

Ecological site F144AY015NY

Wet Silty Low Floodplain

Last updated: 5/01/2019
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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): 144A–New England and Eastern New York Upland, Southern Part

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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 in much of the area, but it is 2,000 feet on some hills. Relief is mostly about 6 to 65 feet in the valleys and about 80 to 330 feet 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 deep, coarse-silty, poorly drained, alluvial soils on low floodplains of mostly large river valleys but can occasionally be found within small river valleys. These floodplains are subject annual spring flooding. Water is at or near the surface for much of the growing season. Representative soils are Lim, Limerick, Bash, and Linlithgo.

The reference community is a silver maple dominated forest. Silver maple is often the only tree species present although an occasional green ash and cottonwood may occur. The understory is characterized by a lack of shrubs and dominance of smallspike false nettle and Canadian clearweed. Other plants include sensitive fern, eastern poison ivy, and white grass (Metzler and Barrett 2006).

The frequency, duration, and timing of floods is the primary natural disturbance affecting species composition. Floodplain forests are commonly found in early to mid-successional stages because of the dynamic nature of floodplains (Thompson and Sorenson 2000). Eastern cottonwood and or black willow would be more common in an early successional forest type along major rivers.

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.

Table 1. Dominant plant species

Tree	(1) <i>Acer saccharinum</i>
Shrub	Not specified
Herbaceous	(1) <i>Boehmeria cylindrica</i>

Physiographic features

The site occurs on nearly level soils on floodplains along major perennial streams. Slopes range from 0 to 3 percent.

Table 2. Representative physiographic features

Landforms	(1) Flood plain (2) Alluvial flat
Flooding duration	Brief (2 to 7 days)
Flooding frequency	Occasional
Water table depth	0–23 cm
Aspect	Aspect is not a significant factor

Climatic features

Mean annual precipitation is 47 inches and is usually uniformly distributed throughout the year. Frost free and freeze free days average 138 and 165, respectively.

Table 3. Representative climatic features

Frost-free period (average)	138 days
Freeze-free period (average)	165 days
Precipitation total (average)	1,194 mm

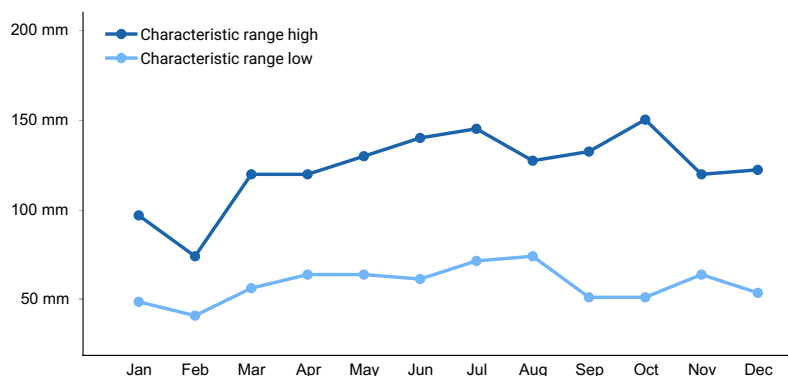


Figure 1. Monthly precipitation range

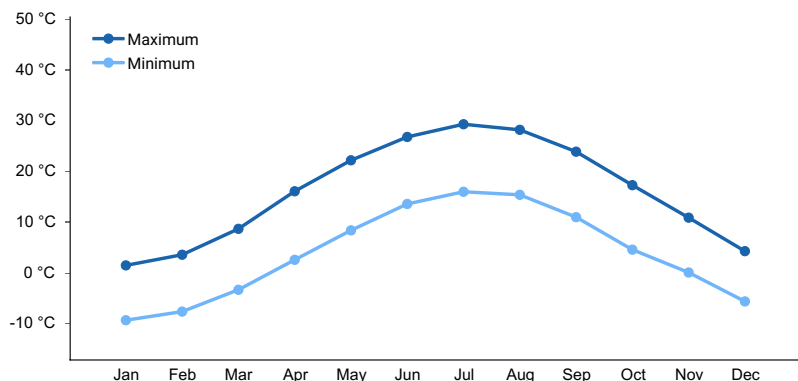


Figure 2. Monthly average minimum and maximum temperature

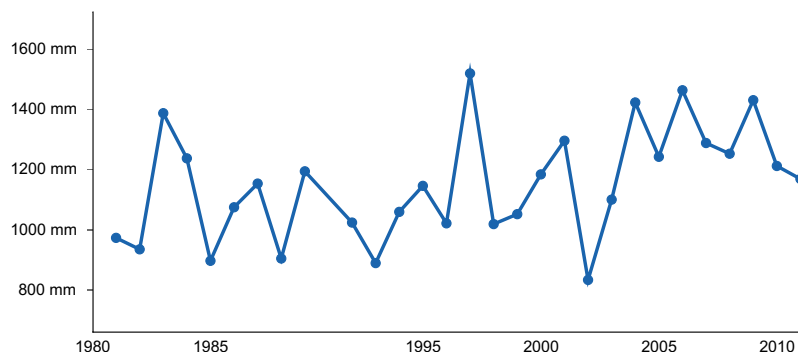


Figure 3. Annual precipitation pattern

Climate stations used

- (1) RHINEBECK 4SE [USC00307035], Rhinebeck, NY
- (2) VALATIE 1 N [USC00308746], Valatie, NY
- (3) HUDSON COR.FACILITY [USC00304025], Athens, NY
- (4) WEST POINT [USC00309292], Cold Spring, NY

Influencing water features

Soil features

The site consists of deep, coarse-loamy and silty, poorly drained, alluvial soils on low floodplains of mostly large river valleys but can occasionally be found within small river valleys. These floodplains are subject annual spring flooding. Water is at or near the surface for much of the growing season.

Representative soils are Lim, Limerick, Bash, and Linlithgo.

Table 4. Representative soil features

Surface texture	(1) Silt loam (2) Very fine sandy loam
Drainage class	Poorly drained to somewhat poorly drained
Permeability class	Slow to moderate
Soil depth	183 cm
Soil reaction (1:1 water) (0-101.6cm)	4.5–7.8
Subsurface fragment volume <=3" (Depth not specified)	5–30%
Subsurface fragment volume >3" (Depth not specified)	0–5%

Ecological dynamics

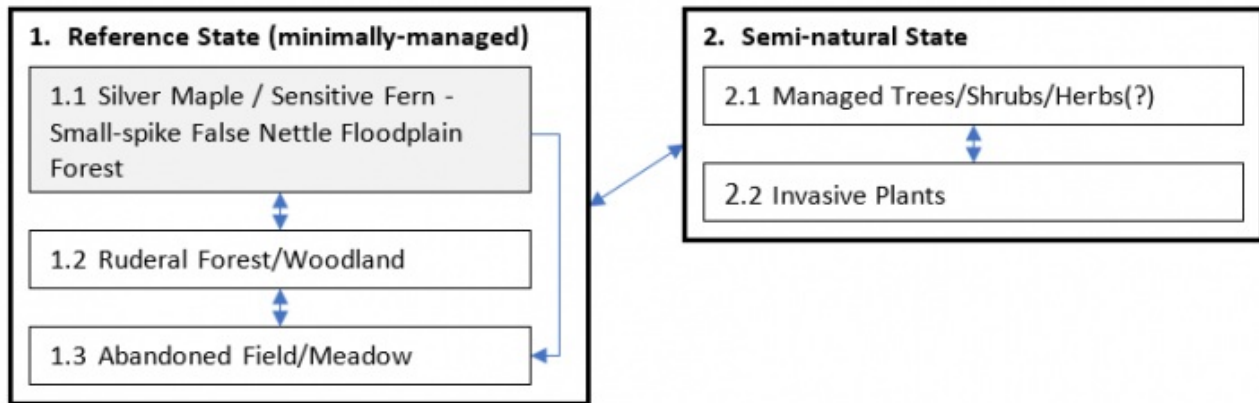
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State and transition model

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<i>Transition</i>	<i>Drivers/practices</i>
T1-2	Forest mgmt., Disturbance
R2-1	Restoration & <u>Mgmt</u> , Forest Stand Improvement, Early Successional Habitat Development, Upland Wildlife <u>Mgmt</u> , Invasive spp. Control, Plant establishment
CP2.1-2.2	Disturbance, Invasive species establishment
CP2.2-2.1	Invasive spp. Control, Forest mgmt..
CP1.3-1.2, CP1.2-1.1	Abandonment, succession
CP1.1-1.2/1.3, CP1.2-1.3,	Disturbance, Early Successional Habitat Development

State 1

Reference State (minimally-managed)

Silver Maple Floodplain Bottom Forest (Sensitive Fern Type)

Community 1.1

Silver Maple / Sensitive Fern - Small-spike False Nettle Floodplain Forest

Community 1.2

Ruderal Wet Forest / Wet Woodland

Community 1.3

Abandoned Wet Field / Wet Meadow

Pathway CP1.1-1.2

Community 1.1 to 1.2

Disturbance

Pathway CP1.1-1.3
Community 1.1 to 1.3

Disturbance

Pathway CP1.2-1.3
Community 1.2 to 1.1

Abandonment, succession

Pathway CP1.2-1.3
Community 1.2 to 1.3

Disturbance

Pathway CP1.3-1.2
Community 1.3 to 1.2

Abandonment, succession

State 2
Semi-natural State

Altered by human disturbance or management

Community 2.1
Managed Trees/Shrubs/Herbs(/)

Community 2.2
Invasive Plants

Pathway CP2.1-2.2
Community 2.1 to 2.2

Disturbance, Invasive species establishment

Pathway CP2.2-2.1
Community 2.2 to 2.1

Invasive spp. Control, Forest mgmt.

Transition T1-2
State 1 to 2

Forest management or disturbance with invasive plant establishment

Restoration pathway R2-1
State 2 to 1

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

Additional community tables

Other references

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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.

Approval

Nels Barrett, 5/01/2019

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:**

17. **Perennial plant reproductive capability:**
