Ecological site F140XY014NY
Low Floodplain

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Accessed: 05/21/2025

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

NY Natural Heritage Program Plant Community Classification:
Floodplain Forest

PA Natural Heritage Program Plant Community Classification:
Sycamore – Mixed Hardwood Floodplain Forest
Sycamore Floodplain Forest

International Vegetation Classification Associations:
Terrace Hardwood Floodplain Forest (CEGL006114)

NatureServe Ecological Systems
Central Appalachian River Floodplain (CES202.608)

Ecological site concept

Landform/Landscape Position:
The site occurs on floodplains. Slopes range from 0 to 3 percent.

Soils:
The soils consists of very deep, moderately well to somewhat poorly drained, coarse-loamy soils formed in recent alluvium. Representative soils are Bash, Basher, Deposit, Holderton, Middlebury, and Otego.

Vegetation:
The reference community is characterized by American sycamore, American elm, green ash, cottonwood, silver maple, spicebush, dogwoods, sensitive fern, jewelweed, and numerous sedges.

Associated sites

F140XY030NY	**Well Drained Dense Till**

Similar sites

F140XY015NY	**Wet Low Floodplain**
F140XY021NY	**Dry Outwash**

Table 1. Dominant plant species

Tree	(1) *Platanus occidentalis* (2) *Fraxinus americana*
Shrub	(1) *Cornus amomum* (2) *Physocarpus opulifolius*
Herbaceous	(1) *Boehmeria cylindrica* (2) *Pilea pumila*

Physiographic features

The site occurs on floodplains, floodplain steps, and alluvial fans. Slopes range from 0 to 6 percent.

Table 2. Representative physiographic features

Landforms	(1) Valley > Flood plain (2) River valley > Alluvial fan (3) Flood-plain step
Runoff class	Very low to very high
Flooding frequency	None to frequent
Ponding frequency	None
Elevation	98–2,998 ft
Slope	0–6%
Water table depth	12–48 in
Aspect	Aspect is not a significant factor

Table 3. Representative physiographic features (actual ranges)

Runoff class	Not specified
Flooding frequency	Not specified
Ponding frequency	Not specified
Elevation	Not specified
Slope	0–6%
Water table depth	Not specified

Climatic features

The Koppen-Geiger climate classification of the area in which this MLRA occurs is Dfb, Warm-summer humid continental. Mean annual precipitation is 43 inches and evenly distributed throughout the year. Rainfall occurs as high-intensity, convective

thunderstorms in the summer. However, snow comprises most of the precipitation in this area; snowfall is common from late in autumn to early spring. Average frost-free and freeze-free days are 122 and 153, respectively, with the coldest temperatures and the shortest frost-free periods occurring in the high-elevation areas in the eastern part of the MLRA.

Table 4. 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
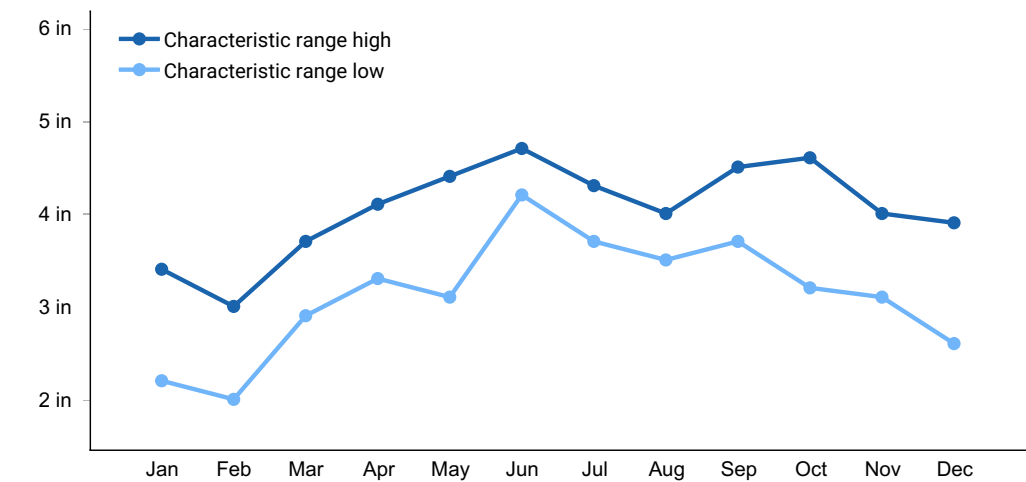
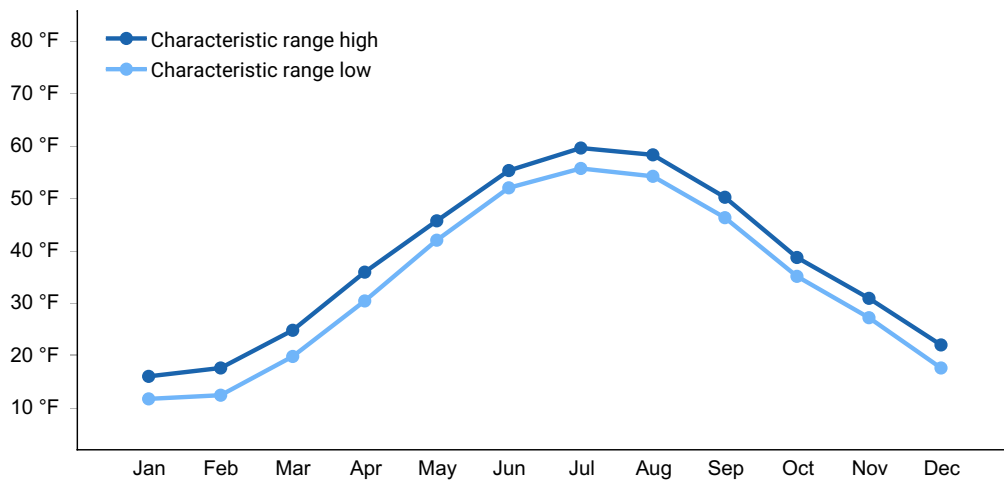**Figure 1. Monthly precipitation range**

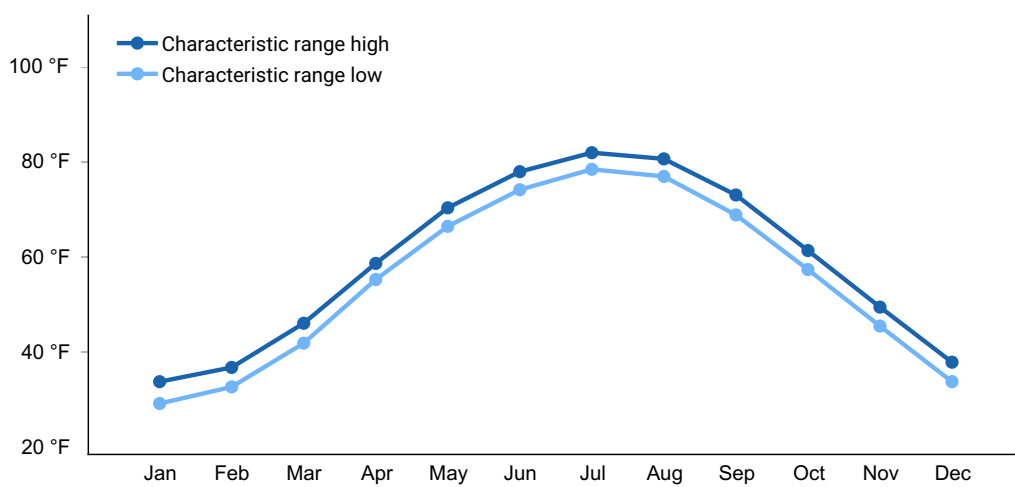**Figure 2. Monthly minimum temperature range**

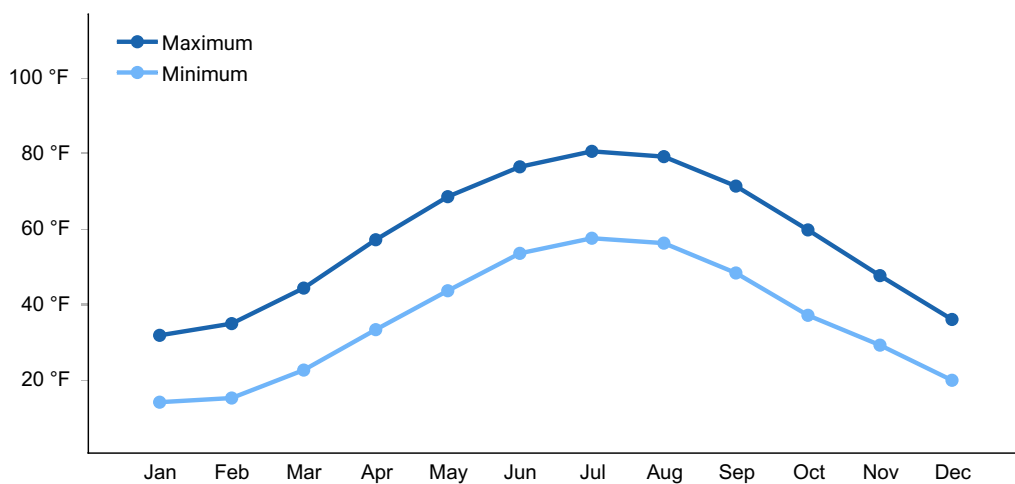**Figure 3. Monthly maximum temperature range**

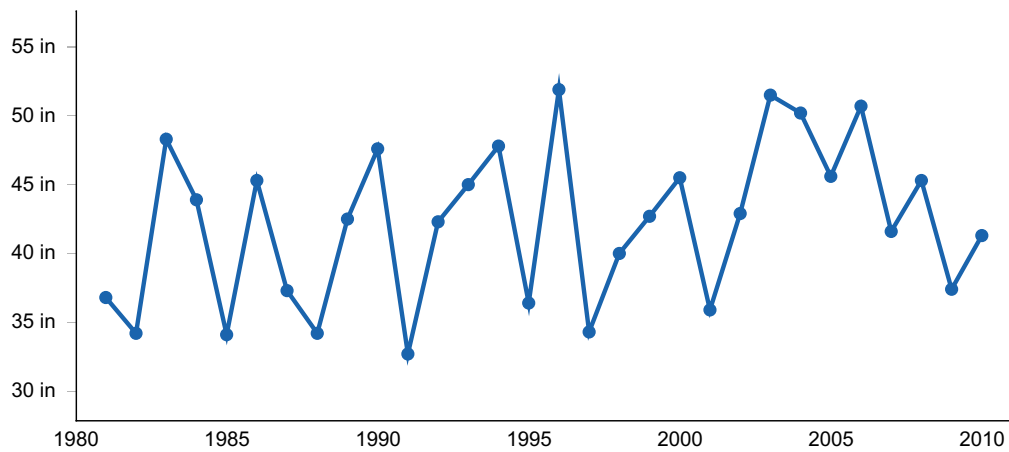**Figure 4. Monthly average minimum and maximum temperature**
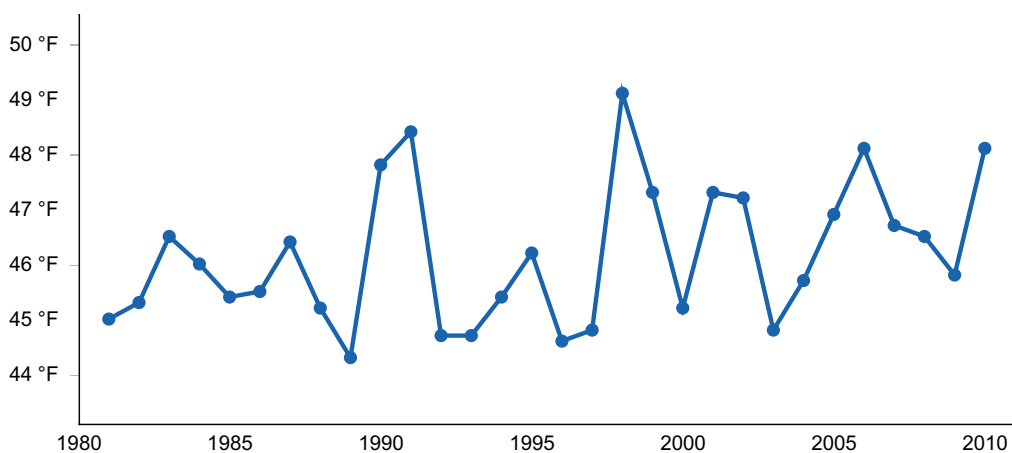
Figure 5. Annual precipitation pattern

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 very deep, moderately well to somewhat poorly drained, coarse-loamy soils formed in recent alluvium. Soil components are Bash, Basher, Eel (teel), Farnham, Middlebury, Naples Creek, Orrville, Otego, and Wakeville.

Table 5. Representative soil features

Parent material	(1) Alluvium–sandstone and shale (2) Glaciofluvial deposits–siltstone (3) Sedimentary rock (4) Limestone
Surface texture	(1) Silt loam (2) Gravelly silt loam (3) Fine sandy loam (4) Channery silt loam (5) Silty clay loam
Family particle size	(1) Coarse-loamy (2) Coarse-silty (3) Fine-loamy (4) Fine-silty (5) Loamy (6) Loamy-skeletal
Drainage class	Somewhat poorly drained to somewhat excessively drained
Permeability class	Very slow to moderate
Depth to restrictive layer	55–72 in
Surface fragment cover <=3"	0%
Surface fragment cover >3"	2%
Available water capacity (Depth not specified)	2–8 in
Soil reaction (1:1 water) (Depth not specified)	3.6–8.4
Subsurface fragment volume <=3" (Depth not specified)	Not specified
Subsurface fragment volume >3" (Depth not specified)	0–18%

Table 6. Representative soil features (actual values)

Drainage class	Not specified
Permeability class	Not specified
Depth to restrictive layer	Not specified
Surface fragment cover <=3"	Not specified
Surface fragment cover >3"	Not specified
Available water capacity (Depth not specified)	Not specified

|	
Soil reaction (1:1 water) (Depth not specified)	Not specified
Subsurface fragment volume <=3" (Depth not specified)	0–35%
Subsurface fragment volume >3" (Depth not specified)	0–20%

Ecological dynamics

The reference community is characterized by American sycamore, American elm, green ash, cottonwood, silver maple, spicebush, dogwoods, sensitive fern, jewelweed, and numerous sedges.
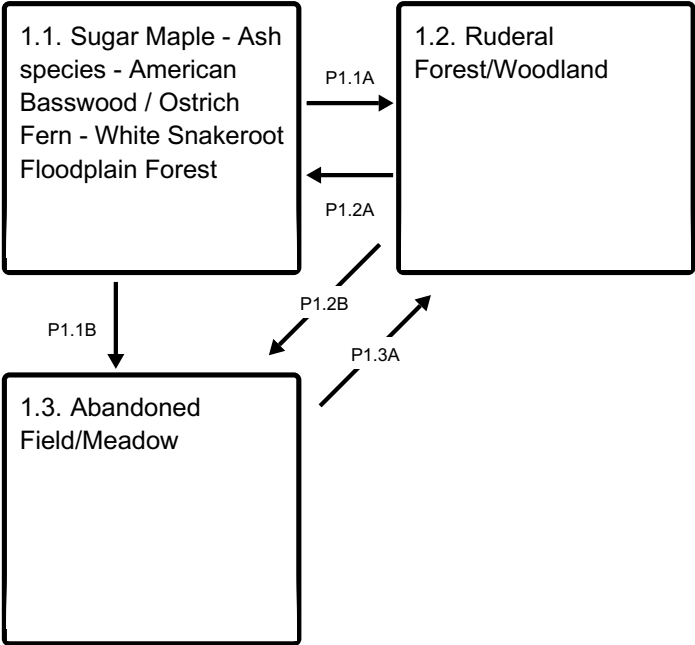
Invasive exotic plants are a significant threat to the community since many can successfully displace native species. Common invasive exotic plants are Japanese barberry, Norway maple, Oriental bittersweet, European bush honeysuckle, garlic mustard, and Japanese stiltgrass.

State and transition model

Ecosystem states
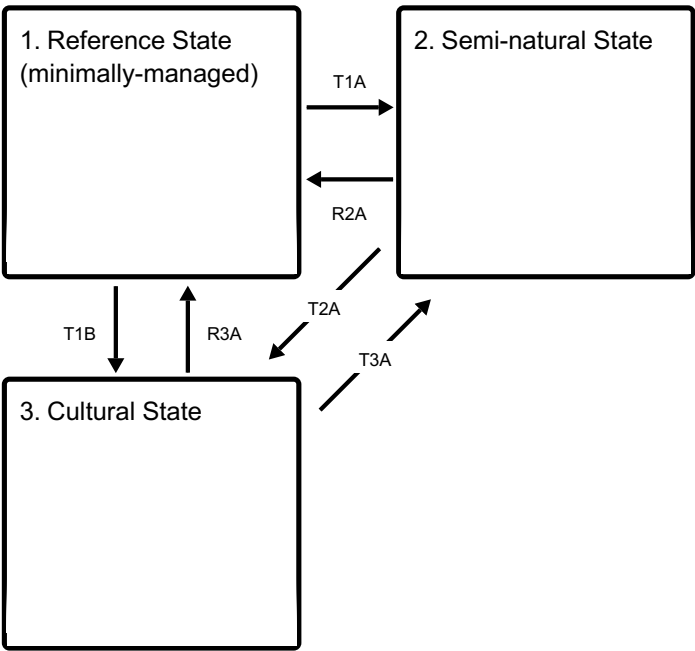
State 1 submodel, plant communities

1.1. Sugar Maple - Ash species - American Basswood / Ostrich Fern - White Snakeroot Floodplain Forest	P1.1A →	1.2. Ruderal Forest/Woodland

P1.2A

P1.1B

P1.2B

P1.3A

1.3. Abandoned Field/Meadow

State 2 submodel, plant communities

2.1. Managed Trees/Shrubs/Herbs(?)

P2.1

2.2. Invasive Plants

P2.2
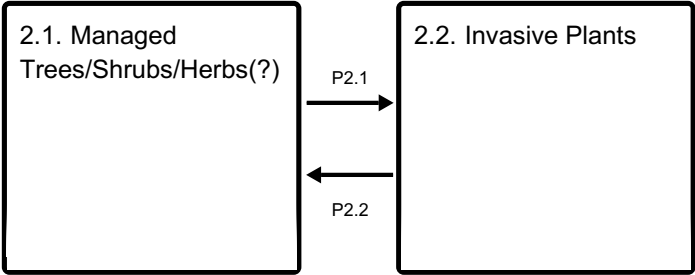
State 3 submodel, plant communities

3.1. Cultivated

P3.1A

3.2. Pasture

P3.2A

P3.1B

P3.3A

P3.2B

P3.3B

3.3. Plantation
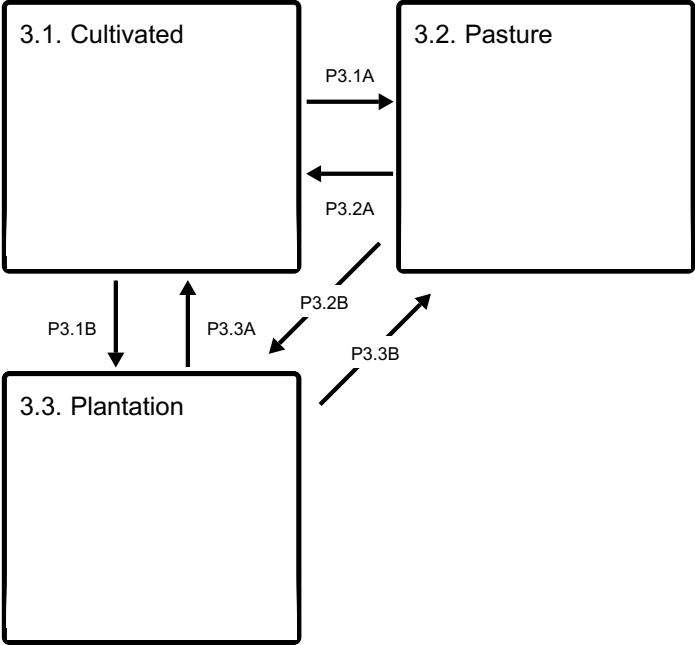
State 1
Reference State (minimally-managed)

High Floodplain Levee

Community 1.1
Sugar Maple - Ash species - American Basswood / Ostrich Fern - White Snakeroot Floodplain Forest

Community 1.2
Ruderal Forest/Woodland

Community 1.3
Abandoned Field/Meadow

Pathway P1.1A
Community 1.1 to 1.2

Disturbance

Pathway P1.1B
Community 1.1 to 1.3

Disturbance

Pathway P1.2A
Community 1.2 to 1.1

Abandonment, Sucession

Pathway P1.2B
Community 1.2 to 1.3

Disturbance

Pathway P1.3A
Community 1.3 to 1.2

Abandonment, Succession

State 2
Semi-natural State

Floodplain forests altered by disturbance (usually w/invasive plants) or managed floodplain forests

Community 2.1
Managed Trees/Shrubs/Herbs(?)

Community 2.2
Invasive Plants

Pathway P2.1
Community 2.1 to 2.2

Disturbance, Invasive species establishment

Pathway P2.2
Community 2.2 to 2.1

Invasive spp. Control, Forest mgmt.

State 3
Cultural State

Different phase of intense land use - may be cultivated crops, pasture/hay, or plantations (including nursery crops)

Community 3.1
Cultivated

Community 3.2
Pasture

Community 3.3
Plantation

Pathway P3.1A
Community 3.1 to 3.2

Changing agricultural phases

Pathway P3.1B
Community 3.1 to 3.3

Changing agricultural phases

Pathway P3.2A
Community 3.2 to 3.1

Changing agricultural phases

Pathway P3.2B
Community 3.2 to 3.3

Changing agricultural phases

Pathway P3.3A
Community 3.3 to 3.1

Changing agricultural phases

Pathway P3.3B
Community 3.3 to 3.2

Changing agricultural phases

Transition T1A
State 1 to 2

altered by Disturbance or Management

Conservation practices

Tree/Shrub Establishment
Forest Stand Improvement
Forest Land Management

Transition T1B
State 1 to 3

Disturbance, clearing, cutting

Conservation practices

Brush Management
Land Clearing
Herbaceous Weed Control

Restoration pathway R2A
State 2 to 1

Plant removals, plantings, Invasive plant control, successional mgmt., forestry practices Restoration & Mgmt, Forest Stand Improvement, Early Successional Habitat Development, Upland Wildlife Mgmt, Invasive spp. Control, Plant establishment

Conservation practices

Early Successional Habitat Development/Management
Restoration and Management of Natural Ecosystems
Native Plant Community Restoration and Management
Forest Land Management
Invasive Plant Species Control

Transition T2A
State 2 to 3

Disturbance, clearing, cutting

Conservation practices

Brush Management
Land Clearing
Herbaceous Weed Control

Restoration pathway R3A
State 3 to 1

Plant removals, plantings, Invasive plant control, successional mgmt., forestry practices Restoration & Mgmt, Forest Stand Improvement, Early Successional Habitat Development, Upland Wildlife Mgmt, Invasive spp. Control, Plant establishment

Conservation practices

Early Successional Habitat Development/Management
Restoration and Management of Natural Ecosystems
Native Plant Community Restoration and Management
Forest Land Management
Invasive Plant Species Control

Transition T3A
State 3 to 2

Abandonment, Plant establishment, Forest mgmt.

Conservation practices

Tree/Shrub Establishment
Forest Stand Improvement
Forest Land Management

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.

Zimmerman, E., T. Davis, G. Podniesinski, M. Furedi, J. McPherson, S. Seymour, B. Eichelberger, N. Dewar, J. Wagner, and J. Fike (editors). 2012. Terrestrial and Palustrine Plant Communities of Pennsylvania, 2nd Edition. Pennsylvania Natural Heritage Program, Pennsylvania Department of Conservation and Natural Resources, Harrisburg, Pennsylvania.

Contributors

Joshua Hibit

Approval

Greg Schmidt, 10/01/2024

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	05/20/2020
Approved by	Greg Schmidt
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:**

17. **Perennial plant reproductive capability:**