

Ecological site F144AY017NH Well Drained Lake Plain

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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.

Ecological site concept

This site consists of deep, well-drained soils formed in silty, clayey lacustrine or marine deposits situated on nearly level plains. Representative soil is Suffield.

The reference community is the “mesic Appalachian oak-hickory forest” that contains a broad diversity of trees dominated by oaks (red, black, and white), red maple, shagbark hickory, white ash, and white pine with a sparse shrub layer of mapleleaf viburnum and beaked hazelnut, and with an moderate understory of herbs, such as indian cucumberroot, starflower, Canada mayflower and ferns such as, New York fern and hayscented fern.

Table 1. Dominant plant species

Tree	(1) <i>Quercus rubra</i>
Shrub	(1) <i>Carya ovalis</i>
Herbaceous	(1) <i>Trientalis borealis</i>

Physiographic features

Climatic features

Influencing water features

Soil features

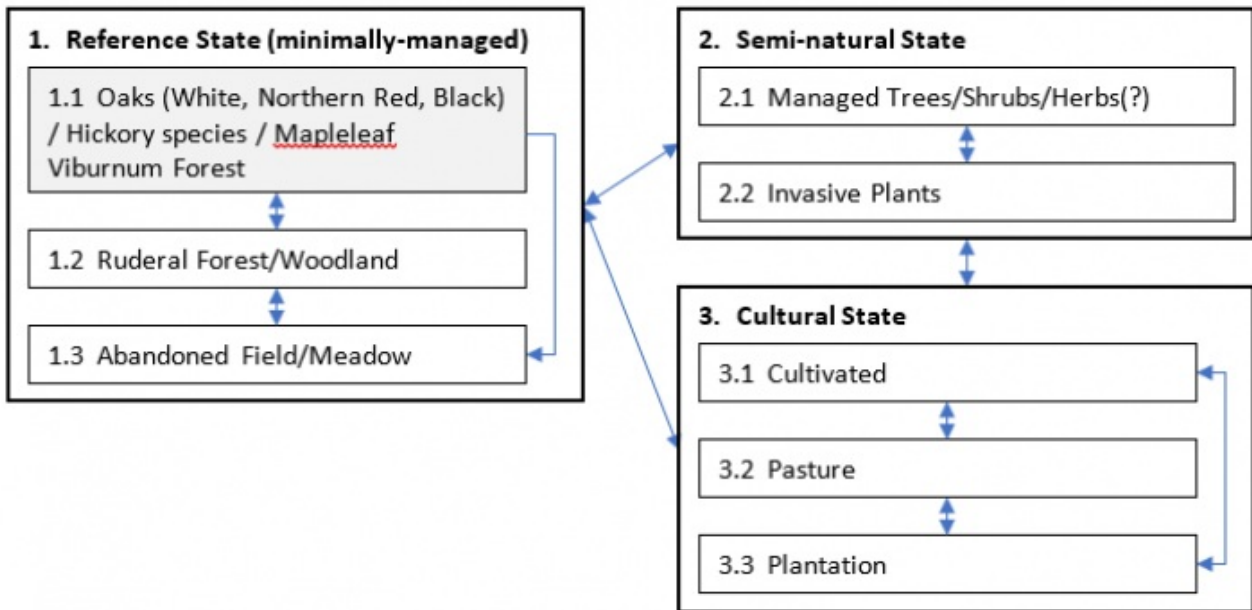
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Ecological dynamics

The reference community is the “mesic Appalachian oak-hickory forest” that contains a broad diversity of trees dominated by oaks (red, black, and white), red maple, shagbark hickory, white ash, and white pine with a sparse shrub layer of mapleleaf viburnum and beaked hazelnut, and with an moderate understory of herbs, such as indian cucumberroot, starflower, Canada mayflower and ferns such as, New York fern and hayscented fern.

State and transition model

144AY017 – Well-drained Lake Plain



<i>Transition</i>	<i>Drivers/practices</i>
T1-2	Forest mgmt., Disturbance
T1-3, T2-3	Disturbance/cutting/clearing, Brush removal
R2-1, R3-1	Restoration & <u>Mgmt</u> , Forest Stand Improvement, Early Successional Habitat Development, Upland Wildlife <u>Mgmt</u> , 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
Oaks (White, Northern Red, Black) / Hickory species / Mapleleaf Viburnum 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

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):**

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:**
