Ecological site F115XB060MO
Anthropic Wet Terrace

Last updated: 12/30/2024
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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): 115X–Central Mississippi Valley Wooded Slopes

This MLRA is characterized by deeply dissected, loess-covered hills bordering well defined valleys of the Illinois, Mississippi, Missouri, Ohio, and Wabash Rivers and their tributaries. It is used to produce cash crops and livestock. About one-third of the area is forested, mostly on the steeper slopes. This area is in Illinois (50 percent), Missouri (36 percent), Indiana (13 percent), and Iowa (1 percent) in two separate areas. It makes up about 25,084 square miles (64,967 square kilometers).

Most of this area is in the Till Plains section and the Dissected Till Plains section of the Central Lowland province of the Interior Plains. The Springfield-Salem plateaus section of the Ozarks Plateaus province of the Interior Highlands occurs along the Missouri River and the Mississippi River south of the confluence with the Missouri River. The nearly level to very steep uplands are dissected by both large and small tributaries of the Illinois, Mississippi, Missouri, Ohio, and Wabash Rivers. The Ohio River flows along the southernmost boundary of this area in Indiana. Well defined valleys with broad flood plains and numerous stream terraces are along the major streams and rivers. The flood plains along the smaller streams are narrow. Broad summits are nearly level to undulating. Karst topography is common in some parts along the Missouri and Mississippi Rivers and their tributaries. Well-developed karst areas have hundreds of sinkholes, caves, springs, and losing streams. In the St. Louis area, many of the karst features have been obliterated by urban development.

Elevation ranges from 90 feet (20 meters) on the southernmost flood plains to 1,030 feet (320 meters) on the highest ridges. Local relief is mainly 10 to 50 feet (3 to 15 meters) but can be 50 to 150 feet (15 to 45 meters) in the steep, deeply dissected hills bordering rivers and streams. The bluffs along the major rivers are generally 200 to 350 feet (60 to 105 meters) above the valley floor.

The uplands in this MLRA are covered almost entirely with Peoria Loess. The loess can be more than 7 feet (2 meters) thick on stable summits. On the steeper slopes, it is thin or does not occur. In Illinois, the loess is underlain mostly by Illinoian-age till that commonly contains a paleosol. Pre-Illinoian-age till is in parts of this MLRA in Iowa and Missouri and to a minor extent in the western part of Illinois. Wisconsin-age outwash, alluvial deposits, and sandy eolian material are on some of the stream terraces and on dunes along the major tributaries. The loess and glacial deposits are underlain by several bedrock systems. Pennsylvanian and Mississippian bedrock are the most extensive. To a lesser extent are Silurian, Devonian, Cretaceous, and Ordovician bedrock. Karst areas have formed where limestone is near the surface, mostly in the southern part of the MLRA along the Mississippi River and some of its major tributaries. Bedrock outcrops are common on the bluffs along the Mississippi, Ohio, and Wabash Rivers and their major tributaries and at the base of some steep slopes along minor streams and drainageways.

The annual precipitation ranges from 35 to 49 inches (880 to 1,250 millimeters) with a mean of 41 inches (1,050 millimeters). The annual temperature ranges from 48 to 58 degrees F (8.6 to 14.3 degrees C) with a mean of 54 degrees F (12.3 degrees C). The freeze-free period ranges from 150 to 220 days with a mean of 195 days.

Soils The dominant soil orders are Alfisols and, to a lesser extent, Entisols and Mollisols. The soils in the area have

a mesic soil temperature regime, an aquic or udic soil moisture regime, and mixed or smectitic mineralogy. They are shallow to very deep, excessively drained to poorly drained, and loamy, silty, or clayey.

The soils on uplands in this area support natural hardwoods. Oak, hickory, and sugar maple are the dominant species. Big bluestem, little bluestem, and scattered oak and eastern redcedar grow on some sites. The soils on flood plains support mixed forest vegetation, mainly American elm, eastern cottonwood, river birch, green ash, silver maple, sweetgum, American sycamore, pin oak, pecan, and willow. Sedge and grass meadows and scattered trees are on some low-lying sites. (United States Department of Agriculture, Natural Resources Conservation Service, 2022)

LRU notes

The Central Mississippi Valley Wooded Slopes, Western Part consists of deeply dissected, loess-covered hills bordering the Missouri and Mississippi Rivers as well as floodplains and terraces of these rivers. The Northern boundary runs along the South Fabius River valley separating it from the broad rounded interfluves of the northern till plain. A major physiographic feature within the LRU (Land Resource Unit) includes the Lincoln Hills region. The Lincoln Hills extend along the Mississippi River in Missouri, starting about 40 miles (64 kilometers) northwest of St. Louis and extending north to Hannibal. The Lincoln Hills partially escaped the most recent glaciation in the region during the Pleistocene. In geology and biology, they resemble the rugged and forested hills of the Ozark Highlands (MLRA 116A) more than the rolling plains of northern Missouri. The underlying limestone bedrock has formed bluffs, glades, caves, springs, and sinkholes. Elevation ranges from about 420 feet (128 meters) along the Mississippi River near Cape Girardeau, Missouri to about 830 feet (253 meters) near Clarksville along the Mississippi River upstream from St. Louis. High ridges near Hillsboro, Missouri can reach over 1,000 feet (305 meters). Underlying bedrock is mainly Ordovician-aged dolomite and sandstone, with Mississippian-aged limestone north of the Missouri River. Loess caps both stream and glacial outwash terraces along the major rivers along with Pre-Illinoisan till near the edges of the area.

Classification relationships

Major Land Resource Area (MLRA) (USDA-NRCS, 2022):
115X–Central Mississippi Valley Wooded Slopes

Geographic relationship to the Missouri Ecological Classification System (Nigh and Schroeder, 2002): This ecological site is distributed in the east-central area of the Ozark Highlands Section, Outer Ozark Border (OZ12).

Ecological site concept

Anthropic Wet Terraces are widely dispersed on secondary stream terraces on anthropogenic landforms in urban areas in and around the St. Louis area, Missouri where human-transported materials have been placed over buried alluvial and terrace soils. Soils are very deep with loamy to clayey subsoils, have a high water table in the spring months, and are subject to flooding. In similar historic settings prior to anthropogenic developments, the native vegetation was dominated by a wide variety of species, tolerant of seasonally wet conditions. These sites have been highly altered in place or associated soils transported from one location to another. Anthropic Wet Terraces are currently associated with open, non-developed spaces adjacent to residential, commercial and industrial areas, along with parks, playgrounds, golf courses and other non-developed areas. Current vegetation is highly variable, ranging from lawn grasses, ornamental shrubs, shade trees to second-growth trees and shrubs, with invasive species common.

Associated sites

F115XB003MO	**Deep Loess Protected Backslope Forest** Deep Loess Protected Backslope Forests are on backslope positions and mapped in a complex with Deep Loess Exposed Backslope Woodland on north and east facing slopes.
F115XB043MO	**Deep Loess Exposed Backslope Woodland** Deep Loess Exposed Backslope Woodlands are on backslope positions and are mapped in a complex with Deep Loess Exposed Backslope Woodlands on south and west facing slopes.

F115XB061MO	**Anthropic Deep Loess Upland** Anthropic Deep Loess Uplands are on upland landscape positions with an anthropic surface horizon.
F115XB031MO	**Loamy Floodplain Forest** Loamy Floodplain Forests are downslope in the main flood plain.
F115XB001MO	**Deep Loess Upland Woodland** Deep Loess Upland Woodlands are on upland landscape positions.
F115XB025MO	**Wet Terrace Forest** Wet Terrace Forests are on similar landscape positions but lack an anthropic surface horizon.

Similar sites

F115XB025MO	**Wet Terrace Forest** Wet Terrace Forests are on similar landscape positions with similar drainage characteristics but do not have anthropic soil surface horizons.

Table 1. Dominant plant species

Tree	(1) *Quercus macrocarpa* (2) *Quercus shumardii var. shumardii*
Shrub	(1) *Ilex decidua*
Herbaceous	(1) *Chasmanthium latifolium*

Physiographic features

Fishpot soils are on anthropogenic landforms in urban areas where human-transported materials have been placed over buried alluvial and stream terraces and flood plains in and near urbanized areas. Thickness of the human-transported material range from 60 to 120 centimeters (2 to 4 feet) and in places has increased the elevation of the landform above flood stage. Elevation is 110 to 200 meters (360 to 655 feet) above mean sea level. Slopes range from 0 to 5 percent.

The following figure shows a typical landscape position of this ecological site and landscape relationships among the major ecological sites in the flood plain and stream terrace systems of major tributaries of the Missouri and Mississippi rivers. Anthropic Wet Terrace is within the area labeled as “2” on the figure and is typically adjacent to but on higher positions than flood plain ecological sites such as the Loamy Flood plain Forest (labeled “3” on the figure). Associated upland ecological sites are within the area labeled as “1”.

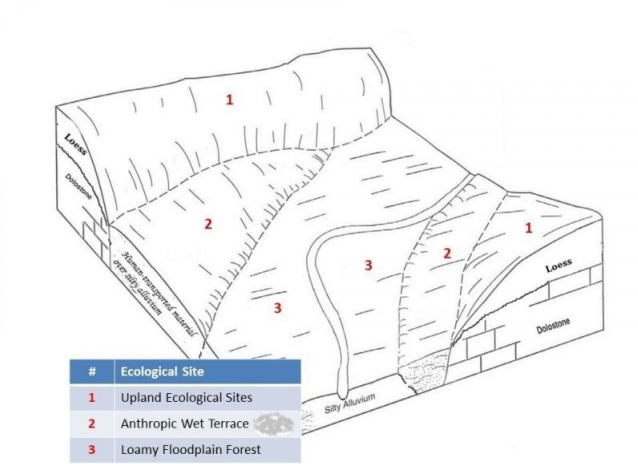


Figure 1. Ecological site landscape relationships.

Table 2. Representative physiographic features

Landforms	(1) River valley > Flood plain (2) River valley > Stream terrace

Runoff class	Medium
Flooding duration	Brief (2 to 7 days) to long (7 to 30 days)
Flooding frequency	None to frequent
Elevation	360–655 ft
Slope	0–5%
Water table depth	20–45 in
Aspect	Aspect is not a significant factor

Climatic features

The Central Mississippi Valley Wooded Slopes, Western Part has a continental type of climate marked by strong seasonality. In winter, dry-cold air masses, unchallenged by any topographic barriers, periodically swing south from the northern plains and Canada. In summer, moist, warm air masses, equally unchallenged by topographic barriers, swing north from the Gulf of Mexico and can produce abundant amounts of rain, either by fronts or by convectional processes. In some summers, high pressure stagnates over the region, creating extended droughty periods. Spring and fall are transitional seasons when abrupt changes in temperature and precipitation may occur due to successive, fast-moving fronts separating contrasting air masses. Mean annual temperature ranges from 6.2 to 18.7 degrees C (44.1 to 65.7 degrees F). Mean annual precipitation ranges from 1018 to 1,100 millimeters (40.1 to 43.3 inches). Frost-free period is 180 to 203 days.

Climate data and analyses are derived from 30-year averages gathered from three National Oceanic and Atmospheric Administration (NOAA) weather stations contained within the range of this ecological site.

Table 3. Representative climatic features

Frost-free period (characteristic range)	168-195 days
Freeze-free period (characteristic range)	195-211 days
Precipitation total (characteristic range)	41-42 in
Frost-free period (actual range)	156-197 days
Freeze-free period (actual range)	189-213 days
Precipitation total (actual range)	41-43 in
Frost-free period (average)	180 days
Freeze-free period (average)	203 days
Precipitation total (average)	42 in

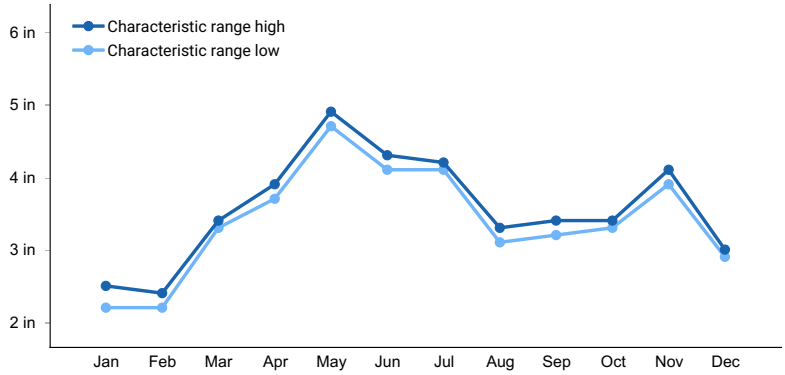


Figure 2. Monthly precipitation range

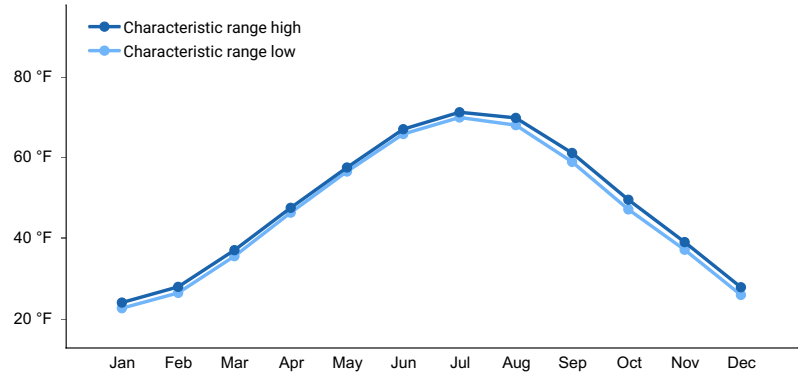


Figure 3. Monthly minimum temperature range

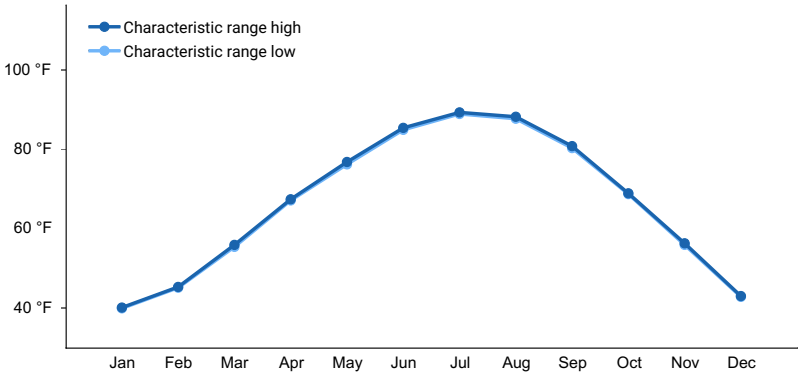


Figure 4. Monthly maximum temperature range

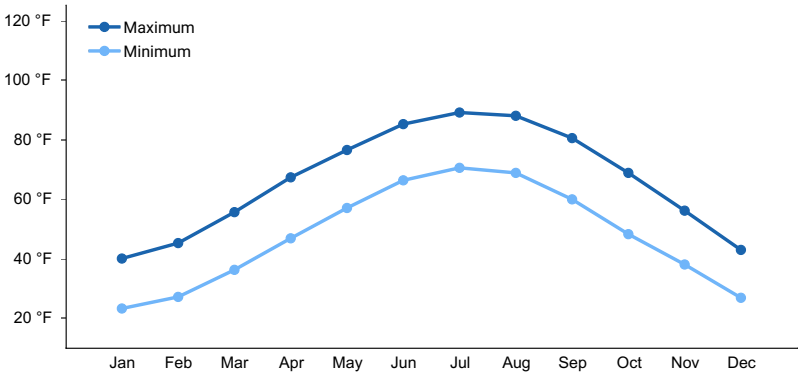


Figure 5. Monthly average minimum and maximum temperature

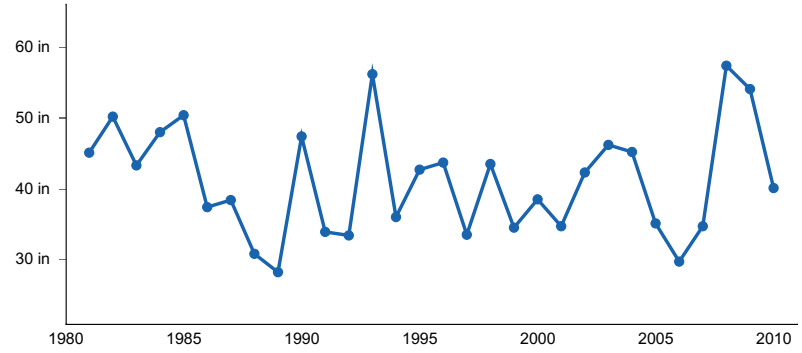


Figure 6. Annual precipitation pattern

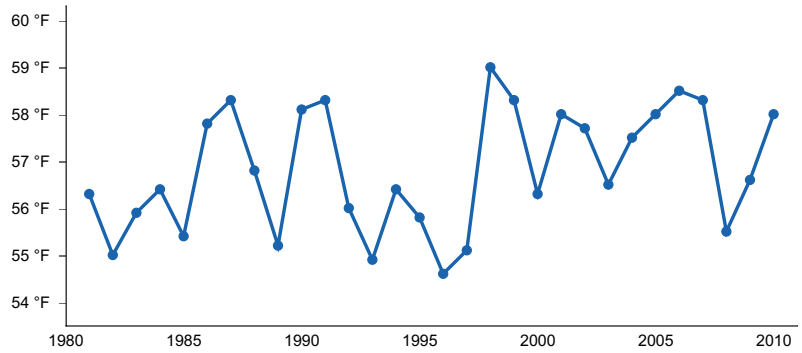


Figure 7. Annual average temperature pattern

Climate stations used

- (1) ST LOUIS SCI CTR [USC00237452], Saint Louis, MO
- (2) ST LOUIS LAMBERT INTL AP [USW00013994], Saint Louis, MO
- (3) ST CHARLES 7 SSW [USC00237398], Saint Louis, MO

Influencing water features

This ecological site is on stream terraces and flood plain steps of perennial streams. They are not adjacent to the current stream channel. Areas are subject to flooding, typically of short duration and low intensity (some elevated areas do not flood) and is influenced by a seasonal high-water table from high groundwater levels. The water table is typically near the surface in late fall through spring, receding in the summer.

Impervious surfaces (e.g. access roads, parking lots, walkways) can occur with this ecological site and are the main contributor to excess stormwater runoff that would otherwise have been retained on site in natural woodlands or grasslands. Runoff is generated to adjacent lower flood plain sites, and some runoff is received from higher stream terraces and uplands. Everything that falls on these impervious surfaces (pollution, trash, animal waste, chemicals, oils, sediment, etc.) washes off those surfaces during rain events, often on a direct path to local streams or water bodies.

This site is in the RIVERINE wetlands class of the Hydrogeomorphic (HGM) classification system (Brinson, 1993), and are Forested Palustrine wetlands (Cowardin et al., 1979).

Soil features

These soils have no rooting restriction. Parent material is alluvium and consists of very deep, somewhat poorly drained soils formed in more than 60 centimeters (24 inches) of human-transported material over buried alluvial or terrace soils that were formed under woodland vegetation. Human artifacts in the upper horizon of the buried soil can include cinder, brick, concrete, glass, wood, and metal (see adjacent photo; photo credit Ralph Tucker, NRCS). Depth to the top of an apparent seasonal high-water table ranges from 55 to 115 centimeters (1.8 to 3.75 feet) between November and May in normal years. Permeability is moderately slow or moderate. Soil series associated with this site include Fishpot (Taxonomic Class: Fine-silty, spolic, mixed, superactive, nonacid, mesic Anthropic Udorthents).

Table 4. Representative soil features

Parent material	(1) Alluvium
Surface texture	(1) Silt loam (2) Silty clay loam
Family particle size	(1) Fine-silty
Drainage class	Somewhat poorly drained
Permeability class	Moderately slow to moderate
Soil depth	80 in

Surface fragment cover <=3"	0–10%
Surface fragment cover >3"	0%
Available water capacity (0-80in)	7–8 in
Calcium carbonate equivalent (Depth not specified)	0%
Electrical conductivity (Depth not specified)	0–2 mmhos/cm
Soil reaction (1:1 water) (Depth not specified)	4.5–7.3
Subsurface fragment volume <=3" (Depth not specified)	0–40%
Subsurface fragment volume >3" (Depth not specified)	0%

Ecological dynamics

Information contained in this section was developed using historical data, professional experience, field reviews, and scientific studies. 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.

Anthropic Wet Terraces are in urban areas where alluvial and terrace soils have been buried under human-transported materials. These ecological sites are on anthropogenic landforms on stream terraces and flood plains in and near urbanized areas formed in human-transported material. Human artifacts in the upper horizon of the buried soil can include asphalt, brick, concrete, glass, wood, ceramic, and metal. Anthropic Wet Terraces are currently associated with open, non-developed spaces adjacent to residential, commercial and industrial areas, along with parks, playgrounds, golf courses and other non-developed areas.

The historic native vegetation has been removed and soils have either been altered in place or transported from one location to another. Current vegetation is highly variable, ranging from lawn and turf grasses, ornamental shrubs, shade trees to second growth trees and shrubs, with invasive species common, such as Amur honeysuckle (*Lonicera maackii*), Callery pear (*Pyrus calleryana*); Common buckthorn (*Rhamnus cathartica*), Garlic mustard, (*Alliaria petiolata*) Purple loosestrife (*Lythrum salicaria*), tall fescue, (*Schedonorus arundinaceus*), and sweet clover (Melilotus spp.).

Urban ecosystem services are related to the diversity of “functional groups” of species in a system, that pollinate, graze, predate, fix nitrogen, spread seeds, decompose, generate soils, modify water flows, open up patches for reorganization, and contribute to the colonization of such patches. In urban areas, such functional groups may be substantially reduced in size or show changes in the composition due to high species turnover, both of which may increase vulnerability in maintaining ecosystem services. To what extent exotic species contribute to reduce or enhance the flow of ecosystem services is relatively unknown for urban areas. But, since introduced species can make up a large proportion of urban communities, introduced species can be detrimental, but also introduced species may enhance local diversity and maintain important functional roles (Elmqvist et.al., 2008).

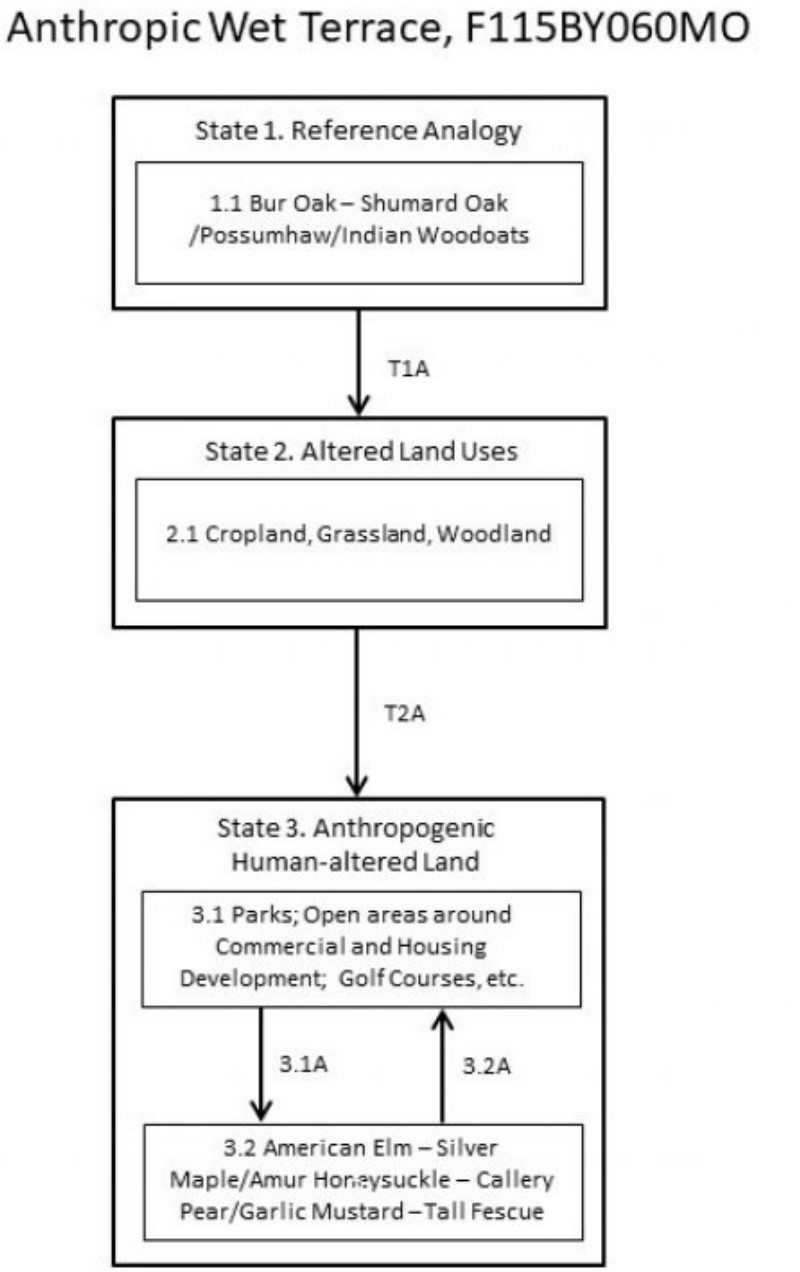
Historic plant communities were on relatively stable former flood plain positions. This reference plant community was dominated by a wide variety of deciduous hardwood tree species, tolerant of seasonally wet conditions including bur oak (*Quercus macrocarpa*), swamp white oak (*Quercus bicolor*), American elm (*Ulmus americana*), and pin oak (*Quercus palustris*). Trees were generally large and tall forming a dense, closed canopy. These forests were structurally and compositionally diverse, with occasional tree-fall gaps and natural mortality providing opportunities for regeneration of overstory species. The understory was also complex, with multiple layers of shade tolerant species such as American hornbeam (*Carpinus caroliniana*), northern spicebush (*Lindera benzoin*), and

Ohio buckeye (*Aesculus glabra*) and numerous wet-tolerant grasses, sedges and forbs.

Today, where former Wet Terrace Forests have been converted to anthropogenic landforms that include associated open, non-developed spaces adjacent to residential, commercial and industrial areas, along with parks, playgrounds, golf courses and other non-developed areas, Anthropic Wet Terrace ecological sites now exist.

A State and Transition Diagram follows. Detailed descriptions of each state, transition, plant community, and pathway follow the model. This model is based on available experimental research, field observations, professional consensus, and interpretations. It is likely to change as knowledge increases.

State and transition model



Code	Event/Activity/Process
T1A	Timber harvesting; clearing; tillage, cropping system; vegetative seeding; grassland management
T2A	Cleared and developed for human use and inhabitation; alluvial and terrace soils have been buried and modified with human-transported materials
3.1A	No disturbance; idle land (non-pervious surfaces) (20+ years); natural reseeding; invasive species common
3.2A	Disturbance and clearing; vegetative seeding and planting

Figure 8. State and transition model for this ecological site.

State 1

Reference Analogy

Figure 9. Wet Terrace Forest reference site at Moniteau Creek Conservation Area, Missouri

A reference state for this ecological site does not exist. However, historically, in similar native settings, an analogous ecological site, Wet Terrace Forest, once existed and was dominated by a wide variety of deciduous hardwood trees, including bur oak, swamp white oak, American elm, and pin oak, and shrub species, tolerant of seasonally wet conditions. Trees were generally large and tall forming a dense, closed canopy. Periodic disturbances from flooding, wind or ice affected the structure and ground flora species. This state is now highly altered and can no longer be restored.

Dominant plant species

- bur oak (*Quercus macrocarpa*), tree
- Shumard oak (*Quercus shumardii var. shumardii*), tree
- possumhaw (*Ilex decidua*), shrub
- Indian woodoats (*Chasmanthium latifolium*), grass

Community 1.1
Bur Oak – Shumard Oak /Possumhaw/Indian Woodoats

Historically, in similar native landscape settings, an analogous ecological site, Wet Terrace Forest, once existed and was dominated by a wide variety of deciduous hardwood trees, including bur oak, swamp white oak, American elm, and pin oak, shrub species, and forbs and grasses tolerant of seasonally wet conditions.

State 2
Altered Land Uses

This state occurs when the historical reference state is altered through timber harvesting or clearing with tillage, cropping systems, vegetative seeding, grassland management, implemented creating cropland, grassland, and second growth woodland. This state is now highly altered by intensive human activity.

Dominant resource concerns

- Sheet and rill erosion
- Ephemeral gully erosion
- Plant productivity and health
- Plant structure and composition
- Plant pest pressure
- Terrestrial habitat for wildlife and invertebrates

Community 2.1
Cropland, Grassland, Woodland

Lands in this community phase have an existing land use of cropland, grassland, or second growth woodland.

State 3
Anthropogenic Human-altered Land

This anthropogenic state occurs when the altered land use state is cleared and developed for intensive human use and inhabitation, such as commercial and housing developments, parks, golf courses, and earthen spoils. The vegetation has been removed when present and soils have either been altered in place or transported from one location to another. Most of the soils in this state have 60 to 122 cm (2 to 4 feet) of overburden on top of the natural soil. This natural material can be determined by observing a buried surface horizon or the unaltered subsoil, till, or alluvial parent materials. When areas have been idle for several years natural reseeding can occur, and second-growth forests may develop. This state can be considered a replacement community and will not transition back to the reference analogy state or altered land use state. Two community phases are recognized in this state, with shifts between phases based on disturbance/idle frequency

Community 3.1
Parks; Open areas around Commercial and Housing Development; Golf Courses

Figure 10. Urban development in St. Louis, Missouri.

Lands in this community phase have had the existing land use of cropland, grassland, or woodland soils heavily re-worked in support of human development projects such as city parks, golf courses, and commercial and housing developments.

Community 3.2
American Elm – Silver Maple/Amur Honeysuckle – Callery Pear/Garlic Mustard – Tall Fescue

Figure 11. Revegetation of idled/abandoned phase 3.1 land.

Land in this community phase has reverted to second-growth forests. This phase typically ensues when non-pervious surfaces have been idle for 20 or more years and naturally reseeding has occurred. Species composition is highly variable and dependent upon local seed sources. Common species associated with this phase include

American elm, silver maple, Amur honeysuckle, Callery pear, garlic mustard and tall fescue. Invasive non-native species are common. This phase provides wildlife habitat and riparian and watershed protection and benefits.

Forest overstory. Forest overstory species list is based on field reconnaissance as well as commonly occurring species listed in Nelson 2010; names and symbols are from USDA PLANTS database

Forest understory. Forest understory species list is based on field reconnaissance as well as commonly occurring species listed in Nelson 2010; names and symbols are from USDA PLANTS database

Dominant resource concerns

- Plant productivity and health
- Plant structure and composition
- Plant pest pressure
- Terrestrial habitat for wildlife and invertebrates

Pathway P
Community 3.1 to 3.2

Parks; Open areas around Commercial and Housing Development; Golf Courses

American Elm – Silver Maple/Amur Honeysuckle – Callery Pear/Garlic Mustard – Tall Fescue

No disturbance (20+ years); idle land (non-pervious surfaces) ; natural reseeding; invasive species common

Pathway P
Community 3.2 to 3.1

American Elm – Silver Maple/Amur Honeysuckle – Callery Pear/Garlic Mustard – Tall Fescue

Parks; Open areas around Commercial and Housing Development; Golf Courses

Disturbance and clearing; vegetative seeding and planting

Transition A
State 1 to 2

Timber harvesting; clearing; tillage, cropping system; vegetative seeding; grassland management

Transition A
State 2 to 3

Cleared and developed for human use and inhabitation; alluvial and terrace soils have been buried and modified with human-transported materials

Additional community tables

Table 5. Community 3.2 forest overstory composition

Common Name	Symbol	Scientific Name	Nativity	Height (Ft)	Canopy Cover (%)	Diameter (In)	Basal Area (Square Ft/Acre)
Tree							
bur oak	QUMA2	*Quercus macrocarpa*	Native	–	–	–	–
green ash	FRPE	*Fraxinus pennsylvanica*	Native	–	–	–	–
common hackberry	CEOC	*Celtis occidentalis*	Native	–	–	–	–
sugarberry	CELA	*Celtis laevigata*	Native	–	–	–	–
shellbark hickory	CALA21	*Carya laciniosa*	Native	–	–	–	–
eastern cottonwood	PODE3	*Populus deltoides*	Native	–	–	–	–
black walnut	JUNI	*Juglans nigra*	Native	–	–	–	–
American sycamore	PLOC	*Platanus occidentalis*	Native	–	–	–	–
pin oak	QUPA2	*Quercus palustris*	Native	–	–	–	–
American elm	ULAM	*Ulmus americana*	Native	–	–	–	–
silver maple	ACSA2	*Acer saccharinum*	Native	–	–	–	–
shingle oak	QUIM	*Quercus imbricaria*	Native	–	–	–	–

Table 6. Community 3.2 forest understory composition

Common Name	Symbol	Scientific Name	Nativity	Height (Ft)	Canopy Cover (%)
Grass/grass-like (Graminoids)					
sedge	CAREX	*Carex*	Native	–	–
scouringrush horsetail	EQHY	*Equisetum hyemale*	Native	–	–
Indian woodoats	CHLA5	*Chasmanthium latifolium*	Native	–	–
tall fescue	SCAR7	*Schedonorus arundinaceus*	Introduced	–	–
European common reed	PHAUA7	*Phragmites australis ssp. australis*	Introduced	–	–
reed canarygrass	PHAR3	*Phalaris arundinacea*	Native	–	–
Forb/Herb					
wild blue phlox	PHDI5	*Phlox divaricata*	Native	–	–
goldenrod	SOLID	*Solidago*	Native	–	–
crownvetch	SEVA4	*Securigera varia*	Introduced	–	–
garlic mustard	ALPE4	*Alliaria petiolata*	Introduced	–	–
purple loosestrife	LYSA2	*Lythrum salicaria*	Introduced	–	–
sericea lespedeza	LECU	*Lespedeza cuneata*	Introduced	–	–
sweetclover	MELIL	*Melilotus*	Introduced	–	–
Virginia bluebells	MEVI3	*Mertensia virginica*	Native	–	–
Canadian woodnettle	LACA3	*Laportea canadensis*	Native	–	–
Carolina springbeauty	CLCA	*Claytonia caroliniana*	Native	–	–
eastern waterleaf	HYVI	*Hydrophyllum virginianum*	Native	–	–
touch-me-not	IMPAT	*Impatiens*	Native	–	–
aster	SYMPH4	*Symphyotrichum*	Native	–	–
smallspike false nettle	BOCY	*Boehmeria cylindrica*	Native	–	–
Shrub/Subshrub					
American bladdernut	STTR	*Staphylea trifolia*	Native	–	–
Amur honeysuckle	LOMA6	*Lonicera maackii*	Introduced	–	–
autumn olive	ELUM	*Elaeagnus umbellata*	Introduced	–	–
common buckthorn	RHCA3	*Rhamnus cathartica*	Introduced	–	–
Tree					
slippery elm	ULRU	*Ulmus rubra*	Native	–	–
red mulberry	MORU2	*Morus rubra*	Native	–	–
Ohio buckeye	AEGL	*Aesculus glabra*	Native	–	–
Callery pear	PYCA80	*Pyrus calleryana*	Introduced	–	–
tree of heaven	AIAL	*Ailanthus altissima*	Introduced	–	–
Vine/Liana					
Virginia creeper	PAQU2	*Parthenocissus quinquefolia*	Native	–	–
summer grape	VIAE	*Vitis aestivalis*	Native	–	–
eastern poison ivy	TORA2	*Toxicodendron radicans*	Native	–	–
Japanese honeysuckle	LOJA	*Lonicera japonica*	Introduced	–	–
winter creeper	EUFO5	*Euonymus fortunei*	Introduced	–	–
Oriental bittersweet	CEOR7	*Celastrus orbiculatus*	Introduced	–	–

Animal community

Wildlife (State 3 – Phase 3.2 woody vegetation) (MDC, 2006)
Moist conditions with abundant coarse woody debris make this type of ecological site important for many herptiles. Ephemeral pools provide important amphibian breeding habitat. When woody species are present, maintain adequate riparian buffer areas.

Periodic inundation and acorns provide important habitat and food for migrating ducks (especially mallards) and breeding ducks including wood ducks and hooded mergansers.

Tall emergent trees along with an uneven canopy structure and canopy gaps are important for heron colonies, eagle nesting, Mississippi kites, cerulean warblers and other bird species.

Birds associated with this ecological site are Wood Duck, Hooded Merganser, Barred Owl, Cerulean Warbler, Yellow-throated Warbler, Prothonotary Warbler, Pileated Woodpecker, Yellow-throated Vireo, Brown Creeper, and Yellow-crowned Night Heron.

Reptiles and amphibians associated with this ecological site include small-mouthed salamander, central newt, midland brown snake, gray treefrog, northern spring peeper, Blanchard's cricket frog, southern leopard frog, western painted turtle, and red-eared slider.

Other information

Equipment issues (NRCS 2002)
Limitations: Wetness from flooding; high water table; artificial artifacts in surface horizons. Use of equipment may be restricted in spring and other excessively wet periods. Restrict activities to dry periods or surfaced areas. Equipment use when wet may compact soil and damage tree roots. Unsurfaced roads and traffic areas tend to be slippery and form ruts easily. Access to sites is easiest during periods in late summer or winter when soils are frozen or dry. Planting may be extremely difficult during spring periods. Seedling mortality may be high due to excess wetness. Unsurfaced roads and trails may be impassable during rainy periods. Large amounts of artificial artifacts may be present in surface horizons. These artificial artifacts if exposed may cause problems for efficient and safe equipment operation and may make equipment use somewhat difficult.

Inventory data references

No field vegetational plots were available for this site. All community phases are considered provisional based on field reviews and the information identified in this ecological site description.

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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	03/13/2025
Approved by	Suzanne Mayne-Kinney
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:**