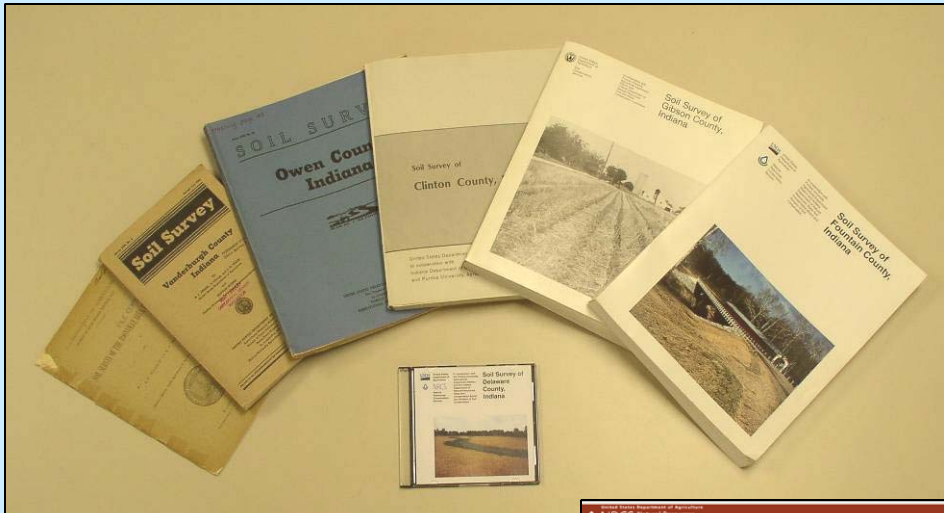
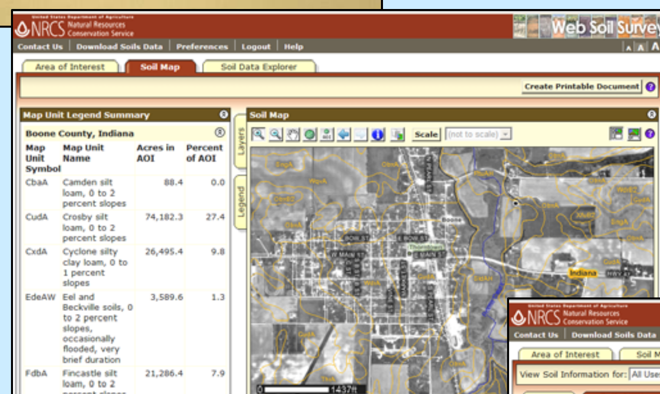
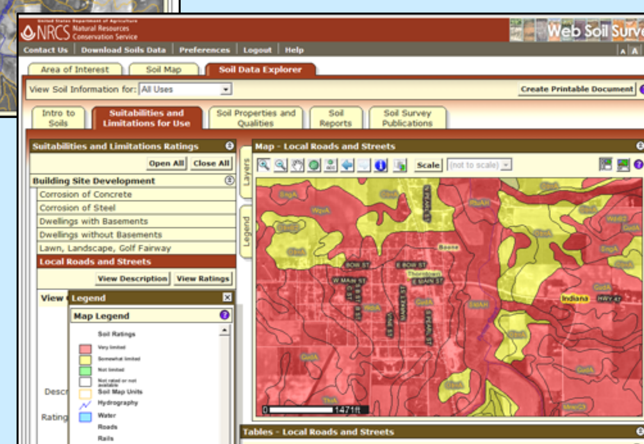


Indiana Soil Survey 1902-2007

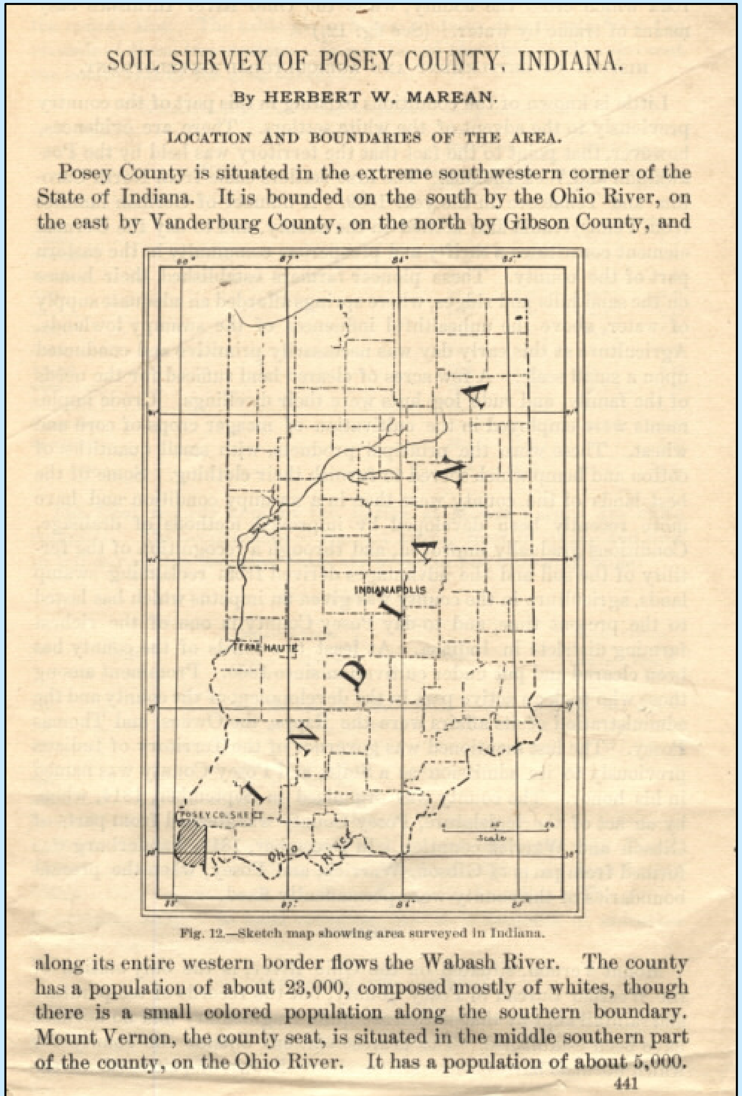


Mike Wigginton
Soil Scientist
Indianapolis, Indiana
January 18, 2007



105 years and counting…

1902
Posey County
First Indiana Soil Survey



SOIL SURVEY OF POSEY COUNTY, INDIANA.

By HERBERT W. MAREAN.

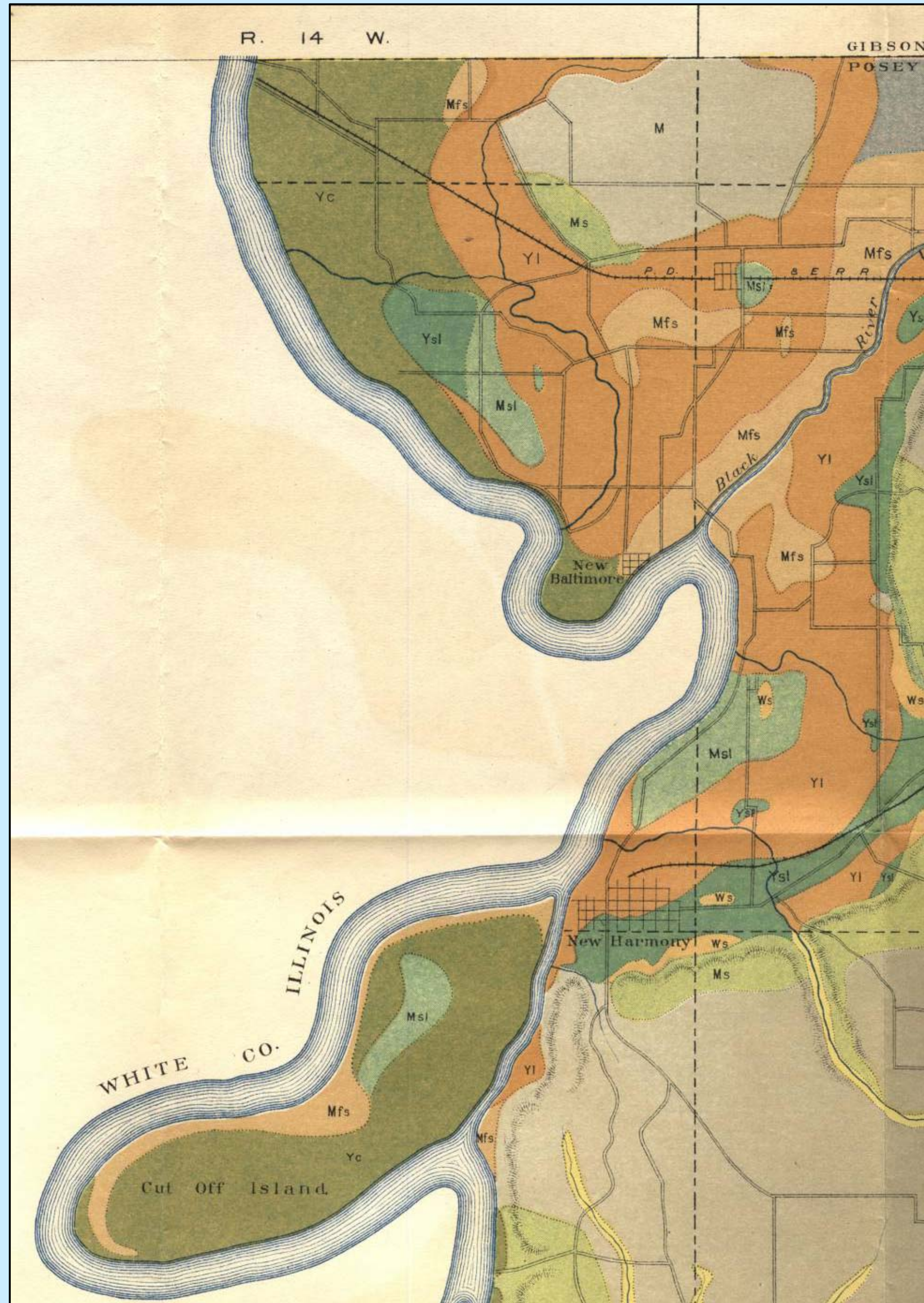
LOCATION AND BOUNDARIES OF THE AREA.

Posey County is situated in the extreme southwestern corner of the State of Indiana. It is bounded on the south by the Ohio River, on the east by Vanderburg County, on the north by Gibson County, and

Fig. 12.—Sketch map showing area surveyed in Indiana.

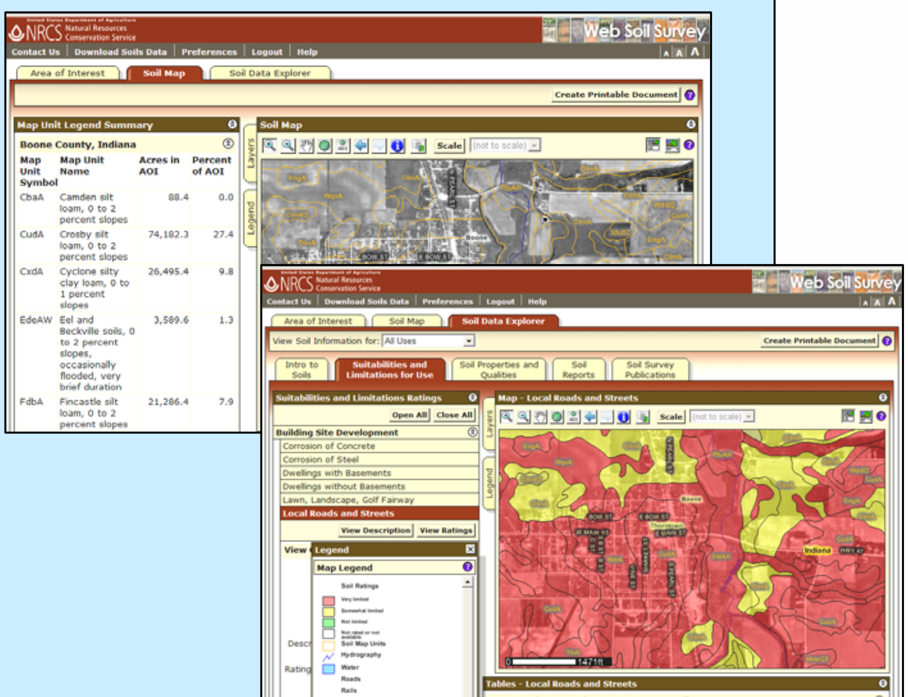
along its entire western border flows the Wabash River. The county has a population of about 23,000, composed mostly of whites, though there is a small colored population along the southern boundary. Mount Vernon, the county seat, is situated in the middle southern part of the county, on the Ohio River. It has a population of about 5,000.

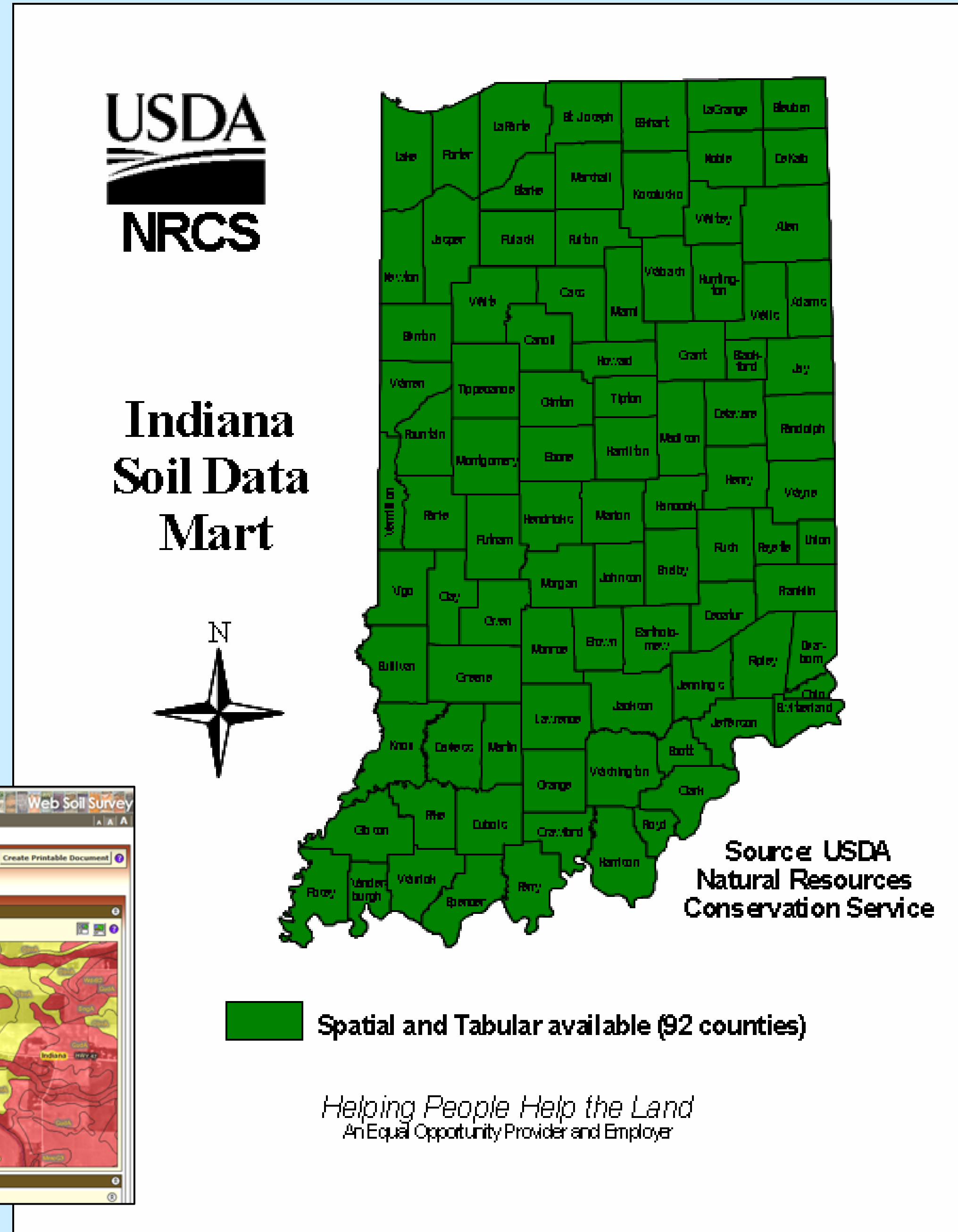
441



January 2007
Warren County

Digital soils data for the last Indiana county posted to the Soil Data Warehouse.





Soil Survey History

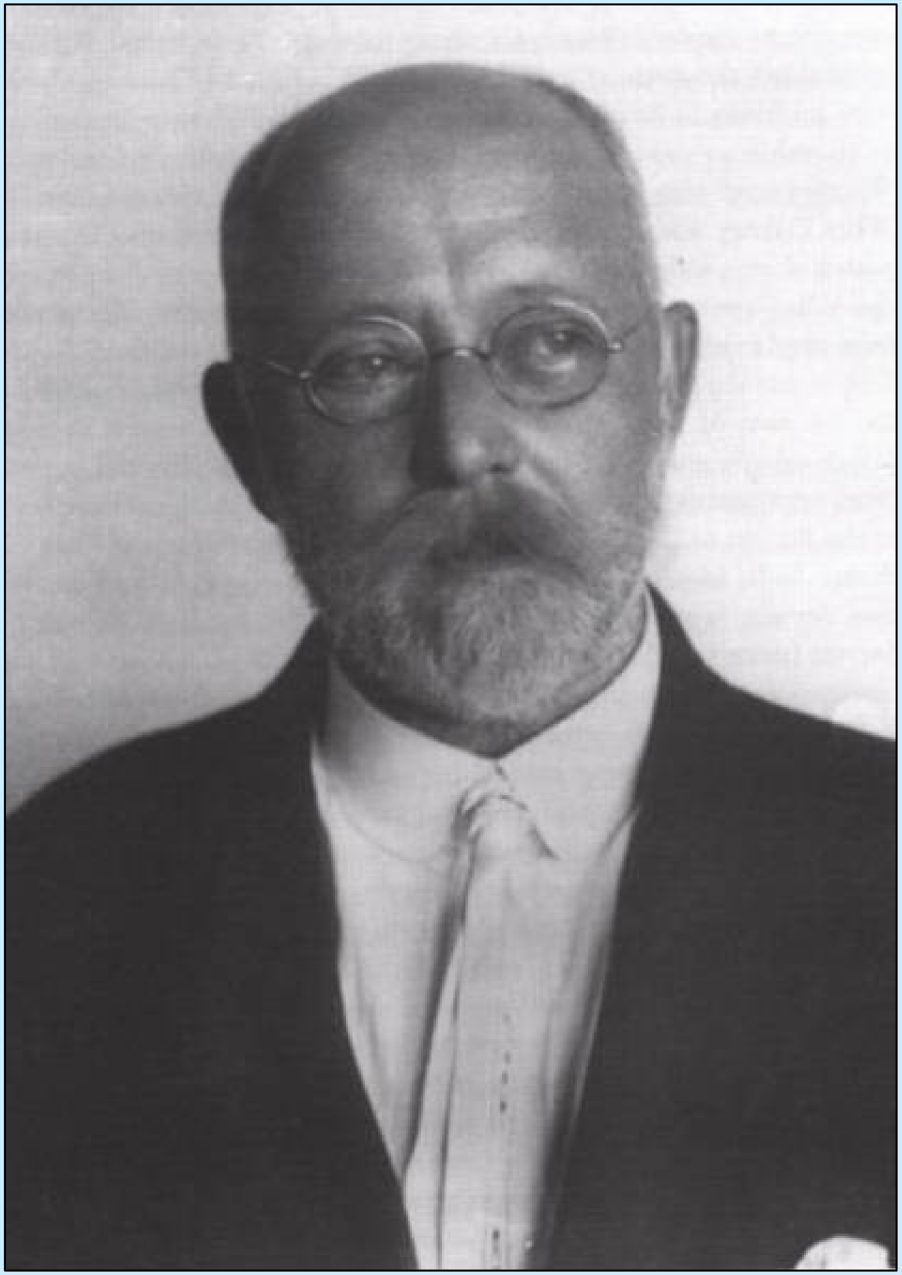
1898 **-** Soil survey work initiated by the Division of Agricultural Soils
1899 **-** National Cooperative Soil Survey established
1912 **-** Soil Survey Division established in Bureau of Soils
1927 **-** Soil Survey Division Transferred to Bureau of Chemistry and Soils
1935 **-** Component of the Soil Investigations unit
1938 **-** Soil Survey Division Transferred to Bureau of Plant Industry
1946 **-** Assigned to Soil Divisions unit, Bureau of Plant Industry, Soils & Agricultural Engineering
1951 **-** Re-designated U.S. Soil Survey, Soil Group
1952 **-** Soil Survey assigned to Soil Conservation Service

Soil Survey History

1894 - 1895	Division of Agricultural Soils/USDA, Weather Bureau
1895 - 1897	Division of Agricultural Soils/USDA
1897 - 1901	Division of Soils/USDA
1901 - 1927	Bureau of Soils/USDA
1927 - 1938	Bureau of Chemistry and Soils/USDA
1938 - 1943	Bureau of Plant Industry/USDA
1943 - 1952	Bureau of Plant Industry, Soils, & Agricultural Engineering/USDA
1952 - 1994	Soil Conservation Service/USDA
1994 - present	Natural Resources Conservation Service/USDA

May 3, 1899

Milton Whitney
first chief of Soil Survey
(National)




Plane table mapping

Early Soil Surveys 1902-1959

County	Date
Posey	1902
Madison	1903
Booneville Area	1904
Marshall	1904
Scott	1904
Newton	1905
Tippecanoe	1905
Greene	1906
Clark, Floyd, and Harrison	1907
Marion	1907
Allen	1908
Boone	1912
Hamilton	1912
Montgomery	1912
Tipton	1912
Delaware	1913
Hendricks	1913
Clinton	1914
Elkhart	1914
Warren	1914
Grant	1915
Starke	1915

County	Date
Wells	1915
White	1915
Benton	1916
Porter	1916
Lake	1917
Decatur	1919
Adams	1921
Clay	1922
Gibson	1922
Kosciusko	1922
Lawrence	1922
Monroe	1922
Hancock	1925
Putnam	1925
Wayne	1925
Miami	1927
Blackford	1928
Ohio and Switzerland	1930
Vermillion	1930
Randolph	1931
Dubois	1937
Rush	1937

County	Date
Pike	1938
Washington	1939
Jennings	1940
Steuben	1940
Knox	1943
LaPorte	1944
Vanderburgh	1944
Brown	1946
Fulton	1946
Martin	1946
Bartholomew	1947
Johnson	1948
Franklin	1950
Morgan	1950
St. Joseph	1950
Noble	1953
Cass	1955
Newton	1955
Carroll	1958
Tippecanoe	1959

1837-1896

Early References to soils in reports from Indiana Department of Geology and Natural Resources

1837 Report of a Geological Reconnaissance of the State of Indiana, David Dale Owen, State Geologist

1859-1860 Report of the Reconnaissance of Indiana, Richard Owen, State Geologist

Indiana Department of Geology and Natural Resources Annual Reports. References to soils have been included since 1869.

1st	**1869**	Franklin
3rd	**1871**	Dubois, Parke, Pike, Dearborn, Ohio & Switzerland
5th	**1873**	Warren
12th	**1882**	Marion, Newton
13th	**1883**	Johnson
15th	**1886**	Benton, Boone, Hancock
17th	**1891**	Carroll
21st	**1896**	Vigo

1869
Indiana Department of Geology and Natural Resources 1st Annual Report Franklin County Soils

SOIL AND AGRICULTURE.

There is considerable variety in the soil of Franklin county. The Whitewater bottoms are, or at least once were, as productive lands as could be found anywhere; they contain a large per cent. of vegetable matter, or humus, with clay, sand and lime -- in fact all the elements of fertility. Some of these lands have produced pretty fair crops of corn for fifty successive years without the use of any kind of manures. This constant cropping in corn, however, is perceptibly exhausting them, and points out the necessity of a rotation in crops, and the application of fertilizers, if we expect them to maintain their fertility.

Forty years ago wheat could not be profitably produced in the alluvial bottoms on account of the great amount of vegetable matter which the soil contained. This has to a considerable extent been exhausted by the growing of corn and these lands now produce good crops of wheat. In the eastern part of the county, Bath, Springfield, and Whitewater townships, there is a large amount of level and very productive land. Many parts of this section were formerly considered to be of little value on account of their swampy character, but, since they have been cleared and drained, hey are considered, taken all in all, to be the most desirable lands we have. The soil is largely composed of vegetable matter with a subsoil of yellow clay…

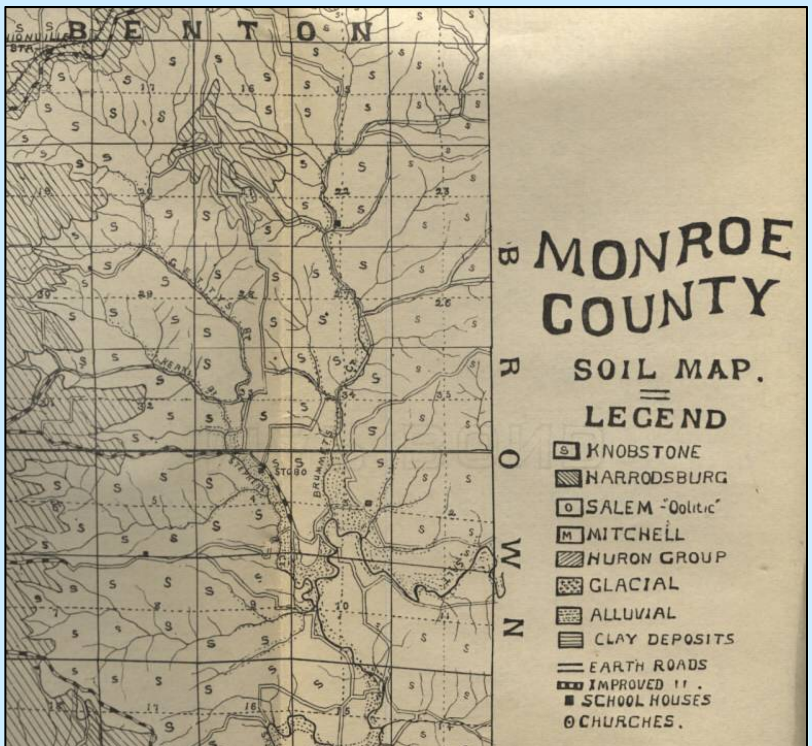
1907 Soil Survey Progress Map

In a parallel effort, the Indiana Department of Geology and Natural Resources published three soil survey reports for 17 southern Indiana Counties in their 32nd Annual Report in 1907.

1907

Soil Survey of Monroe, Brown, Lawrence, Martin, Orange, Washington, and Jackson Counties

Black and white line maps of parent materials for each county



Soil Survey of Monroe, Brown, Lawrence, Martin, Orange, Washington, and Jackson Counties.

By C. W. Shannon and L. C. Snider.

The counties in this group occupy an area in central southern Indiana of about 3,000 square miles. The north line of this area is about 30 miles south of Indianapolis, and the southern boundary is about 15 miles from the Ohio. Transportation facilities are good, and the cities of Chicago, Indianapolis, Louisville, St. Louis and Cincinnati are easily reached, and several cities within the area are in a very prosperous condition and are the center of great industrial activity.

Geology of the Area.—The seven counties here treated lie for the most part in the driftless part of the State, and the surface rocks of the area belong to the Subcarboniferous or Mississippian Period, hence in the discussion of the soils of this section we are dealing principally with residual types. The Knobstone formation covers the whole of Brown and the eastern portions of Monroe, Lawrence and Washington and the greater part of Jackson County. This formation consists of shales and sandstones, and its general characteristics have been discussed under the subject of "Indiana Soil Types." The Harrodsburg, Salem and Mitchell limestones lie on the order named above the knobstone, or to the west of the knobstone area. Each of these comprise large areas in the counties of Monroe, Lawrence, Washington, and about 15 square miles of Harrodsburg are found in western Jackson, and the Mitchell covers more than a third of Orange County. The Huron group, a series of limestones, sandstones and shales, extend over western Monroe, Lawrence and eastern Martin and about one-half of Orange.

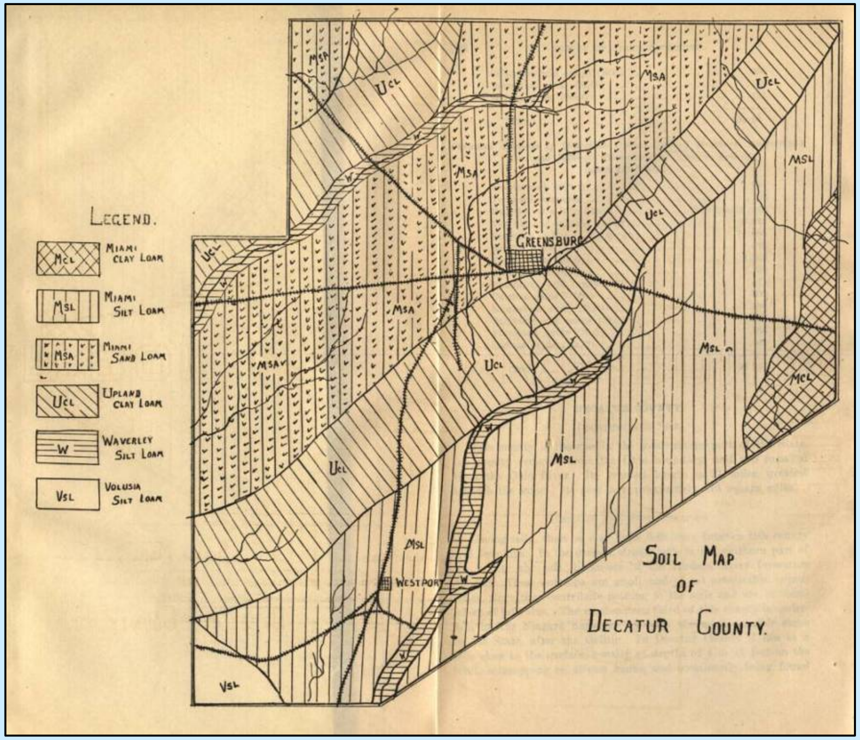
The Mansfield sandstone occurs to some extent in Lawrence, and covers large areas in Martin and Orange. The coal measures proper are confined to isolated patches and ridges in Martin County.

Very small amounts of glacial material occur in northern Monroe and Brown and is thinly distributed over the eastern half of Jackson, except in a few places, such as Chestnut Ridge, where

1907

Soil Survey of Decatur, Jennings, Jefferson, Ripley, Dearborn, Ohio, and Switzerland Counties, Indiana

Black and white line maps of parent materials for each county



A Soil Survey of Decatur, Jennings, Jefferson, Ripley, Dearborn, Ohio and Switzerland Counties, Indiana.

By L. C. Ward.

THE TERRITORY.

The territory embraced in this report consists of the seven counties above mentioned, lying in the southeastern corner of Indiana. The area is bounded on the south by the Ohio River, on the east by the State of Ohio, and on the north and west by the limiting lines of the counties named above. With the exception of Decatur County, a common bond of geology justifies the consideration of this territory in a single report.

The work done is an attempt to classify the soils of the territory on the basis, first, of their origin, and, secondly, their physical and chemical composition. The methods, in the main, are those used by the Soil Survey of the United States Department of Agriculture; and wherever possible the system of nomenclature used by that survey has been followed.

Geology and Physiography.

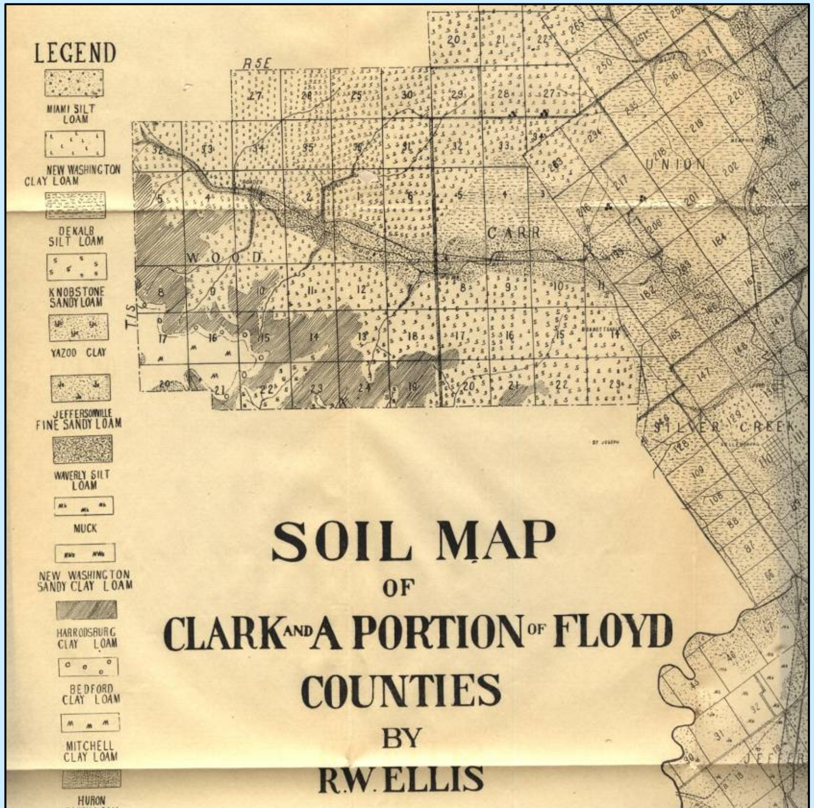
No discussion of the soils of a region can be intelligently begun without some discussion of its geological history, and the subsequent effects of weathering, stream action and other agencies which have operated to make it what it is. These will be considered in detail in connection with the descriptions of the soils by counties. But it seems desirable here to consider these subjects in their general relations with the area as a whole. This general description must be understood as applying to all the region except Decatur County, which, in two-thirds of its area, is entirely different from the remainder of the territory.

Geologically, the region under discussion forms part of the western side of the Cincinnati dome, a name given by geologists to an island which arose from the ancient interior sea, and has probably been land ever since. This dome is elliptical, with its

1907

Soil Survey of Clark, Floyd and Harrison Counties

Black and white soil line maps for Clark and part of Floyd Counties and Harrison and part of Floyd Counties



A Soil Survey of Clark, Floyd and Harrison Counties.

By Robert W. Ellis.

DESCRIPTION OF THE AREA.

The territory under consideration in this report embraces the counties of Clark, Floyd and Harrison. These counties all border on the Ohio River. They are bounded on the north by the counties of Jefferson, Scott and Washington. Washington County also forms the western boundary of Clark County, while Crawford County lies west of Harrison. The area comprises about 1,000 square miles, being approximately 50 miles in length and 20 in breadth, lying with its greater extension in a northeast-southwest direction. The Ohio River courses along its southeastern boundary, a distance of 30 miles above the Falls and 55 miles below the Falls, and its central portion is nearly opposite Louisville, Ky. A brief statement of facts concerning the surface features, the settlement, the industrial facilities, etc., is given for each county, as follows:

Clark County.—The population of Clark County in 1900 was about 32,000, being an average of 85 people to the square mile. The population is largely white, but a considerable percentage of colored population exists in the larger towns. The county embraces most of the tract known as "Clark's Grant," this being the portion of land assigned to Capt. George Rogers Clark in recognition of his services against the British in the Revolutionary War.*

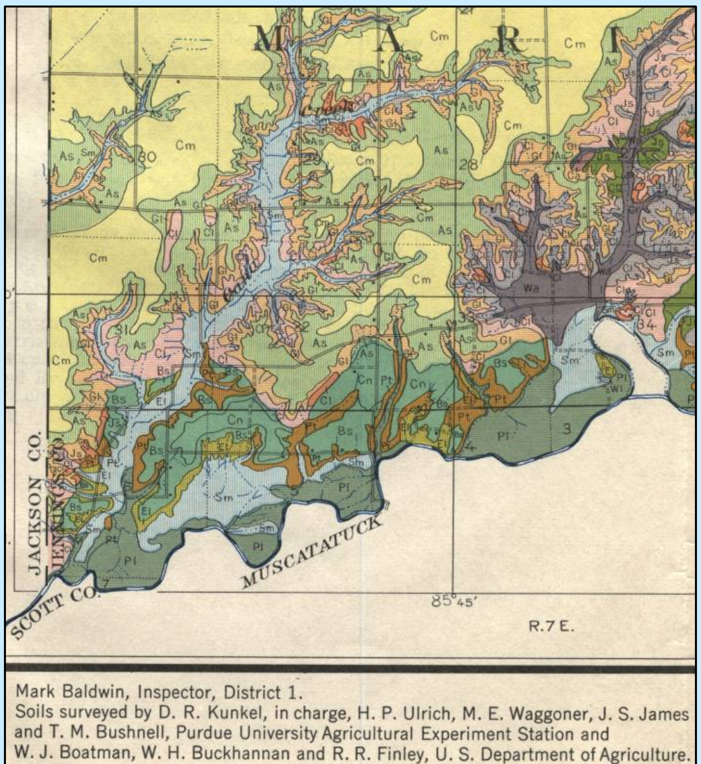
The first settlements were made in 1787, and the settlers came from Pennsylvania, from Virginia, from North Carolina, from Maryland and from New York. Development was slow till after the Civil War, when its progress became very rapid.

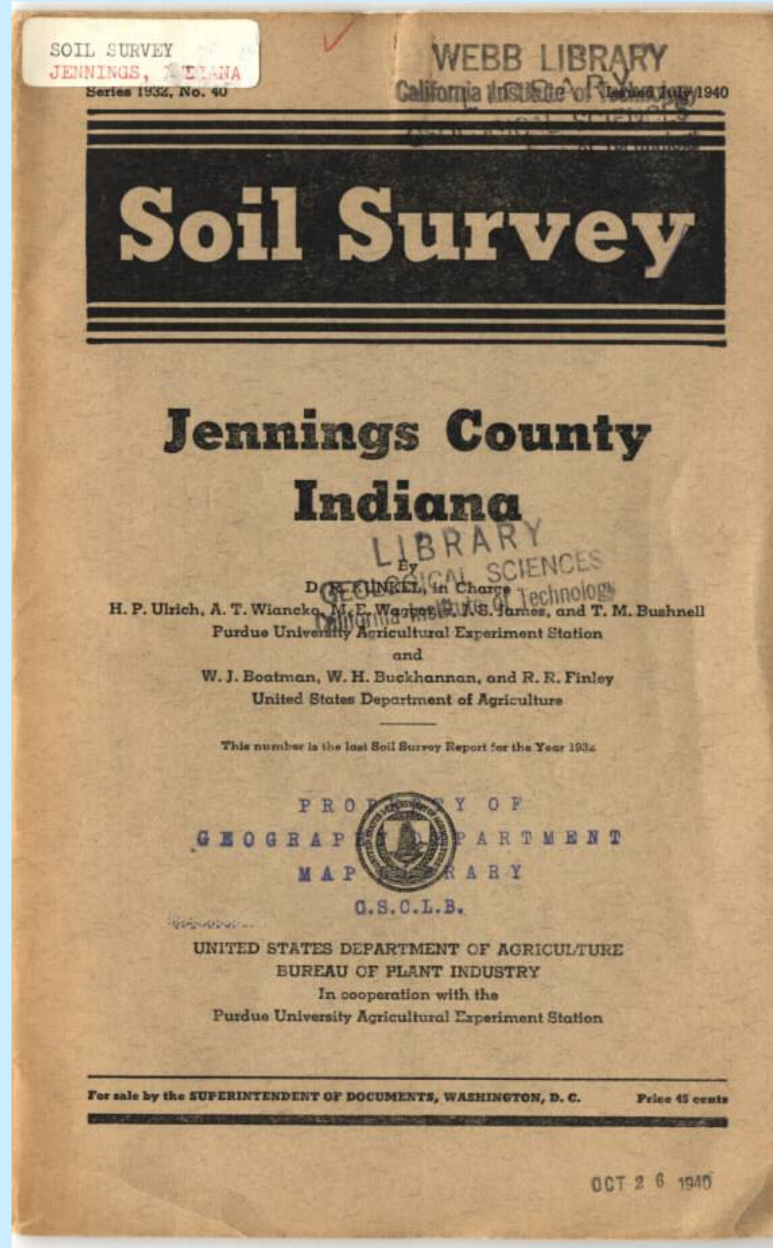
*Clark's Grant comprises an area about 15 miles square and it is laid off in 500-acre tracts numbered successively from 1 to 298. The lines of these tracts do not run in north-south and east-west directions but approximately parallel or at right angles to the Ohio river a few miles above the Falls. One line runs about north 30° west, the other, north 60° east. Most of the roads follow the directions of these lines, but some of them follow irregular courses between towns, without reference to section lines or points of the compass.

1929
Jennings County, Indiana

First soil survey in U.S.
<u>mapped</u> using aerial photographs

Published 1932 w/ color line map

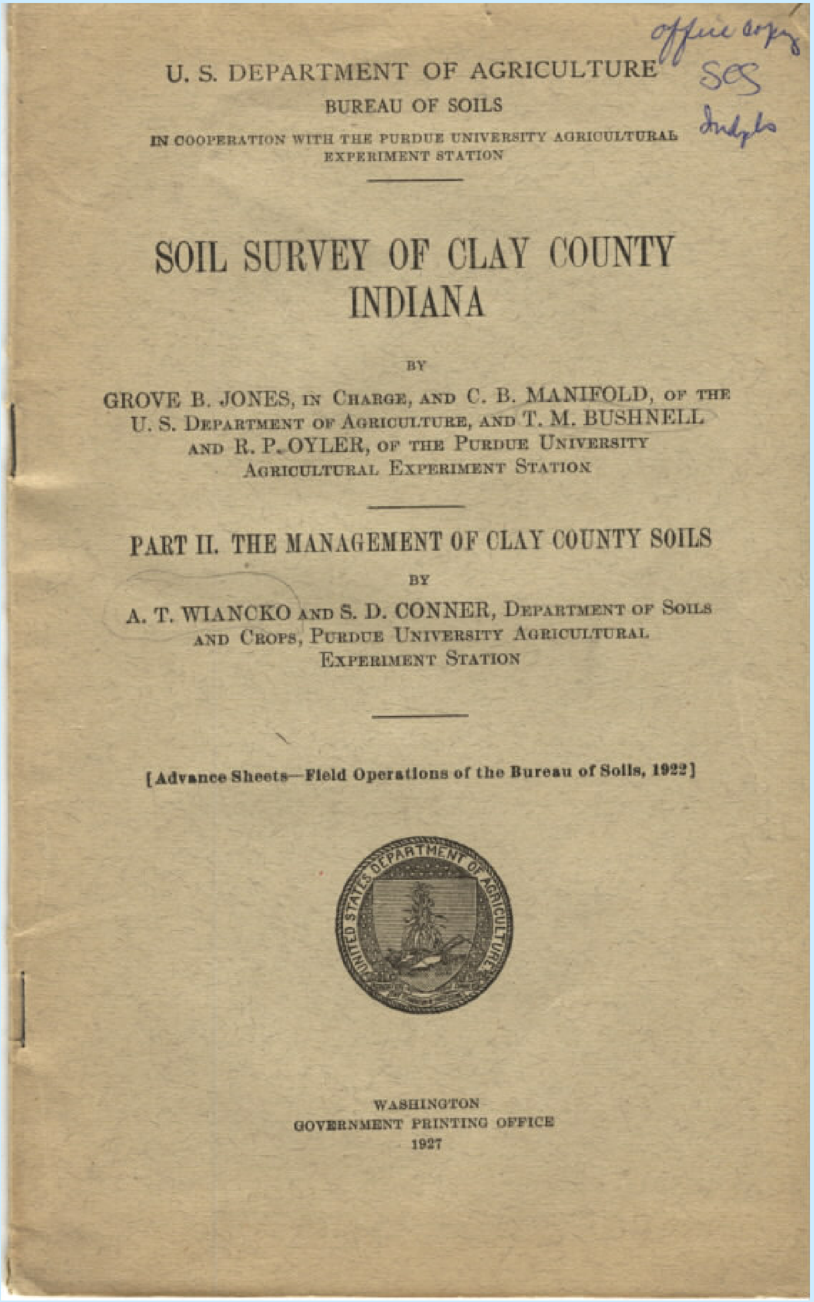




1922

Clay County, Indiana

Part II. Management of Clay County Soils section added



U. S. DEPARTMENT OF AGRICULTURE

BUREAU OF SOILS

IN COOPERATION WITH THE PURDUE UNIVERSITY AGRICULTURAL EXPERIMENT STATION

SOIL SURVEY OF CLAY COUNTY INDIANA

BY

GROVE B. JONES, IN CHARGE, AND C. B. MANIFOLD, OF THE U. S. DEPARTMENT OF AGRICULTURE, AND T. M. BUSHNELL AND R. P. OYLER, OF THE PURDUE UNIVERSITY AGRICULTURAL EXPERIMENT STATION

PART II. THE MANAGEMENT OF CLAY COUNTY SOILS

BY

A. T. WIANCKO AND S. D. CONNER, DEPARTMENT OF SOILS AND CROPS, PURDUE UNIVERSITY AGRICULTURAL EXPERIMENT STATION

[Advance Sheets—Field Operations of the Bureau of Soils, 1922]

WASHINGTON
GOVERNMENT PRINTING OFFICE
1927

1938 Soil classification system

59183°—38——64

Table 2.—*Classification of soils on the basis of their characteristics*

Category VI Order	Category V Suborder	Category IV Great soil groups	Category III Family [1]	Category II Series [1]	Category I Type [1]
Zonal soils	Soils of the cold zone	1. Tundra soils			
Pedocals	1. Light-colored soils of arid regions	2. Desert soils	Mesa	Mesa	Mesa gravelly loam.
				Chipeta	Chipeta silty clay loam.
		3. Red Desert soils	Mohave	Mohave	Mohave loam.
				Reeves	Reeves fine sandy loam.
		4. Sierozem	Portneuf	Portneuf	Portneuf silt loam.
		5. Brown soils	Joplin	Joplin	Joplin loam.
				Weld	Weld loam.
		6. Reddish Brown soils	Springer	Springer	Springer fine sandy loam.
				White House	White House coarse sandy loam.
	2. Dark-colored soils of the semi-arid, subhumid, and humid grasslands.	7. Chestnut soils	Rosebud	Rosebud	Rosebud fine sandy loam.
				Keith	Keith silt loam.
		8. Reddish Chestnut soils	Amarillo	Amarillo	Amarillo fine sandy loam.
				Abilene	Abilene clay.
		9. Chernozem soils	Barnes	Barnes	Barnes very fine sandy loam.
		10. Prairie soils	Carrington	Carrington	Carrington loam.
				Tama	Tama silt loam.
		11. Reddish Prairie soils	Zaneis	Zaneis	Zaneis very fine sandy loam.
				Renfrow	Renfrow silt loam.
Pedalfers	3. Soils of the forest-grassland transition.	12. Degraded Chernozem soils			
		13. Noncalcic Brown or Shantung Brown soils.	Holland	Holland	Holland sandy loam.
				Vista	Vista sandy loam.
				Fallbrook	Fallbrook fine sandy loam.
				Sierra	Sierra coarse sandy loam.
			Placentia	Placentia	Placentia fine sandy loam.
				Ramona	Ramona sandy loam.
			Weihaiwei	Weihaiwei	Weihaiwei loam.
				Tinghsien	Tinghsien fine sandy loam.
	4. Light-colored podzolized soils of the timbered regions.	14. Podzol soils	Kalkaska	Kalkaska	Kalkaska loamy sand.
				Au Train	Au Train loamy sand.
			Rubicon	Rubicon	Rubicon sand.
				Roselawn	Roselawn sand.
			Hermon	Hermon	Hermon loam.
				Colton	Colton loamy sand.
				Becket	Becket loam.

[10] Unfamiliar terms in these tables are defined in the Glossary, p. 1162.

1943

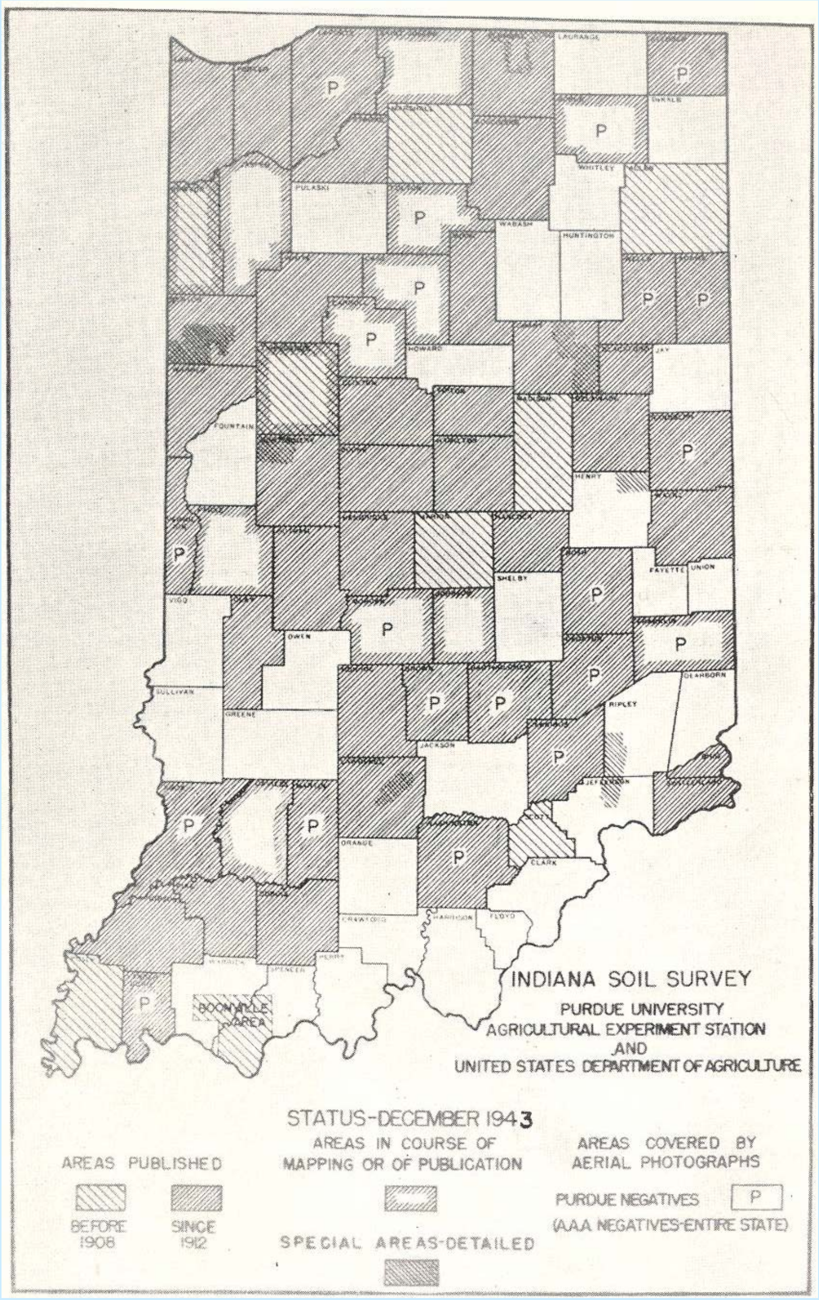
Knox County

First Indiana general soil map

FIGURE 2.—Generalized soil map showing eight different soil associations in Knox County, Ind.: 1, Alford silt loam and associates; 2, Princeton silt loam and associates; 3, sandy Princeton soils and associates; 4, Oaktown and Elkinsville soils and associates; 5, Fox and Homer soils; 6, Warsaw and Buckner soils; 7, Abington, Montgomery, and similar soils; 8, alluvial soils.

December 1943

Indiana Soil Survey
Status Map



1944

Vanderburgh County, Indiana

First estimated crop yields at two levels of management

TABLE 9.—*Estimated acre yields, under prevailing soil management practices, of the principal crops grown on each soil in Vanderburgh County, Ind.*[1]

Soil (soil types, phases, and land types)	Slope range	Corn (open-pollinated)		Corn (hybrid)		Wheat		Soybeans (seed)		Lespedeza hay	Timothy and redtop hay		Red clover hay		Alfalfa hay		Potatoes	Pasture (relative rating in county)		Principal crops or use of land
		A	B	A	B	A	B	A	B	A	A	B	A	B	A	B	B	A	B	
	Percent	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*	*Bu.*	*Pct.*	*Pct.*	
Adler silt loam	0-3	40				16		20					1.6						90	General crops (corn, wheat, soybeans, hay).
Alford silt loam	3-6		50				22		20			1.7		1.5		3.0	150		100	Do.
Alford silt loam, level phase	0-3		50				22		20			1.7		1.5		3.0	150		100	Do.
Alford silt loam, eroded phase	3-6		50				22		20			1.7		1.5		3.0	150		100	Do.
Alford silt loam, eroded slope phase	6-10		35				18		18			1.6		1.3		2.7		80		Do.
Alford silt loam, severely eroded slope phase	6-10																	70		Pasture.
Alford silt loam, severely eroded hill phase	10-14																	60		Do.
Algiers silt loam	0-3	50						20					2.0						100	Corn, soybeans, hay.
Algiers silt loam, colluvial phase	0-3	50				18		20					2.0						100	Do.
Ayrshire silt loam (drained)	0-3		50		55		20		20			1.8	1.7						80	General crops.
Boehne silt loam	0-3	25						15										70		Corn, soybeans.
Boehne silt loam, gentle-slope phase	3-6	25						14										70		Do.
Ginat silt loam (drained)	0-3	18				10					1.0							40		General crops.
Hosmer silt loam	3-6	35				18		18		1.2	1.5			1.5		2.0	125	70		Do.
Hosmer silt loam, level phase	0-3	35				19		20		1.2	1.5			1.5		2.0	130	70		Do.
Hosmer silt loam, eroded phase	3-6	28				14		15		1.0	1.5					2.0		60		Do.
Hosmer silt loam, slope phase	6-10	30				15		16		1.2	1.4					2.0		60		Woods.
Hosmer silt loam, eroded slope phase	6-10	25				14		15		1.0	1.4					1.8		50		Wheat, soybeans, hay.
Hosmer silt loam, hill phase	10-14																	40		Woods.
Hosmer silt loam, eroded hill phase	10-14																	40		Wheat, lespedeza, pasture.
Hosmer silt loam, severely eroded slope phase	6-10																	40		Idle.
Hosmer silt loam, severely eroded hill phase	10-14																	30		Hay, wheat, pasture.
Huntington fine sandy loam	0-3	40						20							3.0			100		Corn, soybeans.
Huntington silt loam	0-3	50		55				25							4.0			100		Do.
Huntington silt loam, gentle-slope phase	3-6	50		55				25							4.0			100		Do.
Huntington silty clay loam	0-3	35		40				22							3.0			100		Do.
Huntington silty clay loam, gentle-slope phase	3-6	35		40				22							3.0			100		Do.
Huntington silty clay loam, slope phase	6-10	30		35				20							3.0			90		Do.
Inglefield silt loam	0-3	35				12		18		1.1			1.5					80		General crops.
Iona silt loam	0-3		50				22		20			1.7		1.5		2.7	130		100	Do.
Iona silt loam, eroded gentle-slope phase	3-6		50				22		20			1.7		1.5		2.7			90	Do.
Johnsburg silt loam	0-3	35				18		20		1.3	1.5						120	70		Do.
Johnsburg silt loam, eroded phase	0-3	33				17		20		1.3	1.5							60		Do.
Keyesport silt loam	0-3	30				18		17		1.1	1.2							60		Do.
Lindside silt loam	0-3	45		50				22							3.0			100		Corn, soybeans.

1959

Carroll and Tippecanoe Counties
First block diagrams in Indiana

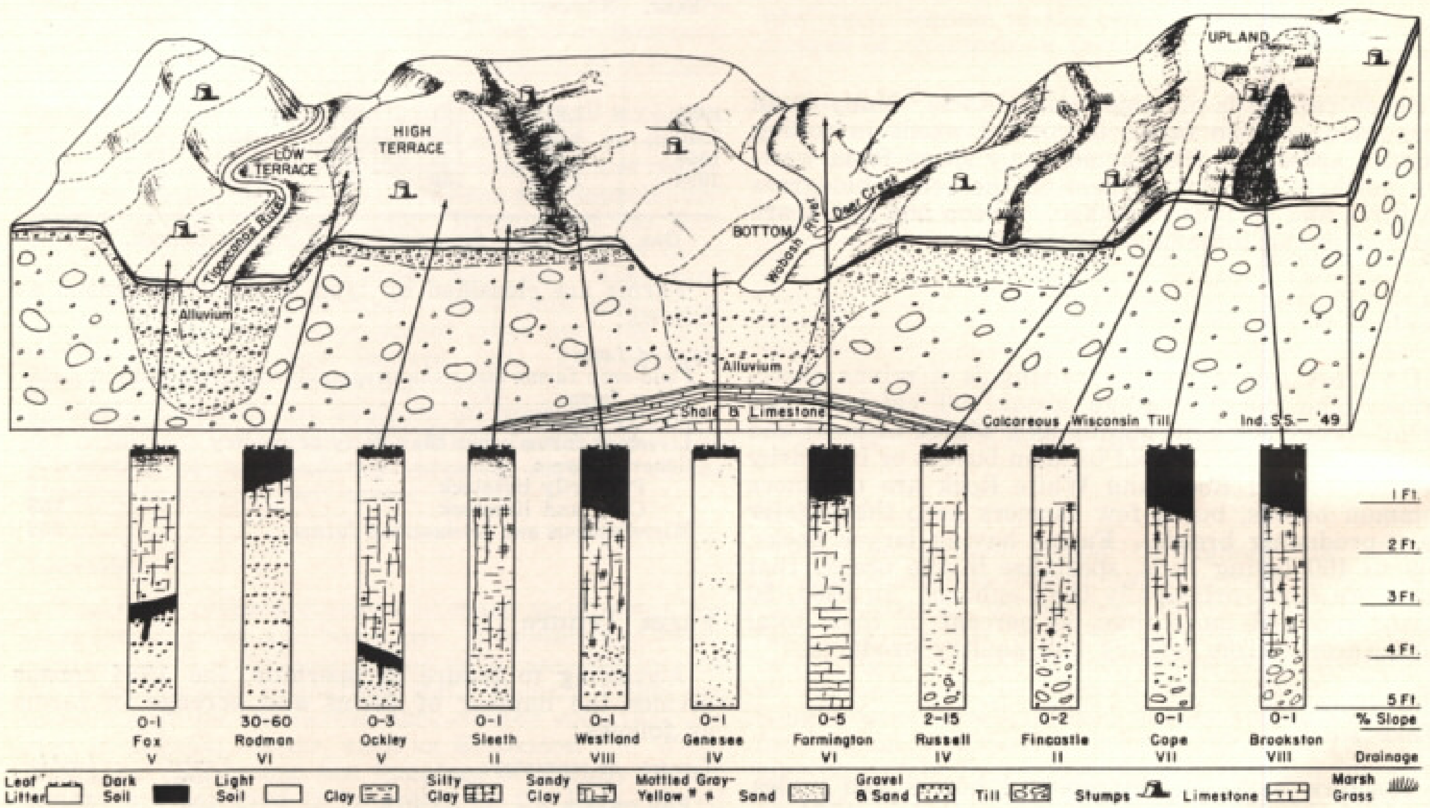


Figure 4.—Schematic cross section of west-central Carroll County showing soil series, parent material, native vegetation, and drainage. Roman numerals below each profile indicate drainage as follows: II, imperfect; IV, good; V, good to excessive; VI, excessive; VII, poor; and VIII, very poor.

1960-1998

Modern Soil Surveys

Fayette and Union	1960
Scott	1962
Owen	1964
Fountain	1966
Madison	1967
Parke	1967
Pulaski	1968
Allen	1969
Perry	1969
Howard	1971
Sullivan	1971
Delaware	1972
Lake	1972
Spencer	1973
Clark and Floyd	1974
Daviess	1974
Elkhart	1974
Hendricks	1974
Shelby	1974
Vigo	1974
Boone	1975
Crawford	1975
Harrison	1975
Bartholomew	1976
Jennings	1976
Vanderburgh	1976
Noble	1977
St. Joseph	1977
Hamilton	1978
Hancock	1978
Marion	1978
Vermillion	1978

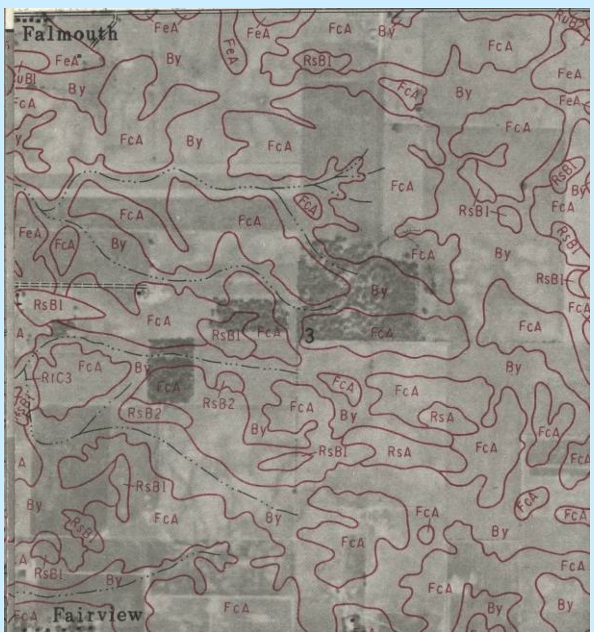
Johnson	1979
Miami	1979
Posey	1979
Warrick	1979
Clinton	1980
Dubois	1980
LaGrange	1980
Marshall	1980
Cass	1981
Dearborn and Ohio	1981
Knox	1981
Monroe	1981
Morgan	1981
Porter	1981
Putnam	1981
Steuben	1981
Clay	1982
DeKalb	1982
Huntington	1982
LaPorte	1982
Starke	1982
White	1982
Decatur	1983
Wabash	1983
Orange	1984
Jefferson	1985
Lawrence	1985
Ripley and parts of Jennings	1985
Adams	1986
Blackford and Jay	1986
Rush	1986
Fulton	1987

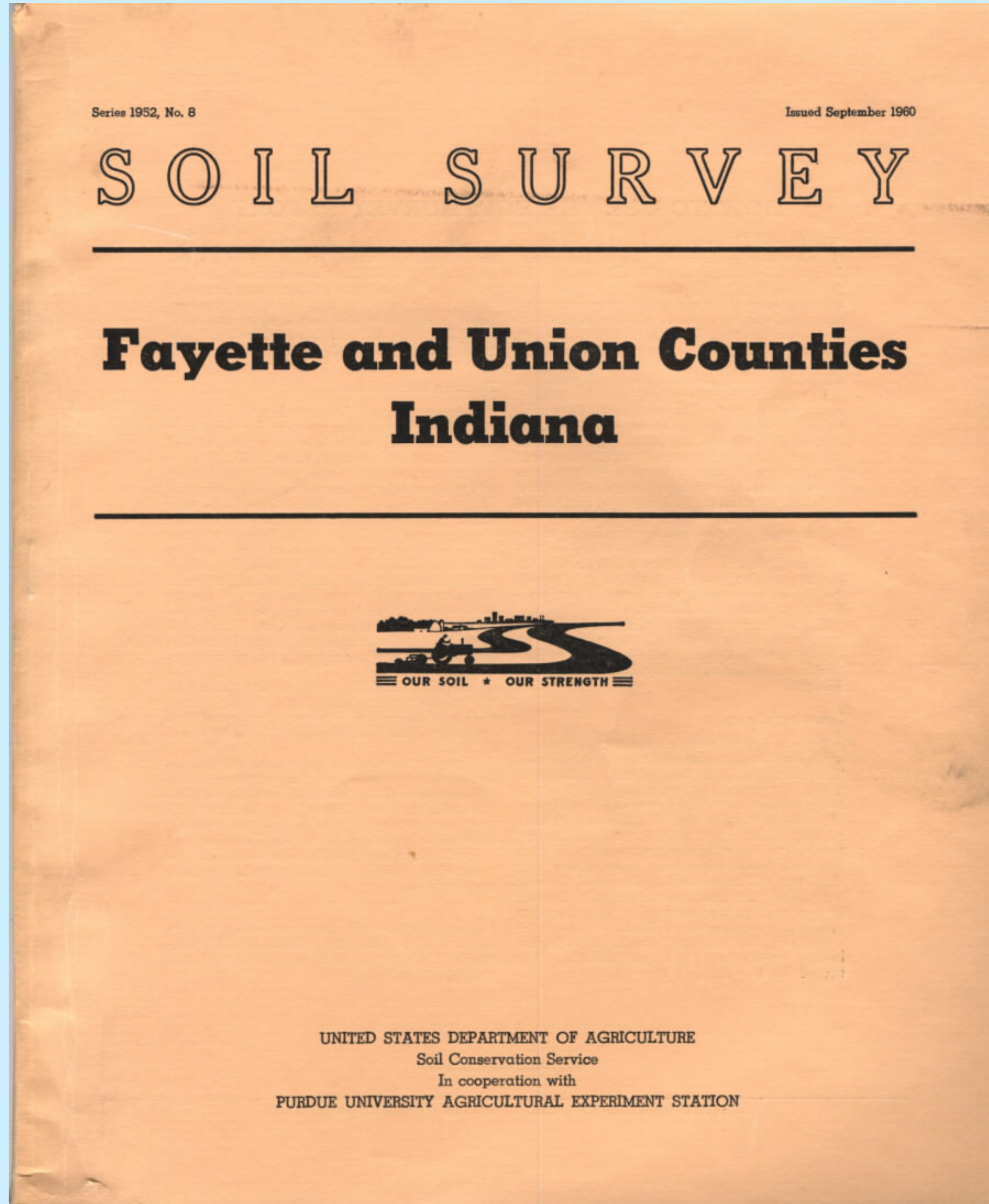
Henry	1987
Pike	1987
Randolph	1987
Switzerland	1987
Wayne	1987
Grant	1988
Greene	1988
Martin	1988
Washington	1988
Benton	1989
Franklin	1989
Gibson	1989
Kosciusko	1989
Montgomery	1989
Tipton	1989
Brown and part of Bartholomew	1990
Jackson	1990
Jasper	1990
Warren	1990
Whitley	1990
Carroll	1991
Wells	1992
Bartholomew	1992
Kosciusko	1992
Lake	1992
Parke	1992
Newton	1998
Tippecanoe	1998

1960

Fayette and Union Counties

First Indiana survey published with air photo base maps




Series 1952, No. 8

Issued September 1960

SOIL SURVEY

Fayette and Union Counties Indiana

OUR SOIL ★ OUR STRENGTH

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with
PURDUE UNIVERSITY AGRICULTURAL EXPERIMENT STATION

1962

Owen County

First engineering test data tables and wildlife section in Indiana

TABLE 9.—*Engineering test data* [1] *for soil samples taken from 29 soil profiles, Owen County, Ind.*—Continued

Soil name and location	Parent material	SCS report No.	Depth	Horizon	Moisture-density [2]: Maximum dry density	Moisture-density [2]: Optimum moisture	CBR test [3]: Molded specimen: Dry density	CBR test [3]: Molded specimen: Moisture content	CBR test [3]: CBR	CBR test [3]: Swell	Mechanical analyses [4]: Percentage passing sieve—: ¾-in.	No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 200 (0.074 mm.)	Percentage smaller than—: 0.05 mm.	0.02 mm.	0.007 mm.	0.002 mm.	Liquid limit	Plasticity index	Classification: AASHO [5]	Classification: Unified [6]
		S59 Ind-60-	Inches		Lb.cu.ft.	Percent	Lb.cu.ft.	Percent	Percent	Percent													
Princeton fine sandy loam: NE¼NW¼ sec. 27, T. 9 N., R. 4 W.	Windblown deposits.	59-4	12-36	B2	121	11	114.5	10.3	12	0.4	--	--	100	85	28	27	24	15	10	18	(8)	A-2-4(0)	SM.
		59-6	44-72	C11	112	13	110.5	13.2	30	0	--	--	100	81	13	12	9	6	5	18	(8)	A-2-4(0)	SM.
Robinson silt loam: SW. corner, sec. 35, T. 10 N., R. 3 W.	Illinoian lacustrine deposits.	42-1	0-20	A	107	17	102.0	17.3	21	--	--	100	99	97	85	79	54	26	15	29	8	A-4(8)	ML-CL.
		42.4	20-40	B2m	100	20	101.4	19.3	5	1.3	--	--	100	99	95	90	66	38	28	47	23	A-7-6(15)	CL.
		42-6	42-70+	C1g	111	15	112.5	14.8	8	.4	100	99	98	94	71	65	46	27	18	32	12	A-6(8)	CL.
Tilsit silt loam: NE¼NE¼, sec. 16, T. 10 N., R. 4 W. (Modal profile).	Sandstone.	18-4	16-28	B21	102	21	101.0	21.5	10	.2	--	--	--	100	95	91	74	38	26	38	15	A-6(10)	ML-CL.
		18-6	43-55	B3m	106	18	106.4	18.1	11	.3	--	--	100	98	85	80	61	32	23	33	11	A-6(8)	ML-CL.
		18-7	55-66	C1	116	15	113.0	14.8	2	0	100	95	92	86	67	62	45	28	18	24	9	A-4(6)	CL.
NE¼NW¼ sec. 32, T. 11 N., R. 4 W. (Weak pan).	Sandstone.	19-1	0-8	Ap	103	19	(7)	(7)	(7)	(7)	100	98	98	95	88	85	65	30	16	35	8	A-4(8)	ML.
		19-2	25-43	B22m	109	18	(7)	(7)	(7)	(7)	--	--	100	98	90	86	69	40	26	36	15	A-6(10)	CL.
		19-3	52-79	C1	120	13	(7)	(7)	(7)	(7)	100	98	93	86	59	55	46	30	23	30	14	A-6(7)	CL.
SW¼NE¼ sec. 3, T. 11 N., R. 4 W. (Shallow).	Sandstone.	20-1	7-14	A2	107	18	(7)	(7)	(7)	(7)	--	--	--	100	90	86	70	35	18	36	11	A-6(8)	ML-CL.
		20-2	24-46	B22m	106	20	(7)	(7)	(7)	(7)	--	--	--	100	96	93	75	43	30	36	17	A-6(11)	CL.
		20-3	46-50	C1	119	12	(7)	(7)	(7)	(7)	100	94	90	86	68	57	42	23	14	21	6	A-4(7)	ML-CL.
Vigo silt loam: SW¼SE¼ sec. 26, T. 10 N., R. 6 W. (Modal profile).	Illinoian till.	3-1	0-23	A	109	15	109.0	15.6	21	.1	--	100	99	96	81	73	39	18	12	29	9	A-4(8)	CL.
		3-2	23-42	B2m	105	18	110.2	17.5	3	1.5	--	100	99	96	87	82	63	38	26	50	29	A-7-6(18)	CL.
		3-3	50-144	D1	114	16	113.2	15.6	5	.2	100	99	97	92	71	65	48	30	20	26	11	A-6(8)	CL.
		3-4	144+	D2	125	10	123.5	10.3	9	.1	100	97	93	81	51	48	36	22	13	23	8	A-4(3)	CL.
NW¼NE¼ sec. 2, T. 11 N., R. 4 W. (Grades to Ava soils).	Illinoian till.	4-1	3-12	A2	99	20	98.0	15.2	4	--	--	--	100	99	97	93	71	42	28	35	10	A-4(8)	ML-CL.
		4-2	26-38	B22m	102	20	101.6	20.3	12	.5	--	--	--	100	99	91	75	42	30	45	22	A-7-6(14)	CL.
		4-3	52-114	C1	116	12	112.1	10.5	4	.1	100	97	96	92	72	65	54	32	22	31	15	A-6(9)	CL.
NE¼SW¼ sec. 2, T. 9 N., R. 6 W. (Grades to Ava soils).	Illinoian till.	5-1	0-8	Ap	108	16	103.8	14.8	17	.5	--	100	99	97	88	80	58	28	17	30	7	A-4(8)	ML-CL.
		5-2	25-39	B22m	110	17	109.0	16.6	10	.2	100	99	98	96	85	80	65	37	26	40	21	A-6(12)	CL.
		5-3	53-135	C1	113	16	113.3	14.6	8	.7	100	99	97	91	68	65	54	37	29	39	20	A-6(11)	CL.
Zanesville silt loam: NW. corner, NW¼ sec. 6, T. 10 N., R. 4 W.	Loess over stratified sandstone, siltstone, and shale.	54-5	18-36	B2 and B2m	102	20	97.0	19.3	9	.7	--	--	--	100	95	90	68	33	20	42	17	A-7-6(11)	ML-CL.
		54-8	36-45	B24m	100	21	102.0	21.0	6	.2	--	--	--	100	92	86	66	33	21	41	20	A-7-6(12)	CL.
		54-9	52-62	C1	107	17	107.0	17.1	9	.3	100	99	99	98	88	82	61	30	18	30	11	A-6(8)	CL.
Zipp silty clay loam: SE¼SW¼ sec. 25, T. 9 N., R. 6 W.	Glacial outwash.	56-1	0-25	A and Bg	93	23	91.6	22.7	3	2.1	--	--	100	99	92	97	88	68	42	54	22	A-7-5(16)	MH.
		56-3	25-45	Bg2	101	18	91.3	18.3	2	4.8	--	--	--	100	79	77	72	58	37	53	31	A-7-6(19)	CH.
		56-4	45-100	C	110	17	109.0	17.3	6	.8	--	--	100	97	28	25	20	16	13	23	5	A-2-4(0)	SM-SC.

[1] Tests performed by Purdue University in cooperation with the Indiana State Highway Commission and the U.S. Department of Commerce, Bureau of Public Roads, in accordance with standard procedures of the American Association of State Highway Officials (AASHO), except the CBR test.

[2] Based on the Moisture-density Relations of Soils Using 5.5-lb. Rammer and 12-in. Drop, AASHO Designation T 99-57, Method C.

[3] The soil sample is prepared according to AASHO Designation T 87-49. Water is added to bring the moisture content to within ± 0.5 percent of optimum. Specimens are compacted according to AASHO Designation T 99-57, Method B, to within ± 1 pound per cubic foot of maximum dry density, a surcharge of 35 pounds is added, and the specimen is soaked from top and bottom for 4 days. The penetration is performed at a rate of 0.05 inch per minute, while the 35-pound surcharge is on the specimen. The CBR value is for 0.1 inch penetration.

[4] Mechanical analyses according to AASHO Designation T 88-57. Results by this procedure frequently may differ somewhat from results that would have been obtained by the soil survey procedure of the Soil Conservation Service (SCS). In the AASHO procedure, the fine material is analyzed by the hydrometer method and the various grain-size fractions are calculated on the basis of all the material, including that coarser than 2 millimeters in diameter. In the SCS soil survey procedure, the fine material is analyzed by the pipette method and the material coarser than 2 millimeters in diameter is excluded from calculations of grain-size fractions. The mechanical analyses used in this table are not suitable for use in naming textural classes for soils.

[5] Based on Standard Specifications for Highway Materials and Methods of Sampling and Testing (Pt. 1, Ed 8): The Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes, AASHO Designation M 145-49.

[6] Based on the Unified Soil Classification System, Tech. Memo. No. 3-357, v. 1, Waterways Expt. Sta., Corps of Engin., Mar. 1953.

[7] Insufficient material for CBR test.

[8] Nonplastic.

1965
U.S. National Cooperative Soil Survey adopts 7th Approximation for U.S. soil survey activities

First Indiana survey published using 7th Approximation

Parke County
1967

TABLE 12.—*Soil series classified according to the new and the old systems of classification*

Series	New classification				Old classification	
	Family	Subgroup	Suborder	Order	Great soil group	Order
Alford	Fine silty, mixed, mesic	Typic Normudalfs	Udalfs	Alfisols	Gray-Brown Podzolic	Zonal.
Allison	Fine silty, mixed, mesic	Cumulic Hapludolls	Udolls	Mollisols	Alluvial	Azonal.
Armiesburg	Fine silty, mixed, mesic	Typic Hapludolls	Udolls	Mollisols	Alluvial	Azonal.
Ayrshire	Fine loamy, mixed, mesic.	Aeric Ochraqualfs	Aqualfs	Alfisols	Gray-Brown Podzolic (intergrading toward Low-Humic Gley).	Zonal.
Bonpas	Fine silty, mixed, mesic	Cumulic Haplaquolls	Aquolls	Mollisols	Humic Gley	Intrazonal.
Camden	Fine silty, mixed, mesic	Typic Normudalfs	Udalfs	Alfisols	Gray-Brown Podzolic	Zonal.
Chelsea	Sandy, siliceous, mesic	Alfic Normipsamments	Psamments	Entisols	Gray-Brown Podzolic (intergrading toward Regosol).	Zonal.
Cincinnati	Fine silty, mixed, mesic	Typic Fragiudalfs	Udalfs	Alfisols	Red-Yellow Podzolic (intergrading toward Gray-Brown Podzolic).	Zonal.
Eel	Fine loamy, mixed, nonacid, mesic.	Aquic Cumulic Haplorthents.	Orthents	Entisols	Alluvial	Azonal.
Elston	Fine loamy, mixed, mesic.	Typic Argiudolls	Udolls	Mollisols	Brunizems	Zonal.
Fincastle	Fine silty, mixed, mesic	Aeric Ochraqualfs	Aqualfs	Alfisols	Gray-Brown Podzolic (intergrading toward Low-Humic Gley).	Zonal.
Fox	Fine loamy, mixed, mesic.	Typic Normudalfs	Udalfs	Alfisols	Gray-Brown Podzolic	Zonal.
Genesee	Fine loamy, mixed, nonacid, mesic.	Cumulic Haplorthents	Orthents	Entisols	Alluvial	Azonal.
Hennepin	Fine loamy, mixed, mesic.	Alfic Eutrochrepts	Ochrepts	Inceptisols	Regosol (intergrading toward Gray-Brown Podzolic).	Azonal.
Hickory	Fine loamy, mixed, mesic.	Typic Normudults	Udults	Ultisols	Red-Yellow Podzolic (intergrading toward Gray-Brown Podzolic).	Zonal.
Huntsville	Fine silty, mixed, mesic	Cumulic Hapludolls	Udolls	Mollisols	Alluvial	Azonal.
Iva	Fine silty, mixed, mesic	Aeric Ochraqualfs	Aqualfs	Alfisols	Gray-Brown Podzolic (intergrading toward Low-Humic Gley).	Zonal.
Linwood	(1)	(1)	(1)	Histosols	Organic	Intrazonal.
Negley	Fine loamy, siliceous, mesic.	Typic Normudults	Udults	Ultisols	Red-Yellow Podzolic (intergrading toward Gray-Brown Podzolic).	Zonal.
Ockley	Fine silty, mixed, mesic.	Typic Normudalfs	Udalfs	Alfisols	Gray-Brown Podzolic	Zonal.
Parke	Fine silty, mixed, mexic.	Typic Normudults	Udults	Ultisols	Red-Yellow Podzolic (intergrading toward Gray-Brown Podzolic).	Zonal
Princeton	Fine loamy, siliceous, mesic.	Typic Normudalfs	Udalfs	Alfisols	Gray-Brown Podzolic	Zonal.
Ragsdale	Fine silty, mixed, mesic.	Typic Argiaquolls	Aquolls	Mollisols	Humic Gley	Intrazonal.
Reesville [2]	Fine silty, mixed, mesic.	Aeric Ochraqualfs	Aqualfs	Alfisols	Gray-Brown Podzolic (intergrading toward Low-Humic Gley).	Zonal.
Rodman [3]					Regosol (intergrading toward Brown Forest).	Azonal.
Russell	Fine silty, mixed, mesic.	Typic Normudalfs	Udalfs	Alfisols	Gray-Brown Podzolic	Zonal.
Shoals	Fine loamy, mixed, nonacid, mesic.	Aeric Cumulic Normaquepts.	Aquepts	Inceptisols	Alluvial (intergrading toward Low-Humic Gley).	Azonal.
Sleeth	Fine silty, mixed, mesic.	Aeric Ochraqualfs	Aqualfs	Alfisols	Gray-Brown Podzolic (intergrading toward Low-Humic Gley).	Zonal.
Warsaw	Fine loamy, mixed, mesic.	Typic Argiudolls	Udolls	Mollisols	Brunizems	Zonal.
Westland	Fine loamy, mixed, mesic.	Typic Haplaquolls	Aquolls	Mollisols	Humic Gley	Intrazonal.
Whitson	Fine, mixed, mesic	Typic Albaqualfs	Aqualfs	Alfisols	Planosol	Intrazonal.
Zipp	Fine, montmorillonitic, mesic.	Typic Normaquepts	Aquepts	Inceptisols	Humic Gley	Intrazonal.

[1] Linwood soils have not been placed in a family, a subgroup, or a suborder.
[2] Reesville soils on the Illinoian till plain are dominantly Typic Ochraqualfs in a fine, mixed, mesic family that borders a fine silty, mixed, mesic family.
[3] The Rodman soils are not classified in the higher categories, because the series likely will be redefined, and its new definition and classification are not known.

1969

Allen County

First trees & shrubs for wildlife planting table in Indiana

TABLE 4.—*Shrub and ground cover plantings*

[Dashes indicate that on the soils of the particular group, the plant is not suitable for any of the specified uses. Borrow pits (Bp), Gravel pits (Gp), and Made land (Ma) were not placed in any of the shrub suitability groups]

Plant	Characteristics of plant	Suitable uses, by shrub suitability groups			
		Group 1	Group 2	Group 3	Group 4
Arrowwood	Ultimate height of 10 to 12 feet; slow growing; shade tolerant.	Wildlife borders.	Wildlife borders.	----------	----------
Autumn olive	Ultimate height of 8 to 14 feet; shade tolerant.	----------	----------	Wildlife borders; areas around ponds.	----------
Blackberry	Ultimate height of 4 to 6 feet; thorny; fruit producers.	----------	Wildlife borders.	Wildlife borders.	----------
Blackhaw	Ultimate height of 15 to 20 feet; slow growing; shade tolerant.	----------	----------	Wildlife borders; areas around ponds.	Wildlife borders; areas around ponds.
Cherry, Manchu	Ultimate height of 3 to 6 feet; shade tolerant; grows only where plant competition is slight.	----------	----------	Wildlife borders.	Wildlife borders.
Coralberry	Ultimate height of 4 to 6 feet; shade tolerant; may spread into unclipped and nontilled areas.	Wildlife borders; gullies and road cuts.	Wildlife borders; gullies and road cuts.	Wildlife [illegible] gullies [illegible] cuts.	[illegible]
Crabapple, Siberian.	Ultimate height of 15 to 20 feet; shade tolerant.	Wildlife borders; areas around ponds.	----------	Wildlife [illegible] areas [illegible] ponds.	[illegible]
Cranberry, highbush.	Ultimate height of 6 to 12 feet; slow growing; shade tolerant.	Shelterbelts and windbreaks; wildlife borders.	Shelterbelts and windbreaks; wildlife borders.	Shelterb[illegible] windb[illegible] life bo[illegible]	[illegible]
Currant	Ultimate height of 2 to 4 feet.	----------	----------	Wildlife [illegible]	[illegible]

Shrub suitability groups

Table 4 gives information about some of the shrubs, vines, and other ground cover that can be used to control erosion, to protect soils and farm buildings from wind, and to provide food and cover for wildlife. The shrub suitability classification of each individual soil is given in the "Guide to Mapping Units." Borrow pits, Gravel pits, and Made land were not placed in a shrub suitability group.

Many plantings serve more than one purpose. Those that help to control erosion in the steeper areas may also help to reduce the cost of mowing and other maintenance work. Shelterbelts and windbreaks to the north and west of farm buildings give year-round protection from wind, as well as adding to the attractiveness of the landscape. Highbush cranberry, multiflora rose, and Amur honeysuckle are useful for erosion control, for protection from wind, and for wildlife food and cover, and they also make good hedges.

1969

Allen County

First in Indiana, outdoor recreation potential by soil association

Figure 13.—Pond constructed in an area of Pewamo silty clay loam.

Recreation[1]

Because of the wide variety and seasonal nature of recreational activities, many different areas can be used for these purposes. Allen County has many areas that have either natural ponds or good sites for pond construction (fig. 13). It also contains some areas that cannot be used profitably for crops, pasture, or timber but that can be developed for recreation. Among these are swampy and marshy areas, wooded areas that have short, steep slopes, and bottom lands that have been cut by stream channels. If managed for multiple use, such areas also provide food and cover for wildlife, protection against runoff, and storage for water. Primitive areas are potential nature laboratories that can be used for educational and scientific purposes.

Four areas that have potential for recreational development are recognized. The soils in these areas are suitable for recreational uses but not for farming. They are described briefly, and their potential uses are discussed in the following paragraphs.

Area 1 is within the watersheds of Cedar Creek and the St. Joseph River. It includes both wooded bottom lands and rugged, severely eroded, wooded uplands within soil associations 1, 2, and 4. This area has potential as a wildlife sanctuary and, in its primitive state, as a nature laboratory that can be used for educational and scientific purposes. It can also be managed for watershed protection.

Area 2 is in the valleys of the Maumee River and the St. Marys River. It includes wooded bottom lands and steep, wooded streambanks in all soil associations except association 5. This area has potential as a wildlife sanctuary.

Area 3 is within the watershed of the Little River. It includes seriously eroded wooded uplands, rugged wooded terrain around headwaters, and wet areas and sandy ridges in the valleys, in soil associations 4, 5, and 7. It has potential as a wildlife sanctuary and, in its primitive state, as a nature laboratory that can be used for educational and scientific purposes. It can also be managed for watershed protection.

Area 4 is in the northwestern part of the county, in soil associations 3, 4, and 5. It is characterized by potholes, bogs, lakes, and ditches, and by seriously eroded uplands. This area has potential as a wildlife sanctuary and, in its primitive state, as a nature laboratory that can be used for educational and scientific purposes.

1971

Howard County

First in Indiana, limitations for 6 common classes of outdoor recreation

TABLE 9.--LIMITATIONS OF SOILS FOR RECREATIONAL USES

Soil series and map symbols	Intensive play areas	Picnic areas, parks, and extensive play areas	Bridle paths, nature trails, and hiking trails	Golf fairways	Cottages and service and utility buildings	Tent, camp, and trailer sites
Blount: BmA, BmB2--	Moderate: seasonal high water table; compact and sticky when wet; slow to dry after rain.	Moderate: seasonal high water table; compact and sticky when wet; slow to dry after rain.	Moderate: wet for short periods; muddy and slippery when wet; may need surfacing.	Moderate: seasonal high water table; compacts easily when wet; turf easily damaged.	Moderate to severe: seasonal high water table restricts sanitary systems.	Moderate: sites remain wet and soft for short periods; compacts easily; walks and roads need surfacing.
Brookston: Bs------	Severe: seasonal high water table; occasional ponding; needs drainage; poor trafficability; sod easily damaged when wet; very sticky when wet.	Severe: seasonal high water table; occasional ponding; needs drainage; poor trafficability; sod easily damaged when wet; very sticky when wet.	Severe: wet for long periods; muddy and slippery when wet; needs surfacing and is difficult to maintain.	Severe: seasonal high water table; occasional ponding; needs drainage; poor trafficability; turf easily damaged when wet.	Severe: seasonal high water table and occasional ponding restricts sanitary systems; needs drainage; subject to frost heave.	Severe: seasonal high water table; occasional ponding; needs drainage; sites remain wet for long periods; walks and roads need surfacing; very sticky when wet.
Carlisle: Ca-------	Very severe: seasonal high water table; needs drainage; poor trafficability when wet; sod easily damaged; subject to soil blowing when dry.	Very severe: seasonal high water table; needs drainage; poor trafficability when wet; sod easily damaged; subject to soil blowing when dry.	Very severe: seasonal high water table; poor trafficability; difficult to maintain.	Very severe: seasonal high water table; needs drainage; poor trafficability; turf easily damaged.	Very severe: seasonal high water table restricts sanitary systems; low shrink-swell; low bearing capacity; subject to soil blowing when dry.	Very severe: sites remain wet for long periods; poor trafficability; difficult to maintain walks and roadways; subject to soil blowing when dry.
Crosby: CsA, CsB2, CyB2: (For properties of Miami soils in CyB2, refer to the Miami series.)	Moderate: seasonal high water table; compact and sticky when wet; slow to dry after rain.	Moderate: seasonal high water table; compact and sticky when wet; slow to dry after rain.	Moderate: wet for short periods; muddy and slippery when wet; may need surfacing.	Moderate: seasonal high water table; compacts easily when wet; turf easily damaged.	Moderate to severe: seasonal high water table restricts sanitary systems.	Moderate: sites remain wet and soft for short periods; compacts easily; walks and roads need surfacing.
Fincastle: Fc------	Moderate: seasonal high water table; compact and sticky when wet; slow to dry after rain.	Moderate: seasonal high water table; compact and sticky when wet; slow to dry after rain.	Moderate: wet for short periods; muddy and slippery when wet; may need surfacing.	Moderate: seasonal high water table; compacts easily when wet; turf easily damaged.	Moderate to severe: seasonal high water table restricts sanitary systems.	Moderate: sites remain wet and soft for short periods; compacts easily; walks and roads need surfacing.
Fox: FoA, FoB2, FsC3.	Slight on 0 to 2 percent slopes; moderate on 2 to 6 percent slopes; severe on 6 to 12 percent slopes; erosive; compact and sticky when wet; extensive leveling may expose the sand and gravel substratum.	Slight on 0 to 6 percent slopes; moderate on 6 to 12 percent slopes; erosive; compact and sticky when wet; extensive leveling may expose the sand and gravel substratum.	Moderate: 0 to 12 percent slopes; muddy and slippery when wet; erosive; may need surfacing; extensive leveling may expose the sand and gravel substratum.	Slight on 0 to 6 percent slopes; moderate on 6 to 12 percent slopes; erosive; extensive leveling may expose the sand and gravel substratum.	Slight on 0 to 6 percent slopes; moderate on 6 to 12 percent slopes; erosive; extensive leveling may expose the sand and gravel substratum.	Slight on 0 to 6 percent slopes; moderate on 6 to 12 percent slopes; wet and soft after rain; walks and roads need surfacing; compacts easily; extensive leveling may expose the sand and gravel substratum.
Genesee: Gh--------	Severe: occasional flooding; compacts easily when wet.	Moderate: occasional flooding during season of use.	Moderate: occasional flooding; muddy and slippery when wet; may need surfacing.	Moderate: occasional flooding; turf easily damaged when wet.	Severe: occasional flooding; fluctuating water table restricts sanitary systems; subject to frost heave; liquefies easily.	Severe: occasional flooding; wet for short periods; sites need protection.
Hennepin: HeE------	Severe: erosive on slopes; compact and sticky when wet.	Severe: erosive; compact and sticky when wet.	Severe: muddy and slippery when wet; erosive; may need surfacing.	Severe: erosive----------------	Severe: erosive---------------------	Severe: wet and soft after rain; walks and roads need surfacing; compacts easily when wet.
Kokomo: Kk, Ko-----	Severe: seasonal high water table; occasional ponding; needs drainage; poor trafficability; sod easily damaged when wet; very sticky when wet.	Severe: seasonal high water table; occasional ponding; needs drainage; poor trafficability; sod easily damaged when wet; very sticky when wet.	Severe: wet for long periods; muddy and slippery when wet; needs surfacing and is difficult to maintain.	Severe: seasonal high water table; occasional ponding; needs drainage; poor trafficability; turf easily damaged when wet.	Severe: high water table; restricts sanitary systems; occasional ponding; needs drainage; subject to frost heave.	Severe: seasonal high water table; occasional ponding; needs drainage; sites remain wet for long periods; walks and roads need surfacing; very sticky when wet.

1972
Lake County

First in Indiana. Chapter on town and country planning for homes, industrial developments, highways, schools, parks, foundations for low buildings and septic tank disposal fields.

- Bearing capacity
- Percolation rate
- Slope
- Seasonal high water table

Town and Country Planning [5]

This section provides information about soil limitations that affect the selection of soils for town and country planning. This information will help planners in evaluating the suitability of soils as sites for homes, industrial developments, schools, and parks. The soils are rated according to limitations caused by bearing capacity, percolation rate, slope, and wetness resulting from a seasonal high water table. The ratings in table 6 express the degree of limitation as "slight," "moderate," or "severe."

Bearing capacity is the ability of a soil to adequately support structures. The ratings in table 6 specifically apply to the limitations of soils in the county if used to support foundations of buildings up to three stories high. These ratings are estimates based on the data given in table 4 for the engineering properties of the soils. No specific value should be assigned to the rating.

Percolation rate is a measurement of the movement of water through the soil profile and is expressed in minutes per inch of soil. The ratings of limitations caused by percolation rate given in table 6 are based on measurement in actual tests on some of the soils in Lake County and on interpolation of tests on similar soils that do not

[5] Kenneth A. Wenner, county extension agent in soils, Purdue University, assisted in the writing of this section.

Table 6.—*Degree of limitation for town and country planning*

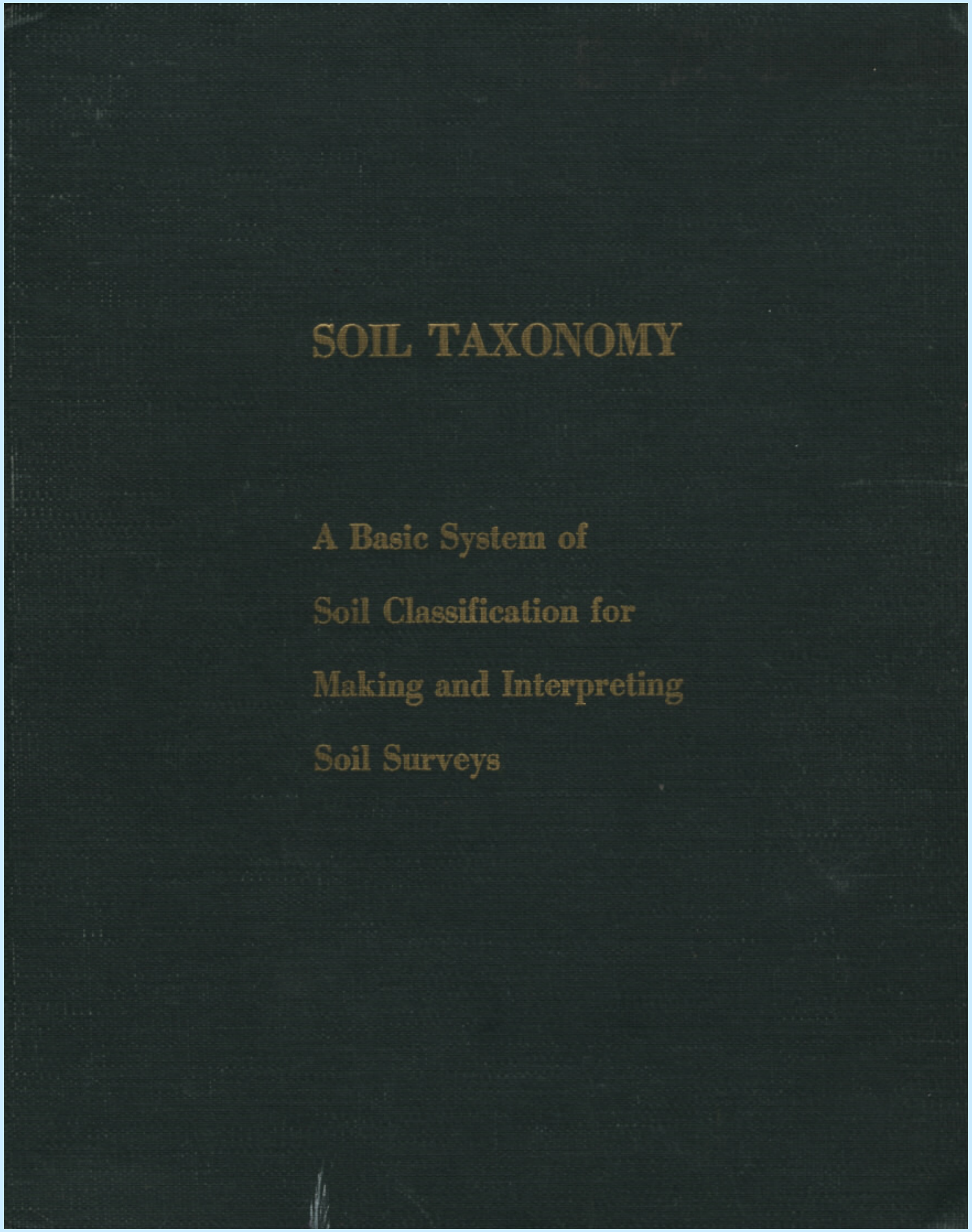
[No evaluation is given for Borrow pits, Clay pits, Urban land, and Oakville-Tawas complex, 0 to 6 percent slopes, because the properties of these mapping units are so variable. Absence of a rating for a property indicates that the property is too variable for a rating]

Soil series and map series	Bearing capacity	Percolation rate	Slope	Seasonal high water table
Alida: Ad, Al	Moderate	Moderate	Slight	Moderate.
Blount: BlA	Moderate	Severe	Slight	Moderate.
Bono: Bn	Moderate	Severe	Slight	Severe.
Brady: Br	Moderate	Slight	Slight	Moderate.
Brems: BsB	Slight	Slight	Slight	Moderate.
Carlisle: Ca	Severe	Slight	Slight	Severe.
Darroch: Da	Moderate	Moderate	Slight	Moderate.
Del Ray: De, Dl	Moderate	Severe	Slight	Moderate.
Door loam: DoA, DoB, DrB	Moderate	Moderate	Slight	Slight.
Dune land: Du	Moderate	Slight	Severe	Slight.
Elliott: El	Moderate	Severe	Slight	Moderate.
Gilford: Gd, Gf, Gm	Moderate	Slight	Slight	Severe.
Lake beaches: Lb			Slight	
Linwood: Lm	Severe	Moderate	Slight	Severe.
Lydick: LyA, LyB	Moderate	Moderate	Slight	Slight.
Markham: MaB2	Moderate	Severe	Slight	Slight.
Marl beds: Mb	Severe	Severe	Slight	Severe.
Marsh: Mh			Slight	Severe.
Maumee: Mm, Mn	Moderate	Slight	Slight	Severe.
Milford:				
Mo, Mr, Ms	Moderate	Severe	Slight	Severe.
Mt			Slight	Severe.
Morley:				
MuB, MvB3	Moderate	Severe	Slight	Slight.
MuC2, MvC3	Moderate	Severe	Moderate	Slight.
MuD2, MuE, MvE3	Moderate	Severe	Severe	Slight.
Oakville: OaE	Slight	Slight	Severe	Slight.
Oshtemo:				
OsA, OsB	Moderate	Slight	Slight	Slight.
OsC	Moderate	Slight	Moderate	Slight.
Pewamo: Pc, Pe	Moderate	Severe	Slight	Severe.
Plainfield:				
PlB	Slight	Slight	Slight	Slight.
PlC	Slight	Slight	Moderate	Slight.
Rensselaer: Re, Rn, Rr, Rs	Moderate	Moderate	Slight	Severe.
Sparta:				
SpB	Slight	Slight	Slight	Slight.
SrB	Moderate	Moderate	Slight	Slight.
Tawas: Ta	Severe	Slight	Slight	Severe.
Tracy: TcA, TcB, TcC, TrB	Moderate	Moderate	Slight	Slight.
Tyner: TyB	Slight	Slight	Slight	Slight.
Wallkill: Wa	Severe	Slight	Slight	Severe.
Warners: We	Severe	Severe	Slight	Severe.
Watseka:				
Wk	Moderate	Slight	Slight	Moderate.
Wl	Moderate	Moderate	Slight	Moderate.
Wauseon: Wo	Moderate	Moderate	Slight	Severe.
Whitaker: Wt	Moderate	Moderate	Slight	Moderate.

1975
Soil Taxonomy
A Basic System of Soil Classification for Making and Interpreting Soil Surveys

First Indiana reference to Soil Taxonomy

Vermillion County
September 1978



December 2, 1986

Indiana Accelerated Soil Survey Program completed

Indiana soil survey completed

Completion of Indiana's accelerated soil survey program was commemorated last week at Purdue University's Stewart Center as a part of the 44th annual conference of Indiana Soil and Water Conservation Districts.

The observance marked the completion of soil surveys for all of Indiana's 92 counties. Indiana is the first major agricultural state to accomplish this task for every county.

On hand to participate in the celebration and to speak to the conferees were Wilson Scaling, chief of the USDA's Soil Conservation Service and Indiana Lt. Gov. John Mutz, who also serves as the state's commissioner of agriculture.

Scaling praised the state's accomplishment and reviewed the federal government's role in the soil survey program. He said that the coordinated effort at local, state and federal levels was a major factor in the program's success.

Mutz paid tribute to the efforts of soil and water conservation district supervisors in obtaining local funding for soil surveys and for promoting their use at the county level. He also noted that the 12-year program was completed for $3 million less than the amount projected in 1974.

Mutz said that the soil surveys will be very useful to Indiana's agricultural industry. Through effective use of soil resources in planning, locating and constructing of new residential commercial and industrial development, these surveys can enhance economic growth statewide.

Joe Rund, a Tippecanoe County farmer; John Bonsett, director of Environmental Health for Johnson County; and James Hawley, director of the Tippecanoe County Area Plan Commission, each discussed their use of soil survey information in carrying out their jobs.

Many of the more than 100 soil scientists who worked on the project were present, and each received a certificate signed by Mutz.

At the conclusion of the ceremony, special plaques were presented to representatives of the four major partners in the soil survey program. The plaques contained a soil probe filled with a soil core representing the final acre of soil surveyed. Recipients were Lt. Gov. Mutz, for the citizens of Indiana; Robert Eddleman, state conservationist, for the USDA Soil Conservation Service; Earl Blank, as president of the Indiana Association of Soil and Water Conservation Districts; and Donald Frazmeier, professor of agronomy, for Purdue University.

The State Legislature first appropriated money for the Accelerated Soil Survey Program in 1974, and state-employed scientists were hired to speed the work. By 1980, 31 Department of Natural Resource soil scientists and 26 Soil Conservation Service soil scientists were working on the project. At this time, Purdue researchers also started a program to computerize the surveys.

In the past 12 years, DNR soil scientists have mapped in 49 of the state's 92 counties. During this period, about 12 million of Indiana's 22.5 million acres were surveyed.

Soil scientists classify soils on the basis of their characteristics in much the same manner as insects and plants are classified.

In a typical Indiana county soil survey, there may be between 20 and 100 mapping units on the legend. The state has more than 350 different soil types which have been mapped.

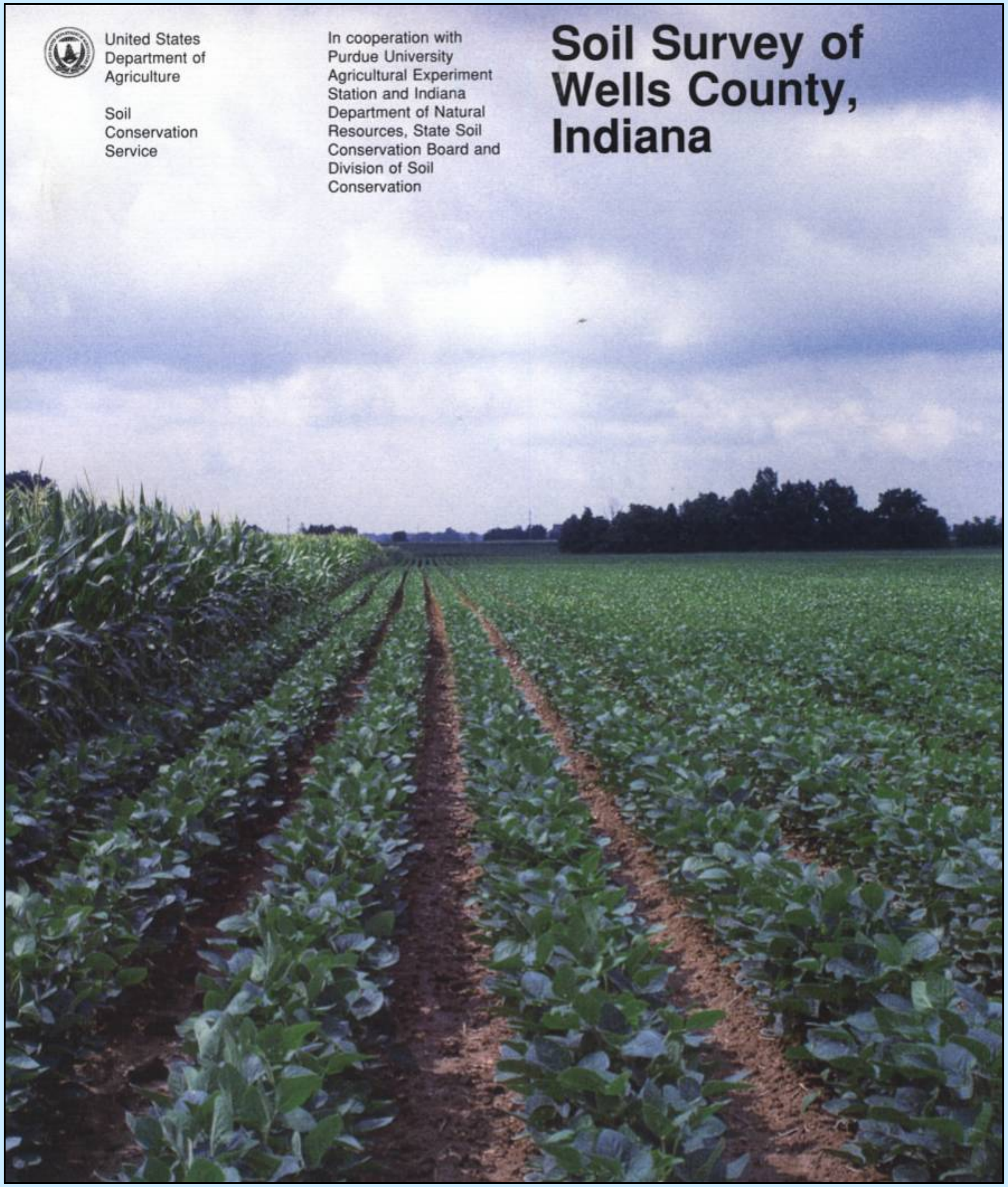
A completed county soil survey is in the form of a booklet and contains a set of soil maps. The maps consist of aerial photos and overlays of soil lines and symbols. Symbols note soil types and various cultural symbols, such as roads, streams and towns.

Published soil surveys are currently available for 67 Indiana counties, and 23 counties are in the process of having their surveys published.

"The Lafayette Leader"
December 11, 1986

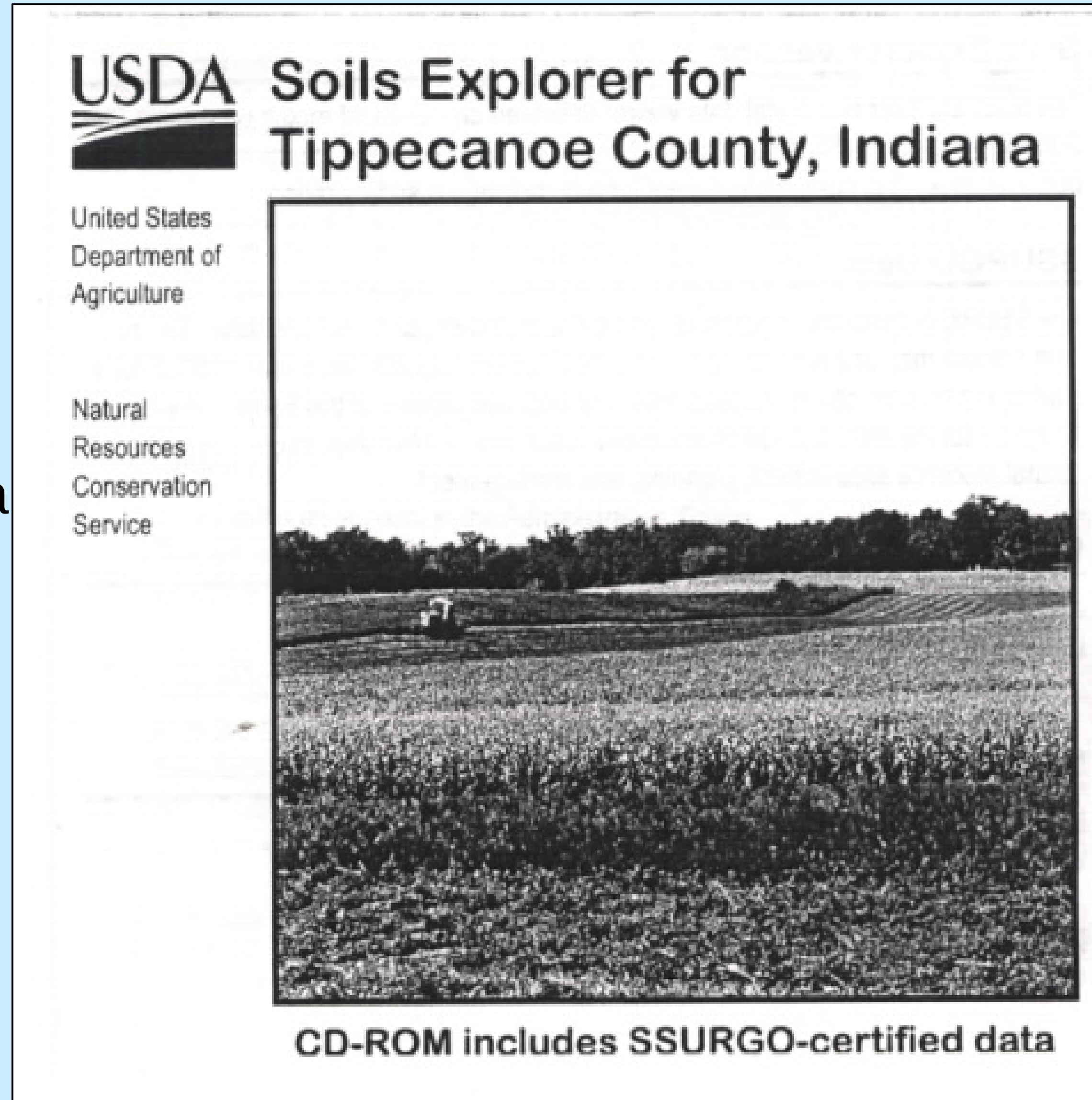
1992
Wells County

First survey in Indiana with color cover photograph



1998
Tippecanoe County

First soil survey in Indiana published on CD-ROM
Soils Explorer


USDA

Soils Explorer for Tippecanoe County, Indiana

United States Department of Agriculture

Natural Resources Conservation Service

CD-ROM includes SSURGO-certified data

92 counties in Indiana

Times published	Counties
1	24
2	58
3	10

1998 Marion County
First Indiana digital soils data
(digitized in Fort Worth but never SSURGO certified)

6/1/1998 Wayne County
First Indiana SSURGO certified digital soils data

7/9/1998 Scott County
First Indiana updated soil survey with SSURGO certified digital soils data

Update Soil Surveys

County	Published
Elkhart	2002
Fountain	2003
Pulaski	2003
Delaware	2004
Owen	2004
Bartholomew	2004

County	Published
Boone	2004
St. Joseph	2004
Perry	2005
Scott	2006
Clark	2007
Floyd	2007

"...I cannot conceive of the time when knowledge of soils will be complete. Our expectation is that our successors will build on what has been done, as we are building on the work of our predecessors."

R.S. Smith, Director of the Illinois Soil Survey, 1928

Pre 1959 Soil Scientists

Soil Scientist	Early Surveys
Adams, H. R.	Putnam
Adams, J. E.	Dubois, Lawrence
Allison, L. E.	Morgan, St. Joseph
Bacon, S. R.	Blackford
Baldwin, Mark	Adams, Decatur
Barnes, F. E.	Randolph, Wayne
Barnes, T. E.	Bartholomew, Carroll, Franklin, Fulton, Johnson, Martin, Morgan, Newton, Tippecanoe
Barrett, Wendell	Lake, Porter, Starke
Bell, A. P.	Carroll, Fulton, Johnson, Morgan, Newton, St. Joseph
Bennett, Frank	Marshall
Beyer, H. R.	Kosciusko
Boatman, W. J.	Jennings, Randolph
Brill, J. Bayard	Adams, Benton
Brune, G. M.	Franklin
Buckannan, W. H.	Jennings, Randolph, Vermillion
Burke, Richard Thomas Avon	Dubois, Madison
Bushnell, T. M.	Adams, Clay, Dubois, Gibson, Jennings, Knox, Lake, Lawrence, Monroe, Newton, Ohio & Switzerland, Pike, Porter, Starke, Steuben, Wayne, White
Combs, John E.	Noble
Ellis, Robert W.	Clark Floyd and Harrison

Soil Scientist	Early Surveys
Ely, Charles W.	Marshall
Envision, T. E.	Johnson, Morgan
Erni, C. P.	White
Finley, R. R.	Jennings, Knox
Fitzpatrick, E. G.	Knox, Pike
Fowler, Earl D.	Kosciusko, Monroe, Putnam, Wayne
Geib, W. J.	Marion
Grimes, E. J.	Delaware, Hamilton, Starke, Tipton, Warren
Hendrickson, B. N.	Ohio and Switzerland
Hertenstein, Earl	Grant
Hessler, R. S.	Elkhart, Hamilton
Higbee, Howard Wm.	Washington
Hurst, Lewis A.	Delaware, Grant, Hamilton, Tipton
Jabine, Thomas	Adams
James, J. S.	Jennings, Knox, Vermillion
Jones, Grove B.	Adams, Allen, Benton, Clay, Elkhart, Montgomery
Jones, S. C.	Adams, Decatur
Krantz, B. A.	St. Joseph, Tippecanoe
Kunkel, D. R.	Cass, Jennings, Knox, Miami, Ohio & Switzerland, Pike, Rush
Leighty, Ralph G.	Brown, Martin
Leighty, W. J.	Cass, LaPorte
Magnum, A. W.	Booneville Area, Scott
Manifold, C. B.	Clay

Pre 1959 Soil Scientists (cont'd)

Soil Scientist	Early Surveys
Mann, Charles J.	Greene
Marean, Herbert W.	Posey
Middleton, Philip	Grant
Miller, John T.	Pike, Washington
Myers, Sutton	Bartholomew, Brown, Carroll, Fulton, Johnson, Martin, Morgan, Newton, Noble, St. Joseph, Vanderburgh
Neill, N. P.	Booneville Area, Newton, Scott, Tippecanoe
Orahood, C. H.	Montgomery
Peacock, R. H.	Clinton
Pylerm, R. P.	Clay
Quinn, E. J.	Boone, Hendricks
Robinson, Glen H.	Newton, Noble
Rogers, O. C.	Bartholomew, Brown, Franklin, Fulton, Newton, Noble
Rose, C. M.	Clinton
Ruhlen, La Mott	Madison
Schroeder, Frank C.	Marion
Sears, O. H.	Decatur
Shearn, A. E.	LaPorte
Simmons, C. S.	Dubois, Hancock, Rush
Slipher, J. A.	Decatur
Smith, L. R.	Cass, Steuben
Stevens, E. H.	Warren

Soil Scientist	Early Surveys
Tharp, W. E.	Blackford, Boone, Clinton, Gibson, Grant, Greene, Hancock, Hendricks, Kosciusko, Lawrence, Miami, Newton, Steuben, Tippecanoe, Wells
Thorp, James	Knox, Wayne
Troth, L. S.	Kosciusko
Ulrich, H. P.	Bartholomew, Brown, Carroll, Dubois, Jennings, Johnson, Knox, LaPorte, Martin, Morgan, Ohio & Switzerland, Pike, Rush, St. Joseph, Steuben, Tippecanoe
Van Duyne, Cornelius	Allen
Veale, P. T.	Johnson, Morgan, Newton, Noble, St. Joseph
Vessel, A. J.	Franklin, Vanderburgh
Wade, J. G.	Carroll, Tippecanoe, Vanderburgh
Waggoner, M. E.	Jennings, Randolph, Washington
Watkins, W. I.	Grant
Wiancko, A. T.	Bartholomew, Brown, Cass, Jennings, Washington
Wiley, W. E.	Wells
Young, H. G.	Hamilton

1959-1998 Soil Scientists - 1	Modern Soil Surveys
Alfred, S. D.	Fayette & Union, Parke
Anderson, J. U.	Allen
Anderson, Noel P.	Blackford and Jay, Randolph, Ripley & parts of Jennings, Wells, Whitley
Barnes, James R.	Benton, Newton, Starke, Warren
Barnes, T. E.	Allen, Fayette & Union, Parke
Bass, T. C.	Madison
Bauer, Thomas J.	Porter
Bell, A. P.	Parke
Bell, R.	Pulaski
Benton, Jr., Hezekiah	Hendricks, LaGrange, Marshall, St. Joseph
Bernard, John R.	Dubois
Bernard, John R.	Hamilton
Bernard, John R.	St. Joseph
Biberdorf, Gregory L.	Benton
Binnie, R.	Madison
Blank, James R.	Blackford & Jay, Morgan, Wayne, White
Boulding, J. Russell	Orange
Braun, Randy J.	Carroll, Grant, Tippecanoe
Brock, Rex A.	Hamilton, Kosciusko, LaPorte, Marion, Miami, Noble, Porter, Rush
Brownfield, Shelby H.	Bartholomew, Jennings, Johnson, Owen, Shelby, Steuben
Bryant, Ray B.	Montgomery
Buckelew, Hal C.	Shelby
Carmony, P.	Madison
Combs, John	Parke
Couch, William E.	Perry

1959-1998 Soil Scientists - 2	Modern Soil Surveys
Coulter, Jack W.	Dubois
Crafton, Curtis R.	Gibson, Pike
Cranor, Donald A.	Perry
Crooke, John D.	Marion, Porter
Dalton, Michael	Rush, Tipton
Deal, Jack M.	Fountain, Howard, Miami, St. Joseph
Dinaker, Robert C.	Porter
Donaldson, Daniel A.	Clark and Floyd, Harrison
Douglas, Walter W.	Cass
Eastman, Mark A.	Jackson, Lawrence
Ebinger, Michael H.	Tippecanoe
Edmonds, N. F.	Spencer
Edmonds, P.	Pulaski
Evans, Christine J.	Blackford and Jay
Farmer, Denver L.	Adams, Noble, Steuben
Fields, Robert	Owen
Fink, Brian L.	Clinton
Fischer, Susan E.	DeKalb
Forston, Dave	Jackson
Froedge, Ronald D.	Scott
Froehle, Charles E.	Clinton, Hamilton, Kosciusko, Morgan
Furr, Jr., G. Franklin	Bartholomew, Fulton, LaPorte, Newton, Porter
Gilbert, Richard H.	Bartholomew, Marion
Grunewald, Armin R.	Allen, Madison, Scott
Guernsey, Carl W.	Fountain, Vigo

1959-1998 Soil Scientists - 3	Modern Soil Surveys
Gundrum, Gary R.	Randolph
Guthrie, Robert S.	Orange
Hamilton, Gary	Jefferson
Harkenrider, Dan	Ripley and parts of Jennings
Hartman, Peter R.	Blackford and Jay
Heltsley, Jerry W.	Benton, Marshall, Starke
Henderson, Gregory L.	Decatur, Franklin, Ripley & parts of Jennings
Hill, S. Joshua	Greene
Hillis, John H.	Henry, LaGrange, Noble, Steuben, Warren
Hosteter, William D.	Clinton, Crawford, Hamilton, Harrison, Jennings, Montgomery
Houghtby, Bruce J.	Randolph
Howell, I. David	Bartholomew
Huber, Larry P.	LaPorte
Hudson, Gary L.	Dubois, Orange
Huffman, Kelso K.	Delaware, Fountain, Hamilton, Hancock, Pulaski
Hunt, Thomas C.	Jasper, Marshall
Hutchinson, N.	Madison
Jensen, Earnest L.	Carroll, DeKalb, Grant, Huntington, Steuben, Tippecanoe
Jones, Robert C.	Gibson, Henry, Wabash
Jones, Timothy S.	Jackson
Kelley, Leo A.	Clay, Daviess, Knox, Pike, Sullivan, Vanderburgh, Vigo, Warrick
Kempf, Phillip A.	Lawrence, Monroe
Kimball, Mary R.	Rush
Kimmell, Mary R.	Blackford and Jay
Kirkham, Wendall C.	Clark and Floyd, Madison

1959-1998 Soil Scientists - 4	Modern Soil Surveys
Kirschner, Frank R.	Allen, Elkhart, LaGrange, Noble, Steuben
Klika, Roxann C.	Henry, Warren, Wells
Kluess, Steven K.	Morgan, Blackford & Jay, White
Kolesar, Roger A.	Jefferson
Kronenberger, R.	Madison
Kyler, R.	Madison
Landrum, Richard W.	Wabash
Langer, Eric R.	Greene, Wabash, Whitley
Langlois, Jr., Karl H.	Boone, White
Latowski, Carol J.	Randolph
Lefforge, David K.	DeKalb, Greene, Wabash, Wells, Whitley
Lehman, Samuel	Elkhart, Owen
LeMasters, Gary S.	Henry
Lockridge, Earl D.	Huntington
MacDonald, R. Jeffery	Jackson
McCarter, Jr., Paul	Benton, Clay, Crawford, Delaware, Elkhart, Greene, LaGrange, Noble, Warren
McClain, Mark S.	Blackford & Jay, Brown & part of Bartholomew, Tippecanoe, Washington
McElrath, Jr., George	Benton, Greene, Knox, Martin, Montgomery, Putnam, Warrick
McGhee, Lawrence E.	Benton, Warren
McWilliams, Kendall M.	Gibson, Pike, Posey, Ripley & parts of Jennings, Tippecanoe
Meland, John R.	Wayne
Meyer, Virginia A.	Adams
Miles, Randall J.	Clinton
Modesitt, Robert E.	Harrison, Perry
Montgomery, Dallas D.	Clark and Floyd, Scott

1959-1998 Soil Scientists - 5	Modern Soil Surveys
Montgomery, Robert H.	Lake, LaPorte, Porter, Vigo
Moriarity, William J.	Madison, Perry
Murdock, Stanley H.	Daviess
Nagel, Byron G.	Benton, Dearborn and Ohio, Jackson, Newton, Warren
Neely, Travis	Clay, Henry, Knox, Putnam, Randolph, Tipton, Vermillion, Wells
Neyhouse, Steven W.	Pike, Putnam
Nickell, Allan K.	Clark & Floyd, Dearborn & Ohio, Jefferson, Jennings, Switzerland
Noble, Richard A.	Lawrence
Norton, Darrell L.	Clinton
Osterholtz, Larry C.	Jasper, Newton, Tippecanoe, White
Pearson, Ronald E.	Randolph
Persinger, Ival D.	Lake, St. Joseph
Peterson, Bruce K.	Marshall
Pilgrim, Sidney	Lake
Pirtle, Bobby L.	Blackford & Jay, Hancock, Henry, Marshall, St. Joseph
Plank, Mark S.	Benton, Warren, Wayne
Post, D. F.	Allen, Pulaski
Preston, C.	Pulaski
Preston, George	Lake
Rich, K. Susan	Grant
Rivera, Arturo	Harrison, Jennings, Vigo
Robards, Mac H.	Putnam, Vermillion, Washington, Wells
Robbins, Jr., John M.	Harrison, Hendricks, Perry, Putnam, Shelby, Vermillion
Robinson, Glen H.	Parke
Ruesch, Donald R.	Hancock, Hendricks, Wabash, Wells, Whitley

1959-1998 Soil Scientists - 6	Modern Soil Surveys
Sanders, Frank W.	Madison, Owen, Parke
Schermerhorn, Edward J.	Madison
Schumacher, William K.	Fulton, Wabash
Shadis, David	Ripley & parts of Jennings
Shipman, Daniel A.	Porter
Shively, Jerold L.	Decatur, Franklin, Newton, Shelby, Spencer, Vanderburgh, Warren, Warrick
Smallwood, Benjamin F.	Jasper, LaPorte, Marshall, Porter
Smith, James R.	Sullivan
Sobecki, Terrence M.	Randolph
Staley, Larry R.	Kosciusko, Miami, Wells
Stephenson, Terry L.	Morgan, Putnam, Ripley & parts of Jennings, Switzerland
Strenger, Steven H.	Cass
Strimbu, Robert T.	Jasper
Struben, Gary R.	Gibson, Jackson, Jefferson, Newton, Pike, Warren
Sturm, Ralph H.	Boone, Daviess, Fountain, Johnson, Marion, Morgan, Sullivan
Tanaka, Gordon K.	Delaware
Tardy, Steven W.	Grant, Huntington
Taylor, Edwin A.	Carroll, Tippecanoe
Thomas, Jerry A.	Jasper, LaPorte, Lawrence, Monroe, Newton, Porter, St. Joseph
Tuszynski, David A.	Cass, Martin, Newton
Ulrich, H. P.	Allen, Fayette & Union, Parke
Veale, P. T.	Parke
Villars, Thomas R.	Franklin, Jefferson
Voss, Earl E.	Hendricks, Johnson, Scott, Spencer, Vigo
Wade, Steven L.	Clinton, Washington

1959-1998 Soil Scientists - 7	Modern Soil Surveys
Walker, Carl F.	Grant, Huntington, Wabash
Weikert, G. Dean	Crawford
Weilbaker, James	Lake
Williamson, Herbert F.	Spencer, Sullivan
Wingard, Jr., Robert C.	Brown & part of Bartholomew, Clark & Floyd, Crawford, Dubois, Jackson, Lawrence, Monroe, Orange, Tippecanoe
Wolf, Douglas R.	Clinton, Montgomery, Tippecanoe
Zachary, Alvin L.	Allen, Fayette & Union, Lake, Parke, Pulaski
Ziegler, Thomas R.	Adams, Brown & part of Bartholomew, Dearborn & Ohio, Tippecanoe

Soil Scientists 1987-2007

Soil Scientist	Update Soil Surveys
Bott, Wade D.	Pulaski
Brock, Rex A.	Elkhart, Pulaski, St. Joseph
Chowdhery, Asghar A.	Elkhart
Clark, Bennie	Fountain
Donaldson, Daniel A.	Floyd
Furr, Jr., G. Franklin	Elkhart, Pulaski
Gehring, David A.	St. Joseph
Haley, Scot A.	Bartholomew, Boone, Delaware, Fountain
Hudson, Gary L.	Pulaski
Jenkinson, Byron	Pulaski
Kirkham, Wendall C.	Floyd
Marshall, Dena L.	Bartholomew, Clark, Delaware, Fountain
McBurnett, Shane L.	Delaware, Elkhart, Pulaski, St. Joseph
McCarter, Jr., Paul	Owen
McElrath, Jr., George	Bartholomew, Clark
McWilliams, Kendall M.	Perry
Montgomery, Dallas D.	Floyd
Nagel, Byron G.	Clark, Floyd, Owen, Perry, Scott
Neely, Travis	Delaware
Neilson, Richard W.	St. Joseph
Neyhouse, Steven W.	Bartholomew, Clark , Floyd, Fountain, Perry
Nickell, Allan K.	Clark, Floyd, Perry, Scott

Soil Scientist	Update Soil Surveys
Patterson, Neil T.	Delaware, Elkhart, Owen
Ross, Stephen S.	Elkhart
Ruesch, Donald R.	Delaware
Shively, Jerold L.	Bartholomew, Boone, Elkhart, Fountain, Owen
Stephens, Norm	Bartholomew, Boone
Struben, Gary R.	Delaware
Wigginton, Mike	Bartholomew, Boone, Fountain
Wingard, Jr., Robert C.	Floyd, Perry
Ziegler, Thomas R.	Elkhart

MLRA Soil Scientists (1/2007)
Bender, Justin
Chase, Patrick
Helt, Genny
Holmes, Kamara
Marshall, Dena
McBurnett, Shane
Neyhouse, Steven W.
Norwood, Kevin
Stephens, Norm