

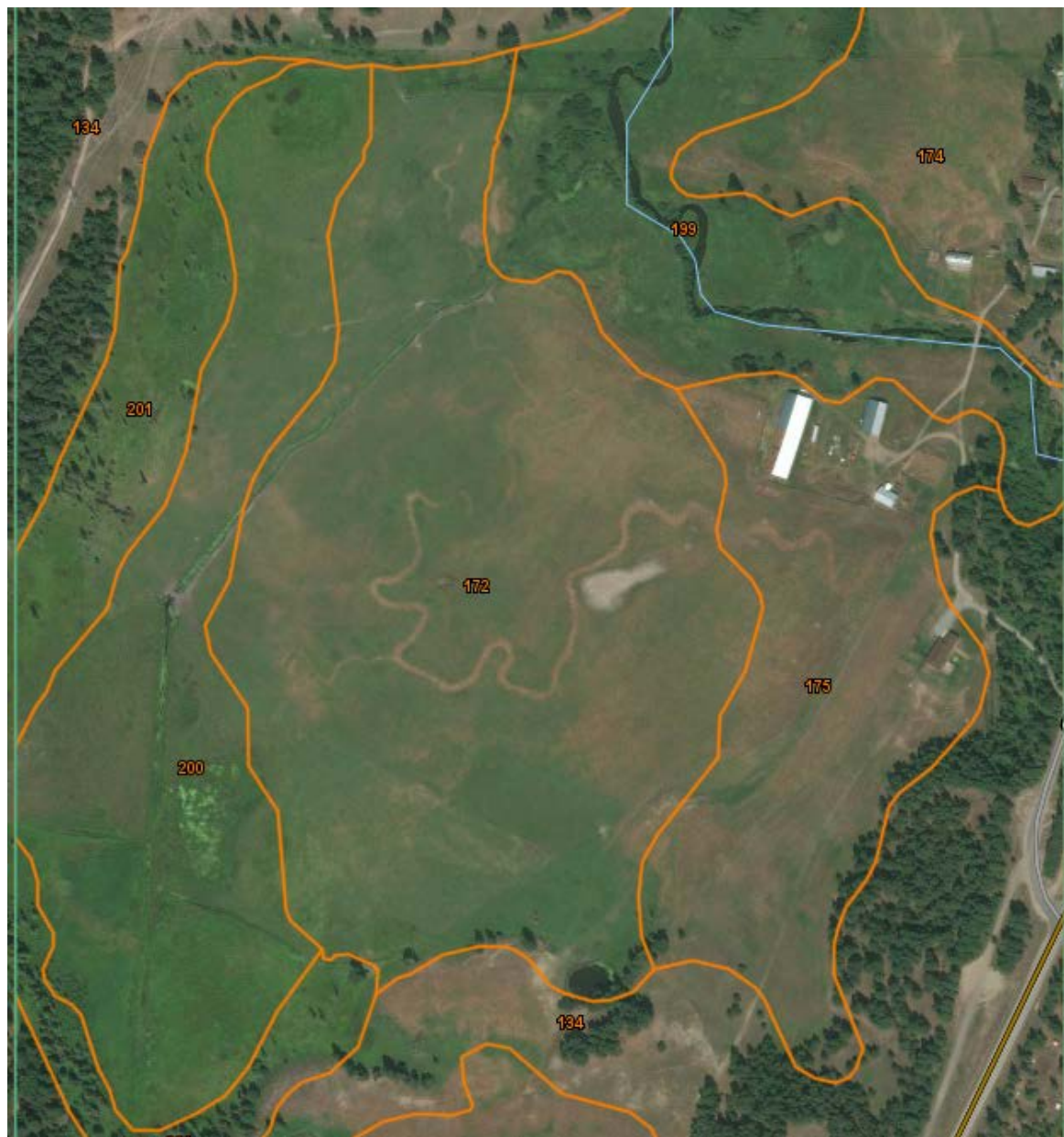
10 Acres & A Dream Online Workshop

Day 2

March 19: What's Under Your Feet?
Introduction to the Web Soil Survey



The USDA-NRCS tool
Web Soil Survey
provides a wealth of
information about
your land



Simply google Web Soil Survey

USDA United States Department of Agriculture
Natural Resources Conservation Service

Web Soil Survey

Home About Soils Help Contact Us

You are here: Web Soil Survey Home


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

START WSS

I Want To...

- Know Web Soil Survey Requirements
- Know Web Soil Survey operation hours
- Find what areas of the U.S. have soil data
- Find information by topic

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

Search

Enter Keyword

All NRCS Sites

Browse by Subject

- Soils Home
- National Cooperative Soil Survey (NCSS)
- Archived Soil Surveys
- Status Maps
- Official Soil Series Descriptions

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

Area of Interest Interactive Map

Legend [Map Tools: Search, Zoom, Pan, AOI, Print, Info, Scale, AOI, AOI] View Extent: Contiguous U.S.



First step: Locate your property and define an Area of Interest (AOI)

The screenshot displays the 'Area of Interest Interactive Map' interface. On the left sidebar, the 'Address' field is highlighted with a red arrow and contains the text '264 Deep Creek Loop, Naples, ID'. Below it, the 'Show location marker' checkbox is checked. The main map area shows a satellite view of a rural landscape with roads and fields. A red arrow points to the 'AOI' tool icon in the top toolbar. The toolbar also includes icons for search, pan, zoom, and other map functions. The map shows 'County Road 11', 'County Road 3', and 'County Road 8a'. A 'Boundary' line is visible on the map. The top right of the map area has a 'View Extent' dropdown menu set to 'Contiguous U.S.'.

Outlining an area of interest

- Click on the AOI tool, either the rectangle or polygon. I find the rectangle easier to use.
- Position the cursor that appears on the upper left of the area you wish to delineate.
- Drag the cursor to the bottom right area and release it.
- A new box will be created with blue diagonal lines.

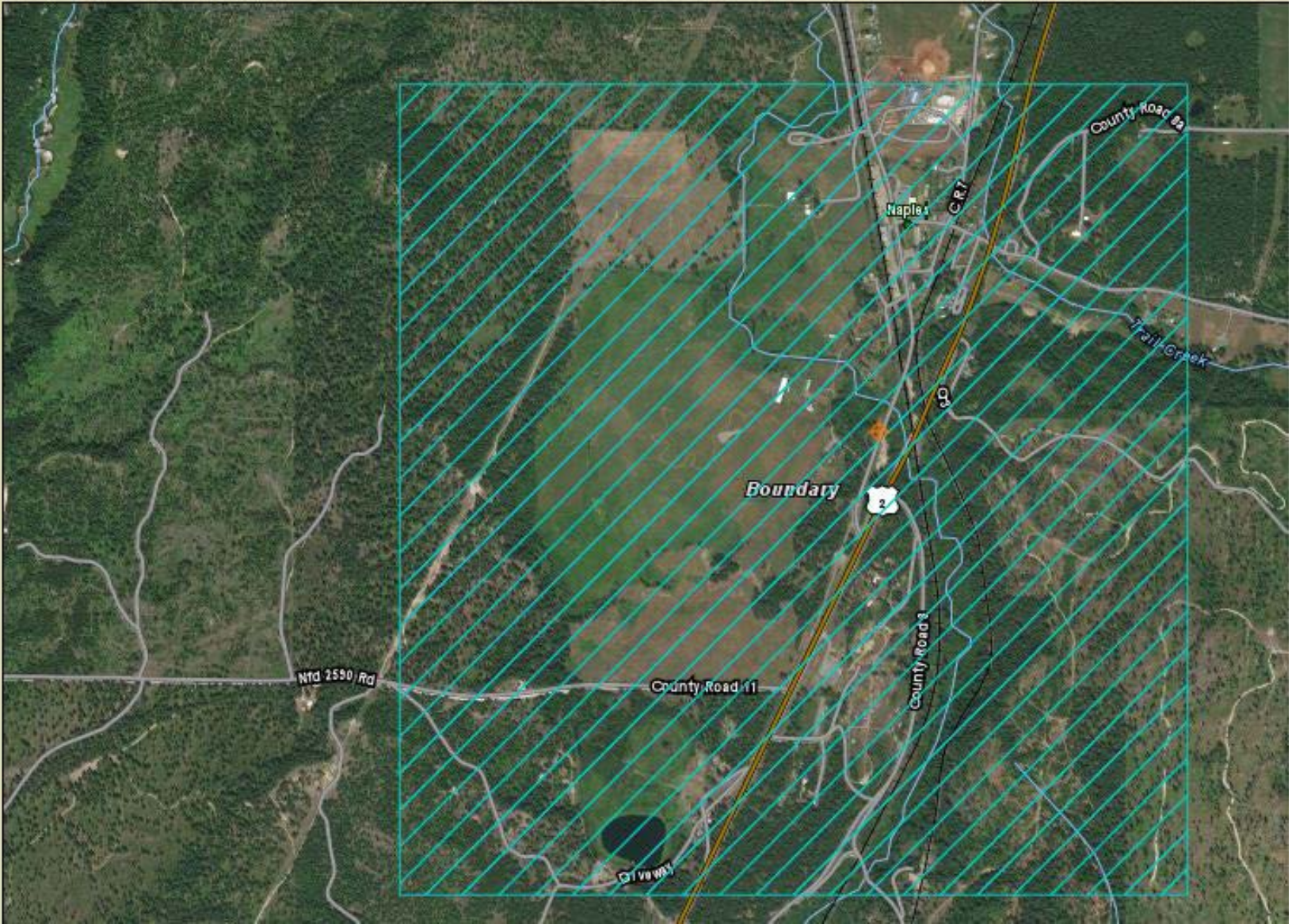
Area of Interest Interactive Map

Legend



View Extent

Scale



Let's start by exploring the Soil Map tab.

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

Search

Map Unit Legend

167	Rubson ashy silt loam, 8 to 15 percent slopes	83.3	6.3%
172	Seelovers silt loam, drained, 0 to 2 percent slopes	77.7	5.9%
174	Selle ashy fine sandy loam, 0 to 7 percent slopes	106.0	8.0%
175	Selle-Elmira complex, 0 to 20 percent slopes	265.4	20.0%
190	Wishbone-Caboose	58.6	4.4%

Soil Map

Legend | Scale: (not to scale)

Clicking on a blue soil name will give you a mapping unit description:

- **167—Rubson ashy silt loam, 8 to 15 percent slopes**
- **Map Unit Setting**
- *National map unit symbol: 5421*
- *Elevation: 2,100 to 2,700 feet*
- *Mean annual precipitation: 25 to 30 inches*
- *Mean annual air temperature: 42 to 45 degrees F*
- *Frost-free period: 100 to 135 days*
- *Farmland classification: Not prime farmland*
- **Map Unit Composition**
- *Rubson and similar soils: 85 percent*
- *Estimates are based on observations, descriptions, and transects of the mapunit.*

Map Unit Composition

Rubson and similar soils: 85 percent

Estimates are based on observations, descriptions, and transects of the map unit.

Description of Rubson

Setting

Landform: Terraces

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Volcanic ash and/or loess over glaciolacustrine deposits

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material

Oe - 2 to 3 inches: moderately decomposed plant material

A - 3 to 5 inches: ashy silt loam

Bw1 - 5 to 11 inches: ashy silt loam

Bw2 - 11 to 17 inches: ashy silt loam

Bt1 - 17 to 26 inches: silt loam

Bt2 - 26 to 32 inches: silt loam

Bt3 - 32 to 35 inches: silt loam

Bt4 - 35 to 53 inches: very fine sandy loam

Bt5 - 53 to 58 inches: very fine sandy loam

C - 58 to 68 inches: loamy very fine sand

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: High (about 11.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Soil Data Explorer: Determining properties and capabilities

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

View Soil Information By Use: All Uses

Intro to Soils | Suitabilities and Land Uses for Use | **Soil Properties and Qualities** | Ecological Site Assess

Search

Properties and Capabilities Ratings

Open All | Close All

- Soil Chemical Properties
- Soil Erosion Factors
- Soil Health Properties
- Soil Physical Properties
- Soil Qualities and Features
- Water Features


Soil Map


Scale: (not to scale)



Legend







134, 175, 110, 174, 199, 172, 175, 201, 200, 134

Let's look at Soil Chemical Properties



Properties and Qualities Ratings 



[Open All](#) [Close All](#) 

Soil Chemical Properties  

- Calcium Carbonate (CaCO₃) 
- Cation-Exchange Capacity (CEC-7) 
- Effective Cation-Exchange Capacity (ECEC) 
- Electrical Conductivity (EC) 
- Gypsum 
- pH (1 to 1 Water)** 

[View Description](#) [View Rating](#)

View Options  

Advanced Options  

Aggregation Method

Component Percent Cutoff

Soil pH data

- You must select a number of options
- Choose default options for displaying as a map, in a table, and to give descriptions of the ratings.
- In the Advance Options, choose the following options:
 - Weighted average for the Aggregation Method
 - Specify the depth range, such as 0 to 12
 - Specify the units in inches
- Click on View Rating

pH (1 to 1 Water)

[View Description](#) [View Rating](#)

View Options

Map

Table

Description of Rating

Rating Options

Detailed Description

Advanced Options

Aggregation Method

Component Percent Cutoff

Tie-break Rule Lower Higher

Interpret Nulls as Zero Yes No

Layer Options (Horizon Aggregation Method) Surface Layer (Not applicable) Depth Range (Weighted Average)

Top Depth

Bottom Depth

Inches Centimeters

Results are displayed in a map and a table

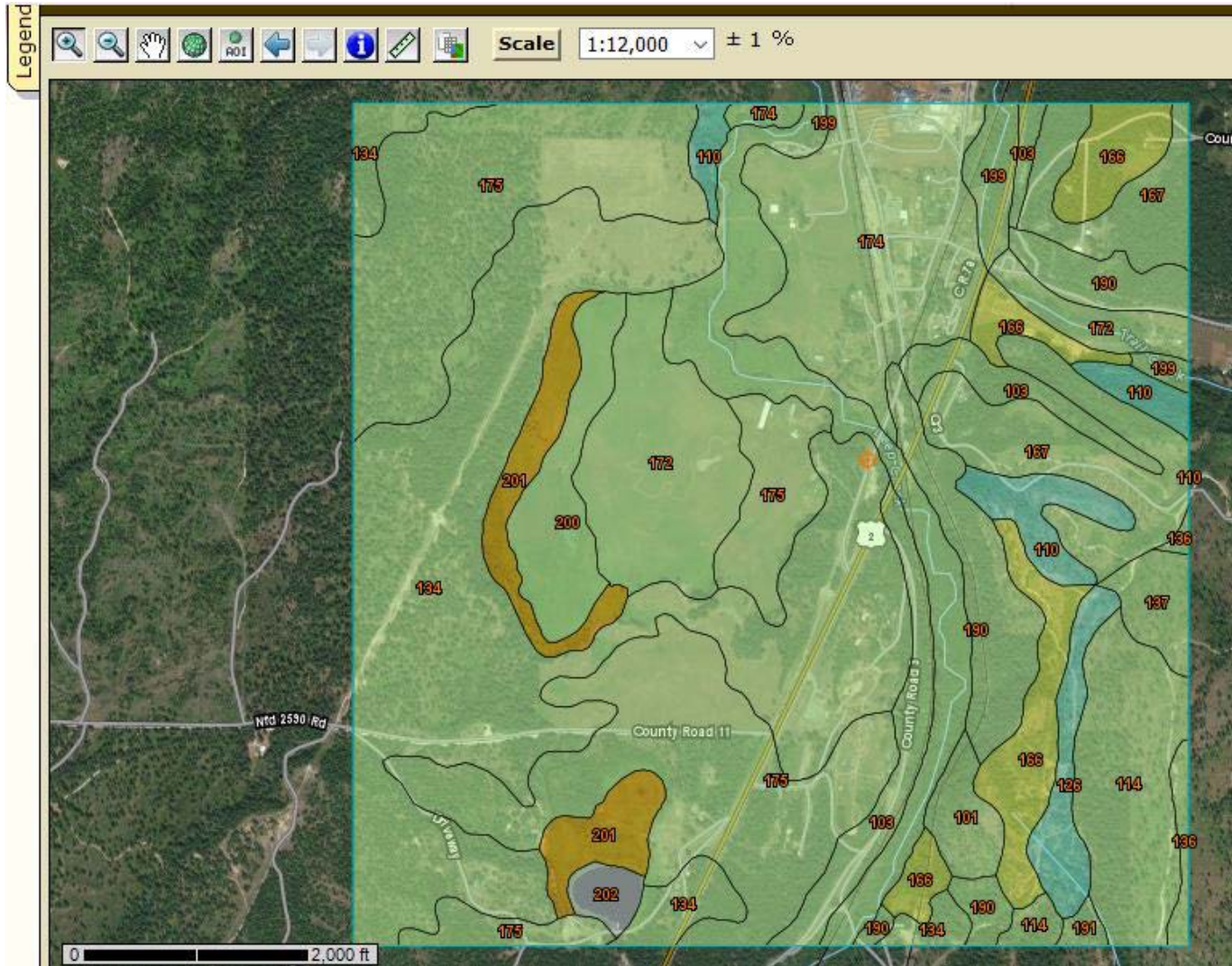
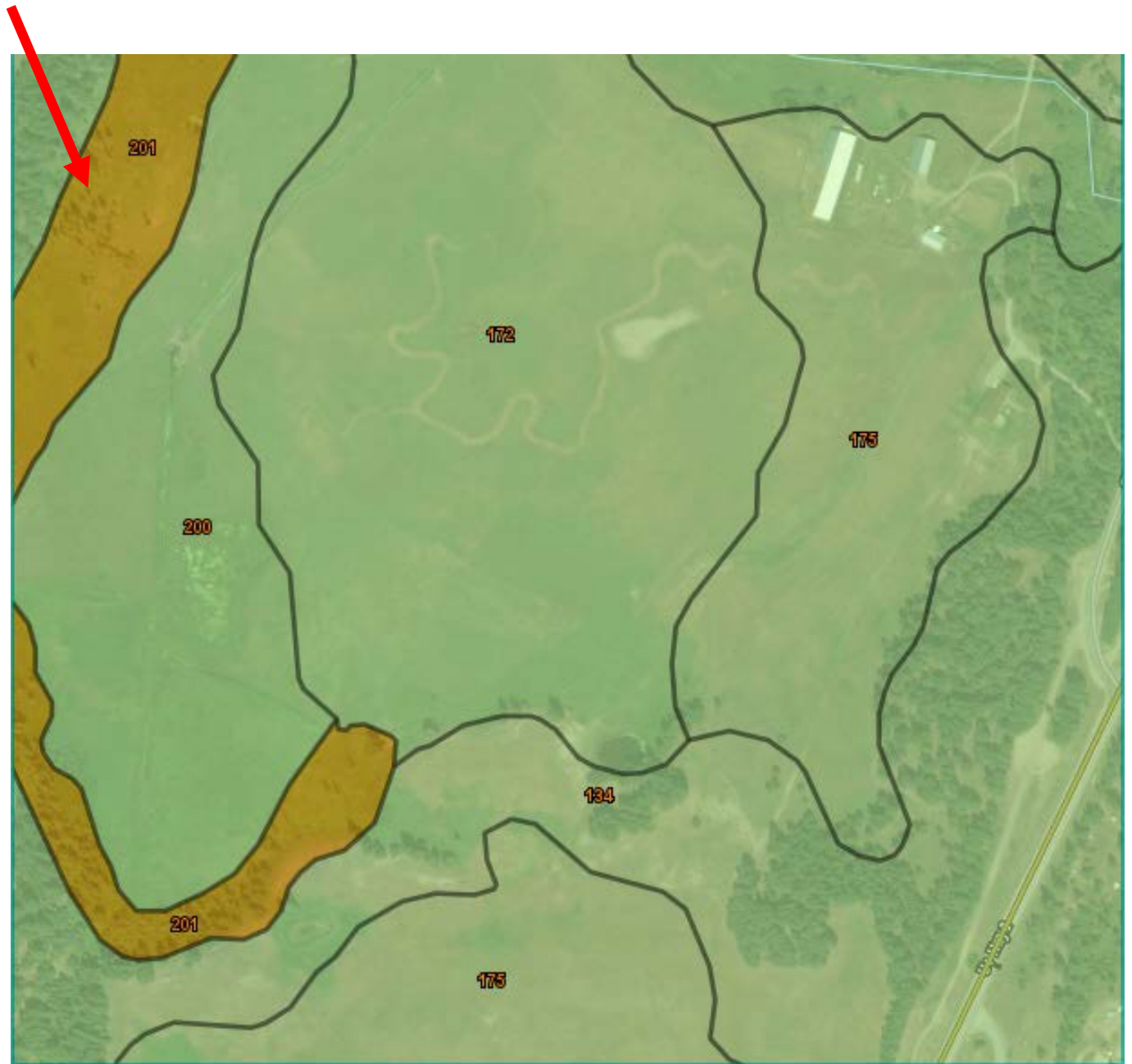


Table displays pH by soil type

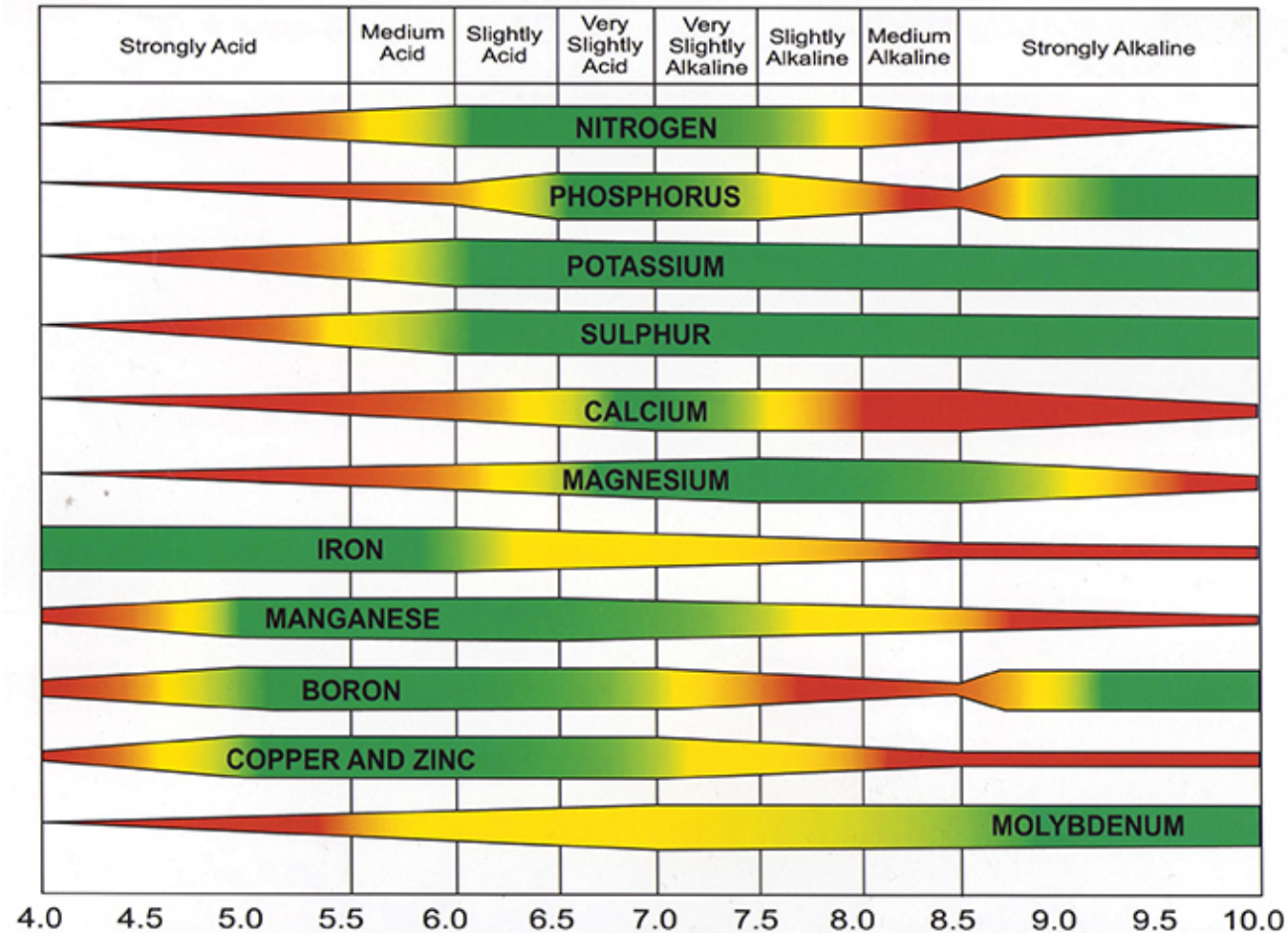
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
101	Dufort-Rock outcrop-Kriest complex, 35 to 65 percent slopes	6.4	12.8	1.0%
103	Artnoc silt loam, 35 to 75 percent slopes	6.1	43.0	3.3%
110	Crash silt loam, 35 to 75 percent slopes	6.8	28.9	2.2%
114	Dufort ashy silt loam, 35 to 65 percent slopes	6.4	57.1	4.4%
126	Idamont ashy silt loam, 15 to 35 percent slopes	6.6	18.3	1.4%
134	Elmira loamy fine sand, 15 to 35 percent slopes	6.5	310.4	24.0%
136	Pend Oreille ashy silt loam, 15 to 35 percent slopes	6.5	6.4	0.5%
137	Pend Oreille ashy silt loam, 35 to 65 percent slopes	6.5	12.8	1.0%
166	Rubson ashy silt loam, 2 to 8 percent slopes	5.9	59.5	4.6%
167	Rubson ashy silt loam, 8 to 15 percent slopes	6.2	79.6	6.2%
172	Seelovers silt loam, drained, 0 to 2 percent slopes	6.2	77.1	6.0%
174	Selle ashy fine sandy loam, 0 to 7 percent slopes	6.1	100.7	7.8%
175	Selle-Elmira complex, 0 to 20 percent slopes	6.4	258.8	20.1%
190	Wishbone-Caboose complex, 35 to 75 percent slopes	6.5	57.3	4.4%
191	Dufort-Rock outcrop-Kriest complex, 15 to 35 percent slopes	6.4	2.8	0.2%
199	Seelovers-Typic Fluvaquents-Aquic Udifluvents complex, 0 to 4 percent slopes	6.2	86.9	6.7%
200	Pywell-DeVoignes complex, partially drained, 0 to 2 percent slopes	6.5	32.8	2.5%
201	Pywell muck, unprotected, undrained, 0 to 1 percent slopes	5.0	38.4	3.0%

All but Pywell
Muck,
undrained,
has a
relatively
neutral value



Why is soil pH important?

How soil pH affects availability of plant nutrients.



Exploring Yields by Soil Mapping Unit and Crop

Check out the Suitabilities and
Limitations for use



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

View Soil Information By Use: All Uses

Intro to Soils | **Suitabilities and Limitations for Use**

Search

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
- Soil Health
- Vegetative Productivity
- Waste Management
- Water Management

Soil Map

Legend

Yields of
non-irrigated
crops –
estimated
yields under
normal
conditions

Yields of Non-Irrigated Crops (Component)

[View Description](#) [View Rating](#)

View Options

Map

Table

Description of Rating

Rating Options

Detailed Description

Basic Options

Crop AUM

Advanced Options

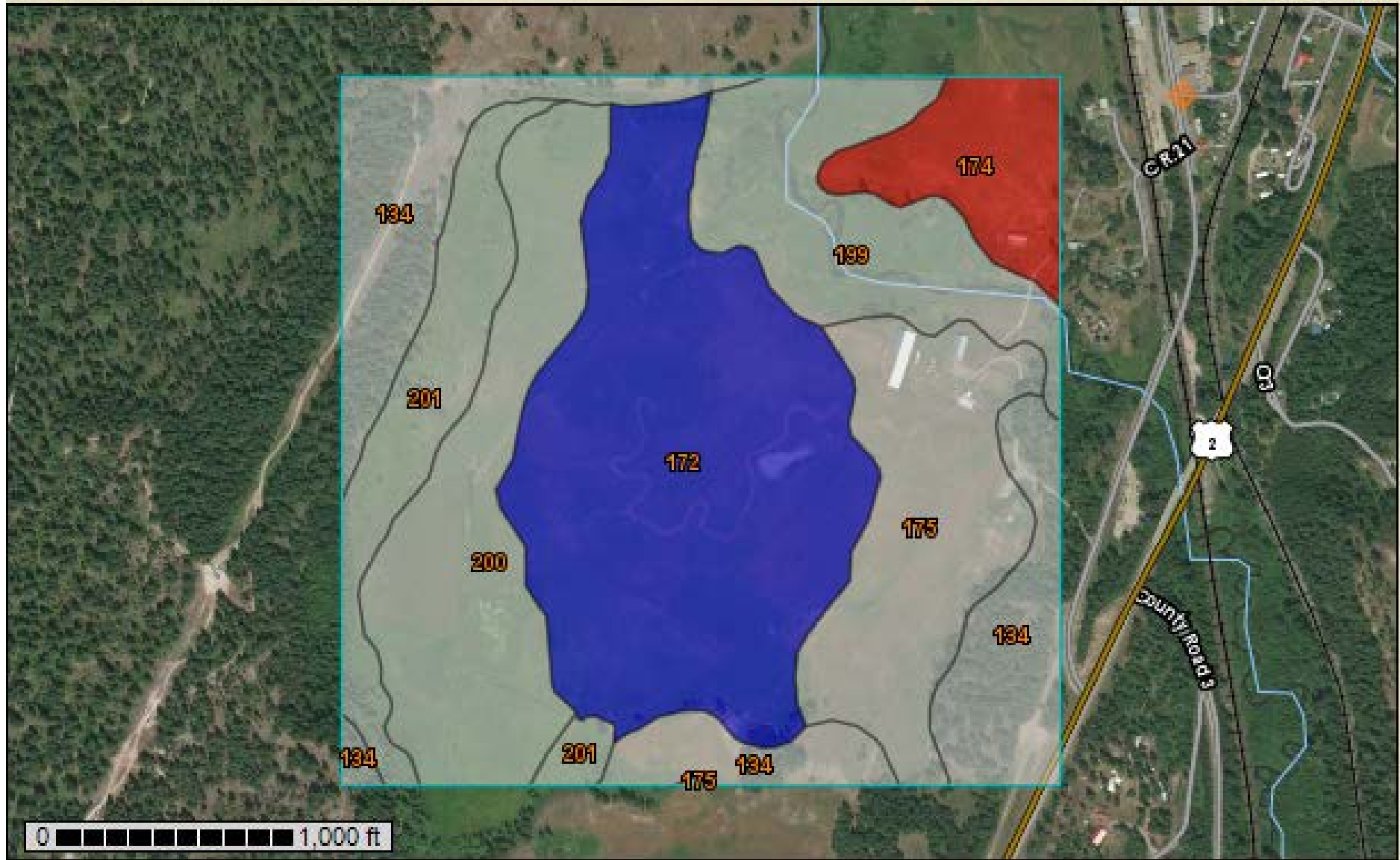
[View Description](#) [View Rating](#)

Yields of Non-Irrigated Crops (Map Unit)

Map — Yields of Non-Irrigated Crops (Component): Alfalfa hay (Tons)



Scale (not to scale) ▾



0 1,000 ft

Tables — Yields of Non-Irrigated Crops (Component): Alfalfa hay (Tons) — Summary By Map Unit

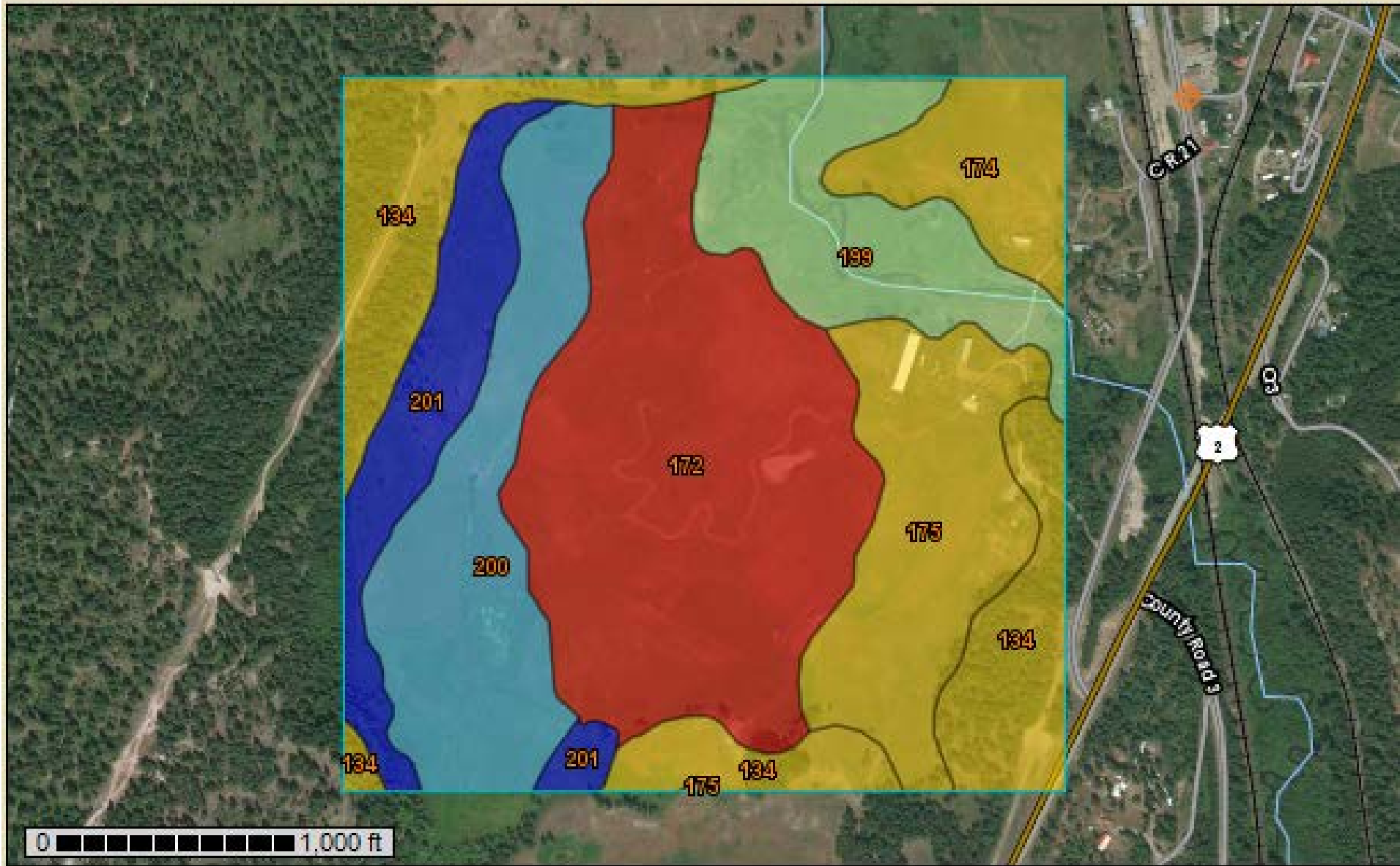
Summary by Map Unit — Boundary County Area, Idaho (ID601)

Summary by Map Unit — Boundary County Area, Idaho (ID601)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
134	Elmira loamy fine sand, 15 to 35 percent slopes		36.7	17.4%
172	Seelovers silt loam, drained, 0 to 2 percent slopes	2.71	62.9	29.8%
174	Selle ashy fine sandy loam, 0 to 7 percent slopes	2.00	12.1	5.7%
175	Selle-Elmira complex, 0 to 20 percent slopes		27.5	13.0%
199	Seelovers-Typic Fluvaquents-Aquic Udifluvents complex, 0 to 4 percent slopes		23.5	11.1%
200	Pywell-DeVoignes complex, partially drained, 0 to 2 percent slopes		31.2	14.8%
201	Pywell muck, unprotected, undrained, 0 to 1 percent slopes		17.2	8.2%
Totals for Area of Interest			211.1	100.0%

Map — Range Production (Normal Year)

Map navigation and scale controls including zoom in, zoom out, pan, full screen, ROI, navigation arrows, info, and scale (not to scale).



Summary by Map Unit — Boundary County Area, Idaho (ID601)

Summary by Map Unit — Boundary County Area, Idaho (ID601)

Map unit symbol	Map unit name	Rating (pounds per acre per year)	Acres in AOI	Percent of AOI
134	Elmira loamy fine sand, 15 to 35 percent slopes	1100	36.7	17.4%
172	Seelovers silt loam, drained, 0 to 2 percent slopes	249	62.9	29.8%
174	Selle ashy fine sandy loam, 0 to 7 percent slopes	900	12.1	5.7%
175	Selle-Elmira complex, 0 to 20 percent slopes	1041	27.5	13.0%
199	Seelovers-Typic Fluvaquents-Aquic Udifluvents complex, 0 to 4 percent slopes	1647	23.5	11.1%
200	Pywell-DeVoignes complex, partially drained, 0 to 2 percent slopes	3595	31.2	14.8%
201	Pywell muck, unprotected, undrained, 0 to 1 percent slopes	3820	17.2	8.2%
Totals for Area of Interest			211.1	100.0%

Summary by Map Unit — Boundary County Area, Idaho (ID601)

Summary by Map Unit — Boundary County Area, Idaho (ID601)

Map unit symbol	Map unit name	Rating (pounds per acre per year)	Acres in AOI	Percent of AOI
134	Elmira loamy fine sand, 15 to 35 percent slopes	1500	36.7	17.4%
172	Seelovers silt loam, drained, 0 to 2 percent slopes	351	62.9	29.8%
174	Selle ashy fine sandy loam, 0 to 7 percent slopes	1500	12.1	5.7%
175	Selle-Elmira complex, 0 to 20 percent slopes	1564	27.5	13.0%
199	Seelovers-Typic Fluvaquents-Aquic Udifluvents complex, 0 to 4 percent slopes	2844	23.5	11.1%
200	Pywell-DeVoignes complex, partially drained, 0 to 2 percent slopes	4350	31.2	14.8%
201	Pywell muck, unprotected, undrained, 0 to 1 percent slopes	4800	17.2	8.2%
Totals for Area of Interest			211.1	100.0%



Summary by Map Unit — Boundary County Area, Idaho (ID601)

Summary by Map Unit — Boundary County Area, Idaho (ID601)



Map unit symbol	Map unit name	Rating (pounds per acre per year)	Acres in AOI	Percent of AOI
134	Elmira loamy fine sand, 15 to 35 percent slopes	700	36.7	17.4%
172	Seelovers silt loam, drained, 0 to 2 percent slopes	144	62.9	29.8%
174	Selle ashy fine sandy loam, 0 to 7 percent slopes	250	12.1	5.7%
175	Selle-Elmira complex, 0 to 20 percent slopes	488	27.5	13.0%
199	Seelovers-Typic Fluvaquents-Aquic Udifluvents complex, 0 to 4 percent slopes	469	23.5	11.1%
200	Pywell-DeVoignes complex, partially drained, 0 to 2 percent slopes	2655	31.2	14.8%
201	Pywell muck, unprotected, undrained, 0 to 1 percent slopes	2790	17.2	8.2%
Totals for Area of Interest			211.1	100.0%

Thank you!
Please contact me for more information at:
kpainter@uidaho.edu



University of Idaho
Extension