

Hydric Soils

Lebanon County, Pennsylvania

[This report lists only those map unit components that are rated as hydric. Dashes (--) in any column indicate that the data were not included in the database. Definitions of hydric criteria codes are included at the end of the report]

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
1BkB: Berks-Weikert complex, 3 to 8 percent slopes	Brinkerton	3	Depressions	Yes	2B3
1BkC: Berks-Weikert complex, 8 to 15 percent slopes	Brinkerton	3	Depressions	Yes	2B3
1BkF: Berks-Weikert complex, 25 to 60 percent slopes	Brinkerton	2	Depressions	Yes	2B3
1GeB: Gladstone gravelly loam, 3 to 8 percent slopes	Cokesbury	3	Depressions	Yes	2B3
1GeC: Gladstone gravelly loam, 8 to 15 percent slopes	Cokesbury	5	Depressions	Yes	2B3
1GfB: Gladstone gravelly loam, 0 to 8 percent slopes, very bouldery	Cokesbury	5	Depressions	Yes	2B3
1GfD: Gladstone gravelly loam, 8 to 25 percent slopes, very bouldery	Cokesbury	5	Depressions	Yes	2B3
1JnB: Joanna loam, 3 to 8 percent slopes	Croton	5	Depressions	Yes	2B3
1JnD: Joanna loam, 15 to 25 percent slopes	Croton	5	Depressions	Yes	2B3
1JpB: Joanna loam, 0 to 8 percent slopes, extremely stony	Croton	4	Depressions	Yes	2B3
1JpD: Joanna loam, 8 to 25 percent slopes, extremely stony	Croton	2	Depressions	Yes	2B3
1Me: Middlebury silt loam	Holly	3	Flood plains	Yes	2B3, 4
1WeB: Weikert-Berks complex, 3 to 8 percent slopes	Brinkerton	5	Depressions	Yes	2B3
1WeD: Weikert-Berks complex, 15 to 25 percent slopes	Brinkerton	5	Depressions	Yes	2B3

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AngB:					
Andover gravelly loam, 3 to 8 percent slopes	Andover	75	Depressions	Yes	2B3
	Atkins	3	Flood plains	Yes	2B3
	Swampy areas	3	Depressions	Yes	2B3
AogB:					
Andover gravelly loam, 0 to 8 percent slopes, extremely stony	Andover, extremely stony	85	Depressions	Yes	2B3
	Andover, nonstony	4	Depressions	Yes	2B3
Atg:					
Atkins silt loam	Atkins	85	Flood plains	Yes	2B3
	Muck	2	Depressions	Yes	2B3
Bcg:					
Basher silt loam	Atkins	7	Flood plains	Yes	2B3
BkB:					
Berks shaly silt loam, 3 to 8 percent slopes	Brinkerton	1	Hillslopes	Yes	2B3
BkC:					
Berks shaly silt loam, 8 to 15 percent slopes	Brinkerton	1	Hillslopes	Yes	2B3
BkgB:					
Berks channery silt loam, 3 to 8 percent slopes	Brinkerton	1	Hillslopes	Yes	2B3
BkgC:					
Berks channery silt loam, 8 to 15 percent slopes	Brinkerton	1	Hillslopes	Yes	2B3
Bm:					
Bowmansville silt loam	Bowmansville	90	Flood plains	Yes	2B3
BrA:					
Brinkerton silt loam, 0 to 3 percent slopes	Brinkerton	80	Depressions	Yes	2B3
	Atkins	6	Flood plains	Yes	2B3
BrB:					
Brinkerton silt loam, 3 to 8 percent slopes	Brinkerton	75	Depressions	Yes	2B3
	Atkins	3	Flood plains	Yes	2B3

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BwB: Buchanan gravelly loam, 3 to 8 percent slopes	Andover	10	Depressions	Yes	2B3
BxB: Buchanan extremely stony loam, 3 to 8 percent slopes	Andover, extremely stony	7	Depressions	Yes	2B3
BxC: Buchanan extremely stony loam, 8 to 25 percent slopes	Andover, extremely stony	3	Depressions	Yes	2B3
BxgB: Buchanan gravelly loam, 0 to 8 percent slopes, extremely stony	Andover, extremely stony	5	Depressions	Yes	2B3
BxgD: Buchanan gravelly loam, 8 to 25 percent slopes, extremely stony	Andover, extremely stony	10	Depressions	Yes	2B3
CeB: Chester channery loam, 3 to 8 percent slopes	Brinkerton	4	Depressions	Yes	2B3
CeC: Chester channery loam, 8 to 15 percent slopes	Brinkerton	4	Depressions	Yes	2B3
ChC: Chester extremely stony loam, 8 to 25 percent slopes	Holly	5	Flood plains	Yes	2B3
CkA: Clarksburg silt loam, 0 to 3 percent slopes	Thorndale	5	Depressions	Yes	2B3
CkB: Clarksburg silt loam, 3 to 8 percent slopes	Thorndale	5	Depressions	Yes	2B3
CmA: Comly silt loam, 0 to 3 percent slopes	Brinkerton	5	Depressions	Yes	2B3
CmB: Comly silt loam, 3 to 8 percent slopes	Brinkerton	5	Depressions	Yes	2B3
DfA: Duffield silt loam, 0 to 3 percent slopes	Thorndale	2	Depressions	Yes	2B3
DfB: Duffield silt loam, 3 to 8 percent slopes	Thorndale	2	Depressions	Yes	2B3
Dp: Dumps	Andover	1	Depressions	Yes	2B3

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Ho: Holly silt loam	Holly	90	Flood plains	Yes	2B3, 4
	Brinkerton	2	Depressions	Yes	2B3
HugA: Hustontown silt loam, 0 to 3 percent slopes	Brinkerton soils	2	Depressions	Yes	2B3
HugB: Hustontown silt loam, 3 to 8 percent slopes	Brinkerton	2	Depressions	Yes	2B3
HvgB: Hustontown silt loam, 0 to 8 percent slopes, very stony	Brinkerton soils	2	Depressions	Yes	2B3
KnB: Klinesville shaly silt loam, 3 to 8 percent slopes	Brinkerton	2	Hills	Yes	2B3
KnC: Klinesville shaly silt loam, 8 to 15 percent slopes	Brinkerton	2	Hills	Yes	2B3
LagD: Laidig gravelly loam, 15 to 25 percent slopes	Andover	4	Depressions	Yes	2B3
LdC: Laidig extremely stony loam, 8 to 25 percent slopes	Andover	1	Mountain slopes	Yes	2B3
LdgB: Laidig gravelly loam, 0 to 8 percent slopes, extremely stony	Andover	2	Depressions	Yes	2B3
LdgF: Laidig gravelly loam, 25 to 60 percent slopes, extremely stony	Andover, extremely stony	5	Depressions	Yes	2B3
Ls: Lindside silt loam	Melvin	5	Flood plains	Yes	2B3
MaA: Markes silt loam, 0 to 5 percent slopes	Markes	85	Depressions	Yes	2B3
	Brinkerton	3	Depressions	Yes	2B3
MagB: Markes silt loam, 3 to 8 percent slopes	Markes	85	Depressions	Yes	2B3
	Brinkerton	3	Depressions	Yes	2B3

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Me: Melvin variant silt loam	Melvin variant	90	Flood plains	Yes	2B3
	Holly	3	Flood plains	Yes	2B3
MfgF: Meckesville gravelly loam, 25 to 35 percent slopes, extremely stony	Andover	1	Depressions	Yes	2B3
MoB: Mount Lucas silt loam, 3 to 8 percent slopes	Watchung	5	Depressions	Yes	2B3
MsB: Mount Lucas extremely stony silt loam, 3 to 8 percent slopes	Towhee, very stony	5	Depressions	Yes	2B3
No: Nolin variant silt loam	Poorly drained areas	2	Flood plains	Yes	2B3
PeB: Penn shaly silt loam, 3 to 8 percent slopes	Croton	5	Depressions	Yes	2B3
PeC: Penn shaly silt loam, 8 to 15 percent slopes	Croton	5	Depressions	Yes	2B3
Ph: Philo silt loam	Atkins	5	Flood plains	Yes	2B3
Po: Pope loam	Holly	5	Flood plains	Yes	2B3
ReB: Readington silt loam, 3 to 8 percent slopes	Croton	4	Depressions	Yes	2B3
Ro: Rowland silt loam	Knauers	1	Flood plains	Yes	2B3, 3
ThA: Thorndale silt loam, 0 to 3 percent slopes	Thorndale	100	Depressions, Drainageways, Valleys	Yes	2B3
ThB: Thorndale silt loam, 3 to 8 percent slopes	Thorndale	90	Draws	Yes	2B3
UdgB: Udorthents, shale and sandstone, 0 to 8 percent slopes	Doylestown	1	Drainageways	Yes	2B3

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UkgB:					
Urban land-Berks complex, 0 to 8 percent slopes	Brinkerton	5	Depressions	Yes	2B3
UkgD:					
Urban land-Berks complex, 8 to 25 percent slopes	Brinkerton	5	Depressions	Yes	2B3
UR:					
Urban land-Berks complex	Brinkerton	5	Depressions	Yes	2B3
WaA:					
Watchung silt loam, 0 to 5 percent slopes	Watchung	90	Depressions	Yes	2B3
	Watchung, stony	3	Depressions	Yes	2B3
WbB:					
Watchung extremely stony silt loam, 0 to 8 percent slopes	Watchung, extremely stony	90	Depressions	Yes	2B3
	Watchung	3	Depressions	Yes	2B3

Hydric Soils

This table lists the map unit components that are rated as hydric soils in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2003) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 2002).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folist.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
 - A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
 - B. are poorly drained or very poorly drained and have either:
 - 1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
 - 2) a water table at a depth of 0.5 foot or less during the growing season if permeability is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
 - 3) a water table at a depth of 1.0 foot or less during the growing season if permeability is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

References:

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Hurt, G.W., P.M. Whited, and R.F. Pringle, editors. Version 5.0, 2002. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.
- Soil Survey Staff. 2003. Keys to soil taxonomy. 9th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.