



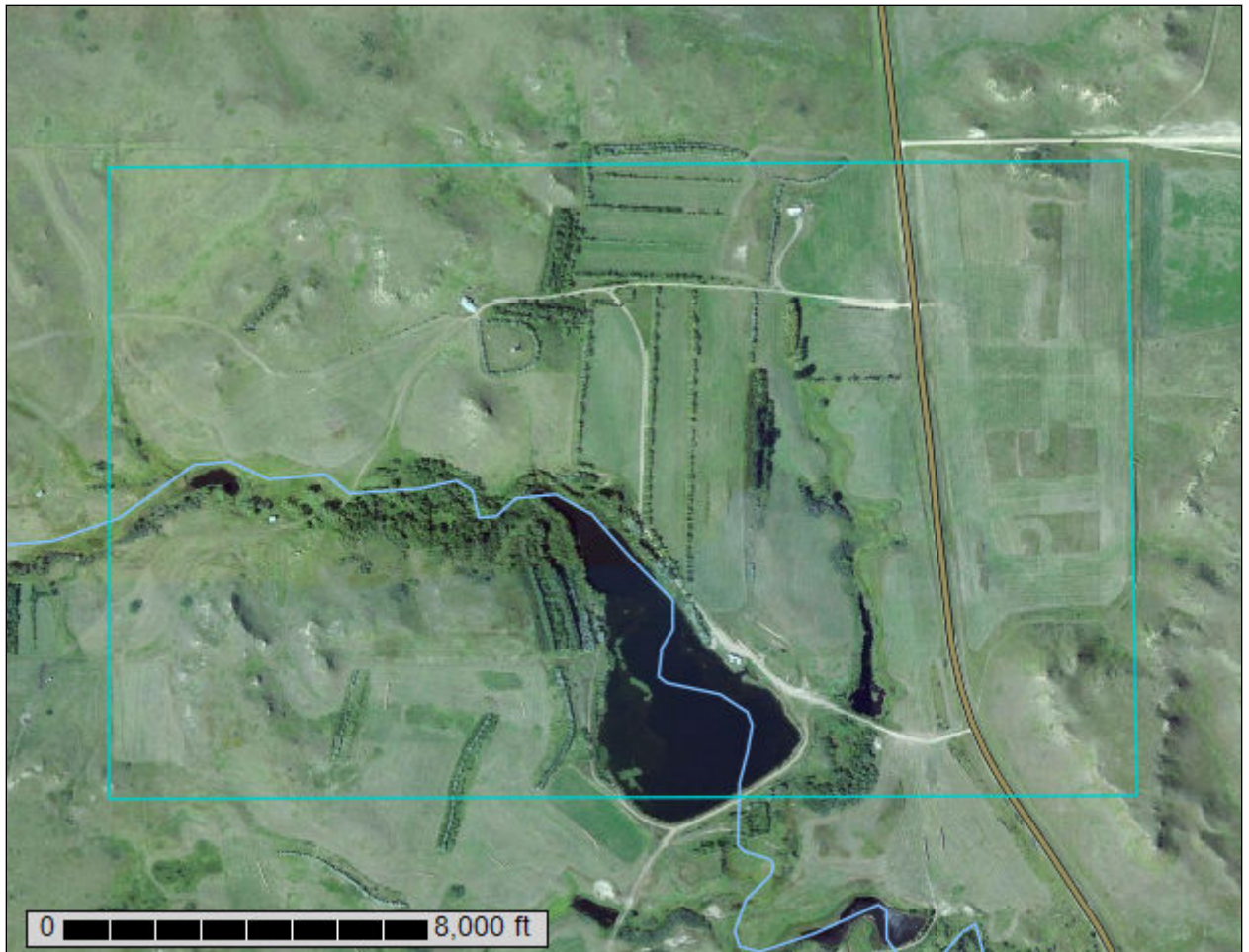
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Oliver County, North Dakota**



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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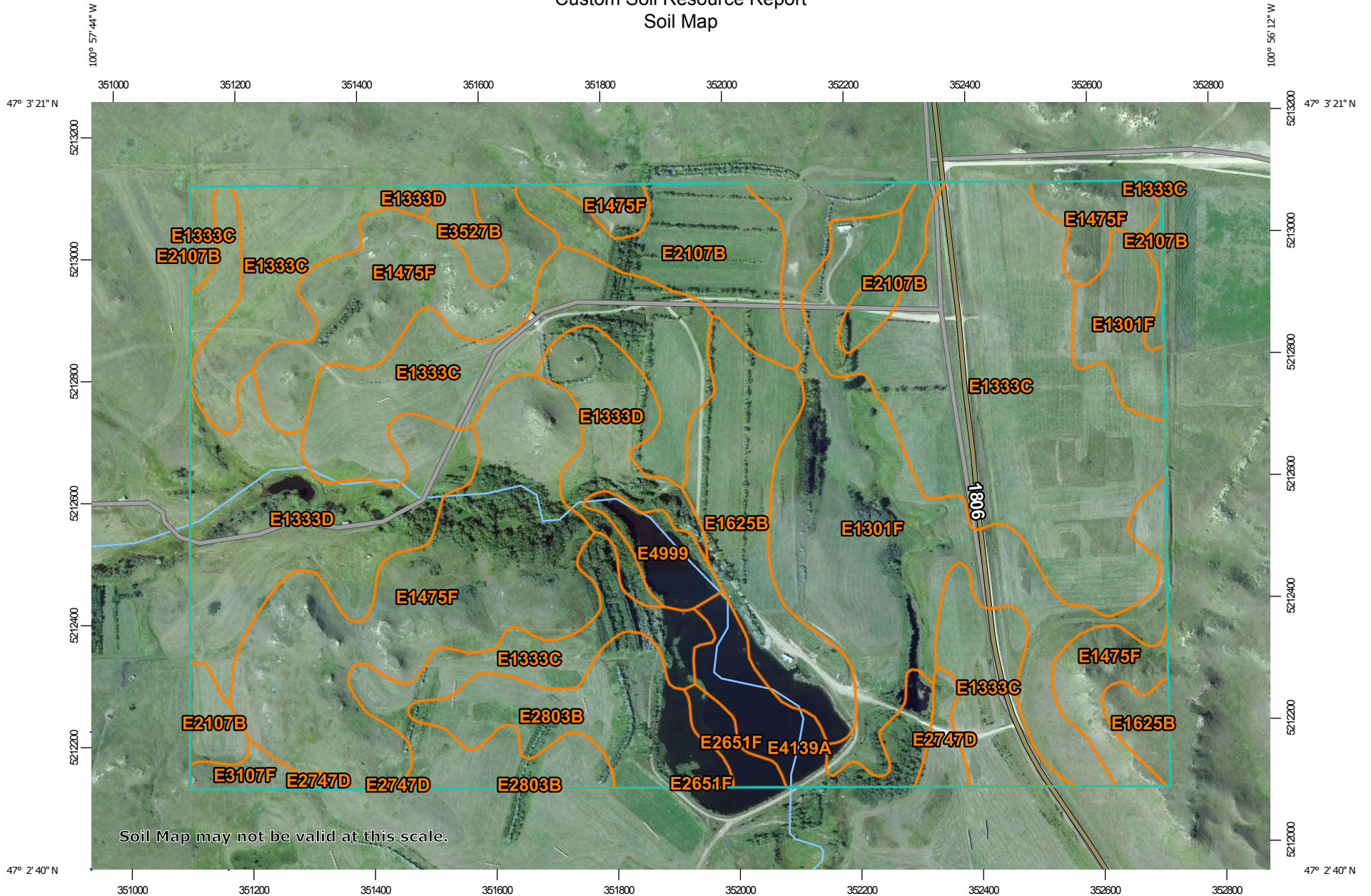
Contents

Preface	2
Soil Map	5
Soil Map.....	6
Legend.....	7
Map Unit Legend.....	8
Soil Information for All Uses	9
Suitabilities and Limitations for Use.....	9
Vegetative Productivity.....	9
Crop Productivity Index.....	9

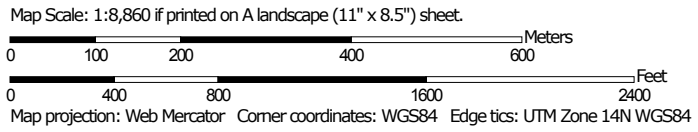
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map




Soil Map may not be valid at this scale.




MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Oliver County, North Dakota
 Survey Area Data: Version 21, Sep 21, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 16, 2010—May 17, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Oliver County, North Dakota (ND065)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
E1301F	Cohagen-Vebar-Parshall fine sandy loams, 9 to 35 percent slopes	57.5	14.6%
E1333C	Vebar-Cohagen fine sandy loams, 6 to 9 percent slopes	127.5	32.3%
E1333D	Vebar-Cohagen fine sandy loams, 9 to 15 percent slopes	41.0	10.4%
E1475F	Flasher-Rock outcrop-Vebar complex, 9 to 70 percent slopes	77.3	19.6%
E1625B	Vebar-Parshall fine sandy loams, 3 to 6 percent slopes	23.2	5.9%
E2107B	Arnegard loam, 2 to 6 percent slopes	26.2	6.7%
E2651F	Werner-Amor-Arnegard loams, 9 to 50 percent slopes	2.7	0.7%
E2747D	Werner-Chama-Sen silt loams, 9 to 15 percent slopes	2.9	0.7%
E2803B	Amor-Shambo loams, 3 to 6 percent slopes	15.7	4.0%
E3107F	Cabba-Badland complex, 6 to 70 percent slopes	2.1	0.5%
E3527B	Williams-Bowbells loams, 3 to 6 percent slopes	2.8	0.7%
E4139A	Korchea-Fluvaquents complex, channeled, 0 to 2 percent slopes, frequently flooded	10.7	2.7%
E4999	Water	4.7	1.2%
Totals for Area of Interest		394.3	100.0%

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Vegetative Productivity

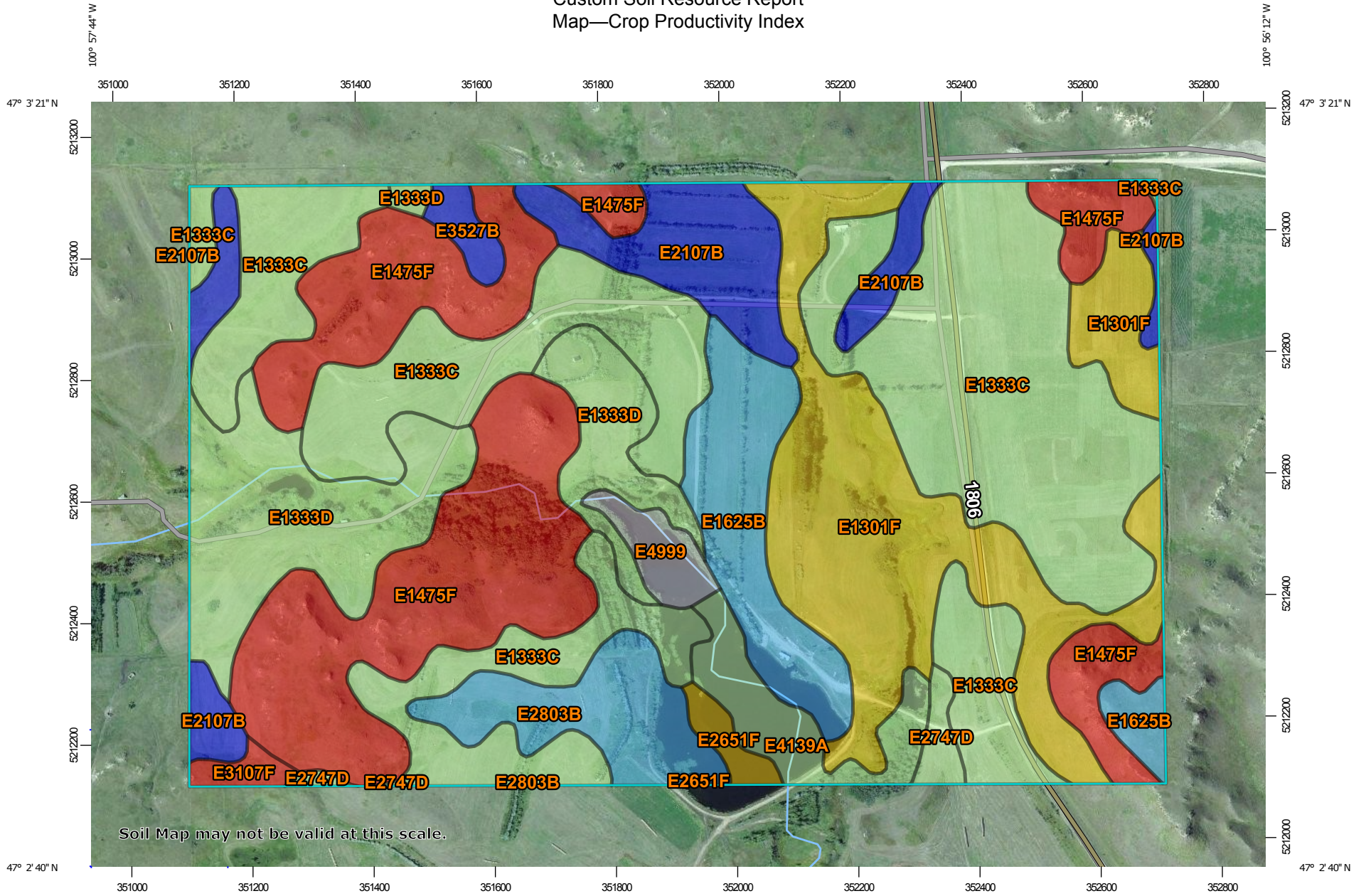
Vegetative productivity includes estimates of potential vegetative production for a variety of land uses, including cropland, forestland, hayland, pastureland, horticulture and rangeland. In the underlying database, some states maintain crop yield data by individual map unit component. Other states maintain the data at the map unit level. Attributes are included for both, although only one or the other is likely to contain data for any given geographic area. For other land uses, productivity data is shown only at the map unit component level. Examples include potential crop yields under irrigated and nonirrigated conditions, forest productivity, forest site index, and total rangeland production under of normal, favorable and unfavorable conditions.

Crop Productivity Index

Crop productivity index ratings provide a relative ranking of soils based on their potential for intensive crop production. An index can be used to rate the potential yield of one soil against that of another over a period of time. Ratings range from 0 to 100. The higher numbers indicate higher production potential. The rating is not crop specific. Minnesota inquiries must use the "Map Unit Cropland Productivity Report (MN)" soils report from the Soil Reports tab under "Vegetative Productivity".

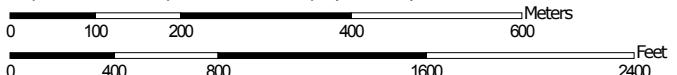
When the soils are rated, the following assumptions are made: a) adequate management, b) natural weather conditions (no irrigation), c) artificial drainage where required, d) no frequent flooding on the lower lying soils, and e) no land leveling or terracing. Even though predicted average yields will change with time, the productivity indices are expected to remain relatively constant in relation to one another over time.

Custom Soil Resource Report Map—Crop Productivity Index



Soil Map may not be valid at this scale.


Map Scale: 1:8,860 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84







MAP LEGEND

Area of Interest (AOI)







 Area of Interest (AOI)

Soils







Soil Rating Polygons

-  <= 13
-  > 13 and <= 25
-  > 25 and <= 40
-  > 40 and <= 76
-  > 76 and <= 93
-  Not rated or not available


Soil Rating Lines

-  <= 13
-  > 13 and <= 25
-  > 25 and <= 40
-  > 40 and <= 76
-  > 76 and <= 93
-  Not rated or not available






Soil Rating Points

-  <= 13
-  > 13 and <= 25
-  > 25 and <= 40
-  > 40 and <= 76
-  > 76 and <= 93
-  Not rated or not available


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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Table—Crop Productivity Index

Crop Productivity Index— Summary by Map Unit — Oliver County, North Dakota (ND065)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
E1301F	Cohagen-Vebar-Parshall fine sandy loams, 9 to 35 percent slopes	22	57.5	14.6%
E1333C	Vebar-Cohagen fine sandy loams, 6 to 9 percent slopes	40	127.5	32.3%
E1333D	Vebar-Cohagen fine sandy loams, 9 to 15 percent slopes	32	41.0	10.4%
E1475F	Flasher-Rock outcrop-Vebar complex, 9 to 70 percent slopes	12	77.3	19.6%
E1625B	Vebar-Parshall fine sandy loams, 3 to 6 percent slopes	63	23.2	5.9%
E2107B	Arnegard loam, 2 to 6 percent slopes	93	26.2	6.7%
E2651F	Werner-Amor-Arnegard loams, 9 to 50 percent slopes	25	2.7	0.7%
E2747D	Werner-Chama-Sen silt loams, 9 to 15 percent slopes	38	2.9	0.7%
E2803B	Amor-Shambo loams, 3 to 6 percent slopes	76	15.7	4.0%
E3107F	Cabba-Badland complex, 6 to 70 percent slopes	13	2.1	0.5%
E3527B	Williams-Bowbells loams, 3 to 6 percent slopes	84	2.8	0.7%
E4139A	Korchea-Fluvaquents complex, channeled, 0 to 2 percent slopes, frequently flooded	32	10.7	2.7%
E4999	Water		4.7	1.2%
Totals for Area of Interest			394.3	100.0%

Rating Options—Crop Productivity Index

Aggregation Method: Weighted Average

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Interpret Nulls as Zero: Yes