

SOILS OF *Grant County* WISCONSIN

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This folder presents an introductory soil map and report for Grant County, Wisconsin. A large detailed soil map in color and accompanying descriptive bulletin will be published later by the U. S. Department of Agriculture. Uncolored copies of this detailed map will be available meanwhile at the office of the County Agent and at the Soil Conservation District Office, Lancaster, Wisconsin, at the Soils Department, College of Agriculture, and at the office of the State Geologist, at Madison.

How to Use this Map and Report

To find the land area you are interested in, follow the lines on the map which show where the roads, rivers and section lines are. Notice what color is used for it on the map.

- Green means first-class farm land.
- Yellow means second-class farm land.
- Red means third-class farm land.
- Blue means fourth-class farm land.
- Brown means fifth-class farm land.

The numbers and letters (soil symbols such as 8 or 8L) in the soil areas on the map are the same as the numbers and letters beside the blocks of color in the list (legend) at the bottom of the map. Find the color block which has the same number as the land area you are studying. In each color block in the legend are letters, such as FDsVG, which tell whether the soil is found on the upland or valley bottoms, whether it is dark or light in color, whether it is sandy or clayey, deep or shallow, well drained or poorly drained. To find out what these letters mean, look them up in the table entitled "How to Read the Soil Symbols in the Color Blocks of the Legend". This table is just above the legend, below the map.

The names of the soils are given under the color blocks in the legend. Each of the soils is described briefly on the back of this map (pages 4, 5, 6). Each soil has its own capacity for producing crops. The chapter on crop yields on page 8 tells what yields can be expected from the soils of Grant County. On page 9 are general recommendations for crop rotations and fertilizers to increase yields. The climate, the system of farming, and the history of the county are discussed on pages 10, 11, and 12.

The soil map shows the location of each section by township and range numbers. Streams, roads, villages, and cities are indicated on the map. The areas in color show not only the surface extent of the soils, but also tell what the soil is like to a depth of three or four feet.



SOIL SURVEY DIVISION
WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY
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How to Know Your Soils

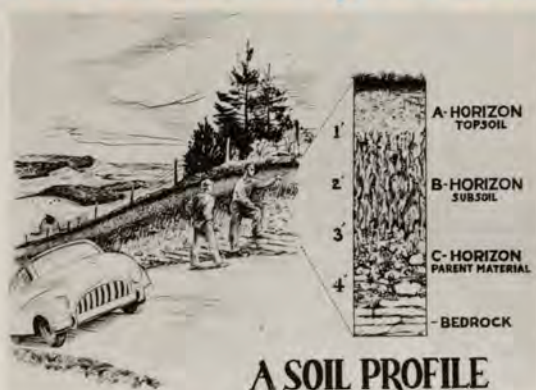


Figure 1.

A SOIL PROFILE. To find out what a soil is like, look at the side of a newly-dug pit or fresh road cut. Above is a sketch of one type of soil. A vertical cross-section of a soil, made up of layers of surface soil and subsoil, is called a soil profile. For example, the Dubuque soil has four layers or "horizons":

- (1) Dark colored surface soil (A_1)
- (2) Light colored subsurface soil (A_2)
- (3) Brown subsoil (B)
- (4) Red stony clay (C)

The respective horizons or layers differ from soil to soil, as can be seen by reading the soil descriptions (pages 4, 5, 6). Each soil or soil group has its own particular kinds of horizons and profile. The character of the lower horizons is very important, sometimes as much as the surface layer. Soils are classified according to the nature of their profiles, which usually extend to a depth of 4 or more feet.

SOILS CHANGE FROM PLACE TO PLACE. As you cross a field, look for differences in soil. These differences may be in one layer or in several layers of the soil profile. A buried gravel bed may merge into a buried clay bed. Or the surface soil may change from a flour-like silt loam to a gritty sandy loam. All such changes in soils from place to place can be discovered only by careful observation and use of a spade, soil auger, or post-hole digger for inspection of the soil below the surface. Soil surveyors have made thousands of inspections of both the surface and lower layers of the soils of Grant County. The surveyors drew lines—soil boundaries—on the map wherever one kind of soil changes to another kind of soil. Figures 2 and 3 give sketches of some of the kinds of soils found in various positions on the sides of the hills and valleys of Grant County.

WHAT MADE THE SOILS WHAT THEY ARE. The soils of the area now called Grant County were formed over a period of thousands of years. Wind-carried material was dropped as a blanket of dust called "loess" over the surface of soils and rocks as then exposed. From this fertile "loess" and underlying material, soils were formed through the action of water, growth of roots of trees and prairie grass, and myriads of soil organisms, such as molds and bacteria. Deeper soils were formed on level land than on steep slopes. And where the prairie grass grew the soils became darker than where trees prevailed. Soils formed from bedrock are found on some steep valley slopes.

What the Soil Map Shows

The soil map shows where the various kinds of soils in Grant County occur. Each soil has been labeled with numbers and letters (soil symbols) on the map, such as 8 or 8L. Corresponding letter symbols are given in the color blocks of the legend below the map, and these symbols are explained in the table just above the legend. The letters stand for the following chief properties of the soils of Grant County.

LAY OF THE LAND. Grant County has wide bottoms (B), flats (F) or benches, narrow ravines (R), valley slopes (V), and ridgetops (U). The bottoms have fertile soils, and where these are well drained crop yields are high, providing floods do not cause serious damage. In narrow ravines are soils suited to pasture (see Figure 6). Flats are level, well drained, and generally have loamy, productive soils. The ridgetops are level to sloping and are covered by dark or light colored soils well suited to agriculture. On the valley slopes are steep soils suited to pasture and forestry.

COLOR OF THE TOPSOIL. Some soils of Grant County, such as Tama silt loam, are dark in color (D) to a depth of eight to twenty inches. Other soils are light colored (L) at a depth of four inches or even less. Most of the dark soils were under prairie grass, and most light colored soils were originally in forest. The dark soils have been the more productive of farm crops from the start.

TEXTURE (Coarseness or Fineness of the Surface Soil). Surface soil is made up of a sticky clay, flour-like silt, gritty sand, and organic matter. The principal kinds are:

- sc Silty clay loam soil—contains about 35% clay
- s Silt loam soil—contains about 65% silt
- l Loam soil—contains about 40% silt and 35% sand
- sl Sandy loam soil—contains about 60% sand
- s Sand soil—contains about 90% sand

Silt loams and loams are the best for general farming. They contain enough clay and silt to store water and plant nutrients, and enough sand to form a loose, open soil.

DEPTH TO SANDY, GRAVELLY OR STONY MATERIAL. A good soil must be 2 to 4 feet deep to hold ample water and nutrients for plant growth. In Grant County most soils are sufficiently deep except on rocky bluffs and steep valley slopes.

DRAINAGE UNDER NATURAL SOIL CONDITIONS. Internal drainage—wetness or droughtiness—of a soil influences crop growth. To be highly productive, a soil should be neither water-logged nor seriously droughty. Fortunately, most of Grant County has soils with good natural drainage. Soils with fair, slow, or poor drainage have mottled yellowish brown and bluish gray colors in the subsoil.

SOIL TYPE NAMES. For technical purposes, soils are classified into series named after places. For example, the Dubuque silt loam (number 8L on the map) was named for Dubuque, Iowa, near which this soil was first studied. The name is given in parentheses under the proper color block in the legend below the map.

GENERAL DESCRIPTION OF THE SOILS OF GRANT COUNTY

FIVE SOILS COVER MOST OF GRANT COUNTY.
Although there are many kinds of soils, only five are extensive in Grant County:

Soil Symbol	Name of Soil	% of Area of County	General Rating
3	Tama silt loam (and related soils)	12	First Class
7	Fayette silt loam (and related soils)	26	Second Class
8	Deep Dubuque silt loam (and related soils)	18	Second Class
14	Shallow Dubuque silt loam (and related soils)	18	Third Class
25	Stony Land	14	Fifth Class
		88	

All of the soils of Grant County are grouped on the soil map and in this introductory report into five classes which indicate general ratings on the basis of agricultural productivity:

GENERAL INDEX LIST OF THE SOILS OF GRANT COUNTY

FIRST CLASS SOILS

(Good Farm Land, shown in shades of green on the map)

Soil Symbol on the Map and Legend	Name of Soil	Percentage of the Area of the County
1 (FDsVg)	Richwood and Toddville silt loams -	0.1
2 (FLsVg)	Bertrand and Jackson silt loams - -	0.4
3 (UDsVg)	Tama, Downs, and Muscatine silt loams - - - - -	12.0
		12.5
		12.5

SECOND CLASS SOILS

(Fair to Good Farm Land,
shown in shades of yellow on the map)

4 (BLsVg)	Arenzville, Ray, Orion, and Lawson silt loams - - - - -	4.3
5 (FL1Mg)	Alvin loam - - - - -	0.4
6 (FD1Mg)	Dakota loam - - - - -	0.1
7 (ULsVg)	Fayette, Stronghurst, and Seaton silt loams - - - - -	26.4
8L (ULsDg)	Dubuque and Dodgeville silt loams, deep phases - - - - -	18.0
8D (UDsDg)	Chaseburg, Judson, and Lindstrom silt loams, gently sloping phases - - -	0.1
9L (RLsVg)		49.3
9D (RDsVg)		49.3

THIRD CLASS SOILS

(Poor to Fair Farm Land,
shown in shades of red on the map)

10L (BLsVs)	Alluvial soils, undifferentiated, silt loams, fair to poor drainage - - -	1.9
10D (BDsVs)	Curran silt loam - - - - -	0.1
11 (FLsVs)	Medary silt loam (over red clay) - -	0.2
12 (FLsMg)	Dakota sandy loam - - - - -	0.1
13 (FDslMe)	Dubuque and Dodgeville shallow silt loams; Gale silt loam - - - - -	18.3
14L (VLsMg)	Fayette silt loam, valley phase - - -	0.4
14D (VDsMg)	Lindstrom silt loam, steep phase - -	0.1
15 (VLsVg)	Hixton and Hesch loams - - - - -	0.9
16 (VDsVg)		22.2
17L (VL1Mg)	Cashton silt loam - - - - -	0.1
17D (VD1Mg)	Garwin silty clay loam - - - - -	0.1
18 (UDsVs)		22.2
19 (UDscVp)		22.2

General Description of Soils of Grant County

(Continued)

FOURTH CLASS SOILS

(Poor Farm Land, shown in blue on the map)

20	(FDsLe)	Sparta loamy sand - - - - -	1.2	1.2
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FIFTH CLASS SOILS

(Pasture and Forest Land,
shown in shades of brown on the map)

21	(BDpVp)	Marsh soils - - - - -	0.3	
22	(FLsLe)	Sparta fine sand, dune phase - - -	0.4	
23	(VDsLg)	Sogn and Dubuque stony silt loams -	0.1	
24	(VLsLe)	Boone, Chelsea and Lamont sands -	0.3	
25	(VLrLe)	Stony Land - - - - -	13.7	
			14.8	14.8
				100.0

FIRST CLASS SOILS (Good Farm Land)

The first class soils are the best agricultural soils of the county. They are level to rolling silt loams. Their waterholding capacity is good and drainage is good. These soils are usually over four feet deep to underlying bedrock, stony material, sand or gravel.

SILT LOAMS ON THE FLATS: 1 (FDsVg, Richwood and Toddville), 2 (FLsVg, Bertrand and Jackson). Richwood silt loam developed under prairie grass from 42 inches or more of silty material resting on sand, gravel, or bedrock. Toddville is a darker, moderately well drained soil developed in moist sites in the prairie areas. Bertrand silt loam is a light colored deep soil, developed under forest. Jackson is the moderately well drained soil associated with Bertrand. All four of these soils are on natural flats or high terrace benches in the large river valleys.

VERY DEEP SILT LOAMS OF THE UPLAND PRAIRIES: 3 (UDsVG, Tama, Downs, and Muscatine). Tama silt loam formed under prairie grass from 42 inches or more of wind-blown calcareous silt ("loess") resting on bedrock. Muscatine silt loam is the moderately well drained (mottled below a depth of 20 inches) deep prairie soil associated with Tama. Downs silt loam is slightly lighter in color than Tama. The Downs developed at the edges of the prairie, where scattered trees were invading the natural grasslands.

SECOND CLASS SOILS (Fair to Good Farm Land)

The soils in this class rate somewhat lower than the first class soils because of shallowness, droughtiness or low bottom position.

SOILS WITH GOOD TO FAIR DRAINAGE ON THE BOTTOMS: 4 (BLsVg, Arenzville, Ray, Orion, and Lawson). Arenzville silt loam is a brown, deep fertile soil which receives several inches of new soil by flooding nearly every year. The Ray silt loam, found in small valleys, consists of one to three feet of light brown alluvium over a buried dark brown soil. Orion silt loam differs from the Arenzville in being slightly less well drained. Lawson resembles Arenzville, but is darker and more fertile.

LOAMS OF THE FLATS: 5 (FL1Mg, Alvin), 6 (FD1Mg, Dakota). The Alvin sandy loam developed under forest from 2 to 2½ feet of sandy loam overlying stratified sands. The Dakota loam is a darker soil developed under prairie grass over stratified sands.

DEEP AND VERY DEEP SILT LOAMS OF THE UPLAND: 7 (ULsVg, Fayette, Stronghurst and Seaton), 8L-8D (ULsDg-UDsDg, Dubuque and Dodgeville, deep phases), 9L-9D (RLsVg-RDsVg, Chaseburg, Judson, Lindstrom, gently sloping). Fayette and Seaton silt loams are very deep soils developed under forest on wind-blown calcareous silt ("loess") resting on bedrock. They are lighter colored than Tama and Downs. Seaton contains less clay and fine silt than Fayette. Stronghurst is a slightly wetter soil than Fayette, as indicated by mottled coloring below a depth of 20 inches. The Dubuque and Dodgeville silt loams are the light colored and dark colored soils, respectively, developed from 18 inches to 42 inches of wind-blown silt resting on cherty red clay over dolomitic bedrock. Chaseburg silt loam is found in the bottoms of narrow ravines and small valleys. It resembles the Fayette soil, but is more gritty and contains less clay in the subsoil. The Judson silt loam is similar to Chaseburg but is dark in color. Lindstrom resembles Downs and Tama, but is found on valley slopes, rather than on ridge-tops.

General Description of Soils of Grant County

(Continued)

THIRD CLASS SOILS (Poor to Fair Farm Land)

The soils in this class are rated lower than the second class soils because of poor drainage, droughtiness, shallowness, or steep slopes.

SOILS WITH FAIR TO POOR DRAINAGE ON THE BOTTOMS (mottled at 6-16"): 10L-10D (BlVs-BDsVs, Alluvial soils, undifferentiated, fair to poor drainage). These soils, subject to flooding nearly every year, occur in wide areas in large valleys and in narrow strips in the small valleys.

SOILS WITH SLOW TO EXCESSIVE DRAINAGE ON THE FLATS: 11 (FlVs, Curran), 12 (FLsMg, Medary), 13 (FDsMe, Dakota). The Curran silt loam resembles the Bertrand and Jackson (2,FLsVg) soils, but is less well drained than they. The Medary silt loam is underlain at 30-40 inches by reddish brown clay. The Dakota sandy loam is a dark, droughty soil.

SILT LOAMS AND LOAMS OF THE VALLEY SLOPES: 14L-14D (VLsMg-VDsMg, shallow Dubuque and Dodgeville, Gale), 15 (VLsVg, valley Fayette), 16 (VDsVg, steep Lindstrom), 17L-17D (VLlMg, VDlMg, Hixton and Hesch). The Dubuque and Dodgeville silt loams are light colored and dark colored soils developed from about 18 inches of wind-blown silt resting on cherty red clay over dolomitic limestone bedrock. Gale silt loam overlies sandstone bedrock at 24-30 inches. Fayette and Lindstrom silt loams are deep light colored and dark colored soils on steep valley slopes. Hixton and Hesch loams are light colored and dark colored soils which overlie fine-grained sandstone at 18-28 inches.

UPLAND SOILS WITH SLOW TO POOR DRAINAGE: 18 (UDsVs, Cashton), 19 (UDsVp, Garwin). The Cashton silt loam resembles the Downs (3) but is slowly drained. The Garwin silty clay loam is a wet soil associated with the fairly well drained Muscatine and well drained Tama soils (3).

FOURTH CLASS SOILS (Poor Farm Land)

The soil of this class is more droughty and shallower than any discussed thus far.

LOAMY SAND SOIL OF THE FLATS: 20 (FDsLe, Sparta). The Sparta loamy sand is a fairly dark, very droughty soil which overlies loose sand at 12-30 inches.

FIFTH CLASS SOILS (Pasture and Forest Land)

The soils of this class are non-agricultural because of excessive stoniness, steepness, droughtiness, or poor drainage. They are best suited to pasture, to forestry, to wildlife refuges, and to the development of recreational areas.

MARSH SOILS: 21 (BDpVp). These black and bluish gray mucks, silt loams, and sandy loams are very wet during most of the year.

DUNES OF THE FLATS: 22 (FLsLe, Sparta). The Sparta fine sand, dune phase, is found on sandy flats in the Wisconsin River Valley.

STEEP STONY SILT LOAMS AND LOAMS OF THE VALLEY SLOPES: 23 (VDsLg, Sogn and Dubuque). These are cherty soils which are 8-18 inches deep to reddish brown stony clay and bedrock dolomitic limestone.

STEEP SANDY SOILS OF THE VALLEY SLOPES: 24 (VLsLe, Boone, Chelsea and Lamont). The Chelsea sand is a very droughty, shallow soil found on deposits of stratified and unstratified sand near the foot of steep valley slopes. The Lamont loamy sand is found on the upland ridges near the Mississippi River. It appears to have developed from a coarse-textured wind-laid deposit. Boone formed from sandstone.

STONY LAND: 25 (VLrLe). Stony land includes cliffs and rocky slopes where the soil is shallow or where rocks outcrop.

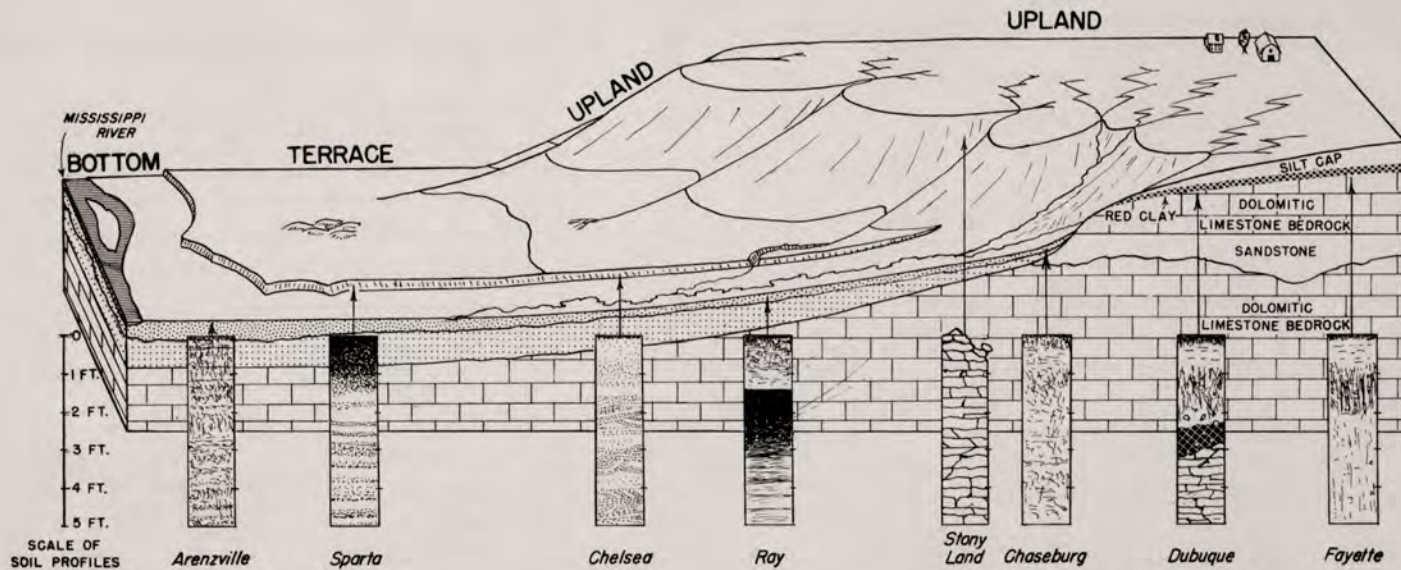


Figure 2. This diagram shows the relative positions of some typical soils of the bottoms, flats, valley slopes and ridgetops in Grant County.

Crop Yields Vary With The Soils In Grant County

The five most extensive soils in Grant County (see page 4) and 37 others have been grouped under 25 numbers and 5 classes. The first four classes of soils are considered suitable for cropland or pasture. The soils differ widely in their capacities to produce crops. The soils also differ in their abilities to respond to fertilizers and conservation practices.

AVERAGE CORN YIELDS ON GRANT COUNTY SOILS. Although much higher yields of corn can be obtained with best soil management, average yields in recent years in Grant County have been estimated by various observers as follows: First class soils, 65 bushels per acre; Second class soils, 55 bushels; Third class soils, 40 bushels; and Fourth class soils, 25 bushels. The lowest yield was 18 bushels on Sparta loamy sand, and the highest common yield under fairly good management was 70 bushels for Tama silt loam.

AVERAGE OATS YIELDS ON GRANT COUNTY SOILS.¹ First class soils have been producing an estimated 55 bushels of oats under slightly better than average management. Second class soils have yielded 49 bushels; Third class soils, 41 bushels; and Fourth class soils, 26 bushels. Sparta loamy sand went as low as 21 bushels, and Tama silt loam, 65 bushels under fairly good management.

AVERAGE CORN SILAGE YIELDS ON GRANT COUNTY SOILS.¹ First class soils have been giving 10 tons of corn silage to the acre, according to estimates. Second class soils have produced 9 tons; Third class soils, 7 tons; and Fourth class soils, 4 tons. Sparta loamy sand showed a low of 3.5 tons, and Tama silt loam a high of 11 tons per acre under fairly good management.

AVERAGE ALFALFA HAY YIELDS ON GRANT COUNTY SOILS.¹ The estimated average yield under slightly better than average management on first class soils has been 3.2 tons of alfalfa hay per acre. Second class soils yielded 3 tons; Third class soils, 2½ tons; and Fourth class soils, 1½ tons. One ton was the lowest common figure, from fields of Sparta loamy sand. Tama silt loam has produced 4 tons on some fields where management was very good.

AVERAGE CLOVER-TIMOTHY YIELDS ON GRANT COUNTY SOILS.¹ First class soils gave 2.3 tons per acre; Second class soils, 2.2 tons; Third class soils, 1.8 tons; and Fourth class soils, 1.7 tons. A little over a half a ton has been a common yield in some fields of Sparta loamy sand, while 2.6 tons per acre are frequent on Tama silt loam.

PASTURE YIELDS (in number of days a cow can profitably graze on one acre).¹ First class soils have been supporting a cow on an acre for 95 days; Second class soils, for 87 days; Third class soils, 72 days; and Fourth class soils, 40 days. Sparta loamy sand frequently drops as low as 30 days in a given season. Tama silt loam often supports a cow for 120 days on an acre.

¹The information in this section is adapted from an unpublished thesis at the College of Agriculture written by A. J. Klingelhoets.

How to Increase Crop Yields On the Soils of Grant County

Lime. Most of the soils in Grant County which have not been limed are acid. For best results with most farm crops, especially clover and alfalfa, fields should be limed according to the soil test. A farmer can have his soil tested by his County Agent, Vocational Agriculture Teacher or by sending samples to the State Soil Testing Laboratory, College of Agriculture, Madison, Wisconsin. Field experiments in Grant County show that about 70 lbs. of available phosphorus and 200 lbs. of available potassium are needed for good yields.

Function of Plant Food In Commercial Fertilizer. A 3-12-12 fertilizer contains 3 lbs. of nitrogen (N), 12 lbs. of phosphate (P_2O_5) and 12 lbs. of potash (K_2O) per 100 lbs. Nitrogen promotes rapid lush growth of plants and gives them a dark green color. Phosphate stimulates root formation, hastens maturity and aids in seed formation. Acid soil ties up some of the available phosphorus. Potash gives plants disease resistance, lessens danger of lodging, gives legumes winter hardiness and increases yields.

Renovation of Permanent Pastures. Yields of grass from permanent pastures can be increased three to five times by applying lime and fertilizer according to the soil test and seeding to a mixture of 8 lbs. brome grass, 8 lbs. alfalfa and 3 lbs. of red clover in a seed-bed prepared by either digging with a field cultivator or shallow plowing.

Nitrogen for Small Grain. There are many fields in Grant County, especially on steep slopes, that will respond to the application of nitrogen. Yields of grain are increased from 20 to 50 per cent on soils low in nitrogen. On fertile soils the nitrogen will tend to increase lodging.

Corn Feeds Heavily on Nitrogen. Yields of corn can be doubled on low fertility fields by plowing down 700-800 lbs. of 8-8-8 fertilizer per acre. Yields can also be boosted by side-dressing corn with 125-150 lbs. ammonium nitrate at cultivating time on fields low in available nitrogen. Early firing of corn, commonly thought of as dry weather firing, is principally due to the lack of available nitrogen in the soil.

Conserve Barnyard Manure. On livestock farms in Grant County, manure from livestock supplies valuable plant food and organic matter. Best returns from it are obtained by spreading daily on land which is not subject to severe erosion. A ton of barnyard manure contains about 10 lbs. of nitrogen, 5 lbs. of phosphate and 10 lbs. of potash.

Green Manure Crops Increase Organic Matter in the Soil. Plowing under a good growth of sweet clover, alfalfa or rye will help build up the organic matter of the soil and increase the nitrogen content. Soils high in organic matter are productive, easy to work, and have a high water holding capacity.

Use Soil Conservation Practices. One of the principal aids to erosion control is a crop rotation which includes two or three years of hay or pasture. In addition, contour strip cropping, terracing, and grass waterways are needed on rolling to steep land. Farmers can receive help on these practices through the Grant County Soil Conservation District office at Lancaster.

Grant County and Its Farms

LAY OF THE LAND. The county is roughly triangular in shape with one of its sides bounded by the Wisconsin River and one by the Mississippi River. The total area is 1,137 square miles or 740,480 acres. Water covers 2,560 acres, most of which is under the large rivers. The sketch in the upper left-hand corner of the map side of this sheet shows Military Ridge as a white band running from east to west, with somewhat narrower ridges branching off to the north and south. On these ridges the main cities and villages and the best farm land are located. Elevations are 600 feet above sea level at the southwest corner of the county to 620 on the west, to 690 on the northeast. Military Ridge reaches an elevation of 1,211 feet at Mt. Ida, and the smooth upland slopes south to elevations around 900 feet. West Platte Mound, just across the line in Lafayette County, reaches 1420 feet above sea level, and Sinsinawa Mound, 1185 feet. These two mounds have a local relief of about 300 feet. The bluffs along the Mississippi River are 500 feet high near Prairie du Chien, 300 near Cassville, and 260 near Dubuque.

BEDROCK AND LOESS. Military Ridge is a divide between streams flowing north down the steep slope of the Galena-Platteville bluff or cuesta, and streams flowing south down the long, gentle back-slope of the same cuesta. The Galena-Platteville bedrocks are resistant dolomitic limestones about 300 feet thick. There are some shale layers and a thin decomposed volcanic ash bed, called bentonite, near the bottom of this bedrock formation. Below the Galena-Platteville rocks are about 200 feet of St. Peter sandstone, then 200 feet of the lower Magnesian dolomitic limestone, and finally, at the bottom of the Wisconsin River Valley, Cambrian sandstone. At Platteville Mound and Sinsinawa Mound, Maquoketa shale overlies the Galena-Platteville. The Maquoketa shale is rather extensive in the southeastern corner of the county.

The deposits of lead and zinc ores in the Galena dolomitic limestone have been mined for years in the county. The dolomite itself has been crushed for road material and for agricultural lime. There are approximately 300 dolomitic limestone quarries in the county, some of which are abandoned. In the Wisconsin River Valley are about a half dozen sand and gravel pits.

Thousands of years ago, during the ice age, winds from the southwest blew dust off the Mississippi valley bottom onto the upland. This made a fertile soil material overlying the bedrock. Between Beetown and Cassville this dust, called "loess", is from 8 to 20 feet thick on the smooth upland areas; between Beetown and Fennimore, it is 4 to 8 feet thick in places; it is about 4 feet thick northeast of Fennimore. Directly beneath this loess blanket is a cherty reddish brown clay weathered from the dolomitic limestone below.

The ice-sheet did not enter Grant County. Therefore, the upland is well dissected by the Grant, Platte, and other rivers. The power of these streams in flood is great after unusually heavy rains. Sand and gravel fill the bottoms of the Wisconsin and Mississippi River valleys to a depth of about 100 feet. In these valleys are some high terraces or benches of gravel, sand, silt and clay deposited by meltwaters which came from the glaciers.

CLIMATE. The average length of the frost-free period is about 160 days in Grant County (see Figure 4). This period is considered to be the growing season for corn, potatoes, and other tender crops. The latest and earliest frosts on record come on May 27 and September 10, respectively. The average dates at Lancaster are May 1 and October 6, giving an average frost-free season of 157 days. Small grains and hay have a growing season about 6 weeks longer. The highest temperature ever recorded at Lancaster was 108°F., the lowest, -30°F. The mean annual temperature is 46°F., the mean July temperature, 72.1°F., and the mean January temperature, 16.6°F. The mean annual precipitation is 32.2 inches, nearly two thirds of which comes during the growing season. On the average, 36 inches of snow falls during the course of the winter.

WATER SUPPLY. There are approximately 1,000 springs in the stream valleys of Grant County. About 50 artificial ponds had been built by 1950 on land standing above the springs and permanent streams. However, most of the water for farm home and barn use is pumped from the St. Peter and Cambrian sandstone formations at depths of 100 to 200 feet. The water table stands at about 50 to 150 feet below the surface. The water is hard. Analyses of samples from 9 drilled city wells show an average of 406 parts per million of dissolved solids. Spring water at Lancaster contains 283 parts per million of dissolved solids. A drilled well at Montfort furnishes water having 583 ppm.

SETTLEMENT AND DEVELOPMENT. Grant County was probably visited by Marquette and Joliet, who in 1673 portaged from the Fox River to the Wisconsin River. By 1725 there was a trading post in what is now the town of Bloomington. A fur trader named Grant had his headquarters in Prairie du Chien and operated in the Grant River Valley. The river, and later, the county itself, were named after him.

Lead miners came from Kentucky, Tennessee, Missouri and Illinois about 1825, and established the village of Hazel Green. From 1830-50 Cornish miners immigrated to the area. The English thus formed the predominant immigrant group. By 1905 the percentage of English in the total population had dropped from 12% to 2%, while Germans accounted for more than 5% of the population. Bohemians constituted another group of foreign-born residents. Population figures taken at intervals are: 1850 - 16,169; 1860 - 31,189; 1870 - 37,979; 1900 - 38,881; 1920 - 39,044; 1940 - 40,639.

By 1870 the fertile prairie soils of the area were settled and 4,301 farms were established, the largest number of farms ever reported by a census in Grant County. In 1945 there were 3,842 farms, occupying 93.4 percent of the total land area. Fifty per cent of the farm land was in cropland. The average size of farm had changed from 146 acres in 1880 to 179 acres in 1945. Popular sizes were 120 acres, 160 acres, and 250 acres. There are five incorporated places in the county, including Lancaster (3,245) and Platteville (5,718). In 1940, 81% of the total population lived on farms or in villages. Forty-eight percent of the people depended directly on farming for a livelihood.

HIGHWAYS. There are approximately 85 miles of concrete highways and 370 miles of bituminous highways in Grant County. A network of gravel roads connects the farms and villages with these main arteries.

Agricultural Production

Grant County ranks first among Wisconsin counties in hog production. The 1950 census listed a total of 176,504 hogs on farms, compared to a total of 104,049 in 1945. Forty-six percent of the total farm income is derived from the sale of hogs. The total number of hogs sold from Grant County farms during 1949 was 239,610.

The sale of milk provides the second most important source of income (28%). Although there are fewer cattle in the county than in 1944, milk production has increased to 7,089,997 pounds. In 1950, Grant County had 119,934 cattle. However, only 45% of these were milk cows. This shows the presence of many beef type cattle.

Grant County also ranks first in the State in the total number of stock sheep. In 1950 this figure was 16,959.

A peak in numbers of chickens was reached in 1944. In 1949, 236,055 chickens were marketed and 3,165,326 dozen eggs were sold. Twenty-eight farms raised 10,308 turkeys in 1950.

For many years farmers have fed their crops to livestock. They have found that there is more profit from the sale of livestock and livestock products than from the sale of crops.

Corn is the leading crop in the county. In 1949, 104,989 acres of corn were harvested, with an average yield of 60.8 bushels per acre. A record low of 9,959 acres of corn were cut for silage. The 160-day growing season and warm summer temperatures in Grant County are favorable to corn production.

Tame hay has been the second most important crop. In 1949 there were 106,108 acres in hay. Hay cropland has increased since 1934 as a result of less winter killing of the plants, adequate rainfall, and increased interest in soil conservation. Alfalfa-Brome hay mixtures are the most productive. Since 1924 the total acreage of alfalfa has increased from 2,350 acres to 60,377 in 1949. Clover and Timothy have shown a downward trend from 86,426 in 1944 to 42,692 in 1949. Seed harvested from the various hay varieties totalled 6,624 bushels in 1949. Eighty-seven per cent was red clover seed.

Oats rank third in importance. In 1949, 79,536 acres were devoted to this crop. This is a decrease over past years. Of the other small grains, barley totalled 674 acres; wheat, 1,808 acres; rye, 512 acres; and buckwheat, 44 acres. A total of 777 acres of soybeans were grown for beans and hay in 1949, as compared to 1,778 acres in 1944.

Small crops sold for cash were as follows for 1949: tobacco, 145,490 pounds; sweet corn, 577 acres; peas, 840 acres.

Farm woodlots in the fiscal year 1944-45 yielded \$268,100 worth of fuel wood, fence posts, saw logs, railroad ties and pulpwood. Woodland pastures yield one-tenth as much forage per acre as open pastures, and yield virtually no new timber. Woodland pastures have therefore been found unproductive of both forage and timber, as compared with fence woodlots and open pastures.

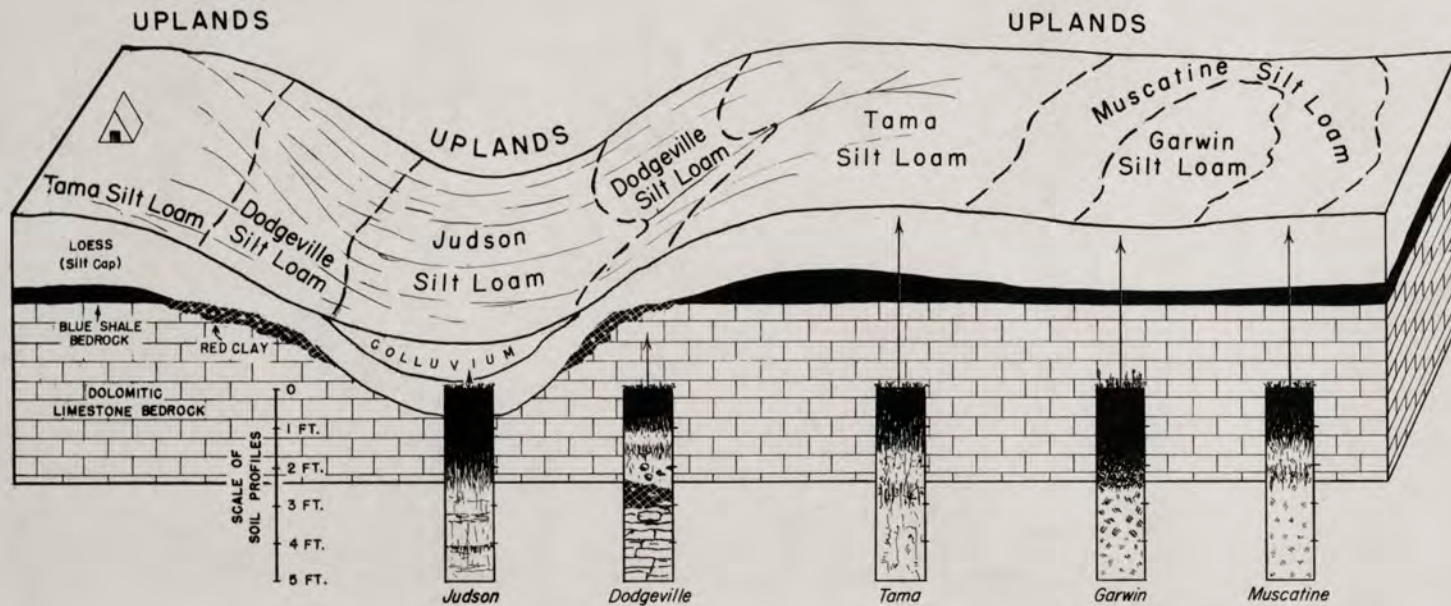


Figure 3. This diagram shows the relative positions of some typical prairie soils on the uplands of Grant County.



Figure 4. Index Map of Wisconsin

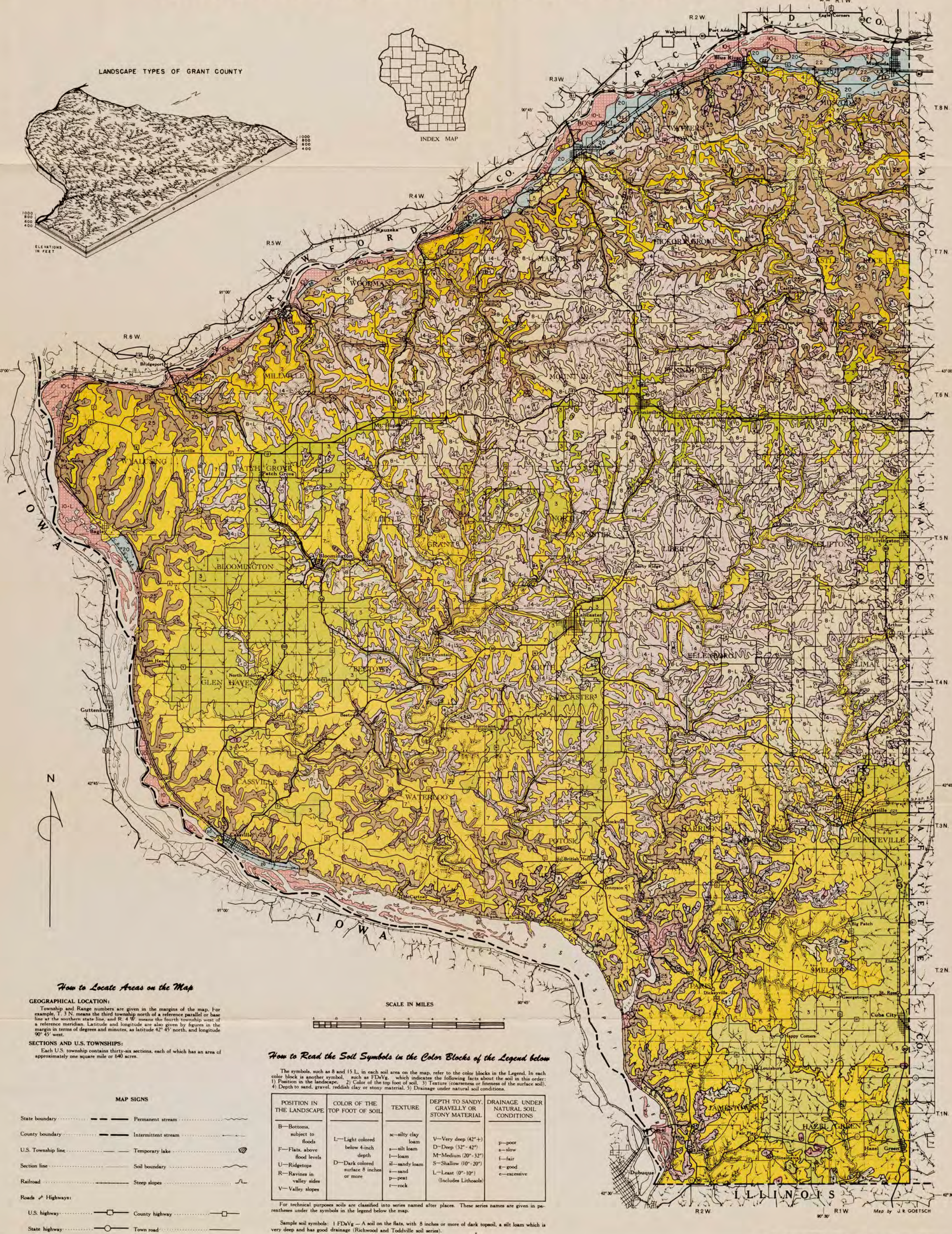


Figure 5. View of Tama silt loam, a prairie soil, with the shallower Dodgeville silt loam under cover of oak trees in the distant drainage way.

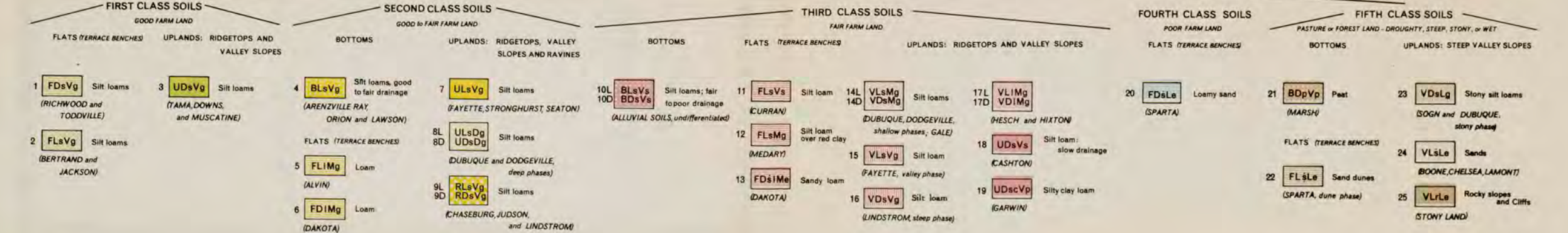


Figure 6. A typical pasture on Alluvial Soils in a rougher part of Grant County.

INTRODUCTORY SOIL MAP OF GRANT COUNTY, WISCONSIN



LEGEND



SOILS

OF

WYALUSING TOWNSHIP

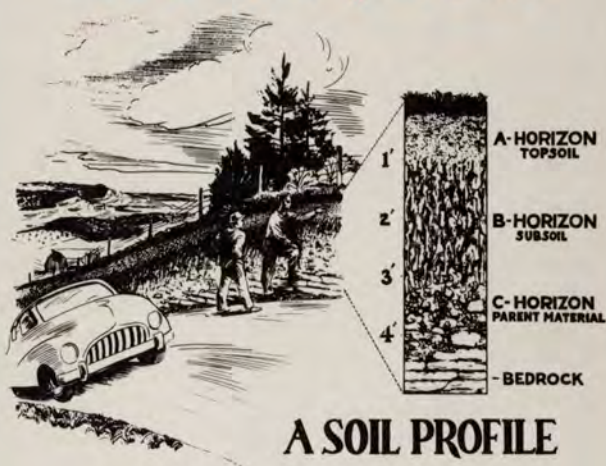
Grant County

WISCONSIN

F. D. HOLE, G. H. ROBINSON, G. DEHNERT,
AND F. C. DAHMS

This preliminary town soil map is intended to serve until such time as the U. S. Department of Agriculture publishes a detailed soil map of Grant County in color, and to supplement that detailed map when it becomes available. Several sets of uncolored, large-scale town maps, showing detailed soils information, will be bound together in the form of an Atlas of Soil Maps for Grant County. These atlases may be consulted in the office of the County Agent, the Soil Conservation District Office, at the Soils Department, University of Wisconsin, at Madison, and at other places to be announced.

How to Know Your Soils



A SOIL PROFILE

A SOIL PROFILE. A vertical cross-section of a soil, made up of layers of surface soil and subsoil, is called a soil profile. To find out what a soil is like, look at the side of a newly-dug pit or fresh road cut. Above is a sketch of one type of soil, showing four soil layers or "horizons":

- (1) Dark colored surface soil (A_1)
- (2) Light colored subsurface soil (A_2)
- (3) Brown subsoil (B)
- (4) Red stony clay (C)

Each soil or soil group has a particular kind of profile.

Soil Survey Division
Wisconsin Geological and Natural History Survey,
and the

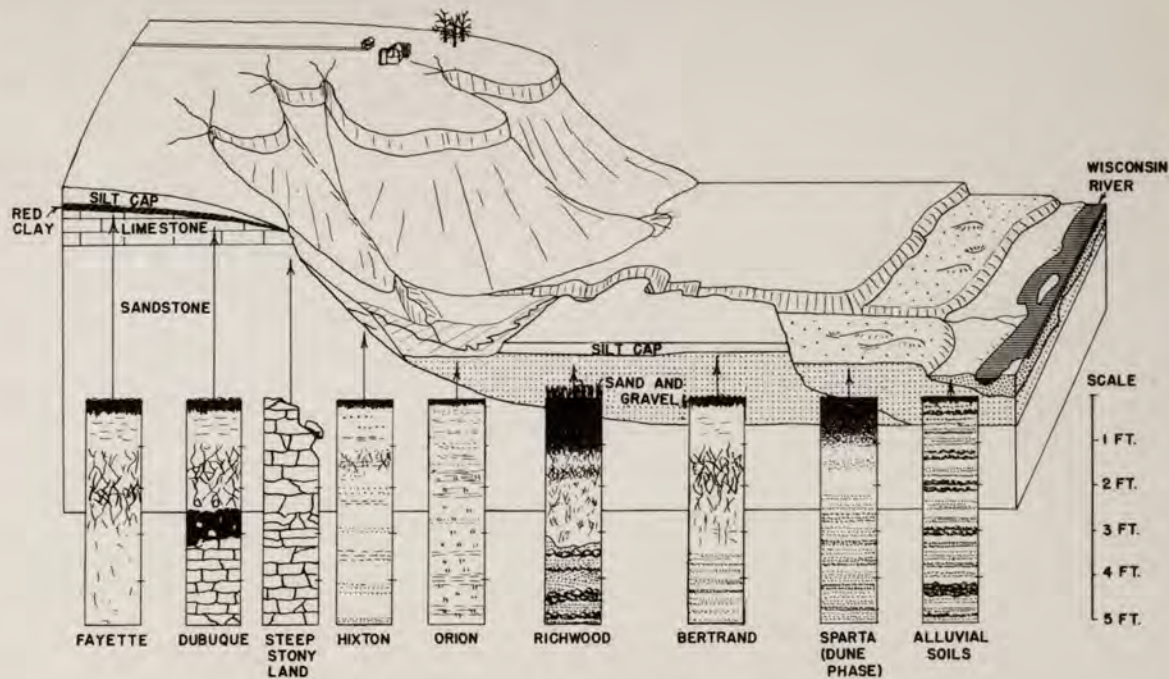
Agricultural Experiment Station
University of Wisconsin at Madison

1952

SOILS CHANGE FROM PLACE TO PLACE. As you cross a field, look for differences in soil. These differences may be in any one layer or in several layers of the soil profile. A buried sand bed may merge into a buried clay bed. Or the surface soil may change from a flour-like silt loam into a gritty sandy loam. Soil surveyors drew lines—soil boundaries—on the map wherever one kind of soil changes to another kind of soil. The diagram gives sketches of some of the kinds of soil found in various positions on the sides of the hills and valleys of Grant County.

LAY OF THE LAND. Grant County has (1) hilly upland and (2) valley bottoms. In the hilly upland are ridge tops and valley slopes, cut by numerous ravines. In the valley bottoms are low flood plains and high flats or terrace-benches.

SOIL TYPE NAMES. Soils are classified into series named after places. For example, the Dubuque silt loam is named for Dubuque County, Iowa, where this soil was first studied.



Five Soils Cover most of Grant County

Although there are many kinds of soils in the area, only five are extensive in Grant County:

Name of Soil Group	Soil Symbols	Names of Soil Series	Percent of Area of County	General Agricultural Rating
1. Tama -----	{ 28-----	Tama	12%-----	Excellent
	{ 29-----	Downs		
	{ 81-----	Muscatine		
2. Fayette ----	{ 26-----	Fayette, valley phase	26%-----	Good
	{ 27-----	Fayette		
	{ 271-----	Stronghurst		
3. Dubuque --	{ 30-----	Deep Dubuque	36%-----	Good
	{ 31-----	Dubuque		
	{ 33-----	Deep Dodgeville		
	{ 331-----	Dodgeville		
4. Arenzville -	{ 1-----	Arenzville	4%-----	Good
	{ 5-----	Lawson		
	{ 197-----	Orion		
5. Stony land .	43-----	Stony land -----	14%-----	Very poor
			Total	92%

The Tama silt loam formed under prairie grass on four feet or more of ancient wind-blown limey silt ("loess"), resting on bedrock. The Downs soil is not quite as dark in color as the Tama, having developed at the edges of the prairies, where scattered trees were invading the natural grassland. The Muscatine silt loam has a somewhat moist subsoil, but is otherwise like the Tama soil. The Fayette soils are very deep soils developed from "loess" under forest. They are lighter in color in plowed fields than is the Tama soil. The Stronghurst soil is somewhat moist in the subsoil, but otherwise resembles the Fayette. The Dubuque soils are light colored forest soils while the Dodgeville soils are dark prairie soils. Both overlie stony (cherty) reddish brown clay which is on limestone bedrock. The Arenzville is a fertile, brown river-bottom soil. The Lawson is darker in color and the Orion is wetter than the Arenzville. Sandstone and dolomitic limestone outcrop in the areas of steep stony land of Grant County.

What the Soil Map Shows

The soil map shows where the various kinds of soils of Grant County occur. Soil symbols are given on the map as numbers. These numbers are explained in the List of Soils on the back of the map, where the general ratings and properties of the soils are also given.

One of the important soil properties is texture (coarseness or fineness of the surface soil). Soil is made up of stick clay, flour-like silt, gritty sand, and organic matter. The principal kinds are: clay soil (contains about 50% clay); silt loam soil (contains about 65% silt); loam soil (contains about 40% silt and 35% sand); sandy loam soil (contains about 60% sand); sand soil (contains about 90% sand). Silt loams and loams are best for general farming. They contain enough clay and silt to store water and plant nutrients, and enough sand to form a loose, open soil.

LIST OF SOILS OF GRANT COUNTY

(A list of all soil numbers used on the town soil maps, with names and general productivity ratings of the soils)

(The soils listed in blue are the most extensive soils in Grant County)

Soil Number	Name of the Soil, Location and Color	Gen. Productivity Rating* For			Soil Number	Name of the Soil, Location and Color	Gen. Productivity Rating* For		
		Crops	Pasture	Forest			Crops	Pasture	Forest
1	Arenzville silt loam (Stream bottom; brown)	Good	Good	Good	36	Hixton fine sandy loam (Valley slope; brown)	Poor	Fair	Fair
3	Stony colluvium (Ravine soils; stony)			Fair	40	Hesch loam (Valley slope; gray)	Poor	Good	Fair
4	Marsh		Fair		41	Hesch fine sandy loam (Valley slope; gray)	Poor	Fair	Fair
5	Lawson silt loam (Stream bottom; black)	Good	Good	Poor	43	Stony land (Valley slope; steep)		Poor	Fair
8	Judson silt loam (Ravine soil; black)	Good	Good	Good	45	Sogn loam (Valley slope; shallow; stony)		Poor	Fair
11	Alluvial soils (Stream bottom; variable)		Fair	Poor	51	Chaseburg silt loam (Ravine soil; brown)	Fair	Fair	Good
12	Richwood silt loam (Valley flat; black)	Best	Best	Good	55	Gale silt loam (Valley slope; brown silt on sandstone)	Fair	Good	Good
13	Dakota loam (Valley flat; dark gray)	Good	Good	Good	80	Garwinsilty clay loam (Ridge; depression; black on blue)		Fair	Poor
14	Bertrand silt loam (Valley flat; brown)	Best	Best	Good	81	Muscatine silt loam (Ridge; dark gray)	Best	Best	Best
15	Alvin loam (Valley flat; brown)	Good	Good	Good	136	Curran silt loam (Valley flat; dark gray)	Fair	Good	Poor
16	Alvin fine sandy loam (Valley flat; brown)	Good	Good	Good	141	Jackson silt loam (Valley flat; dark brown)	Best	Best	Fair
18	Sparta fine sand (Valley flat; gray)	Poor	Poor	Poor	181	Medary silt loam, eroded (Valley flat; reddish brown)	Fair	Fair	Good
19	Sparta fine sand, dune phase (Valley flat; brown)			Poor	184	Chelsea sand (Valley slope; steep)		Poor	Poor
21	Toddville silt loam (Valley flat; black)	Good	Best	Fair	197	Orion silt loam (Stream bottom; gray)	Fair	Good	Fair
24	Medary silt loam (Valley flat; brown on red or blue)	Fair	Good	Good	236	Dakota sandy loam (Valley flat; brown)	Fair	Fair	Good
26	Fayette silt loam, valley phase (V. slope; brown; deep)	Fair	Good	Best	251	Seaton very fine sandy loam (Ridge; brown; very deep)	Good	Good	Good
27	Fayette silt loam (Ridge; brown, very deep)	Good	Good	Good	252	Lamont loamy sand (Ridge; hilly)		Poor	Fair
28	Tama silt loam (Ridge; gray; very deep)	Best	Best	Best	271	Stronghurst silt loam (Ridge; grayish brown; very deep)	Good	Good	Good
29	Downs silt loam (Ridge; dark brown, very deep)	Best	Best	Best	291	Cashton silt loam (Ridge; depression; dark gray)	Fair	Fair	Fair
30	Dubuque silt loam, deep phase (Ridge; brown)	Good	Good	Good	321	Dubuque stony silt loam (Ridge; brown; shallow)		Poor	Fair
31	Dubuque silt loam (Ridge; shallow, brown on red)	Fair	Good	Fair	331	Dodgeville silt loam (Ridge; shallow; gray on red)	Fair	Good	Fair
33	Dodgeville silt loam, deep phase (Ridge; gray)	Good	Good	Good	391	Lindstrom silt loam (Valley slope; dark gray)	Fair	Good	Good
35	Hixton loam (Valley slope; brown)	Poor	Good	Fair	431	Sogn silt loam (Valley slope; shallow; stony)		Fair	Fair

* Ratings group the soils into 4 grades: 1—Best, 2—Good, 3—Fair, 4—Poor. If no rating is given, the soil is unsuitable for such use. In areas where erosion is severe or slopes steep, the general rating given for the soil is too high. This is also true wherever good agricultural soils occur in areas too narrow for common field operations. Soil ratings for forest on valley slopes should be raised wherever there is plenty of water for the trees.

SOIL MAP, TOWN OF WYALUSING, GRANT COUNTY, WISCONSIN

R7W R6W

WISCONSIN RIVER CRAWFORD CO.

U.S. WILDLIFE RESERVE

WYALUSING STATE PARK

Park Boundary

MISSISSIPPI RIVER

IOWA

Wyalusing

Bagley

251 D3 43 G1 30 F2 27 D3 27 D4 27 D5 27 D6 27 D7 27 D8 27 D9 27 D10 27 D11 27 D12 27 D13 27 D14 27 D15 27 D16 27 D17 27 D18 27 D19 27 D20 27 D21 27 D22 27 D23 27 D24 27 D25 27 D26 27 D27 27 D28 27 D29 27 D30 27 D31 27 D32 27 D33 27 D34 27 D35 27 D36 27 D37 27 D38 27 D39 27 D40 27 D41 27 D42 27 D43 27 D44 27 D45 27 D46 27 D47 27 D48 27 D49 27 D50 27 D51 27 D52 27 D53 27 D54 27 D55 27 D56 27 D57 27 D58 27 D59 27 D60 27 D61 27 D62 27 D63 27 D64 27 D65 27 D66 27 D67 27 D68 27 D69 27 D70 27 D71 27 D72 27 D73 27 D74 27 D75 27 D76 27 D77 27 D78 27 D79 27 D80 27 D81 27 D82 27 D83 27 D84 27 D85 27 D86 27 D87 27 D88 27 D89 27 D90 27 D91 27 D92 27 D93 27 D94 27 D95 27 D96 27 D97 27 D98 27 D99 27 D100

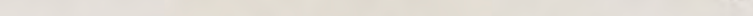
This aerial mosaic is uncontrolled.

Map by F.D.Hole

How to Read the Map

This soil map shows section lines, roads, houses, and streams, and it shows the soils, the slope of the land, and the eroded areas. Each first number on the map stands for a soil. Example: 30 = Dubuque silt loam (brown soil over red clay). The soil numbers on the map are followed by a letter which tells you how steep the slope is. Example: 30F = Dubuque silt loam, with a slope of 15 to 30 per cent (the surface rises or falls 15 to 30 feet in every 100 feet of horizontal distance). A number follows the slope letter to tell the degree of erosion. Example: 30F3 = Dubuque silt loam with a slope of 15 - 30%, severely eroded.

LANDSCAPE TYPES OF GRANT COUNTY



This soil map shows section lines, roads, houses, and streams, and it shows the soils, the slope of the land, and the eroded areas. Each first number on the map stands for a soil. Example: 30 = Dubuque silt loam (brown soil over red clay). The soil numbers on the map are followed by a letter which tells you how steep the slope is. Example: 30F = Dubuque silt loam, with a slope of 15 to 30 per cent (the surface rises or falls 15 to 30 feet in every 100 feet of horizontal distance). A number follows the slope letter to tell the degree of erosion. Example: 30F3 = Dubuque silt loam with a slope of 15 - 30%, severely eroded.

Soil boundary.....		Railroad.....	
State line.....		Cemetery.....	
County line.....		House.....	
Town line.....		School.....	
Section line.....		Church.....	
Road.....		Creamery.....	
Lane.....		Intermittent stream.....	

EROSION SYMBOLS-
 + - Deposition
 1 - Slight erosion
 2 - Moderate erosion
 3 - Severe erosion
 4 - Very severe erosion

A- Level land (0-2%)
B- Gently sloping land (2-6%)
D- Sloping to steep land (6-15%)
F- Steep to very steep land (15-30%)
G- Very steep land, usually stony (30%+)

Scale 2 inches = 1 Mile

0 1/2 1 MILE

Vertical distances are exaggerated. The vertical scale is about 20 times the corresponding horizontal scale.

SOIL MAP, TOWN OF SOUTH LANCASTER (T.4N., R.3W.), GRANT COUNTY, WISCONSIN



HOW TO READ THE MAP

This soil map shows section lines, roads, houses, and streams, and it shows the soils, the slope of the land, and the eroded areas. Each first number on the map stands for a soil.

Example: 30 = Dubuque silt loam (brown soil over red clay).

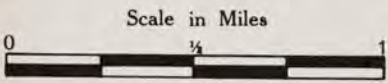
The soil numbers on the map are followed by a letter which tells you how steep the slope is.

Example: 30F = Dubuque silt loam, with a slope of 15 to 30 per cent (the surface of the soil rises or falls 15 to 30 feet in every 100 feet of horizontal distance).

A number follows the slope letter to tell the degree of erosion.

Example: 30F3 = Dubuque silt loam with a slope of 15-30%, severely eroded.

SOIL SURVEY, 1949-50, BY THE SOIL SURVEY DIVISION, WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY, IN COOPERATION WITH THE SOIL SURVEY DIVISION, U. S. BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING, AND THE SOIL CONSERVATION SERVICE AND THE COLLEGE OF AGRICULTURE.



SLOPE LETTERS

- Level land (0-2%)..... A
- Gently sloping land (2-6%)..... B
- Sloping to steep land (6-15%)..... D
- Steep to very steep land (15-30%)..... F
- Very steep land, usually stony (30%+)..... G

EROSION SYMBOLS

- Deposition..... +
- Slight erosion..... 1
- Moderate erosion..... 2
- Severe erosion..... 3
- Very severe erosion..... 4

MAP SIGNS

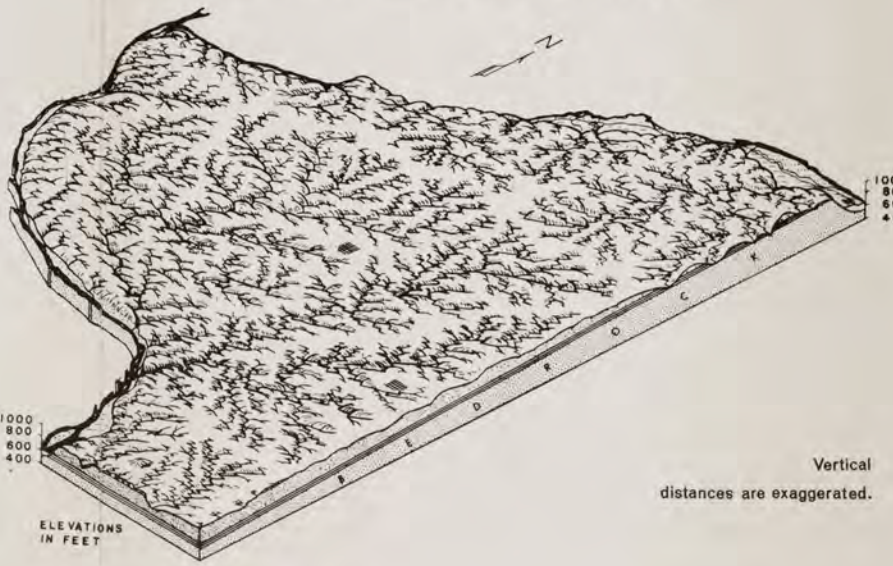
- State line.....
- County line.....
- Township line.....
- Town line.....
- Section line.....
- Paved road.....
- Bituminous road.....

- Road.....
- Railroad.....
- House.....
- School.....
- Creamery.....
- Church.....
- Cemetery.....

- Power - Transmission line.....
- Quarry.....
- Bluff or escarpment.....
- Rock ledges.....
- Stony spot.....
- Sandy spot.....
- Chert fragments.....

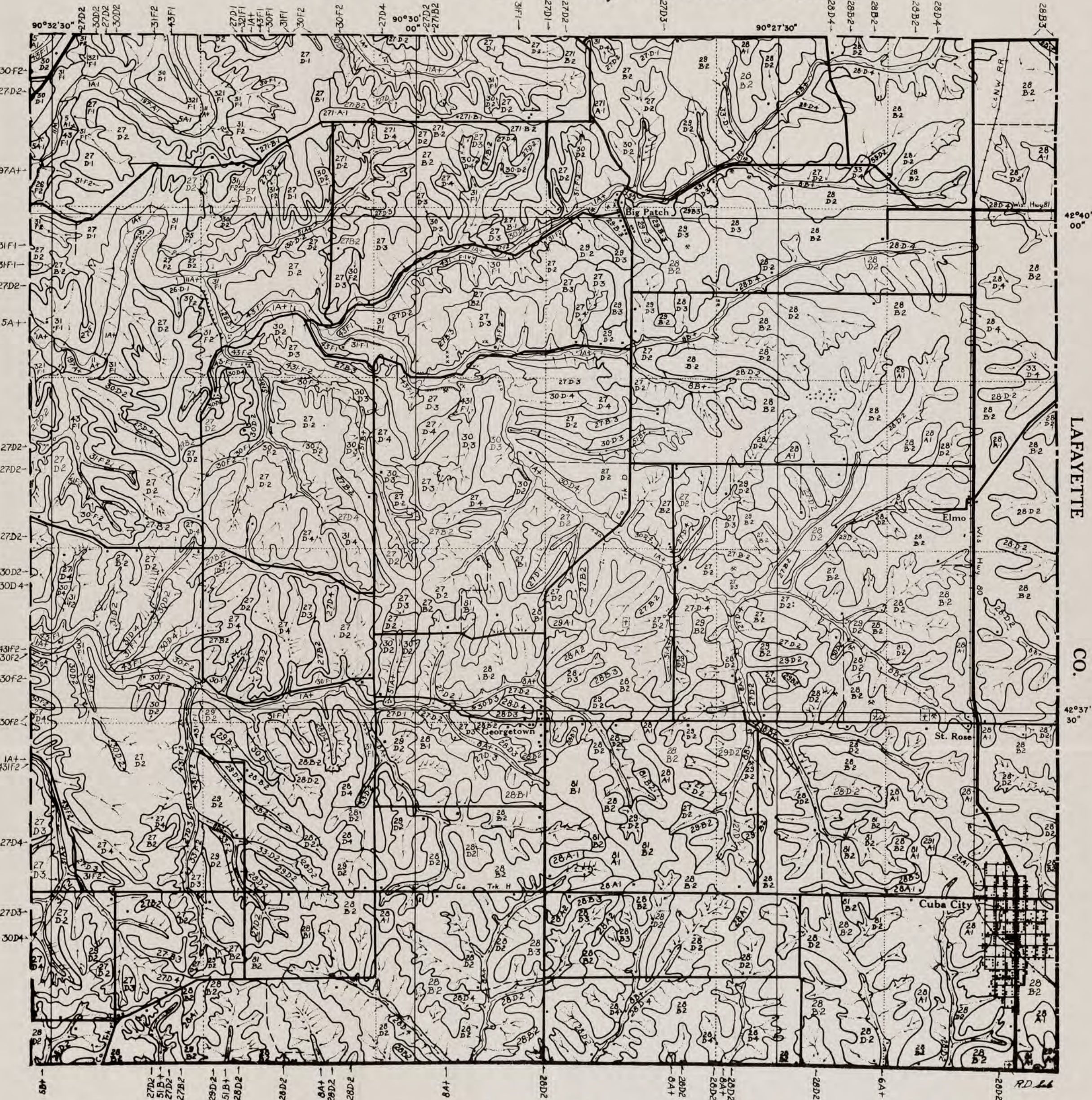
- River.....
- Permanent stream.....
- Intermittent stream.....
- Water.....
- Spring.....
- Marshy spot.....
- Soil boundary.....

LANDSCAPE TYPES OF GRANT COUNTY



TURN UP THIS BOTTOM FLAP TO FIND THE COMPLETE LIST OF SOIL NUMBERS

SOIL MAP, TOWN OF SMELSER (T.2N.,R.1W.), GRANT COUNTY, WISCONSIN



SOIL SURVEY, 1949-50, BY THE SOIL SURVEY DIVISION, WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY, IN COOPERATION WITH THE SOIL SURVEY DIVISION, U.S. BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING, AND THE SOIL CONSERVATION SERVICE, AND THE COLLEGE OF AGRICULTURE.

How to Read the Map

This soil map shows section lines, roads, houses, and streams, and it shows the soils, the slope of the land, and the eroded areas. Each first number on the map stands for a soil. Example: 30 = Dubuque silt loam (brown soil over red clay). The soil numbers on the map are followed by a letter which tells you how steep the slope is. Example: 30F = Dubuque silt loam, with a slope of 15 to 30 per cent (the surface rises or falls 15 to 30 feet in every 100 feet of horizontal distance). A number follows the slope letter to tell the degree of erosion. Example: 30F3 = Dubuque silt loam with a slope of 15 - 30%, severely eroded.

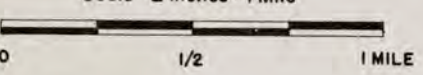
SLOPE LETTERS-

- A - Level land (0-2%)
- B - Gently sloping land (2-6%)
- D - Sloping to steep land (6 - 15%)
- F - Steep to very steep land (15 - 30%)
- G - Very steep land, usually stony (30%+)

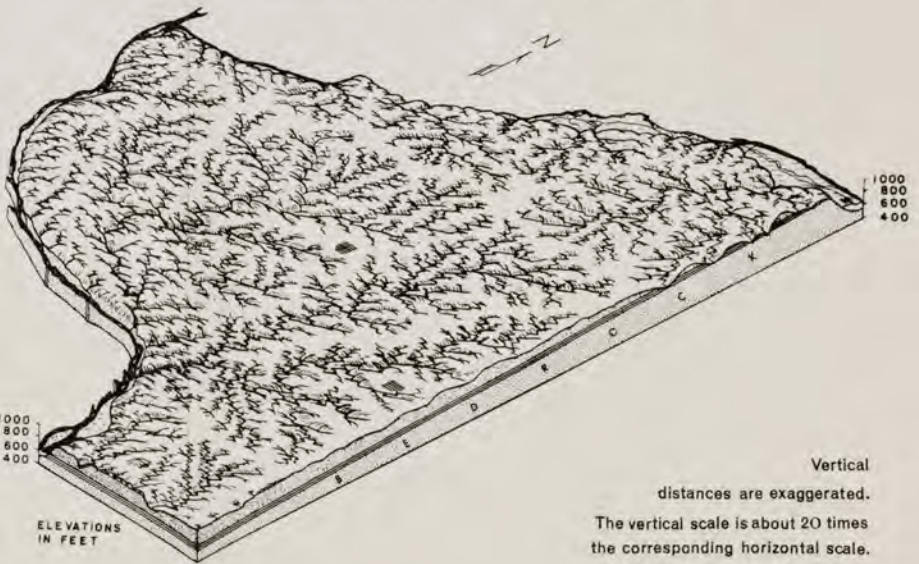
EROSION SYMBOLS-

- + - Deposition
- 1 - Slight erosion
- 2 - Moderate erosion
- 3 - Severe erosion
- 4 - Very severe erosion

Scale 2 inches = 1 Mile



LANDSCAPE TYPES OF GRANT COUNTY



MAP SIGNS

- | | | |
|--------------------|---------------------|---------------------|
| Soil boundary | House | Water |
| County line | School | Marshy spot |
| Town line | Church | Bluff or escarpment |
| Section line | Creamery | Quarry or pit |
| Highways and roads | River | Rock ledges |
| Lane | Permanent stream | Stony spot |
| Railroad | Intermittent stream | Sandy spot |
| Cemetery | Spring | Sink |

TURN UP THIS BOTTOM FLAP TO FIND THE COMPLETE LIST OF SOIL NUMBERS

SOIL MAP, TOWN OF JAMESTOWN (T.1N.,R.2W.), GRANT COUNTY, WISCONSIN



HOW TO READ THE MAP

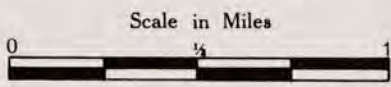
This soil map shows section lines, roads, houses, and streams, and it shows the soils, the slope of the land, and the eroded areas. Each first number on the map stands for a soil.

Example: 30 = Dubuque silt loam (brown soil over red clay).
The soil numbers on the map are followed by a letter which tells you how steep the slope is.

Example: 30F = Dubuque silt loam, with a slope of 15 to 30 per cent (the surface of the soil rises or falls 15 to 30 feet in every 100 feet of horizontal distance).

A number follows the slope letter to tell the degree of erosion.
Example: 30F3 = Dubuque silt loam with a slope of 15-30%, severely eroded.

SOIL SURVEY, 1949-50, BY THE SOIL SURVEY DIVISION, WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY, IN COOPERATION WITH THE SOIL SURVEY DIVISION, U. S. BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING, AND THE SOIL CONSERVATION SERVICE AND THE COLLEGE OF AGRICULTURE.



SLOPE LETTERS

- | | |
|---------------------------------------|---|
| Level land (0-2%) | A |
| Gently sloping land (2-6%) | B |
| Sloping to steep land (6-15%) | C |
| Steep to very steep land (15-30%) | D |
| Very steep land, usually stony (30%+) | E |

EROSION SYMBOLS

- | | |
|---------------------|---|
| Deposition | + |
| Slight erosion | 1 |
| Moderate erosion | 2 |
| Severe erosion | 3 |
| Very severe erosion | 4 |

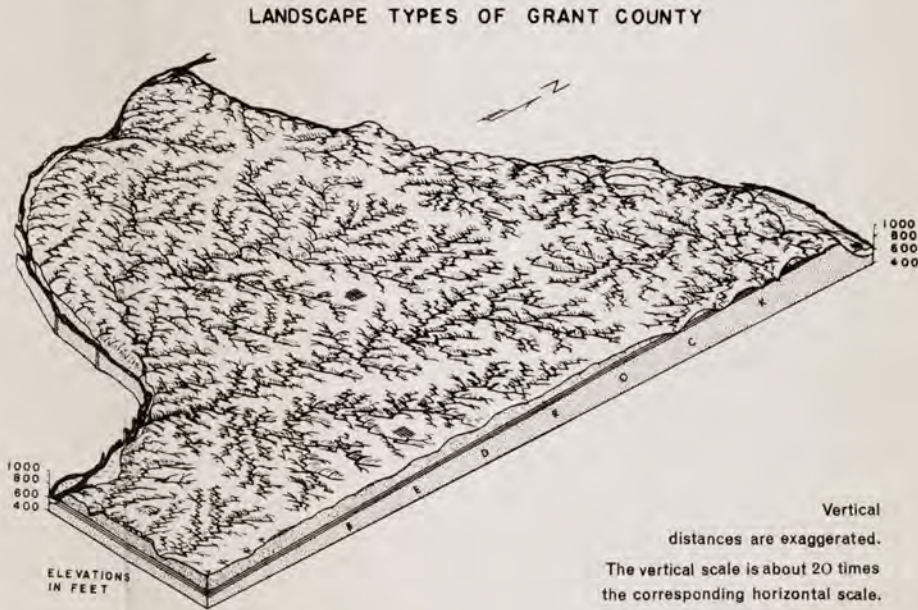
MAP SIGNS

- | | |
|----------------------------|-----|
| State line | --- |
| County line | --- |
| Township line | --- |
| Town line | --- |
| Section line | --- |
| State and Federal Highways | --- |
| Other roads | --- |

- | | |
|----------|-----|
| Lane | --- |
| Railroad | --- |
| House | --- |
| School | --- |
| Creamery | --- |
| Church | --- |
| Cemetery | --- |

- | | |
|-------------------------|-----|
| Power-Transmission line | --- |
| Quarry | --- |
| Bluff or escarpment | --- |
| Rock ledges | --- |
| Stony spot | --- |
| Sandy spot | --- |
| Chert fragments | --- |

- | | |
|---------------------|-----|
| River | --- |
| Permanent stream | --- |
| Intermittent stream | --- |
| Water | --- |
| Spring | --- |
| Marshy spot | --- |
| Soil boundary | --- |

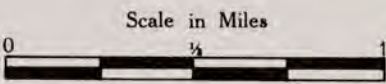


TURN UP THIS BOTTOM FLAP TO FIND THE COMPLETE LIST OF SOIL NUMBERS

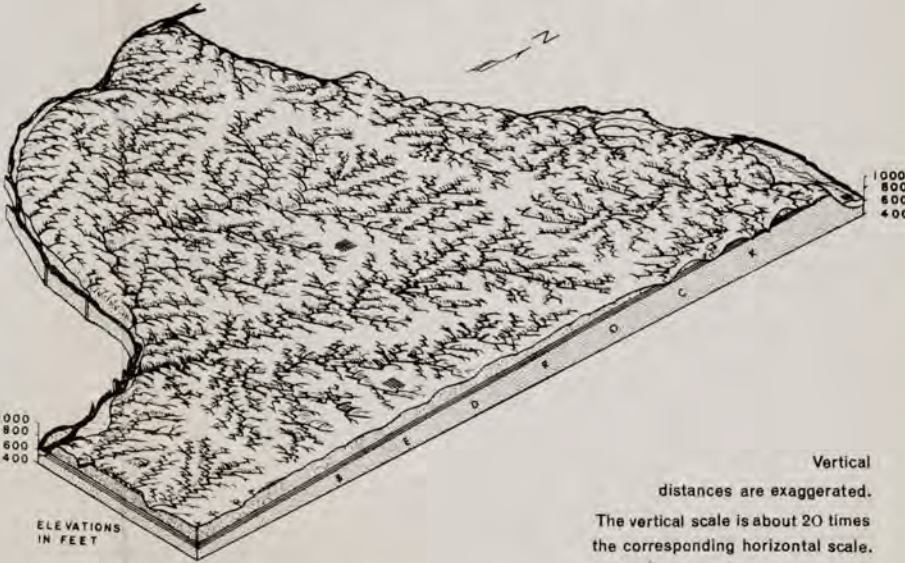
SOIL MAP, TOWN OF HAZEL GREEN(T.1N.,R.1W.), GRANT COUNTY, WISCONSIN



HOW TO READ THE MAP



LANDSCAPE TYPES OF GRANT COUNTY



This soil map shows section lines, roads, houses, and streams, and it shows the soils, the slope of the land, and the eroded areas. Each first number on the map stands for a soil.

Example: 30 = Dubuque silt loam (brown soil over red clay). The soil numbers on the map are followed by a letter which tells you how steep the slope is.

Example: 30F = Dubuque silt loam, with a slope of 15 to 30 per cent (the surface of the soil rises or falls 15 to 30 feet in every 100 feet of horizontal distance).

A number follows the slope letter to tell the degree of erosion.

Example: 30F3 = Dubuque silt loam with a slope of 15-30%, severely eroded.

SLOPE LETTERS

- | | |
|---------------------------------------|---|
| Level land (0-2%) | A |
| Gently sloping land (2-6%) | B |
| Sloping to steep land (6-15%) | D |
| Steep to very steep land (15-30%) | F |
| Very steep land, usually stony (30%+) | G |

EROSION SYMBOLS

- | | |
|---------------------|---|
| Deposition | + |
| Slight erosion | 1 |
| Moderate erosion | 2 |
| Severe erosion | 3 |
| Very severe erosion | 4 |

MAP SIGNS

- | | |
|----------------------------|-----|
| State line | --- |
| County line | --- |
| Township line | --- |
| Town line | --- |
| Section line | --- |
| State and Federal Highways | --- |
| Other roads | --- |

- | | |
|----------|-----|
| Lane | --- |
| Railroad | --- |
| House | • |
| School | • |
| Creamery | • |
| Church | • |
| Cemetery | • |

- | | |
|-------------------------|-----|
| Power-Transmission line | --- |
| Quarry | • |
| Bluff or escarpment | --- |
| Rock ledges | --- |
| Stony spot | • |
| Sandy spot | • |
| Chert fragments | • |

- | | |
|---------------------|-----|
| River | --- |
| Permanent stream | --- |
| Intermittent stream | --- |
| Water | --- |
| Spring | • |
| Marshy spot | • |
| Soil boundary | --- |

TURN UP THIS BOTTOM FLAP TO FIND THE COMPLETE LIST OF SOIL NUMBERS

SOIL MAP, TOWN OF LIMA (T.4N.,R.1W.), GRANT COUNTY, WISCONSIN



SOIL SURVEY, 1949-50, BY THE SOIL SURVEY DIVISION, WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY, IN COOPERATION WITH THE SOIL SURVEY DIVISION, U.S. BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING, AND THE SOIL CONSERVATION SERVICE, AND THE COLLEGE OF AGRICULTURE.

How to Read the Map

This soil map shows section lines, roads, houses, and streams, and it shows the soils, the slope of the land, and the eroded areas. Each first number on the map stands for a soil. Example: 30 = Dubuque silt loam (brown soil over red clay). The soil numbers on the map are followed by a letter which tells you how steep the slope is. Example: 30F = Dubuque silt loam, with a slope of 15 to 30 per cent (the surface rises or falls 15 to 30 feet in every 100 feet of horizontal distance). A number follows the slope letter to tell the degree of erosion. Example: 30F3 = Dubuque silt loam with a slope of 15 - 30%, severely eroded.

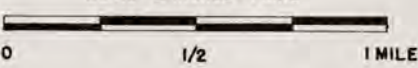
SLOPE LETTERS-

- A- Level land (0-2%)
- B- Gently sloping land (2-6%)
- D- Sloping to steep land (6-15%)
- F- Steep to very steep land (15-30%)
- G- Very steep land, usually stony (30%+)

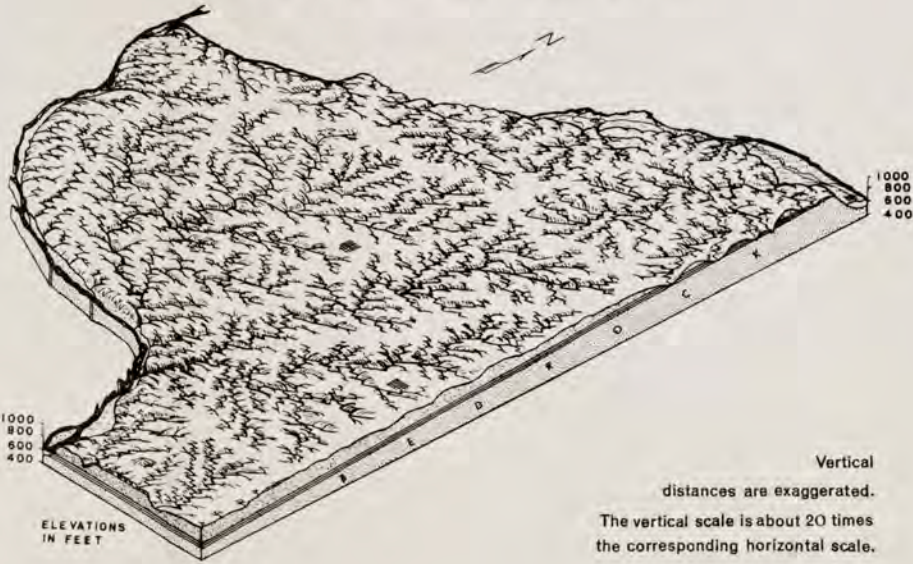
EROSION SYMBOLS-

- + - Deposition
- 1 - Slight erosion
- 2 - Moderate erosion
- 3 - Severe erosion
- 4 - Very severe erosion

Scale 2 inches = 1 mile



LANDSCAPE TYPES OF GRANT COUNTY

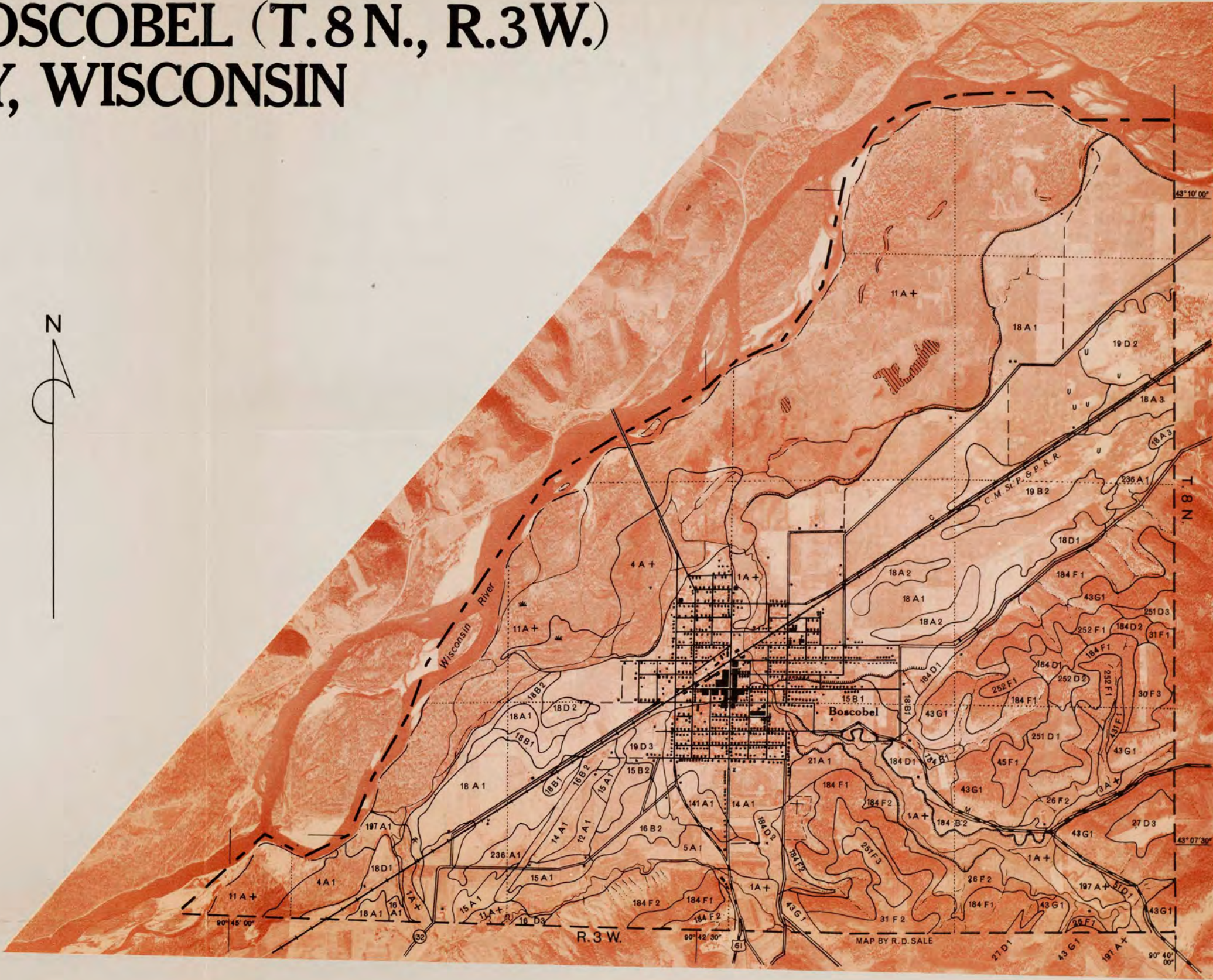
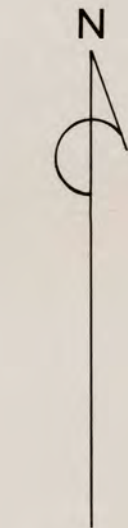
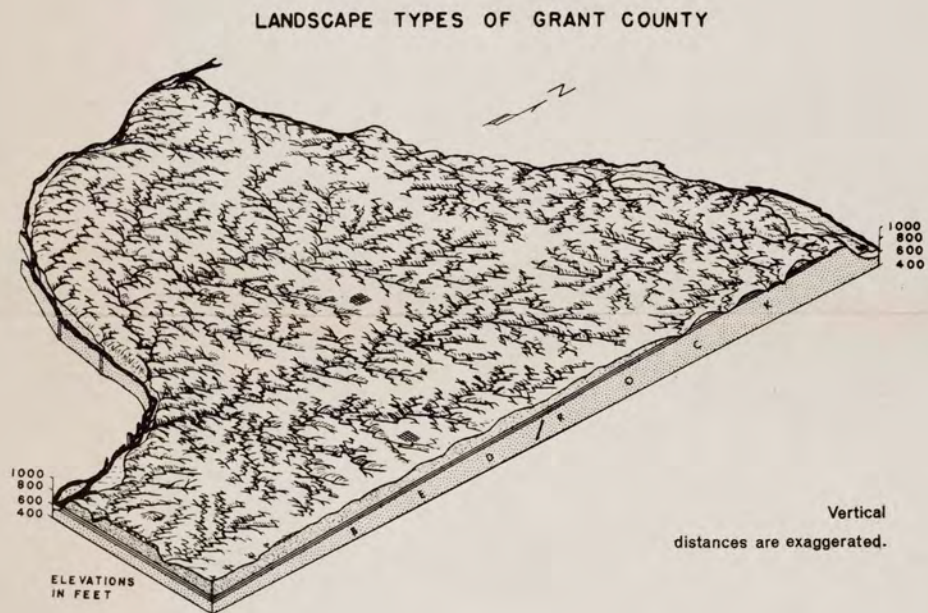


MAP SIGNS

Soil boundary.....	House.....	Water.....
County line.....	School.....	Marshy spot.....
Town line.....	Church.....	Bluff or escarpment.....
Section line.....	Creamery.....	Quarry or pit.....
Highways and roads.....	River.....	Rock ledges.....
Lane.....	Permanent stream.....	Stony spot.....
Railroad.....	Intermittent stream.....	Sandy spot.....
Cemetery.....	Spring.....	Sink.....

TURN UP THIS BOTTOM FLAP TO FIND THE COMPLETE LIST OF SOIL NUMBERS

SOIL MAP, TOWN OF BOSCOBEL (T.8 N., R.3 W.) GRANT COUNTY, WISCONSIN



HOW TO READ THE MAP

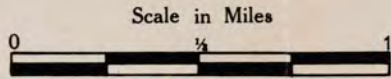
This soil map shows section lines, roads, houses, and streams, and it shows the soils, the slope of the land, and the eroded areas. Each first number on the map stands for a soil.

Example: 30 = Dubuque silt loam (brown soil over red clay).
The soil numbers on the map are followed by a letter which tells you how steep the slope is.

Example: 30F = Dubuque silt loam, with a slope of 15 to 30 per cent (the surface of the soil rises or falls 15 to 30 feet in every 100 feet of horizontal distance).

A number follows the slope letter to tell the degree of erosion.

Example: 30F3 = Dubuque silt loam with a slope of 15-30%, severely eroded.



SLOPE LETTERS

Level land (0-2%)	A
Gently sloping land (2-6%)	B
Sloping to steep land (6-15%)	D
Steep to very steep land (15-30%)	F
Very steep land, usually stony (30%+)	G

EROSION SYMBOLS

Deposition	+
Slight erosion	1
Moderate erosion	2
Severe erosion	3
Very severe erosion	4

State line	---
County line	---
Township line	---
Town line	---
Section line	---
Bituminous road	---
Road	---

Lane	---
Railroad	---
House	---
School	---
Creamery	---
Church	---
Cemetery	---

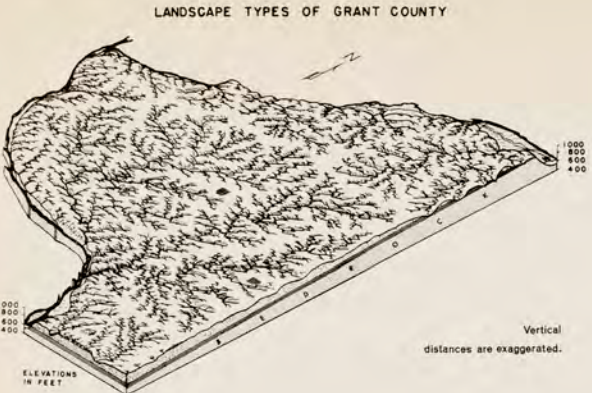
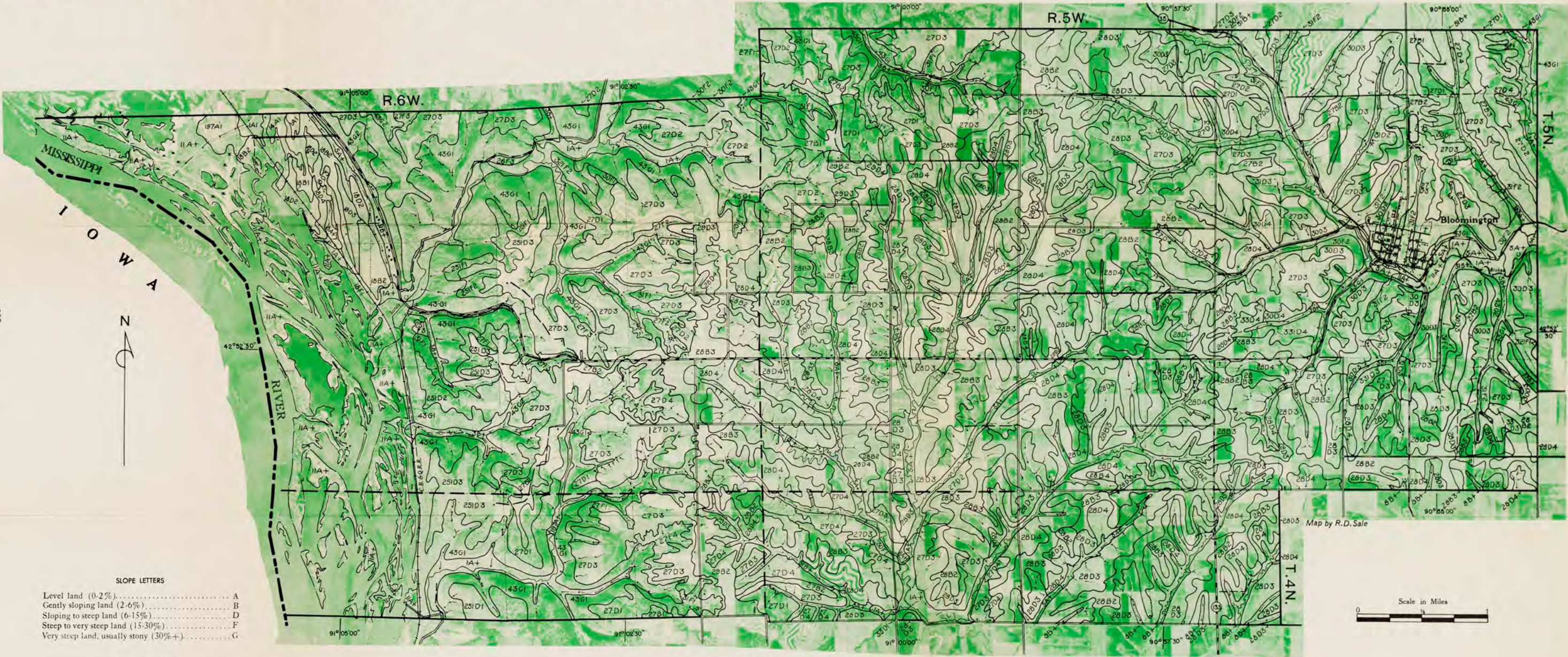
MAP SIGNS

Power-Transmission line	---
Quarry	---
Bluff or escarpment	---
Rock ledges	---
Stony spot	---
Chert fragments	---

River	---
Permanent stream	---
Intermittent stream	---
Water	---
Spring	---
Marshy spot	---
Soil boundary	---

SOIL SURVEY, 1949-50, BY THE SOIL SURVEY DIVISION, WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY, IN COOPERATION WITH THE SOIL SURVEY DIVISION, U. S. BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING, AND THE SOIL CONSERVATION SERVICE AND THE COLLEGE OF AGRICULTURE.

SOIL MAP, TOWN OF BLOOMINGTON, GRANT COUNTY, WISCONSIN



HOW TO READ THE MAP

This soil map shows section lines, roads, houses, and streams, and it shows the soils, the slope of the land, and the eroded areas. Each first number on the map stands for a soil.

Example: 30 = Dubuque silt loam (brown soil over red clay).
The soil numbers on the map are followed by a letter which tells you how steep the slope is.

Example: 30F = Dubuque silt loam, with a slope of 15 to 30 per cent (the surface of the soil rises or falls 15 to 30 feet in every 100 feet of horizontal distance).
A number follows the slope letter to tell the degree of erosion.
Example: 30F3 = Dubuque silt loam with a slope of 15-30%, severely eroded.

SLOPE LETTERS

- Level land (0-2%)..... A
- Gently sloping land (2-6%)..... B
- Sloping to steep land (6-15%)..... D
- Steep to very steep land (15-30%)..... F
- Very steep land, usually stony (30%+)..... G

EROSION SYMBOLS

- Deposition..... +
- Slight erosion..... 1
- Moderate erosion..... 2
- Severe erosion..... 3
- Very severe erosion..... 4

- State line.....
- County line.....
- Township line.....
- Town line.....
- Section line.....
- Bituminous road.....
- Road.....

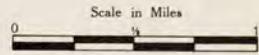
- Lane.....
- Railroad.....
- House.....
- School.....
- Creamery.....
- Church.....
- Cemetery.....

MAP SIGNS

- Power-Transmission line.....
- Quarry.....
- Bluff or escarpment.....
- Rock ledges.....
- Stony spot.....
- Church.....
- Cemetery.....

- River.....
- Permanent stream.....
- Intermittent stream.....
- Water.....
- Spring.....
- Marshy spot.....
- Soil boundary.....

Map by R.D. Sale



SOIL SURVEY, 1949-50, BY THE SOIL SURVEY DIVISION, WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY, IN COOPERATION WITH THE SOIL SURVEY DIVISION, U. S. BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING, AND THE SOIL CONSERVATION SERVICE AND THE COLLEGE OF AGRICULTURE.

SOIL MAP, TOWN OF ELLENBORO (T.4 N., R.2 W.), GRANT COUNTY, WISCONSIN



SOIL SURVEY, 1949-50, BY THE SOIL SURVEY DIVISION, WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY, IN COOPERATION WITH THE SOIL SURVEY DIVISION, U.S. BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING, AND THE SOIL CONSERVATION SERVICE, AND THE COLLEGE OF AGRICULTURE.

How to Read the Map

This soil map shows section lines, roads, houses, and streams, and it shows the soils, the slope of the land, and the eroded areas. Each first number on the map stands for a soil. Example: 30 = Dubuque silt loam (brown soil over red clay). The soil numbers on the map are followed by a letter which tells you how steep the slope is. Example: 30F = Dubuque silt loam, with a slope of 15 to 30 per cent (the surface rises or falls 15 to 30 feet in every 100 feet of horizontal distance). A number follows the slope letter to tell the degree of erosion. Example: 30F3 = Dubuque silt loam with a slope of 15 - 30%, severely eroded.

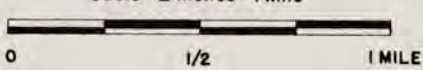
SLOPE LETTERS-

- A - Level land (0-2%)
- B - Gently sloping land (2-6%)
- D - Sloping to steep land (6 - 15%)
- F - Steep to very steep land (15 - 30%)
- G - Very steep land, usually stony (30%+)

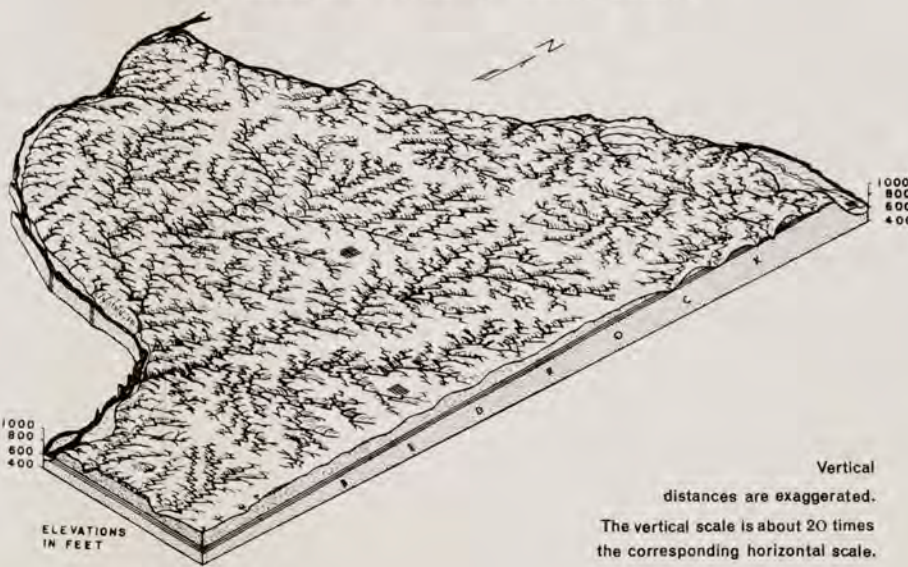
EROSION SYMBOLS-

- + - Deposition
- 1 - Slight erosion
- 2 - Moderate erosion
- 3 - Severe erosion
- 4 - Very severe erosion

Scale 2 inches = 1 Mile



LANDSCAPE TYPES OF GRANT COUNTY

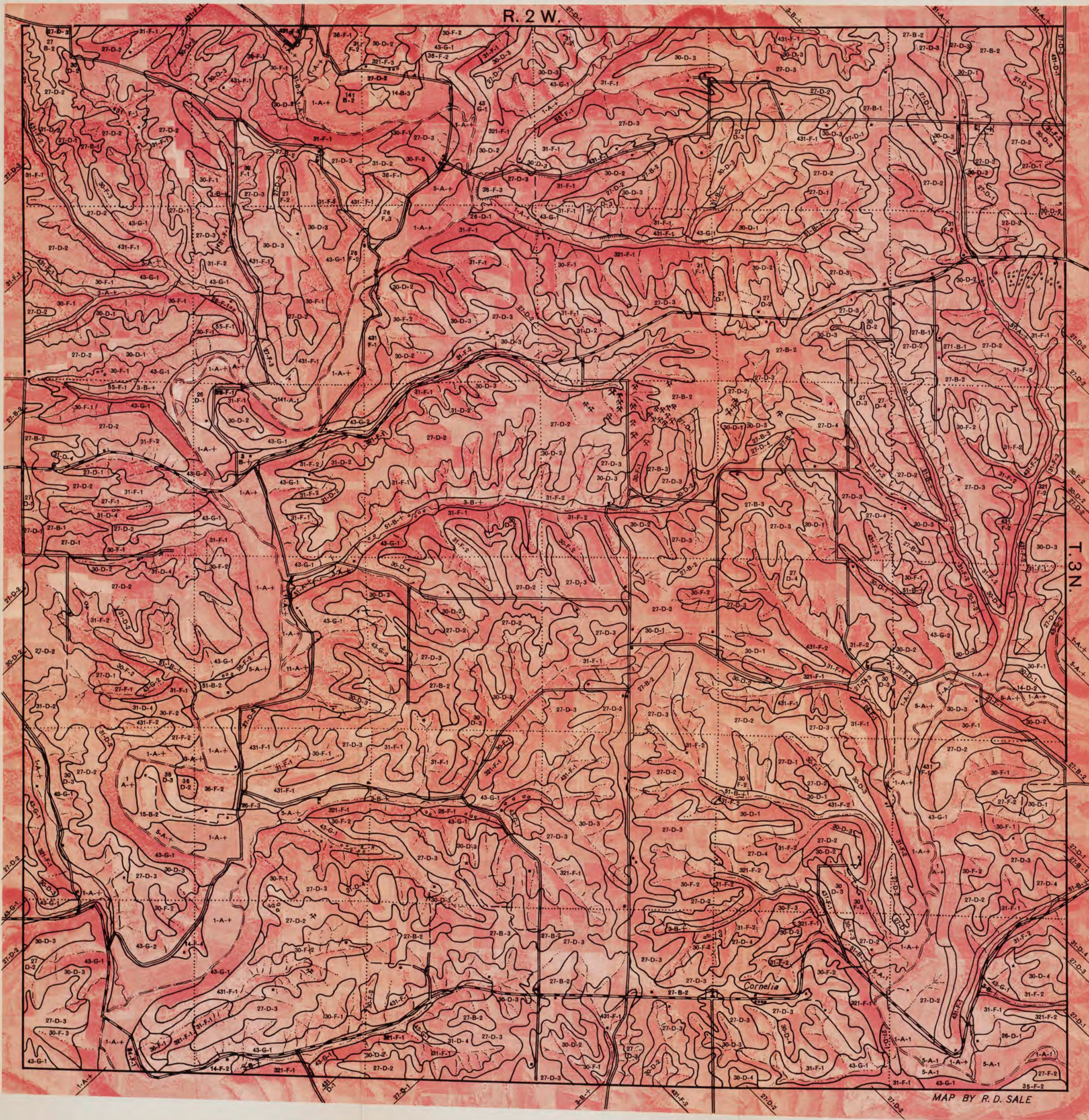


MAP SIGNS

Soil boundary.....	House.....	Water.....
County line.....	School.....	Marshy spot.....
Town line.....	Church.....	Bluff or escarpment.....
Section line.....	Creamery.....	Quarry or pit.....
Highways and roads.....	River.....	Rock ledges.....
Lane.....	Permanent stream.....	Stony spot.....
Railroad.....	Intermittent stream.....	Sandy spot.....
Cemetery.....	Spring.....	Sink.....

TURN UP THIS BOTTOM FLAP TO FIND THE COMPLETE LIST OF SOIL NUMBERS

SOIL MAP, TOWN OF HARRISON, GRANT COUNTY, WISCONSIN



HOW TO READ THE MAP

This soil map shows section lines, roads, houses, and streams, and it shows the soils, the slope of the land, and the eroded areas. Each first number on the map stands for a soil.

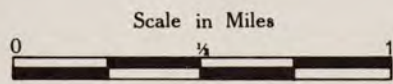
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The soil numbers on the map are followed by a letter which tells you how steep the slope is.

Example: 30F= Dubuque silt loam, with a slope of 15 to 30 per cent (the surface of the soil rises or falls 15 to 30 feet in every 100 feet of horizontal distance).

A number follows the slope letter to tell the degree of erosion.

Example: 30F3 = Dubuque silt loam with a slope of 15-30%, severely eroded.

SOIL SURVEY, 1949-50, BY THE SOIL SURVEY DIVISION, WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY, IN COOPERATION WITH THE SOIL SURVEY DIVISION, U. S. BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING, AND THE SOIL CONSERVATION SERVICE AND THE COLLEGE OF AGRICULTURE.



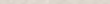
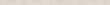
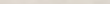
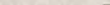
SLOPE LETTERS

Level land (0-2%).	A
Gently sloping land (2-6%).	B
Sloping to steep land (6-15%).	D
Steep to very steep land (15-30%).	F
Very steep land, usually stony (30%+).	G

EROSION SYMBOLS

Deposition.....	+
Slight erosion.....	1
Moderate erosion.....	2
Severe erosion.....	3
Very severe erosion.....	4

MAP SIGNS

State line	
County line	
Township line	
Town line	
Section line	
Paved highway	
Bituminous highway	

Road.....

Lane.....

Railroad.....

House.....

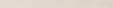
School.....

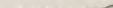
Creamery.....

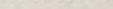
Church.....

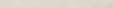
Cemetery	+
Quarry	☒
Bluff or escarpment	~~~~~
Rock ledges	vvvvv
Stony spot	o o o
Sandy spot	
Chert fragments	200

River..... 

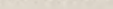
Permanent stream..... 

Intermittent stream..... 

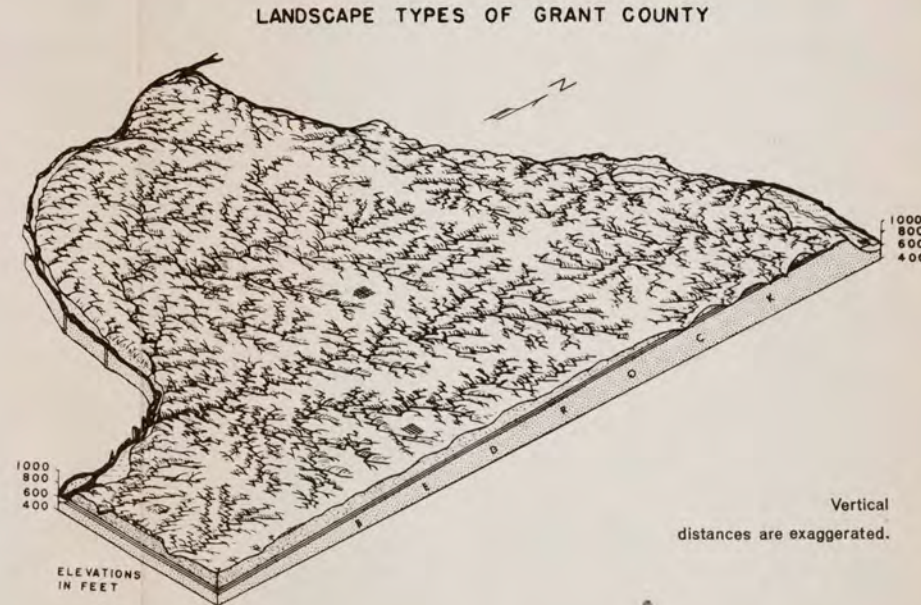
Water..... 

Spring..... 

Marshy spot..... 

Soil boundary..... 

TURN THIS BOTTOM FLAP TO FIND THE COMPLETE LIST OF SOIL NUMBERS



SOIL MAP, TOWN OF PARIS (T.2N.,R.2W.) GRANT COUNTY, WISCONSIN



HOW TO READ THE MAP

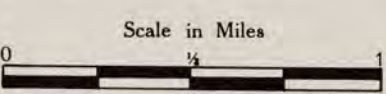
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Example: 30 = Dubuque silt loam (brown soil over red clay).
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Example: 30F = Dubuque silt loam, with a slope of 15 to 30 per cent (the surface of the soil rises or falls 15 to 30 feet in every 100 feet of horizontal distance).

A number follows the slope letter to tell the degree of erosion.
Example: 30F3 = Dubuque silt loam with a slope of 15-30%, severely eroded.

SOIL SURVEY, 1949-50. BY THE SOIL SURVEY DIVISION, WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY, IN COOPERATION WITH THE SOIL SURVEY DIVISION, U. S. BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING, AND THE SOIL CONSERVATION SERVICE AND THE COLLEGE OF AGRICULTURE.



SLOPE LETTERS

- Level land (0-2%) A
- Gently sloping land (2-6%) B
- Sloping to steep land (6-15%) D
- Steep to very steep land (15-30%) F
- Very steep land, usually stony (30%+) G

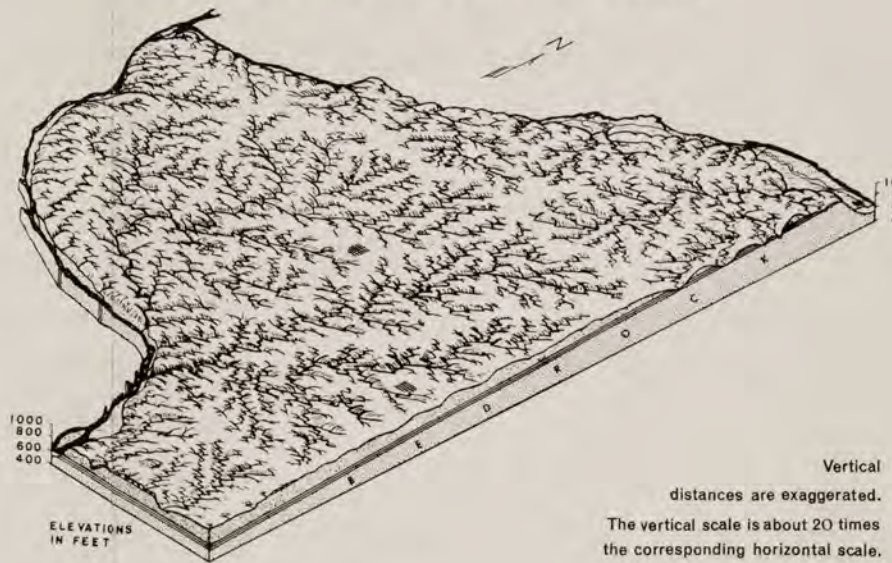
EROSION SYMBOLS

- Deposition +
- Slight erosion 1
- Moderate erosion 2
- Severe erosion 3
- Very severe erosion 4

MAP SIGNS

- | | | | |
|--------------------------------------|--------------------|-----------------------------------|-------------------------------|
| State line | Lane | Power-Transmission line | River |
| County line | Railroad | Quarry | Permanent stream |
| Township line | House | Bluff or escarpment | Intermittent stream |
| Section line | School | Rock ledges | Water |
| State and Federal Highways | Creamery | Stony spot | Spring |
| Other roads | Church | Sandy spot | Marshy spot |
| | Cemetery | Chert fragments | Soil boundary |

LANDSCAPE TYPES OF GRANT COUNTY



Vertical distances are exaggerated.
The vertical scale is about 20 times the corresponding horizontal scale.

TURN UP THIS BOTTOM FLAP TO FIND THE COMPLETE LIST OF SOIL NUMBERS

SOIL MAP, TOWN OF PLATTEVILLE (T.3N.,R.1W.), GRANT COUNTY, WISCONSIN



SOIL SURVEY, 1949-50, BY THE SOIL SURVEY DIVISION, WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY, IN COOPERATION WITH THE SOIL SURVEY DIVISION, U.S. BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING, AND THE SOIL CONSERVATION SERVICE, AND THE COLLEGE OF AGRICULTURE.

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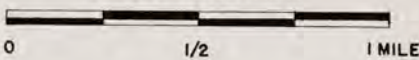
SLOPE LETTERS-

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- B - Gently sloping land (2-6%)
- D - Sloping to steep land (6-15%)
- F - Steep to very steep land (15-30%)
- G - Very steep land, usually stony (30%+)

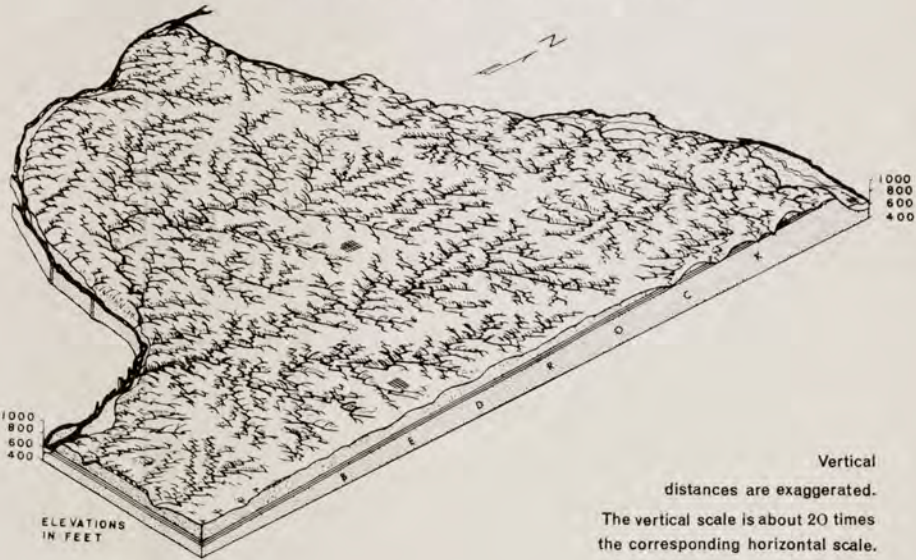
EROSION SYMBOLS-

- + - Deposition
- 1 - Slight erosion
- 2 - Moderate erosion
- 3 - Severe erosion
- 4 - Very severe erosion

Scale 2 inches = 1 mile



LANDSCAPE TYPES OF GRANT COUNTY



MAP SIGNS

Soil boundary	Railroad	Water
County line	Cemetery	Marshy spot
Town line	House	Bluff or escarpment
Section line	School	Quarry or pit
Paved Highway	Church	Rock ledges
Bituminous Highway	River	Stony spot
Road	Permanent stream	Sandy spot
Lane	Intermittent stream	Sink

TURN UP THIS BOTTOM FLAP TO FIND THE COMPLETE LIST OF SOIL NUMBERS

SOIL MAP, TOWN OF POTOSI, GRANT COUNTY, WISCONSIN



LANDSCAPE TYPES OF GRANT COUNTY



HOW TO READ THE MAP

This soil map shows section lines, roads, houses, and streams, and it shows the soils, the slope of the land, and the eroded areas. Each first number on the map stands for a soil.

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Example: 30F3 = Dubuque silt loam with a slope of 15-30%, severely eroded.

SOIL SURVEY, 1949-50. BY THE SOIL SURVEY DIVISION, WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY, IN COOPERATION WITH THE SOIL SURVEY DIVISION, U. S. BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING, AND THE SOIL CONSERVATION SERVICE AND THE COLLEGE OF AGRICULTURE.

SLOPE LETTERS

Level land (0-2%) A
Gently sloping land (2-6%) B
Sloping to steep land (6-15%) C
Steep to very steep land (15-30%) D
Very steep land, usually stony (30%+) E

EROSION SYMBOLS

Deposition +
Slight erosion 1
Moderate erosion 2
Severe erosion 3
Very severe erosion 4

SCALE IN MILES



MAP SIGNS

State line	County line	Township line	Town line	Section line	Paved highway	Bituminous highway
Road	Lane	Railroad	House	School	Cemetery	Church
Cemetery	Power-transmission line	Quarry	Steeper Slopes	Stony Spot	Sandy Spot	Lake
River	Permanent Stream	Intermittent Stream	Spring	Marshy Spot	Dam	Soil Boundary

TURN THIS BOTTOM FLAP TO FIND THE COMPLETE LIST OF SOIL NUMBERS