

# Ecological site F140XY029NY

## Rich Shallow Till Upland

Last updated: 5/20/2020  
Accessed: 04/25/2024

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### 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): 140X–Glaciated Allegheny Plateau and Catskill Mountains

This area is primarily in the Southern New York Section of the Appalachian Plateaus Province of the Appalachian Highlands. The top of the dissected plateau in this MLRA is broad and is nearly level to moderately sloping. The narrow valleys have steep walls and smooth floors. The Catskills in the east have steep slopes. Elevation is typically 650 to 1,000 feet on valley floors; 1,650 to 2,000 feet on the plateau surface; and 3,600 feet or more in parts of the Catskills.

The average annual precipitation in most of this area is 30 to 45 inches. Rainfall occurs as high-intensity, convective thunderstorms during the summer, but most of the precipitation in this area occurs as snow. The average annual temperature is 40 to 50 degrees F.

The dominant soil order in this MLRA is Inceptisols. The soils in the area dominantly have a mesic soil temperature regime, an aquic or udic soil moisture regime, and mixed mineralogy. Frigid soils are found within the higher elevations.

This area supports forest vegetation, particularly hardwood species. Beech-birch-maple and elm-ash-red maple are the potential forest types. The extent of oak species increases from east to west, particularly in areas of shallow and dry soils. In some areas conifers, such as white pine, are important. Aspen, hemlock, northern white-cedar, and black ash grow on the wetter soils. In some parts of the area, sugar maple has potential economic significance. Some of the major wildlife species in this area are white-tailed deer, cottontail, turkey, pheasant, and grouse.

### Classification relationships

USDA NRCS:

LRR: R - Northeastern Forage and Forest Region

MLRA 140 - Glaciated Allegheny Plateau and Catskills Mountains

### Ecological site concept

Landform/Landscape Position:

The site occurs on till plains, benches, and ridges. Slopes range from 3 to 60 percent.

Soils:

The soils consists of shallow, somewhat excessively drained loamy soils that formed in glacial till derived from limestone, dolomite, shale, and sandstone. Representative soil is Farmington.

Vegetation:

The reference community coincides with NY Natural Heritage Community: Limestone Woodland and NatureServe's Sugar Maple - Hophornbeam - Shagbark Hickory - Northern Red Oak Limestone Woodland.

**Table 1. Dominant plant species**

Tree	(1) <i>Acer saccharum</i> (2) <i>Tilia americana</i>
Shrub	(1) <i>Ostrya virginiana</i> (2) <i>Hamamelis virginiana</i>
Herbaceous	(1) <i>Polystichum acrostichoides</i> (2) <i>Trillium cernuum</i>

## Physiographic features

The site occurs on till plains, benches, and ridges. Slopes range from 3 to 60 percent.

**Table 2. Representative physiographic features**

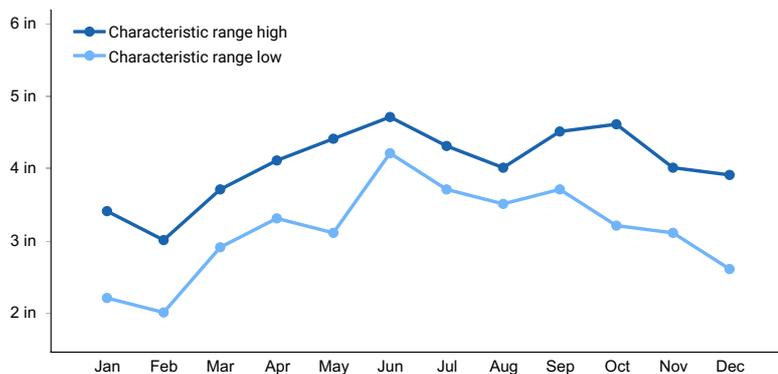
Landforms	(1) Till plain (2) Bench (3) Ridge
Slope	3–60%

## Climatic features

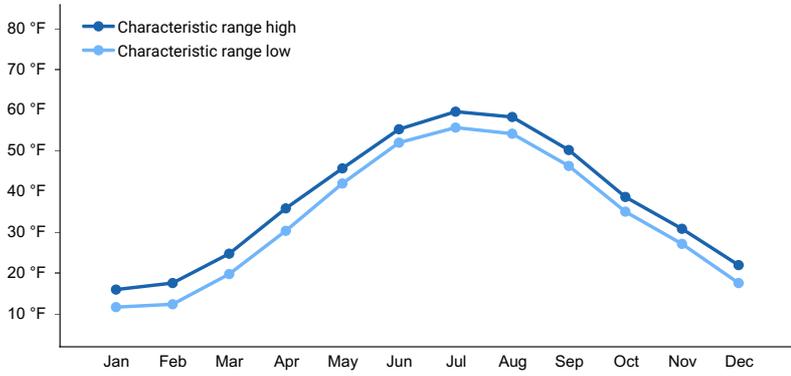
Mean annual precipitation is 43 inches and evenly distributed throughout the year. Most of the rainfall occurs as high intensity, convective thunderstorms during the summer. Snowfall is common from late in autumn to early spring. Average frost-free and freeze-free days are 122 and 153, respectively.

**Table 3. Representative climatic features**

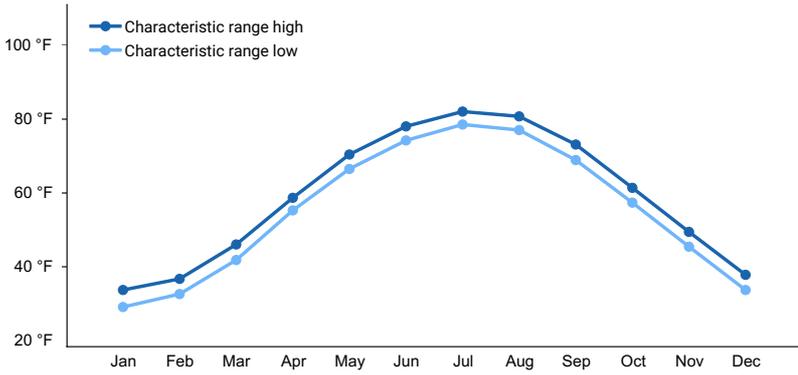
Frost-free period (characteristic range)	110-134 days
Freeze-free period (characteristic range)	136-168 days
Precipitation total (characteristic range)	38-49 in
Frost-free period (actual range)	101-136 days
Freeze-free period (actual range)	136-168 days
Precipitation total (actual range)	36-51 in
Frost-free period (average)	122 days
Freeze-free period (average)	154 days
Precipitation total (average)	43 in



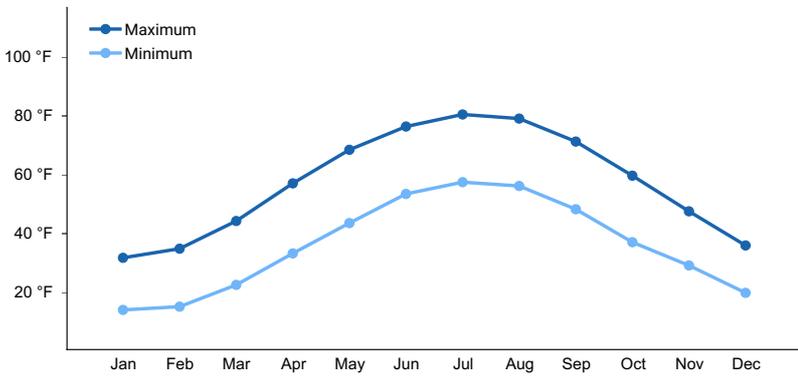
**Figure 1. Monthly precipitation range**



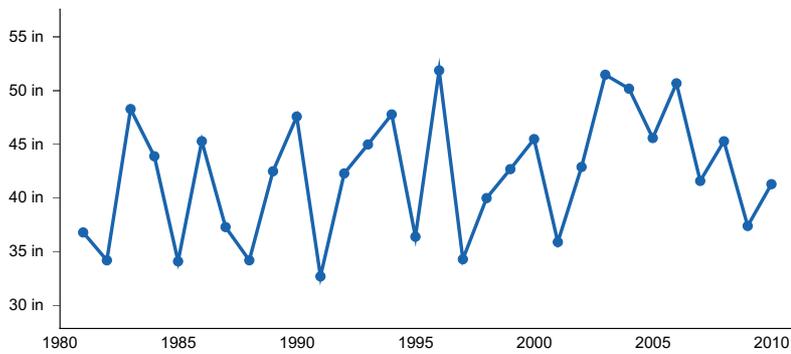
**Figure 2. Monthly minimum temperature range**



**Figure 3. Monthly maximum temperature range**



**Figure 4. Monthly average minimum and maximum temperature**



**Figure 5. Annual precipitation pattern**

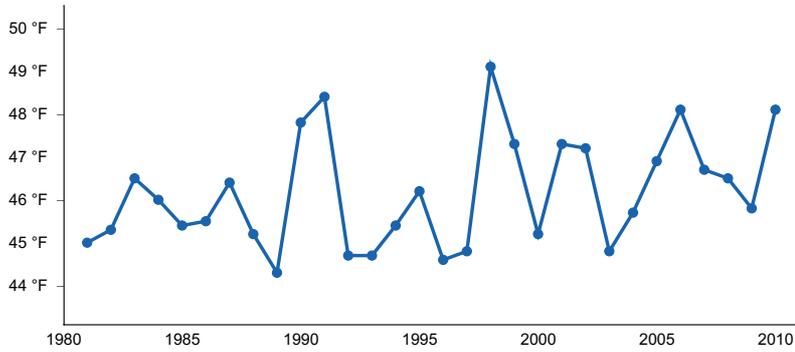


Figure 6. Annual average temperature pattern

### Climate stations used

- (1) BINGHAMTON [USW00004725], Johnson City, NY
- (2) STROUDSBURG [USC00368596], East Stroudsburg, PA
- (3) TOWANDA 1 S [USC00368905], Towanda, PA
- (4) MONTROSE [USC00365915], Montrose, PA
- (5) CORNING [USC00301787], Corning, NY
- (6) ROCK HILL 3 SW [USC00307210], Rock Hill, NY
- (7) CANTON [USC00361212], Canton, PA

### Influencing water features

#### Soil features

The soils consists of shallow, somewhat excessively drained loamy soils that formed in glacial till derived from limestone, dolomite, shale, and sandstone. Representative soil is Farmington.

Table 4. Representative soil features

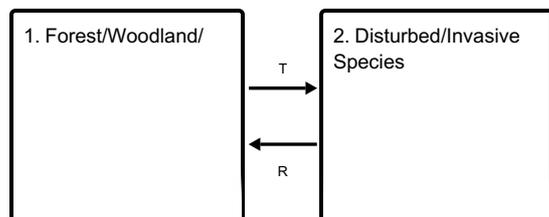
Parent material	(1) Till–limestone
Surface texture	(1) Loam (2) Silt loam (3) Fine sandy loam
Family particle size	(1) Loamy
Drainage class	Somewhat excessively drained
Soil depth	16 in
Available water capacity (Depth not specified)	2 in
Calcium carbonate equivalent (Depth not specified)	0–5%
Soil reaction (1:1 water) (Depth not specified)	5.1–7.8
Subsurface fragment volume >3" (Depth not specified)	5–23%

### Ecological dynamics

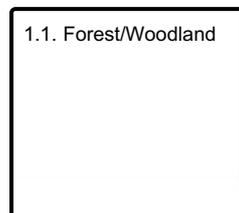
The reference community coincides with NY Natural Heritage Community: Limestone Woodland and NatureServe's Sugar Maple - Hophornbeam - Shagbark Hickory - Northern Red Oak Limestone Woodland.

### State and transition model

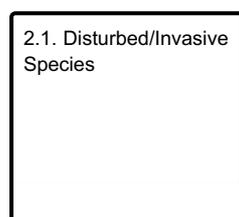
## Ecosystem states



## State 1 submodel, plant communities



## State 2 submodel, plant communities



## State 1 Forest/Woodland/

The reference community coincides with NY Natural Heritage Community: Limestone Woodland and NatureServe's Sugar Maple - Hophornbeam - Shagbark Hickory - Northern Red Oak Limestone Woodland.

## Community 1.1 Forest/Woodland

Late successional (mature) forest/woodland

## State 2 Disturbed/Invasive Species

## Community 2.1 Disturbed/Invasive Species

Invasive species, such as black swallow-wort (*Cynanchum louiseae*), Morrow's honeysuckle (*Lonicera morrowii*), and buckthorn (*Rhamnus cathartica*) (New York Natural Heritage, 2014).

## Transition T State 1 to 2

Soil disturbance, vehicle traffic, logging, over-utilization of plant resources.

## Restoration pathway R State 2 to 1

Removal of disturbance, restoration of structure and function of the site. Invasive plant species control.

## Conservation practices

Restoration and Management of Rare and Declining Habitats

Restoration and Management of Natural Ecosystems
Native Plant Community Restoration and Management
Invasive Plant Species Control

## Additional community tables

### Inventory data references

Site Development and Testing Plan:

Future work to validate the vegetation information in this provisional ecological site description is needed. This will include field activities to collect low and medium intensity sampling and analysis of that data. Field reviews should be done by soil scientists and vegetation specialists. A final field review, peer review, quality control, and quality assurance reviews of the ESD will be needed to produce the final approved level document. Reviews of the project plan are to be conducted by the Ecological Site Technical Team.

### Other 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.

### Approval

Nels Barrett, 5/20/2020

### 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	04/25/2024
Approved by	Nels Barrett
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

### Indicators

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

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

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

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**
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5. **Number of gullies and erosion associated with gullies:**
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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):**
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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):**
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-**

production):

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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:**
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