

**Soil Survey Evaluation for Rutland County, VT
Vermont NRCS
2010**

This report contains general information about the history of the soil survey and an evaluation of the available soil survey information, for use in planning for maintenance and updates to the soil survey.

1. General Information

A. State Soil Survey Area ID (STSSAID)	VT021
B. Acres (from NRI)	
Total land acres in the survey area	596,800
Total census water in the survey area	7,700
Total Surface area	604,500
Approximate acres within MLRA 142 (as of 1996)	46,100
Approximate acres within MLRA 143 (as of 1996)	230,000
Approximate acres within MLRA 144A (as of 1996)	328,400
Approximate acres within the Green Mountain National Forest (GMNF)	65,000

Correlation

A. Correlation date	1985
B. Correlation Amendment Dates	
First	1985
Second	1985
Third	1989

Initial Soil Survey

A. Publication date	1998
B. Publication scale	1:20,000
C. Photobase	Orthophoto, USGS
D. Mapping order	2 (3 in GMNF)
E. Field Mapping scale	1:18,000 outside of GMNF
F. Field Mapping	
Started	1974
Completed	1984
G. Soil Survey Status	Published

Digital Soil Survey

A. Date survey digitized	1991
B. Digitizing base map	Orthophoto, VT
C. Digitizing Scale	1:20,000
D. Date of SSURGO Certification	1995

2. Quality of the Existing Soil Survey

Published Soil Survey

Soil names and descriptions were approved in 1985. Unless otherwise stated, statements in the published soil survey refer to conditions in the soil survey area in 1984. The soil maps were map finished using SSURGO digital data.

Evaluating and/or refining the criteria for determining soil interpretations continues after the soil survey is completed. Development of new soil interpretations is an ongoing process. Many published soil surveys do not contain recently developed soil interpretations, such as hydric soils and highly erodible land ratings. New interpretations developed after the soil survey has been published are filed in the Field Office Technical Guide.

Recommendations for changes in the published soil survey are collected by field office personnel and evaluated by soil scientists. Proposed changes could include but are not restricted to: errors found on the soil survey maps, revised interpretations, or new interpretations.

Changes that are certified by the State Soil Scientist become part of the Official Copy of the soil survey. These changes are supplied to customers on an as-needed basis in the form of electronic or hard copy reports. If changes become extensive in nature, an updated soil survey report may be published at the discretion of the State Conservationist.

Soil Maps

The soil mapping has been completed. Officially certified soil maps derived from SSURGO data are available on: 1) the Web Soil Survey, and 2) the Soil Data Mart.

Taxonomic and Map Unit Names and Descriptions

The following soils were classified as Orthods (Spodosol order) in Rutland County: Houghtonville, Killington, Mundal, and Rawsonville. Some of these soils may now fit the classification criteria for Humods.

In **Rutland County**, the following limitations are recognized:

- There is no distinction or delineation of soils formed over limestone bedrock in the frigid soil temperature zone. Because of this, boreal calcareous natural communities have been included with the mesic Farmington, Galoo, and Galway soils.
- **Organic soils in bogs and swamps** are found throughout the county, from warm areas in the valleys up to cooler areas in the Green Mountains. The soil series include the Adrian, Linwood, and Pinnebog soils. All of these soils are considered to be in the warmer mesic soil temperature zone. But in the Green Mountains, these soils are mapped in the frigid soil temperature zone. However, natural communities that occur only in the frigid soil temperature zone are not linked to these mesic soils.
- The map unit, ***Histosols and Aquents, ponded***, is named using terms from Soil Taxonomy rather than soil series names. Although it is mapped solely in areas of fresh water marsh along Lake Champlain, it is not linked to any specific natural communities.

List of Map Unit Concerns by MLRA – see legend below for concerns for individual map units

MLRA 142

- 142-FX. Consociations of shallow soils may be complexes with moderately deep or very shallow series.
- 142-G. This flooded phase of a clayey soil series may be a new series, not just a map unit phase.
- 142-H. Fresh water marsh map units (and other units with this note) may contain significant areas of subaqueous soils.
- 142-HA. Hartland series and map units may include areas of Hitchcock series. All Hartland series map units may be better correlated as Hitchcock series map units.
- 142-HTC. Map units named after higher Taxonomic classes than series (Borohemists, Fragiaquepts and Haplaquepts, Histic Fluvaquents, Udifluvents, etc.) should be reviewed and established as new series or incorporated into existing series, if possible. They have poor interpretative value.
- 142-SL. Out of date slope classes were used for this map unit. They have poor interpretative value.
- 142-T. This series was mapped throughout the county across the mesic and frigid temperature zones. It should be confined to the appropriate temperature zone within county. Other series are needed on the legend to map in other temperature zone areas. Related to this issue, in some counties, some series are mapped only in the mesic region, but are now classified as having a frigid temperature class.
- 142-Y. This is the only county in the state where this series (or one of the series in a complex) is mapped.
- 142-Z. This is the only map unit of this series in Vermont.

MLRA 143

- 143-HTC. Map units named after higher Taxonomic classes than series (Borohemists, Fragiaquepts and Haplaquepts, Histic Fluvaquents, Udifluvents, etc.) should be reviewed and established as new series or incorporated into existing series, if possible. They have poor interpretative value.
- 143-SK. This map unit may contain very skeletal soils high in white quartzite from the Cheshire formation in areas along the western flank of the Green Mountains.
- 143-SL. Out of date slope classes were used for this map unit. They have poor interpretative value.
- 143-SPR. This Spodosol series classification needs to be updated.
- 143-T. This series was mapped throughout the county across the mesic and frigid temperature zones. It should be confined to the appropriate temperature zone within county. Other series are needed on the legend to map in other temperature zone areas. Related to this issue, in some counties, some series are mapped only in the mesic region, but are now classified as having a frigid temperature class.
- 143-Y. This is the only county in the state where this series (or one of the series in a complex) is mapped.
- 143-Z. This is the only map unit of this series in Vermont.

MLRA 144A

- 144A-C. This series and map unit are part of a catena mapped in Bennington and Rutland counties with both mesic and frigid temperature class soils: Hubbardton, Macomber, and

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Taconic soils are frigid; Dutchess and Pittstown soils (and Bomoseen soils in Rutland county) are mesic. Need to re-correlate the soils in this catena to fit within one temperature class. Soils in this catena join mesic soils in New York and Addison county.

144A-SL. Out of date slope classes were used for this map unit. They have poor interpretative value.

144A-T. This series was mapped throughout the county across the mesic and frigid temperature zones. It should be confined to the appropriate temperature zone within county. Other series are needed on the legend to map in other temperature zone areas. Related to this issue, in some counties, some series are mapped only in the mesic region, but are now classified as having a frigid temperature class.

144A-UD. This unit is an undifferentiated unit. However, there may be significant interpretive and morphological differences between the major soils to justify separating them into consociations.

144A-Y. This is the only county in the state where this series (or one of the series in a complex) is mapped.

144A-Z. This is the only map unit of this series in Vermont.

Map Unit Symbol and Name	Map Unit Issues by MLRA-Concern Number (see above)					
1B Marlow fine sandy loam, 3 to 8 percent slopes	143-SPR					
1C Marlow fine sandy loam, 8 to 15 percent slopes	143-SPR					
1D Marlow fine sandy loam, 15 to 25 percent slopes	143-SPR					
2C Marlow fine sandy loam, 8 to 15 percent slopes, very stony	143-SPR					
2D Marlow fine sandy loam, 15 to 35 percent slopes, very stony	143-SPR					
2E Marlow fine sandy loam, 35 to 60 percent slopes, very stony	143-SPR					
3B Peru gravelly fine sandy loam, 3 to 8 percent slopes	143-SPR					
3C Peru gravelly fine sandy loam, 8 to 15 percent slopes	143-SPR					
4B Peru gravelly fine sandy loam, 3 to 8 percent slopes, very stony	143-SPR					
4C Peru gravelly fine sandy loam, 8 to 15 percent slopes, very stony	143-SPR					
4D Peru gravelly fine sandy loam, 15 to 25 percent slopes, very stony	143-SPR					

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6A Cabot gravelly fine sandy loam, 0 to 8 percent slopes, very stony						
7C Brayton loam, 8 to 15 percent slopes, very stony						
9 Pits-Dumps complex						
11C Taconic-Hubbardton complex, 8 to 25 percent slopes, very rocky	144A-C	144A-SL				
12F Taconic-Hubbardton-Macomber complex, 25 to 80 percent slopes, very rocky	144A-C					
13B Hinckley gravelly loamy fine sand, 0 to 8 percent slopes						
13C Hinckley gravelly loamy fine sand, 8 to 15 percent slopes						
13D Hinckley gravelly loamy fine sand, 15 to 25 percent slopes						
13E Hinckley gravelly loamy fine sand, 25 to 40 percent slopes						
14A Sudbury fine sandy loam, 0 to 3 percent slopes	142-Y	144A-Y				
14B Sudbury fine sandy loam, 3 to 8 percent slopes	142-Y	144A-Y				
15A Walpole fine sandy loam, 0 to 5 percent slopes	142-SL	144A-SL				
18B Windsor loamy sand, 3 to 8 percent slopes						
18C Windsor loamy sand, 8 to 15 percent slopes						
18D Windsor loamy sand, 15 to 25 percent slopes						
18E Windsor loamy sand, 25 to 60 percent slopes						
21 Rippowam fine sandy loam						
22 Saco mucky silt loam						
23 Adrian muck	142-T	143-T	144A-T			
24 Pinnebog muck	144A-Z	142-Z	143-Z	142-T	143-T	144A-T
25A Belgrade silt loam, 0 to 3 percent slopes						

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25B Belgrade silt loam, 3 to 8 percent slopes						
25C Belgrade silt loam, 8 to 15 percent slopes						
26A Raynham silt loam, 0 to 4 percent slopes	142-SL					
28 Udifluvents and Fluvaquents, nearly level	142-HTC	143-HTC				
29 Histosols and Aquents, ponded	142-HTC	142-H				
30B Paxton fine sandy loam, 2 to 8 percent slopes	142-Y	144A-Y	142-SL	144A-SL		
30C Paxton fine sandy loam, 8 to 15 percent slopes	142-Y	144A-Y				
30D Paxton fine sandy loam, 15 to 25 percent slopes	142-Y	144A-Y				
31B Paxton fine sandy loam, 2 to 8 percent slopes, very stony	142-Y	144A-Y	142-SL	144A-SL		
31C Paxton fine sandy loam, 8 to 15 percent slopes, very stony	142-Y	144A-Y				
31D Paxton fine sandy loam, 15 to 25 percent slopes, very stony	142-Y	144A-Y				
31E Paxton fine sandy loam, 25 to 35 percent slopes, very stony	142-Y	144A-Y				
38A Tisbury silt loam, 0 to 3 percent slopes	142-Z	144A-Z				
39B Galway-Nellis-Farmington complex, 3 to 8 percent slopes						
40C Galway-Nellis-Farmington complex, 8 to 15 percent slopes, rocky						
40D Galway-Nellis-Farmington complex, 15 to 25 percent slopes, rocky						
41C Farmington-Galway-Galoo complex, 5 to 25 percent slopes, very rocky	142-SL	144A-Y	142-Y			
41E Farmington-Galway-Galoo complex, 25 to 50 percent slopes, very rocky	144A-Y	142-Y				

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42C	Macomber-Taconic complex, 8 to 15 percent slopes, rocky	144A-C					
42D	Macomber-Taconic complex, 15 to 25 percent slopes, rocky	144A-C					
42F	Macomber-Taconic complex, 25 to 80 percent slopes, rocky	144A-C					
43C	Taconic-Macomber complex, 8 to 25 percent slopes, very rocky	144A-C	144A-SL				
44B	Dutchess silt loam, 3 to 8 percent slopes	144A-C					
44C	Dutchess silt loam, 8 to 15 percent slopes	144A-C					
44D	Dutchess silt loam, 15 to 25 percent slopes	144A-C					
47B	Dutchess silt loam, 3 to 8 percent slopes, very stony	144A-C					
47C	Dutchess silt loam, 8 to 15 percent slopes, very stony	144A-C					
47D	Dutchess silt loam, 15 to 25 percent slopes, very stony	144A-C					
47E	Dutchess silt loam, 25 to 60 percent slopes, very stony	144A-C					
50A	Massena silt loam, 0 to 8 percent slopes						
52B	Macomber-Dutchess complex, 3 to 8 percent slopes	144A-C					
53	Elvers silt loam						
54A	Ninigret fine sandy loam, 0 to 4 percent slopes	142-SL					
56B	Colton-Duxbury complex, 2 to 8 percent slopes, very stony						
56C	Colton-Duxbury complex, 8 to 15 percent slopes, very stony						
56D	Colton-Duxbury complex, 15 to 25 percent slopes, very stony						

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56E Colton-Duxbury complex, 25 to 50 percent slopes, very stony						
57B Duxbury-Colton complex, 2 to 8 percent slopes						
58C Colton-Duxbury complex, 8 to 15 percent slopes						
58D Colton-Duxbury complex, 15 to 25 percent slopes						
59A Deerfield loamy sand, 0 to 4 percent slopes						
61A Eldridge fine sandy loam, 0 to 3 percent slopes						
61B Eldridge fine sandy loam, 3 to 8 percent slopes						
62 Enosburg loamy fine sand						
64B Stockbridge gravelly silt loam, 3 to 8 percent slopes						
64C Stockbridge gravelly silt loam, 8 to 15 percent slopes						
64D Stockbridge gravelly silt loam, 15 to 25 percent slopes						
65B Stockbridge gravelly silt loam, 3 to 8 percent slopes, very stony						
65C Stockbridge gravelly silt loam, 8 to 15 percent slopes, very stony						
65D Stockbridge gravelly silt loam, 15 to 25 percent slopes, very stony						
65E Stockbridge gravelly silt loam, 25 to 45 percent slopes, very stony						
66B Georgia and Amenia soils, 3 to 8 percent slopes	144A-UD					
66C Georgia and Amenia soils, 8 to 15 percent slopes	144A-UD					
67B Georgia and Amenia soils, 3 to 8 percent slopes, very stony	144A-UD					
67C Georgia and Amenia soils, 8 to 15 percent slopes, very stony	144A-UD					

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67D	Georgia and Amenia soils, 15 to 25 percent slopes, very stony	144A-UD					
68A	Massena silt loam, 0 to 8 percent slopes, very stony						
71A	Castile gravelly fine sandy loam, 0 to 3 percent slopes	144A-Z					
72A	Fredon gravelly loam, 0 to 3 percent slopes						
73	Scarboro muck						
80A	Kingsbury silty clay loam, 0 to 3 percent slopes						
80B	Kingsbury silty clay loam, 3 to 8 percent slopes						
81	Livingston silty clay loam						
82B	Vergennes clay, 3 to 8 percent slopes						
82C	Vergennes clay, 8 to 15 percent slopes						
82D	Vergennes clay, 15 to 25 percent slopes						
82E	Vergennes clay, 25 to 50 percent slopes						
86	Linwood muck	144A-Z	142-Z	143-Z	142-T	143-T	144A-T
88	Birdsall muck						
90B	Hartland silt loam, 3 to 8 percent slopes	142-HA					
90C	Hartland silt loam, 8 to 15 percent slopes	142-HA					
90D	Hartland silt loam, 15 to 25 percent slopes	142-HA					
95	Udorthents loamy						
96	Udipsamments, nearly level						
97A	Warwick-Quonset complex, 0 to 3 percent slopes						
97B	Warwick-Quonset complex, 3 to 8 percent slopes						
97C	Warwick-Quonset complex, 8 to 15 percent slopes						

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97D	Warwick-Quonset complex, 15 to 25 percent slopes					
98E	Quonset-Warwick complex, 25 to 45 percent slopes					
99B	Copake gravelly fine sandy loam, 2 to 8 percent slopes					
104B	Groton gravelly loam, 2 to 8 percent slopes	144A-SL				
105	Tioga fine sandy loam	142-Z	144A-Z			
106	Middlebury loam	142-Z				
108	Hamlin silt loam					
109	Teel silt loam, sandy substratum					
110	Limerick silt loam					
111	Livingston silty clay loam, frequently flooded	142-G				
118C	Adams loamy fine sand, 8 to 15 percent slopes	143-SPR				
122B	Lyme fine sandy loam, 2 to 8 percent slopes, very stony	143-Y	143-SL			
122C	Lyme fine sandy loam, 8 to 15 percent slopes, very stony	143-Y				
123B	Sheepscot fine sandy loam, 2 to 8 percent slopes	143-SL	143-SPR			
123C	Sheepscot fine sandy loam, 8 to 15 percent slopes	143-SPR				
124B	Sunapee fine sandy loam, 3 to 8 percent slopes, very stony	143-SPR				
124C	Sunapee fine sandy loam, 8 to 15 percent slopes, very stony	143-SPR				
124D	Sunapee fine sandy loam, 15 to 35 percent slopes, very stony	143-SPR				
124E	Sunapee fine sandy loam, 35 to 50 percent slopes, very stony	143-SPR				

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125B Berkshire gravelly fine sandy loam, 3 to 8 percent slopes, very stony	143-SPR	143-SK				
125C Berkshire gravelly fine sandy loam, 8 to 15 percent slopes, very stony	143-SPR	143-SK				
125D Berkshire gravelly fine sandy loam, 15 to 35 percent slopes, very stony	143-SPR	143-SK				
125E Berkshire gravelly fine sandy loam, 35 to 50 percent slopes, very stony	143-SPR	143-SK				
127C Houghtonville gravelly fine sandy loam, 8 to 15 percent slopes, very stony	143-SPR	143-SK				
127D Houghtonville gravelly fine sandy loam, 15 to 35 percent slopes, very stony	143-SPR	143-SK				
127E Houghtonville gravelly fine sandy loam, 35 to 60 percent slopes, very stony	143-SPR	143-SK				
128C Rawsonville-Houghtonville complex, 8 to 15 percent slopes, rocky	143-SPR					
128D Rawsonville-Houghtonville complex, 15 to 35 percent slopes, rocky	143-SPR					
128E Rawsonville-Houghtonville complex, 35 to 60 percent slopes, rocky	143-SPR					
129D Killington-Rawsonville complex, 15 to 35 percent slopes, very rocky	143-Y	143-SPR				
129F Killington-Rawsonville complex, 35 to 70 percent slopes, very rocky	143-Y	143-SPR				
130B Tunbridge-Berkshire complex, 3 to 8 percent slopes, rocky	143-SPR	143-SK				
130C Tunbridge-Berkshire complex, 8 to 15 percent slopes, rocky	143-SPR	143-SK				

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130D Tunbridge-Berkshire complex, 15 to 35 percent slopes, rocky	143-SPR	143-SK				
130E Tunbridge-Berkshire complex, 35 to 60 percent slopes, rocky	143-SPR	143-SK				
131D Lyman-Tunbridge-Rock outcrop complex, 15 to 35 percent slopes, very stony	143-SPR	143-SK				
131E Lyman-Tunbridge-Rock outcrop complex, 35 to 60 percent slopes, very stony	143-SPR	143-SK				
132C Glebe-Stratton complex, 8 to 25 percent slopes, very stony	143-SPR					
132E Glebe-Stratton complex, 25 to 60 percent slopes, very stony	143-SPR					
134F Stratton-Londonderry-Ricker complex, 15 to 80 percent slopes, very rocky	143-SPR					
135D Mundal loam, 15 to 35 percent slopes, very stony	143-SPR					
135E Mundal loam, 35 to 60 percent slopes, very stony	143-SPR					
138C Berkshire gravelly fine sandy loam, 8 to 15 percent slopes	143-SPR					
139B Sunapee fine sandy loam, 3 to 8 percent slopes	143-SPR					
139C Sunapee fine sandy loam, 8 to 15 percent slopes	143-SPR					
140C Benson very channery loam, 3 to 15 percent slopes	142-FX					
140D Benson very channery loam, 15 to 25 percent slopes	142-FX					
140E Benson very channery loam, 25 to 50 percent slopes	142-FX					
148B Bomoseen and Pittstown soils, 2 to 8 percent slopes	144A-Y	144A-C				
148C Bomoseen and Pittstown soils, 8 to 15 percent slopes	144A-Y	144A-C				
148D Bomoseen and Pittstown soils, 15 to 25 percent slopes	144A-Y	144A-C				

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percent slopes						
149B Bomoseen and Pittstown soils, 3 to 8 percent slopes, very stony	144A-Y	144A-C				
149C Bomoseen and Pittstown soils, 8 to 15 percent slopes, very stony	144A-Y	144A-C				
149D Bomoseen and Pittstown soils, 15 to 25 percent slopes, very stony	144A-Y	144A-C				
149E Bomoseen and Pittstown soils, 25 to 40 percent slopes, very stony	144A-Y	144A-C				
150A Peacham muck, 0 to 8 percent slopes						
152 Lyons silt loam						
161A Elmridge sandy loam, 0 to 3 percent slopes						
161B Elmridge sandy loam, 3 to 8 percent slopes						
163 Canandaigua silt loam						
175 Wappinger silt loam	144A-Z					
177 Pawling silt loam	144A-Z					
202E Rawsonville-Killington association, very hilly, very rocky	143-Y	143-SK				
203D Peru-Marlow association, hilly, very stony						
205D Tunbridge-Berkshire-Marlow association, hilly, rocky						
213E Glebe-Stratton association, very hilly, very rocky						
221F Tunbridge-Berkshire association, very steep, very stony	143-SK					
402D Tunbridge-Lyman association, hilly, rocky						
403C Brayton-Cabot-Pinnebog association, rolling, very stony						
405D Tunbridge-Berkshire association, hilly, very rocky						

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505D Berkshire-Colton association, hilly, stony						
702F Killington-Ricker-Rock outcrop association, very steep, very stony	143-Y					
703D Mundal-Cabot association, hilly, very stony						
705D Rawsonville-Houghtonville association, hilly, rocky						
W Water						

Interpretations

The soil survey interpretations were approved when the soil survey was correlated. Interpretations developed or revised since correlation are available in the Field Office Technical Guide, Section II Part I, Soils Information, and on the Soil Data Mart. Some interpretations are available through Soil Fact Sheets.

3. Digital Soil Survey/Tabular Soil Survey Data

SSURGO-certified data is posted to the Soil Data Mart and Web Soil Survey.

4. Plans to update the Soil Survey

This section will be completed by the MLRA Soil Survey Office after a review of county SS evaluations.

5. Staff and Budget needed to update the Soil Survey

This section will be completed by the MLRA Soil Survey Office after a review of county SS evaluations.