

# Hydric Soils

Mahnomen 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
33B:					
Barnes loam, 2 to 6 percent slopes	Barnes	90	Hillslopes, Moraines	No	---
	Flom	2	Flats	Yes	2B3
	Hamerly	2	---	No	---
	Hamlet	2	---	No	---
	Poorly drained soils	2	Depressions	Yes	2B3, 3
	Vallers	2	Flats	Yes	2B3
36:					
Flom silty clay loam	Flom	90	Flats, Moraines	Yes	2B3
	Hamerly	4	---	No	---
	Hamlet	3	---	No	---
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
38B:					
Waukon loam, 2 to 8 percent slopes	Waukon	90	Hillslopes, Moraines	No	---
	Gonvick	4	---	No	---
	Flom	3	Drainageways	Yes	2B3
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
38C:					
Waukon loam, 8 to 15 percent slopes	Waukon	90	Hillslopes, Moraines	No	---
	Gonvick	4	---	No	---
	Flom	3	Drainageways	Yes	2B3
	Very poorly drained soils	3	Depressions	Yes	2B3, 3

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<b>38E:</b>					
Waukon loam, 15 to 30 percent slopes	Waukon	90	Hillslopes, Moraines	No	---
	Flom	5	Drainageways	Yes	2B3
	Gonvick	5	---	No	---
<b>40B:</b>					
Nebish loam, 2 to 8 percent slopes	Nebish	90	Hillslopes, Moraines	No	---
	Beltrami	4	---	No	---
	Talmoon	3	Drainageways	Yes	2B3
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
<b>40C:</b>					
Nebish loam, 8 to 15 percent slopes	Nebish	90	Hillslopes, Moraines	No	---
	Beltrami	4	---	No	---
	Talmoon	3	Drainageways	Yes	2B3
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
<b>40E:</b>					
Nebish loam, 15 to 30 percent slopes	Nebish	90	Hillslopes, Moraines	No	---
	Beltrami	5	---	No	---
	Talmoon	5	Drainageways	Yes	2B3
<b>59:</b>					
Grimstad sandy loam	Grimstad	90	Moraines, Rises	No	---
	Foldahl	5	---	No	---
	Rockwell	5	Swales	Yes	2B3

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63: Rockwell loam	Rockwell	90	Flats, Moraines	Yes	2B3
	Vallers	4	Drainageways	Yes	2B3
	Grimstad	3	---	No	---
	Marysland	3	Drainageways	Yes	2B3
121: Wykeham fine sandy loam	Wykeham	90	Moraines, Rises	No	---
	Egglake	4	Drainageways	Yes	2B3
	Snellman	3	---	No	---
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
125: Beltrami loam	Beltrami	90	Moraines, Rises	No	---
	Nebish	4	---	No	---
	Talmoon	3	Drainageways	Yes	2B3
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
127B: Sverdrup sandy loam, 1 to 6 percent slopes	Sverdrup	90	Hillslopes, Hillslopes, Moraines, Outwash plains	No	---
	Marysland	5	Swales	Yes	2B3
	Rockwell	5	Swales	Yes	2B3
180: Gonvick loam	Gonvick	90	Moraines, Rises	No	---
	Flom	5	Drainageways	Yes	2B3
	Waukon	5	---	No	---

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Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
191: Epoufette sandy loam	Epoufette	90	Outwash plains, Swales	Yes	2B3
	Karlstad	5	---	No	---
	Very poorly drained soils	5	Depressions	Yes	2B3, 3
205: Karlstad sandy loam	Karlstad	90	Outwash plains, Rises	No	---
	Epoufette	4	Drainageways	Yes	2B3
	Sugarbush	3	---	No	---
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
236: Vallers silty clay loam	Vallers	90	Flats, Moraines	Yes	2B3
	Hamerly	5	---	No	---
	Very poorly drained soils	5	Depressions	Yes	2B3, 3
267B: Snellman sandy loam, 2 to 8 percent slopes	Snellman	90	Hillslopes, Moraines	No	---
	Egglake	4	Drainageways	Yes	2B3
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
	Wykeham	3	---	No	---
267C: Snellman sandy loam, 8 to 15 percent slopes	Snellman	90	Hillslopes, Moraines	No	---
	Egglake	4	Drainageways	Yes	2B3
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
	Wykeham	3	---	No	---

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<b>267E:</b>					
Snellman sandy loam, 15 to 30 percent slopes	Snellman	90	Hillslopes, Moraines	No	---
	Egglake	5	Drainageways	Yes	2B3
	Wykeham	5	---	No	---
<b>290B:</b>					
Rothsay silt loam, 1 to 6 percent slopes	Rothsay	90	Hillslopes, Moraines	No	---
	Poorly drained soils	5	Drainageways	Yes	2B3
	Soils underlain by glacial till less than 40 inches deep	5	Hillslopes, Moraines	No	---
<b>296:</b>					
Fram loam	Fram	90	Moraines, Rises	No	---
	Hedman	4	Drainageways, Flats	Yes	2B3
	Heimdal	3	---	No	---
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
<b>332B:</b>					
Sugarbush sandy loam, 1 to 8 percent slopes	Sugarbush	90	Hillslopes, Hillslopes, Outwash plains, Valley trains	No	---
	Two Inlets	4	---	No	---
	Epoufette	3	Drainageways	Yes	2B3
	Karlstad	3	---	No	---
<b>335:</b>					
Urness mucky silt loam	Urness	90	Depressions, Lakebeds, Moraines	Yes	2B3, 3
	Quam, noncalcareous	5	Depressions	Yes	2B3, 3
	Vallers	5	Depressions	Yes	2B3, 3

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344: Quam silty clay loam	Quam	90	Depressions, Moraines	Yes	2B3, 3
	Urness, calcareous	5	Depressions	Yes	2B3, 3
	Vallers	5	Depressions	Yes	2B3, 3
346: Talmoon loam	Talmoon	90	Flats, Moraines	Yes	2B3
	Beltrami	5	---	No	---
	Very poorly drained soils	5	Depressions	Yes	2B3, 3
352B: Heimdal loam, 2 to 6 percent slopes	Heimdal	90	Hillslopes, Moraines	No	---
	Esmond	3	---	No	---
	Fram	3	---	No	---
	Hedman	2	Drainageways	Yes	2B3
	Very poorly drained soils	2	Depressions	Yes	2B3, 3
426: Foldahl sandy loam	Foldahl	90	Moraines, Rises	No	---
	Rockwell	4	Depressions	Yes	2B3, 3
	Grimstad	3	---	No	---
	Sverdrup	3	---	No	---
494B: Darnen loam, 2 to 6 percent slopes	Darnen	90	Hillslopes, Moraines	No	---
	Barnes	5	---	No	---
	Flom	5	Drainageways	Yes	2B3

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Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
540: Seelyeville muck	Seelyeville	90	Depressions	Yes	1, 3
	Cathro	2	Depressions	Yes	1, 3
	Haslie	2	Depressions	Yes	1, 3
	Markey	2	Depressions	Yes	1, 3
	Poorly drained soils	2	Depressions	Yes	2B3, 3
	Very poorly drained soils	2	Depressions	Yes	2B3, 3
543: Markey muck	Markey	90	Depressions	Yes	1, 3
	Hamre	3	Depressions	Yes	2B3, 3
	Seelyeville	3	Depressions	Yes	1, 3
	Poorly drained soils	2	Depressions	Yes	2B3, 3
	Very poorly drained soils	2	Depressions	Yes	2B3, 3
544: Cathro muck	Cathro	90	Depressions, Moraines	Yes	1, 3
	Hamre	3	Depressions	Yes	2B3, 3
	Seelyeville	3	Depressions	Yes	1, 3
	Poorly drained soils	2	Depressions	Yes	2B3, 3
	Very poorly drained soils	2	Depressions	Yes	2B3, 3
718B: Naytahwaush loam, 2 to 8 percent slopes	Naytahwaush	90	Hillslopes, Moraines	No	---
	Auganaush	4	Drainageways	Yes	2B3
	Mahkonce	3	---	No	---
	Very poorly drained soils	3	Depressions	Yes	2B3, 3

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718C:					
Naytahwaush loam, 8 to 15 percent slopes	Naytahwaush	90	Hillslopes, Moraines	No	---
	Auganaush	4	Drainageways	Yes	2B3
	Mahkonce	3	---	No	---
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
718E:					
Naytahwaush loam, 15 to 30 percent slopes	Naytahwaush	90	Hillslopes, Moraines	No	---
	Auganaush	4	Drainageways	Yes	2B3
	Mahkonce	3	---	No	---
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
737:					
Mahkonce loam	Mahkonce	90	Moraines, Rises	No	---
	Auganaush	4	Drainageways	Yes	2B3
	Naytahwaush	3	---	No	---
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
746:					
Haslie muck	Haslie	90	Depressions, Depressions, Moraines, Outwash plains	Yes	1, 3
	Hamre	3	Depressions	Yes	2B3, 3
	Seelyeville	3	Depressions	Yes	1, 3
	Poorly drained soils	2	Depressions	Yes	2B3, 3
	Very poorly drained soils	2	Depressions	Yes	2B3, 3

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748:					
Hamlet loam	Hamlet	90	Moraines, Rises	No	---
	Barnes	5	---	No	---
	Flom	5	Drainageways	Yes	2B3
749:					
Colvin silt loam, occasionally flooded	Colvin, occasionally flooded	90	Flats, Flood plains	Yes	2B3
	Fairdale	4	---	No	---
	Lamoure	3	Depressions	Yes	2B3, 3
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
767:					
Auganaush loam	Auganaush	90	Flats, Moraines	Yes	2B3
	Mahkonce	5	---	No	---
	Very poorly drained soils	5	Depressions	Yes	2B3, 3
775B:					
Sugarbush-Two Inlets complex, 1 to 8 percent slopes	Sugarbush	55	Hillslopes, Moraines	No	---
	Two Inlets	35	Hillslopes, Moraines	No	---
	Epoufette	4	Drainageways	Yes	2B3
	Karlstad	3	---	No	---
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
775C:					
Sugarbush-Two Inlets complex, 8 to 15 percent slopes	Sugarbush	50	Hillslopes, Moraines	No	---
	Two Inlets	40	Hillslopes, Moraines	No	---
	Epoufette	4	Drainageways	Yes	2B3
	Karlstad	3	---	No	---
	Very poorly drained soils	3	Depressions	Yes	2B3, 3

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Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
<b>776B:</b>					
Snellman-Sugarbush complex, 2 to 8 percent slopes	Snellman	60	Hillslopes, Moraines	No	---
	Sugarbush	30	Hillslopes, Moraines	No	---
	Egglake	2	Drainageways	Yes	2B3
	Epoufette	2	Drainageways	Yes	2B3
	Karlstad	2	---	No	---
	Very poorly drained soils	2	Depressions	Yes	2B3, 3
	Wykeham	2	---	No	---
<b>776C:</b>					
Snellman-Sugarbush complex, 8 to 15 percent slopes	Snellman	55	Hillslopes, Moraines	No	---
	Sugarbush	35	Hillslopes, Moraines	No	---
	Egglake	2	Drainageways	Yes	2B3
	Epoufette	2	Drainageways	Yes	2B3
	Karlstad	2	---	No	---
	Very poorly drained soils	2	Depressions	Yes	2B3, 3
	Wykeham	2	---	No	---
<b>776E:</b>					
Snellman-Sugarbush complex, 15 to 30 percent slopes	Snellman	50	Hillslopes, Moraines	No	---
	Sugarbush	35	Hillslopes, Moraines	No	---
	Egglake	3	Drainageways	Yes	2B3
	Epoufette	3	Drainageways	Yes	2B3
	Karlstad	3	---	No	---
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
	Wykeham	3	---	No	---

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Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
<b>827B:</b>					
Heimdal-Esmond complex, 2 to 6 percent slopes	Heimdal	60	Hillslopes, Moraines	No	---
	Esmond	30	Hillslopes, Moraines	No	---
	Fram	4	---	No	---
	Hedman	3	Drainageways	Yes	2B3
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
<b>827C2:</b>					
Heimdal-Esmond complex, 6 to 12 percent slopes, eroded	Heimdal, eroded	50	Hillslopes, Moraines	No	---
	Esmond, eroded	40	Hillslopes, Moraines	No	---
	Fram	4	---	No	---
	Hedman	3	Drainageways	Yes	2B3
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
<b>867B:</b>					
Graycalm-Menahga complex, 1 to 8 percent slopes	Graycalm	55	Hillslopes, Outwash plains	No	---
	Menahga	35	Hillslopes, Outwash plains	No	---
	Epoufette	5	Drainageways	Yes	2B3
	Very poorly drained soils	5	Depressions	Yes	2B3, 3
<b>903B:</b>					
Barnes-Langhei complex, 2 to 6 percent slopes	Barnes	65	Hillslopes, Moraines	No	---
	Langhei	25	Hillslopes, Moraines	No	---
	Flom	4	Drainageways	Yes	2B3
	Hamlet	3	---	No	---
	Very poorly drained soils	3	Depressions	Yes	2B3, 3

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Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
<b>903C2:</b>					
Barnes-Langhei complex, 6 to 12 percent slopes, eroded	Barnes, eroded	55	Hillslopes, Moraines	No	---
	Langhei, eroded	35	Hillslopes, Moraines	No	---
	Darnen	3	---	No	---
	Flom	3	Drainageways	Yes	2B3
	Hamlet	2	---	No	---
	Very poorly drained soils	2	Depressions	Yes	2B3, 3
<b>942D2:</b>					
Langhei-Barnes complex, 12 to 20 percent slopes, eroded	Langhei, eroded	55	Hillslopes, Moraines	No	---
	Barnes, eroded	35	Hillslopes, Moraines	No	---
	Darnen	5	---	No	---
	Flom	5	Drainageways	Yes	2B3
<b>967B:</b>					
Waukon-Langhei complex, 2 to 6 percent slopes	Waukon	65	Hillslopes, Moraines	No	---
	Langhei	25	Hillslopes, Moraines	No	---
	Flom	4	Drainageways	Yes	2B3
	Gonvick	3	---	No	---
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
<b>967C2:</b>					
Waukon-Langhei complex, 6 to 12 percent slopes, eroded	Waukon, eroded	60	Hillslopes, Moraines	No	---
	Langhei, eroded	30	Hillslopes, Moraines	No	---
	Darnen	4	---	No	---
	Flom	3	Drainageways	Yes	2B3
	Very poorly drained soils	3	Depressions	Yes	2B3, 3

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Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
<b>979D2:</b>					
Langhei-Waukon complex, 12 to 20 percent slopes, eroded	Langhei, eroded	55	Hillslopes, Moraines	No	---
	Waukon, eroded	35	Hillslopes, Moraines	No	---
	Darnen	5	---	No	---
	Flom	5	Drainageways	Yes	2B3
<b>1030:</b>					
Pits, gravel-Udipsamments complex	Pits, gravel	65	Moraines, Outwash plains, Stream terraces		---
	Udipsamments	35	Moraines, Outwash plains, Stream terraces		---
<b>1113:</b>					
Haslie, Seelyeville, and Cathro soils, ponded	Cathro, ponded	30	Depressions	Yes	1, 3
	Haslie, ponded	30	Depressions	Yes	1, 3
	Seelyeville, ponded	30	Depressions	Yes	1, 3
	Poorly drained soils	5	Depressions	Yes	2B3, 3
	Very poorly drained soils	5	Depressions	Yes	2B3, 3
<b>1117:</b>					
Hedman loam	Hedman	90	Flats, Moraines	Yes	2B3
	Fram	4	---	No	---
	Rockwell	3	Flats	Yes	2B3
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
<b>1139:</b>					
Marysland loam, occasionally flooded	Marysland, occasionally flooded	90	Flats, Flood plains	Yes	2B3
	Fairdale	4	---	No	---
	Lamoure	3	Flats	Yes	2B3
	Very poorly drained soils	3	Depressions	Yes	2B3, 3

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Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
1142:					
Hedman-Fram complex	Hedman	50	Flats	Yes	2B3
	Fram	40	Rises	No	---
	Esmond	4	Hillslopes	No	---
	Heimdal	3	---	No	---
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
1147:					
Fordum, Fairdale, and Lamoure soils, frequently flooded	Fairdale, frequently flooded	30	Flood plains, Rises	No	---
	Fordum, frequently flooded	30	Flats, Flood plains	Yes	2B3, 4
	Lamoure, frequently flooded	25	Flats, Flood plains	Yes	2B3
	Soils that have a surface layer of muck	15	Flats	Yes	2B3
1148:					
Fairdale and Lamoure soils, occasionally flooded	Fairdale, occasionally flooded	45	Flood plains, Rises	No	---
	Lamoure, occasionally flooded	45	Flats, Flood plains	Yes	2B3
	Soils that have a surface layer of muck	5	Flats	Yes	2B3
	Soils that have more sand	5	Flats	No	---
1149:					
Hamerly clay loam	Hamerly	90	Moraines, Rises	No	---
	Barnes	4	---	No	---
	Vallers	3	Swales	Yes	2B3
	Very poorly drained soils	3	Depressions	Yes	2B3, 3

# Hydric Soils

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Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
<b>1152B:</b>					
Sugarbush loamy sand, 1 to 8 percent slopes	Sugarbush	90	Hillslopes, Hillslopes, Outwash plains, Valley trains	No	---
	Two Inlets	4	---	No	---
	Epoufette	3	Drainageways	Yes	2B3
	Karlstad	3	---	No	---
<b>1152C:</b>					
Sugarbush loamy sand, 8 to 15 percent slopes	Sugarbush	90	Hillslopes, Hillslopes, Outwash plains, Valley trains	No	---
	Two Inlets	4	---	No	---
	Epoufette	3	Drainageways	Yes	2B3
	Karlstad	3	---	No	---
<b>1152E:</b>					
Sugarbush loamy sand, 15 to 30 percent slopes	Sugarbush	90	Hillslopes, Hillslopes, Outwash plains, Valley trains	No	---
	Two Inlets	4	---	No	---
	Epoufette	3	Drainageways	Yes	2B3
	Karlstad	3	---	No	---
<b>1200:</b>					
Egglake loam	Egglake	90	Flats, Moraines, Swales	Yes	2B3
	Very poorly drained soils	5	Depressions	Yes	2B3, 3
	Wykeham	5	---	No	---

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1233D2:					
Esmond-Heimdal complex, 12 to 20 percent slopes, eroded	Esmond, eroded	60	Hillslopes, Moraines	No	---
	Heimdal, eroded	30	Hillslopes, Moraines	No	---
	Fram	4	---	No	---
	Hedman	3	Drainageways	Yes	2B3
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
1238E:					
Two Inlets-Sugarbush complex, 15 to 30 percent slopes	Two Inlets	55	Hillslopes, Moraines	No	---
	Sugarbush	35	Hillslopes, Moraines	No	---
	Epoufette	5	Drainageways	Yes	2B3
	Very poorly drained soils	5	Depressions	Yes	2B3, 3
1241B:					
Sandberg sandy loam, 1 to 6 percent slopes	Sandberg	90	Hillslopes, Hillslopes, Moraines, Outwash plains	No	---
	Foldahl	4	---	No	---
	Marysland	3	Depressions	Yes	2B3, 3
	Rockwell	3	Depressions	Yes	2B3, 3
1356:					
Water, miscellaneous	Water, miscellaneous	100	---	---	---

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1804: Hamre muck, ponded	Hamre, ponded	90	Depressions	Yes	2B3, 3
	Cathro	2	Depressions	Yes	1, 3
	Haslie	2	Depressions	Yes	1, 3
	Markey	2	Depressions	Yes	1, 3
	Seelyeville	2	Depressions	Yes	1, 3
	Poorly drained soils	1	Depressions	Yes	2B3, 3
	Very poorly drained soils	1	Depressions	Yes	2B3, 3
1825B: Seelyeville muck, sloping, seep land	Seelyeville, sloping, seep land	90	Fens, Fens, Moraines, Outwash plains	Yes	1
	Poorly drained soils	5	Depressions	Yes	2B3, 3
	Very poorly drained soils	5	Depressions	Yes	2B3, 3
1878: Hamre muck	Hamre	90	Depressions	Yes	2B3, 3
	Cathro	4	Depressions	Yes	1, 3
	Poorly drained soils	3	Depressions	Yes	2B3, 3
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
1967: Hamerly-Vallers complex	Hamerly	55	Moraines, Rises	No	---
	Vallers	35	Flats, Moraines	Yes	2B3
	Barnes	4	---	No	---
	Langhei	3	---	No	---
	Very poorly drained soils	3	Depressions	Yes	2B3, 3
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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