

Blair

049

**CLASSIFICATION AND CORRELATION
OF
THE SOILS OF**

**FULTON COUNTY
INDIANA**

MAY 1984



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

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

Classification and Correlation
of the Soils of
Fulton County, Indiana

This correlation was prepared by Rodney F. Harner in consultation with Jerry D. Larson, soil specialist, Indiana State Office. The final correlation was based on the first draft of the soil survey manuscript, field correlation, correlation samples, field notes, and laboratory data. Maurice Stout, Jr., head, MNTC Soils Staff (at that time), participated in the comprehensive field review on July 6-9, 1981.

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 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 a number 3 indicates that the soil is severely eroded.

*Symbols
Ordered*

<u>Field Symbol</u>	<u>Field Map Unit Name</u>	<u>Publication Symbol</u>	<u>Approved Map Unit Name</u>
Ad ✓	Adrian muck, drained	Ad ✓	Adrian muck, drained ✓
Ah, Fh	Alganssee loamy sand, frequently flooded	) Ah ✓	Alganssee loamy sand, frequently flooded ✓
Bb, Bw, Re	Brookston loam	Bb ✓	Barry loam ✓
B1A	Blount loam, 0 to 2 percent slopes	) B1A ✓	Blount loam, 0 to 2 percent slopes ✓
Br	Brady sandy loam	Br ✓	Brady sandy loam ✓
BsA, BuA	Bronson sand, 0 to 2 percent slopes	) BsA ✓	Branch loamy sand, 0 to 2 percent slopes ✓
BtA	Brems loamy sand, 0 to 3 percent slopes	) BtA ✓	Brems loamy sand, 0 to 3 percent slopes ✓
ChB	Chelsea loamy fine sand, 2 to 6 percent slopes	) ChB ✓	Chelsea fine sand, 2 to 6 percent slopes ✓
Co	Cohoctah loam, occasionally flooded	) Co ✓	Cohoctah fine sandy loam, occasionally flooded ✓
CrA	Crosier loam, 0 to 2 percent slopes	) CrA ✓	Crosier loam, 0 to 2 percent slopes ✓
Ed	Edwards muck, drained	Ed ✓	Edwards muck, drained ✓
Gf	Gilford loam	Gf ✓	Gilford fine sandy loam ✓
Gh, Ba	Gilford Variant, fine sandy loam	) Gh ✓	Gilford fine sandy loam, loamy substratum ✓
Hh	Histosols and Aquolls, ponded	) Hh ✓	Histosols-Aquolls complex, ponded ✓
Hk	Homer fine sandy loam, 0 to 2 percent slopes	) Hk ✓	Homer fine sandy loam, 0 to 2 percent slopes ✓
Hm	Houghton muck, drained	Hm ✓	Houghton muck, drained ✓
Ho	Houghton muck, undrained	Ho ✓	Houghton muck, undrained ✓
KoA	Kosciusko-Ormas complex, 0 to 2 percent slopes	) KoA ✓	Kosciusko-Ormas complex, 0 to 2 percent slopes ✓
KoB, OsB	Kosciusko-Ormas complex, 2 to 6 percent slopes	) KoB ✓	Kosciusko-Ormas complex, 2 to 6 percent slopes ✓

<u>Field Symbol</u>	<u>Field Map Unit Name</u>	<u>Publication Symbol</u>	<u>Approved Map Unit Name</u>
KoC	Kosciusko-Ormas complex, 6 to 12 percent slopes	) KoC ✓	Kosciusko-Ormas complex, 6 to 12 percent slopes ✓
MaA, S1A	Markton loamy sand, 0 to 2 percent slopes	) MaA ✓	Markton loamy sand, 0 to 2 percent slopes ✓
MeA, MKA, PoA	Metea loamy sand, 0 to 2 percent slopes	) MeA ✓	Metea loamy sand, 0 to 2 percent slopes ✓
MeB, MkB, PoB	Metea loamy sand, 2 to 6 percent slopes	) MeB ✓	Metea loamy sand, 2 to 6 percent slopes ✓
MeC, MkC, PoC	Metea loamy sand, 6 to 12 percent slopes	) MeC ✓	Metea loamy sand, 6 to 12 percent slopes ✓
MrB2	Morley loam, 2 to 6 percent slopes, eroded	) MrB2 ✓	Morley loam, 2 to 6 percent slopes, eroded ✓
MsC3	Morley clay loam, 6 to 12 percent slopes, severely eroded	) MsC3 ✓	Morley clay loam, 6 to 12 percent slopes, severely eroded ✓
Mu	Morocco loamy sand	) Mu ✓	Morocco loamy sand ✓
Mx	Muskego muck, drained	) Mx ✓	Muskego muck, drained ✓
Ne, Me	Maumee loamy fine sand	) Ne ✓	Newton fine sandy loam ✓
OmA	Ormas loamy fine sand, 0 to 2 percent slopes	) OmA ✓	Ormas loamy sand, 0 to 2 percent slopes ✓
OmB	Ormas loamy fine sand, 2 to 6 percent slopes	) OmB ✓	Ormas loamy sand, 2 to 6 percent slopes ✓
Pe	Pewamo clay loam	) Pe ✓	Pewamo clay loam ✓
Pk	Pits, gravel	) Pk ✓	Pits, gravel ✓
PlA	Plainfield sand, 0 to 2 percent slopes	) PlA ✓	Plainfield sand, 0 to 2 percent slopes ✓
PlB	Plainfield sand, 2 to 6 percent slopes	) PlB ✓	Plainfield sand, 2 to 6 percent slopes ✓
PlC	Plainfield sand, 6 to 12 percent slopes	) PlC ✓	Plainfield sand, 6 to 12 percent slopes ✓
R1A	Riddles fine sandy loam, 0 to 2 percent slopes	) R1A ✓	Riddles fine sandy loam, 0 to 2 percent slopes ✓

<u>Field Symbol</u>	<u>Field Map Unit Name</u>	<u>Publication Symbol</u>	<u>Approved Map Unit Name</u>
R1B2	Riddles fine sandy loam, 2 to 6 percent slopes, eroded	) R1B2))	Riddles fine sandy loam, 2 to 6 percent slopes, eroded ✓
R1C2	Riddles fine sandy loam, 6 to 12 percent slopes, eroded	) R1C2))	Riddles fine sandy loam, 6 to 12 percent slopes, eroded ✓
Se	Sebewa loam	Se -	Sebewa sandy clay loam ✓
Wa	Wallkill loam	Wa -	Wallkill silt loam ✓
Wh	Washtenaw loam	Wh -	Washtenaw silt loam ✓
WkB, M1B	Wawasee fine sandy loam, 2 to 6 percent slopes	) WkB))	Wawasee fine sandy loam, 2 to 6 percent slopes ✓
WkC2	Wawasee fine sandy loam, 6 to 12 percent slopes	) WkC2))	Wawasee fine sandy loam, 6 to 12 percent slopes, eroded ✓
WkD	Wawasee fine sandy loam, 12 to 18 percent slopes	) WkD))	Wawasee fine sandy loam, 12 to 18 percent slopes ✓

Series Established by This Correlation:

Branch (type location in Branch County, Michigan)

Series Dropped or Made Inactive:

None

Certification Statement:

The state soil scientist certifies that:

1. Soil mapping was complete as of June 9, 1982.
2. The "General Soil Map for Broad Land Use Planning" has been joined with adjoining soil survey areas. All lines join. All adjoining map units have at least one soil series name in common or certain similar soils. Differences are caused by variations in extent of soil series between adjoining counties and because some series were extensive enough to recognize in one county but not in another. A detailed statement about the join was submitted with the field correlation.

The detailed maps join except where like soils were not mapped in adjoining counties or where small acreage units were not correlated. All lines join and adjoining map units have similar interpretations. A detailed statement about the join was submitted with the field correlation.

3. All interpretations have been coordinated.
4. All typical pedons are in soil areas using the map unit name and the legal descriptions of the location of the typical pedon are correct.

Verification of Exact Cooperator Names:

For the front cover:

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

The cooperators to be listed on the inside of the front cover are:

"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 Fulton County Soil and Water Conservation District. Financial assistance was made available by the Fulton County Board of County Commissioners."

Disposition of Field Sheets:

The original atlas field sheets for Fulton County will be retained by the Indiana State Office, and will be used in the map finishing. Copies have been made for fire protection purposes. The state office at Indianapolis will prepare the atlas sheets for publication by September 1983.

Prior Soil Survey Publications:

A reference to the 1946 Soil Survey of Fulton County, Indiana, will be made in the introduction of this publication. An example of how this might be done is as follows:

The first soil survey of Fulton County was made in 1946 (ref. citation). This survey updates the first survey and provides additional information and larger maps that show the soils in greater detail.

Soil Survey of Fulton County, Indiana, O. C. Rogers, U.S. Department of Agriculture, A. P. Bell, T. E. Barnes, Sutton Myers, and A. T. Wiancko, Purdue University Agricultural Experiment Station, 82 pp., illus., 1946.

Instruction for Map Finishing:

The conventional and special symbols used in this survey are listed on the attached SCS-SOILS-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: Fulton County
State: Indiana

Date: 9/14/82

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)	•	CeA	
Minor civil division		Church	⋈	FoB2	
Field sheet matchline & neatline		School	⌘	SHORT STEEP SLOPE	.....
AD HOC BOUNDARY (label)		WATER FEATURES		MISCELLANEOUS	
Small airport, airfield, park, oilfield, cemetery, or flood pool		DRAINAGE		Sandy spot	
STATE COORDINATE TICK		Perennial, double line		Severely eroded spot	
LAND DIVISION CORNERS (sections and land grants)		Perennial, single line		RECOMMENDED AD HOC SOIL SYMBOLS	
ROADS		Intermittent		Muck surface layer greater than 16 inches thick, 1/4 to 3 acres in size	
Divided (median shown if scale permits)		Drainage end		⊕	
County, farm or ranch		Canals or ditches			
ROAD EMBLEMS & DESIGNATIONS		Drainage and/or irrigation			
Federal		LAKES, PONDS AND RESERVOIRS			
State		Perennial			
RAILROAD		MISCELLANEOUS WATER FEATURES			
DAMS		Marsh or swamp			
Medium or small					
PITS					
Gravel pit					

PRIME FARMLAND MAP UNITS

The following map units meet the soil requirements for prime farmland:

<u>Publication Symbol</u>	<u>Approved Map Unit Name</u>
Bb	Barry loam (where drained) ~
B1A	Blount loam, 0 to 2 percent slopes, (where drained)
Br	Brady sandy loam (where drained) ~
BsA	Branch loamy sand, 0 to 2 percent slopes ~
Co	Cohoctah fine sandy loam, occasionally flooded (where drained) ~
CrA	Crosier loam, 0 to 2 percent slopes (where drained) -
Gf	Gilford fine sandy loam (where drained) ~
Gh	Gilford fine sandy loam, loamy substratum (where drained) ~
Hk	Homer fine sandy loam, 0 to 2 percent slopes (where drained)
KoA	Kosciusko-Ormas complex, 0 to 2 percent slopes ~
KoB	Kosciusko-Ormas complex, 2 to 6 percent slopes ~
MaA	Markton loamy sand, 0 to 2 percent slopes (where drained)
MeA	Metea loamy sand, 0 to 2 percent slopes ~
MeB	Metea loamy sand, 2 to 6 percent slopes ~
MrB2	Morley loam, 2 to 6 percent slopes, eroded ~
Ne	Newton fine sandy loam (where controlled drainage is used) ~
Pe	Pewamo clay loam (where drained)
R1A	Riddles fine sandy loam, 0 to 2 percent slopes ~
R1B2	Riddles fine sandy loam, 2 to 6 percent slopes ~
Se	Sebewa sandy clay loam (where drained) ~
Wa	Walkill silt loam (where drained) ~

Publication
Symbol

Approved Map Unit Name

Wh

Washtenaw silt loam (where drained)

WkB

Wawasee fine sandy loam, 2 to 6 percent slopes

Approved: May 1, 1984

Robert F. Harner acting

RODNEY F. HARNER
Head, Soils Staff
Midwest NTC

CONVERSION LEGEND RELATING FIELD MAP SYMBOL
TO PUBLICATION SYMBOL

<u>Field Symbol</u>	<u>Publication Symbol</u>	<u>Field Symbol</u>	<u>Publication Symbol</u>
Ad	Ad	MsC3	MsC3
Ah	Ah	Mu	Mu
Ba	Gh	Mx	Mx
Bb	Bb	Ne	Ne
B1A	B1A	OmA	OmA
Br	Br	OmB	OmB
BuA	BsA	OsB	KoB
BtA	BtA	Pe	Pe
Bw	Bb	Pk	Pk
ChB	ChB	PlA	PlA
Co	Co	PlB	PlB
CrA	CrA	PlC	PlC
Ed	Ed	PoA	MeA
Fh	Ah	PoB	MeB
Gf	Gf	PoC	MeC
Gh	Gh	Re	Bb
Hh	Hh	R1A	R1A
Hk	Hk	R1B2	R1B2
Hm	Hm	R1C2	R1C2
Ho	Ho	Se	Se
KoA	KoA	S1A	MaA
KoB	KoB	Wa	Wa
KoC	KoC	Wh	Wh
MaA	MaA	WkB	WkB
Me	Ne	WkC2	WkC2
MEa	MEa	WkD	WkD
MkA	MeA		
MkB	MeB		
MkC	MeC		
M1B	WkB		
MrB2	MrB2		

BSA

BSA

MEB

MEC

Probably used
on Gold Sheds

CLASSIFICATION OF PEDONS SAMPLED
FOR LABORATORY ANALYSIS

1. Laboratory Data from Purdue University with SCS-SOILS-8 forms.

<u>Sampled as</u>	<u>Pedon Sample No.</u>	<u>Publication Symbol*</u>	<u>Approved Series Name or Classification</u>
Blount	S80IN-049-9-(1-6)	B1A	Blount
Brady	S79IN-049-10-1(1-8)	Br	Brady
Bronson	S81IN-049-4-(1-7)	BsA	Branch
Brems	S80IN-049-12-(1-8)	BtA	Brems
Brookston	S80IN-049-5-(1-6)	Bb	Barry
Chelsea	S78IN-049-2-(1-5)	ChB	Chelsea
Cohoctah	S80IN-049-7-(1-7)	Co	Cohoctah
Crosier	S78IN-049-7-(1-6)	CrA	Crosier
Gilford	S79IN-049-7-(1-5)	Gf	Gilford
Gilford Variant	S79IN-049-8-(1-8)	Gh	Gilford
Hillsdale	S79IN-049-6-(1-7)	R1B2	Riddles
Riddles	S79IN-049-5-(1-8)	R1A	Riddles
Homer	S80IN-049-13-(1-6)	Hk	Homer
Maumee	S80IN-049-17-(1-6)	Ne	Newton
Metea	S81IN-049-1-(1-7)	MeB	Metea
Morley	S80IN-049-4-(1-7)	MrB2	Morley
Morocco	S81IN-049-2-(1-8)	Mu	Morocco
Ormas	S80IN-049-3-(1-9)	OmB	Ormas
Ormas	S80IN-049-10-(1-7)	KoA	Ormas
Pewamo	S80IN-049-8-(1-5)	Pe	Pewamo
Sebewa	S81IN-049-6-(1-6)	Se	Sebewa
Selfridge	S78IN-049-4-(1-7)	MaA	Markton
Washtenaw	S81IN-049-3-(1-7)	Wh	Washtenaw (Taxadjunct)
Wawasee	S79IN-049-2-(1-5)	WkB	Wawasee

2. Laboratory Data from Purdue University for which SCS-SOILS-8 forms were not completed.

<u>Sampled as</u>	<u>Pedon Sample No.</u>	<u>Publication Symbol</u>	<u>Approved Series Name or Classification</u>
Metea	S79IN-049-3-(1-6)	MeA	Fine-loamy, mixed, mesic Typic HapludalFs
Oshtemo	S75IN-025-2-(1-8)	OmA	Coarse-loamy, mixed, mesic Typic HapludalFs
Oshtemo	S78IN-049-8-(1-8)	KoB	Loamy, mixed, mesic Grossarenic HapludalFs
Riddles	S78IN-049-6-(1-7)	R1B2	Coarse-loamy, mixed, mesic Typic HapludalFs
Sebewa	S80IN-049-6-(1-6)	Se	Fine-loamy over sandy or sandy-skeletal, mixed, mesic Typic Argiaquolls
Kosciusko	S80IN-049-11-(1-6)	KoA	Fine-loamy over sandy or sandy skeletal, mixed, mesic Typic HapludalFs

*Sample taken from a mapped area identified by this publication symbol.

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

by
Jerry D. Larson and Rodney F. Harner

BARRY SERIES

The soil named as Rensselaer loam, loamy substratum in the field correlation is within the range of the Barry series. This soil is correlated as Barry loam.

BLOUNT SERIES

The Blount soil in Fulton County has less clay in the Ap horizon than is typical for the series. As a result the soil has an abrupt texture change between the Ap horizon and Bt horizon.

BRADY SERIES

This soil has lower chroma in the B horizon than defined for the series but the soil is not considered a taxadjunct.

BRANCH SERIES

The Bronson Variant is correlated as the Branch series, which is established by this correlation. The Branch series, which formed in outwash, has a type location in Branch County, Michigan.

CHELSEA SERIES

The E horizon of this soil has higher value in the upper part and is less acid than allowed in the series range, but it is not considered a taxadjunct.

EDWARDS SERIES

The reaction of the organic material in the typical pedon is more acid than the series range but the soil is not considered a taxadjunct.

GILFORD SERIES

This soil has a layer of sandy clay loam that is 6 inches thick. The series does not allow this texture even though the soil is still in the coarse-loamy family.

HOMER SERIES

This soil is not as acid as defined for the series but the soil is not considered a taxadjunct.

KOSCIUSKO SERIES

The clay content and content of fine and coarser sand in this soil is within the range of the Kosciusko series. The soil does not have the gradation from the Bt to the 2C horizon that is typical of the Kosciusko series; however, the soil is more like the Kosciusko series than the competing Fox series.

METEA SERIES

The soil proposed to be established as the Polerun series was correlated as the Metea series. The clay content of the Bt horizon is minimal and the clay content of the C horizon is 2 to 3 percent below the minimum for the Metea series; however, the bulk density of the C horizon of the typical pedon is 1.9. The interpretations for the Metea series are appropriate.

MORLEY SERIES

Laboratory data shows that the typical pedon in this survey area has an abrupt texture change between the Ap and Bt horizon and has neutral reaction in the upper part of the solum. This soil is not considered a taxadjunct because of these properties.

MUSKEGO SERIES

This soil is more acid in the O horizon and in the C1 horizon than the series range but this soil is not considered a taxadjunct.

NEWTON SERIES

The Newton series has a slightly higher reaction in the surface layer than is defined in the official description.

PEWAMO SERIES

The Pewamo series has slightly more clay in the Bt and C horizons than the series allows, but this soil is not considered a taxadjunct.

RIDDLES SERIES

The reaction of the Bt horizon is slightly lower than the series range, but the soil is not considered a taxadjunct.

WALLKILL SERIES

This soil is a taxadjunct because it has a mollic epipedon and is very strongly acid in the organic layers. The soil is a Haplaquoll.

WASHTENAW SERIES

This soil is considered a taxadjunct to the Washtenaw series because it has slightly less clay in the control section than defined for the series and does not have the mottling characteristic of an Aquent. The soil classifies as coarse-loamy, mixed, nonacid, mesic Aquic Udifluvents.

WAWASEE SERIES

The reaction of the Bt2 horizon is slightly lower than the series range, but this soil is not considered a taxadjunct.

CLASSIFICATION OF THE SOIL

<u>Soil Name</u>	<u>Family or Higher Taxonomic Class</u>
Adrian	Sandy or sandy-skeletal, mixed, euic, mesic Terric Medisaprists
Algansee	Mixed, mesic Aquic Udipsamments
Aquolls	Loamy, mixed, mesic Typic Haplaquolls
Barry	Fine-loamy, mixed, mesic Typic Argiaquolls
Blount	Fine, illitic, mesic Aeric Ochraqualfs
Brady	Coarse-loamy, mixed, mesic Aquollic Hapludalfs
Branch	Loamy, mixed, mesic Aquic Arenic Hapludalfs
Brems	Mixed, mesic Aquic Udipsamments
Chelsea	Sandy, mixed, mesic Alfic Udipsamments
Cohoctah	Coarse-loamy, mixed, mesic Fluvaquentic Haplaquolls
Crosier	Fine-loamy, mixed, mesic Aeric Ochraqualfs
Edwards	Marly, euic, mesic Limnic Medisaprists
Gilford	Coarse-loamy, mixed, mesic Typic Haplaquolls
Histosols	Euic, mesic Medisaprists
Homer	Fine-loamy over sandy or sandy-skeletal, mixed, mesic Aeric Ochraqualfs
Houghton	Euic, mesic Typic Medisaprists
Kosciusko	Fine-loamy, mixed, mesic Typic Hapludalfs
Markton	Loamy, mixed, mesic Aquic Arenic Hapludalfs
Metea	Loamy, mixed, mesic Arenic Hapludalfs
Morley	Fine, illitic, mesic Typic Hapludalfs
Morocco	Mixed, mesic Aquic Udipsamments
Muskego	Coprogenous, euic, mesic Limnic Medisaprists
Newton	Sandy, mixed, mesic Typic Humaquepts

<u>Soil Name</u>	<u>Family or Higher Taxonomic Class</u>
Ormas	Loamy, mixed, mesic Arenic HapludalFs
Pewamo	Fine, mixed, mesic Typic Argiaquolls
Plainfield	Mixed, mesic Typic Udipsamments
Riddles	Fine-loamy, mesic Typic HapludalFs
Sebewa	Fine-loamy over sandy or sandy skeletal, mixed, mesic Typic Argiaquolls
*Wallkill	Fine-loamy, mixed, nonacid, mesic Thapto-Histic Fluvaquents
*Washtenaw	Fine-loamy, mixed, nonacid, mesic Aeric Fluvaquents
Wawasee	Fine-loamy, mixed, mesic Typic HapludalFs

*Taxadjunct--see "Notes to Accompany Classification and Correlation of the Soils of Fulton County, Indiana" for details. Classification for taxadjuncts are included in the "Notes" if different than listed on the table.