Using the Web Soil Survey

www://websoilsurvey.nrcs.usda.gov/app/
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.

Four Basic Steps

Define.

Area of Interest (AOI)

Use the Area of Interest tab to define your area of interest.
Area of Interest (AOI)

You Can Select How You Will Identify Your Area of Interest
Zoom in to Locate Site, Zoom out, or Move Around Your AOI
Or Use a Plat Book to Enter the State, Section, and Township Information To Go To A Specific Section Number and Click On the View Tab
Outline Your Area of Interest by Using the AOI Tools
Acres in Area of Interest: 658.9
Clicking on the “Soil Map” Tab Allows the User to View the Soil Types Within the Area of Interest, the Total Acres of Each Soil Type Within the Area of Interest and the Percent Each Soil Type Represents Within the AOI.

Click on the Map Unit Name to Read a Description of the Soil Type.
To Clear the Area of Interest
Click on the “Clear AOI” Tab
Click on the AOI symbol to outline the field. Click at a corner and then click around the border of the field. Double click when the outline is complete.
If the AOI Does Not Cover the Area You Want to Identify, Click the “Clear AOI” tab and Outline the Field Again. Use the + and - Lens and Hand Symbol to Help Identify the Correct Field Boundary.
Click on “Map Unit Name” for soil information

<table>
<thead>
<tr>
<th>Map Unit Symbol</th>
<th>Map Unit Name</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>4B</td>
<td>Grindstone loam, 0 to 4 percent slopes</td>
<td>22.8</td>
<td>50.4%</td>
</tr>
<tr>
<td>50A</td>
<td>Shebeon-Badaxe sandy loams, 0 to 2 percent slopes</td>
<td>22.4</td>
<td>49.6%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td><strong>45.2</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>
The report generates information on the soil type selected.
Clicking on the “Soil Data Explorer” will add a second row of tabs.

The “Intro to Soils” tab has several categories. Only one “button” can be activated. Checking a category heading will highlight the entire list of subjects. Or, only one subject can be selected.
"The Suitabilities and Limitations for Use" tab is mostly for non-agricultural uses.
The “Soil Properties and Qualities” tab displays crop field soil information.
Warning: Soil Ratings Map may not be valid at this scale.
You have zoomed in beyond the scale at which the soil map for this area is intended to be used. Mapping of soils is done at a particular scale. The soil
Wind Erosion ranking index starts at a low of 56 and ends at a high of 310.

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating (tons per acre per year)</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>4B</td>
<td>Grindstone loam, 0 to 4 percent slopes</td>
<td>56</td>
<td>22.8</td>
<td>50.4%</td>
</tr>
<tr>
<td>50A</td>
<td>Shebeon-Badaxe sandy loams, 0 to 2 percent slopes</td>
<td>86</td>
<td>22.4</td>
<td>49.6%</td>
</tr>
<tr>
<td></td>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td>45.2</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

The wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

**Rating Options – Wind Erodibility Index**

- **Units of Measure:** tons per acre per year
- **Aggregation Method:** Dominant Condition
- **Component Percent Cutoff:** None Specified
- **Tie-break Rule:** Higher
**Crop Tolerances* to Blowing Soil – Table 1**

<table>
<thead>
<tr>
<th>Tolerant “T”</th>
<th>Mod. Tolerance 2 t/acre</th>
<th>Low Tolerance 1 t/acre</th>
<th>Very Low Tolerance 0 – 0.5 t/acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barley</td>
<td>Alfalfa (mature)</td>
<td>Asparagus</td>
<td>Alfalfa (seedlings)</td>
</tr>
<tr>
<td>Buckwheat</td>
<td>Corn</td>
<td>Broccoli</td>
<td>Asparagus</td>
</tr>
<tr>
<td>Flax</td>
<td>Onions (&gt;30 days)</td>
<td>Cabbage</td>
<td>Cantaloupe</td>
</tr>
<tr>
<td>Grain Sorghum</td>
<td>Orchard crops</td>
<td>Eggplant</td>
<td>Carrots</td>
</tr>
<tr>
<td>Millet</td>
<td>Soybeans</td>
<td>Garlic</td>
<td>Celery</td>
</tr>
<tr>
<td>Oats</td>
<td>Sunflowers</td>
<td>Potatoes</td>
<td>Cucumbers</td>
</tr>
<tr>
<td>Rye</td>
<td>Sweet corn</td>
<td>Sweet potatoes</td>
<td>Flowers</td>
</tr>
<tr>
<td>Wheat</td>
<td></td>
<td>Sweet Peppers</td>
<td>Green Peas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soybeans</td>
<td>Lettuce</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sugar Beets</td>
<td>Lima Beans</td>
</tr>
<tr>
<td>Tobacco</td>
<td></td>
<td></td>
<td>Muskmelons</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Onions (seedlings)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Spinach</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Squash</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Strawberries</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Snap Beans</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Table beets</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tomatoes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Watermelons</td>
</tr>
</tbody>
</table>

*Crop tolerance* is defined as the maximum wind erosion (tons/acre) that a growing crop can tolerate, from crop emergence to field stabilization, without an economic loss to crop stand, crop yield, or crop quality. Crops can be damaged by blowing soil particles, exposure of plant roots, burial of plants by drifting soil or desiccation and twisting of plants by the wind. Crop tolerances to abrasion are usually less than soil loss tolerance.

Crops may tolerate greater amounts of blowing soil than shown above, but yield and quality will be adversely affected. When crop damage is a major concern, the wind erosion control system should be designed to reduce wind erosion below the crop tolerance level during the seedling period of the affected crop.
**Centimeter = 0.3937 inches**

**Tables — Depth to Water Table — Summary By Map Unit**

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating (centimeters)</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>4B</td>
<td>Grindstone loam, 0 to 4 percent slopes</td>
<td>30</td>
<td>22.8</td>
<td>50.4%</td>
</tr>
<tr>
<td>50A</td>
<td>Shebeon-Badaxe sandy loams, 0 to 2 percent slopes</td>
<td>15</td>
<td>22.4</td>
<td>49.6%</td>
</tr>
</tbody>
</table>

**Totals for Area of Interest**

- Acres in AOI: 45.2
- Percent of AOI: 100.0%

**Description — Depth to Water Table**

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

**Rating Options — Depth to Water Table**

- **Units of Measure:** centimeters
- **Aggregation Method:** Dominant Component
Warning: Soil Ratings Map may not be valid at this scale.

You have zoomed in beyond the scale at which the soil map for this area is intended to be used. Mapping of soils is done at a particular scale. The soil surveys that comprise your AOI were mapped at 1:20,000. The design of map units and the level of detail shown in the resulting soil map are dependent on...
### Summary by Map Unit — Huron County, Michigan (MI063)

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>4B</td>
<td>Grindstone loam, 0 to percent slopes</td>
<td>Moderately well drained</td>
<td>22.8</td>
<td>50.4%</td>
</tr>
<tr>
<td>50A</td>
<td>Shebeon-Badaxe sandy loams, 0 to 2 percent slopes</td>
<td>Somewhat poorly drained</td>
<td>22.4</td>
<td>49.6%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td></td>
<td><strong>45.2</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

### Description — Drainage Class

"Drainage class (natural)" refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized: excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."

### Rating Options — Drainage Class

- **Aggregation Method:** Dominant Condition
- **Component Percent Cutoff:** None Specified
- **Tie-break Rule:** Higher
Warning: Soil Map may not be valid at this scale.
Click on “View Soil Report”
Warning: Soil Map may not be valid at this scale.

You have zoomed in beyond the scale at which the soil map for this area is intended to be used. Mapping of soils is done at a particular scale. The soil surveys that comprise your AOI were mapped at 1:20,000. The design of map units and the level of detail shown in the resulting soil map are dependent on that map 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.

Report — Nonirrigated Yields by Map Unit

Huron County, Michigan

<table>
<thead>
<tr>
<th>Map symbol and soil name</th>
<th>Land capability</th>
<th>Corn (Bu)</th>
<th>Corn silage (Tons)</th>
<th>Dry beans (Bu)</th>
<th>Sugar beets (Tons)</th>
<th>Winter wheat (Bu)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4B—Grindstone loam, 0 to 4 percent slopes</td>
<td>2s</td>
<td>120</td>
<td>19.00</td>
<td>35</td>
<td>18.90</td>
<td>59</td>
</tr>
<tr>
<td>Grindstone</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50A—Shebeon-Badaxe sandy loams, 0 to 2 percent slopes</td>
<td>2w</td>
<td>201</td>
<td>32.00</td>
<td>64</td>
<td>31.90</td>
<td>96</td>
</tr>
<tr>
<td>Shebeon</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Badaxe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Description — Nonirrigated Yields by Map Unit

The average yields per acre that can be expected of the principal crops under a high level of management are shown in this table. In any given year, yields may
Warning: Soil Map may not be valid at this scale.
You have zoomed in beyond the scale at which the soil map for this area
was created.
Fill in custom information to fit your needs.
MAP LEGEND

- Area of Interest (AOI)
- US Routes
- Major Roads
- Local Roads
- Soil Map Units

Soil Ratings:
- 0
- 28
- 48
- 66
- 86
- 134
- 160
- 180
- 220
- 250
- 310
- Not rated or not available

Political Features:
- Cities
- PLSS Township and Range
- PLSS Section

Water Features:
- Streams and Canals

Transportation:
- Roads
- Interstate Highways

MAP INFORMATION

Map Scale: 1:3,020 if printed on an A size (8.5" x 11") sheet.
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 accurate map measurements.

Source of Map: Natural Resources Conservation Service
Coordinate System: UTM Zone 17N NAD83

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

Soil Survey Area: Huron County, Michigan
Survey Area Data: Version 11, Dec 8, 2011
Date(s) aerial images were photographed: 8/28/2005

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.
Wind Erodibility Index

Wind Erodibility Index—Summary by Map Unit—Huron County, Michigan (MI063)

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating (tons per acre per year)</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>4B</td>
<td>Grindstone loam, 0 to 4 percent slopes</td>
<td>56</td>
<td>23.6</td>
<td>50.9%</td>
</tr>
<tr>
<td>50A</td>
<td>Shebeon-Badaxe sandy loams, 0 to 2 percent slopes</td>
<td>85</td>
<td>22.8</td>
<td>49.1%</td>
</tr>
<tr>
<td></td>
<td>Totals for Area of Interest</td>
<td></td>
<td>46.4</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Description

The wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Rating Options

Units of Measure: tons per acre per year
Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified
Tie-break Rule: Higher
Custom Soil Resource Report for
Huron County, Michigan
Contents

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    50A—Shebeon-Badaxe sandy loams, 0 to 2 percent slopes .... 13
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Huron County, Michigan

4B—Grindstone loam, 0 to 4 percent slopes

Map Unit Setting
Elevation: 580 to 790 feet
Mean annual precipitation: 31 to 35 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 135 to 194 days

Map Unit Composition
Grindstone and similar soils: 88 percent
Minor components: 12 percent

Description of Grindstone

Setting
Landform: Knolls on moraines, till plains, flats on moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Dense, calcareous loamy till

Properties and qualities
Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calium carbonate, maximum content: 35 percent
Available water capacity: Low (about 5.3 inches)

Interpretive groups
Land capability (nonirrigated): 2s

Typical profile
0 to 9 inches: Loam
9 to 11 inches: Clay loam
11 to 30 inches: Clay loam
30 to 60 inches: Clay loam
60 to 90 inches: Loam

Minor Components
...
<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>38</td>
<td>Capture 2EC</td>
<td>279-3114</td>
<td>Bifentrin</td>
<td>12 hrs</td>
<td>yes Mix and load 150' from wells. Not for use in permeable soils with high water table.</td>
<td>This chemical has the potential to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.</td>
</tr>
<tr>
<td>39</td>
<td>Caramba</td>
<td>7969-246</td>
<td>Metconazole</td>
<td>12 hrs</td>
<td>no Product may contaminate water through drift spray in wind. This product has a potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product.</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>Celebrity</td>
<td>7969</td>
<td>Dicamba</td>
<td>Nicosulfuron</td>
<td>Mix and load 150' from wells</td>
<td>Highly leachable, do not apply to sandy soil with less than 3% organic matter and where ground water depth is shallow. Mix and load 150' from well</td>
</tr>
<tr>
<td>41</td>
<td>Celebrity Plus</td>
<td>7969-175</td>
<td>Sodium salt of dicamba</td>
<td>12 hrs</td>
<td>No This pesticide is extremely toxic to fish, aquatic invertebrates and small mammals. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not mix or load any closer than 150' of surface water.</td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>Chlorpyrifos 4E AG</td>
<td>66222-19</td>
<td>Chlorpyrifos</td>
<td>Phosphorothioate</td>
<td>24 Hr. Yes Mix and load 150' from wells</td>
<td>Do not mix or load any closer than 150' of surface water.</td>
</tr>
</tbody>
</table>
For use in disease control in the following crops: barley, oats, rye, sugar beets, triticale and wheat

Active Ingredient: metconazole: 5-[[4-chlorophenyl)methyl]-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol 8.6%

Other Ingredients: 91.4%

Total: 100.0%

*Equivalent to 0.75 pound of metconazole per gallon.

EPA Reg. No. 7969-246

KEEP OUT OF REACH OF CHILDREN
WARNING/AVISO
Environmental Hazards
This pesticide is toxic to fish and aquatic invertebrates. Drift or runoff may be hazardous to aquatic organisms in water adjacent to treated areas. DO NOT apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark.
DO NOT contaminate water when disposing of equipment wash water or rinsate.

Groundwater Advisory
This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Surface Water Advisory
This product may contaminate water through drift of spray in wind. This product has a high potential for runoff for several months or more after application. Poorly draining soils or soils with shallow water tables are more prone to runoff that contains this product. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features, such as ponds, streams, and springs, will reduce the potential for contamination of water from rainfall runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.
Huskie™

Net Contents:

2.5 Gallons

HERBICIDE

FOR CONTROL OF CERTAIN BROADLEAF WEEDS IN WHEAT, BARLEY, CONSERVATION RESERVE PROGRAM ACRES (CRP), GRASS GROWN FOR SEED, GRAIN SORGHUM (TO INCLUDE GRAIN AND FORAGE) AND TRITICALE.

KEEP OUT OF REACH OF CHILDREN

WARNING AVISO
washed thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS
Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate any body of water and do not apply when/where conditions could favor runoff. Do not contaminate water by cleaning of equipment or disposal of equipment washwaters or rinseate. Do not allow sprays to drift onto desirable plants. Drift or runoff may adversely affect non-target plants.

Ground Water Advisory:
Pyrasulfotole is known to leach through soil into ground water under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground-water contamination.

Surface Water Advisories:
This product may contaminate water through drift of spray in wind. This product has a high potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from rainfall-runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

DIRECTIONS FOR USE
It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Do not use this product until you have read the entire label.
Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.
For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.
Web Soil Survey
http://websoilsurvey.nrcs.usda.gov/app/

Start Web Soil Survey
State – County or PLSS (Section, Township, Range)
Soil Map Tab

Click + or – to zoom in or out
Click the hand symbol to move around
Click AOI to outline field.

See Web Soil Survey PowerPoint presentation on the Huron Conservation website at;
www.huroncd.org
Or on the Michigan Water Stewardship website under “Cropping System” at;
www.mwsp.msu.edu/mwsp/cropping_systems

Contact Tom Hanselman at the Huron Conservation office at;
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Email; tom.hanselman@mi.nacdnet.net