

Soil Associations of Perry County

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Perry County is located in the southern part of Indiana and has an area of 245,760 acres or 384 square miles. The Ohio River forms the southeast and south boundary which is the Kentucky state line. The County is bounded on the west by Spencer and Dubois counties; on the north by Dubois and Crawford counties; and on the east by Crawford County. Cannelton is the County seat.

The County is drained by several small watersheds that drain directly into the Ohio River. The sloping ridgetops are used for cropland and pasture; steeply sloping hillsides for forestry or pasture; and the nearly level bottom lands for cropland.

In Perry County the oldest soils have developed from residual sandstone, shale, siltstone and limestone. The soils derived from lacustrine materials are developed in deposits of the Wisconsin Drift. These lacustrine soils occur along the valleys of streams and at the conjunction of the streams with the Ohio River. The young soils are the shallow residual soils usually occurring on steep slopes where natural erosion is nearly as rapid as soil formation and the bottom lands soils where new materials are deposited periodically. Sandy aeolian material in the upland adjacent to the Ohio River was deposited during or after the time of the Wisconsin glacial period. Soils developed in this material are less thoroughly and not as deeply leached as those generally developed in residuum. They have immature profiles.

After study of the soils in Perry County and the way they are arranged, it is possible to make a general map that shows several main patterns of soils, called soil associations (Fig. 1). Each association, as a rule, contains a few major soils and several minor soils, in a pattern that is characteristic although not uniform.

The soils within any one association are likely to differ from each other in some or in many properties; for example, slope, depth, stoniness, or natural drainage. Thus, the general soil map shows, not the kind of soil at any particular place, but patterns of soils, in each of which there are several different kinds of soils.

Each of the five soil associations is named for the major soil series in it, but as already noted, soils of other series may also be present. The major soils of one soil association may also be present in other associations, but in different patterns.

The general map showing patterns of soils is useful to people who want a general idea of the soils, who want to compare different parts of a county, or who want to know the possible location of good-sized areas suitable for a certain kind of farming or other land use.

Association 1

Gilpin-Muskingum-Wellston Association: Moderately deep to deep, well drained, sloping to extremely steep upland soils.

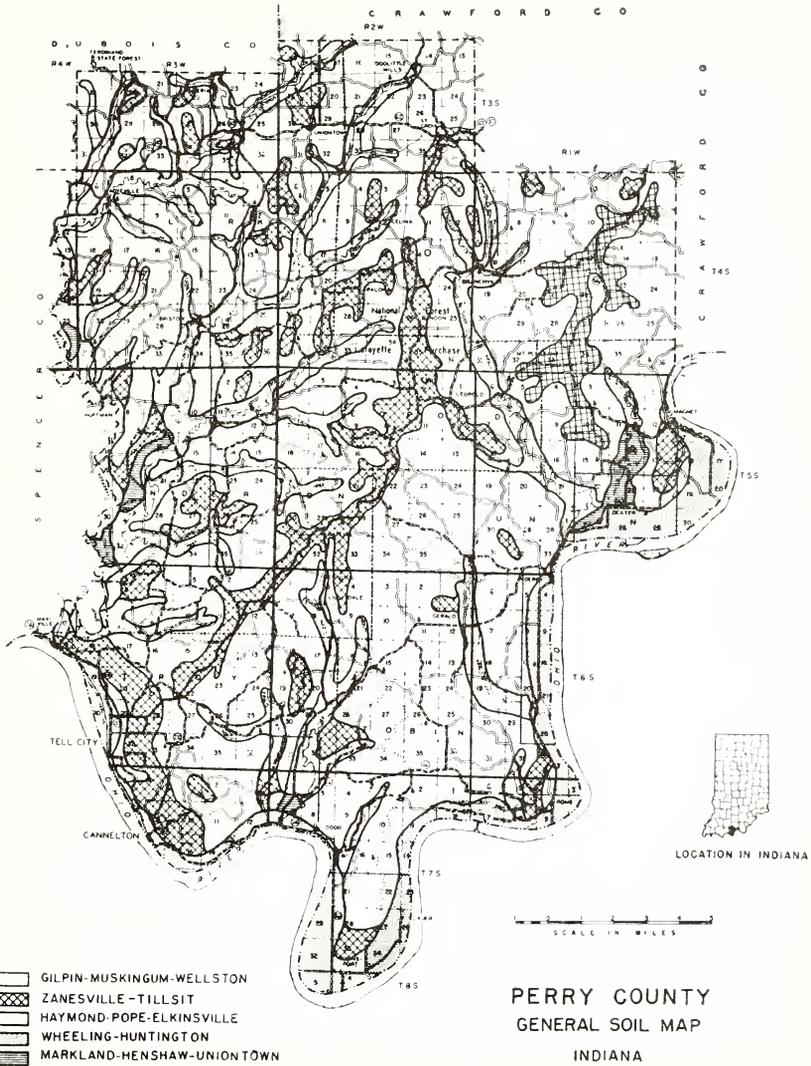


Figure 1. General Soils Map — Perry County, Indiana

This soil association occupies about 54 per cent of the land area in Perry County. It occurs in all areas of the upland soils in the County.

The Gilpin-Muskingum soils are the major soils and comprise about 70 per cent of the association. They are moderately dark colored, moderately deep, well drained, and are developed from acid gray sandstone, siltstone, and shale. These soils occur on sloping to extremely steep slopes.

The Wellston soils make up about 29 per cent of this association. They are light colored, moderately deep to deep, well drained, and are formed in 20 to 25 inches of silt which overlies material weathered from sandstone, siltstone and shale. In strongly sloping topography they are found on the long side slopes while in the steep areas they are found adjacent to the ridgetop, on benches of the side slopes and occasionally on the foot slopes.

The Corydon soils are a minor soil of this association making up about 1 per cent. They are moderately dark colored, shallow, well drained and are formed in material weathered from limestone. These soils occur on steep and very steep slopes mainly on the east side of the County north of Rome and near Branchville.

Most of the soils in this association are used for woodland with minor areas being used for pasture and cropland. Where these soils are cleared and used for cropland and pasture, erosion is a problem. The Muskingum and Corydon soils are somewhat droughty during periods of low rainfall.

Association 2

Zanesville-Tilsit Association: Moderately deep, well drained and moderately well drained soils with fragipans on gently sloping to strongly sloping upland areas.

The soils in this association occupy about 24 per cent of the County and are developed in silts over sandstone and shale. This is the second largest association in the County.

The Zanesville and Tilsit soils comprise about 81 per cent of Association 2. They are moderately dark colored, moderately deep, well and moderately well drained, and are formed in 18 to 48 inches of silt which overlies material weathered from sandstone, siltstone and shale. These soils have compacted layers occurring at a depth of about 28 inches which limit root penetration and moisture movement. They occur on gently sloping to strongly sloping ridgetops and slopes scattered throughout this association.

The Alford soils make up about 10 per cent of this association. They are light to moderately dark colored, deep, well drained and are formed in deep silts, 6 to 12 feet thick, underlain with acid sandstone, siltstone and shale. They occur on nearly level to steep slopes on uplands adjacent to the Ohio River.

Approximately 6 per cent of this soil association is composed of Pembroke soils. They are moderately dark colored, deep and well drained. They are formed in two different soil materials; the upper solum is developed in windblown silt and the lower solum is residuum from limestone. These soils occur on gently sloping to strongly sloping rolling upland adjacent to the Corydon soils, along the eastern border of the County.

The Johnsborg soils are a minor soil of this association making up about 3 per cent. They are moderately dark colored, moderately deep, and somewhat poorly drained and are formed in 18 to 48 inches of silt which overlies material weathered from sandstone, siltstone and shale.

They occur on nearly level to gently sloping ridgetops near Apaloma and Mt. Pleasant.

Most of the soils in this association are used for cropland and pasture. The major management problems for soils in this association are erosion control on Zanesville, Alford and Pembroke soils, drainage on the Johnsbury soils and shallow root penetration limited by the fragipan on the Zanesville, Tilsit and Johnsbury soils. When cropped, rotations which include one to two years of row crops, one year of small grain and two years of meadow are recommended. This area is used dominantly for general livestock farming.

In the rolling areas erosion control practices such as terraces, diversions, sod waterways and contouring are used to slow down runoff and help in the control of erosion as well as effective use of living and dead cover.

Association 3

Haymond-Pope-Elkinsville Association: Deep and moderately deep, well drained nearly level to sloping stream bottom lands soils and old alluvial terrace soils.

This soil association occupies about 10 per cent of the land area in Perry County. These soils are adjacent to the streams. Small acreages of these soils occur in soil Association 1 adjacent to smaller streams that are too small in extent to be shown separately.

Approximately 46 per cent of the association consists of medium acid bottom land soils developed on the flood plain of streams draining upland which consist of mixed sandstone and shale. The moderately dark colored, deep and well drained Haymond soils predominate in most bottoms. There are smaller areas of moderately well drained Wilbur and somewhat poorly drained Wakeland soils. These soils occur in the Anderson River, Deer Creek, Poison Creek and Oil Creek bottoms and are subject to frequent flooding.

Approximately 33 per cent of this association consists of acid bottom land soils which occupy the flood plains of streams, draining the uplands of sandstone and mixed shale. The moderately dark colored, moderately deep and well drained Pope soils predominate in most bottoms. There are small areas of moderately dark colored, deep and well drained Stendal soils. These soils are strongly acid if not limed and overflow frequently.

Included in this association are some acid alluvial terrace soils, approximately 21 per cent, developed in stratified silts and some clays. They occur on slightly higher elevations than the bottoms and only overflow during periods of very high water. The moderately dark colored, deep and well drained Elkinsville soils predominate and have smaller areas of moderately well drained Pekin, somewhat poorly drained Bartle, and poorly drained Peoga soils.

Most of the soils in this association are used for cropland and pasture. Except for the old alluvial terrace soils, which are subject to frequent flooding. The somewhat poorly drained soils have an additional problem of wetness.

The wetness problem has been overcome on many of the areas by using open ditches and tile systems. Corn and soybeans are grown because they can be planted in late spring and harvested in early fall when floods are less likely to occur. Wheat, alfalfa, red clover and other crops that stand over the winter can be grown successfully only on the higher natural levees and terraces from which water recedes rapidly or in areas protected by man made levees. Moderate to high yields of corn are produced when these soils receive good management and fertilizers are applied according to the needs of the crop. Corn grown on these soils generally responds well to large applications of nitrogen.

Association 4

Wheeling-Huntington Association: Deep, well drained, nearly level to steep Ohio River terraces and bottom land soils.

The soils in this association occupy about 7 per cent of the County. They occur along the Ohio River near the east and south boundary of Perry County.

About 62 per cent of this soil association is composed of Ohio River terrace soils. The Wheeling soils comprise about 39 per cent of this association. They are moderately dark colored, deep and well drained. They are developed from noncalcareous waterlaid sands and silts underlain with sand, silt and some gravel with noticeable amounts of mica. The Weinbach soils make up about 12 per cent of this association. They differ from Wheeling soils by being somewhat poorly drained and by having moderately developed fragipans. The Sciotoville soils make up about 8 per cent of this association. They are moderately well drained and have moderately developed fragipans. Sequatchie soils are minor soils that make up about 2 per cent of the terrace area. They differ from the Wheeling soils by having a sandy solum rather than being developed in silt. They are less fertile and somewhat droughty. The Ginat soils make up about 1 per cent of this association. They are poorly drained and usually closely associated with the Weinbach soils. They occur near Tobinsport.

The Huntington soils make up about 18 per cent of this association. They are medium textured, moderately dark colored, deep, well drained and are formed from young alluvium washed from uplands dominated by limestone, loess and loess capped sandstone and shale soils. They occur in the Ohio River bottoms on nearly level areas subject to flooding.

Three other minor Ohio River bottom soils are Newark, Lindside and Bruno soils. Newark soils make up about 6 per cent of this association. They are moderately dark colored, deep and somewhat poorly drained. Lindside soils make up about 4 per cent of this association and they differ from Huntington soils by being only moderately well drained. The Bruno soils make up about 2 per cent of this association. They are moderately dark colored, deep and well drained bottom soils but differ from the Huntington soils in having sandy profiles.

The Woodmere soils make up about 5 per cent of this association. They are moderately dark colored, deep and moderately well to well

drained. They are formed in recently deposited neutral alluvial material from the Ohio River. This alluvium is 18 to 30 inches thick underlain with strongly acid soils developed in Ohio River sediments. These soils occur on level and nearly level second bottom areas above the Huntington soils along the Ohio River.

Another minor associated soil is the Rahm soils which make up about 1 per cent of this association. They differ from the Woodmere soils by being somewhat poorly drained.

The Princeton soils are a minor soil of this association making up about 1 per cent. They are moderately dark, deep, well drained, and are developed in wind-blown calcareous sand and coarse silt. These upland soils occur on long narrow dune ridges north of Tobinsport and near Dexter.

Most of the soils in this association are used for cropland and pasture. The major management problems on these soils are drainage on the somewhat poorly drained and poorly drained soils, overflow on the bottom land soils and erosion control on the Princeton and Wheeling soils.

Except for the rolling Princeton soils and the sloping to steep Wheeling soil areas, soils of this association can be intensively row cropped without damage to the soil. Corn and soybeans are grown on the bottom soils because they can be planted in late spring and harvested early in the fall when floods are less likely to occur. Small grains and meadow crops are included in the rotation on the more rolling Princeton and Wheeling soil areas.

Surface drains and ditches as well as tile are used in the wet areas to overcome the problem of excess wetness.

Association 5

Markland-Henshaw-Uniontown Association: Deep, well drained, moderately well drained and somewhat poorly drained nearly level to steep lacustrine soils.

This is the smallest soil association in Perry County and occupies about 5 per cent of the land area. It occurs on terraces along the lower valleys of streams and at the conjunction of the streams with the Ohio River. Small acreages of these soils occur in Association 3.

Markland is the major series in this association and comprise about 44 per cent of the association. These soils are moderately dark colored, deep and moderately well to well drained. They are developed in calcareous lacustrine stratified silty clay and clay with thin strata of silty clay loam. They occur on strongly sloping and very steep escarpments along the major streams that flow to the Ohio River and on gently sloping areas in the upper valleys of Anderson River and Sulphur Fork Creek.

The Henshaw soils make up about 30 per cent of this association. They are light colored, deep, somewhat poorly drained and are developed in silts and medium to moderately fine textured lacustrine material underlain with stratified deposits. They occur on nearly level to gently

sloping terraces along the lower valleys of streams and at the junction of the stream with the Ohio River.

The Uniontown soils make up about 20 per cent of this association. They are moderately dark colored, deep and well drained to moderately well drained. They are developed in silts and medium to moderately fine textured lacustrine material underlain with stratified deposits. They occur on nearly level to sloping terraces.

The McGary soils make up about 5 per cent of this association. They are light to moderately dark colored, deep and somewhat poorly drained. They are developed in calcareous lacustrine stratified silty clay and clay with some strata of silty clay loam. These nearly level to gently sloping terrace soils are located in the upper valleys of Anderson River, Sulphur Fork Creek and Middle Fork Creek.

Included are minor areas of Patton soils which make up about 1 per cent of the association. They are dark colored, deep and very poorly drained. They occur in small depressional areas.

The major management problems of these soils are erosion control on the Markland and Uniontown soils, and drainage on Henshaw, McGary and Patton soils.

About half of the soils of this association are used for cultivated crops or pasture. These areas which are cropped are nearly level to sloping. The remainder of the area is severely eroded or steep and is either idle or in forest. Areas being cropped produce moderate to high yields when good management practices are used and lime and fertilizers are applied according to the soil and crop needs. Corn, soybeans, wheat and meadow crops are well suited. Alfalfa does well on the better drained soils, but is not adapted to the somewhat poorly drained soils.

Most of the farms where these soils occur are general livestock farms. The crops produced are usually fed to livestock produced on the land.

Literature Cited

1. Soil Survey Staff. 1951. Soil Survey Manual. U. S. Department of Agricultural Handbook No. 18., 503 pp.
2. Robbins, John M. Jr. and Armin R. Grunewald. "Soil Survey Report for Perry County, Indiana" in process.