

# Hydric Soils

Rutland County, Vermont

[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] Dominant components that are hydric are highlighted.

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
1B: Marlow fine sandy loam, 3 to 8 percent slopes	Pillsbury	3	Hills, Mountains	Yes	2
1C: Marlow fine sandy loam, 8 to 15 percent slopes	Pillsbury	2	Hills, Mountains	Yes	2
1D: Marlow fine sandy loam, 15 to 25 percent slopes	Brayton	4	Hills, Mountains	Yes	2
2C: Marlow fine sandy loam, 8 to 15 percent slopes, very stony	Pillsbury, very stony	2	Hills, Mountains	Yes	2
2D: Marlow fine sandy loam, 15 to 35 percent slopes, very stony	Pillsbury, very stony	2	Hills, Mountains	Yes	2
2E: Marlow fine sandy loam, 35 to 60 percent slopes, very stony	Pillsbury, very stony	2	Hills, Mountains	Yes	2
3B: Peru fine sandy loam, 3 to 8 percent slopes	Cabot	4	Hills, Mountains	Yes	2
3C: Peru fine sandy loam, 8 to 15 percent slopes	Cabot	4	Hills, Mountains	Yes	2
4B: Peru fine sandy loam, 0 to 8 percent slopes, very stony	Pillsbury, very stony	4	Hills, Mountains	Yes	2
4C: Peru fine sandy loam, 8 to 15 percent slopes, very stony	Cabot, very stony	4	Hills, Mountains	Yes	2
4D: Peru fine sandy loam, 15 to 25 percent slopes, very stony	Cabot, very stony	4	Hills, Mountains	Yes	2
<b>6A:</b> <b>Cabot silt loam, 0 to 8 percent slopes, very stony</b>	<b>Cabot, very stony</b>	<b>80</b>	Hills, Mountains	Yes	2
	Peacham, very stony	6	Hills, Mountains	Yes	2, 3
	Wonsqueak, very stony	2	Hills, Mountains	Yes	1, 3

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<b>7C:</b>					
Brayton loam, 8 to 15 percent slopes, very stony	Brayton	85	Hills	Yes	2
	Cabot	5	Depressions	Yes	2
	Lyme	5	Knolls	Yes	2
<b>14A:</b>					
Sudbury fine sandy loam, 0 to 3 percent slopes	Walpole	7	Depressions	Yes	2
<b>14B:</b>					
Sudbury fine sandy loam, 3 to 8 percent slopes	Walpole	7	Depressions	Yes	2
<b>15A:</b>					
Walpole sandy loam, 0 to 3 percent slopes	Walpole	80	Depressions	Yes	2
	Scarboro	10	Outwash terraces	Yes	2, 3
<b>21:</b>					
Rippowam fine sandy loam	Rippowam	85	Flood plains	Yes	2
	Elvers, undrained	4	Backswamps	Yes	2, 3, 4
	Saco	4	Backswamps	Yes	2
<b>22:</b>					
Saco mucky silt loam	Saco	85	Depressions, Flood plains	Yes	2
	Adrian, undrained	5	Bogs, Swamps	Yes	1, 3
	Elvers, undrained	5	Flood plains	Yes	2, 3, 4
	Limerick	5	Flood plains, Rises	Yes	2
<b>23:</b>					
Adrian muck	Adrian, undrained	85	Bogs, Swamps	Yes	1, 3
	Pinnebog, undrained	5	Depressions	Yes	1, 3
	Walpole	5	Knolls	Yes	2

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<b>24:</b> <b>Pinnebog muck</b>	<b>Pinnebog, undrained</b>	<b>85</b>	Bogs, Swamps	Yes	1, 3
	Adrian, undrained	8	Knolls	Yes	1, 3
	Linwood, undrained	7	Knolls	Yes	1, 3
<b>25A:</b> Belgrade silt loam, 0 to 3 percent slopes	Raynham	7	Depressions	Yes	2
<b>25B:</b> Belgrade silt loam, 3 to 8 percent slopes	Raynham	7	Depressions	Yes	2
<b>25C:</b> Belgrade silt loam, 8 to 15 percent slopes	Raynham	7	Depressions	Yes	2
<b>26A:</b> <b>Raynham silt loam, 0 to 4 percent slopes</b>	<b>Raynham</b>	<b>85</b>	Terraces	Yes	2
	Birdsall	4	Depressions	Yes	2, 3
	Canandaigua	4	Depressions	Yes	2, 3
	Walpole	3	Knolls	Yes	2
<b>29:</b> <b>Histosols and Aquents, ponded</b>	<b>Aquents</b>	<b>50</b>	Bogs, Swamps	Yes	2, 3
	<b>Histosols, undrained</b>	<b>50</b>	Bogs, Swamps	Yes	1, 3
<b>50A:</b> Massena silt loam, 0 to 8 percent slopes	Lyons	5	Depressions	Yes	2, 3
<b>53:</b> <b>Elvers silt loam</b>	<b>Elvers, undrained</b>	<b>80</b>	Depressions, Flood plains	Yes	2, 3, 4
	Limerick	5	Flood plains, Rises	Yes	2
	Pinnebog, undrained	5	Backswamps	Yes	1, 3
	Saco	5	Backswamps	Yes	2

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Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
59A: Deerfield loamy sand, 0 to 4 percent slopes	Scarboro, undrained	5	Depressions	Yes	2, 3
	Walpole	5	Depressions	Yes	2
61A: Eldridge fine sandy loam, 0 to 3 percent slopes	Enosburg	10	Depressions	Yes	2
61B: Eldridge fine sandy loam, 3 to 8 percent slopes	Enosburg	10	Depressions	Yes	2
<b>62:</b> <b>Enosburg loamy fine sand</b>	<b>Enosburg</b>	<b>85</b>	Terraces	Yes	2
	Scarboro, undrained	7	Depressions	Yes	2, 3
66B: Georgia and Amenia soils, 3 to 8 percent slopes	Lyons	7	Depressions	Yes	2, 3
66C: Georgia and Amenia soils, 8 to 15 percent slopes	Lyons	7	Depressions	Yes	2, 3
67B: Georgia and Amenia soils, 3 to 8 percent slopes, very stony	Lyons	7	Depressions	Yes	2, 3
67C: Georgia and Amenia soils, 8 to 15 percent slopes, very stony	Lyons	7	Depressions	Yes	2, 3
67D: Georgia and Amenia soils, 15 to 25 percent slopes, very stony	Lyons	7	Depressions	Yes	2, 3
68A: Massena silt loam, 0 to 8 percent slopes, very stony	Lyons	5	Depressions	Yes	2, 3
72A: Fredon gravelly loam, 0 to 3 percent slopes	Adrian, undrained	7	Depressions	Yes	1, 3
	Birdsall	7	Depressions	Yes	2, 3
<b>73:</b> <b>Scarboro muck, 0 to 3 percent slopes</b>	<b>Scarboro</b>	<b>80</b>	Depressions, Drainageways	Yes	2, 3
	Timakwa	10	Swamps	Yes	1, 3
	Walpole	8	Depressions	Yes	2

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Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
80A: Kingsbury silty clay loam, 0 to 3 percent slopes	Livingston	6	Depressions	Yes	2
80B: Kingsbury silty clay loam, 3 to 8 percent slopes	Livingston	6	Depressions	Yes	2
<b>81:</b> <b>Livingston silty clay loam</b>	<b>Livingston</b>	<b>95</b>	Flats	Yes	2
	Livingston, flooded	5	Flood plains	Yes	2, 4
82B: Vergennes clay, 3 to 8 percent slopes	Livingston	6	Depressions	Yes	2
82C: Vergennes clay, 8 to 15 percent slopes	Livingston	6	Depressions	Yes	2
82D: Vergennes clay, 15 to 25 percent slopes	Livingston	7	Drainageways	Yes	2
82E: Vergennes clay, 25 to 50 percent slopes	Livingston	7	Drainageways	Yes	2
<b>86:</b> <b>Linwood muck</b>	<b>Linwood, undrained</b>	<b>90</b>	Bogs, Swamps	Yes	1, 3
	Pinnebog, undrained	10	Depressions	Yes	1, 3
<b>88:</b> <b>Birdsall muck</b>	<b>Birdsall</b>	<b>80</b>	Depressions	Yes	2, 3
	Canandaigua	10	Knolls	Yes	2, 3
	Raynham	10	Knolls	Yes	2
106: Middlebury loam	Limerick	8	Depressions, Flood plains	Yes	2
109: Teel silt loam, sandy substratum	Limerick	5	Depressions, Flood plains	Yes	2
	Saco	5	Depressions, Flood plains	Yes	2

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<b>110:</b> <b>Limerick silt loam</b>	<b>Limerick</b>	<b>85</b>	Flood plains	Yes	2
	Elvers, undrained	5	Backswamps	Yes	2, 3, 4
	Saco	5	Backswamps	Yes	2
<b>111:</b> <b>Livingston silty clay loam, frequently flooded</b>	<b>Livingston, flooded</b>	<b>85</b>	Flood plains	Yes	2, 4
	Limerick	8	Flood plains	Yes	2
	Livingston	7	Lake terraces	Yes	2
<b>122B:</b> <b>Lyme fine sandy loam, 2 to 8 percent slopes, very stony</b>	<b>Lyme</b>	<b>80</b>	Depressions, Drainageways	Yes	2
	Brayton	7	Depressions	Yes	2
	Cabot	7	Depressions	Yes	2
<b>122C:</b> <b>Lyme fine sandy loam, 8 to 15 percent slopes, very stony</b>	<b>Lyme</b>	<b>80</b>	Depressions	Yes	2
	Brayton	7	Depressions	Yes	2
	Cabot	7	Depressions	Yes	2
123B: Sheepscot fine sandy loam, 2 to 8 percent slopes	Lyme	6	Depressions	Yes	2
123C: Sheepscot fine sandy loam, 8 to 15 percent slopes	Lyme	6	Depressions	Yes	2
124B: Sunapee fine sandy loam, 3 to 8 percent slopes, very stony	Lyme	7	Depressions	Yes	2
124C: Sunapee fine sandy loam, 8 to 15 percent slopes, very stony	Lyme	7	Depressions	Yes	2
124D: Sunapee fine sandy loam, 15 to 35 percent slopes, very stony	Lyme	7	Drainageways	Yes	2
124E: Sunapee fine sandy loam, 35 to 50 percent slopes, very stony	Lyme	7	Drainageways	Yes	2

# Hydric Soils

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131D: Lyman-Tunbridge-Rock outcrop complex, 15 to 35 percent slopes	Cabot, very stony	4	Hills, Mountains	Yes	2
131E: Lyman-Tunbridge-Rock outcrop complex, 35 to 60 percent slopes	Cabot, very stony	2	Hills, Mountains	Yes	2
139B: Sunapee fine sandy loam, 3 to 8 percent slopes	Lyme	10	Depressions	Yes	2
139C: Sunapee fine sandy loam, 8 to 15 percent slopes	Lyme	10	Depressions	Yes	2
<b>150A:</b> <b>Peacham mucky peat, 0 to 3 percent slopes</b>	<b>Peacham</b>	<b>85</b>	Hills, Mountains	Yes	2, 3
	Cabot	6	Hills, Mountains	Yes	2
	Bucksport	3	Hills, Mountains	Yes	1, 3
	Pondicherry	3	Hills, Mountains	Yes	1, 3
	Wonsqueak	3	Hills, Mountains	Yes	1, 3
<b>152:</b> <b>Lyons silt loam</b>	<b>Lyons</b>	<b>80</b>	Depressions	Yes	2, 3
<b>163:</b> <b>Canandaigua silt loam</b>	<b>Canandaigua</b>	<b>80</b>	Terraces	Yes	2, 3
	Birdsall	7	Depressions	Yes	2, 3
	Raynham	6	Knolls	Yes	2
177: Pawling silt loam	Limerick	5	Depressions, Flood plains	Yes	2
203D: Peru-Marlow association, hilly, very stony	Brayton	7	Depressions	Yes	2
205D: Tunbridge-Berkshire-Marlow association, hilly, rocky	Brayton	4	Drainageways	Yes	2

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<b>403C:</b>					
Brayton-Cabot-Pinnebog association, rolling, very stony	Brayton	35	Depressions, Drainageways	Yes	2
	Cabot	30	Depressions, Drainageways	Yes	2
	Pinnebog, undrained	25	Bogs, Swamps	Yes	1, 3
	Lyme	4	Knolls	Yes	2
	Peacham, undrained	3	Depressions	Yes	2, 3
<b>703D:</b>					
Mundal-Cabot association, hilly, very stony	Cabot	40	Depressions, Hills, Mountains	Yes	2
	Brayton	5	Knolls	Yes	2

## 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.

### References:

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