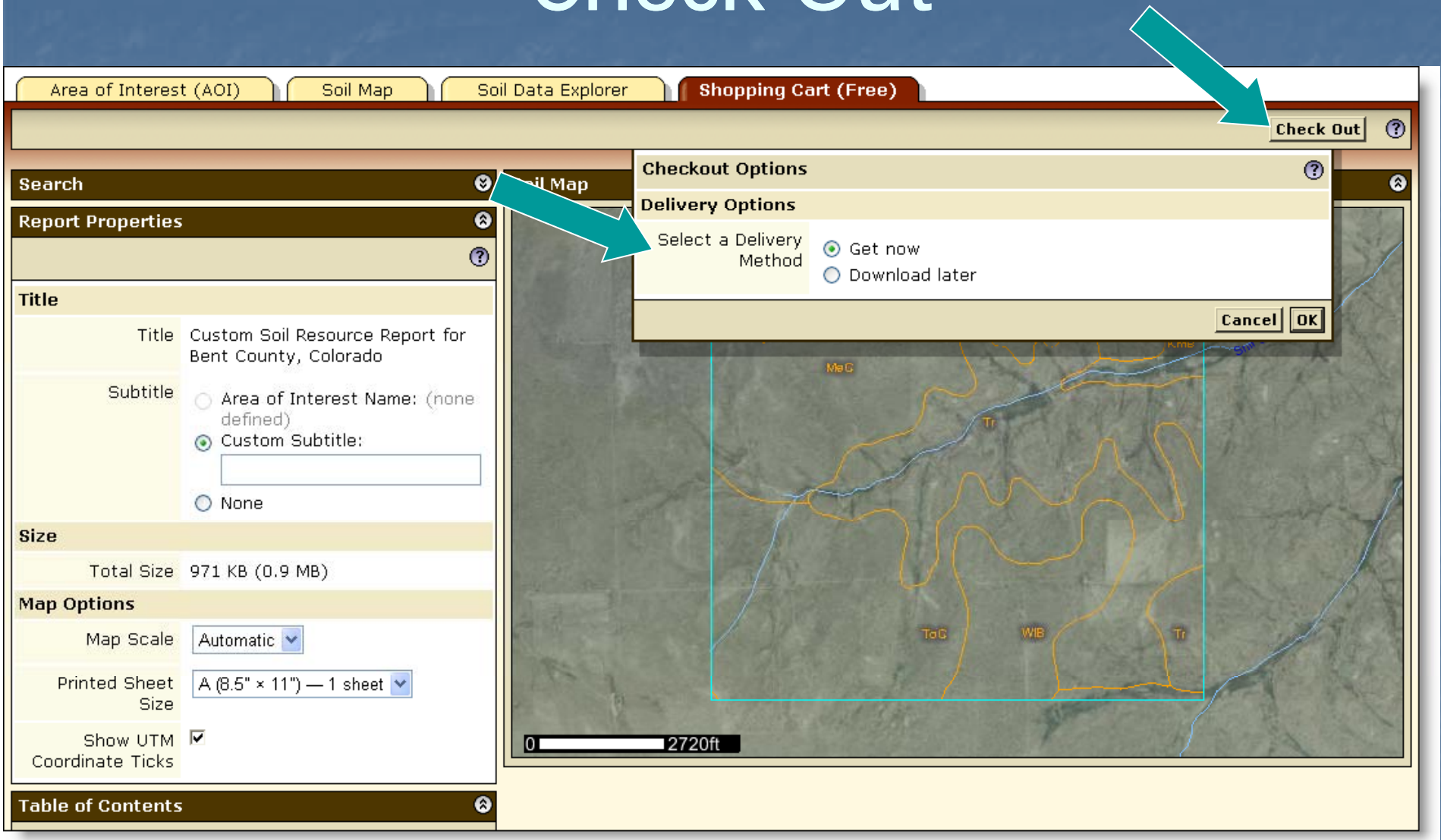
Soil map, map unit legend, and map unit descriptions are automatically added.

Items can be deselected by unchecking them on the list if you decide you do not want to get them. Additional items must be added in previous screens.

Preview an Item



Check Out



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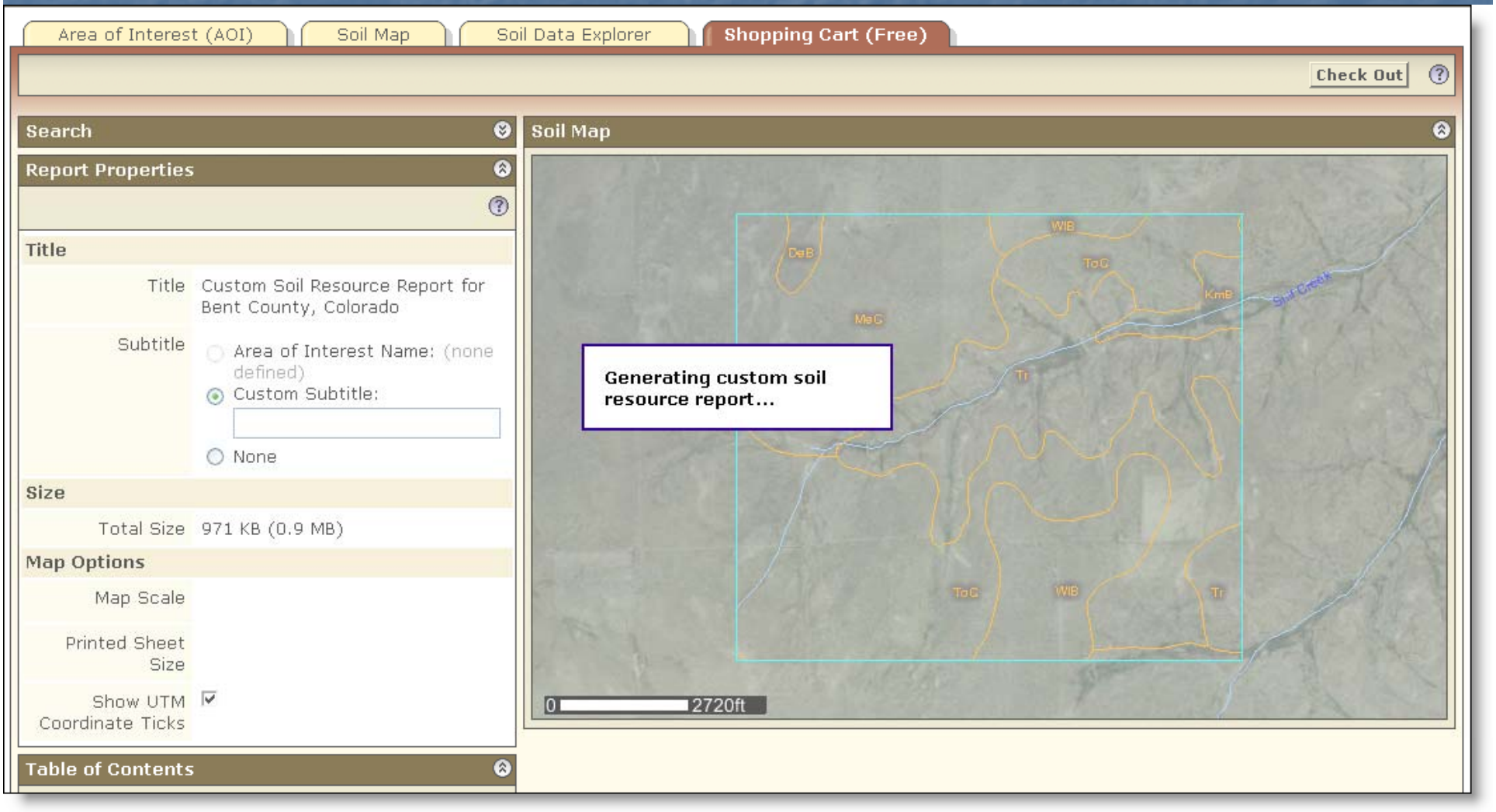
- **Then click OK.**

Custom Soil Resource Report being generated



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