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**CLASSIFICATION AND CORRELATION
OF
THE SOILS OF**

**GRANT COUNTY
INDIANA**

FEBRUARY 1985

LOCATION



**U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
MIDWEST NATIONAL TECHNICAL CENTER
LINCOLN, NEBRASKA**

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UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Midwest National Technical Center
Lincoln, Nebraska 68508-3866

Classification and Correlation
of the Soils of
Grant County, Indiana

This correlation was made the week of March 5-9, 1984, by Robert I. Turner, soil correlator, MNTC, SCS, Lincoln, Nebraska. Jerry D. Larson, soil specialist, SCS, Indianapolis, Indiana, was consulted by telephone on a number of items. The data reviewed consisted of the field correlation, first draft of the soil survey manuscript, correlation samples, field sheets, map unit notes, laboratory data, and SCS-SS-6 forms. Robert I. Turner participated in the comprehensive field review on October 25-28, 1982.

Headnote for Detailed Soil Survey Legend:

Map symbols consist of a combination of letters or of letters and numbers. The first capital letter is the initial one of the map unit name. The lowercase letter that follows separates map units having names that begin with the same letter, except that it does not separate sloping or eroded phases. The second capital letter indicates the class of slope. Symbols without a slope letter are for nearly level soils or miscellaneous areas. A final number of 2 indicates that the soil is moderately eroded and 3 that it is severely eroded.

SCIL CORRELATION OF
GRANT COUNTY, INDIANA

Field symbols	Field map unit name	Publication symbol	Approved map unit name
BhA, CtA	Blount silt loam, 0 to 1 percent slopes	BhA <i>west</i>	Blount silt loam, 1 to 2 percent slopes
BmA	Blount silt loam, 1 to 3 percent slopes	BkB2 <i>east</i>	Blount silty clay loam, 1 to 3 percent slopes, eroded
Bn	Bono silty clay loam	Bn	Bono silty clay
CuA	Crosby silt loam, 0 to 2 percent slopes	CuA	Crosby silt loam, 0 to 2 percent slopes
FsA	Fox silt loam, 0 to 2 percent slopes	FsA	Fox silt loam, 0 to 2 percent slopes
FsB2	Fox silt loam, 2 to 6 percent slopes, eroded	FsB2	Fox silt loam, 2 to 6 percent slopes, eroded
FtC3	Fox clay loam, 6 to 12 percent slopes, severely eroded	FtC3	Fox clay loam, 6 to 15 percent slopes, severely eroded
FvB	Fox Variant silt loam, 1 to 4 percent slopes	FvB	Fox Variant silt loam, 1 to 4 percent slopes
GrB2, WxB2	Glynwood silt loam, 2 to 6 percent slopes, eroded	GrB2 <i>west</i>	Glynwood silt loam, 2 to 6 percent slopes, eroded
GsB3, GsB2, CWB3, GtB3	Glynwood silty clay loam, 2 to 6 percent slopes, severely eroded	GsB2 <i>east</i>	Glynwood silty clay, 2 to 6 percent slopes, severely eroded
HaC	Hennepin loam, 2 to 7 percent slopes	HeB	Hennepin clay loam, 31 to 70 percent slopes
Ht	Houghton muck, drained	Ht	Houghton muck, drained

GRANT COUNTY, INDIANA --Continued

Field symbols	Field map unit name	Publication symbol	Approved map unit name
Lc	Landes sandy loam, occasionally flooded	Lc	Landes sandy loam, occasionally flooded
Mg	Millgrove loam	Mg	Millgrove loam
MvC	Morley silt loam, 6 to 12 percent slopes	MvC <i>east</i>	Morley silt loam, 6 to 12 percent slopes
MvD	Morley silt loam, 12 to 18 percent slopes	MvD <i>west</i>	Morley silt loam, 12 to 18 percent slopes
MwC3, MvC3, MvC3	Morley silty clay loam, 6 to 15 percent slopes, severely eroded	MwC2 <i>west</i>	Morley clay loam, 6 to 15 percent slopes, eroded
MxC3, SxC3, SvD, MvD	Morley clay loam, 6 to 12 percent slopes, severely eroded	MxC3 <i>east</i>	Morley clay, 6 to 15 percent slopes, severely eroded
OcA	Ockley silt loam, 0 to 2 percent slopes	OcA	Ockley silt loam, 0 to 2 percent slopes
Pg	Patton silty clay loam	Pg	Patton silty clay loam
Px, Hu, Pw	Brookston silt loam	Pw	Pewamo silty clay loam
Py, Px	Pits, quarry	Py	Pits
Rn	Sloan clay loam, occasionally flooded	Rn	Sloan clay loam, occasionally flooded
St	Sloan silt loam, sandy substratum, occasionally flooded	St	Sloan silt loam, sandy substratum, occasionally flooded
Ud	Udonthents, loamy	Ud	Udonthents, loamy
Uf5	Urban land-Fox complex, 1 to 5 percent slopes	UfD	Urban land-Fox complex, 1 to 5 percent slopes

GRANT COUNTY, INDIANA --Continued

Field symbols	Field map unit name	Publi- cation: symbol	Approved map unit name
UhB	Urban land-Glynwood complex, 2 to 6 percent slopes	UhB	Urban land-Glynwood complex, 2 to 6 percent slopes
UmC	Urban land-Morley complex, 6 to 15 percent slopes	UmC	Urban land-Morley complex, 6 to 15 percent slopes
Ut	Urban land-Treaty complex	Ut	Urban land-Pewamo complex
Wa	Wallkill silt loam, undrained	Wa	Wallkill silt loam, undrained

Series Established by This Correlation:

None

Series Dropped or Made Inactive:

None

Certification Statement:

The state soil scientist certifies that:

1. Mapping was completed on July 8, 1983.

2. The general soil map for general planning has been joined to the map for the completed Huntington County, Wabash County, Miami County, Howard County, Madison County, Delaware County, and Blackford County. All lines join with units in Grant County. The names of mapping units along Wabash County, Huntington County, Blackford County, and Delaware County do not coincide fully because of lab data that change the concept, design of mapping units and proportion of soils within the mapping units. In other areas all associations have at least one name common, and all join associations that have similar soils. A detailed account of the joins is attached to the report of field correlation and final field review.

The detailed maps have been joined and color checked to prove that each unit is a closed delineation. All lines join. In some cases, mapping unit names differ because series used in the adjoining survey areas were not of sufficient extent or importance to recognize in the survey area. Also, mapping unit design has resulted in some differences where similar soils or different erosion classes join. A detailed account of the joins is attached to the report of field correlation and final field review.

3. Interpretations have been checked and the interpretations that will be used are those that are on the SCS-SOILS-5's.

4. The location of pedons descriptions are in soil areas using those reference names and legal descriptions. The locations have been checked by the party leader.

Verification of Exact Cooperator Names:

The following will be on the front of the publication:

United States Department of Agriculture
Soil Conservation Service
In cooperation with
Purdue University
Agriculture Experiment Station
and
Indiana Department of Natural Resources
Soil and Water Conservation Committee

The citation in the box on the inside of the front cover will read:

"This survey was made cooperatively by the Soil Conservation Service, Purdue University Agricultural Experiment Station, and the Indiana Department of Natural Resources, Soil and Water Conservation Committee. It is part of the technical assistance furnished to the Grant County Soil and Water Conservation District. Financial assistance was made available by the Grant County Board of County Commissioners."

Disposition of Original Atlas Field Sheets:

The original atlas field sheets for Grant County will be retained by the Indiana State Office, and will be used in the map compilation and finishing procedures. Copies have been made for fire protection purposes. The state office at Indianapolis will prepare the atlas sheets for publication by ~~January~~ *September* 1985.

Prior Soil Survey Publication:

A prior soil survey was made for Grant County, Indiana, in 1915. The prior published soil survey will be included in the literature citations for the manuscript. The following will be published in the introductory material of the manuscript: "The first soil survey of Grant County was completed in 1915 and published in 1917. This survey updates the first survey and provides additional information and larger maps that show the soils on greater detail".

Soil Survey of Grant County, Indiana, Lewis A. Hurst, USDA, Earl Hertenstein, and Philip Middleton, Indiana Department of Geology, 36 pp., illus., 1917.

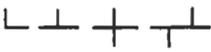
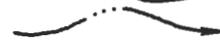
Instructions for Map Finishing:

The conventional and special symbols used in this survey are listed on the attached SCS-37A. These are the only symbols that will be shown on the published maps. The maps will be finished using the "Guide for Soil Map Finishing", July 1976.

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

Soil Survey Area: Grant County
State: Indiana

Date: 9/83

DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
CULTURAL FEATURES		CULTURAL FEATURES (cont.)		SPECIAL SYMBOLS FOR SOIL SURVEY	
BOUNDARIES		MISCELLANEOUS CULTURAL FEATURES		SOIL DELINEATIONS AND SOIL SYMBOLS	
County or parish	---	Farmstead, house (omit in urban areas)	•	ESCARPMENTS	CaA  FoB2
Minor civil division	---	Church	⋈	Bedrock (points down slope)
Field sheet matchline & neatline	---	(omit in urban areas)	⋈	SHORT STEEP SLOPE
AD HOC BOUNDARY (label)		School	⋈	MISCELLANEOUS	
Small airport, airfield, park, oilfield, cemetery, or flood pool		WATER FEATURES		Rock outcrop (includes sandstone and shale) ▽	
STATE COORDINATE TICK	1 890 000 FEET	DRAINAGE		Sandy spot ⋈	
LAND DIVISION CORNERS (sections and land grants)		Perennial, double line		Severely eroded spot ≡	
ROADS		Perennial, single line		RECOMMENDED AD HOC SOIL SYMBOLS	
Divided (median shown if scale permits)	---	Intermittent		40 to 60 inches to bedrock-1 to 10 acres in size ○	
County, farm or ranch	---	Drainage end			
ROAD EMBLEMS & DESIGNATIONS		Canal or ditches			
Interstate		Drainage and/or irrigation			
Federal		LAKES, PONDS AND RESERVOIRS			
State		Perennial			
RAILROAD					
DAMS					
Medium or small					
PITS					
Gravel pit	⊗				

SOIL SURVEY GRANT COUNTY, INDIANA

PRIME FARMLAND

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
BhA	:Blount silt loam, 0 to 2 percent slopes (where drained)
BkB2	:Blount silty clay loam, 1 to 3 percent slopes, eroded : (where drained)
Bn	:Bono silty clay (where drained)
CUA	:Crosby silt loam, 0 to 2 percent slopes (where drained)
FsA	:Fox silt loam, 0 to 2 percent slopes
FsB2	:Fox silt loam, 2 to 6 percent slopes, eroded
FvB	:Fox Variant silt loam, 1 to 4 percent slopes
GrB2	:Glynwood silt loam, 2 to 6 percent slopes, eroded
GsB3	:Glynwood silty clay, 2 to 6 percent slopes, severely : eroded <i>delete</i>
Lc	:Landes sandy loam, occasionally flooded
Mg	:Millgrove loam (where drained)
OcA	:Ockley silt loam, 0 to 2 percent slopes
Pg	:Patton silty clay loam (where drained)
Pw	:Pewamo silty clay loam (where drained)
Sn	:Sloan clay loam, occasionally flooded (where drained)
St	:Sloan silt loam, sandy substratum, occasionally flooded : (where drained)

Approved: FEB 6 1985

Rodney F. Harner

RODNEY F. HARNER
Head, Soils Staff
Midwest NTC

CONVERSION LEGEND FOR
GRANT COUNTY, INDIANA

Field symbol	Publication symbol	Field symbol	Publication symbol	Field symbol	Publication symbol	Field symbol	Publication symbol
BhA	BhA	WxB2	GrB2				
BmA	BkB2						
Bn	Bn						
Bx	Pw						
CtA	BhA						
CuA	CuA						
FsA	FsA						
FsB2	FsB2						
FtC3	FtC3						
FvB	FvB						
GrB2	GrB2						
GsB2	GsB3						
GsB3	GsB3						
GtB3	GsB3						
HeG	HeG						
Ht	Ht						
Hu	Pw						
Lc	Lc						
Mg	Mg						
MnC3	MwC2						
MvC	MvC						
MvC3	MwC2						
MvD	MvD						
MvD2	MxC3						
MwC3	MwC2						
MxC3	MxC3						
OcA	OcA						
Pq	Pq						
Px	Px						
Py	Py						
Sn	Sn						
St	St						
SvD	MxC3						
SxB3	GsB3						
SxC3	MxC3						
Ud	Ud						
UfB	UfB						
Uhb	Uhb						
UmC	UmC						
Ut	Ut						
Wa	Wa						

CLASSIFICATION OF PEDONS SAMPLED FOR
LABORATORY ANALYSIS

Pedons characterized at Purdue Laboratory^{1/}

<u>Sampled as</u>	<u>Pedon Sample No.</u>	<u>Publication Symbol</u>	<u>Approved Series Name or Classification</u>
Bono	S80IN53-6-(1-7)	Bn	^{2/} Bono
Blount	S80IN53-5-(1-6)	BkB2	Blount, B horizon in most clayey part of range
Del Rey	S82IN53-5-(1-10)	CuA	Del Rey, inclusion in map unit of Crosby
Blount	S79IN53-1-(1-6)	GrB 2	Blount; free carbonates slightly shallower than defined for series; inclusion in map unit of Glynwood
Morley	S82IN53-3-(1-6)	MxC3	Morley
Glynwood	S80IN53-3-(1-5)	GsB3	Glynwood, B horizon in most clayey part of range
Patton	S82IN53-6-(1-11)	Pg	^{2/} Patton
Pewamo	S80IN53-4-(1-6)	Pw	Pewamo
Blount	S77IN53-1-(1-6)	GsB3	Glynwood
Brookston	S80IN53-2-(1-6)	Pw	^{2/} Pewamo, B horizon in least clayey part of range
Miamian	S82IN53-7-(1-7)	MwC2	^{2/} Morley

^{Lands Span.}
Pedons characterized at NSSL^{1/}

Crosby	S80IN53-1-(1-5)	BhA	^{2/} Blount
Crosby	S81IN53-3-(1-6)	BhA	Blount
Crosby	S81IN53-2-(1-8)	BhA	Crosby, inclusion in Blount map unit
Blount	S81IN53-7-(1-7)	BkB2	Blount, more clayey part of textural range of Blount series

<u>Sampled as</u>	<u>Pedon Sample No.</u>	<u>Publication Symbol</u>	<u>Approved Series Name or Classification</u>
Crosby	S81IN53-8-(1-8)	CuA	<u>2/</u> Crosby
Celina	S81IN53-4-(1-7)	GrB2	<u>2/</u> Glynwood

1/ SCS-SOILS-8 forms have been prepared.

2/ Representative pedon for the series in Grant County.

Notes to Accompany
Classification and Correlation
of the Soils of
Grant County, Indiana

by

Robert I. Turner
and
Jerry D. Larson

BLOUNT SERIES

Blount soils on the west side of Mississinewa River tend to have a clay content in the argillic horizon about in the middle of the range for the series and in the C horizon within depths of less than 40 inches of 30 percent or less. East of this Blount soils tend to have slightly higher clay contents in the B horizon and in the C horizon has a clay content of 30 percent or more. Soils previously called Nappanee were judged to be mostly within the more clayey part of the range of Blount and were renamed Blount.

CROSBY SERIES

Crosby soils are in the least clayey part of the range for the Bt horizons and C horizons.

FOX SERIES

Fox soils have a slightly higher content of sand in the major part of the Bt horizons than defined for the Fox series and have the maximum gravel content in the solum for the series.

GLYNWOOD SERIES

Glynwood soils are in the least clayey part of the range for the Bt and C horizons for the Glynwood series in much of the area west of the Mississinewa River. Glynwood soils east of the river tend to have slightly higher clay contents in the Bt and C horizons.

HENNEPIN SERIES

Hennepin soils contain thin A1 horizons with value of 2 or 3 which is not allowed in the series definition. As these horizons are 3 inches or less thick, we have not called these soils taxadjuncts.

MORLEY SERIES

Morley soils east of the Mississinewa River tend to be in the most clayey part of the range for the Morley series and that west of the river have slightly less clay. Soils previously named St. Clair were judged to be dominantly within the range of the Morley series and were combined with it.

OCKLEY SERIES

Ockley soils have more sand and less clay in part of the Bt horizon than defined for the Ockley series. We did not consider this of sufficient importance to name it a taxadjunct. In addition, these soils are strongly acid to somewhat deeper depths than is considered typical for the Ockley series and contain less gravel in the solum than is typical for the Ockley series.

PEWAMO SERIES

Pewamo soils west of the river have less clay than typical for the series. The clay content of the argillic horizon is within the range of the Kokomo series but the clay content in the C horizon is higher than appropriate for the Kokomo series.

Pewamo soils east of the river have slightly more clay in the argillic horizon and are probably more representative of the Pewamo series from that standpoint. Hoytville silty clay loam is within the range of the Pewamo series and for that reason was combined with it.

WALLKILL SERIES

Wallkill soils are taxadjuncts to the Wallkill series because they contain less sand in the mineral portion of the soil. They would classify as fine-silty, mixed, nonacid, mesic Thapto-Histic Fluvaquents.

SOIL SURVEY GRANT COUNTY, INDIANA

CLASSIFICATION OF THE SOILS

(An asterisk in the first column indicates a taxadjunct to the series. See notes for a description of those characteristics of this taxadjunct that are outside the range of the series)

Soil name	Family or higher taxonomic class
Blount-----	Fine, illitic, mesic Aeric Ochraqualfs
Bono-----	Fine, illitic, mesic Typic Haplaquolls
Crosby-----	Fine, mixed, mesic Aeric Ochraqualfs
Fox-----	Fine-loamy over sandy or sandy-skeletal, mixed, mesic Typic Hapludalfs
Fox Variant	Fine-loamy, mixed, mesic Typic Hapludalfs
Glynwood-----	Fine, illitic, mesic Aquic Hapludalfs
Hennepin-----	Fine-loamy, mixed, mesic Typic Eutrochrepts
Houghton-----	Euic, mesic Typic Medisaprists
Landes-----	Coarse-loamy, mixed, mesic Fluventic Hapludolls
Millgrove-----	Fine-loamy, mixed, mesic Typic Argiaquolls
Morley-----	Fine, illitic, mesic Typic Hapludalfs
Ockley-----	Fine-loamy, mixed, mesic Typic Hapludalfs
Patton-----	Fine-silty, mixed, mesic Typic Haplaquolls
Pewamo-----	Fine, mixed, mesic Typic Argiaquolls
Sloan-----	Fine-loamy, mixed, mesic Fluvaquentic Haplaquolls
Udorthents.	Loamy, mixed, nonacid, mesic Udorthents
*Wallkill-----	Fine-loamy, mixed, nonacid, mesic Thapto-Histic Fluvaquents