

**CLASSIFICATION AND CORRELATION
OF
THE SOILS OF**

**MARSHALL COUNTY
INDIANA**

NOVEMBER 1978



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

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

Classification and Correlation
of the Soils of
Marshall County, Indiana

A correlation conference was held at the Midwest Technical Service in Lincoln, Nebraska the week of August 7, 1978. Participants in this conference were Benjamin F. Smallwood, Party Leader; Frank W. Sanders, Assistant State Soil Scientist; and G. J. Post, Soil Correlator. The draft copy of the manuscript, county laboratory data, field sheets, field notes, and correlation samples were available and used to prepare the correlation. G. J. Post participated in the comprehensive field review the week of August 8-12, 1977.

Map symbols consist of two or three letters and sometimes a final number. For example; Ad, OsA, and RsC2. The first letter is a capital and it is the first letter of the soil name or miscellaneous area. The second letter is lower case and it is used to separate mapping units that begin with the same first letter. The third letter is a capital and it indicates the class of slope. Symbols without a slope letter are nearly level or they are miscellaneous areas. A final number two or three indicates the degree of erosion.

SOIL CORRELATION OF
MARSHALL COUNTY, INDIANA
AUGUST 1978

Field symbols	Field mapping unit name	Publi- cation symbol	Approved mapping unit name
Ad	Adrian muck, drained	Ad	Adrian muck, drained
AuA, Au	Aubbeenaubbee sandy loam, 0 to 2 percent slopes	AuA	Aubbeenaubbee sandy loam, 0 to 2 percent slopes
Bd	Brady sandy loam	Bd	Brady sandy loam
BeA, Mo, Mr	Brems sand, 0 to 2 percent slopes	BeA	Brems sand, 0 to 2 percent slopes
BoA, Bo	Bronson sandy loam, 0 to 2 percent slopes	BoA	Bronson loamy sand, 0 to 2 percent slopes
Br	Brookston loam	Br	Brookston loam
ChB	Chelsea fine sand, 2 to 6 percent slopes	ChB	Chelsea fine sand, 2 to 6 percent slopes
ChC	Chelsea fine sand, 6 to 12 percent slopes	ChC	Chelsea fine sand, 6 to 12 percent slopes
CtA, Ct, Cs, De	Crosier loam, 0 to 2 percent slopes	CtA	Crosier loam, 0 to 2 percent slopes
Ed, Em	Edwards muck, drained	Ed	Edwards muck, drained
ESA	Elston sandy loam, 0 to 2 percent slopes	ESA	Elston sandy loam, 0 to 2 percent slopes
Fc, Sh, Sm, Am	Fluvaquents	Fc	Fluvaquents, loamy
FSA, KaA, FxA	Fox sandy loam, 0 to 2 percent slopes	FSA	Fox sandy loam, 0 to 2 percent slopes
FsB, KaB, FxB	Fox sandy loam, 2 to 6 percent slopes	FsB	Fox sandy loam, 2 to 6 percent slopes
FsCZ, FxC2	Fox sandy loam, 6 to 12 percent slopes, eroded	FsC2	Fox sandy loam, 6 to 12 percent slopes, eroded
Gf, Gm	Gilford sandy loam	Gf	Gilford sandy loam

MAFSHALL COUNTY, INDIANA --Continued

Field symbols	Field mapping unit name	Publi- cation symbol	Approved mapping unit name
HdB	Hillsdale sandy loam, 2 to 6 percent slopes	HdB	Hillsdale sandy loam, 2 to 6 percent slopes
Ho, Hm	Houghton muck, drained	Ho	Houghton muck, drained
Hp, Mc	Houghton muck, ponded	Hp	Houghton muck, ponded
LnA	Linkville sandy loam, 0 to 2 percent slopes	LnA	Linkville sandy loam, 0 to 2 percent slopes
LnB	Linkville sandy loam, 2 to 6 percent slopes	LnB	Linkville sandy loam, 2 to 6 percent slopes
MeA	Martinsville loam, 0 to 2 percent slopes	MeA	Martinsville loam, 0 to 2 percent slopes
MeB	Martinsville loam, 2 to 6 percent slopes	MeB	Martinsville loam, 2 to 6 percent slopes
MeC2	Martinsville loam, 6 to 12 percent slopes, eroded	MeC2	Martinsville loam, 6 to 12 percent slopes, eroded
MgB	Metea loamy fine sand, 2 to 6 percent slopes	MgB	Metea loamy fine sand, 2 to 6 percent slopes
MgC, 0-9, 9-28, 28-44, 44-60	Metea loamy fine sand, 6 to 12 percent slopes	MgC	Metea loamy fine sand, 6 to 12 percent slopes
Mn	Milford silty clay loam	Mn	Milford silty clay loam
Ne, Nf, Nd, Nf	Newton loamy fine sand	Ne	Newton loamy fine sand
OsA	Oshtemo loamy sand, 0 to 2 percent slopes	OsA	Oshtemo loamy sand, 0 to 2 percent slopes
OsB	Oshtemo loamy sand, 2 to 6 percent slopes	OsB	Oshtemo loamy sand, 2 to 6 percent slopes

MARSHALL COUNTY, INDIANA --Continued

Field symbols	Field mapping unit name	Publi- cation symbol	Approved mapping unit name
OsC, CsC2	Oshtemo loamy sand, 6 to 12 percent slopes	OsC	Oshtemo loamy sand, 6 to 12 percent slopes
OsD, FSD2, CSD2	Oshtemo loamy sand, 12 to 18 percent slopes	OsD	Oshtemo loamy sand, 12 to 18 percent slopes
OWA, MgA	Owosso sandy loam, loamy substratum, 0 to 2 percent slopes	OWA	Owosso sandy loam, 0 to 2 percent slopes
Pa	Palms muck, drained	Pa	Palms muck, drained
PdA, Qu, AeA, P1, Ph	Pinhook sandy loam, 0 to 2 percent slopes	PdA	Pinhook sandy loam, 0 to 2 percent slopes
PSA, ChA	Plainfield sand, 0 to 2 percent slopes	PSA	Plainfield sand, 0 to 2 percent slopes
PSC, PSB, PxB2, PXC2	Plainfield sand, 3 to 10 percent slopes	PSC	Plainfield sand, 3 to 10 percent slopes
PSD, TyD	Plainfield sand, 12 to 18 percent slopes	PSD	Plainfield sand, 12 to 18 percent slopes
Re, Rm, Se	Rensselaer loam	Re	Rensselaer loam
RSA, RtA, HdA	Riddles sandy loam, 0 to 2 percent slopes	RSA	Riddles sandy loam, 0 to 2 percent slopes
RSB, FtB, OWB	Riddles sandy loam, 2 to 6 percent slopes	RSB	Riddles sandy loam, 2 to 6 percent slopes
RSC2, FtC2, OWC, HdC	Riddles sandy loam, 6 to 12 percent slopes, eroded	RSC2	Riddles sandy loam, 6 to 12 percent slopes, eroded
RSD, HdD2, RSD2, RtD2	Riddles sandy loam, 12 to 18 percent slopes	RSD	Riddles sandy loam, 12 to 18 percent slopes
SpA, W1	Shipshe sandy loam, 0 to 2 percent slopes	SpA	Shipshe sandy loam, 0 to 2 percent slopes
St, Fe	Stonelick sandy loam	St	Stonelick sandy loam
Tx	Troxel silt loam	Tx	Troxel silt loam

MARSHALL COUNTY, INDIANA --Continued

Field symbols	Field mapping unit name	Publi- cation symbol	Approved mapping unit name
TyA	Tyner loamy sand, 0 to 2 percent slopes	TyA	Tyner loamy sand, 0 to 2 percent slopes
TyB	Tyner loamy sand, 2 to 6 percent slopes	TyB	Tyner loamy sand, 2 to 6 percent slopes
TyC	Tyner loamy sand, 6 to 12 percent slopes	TyC	Tyner loamy sand, 6 to 12 percent slopes
Ua, Gp, Fg, Sp	Udorthents, 0 to 2 percent slopes	Ua	Udorthents, loamy
Wa	Wallkill silt loam	Wa	Wallkill loam
Wh, Wb	Washtenaw silt loam	Wh	Washtenaw silt loam
MkB, MkB	Miami sandy loam, 2 to 6 percent slopes	WkB	Wawasee sandy loam, 2 to 6 percent slopes
MkC2, MaC3, MiC2	Miami sandy loam, 6 to 12 percent slopes, eroded	WkC2	Wawasee sandy loam, 6 to 12 percent slopes, eroded
MmD3, MiD3, MlD3	Miami sandy clay loam, 12 to 18 percent slopes, severely eroded	WmD3	Wawasee sandy clay loam, 12 to 18 percent slopes, severely eroded
Wt	Whitaker loam	Wt	Whitaker loam

Marshall County, Indiana

Series established by this correlation:

Linkville

Series dropped or made inactive:

None

Certification Statement:

Marshall County joins St. Joseph, Elkart, Kosciusko, Fulton, and Starke Counties. All of these counties are either mapped or have a survey in progress. Marshall County general soil map as well as the detailed maps have been adequately joined with these counties.

All typical pedon descriptions are located in a delineation of the named soil.

All the field mapping has been completed in this county.

Cooperators:

On the front cover the cooperators citation will read:

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

In the box on the inside front cover of the publication, the statement will include the above as well as the following:

"Financial assistance was made available by the Marshall County Board of County Commissioners."

Prior Soil Survey Publication:

A reference to the 1904 Marshall County Soil Survey should be in the introduction of this publication. The prior published soil survey will be a literature citation. For example: "The first soil survey of Marshall County was made in 1904 (ref. citation). This survey updates the first survey and provides additional information and larger maps that show the soils in greater detail."

Disposition of Field Sheets:

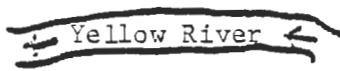
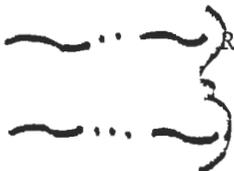
Negatives are being made and will remain with the Cartographic Staff in the Midwest Technical Service Center. The original field sheets are retained by the states and will be used in map compilation and finishing.

Marshall County, Indiana

Instructions for Map Compilation and Finishing:

The conventional and special symbols used in field mapping will be compiled using the appropriate symbols from SCS-Soils-37A.

LEGEND OF CONVENTIONAL SYMBOLS

<u>Description</u>	<u>Symbol</u>	<u>Disposition</u>
U.S. or State Roads	 	Retain
RAILROADS		
Single or double track		Retain
Abandoned		Retain
BUILDINGS AND SIMILAR FEATURES		
Large Buildings (to scale; label)	Hospital 	Delete
Church (to scale, if large)		Retain
School (to scale, if large)		Retain
Airport (small)		Retain as <u>Airfield</u>
BOUNDARIES		
County		Retain
Small Park or Airfield		Retain
Cemetery		Retain
DRAINAGE FEATURES		
Streams, double-line	 Yellow River	Retain
Perennial		
Streams, single-line		Retain
Perennial		
Intermittent		
Crossable with tillage implements		Retain as 
Not crossable		
Gully		Retain

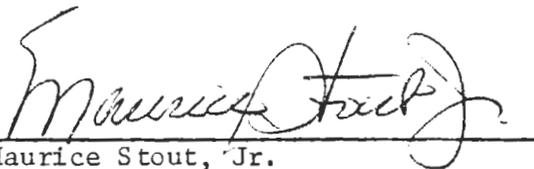
Marshall County, Indiana

<u>Description</u>	<u>Symbol</u>	<u>Disposition</u>
Drainage ends		Retain as
Ditches		Retain
Lakes, ponds		Retain
Wet spot, 5 acres or less		Retain
Swamp, Marsh (greater than 3 acres) (less than 3 acres)		Delete Retain as
DAMS		
Small; stock or farm pond		Retain
RELIEF FEATURES		
Escarpments		
Other than bedrock		Retain as
DEPRESSION		
Crossable with tillage implements At least 3 foot depression with no outlet		Retain
Gravel Pit		Retain
Sand Pit		less than 3 acres over 3 acres Ua
Cut and Fill land		Retain as Ua
SPECIAL SOIL SYMBOLS (one for each 3 acre area or less)		
Blowout		Retain
Clay Spot		Delete
Gravel Spot		Delete
Sand Spot		Retain
Severely Eroded Spot		Retain
Iron Spot	Fe	Delete

Marshall County, Indiana

<u>Description</u>	<u>Symbol</u>	<u>Disposition</u>
Marl Spot	+	Retain as ①
Muck Spot	⊕	Retain
Soil Sample Site	⑤ 21	Delete
Soil Area Boundaries and Symbols		Retain

Approved: November 9, 1978



Maurice Stout, Jr.
Head, Soils Staff
Midwest TSC

CONVERSION LEGEND FOR
MARSHALL COUNTY, INDIANA
AUGUST 1978

Field symbol	Publication symbol						
Ad	Ad	KaB	FsB	PsB	Psc		
AeA	PdA	LnA	LnA	Psc	Psc		
Am	Fc	LnB	LnB	PsD	PsD		
Au	AuA	Mc	Hp	PxB2	Psc		
AuA	AuA	MeA	MeA	PxC2	Psc		
Bd	Bd	MeB	MeB	Qu	PdA		
BeA	BeA	MeC2	MeC2	Re	Re		
Bo	BoA	Mf	Ne	Rm	Fe		
BoA	BoA	MgA	OwA	RSA	RSA		
Br	Br	MgB	MgB	FsB	Rsb		
ChA	PSA	MgC	MgC	Rsc2	Rsc2		
ChB	ChB	MiC2	WkC2	FsD	FsD		
ChC	ChC	MiD3	WmD3	Rsd2	Rsd		
Cs	CtA	MkB	WkB	FtA	FSA		
Ct	CtA	MkB	WkB	RtB	Rsb		
CtA	CtA	MkC2	WkC2	FtC2	Fsc2		
De	CtA	MlD3	WmD3	RtD2	Rsd		
Ed	Ed	MmC3	WkC2	Se	Re		
Ee	St	MmD3	WmD3	Sh	Fc		
Em	Ed	Mn	Mn	Sm	Fc		
ESA	ESA	Mo	BeA	Sp	Ua		
Fc	Fc	Mr	BeA	St	St		
FSA	FSA	Nd	Ne	Tx	Tx		
FsB	FsB	Ne	Ne	TyA	TyA		
FSCZ	FSC2	Nf	Ne	TyB	TyB		
FSD2	OSD	OSA	OSA	TyC	TyC		
FxA	FSA	OSB	OSB	TyD	PsD		
FxE	Fs3	OSC	OSC	Ua	Ua		
FxC2	FSC2	OSC2	OSC	Wa	Wa		
Gf	Gf	OSD	OSD	Wb	Wh		
Gm	Gf	OSD2	OSD	Wd	SpA		
Gp	Ua	OwA	OwA	WdA	SpA		
HdA	PSA	OwB	EsB	Wh	Wh		
HdB	HdB	OwC	Psc2	Wt	Wt		
HdC	Rsc2	Pa	Pa	0-9	MgC		
HdD2	Rsd	Pd	PdA	9-28	MgC		
Hm	Ho	PdA	PdA	28-44	MgC		
Ho	Ho	Pg	Ua	44-60	MgC		
Hp	Hp	Ph	PdA				
KaA	PSA	PSA	PSA				

Marshall County, Indiana

CLASSIFICATION OF PEDONS SAMPLED FOR LABORATORY ANALYSIS

There are considerable data available from a number of pedons in this survey area. However, this data is being reviewed and proper classification determined and it will be stored on the Purdue Computer System.

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

by
Gerald J. Post

BREMS SERIES

This soil lacks grey mottles (chroma of 2 or less) in the upper part of the B horizon as defined for the series. However, this soil has a seasonal high water table and is considered to be a taxadjunct to the Brems series.

ELSTON SERIES

This soil contains more coarse fragments in the lower part of the solum and substratum than is defined for the series. For this reason it is considered to be a taxadjunct to the Elston series.

LINKVILLE SERIES

This series is established by this correlation. It is currently being used in a number of surveys in north central Indiana. These soils were formally included with Ayr and Parr soils.

STONELICK SERIES

This soil is within the defined range of the series except it lacks free carbonates although it is mostly neutral in reaction. This difference was not considered significant enough to make this soil a taxadjunct.

TROXEL SERIES

This soil had a slightly higher percentage of sand in the control section than is defined for the series. For this reason this soil is considered a taxadjunct to the Troxel series. The texture family classification of this soil is fine-loamy rather than fine-silty.

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
Adrian-----	Sandy or sandy-skeletal, mixed, euic, mesic Terric Medisaprists
Aubbeenaubee	Fine-loamy, mixed, mesic Aeric Ochraqualfs
Brady-----	Coarse-loamy, mixed, mesic Aquollic Hapludalfs
*Brems-----	Mixed, mesic Aquic Udipsamments
Bronson-----	Coarse-loamy, mixed, mesic Aquic Hapludalfs
Brookston---	Fine-loamy, mixed, mesic Typic Argiaquolls
Chelsea-----	Mixed, mesic Alfic Udipsamments
Crosier-----	Fine-loamy, mixed, mesic Aeric Ochraqualfs
Edwards-----	Marly, euic, mesic Limnic Medisaprists
*Eiston-----	Coarse-loamy, mixed, mesic Typic Argiudolls
Fluvaquents	Loamy, mixed, nonacid, mesic Typic Fluvaquents
Fox-----	Fine-loamy over sandy or sandy-skeletal, mixed, mesic Typic Hapludalfs
Gilford-----	Coarse-loamy, mixed, mesic Typic Haplaquolls
Hillsdale---	Coarse-loamy, mixed, mesic Typic Hapludalfs
Houghton----	Euic, mesic Typic Medisaprists
Linkville---	Fine-loamy, mixed, mesic Typic Argiudolls
Martinsville	Fine-loamy, mixed, mesic Typic Hapludalfs
Metea-----	Loamy, mixed, mesic Arenic Hapludalfs
Milford-----	Fine, mixed, mesic Typic Haplaquolls
Newton-----	Sandy, mixed, mesic Typic Humaquepts
Oshtemo-----	Coarse-loamy, mixed, mesic Typic Hapludalfs
Owosso-----	Fine-loamy, mixed, mesic Typic Hapludalfs
Palms-----	Loamy, mixed, euic, mesic Terric Medisaprists
Pinnock-----	Coarse-loamy, mixed, mesic Mollic Ochraqualfs
Plainfield---	Mixed, mesic Typic Udipsamments
Rensselaer---	Fine-loamy, mixed, mesic Typic Argiaquolls
Riddles-----	Fine-loamy, mixed, mesic Typic Hapludalfs
Shipshe-----	Loamy-skeletal, mixed, mesic Typic Argiudolls
Stonelick---	Coarse-loamy, mixed (calcareous), mesic Typic Udifluvents
*Troxel-----	Fine-silty, mixed, mesic Typic Argiudolls

CLASSIFICATION OF THE SOILS--Continued

Soil name	Family or higher taxonomic class
Tyner-----	Mixed, mesic Typic Udipsamments
Udorthents.	Loamy, mixed, nonacid, mesic Typic Udorthents
Walkkill-----	Fine-loamy, mixed, nonacid, mesic Thapto-Histic Fluvaquents
Washtenaw----	Fine-loamy, mixed, nonacid, mesic Typic Haplaquents
Wawasee-----	Fine-loamy, mixed, mesic Typic Hapludalfs
Whitaker-----	Fine-loamy, mixed, mesic Aeric Ocnraqualfs