USDA Natural Resources Conservation Service

Ecological site F126XY004OH
Side Slope

Last updated: 9/27/2024
Accessed: 05/10/2025

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): 126X–Central Allegheny Plateau

These sites generally occur on back slopes. The MAAT > 45 degree F.

This ecosite is found in Alleghany plateau in MLRA 126. Steep slopes are dominant, but level to gently rolling plateau remnants exist. The area is dominantly forest, containing large blocks of state forest, game lands, and national forest. Less than one-tenth of the MLRA consists of urban areas.

Classification relationships

USDA-NRCS (USDA 2006):
Land Resource Region (LRR): N—East and Central Farming and Forest Region
Major Land Resource Area (MLRA): 126—Central Allegheny Plateau

USDA-FS (Cleland et al. 2007)
Province: 221 - Eastern Broadleaf Province
Section: 221E - Southern Unglaciated Allegheny Plateau
Subsection: 221Ea - Pittsburgh Low Plateau
221Eb - Teays Plateau
221Ec - Ohio Valley Lowland
221Ed - East Hocking Plateau

This site crosswalks to Landfire biophysical setting (BpS) Northeastern Interior Dry-Mesic Oak Forest

NatureServe's description (2007) for the equivalent ecological system CES202.592 -- Northeastern Interior Dry-Mesic Oak Forest notes this system is found from central New England west through OH and PA and south to VA.
Component Associations
Association Unique ID Association Name
CEGL002059 *Quercus alba* - *Quercus rubra* - Quercus prinus - Acer saccharum / Lindera benzoin Forest
CEGL002067 *Quercus alba* - *Quercus rubra* - Carya (alba, ovata) / Cornus florida Acidic Forest
CEGL002068 *Quercus alba* - *Quercus rubra* - Carya ovata Glaciated Forest
CEGL004793 Quercus muehlenbergii - Quercus (alba, rubra) - Carya cordiformis / Viburnum prunifolium Forest
CEGL006057 Quercus prinus - *Quercus rubra* / Hamamelis virginiana Forest
CEGL006216 *Quercus alba* - Carya glabra - *Fraxinus americana* / Cercis canadensis / Muhlenbergia sobolifera - Elymus hystrix Forest
CEGL006241 Quercus bicolor / Vaccinium corymbosum / Carex stipata Forest
CEGL006293 *Pinus strobus* - Quercus (rubra, velutina) - Fagus grandifolia Forest
CEGL006301 *Quercus rubra* - Carya (glabra, ovata) / Ostrya virginiana / Carex lucorum Forest
CEGL006304 Liriodendron tulipifera - *Pinus strobus* - Tsuga canadensis - Quercus (rubra, alba) / Polystichum acrostichoides Forest

CEGL006336 Quercus (alba, rubra, velutina) - Carya spp. / Viburnum acerifolium Forest
CEGL006454 Quercus (rubra, velutina, alba) - Betula lenta - (*Pinus strobus*) Forest
CEGL006921 Fagus grandifolia - Betula lenta - Quercus (alba, rubra) / Carpinus caroliniana Forest
CEGL008475 *Quercus alba* - *Quercus rubra* - Carya alba / Cornus florida / Vaccinium stamineum / Desmodium nudiflorum Piedmont Forest
CEGL008514 *Quercus rubra* - Quercus prinus - Carya ovalis / (Cercis canadensis) / Solidago (caesia, curtisii) Forest
CEGL008516 Quercus prinus - *Quercus rubra* - Carya ovalis / Carex pensylvanica - (Calamagrostis porteri) Forest
CEGL008517 *Quercus rubra* - Acer saccharum / Ostrya virginiana / Cardamine concatenata Forest
CEGL008518 *Quercus rubra* - Carya (ovata, ovalis) - *Fraxinus americana* / Actaea racemosa - Hydrophyllum virginianum Forest
CEGL008528 Tilia americana - *Fraxinus americana* / Acer pensylvanicum - Ostrya virginiana / Parthenocissus quinquefolia - Impatiens pallida Woodland

See also NatureServe's description (2007):
Allegheny-Cumberland Dry Oak Forest and Woodland CES202.359
Component Associations
Association Unique ID Association Name
CEGL004761 Pinus echinata - Quercus prinus - Quercus (coccinea, velutina) Forest
CEGL004786 Quercus prinus - Carya (alba, glabra, ovata) / Juniperus virginiana var. virginiana Forest
CEGL005023 Quercus prinus - Quercus (alba, coccinea, velutina) / Viburnum acerifolium - (Kalmia latifolia) Forest
CEGL006557 Pinus rigida - *Quercus coccinea* / Vaccinium angustifolium Woodland
CEGL007119 Pinus virginiana - Pinus (rigida, echinata) - (Quercus prinus) / Vaccinium pallidum Forest
CEGL007231 *Quercus alba* - *Quercus velutina* - Carya (ovata, alba, glabra) - Pinus sp. Forest
CEGL007240 *Quercus alba* - *Quercus rubra* - Carya ovata / Cercis canadensis - Juniperus virginiana var. virginiana Forest
CEGL007244 Quercus falcata - *Quercus alba* - Carya alba / Oxydendrum arboreum / Vaccinium stamineum Forest
CEGL007247 Quercus falcata - Quercus (coccinea, stellata) / Vaccinium (pallidum, stamineum) Forest
CEGL007261 Quercus prinus - Carya spp. - *Quercus velutina* / Vaccinium arboreum / Iris verna var. smalliana Forest
CEGL007269 Quercus prinus - *Quercus rubra* - Carya (ovata, glabra) - Pinus virginiana Forest
CEGL007517 *Pinus strobus* - *Quercus alba* - (Carya alba) / Gaylussacia ursina Forest
CEGL007519 *Pinus strobus* - Quercus (coccinea, prinus) / (Gaylussacia ursina, Vaccinium stamineum) Forest
CEGL007700 Quercus prinus - Quercus spp. / Vaccinium arboreum - (Kalmia latifolia, Styrax grandifolius) Forest
CEGL007795 *Quercus alba* - Carya alba - (*Quercus velutina*) / Desmodium nudiflorum - (Carex picta) Forest
CEGL008406 Quercus stellata - Pinus virginiana / (Schizachyrium scoparium, Piptochaetium avenaceum) Woodland
CEGL008430 *Quercus alba* - (Quercus prinus) / (Hydrangea quercifolia) - Viburnum acerifolium / Carex picta - Piptochaetium avenaceum Forest
CEGL008431 Quercus prinus - (*Quercus coccinea*) / Carya pallida / Vaccinium arboreum - Vaccinium pallidum Forest
CEGL008443 *Quercus alba* - Quercus stellata / Ostrya virginiana - Acer barbatum / Chasmanthium sessiliflorum Forest
CEGL008521 *Quercus alba* - Quercus (coccinea, velutina, prinus) / Gaylussacia baccata Forest
CEGL008567 *Quercus alba* - Quercus falcata / Vaccinium (arboreum, hirsutum, pallidum) Forest

Ecological site concept

From Landfire http://www.landfire.gov/index.php:

This ecological section comprises part of the Appalachian Plateaus geomorphic province (USDA Forest Service 1995). It is a maturely dissected plateau characterized by high hills, sharp ridges, and narrow valleys. Bedrock is overlain by Quaternary residuum on the ridges and hilltops, colluvium on the slopes, and either or both alluvium and Pleistocene lacustrine materials in the valleys. Udalfs, Udults, and Ochrepts dominate, in combination with mesic soil temperature regime, an udic soil moisture regime, and mixed or illitic mineralogy. Soils formed in parent materials are divided into five groups:residual material, which developed in place by the weathering of underlying bedrock; colluvial material which weathered from bedrock strata transported by water and gravity to the lower slopes; alluvium, lacustrine sediments and outwash deposited by water; and loess deposited by wind. Precipitation

averages 35 to 45in (900 to 1,150mm0150mm); it occurs mainly during summer, winter, and spring. Rain on snow is common during winter and early spring. Summers are dry with low humidity. Temperature averages 52 degrees F (11 degrees C). The growing season is 120 to 180 days. This ecological section is characterized by a relatively high density of streams, with gradients ranging from high, steep headwaters streams to low gradient rivers that flow into the OH River.

NatureServe (2007) provides the following description pertaining to this system type. These oak-dominated forests are one of the matrix forest systems in the northeastern and north-central US Occurring in dry-mesic settings, they are typically closed-canopy forests, though there may be areas of patchy-canopy woodlands. They cover large expanses at low to mid elevations, where the topography is flat to gently rolling, occasionally steep. Soils are acidic and relatively infertile but not strongly xeric.

Associated sites

F126XY002OH	**Footslope** Footslope

Table 1. Dominant plant species

Tree	(1) *Quercus alba* (2) *Quercus montana*
Shrub	(1) *Vaccinium* (2) *Viburnum*
Herbaceous	Not specified

Physiographic features

Generally sites with slopes greater than 25 percent.

Table 2. Representative physiographic features

Landforms	(1) Hills > Hillside (2) Hillslope
Runoff class	Medium to very high
Elevation	590–1,706 ft
Slope	25–80%

Climatic features

The regional climate of the unglaciated Central Allegheny Plateau is predominately a humid continental climate grading at the extreme southwestern corner a to humid temperate climate with hot summers and cool winters (Beck et al., 2018; Bailey, 2014). However, the local climate is highly influenced by the dissected terrain, where climatic variations may be greater at the local scale, e.g., cooler temperatures and shorter growing season at higher elevations and more northerly latitudes. High-intensity, convective thunderstorms are common in summer. Winter precipitation is mostly snow.

Climate change is occurring, and the resiliency of any ecological site will depend upon the direct and indirect effects upon component species and shifting atmospheric and soil conditions.

Table 3. Representative climatic features

Frost-free period (characteristic range)	139-168 days
Freeze-free period (characteristic range)	167-198 days
Precipitation total (characteristic range)	40-43 in
Frost-free period (actual range)	131-171 days

Freeze-free period (actual range)	156-201 days
Precipitation total (actual range)	39-45 in
Frost-free period (average)	151 days
Freeze-free period (average)	184 days
Precipitation total (average)	42 in

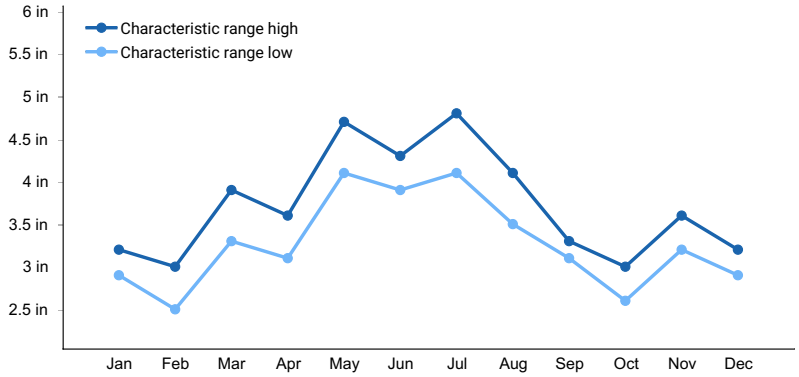

Figure 1. Monthly precipitation range

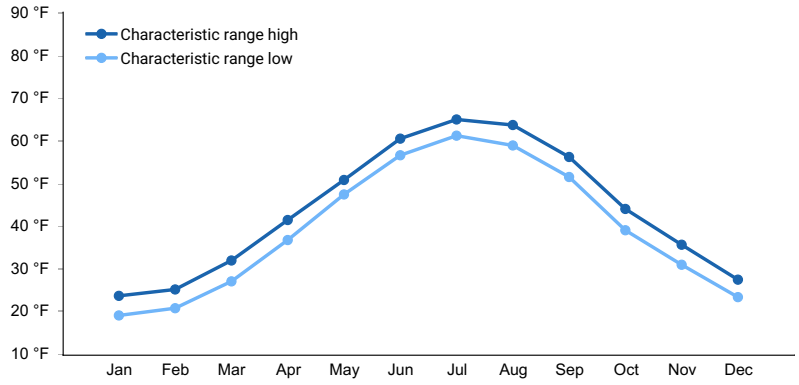

Figure 2. Monthly minimum temperature range

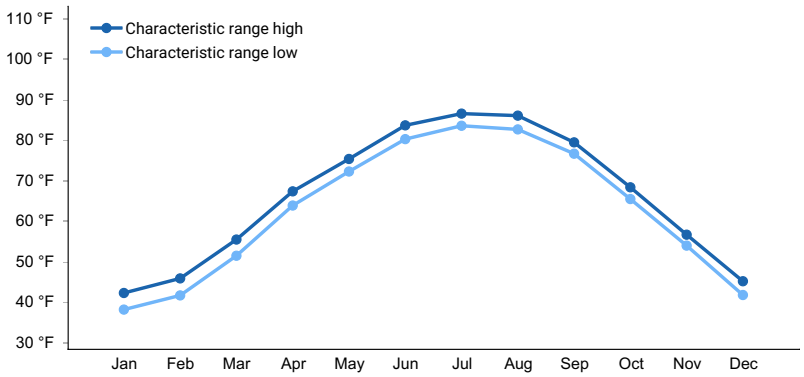

Figure 3. Monthly maximum temperature range

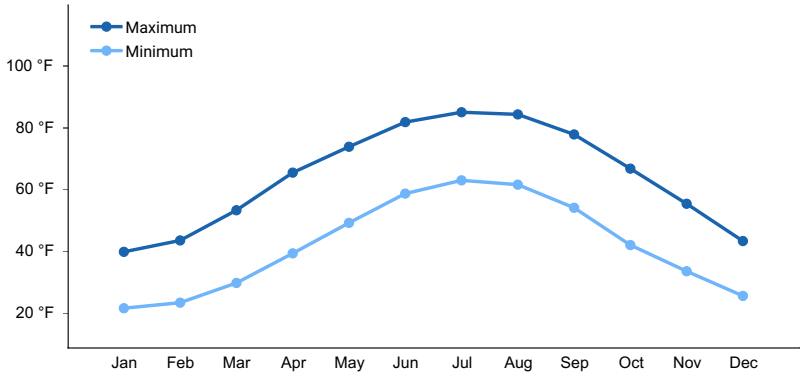

Figure 4. Monthly average minimum and maximum temperature

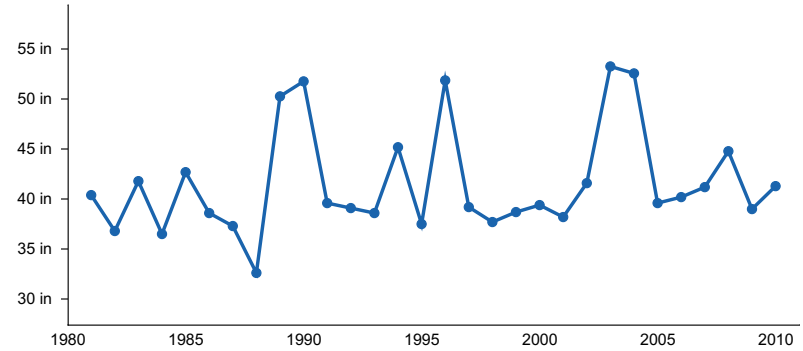

Figure 5. Annual precipitation pattern

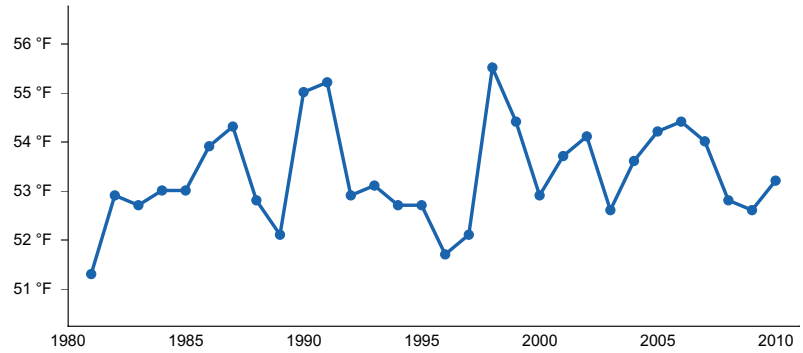

Figure 6. Annual average temperature pattern

Climate stations used

- (1) WHEELING [USC00469482], Wheeling, WV
- (2) SENECAVILLE LAKE [USC00337559], Senecaville, OH
- (3) CALDWELL 3 SE [USC00331175], Caldwell, OH
- (4) HANNIBAL L&D [USC00333500], New Martinsville, OH
- (5) WAYNESBURG 1 E [USC00369367], Waynesburg, PA
- (6) WEST UNION 2 [USC00469458], West Union, WV
- (7) PARKERSBURG [USW00013867], Parkersburg, WV
- (8) WINFIELD LOCKS [USC00469683], Red House, WV
- (9) PEA RIDGE PSD [USC00466912], Huntington, WV
- (10) HUNTINGTON SEWAGE PLT [USC00464397], Kenova, WV
- (11) LOYALHANNA LAKE [USC00365212], New Alexandria, PA
- (12) PITTSBURGH INTL AP [USW00094823], Coraopolis, PA

Influencing water features

Soil features

Soils are acidic and relatively infertile but not strongly xeric.

Table 4. Representative soil features

Parent material	(1) Colluvium (2) Residuum
Surface texture	(1) Silt loam (2) Loam
Drainage class	Somewhat poorly drained to excessively drained
Permeability class	Slow to moderately rapid
Depth to restrictive layer	Not specified
Surface fragment cover <=3"	0%
Surface fragment cover >3"	1–9%
Available water capacity (Depth not specified)	1–8 in
Soil reaction (1:1 water) (Depth not specified)	3.5–8.4
Subsurface fragment volume <=3" (Depth not specified)	2–65%
Subsurface fragment volume >3" (Depth not specified)	2–65%

Ecological dynamics

Information contained in this section was adapted from several sources. The information presented is representative of very complex vegetation communities. Key indicator plants, animals and ecological processes are described to help inform land management decisions. Plant communities will differ across the MLRA because of the naturally occurring variability in weather, soils, and aspect. The reference plant community is not necessarily the management goal. The species lists are representative and are not botanical descriptions of all species occurring, or potentially occurring, on this site. They are not intended to cover every situation or the full range of conditions, species, and responses for the site.

From Landfire http://www.landfire.gov/index.php:

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Vegetation Description
The vegetation consisted of forests dominated by oaks of dry-mesic conditions, especially white oak (*Quercus alba*)

and red oak (*Quercus rubra*), and, on drier sites, chestnut oak (Quercus prinus), black oak (*Quercus velutina*), and scarlet oak (*Quercus coccinea*). Scarlet oak is absent at the northern edge of the system range. Along with oaks are varying amounts of hickory (Carya spp.), red maple (*Acer rubrum*), and other species such as white pine (*Pinus strobus*) and white ash (*Fraxinus americana*). American chestnut (*Castanea dentata*) was a prominent tree in these forests before chestnut blight eradicated it as a canopy constituent (NatureServe 2007). Common shrubs include mountain laurel (Kalmia spp.), greenbriar (Smilax spp.), blueberries (Vaccinium spp.), and huckleberries (Gaylussacia spp.). In the Ridge and Valley region, bear oak is an important shrub component. Herbs, forbs, and ferns are usually sparse to moderate in density. Areas experiencing frequent fire had a greater abundance of grasses and sedges.

State and transition model

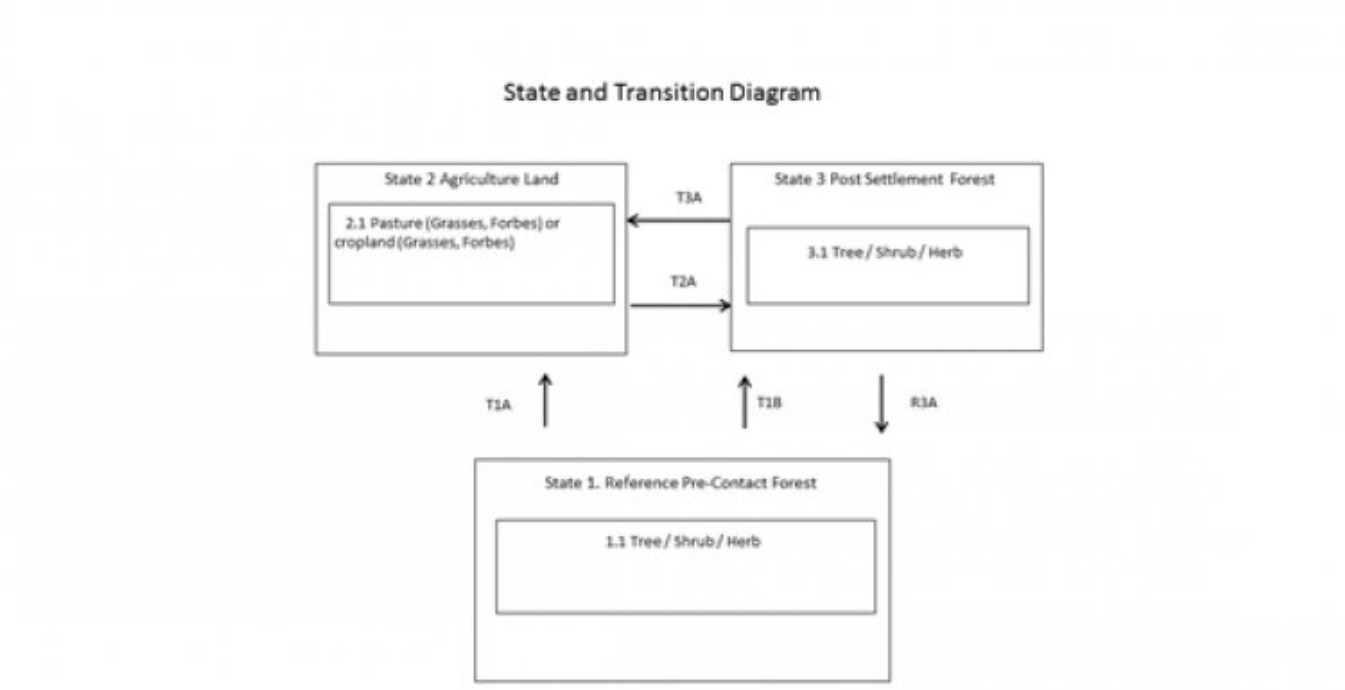

Figure 7. Side Slope

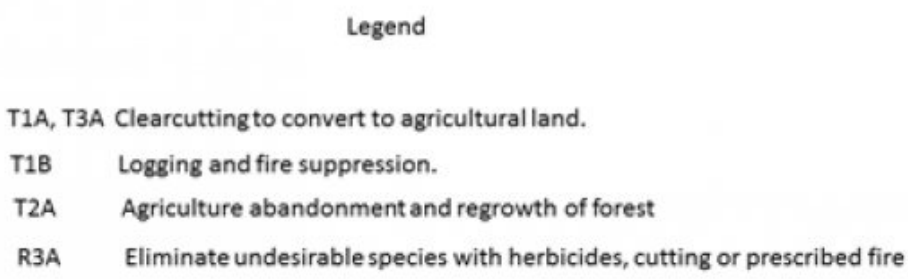

Figure 8. Legend

State 1
Reference Pre-Contact Forest

The reference state can be represented by several communities within the Northeastern Interior Dry-Mesic Oak Forest (Natureserve, 2007). Forest overstory canopies are oak dominated and generally closed canopy.

Community 1.1
Tree/Shrub/Herb

Chestnut Oak-Black Oak/American Witch hazel Forest best captures the nature of this vegetation state. The dominate overstory canopy consist of Oaks with minor canopy coverage of Hickory. The shrub layer contains American Witch Hazel, greenbrier and ericads. The herb layer will contain flowering forbes (asters and goldenrod), ferns (woodferns) and grasses (native fescue, povertygrass).

State 2
Agricultural Land

Land managed for agricultural production of crops and livestock.

Community 2.1
Pasture (Grasses, Forbes) or Cropland (Grasses, Forbes)

This community phase may contain a wide variety of plants depending on the level of management. In pasture circumstances that are managed tall fescue, bluegrass and white clover will dominate the vegetation canopy. Without management such as prescribed grazing, nutrient management and weed control, less desirable forage species and weeds will invade.

State 3
Post Settlemet Forest

This forest vegetation community is the result of removing fire from the landscape, and poor logging techniques (high grading). Following European settlement fire as a management tool was abandoned and mesophication of the vegetation took place.

Community 3.1
Tree/Shrub/Herb

Maple (Red and Sugar)/Striped Maple Forest best captures the nature of this vegetation state. The dominate overstory canopy consist of Maples with minor canopy coverage of Tulip tree. The shrub layer contains Stripped maple, greenbrier and blackberry. The herb layer will contain flowering forbes (asters and goldenrod), ferns (woodferns) and grasses (native fescue, povertygrass).

Transition T1A
State 1 to 2

The site is logged and managed for agricultural land.

Transition T1B
State 1 to 3

The site is logged and fire is suppressed allowing mesophication to occur.

Transition T2A
State 2 to 3

The site agricultural management is abandoned and forest regrowth occurs through natural succession or tree planting.

Restoration pathway R3A
State 3 to 1

Remove undesirable species using herbicides, cutting or prescribed fire. Plant desired species if absent from the site.

Transition T3A
State 3 to 2

The site is logged and managed for agricultural land.

Additional community tables

Inventory data references

Site Development and Testing Plan
Future work is needed, as described in a future project plan, to validate the information presented in this provisional ecological site description. Future work includes field sampling, data collection and analysis by qualified vegetation ecologists and soil scientists. As warranted, annual reviews of the project plan can be conducted by the Ecological Site Technical Team. A final field review, peer review, quality control, and quality assurance reviews of the ESD are necessary to approve a final document.

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Contributors

Jason Teets

Approval

Greg Schmidt, 9/27/2024

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	05/10/2025
Approved by	Greg Schmidt
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:**