

Ecological site F124XY101OH

Urbanland (reserved)

Last updated: 9/26/2024
Accessed: 09/20/2026

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): 124X—Western Allegheny Plateau

Major Land Resource Area (MLRA): 124—Western Allegheny Plateau (USDA-NRCS, 2006) MLRA 124, Western Allegheny Plateau extends from and includes western PA just north of Pittsburgh through southeastern OH to and includes northeastern KY. This area is primarily in the Kanawha Section of the Appalachian Province of the Appalachian Highlands. This MLRA is on an unglaciated dissected plateau with narrow level valley floors, rolling ridgetops, and hilly to steep slopes with dendritic stream drainages. A notable exception is the broad, Teays Valley, and other glacio-fluvial and glacio-lacustrine features attributed to nearby Pleistocene glaciation. Elevation ranges from 660 to 1310 feet (200 to 400 meters). The geology is predominantly cyclic beds of sandstone, siltstone, clay, shale and coal of Pennsylvanian age. Soils are dominated by Udalfs, Udufts, and Ochcrepts with a mesic temperature regime in combination with five parent materials, residuum, colluvium, alluvium, eolian, and extra-glacial material of glacio-fluvial and glaciolacustrine mesic materials. The climate is predominately a humid continental to temperate, with 940 to 1145 millimeters (37 to 45 inches) of precipitation. Average annual temperature is 8 to 13 degree C (46 to 56 degrees F) with a freeze-free period averaging 185 days. Much of the areas is either forest or in farms, principally for hay and pasture, with fruits and vegetables grown locally. Coal and gas extraction are important industries in the northern part of the MLRA.

Classification relationships

USDA-NRCS (USDA 2006): Land Resource Region (LRR): N—East and Central Farming and Forest Region Major Land Resource Area (MLRA): 124—Western 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 221Ee - Unglaciated Muskingam Plains 221Ef - Western Hocking Plateau 221Eg - Lower Scotio River Plateau 221En - Kinniconick and Licking Knobs Section: 221H - North Cumberland Plateau (in Part) Subsection: 221Hb - Kinniconick and Licking Knobs 221He - Miami - Scioto Plain - Tipton Till Plain

Ecological site concept

These sites consist of areas subject to urban influences, such as accelerated runoff, heat island effects, and soils derived from human-altered or human-transported (HAHT) material (e.g., coal ash, construction debris, dredged materials, and landfills) which are often coupled with weedy and untypical vegetation. As a result, urban ecological sites seem quite idiosyncratic where reference conditions do not apply. Opportunities exist to further explore an urban ecological site framework, to organize soils, vegetation, and landuse history, that is characteristic of an urban ecological context and subsequent interpretations of those findings.

Associated sites

F124XY101OH	Urbanland (reserved) Urbanland
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Similar sites

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Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

These sites are urban settings with novel built physiography.

Table 2. Representative physiographic features

Runoff class	Very low to very high
Elevation	90 – 400 m
Slope	0 – 30 %
Water table depth	30 – 180 cm
Aspect	Aspect is not a significant factor

Climatic features

The regional climate of the unglaciated Western 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. 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.

Greater frequency and magnitude of storm events may increase large gap disturbances coupled with drier conditions in summer and fall may increase wildfires (Butler et al., 2015).

Table 3 Representative climatic features

Frost-free period (characteristic range)	120-140 days
Freeze-free period (characteristic range)	160-180 days

Precipitation total (characteristic range)	1,020-1,120 mm
Frost-free period (actual range)	120-150 days
Freeze-free period (actual range)	150-180 days
Precipitation total (actual range)	970-1,170 mm
Frost-free period (average)	130 days
Freeze-free period (average)	170 days
Precipitation total (average)	1,070 mm

- (1) PUTNEYVILLE 2 SE DAM [USC00367229], Dayton, PA
- (2) FORD CITY 4 S DAM [USC00362942], Ford City, PA
- (3) BUTLER 2 SW [USC00361139], Butler, PA
- (4) DENISON WTR WKS [USC00332160], Dennison, OH
- (5) NEW PHILADELPHIA FLD [USW00004852], New Philadelphia, OH
- (6) MILLERSBURG [USC00335297], Millersburg, OH
- (7) DANVILLE 2 W [USC00332044], Danville, OH
- (8) COSHOCTON AG RSCH STN [USC00331905], Fresno, OH
- (9) COSHOCTON WPC PLT [USC00331890], Coshocton, OH
- (10) ZANESVILLE MUNI AP [USW00093824], Zanesville, OH
- (11) PHILO 3 SW [USC00336600], Philo, OH
- (12) NEW LEXINGTON 2 NW [USC00335857], New Lexington, OH
- (13) LOGAN [USC00334672], Logan, OH
- (14) JACKSON 3 NW [USC00334004], Jackson, OH
- (15) WAVERLY [USC00338830], Waverly, OH
- (16) PORTSMOUTH-SCIOTOVILLE [USC00336781], South Shore, OH
- (17) WARNOCK2 [USC00158432], Greenup, KY
- (18) GRAYSON 2 E [USC00153389], Grayson, KY
- (19) OLIVE HILL 5NE [USC00156012], Olive Hill, KY
- (20) GRAYSON 3 SW [USC00153391], Grayson, KY
- (21) GIMLET 9N [USC00153230], Olive Hill, KY
- (22) CAVE RUN LAKE [USC00152791], Morehead, KY
- (23) ASHLAND [USC00150254], South Point, KY

Influencing water features

Water features are not typically associated with this ecological site, but can be incidental.

Wetland description

N/A

Soil features

Urban soils are all derived from human-altered and human-transported (HAHT) material (e.g., coal ash, construction debris, dredged materials, landfills, etc.). A soils catena table summarizing various HAHT soils according to type of urban parent material and drainage category. Using a soils systems approach, as such, may provide further insight as to how to subdivide Urban Ecological Sites in the future.

Table 4. Representative soil features

Parent material	(1) Human-transported material
Surface texture	(1) Artifactual
Depth to restrictive layer	Not specified
Surface fragment cover <=3"	Not specified
Surface fragment cover >3"	Not specified
Available water capacity (Depth not specified)	Not specified
Soil reaction (1:1 water) (Depth not specified)	Not specified
Subsurface fragment volume <=3" (Depth not specified)	Not specified
Subsurface fragment volume >3" (Depth not specified)	Not specified

Ecological dynamics

The ecological dynamics of Urban Sites are problematic. Heterogeneous HAHT parent materials and the effects of the urban environment (pollution, runoff, heat island, compaction, etc.) on the chemical and physical soil properties results in complicated plant community dynamics. Urban ES, therefore, lack traditional "reference plant communities" found in native ecological sites. However, the state-and-transition model may consist of "managed" or "potential" plant communities. And as developed, "analagous" (similar function, different origin) reference conditions may be used by emulating the character of more native landscape settings. Upon further investigation, a custom model could provide an approximation of the generalized types of State-and-Transition Models found in urban settings.

State and transition model

Additional community tables

Table 5. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 6. Community 1.2 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 7. Community 1.3 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 8. Community 2.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 9. Community 2.2 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 10. Community 3.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 11. Community 3.2 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 12. Community 3.3 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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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

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Approval

Greg Schmidt, 9/26/2024

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	10/06/2021
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:
