

**CLASSIFICATION AND CORRELATION
OF
THE SOILS OF**

**PUTNAM COUNTY
INDIANA**

MARCH 1979



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
Putnam County, Indiana

This correlation was prepared by Robert I. Turner in consultation with Max H. Robards, Party Leader; and DeWayne Williams, Field Specialist-Soils, during the week of August 7-11, 1978. The final correlation is based on the first draft of sections of the manuscript, field correlation, field sheets, correlation samples, some laboratory data, and interpretive information available with the standard series descriptions for the soils used in this soil survey area. The halftone positive mylars to which the field mapping was transferred are considered as the field sheets for this soil survey. Robert I. Turner participated in the comprehensive field review on May 9-13, 1977. A draft of the final correlation was reviewed by the SCS and the cooperating agencies in Indiana before it was approved and distributed.

Head note for detailed soil legend symbols:

The first capital letter is the initial one of the soil name. The lower case letter that follows separates mapping 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 those with a slope range of 0 to 2 percent or for other map units for which slope was not a part of the name. A final number of 2 or 3 in the symbol indicates that the soil is eroded or severely eroded, respectively.

SOIL CORRELATION OF
PUTNAM COUNTY, INDIANA

Field symbols	Field mapping unit name	Publi- cation symbol	Approved mapping unit name
AlB, AlB2, GrB2	Alford silt loam, 2 to 6 percent slopes	AlB	Alford silt loam, 2 to 6 percent slopes
AlC2	Alford silt loam, 6 to 12 percent slopes, eroded	AlC2	Alford silt loam, 6 to 12 percent slopes, eroded
AnC, AnC2, AnD2, PrC, PrD2	Alvin sandy loam, 6 to 16 percent slopes	AnC	Alvin sandy loam, 6 to 12 percent slopes
AvA AvB, AvB2	Ava Variant silt loam, 0 to 2 percent slopes Ava Variant silt loam, 2 to 6 percent slopes	AvB	Ava silt loam, 1 to 4 percent slopes
CnB2, ZaB2	Cincinnati variant silt loam, 2 to 6 percent slopes, eroded	AwB2	Ava silt loam, 3 to 6 percent slopes, eroded
CnC2, ZaC2	Cincinnati variant silt loam, 6 to 12 percent slopes, eroded	AwC2	Ava silt loam, 6 to 12 percent slopes, eroded
Ba	Bartle silt loam	Ba	Bartle silt loam
Bd, St	Birds silt loam	Bd	Birds silt loam
Ge, Ro	Genesee silt loam	Ch	Chagrin silt loam
NgG	Negley loam, 25 to 50 percent slopes	CkG	Chetwynd silt loam, 25 to 50 percent slopes
CnC3, ZaC3	Cincinnati variant silt loam, 6 to 12 percent slopes, severely eroded	CnC2	Cincinnati silt loam, 6 to 12 percent slopes, eroded
CnD2, CnD3	Cincinnati variant silt loam, 12 to 18 percent slopes, eroded	CnD2	Cincinnati silt loam, 12 to 18 percent slopes, eroded

PUTNAM COUNTY, INDIANA --Continued

Field symbols	Field mapping unit name	Publi- cation symbol	Approved mapping unit name
CoG	Corydon silt loam, 25 to 50 percent slopes	CoG	Corydon silt loam, 25 to 50 percent slopes
ELB, ELB2	Elkinsville silt loam, 2 to 6 percent slopes	ELB	Elkinsville silt loam, 2 to 6 percent slopes
Ev	Evansville silt loam	Ev	Evansville silt loam
FdA	Fincastle silt loam, 0 to 3 percent slopes	FdA	Fincastle silt loam, 1 to 3 percent slopes
FoE2	Fox loam, 2 to 6 percent slopes, eroded	FoE2	Fox loam, 2 to 6 percent slopes, eroded
FxC3	Fox clay loam, 6 to 15 percent slopes, severely eroded	FxC3	Fox clay loam, 6 to 15 percent slopes, severely eroded
GnE, GnE2, GnD2	Gilpin silt loam, 15 to 25 percent slopes	GnE	Gilpin silt loam, 15 to 25 percent slopes
GrC2	Grayford silt loam, 6 to 12 percent slopes, eroded	GrC2	Grayford silt loam, 6 to 12 percent slopes, eroded
GrD2	Grayford silt loam, 12 to 18 percent slopes, eroded	GrD2	Grayford silt loam, 12 to 18 percent slopes, eroded
GrE2	Grayford silt loam, 18 to 25 percent slopes, eroded	GrE2	Grayford silt loam, 18 to 25 percent slopes, eroded
Hb	Haymond silt loam	Hb	Haymond silt loam
HeG	Hennepin loam, 25 to 50 percent slopes	HeG	Hennepin loam, 25 to 50 percent slopes
HoG	Hickory loam, 25 to 70 percent slopes	HoG	Hickory loam, 25 to 70 percent slopes

PUTNAM COUNTY, INDIANA --Continued

Field symbols	Field mapping unit name	Publi- cation symbol	Approved mapping unit name
HvA	Hoosierville silt loam, 0 to 2 percent slopes	Hv	Hoosierville silt loam
IvA	Iva silt loam, 0 to 2 percent slopes	IvA	Iva silt loam, 0 to 2 percent slopes
McA, CaA	Martinsville loam, 0 to 2 percent slopes	McA	Martinsville loam, 0 to 2 percent slopes
McB, McB2, CaB2	Martinsville loam, 2 to 6 percent slopes	McB	Martinsville loam, 2 to 6 percent slopes
MeD2	Miami silt loam, 12 to 18 percent slopes, eroded	MeD2	Miami silt loam, 12 to 18 percent slopes, eroded
MgC3	Miami clay loam, 6 to 12 percent slopes, severely eroded	MgC3	Miami clay loam, 6 to 12 percent slopes, severely eroded
MgD3	Miami clay loam, 12 to 18 percent slopes, severely eroded	MgD3	Miami clay loam, 12 to 18 percent slopes, severely eroded
MuB, MuB2, MuA, UnB2	Muren silt loam, 1 to 4 percent slopes	MuB	Muren silt loam, 1 to 4 percent slopes
OcA, FoA	Ockley silt loam, 0 to 2 percent slopes	OcA	Ockley silt loam, 0 to 2 percent slopes
OcB2	Ockley silt loam, 2 to 6 percent slopes, eroded	OcB2	Ockley silt loam, 2 to 6 percent slopes, eroded
PeB2	Parke silt loam, 2 to 6 percent slopes, eroded	PeB2	Parke silt loam, 2 to 6 percent slopes, eroded
PeC2	Parke silt loam, 6 to 12 percent slopes, eroded	PeC2	Parke silt loam, 6 to 12 percent slopes, eroded
Fo, P6, Q1	Pits, quarries	Po	Pits, quarries
Ra	Ragsdale silt loam	Ra	Ragsdale silt loam

PUTNAM COUNTY, INDIANA --Continued

Field symbols	Field mapping unit name	Publication symbol	Approved mapping unit name
ReA, FcA, HnA	Reesville silt loam, 0 to 2 percent slopes	ReA	Reesville silt loam, 0 to 2 percent slopes
Rn, Wf	Rensselaer silt loam	Rn	Rensselaer silt loam
RuB, RuB2, M1B2	Russell silt loam, 2 to 6 percent slopes	RuB	Russell silt loam, 2 to 6 percent slopes
RuC, RuC2	Russell silt loam, 6 to 12 percent slopes	RuC	Russell silt loam, 6 to 12 percent slopes
Sh, S1	Shoals silt loam	Sh	Shoals silt loam
Sm, Sj	Shoals-Hennepin complex, 0 to 50 percent slopes	Sm	Shoals-Hennepin complex, 0 to 50 percent slopes
Sw	Stonelick sandy loam, gravelly substratum phase	Sw	Stonelick sandy loam
Cr, Dw, Or	Orthents loamy	Ud	Udorthents, loamy
Wa	Wakeland silt loam	Wa	Wakeland silt loam
WeG	Weikert silt loam, 25 to 70 percent slopes	WeG	Weikert silt loam, 25 to 70 percent slopes
Wh	Whitaker silt loam	Wh	Whitaker silt loam
XeA	Xenia silt loam, 0 to 2 percent slopes	XeA	Xenia silt loam, 0 to 2 percent slopes
XeB2	Xenia silt loam, 2 to 6 percent slopes, eroded	XeB2	Xenia silt loam, 2 to 6 percent slopes, eroded

Putnam County, Indiana

Series established by this correlation:

Hoosierville (Type location--Clay County, Indiana)

Series dropped or made inactive:

Greencastle

Join Statement:

The soil survey of Putnam County, Indiana, joins the modern published soil surveys of Hendricks County, Indiana (1974); Owen County, Indiana (1964); and Parke County, Indiana (1967); and the project soil surveys of Clay County, Indiana, and Morgan County, Indiana. The general soil maps and the detailed soil maps join those of Clay County and Morgan County with no exceptions.

A more detailed explanation of all discrepancies in the join of the detailed soil map and the general soil map with the three published soil surveys is on file at the PSC's office and at the Indiana state office. The differences are reasonable, and the counties are satisfactorily joined to the Putnam County soil survey.

The lines on the general soil maps join except for a few lines which were left dangling because of small size of the unit in Putnam County. Nothing could be done to the map of Putnam County to improve this join. Most lines join, although some names differ because of different proportions of components in map units, recognition of new series previously not separated in some of the older surveys, and differences in composition and definition of soils within different survey areas.

The lines on the detailed soil maps join and similar series join, although a few areas have different names. These differences are the result of knowledge learned through further study of the soils, defining series so they fit in Soil Taxonomy, recognition of new series not previously separated in soil surveys, and the inclusion of small amounts of some soils with similar soils in one survey area which were separated in other survey areas because of larger extent.

The state soil scientist has certified that the field mapping is completed, the typical pedons are located in representative areas and the legal description is correct, and that interpretations have been coordinated with adjoining survey areas and are in accord with the information on the SCS-SOILS-5 forms.

Verification of Cooperator Names:

The state soil scientist has certified that the following statements for the front cover and in the third paragraph of the box inside the front cover shall read as follows for this soil survey:

A. Outside front cover and credit line on the General Soil Map:

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

B. Inside front cover:

This survey was made cooperatively by the Soil Conservation Service, the 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 Putnam County Soil and Water Conservation District. Financial assistance was made available by the County Commissioners and the County Council.

Disposition of Field Sheets:

The original field sheets have been transferred to halftone positive mylars of the atlas sheets by a correlated legend that was in agreement with the comprehensive legend outlined at the comprehensive field review. Fire protection negatives have been prepared and copies have been forwarded to the field office of the field sheets. Overlays have been completed for nearly all of the atlas sheets except for adding stick-ons for the symbols. Map finishing will be completed after approval of the final correlation. Halftone positive mylars are considered as the field sheets of this soil survey area.

Prior Soil Survey Publications:

There is a prior published soil survey of this area which should be listed as a literature citation. For example: "The first soil survey of Putnam County was published in 1925 (ref. citation). This survey updates the first survey and provides additional information and larger maps that show the soils in greater detail."

Instructions for Map Compilation:

As previously noted, the original field sheets have already been compiled on halftone positive mylars and overlays have been prepared. Therefore, the attached SCS-SOILS-37A form furnishes a record of the "conventional and special symbol legend" that is shown as the legend on the published soil survey. Roads have been inked on the field sheets and will be shown in the published soil survey. Railroads will be shown in the published soil survey but will not be named.

CONVERSION LEGEND FOR
PUTNAM COUNTY, INDIANA

Field symbol	Publi- cation symbol						
ALB	ALB	IvA	IvA	Wf	Rn		
ALB2	ALB	MCA	MCA	Wh	Wh		
ALC2	ALC2	MCB	MCB	XeA	XeA		
AnC	AnC	MCB2	MCB	XeB2	XeB2		
AnC2	AnC	MeD2	MeD2	ZaB2	AwB2		
AnD2	AnC	MgC3	MgC3	ZaC2	AwC2		
AvA	AvB	MgD3	MgD3	ZaC3	CnC2		
AvB	AvB	MLB2	RuB				
AvB2	AvB	MuA	MuB				
Ea	Ea	MuB	MuB				
Ea	Ea	MuB2	MuB				
Ed	Ed	NgG	CkG				
CaA	MCA	OcA	OcA				
CaB2	MCB	OcB2	OcB2				
CnB2	AwB2	Or	Ud				
CnC2	AwC2						
CnC3	CnC2	Or	Ud				
CnD2	CnD2	P6	Po				
CnE3	CnD2	PeB2	PeB2				
CoG	CoG	PeC2	PeC2				
Dw	Ud	Po	Po				
ELB	ELB	PrC	AnC				
ELB2	ELB	PrD2	AnC				
Fv	Fv	Qu	Pc				
FCA	ReA	Ra	Ra				
FdA	FdA	ReA	ReA				
FoA	CcA	Rn	Rn				
FoB2	FoB2	Ro	Ch				
FxC3	FxC3	RuB	RuB				
Ge	Ch	RuB2	RuB				
GnD2	GnE	RuC	RuC				
GnE	GnE	RuC2	RuC				
GnE2	GnE	Sh	Sh				
GrB2	ALB	Sj	Sm				
GrC2	GrC2	Sl	Sh				
GrD2	GrD2	Sm	Sm				
GrE2	GrE2	St	Bd				
Hb	Hb	Sw	Sw				
HeG	HeG	UnB2	MuB				
HnA	ReA	Wa	Wa				
HoG	HoG	WeG	WeG				
HvA	Hv						

Putnam County, Indiana

CLASSIFICATION OF PEDONS SAMPLED
FOR LABORATORY ANALYSIS

Varying amounts of laboratory data for soils in this county were provided by the Purdue University Agricultural Experiment Station. Since the data are not complete and will not be placed in the National Pedon Data Files, they are not being listed in this correlation.

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

by
Robert I. Turner

ALFORD SERIES

Indiana has proposed that the Alford series be classified as an Ultic Hapludalf. Comments have been received from other users of this series, but no further action has been taken as yet. It is expected that the soils named Alford in the survey area would classify as Ultic Hapludalfs, although no base saturation data are available for this soil survey area. The pH of medium acid throughout the B horizon to depths of 80 inches would tend to indicate the classification of an Ultic Hapludalf might be questionable in this survey area.

ALVIN SERIES

The small amount of data available for this soil survey area tend to indicate that Alvin soils in this survey area have somewhat lower base saturation than is believed typical for the Alvin series. Sites that were sampled would classify marginally to Ultic Hapludalfs and, for that reason, we are considering them as taxadjuncts to the Alvin series, as we do not believe this materially affects use and management of the sandy soils.

AVA SERIES

These soils have the argillic horizon and fragipan formed in approximately 4 feet of loess and a very weakly developed B3 horizon formed in loam material, probably glacial till. The Hosmer name was originally proposed, but Hosmer soils typically are formed in thicker loess; and as long as the established Ava series was available, it seemed more appropriate to use it than the Hosmer series. These soils are in the thickest part of the range in loess thickness of the Ava series. It was agreed that a contrasting inclusion would be noted in map units of Ava south of Cloverdale along the Owen County line. These contrasting inclusions lack a distinct fragipan, are formed in thinner loess, and are underlain by gray clay loam material.

Map units AvA and AvB, previously named Ava Variant, are taxadjuncts to the Ava series as they have gray mottles at slightly shallower depths than defined for the Ava series and would classify as Aquic Fragiudalfs. The use and management of these units is not significantly different from the Ava series.

CHAGRIN SERIES

These soils previously were named Genesee series. They typically are leached of carbonates to deeper depths than the defined range for the Genesee series, and from that standpoint the Chagrin name seemed more appropriate.

CHETWYND SERIES

Available data indicate that map units of Chetwynd silt loam contain a component of similar soils with base saturation slightly higher than the defined range for the Chetwynd series.

CINCINNATI SERIES

The unit on C slope previously named severely eroded was judged not nearly that eroded and changed to eroded. These soils are in the thickest part of the silt range for the Cincinnati series.

In the map units of Cincinnati it was agreed that it will be noted inclusion of some areas of contrasting soils down south of Cloverdale along the Owen County line. These soils lack fragipans and are underlaid with gray clay loam material within shallow depths.

CORYDON SERIES

Map units of this soil include areas that have less clay than the defined range for the series and contain the minimal thickness of mollic epipedons, as well as other areas that probably fail the definition of lithic contact because of the fractured bedrock. Because of the steepness in slope and the use of these soils, it was not considered efficient to invest sufficient time to separate out some of the other kinds of taxonomic units within the delineations.

ELKINSVILLE SERIES

These soils are slightly less acid than defined for the series in the A2 and B2lt horizons. They appear to be lower in sand content than is typical for the Elkinsville series. Further study is needed to determine whether the present concept of Elkinsville is significantly different from the Elk series.

FINCASTLE SERIES

These soils are less acid in the A2 horizon and in the IIB horizon than defined for the series, but we did not call them taxadjuncts on this account.

FOX SERIES

These soils are less acid in the upper part of the solum than defined for the Fox series, but we did not indicate them as taxadjuncts. These soils also appear to contain the maximum amount of coarse fragments allowed in the solum of the Fox series.

GILPIN SERIES

It appears that the Gilpin soils contain a considerable inclusion that fails the literal definition of a lithic contact within depths of 40 inches, which is a requirement of the standard series description.

GRAYFORD SERIES

The map units of this series on D and E slopes are taxadjuncts to the Grayford series, as they lack the loamy component in the solum as required for the Grayford definition and are shallower to clayey textures than defined for the Grayford series.

HICKORY SERIES

It was agreed that the mapping unit writeup for Hickory soils will note a component of soils that are slightly shallower to free carbonates than typical for the Hickory series. We also agreed that it will note as a contrasting soil a few areas of Hennepin soils.

HOOSIERVILLE SERIES

This is a new series being established in this survey area with the type location in Clay County, Indiana. Typically, this soil formed in loess. It has a lower maximum clay content and a more gradual clay increase than the Whitson series and is more permeable than the Peoga series.

IVA SERIES

South of Cloverdale along the Owen County line, map units of Iva silt loam include areas underlaid by silty clay loam sediments in the C horizon below depths of 4 feet.

MARTINSVILLE SERIES

Approximately 1,000 acres of Martinsville soils are taxadjuncts to the Martinsville series as they contain less clay and have solums that are too thick for the defined range for Martinsville. We considered using Princeton soils but did not because Princeton soils are in a higher position which does not flood. A new SCS-SOILS-5 will be prepared for the Martinsville showing rare flooding for the soils as they are located in Putnam County.

RAGSDALE SERIES

If the solum is defined as extending to the depths at which free carbonates are encountered, these soils are in the thickest part of the range of solum thickness for the Ragsdale series. However, the solum is essentially neutral in reaction throughout and the argillic horizon stops within depths of 4 feet or less, and for these reasons we think Ragsdale is the appropriate series and didn't think the differences were sufficient to identify as a taxadjunct.

REESVILLE SERIES

These soils are very similar to the Iva series, but they are less acid throughout and have a thinner solum.

STONELICK SERIES

Further investigations of the unit mapped Stonelick indicate that the typical units fit well within the Stonelick series, although they were underlaid with sandy material below depths of 40 inches or so.

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
Alford-----	Fine-silty, mixed, mesic Typic Hapludalfs
*Alvin-----	Coarse-loamy, mixed, mesic Typic Hapludalfs
Ava-----	Fine-silty, mixed, mesic Typic Fragiudalfs
Bartle-----	Fine-silty, mixed, mesic Aeric Fragiqualfs
Birds-----	Fine-silty, mixed, nonacid, mesic Typic Fluvaquents
Chagrin-----	Fine-loamy, mixed, mesic Dystric Fluventic Eutrochrepts
Chetwynd.	Fine-loamy, mixed, mesic Typic Hapludults
Cincinnati---	Fine-silty, mixed, mesic Typic Fragiudalfs
Corydon-----	Clayey, mixed, mesic Lithic Argiudolls
Elkinsville	Fine-silty, mixed, mesic Ultic Hapludalfs
Evansville---	Fine-silty, mixed, nonacid, mesic Typic Haplaquents
Fincastle---	Fine-silty, mixed, mesic Aeric Ochraqualfs
Fox-----	Fine-loamy over sandy or sandy-skeletal, mixed, mesic Typic Hapludalfs
Gilpin-----	Fine-loamy, mixed, mesic Typic Hapludults
*Grayford----	Fine-silty, mixed, mesic Typic Hapludalfs
Haymond-----	Coarse-silty, mixed, nonacid, mesic Typic Udifluvents
Hennepin-----	Fine-loamy, mixed, mesic Typic Eutrochrepts
Hickory-----	Fine-loamy, mixed, mesic Typic Hapludalfs
Hoosierville---	Fine-silty, mixed, mesic Typic Ochraqualfs
Iva-----	Fine-silty, mixed, mesic Aeric Ochraqualfs
*Martinsville	Fine-loamy, mixed, mesic Typic Hapludalfs
Miami-----	Fine-loamy, mixed, mesic Typic Hapludalfs
Muren-----	Fine-silty, mixed, mesic Aquic Hapludalfs
Ockley-----	Fine-loamy, mixed, mesic Typic Hapludalfs
Parke-----	Fine-silty, mixed, mesic Ultic Hapludalfs
Ragsdale----	Fine-silty, mixed, mesic Typic Argiaquolls
Feesville----	Fine-silty, mixed, mesic Aeric Ochraqualfs
Kensselaer---	Fine-loamy, mixed, mesic Typic Argiaquolls

CLASSIFICATION OF THE SOILS--Continued

Soil name	Family or higher taxonomic class
Russell-----	Fine-silty, mixed, mesic Typic Hapludalfs
Shoals-----	Fine-loamy, mixed, nonacid, mesic Aeric Fluvaquents
Stonelick---	Coarse-loamy, mixed (calcareous), mesic Typic Udifulvents
Udorthents.	Loamy, mixed, nonacid, mesic Udorthents
Wakeland---	Coarse-silty, mixed, nonacid, mesic Aeric Fluvaquents
Weikert-----	Loamy-skeletal, mixed, mesic Lithic Dystrochrepts
Whitaker-----	Fine-loamy, mixed, mesic Aeric Ochraqualfs
Xenia-----	Fine-silty, mixed, mesic Aquic Hapludalfs