USDA Natural Resources Conservation Service

Ecological site F144AY014CT
Wet Sandy 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-loamy, poorly drained, alluvial soils on low floodplains of mostly small to medium sized river valleys but can also be found within large river valleys. These floodplains are subject annual flooding. Water is at or near the surface for much of the growing season. Representative soil is Rippowam.

The reference plant community is considered to be an alluvial red maple dominated forest. Silver maple may occur along riverbanks, with lesser amounts of American elm, sugar maple, green ash, white oak, and shagbark hickory. Common shrubs include northern arrow-wood, silky dogwood, and buttonbush. Sensitive fern, cinnamon fern, false nettle, jewelweeds, awned sedge, and rice cutgrass are common herbaceous plants.

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 (Swain and Kearsley 2011).

Invasive exotic plants are a significant threat to the community since many can successfully displace native species. Common invasive exotic plants are glossy alder-buckthorn, Japanese barberry, Norway maple, Oriental bittersweet,

European bush honeysuckle, moneywort, garlic mustard, and Japanese stiltgrass.

Table 1. Dominant plant species

Tree	(1) *Acer rubrum*
Shrub	(1) *Viburnum dentatum*
Herbaceous	(1) *Onoclea sensibilis*

Physiographic features

The site occurs on low floodplains of mostly small to medium sized river valleys but can also be found within large river valleys. These floodplains are subject annual flooding. Water is at or near the surface for much of the growing season.

Table 2. Representative physiographic features

Landforms	(1) Flood plain
Flooding duration	Brief (2 to 7 days)
Flooding frequency	None to frequent
Ponding frequency	None
Water table depth	0–23 cm
Aspect	Aspect is not a significant factor

Climatic features

Mean annual precipitation is 52 inches and is usually uniformly distributed throughout the year. Frost free and freeze free days average 161 and 187, respectively.

Table 3. Representative climatic features

Frost-free period (average)	161 days
Freeze-free period (average)	187 days
Precipitation total (average)	1,321 mm

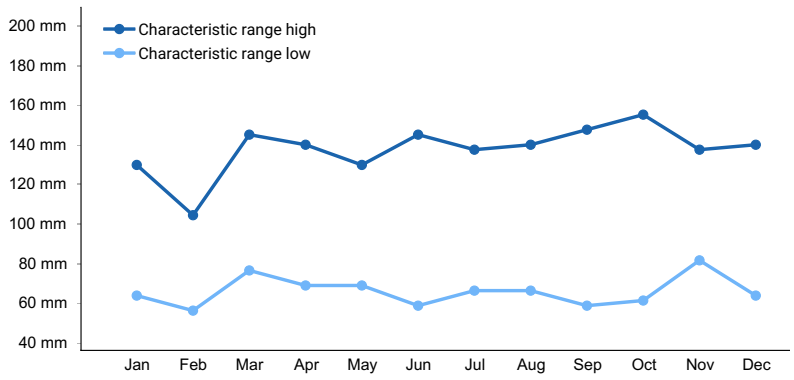

Figure 1. Monthly precipitation range

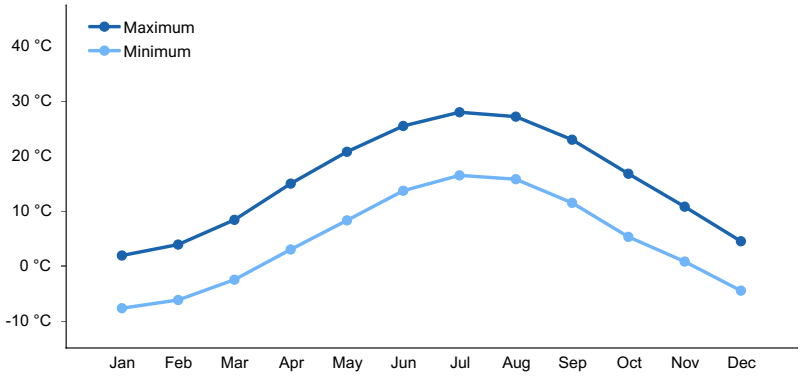

Figure 2. Monthly average minimum and maximum temperature

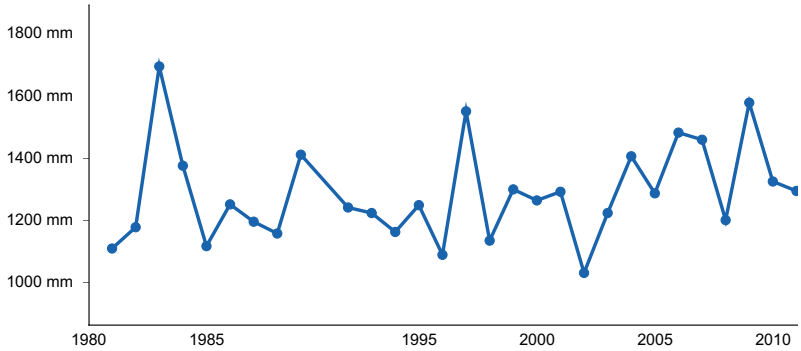

Figure 3. Annual precipitation pattern

Climate stations used

- (1) DANBURY [USC00061762], Bethel, CT
- (2) KINGSTON [USC00374266], Kingston, RI
- (3) WORCESTER RGNL AP [USW00094746], Leicester, MA
- (4) DOBBS FERRY ARDSLEY [USC00302129], Ardsley, NY
- (5) STORRS [USC00068138], Storrs Mansfield, CT
- (6) NASHUA 2 NNW [USC00275712], Merrimack, NH

Influencing water features

Soil features

The site consists of deep, coarse-loamy, poorly drained, alluvial soils on low floodplains of mostly small to medium sized river valleys but can also be found within large river valleys. These floodplains are subject annual flooding. Water is at or near the surface for much of the growing season. Soil pH ranges from very strongly acid to neutral.

Representative soil is Rippowam.

Table 4. Representative soil features

Parent material	(1) Alluvium–granite
Surface texture	(1) Fine sandy loam (2) Sandy loam (3) Very fine sandy loam
Drainage class	Poorly drained
Permeability class	Moderate to moderately slow
Soil depth	183 cm
Surface fragment cover <=3"	0%

Surface fragment cover >3"	0%
Available water capacity (0-101.6cm)	10.16–12.7 cm
Soil reaction (1:1 water) (0-101.6cm)	4.5–7.3
Subsurface fragment volume <=3" (Depth not specified)	5–20%
Subsurface fragment volume >3" (Depth not specified)	0–5%

Ecological dynamics

The reference plant community is considered to be an alluvial red maple dominated forest. Silver maple may occur along riverbanks, with lesser amounts of American elm, sugar maple, green ash, white oak, and shagbark hickory. Common shrubs include northern arrow-wood, silky dogwood, and buttonbush. Sensitive fern, cinnamon fern, false nettle, jewelweeds, awned sedge, and rice cutgrass are common herbaceous plants.

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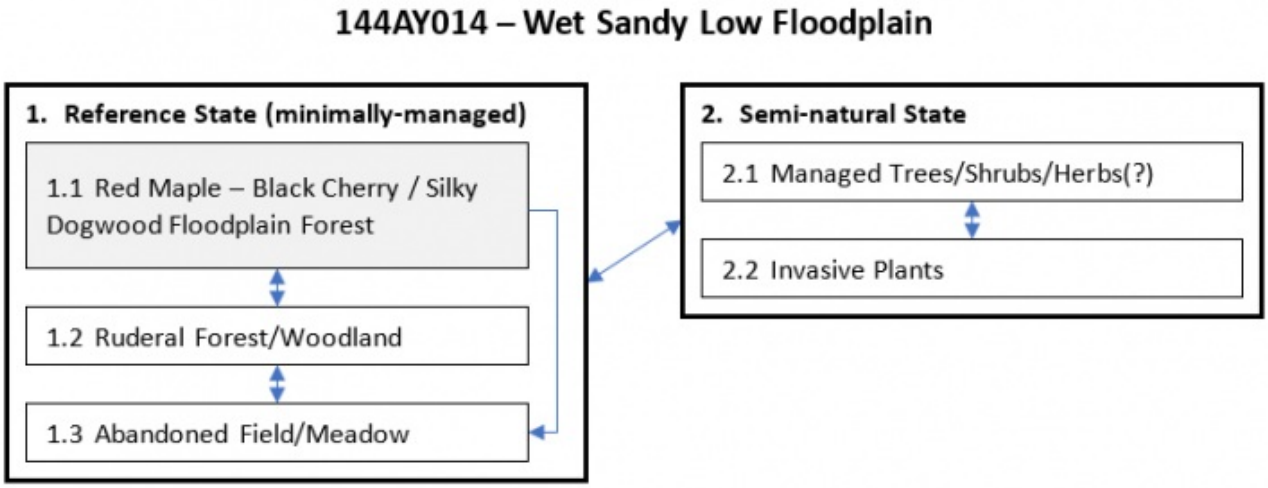
State and transition model



Transition	*Drivers/practices*
T1-2	Forest mgmt., Disturbance
R2-1	Restoration & Mgmt, Forest Stand Improvement, Early Successional Habitat Development, Upland Wildlife Mgmt, 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)

Red Maple Floodplain Forest

Community 1.1
Red Maple – Black Cherry / Silky Dogwood 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 CP1.2-1.1
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

Invasive plant establishment

Pathway CP2.2-2.1
Community 2.2 to 2.1

Invasive spp. Control, Forest mgmt..

Transition T1-2
State 1 to 2

Disturbance, Forest Mgmt

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

Conservation practices

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

Additional community tables

Other references

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Sperduto, D.D., & Nichols, W.F. 2011. Natural Communities of New Hampshire, Second Ed. NH Natural Heritage Bureau, Concord, NH. Publ. UNH Cooperative Extension.

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.

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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:

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

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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:**
