DESCRIPTIONS OF SOIL ASSOCIATIONS

(See end of this section for an explanation of upper-case letter designations for slope classes and soil horizons.)

A1 GENESEE-EEL-SHOALS ASSOCIATION

This association is on the wide flood plains of streams originating in areas of Wisconsinan loamy glacial deposits. The parent materials are calcareous loamy alluvium. Native vegetation includes a large variety of hardwood species such as beech, maple, oak, elm, sycamore, and buckeye. The three named soils form a drainage sequence. Genesee is well-drained; Eel, moderately well drained; and Shoals, somewhat poorly drained. Slopes are dominantly nearly level. Typically all soils have light-colored loam surface and subsoil horizons and stratified loamy material with some sand layers below 40 inches. Fox soils are common associates.

A2 FOX-GENESEE-EEL ASSOCIATION

These soils are along the narrower stream valleys in northern Indiana. Fox is on the terraces and formed from loamy outwash over stratified calcareous sand and gravel deposits of Wisconsinan age. Genesee and Eel formed from more recent loamy alluvial deposits on the flood plains. Native vegetation on all soils was mixed hardwood species, especially beech, maple, and oaks. Fox soils are well drained and are mainly on A and B slopes. They have light-colored, sandy loam, loam, or silt loam A horizons, clay loam and sandy clay loam B horizons and sandy and gravelly, calcareous C horizons. Genesee and Eel soils are well-drained and moderately well drained, respectively, and are on A slopes. They typically have light-colored or brownish loam surface and subsurface horizons and stratified loamy material with some sand layers below 40 inches. Westland and Mahalasville are common inclusions in the association.

A3 SLOAN-ROSS-VINCENNES-ZIPP ASSOCIATION

These soils are on the flood plains and low terraces of the Wabash Valley in southwestern Indiana. Sloan and Ross are on the flood plain; Vincennes and Zipp are on the low slack-water terraces. Parent materials are alluvial and lacustrine deposits of various textures. Native vegetation was a mixture of grasses and trees. All of the soils are nearly level. Sloan, Vincennes, and Zipp are poorly or very poorly drained and Ross is well-drained. Sloan has a dark silty clay loam surface horizon and silty clay loam and clay loam subsurface horizons. Ross has a dark loam surface horizon and a loam subsoil. Vincennes has a light-colored loam A horizon and a clay loam B horizon. Zipp soils have silty clay or silty clay loam A and B horizons. The A horizon is light-colored. Bartle and Fox soils are minor soils of the association.

A4 STENDAL-HAYMOND-WAKELAND-NOLIN ASSOCIATION

This association is on flood plains in southern Indiana where streams originate in areas of silty soils. The parent materials are neutral to acid, silty, alluvial deposits. Native vegetation was a variety of hardwood species. All of the major soils have light-colored silt loam surface horizons and silt loam or silty clay loam subsoils. Stendal and Wakeland soils are nearly level and somewhat poorly drained. Haymond and Nolin soils are well-drained and are mainly nearly level. Minor soils include Genesee, Armiesburg, Cuba, Steff, and Petrolia.

A5 WHEELING-HUNTINGTON-LINDSIDE ASSOCIATION

The landforms of this association are the Ohio River terraces and flood plains. Wheeling is on the terraces and formed from loamy material over sandy and silty deposits usually high in mica. Huntington and Lindside are on the flood plain and formed from neutral silty alluvium. The native vegetation consisted of various hardwood species. Wheeling soils are well-drained and have light-colored silt loam A horizons, clay loam or silty clay loam B horizons and usually are on A or B slopes. Huntington and Lindside soils are well or moderately well drained and usually are on A slopes. They have silt loam A horizons and silt loam or silty clay loam B horizons. Huntington soils have dark-colored A horizons and Lindside soils have light-colored A horizons. Minor soils include Cuba, Rahm and Weinbach.

B1 HOUGHTON-ADRIAN ASSOCIATION

These soils developed from organic materials deposited in lakes after the last glacier retreated. They are nearly level and very poorly drained. The plant material from which the soils formed consisted of trees, shrubs and sedges. Houghton soils formed in deep organic deposits and Adrian formed in less than 50 inches of organic material over sandy deposits. Poorly drained Maumee, Lenawee, and Toledo are the common associated mineral soils.

B2 MAUMEE-GILFORD-SEBEWA ASSOCIATION

This association is on nearly level lacustrine and outwash plains mainly in the Kankakee River watershed. Parent materials are Wisconsinan lacustrine and outwash deposits that range from sand to loam in texture. Native vegetation was grasses and water-tolerant mixed hardwoods. All the major soils are nearly level, very poorly drained, and have dark-colored A horizons. Maumee soils are fine sand or loamy fine sand throughout. Gilford soils usually have fine sandy loam A and B horizons. Sebewa has a loam A horizon, clay loam B horizon, and gravelly sand C horizon. Newton soils are of minor extent; they are similar to Maumee soils but are more acid.

C1 RENSSELAER-DARROCH-WHITAKER ASSOCIATION

This association is on nearly level lacustrine plains. Parent materials are stratified, loamy outwash and lacustrine deposits. The very poorly drained Rensselaer soils in the swales and broad flat areas typically have dark-colored silt loam A horizons and clay loam B horizons. On the convex swells in the lake plain are the somewhat poorly drained Whitaker soils in some areas and Darroch soils in other areas. Whitaker, developed under mixed hardwoods, has a light-colored loam or silt loam A horizon and clay loam B horizons. Darroch is similar except it has a dark-colored A horizon developed under prairie grasses. Mahalasville and Sebewa soils, which are similar to Rensselaer in natural drainage and color of the A horizon, are minor soils in the association.

C2 SEBEWA-GILFORD-HOMER ASSOCIATION

This association is on nearly level outwash plains and terraces in which the water table is high much of the time. Parent materials are loamy Wisconsinan outwash over calcareous sand and gravel. Native vegetation was various kinds of water-tolerant hardwoods and grasses. All of the major soils are nearly level. Sebewa and Gilford are very poorly drained and have dark-colored A horizons. Homer is somewhat poorly drained and has a light-colored surface. Typically the soils have loam or sandy loam A horizons, sandy loam to clay loam B horizons, and calcareous sandy and gravelly C horizons. The depth to the C horizon is 24 to 40 inches in Sebewa and Homer, and 40 to 60 inches in Gilford. Fox, Wea, and organic soils are important soils of lesser extent in the association.

C3 LYLES-AYRSHIRE-PRINCETON ASSOCIATION

The landscape pattern of this association consists of level terraces with a high water table on which scattered sand dunes have formed. The parent material is calcareous outwash sand and eolian fine sand deposited in Wisconsinan time. Native vegetation was mixed hardwood species. All three major soils have fine sandy loam A horizons and sandy clay loam B horizons. Very poorly drained Lyles, with a dark-colored surface, and somewhat poorly drained Ayrshire, with a light-colored surface, are on the level parts of the landscape. Well-drained Princeton is on the dunes, usually on A, B, and C slopes. Minor soils are Kings, Vincennes, and Bloomfield.

D1 MILFORD-BONO-RENSSELAER ASSOCIATION

This association is on nearly level lacustrine plains of Wisconsinan age in northern Indiana. The parent materials are calcareous, silty, clayey, and loamy lacustrine deposits. Native vegetation was mainly water-tolerant mixed hardwood and grass species. All major soils are very poorly drained and have dark-colored A horizons. Typically, Milford has silty clay loam A and B horizons, Bono has silty clay loam A horizons and silty clay B horizons, and Rensselaer has loam A horizons and clay loam B horizons. Minor included soils are Maumee, Toledo, and organic soils, all of which are very poorly drained.

D2 PATTON-LYLES-HENSHAW ASSOCIATION

These soils are on nearly level lacustrine plains of Wisconsinan age in southern Indiana. The parent materials of Patton and Henshaw soils are stratified silty lacustrine deposits. Lyles soils formed in sandy outwash, lacustrine, or eolian deposits. Native vegetation was water-tolerant hardwood and grass species. Patton soils are very poorly drained and have dark-colored silty clay loam A horizons and silty clay loam B horizons. Lyles soils are similar in drainage and color characteristics but usually have fine sandy loam or loam A horizons and sandy clay loam B horizons. Henshaw soils, on the landscape swells associated with Patton, are somewhat poorly drained and have light-colored silt loam A horizons and silty clay loam B horizons. Wakeland and Shoals soils are associated alluvial soils.

D3 ZIPP-MARKLAND-MC GARY ASSOCIATION

The landforms of this association are dissected lacustrine plains. Zipp and McGary are on the nearly level lake plain uplands and Markland is on the side slopes leading down to the streams. The soil parent materials are calcareous silty and clayey lacustrine and slack-water deposits of Wisconsinan age. Native vegetation was hardwood trees. McGary soils, on the landscape swells, are somewhat poorly drained, and have light-colored silt loam A horizons and silty clay B horizons. Markland soils have a similar texture profile and A horizon color, but are well-drained and are predominantly on B and C slopes. Zipp soils, very poorly drained soils in the depressions, have light-colored silty clay A horizons and silty clay B horizons. Minor soils include Evansville, Patton, Steff, Montgomery, and Henshaw.

E1 TRACY-DOOR-LYDICK ASSOCIATION

This association is on the pitted outwash plains southeast of the late Wisconsinan moraine in northwestern Indiana. The parent materials are loamy and sandy outwash deposits that were high in sulfur-containing shale particles which weathered to form acid soils. The native vegetation on Tracy soils was mainly oak; on Door it was prairie grasses; and on Lydick, a mixture of the two kinds of vegetation. Therefore, Tracy has a light-colored surface, Door has a relatively thick dark-colored surface, and Lydick has a thinner dark-colored surface. All three soils are well-drained. Tracy soils usually have sandy loam A horizons and loam or sandy loam B horizons and are on A, B or C slopes. Lydick and Door typically have loam A horizons, sandy clay loam B horizons and are mainly on A slopes. Elston, Coupee and Rensselaer are important included soils.

E2 ELSTON-SHIPSHE-WARSAW ASSOCIATION

These soils are on the terraces and outwash plains that were predominantly covered with prairie grasses. The parent materials are loamy outwash over calcareous sandy and gravelly deposits. All three soils are well-drained, are mainly on A and B slopes, and have dark-colored sandy loam or loam A horizons. Textures in B horizons are dominantly sandy loam in Elston, gravelly sandy loam in Shipshe, and sandy loam or sandy clay loam in Warsaw soils. Volinia, Coupee, Fox, Sebewa, and Wea are important soils of lesser extent in the association.

E3 OSHTEMO-FOX ASSOCIATION

The landforms of this association are the pitted outwash plains and sandy kettle moraines of northern Indiana. The Wisconsinan age soil parent materials are loamy, sandy, and gravelly drift. Native vegetation was the oak-hickory forest type. Both of the major soils are well-drained and are mainly on A and B slopes with smaller areas of C and D slopes. Oshtemo typically has a light-colored loamy sand A horizon and a sandy loam B horizon, and Fox has a light-colored sandy loam or loam A horizon and a sandy clay loam or clay loam B horizon. Both soils have calcareous sandy and gravelly sand C horizons. Miami is a commonly included soil.

E4 FOX-OCKLEY-WESTLAND ASSOCIATION

The landforms of this association are Wisconsinam terraces and outwash plains. Soil parent materials are loamy outwash over calcareous sand and gravel. Native vegetation was mixed hardwoods, especially beech, maple, white oak, and hickory. Fox and Ockley are well-drained soils mainly on A and B slopes. They have light-colored loam or silt loam surface horizons and brownish clay loam or sandy clay loam B horizons. Ockley soils are deeper to sand and gravelly sand than Fox soils. Westland is in the nearly level drainageways and swales. It is very poorly drained and usually has a dark-colored silt loam surface horizon and a clay loam B horizon. Other soils in the association are Genesee, Sleeth, Nineveh, and Martinsville.

E5 PARKE-NEGLEY ASSOCIATION

These soils are on remnants of terraces or outwash plains of Illinoian age in southern Indiana which are partially covered with Wisconsinan loess. The loess buried parts of old, reddish, sandy clay loam soils. Native vegetation was hardwood. Both soils are well-drained and have light-colored A horizons. Parke soils, on B, C, and D slopes, have 20 to 40 inches of loess with silt loam A horizons and silty clay loam upper B horizons. Negley soils, on E, F, and G slopes, usually lack a loess cover and have loam A horizons and reddish sandy clay loam B horizons. Pike soils, on A and B slopes with 40 to 60 inches of loess, are included in the soil association.

F1 OAKVILLE-ADRIAN ASSOCIATION

This association is on the high sand dunes and the lower sandy ridges and wet swales at the south end of Lake Michigan. Oakville soils, which formed from dune sand or beach sand, are on the dunes and beach ridges. They are fine sand throughout, have weak horizon development, and are well-drained. Native vegetation was mainly oak trees. Adrian is a very poorly drained soil formed in 16 to 50 inches of organic material over sands. It is in the swales between the ridges. Maumee is a less extensive soil in the association.

F2 PLAINFIELD-MAUMEE-OSHTEMO ASSOCIATION

The landscape pattern of this association in northern Indiana consists of sandy outwash and lacustrine plains with numerous sand dunes rising above the plains. The parent materials are eolian deposits and sandy outwash. Native vegetation on the dune soils was mainly white and black oak. Plainfield soils, on the sand dunes, are well-drained and are mainly on B and C slopes. They have fine sand texture throughout and have light-colored A horizons. Maumee soils are the very poorly drained soils in the level low-lying position surrounding the dunes. They have dark-colored loamy fine sand A horizons and fine sand lower horizons. Oshtemo soils, on the outwash plains, are well-drained and have light-colored loamy sand or sandy loam A horizons and sandy loam B horizons. Other soils include Chelsea, similar to Plainfield, and Newton and Morocco, in landscape positions similar to Maumee.

G PRINCETON-BLOOMFIELD-AYRSHIRE ASSOCIATION

This association occupies the dunes and associated swales along the Wabash River and tributary streams in southwestern Indiana. The soil parent material is Wisconsinan age, calcareous, eolian sand, predominantly in the fine sand fraction. Native vegetation was mixed hardwoods. Princeton and Bloomfield are well-drained soils with light-colored A horizons. Princeton usually has a fine sandy loam surface horizon, a continuous sandy clay loam B horizon, and is on A, B, and C slopes. Bloomfield is, typically, on B, C, and D slopes and has a fine sand or loamy fine sand A horizon and a B horizon consisting of bands of fine sandy loam in a fine sand matrix. Ayrshire, in the swales, has a light-colored fine sandy loam surface horizon and a sandy clay loam B horizon and is somewhat poorly drained. Iva and Lyles are minor soils in the association.

H ALFORD ASSOCIATION

The loessial hills of this association are occupied mainly by the Alford soil. The parent material is leached loess more than five feet thick. The soil developed under oak and other hardwood species. Alford is well-drained and is mainly on B, C, and D slopes. It has a light-colored silt loam A horizon and a silty clay loam B horizon. Wakeland and Wilbur soils are in the flood plains of small streams in the area.

I1 RAGSDALE-RAUB ASSOCIATION

This association is on the nearly level surface of a Wisconsinan age glacial till plain with swell-and-swale topography. Native vegetation was prairie grasses. The very poorly drained Ragsdale soils, in the landscape swales, formed in loess and other silty sediments, and the somewhat poorly drained Raub soils, on the landscape swells, formed in 20 to 40 inches of loess over loam-textured glacial till. Both soils have dark-colored silt loam surface horizons, and silty clay loam and clay loam B horizons. Moderately well drained Dana and well-drained Sidell are important minor soils in the association.

I2 SABLE-IPAVA ASSOCIATION

This association is on a Wisconsinan age glacial till plain covered with more than four feet of loess. The native vegetatium was prairie grasses. The very poorly drained Sable soils are in the swales and have dark-colored silty clay loam A horizons and silty clay loam B horizons. Ipava soils, on the swells, are somewhat poorly drained and have silt loam A horizons and silty clay loam B horizons. Raub soils are also in the area.

I3 FINCASTLE-RAGSDALE ASSOCIATION

This association is on the nearly level surface of a Wisconsinan age glacial till plain. Native vegetation was mainly beech and maple trees. The till plain surface has a swell-and-swale topography. On the landscape swells, the somewhat poorly drained Fincastle soils have light-colored silt loam surface horizons, silty clay loam and clay loam B horizons, and compact till C horizons at depths of 40 to 60 inches. They formed in 20 to 40 inches of loess over loam-textured glacial till. The very poorly drained Ragsdale soils, in the swales, formed in loess and silty sediments. They have dark-colored silt loam or silty clay loam surface horizons and silty clay loam B horizons. Russell and Xenia soils are of minor extent in the association.

I4 REESVILLE-RAGSDALE ASSOCIATION

This association is on loess-covered glacial till plain surfaces with a swell-and-swale topography. The major soils developed entirely in Wisconsinan loess. Native vegetation was mainly beech and maple trees. Reesville soils are somewhat poorly drained and occupy the swells in the landscape. They have light-colored silt loam A horizons and silty clay loam B horizons. The very poorly drained Ragsdale soil, in the swales, has a dark-colored silt loam or silty clay loam surface and a silty clay loam B horizon. Fincastle, Iva, and Alford soils are of minor extent in the association.

I5 IVA-VIGO ASSOCIATION

This association is on Illinoian till plain surfaces covered with leached loess. Native vegetation was mixed hardwoods. Both major soils are somewhat poorly drained, have light-colored silt loam A horizons and silty clay loam B horizons. Iva soils are on loess deposits more than five feet thick, and Vigo soils are on loess 3 1/2 to 5 feet thick. Cory and Ava are minor soils in the association.

J1 BROOKSTON-ODELL-CORWIN ASSOCIATION

This association is on the nearly level surface of Wisconsinan age glacial till plains with swell-and-swale topography. Native vegetation was prairie grasses. The somewhat poorly drained Odell soils, on the landscape swells, formed in loess less than 20 inches thick over loam glacial till. They have dark-colored silt loam surface horizons, silty clay loam and clay loam B horizons and compact till C horizons at depths of 20 to 40 inches. The very poorly drained Brookston soils, in the swales, formed in loess and loamy glacial drift. They have dark-colored silt loam or silty clay loam surface horizons and silty clay loam or clay loam B horizons. Moderately well drained Corwin soils on B slopes and well-drained Parr soils on B and C slopes are on the small ridges and side slopes. They have a texture profile similar to Odell and also have dark surface horizons.

J2 CROSIER-BROOKSTON ASSOCIATION

The landforms of this association are till plains with swell-and-swale topography. The parent material is Wisconsinan calcareous loam glacial till covered with less than 20 inches of loess. Native vegetation was dominantly oak, beech, and maple. Crosier, on the swells, is somewhat poorly drained and has a light-colored loam surface and a clay loam B horizon. Brookston, in the swales, is very poorly drained and has a dark-colored loam or silt loam surface and a clay loam B horizon. Miami and Celina soils are of lesser extent in the association.

J3 CROSBY-BROOKSTON ASSOCIATION

The landscape of this association is the nearly level surface of Wisconsinan age glacial till plains. Native vegetation was a maple-beech forest type. The till plain surface has a swell-and-swale topography. On the nearly level swells, the somewhat poorly drained Crosby soils formed in loam glacial till and the overlying loess, up to 20 inches thick. They have light-colored silt loam surface horizons and silty clay loam and clay loam B horizons. Compact glacial till is at a depth of 20 to 40 inches. In the swales, the very poorly drained Brookston soils formed in loess and loamy glacial drift. They have dark-colored silt loam or silty clay loam surface horizons and silty clay loam B horizons. Miami and Celina soils are of lesser extent in the association.

K1 BLOUNT-PEWAMO ASSOCIATION

This association is on Wisconsinan till plains with swell-and-swale topography. Soil parent material is calcareous silty clay loam or clay loam glacial till. Native vegetation was mainly beech, oak, and maple trees. Blount, on the swells, is somewhat poorly drained and has a light-colored silt loam A horizon and a silty clay B horizon. Pewamo, in the swales, is very poorly drained and has a dark-colored silty clay loam A horizon and clay or silty clay B horizons. Morley is of lesser extent in the association.

K2 HOYTVILLE-NAPPANEE ASSOCIATION

These soils are on the glacial Lake Maumee plain of Wisconsinan age in northeastern Indiana. Nappanee soils are on the landscape swells, and Hoytville soils are on the swales. Parent materials are water-worked clayey glacial till deposits. Native vegetation was beech, maple, and associated species. Very poorly drained Hoytville soils typically have dark-colored silty clay A horizons and silty clay or clay B horizons. Somewhat poorly drained Nappanee soils have light-colored silt loam or silty clay loam A horizons and silty clay or clay B horizons. Pewamo is a minor soil in the association.

L1 PARR-BROOKSTON ASSOCIATION

This association is on end moraines and rolling areas near the streams that dissect the glacial till plain. Native vegetation was prairie grasses. The well-drained Parr soils formed in calcareous loam glacial till and the overlying loess which varies in thickness from 0 to 20 inches. They are mainly on convex B and C slopes. Typically, these soils have dark-colored silt loam surface horizons, silty clay loam and clay loam B horizons, and calcareous till C horizons at depths of 20 to 40 inches. The very poorly drained Brookston soils formed in loess and loamy glacial drift in the drainageways and swales. They have dark-colored silt loam or silty clay loam surface horizons and silty clay loam and clay loam B horizons. Odell and Corwin are minor soils in the association.

L2 RIDDLES-TRACY-CHELSEA ASSOCIATION

This association is on the end moraines in northwestern Indiana. Soil parent materials are glacial till and outwash. Native vegetation was hardwood trees. All soils have light-colored A horizons, are well-drained, and are on mainly B, C, and D convex slopes. Riddles soils have loam A horizons, clay loam B horizons, and loam glacial till C horizons. Tracy soils have sandy loam A horizons, predominantly sandy loam B horizons, and sandy C horizons in acid outwash. Chelsea has fine sand A horizons, loamy sand or sandy loam banded B horizons and sandy C horizons. Crosier soils are inclusions.

L3 MIAMI-CROSIER-BROOKSTON-RIDDLES ASSOCIATION

The landforms of this association are end moraines and rolling areas near streams that dissect the glacial till plain. The parent material is calcareous loam glacial till. Native vegetation was mainly oak, beech, and maple trees. Miami and Riddles are well-drained soils on convex B and C slopes. Miami has a loam A horizon and clay loam B horizons, and Riddles has a loam or sandy loam A horizon and sandy clay loam and clay loam B horizons. Somewhat poorly drained Crosier soils, on the flatter parts of the landscape and the toe slopes, have light-colored loam A horizons and clay loam B horizons. Very poorly drained Brookston soils, in the drainageways and swales, have dark-colored loam A horizons and clay loam B horizons. Blount soils are common inclusions.

L4 MIAMI-CROSBY-BROOKSTON ASSOCIATION

These soils are on end moraines and rolling areas near streams that dissect the glacial till plain. The parent materials of Miami and Crosby are calcareous loam glacial till and the overlying loess which varies in thickness from 0 to 20 inches. Native vegetation was a beech-maple forest association. The well-drained Miami soils are mainly on convex B and C slopes. Typically, they have light-colored silt loam surface horizons, clay loam B horizons, and calcareous loam till C horizons at depths of 20 to 40 inches. The somewhat poorly drained Crosby soils, on the nearly level parts of the landscape and the toe slopes, have light-colored silt loam A horizons and silty clay loam and clay loam B horizons. The very poorly drained Brookston soils, in the small drainageways and swales, have dark-colored silt loam or silty clay loam surface horizons and silty clay loam and clay loam B horizons. They formed in loess and silty and loamy glacial deposits. Hennepin is a common soil of smaller extent.

L5 MIAMI-HENNEPIN-CROSBY ASSOCIATION

This association is on the rolling areas and steep side slopes between the nearly level till plain uplands and the stream terraces or flood plains. The parent materials are glacial till and loess which varies in depth from 0 to 20 inches thick. Native vegetation was mainly maple and beech trees. Hennepin soils, on the steep G, F, and E slopes, have light-colored loam surface horizons, loam B horizons, and loam till C horizons at depths of less than 20 inches. On the rolling areas of B, C, and D slopes, Miami soils have light-colored silt loam A horizons and clay loam B horizons. Miami and Hennepin soils are well-drained. Crosby soils are on the nearly level parts of the landscape. They are somewhat poorly drained with light-colored silt loam A horizons and silty clay loam and clay loam B horizons. Celina soils are an important minor unit.

L6 MIAMI-RUSSELL-FINCASTLE-RAGSDALE ASSOCIATION

These soils are on end moraines and rolling areas near streams that dissect the glacial till plain. Except for Ragsdale, the parent materials are loess and calcareous loam glacial till. The loess is mainly 20 to 40 inches thick on nearly level areas but is thinner on most slopes. Native vegetation was a beech-maple forest type. Well-drained Miami and Russell soils are mainly on convex B and C slopes. Miami has less than 20 inches of loess and Russell has 20 to 40 inches of loess. Typically, these soils have light-colored silt loam surface horizons, silty clay loam and clay loam B horizons, and calcareous till C horizons at depths of 20 to 40 inches in Miami and 40 to 60 inches in Russell. The somewhat poorly drained Fincastle soils are on the nearly level parts of the landscape. They have light-colored silt loam A horizons and silty clay loam and clay loam B horizons. The very poorly drained Ragsdale soils, in the drainageways and swales, have dark-colored silt loam or silty clay loam surface horizons and silty clay loam B horizons. Xenia soils are also included.

L7 RUSSELL-HENNEPIN-FINCASTLE ASSOCIATION

This association is on the rolling areas and steep side slopes between the nearly level till plain uplands and the stream terraces and flood plains. The parent materials are loess and glacial till. The loess is 20 to 40 inches thick on the nearly level uneroded areas, but is absent on the steep slopes. Native vegetation was mainly maple and beech trees. Hennepin soils occupy the steep G, F, and E slopes. They are well-drained and have light-colored loam surface horizons, loam B horizons, and loam till C horizons at depths of less than 20 inches. The well-drained Russell soils, on B and C slopes, have light-colored silt loam A horizons and silty clay loam and clay loam B horizons. Fincastle soils, on the nearly level parts of the landscape, are somewhat poorly drained and have light-colored silt loam A horizons and silty clay loam and clay loam B horizons. Reesville soils are in areas where the loess is thicker.

M1 MARKHAM-ELLIOTT-PEWAMO ASSOCIATION

These soils are on end moraines and on rolling areas near streams that dissect the till plain. The parent material is calcareous silty clay loam or clay loam glacial till. Native vegetation was prairie grasses. Markham soils are well-drained and occupy mainly convex B and C slopes. They have dark-colored silt loam A horizons and silty clay or silty clay loam B horizons. Somewhat poorly drained Elliott has textures and A horizon colors similar to Markham, but Elliott is on the nearly level parts of the landscape. Pewamo is very poorly drained and is in the drainageways and swales. It has a dark-colored silty clay loam A horizon and a clay or silty clay B horizon. Morley soils are also important in this association.

M2 MORLEY-BLOUNT-PEWAMO ASSOCIATION

This association is on end moraines and on rolling areas near streams that dissect the till plain. The parent material is calcareous silty clay loam or clay loam glacial till. Native vegetation was mainly beech, oak, and maple trees. Morley soils are well or moderately well drained and occupy mainly convex B and C slopes. They have light-colored silt loam A horizons and silty clay or silty clay loam B horizons. The somewhat poorly drained Blount has textures and A horizon colors similar to Morley, but Blount is usually on A slopes. Pewamo is very poorly drained and is in the small drainageways and swales. It has a dark-colored silty clay loam A horizon and a clay or silty clay B horizon. Miami soils are inclusions.

N1 BARTLE-PEOGA-DUBOIS ASSOCIATION

These soils are on lacustrine plains and slack-water terraces in southern Indiana. The parent materials are acid silty materials that were either deposited in Illinoian lakes or washed from acid materials and deposited later. Native vegetation was mixed hardwoods. All three dominant soils are nearly level and have light-colored silt loam A horizons and silty clay loam B horizons. Bartle and Dubois are somewhat poorly drained, occur on the slight swells in topography and have fragipans. Poorly drained Peoga soils are on the lower-lying, flatter landscape positions. Hosmer and Robinson soils are the most common included series.

N2 WEINBACH-WHEELING ASSOCIATION

This association is on terraces of the Ohio River. Soil parent materials are loamy outwash over stratified acid sands and silts, usually high in mica. Native vegetation was hardwood trees. Weinbach soils are nearly level and somewhat poorly drained. They have light-colored silt loam A horizons and silty clay loam B horizons with fragipans. Wheeling soils are well-drained and are mainly on A and B slopes. They have light-colored silt loam A horizons and clay loam B horizons. Sciotoville and Ginat soils are less prevalent in the assocation.

N3 AVONBURG-CLERMONT ASSOCIATION

This association is on the "gray flats" area of southern Indiana--the extensive level Illinoian till plain surface. Soil parent materials are a few feet of Wisconsinan loess and portions of soils that had formed on Illinoian till and were subsequently eroded before being buried by the loess. Native vegetation was mainly beech with some oak, maple, sweet gum, and tulip poplar tree species. Both major soils have light-colored silt loam surface horizons which give the landscape a gray color, silty clay loam B horizons with fragipans (or a fragipan-like horizon in Clermont), and clayey buried soil horizons. The poorly drained Clermont soil occupies the flat and nearly level positions in the interior of the till plain, and the somewhat poorly drained Avonburg is on the nearly level to gently sloping areas around the edges. Rossmoyne is of lesser extent in the association.

O1 HOSMER ASSOCIATION

Hosmer soils developed on a rolling landscape having leached loess deposits usually four to six feet thick over Illinoian till or residual materials. Oak trees were the dominant native vegetation. Hosmer soils are well-drained and are mainly on B and C slopes. They have a light-colored silt loam surface horizon and silty clay loam B horizons with fragipans. Minor soils are Alford and Cincinnati.

O2 ZANESVILLE-WELLSTON-TILSIT ASSOCIATION

This association occupies the less steeply sloping parts of the hilly unglaciated section of south Indiana. Soil parent materials are weathered acid Pennsylvanian siltstone, shale, and sandstone and the overlying loess. Native vegetation was mainly oak, hickory, and beech trees. In order of increasing slope the soils are Tilsit, Zanesville, Wellston, and the minor soil, Muskingum. Tilsit is moderately well drained, the others are well-drained. Tilsit soils, mainly on B slopes, have light-colored silt loam A horizons and silty clay loam B horizons with fragipans. Zanesville soils are similar but are mainly on steeper B, C, and D slopes. Wellston soils are on D and E slopes, lack a fragipan, and have light-colored silt loam A horizons and silty clay loam B horizons. Muskingum soils are on E, F, and G slopes.

O3 CINCINNATI-VIGO-AVA ASSOCIATION

The landforms of this association are the slopes of the ravines in the western portion of the Illinoian till plain and the adjacent rolling areas. The parent materials consist of Wisconsinan loess of varying thickness, depending on steepness of slope, and Illinoian till or buried soils formed from Illinoian till. The native vegetation was mainly beech, oak, hickory, and maple trees. From the flattest soils on the upland divides to the steep soils on the ravine side slopes, the sequence of soils is the somewhat poorly drained Vigo soil on A slopes, moderately well drained Ava on B slopes, well-drained Cincinnati on C, D, and E slopes, and well-drained Hickory (a minor soil) on E, F, and G slopes. Except for Hickory, all the soils have light-colored silt loam A horizons, silty clay loam B horizons, and buried clayey B horizons. Hickory has a loam surface and a clay loam B horizon. Cincinnati and Ava soils have fragipans. Iva soils are also important inclusions.

O4 CINCINNATI-ROSSMOYNE ASSOCIATION

This association occupies the rolling areas in and around the ravines in the eastern portion of the Illinoian till plain. The parent materials consist of Wisconsinan loess of varying thickness, depending on steepness of slope, and Illinoian till or buried soils formed from Illinoian till. Native vegetation was mainly beech, oak, maple, and hickory trees. Moderately well drained Rossmoyne soils are on the upland shoulder slopes, mostly with B gradient, and well-drained Cincinnati soils are on the steeper side slopes with C, and D gradients. Both soils have light-colored silt loam A horizons, silty clay loam B horizons with fragipans, and clay loam paleosols. Jennings, Grayford, and Hickory soils are minor series in the association.

P WELLSTON-ZANESVILLE-BERKS ASSOCIATION

These soils are on the more steeply sloping parts of the hilly unglaciated section of southern Indiana. The soil parent materials are weathered acid Mississippian and Pennsylvanian siltstone, sandstone, and shale and on some soils, a thin layer of loess. Native vegetation was mainly oak, beech, and maple trees. All the soils are well-drained and have light-colored surface horizons. In progressing steepness of slope the soils are Zanesville on B, C, and D slopes, Wellston on D and E slopes, and Berks on E, F, and G slopes. Zanesville soils have silt loam A horizons and silty clay loam B horizons with fragipans. Wellston soils have silt loam A horizons and silty clay loam B horizons. Berks soils are 20 to 40 inches to bedrock and have much shale in the loam and silt loam A and B horizons. Minor soils are Muskingum and Gilpin.

Q1 CRIDER-BEDFORD-LAWRENCE ASSOCIATION

This association is on the slightly to moderately sloping portions of the karst plain, a plain with many sinkholes, in southern Indiana. The parent materials are red clayey material derived from weathering of Mississippian limestone bedrock and the overlying thin loess. Native vegetation was mainly beech, oak, and maple trees. All soils have light-colored surface horizons. Crider soils are well-drained and usually on B, C, and D slopes. They have silt loam A horizons and silty clay loam and reddish clay B horizons. Bedford soils are moderately well drained soils on B slopes with silt loam A horizons, silty clay loam B horizons with fragipans, and reddish silty clay lower B horizons. Lawrence soils, somewhat poorly drained soils on A slopes, have a horizon sequence similar to Bedford but have grayer B horizons. Zanesville is a minor soil of the association.

Q2 CRIDER-HAGERSTOWN-BEDFORD ASSOCIATION

This association occupies the hilly part of the karst landscape. It is characterized by many sinkholes and few surface streams because water drains into sinkholes and through caverns in the limestone bedrock. Soil parent materials are mainly weathered Mississippian or Devonian limestone bedrock. Some soils have a thin loess cap. Native vegetation was mainly beech, oak, and maple trees. All the major soils have light-colored surface horizons. Crider soils are well-drained and usually are on B, C, and D slopes. They have silt loam A horizons and silty clay loam and reddish clay B horizons. Bedford soils, typically on B slopes, are moderately well drained, have silt loam A horizons and silty clay loam fragipan B horizons over reddish clayey materials. Hagerstown soils are well-drained and are on B, C, and D slopes and have silt loam A horizons and reddish clay B horizons. Baxter, Corydon, Haymond, and Grayford are minor soils.

Q3 CRIDER-BAXTER-CORYDON ASSOCIATION

This association occupies the hilly and steep part of the karst area. It is characterized by many sinkholes and no surface streams because water drains into sinkholes and through caverns in the limestone bedrock. Soil parent materials are weathered Mississippian limestone bedrock and, on some soils, a thin loess cap. Native vegetation was mainly beech, oak, and maple. All the soils have light-colored surface horizons and are well-drained. Crider soils are usually on B, C, and D slopes. They have silt loam A horizons and silty clay loam and reddish clay B horizons. Baxter soils, developed from cherty limestone, are on B, C, and D slopes and have silt loam A horizons and a reddish clay B horizon with numberous chert fragments. Corydon soils, mainly on E, F, and G slopes, are shallow to bedrock and have dark-colored silt loam A horizons and clay B horizons with many stones. Haymond is a minor soil.

R1 BERKS-GILPIN-WEIKERT ASSOCIATION

The landforms of this association are the steep side slopes of the sharply dissected residual Mississippian sandstone, siltstone, and shale region of southern Indiana. The area consists of narrow ridge tops, steep side slopes, and narrow valley floors. All soils are well-drained. Gilpin soils, on predominantly D and E slopes, are deep to bedrock with a moderate content of rock in the loamy B horizon. Berks soils, on E and F slopes, have abundant loose rocks in the A and B horizons and have bedrock at 20 to 40 inches. Weikert soils, on F and G slopes, are similar to Berks but have bedrock at less than 20 inches. Zanesville, Cincinnati, and Muskingum are important inclusions.

R2 CORYDON-WEIKERT-BERKS ASSOCIATION

These soils are on the steep slopes where the limestone area meets the sandstone and shale area. The parent materials weathered from limestone, shale, sandstone, and siltstone. Native vegetation was mixed hardwoods. All three soils are on predominantly E, F, and G slopes and are well-drained. Corydon soils have a dark-colored surface layer and limestone bedrock at 10 to 20 inches. Weikert (10 to 20 inches deep) and Berks (20 to 40 inches deep) have light-colored surface horizons and are over sandstone and shale. Crider and Zanesville are minor soils.

R3 EDEN-SWITZERLAND ASSOCIATION

This association is on the sharply dissected Ordovician rocks consisting of alternate layers of soft calcareous shale and hard limestone. The parent materials are the weathered shale and limestone, but much of the limestone remains as flagstones in the soil. In Switzerland soils, loess overlies the weathered rocks. All the soils are well-drained. Native vegetation was beech, maple, and oak species. Switzerland soils are on B, C, and D slopes near the ridge tops. They have light-colored silt loam A horizons and silty clay loam and clay B horizons. Eden soils (formerly Fairmount) are on the steep E, F, and G side slopes and ravine slopes. They have dark-colored silty clay loam A horizons, silty clay or clay B horizons and fragments of limestone and shale throughout the profile. Bedrock is within 20 to 40 inches of the surface. Nicholson, Corydon, and Cincinnati are included in the association.

SLOPE CLASSES AND HORIZON DESIGNATIONS

Slope classes:

A = 0 - 2%	B = 2 - 6%	C = 6 - 12%	D = 12 - 18%
E = 18 - 25%	F = 25 - 35%	G = more than 35%	

Horizon designations:

- A horizon: The surface horizon with an accumulation of humus.
- B horizon: The subsoil horizon that usually has more clay, stronger structure, and/or redder colors than other horizons.
- C horizon: The substratum, occurring below the B horizon, that consists of weathered rock or relatively unaltered material deposited by ice, water, or wind.

AY-209

MAP OF THE SOIL ASSOCIATIONS OF INDIANA

Prepared by the Indiana Soil Survey Staff of the U.S. Department of Agriculture Soil Conservation Service and Purdue University Agricultural Experiment Station

This publication consists of a map showing the geographic locations of the *soil associations* that occur in Indiana and a description of each association. The map has value as an educational aid and may serve in general land-use planning. Specific land-use decisions call for detailed soil surveys and, sometimes, on-site investigation.

A soil association is a landscape that has a distinctive pattern of soils. It is usually composed of two or four major soils (for which the association is named) *plus* a few minor soils that are mentioned in the description *plus* some soils not mentioned in either title or description and that vary from place to place. Soil associations are grouped (by color and letter) according to similarities in slope, natural drainage, texture and special features, such as presence of fragipans or rock fragments in the profiles.

Printed with this state soil association map is a smaller one showing Indiana's 13 *soil regions*. A soil region is made up of associations that have similar kinds of parent materials (except for Region 3 along the rivers, which has both glacial outwash and recent alluvial parent materials). The specific soil associations in each soil region are given in Table 1.

For more specific soils information, two additional maps are available from most Cooperative Extension Service or Soil Conservation Service offices. One is the detailed county soil survey (3.2 or 4 inches = 1 mile); the other is the county general soil map (1/3 inch = 1 mile). The relationship of soil associations in the county general soil maps to those used in this state map is shown in Table 2.

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RELATION OF STATE MAPS TO COUNTY MAPS

These maps are based on the field work of many soil scientists. In 1971 general soil maps (scale 1:190,080) of each county were developed from published detailed soil surveys (1:15,840 to 1:63,360) and unpublished soil maps. Some of the general soil maps were revised slightly when they were printed with interpretive tables and a user's guide in 1975. The State Association map (1:500,000) was generalized from the county maps according to the relationships listed in Table 1. The Soil Region map (1:2,000,000) was generalized, in turn, from the State Association map according to Table 2.

Detailed soil survey information is available from county Soil Conservation Service offices. County General Soil Maps and Interpretations (AY-50 series) and the User's Guide (AY-50 supplement) are available in local Cooperative Extension or SCS offices or from the Department of Agricultural Information, Purdue University, West Lafayette, Indiana 47907.

Table 1. RELATION BETWEEN STATE AND COUNTY ASSOCIATIONS

The state map was compiled from county association maps (AY-50 series, Purdue Univ. Coop. Ext. Ser., 1971) using the following groupings:

STATE	COUNTY	STATE	COUNTY	STATE	COUNTY
A1	2,4,6	F1	34	L5	84[3/], 87,90
A2	1,18	F2	39,40,41,42	L6	77,81
A3	50	G	110,115,116	L7	76
A4	3,5,9	H	96[1/],109	M1	65
A5	7,8	I1	73[2/], 74	M2	61,86 [5/]
B1	108	I2	73[2/]	N1	17,45
B2	13,23,24	I3	66	N2	56,57
C1	10,28,37,47,48,49	I4	72	N3	91
C2	22	I5	112	O1	111
C3	114	J1	59,88	O2	104,107
D1	11,21,30	J2	58	O3	92,95,96[1/], 102
D2	43,44	J3	64	O4	93
D3	31	K1	62[4/]	P	105
E1	14,15	K2	67	Q1	103
E2	16,51,53,54	L1	69,70,89	Q2	98
E3	33,35	L2	12	Q3	99
E4	19,20,26,27,36,38,55	L3	63,78,79,80	R1	106
E5	32,46	L4	82,83,84[3/],85	R2	100
				R3	101

1/ In Sullivan County some areas of 96 were placed in H; the rest of 96, in O3.
2/ In Vermillion County 73 is in I2; in other counties 73 is in I1.
3/ In Marion and parts of surrounding counties many delineations of 84 are in L4; in other areas 84 is in L5.
4/ In Wabash County some areas of 62 were placed in I3 or J2
5/ In northeastern Indiana some areas of 86 were placed in K1 or L3.

Table 2. RELATION OF SOIL REGIONS TO STATE ASSOCIATIONS

SOIL REGION	STATE ASSOCIATION
1	B1, B2, C1, D1
2	D2, D3, K2, N1
3	A1, A2, A3, A4, A5, C2, E1, E2, E3, E4, E5, N2
4	C3, F1, F2, G
5	H, I2, I4, I5, O1
6	J2, L2, L3
7	K1, M1, M2
8	J1, J3, L1, L4, L5
9	I1, I3, L6, L7
10	N3, O3, O4
11	O2, P, R1
12	Q1, Q2, Q3, R2
13	R3

CLASSIFICATION OF SOIL SERIES

SERIES	SOIL FAMILY
Adrian	Sandy or sandy-skeletal mixed, euic, mesic Terric Medisaprists
Alford	Fine-silty, mixed, mesic Typic Hapludalfs
Armiesburg	Fine-silty, mixed, mesic Fluventic Hapludolls
Avonburg	Fine-silty, mixed, mesic Aeric Fragiaqualfs
Ava	Fine-silty, mixed, mesic Typic Fragiudalfs
Ayrshire	Fine-loamy, mixed, mesic Aeric Ochraqualfs
Bartle	Fine-silty, mixed, mesic Aeric Fragiaqualfs
Baxter	Clayey, mixed, mesic Typic Paleudults
Bedford	Fine-silty, mixed, mesic Typic Fragiudults
Berks	Loamy,skeletal, mixed, mesic Typic Dystrochrepts
Bloomfield	Coarse-loamy, mixed, mesic Psammentic Hapludalfs
Blount	Fine, illitic, mesic Aeric Ochraqualfs
Bono	Fine, illitic, mesic Typic Haplaquolls
Brookston	Fine-loamy, mixed, mesic Typic Argiaquolls
Celina	Fine, mixed, mesic Aquic Hapludalfs
Chelsea	Mixed, mesic Alfic Udipsamments
Cincinnati	Fine-silty, mixed, mesic Typic Fragiudalfs
Clermont	Fine-silty, mixed, mesic Typic Ochraqualfs
Corwin	Fine-loamy, mixed, mesic Typic Argiudolls
Cory	Fine-silty, mixed, mesic Mollic Ochraqualfs
Corydon	Clayey, mixed, mesic Lithic Argiudolls
Coupee	Fine-loamy over sandy or sandy-skeletal, mixed, mesic Ultic Hapludalfs
Crider	Fine-silty, mixed, mesic Typic Paleudalfs
Crosby	Fine, mixed, mesic Aeric Ochraqualfs
Crosier	Fine-loamy, mixed, mesic Aeric Ochraqualfs
Cuba	Fine-silty, mixed, mesic Fluventic Dystrochrepts
Dana	Fine-silty, mixed, mesic Typic Argiudolls
Darroch	Fine-loamy, mixed, mesic Aquic Argiudolls
Door	Fine-loamy, mixed, mesic Typic Argiudolls
Dubois	Fine-silty, mixed, mesic Aeric Fragiaqualfs
Eden	Fine, mixed, mesic Typic Hapludalfs
Eel	Fine-loamy, mixed, nonacid, mesic Aquic Udifluvents
Elliott	Fine, illitic, mesic Aquic Argiudolls
Elston	Coarse-loamy, mixed, mesic Typic Argiudolls
Evansville	Fine-silty, mixed, nonacid, mesic Typic Haplaquepts
Fincastle	Fine-silty, mixed, mesic Aeric Ochraqualfs
Fox	Fine-loamy over sandy or sandy-skeletal, mixed mesic, Typic Hapludalfs
Genesee	Fine-loamy, mixed, nonacid, mesic Typic Udifluvents
Gilford	Coarse-loamy, mixed, mesic Typic Haplaquolls
Gilpin	Fine-loamy, mixed, mesic Typic Hapludults
Ginat	Fine-silty, mixed, mesic Typic Fragiaqualfs
Grayford	Fine-silty, mixed, mesic Typic Hapludalfs
Hagerstown	Fine, mixed, mesic Typic Hapludalfs
Haymond	Coarse-silty, mixed, nonacid, mesic Typic Udifluvents
Hennepin	Fine-loamy, mixed, mesic Typic Eutrochrepts
Henshaw	Fine-silty, mixed, mesic Aquic Hapludalfs
Hickory	Fine-loamy, mixed, mesic Typic Hapludalfs
Homer	Fine-loamy over sandy or sandy-skeletal, mixed, mesic Aeric Ochraqualfs
Hosmer	Fine-silty, mixed, mesic Typic Fragiudalfs
Houghton	Euic, mesic Typic Medisaprists
Hoytville	Fine, illitic, mesic Mollic Ochraqualfs
Huntington	Fine-silty, mixed, mesic Fluventic Hapludolls
Ipava	Fine, montmorillonitic, mesic Aquic Argiudolls
Iva	Fine-silty, mixed, mesic Aeric Ochraqualfs
Jennings	Fine-silty, mixed, mesic Typic Fragiudults
Kings	Fine, montmorillonitic, mesic Vertic Haplaquolls
Lawrence	Fine-silty, mixed, mesic Aquic Fragiudalfs
Lenawee	Fine, mixed, nonacid, mesic Mollic Haplaquepts
Lindside	Fine-silty, mixed, mesic Fluvaquentic Eutrochrepts
Lydick	Fine-loamy, mixed, mesic Mollic Hapludalfs
Lyles	Fine-loamy, mixed, mesic Typic Haplaquolls
Mahalasville	Fine-silty, mixed, mesic Typic Argiaquolls
Markham	Fine, illitic, mesic Mollic Hapludalfs
Markland	Fine, mixed, mesic Typic Hapludalfs
Martinsville	Fine-loamy, mixed, mesic Typic Hapludalfs
Maumee	Sandy, mixed, mesic Typic Haplaquolls
McGary	Fine, mixed, mesic Aeric Ochraqualfs
Miami	Fine-loamy, mixed, mesic Typic Hapludalfs
Milford	Fine, mixed, mesic Typic Haplaquolls
Montgomery	Fine, mixed, mesic Typic Haplaquolls
Morley	Fine, illitic, mesic Typic Hapludalfs
Morocco	Mixed, mesic Aquic Udipsamments
Muskingum	Fine-loamy, mixed, mesic Typic Dystrochrepts
Nappanee	Fine, illitic, mesic Aeric Ochraqualfs
Negley	Fine-loamy, mixed, mesic Typic Paleudalfs
Newton	Sandy, mixed, mesic Typic Humaquepts
Nicholson	Fine-silty, mixed, mesic Typic Fragiudalfs
Nineveh	Fine-loamy over sandy or sandy-skeletal, mixed, mesic Typic Argiudolls
Nolin	Fine-silty, mixed, mesic Dystric Fluventic Eutrochrepts
Oakville	Mixed, mesic Typic Udipsamments
Ockley	Fine-loamy, mixed, mesic Typic Hapludalfs
Odell	Fine-loamy, mixed, mesic Aquic Argiudolls
Oshtemo	Coarse-loamy, mixed, mesic Typic Hapludalfs
Parke	Fine-silty, mixed, mesic Ultic Hapludalfs (Paleudalfs)
Parr	Fine-loamy, mixed, mesic Typic Argiudolls
Patton	Fine-loamy, mixed, mesic Typic Argiudolls
Peoga	Fine-silty, mixed, mesic Typic Ochraqualfs
Petrolia	Fine-silty, mixed, nonacid, mesic Typic Fluvaquents
Pewamo	Fine, mixed, mesic Typic Argiaquolls
Pike	Fine-silty, mixed, mesic Ultic Hapludalfs
Plainfield	Mixed, mesic Typic Udipsamments
Princeton	Fine-loamy, mixed, mesic Typic Hapludalfs
Ragsdale	Fine-silty, mixed, mesic Typic Argiaquolls
Rahm	Fine-silty, mixed, nonacid, mesic Aeric Fluvaquents
Raub	Fine-silty, mixed, mesic, Aquic Argiudolls
Reesville	Fine-silty, mixed, mesic Aeric Ochraqualfs
Rensselaer	Fine-loamy, mixed, mesic Typic Argiaquolls
Riddles	Fine-loamy, mixed, mesic Typic Hapludalfs
Ross	Fine-loamy, mixed, mesic Cumulic Hapludolls
Rossmoyne	Fine-silty, mixed, mesic Aquic Fragiudalfs
Russell	Fine-silty, mixed, mesic Typic Hapludalfs
Sable	Fine-silty, mixed, mesic Typic Haplaquolls
Sciotoville	Fine-loamy, mixed, mesic Aquic Fragiudalfs
Sebewa	Fine-loamy over sandy or sandy-skeletal, mixed, mesic Typic Argiaquolls
Shipshe	Loamy-skeletal, mixed mesic Typic Argiudolls
Shoals	Fine-loamy, mixed, nonacid, mesic Aeric Fluvaquents
Sidell	Fine-silty, mixed, mesic Typic Argiudolls
Sleeth	Fine-loamy, mixed, mesic Aeric Ochraqualfs
Sloan	Fine-loamy, mixed, mesic Fluvaquentic Haplaquolls
Steff	Fine-silty, mixed, mesic Fluvaquentic Dystrochrepts
Stendal	Fine-silty, mixed, acid, mesic Aeric Fluvaquents
Switzerland	Fine, mixed, mesic Typic Hapludalfs
Tilsit	Fine-silty, mixed, mesic Typic Fragiudults
Toledo	Fine, illitic, nonacid, mesic Mollic Haplaquepts
Tracy	Coarse-loamy, mixed, mesic Ultic Hapludalfs
Vigo	Fine-silty, mixed, mesic Typic Glossaqualfs
Vincennes	Fine-loamy, mixed, acid, mesic Typic Haplaquepts
Volinia	Fine-loamy over sandy or sandy-skeletal, mixed, mesic Typic Argiudolls
Wakeland	Coarse-silty, mixed, nonacid, mesic Aeric Fluvaquents
Warsaw	Fine-loamy over sandy or sandy-skeletal, mixed, mesic Typic Argiudolls
Wea	Fine-loamy, mixed, mesic Typic Argiudolls
Weikert	Loamy-skeletal, mixed, mesic Lithic Dystrochrepts
Weinbach	Fine-silty, mixed, mesic Aeric Fragiaqualfs
Wellston	Fine-silty, mixed, mesic Ultic Hapludalfs
Westland	Fine-loamy, mixed, mesic Typic Argiaquolls
Wheeling	Fine-loamy, mixed, mesic Ultic Hapludalfs
Whitaker	Fine-loamy, mixed, mesic Aeric Ochraqualfs
Wilbur	Coarse-silty, mixed, nonacid, mesic Aquic Udifluvents
Xenia	Fine-silty, mixed, mesic Aquic Hapludalfs
Zanesville	Fine-silty, mixed, mesic Typic Fragiudalfs
Zipp	Fine, mixed, nonacid, mesic Typic Haplaquepts

REV 5/82

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