Ecological site F144AY019NH
Wet Lake Plain

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

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 very deep, poorly drained soils formed in clayey, silty and loamy over clayey sediments. They are nearly level to gently sloping soils in low-lying positions on glaciolacustrine and marine terraces. There may be two geographically distinct areas, inland sites (along the Hudson: representative soils are Madalin, Parsippany, Great Piece, and Passaic) and coastal sites (in Northeast MA and Southeast NH: representative soils Scitico (coastal), Shaker, Raynham (coastal) and Squamscott.
The reference community is typified by (NY) “red maple - ash forest” These communities may be perched or show seepage (and maybe considered minerotrophic (slightly enriched) forests?). The dominant tree is red maple with green ash or white ash . Other trees include pin oak and black gum. shrubs include northern spicebush and winterberry holly, and northern arrowwood. Groundcover is variable w/ skunk cabbage and and/or ferns : cinnamon fern, royal fern, marsh fern; and sedges: Gray’s sedge, fringed sedge, hop sedge. Depending on the water table fluctuations, the “perched” wetlands may contain a more diverse shrub layer.

Table 1. Dominant plant species

Tree	(1) *Acer rubrum*
Shrub	(1) *Lindera benzoin*

Herbaceous	(1) *Osmunda regalis*

Physiographic features

The site occurs nearly level to gently sloping soils in low-lying positions on glaciolacustrine and marine terraces. Water table depth ranges from 0 to 12 inches.

Table 2. Representative physiographic features

Landforms	(1) Lake plain (2) Depression (3) Marine terrace
Ponding frequency	None to frequent
Water table depth	0–30 cm

Climatic features

Influencing water features

Soil features

The site consists of very deep, poorly drained soils formed in clayey, silty and loamy over clayey sediments. They are nearly level to gently sloping soils in low-lying positions on glaciolacustrine and marine terraces. There may be two geographically distinct areas, inland sites (along the Hudson: representative soils are Madalin, Parsippany, Great Piece, and Passaic) and coastal sites (in Northeast MA and Southeast NH: representative soils Scitico (coastal), Shaker, Raynham (coastal) and Squamscott.

Table 3. Representative soil features

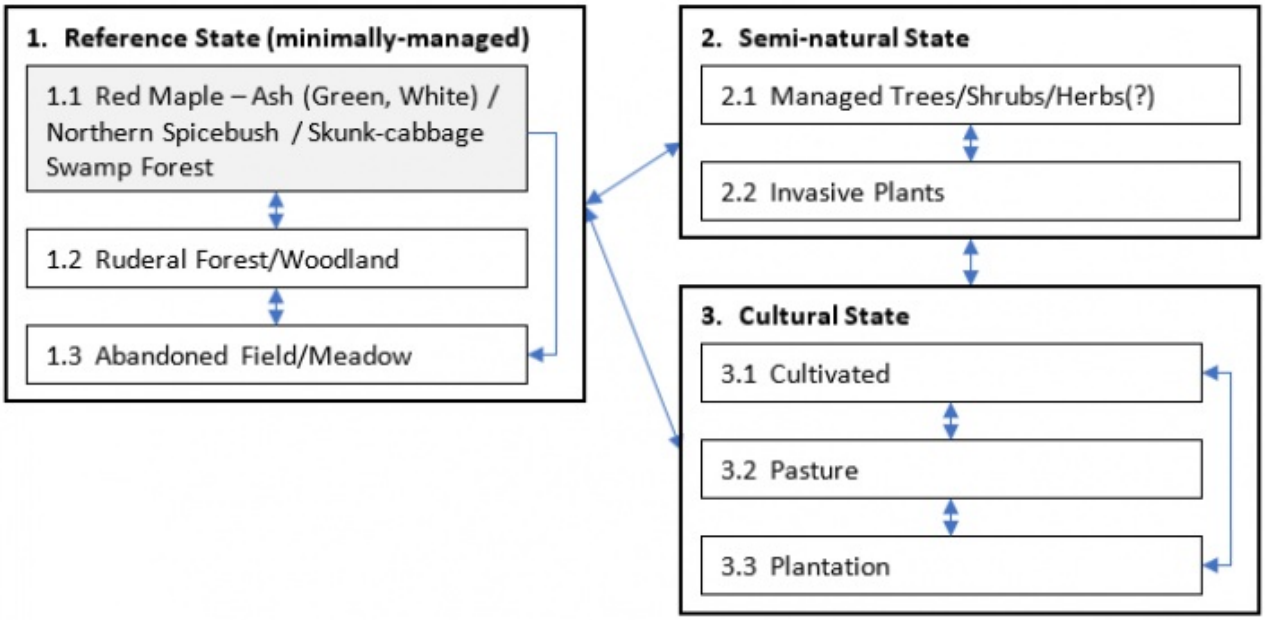
Surface texture	(1) Silt loam (2) Silty clay loam
Drainage class	Poorly drained
Soil depth	183 cm
Soil reaction (1:1 water) (0-101.6cm)	4.5–7.8

Ecological dynamics

The reference community is typified by (NY) “red maple - ash forest” These communities may be perched or show seepage (and maybe considered minerotrophic (slightly enriched) forests?). The dominant tree is red maple with green ash or white ash . Other trees include pin oak and black gum. shrubs include northern spicebush and winterberry holly, and northern arrowwood. Groundcover is variable w/ skunk cabbage and and/or ferns : cinnamon fern, royal fern, marsh fern; and sedges: Gray’s sedge, fringed sedge, hop sedge. Depending on the water table fluctuations, the “perched” wetlands may contain a more diverse shrub layer.

State and transition model

144AY019 – Wet Lake Plain



Transition	*Drivers/practices*
T1-2	Forest mgmt., Disturbance
T1-3, T2-3	Disturbance/cutting/clearing, Brush removal
R2-1, R3-1	Restoration & Mgmt, Forest Stand Improvement, Early Successional Habitat Development, Upland Wildlife Mgmt, Invasive spp. Control, Plant establishment
T3-2	Abandonment, Plant establishment, Forest mgmt.
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
CP3.1-3.2/3.3, CP 3.2-3.1/3.3 3.3-3.1/3.2	Changing agricultural phases
CP1.1-1.2/1.3, CP1.2-1.3,	Disturbance, Early Successional Habitat Development

State 1
Reference State (minimally-managed)

High Floodplain Levee

Community 1.1
Red Maple – Ash (Green, White) / Northern Spicebush / Skunk-cabbage Swamp Forest

Community 1.2
Ruderal Forest/Woodland

Community 1.3
Abandoned Field/Meadow

Pathway CP1.1-2.1
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, Sucession

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

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 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.

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 CP3.1-3.2
Community 3.1 to 3.2

Changing agricultural phases

Pathway CP3.1-3.3
Community 3.1 to 3.3

Changing agricultural phases

Pathway CP3.2-3.1
Community 3.2 to 3.1

Changing agricultural phases

Pathway CP3.2-3.3
Community 3.2 to 3.3

Changing agricultural phases

Pathway CP3.3-3.1
Community 3.3 to 3.1

Changing agricultural phases

Pathway CP3.3-3.2
Community 3.3 to 3.2

Changing agricultural phases

Transition T1-2
State 1 to 2

altered by human- induced Disturbance or Management

Conservation practices

Tree/Shrub Establishment
Forest Land Management
Forest stand improvement for habitat and soil quality

Transition T1-3
State 1 to 3

Disturbance, clearing, cutting

Conservation practices

Brush Management
Land Clearing
Herbaceous Weed Control

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, Upland Wildlife Mgmt, Invasive spp. Control, Plant establishment

Conservation practices

Brush Management
Tree/Shrub Establishment
Early Successional Habitat Development/Management
Forest Stand Improvement
Restoration and Management of Natural Ecosystems
Native Plant Community Restoration and Management
Forest Land Management
Invasive Plant Species Control

Transition T2-3
State 2 to 3

Land clearing, cutting

Conservation practices

Brush Management
Land Clearing
Herbaceous Weed Control

Restoration pathway R3-1
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

Restoration and Management of Natural Ecosystems
Native Plant Community Restoration and Management

Transition T3-2
State 3 to 2

Abandonment. Plant establishment, Forest mgmt.

Conservation practices

Tree/Shrub Establishment
Forest Stand Improvement
Forest Land Management

Additional community tables

Other references

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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:

    _____

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:**