

From: [Marshall, Michael E](#)
To: [Stephanie DeMay](#); [Endries, Mark](#); [Reid, Rebekah N](#)
Subject: Ecological Sites
Date: Thursday, January 25, 2018 3:11:03 PM
Importance: High

Hey guys,

Follow up from our call regarding ecological sites. So...they are not fully developed for all areas of the country as of yet. The first thing you have to do is to identify what Major Land Resource Area your area of interest is in.....you can do this by following this link and downloading the MLRA shapefile or looking at the PDFs they have as links:

https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053624

After you've identified the MLRA #, you can go this link (below) to grab the ecological site report (if it's available) by finding the MLRA # on the drop down menu. I don't sort by state, just use the default dropdown menu for the whole country as it is more inclusive for some reason. For HENA, it might be Southern Piedmont (MLRA 136 X).

<https://esis.sc.egov.usda.gov/Welcome/pgReportLocation.aspx?type=ESD>

Now....for the shapefiles themselves....I've put in a request at NRCS to help me find them....should hear back soon. If I don't, I'll lean on some old NRCS drinking buddies and see what I can make happen.

Thanks!

Mike

--

Mike Marshall
SSA Program Specialist
U.S. Fish and Wildlife Service Region 4
Cell: 512-461-6217
Alternate email: mmarshall@ag.tamu.edu

Work Schedule 1st Week

Monday-Thursday --> In Office 7:30-4:30 CST

Work Schedule 2nd Week

Monday-Thursday --> In Office 7:30-4:30 CST

This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act and may be disclosed to third parties.

From: [Marshall, Michael E](#)
To: [Stephanie DeMay](#); [Endries, Mark](#); [Reid, Rebekah N](#)
Subject: Re: Ecological Sites
Date: Thursday, January 25, 2018 3:15:57 PM
Attachments: [09 How to Access ESD Products S.Campbell.pdf](#)
Importance: High

Ah ha! And there is this guide....hopefully it is useful.

Mike

On Thu, Jan 25, 2018 at 3:11 PM, Marshall, Michael <michael_marshall@fws.gov> wrote:

Hey guys,

Follow up from our call regarding ecological sites. So...they are not fully developed for all areas of the country as of yet. The first thing you have to do is to identify what Major Land Resource Area your area of interest is in.....you can do this by following this link and downloading the MLRA shapefile or looking at the PDFs they have as links:

https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053624

After you've identified the MLRA #, you can go this link (below) to grab the ecological site report (if it's available) by finding the MLRA # on the drop down menu. I don't sort by state, just use the default dropdown menu for the whole country as it is more inclusive for some reason. For HENA, it might be Southern Piedmont (MLRA 136 X).

<https://esis.sc.egov.usda.gov/Welcome/pgReportLocation.aspx?type=ESD>

Now....for the shapefiles themselves....I've put in a request at NRCS to help me find them....should hear back soon. If I don't, I'll lean on some old NRCS drinking buddies and see what I can make happen.

Thanks!

Mike

--

Mike Marshall
SSA Program Specialist
U.S. Fish and Wildlife Service Region 4
Cell: 512-461-6217
Alternate email: mmarshall@ag.tamu.edu

Work Schedule 1st Week

Monday-Thursday --> In Office 7:30-4:30 CST

Work Schedule 2nd Week

Monday-Thursday --> In Office 7:30-4:30 CST

This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act and may be

| disclosed to third parties.

--

Mike Marshall
SSA Program Specialist
U.S. Fish and Wildlife Service Region 4
Cell: 512-461-6217
Alternate email: mmarshall@ag.tamu.edu

Work Schedule 1st Week

Monday-Thursday --> In Office 7:30-4:30 CST

Work Schedule 2nd Week

Monday-Thursday --> In Office 7:30-4:30 CST

This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act and may be disclosed to third parties.

How to Access ESD Products

Ecological Site Description Information Sources

Steve Campbell

- Web Soil Survey
- Ecological Site Information System (ESIS)

Click on the "Start WSS" button to get started.

websoilsurvey.nrcs.usda.gov

The screenshot shows the homepage of the Web Soil Survey (WSS) website. At the top, there is a banner with the USDA logo, the text "United States Department of Agriculture" and "Natural Resources Conservation Service", and a large "Web Soil Survey" title. Below the banner is a navigation bar with links: "Home", "About Soils", "Help", and "Contact Us". A red arrow points from the text "Click on the 'Start WSS' button to get started." to a green circular button labeled "START WSS".

You are here: WSS Home

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

START WSS

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.

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

I Want To...

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

Announcements/Events

- Web Soil Survey 2.0 has been released! [View description of new](#)**

The first step is to create your “Area of Interest (AOI)”. Current selection criteria include Address; County; Soil Survey Area; Lat/Long; Section, Township and Range; Federal Land category, and Hydrologic Unit.

Area of Interest (AOI)

Quick Navigation

Navigate By...

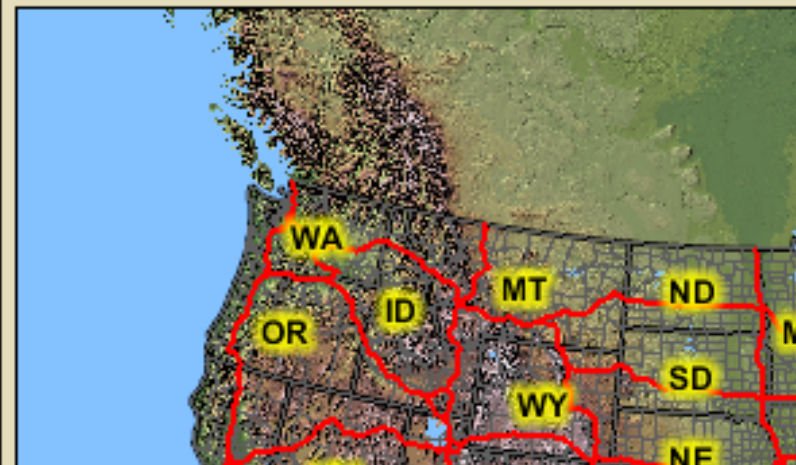
Address
State and County
Soil Survey Area
Latitude and Longitude
PLSS (Section, Township, Range)
Bureau of Land Management
Department of Defense
Forest Service
National Park Service
Hydrologic Unit

Legend

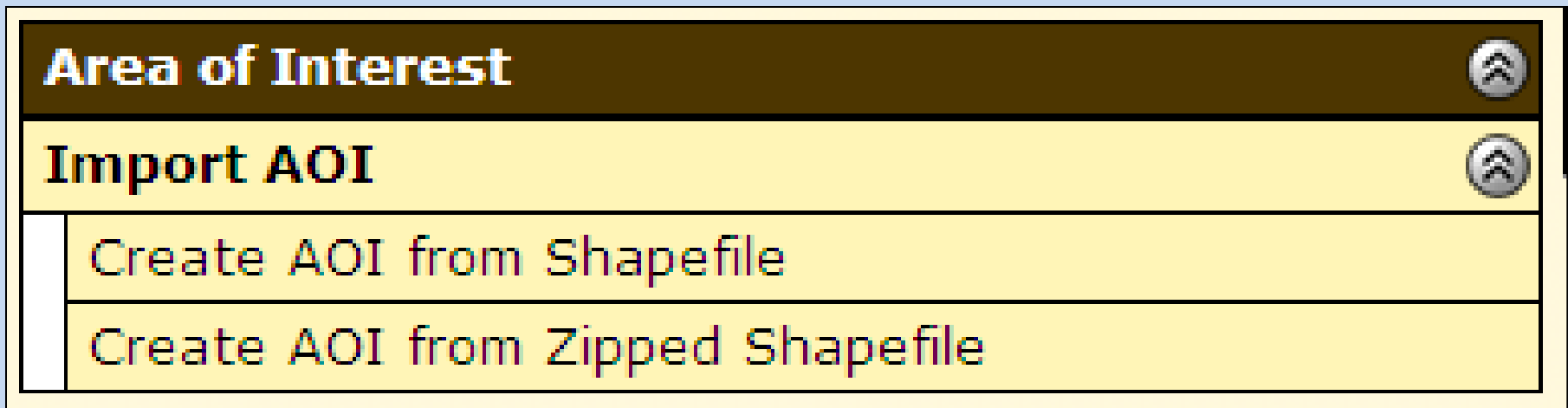
Area of Interest Interactive Map



View Extent Continental U.S.



A new option – you can import a shapefile or zipped shapefile to create an Area of Interest (AOI)

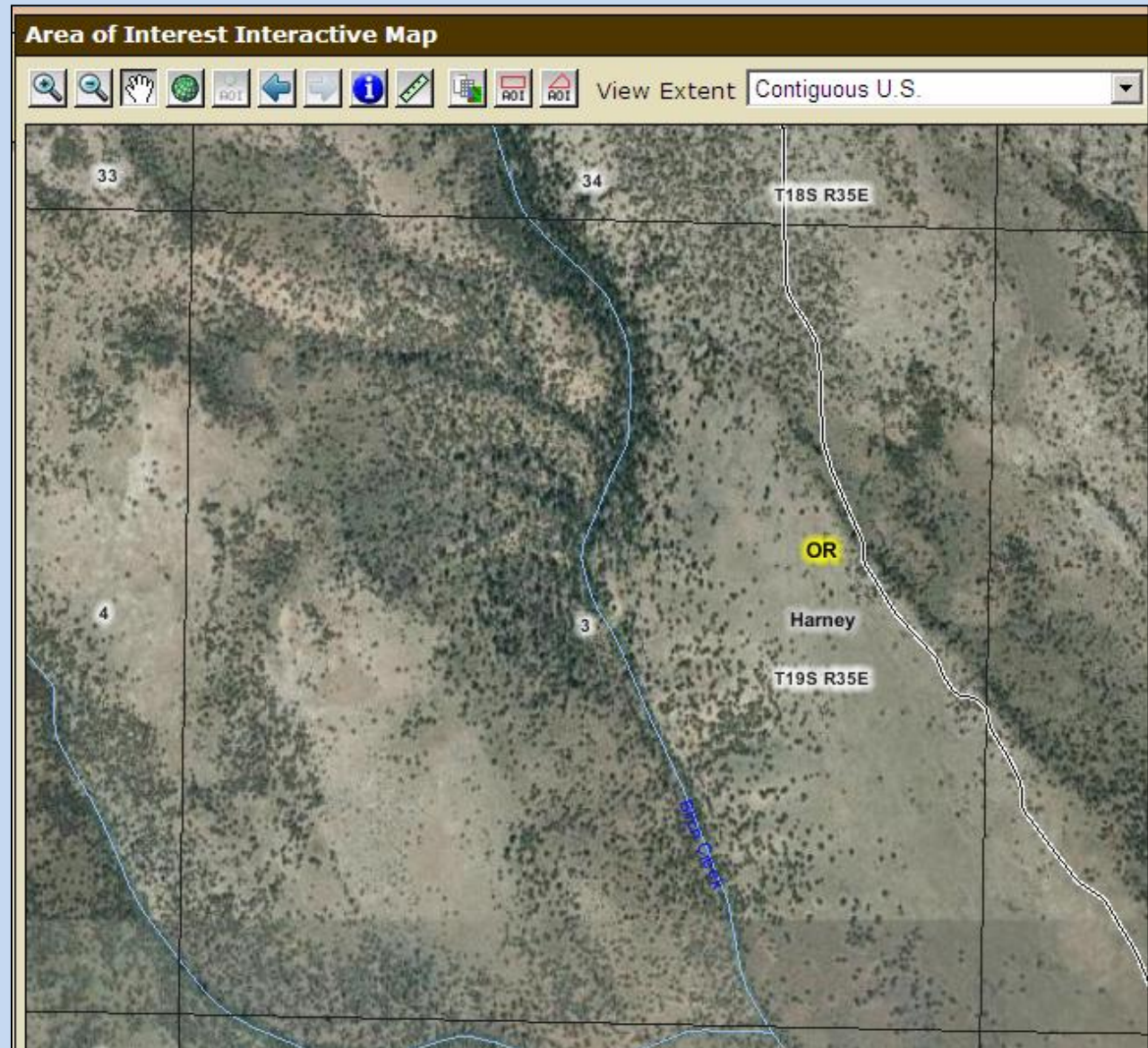


PLSS (Section, Township, Range)	
<div>View ?</div>	
State	<div>Oregon</div>
Principal Meridian	Willamette
<div>View Meridian Map</div>	
Section	<div>3</div>
Township	<div>19</div>
<div><input type="radio"/> North</div>	
<div><input checked="" type="radio"/> South</div>	
Range	<div>35</div>
<div><input checked="" type="radio"/> East</div>	
<div><input type="radio"/> West</div>	
<div>Show PLSS Section and PLSS Township and Range Layers in Map <input checked="" type="checkbox"/></div>	
<div>View</div>	

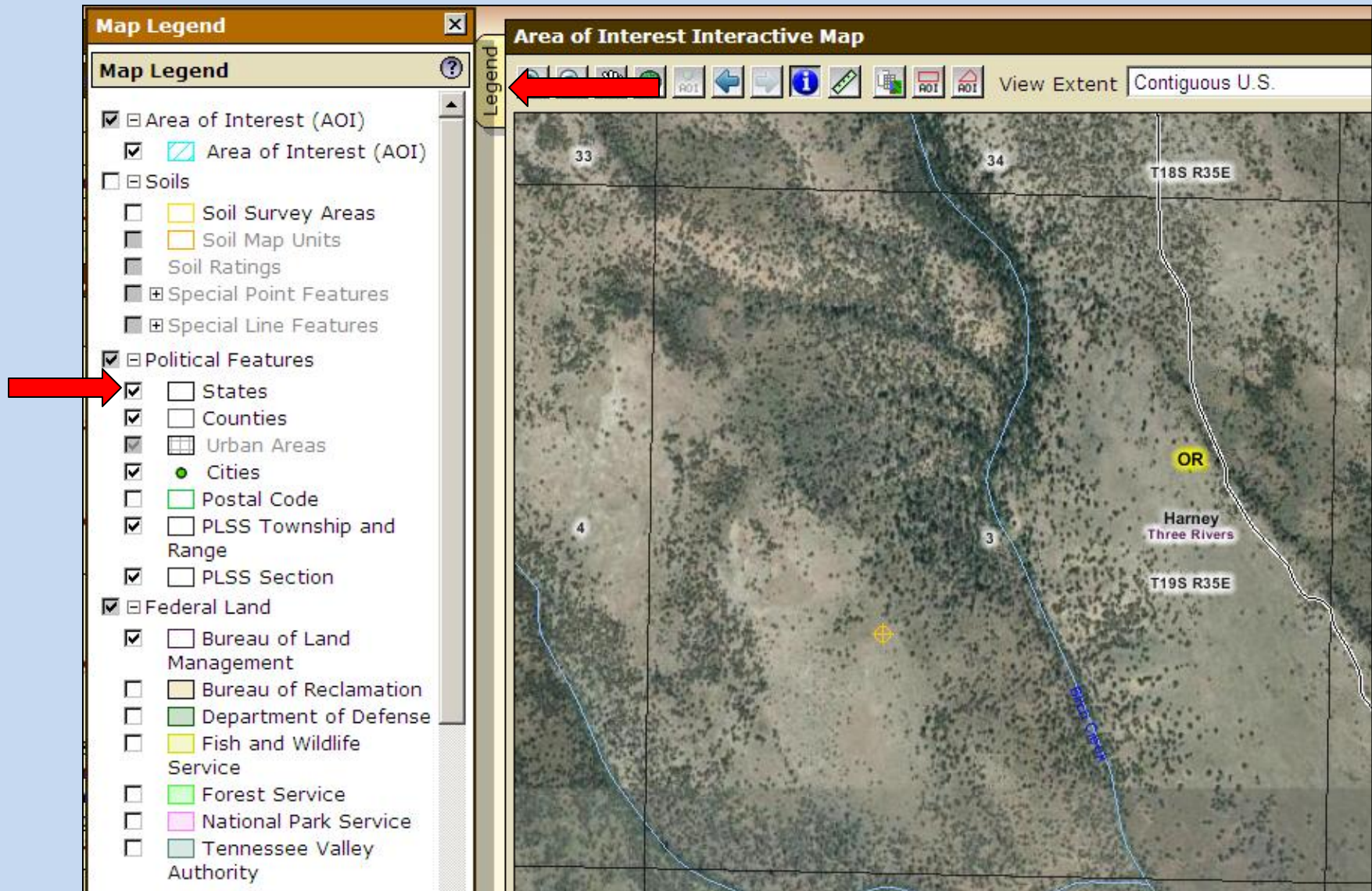
In this example “PLSS” is the navigation choice. Select the State. Enter Section, Township, Range.

Click on the “View” button to zoom to this section.

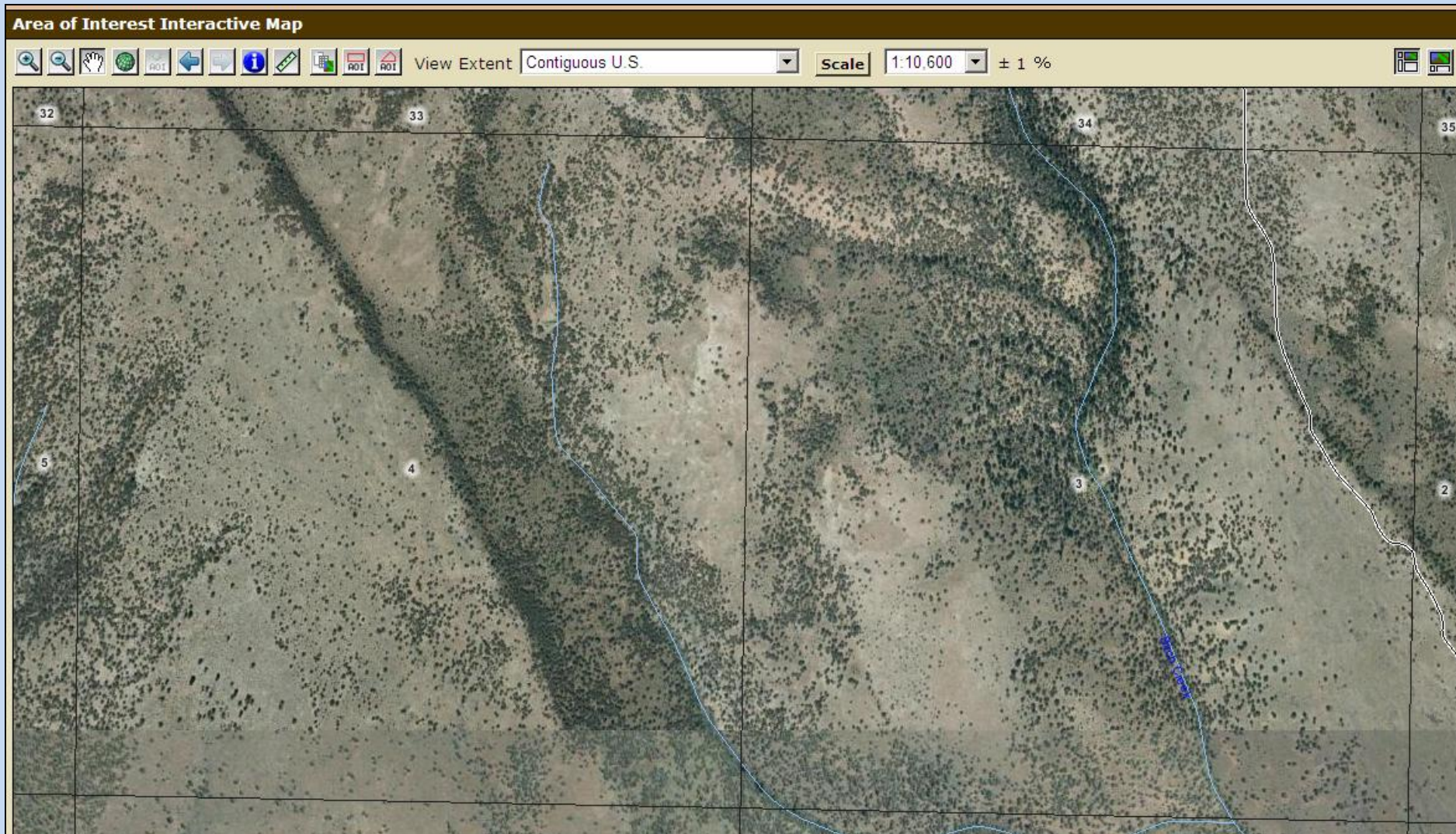
We're now zoomed in to Section 3, Township 19 S, Range 35 E. The State and County names are also displayed.

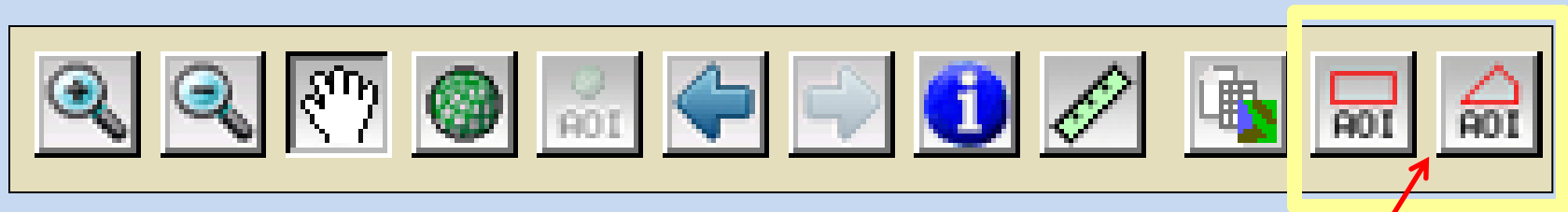


When you zoom in, the orthophoto, roads, and water features appear. Layers can be turned on and off by clicking on the “Legend” tab.



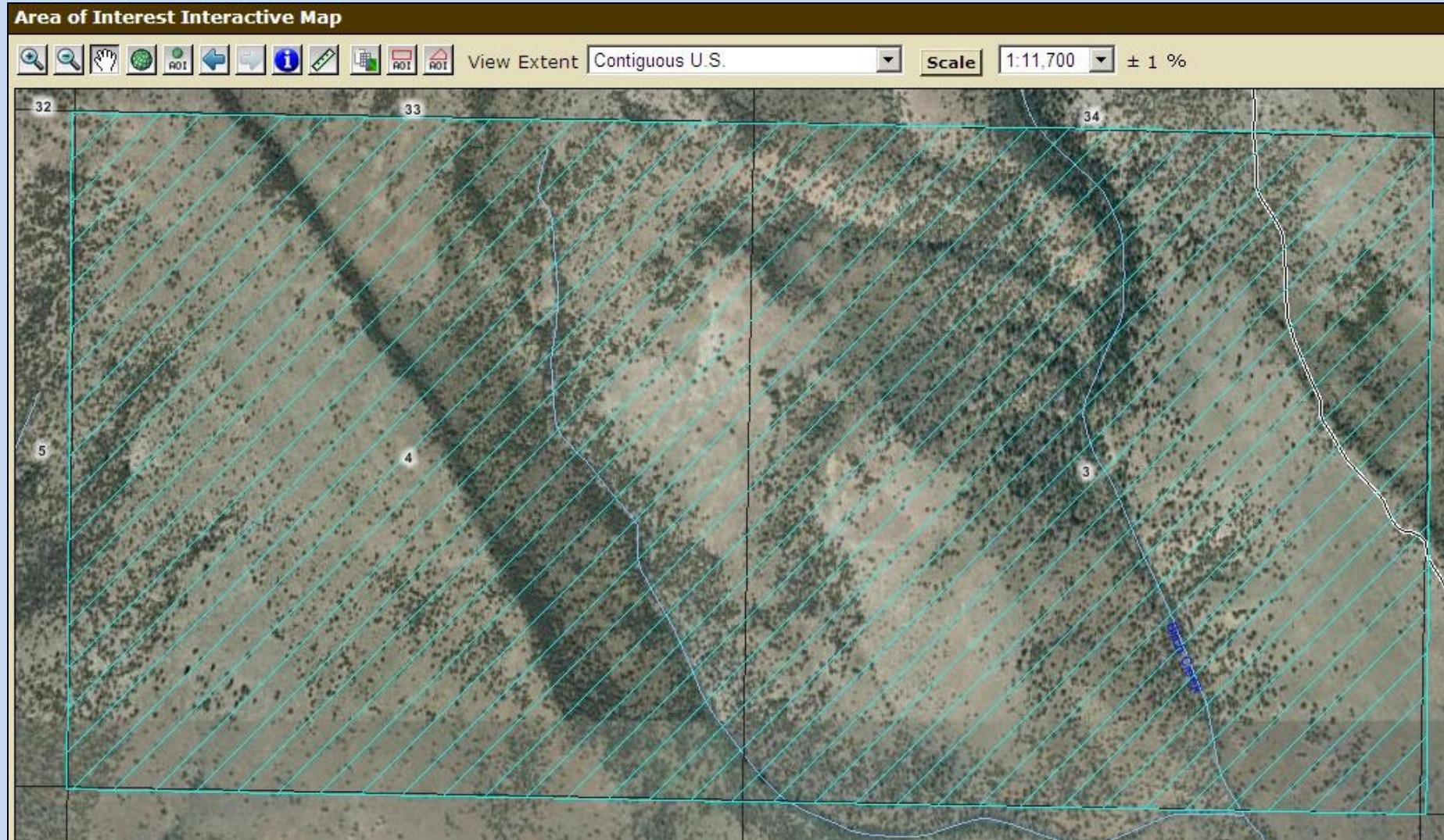
In this example, we want to include both Section 3 and 4 in our Area of Interest. We'll use the Zoom Out tool to make both sections visible.





The “AOI” buttons are used to create your Area of Interest. The left button creates a rectangle. The right button creates a polygon of any shape. The user creates the shape by left clicking at each vertex. Left double click at the last vertex to create the Area of Interest.

After you draw your “Area of Interest”, it will appear as a blue hatched area.



Area of Interest (AOI)

Soil Map

Search

Area of Interest Properties

Clear AOI

AOI Information

Name

Birch Creek Restoration Project

Map Unit Symbols

☒ Use Soil Survey Area Map Unit Symbols

☐ Use National Map Unit Symbols

Area (acres)

1,278.2

Soil Data Available from Web Soil Survey

Harney County Area, Oregon (OR628)

Soil Maps

Version 4, Jul 15, 2010

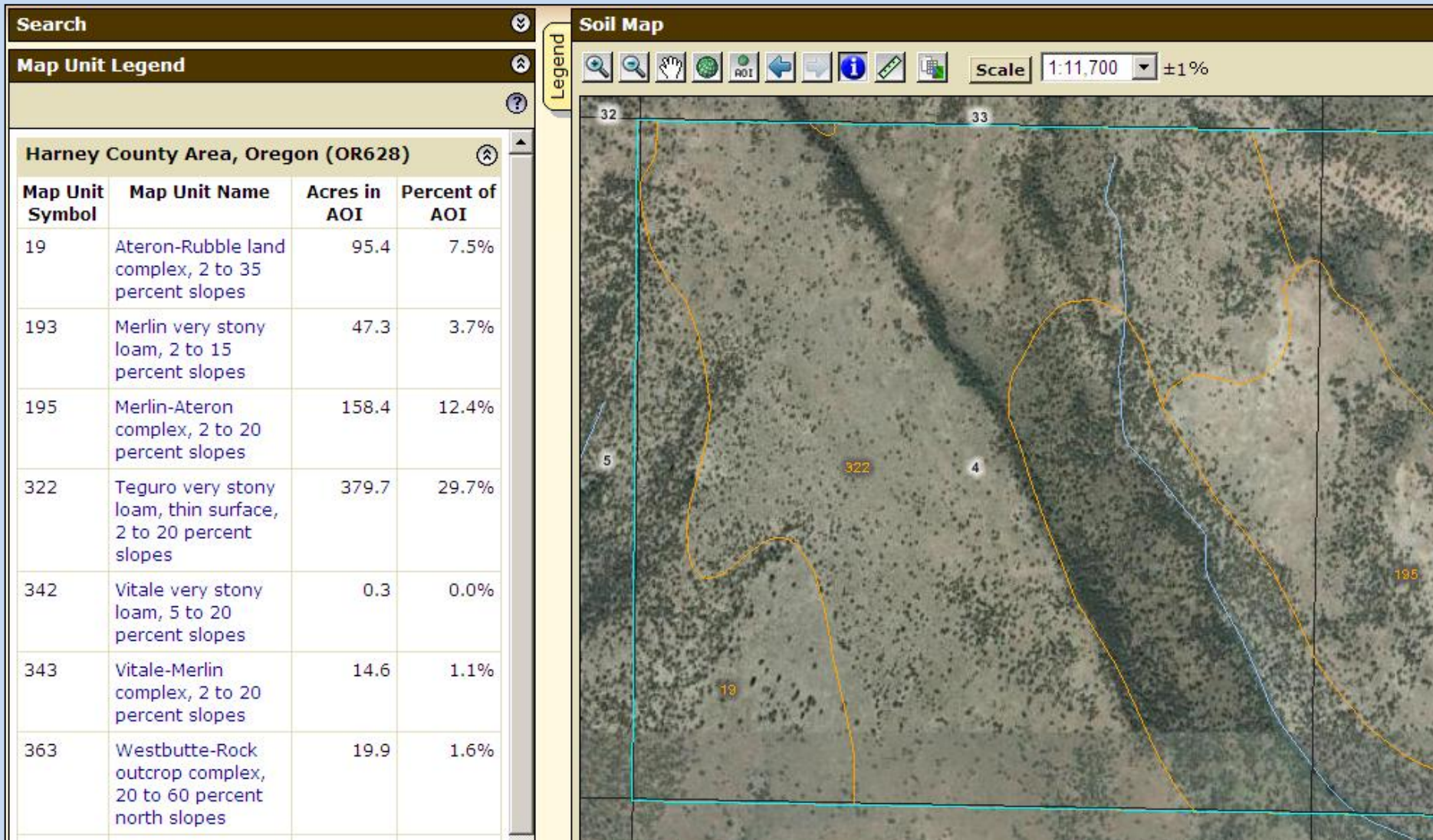
Soil Data

Version 7, Feb 12, 2010

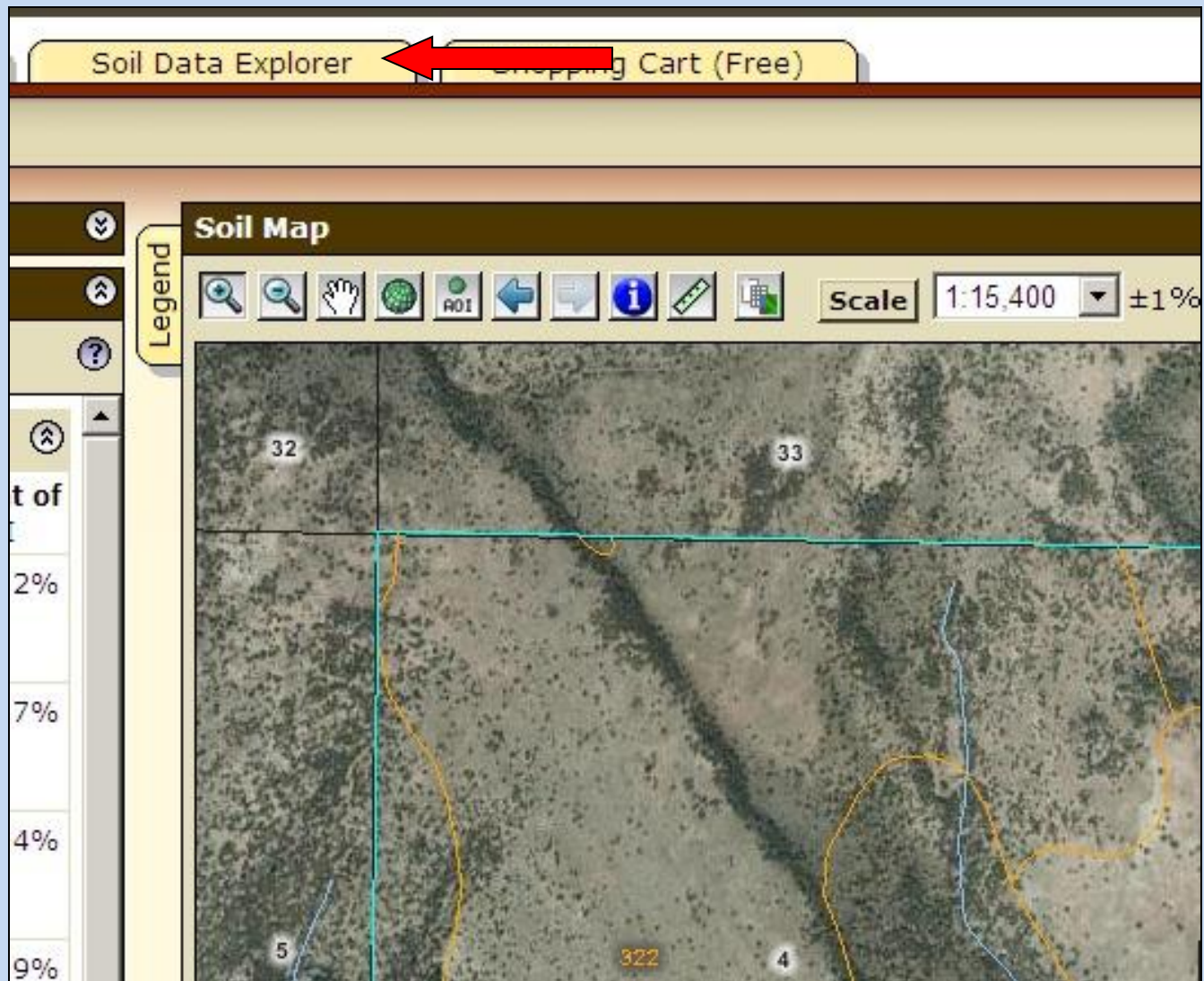
After the “AOI” is created, the size of the area and the type of data that is available is displayed.

The next step is to click on the “Soil Map” tab.

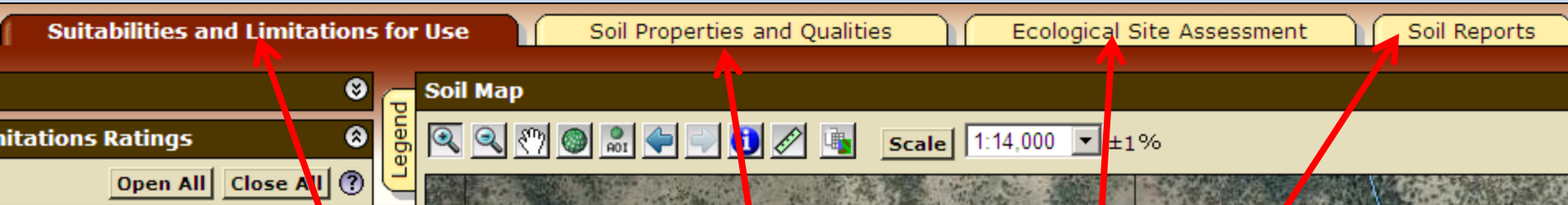
Soil Map with Legend of Map Units, Acres, and Percent of Area



Click on the “Soil Data Explorer” tab to create maps and reports of soil properties, interpretations, and ecological site information.



The Soil Data Explorer tab provides multiple options for displaying soils and ecological site information.



The **"Suitabilities and Limitations for Use"** tab is used to create maps and reports of a single interpretation such as "Rangeland Seeding Basin Ecoregion".

The **"Soil Properties and Qualities"** tab is used to create maps and reports for a single soil property such as Percent surface horizon.

The **"Ecological Site Assessment"** tab is used to view and print reports that contain multiple soil properties and interpretations.

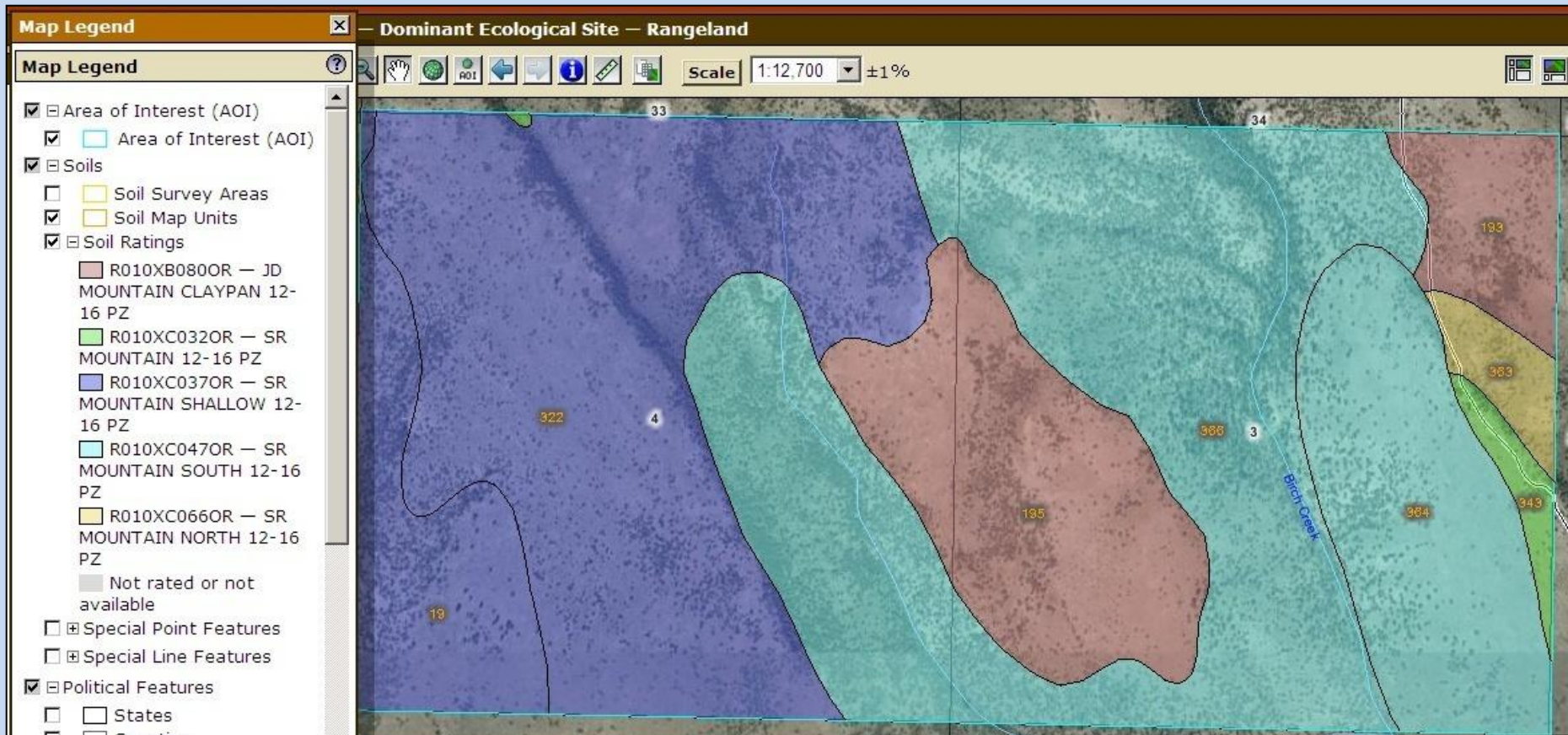
The **"Soil Reports"** tab is used to view and print reports that contain multiple soil properties and interpretations.

The **Ecological Site Assessment** tab can be used to generate maps of the dominant ecological sites and reports of ecological site descriptions.

Soil Properties and Qualities

Ecological Site Assessment

Soil Reports



The **Ecological Site Assessment** tab report of Ecological Sites in the Area of Interest (AOI).

Table — Ecological Sites by Map Unit Component — Rangeland

Harney County Area, Oregon				
Map unit symbol	Component name (percent)	Ecological site	Acres in AOI	Percent of AOI
19	Ateron (50%)	R010XC037OR — SR MOUNTAIN SHALLOW 12-16 PZ	93.6	7.3%
	Rubble land (35%)			
193	Merlin (85%)	R010XB080OR — JD MOUNTAIN CLAYPAN 12-16 PZ	47.0	3.7%
195	Merlin (60%)	R010XB080OR — JD MOUNTAIN CLAYPAN 12-16 PZ	158.4	12.4%
	Ateron (25%)	R010XC080OR — SR MAHOGANY MOUNTAIN LOAM 14-18 PZ		
322	Teguro, thin surface (85%)	R010XC037OR — SR MOUNTAIN SHALLOW 12-16 PZ	381.9	29.9%
342	Vitale (85%)	R010XC032OR — SR MOUNTAIN 12-16 PZ	0.4	0.0%
343	Vitale (50%)	R010XC032OR — SR MOUNTAIN 12-16 PZ	13.9	1.1%
	Merlin (35%)	R010XB080OR — JD MOUNTAIN CLAYPAN 12-16 PZ		

Ecological Sites

Open All

Close All

?

All Ecological Sites

R010XB080OR — JD MOUNTAIN CLAYPAN 12-16 PZ

R010XC032OR — SR MOUNTAIN 12-16 PZ

This Ecological Site

View Ecological Site Info

View Options

All Plant Community Photos

State Transition Diagram

Ecological Dynamics Description

View Ecological Site Info

Reference Plant Community

R010XC037OR — SR MOUNTAIN SHALLOW 12-16 PZ

R010XC047OR — SR MOUNTAIN SOUTH 12-16 PZ

R010XC059OR — SR MAHOGANY ROCKLAND 12+ PZ

R010XC066OR — SR MOUNTAIN NORTH 12-16 PZ

R010XC080OR — SR MAHOGANY MOUNTAIN LOAM 14-18 PZ

After selecting an ecological site, the following ***View Options*** are available:

- Plant Community Photos
- State Transition Diagram
- Ecological Dynamics Description

Reference Plant Community Photo:

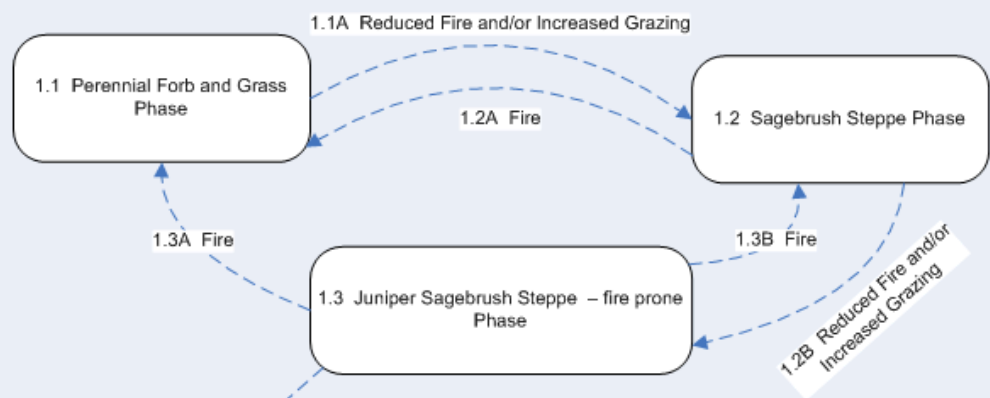
R010XC032OR – SR MOUNTAIN 12 – 16 PZ

All Plant Community Photos – R010XC032OR – SR MOUNTAIN 12-16 PZ Ecological Site

Reference Plant Community



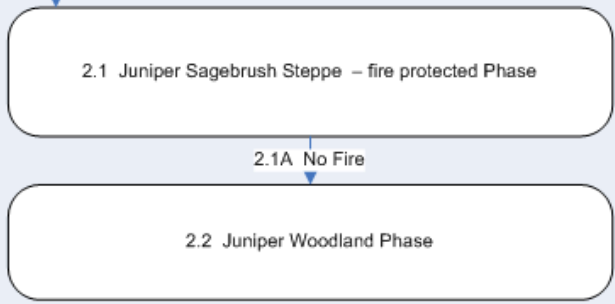
State 1 – Reference State, bunchgrass dominated



T1A Continued Fire Suppression

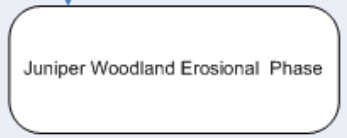
R2A Mechanical Juniper Removal

State 2 – Juniper dominated



T2A Soil Erosion

State 3



State Transition
Diagram:
Ecological Site
R010XC032OR -
SR MOUNTAIN
12 – 16 PZ

Ecological Dynamics Description

R010XC032OR - SR MOUNTAIN 12 – 16 PZ

Ecological Dynamics Description — R010XC032OR — SR MOUNTAIN 12-16 PZ Ecological Site



The potential native plant community is strongly dominated by Idaho fescue and mountain big sagebrush. Sandberg bluegrass is the dominant shallow rooted perennial grass. Bluebunch wheatgrass, prairie junegrass and a variety of forbs are present. Wild crab apple and antelope bitterbrush occur sporadically. Vegetative composition of the community is approximately 75 percent grasses, 10 percent forbs and 15 percent shrubs. Approximate ground cover is 70 to 80 percent (basal and crown).

Range in Characteristics:

Idaho fescue increases on silty clay loam surfaces. Bluebunch wheatgrass increases on slight south and west exposures. Needlegrasses increases on coarser surfaces and over shallower depths. Shrubs increase over gravelly and fractured substratums. Basin big sagebrush increases at lower elevations and as the precipitation zone approaches 12 inches. Production, antelope bitterbrush, serviceberry, snowberry and pine increase at the upper end of the precipitation zone.

Response to Disturbance - States:

If the condition of the site deteriorates as a result of overgrazing, Idaho fescue decreases. Mountain big sagebrush rapidly increases. Sandberg bluegrass increases and juniper invades. With continued overgrazing, juniper and big sagebrush dominate the overstory. Sandberg bluegrass dominates the understory. Annual invasion is limited unless ground disturbance occurs. With further deterioration and lack of fire juniper dominates the site, shrubs decrease and bare ground increases. With fire and heavy use or ground disturbance, annuals and Sandberg or bulbous bluegrass increase. Bare ground increases and excessive erosion contributes to downstream sedimentation.

States: ARTRV-T/POSE-Bare Ground; JUOC/ARTRV-T/POSE-Bare Ground; POSE-POBU -Annuals-Bare Ground

Ecological Sites

Open All

Close All

?

All Ecological Sites

R010XB080OR — JD MOUNTAIN CLAYPAN 12-16 PZ

R010XC032OR — SR MOUNTAIN 12-16 PZ

This Ecological Site

Reference Plant Community

View Plant Community Info

View Options

Plant Community Photos

☒

Plant Community Description

☒

Plant Community Tables

☒

☒ Annual Production

☒ Plant Species Composition

☒ Plant Growth Curve

View Plant Community Info

1. Select the “Reference Plant Community” option
2. Select the “View Options”
3. Click the “View Plant Community Info” button to generate a report.

Tables — Reference Plant Community

Annual Production (Lbs/Acre)				⌆	
Plant Type		Low	Representative Value		High
Grass/Grasslike		900	1,200		1,500
Forb		120	160		200
Shrub/Vine		180	240		300
Totals		1,200	1,600		2,000
Plant Species Composition (Lbs/Acre)					⌆
Grass/Grasslike					
Group	Plant Common Name	Plant Scientific Name	Annual Production Pounds Per Acre		
			Low	High	
1: Dominant deep rooted bunchgrass			960	1280	
	Idaho fescue	Festuca idahoensis	960	1280	
2: Sub-dominant deep rooted bunchgrass			32	320	
	bluebunch wheatgrass	Pseudoroegneria spicata ssp. spicata	32	320	
3: Sub-dominant shallow rooted perennial grass			32	80	
	Sandberg bluegrass	Poa secunda	32	80	
4: Other perennial grasses			64	384	
	western needlegrass	Achnatherum occidentale	0	32	
	Thurber's needlegrass	Achnatherum thurberianum	32	128	
	mountain brome	Bromus marginatus	0	32	
	threadleaf sedge	Carex filifolia	0	32	
	squirreltail	Elymus elymoides	0	32	
	prairie Junegrass	Koeleria macrantha	16	48	
	basin wildrye	Leymus cinereus	16	48	
	oniongrass	Melica bulbosa	0	32	

Forb				
Group	Plant Common Name	Plant Scientific Name	Annual Production Pounds Per Acre	
			Low	High
7: Dominant perennial forbs			32	48
	arrowleaf balsamroot	Balsamorhiza sagittata	32	48
8: Sub-dominant perennia forbs			112	224
	common yarrow	Achillea millefolium	16	32
	milkvetch	Astragalus	16	32
	fleabane	Erigeron	16	32
	buckwheat	Eriogonum	16	32
	desertparsley	Lomatium	16	32
	lupine	Lupinus	16	32
	phlox	Phlox	16	32
9: All other perennial forbs			30	200
	agoseris	Agoseris	2	10
	onion	Allium	2	10
	pussytoes	Antennaria	2	10
	brodiaea	Brodiaea	2	10
	mariposa lily	Calochortus	2	10
	Indian paintbrush	Castilleja	2	10
	bastard toadflax	Comandra	2	16
	bushy bird's beak	Cordylanthus ramosus	2	10
	tapertip hawksbeard	Crepis acuminata	2	16
	waterleaf	Hydrophyllum	0	16

Shrub/Vine				
Group	Plant Common Name	Plant Scientific Name	Annual Production Pounds Per Acre	
			Low	High
11: Dominant evergreen shrub			48	128
	mountain big sagebrush	<i>Artemisia tridentata</i> ssp. <i>vaseyana</i>	48	128
12: Subdominant evergreen shrub			16	48
	basin big sagebrush	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	16	48
15: Other shrubs			32	320
	Saskatoon serviceberry	<i>Amelanchier alnifolia</i>	0	32
	threetip sagebrush	<i>Artemisia tripartita</i>	0	32
	big sagebrush	<i>Artemisia tridentata</i> ssp. <i>xericensis</i>	0	32
	yellow rabbitbrush	<i>Chrysothamnus viscidiflorus</i>	0	32
	squaw apple	<i>Peraphyllum ramosissimum</i>	0	32
	antelope bitterbrush	<i>Purshia tridentata</i>	0	32
	wax currant	<i>Ribes cereum</i>	0	32
	Woods' rose	<i>Rosa woodsii</i>	0	32
	common snowberry	<i>Symphoricarpos albus</i>	0	32
	horsebrush	<i>Tetradymia</i>	0	32
Tree				
Group	Plant Common Name	Plant Scientific Name	Annual Production Pounds Per Acre	
			Low	High
16: Evergreen sub-dominant trees			0	64
	western juniper	<i>Juniperus occidentalis</i>	0	32
	ponderosa pine	<i>Pinus ponderosa</i>	0	32

Plant Growth Curve Table

Plant Growth Curve



Growth Curve Name

B10 SR Mtn, Cool & No 12-16pz

Growth Curve Description


SR Mtn, Cool & No 12-16pz RPC Growth Curve

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0%	0%	0%	10%	30%	30%	15%	5%	5%	5%	0%	0%

Ecological Site Information System (ESIS)

<http://esis.sc.egov.usda.gov/>

United States Department of Agriculture




Natural Resources Conservation Service

Ecological Site Information System

PLANTS | **ESIS** | ESD | FSGD | ESI Rangeland | ESI Forestland

Quick Access


- ▶ About ESIS
- ▶ ESD Home
- ▶ FSGD- Forage Suitability Groups
- ▶ ESI - Forest
- ▶ ESI - Range



Ecological Site Information System (ESIS)

ESIS is the NRCS repository for ecological site descriptions and for information associated with the collection of forestland and rangeland plot data. ESIS is organized into two applications and associated databases; the Ecological Site Description (ESD) application and the Ecological Site Inventory (ESI) application. This section, plus the access tab on the right, provides quick access to technical resources and technical guidance for developing and understanding ecological sites.

[...More Info](#)



Ecological Site Description (ESD)

The ESD application is used to enter, edit and store ecological site information. Only approved ecological sites for forestland and rangeland are available to the public. Open this section to access approved and non-approved ESD's. Entry/Edit privileges are required to access non-approved sites. Click on MLRA/state of interest, and available ESDs within that MLRA/LRU for the state will be displayed.

[...More Info](#)

Technical Resources

- [USDA - ARS Range Database](#)
- [Web Soil Survey](#)
- [Ag Handbook 296](#)
- [Climate Data](#)
- [Soil Change Guide](#)

Technical Guidance

- [National Range & Pasture Handbook](#)
- [National Biology Manual](#)
- [National Biology Handbook](#)
- [National Forestry Manual](#)
- [National Soil Survey Handbook \(NSSH\)](#)



United States Department of Agriculture

NRCS Natural Resources
Conservation Service

Plants ESIS ESD ESGD ESI Forestland

Reports

- > [Approved ESD Reports](#)
- > [Approved Reference Sheets](#)

Data Access

- > [Data Edit/Entry, Download, Reports](#)
- > [GSAT Downloads](#)

Click on the ***Approved ESD Reports*** link to access ecological site descriptions.

Ecological Site Description (ESD) System for Rangeland and Forestland

The Ecological Site Description (ESD) application provides the capability to enter, edit, and view reports of rangeland and forest land ecological site descriptions. Anyone may view reports of approved Ecological Site Descriptions. Data entry, edit, download, and viewing draft reports is for authorized users only.

ESIS User Guide

Queries for Ecological Site Descriptions (ESD's) can be submitted by Major Land Resource Area (MLRA), State, or both

MLRA InformationMLRA Explorer

MLRA

None Selected

None Selected

002X

003X

004B

005X

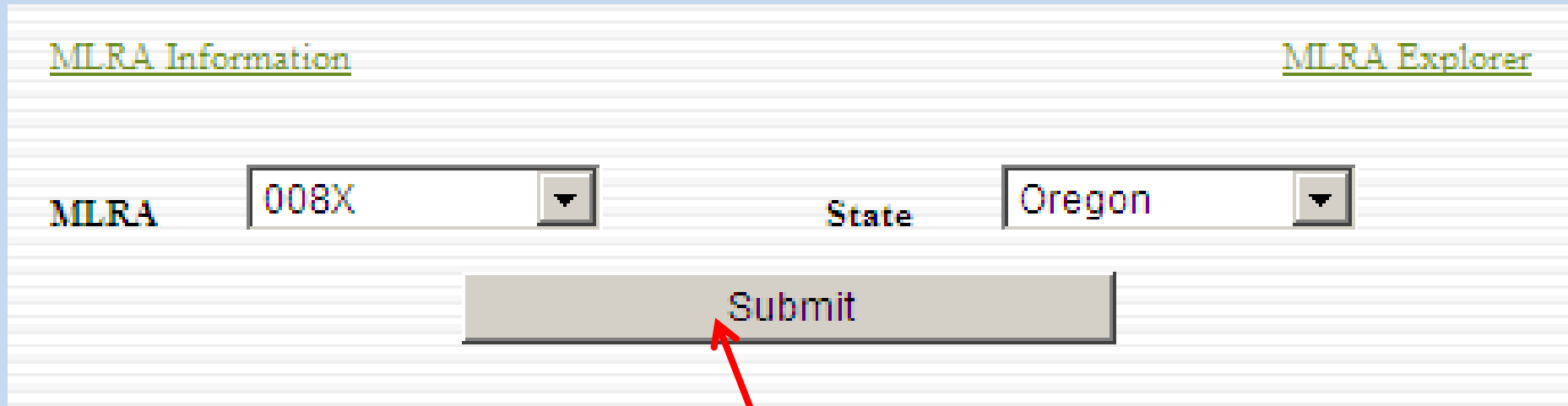
006X

State

None Selected

Submit

In this example we'll query for ESD's in MLRA 8 from Oregon.



The screenshot shows a web interface with two tabs at the top: "MLRA Information" and "MLRA Explorer". Below the tabs, there are two dropdown menus. The first dropdown is labeled "MLRA" and has "008X" selected. The second dropdown is labeled "State" and has "Oregon" selected. Below these dropdowns is a large, light gray button labeled "Submit". A red arrow points from a yellow callout box to the "Submit" button.

MLRA Information MLRA Explorer


MLRA 008X State Oregon

Submit

Click the ***Submit*** button after the query criteria are selected.

A list of ESD's
in MLRA 8
from Oregon
are produced.

Click on an ESD
link to view the
ecological site
description.



Ecological Site Description Selection

Select a site to view Report

ID	Type	MLRA	Site Name	Biotic Name
R008XY110OR	R	008X	LOAMY 10-12 PZ	
R008XY120OR	R	008X	LOAMY 12-14 PZ	
R008XY130OR	R	008X	SANDY LOAM 10-12 PZ	
R008XY140OR	R	008X	SHALLOW LOAM 10-14 PZ	
R008XY150OR	R	008X	VERY SHALLOW LOAM 10-14 PZ	
R008XY200OR	R	008X	SOUTH 10-14 PZ	/Artemisia tridentata ssp. tridentata-Ericameria nauseosa/Pseudoroegneria spicata ssp. spicata-Poa secunda



Data Access

- > [Return to Reports Selection Screen](#)

Report Selections

- General
- > [Physiographic Features](#)
- > [Climate Features](#)
- > [Water Features](#)
- > [Soil Features](#)
- > [Plant Communities](#)
- > [Site Interpretations](#)
- > [Supporting Information](#)
- > [Rangeland Health Reference Sheet](#)
- > [Complete Report](#)
- > [HTML Printable Format](#)

UNITED STATES DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION (New Format Report)

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site Name: SOUTH 10-14 PZ

/ Artemisia tridentata ssp. tridentata - Ericameria nauseosa /
Pseudoroegneria spicata ssp. spicata - Poa secunda
(/ basin big sagebrush - rubber rabbitbrush / bluebunch wheatgrass - Sandberg bluegrass)

Site ID: R008XY200OR

Major Land Resource Area: 008-Columbia Plateau



Questions ???



Steve Campbell

Soil Scientist

USDA – Natural Resources Conservation Service

West National Technology Support Center

Portland, Oregon

Phone: 503-273-2421

E-mail: steve.campbell@por.usda.gov