Ecological site F144AY035MA
Shallow Semi-Rich Well Drained Till Uplands

Accessed: 05/04/2024

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

MLRA notes

Major Land Resource Area (MLRA): 144A–New England and Eastern New York Upland, Southern Part

MLRA 144A: New England and Eastern New York Upland, Southern Part
The eastern half of the eastern part of this MLRA is in the Seaboard Lowland Section of the New England Province of the Appalachian Highlands. The western half of the eastern part and the southeastern half of the western part are in the New England Upland Section of the same province and division. The northwestern half of the western part is in the Hudson Valley Section of the Valley and Ridge Province of the Appalachian Highlands. This MLRA is a very scenic area of rolling to hilly uplands that are broken by many gently sloping to level valleys that terminate in coastal lowlands. Elevation ranges from sea level to 1,000 feet (0 to 305 meters) in much of the area, but it is 2,000 feet (610 meters) on some hills. Relief is mostly about 6 to 65 feet (2 to 20 meters) in the valleys and about 80 to 330 feet (25 to 100 meters) in the uplands.
This area has been glaciated and consists almost entirely of till plains and drumlins dissected by narrow valleys with a thin mantle of till. The southernmost boundary of the area marks the farthest southward extent of glaciation on the eastern seaboard. The river valleys and coastal plains are filled with glacial lake sediments, marine sediments, and glacial outwash. The bedrock in the eastern half of the area consists primarily of igneous and metamorphic rocks of early Paleozoic age. Granite is the most common igneous rock, and gneiss, schist, and slate are the most common metamorphic rocks. In the parts of the MLRA in northeastern Pennsylvania and in eastern and southeastern New York, Devonian- to Pennsylvanian-age sandstone, shale, and limestone bedrock is dominant. Carbonate rocks, primarily dolomite and limestone, are the dominant kinds of bedrock in the part of this MLRA in northwestern Connecticut.

Ecological site concept

The site consists of shallow, well drained and somewhat excessively drained soils formed in till. The soils are nearly level to very steep slopes on glaciated uplands hills and mountains. Soil pH is considered circumnuetral (pH 5.5-7.4). Representative soil is Farmington.
The reference plant community coincides with Red Cedar and hophornbeam with mixture of hickories and and hackberry the herbaceous understory is diverse with bristle sedge and mosses and lichens. Other more well-developed community may include the maple-basswood rich mesic forest (Eddinger et al. 2014) and sugar maple-chinkapin oak / bristle sedge community (Metzler and Barrett, 2006). Dominant trees are sugar maple, basswood, and white ash. Associated tree species include red oak, American beech, bitternut hickory, shagbark hickory, tulip tree, chinkapin oak, hop hornbeam, yellow birch, and American hornbeam. Characteristic shrubs include alternate-leaved dogwood, witch hazel, and mountain maple. The herbaceous layer is diverse with numerous species such as wild leek, trout-lily, dutchman’s breeches, squirrel-corn, nodding trillium, spring beauty, maidenhair fern, glade fern, bloodroot, and blue cohosh. The site is threatened by invasive exotic plants such as Japanese barberry, shrubby honeysuckle, buckthorn, garlic mustard, and multiflora rose.
The site is shallow to bedrock thereby limiting forest productivity relative to the Semi-rich Well Drained Till Uplands ecological site, which also occurs within MLRA 144A, but is deep to bedrock.

Table 1. Dominant plant species

Tree	(1) *Juniperus virginiana* (2) *Acer saccharum*
Shrub	(1) *Ostrya virginiana* (2) *Swida alternifolia*
Herbaceous	(1) *Carex eburnea* (2) *Allium tricoccum*

Physiographic features

The site occurs on nearly level to very steep soils on glaciated uplands. Bedrock is at a depth of 10 to 20 inches. Slope ranges from 0 to 70 percent.

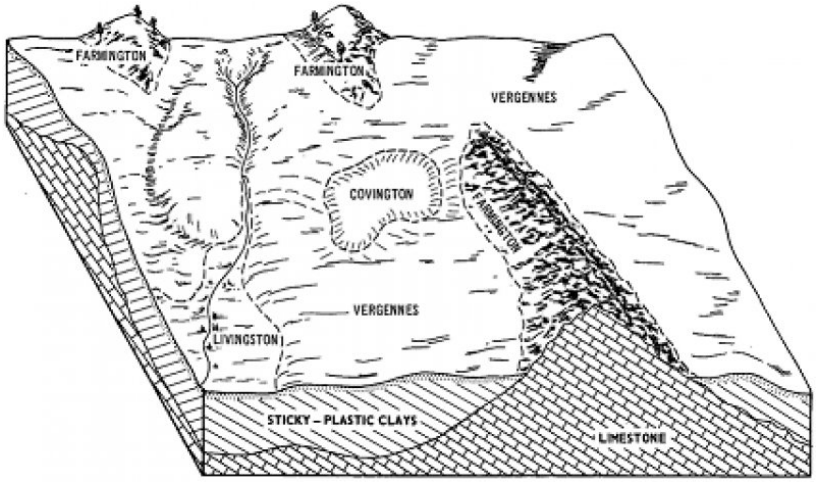

Figure 1. Shallow Semi-rich Well Drained Till Uplands - Farm

Table 2. Representative physiographic features

Landforms	(1) Hill (2) Ridge (3) Till plain
Slope	0–70%

Climatic features

Mean annual precipitation is 47 inches and is usually uniformly distributed throughout the year. Frost free and freeze free days average 135 and 164, respectively.

Table 3. Representative climatic features

Frost-free period (average)	135 days
Freeze-free period (average)	164 days
Precipitation total (average)	1,194 mm

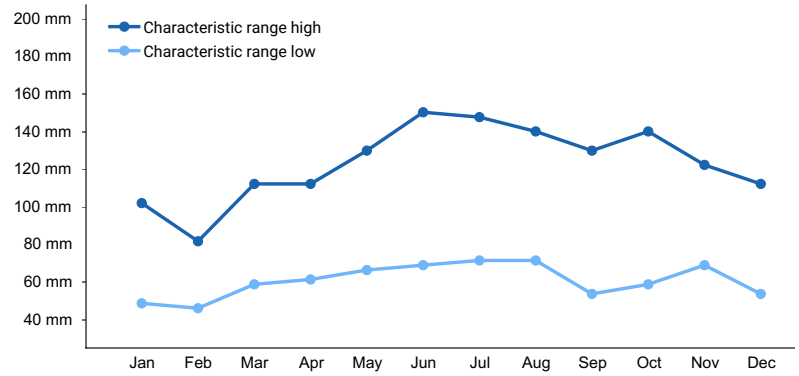

Figure 2. Monthly precipitation range

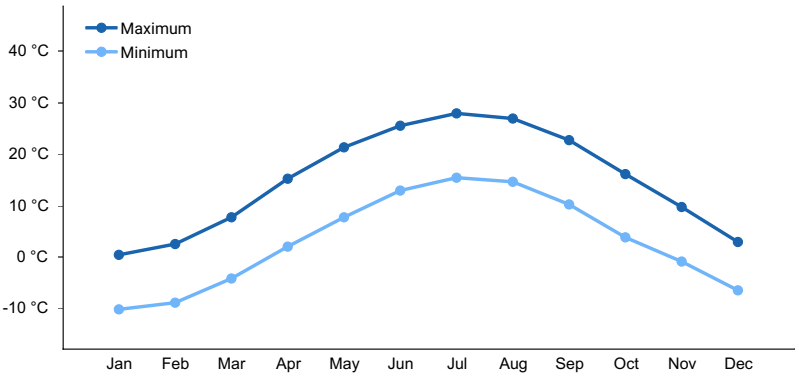

Figure 3. Monthly average minimum and maximum temperature

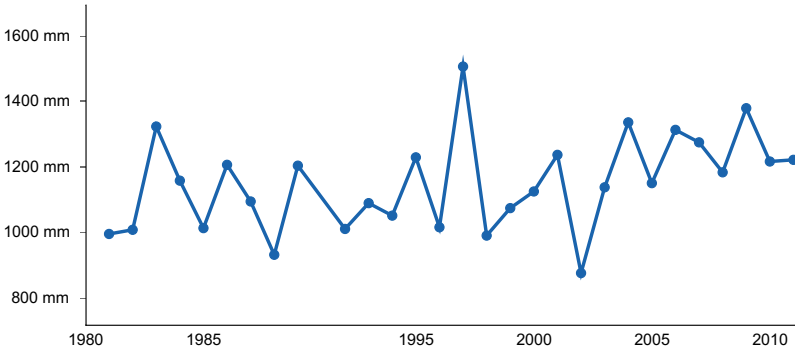

Figure 4. Annual precipitation pattern

Climate stations used

- (1) FALLS VILLAGE [USC00062658], Falls Village, CT
- (2) NEWTON [USC00286177], Newton, NJ
- (3) SARATOGA SPRINGS 4 SW [USC00307484], Saratoga Springs, NY
- (4) RUTLAND [USC00436995], Rutland, VT
- (5) STORMVILLE [USC00308304], Stormville, NY

Influencing water features

Soil features

The site consists of shallow, well drained and somewhat excessively drained soils formed in glacial till. The till is derived from limestone, dolomite, shale, and sandstone. Soil pH is considered circumnuetral (pH 5.1-7.8) resulting in nutrient rich plant indicators. Representative soil is Farmington.

Table 4. Representative soil features

Parent material	(1) Ablation till–limestone, sandstone, and shale
Surface texture	(1) Fine sandy loam (2) Silt loam (3) Loam
Drainage class	Well drained to somewhat excessively drained
Permeability class	Very slow
Soil depth	25–51 cm
Surface fragment cover >3"	0–2%
Calcium carbonate equivalent (0-101.6cm)	1–5%
Soil reaction (1:1 water) (0-101.6cm)	5.1–7.8
Subsurface fragment volume <=3" (Depth not specified)	5–10%
Subsurface fragment volume >3" (Depth not specified)	1–2%

Ecological dynamics

The site consists of shallow, well drained and somewhat excessively drained soils formed in till. The soils are nearly level to very steep slopes on glaciated uplands hills and mountains. Soil pH is considered circumnuetral (pH 5.5-7.4). Representative soil is Farmington.

The reference plant community coincides with Red Cedar and hophornbeam with mixture of hickories and and hackberry the herbaceous understory is diverse with bristle sedge and mosses and lichens. Other more well-developed community may include the maple-basswood rich mesic forest (Eddinger et al. 2014) and sugar maple-chinkapin oak / bristle sedge community (Metzler and Barrett, 2006). Dominant trees are sugar maple, basswood, and white ash. Associated tree species include red oak, American beech, bitternut hickory, shagbark hickory, tulip tree, chinkapin oak, hop hornbeam, yellow birch, and American hornbeam. Characteristic shrubs include alternate-leaved dogwood, witch hazel, and mountain maple. The herbaceous layer is diverse with numerous species such as wild leek, trout-lily, dutchman’s breeches, squirrel-corn, nodding trillium, spring beauty, maidenhair fern, glade fern, bloodroot, and blue cohosh. The site is threatened by invasive exotic plants such as Japanese barberry, shrubby honeysuckle, buckthorn, garlic mustard, and multiflora rose.

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State and transition model

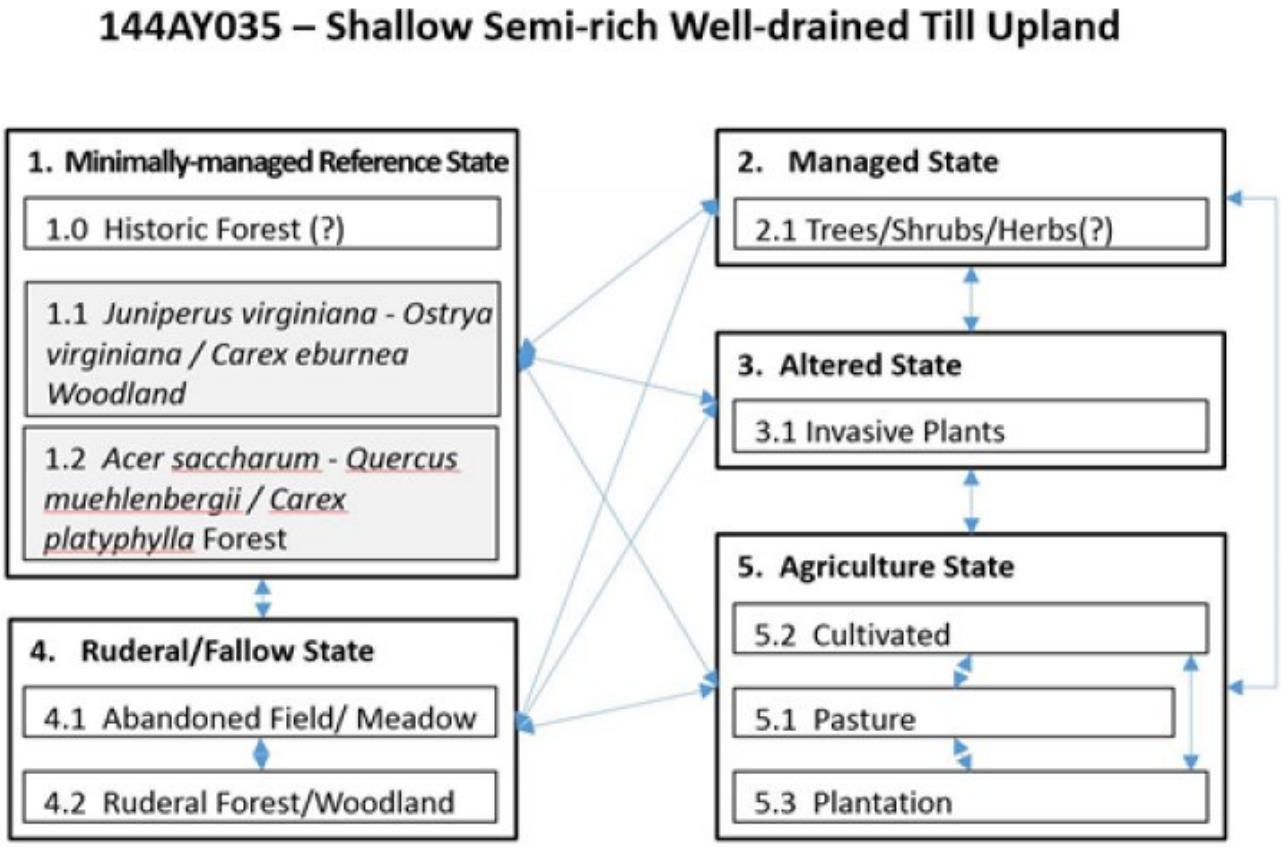

Figure 6. STM_144AY035_Shallow_Semi-Rich_Wel-lDrained_Till_U

Transition	Drivers/practices
T1-2	Forest mgmt
T1-3, T1-4, T1-5, T2-3, T2-5, T3-4, T4-5, T4-3	Disturbance/cutting/clearing, Brush removal
R2-1, R3-1, R4-1, R4-2, R5-1, R5-2	Restoration & Mgmt, Forest Stand Improvement, Upland Wildlife Mgmt
R3-1, R3-2	Brush removal, Herb weed control, Plant establishment
R4-1, T2-4, T5-4, CP4.1-4.2	Abandonment, succession
R5-2	Plant establishment, Forest mgmt., Early Successional Habitat Development
CP5.1-5.2-5.3	Changing Agricultural phases
CP4.2-4.1	Restoration & Mgmt., Early Successional Habitat Development

Figure 7. STM_144AY035_Shallow_Semi-Rich_Wel-lDrained_Till_U

Transition	Drivers/practices
T1-2	Forest mgmt
T1-3, T1-4, T1-5, T2-3, T2-5, T3-4, T4-5, T4-3	Disturbance/cutting/clearing, Brush removal
R2-1, R3-1, R4-1, R4-2, R5-1, R5-2	Restoration & Mgmt, Forest Stand Improvement, Upland Wildlife Mgmt
R3-1, R3-2	Brush removal, Herb weed control, Plant establishment
R4-1, T2-4, T5-4, CP4.1-4.2	Abandonment, succession
R5-2	Plant establishment, Forest mgmt., Early Successional Habitat Development
CP5.1-5.2-5.3	Changing Agricultural phases
CP4.2-4.1	Restoration & Mgmt., Early Successional Habitat Development

Figure 8. STM_144AY035_Shallow_Semi-Rich_Wel-lDrained_Till_U

Other references

REFERENCES

Edinger, G.J., Evans, D.J., Gebauer, S., Howard, T.G., Hunt, D.M., and A.M. Olivero, A.M. (eds.). 2014. Ecological Communities of New York State, Second Edition: A revised and expanded edition of Carol Reschke's Ecological Communities of New York State. New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY.

Metzler, K.J. and Barrett, J.P., 2006. The Vegetation of Connecticut, a Preliminary Classification. Department of Environmental Protection, State Geological and Natural History Survey of Connecticut.

Swain, P.C. and Kearsley, J.B., 2001. Classification of the natural communities of Massachusetts. Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries and Wildlife.

Thompson, E.H. and Sorenson, E.R., 2000. Wetland, woodland, wildland. Vermont Department of Fish and Wildlife and The Nature Conservancy. Publ. University Press of New England.

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:**

2. **Presence of water flow patterns:**

3. **Number and height of erosional pedestals or terracettes:**

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

5. **Number of gullies and erosion associated with gullies:**

6. **Extent of wind scoured, blowouts and/or depositional areas:**

7. **Amount of litter movement (describe size and distance expected to travel):**

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

    Dominant:

    Sub-dominant:

    Other:

    Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**

14. **Average percent litter cover (%) and depth (in):**

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**

16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that**

become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:

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17. **Perennial plant reproductive capability:**
