



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 **Dunn County, North Dakota**



# Preface

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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](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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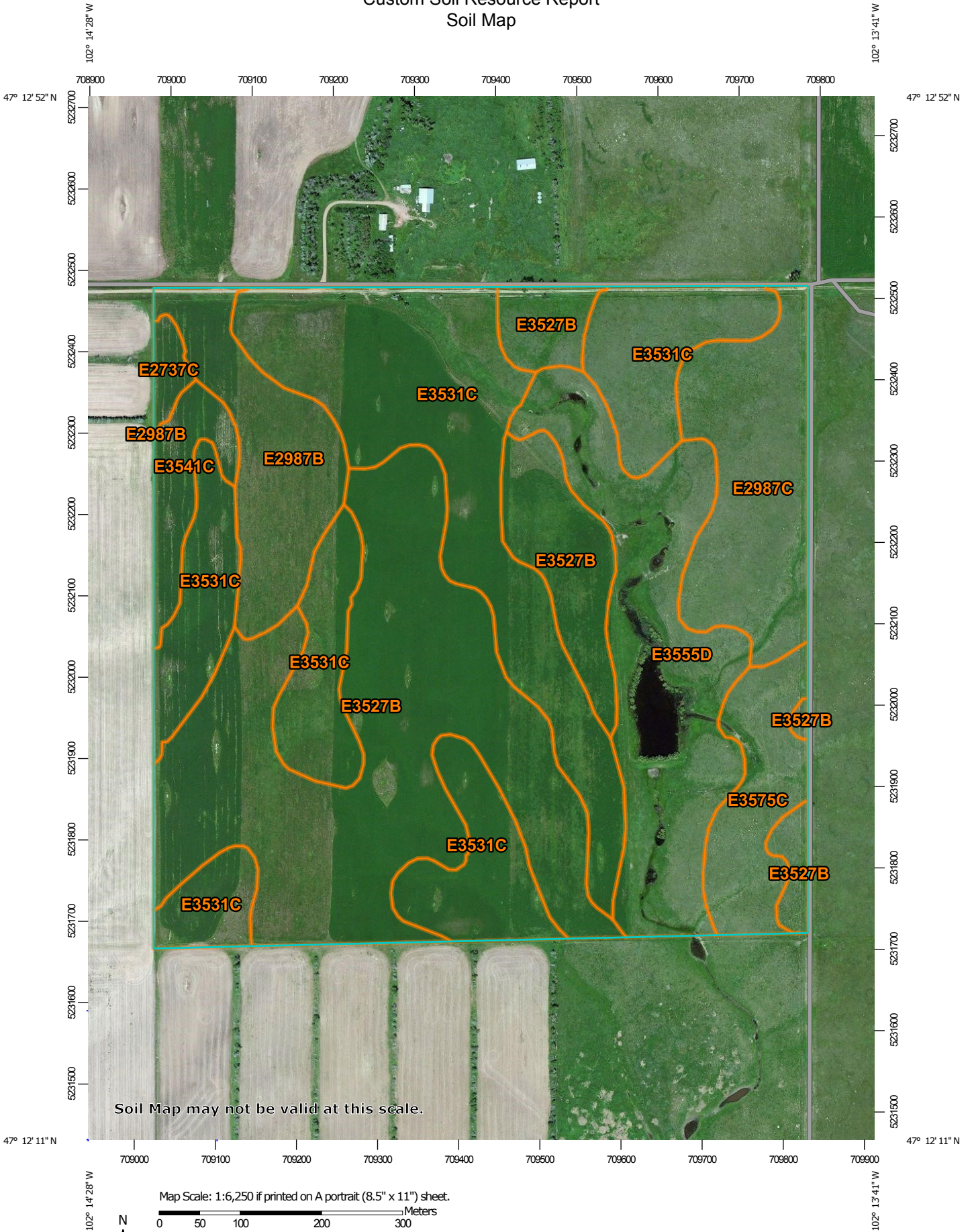
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# Soil Map

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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 Scale: 1:6,250 if printed on A portrait (8.5" x 11") sheet.


0 50 100 200 300 Meters

0 300 600 1200 1800 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84


### 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: Dunn County, North Dakota  
 Survey Area Data: Version 21, Sep 20, 2016

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

Date(s) aerial images were photographed: Jun 23, 2011—Jul 30, 2011

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

| Dunn County, North Dakota (ND025)  |   |              |                |
|------------------------------------|---|--------------|----------------|
| Map Unit Symbol                    | Map Unit Name                                     | Acres in AOI | Percent of AOI |
| E2737C                             | Chama-Cabba-Sen silt loams, 6 to 9 percent slopes | 1.1          | 0.7%           |
| E2987B                             | Sen-Chama silt loams, 3 to 6 percent slopes       | 10.7         | 6.6%           |
| E2987C                             | Sen-Chama silt loams, 6 to 9 percent slopes       | 13.8         | 8.6%           |
| E3527B                             | Williams-Bowbells loams, 3 to 6 percent slopes    | 50.5         | 31.4%          |
| E3531C                             | Williams loam, 6 to 9 percent slopes              | 52.0         | 32.4%          |
| E3541C                             | Williams-Zahl loams, 6 to 9 percent slopes        | 3.9          | 2.4%           |
| E3555D                             | Zahl-Williams loams, 9 to 15 percent slopes       | 21.4         | 13.3%          |
| E3575C                             | Williams loam, 0 to 9 percent slopes, very stony  | 7.4          | 4.6%           |
| <b>Totals for Area of Interest</b> |   | <b>160.7</b> | <b>100.0%</b>  |



# **Soil Information for All Uses**

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## **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**

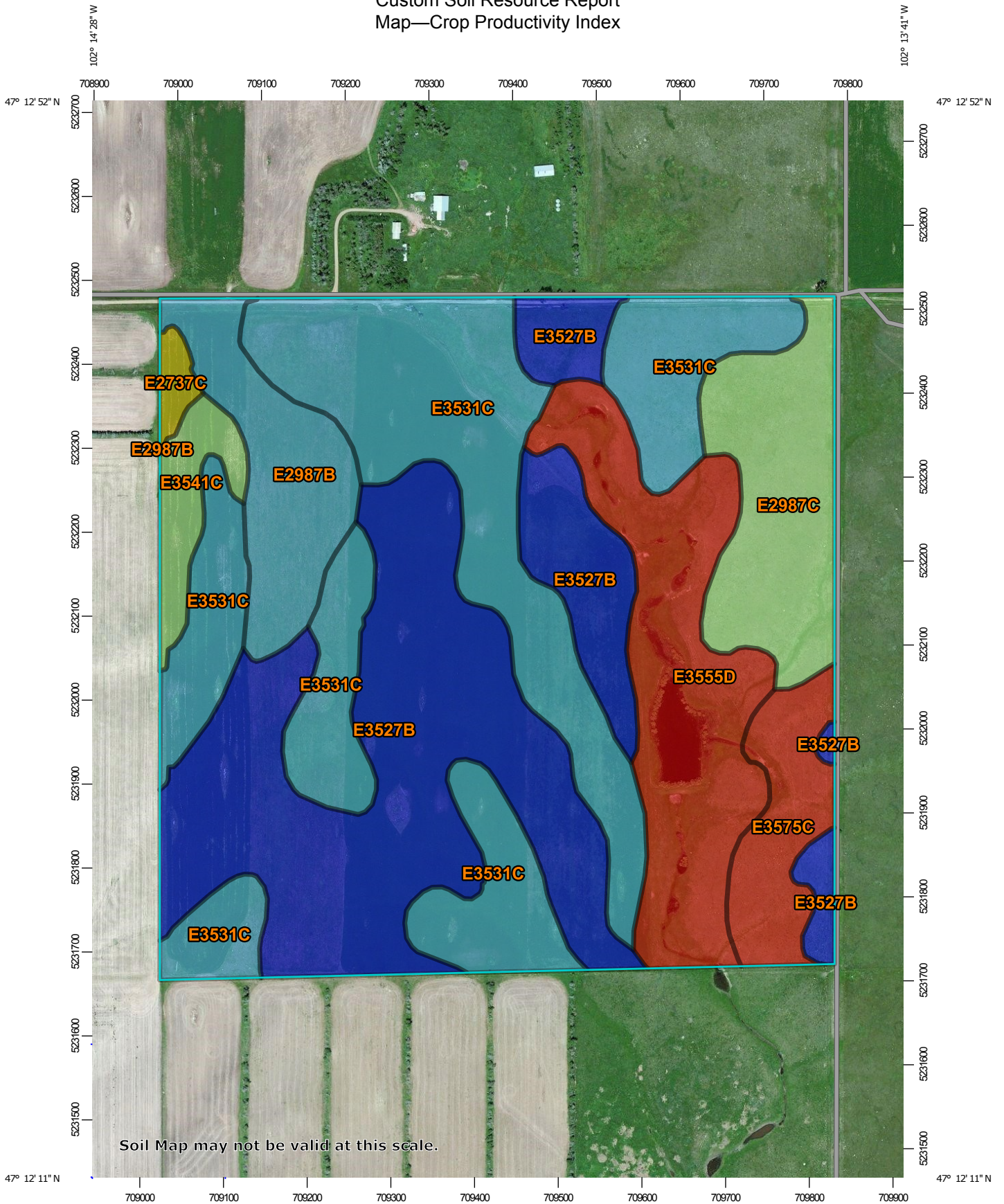
Vegetative productivity includes estimates of potential vegetative production for a variety of land uses, including cropland, forestland, hayland, pastureland, horticulture and rangeland. In the underlying database, some states maintain crop yield data by individual map unit component. Other states maintain 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



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0 50 100 200 300 Meters


0 300 600 1200 1800 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84









### MAP LEGEND

**Area of Interest (AOI)**







 Area of Interest (AOI)

**Soils**







**Soil Rating Polygons**

-  <= 44
-  > 44 and <= 50
-  > 50 and <= 60
-  > 60 and <= 72
-  > 72 and <= 84
-  Not rated or not available


**Soil Rating Lines**

-  <= 44
-  > 44 and <= 50
-  > 50 and <= 60
-  > 60 and <= 72
-  > 72 and <= 84
-  Not rated or not available






**Soil Rating Points**

-  <= 44
-  > 44 and <= 50
-  > 50 and <= 60
-  > 60 and <= 72
-  > 72 and <= 84
-  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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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.

**Table—Crop Productivity Index**

| Crop Productivity Index— Summary by Map Unit — Dunn County, North Dakota (ND025) |   |        |              |                |
|--|---|--------|--------------|----------------|
| Map unit symbol  | Map unit name                                     | Rating | Acres in AOI | Percent of AOI |
| E2737C   | Chama-Cabba-Sen silt loams, 6 to 9 percent slopes | 50     | 1.1          | 0.7%           |
| E2987B   | Sen-Chama silt loams, 3 to 6 percent slopes       | 72     | 10.7         | 6.6%           |
| E2987C   | Sen-Chama silt loams, 6 to 9 percent slopes       | 58     | 13.8         | 8.6%           |
| E3527B   | Williams-Bowbells loams, 3 to 6 percent slopes    | 84     | 50.5         | 31.4%          |
| E3531C   | Williams loam, 6 to 9 percent slopes              | 70     | 52.0         | 32.4%          |
| E3541C   | Williams-Zahl loams, 6 to 9 percent slopes        | 60     | 3.9          | 2.4%           |
| E3555D   | Zahl-Williams loams, 9 to 15 percent slopes       | 44     | 21.4         | 13.3%          |
| E3575C   | Williams loam, 0 to 9 percent slopes, very stony  | 41     | 7.4          | 4.6%           |
| <b>Totals for Area of Interest</b>   |   |        | <b>160.7</b> | <b>100.0%</b>  |

**Rating Options—Crop Productivity Index**

*Aggregation Method: Weighted Average*

*Component Percent Cutoff: None Specified*

*Tie-break Rule: Higher*

*Interpret Nulls as Zero: Yes*