Hydric Soils

Jackson County, Minnesota

[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
27B:					
Dickinson sandy loam, 1 to 6 percent slopes	Dickinson	90	Moraines	No	---
	Wadena	4	Moraines	No	---
	Biscay	3	Flats	Yes	2B3
	Estherville	3	Moraines	No	---
27C:					
Dickinson sandy loam, 6 to 12 percent slopes	Dickinson	90	Moraines	No	---
	Biscay	5	Flats	Yes	2B3
	Estherville	5	Moraines	No	---
35:					
Blue Earth mucky silt loam	Blue Earth	95	Depressions	Yes	2B3, 3
	Canisteo	3	Flats	Yes	2B3
	Mayer	2	Flats	Yes	2B3
39A:					
Wadena loam, 0 to 2 percent slopes	Wadena	90	Moraines	No	---
	Dickinson	4	Moraines	No	---
	Biscay	3	Flats	Yes	2B3
	Dickman	3	Moraines	No	---
39B:					
Wadena loam, 2 to 6 percent slopes	Wadena	90	Moraines	No	---
	Dickinson	4	Moraines	No	---
	Biscay	3	Flats	Yes	2B3
	Dickman	3	Moraines	No	---
41A:					
Estherville sandy loam, 0 to 2 percent slopes	Estherville	90	Moraines	No	---
	Biscay	10	Flats	Yes	2B3

Hydric Soils

Jackson County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
41B:					
Estherville sandy loam, 2 to 6 percent slopes	Estherville	90	Moraines	No	---
	Biscay	10	Flats	Yes	2B3
41C:					
Estherville sandy loam, 6 to 12 percent slopes	Estherville	90	Moraines	No	---
	Biscay	10	Flats	Yes	2B3
86:					
Canisteo clay loam	Canisteo	90	Flats	Yes	2B3
	Delft	5	Swales	Yes	2B3
	Webster	5	Swales	Yes	2B3
94B:					
Terril loam, 2 to 6 percent slopes	Terril	90	Moraines	No	---
	Coland	10	Flood plains	Yes	2B3, 4
96:					
Collinwood silty clay	Collinwood	90	Moraines	No	---
	Truman	4	Moraines	No	---
	Lura	3	Depressions	Yes	2B3, 3
	Waldorf	3	Flats	Yes	2B3
101B:					
Truman silty clay loam, 2 to 6 percent slopes	Truman	90	Moraines	No	---
	Lura	4	Depressions	Yes	2B3, 3
	Collinwood	3	Moraines	No	---
	Waldorf	3	Flats	Yes	2B3

Hydric Soils

Jackson County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
102B:					
Clarion loam, 2 to 6 percent slopes	Clarion	90	Moraines	No	---
	Nicollet	3	Moraines	No	---
	Webster	2	Swales	Yes	2B3
	Crippin	1	Moraines	No	---
	Delft	1	Swales	Yes	2B3
	Storden	1	Moraines	No	---
	Swanlake	1	Moraines	No	---
	Terril	1	Moraines	No	---
102B2:					
Clarion loam, 4 to 8 percent slopes, eroded	Clarion, eroded	90	Moraines	No	---
	Delft	3	Swales	Yes	2B3
	Webster	2	Swales	Yes	2B3
	Crippin	1	Flats	No	---
	Nicollet	1	Moraines	No	---
	Storden	1	Moraines	No	---
	Swanlake	1	Moraines	No	---
	Terril	1	Moraines	No	---
113:					
Webster clay loam	Webster	95	Swales	Yes	2B3
	Canisteo	3	Flats	Yes	2B3
	Crippin	1	Moraines	No	---
	Nicollet	1	Moraines	No	---

Hydric Soils

Jackson County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
114:					
Glencoe clay loam	Glencoe	95	Depressions	Yes	2B3, 3
	Canisteo	5	Flats	Yes	2B3
118:					
Crippin clay loam	Crippin	90	Moraines	No	---
	Glencoe	5	Depressions	Yes	2B3, 3
	Swanlake	5	Moraines	No	---
130:					
Nicollet clay loam	Nicollet	90	Moraines	No	---
	Canisteo	3	Flats	Yes	2B3
	Webster	3	Swales	Yes	2B3
	Clarion	2	Moraines	No	---
	Swanlake	2	Moraines	No	---
197:					
Kingston silty clay loam	Kingston	90	Moraines	No	---
	Waldorf	4	Flats	Yes	2B3
	Lura	3	Depressions	Yes	2B3, 3
	Truman	3	Moraines	No	---
211:					
Lura silty clay	Lura	90	Depressions	Yes	2B3, 3
	Spicer	10	Flats	Yes	2B3
229:					
Waldorf silty clay	Waldorf	90	Flats	Yes	2B3
	Collinwood	5	Moraines	No	---
	Kingston	5	Moraines	No	---

Hydric Soils

Jackson County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
255:					
Mayer loam	Mayer	95	Flats	Yes	2B3
	Biscay	5	Flats	Yes	2B3
313:					
Spillville loam, occasionally flooded	Spillville, occasionally flooded	90	Flood plains	No	---
	Coland	10	Flood plains	Yes	2B3, 4
327B:					
Dickman sandy loam, 1 to 6 percent slopes	Dickman	90	Moraines	No	---
	Estherville	4	Moraines	No	---
	Wadena	4	Moraines	No	---
	Biscay	2	Flats	Yes	2B3
327C:					
Dickman sandy loam, 6 to 12 percent slopes	Dickman	90	Moraines	No	---
	Biscay	5	Flats	Yes	2B3
	Estherville	5	Moraines	No	---
336:					
Delft clay loam	Delft	95	Swales	Yes	2B3
	Canisteo	3	Flats	Yes	2B3
	Crippin	2	Moraines	No	---
362:					
Millington clay loam, frequently flooded	Millington, frequently flooded	95	Flood plains	Yes	2B3, 4
	Spillville	5	Flood plains	No	---
392:					
Biscay clay loam	Biscay	95	Flats	Yes	2B3
	Wadena	5	Moraines	No	---

Hydric Soils

Jackson County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
539:					
Palms muck	Palms	95	Depressions	Yes	1, 3
	Canisteo	3	Flats	Yes	2B3
	Mayer	2	Flats	Yes	2B3
595E:					
Swanlake loam, 18 to 25 percent slopes	Swanlake	90	Moraines	No	---
	Clarion	3	Moraines	No	---
	Terril	3	Moraines	No	---
	Delft	2	Swales	Yes	2B3
	Coland	1	Flood plains	Yes	2B3
	Spillville	1	Flood plains	No	---
595F:					
Swanlake loam, 25 to 40 percent slopes	Swanlake	90	Moraines	No	---
	Clarion	5	Moraines	No	---
	Delft	2	Swales	Yes	2B3
	Coland	1	Flood plains	Yes	2B3
	Spillville	1	Flood plains	No	---
	Terril	1	Moraines	No	---
664:					
Zook silty clay, frequently flooded	Zook, frequently flooded	95	Flood plains	Yes	2B3, 4
	Millington	3	Flood plains	Yes	2B3, 4
	Spillville	2	Flood plains	No	---

Hydric Soils

Jackson County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
813:					
Spicer-Lura complex	Spicer	40	Flats	Yes	2B3
	Lura	30	Depressions	Yes	2B3, 3
	Collinwood	10	Moraines	No	---
	Lakefield	10	Moraines	No	---
	Waldorf	10	Flats	Yes	2B3
887C:					
Clarion-Swanlake loams, 6 to 12 percent slopes	Clarion	55	Moraines	No	---
	Swanlake	40	Moraines	No	---
	Nicollet	2	Moraines	No	---
	Delft	1	Swales	Yes	2B3
	Terril	1	Moraines	No	---
	Webster	1	Swales	Yes	2B3
887D:					
Clarion-Swanlake loams, 12 to 18 percent slopes	Clarion	55	Moraines	No	---
	Swanlake	40	Moraines	No	---
	Delft	2	Swales	Yes	2B3
	Terril	2	Moraines	No	---
	Webster	1	Swales	Yes	2B3

Hydric Soils

Jackson County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
921C2:					
Clarion-Storden loams, 6 to 12 percent slopes, eroded	Clarion, eroded	55	Moraines	No	---
	Storden, eroded	40	Moraines	No	---
	Nicollet	2	Moraines	No	---
	Delft	1	Swales	Yes	2B3
	Terril	1	Moraines	No	---
	Webster	1	Swales	Yes	2B3
956:					
Canisteo-Glencoe clay loams	Canisteo	50	Flats	Yes	2B3
	Glencoe	25	Depressions	Yes	2B3, 3
	Crippin	13	Moraines	No	---
	Webster	12	Swales	Yes	2B3
960D2:					
Storden-Clarion loams, 12 to 18 percent slopes, eroded	Storden, eroded	45	Moraines	No	---
	Clarion, eroded	40	Moraines	No	---
	Terril	8	Moraines	No	---
	Delft	7	Swales	Yes	2B3
1030:					
Udorthents-Pits complex	Udorthents	70	Moraines		---
	Pits	30	Moraines		---
1051:					
Glencoe clay loam, ponded	Glencoe, ponded	90	Depressions	Yes	2B3, 3
	Palms	4	Depressions	Yes	1, 3
	Blue Earth	3	Depressions	Yes	2B3, 3
	Lura	3	Depressions	Yes	2B3, 3

Hydric Soils

Jackson County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
1356:					
Water, miscellaneous	Water, miscellaneous	100	---		---
1833:					
Coland clay loam, occasionally flooded	Coland, occasionally flooded	90	Flood plains	Yes	2B3
	Spillville	10	Flood plains	No	---
1834:					
Coland loam, frequently flooded	Coland, frequently flooded	90	Flood plains	Yes	2B3, 4
	Spillville	10	Flood plains	No	---
1852F:					
Terril-Swanlake loams, 25 to 40 percent slopes	Terril	55	Moraines	No	---
	Swanlake	25	Moraines	No	---
	Clarion	10	Moraines	No	---
	Coland	10	Flood plains	Yes	2B3
1907:					
Lakefield silty clay loam	Lakefield	90	Moraines	No	---
	Collinwood	3	Moraines	No	---
	Spicer	3	Flats	Yes	2B3
	Lura	2	Depressions	Yes	2B3, 3
	Waldorf	2	Flats	Yes	2B3
1914:					
Lura silty clay, nearly level	Lura, nearly level	90	Swales	Yes	2B3
	Terril	10	Moraines	No	---
L13A:					
Klossner muck, depressional, 0 to 1 percent slopes	Klossner, drained	80	Depressions, Moraines	Yes	1
	Mineral soil, drained	15	Depressions, Moraines	Yes	2B3
	Houghton, drained	5	Depressions, Moraines	Yes	1

Hydric Soils

Jackson County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
L84A:					
Glencoe clay loam, depressional, 0 to 1 percent slopes	Glencoe, depressional	80	Depressions, Moraines	Yes	2B3, 3
	Very poorly drained muck	10	Depressions, Moraines	Yes	2B3
	Canisteo	5	Depressions, Flats, Moraines, Rims	Yes	2B3
	Harps	5	Depressions, Rims	Yes	2B3
L85A:					
Nicollet clay loam, 1 to 3 percent slopes	Nicollet	85	Flats, Moraines, Rises	No	---
	Clarion	10	Hills, Moraines	No	---
	Webster	5	Flats, Moraines, Swales	Yes	2B3
L107A:					
Canisteo-Glencoe, depressional complex, 0 to 2 percent slopes	Canisteo	50	Moraines, Rims	Yes	2B3, 3
	Glencoe, depressional	35	Depressions, Moraines	Yes	2B3, 3
	Harps	8	Moraines, Rims	Yes	2B3
	Canisteo, depressional	3	Depressions, Moraines	Yes	2B3
	Crippin	2	Flats, Moraines, Rises	No	---
	Jeffers, friable	2	Depressions, Flats, Moraines, Rims	Yes	2B3
W:					
Water	Water	100	---		---

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 Folists.
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.

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