

# Ecological site F144AY032NH

## Dry Till Uplands

Accessed: 05/07/2024

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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 moderately deep to very deep, somewhat excessively drained, coarse-loamy, skeletal, glacial till derived mostly from gneiss, schist, and granite. Soils are dry and nutrient poor. Slopes range from 0 to 50 percent on hills and ridges. Representative soils are Gloucester and Lippitt.

The reference plant community is an oak dominated forest. In some places the canopy may be more open forming a woodland. Black oak and scarlet oak are often the most common on the site. Other associated trees include chestnut oak, white oak, red oak, pignut hickory, eastern white pine, and in some cases pitch pine. Black huckleberry and lowbush blueberry are common shrubs. In openings following tree falls or other natural disturbances poverty oatgrass and little bluestem may occur with early successional trees such as eastern red cedar and black birch. Invasive exotic plants such as Japanese barberry, multiflora rose, winged euonymus, and shrub honeysuckles can occur in disturbed sites.

**Table 1. Dominant plant species**

Tree	(1) <i>Quercus velutina</i> (2) <i>Quercus coccinea</i>
Shrub	(1) <i>Gaylussacia baccata</i> (2) <i>Vaccinium pallidum</i>

Herbaceous	Not specified
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### Physiographic features

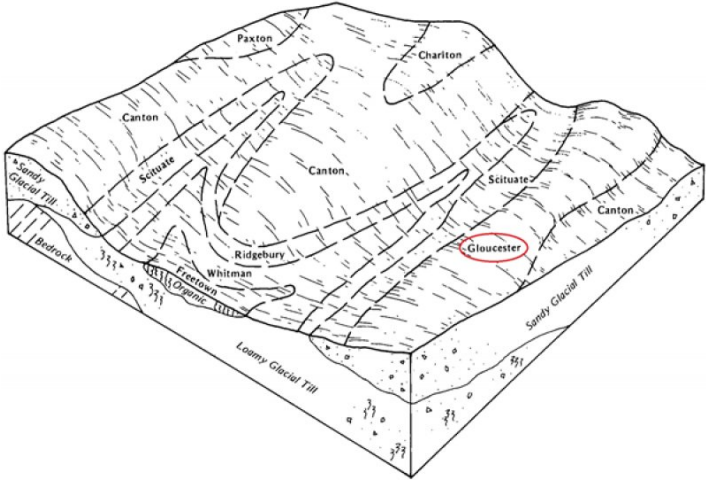


Figure 1. Dry Till Upland ecological site - Gloucester soils

### Climatic features

Mean annual precipitation is 52 inches and is usually uniformly distributed throughout the year. Frost free and freeze free days average 143 and 168, respectively.

Table 2. Representative climatic features

Frost-free period (average)	143 days
Freeze-free period (average)	168 days
Precipitation total (average)	1,321 mm

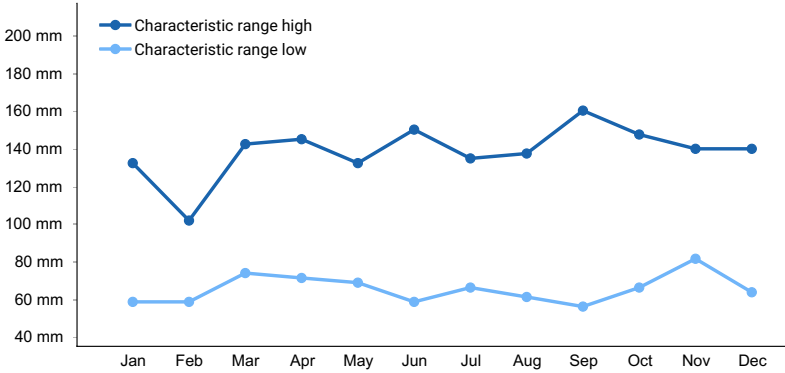


Figure 2. Monthly precipitation range

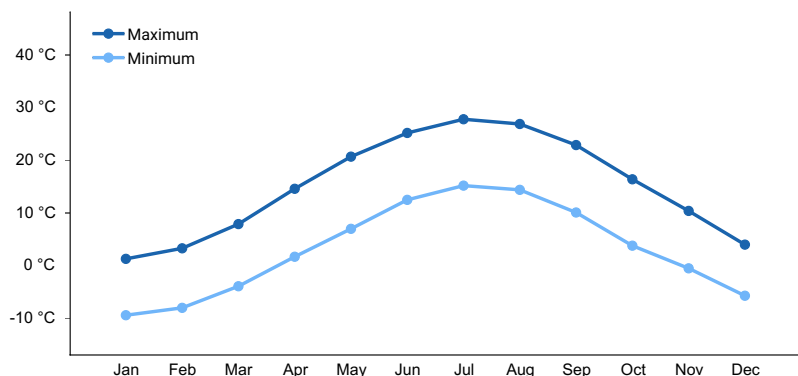


Figure 3. Monthly average minimum and maximum temperature

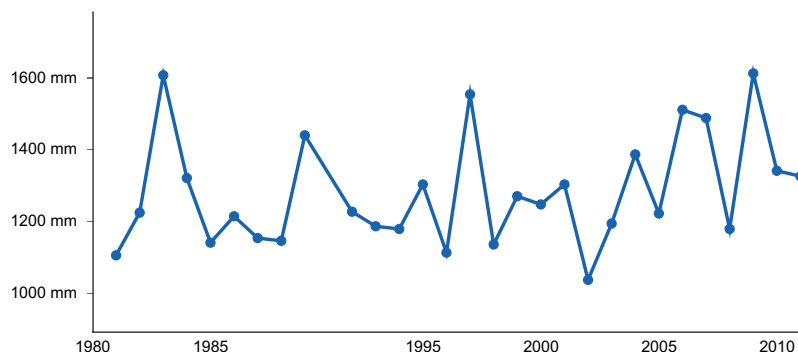


Figure 4. Annual precipitation pattern

### Climate stations used

- (1) WIGWAM RSVR [USC00069568], Morris, CT
- (2) BELCHERTOWN [USC00190562], Belchertown, MA
- (3) BAKERSVILLE [USC00060227], New Hartford, CT
- (4) EPPING [USC00272800], Fremont, NH
- (5) KINGSTON [USC00374266], Kingston, RI
- (6) STORRS [USC00068138], Storrs Mansfield, CT

### Influencing water features

#### Soil features

The site consists of moderately deep to very deep, somewhat excessively drained, coarse-loamy, skeletal, glacial till derived mostly from gneiss, schist, and granite. Soils are dry and nutrient poor. Representative soils are Gloucester and Lippitt.

Table 3. Representative soil features

Parent material	(1) Ablation till–granite
Surface texture	(1) Gravelly sandy loam (2) Gravelly fine sandy loam (3) Gravelly coarse sandy loam
Drainage class	Somewhat excessively drained
Soil depth	183 cm
Surface fragment cover >3"	0–2%
Soil reaction (1:1 water) (0-101.6cm)	3.6–6
Subsurface fragment volume <=3" (Depth not specified)	10–20%

Subsurface fragment volume >3" (Depth not specified)	5–15%
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## Ecological dynamics

The reference plant community is an oak dominated forest. In some places the canopy may be more open forming a woodland. Black oak and scarlet oak are often the most common on the site. Other associated trees include chestnut oak, white oak, red oak, pignut hickory, eastern white pine, and in some cases pitch pine. Black huckleberry and lowbush blueberry are common shrubs. In openings following tree falls or other natural disturbances poverty oatgrass and little bluestem may occur with early successional trees such as eastern red cedar and black birch. Invasive exotic plants such as Japanese barberry, multiflora rose, winged euonymus, and shrub honeysuckles can occur in disturbed sites.

## State and transition model

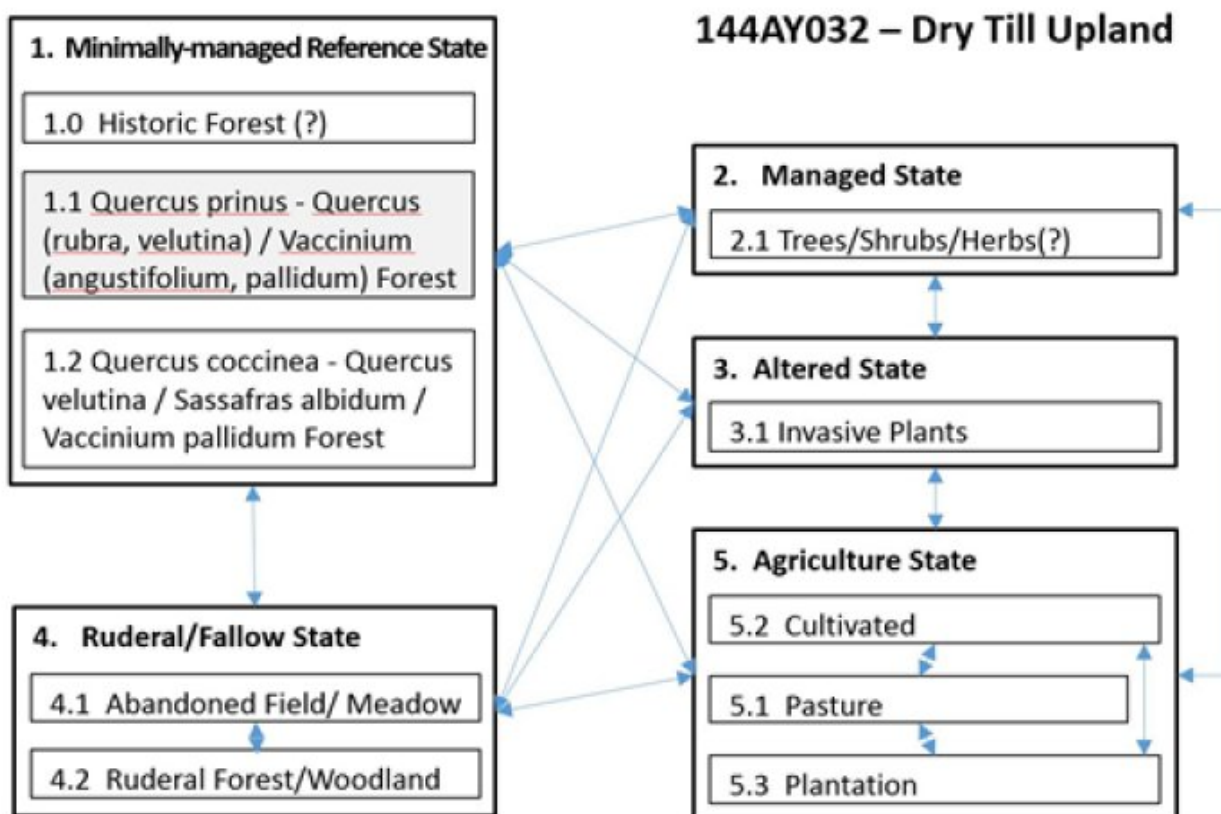


Figure 6. STM\_144AY032\_Dry\_Till\_Upland

Transition	Drivers/practices
T1-2	Forest mgmt
T1-3, T1-4, T1-5, T2-3, T2-5, T3-4, T4-5, T4-3	Disturbance/cutting/clearing, Brush removal
R2-1, R3-1, R4-1, R4-2, R5-1, R5-2	Restoration & Mgmt, Forest Stand Improvement, Upland Wildlife Mgmt
R3-1, R3-2	Brush removal, Herb weed control, Plant establishment
R4-1, T2-4, T5-4, CP4.1-4.2	Abandonment, succession
R5-2	Plant establishment, Forest mgmt., Early Successional Habitat Development
CP5.1-5.2-5.3	Changing Agricultural phases
CP4.2-4.1	Restoration & Mgmt., Early Successional Habitat Development

## Other references

### 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.

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## 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:**

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3. **Number and height of erosional pedestals or terracettes:**

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

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5. **Number of gullies and erosion associated with gullies:**

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6. **Extent of wind scoured, blowouts and/or depositional areas:**

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7. **Amount of litter movement (describe size and distance expected to travel):**

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8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

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11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

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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:**

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