

United States Department of Agriculture

Natural Resources Conservation Service

**Soil Survey to Web Soil Survey**

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### What is Soil Survey?

The systematic examination, description, classification, and mapping of soils in an area (SSSA)

- Relies on geomorphology, factors of soil formation, and remote sensing techniques
- Identifies important soil characteristics that determine limitations and qualities of the soil

Hans Jenny (1899-1992)

**Five Factors of Soil Formation**

- Climate
- Organisms
- Topography
- Parent material
- Time

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### What is Soil Survey?

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### Scale and Usage of Soil Surveys

Order	Scale	Minimum Polygon Size (ha)	Usage
1	1:15,840 or larger	1 or less	Intensive (e.g., general agriculture, urban planning)
2	1:12,000 to 1:31,680	0.6 to 4	Extensive (e.g., range, community planning)
3	1:20,000 to 1:63,360	1.6 to 16	
4	1:63,360 to 1:250,000	16 to 252	
5	1:250,000 to 1:1,000,000	252 to 4,000	

The soils in each delineation are identified by field observations and by remotely sensed data. Boundaries are verified at closely spaced intervals.

Soil boundaries are plotted by observation and interpretation of remotely sensed data. They are verified by traversing representative areas and by some transects.

All Wisconsin soil survey manuscripts were inventoried at 1:20,000 or 1:15,840 for Order 2.

Modern, post 2000s initial and remap inventories completed at 1:12,000.

All update projects at completed at 1:12,000 mapping scale.

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### SSURGO vs STATSGO

**SSURGO:** Detailed Soil Maps (Order 2, originally 1:15,840 scale)  
**STATSGO:** General Soils Map (Order 4, 1:250,000 scale)

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### History of Wisconsin Soil Survey

- 1882:** First soil map in WI published
- 1899:** Federal soil survey work began
- 1933:** Soil Erosion Service formed in Dept. of Interior
- 1935:** SES to Soil Conservation Service in Dept. of Ag
- 1960s-1990s:** large workload of soil survey completed county by county
- 1994:** SCS to Natural Resource Conservation Service
- 2000:** State support – NRCS agreement to complete initial for remaining areas of the state
- 2006:** Wisconsin became 10<sup>th</sup> state with complete coverage

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Soil Survey Area	Soil Series	Survey Area	Version	Access	Size	Download Link
Adams County, Wisconsin	W803	Tular and Spotted, complete	Survey Area: Version 22, Sep 7, 2022 Tular: Version 26, Sep 9, 2022 Spotted: Version 22, Sep 9, 2022	soils_wl_2003 Access 2003 Version 36	20.5 MB	soils_wl_2003_soils_wl_2003_2202-09-092.zip
Apheland County, Wisconsin	W803	Tular and Spotted, complete	Survey Area: Version 21, Sep 6, 2022 Tular: Version 21, Sep 6, 2022 Spotted: Version 21, Sep 10, 2019	soils_wl_2003 Access 2003 Version 36	43.0 MB	soils_wl_2003_soils_wl_2003_2202-09-061.zip
Barren County, Wisconsin	W805	Tular and Spotted, complete	Survey Area: Version 22, Sep 7, 2022 Tular: Version 26, Sep 7, 2022	soils_wl_2003 Access 2003 Version 36	23.0 MB	soils_wl_2003_soils_wl_2003_2202-09-073.zip

### Soil Map Tab – Map Unit Descriptions

**Map Unit Descriptions**

**Map Unit Legend**

Map Unit	Soil	Area	Percentage
3035	Richwood silty clay loam, 0 to 3 percent	43.9	1.7%
3336	Richwood silty clay loam, 0 to 3 percent	28.8	0.9%
3338	Toddville silty clay loam, 0 to 3 percent	181.6	4.4%
3676	Richwood silty clay loam, 0 to 3 percent	129.7	3.2%
3448	Richwood silty clay loam, 0 to 3 percent	16.8	0.4%
4036	Richwood silty clay loam, 0 to 3 percent	131.2	3.2%

**Map Unit Description**

**Richwood, Typic**

Richwood, Typic, is a very fine, silty, clay loam soil. It is a member of the Richwood soil family. The soil is formed in a flood plain. The soil is composed of silty clay loam, silty clay, and silty sand. The soil is characterized by a high water table. The soil is susceptible to compaction. The soil is not suitable for agriculture. The soil is not suitable for construction. The soil is not suitable for residential development. The soil is not suitable for industrial development. The soil is not suitable for recreation. The soil is not suitable for wildlife habitat. The soil is not suitable for riparian habitat. The soil is not suitable for wetland habitat. The soil is not suitable for forest habitat. The soil is not suitable for grassland habitat. The soil is not suitable for rangeland habitat. The soil is not suitable for pasture habitat. The soil is not suitable for cropland habitat. The soil is not suitable for woodland habitat. The soil is not suitable for shrubland habitat. The soil is not suitable for tundra habitat. The soil is not suitable for desert habitat. The soil is not suitable for steppe habitat. The soil is not suitable for savanna habitat. The soil is not suitable for grassland habitat. The soil is not suitable for rangeland habitat. The soil is not suitable for pasture habitat. The soil is not suitable for cropland habitat. The soil is not suitable for woodland habitat. The soil is not suitable for shrubland habitat. The soil is not suitable for tundra habitat. The soil is not suitable for desert habitat. The soil is not suitable for steppe habitat. The soil is not suitable for savanna habitat.

### Soil Data Explorer Tab

**Soil Data Explorer**

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### Soil Data Explorer Tab – Suitabilities and Limitations

Example: Susceptibility to compaction

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### Soil Data Explorer Tab – Soil Properties

Example: Organic Matter Content

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### Aggregation Methods

**Dominant Component:** Component with highest percentage

**Dominant Condition:** Most common value shared between map unit components

**Minimum or Maximum:** Displays values from either component with maximum or minimum value

**Weighted Average:** Averages numerical values based on component percentages

**Limiting Component:** Uses values from most limiting component in map unit. Ex. Most susceptible to compaction

**Map Unit Composition**

**Algonsee-Kalamville complex, river valleys, 0 to 3 percent slopes, frequently flooded (FISMA)**

- 50% Algonsee  
Geomorphic Position: flood plains / Toe slope
- 30% Kalamville  
Geomorphic Position: flood plains / Toe slope  
Soil texture: silty clay loam / Toe slope
- 4% Richwood  
Geomorphic Position: flood plains / Summit
- 3% Water  
Moisture class: r1a
- 2% Northland  
Geomorphic Position: flood plains
- 2% Riverwash  
Geomorphic Position: flood plains / Toe slope  
Moisture class: r1a

### Soil Data Explorer Tab – Soil Reports

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