

How to use Web Soil Survey to assess soil available water holding capacity

Web Soil Survey can be accessed using the web address <https://websoilsurvey.nrcs.usda.gov/app/>. After opening the application, you will be shown a map of the United States. Use the “Zoom in” function to locate your farm on the map (Figure 1). Then use the “Area of interest” function to define where you want to generate a soils map.

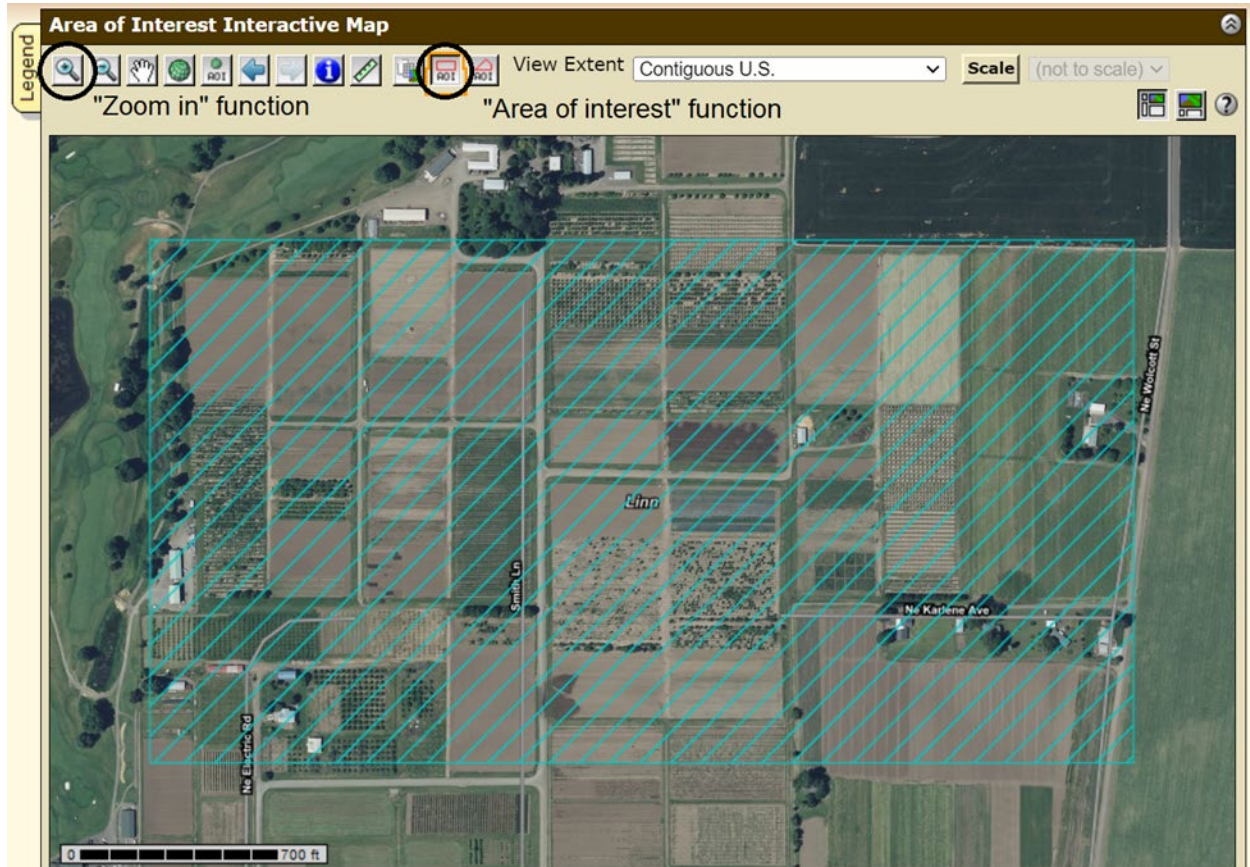


Figure 1: This screenshot shows the Area of Interest Interactive Map that can be found on Web Soil Survey. After using the “Zoom in” function to find your farm, use the “Area of interest” function to define the area that you want to produce a soils map. Here we have an area of interest, defined by a blue hatched rectangle, for the Oregon State University Vegetable Research Farm and the surrounding area.

Once you have defined your area of interest, click on the tab labeled “Soil Map.” This will create a map of all of the soils within your area of interest (Figure 2). The lines within the area of interest delimit different soils, which are identified by “Map Unit Symbols” defined by their official soil series description. Soils of the same series have similar properties and histories. Clicking on a “Map Unit Name” will open a description of the soil. This will include the soil series and the available water supply, which are located near the top and bottom of the description respectively (Figure 3).

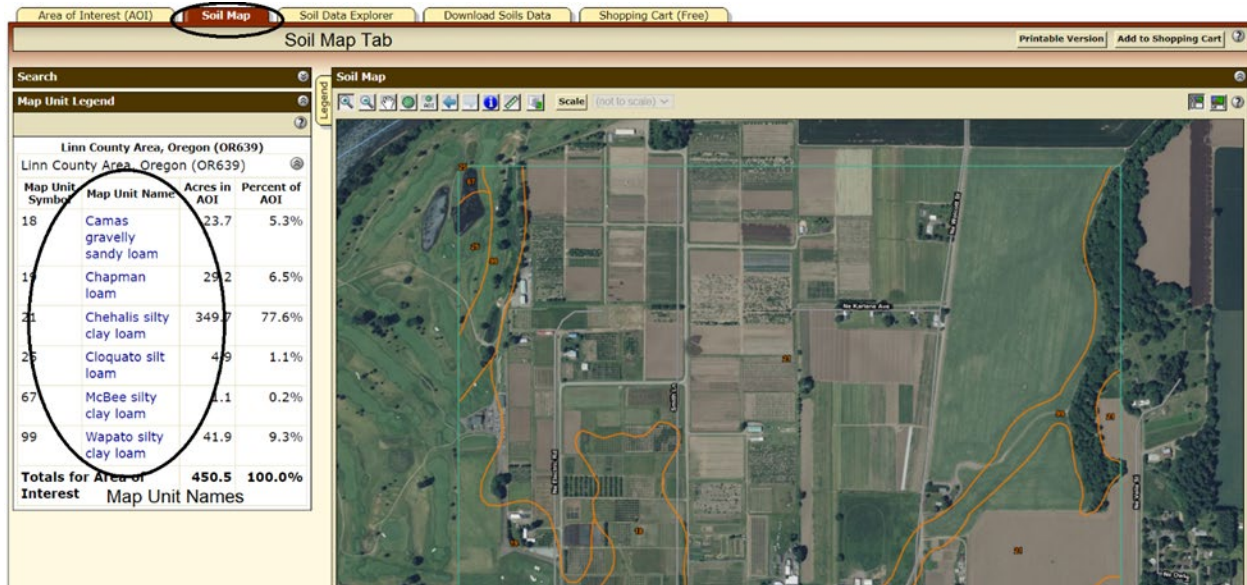


Figure 2: This screenshot shows the soil map generated after clicking on the "Soil Map" tab. Blue lines delimit the area of interest while orange lines delimit the soils present at the site. Within the boundaries of each soil mapped is a "Map Unit Symbol" that corresponds with a "Map Unit Name." Clicking on a /"Map Unit Name" will open up a description of that soil.

The screenshot shows a web application window titled "Map Unit Description". At the top right, there is a "Printable Version" button. The main content area is titled "Report — Map Unit Description" and contains the following information:

- Linn County Area, Oregon**
- 21—Chehalis silty clay loam** (circled in red)
- Map Unit Setting**
 - National map unit symbol: 24wg
 - Elevation: 150 to 600 feet
 - Mean annual precipitation: 40 to 50 inches
 - Mean annual air temperature: 52 to 54 degrees F
 - Frost-free period: 165 to 210 days
 - Farmland classification: All areas are prime farmland
- Map Unit Composition**
 - Chehalis and similar soils: 85 percent
 - Estimates are based on observations, descriptions, and transects of the mapunit.
- Description of Chehalis**
 - Setting**
 - Landform: Flood plains
 - Landform position (three-dimensional): Tread
 - Down-slope shape: Linear
 - Across-slope shape: Linear
 - Parent material: Recent moderately fine textured alluvium derived from mixed sources
 - Typical profile**
 - H1 - 0 to 16 inches: silty clay loam
 - H2 - 16 to 60 inches: silty clay loam
 - Properties and qualities**
 - Slope: 0 to 3 percent
 - Depth to restrictive feature: More than 80 inches
 - 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: Occasional, None
 - Frequency of ponding: None
 - Available water supply, 0 to 60 inches: High (about 11.5 inches) (circled in red)

Figure 3: After clicking on a map unit name, a description of the soil will open. At the bottom of the description there is the soil available water holding capacity. For this Chehalis silty clay loam, the soil available water holding capacity is 11.5 inches.