

APPENDIX B:
ENVIRONMENTAL OVERVIEW



**Environmental Overview (EO) –
Plantside Drive Extension Corridor
Study, Jefferson County,
Kentucky**

KYTC Item No. 5-80003.00

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Prepared for:

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**ENVIRONMENTAL OVERVIEW (EO) – PLANTSIDE DRIVE EXTENSION CORRIDOR STUDY,
JEFFERSON COUNTY, KENTUCKY**

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Abbreviations

ASBESTOS	Asbestos Notification System
AST	Above Ground Storage Tanks
ECHO	Enforcement & Compliance History Information
EDR	Environmental Data Resources
EDR Hist Auto	EDR Exclusive Historical Auto Stations
EO	Environmental Overview
EPA	Environmental Protection Agency
ERNS	Emergency Response Notification System
FEMA	Federal Emergency Management Agency
FINDS	Facility Index System/Facility Registry System
HMIRS	Hazardous Materials Information Reporting System
IPaC	Information for Planning and Consultation
KDFWR	Kentucky Department of Fish and Wildlife Resources
KPDES	Kentucky Pollutant Discharge Elimination System
KDOW	Kentucky Division of Water
KSS	Kentucky Speleological Society
KYTC	Kentucky Transportation Cabinet
LEAD	Environmental Lead Program Report Tracking Database
LWCF	Land and Water Conservation Fund
NAAQS	National Ambient Air Quality Standards
MS4	Municipal Separation Storm Sewer Systems
NEPA	National Environmental Policy Act
NFHL	National Flood Hazard Layer
NHD	National Hydrography Dataset
NPDES	National Pollutant Discharge Elimination System



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(Abbreviations continued)

NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OSA	Kentucky Office of State Archaeology
OKNP	Office of Kentucky State Nature Preserve
PADUS	Protected Areas Database of the United States
PSTEAF	Petroleum Storage Tank Environmental Assurance Fund
RCRA	Resource Conservation Recovery Act
RGA HWS	Recovered Government Archive State Hazardous Waste Facilities List
SHWS	State Hazardous Waste Sites
SSTS	Section 7 Tracking Systems
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tanks



Executive Summary

This Environmental Overview (EO) has been prepared to support the feasibility study for the extension of Plantside Drive (CS 1001H) between Rehl Road (CR 1006H) and Taylorsville Road (KY 155) in Jefferson County, Kentucky (the “Study Area”) for the Kentucky Transportation Cabinet (KYTC) [Item No. 5-80003.00] (Figure 1). The objective of this EO is to identify environmental resources of significance, potential U.S. Army Corps of Engineers (USACE) jurisdictional features, and other environmental areas of concern that need to be considered. Natural and human environmental resources within the study area were identified from secondary source information including available electronic databases, data files, and published data that may be publicly available or restricted to subject matter experts. Based on this information, key environmental features within the Study Area include:

USGS Streams and Wetlands: There are 24 U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) wetland features (27.6 acres total), 19 United States Geological Survey (USGS) National Hydrography Dataset (NHD) waterbodies (22.2 acres total) and 21 NHD streams (17,114 linear feet total) mapped within the Study Area. The Kentucky Watershed Viewer shows the majority of the Study Area falls within the Cane Run-Floyds Fork watershed (HUC12: 051401020806) with the remainder within the Chenoweth Run watershed (HUC12: 051401021001). No Kentucky Division of Water (KDOW) outstanding state resource, 303(d) Impaired and Threatened Waters list, 305(b) Water Quality list waters were identified within the Study Area. A portion of the Study Area is located within the Louisville MS4:MSD boundary of KPDES: KYS000001 permit area; however, KYTC maintains compliance under its own MS4 and KPDES statewide program commitments. (Figure 2)

FEMA NFHL Floodplain & Floodway: No 100-Year floodplains or FEMA designated floodway areas were identified within the Study Area. (Figure 2)

Farmland: Approximately 283.33 acres or 36% of the soils in the Study Area are identified as ‘Prime Farmland’. ‘Prime Farmland if protected from flooding or not frequently flooded during the growing season’ constituted 11.12 acres, or 1% of the Study Area. Approximately 138.83 acres or 18% are ‘Farmlands of Statewide Importance’. ‘Non-Prime Farmland’ totals 350.06 acres or 45% of the soils in the Study Area. In the Study Area some of ‘Prime Farmland’ has previously been developed. Additionally, the US census the study area as an urban area and would be exempt from the Farmland Protection Policy Act. (Figure 3; Attachment 5)

Threatened and Endangered Species: According to U.S. Fish and Wildlife Service’s Information for Planning and Consultation (IPaC), there are three federally listed endangered species, one federally listed proposed endangered species, one federally listed candidate species, and one federally listed experimental population. All have the potential to occur within the Study Area. Freshwater mussels typically require perennial waters for their habitat and some forested areas are present that could provide suitable bat habitat. (Figure 4; Attachments 1a-g)

Karst: Based on information from the USGS US Karst Occurrence Map, the majority of the study area is underlain by bedrock with high potential for karst development. The KyGovMaps Open Data Portal identified



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one sinkhole polygon within the Study Area. The Office of Kentucky State Nature Preserves (OKNP) data search reported no record of caves or sinkholes within the Study Area. The Kentucky Speleological Society (KSS) database showed two caves within a 1-mile buffer of the Study Area, but both are outside of the boundary and located west of Blankenbaker Parkway in Jefferson County. (Figure 4; Attachments 1f, 1g, & 3)

Groundwater: The EDR Well Report and a search of the University of Kentucky Groundwater Data Repository identified two agricultural water well records although both were noted as “Plugged”. No public water supply system and no source water protection areas were identified. Kaelin Spring (9000-3754) and Tucker Spring (9000-3755) were identified in the Study Area and were noted as ‘Unused’. (Figure 5)

Hazardous Materials Concerns: The EDR report revealed 30 sites (122 records) within the Study Area. There are three underground storage tank (UST) sites including two gas stations and one personal residence. One aboveground storage tank (AST) site (Louisville Metro Gov) was identified in the Study Area. Two RCRA Non Generators / No Longer Regulated sites were identified. A total of 23 National Pollutant Discharge Elimination System (NPDES) sites were identified in the Study Area. Two high risk historical records were identified in the Study Area including a historic auto site (Kiel Brothers Oil Co; Taylorsville Road) and a historic cleaner (Dry Cleaning Deliver; Tucker Station).

Potential hazardous materials concerns exist throughout the Study Area. For additional information on specific hazardous materials concerns in and around the surrounding Study Area, please reference the full EDR report (provided separately). (Figure 5, Attachment 6)

Oil and Gas Wells: According to both the EDR and KGS reports, no oil and gas wells were identified in the Study Area. Only one was located within a 1-mile buffer of the Study Area. (Figure 5; Attachment 6)

Archaeological, Cultural and Historic Resources: Although a couple archaeological surveys areas were previously performed in the area, the Kentucky Office of State Archaeology (OSA) preliminary records review indicated no recorded archaeological sites within the Study Area boundary. One previously recorded indeterminate prehistoric archaeological site was identified and is located immediately adjacent within feet of the Study Area boundary. (Figure 6)

This critical issues analysis is based on results from the Kentucky Heritage Council State Historic Preservation Office (KHC-SHPO). The data has not been field-checked for locational accuracy, continued National Register of Historic Places (NRHP) eligibility, and/or whether each property is extant. There are three types of data collected to assess any cultural-historic critical issues:

- 1) Survey or Inventory data: This information is at the identification level only per SHPO. These properties may or may not be eligible for the NRHP.
- 2) NRHP Eligible Properties: These properties have been identified, analyzed, and determined eligible for the NRHP under Criterion A (history), Criterion B (people), or Criteria C (architecture). This determination generally happens at the SHPO level.



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- 3) NRHP Listed Properties: These properties have been listed in the NRHP. They receive at least two reviews: one at the SHPO level and another at the federal level with the National Park Service.

A total of 49 previously recorded historic architectural properties are within a half-mile of the Study Area’s footprint. A 500-foot buffer was extended beyond the half mile to account for parcels that may be partially clipped within this area. This number includes NRHP listings, NRHP eligible properties, and survey/inventory level properties. One of these properties has been demolished. Background data from the KHC-SHPO identifies five NRHP listed properties within a half mile of the Study Area. One of the NRHP listed properties is a rural historic district (Tyler Settlement), and the remaining four are individual properties. See Table 1 below.

Table 1. NRHP Listed and Eligible Properties within a Half Mile of the Study Area

Property Name	Date listed or DOE	NRIS Number/KHC Number
Tyler Settlement Rural Historic District	Listed, May 1, 1986	86001045
Old Wilderness Fort/Robert Tyler Place	Listed, July 12, 1983	83002739
Rockdale/Tyler-Sweeney Farm	Listed, July 12, 1983	83002727
Hazael Tucker Farm	Listed, December 5, 1980 (boundary increase May 1, 1986)	86001591 (86001046)
Moses Tyler-Presley Tyler Farm	Listed, July 12, 1983	83002744
House	Determined Eligible, 2003	JF 968
House	Determined Eligible, 2008	JF 1739
House	Determined Eligible, 2008	JF 1741
House	Determined Eligible, 2008	JF 1748
House	Determined Eligible, 2008	JF 1749

Five of the previously recorded historic architectural properties have been recommended individually eligible for listing in the NRHP (JF 968, JF 1739, JF 1741, JF 1748, and JF 1749). A *Cultural Historic Survey of the Proposed Improvements of KY 155 at Tucker Station Road in Jefferson County, Kentucky* was located during the KHC-SHPO background data check which includes properties within this area that were not accounted for on KHC-SHPO mapping.¹ Three of the properties included within this report were recommended eligible as contributing to the Tyler Settlement Rural Historic District (JF 1743, JF 1747, and

¹ Amanda Abner and Rebecca Turner, *A Cultural Historic Survey of the Proposed Improvements of KY 155 at Tucker Station Road in Jefferson County, Kentucky (Item No 5-902.00)*. Report prepared for the KY Transportation Cabinet, 2008.



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JF 1748); this recommendation was concurred by KHC-SHPO. One of the sites contributing to the district (JF 1748) and one additional individual site (JF 1749) were recommended as individually eligible. This recommendation also was agreed to by KHC-SHPO. Although not accounted for within the KHC-SHPO Site Check Web Service, the properties within the Abner/Turner report are included for in the above totals and are included on the previously surveyed resources Figure 7.

In addition to a substantial number of previously recorded resources, there are numerous un-documented historic architectural properties that are fifty years of age or older, which is the approximate age required for historic architectural field work and NRHP eligibility. A few of these may be eligible for the NRHP. These properties are likely to represent urban and rural resources, such as houses, farmsteads, cemeteries, bridges, and commercial buildings.

Based upon these initial results and a knowledge of the area, Stantec recommends a reconnaissance historic architectural survey, prior to construction. This survey work will be required if the project is determined to be a federal undertaking, per Section 106 of the National Historic Preservation Act of 1966.

Community Resources: Community resources and sensitive noise receptors in the Study Area include numerous houses and residential neighborhoods. Blackacre State Nature Preserve & Historic Homestead is located outside of the Study Area but hosts public events, recreational trails, community gardens, and a historic home. No cemeteries were identified within the Study Area; however, three cemeteries were located within 0.5-mile. Two houses of worship, St. Michaels Catholic Church and The Kingdom Center, were identified within the Study Area. One private school, St. Michaels Catholic School, is associated with the St. Michaels Catholic Church. Harmony at Tuckers Station is a Senior Services Living Facility within the Study Area. The Tyler Village retail center hosts multiple community service businesses including a Kroger grocery store and fuel center, Norton Immediate Care Center, credit union, nail salon, coffee shop, and multiple restaurants. A tire shop is also located on Taylorsville Road adjacent to the Tyler Village. Two Louisville Gas & Electric (LG&E) electric transmission lines run north-south directly adjacent to each other along the eastern extent of the Study Area. No electric substations, or natural gas pipelines were identified in the Study Area. (Figure 5)

Section 4(f) and Section 6(f) Resources: No 6(f) properties were identified in the Study Area. Historic or archaeological sites or districts are considered significant, for Section 4(f) purposes, if it is on or determined eligible for listing on the NRHP (FHWA 2024). There are no NRCS Wetland Reserve Program Lands within the Study Area. No Wildlife Management Areas or Federal Public Lands were located within the Study Area. Blackacre State Nature Preserve & Historic Homestead is located outside of the Study Area but was identified as a 4(f) public recreation area with some restricted public access and presence of a registered historic home. It is also a 6(f) protected resource due to the Land and Water Conservation Fund (LWCF) funds used in the acquisition (fee) for the property in 1980 (Trust for Public Land 2023). (Figure 5)



1.0 ENVIRONMENTAL OVERVIEW

Stantec Consulting Services has prepared this Environmental Overview (EO) as part of the Plantside Drive Extension Corridor Study [Item No. 5-80003.00] for the Kentucky Transportation Cabinet (KYTC). This overview identifies known natural and human features which occur within the Study Area that should be considered during the development and advancement of improvement concepts, as well as the avoidance or minimization of impacts.

1.1 PROJECT DESCRIPTION

This Environmental Overview (EO) has been prepared as part of the Kentucky Transportation Cabinet's (KYTC) feasibility study for the extension of Plantside Drive (CS 1001H) from Rehl Road (CR 1006H) to Taylorsville Road (KY 155) in Jefferson County, Kentucky [Item No. 5-80003.00] (Figure 1). The objectives of the study include the following:

- Develop conceptual roadway options to extend Plantside Drive
- Investigate the impacts and benefits of a new connection to the traveling public
- Assess the viability / feasibility using the existing structure over the Norfolk-Southern Railroad
- Evaluate potential environmental impacts as well as potential mitigation costs

The objective of this EO is to identify environmental resources of significance, potential jurisdictional features, and other environmental areas of concern that need to be considered in development of improvement concepts. Natural and human environmental resources within the Study Area were identified from secondary source information including available electronic databases, data files, and published data that may be publicly available or restricted to subject matter experts. Please recognize and adhere to restrictions for any report Attachments identified within as for "Internal Use Only".

1.2 RECORDS REVIEW

A review of agency databases and secondary sources was conducted to document known environmental resources including, but not limited to:

- Ecological resources in **Attachments 1a-1g**:
 - IPaC threatened and endangered species list
 - Known northern long-eared bat (*Myotis septentrionalis*) habitat in Kentucky
 - Known Indiana bat (*Myotis sodalis*) habitat in Kentucky
 - Kentucky Department of Fish and Wildlife Resources state species list
 - Office Kentucky Nature Preserves Kentucky Biological Assessment Tool database report
 - Kentucky Speleological Society caves and sinkholes database report
- Kentucky NAAQs Air Quality Map (**Attachment 2**)
- Kentucky Karst Potential Map (**Attachment 3**)
- Project Overview Map (**Figure 1**)



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- Water resources (**Figure 2**):
 - FEMA National Flood Hazard Layer (NFHL) Data
 - USGS National Hydrography Dataset (NHD) Streams & Waterbodies
 - USFWS National Wetland Inventory (NWI)
- Farmland Classification of Soils (**Figure 3**)
- NRCS Hydric Soils & NRCS Custom Soils Report for Jefferson County, Kentucky (**Figure 3**)
- Potential Bat Habitat (**Figure 4**)
- Human Environment (**Figure 5**)
- KGS Oil and Gas Wells (**Figure 5**)
- Hazardous Materials records (**Figure 5**)
 - EDR DataMap research report
 - EDR topographic maps
- Cultural and Historic resources:
 - Kentucky Office of State Archaeology preliminary records review (**Figure 6**)
 - Kentucky Heritage Council report (**Figure 7**)
 - Kentucky Historical Society, Kentucky Cemeteries Database (**Figure 5**)
- **Table 2** below provides a summary of the features that were identified within the study area. Study Area location and aerial features are identified in **Figures 1-7**. This information provides an overview of resources of significance within the Study Area as well as other environmental issues of potential concern. More detailed environmental studies may be required as project concepts are further developed in accordance with the National Environmental Policy Act (NEPA).



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Table 2. Environmental Resources/Features in Plantside Drive Extension Corridor Study Area, Jefferson County, Kentucky

Environmental Category	Resource/Feature	Source/Information
USGS Streams	<p>21 NHD streams (17,114 linear feet total) were mapped within the Study Area. There are no NRCS Wetland Reserve Program Lands within the Study Area.</p> <p>The Kentucky Watershed Viewer shows the majority of the Study Area falls within the Cane Run-Floyds Fork watershed (HUC12: 051401020806) with the remainder within the Chenoweth Run watershed (HUC12: 051401021001).</p> <p>No KDOW outstanding state resource waters, 303(d) list waters, or 305(b) list waters were identified. A portion of the Study Area is located within the Louisville MS4:MSD boundary of KPDES: KYS000001.</p> <p>Please refer to Figure 2 for more information.</p>	<p>Source: KDOW Special Waters tables, KDOW 305(b) and 303(d) tables (2016), USFWS NWI, USGS National Hydrography Dataset Map, KY Water Health Portal</p>
Other Streams	<p>Surface streams are potentially present in the Study Area. These would likely consist of small headwater streams or springs and roadside drainage features not indicated on traditional mapping. Field reconnaissance would be required to determine their presence and/or extents.</p> <p>Please refer to Figure 2 for more information.</p>	<p>Source: USGS maps, ESRI topo maps</p>
Wetlands	<p>There are no NRCS Wetland Reserve Program lands within the Study Area. 24 NWI wetland features (27.6 acres total) were identified within the Study Area.</p> <p>Please refer to Figure 2 for more information.</p>	<p>Source: USFWS NWI, USGS National Map</p>
Lakes/Ponds	<p>19 NHD waterbodies (22.2 acres total) were within the Study Area.</p> <p>Please refer to Figure 2 for more information.</p>	<p>Source: USFWS NWI, USGS National Hydrography Dataset Map</p>



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(Table 2 continued)

Environmental Category	Resource/Feature	Source/Information
<p>USFWS Species List</p>	<p>The United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) resource list indicated the following six species were of concern for the Study Area:</p> <ul style="list-style-type: none"> • Northern long-eared bat (<i>Myotis septentrionalis</i>) - Endangered • Gray bat (<i>Myotis grisescens</i>) - Endangered • Indiana bat (<i>Myotis sodalis</i>) - Endangered • Salamander mussel (<i>Simpsonaias ambigua</i>) - Proposed Endangered • Monarch Butterfly (<i>Danaus plexippus</i>) – Candidate • Whooping Crane (<i>Grus americana</i>) – Experimental Population <p>Tricolored bat (<i>Perimyotis subflavus</i>) was not listed on the IPaC species list but is federally Proposed Endangered and based on its former statewide prevalence has potential to occur within this Study Area.</p> <p>Please refer to Figure 4 and Attachments 1a & 1d for more information regarding species data.</p>	<p>Source: USFWS IPaC Trust Resource Report (2023), USFWS Kentucky Ecological Field Office (2019).</p>
<p>KDFWR Species List</p>	<p>Kentucky Department of Fish and Wildlife Resources (KDFWR) lists 4 Federal Threatened, Endangered, and Special Concern Species as occurring (either recently or historically) in the Jeffersontown Quadrangle. These include:</p> <ul style="list-style-type: none"> • Whooping Crane (<i>Grus americana</i>) - Experimental Population • Clubshell (<i>Pleurobema clava</i>) - Endangered • Tricolored Bat (<i>Perimyotis subflavus</i>) - Proposed Endangered • Louisville Cave Beetle (<i>Pseudanopthalmus troglodytes</i>) - Candidate <p>KDFWR lists 25 State Threatened, Endangered, and Special Concern Species as occurring (either recently or historically) in the Jeffersontown Quadrangle. These include:</p> <ul style="list-style-type: none"> • Eight state endangered species (six Aves, one Bivalvia, and one Malacostraca) • Four state threatened species (three Aves and one Mammalia) • 13 state sensitive species (12 Aves and one Insecta) <p>Please refer to Attachment 1e for more information regarding species data.</p>	<p>Source: KDFWR – Jeffersontown Quad (2023)</p>



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(Table 2 continued)

Environmental Category	Resource/Feature	Source/Information
<p>OKNP Species Database</p>	<p>The Office of Kentucky Nature Preserves (OKNP) provided three records of species occurrences either in or within one mile of the Study Area.</p> <p>Within the Study Area there are two state species listed:</p> <ul style="list-style-type: none"> • Lyre-leaf Rockcress (<i>Arabidopsis lyrata</i> ssp. <i>lyrata</i>) • Agueweed (<i>Gentianella occidentalis</i>) <p>Within one mile of the Study Area there is one additional state species listed:</p> <ul style="list-style-type: none"> • Crawe’s Sedge (<i>Carex crawei</i>) <p>The OKNP Natural Heritage Database report summarizes the existing information known to the program at the time of the request for the Study Area provided. These biological elements or locations in question should not be regarded as final statements, nor should they be substituted for on-site surveys required for environmental assessments. Due to the sensitive nature of this data, the specific species’ locations have been redacted.</p> <p>Please refer to Attachment 1f for more information regarding species data.</p>	<p>Source: OKNP Natural Heritage Database response (November 14, 2023)</p>
<p>Groundwater</p>	<p>The EDR well report found no public water supply and 2 ‘Plugged’ agricultural water wells within the Study Area.</p> <p>Please refer to Figure 5 for more information regarding groundwater data.</p>	<p>Source: Kentucky Watershed Viewer (2023), EDR DataMap Well Search Report (2023), and Water Protection Viewer (2023), EDR Topographic Maps (2023)</p>
<p>Karst Areas</p>	<p>Based on information from the USGS US Karst Occurrence Map, the majority of the Study Area is underlain by bedrock with moderate potential for karst development. The KyGovMaps Open Data Portal identified one sinkhole polygon within the Study Area. The OKNP report found no record of caves or sinkholes within the Study Area and buffer zone. The KSS database identified two caves within 1-mile buffer of the Study Area.</p> <p>Please refer to Figure 4 for KyGovMaps sinkhole, Attachment 1f for OKNP database report, Attachment 1g for KSS database response, and Attachment 3 for Kentucky karst potential map.</p>	<p>Source: Karst Occurrence in Kentucky map (Paylor and Currens 2002), KyGovMaps Open Data Portal – KY Water Resources Polygons Sinkholes, OKNP database response (2023), USGS</p>



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(Table 2 continued)

Environmental Category	Resource/Feature	Source/Information
Floodplain	<p>According to NFHL data, there are no FEMA 100-Year floodplains occurring within the Study Area.</p> <p>Please refer to Figure 2 for more information regarding floodplain mapping.</p>	Source: FEMA NFHL (2021)
Floodway	<p>There are no FEMA designated floodway areas within the Study Area.</p> <p>Please refer to Figure 2 for more information regarding floodway mapping.</p>	Source: FEMA NFHL (2021)
Farmlands	<p>Approximately 283.33 acres or 36% of the soils in the Study Area are identified as 'Prime Farmland'. 'Prime Farmland if protected from flooding or not frequently flooded during the growing season' constituted 11.12 acres, or 1% of the Study Area. Approximately 138.83 acres or 18% are 'Farmlands of Statewide Importance'. 'Non-Prime Farmland' totals 350.06 acres or 45% of the soils in the Study Area. In the Study Area some of 'Prime Farmland' has previously been developed. Additionally, the US census the study area as an urban area and would be exempt from the Farmland Protection Policy Act.</p> <p>Please refer to Figure 3 and Attachment 4 for the full USGS NRCS Soil Survey Report and mapping.</p>	Source: NRCS Web Soil Survey Map Data (2023)
Hazardous Materials	<p>The EDR report revealed 30 sites (122 records) within the Study Area.</p> <p>Please refer to Figure 5 and digital Attachment 6 for more information regarding EDR data.</p>	Source: Environmental Data Resources Report (EDR 2023)
Oil and Gas Wells	<p>The EDR and KGS revealed zero oil and gas wells within the Study Area.</p> <p>Please refer to Figure 5 and digital Attachment 6 for more information regarding well data.</p>	Source: EDR DataMap Well Search Report (December 2023), KGS (2023)



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(Table 2 continued)

Environmental Category	Resource/Feature	Source/Information
Section 4(f)	<p>There are no Protected Areas Database of United States (PADUS) locations within the Study Area.</p> <p>Tyler Settlement Rural Historic District, and all historic or archaeological listed or eligible NRHP properties are provided protection via Section 4(f). Please refer to Figure 7 for identified NRHP sites.</p> <p>Although outside of the Study Area, Blackacre State Nature Preserve (SNP) is considered 4(f) as a public park with restricted access. See Figure 5 for Blackacre SNP bounds.</p> <p>No Wildlife Management Areas or Federal Public Lands located within the Study Area.</p>	<p>Source: KDFWR (2023), Google Earth Pro Maps, PADUS (2023)</p>
Section 6(f)	<p>Based on the Land and Water Conservation Fund (LWCF) records map, 'Blackacre & Beargrass Preserves' is a Section 6(f) public nature preserve since it received LWCF funds in 1980 for the acquisition fee on the property.</p>	<p>Source: Trust for Public Land LWCF Federal and State Funding Map Data (2023)</p>
Air Quality	<p>The Study Area is located in Jefferson County which is a Non-attainment Area for 8-hour ozone (2015 standard). Jefferson County is an Attainment/Unclassifiable Area for PM 2.5 (2012 standard) for transportation-related criteria pollutants, for which the EPA has established National Ambient Air Quality Standards (NAAQS). There are no USEPA air emissions facilities located within the Study Area.</p> <p>Please refer to Attachment 2 for more information regarding air quality data.</p>	<p>Source: KYTC Air Quality Maps (2019), USEPA Green Book (2015), USEPA Envirofacts (2018)</p>
Noise	<p>Sensitive noise receptor areas include several residential neighborhoods and houses, a senior living community, two houses of worship, and one private school.</p> <p>Blackacre State Nature Preserve & Historic Homestead may also be a sensitive noise receptor but is located outside of the Study Area. See Figure 5 for Blackacre SNP bounds.</p>	<p>Source: KYTC Noise Policy (2020)</p>
Cultural-Archaeology	<p>Although archaeological surveys were previously performed in the area, the Kentucky Office of State Archaeology (OSA) preliminary records review indicated no recorded archaeological sites within the Study Area boundary but did identify one previously recorded archaeological site located immediately adjacent to the Study Area.</p> <p>Please refer to Figure 6 for more information regarding cultural-archaeology data.</p>	<p>Source: KY OSA report (2023)</p>



**ENVIRONMENTAL OVERVIEW (EO) – PLANTSIDE DRIVE EXTENSION CORRIDOR STUDY,
JEFFERSON COUNTY, KENTUCKY**

(Table 2 continued)

Environmental Category	Resource/Feature	Source/Information
Cultural- Historic	<p>There are 49 previously recorded historic architectural properties within or adjacent to the Study Area; one has been demolished. Five properties are NRHP listed: one is a rural historic district and the remaining four are individual properties. Five previously recorded properties have been recommended individually eligible for listing in the NRHP.</p> <p>Based on these results and knowledge of the area, numerous undocumented historic architectural properties that are 50 years of age or older may be present and a reconnaissance historic architectural survey is recommended prior to construction.</p> <p>Please refer to Figure 7 for more information regarding cultural-historic data.</p>	<p>Source: Kentucky Heritage Council Site Files; National Register of Historic Places Map (2020), USGS topo maps, Abner & Turner 2008</p>
Houses of Worship	<p>There are two houses of worship within the Study Area, St. Michaels Catholic Church and The Kingdom Center.</p> <p>Please refer to Figure 5 for more Human Resources data.</p>	<p>Source: Google Earth Pro Maps, ESRI topo maps</p>
Schools	<p>There is one private school within the Study Area, St. Michaels Catholic School.</p> <p>Please refer to Figure 5 for more Human Resources data.</p>	<p>Source: Google Earth Pro Maps, ESRI topo maps, HIFLD</p>
Cemeteries	<p>There are no cemeteries within the Study Area, however, three cemeteries were identified within 0.5-mile of the Study Area.</p> <p>There may be additional private or family cemeteries present in the Study Area that have not been previously mapped or located.</p> <p>Please refer to Figure 5 for more Human Resources data.</p>	<p>Source: Google Earth Pro Maps, ESRI topo maps, USGS topo maps, Kentucky Historical Society Cemeteries Database (2008)</p>
Public Services	<p>Two directly adjacent electric transmission lines were identified running N-S along the eastern extent of the Study Area. There are no electrical substations, or natural gas pipelines identified within the Study Area.</p> <p>Please refer to Figure 5 for more Human Resources data.</p>	<p>Source: U.S. Department of Homeland Security Infrastructure data (2024). Google Earth Pro Maps, National Pipeline Mapping Systems Public Viewer (2023)</p>



**ENVIRONMENTAL OVERVIEW (EO) – PLANTSIDE DRIVE EXTENSION CORRIDOR STUDY,
JEFFERSON COUNTY, KENTUCKY**

(Table 2 continued)

Environmental Category	Resource/Feature	Source/Information
Residences and Businesses	The majority of the Study Area is comprised of residential development interspersed with commercial businesses along Taylorsville Road. A senior living community is also present. Commercial development is also concentrated at the northern end outside of the Study Area, along the north side of Rehl Road. Louisville Laser Works, Affordable Mini-Warehouses, and Gary Dukes Land Surveying were additional businesses identified.	Source: Google Earth Pro Maps, ESRI topo maps, NLCD (2021)



ENVIRONMENTAL OVERVIEW (EO) – PLANTSIDE DRIVE EXTENSION CORRIDOR STUDY, JEFFERSON COUNTY, KENTUCKY

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ENVIRONMENTAL OVERVIEW (EO) – PLANTSIDE DRIVE EXTENSION CORRIDOR STUDY, JEFFERSON COUNTY, KENTUCKY

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**ENVIRONMENTAL OVERVIEW (EO) – PLANTSIDE DRIVE EXTENSION CORRIDOR STUDY,
JEFFERSON COUNTY, KENTUCKY**

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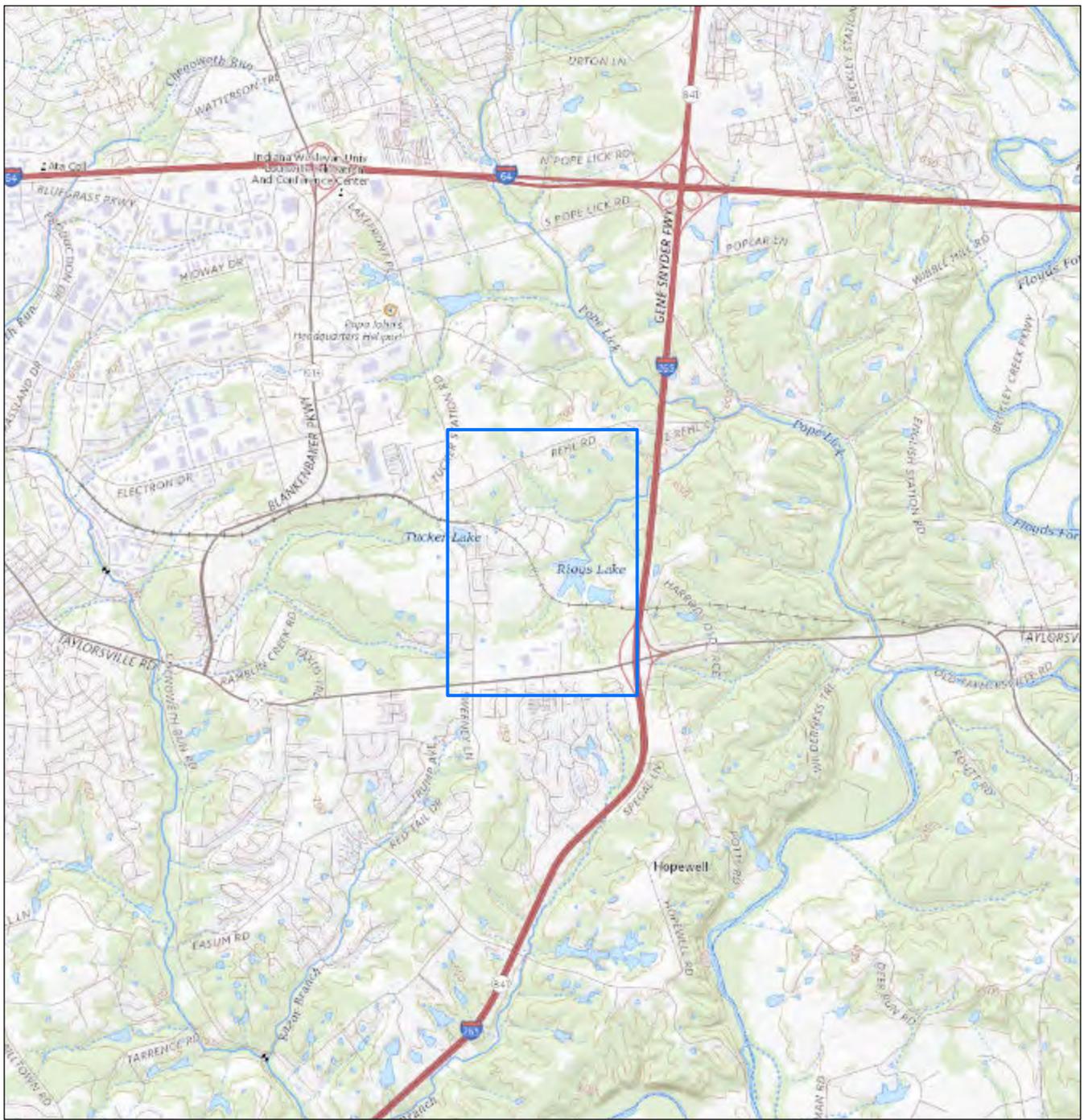
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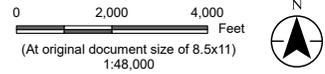
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FIGURES

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Legend
 Study Area



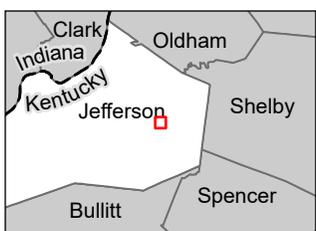
Project Location Jefferson County, Kentucky *Prepared by* TCN on 2024-01-26

Client/Project Kentucky Transportation Cabinet (KYTC) 178568101
 Item No. 5-80003.00: Plantside Extension Corridor Study
 Environmental Overview

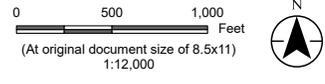
Figure No. 1
Title **Project Overview**

- Notes**
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
 2. Data Sources: KYTC, Stantec
 3. Background: USGS Topographic Map

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- Legend**
- Study Area
 - US Highway
 - Interstate
 - State Route
 - Local Road
 - Spring
 - KOW Source Water Protection Area*
 - FEMA Floodplain*
- NWI Feature**
- Freshwater Emergent Wetland
 - Freshwater Pond
 - Riverine
 - Intermittent Stream
 - Perennial Stream
 - Artificial Path
 - Waterbody



Project Location: Jefferson County, Kentucky
 Prepared by: TCN on 2024-01-26

Client/Project: Kentucky Transportation Cabinet (KYTC) 178568101
 Item No. 5-80003.00: Plantside Extension Corridor Study

Environmental Overview
 Figure No. 2

Title
Water Resources

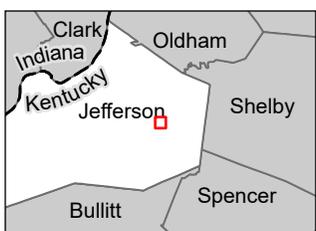
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3. Background: ESRI World Imagery

*No Features Within Data Frame

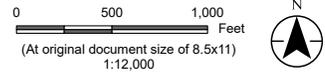
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Notes
 1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
 2. Data Sources: KYTC, Stantec, NRCS
 3. Background: ESRI World Imagery

- Legend**
- Study Area
 - US Highway
 - Interstate
 - State Route
 - Local Road
- NRCS Soil Classification**
- Farmland Indicator**
- All areas are prime farmland
 - Prime farmland if protected from flooding or not frequently flooded during the growing season
 - Farmland of statewide importance
 - Not prime farmland



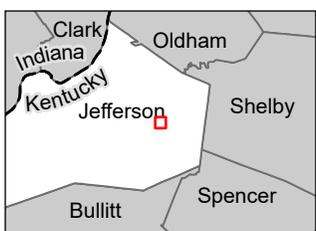
Project Location Jefferson County, Kentucky *Prepared by* TCN on 2024-01-26

Client/Project Kentucky Transportation Cabinet (KYTC) *178568101*
 Item No. 5-80003.00: Plantside Extension Corridor Study
 Environmental Overview

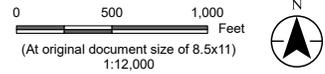
Figure No. **3**
Title
Farmland Classification

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- Legend**
- Study Area
 - US Highway
 - Interstate
 - State Route
 - Local Road
 - Forested Habitat
 - Potential Sinkhole



Project Location: Jefferson County, Kentucky Prepared by TCN on 2024-01-26

Client/Project: Kentucky Transportation Cabinet (KYTC) 178568101

Item No. 5-80003.00: Plantside Extension Corridor Study Environmental Overview

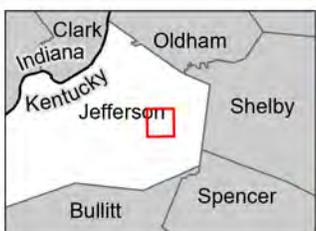
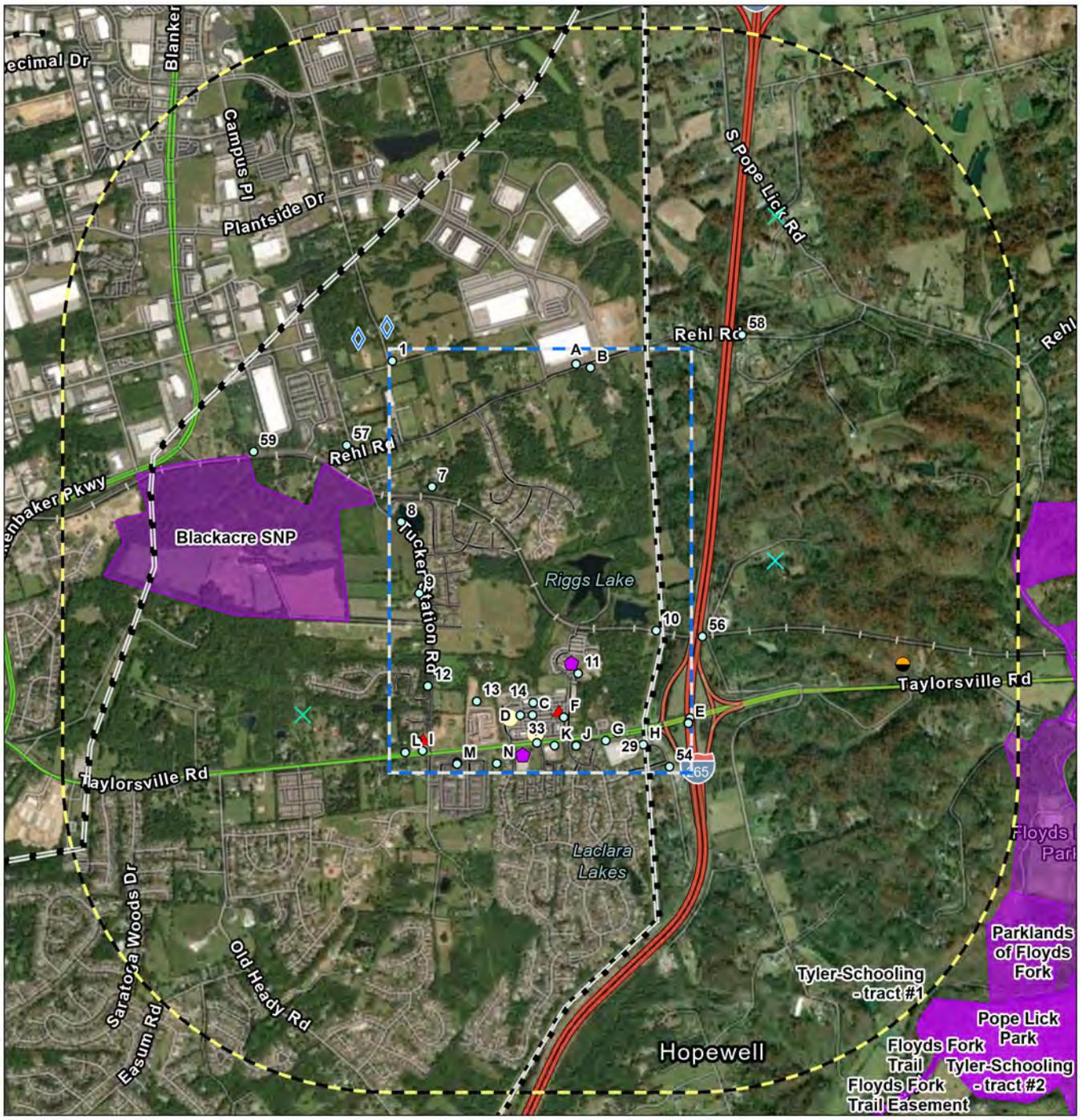
Figure No. 4

Title: Potential Bat Habitat and Sinkholes

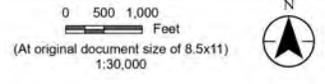
- Notes**
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- Legend**
- Study Area
 - ◆ Spring
 - ✕ Cemetery
 - 1-Mile Buffer
 - US Highway
 - Interstate
 - State Route
 - Local Road
 - Protected Area
 - EDR Site
 - Oil and Gas Well
 - Electric Transmission Line
 - ▲ Gas Station
 - ◆ Church
 - Agriculture Water Well



Project Location: Jefferson County, Kentucky
Prepared by: TCN on 2024-01-26

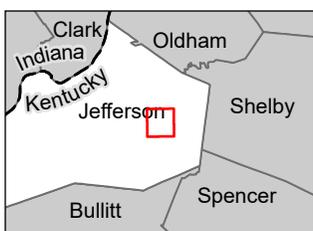
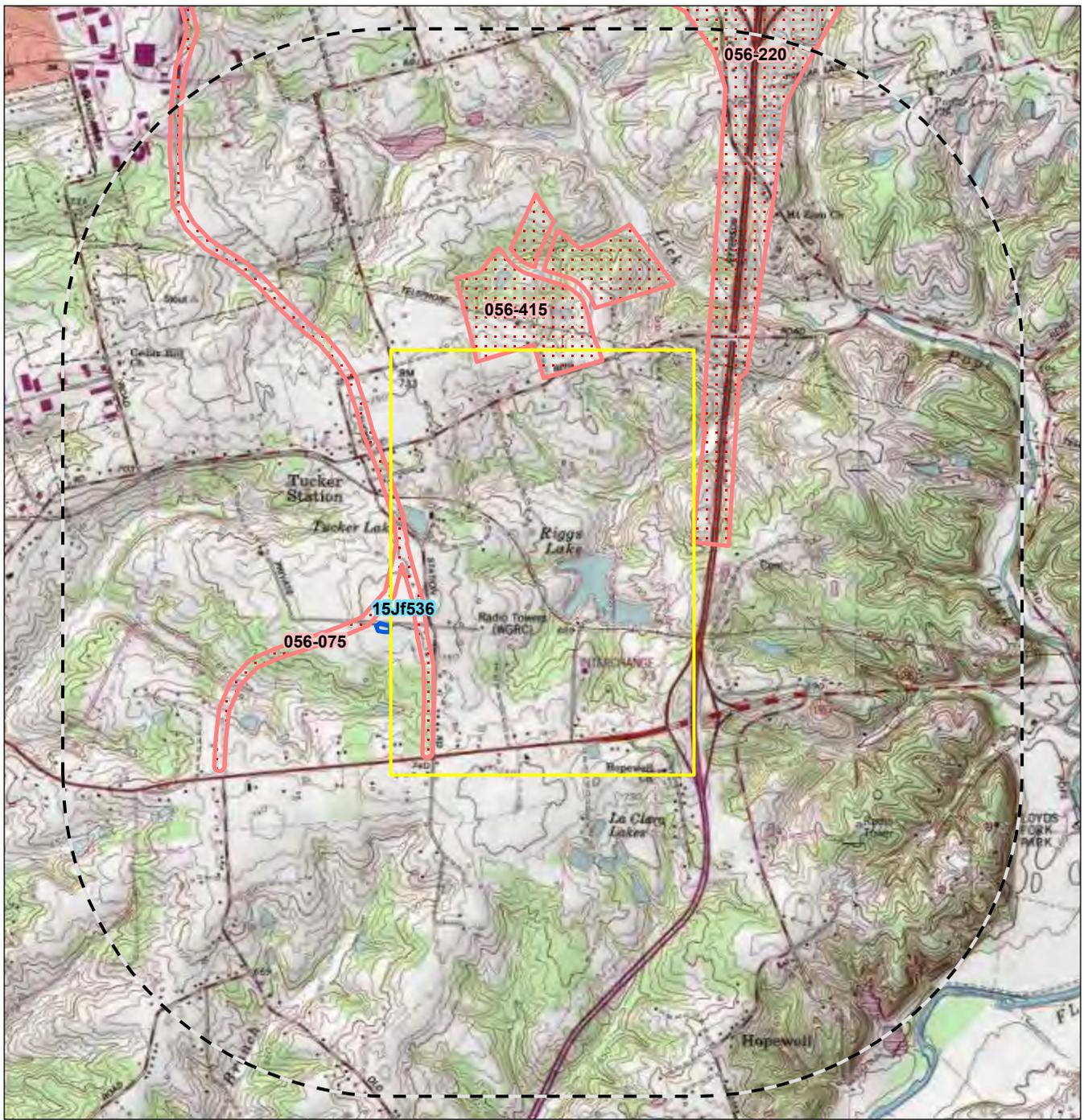
Client/Project: Kentucky Transportation Cabinet (KYTC) 178568101
Item No. 5-80003.00: Plantside Extension Corridor Study
Environmental Overview

Figure No. 5

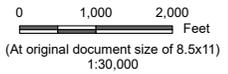
Human Environment

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- Legend**
- Study Area
 - 1-Mile Buffer
 - Recorded Archaeological Site
 - Archaeological Survey Area



Project Location: Jefferson County, Kentucky Prepared by TCN on 2024-01-26

Client/Project: Kentucky Transportation Cabinet (KYTC) 178568101

Item No. 5-80003.00: Plantside Extension Corridor Study Environmental Overview

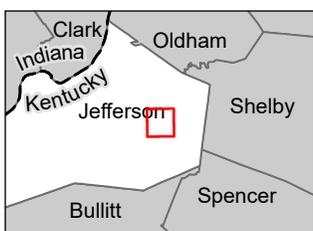
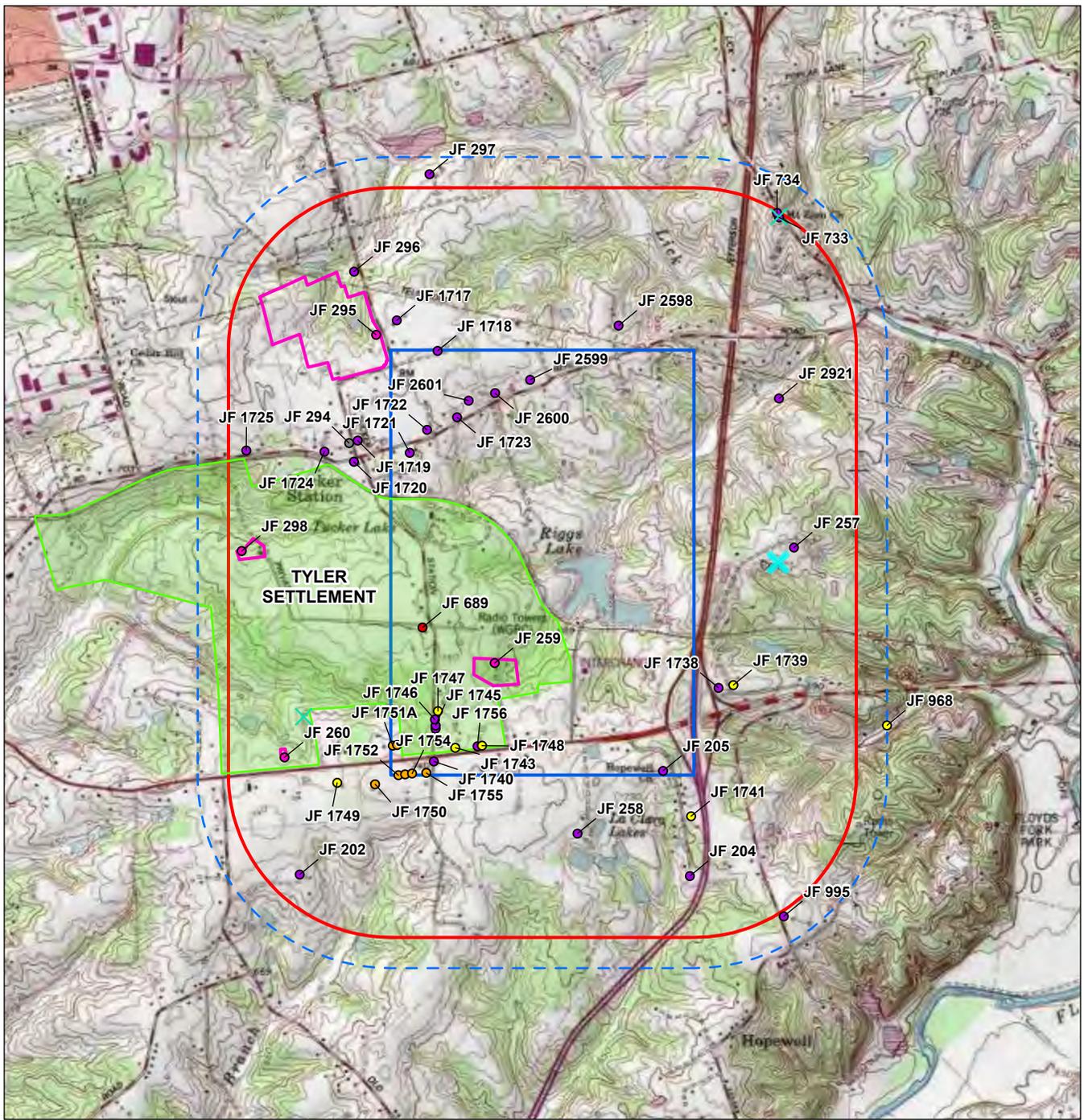
Figure No. 6 **For Internal Use Only. Not For Public Release**

Title: **Archaeological Resources**

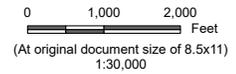
- Notes**
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
 2. Data Sources: KYTC, Stantec, KY SHPO
 3. Background: USGS Topographic Map

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- Legend**
- Study Area
 - APE (Half-Mile)
 - Site Check Boundary
 - NRHP Listed
 - NRHP Districts
 - X Cemetery
- Previously Recorded Properties**
- Demolished
 - Determined Not Eeligible
 - Meets N/R Criteria
 - N/R District Contrl. Site
 - National Register
 - Undetermined



Project Location Jefferson County, Kentucky *Prepared by* TCN on 2024-01-26

Client/Project Kentucky Transportation Cabinet (KYTC) 178568101
 Item No. 5-80003.00: Plantside Extension Corridor Study
 Environmental Overview

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Cultural Historic Resources

- Notes**
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
 2. Data Sources: KYTC, Stantec, KHC
 3. Background: USGS Topographic Map

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Attachments

ATTACHMENTS

- 1. Threatened and Endangered Species**
- 2. Areas of Air Quality Concern in Kentucky**
- 3. Kentucky Karst Potential Map**
- 4. USDA Soil Resource Report**
- 5. USGS Topographic Map**
- 6. EDR Report** (Provided in separate digital format due to size)



Attachments

ATTACHMENT 1

Threatened and Endangered Species

- a. USFWS IPaC Trust Resource Report
- b. USFWS Map of Known Northern Long-eared Bat Habitat
- c. USFWS Map of Known Indiana Bat Habitat
- d. KDFWR Federal-Listed Species, Jeffersontown Quad
- e. KDFWR State-Listed Species, Jeffersontown Quad
- f. OKNP Natural Heritage Database Response (For Internal Use Only. Not for Public Release.)
- g. KSS database response (For Internal Use Only. Not for Public Release.)



**ENVIRONMENTAL OVERVIEW (EO) – PLANTSIDE DRIVE EXTENSION CORRIDOR STUDY,
JEFFERSON COUNTY, KENTUCKY**

Attachments

Attachment 1a.
USFWS IPaC Trust Resource Report



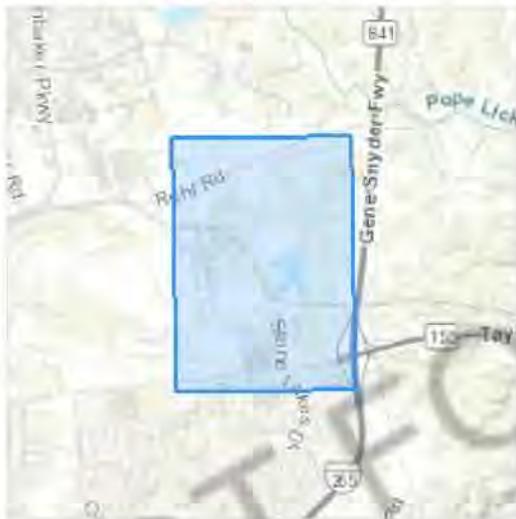
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Jefferson County, Kentucky



Local office

Kentucky Ecological Services Field Office

☎ (502) 695-0468

📅 (502) 695-1024

✉ kentuckyes@fws.gov

J C Watts Federal Building, Room 265

330 West Broadway

Frankfort, KY 40601-8670

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
<p>Gray Bat <i>Myotis grisescens</i></p> <p>Wherever found</p> <p>This species only needs to be considered if the following condition applies:</p> <ul style="list-style-type: none"> • The project area includes potential gray bat habitat. <p>No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6329</p>	Endangered
<p>Indiana Bat <i>Myotis sodalis</i></p> <p>Wherever found</p> <p>This species only needs to be considered if the following condition applies:</p> <ul style="list-style-type: none"> • The project area includes 'potential' habitat. All activities in this location should consider possible effects to this species. <p>There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5949</p>	Endangered
<p>Northern Long-eared Bat <i>Myotis septentrionalis</i></p> <p>Wherever found</p> <p>No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045</p>	Endangered

Birds

NAME	STATUS
Whooping Crane <i>Grus americana</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/758	EXPN

Clams

NAME	STATUS
Salamander Mussel <i>Simpsonaias ambigua</i> Wherever found There is proposed critical habitat for this species. https://ecos.fws.gov/ecp/species/6208	Proposed Endangered

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act¹ and the Migratory Bird Treaty Act².

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats³, should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are bald and/or golden eagles in your project area.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON

Bald Eagle *Haliaeetus leucocephalus*

Breeds Sep 1 to Jul 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (I)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply). To see a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the [Eagle Act](#) should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats³ should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the

general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Cerulean Warbler <i>Dendroica cerulea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 23 to Jul 20
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25

Field Sparrow *Spizella pusilla*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds Mar 1 to Aug 15

Kentucky Warbler *Oporornis formosus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Apr 20 to Aug 20

Prairie Warbler *Dendroica discolor*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 1 to Jul 31

Prothonotary Warbler *Protonotaria citrea*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Apr 1 to Jul 31

Red-headed Woodpecker *Melanerpes erythrocephalus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Sep 10

Rusty Blackbird *Euphagus carolinus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds elsewhere

Wood Thrush *Hylocichla mustelina*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (I)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

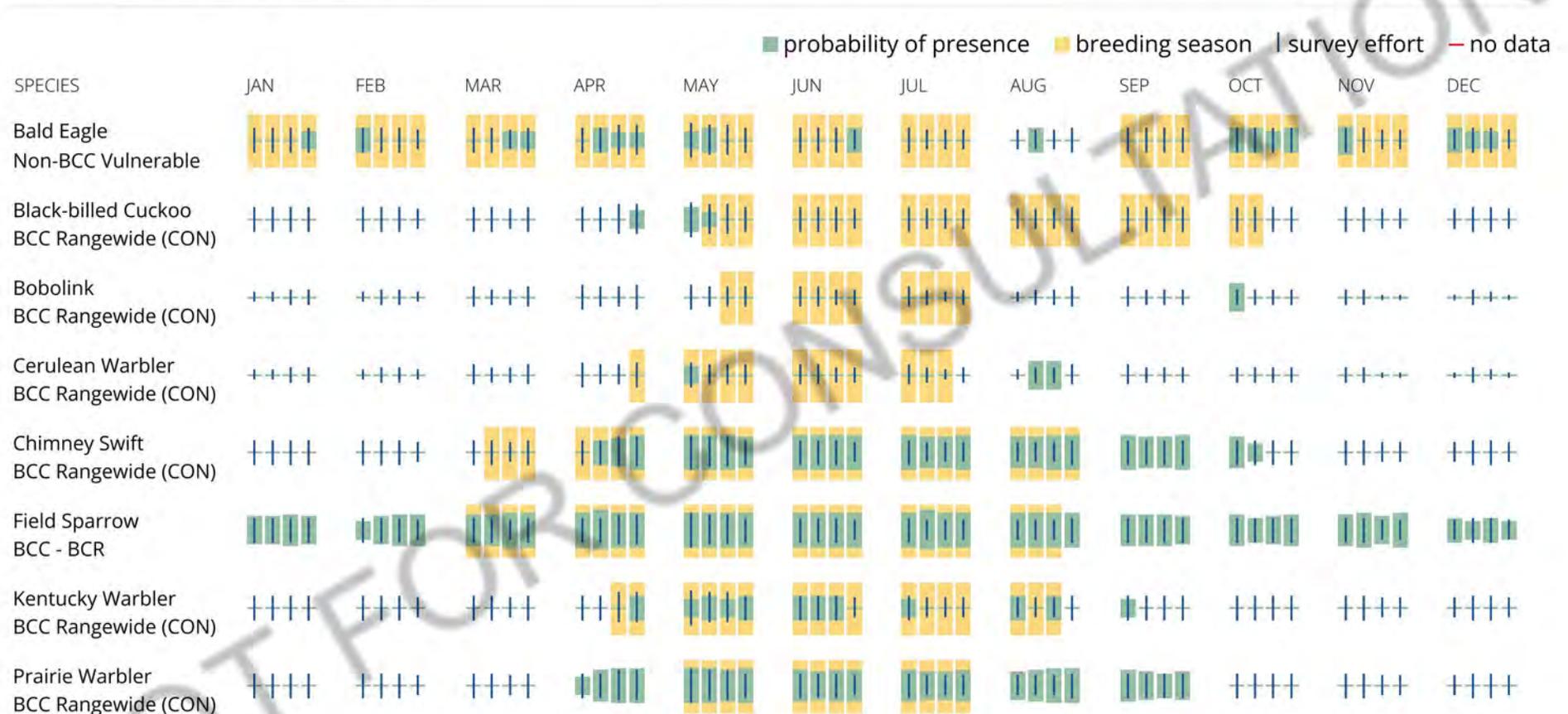
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

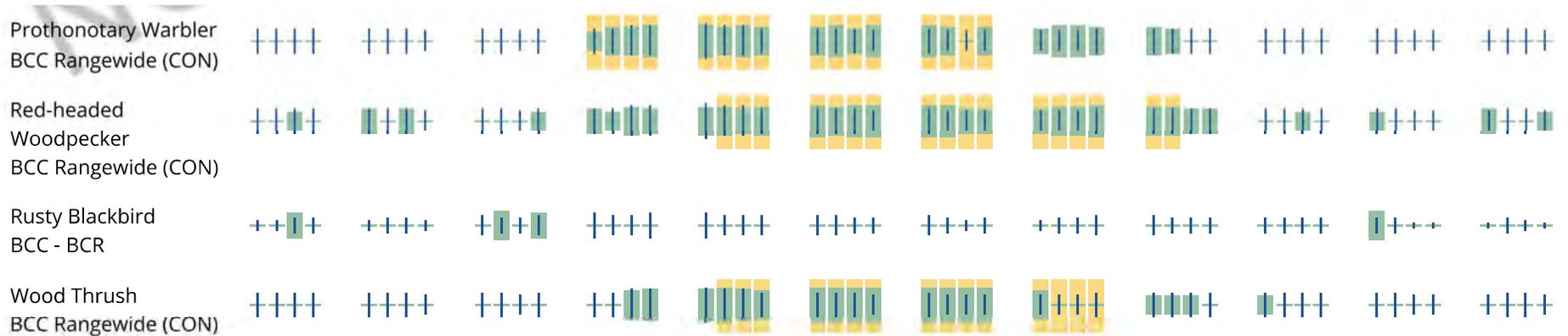
No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

Attachments

Attachment 1b.
**USFWS Map of Known Northern Long-eared Bat
Habitat**



**ENVIRONMENTAL OVERVIEW (EO) – PLANTSIDE DRIVE EXTENSION CORRIDOR STUDY,
JEFFERSON COUNTY, KENTUCKY**

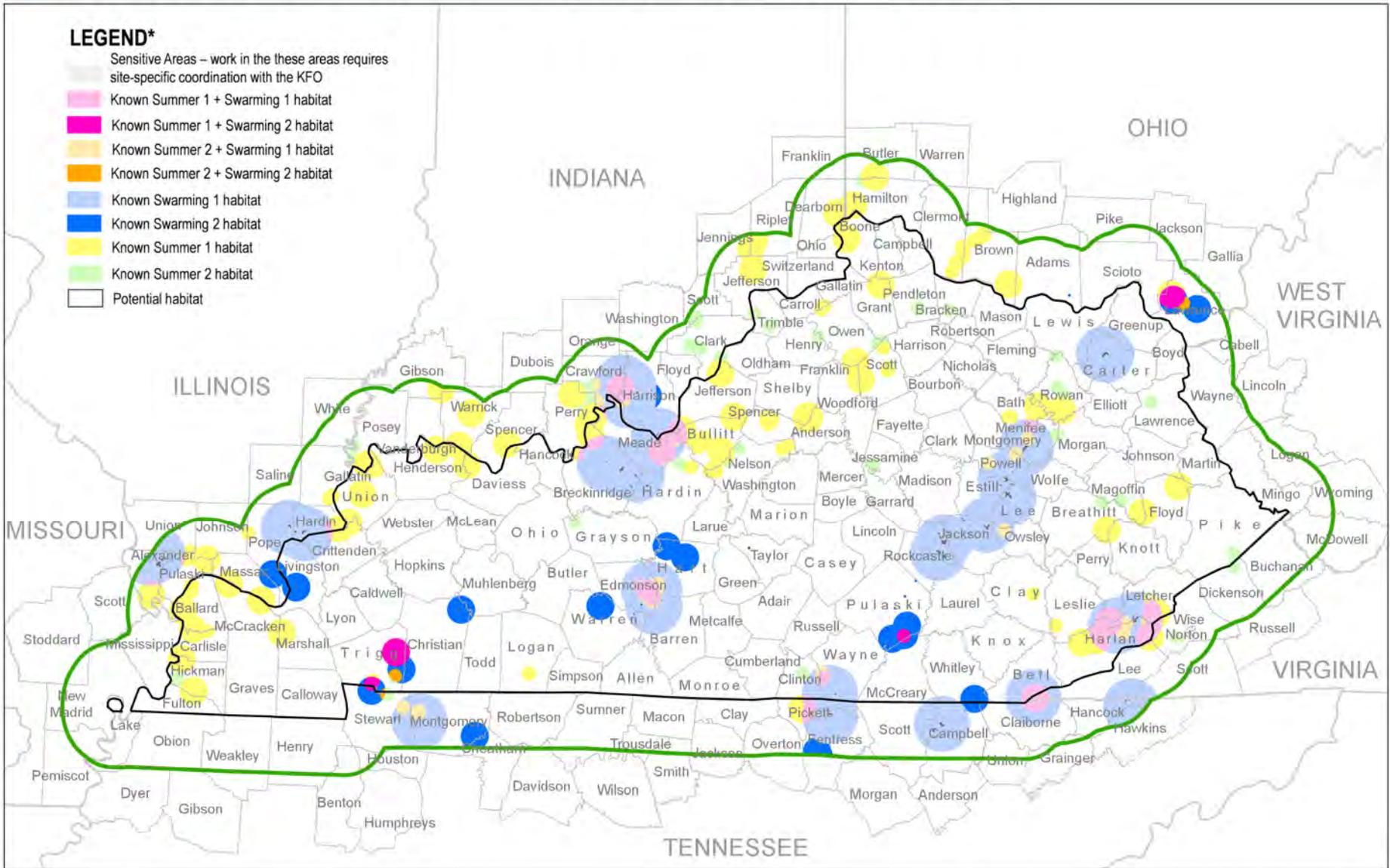
Attachments

**Attachment 1c.
USFWS Map of Known Indiana Bat Habitat**



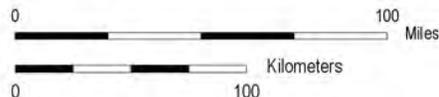


Known Indiana bat habitat in Kentucky and within 20 miles (August 2019)



NOTE: This map is based on species occurrence information and is subject to change as new data becomes available. Please contact our office at 502-695-0468 to ensure you are working with the most current version.

*For an explanation of terms, please see the Conservation Strategy for Forest-Dwelling Bats in the Commonwealth of Kentucky.



The USFWS makes no warranty for use of this map and cannot be held liable for actions or decisions based on map content. This map was produced as an appendix to the Conservation Strategy for Forest-Dwelling Bats in the Commonwealth of Kentucky and should only be used in the context of this Strategy.



Datum: NAD 83

Attachments

Attachment 1d.
KDFWR Federal-Listed Species, Jeffersontown Quad





KENTUCKY DEPARTMENT *of* FISH & WILDLIFE RESOURCES



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Species Information

Federal Threatened, Endangered, and Candidate Species observations for selected quads

Linked life history provided courtesy of [NatureServe Explorer](#).

Records may include both recent and historical observations.

[US Status Definitions](#) [Kentucky Status Definitions](#)

List Federal Threatened, Endangered, and Candidate Species observations in 1 selected quad.

Selected quad is: Jeffersontown.

Scientific Name and Life History	Common Name and Pictures	Class	Quad	US Status	KY Status	WAP	Reference
<i>Pleurobema clava</i>	Clubshell	Bivalvia	Jeffersontown	E	E	Yes	Reference
<i>Pseudanophthalmus troglodytes</i>	Louisville Cave Beetle	Insecta	Jeffersontown	C	S	Yes	Reference
<i>Perimyotis subflavus</i>	Tricolored Bat	Mammalia	Jeffersontown	PE	T	Yes	Reference
<i>Grus americana</i>	Whooping Crane	Aves	Jeffersontown	XN	N	Yes	Reference

4 species are listed.

Attachments

Attachment 1e.
KDFWR State-Listed Species, Jeffersontown Quad





KENTUCKY DEPARTMENT *of* FISH & WILDLIFE RESOURCES



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Species Information

State Threatened, Endangered, and Special Concern Species observations for selected quads

Linked life history provided courtesy of [NatureServe Explorer](#).

Records may include both recent and historical observations.

[US Status Definitions](#) [Kentucky Status Definitions](#)

List State Threatened, Endangered, and Special Concern Species observations in 1 selected quad.

Selected quad is: Jeffersontown.

Scientific Name and Life History	Common Name and Pictures	Class	Quad	US Status	KY Status	WAP	Reference
<i>Fulica americana</i>	American Coot	Aves	Jeffersontown	N	E		Reference
<i>Peucaea aestivalis</i>	Bachman's Sparrow	Aves	Jeffersontown	N	E	Yes	Reference
<i>Riparia riparia</i>	Bank Swallow	Aves	Jeffersontown	N	S	Yes	Reference
<i>Setophaga fusca</i>	Blackburnian Warbler	Aves	Jeffersontown	N	T		Reference
<i>Certhia americana</i>	Brown Creeper	Aves	Jeffersontown	N	T		Reference
<i>Cardellina canadensis</i>	Canada Warbler	Aves	Jeffersontown	N	S	Yes	Reference
<i>Pleurobema clava</i>	Clubshell	Bivalvia	Jeffersontown	E	E	Yes	Reference

<i>Junco hyemalis</i>	Dark-eyed Junco	Aves	Jeffersontown	N	S		Reference
<i>Phalacrocorax auritus</i>	Double-crested Cormorant	Aves	Jeffersontown	N	S		Reference
<i>Centronyx henslowii</i>	Henslow's Sparrow	Aves	Jeffersontown	N	S	Yes	Reference
<i>Chondestes grammacus</i>	Lark Sparrow	Aves	Jeffersontown	N	S		Reference
<i>Empidonax minimus</i>	Least Flycatcher	Aves	Jeffersontown	N	E	Yes	Reference
<i>Lanius ludovicianus</i>	Loggerhead Shrike	Aves	Jeffersontown	N	S	Yes	Reference
<i>Pseudanopthalmus troglodytes</i>	Louisville Cave Beetle	Insecta	Jeffersontown	C	S	Yes	Reference
<i>Faxonius jeffersoni</i>	Louisville Crayfish	Malacostraca	Jeffersontown	N	E	Yes	Reference
<i>Circus hudsonius</i>	Northern Harrier	Aves	Jeffersontown	N	T	Yes	Reference
<i>Pandion haliaetus</i>	Osprey	Aves	Jeffersontown	N	S	Yes	Reference
<i>Falco peregrinus</i>	Peregrine Falcon	Aves	Jeffersontown	N	E	Yes	Reference
<i>Podilymbus podiceps</i>	Pied-billed Grebe	Aves	Jeffersontown	N	E	Yes	Reference
<i>Sitta canadensis</i>	Red-breasted Nuthatch	Aves	Jeffersontown	N	E		Reference
<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak	Aves	Jeffersontown	N	S		Reference
<i>Passerculus sandwichensis</i>	Savannah Sparrow	Aves	Jeffersontown	N	S	Yes	Reference
<i>Accipiter striatus</i>	Sharp-shinned Hawk	Aves	Jeffersontown	N	S	Yes	Reference
<i>Alasmidonta viridis</i>	Slippershell Mussel	Bivalvia	Jeffersontown	N	S	Yes	Reference
<i>Perimyotis subflavus</i>	Tricolored Bat	Mammalia	Jeffersontown	PE	T	Yes	Reference

25 species are listed.

Attachments

Attachment 1f.
OKNP Natural Heritage Database Response
(For Internal Use Only. Not for Public
Release.)



Standard Occurrence Report Key Office of Kentucky Nature Preserves

KNP Monitored Species within x Miles of Project Area

Federally and state listed species, species of conservation concern, and exemplary natural communities known to occur within the project area.

- EO: Element Occurrence; Specific example of a species at a geographic location
- EO ID: Kentucky Nature Preserves unique identifier for the Element Occurrence
- Scientific Name: Scientific name used by Kentucky Nature Preserves
- Common Name: Common name used by Kentucky Nature Preserves
- GRANK: Estimate of species abundance on a global scale

GX	Presumed extinct: Not located despite intensive searches and rediscovery unlikely	G#G#	Range rank; numeric range rank used to indicate uncertainty about the exact status of the taxon
GH	Possibly extinct: Missing; known from only historical occurrences but still hope of rediscovery	GNR	Not ranked
G1	Extremely Rare	GU	Unrankable due to lack of information or substantially conflicting information
G2	Rare	?	Qualifier that may be added to the rank to indicate uncertainty
G3	Uncommon	T #	May be appended to ranks for infraspecific taxa
G4	Common	Q	Qualifier that indicates questionable taxonomy
G5	Very Common		

- SRANK: Estimate of species abundance in Kentucky

SX	Presumed extirpated: Not located despite intensive searches and rediscovery unlikely	S#S#	Range rank - numeric range rank used to indicate uncertainty about the exact status of the taxon
SH	Possibly extirpated: Known from historical occurrences only but still hope of rediscovery	SNR	Not ranked
S1	Extremely Rare	SU	Unrankable due to lack of information or substantially conflicting information
S2	Rare	SNA	Not Applicable; may be non-native, hybrid, or long distance migrant
S3	Uncommon	?	Qualifier that may be added to the rank to indicate uncertainty
S4	Many Occurrences	B	Qualifier to indicate breeding population of the element
S5	Very Common	N	Qualifier to indicate non-breeding population of the element

Standard Occurrence Report Key Office of Kentucky Nature Preserves

- SPROT: Office of Kentucky Nature Preserves species state status

E	Endangered
T	Threatened
S	Special Concern
H	Historic
X	Extirpated
N or blank	None

- USESA: U.S. Fish and Wildlife status

C	Candidate
PE	Proposed Endangered
PT	Proposed Threatened
LT	Listed as Threatened
LE	Listed as Endangered
SOMC	Species of Management Concern
LTNL	Listed Threatened in part of its range, but not listed in Kentucky
Delisted	Delisted
N or blank	None

- **STWG: Species included in the Kentucky Department of Fish and Wildlife's State Wildlife Action Plan as Species of Greatest Conservation Need under the State and Tribal Wildlife Grants program**

Y	Yes
Blank	No

- Last Obs Date: Date the species was last observed to be extant at the site
- Precision: The precision of the record

S	Seconds; Can be accurately mapped within a 3-second radius (approximately 100 ft)
M	Minutes; Can be mapped within a 1-minute radius (approximately 1.5 miles)
G	General; Only known to a place name (within about 5 miles)
C	County; Only known to the county
Q	Quad; Only known to the county

Standard Occurrence Report Key Office of Kentucky Nature Preserves

- EO Rank: Rank of the Element Occurrence based on assessment of viability

A	Excellent estimated viability	D	Poor estimated viability
A?	Possibly excellent estimated viability	D?	Possibly poor estimated viability
AB	Excellent or good estimated viability	E	Verified extant (viability not assessed)
AC	Excellent, good, or fair estimated viability	F	Failed to find
B	Good estimated viability	F?	Possibly failed to find
B?	Possibly good estimated viability	H	Historical
BC	Good or fair estimated viability	H?	Possibly historical
BD	Good, fair, or poor estimated viability	X	Extirpated
C	Fair estimated viability	X?	Possibly extirpated
C?	Possibly fair estimated viability	U	Unrankable
CD	Fair or poor estimated viability	NR	Not ranked

- Lat/Long: Coordinates of the centroid of the Element Occurrence
- Directions: Directions to the Element Occurrence
- Habitat: Habitat the species is typically associated with

Critical Habitats within x Miles of Project Area

Designated Endangered Species Act critical habitats known to occur within the project area.

Managed Areas within x Miles of Project Area

Areas managed for conservation known to occur within the project area.

Areas of Significant Biodiversity within x Miles of Project Area

Areas occurring within the project area that have identified by biologists and ecologists as being of significant value because of a high level of biodiversity and/or containing significant occurrences of rare plants, animals, or natural communities.

Bat Habitats within x Miles of Project Area

USFWS known Indiana bat and Northern Long-Eared Bat habitats that occur within the project area.



Andy Beshear
Governor

Energy and Environment Cabinet

Office of Kentucky Nature Preserves

300 Sower Boulevard
Frankfort, Kentucky 40601
Telephone: 502-782-7828
EEC.KYBAT@ky.gov

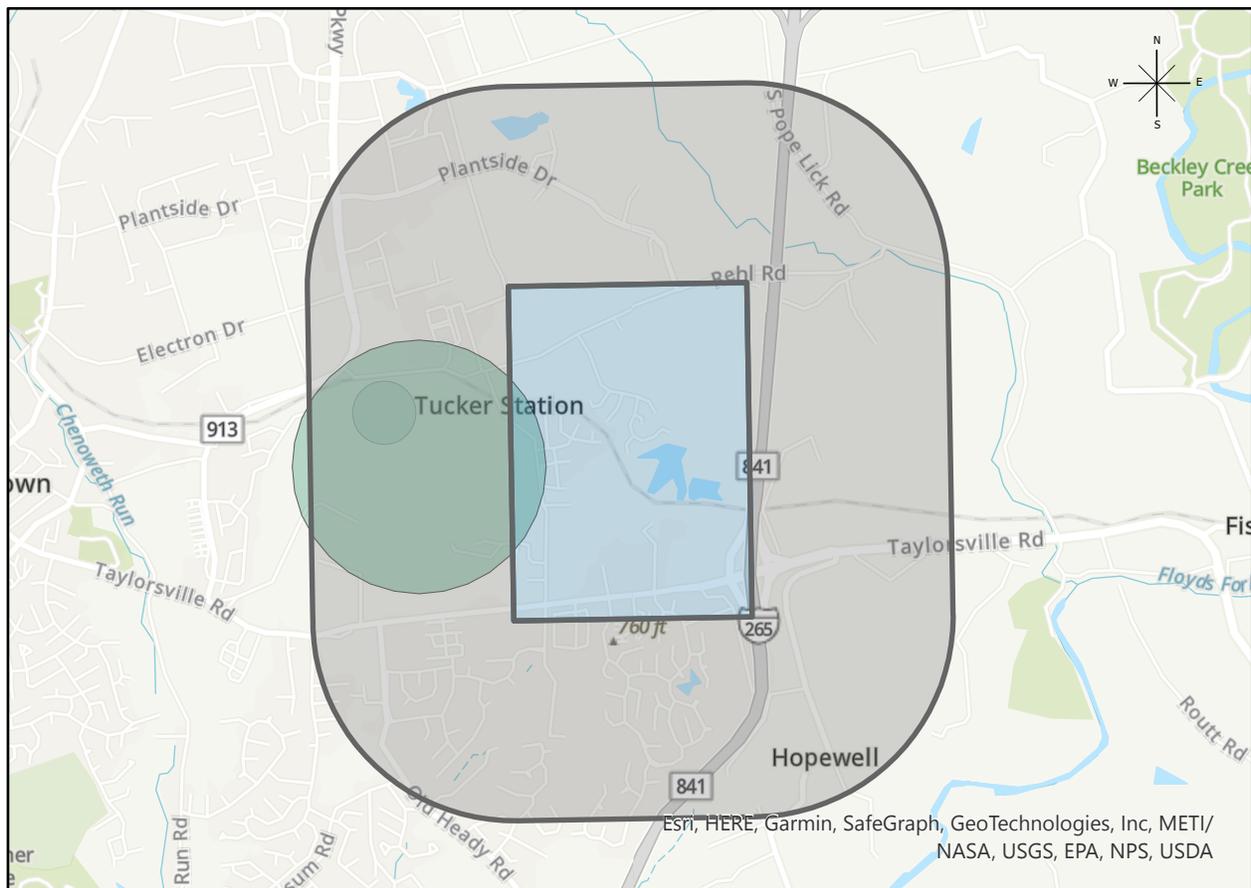
Rebecca W. Goodman
Secretary

Sunni Carr
Executive Director

Requested on Tuesday, November 14, 2023 by Tyler C Newman, Stantec

Re: Kentucky Biological Assessment Data Request 231114T01
KYTC - Plantside Drive
Transportation, 1 mile buffer.
JEFFERSON County, Kentucky

This letter is in response to your data request for the project referenced above. We have reviewed our Natural Heritage Program Database to determine if any of the endangered, threatened, or special concern plants, animals, features or exemplary natural communities monitored by the Office of Kentucky Nature Preserves are noted within your submitted project area.





Andy Beshear
Governor

Energy and Environment Cabinet Office of Kentucky Nature Preserves

300 Sower Boulevard
Frankfort, Kentucky 40601
Telephone: 502-782-7828
EEC.KYBAT@ky.gov

Rebecca W. Goodman
Secretary

Sunni Carr
Executive Director

This report includes the following items:

- A - A report for occurrences which intersect the project area
- B - A report for occurrences which intersect the buffer around the project area
- C - A list of best management practices relevant to occurrences near to or within the project area
- D - A list of best management practices relevant to the chosen project type

Thank you for using Office of Kentucky Nature Preserves' Biological Assessment Tool.

We would like to take this opportunity to remind you of the [terms](#) of the data request license, which you agreed upon in order to submit your request. The license agreement states "Data and data products received from the Office of Kentucky Nature Preserves, including any portion thereof, may not be reproduced in any form or by any means without the express written authorization of the Office of Kentucky Nature Preserves." The exact location of plants, animals, and natural communities, if released by the Office of Kentucky Nature Preserves, may not be released in any document or correspondence. These products are provided on a temporary basis for the express project (described above) of the requester, and may not be redistributed, resold or copied without the written permission of the Office of Kentucky Nature Preserves Biological Assessment Branch (300 Sower Blvd - 4th Floor, Frankfort, KY, 40601. Phone: 502-782-7828).

Please note that the quantity and quality of data collected by the Kentucky Natural Heritage Program are dependent on the research and observations of many individuals and organizations. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Kentucky have never been thoroughly surveyed and new plants and animals are still being discovered. For these reasons, the Kentucky Natural Heritage Program cannot provide a definitive statement on the presence, absence, or condition of biological elements in any part of Kentucky. Heritage reports summarize the existing information known to the Kentucky Natural Heritage Program at the time of the request regarding the biological elements or locations in question. They should never be regarded as final statements on the occurrences being considered, nor should they be substituted for on-site surveys required for environmental assessments. We would greatly appreciate receiving any pertinent information obtained as a result of on-site surveys.

If you have any questions, or if we can be of further assistance, please do not hesitate to contact our office by email at EEC.KYBAT@ky.gov or by phone at 502-782-7828.

Sincerely,

Alexis R. Schoenlaub
Geoprocessing Specialist
Office of Kentucky Nature Preserves

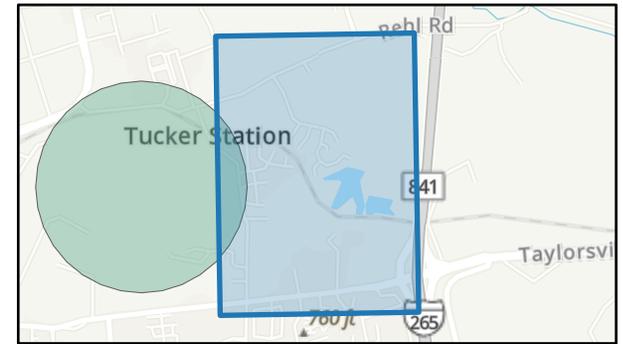
A.1. Project Area - Occurrence Report

The following table outlines occurrences found within your project footprint (if any). You can find more information about global and state rank status definitions on our [Standard Occurrence Report Key](#). Please note that certain sensitive occurrences found within the buffer area may be listed in this table but are not represented on the map. Please contact the appropriate source as outlined in the “Directions” column should you have further questions related to sensitive occurrences found within the project area.



Map Credits: Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA

- Botanical
- Ecological
- Zoological



EO ID	Scientific Name	Common Name	G Rank	S Rank	Fed. Status	State Status	SWAP	Precision	Last Obs. Date
16248	<i>Arabidopsis lyrata ssp. lyrata</i>	<i>Lyre-leaf Rockcress</i>	G5T5	S1S2	None	E		C	1937-pre
16787	<i>Gentianella occidentalis</i>	<i>Agueweed</i>	G5T4T5	S3S4	None	N		M	1979-05-31

A.2. Project Area – Occurrence Habitat and Location

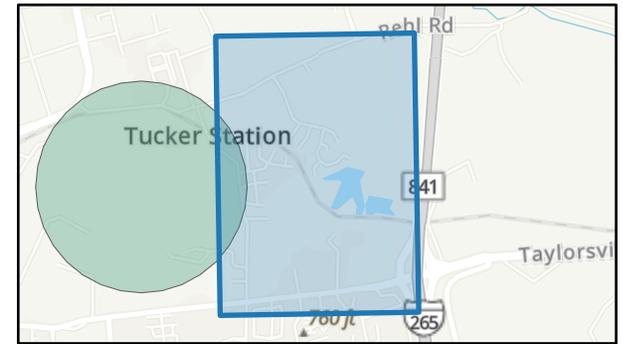
The following table provides supplemental occurrence information found within your project footprint (if any). You can find more information about global and state rank status definitions on our [Standard Occurrence Report Key](#). Please note that certain sensitive occurrences found within the buffer area may be listed in this table but are not represented on the map. Please contact the appropriate source as outlined in the “Directions” column should you have further questions related to sensitive occurrences found within the



ENERGY AND ENVIRONMENT CABINET
OFFICE OF KENTUCKY NATURE PRESERVES

Map Credits: Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA

- Botanical
- Ecological
- Zoological



EOID	Scientific Name	Habitat	Location
16248	<i>Arabidopsis lyrata ssp. lyrata</i>		Edge of woods near Louisville
16787	<i>Gentianella occidentalis</i>	DRY - MESIC LIMESTONE WOODLANDS AND EDGES OF CEDAR GLADES.	From US265, take exit 23 going east on Taylorsville Rd. Turn

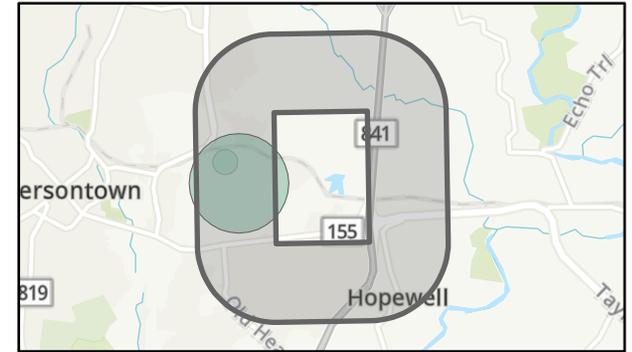
B. Buffer Area - Occurrence Report

The following table outlines occurrences found within your buffered project footprint (if any). You can find more information about global and state rank status definitions on our [Standard Occurrence Report Key](#). Please note that certain sensitive occurrences found within the buffer area may be listed in this table but are not represented on the map. Please contact the appropriate source as outlined in the “Directions” column should you have further questions related to sensitive occurrences found within the project area.



Map Credits: Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA

- Botanical
- Ecological
- Zoological



EO ID	Scientific Name	Common Name	G Rank	S Rank	Fed. Status	State Status	SWAP	Precision	Last Obs. Date
16248	<i>Arabidopsis lyrata ssp. lyrata</i>	Lyre-leaf Rockcress	G5T5	S1S2	None	E	C		1937-pre
24855	<i>Carex crawei</i>	Crawe's Sedge	G5	S3	None	S	S		1979-05-31
16787	<i>Gentianella occidentalis</i>	Agueweed	G5T4T5	S3S4	None	N	M		1979-05-31

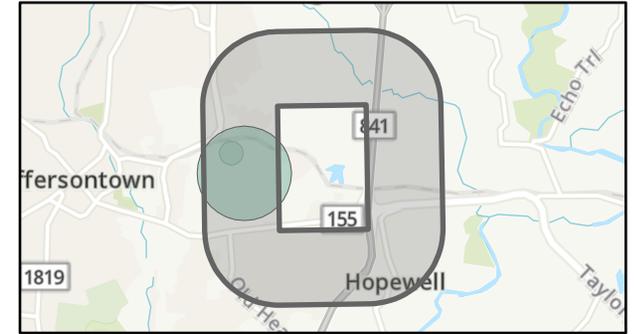
C. Occurrence References and Recommendations (1 of 1)

OKNP references the following references and recommendations regarding this project's potential impacts to natural resources within or surrounding the project area. Please contact the applicable office should you have further questions with regard to these references and recommendations related to the project area.



Map Credits: Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA

- Botanical 
- Ecological 
- Zoological 



D. Project References and Recommendations (1 of 1)

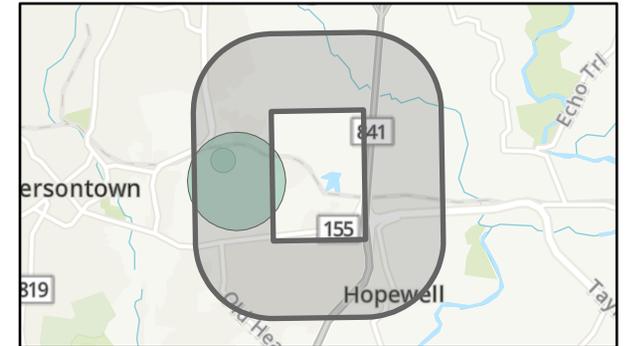
OKNP references the following references and recommendations regarding this project's potential impacts to natural resources within or surrounding the project area. Please contact the applicable office should you have further questions with regard to these references and recommendations related to the project area.



ENERGY AND ENVIRONMENT CABINET
OFFICE OF KENTUCKY NATURE PRESERVES

Map Credits: Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA

- Botanical 
- Ecological 
- Zoological 



There are protected areas within your project and buffer footprint.
There are areas of significant biodiversity within your project and buffer footprint.



Thank you for using the Office of Kentucky Nature Preserves
Biological Assessment Tool.

OKNP's species dataset relies on continuous monitoring and surveying for species of concern throughout the state. Any records of species of concern found within this project area would greatly benefit the quality and comprehensiveness of the state wide dataset for rare, threatened and endangered species. If you would like to contribute any additional species information, please do not hesitate to contact our office by e mail at EEC_KYBAT@ky.gov or by phone at 502-782-7828.

Attachments

Attachment 1g.
KSS database response
(For Internal Use Only. Not for Public Release.)



From: [Newman, Tyler](#)
To: [Mullins, Ellen](#)
Subject: FW: KSS Database Request - Tyler C Newman, Plantside Drive
Date: Friday, November 17, 2023 9:52:01 AM
Attachments: [Newman 11 14 23.zip](#)

From: Howard Kalnitz <hjkalnitz@gmail.com>
Sent: Thursday, November 16, 2023 2:45 PM
To: Newman, Tyler <Tyler.Newman@stantec.com>
Cc: ctdecelle@gmail.com; vanders33@yahoo.com; benjamin.tobin@uky.edu;
bobroth88@yahoo.com; pat.kambesis@wku.edu; treasurer@ksscaves.org
Subject: Re: KSS Database Request - Tyler C Newman, Plantside Drive

You don't often get email from hjkalnitz@gmail.com. [Learn why this is important](#)

Tyler

A search of our database shows two caves within your buffered project. Locations are within attached shp file

There is a 50\$ fee for search origination, plus 10\$ per record, for a total of 70\$. You will be invoiced by our organization Treasurer.

This data is shared to aid in our organizational goals of conservation, research, and exploration of caves throughout the Commonwealth of Kentucky. Please remember that data reported by KSS is as has been reported to us, but not guaranteed to be complete or correct. There may be unknown caves, sinks or other unreported or unknown karst features. Additionally unreported or filled in cave entrances can open or subside at any time. Use caution when using this data.

Please mark supplied locations as Privileged and Confidential on all maps associated with this project.

Please note our updated guidelines on request turnaround timing:

KSS is a volunteer organization. We do try to process standard requests as fast as possible, but cannot guarantee a turnaround time. We try to process non-voted requests in less than 1 month, and will attempt to vote on more complicated requests within 2 months.

Requestors can contact us if a quick turnaround time is specifically needed.

Timing is greatly reduced if an ArcGIS .shp file is provided

Thank You
Howard Kalnitz
KSS Database Committee

On Tue, Nov 14, 2023 at 6:32 AM Kentucky Speleological Survey <wordpress@kss.caves.org> wrote:

From: Tyler C Newman tyler.newman@stantec.com

Sent: November 14, 2023, 1:32 pm

Qualifications: Environmental Scientist

Organization: Stantec

Address: 3052 Beaumont Centre Circle

Phone: 8597793613

Data Request:

All caves within a 1-mile buffer of the attached Plantside Drive Project

Intended use:

Informational purposes for T&E Report for the project

--

This e-mail was sent from a contact form on Kentucky Speleological Survey (<https://kss.caves.org>)
[contact-form-7 id="20a05e3" title="KSS Database Request"]

Caution: This email originated from outside of Stantec. Please take extra precaution.

Attention: Ce courriel provient de l'extérieur de Stantec. Veuillez prendre des précautions supplémentaires.

Atención: Este correo electrónico proviene de fuera de Stantec. Por favor, tome precauciones adicionales.

Attachments

ATTACHMENT 2

Areas of Air Quality Concern in Kentucky



Areas of Air Quality Concern in KY

2015 8-hour ozone**:



Nonattainment Area



Attainment/Unclassifiable Area

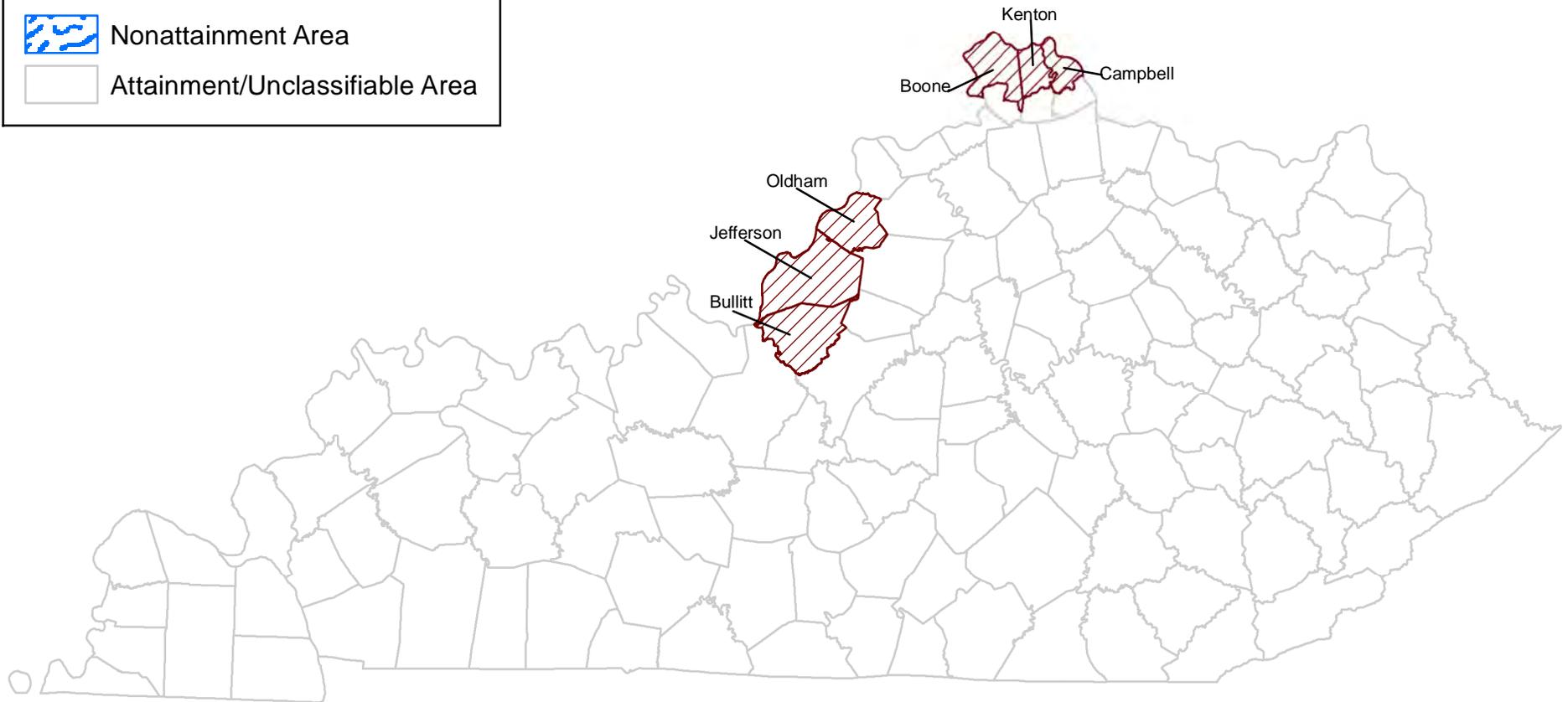
2012 PM2.5:



Nonattainment Area



Attainment/Unclassifiable Area



**The 2015 8-hour ozone NAAQS includes the counties of Jefferson, Oldham, Bullitt, and partial counties of Boone, Kenton, and Campbell .

As of March 2019

KENTUCKY'S AIR QUALITY DESIGNATIONS FOR TRANSPORTATION CONFORMITY PURPOSES (Updated 03/15/2019)

AIRSHEDS	1-Hour Ozone Vacated (1979 NAAQS)	8-Hour Ozone Vacated (1997 NAAQS)	8-Hour Ozone Implemented (2008 NAAQS)	8-Hour Ozone Implemented (2015 NAAQS)	PM2.5 Annual Vacated (1997 NAAQS)	PM2.5 Annual Implemented (2012 NAAQS)
Cincinnati - Hamilton (OH, KY, IN)						
Boone Co, KY*	Vacated	Vacated	Maintenance (P)	Nonattainment (P)	Vacated	Attainment/Unclassifiable
Campbell Co, KY*	Vacated	Vacated	Maintenance (P)	Nonattainment (P)	Vacated	Attainment/Unclassifiable
Kenton Co, KY*	Vacated	Vacated	Maintenance (P)	Nonattainment (P)	Vacated	Attainment/Unclassifiable
Louisville (KY, IN)						
Bullitt Co, KY*	Vacated (P)	Vacated	Attainment/Unclassifiable	Nonattainment	Vacated	Attainment/Unclassifiable
Jefferson Co, KY*	Vacated	Vacated	Attainment/Unclassifiable	Nonattainment	Vacated	Attainment/Unclassifiable
Oldham Co, KY*	Vacated (P)	Vacated	Attainment/Unclassifiable	Nonattainment	Vacated	Attainment/Unclassifiable
Huntington - Ashland (WV, KY)						
Boyd Co, KY*	N/A	Vacated	Attainment/Unclassifiable	Attainment/Unclassifiable	Vacated	Attainment/Unclassifiable
Greenup Co, KY**	Vacated (P)	N/A	Attainment/Unclassifiable	Attainment/Unclassifiable	Vacated	Attainment/Unclassifiable
Lawrence Co, KY**	N/A	N/A	Attainment/Unclassifiable	Attainment/Unclassifiable	Vacated (P)	Attainment/Unclassifiable
Clarksville - Hopkinsville (TN, KY)						
Christian Co, KY*	N/A	Vacated	Attainment/Unclassifiable	Attainment/Unclassifiable	N/A	Attainment/Unclassifiable
Muhlenberg, TN (P)	N/A	Vacated	Attainment/Unclassifiable	Attainment/Unclassifiable	N/A	Attainment/Unclassifiable
Lexington						
Fayette Co, KY*	Vacated	N/A	Attainment/Unclassifiable	Attainment/Unclassifiable	N/A	Attainment/Unclassifiable
Scott Co, KY*	Vacated	N/A	Attainment/Unclassifiable	Attainment/Unclassifiable	N/A	Attainment/Unclassifiable
Owensboro						
Daviess Co, KY*	Vacated	N/A	Attainment/Unclassifiable	Attainment/Unclassifiable	N/A	Attainment/Unclassifiable
Hancock Co, KY**	Vacated (P)	N/A	Attainment/Unclassifiable	Attainment/Unclassifiable	N/A	Attainment/Unclassifiable
Paducah						
Livingston Co, KY**	Vacated (P)	N/A	Attainment/Unclassifiable	Attainment/Unclassifiable	N/A	Attainment/Unclassifiable
Marshall Co, KY*	Vacated	N/A	Attainment/Unclassifiable	Attainment/Unclassifiable	N/A	Attainment/Unclassifiable
Other						
Edmondson, Co, KY*	Vacated	N/A	Attainment/Unclassifiable	Attainment/Unclassifiable	N/A	Attainment/Unclassifiable
National Ambient Air Quality Standards (NAAQS), Particulate Matter (PM), Partial (P)						
(*) indicates entire counties eligible for CMAQ. (**) indicates partial counties eligible for CMAQ						

Attachments

ATTACHMENT 3

Kentucky Karst Potential Map



KARST OCCURRENCE IN KENTUCKY

Randall L. Paylor and
James C. Currens



EXPLANATION

- Areas underlain by bedrock with high potential for karst development
- Areas underlain by bedrock with moderate potential for karst development
- Areas underlain by bedrock with limited or no potential for karst development

This map was compiled from a digital version of the 1:500,000-scale geologic map of Kentucky (Noger, M.C., comp., 1988, Geologic map of Kentucky: U.S. Geological Survey). The areas of potential karst development were delineated using stratigraphic units mapped on the geologic map. The classification of the potential for karst development was based on the field experience of the authors and other data. A number of isolated carbonate units that would not have otherwise been differentiated on the geologic map were newly digitized for this map.

This karst map should not be used for evaluating karst geologic hazards or hydrogeology at scales larger than 1:500,000. The base geologic map was digitized at 1:500,000 scale and is limited in precision to that scale. Because of the small scale of the original geologic map, lithostratigraphic units were consolidated into thicker chronostratigraphic units to create an area large enough to delineate on the geologic map. In some cases, the consolidation resulted in carbonates (limestone or dolomite) and noncarbonates (sandstone or shale, for example) being grouped; these rocks are not redivided on this map. Although the potential for karst development can be predicted from lithology, other factors such as relief and length of time the rock is exposed are also important and were not considered in the making of this map. Finally, areas where the near-surface bedrock is insoluble and closely underlain by soluble rock are common, particularly in the Eastern Pennyroyal. Conduits that pirate drainage commonly extend through ridges capped with insoluble rocks. Therefore, some areas mapped as having limited potential that are adjacent to areas of higher potential are actually karst, but cannot be differentiated on this map.

Karst is a terrane that is generally underlain by limestone or dolomite, where the topography is formed chiefly by the dissolving of rock. Karst landscapes are commonly characterized by sinkholes, sinking streams, closed depressions, subterranean drainage, large springs, and caves.

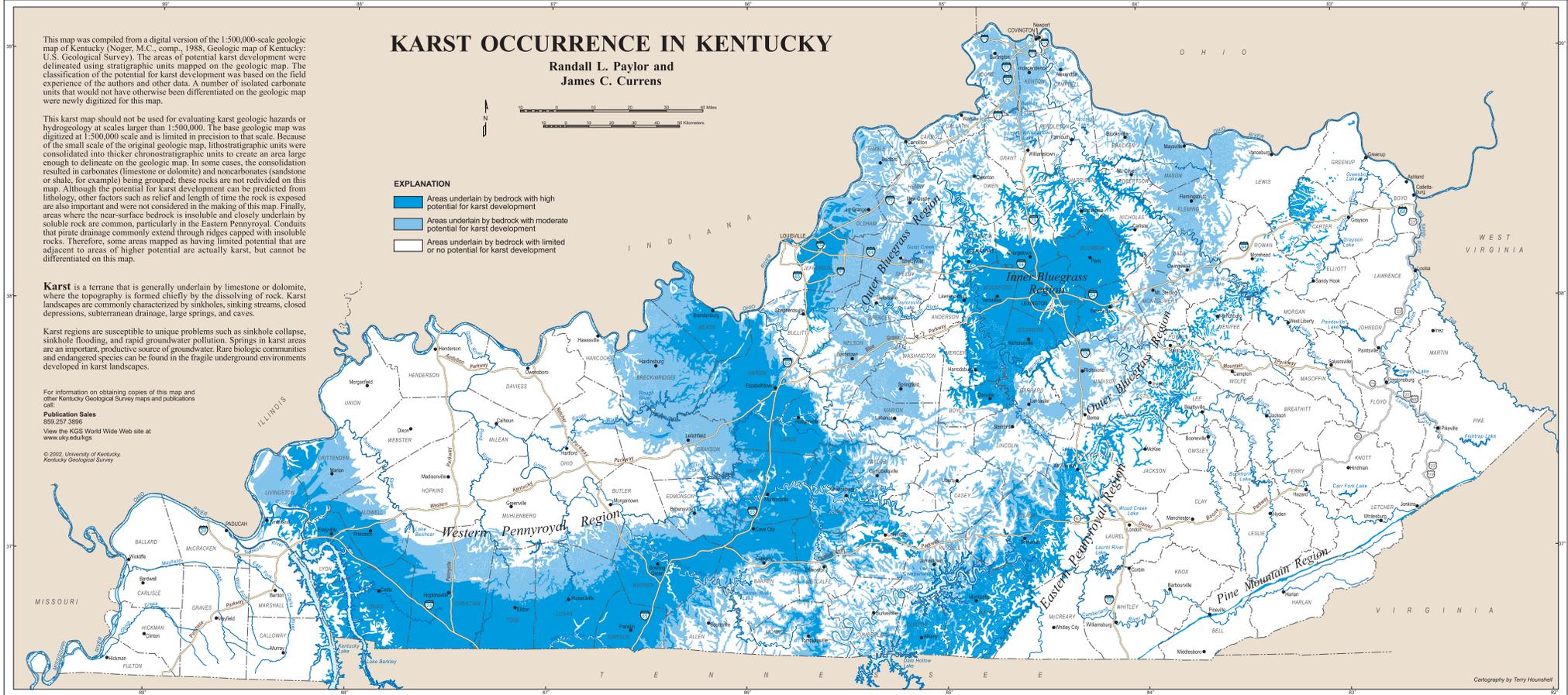
Karst regions are susceptible to unique problems such as sinkhole collapse, sinkhole flooding, and rapid groundwater pollution. Springs in karst areas are an important, productive source of groundwater. Rare biologic communities and endangered species can be found in the fragile underground environments developed in karst landscapes.

For information on obtaining copies of this map and other Kentucky Geological Survey maps and publications call:

Publication Sales
859.257.3896

View the KGS World Wide Web site at
www.uky.edu/kgs

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Kentucky Geological Survey



Cartography by Terry Hourshel

Attachments

ATTACHMENT 4

USDA Soil Resource Report





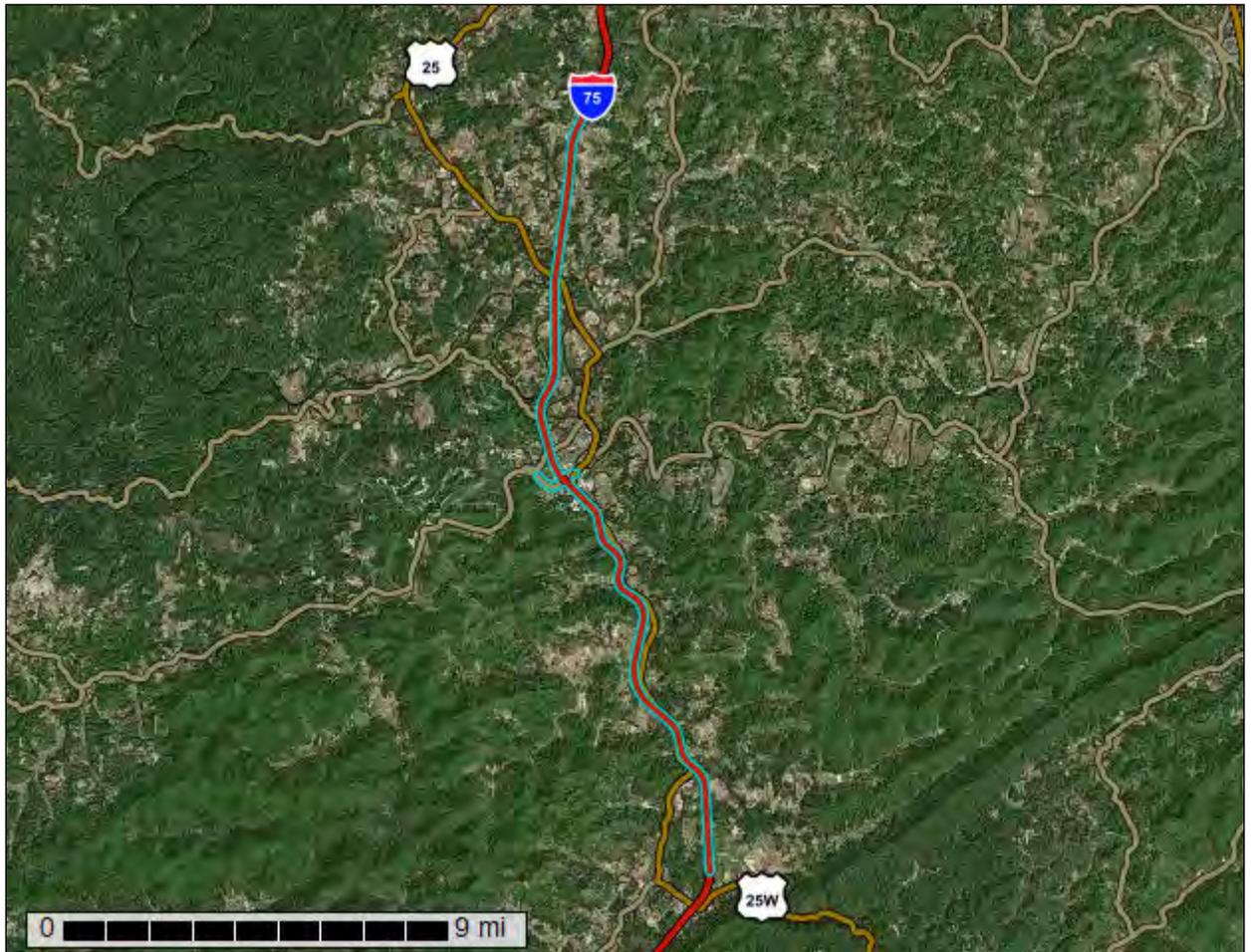
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Campbell County, Tennessee, Knox and Eastern Part of Whitley Counties, Kentucky, and McCreary-Whitley Area, Kentucky



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

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scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

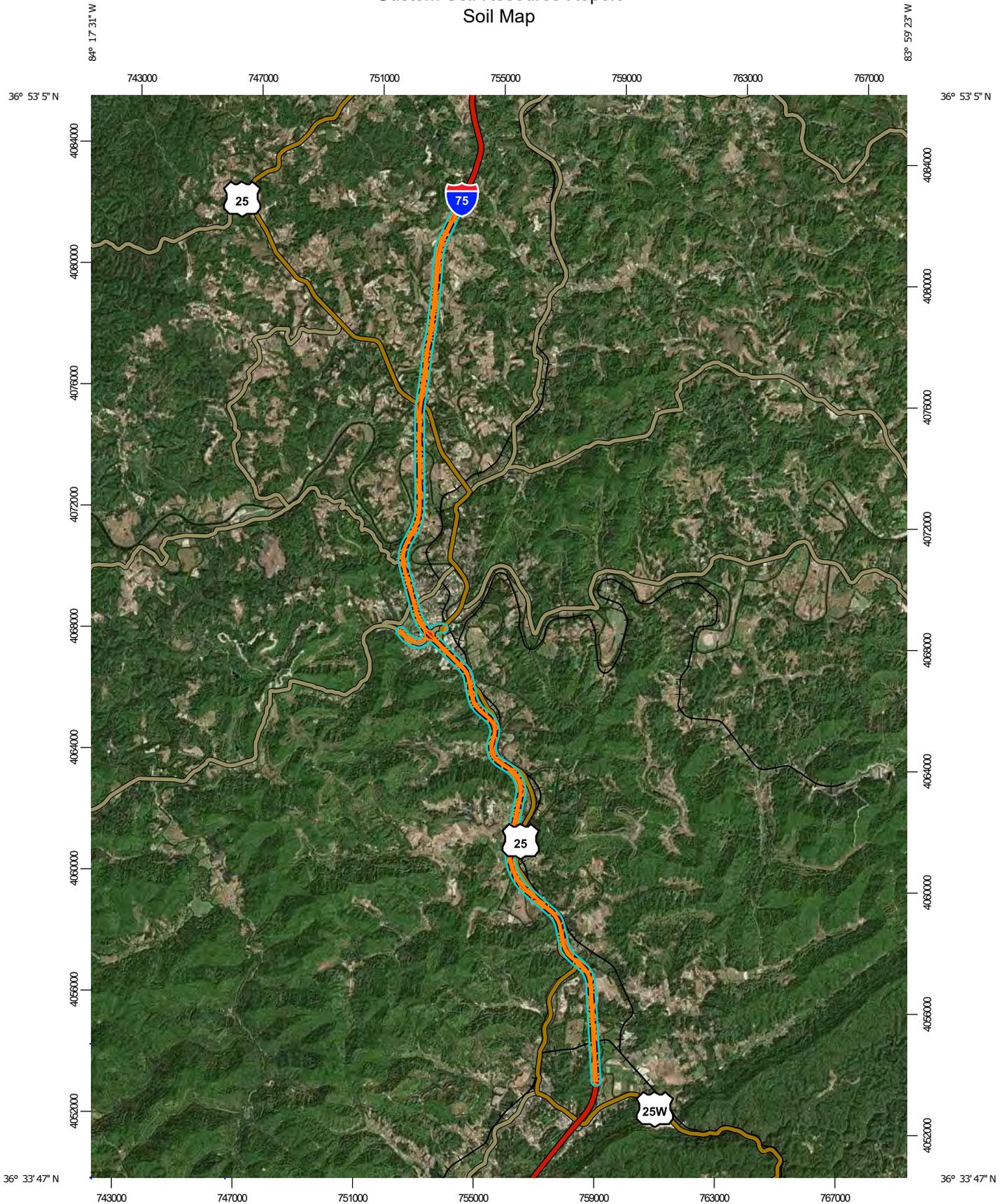
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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Scale: 1:174,000 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at scales ranging from 1:15,800 to 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Campbell County, Tennessee
 Survey Area Data: Version 18, Sep 12, 2023

Soil Survey Area: Knox and Eastern Part of Whitley Counties, Kentucky
 Survey Area Data: Version 23, Sep 10, 2023

Soil Survey Area: McCreary-Whitley Area, Kentucky
 Survey Area Data: Version 22, Sep 10, 2023

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 1, 1999—Dec 31, 2003

MAP LEGEND

MAP INFORMATION

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MkF	Muskingum-Sequoia-Petros complex, 30 to 60 percent slopes	2.0	0.1%
SaB	Sequatchie loam, 1 to 5 percent slopes, occasionally flooded	0.6	0.0%
SeD3	Sequoia silty clay loam, 15 to 25 percent slopes, severely eroded	1.9	0.1%
Sw	Swafford loam, occasionally flooded	5.2	0.2%
Subtotals for Soil Survey Area		9.7	0.4%
Totals for Area of Interest		2,567.6	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Bo	Bonnie silt loam, frequently flooded	6.3	0.2%
Co	Cotaco loam, rarely flooded	34.1	1.3%
Cu	Cuba silt loam, frequently flooded	2.9	0.1%
FBC	Fairpoint and Bethesda soils, 0 to 20 percent slopes	6.9	0.3%
Hu	Huntington silt loam, occasionally flooded	80.9	3.2%
LaC	Latham silt loam, 6 to 12 percent slopes	18.3	0.7%
LaD	Latham silt loam, 12 to 20 percent slopes	28.7	1.1%
Mo	Morehead silt loam, rarely flooded	9.6	0.4%
Ne	Newark silt loam, occasionally flooded	17.1	0.7%
ShC	Shelocta channery silt loam, 6 to 12 percent slopes	27.3	1.1%
ShD	Shelocta gravelly silt loam, 12 to 20 percent slopes	15.8	0.6%
SLE	Shelocta-Latham silt loams, 20 to 30 percent slopes	141.7	5.5%
SLF	Shelocta-Latham complex, 30 to 60 percent slopes, stony	165.0	6.4%
St	Stendal silt loam, frequently flooded	14.3	0.6%
uAIC	Allegheny loam, 6 to 12 percent slopes	12.5	0.5%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
uAID	Allegheny loam, 12 to 20 percent slopes	0.2	0.0%
uAlnB	Allegheny loam, 2 to 6 percent slopes, rarely flooded	16.4	0.6%
uAlnC	Allegheny loam, 6 to 12 percent slopes, rarely flooded	0.1	0.0%
uAnoB	Allegheny-Cotaco complex, 2 to 6 percent slopes	16.5	0.6%
uAnuC	Allegheny-Urban land complex, 2 to 15 percent slopes	113.6	4.4%
uDut	Dumps, mine and tailings	3.4	0.1%
uUduD	Udorthents-Urban land complex, 2 to 25 percent slopes	264.9	10.3%
uUraB	Urban land-Udorthents complex, 0 to 6 percent slopes	27.2	1.1%
uUraC	Urban land-Udorthents complex, 6 to 15 percent slopes	42.1	1.6%
uWhtA	Whitley silt loam, 0 to 2 percent slopes, rarely flooded	8.5	0.3%
uWhtB	Whitley silt loam, 2 to 6 percent slopes, rarely flooded	21.0	0.8%
W	Water	19.5	0.8%
WnB	Wernock silt loam, 2 to 6 percent slopes	47.1	1.8%
WnC	Wernock silt loam, 6 to 12 percent slopes	99.6	3.9%
WnD	Wernock silt loam, 12 to 20 percent slopes	30.3	1.2%
Subtotals for Soil Survey Area		1,291.8	50.3%
Totals for Area of Interest		2,567.6	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3D	Wernock-Sequoia complex, 12 to 25 percent slopes	100.3	3.9%
3E	Wernock-Gilpin-Sequoia complex, 12 to 40 percent slopes, rocky	0.7	0.0%
4C	Sequoia-Wernock complex, 6 to 12 percent slopes	73.7	2.9%
5E	Wallen-Ramsey-Alticrest complex, 15 to 60 percent slopes, very rocky	1.3	0.0%
7C	Sequoia silt loam, 6 to 12 percent slopes	1.8	0.1%
8C	Lily loam, 5 to 12 percent slopes	0.8	0.0%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
9C	Bethesda and Fairpoint soils, 6 to 20 percent slopes	27.3	1.1%
9F	Bethesda and Fairpoint soils, 20 to 70 percent slopes	26.5	1.0%
10	Nolin-Elk complex, 0 to 6 percent slopes, occasionally flooded	39.9	1.6%
11F	Shelocta-Highsplint-Sequoia complex, 30 to 80 percent slopes, rocky	99.8	3.9%
14F	Shelocta-Bouldin complex, 30 to 75 percent slopes, extremely stony, very rocky	59.8	2.3%
15	Pope soils, 0 to 4 percent slopes, frequently flooded	14.0	0.5%
22E	Shelocta-Sequoia complex, 20 to 35 percent slopes, rocky	190.0	7.4%
26B	Captina silt loam, 2 to 6 percent slopes	12.7	0.5%
28	Cotaco silt loam	13.6	0.5%
30	Atkins-Stokly complex, 0 to 3 percent slopes, frequently flooded	44.5	1.7%
64	Robertsville silt loam	21.4	0.8%
uAlIC	Allegheny loam, 6 to 12 percent slopes	41.1	1.6%
uAlnB	Allegheny loam, 2 to 6 percent slopes, rarely flooded	9.2	0.4%
uAlnC	Allegheny loam, 6 to 12 percent slopes, rarely flooded	12.6	0.5%
uAnoB	Allegheny-Cotaco complex, 2 to 6 percent slopes	7.0	0.3%
uAnuC	Allegheny-Urban land complex, 2 to 15 percent slopes	8.5	0.3%
Ud	Udorthents soils	342.6	13.3%
uShrF	Shelocta-Highsplint-Rigley complex, 30 to 50 percent slopes, stony, rocky	30.9	1.2%
uUraB	Urban land-Udorthents complex, 0 to 6 percent slopes	63.5	2.5%
uUraC	Urban land-Udorthents complex, 6 to 15 percent slopes	5.9	0.2%
uWhitB	Whitley silt loam, 2 to 6 percent slopes, rarely flooded	12.2	0.5%
W	Water	4.7	0.2%
Subtotals for Soil Survey Area		1,266.1	49.3%
Totals for Area of Interest		2,567.6	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas

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shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Campbell County, Tennessee

MkF—Muskingum-Sequoia-Petros complex, 30 to 60 percent slopes

Map Unit Setting

National map unit symbol: kljx
Elevation: 1,200 to 3,500 feet
Mean annual precipitation: 47 to 61 inches
Mean annual air temperature: 41 to 67 degrees F
Frost-free period: 156 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Muskingum and similar soils: 50 percent
Sequoia and similar soils: 25 percent
Petros and similar soils: 15 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Muskingum

Setting

Landform: Ridges
Landform position (three-dimensional): Side slope
Parent material: Loamy residuum weathered from sandstone and shale

Typical profile

H1 - 0 to 6 inches: silt loam
H2 - 6 to 24 inches: channery silt loam
Cr - 24 to 34 inches: bedrock

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: F125XY003WV - Interbedded Sedimentary Uplands
Hydric soil rating: No

Description of Sequoia

Setting

Landform: Ridges
Landform position (three-dimensional): Side slope
Parent material: Clayey residuum weathered from shale

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Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 30 inches: channery silty clay
Cr - 30 to 42 inches: bedrock

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: F125XY003WV - Interbedded Sedimentary Uplands
Hydric soil rating: No

Description of Petros

Setting

Landform: Ridges
Parent material: Channery residuum weathered from shale and siltstone

Typical profile

H1 - 0 to 5 inches: channery silt loam
H2 - 5 to 16 inches: very channery silt loam
Cr - 16 to 30 inches: bedrock

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: F125XY003WV - Interbedded Sedimentary Uplands
Hydric soil rating: No

Minor Components

Minor components

Percent of map unit: 10 percent
Hydric soil rating: No

SaB—Sequatchie loam, 1 to 5 percent slopes, occasionally flooded

Map Unit Setting

National map unit symbol: klk2
Elevation: 600 to 1,500 feet
Mean annual precipitation: 47 to 61 inches
Mean annual air temperature: 41 to 67 degrees F
Frost-free period: 156 to 170 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Sequatchie and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sequatchie

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Parent material: Loamy alluvium derived from interbedded sedimentary rock

Typical profile

H1 - 0 to 9 inches: loam
H2 - 9 to 41 inches: loam
H3 - 41 to 62 inches: loam

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F128XY521WV - Mesic Low Stream Terrace Alluvium
Hydric soil rating: No

SeD3—Sequoia silty clay loam, 15 to 25 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: klk6
Elevation: 1,700 to 2,300 feet
Mean annual precipitation: 47 to 61 inches
Mean annual air temperature: 41 to 67 degrees F
Frost-free period: 156 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Sequoia and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sequoia

Setting

Landform: Ridges
Landform position (three-dimensional): Side slope
Parent material: Clayey residuum weathered from shale

Typical profile

H1 - 0 to 4 inches: silty clay loam
H2 - 4 to 30 inches: channery silty clay
Cr - 30 to 42 inches: bedrock

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: F128XY514WV - Mesic Interbedded Sedimentary Uplands
Hydric soil rating: No

Sw—Swafford loam, occasionally flooded

Map Unit Setting

National map unit symbol: klk9
Elevation: 660 to 1,100 feet
Mean annual precipitation: 47 to 61 inches
Mean annual air temperature: 41 to 67 degrees F
Frost-free period: 156 to 170 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Swafford and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Swafford

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Parent material: Loamy alluvium derived from limestone and sandstone

Typical profile

H1 - 0 to 7 inches: loam
H2 - 7 to 30 inches: loam
H3 - 30 to 59 inches: loam
H4 - 59 to 65 inches: clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F128XY521WV - Mesic Low Stream Terrace Alluvium
Hydric soil rating: No

Minor Components

Whitwell

Percent of map unit: 5 percent
Hydric soil rating: No

Custom Soil Resource Report

Knox and Eastern Part of Whitley Counties, Kentucky

Bo—Bonnie silt loam, frequently flooded

Map Unit Setting

National map unit symbol: ljm9

Elevation: 890 to 2,300 feet

Mean annual precipitation: 44 to 57 inches

Mean annual air temperature: 43 to 69 degrees F

Frost-free period: 154 to 196 days

Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Bonnie, frequently flooded, and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bonnie, Frequently Flooded

Setting

Landform: Flood plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed fine-silty alluvium

Typical profile

H1 - 0 to 7 inches: silt loam

H2 - 7 to 26 inches: silt loam

H3 - 26 to 64 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: About 0 to 12 inches

Frequency of flooding: Frequent

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very high (about 12.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C/D

Ecological site: F125XY004WV - Floodplain Alluvium

Hydric soil rating: Yes

Minor Components

Newark

Percent of map unit: 4 percent

Hydric soil rating: No

Morehead

Percent of map unit: 3 percent
Hydric soil rating: No

Stendal

Percent of map unit: 3 percent
Hydric soil rating: No

Co—Cotaco loam, rarely flooded

Map Unit Setting

National map unit symbol: ljm
Elevation: 900 to 2,300 feet
Mean annual precipitation: 44 to 57 inches
Mean annual air temperature: 43 to 69 degrees F
Frost-free period: 154 to 196 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Cotaco, rarely flooded, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cotaco, Rarely Flooded

Setting

Landform: Stream terraces, alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Fine-loamy alluvium derived from sandstone and shale

Typical profile

H1 - 0 to 6 inches: loam
H2 - 6 to 41 inches: sandy clay loam
H3 - 41 to 70 inches: loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: About 12 to 18 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Custom Soil Resource Report

Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F125XY005WV - Low Stream Terrace Alluvium
Hydric soil rating: No

Minor Components

Morehead

Percent of map unit: 4 percent
Hydric soil rating: No

Stokly

Percent of map unit: 4 percent
Hydric soil rating: No

Ezel

Percent of map unit: 2 percent
Hydric soil rating: No

Cu—Cuba silt loam, frequently flooded

Map Unit Setting

National map unit symbol: ljmd
Elevation: 880 to 2,300 feet
Mean annual precipitation: 44 to 57 inches
Mean annual air temperature: 43 to 69 degrees F
Frost-free period: 154 to 196 days
Farmland classification: Prime farmland if protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Cuba, frequently flooded, and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cuba, Frequently Flooded

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed fine-silty alluvium

Typical profile

H1 - 0 to 45 inches: silt loam
H2 - 45 to 72 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Frequent

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very high (about 13.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B

Ecological site: F125XY004WV - Floodplain Alluvium

Hydric soil rating: No

Minor Components

Pope

Percent of map unit: 2 percent

Hydric soil rating: No

Stendal

Percent of map unit: 2 percent

Hydric soil rating: No

Whitley

Percent of map unit: 1 percent

Hydric soil rating: No

FBC—Fairpoint and Bethesda soils, 0 to 20 percent slopes

Map Unit Setting

National map unit symbol: ljmf

Elevation: 900 to 2,300 feet

Mean annual precipitation: 44 to 57 inches

Mean annual air temperature: 43 to 69 degrees F

Frost-free period: 154 to 196 days

Farmland classification: Not prime farmland

Map Unit Composition

Fairpoint, unstable fill, and similar soils: 65 percent

Bethesda, unstable fill, and similar soils: 20 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fairpoint, Unstable Fill

Setting

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Mountaintop

Down-slope shape: Convex

Custom Soil Resource Report

Across-slope shape: Linear

Parent material: Loamy skeletal coal extraction mine spoil derived from interbedded sedimentary rock

Typical profile

H1 - 0 to 12 inches: very gravelly silt loam

H2 - 12 to 60 inches: very gravelly silt loam

Properties and qualities

Slope: 0 to 20 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: C

Hydric soil rating: No

Description of Bethesda, Unstable Fill

Setting

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Mountaintop

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Loamy skeletal coal extraction mine spoil derived from interbedded sedimentary rock

Typical profile

H1 - 0 to 12 inches: channery silt loam

H2 - 12 to 72 inches: very channery loam

Properties and qualities

Slope: 0 to 20 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: C

Hydric soil rating: No

Minor Components

Latham

Percent of map unit: 5 percent
Hydric soil rating: No

Shelocta

Percent of map unit: 5 percent
Hydric soil rating: No

Barkcamp, unstable fill

Percent of map unit: 3 percent
Hydric soil rating: No

Kaymine, unstable fill

Percent of map unit: 2 percent
Hydric soil rating: No

Hu—Huntington silt loam, occasionally flooded

Map Unit Setting

National map unit symbol: ljmh
Elevation: 890 to 2,300 feet
Mean annual precipitation: 44 to 57 inches
Mean annual air temperature: 43 to 69 degrees F
Frost-free period: 154 to 196 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Huntington, occasionally flooded, and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Huntington, Occasionally Flooded

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed fine-silty alluvium

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 44 inches: silt loam
H3 - 44 to 62 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained

Custom Soil Resource Report

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)

Depth to water table: About 48 to 72 inches

Frequency of flooding: Occasional

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B

Ecological site: F125XY004WV - Floodplain Alluvium

Hydric soil rating: No

Minor Components

Whitley

Percent of map unit: 2 percent

Hydric soil rating: No

Newark

Percent of map unit: 2 percent

Hydric soil rating: No

Grigsby

Percent of map unit: 1 percent

Hydric soil rating: No

LaC—Latham silt loam, 6 to 12 percent slopes

Map Unit Setting

National map unit symbol: ljml

Elevation: 900 to 2,300 feet

Mean annual precipitation: 44 to 57 inches

Mean annual air temperature: 43 to 69 degrees F

Frost-free period: 154 to 196 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Latham and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Latham

Setting

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Mountaintop

Down-slope shape: Convex

Custom Soil Resource Report

Across-slope shape: Linear

Parent material: Clayey residuum weathered from acid shale

Typical profile

H1 - 0 to 6 inches: silt loam

H2 - 6 to 24 inches: silty clay

Cr - 24 to 35 inches: weathered bedrock

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Drainage class: Moderately well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 18 to 23 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: D

Ecological site: F125XY003WV - Interbedded Sedimentary Uplands

Hydric soil rating: No

Minor Components

Lily

Percent of map unit: 4 percent

Hydric soil rating: No

Sequoia

Percent of map unit: 3 percent

Hydric soil rating: No

Wernock

Percent of map unit: 3 percent

Hydric soil rating: No

LaD—Latham silt loam, 12 to 20 percent slopes

Map Unit Setting

National map unit symbol: ljmm

Elevation: 900 to 2,300 feet

Mean annual precipitation: 44 to 57 inches

Mean annual air temperature: 43 to 69 degrees F

Frost-free period: 154 to 196 days

Farmland classification: Not prime farmland

Map Unit Composition

Latham and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Latham

Setting

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Mountaintop

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Clayey residuum weathered from acid shale

Typical profile

H1 - 0 to 6 inches: silt loam

H2 - 6 to 24 inches: silty clay

Cr - 24 to 35 inches: weathered bedrock

Properties and qualities

Slope: 12 to 20 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Drainage class: Moderately well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 18 to 23 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: D

Ecological site: F125XY003WV - Interbedded Sedimentary Uplands

Hydric soil rating: No

Minor Components

Wernock

Percent of map unit: 4 percent

Hydric soil rating: No

Sequoia

Percent of map unit: 4 percent

Hydric soil rating: No

Shelocta

Percent of map unit: 4 percent

Hydric soil rating: No

Lily

Percent of map unit: 3 percent

Hydric soil rating: No

Mo—Morehead silt loam, rarely flooded

Map Unit Setting

National map unit symbol: ljmp
Elevation: 900 to 2,300 feet
Mean annual precipitation: 44 to 57 inches
Mean annual air temperature: 43 to 69 degrees F
Frost-free period: 154 to 196 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Morehead, rarely flooded, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Morehead, Rarely Flooded

Setting

Landform: Alluvial fans, stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Mountainbase, tread
Down-slope shape: Convex
Across-slope shape: Convex, linear
Parent material: Mixed fine-silty alluvium

Typical profile

H1 - 0 to 6 inches: silt loam
H2 - 6 to 49 inches: silt loam
H3 - 49 to 67 inches: gravelly loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: About 12 to 21 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 11.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F125XY005WV - Low Stream Terrace Alluvium
Hydric soil rating: No

Minor Components

Cotaco

Percent of map unit: 4 percent
Hydric soil rating: No

Ezel

Percent of map unit: 3 percent
Hydric soil rating: No

Stendal

Percent of map unit: 3 percent
Hydric soil rating: No

Ne—Newark silt loam, occasionally flooded

Map Unit Setting

National map unit symbol: ljm_q
Elevation: 890 to 2,300 feet
Mean annual precipitation: 44 to 57 inches
Mean annual air temperature: 43 to 69 degrees F
Frost-free period: 154 to 196 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Newark, occasionally flooded, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Newark, Occasionally Flooded

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed fine-silty alluvium

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 40 inches: silt loam
H3 - 40 to 66 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: About 12 to 18 inches
Frequency of flooding: Occasional

Custom Soil Resource Report

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B/D

Ecological site: F125XY004WV - Floodplain Alluvium

Hydric soil rating: No

Minor Components

Bonnie, frequently flooded

Percent of map unit: 4 percent

Landform: Flood plains

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: Yes

Huntington

Percent of map unit: 3 percent

Hydric soil rating: No

Stendal

Percent of map unit: 3 percent

Hydric soil rating: No

ShC—Shelocta channery silt loam, 6 to 12 percent slopes

Map Unit Setting

National map unit symbol: 2w8j0

Elevation: 680 to 1,100 feet

Mean annual precipitation: 41 to 58 inches

Mean annual air temperature: 42 to 68 degrees F

Frost-free period: 147 to 200 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Shelocta and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shelocta

Setting

Landform: Hills

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Fine-loamy colluvium derived from sandstone and shale

Custom Soil Resource Report

Typical profile

Ap - 0 to 9 inches: channery silt loam
BA - 9 to 20 inches: channery loam
Bt1 - 20 to 30 inches: channery silt loam
Bt2 - 30 to 42 inches: channery silt loam
Bt3 - 42 to 52 inches: channery silt loam
C - 52 to 72 inches: very parachannery silt loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Minor Components

Whitley

Percent of map unit: 5 percent
Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Highsprint

Percent of map unit: 4 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Allegheny

Percent of map unit: 3 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Craigsville, frequently flooded

Percent of map unit: 1 percent

Custom Soil Resource Report

Landform: Drainageways
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Philo, occasionally flooded

Percent of map unit: 1 percent
Landform: Drainageways
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Cotaco

Percent of map unit: 1 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

ShD—Shelocta gravelly silt loam, 12 to 20 percent slopes

Map Unit Setting

National map unit symbol: ljn0
Elevation: 900 to 2,300 feet
Mean annual precipitation: 44 to 57 inches
Mean annual air temperature: 43 to 69 degrees F
Frost-free period: 154 to 196 days
Farmland classification: Not prime farmland

Map Unit Composition

Shelocta and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shelocta

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Fine-loamy colluvium derived from sandstone and shale

Typical profile

H1 - 0 to 9 inches: gravelly silt loam
H2 - 9 to 42 inches: gravelly silty clay loam
H3 - 42 to 60 inches: very gravelly silty clay loam

Custom Soil Resource Report

Properties and qualities

Slope: 12 to 20 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Minor Components

Allegheny

Percent of map unit: 5 percent
Hydric soil rating: No

Wernock

Percent of map unit: 5 percent
Hydric soil rating: No

SLE—Shelocta-Latham silt loams, 20 to 30 percent slopes

Map Unit Setting

National map unit symbol: ljm_v
Elevation: 890 to 2,300 feet
Mean annual precipitation: 44 to 57 inches
Mean annual air temperature: 43 to 69 degrees F
Frost-free period: 154 to 196 days
Farmland classification: Not prime farmland

Map Unit Composition

Shelocta and similar soils: 50 percent
Latham and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shelocta

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope

Custom Soil Resource Report

Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Fine-loamy colluvium derived from sandstone and shale

Typical profile

H1 - 0 to 6 inches: silt loam
H2 - 6 to 48 inches: channery silty clay loam
H3 - 48 to 74 inches: very channery silt loam

Properties and qualities

Slope: 20 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Description of Latham

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Mountainbase
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Clayey residuum weathered from acid shale

Typical profile

H1 - 0 to 6 inches: silt loam
H2 - 6 to 24 inches: silty clay
Cr - 24 to 34 inches: weathered bedrock

Properties and qualities

Slope: 20 to 30 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 23 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Custom Soil Resource Report

Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: F125XY003WV - Interbedded Sedimentary Uplands
Hydric soil rating: No

Minor Components

Dekalb

Percent of map unit: 4 percent
Hydric soil rating: No

Lily

Percent of map unit: 4 percent
Hydric soil rating: No

Wernock

Percent of map unit: 4 percent
Hydric soil rating: No

Steinsburg

Percent of map unit: 3 percent
Hydric soil rating: No

SLF—Shelocta-Latham complex, 30 to 60 percent slopes, stony

Map Unit Setting

National map unit symbol: 2w8hz
Elevation: 680 to 2,300 feet
Mean annual precipitation: 28 to 52 inches
Mean annual air temperature: 39 to 68 degrees F
Frost-free period: 135 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Shelocta, stony, and similar soils: 60 percent
Latham, stony, and similar soils: 20 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shelocta, Stony

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Fine-loamy colluvium derived from sandstone and shale over clayey residuum weathered from shale and siltstone

Custom Soil Resource Report

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 3 inches: silt loam
BA - 3 to 7 inches: loam
Bt1 - 7 to 23 inches: channery silt loam
2Bt2 - 23 to 34 inches: channery silt loam
2Bt3 - 34 to 45 inches: very channery silt loam
2C - 45 to 59 inches: very parachannery silt loam
2Cr - 59 to 69 inches: bedrock

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: 48 to 65 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Description of Latham, Stony

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Clayey residuum weathered from shale and siltstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 2 inches: silt loam
BA - 2 to 6 inches: silty clay loam
Bt - 6 to 20 inches: silty clay
BC - 20 to 25 inches: silty clay loam
Cr - 25 to 36 inches: bedrock
R - 36 to 46 inches: bedrock

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: 24 to 34 inches to paralithic bedrock; 34 to 45 inches to lithic bedrock
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)

Custom Soil Resource Report

Depth to water table: About 14 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C/D
Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Minor Components

Rigley, stony

Percent of map unit: 8 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Kimper, stony

Percent of map unit: 7 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Matewan, stony

Percent of map unit: 3 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Marrowbone, stony

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

St—Stendal silt loam, frequently flooded

Map Unit Setting

National map unit symbol: ljn1

Elevation: 890 to 2,300 feet

Mean annual precipitation: 44 to 57 inches

Mean annual air temperature: 43 to 69 degrees F

Frost-free period: 154 to 196 days

Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Stendal, frequently flooded, and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Stendal, Frequently Flooded

Setting

Landform: Flood plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed fine-silty alluvium

Typical profile

H1 - 0 to 8 inches: silt loam

H2 - 8 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)

Depth to water table: About 12 to 24 inches

Frequency of flooding: Frequent

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very high (about 12.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B/D

Ecological site: F125XY004WV - Floodplain Alluvium

Hydric soil rating: No

Minor Components

Cuba

Percent of map unit: 3 percent
Hydric soil rating: No

Bonnie, frequently flooded

Percent of map unit: 3 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Morehead

Percent of map unit: 2 percent
Hydric soil rating: No

Stokly

Percent of map unit: 2 percent
Hydric soil rating: No

uAIIc—Allegheny loam, 6 to 12 percent slopes

Map Unit Setting

National map unit symbol: 2qytf
Elevation: 590 to 1,450 feet
Mean annual precipitation: 32 to 58 inches
Mean annual air temperature: 39 to 69 degrees F
Frost-free period: 152 to 245 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Allegheny and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Allegheny

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Fine-loamy alluvium derived from sandstone and shale

Typical profile

Ap - 0 to 8 inches: loam
Bt1 - 8 to 33 inches: loam
Bt2 - 33 to 42 inches: fine sandy loam
BC - 42 to 72 inches: fine sandy loam
C - 72 to 82 inches: sandy loam

Custom Soil Resource Report

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B

Ecological site: F125XY005WV - Low Stream Terrace Alluvium

Hydric soil rating: No

Minor Components

Cotaco

Percent of map unit: 8 percent

Landform: Stream terraces

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Gilpin

Percent of map unit: 5 percent

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Lower third of mountainflank

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Grigsby, occasionally flooded

Percent of map unit: 2 percent

Landform: Flood plains

Landform position (three-dimensional): Riser

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

uAIIID—Allegheny loam, 12 to 20 percent slopes

Map Unit Setting

National map unit symbol: 2ndsy

Custom Soil Resource Report

Elevation: 720 to 1,100 feet
Mean annual precipitation: 45 to 57 inches
Mean annual air temperature: 43 to 68 degrees F
Frost-free period: 169 to 203 days
Farmland classification: Not prime farmland

Map Unit Composition

Allegheny and similar soils: 70 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Allegheny

Setting

Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Fine-loamy alluvium derived from sandstone and shale

Typical profile

Ap - 0 to 8 inches: loam
Bt1 - 8 to 33 inches: loam
Bt2 - 33 to 42 inches: fine sandy loam
BC - 42 to 72 inches: fine sandy loam
C - 72 to 82 inches: sandy loam

Properties and qualities

Slope: 12 to 20 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F125XY005WV - Low Stream Terrace Alluvium
Hydric soil rating: No

Minor Components

Shelocta

Percent of map unit: 7 percent
Landform: Hillsides
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Nose slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Custom Soil Resource Report

Whitley

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Gilpin

Percent of map unit: 4 percent
Landform: Hillsides
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Cotaco

Percent of map unit: 4 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Latham

Percent of map unit: 4 percent
Landform: Hillsides
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Grigsby, occasionally flooded

Percent of map unit: 3 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Cottonbend

Percent of map unit: 3 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

uAInB—Allegheny loam, 2 to 6 percent slopes, rarely flooded

Map Unit Setting

National map unit symbol: 2msts
Elevation: 720 to 1,100 feet
Mean annual precipitation: 45 to 57 inches
Mean annual air temperature: 43 to 68 degrees F
Frost-free period: 169 to 203 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Allegheny, rarely flooded, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Allegheny, Rarely Flooded

Setting

Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Fine-loamy alluvium derived from sandstone and shale

Typical profile

Ap - 0 to 8 inches: loam
Bt1 - 8 to 33 inches: loam
Bt2 - 33 to 42 inches: fine sandy loam
BC - 42 to 72 inches: fine sandy loam
C - 72 to 82 inches: sandy loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F125XY005WV - Low Stream Terrace Alluvium
Hydric soil rating: No

Minor Components

Cotaco, rarely flooded

Percent of map unit: 6 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Whitley, rarely flooded

Percent of map unit: 6 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Chagrin, occasionally flooded

Percent of map unit: 3 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

uAlnC—Allegheny loam, 6 to 12 percent slopes, rarely flooded

Map Unit Setting

National map unit symbol: 2mstx
Elevation: 720 to 1,100 feet
Mean annual precipitation: 45 to 57 inches
Mean annual air temperature: 43 to 68 degrees F
Frost-free period: 169 to 203 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Allegheny, rarely flooded, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Allegheny, Rarely Flooded

Setting

Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread

Custom Soil Resource Report

Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy alluvium derived from sandstone and shale

Typical profile

Ap - 0 to 8 inches: loam
Bt1 - 8 to 33 inches: loam
Bt2 - 33 to 42 inches: fine sandy loam
BC - 42 to 72 inches: fine sandy loam
C - 72 to 82 inches: sandy loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F125XY005WV - Low Stream Terrace Alluvium
Hydric soil rating: No

Minor Components

Cotaco, rarely flooded

Percent of map unit: 10 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Chagrin, occasionally flooded

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Whitley, rarely flooded

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Linear

Hydric soil rating: No

uAnoB—Allegheny-Cotaco complex, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2mstn

Elevation: 720 to 1,100 feet

Mean annual precipitation: 45 to 57 inches

Mean annual air temperature: 43 to 68 degrees F

Frost-free period: 169 to 203 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Allegheny and similar soils: 55 percent

Cotaco and similar soils: 40 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Allegheny

Setting

Landform: Stream terraces

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Fine-loamy alluvium derived from sandstone and shale

Typical profile

Ap - 0 to 8 inches: loam

Bt1 - 8 to 33 inches: loam

Bt2 - 33 to 42 inches: fine sandy loam

BC - 42 to 72 inches: fine sandy loam

C - 72 to 82 inches: sandy loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: B

Custom Soil Resource Report

Ecological site: F125XY005WV - Low Stream Terrace Alluvium
Hydric soil rating: No

Description of Cotaco

Setting

Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Fine-loamy alluvium derived from sandstone and shale

Typical profile

Ap - 0 to 6 inches: silt loam
BA - 6 to 12 inches: silt loam
Bt1 - 12 to 19 inches: silt loam
Bt2 - 19 to 49 inches: silt loam
C - 49 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: About 12 to 49 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B/D
Ecological site: F125XY005WV - Low Stream Terrace Alluvium
Hydric soil rating: No

Minor Components

Chagrin, occasionally flooded

Percent of map unit: 3 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Cottonbend

Percent of map unit: 2 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear

Custom Soil Resource Report

Hydric soil rating: No

uAnuC—Allegheny-Urban land complex, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2mw64
Elevation: 720 to 1,100 feet
Mean annual precipitation: 45 to 57 inches
Mean annual air temperature: 43 to 68 degrees F
Frost-free period: 169 to 203 days
Farmland classification: Not prime farmland

Map Unit Composition

Allegheny and similar soils: 55 percent
Urban land: 25 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Allegheny

Setting

Landform: Stream terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Fine-loamy alluvium derived from sandstone and shale

Typical profile

Ap - 0 to 8 inches: loam
Bt1 - 8 to 33 inches: loam
Bt2 - 33 to 42 inches: fine sandy loam
BC - 42 to 72 inches: fine sandy loam
C - 72 to 82 inches: sandy loam

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e

Custom Soil Resource Report

Hydrologic Soil Group: B
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Stream terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Minor Components

Udorthents, unstable fill

Percent of map unit: 10 percent
Landform: Stream terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Whitley

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Cotaco

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

uDut—Dumps, mine and tailings

Map Unit Setting

National map unit symbol: 2mtj7

Custom Soil Resource Report

Elevation: 720 to 1,510 feet
Mean annual precipitation: 45 to 57 inches
Mean annual air temperature: 43 to 68 degrees F
Frost-free period: 169 to 203 days
Farmland classification: Not prime farmland

Map Unit Composition

Dumps, mine (tailings & tipples): 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dumps, Mine (tailings & Tipples)

Setting

Landform: Hillslopes
Landform position (three-dimensional): Base slope

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Minor Components

Fairpoint, unstable fill

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Urban land

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (three-dimensional): Base slope
Hydric soil rating: No

Udorthents, unstable fill

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear, concave
Across-slope shape: Linear
Hydric soil rating: No

uUduD—Udorthents-Urban land complex, 2 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2qysw
Elevation: 720 to 1,100 feet
Mean annual precipitation: 45 to 57 inches
Mean annual air temperature: 43 to 68 degrees F
Frost-free period: 169 to 203 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents, unstable fill, and similar soils: 60 percent
Urban land: 40 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Unstable Fill

Setting

Landform: Hillsides
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy skeletal mine spoil or earthy fill derived from interbedded sedimentary rock

Typical profile

Ap - 0 to 5 inches: extremely parachannery silt loam
C1 - 5 to 30 inches: extremely parachannery silt loam
C2 - 30 to 60 inches: extremely parachannery silt loam
C3 - 60 to 79 inches: extremely parachannery silt loam

Properties and qualities

Slope: 2 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Hillsides

Landform position (three-dimensional): Base slope

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: No

uUraB—Urban land-Udorthents complex, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2ndt7

Elevation: 720 to 1,100 feet

Mean annual precipitation: 45 to 57 inches

Mean annual air temperature: 43 to 68 degrees F

Frost-free period: 169 to 203 days

Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 60 percent

Udorthents, unstable fill, and similar soils: 25 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Hillsides

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: No

Description of Udorthents, Unstable Fill

Setting

Landform: Valleys

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy skeletal mine spoil or earthy fill derived from interbedded sedimentary rock

Typical profile

Ap - 0 to 4 inches: silt loam

2C1 - 4 to 17 inches: channery clay loam

Custom Soil Resource Report

2C2 - 17 to 35 inches: very channery clay loam

3Ab - 35 to 47 inches: loam

3Bwb - 47 to 79 inches: loam

Properties and qualities

Slope: 0 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: C

Hydric soil rating: No

Minor Components

Whitley

Percent of map unit: 5 percent

Landform: Stream terraces

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Linear

Hydric soil rating: No

Chagrin, occasionally flooded

Percent of map unit: 5 percent

Landform: Flood plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Cotaco

Percent of map unit: 5 percent

Landform: Stream terraces

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Down-slope shape: Concave

Across-slope shape: Linear

Hydric soil rating: No

uUraC—Urban land-Udorthents complex, 6 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2qysz
Elevation: 720 to 1,100 feet
Mean annual precipitation: 45 to 57 inches
Mean annual air temperature: 43 to 68 degrees F
Frost-free period: 169 to 224 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 60 percent
Udorthents, unstable fill, and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Hillsides

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Description of Udorthents, Unstable Fill

Setting

Landform: Hillsides
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy skeletal mine spoil or earthy fill derived from interbedded sedimentary rock

Typical profile

ACp - 0 to 7 inches: very channery silt loam
C1 - 7 to 33 inches: very channery silt loam
C2 - 33 to 38 inches: very channery silt loam
C3 - 38 to 46 inches: extremely channery loam
C4 - 46 to 80 inches: extremely channery loam

Properties and qualities

Slope: 6 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: C

Hydric soil rating: No

Minor Components

Chagrin, occasionally flooded

Percent of map unit: 5 percent

Landform: Flood plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Cotaco

Percent of map unit: 5 percent

Landform: Stream terraces

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Down-slope shape: Concave

Across-slope shape: Linear

Hydric soil rating: No

Whitley

Percent of map unit: 5 percent

Landform: Stream terraces

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Linear

Hydric soil rating: No

uWhtA—Whitley silt loam, 0 to 2 percent slopes, rarely flooded

Map Unit Setting

National map unit symbol: 2msv0

Elevation: 720 to 1,100 feet

Mean annual precipitation: 45 to 57 inches

Mean annual air temperature: 43 to 68 degrees F

Frost-free period: 169 to 203 days

Custom Soil Resource Report

Farmland classification: All areas are prime farmland

Map Unit Composition

Whitley, rarely flooded, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Whitley, Rarely Flooded

Setting

Landform: Stream terraces

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Fine-silty alluvium derived from shale and siltstone

Typical profile

Ap - 0 to 11 inches: silt loam

Bt1 - 11 to 31 inches: silt loam

Bt2 - 31 to 46 inches: loam

2Bt3 - 46 to 60 inches: very gravelly loam

2C - 60 to 80 inches: extremely gravelly loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Rare

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 1

Hydrologic Soil Group: B

Ecological site: F125XY005WV - Low Stream Terrace Alluvium

Hydric soil rating: No

Minor Components

Chagrin, occasionally flooded

Percent of map unit: 4 percent

Landform: Flood plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Shelbiana, rarely flooded

Percent of map unit: 4 percent

Landform: Stream terraces

Custom Soil Resource Report

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Allegheny, rarely flooded

Percent of map unit: 4 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Holly, frequently flooded

Percent of map unit: 3 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

uWhtB—Whitley silt loam, 2 to 6 percent slopes, rarely flooded

Map Unit Setting

National map unit symbol: 2msv2
Elevation: 720 to 1,100 feet
Mean annual precipitation: 45 to 57 inches
Mean annual air temperature: 43 to 68 degrees F
Frost-free period: 169 to 203 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Whitley, rarely flooded, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Whitley, Rarely Flooded

Setting

Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Fine-silty alluvium derived from shale and siltstone

Typical profile

Ap - 0 to 11 inches: silt loam

Custom Soil Resource Report

Bt1 - 11 to 31 inches: silt loam
Bt2 - 31 to 46 inches: loam
2Bt3 - 46 to 60 inches: very gravelly loam
2C - 60 to 80 inches: extremely gravelly loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F125XY005WV - Low Stream Terrace Alluvium
Hydric soil rating: No

Minor Components

Shelbiana, rarely flooded

Percent of map unit: 4 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Chagrin, occasionally flooded

Percent of map unit: 4 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Allegheny, rarely flooded

Percent of map unit: 4 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Holly, frequently flooded

Percent of map unit: 3 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope

Custom Soil Resource Report

Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

W—Water

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

WnB—Wernock silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: ljn4

Elevation: 900 to 2,300 feet

Mean annual precipitation: 44 to 57 inches

Mean annual air temperature: 43 to 69 degrees F

Frost-free period: 154 to 196 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Wernock and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wernock

Setting

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Mountaintop

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Fine-silty residuum weathered from shale and siltstone

Typical profile

H1 - 0 to 5 inches: silt loam

H2 - 5 to 34 inches: silty clay loam

H3 - 34 to 38 inches: silt loam

Cr - 38 to 48 inches: weathered bedrock

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)

Custom Soil Resource Report

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F125XY003WV - Interbedded Sedimentary Uplands
Hydric soil rating: No

Minor Components

Clarkrange

Percent of map unit: 3 percent
Hydric soil rating: No

Latham

Percent of map unit: 3 percent
Hydric soil rating: No

Rayne

Percent of map unit: 2 percent
Hydric soil rating: No

Lily

Percent of map unit: 2 percent
Hydric soil rating: No

WnC—Wernock silt loam, 6 to 12 percent slopes

Map Unit Setting

National map unit symbol: ljn5
Elevation: 900 to 2,300 feet
Mean annual precipitation: 44 to 57 inches
Mean annual air temperature: 43 to 69 degrees F
Frost-free period: 154 to 196 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Wernock and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wernock

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex

Custom Soil Resource Report

Across-slope shape: Linear

Parent material: Fine-silty residuum weathered from shale and siltstone

Typical profile

H1 - 0 to 5 inches: silt loam

H2 - 5 to 34 inches: silty clay loam

H3 - 34 to 38 inches: silt loam

Cr - 38 to 48 inches: weathered bedrock

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F125XY003WV - Interbedded Sedimentary Uplands

Hydric soil rating: No

Minor Components

Latham

Percent of map unit: 4 percent

Hydric soil rating: No

Lily

Percent of map unit: 3 percent

Hydric soil rating: No

Rayne

Percent of map unit: 3 percent

Hydric soil rating: No

WnD—Wernock silt loam, 12 to 20 percent slopes

Map Unit Setting

National map unit symbol: ljn6

Elevation: 900 to 2,300 feet

Mean annual precipitation: 44 to 57 inches

Mean annual air temperature: 43 to 69 degrees F

Frost-free period: 154 to 196 days

Farmland classification: Not prime farmland

Map Unit Composition

Wernock and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wernock

Setting

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Mountaintop

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Fine-silty residuum weathered from shale and siltstone

Typical profile

H1 - 0 to 5 inches: silt loam

H2 - 5 to 34 inches: silty clay loam

H3 - 34 to 38 inches: silt loam

Cr - 38 to 48 inches: weathered bedrock

Properties and qualities

Slope: 12 to 20 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: C

Ecological site: F125XY003WV - Interbedded Sedimentary Uplands

Hydric soil rating: No

Minor Components

Latham

Percent of map unit: 4 percent

Hydric soil rating: No

Lily

Percent of map unit: 3 percent

Hydric soil rating: No

Rayne

Percent of map unit: 3 percent

Hydric soil rating: No

Custom Soil Resource Report

McCreary-Whitley Area, Kentucky

3D—Wernock-Sequoia complex, 12 to 25 percent slopes

Map Unit Setting

National map unit symbol: ng8r
Elevation: 800 to 2,130 feet
Mean annual precipitation: 27 to 37 inches
Mean annual air temperature: 36 to 56 degrees F
Frost-free period: 131 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Wernock and similar soils: 50 percent
Sequoia and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wernock

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Fine-silty residuum weathered from siltstone

Typical profile

H1 - 0 to 5 inches: silt loam
H2 - 5 to 25 inches: silty clay loam
H3 - 25 to 35 inches: silty clay loam
Cr - 35 to 45 inches: weathered bedrock

Properties and qualities

Slope: 12 to 25 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F125XY003WV - Interbedded Sedimentary Uplands
Hydric soil rating: No

Description of Sequoia

Setting

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Mountaintop

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Clayey residuum weathered from shale and siltstone

Typical profile

H1 - 0 to 4 inches: silt loam

H2 - 4 to 22 inches: silty clay

Cr - 22 to 30 inches: weathered bedrock

Properties and qualities

Slope: 12 to 25 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C

Ecological site: F125XY003WV - Interbedded Sedimentary Uplands

Hydric soil rating: No

Minor Components

Lily

Percent of map unit: 5 percent

Hydric soil rating: No

Muse

Percent of map unit: 3 percent

Hydric soil rating: No

Rayne

Percent of map unit: 2 percent

Hydric soil rating: No

3E—Wernock-Gilpin-Sequoia complex, 12 to 40 percent slopes, rocky

Map Unit Setting

National map unit symbol: t19s
Elevation: 800 to 2,130 feet
Mean annual precipitation: 27 to 37 inches
Mean annual air temperature: 36 to 56 degrees F
Frost-free period: 131 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Wernock and similar soils: 30 percent
Gilpin and similar soils: 25 percent
Sequoia and similar soils: 20 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wernock

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Fine-silty residuum weathered from siltstone

Typical profile

H1 - 0 to 5 inches: silt loam
H2 - 5 to 25 inches: silty clay loam
H3 - 25 to 35 inches: silty clay loam
Cr - 35 to 45 inches: weathered bedrock

Properties and qualities

Slope: 12 to 40 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C

Custom Soil Resource Report

Ecological site: F125XY003WV - Interbedded Sedimentary Uplands
Hydric soil rating: No

Description of Gilpin

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Fine-loamy residuum weathered from shale and siltstone

Typical profile

H1 - 0 to 7 inches: silt loam
H2 - 7 to 12 inches: silt loam
H3 - 12 to 35 inches: silty clay loam
R - 35 to 45 inches: unweathered bedrock

Properties and qualities

Slope: 12 to 40 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: F125XY003WV - Interbedded Sedimentary Uplands
Hydric soil rating: No

Description of Sequoia

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey residuum weathered from shale and siltstone

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 22 inches: silty clay
Cr - 22 to 30 inches: weathered bedrock

Properties and qualities

Slope: 12 to 40 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Very high

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C

Ecological site: F125XY003WV - Interbedded Sedimentary Uplands

Hydric soil rating: No

Minor Components

Dekalb

Percent of map unit: 5 percent

Hydric soil rating: No

Wallen

Percent of map unit: 5 percent

Hydric soil rating: No

Shelocta

Percent of map unit: 5 percent

Hydric soil rating: No

Alticrest

Percent of map unit: 5 percent

Hydric soil rating: No

Ramsey

Percent of map unit: 2 percent

Hydric soil rating: No

Lily

Percent of map unit: 2 percent

Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent

Hydric soil rating: No

4C—Sequoia-Wernock complex, 6 to 12 percent slopes

Map Unit Setting

National map unit symbol: ng8t

Elevation: 800 to 2,130 feet

Mean annual precipitation: 27 to 37 inches

Custom Soil Resource Report

Mean annual air temperature: 36 to 56 degrees F

Frost-free period: 131 to 170 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Sequoia and similar soils: 55 percent

Wernock and similar soils: 35 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sequoia

Setting

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Mountaintop

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Clayey residuum weathered from shale and siltstone

Typical profile

H1 - 0 to 4 inches: silt loam

H2 - 4 to 22 inches: silty clay

Cr - 22 to 30 inches: weathered bedrock

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: C

Ecological site: F125XY003WV - Interbedded Sedimentary Uplands

Hydric soil rating: No

Description of Wernock

Setting

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Mountaintop

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Fine-silty residuum weathered from siltstone

Typical profile

H1 - 0 to 5 inches: silt loam

H2 - 5 to 25 inches: silty clay loam

Custom Soil Resource Report

H3 - 25 to 35 inches: silty clay loam

Cr - 35 to 45 inches: weathered bedrock

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F125XY003WV - Interbedded Sedimentary Uplands

Hydric soil rating: No

Minor Components

Lily

Percent of map unit: 5 percent

Hydric soil rating: No

Muse

Percent of map unit: 3 percent

Hydric soil rating: No

Greenbriar

Percent of map unit: 2 percent

Hydric soil rating: No

5E—Wallen-Ramsey-Alticrest complex, 15 to 60 percent slopes, very rocky

Map Unit Setting

National map unit symbol: svbb

Elevation: 800 to 2,130 feet

Mean annual precipitation: 27 to 37 inches

Mean annual air temperature: 36 to 56 degrees F

Frost-free period: 131 to 170 days

Farmland classification: Not prime farmland

Map Unit Composition

Wallen and similar soils: 30 percent

Ramsey and similar soils: 25 percent

Custom Soil Resource Report

Alticrest and similar soils: 15 percent

Minor components: 30 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wallen

Setting

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Mountaintop

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Loamy residuum weathered from sandstone

Typical profile

H1 - 0 to 6 inches: channery sandy loam

H2 - 6 to 24 inches: very channery sandy loam

R - 24 to 34 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 60 percent

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Drainage class: Somewhat excessively drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: B

Ecological site: F125XY001WV - Sandstone Residuum

Hydric soil rating: No

Description of Ramsey

Setting

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Mountaintop

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Loamy residuum weathered from sandstone

Typical profile

H1 - 0 to 4 inches: channery sandy loam

H2 - 4 to 19 inches: channery sandy loam

R - 19 to 29 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 60 percent

Surface area covered with cobbles, stones or boulders: 0.1 percent

Depth to restrictive feature: 10 to 20 inches to lithic bedrock

Drainage class: Somewhat excessively drained

Custom Soil Resource Report

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 1.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D

Ecological site: F125XY001WV - Sandstone Residuum

Hydric soil rating: No

Description of Alticrest

Setting

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Mountaintop

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Coarse-loamy residuum weathered from sandstone

Typical profile

H1 - 0 to 3 inches: sandy loam

H2 - 3 to 22 inches: sandy loam

R - 22 to 32 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 60 percent

Surface area covered with cobbles, stones or boulders: 0.1 percent

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: B

Ecological site: F125XY001WV - Sandstone Residuum

Hydric soil rating: No

Minor Components

Gilpin

Percent of map unit: 10 percent

Hydric soil rating: No

Rock outcrop

Percent of map unit: 5 percent

Custom Soil Resource Report

Hydric soil rating: No

Wernock

Percent of map unit: 5 percent

Hydric soil rating: No

Lily

Percent of map unit: 3 percent

Hydric soil rating: No

Sequoia

Percent of map unit: 3 percent

Hydric soil rating: No

Petros

Percent of map unit: 2 percent

Hydric soil rating: No

Helechawa

Percent of map unit: 2 percent

Hydric soil rating: No

7C—Sequoia silt loam, 6 to 12 percent slopes

Map Unit Setting

National map unit symbol: ng8w

Elevation: 800 to 2,130 feet

Mean annual precipitation: 27 to 37 inches

Mean annual air temperature: 36 to 56 degrees F

Frost-free period: 131 to 170 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Sequoia and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sequoia

Setting

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Mountaintop

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Clayey residuum weathered from shale and siltstone

Typical profile

H1 - 0 to 4 inches: silt loam

H2 - 4 to 22 inches: silty clay

Custom Soil Resource Report

Cr - 22 to 30 inches: weathered bedrock

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: C

Ecological site: F125XY003WV - Interbedded Sedimentary Uplands

Hydric soil rating: No

Minor Components

Muse

Percent of map unit: 5 percent

Hydric soil rating: No

Wernock

Percent of map unit: 5 percent

Hydric soil rating: No

8C—Lily loam, 5 to 12 percent slopes

Map Unit Setting

National map unit symbol: 2tqhl

Elevation: 580 to 2,490 feet

Mean annual precipitation: 31 to 61 inches

Mean annual air temperature: 41 to 69 degrees F

Frost-free period: 139 to 187 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Lily and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lily

Setting

Landform: Ridges

Landform position (two-dimensional): Summit

Custom Soil Resource Report

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Fine-loamy residuum weathered from sandstone and shale

Typical profile

Ap - 0 to 10 inches: loam

BE - 10 to 18 inches: loam

Bt - 18 to 31 inches: sandy clay loam

R - 31 to 41 inches: bedrock

Properties and qualities

Slope: 5 to 12 percent

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B

Ecological site: F125XY001WV - Sandstone Residuum

Hydric soil rating: No

Minor Components

Gilpin

Percent of map unit: 6 percent

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Sequoia

Percent of map unit: 5 percent

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Wernock

Percent of map unit: 4 percent

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex

Across-slope shape: Linear

Hydric soil rating: No

9C—Bethesda and Fairpoint soils, 6 to 20 percent slopes

Map Unit Setting

National map unit symbol: ng8z

Elevation: 800 to 2,130 feet

Mean annual precipitation: 27 to 37 inches

Mean annual air temperature: 36 to 56 degrees F

Frost-free period: 131 to 170 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Bethesda, unstable fill, and similar soils: 41 percent

Fairpoint, unstable fill, and similar soils: 39 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bethesda, Unstable Fill

Setting

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Mountaintop

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Loamy coal extraction mine spoil derived from sandstone and shale

Typical profile

H1 - 0 to 6 inches: very channery silt loam

H2 - 6 to 65 inches: very channery clay loam

Properties and qualities

Slope: 6 to 20 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: C

Hydric soil rating: No

Description of Fairpoint, Unstable Fill

Setting

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Mountaintop

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Loamy coal extraction mine spoil derived from sandstone and shale

Typical profile

H1 - 0 to 5 inches: very channery silt loam

H2 - 5 to 65 inches: very channery silty clay loam

Properties and qualities

Slope: 6 to 20 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: C

Hydric soil rating: No

Minor Components

Shelocta

Percent of map unit: 5 percent

Hydric soil rating: No

Lily

Percent of map unit: 5 percent

Hydric soil rating: No

Wernock

Percent of map unit: 5 percent

Hydric soil rating: No

Sequoia

Percent of map unit: 5 percent

Hydric soil rating: No

9F—Bethesda and Fairpoint soils, 20 to 70 percent slopes

Map Unit Setting

National map unit symbol: ng90
Elevation: 800 to 2,130 feet
Mean annual precipitation: 27 to 37 inches
Mean annual air temperature: 36 to 56 degrees F
Frost-free period: 131 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Bethesda, unstable fill, and similar soils: 41 percent
Fairpoint, unstable fill, and similar soils: 39 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bethesda, Unstable Fill

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy coal extraction mine spoil derived from sandstone and shale

Typical profile

H1 - 0 to 6 inches: very channery silt loam
H2 - 6 to 65 inches: very channery clay loam

Properties and qualities

Slope: 20 to 70 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Fairpoint, Unstable Fill

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountainflank

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Loamy coal extraction mine spoil derived from sandstone and shale

Typical profile

H1 - 0 to 5 inches: very channery silt loam

H2 - 5 to 65 inches: very channery silty clay loam

Properties and qualities

Slope: 20 to 70 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: C

Hydric soil rating: No

Minor Components

Sequoia

Percent of map unit: 5 percent

Hydric soil rating: No

Shelocta

Percent of map unit: 5 percent

Hydric soil rating: No

Wernock

Percent of map unit: 5 percent

Hydric soil rating: No

Lily

Percent of map unit: 5 percent

Hydric soil rating: No

10—Nolin-Elk complex, 0 to 6 percent slopes, occasionally flooded

Map Unit Setting

National map unit symbol: nk1w

Elevation: 800 to 2,130 feet

Mean annual precipitation: 27 to 37 inches

Mean annual air temperature: 36 to 56 degrees F

Frost-free period: 131 to 170 days

Farmland classification: Prime farmland if protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Nolin, occasionally flooded, and similar soils: 45 percent

Elk, occasionally flooded, and similar soils: 40 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nolin, Occasionally Flooded

Setting

Landform: Flood plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Fine-silty alluvium derived from shale and siltstone

Typical profile

H1 - 0 to 8 inches: silt loam

H2 - 8 to 45 inches: silt loam

H3 - 45 to 65 inches: silt loam

Properties and qualities

Slope: 0 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)

Depth to water table: About 40 to 65 inches

Frequency of flooding: Occasional

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B

Ecological site: F125XY004WV - Floodplain Alluvium

Hydric soil rating: No

Description of Elk, Occasionally Flooded

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Fine-silty alluvium derived from shale and siltstone

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 17 inches: silt loam
H3 - 17 to 80 inches: silty clay loam

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: About 40 to 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F125XY005WV - Low Stream Terrace Alluvium
Hydric soil rating: No

Minor Components

Stokly

Percent of map unit: 5 percent
Hydric soil rating: No

Grigsby

Percent of map unit: 5 percent
Hydric soil rating: No

Allegheny

Percent of map unit: 5 percent
Hydric soil rating: No

11F—Shelocta-Highsplint-Sequoia complex, 30 to 80 percent slopes, rocky

Map Unit Setting

National map unit symbol: nk1x
Elevation: 800 to 2,130 feet
Mean annual precipitation: 27 to 37 inches
Mean annual air temperature: 36 to 56 degrees F
Frost-free period: 131 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Shelocta and similar soils: 40 percent
Highsplint and similar soils: 20 percent
Sequoia and similar soils: 18 percent
Minor components: 22 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shelocta

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Fine-loamy colluvium derived from sandstone and shale

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 48 inches: silty clay loam
H3 - 48 to 65 inches: channery silt loam

Properties and qualities

Slope: 30 to 80 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e

Custom Soil Resource Report

Hydrologic Soil Group: B

Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium

Hydric soil rating: No

Description of Highsplint

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountainbase

Down-slope shape: Concave

Across-slope shape: Concave

Parent material: Loamy colluvium derived from sandstone and shale

Typical profile

H1 - 0 to 4 inches: channery silt loam

H2 - 4 to 19 inches: channery silt loam

H3 - 19 to 45 inches: very channery silty clay loam

H4 - 45 to 65 inches: extremely channery silt loam

Properties and qualities

Slope: 30 to 80 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium

Hydric soil rating: No

Description of Sequoia

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountainflank

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Clayey residuum weathered from shale and siltstone

Typical profile

H1 - 0 to 4 inches: silt loam

H2 - 4 to 22 inches: silty clay

Cr - 22 to 30 inches: weathered bedrock

Properties and qualities

Slope: 30 to 80 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Drainage class: Well drained

Custom Soil Resource Report

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: C

Ecological site: F125XY003WV - Interbedded Sedimentary Uplands

Hydric soil rating: No

Minor Components

Alticrest

Percent of map unit: 5 percent

Hydric soil rating: No

Gilpin

Percent of map unit: 3 percent

Hydric soil rating: No

Bethesda, unstable fill

Percent of map unit: 3 percent

Hydric soil rating: No

Kimper

Percent of map unit: 3 percent

Hydric soil rating: No

Fairpoint, unstable fill

Percent of map unit: 2 percent

Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent

Hydric soil rating: No

Rigley

Percent of map unit: 2 percent

Hydric soil rating: No

Wernock

Percent of map unit: 2 percent

Hydric soil rating: No

14F—Shelocta-Bouldin complex, 30 to 75 percent slopes, extremely stony, very rocky

Map Unit Setting

National map unit symbol: spdg
Elevation: 800 to 2,130 feet
Mean annual precipitation: 27 to 37 inches
Mean annual air temperature: 36 to 56 degrees F
Frost-free period: 131 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Shelocta and similar soils: 45 percent
Bouldin and similar soils: 25 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shelocta

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Fine-loamy colluvium derived from sandstone and shale

Typical profile

H1 - 0 to 5 inches: channery silt loam
H2 - 5 to 48 inches: silty clay loam
H3 - 48 to 65 inches: channery silt loam

Properties and qualities

Slope: 20 to 75 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e

Custom Soil Resource Report

Hydrologic Soil Group: B

Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium

Hydric soil rating: No

Description of Bouldin

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountainflank

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy colluvium derived from sandstone and shale

Typical profile

H1 - 0 to 4 inches: channery loam

H2 - 4 to 15 inches: very channery loam

H3 - 15 to 85 inches: very channery clay loam

Properties and qualities

Slope: 20 to 75 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat excessively drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium

Hydric soil rating: No

Minor Components

Wallen

Percent of map unit: 5 percent

Hydric soil rating: No

Ramsey

Percent of map unit: 5 percent

Hydric soil rating: No

Gilpin

Percent of map unit: 5 percent

Hydric soil rating: No

Rock outcrop

Percent of map unit: 5 percent

Hydric soil rating: No

Muse

Percent of map unit: 2 percent

Hydric soil rating: No

Kimper

Percent of map unit: 2 percent
Hydric soil rating: No

Wernock

Percent of map unit: 2 percent
Hydric soil rating: No

Sequoia

Percent of map unit: 1 percent
Hydric soil rating: No

Alticrest

Percent of map unit: 1 percent
Hydric soil rating: No

Lily

Percent of map unit: 1 percent
Hydric soil rating: No

Craigsville

Percent of map unit: 1 percent
Hydric soil rating: No

15—Pope soils, 0 to 4 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 11cpd
Elevation: 800 to 2,130 feet
Mean annual precipitation: 27 to 37 inches
Mean annual air temperature: 36 to 56 degrees F
Frost-free period: 131 to 170 days
Farmland classification: Prime farmland if protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Pope, frequently flooded, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pope, Frequently Flooded

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-loamy alluvium derived from sandstone and shale

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 45 inches: sandy loam

Custom Soil Resource Report

H3 - 45 to 65 inches: stratified loamy sand to sandy loam

Properties and qualities

Slope: 0 to 4 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 5.95 in/hr)

Depth to water table: About 40 to 72 inches

Frequency of flooding: Frequent

Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: A

Ecological site: F125XY004WV - Floodplain Alluvium

Hydric soil rating: No

Minor Components

Atkins, frequently flooded

Percent of map unit: 4 percent

Landform: Flood plains, sloughs

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: Yes

Stokly

Percent of map unit: 3 percent

Hydric soil rating: No

Craigsville

Percent of map unit: 3 percent

Hydric soil rating: No

22E—Shelocta-Sequoia complex, 20 to 35 percent slopes, rocky

Map Unit Setting

National map unit symbol: ngc7

Elevation: 800 to 2,130 feet

Mean annual precipitation: 27 to 37 inches

Mean annual air temperature: 36 to 56 degrees F

Frost-free period: 131 to 170 days

Farmland classification: Not prime farmland

Map Unit Composition

Shelocta and similar soils: 55 percent

Sequoia and similar soils: 30 percent

Custom Soil Resource Report

Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shelocta

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Fine-loamy colluvium derived from sandstone and shale

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 48 inches: silty clay loam
H3 - 48 to 65 inches: channery silt loam

Properties and qualities

Slope: 20 to 35 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Description of Sequoia

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey residuum weathered from shale and siltstone

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 22 inches: silty clay
Cr - 22 to 30 inches: weathered bedrock

Properties and qualities

Slope: 20 to 35 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Very high

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C

Ecological site: F125XY003WV - Interbedded Sedimentary Uplands

Hydric soil rating: No

Minor Components

Bouldin

Percent of map unit: 3 percent

Hydric soil rating: No

Wernock

Percent of map unit: 3 percent

Hydric soil rating: No

Bethesda, unstable fill

Percent of map unit: 3 percent

Hydric soil rating: No

Fairpoint, unstable fill

Percent of map unit: 2 percent

Hydric soil rating: No

Highsplint

Percent of map unit: 2 percent

Hydric soil rating: No

Lily

Percent of map unit: 2 percent

Hydric soil rating: No

26B—Captina silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 1nr7

Elevation: 720 to 2,160 feet

Mean annual precipitation: 27 to 37 inches

Mean annual air temperature: 36 to 56 degrees F

Frost-free period: 131 to 170 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Captina and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Captina

Setting

Landform: Stream terraces

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Fine-silty alluvium

Typical profile

H1 - 0 to 8 inches: silt loam

H2 - 8 to 24 inches: silt loam

H3 - 24 to 34 inches: silty clay loam

H4 - 34 to 42 inches: gravelly silty clay loam

R - 42 to 46 inches: unweathered bedrock

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: 16 to 38 inches to fragipan

Drainage class: Moderately well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)

Depth to water table: About 16 to 32 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C/D

Ecological site: F125XY005WV - Low Stream Terrace Alluvium

Hydric soil rating: No

Minor Components

Elk

Percent of map unit: 5 percent

Hydric soil rating: No

Robertsville, occasionally flooded

Percent of map unit: 5 percent

Landform: Stream terraces

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: Yes

Tyler

Percent of map unit: 5 percent

Hydric soil rating: No

28—Cotaco silt loam

Map Unit Setting

National map unit symbol: 1nrf9
Elevation: 720 to 2,160 feet
Mean annual precipitation: 27 to 37 inches
Mean annual air temperature: 36 to 56 degrees F
Frost-free period: 131 to 170 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Cotaco and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cotaco

Setting

Landform: Stream terraces, alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Fine-loamy alluvium derived from sandstone and shale

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 15 inches: silt loam
H3 - 15 to 26 inches: gravelly silty clay loam
H4 - 26 to 80 inches: very gravelly silty clay loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: About 8 to 28 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F125XY005WV - Low Stream Terrace Alluvium
Hydric soil rating: No

Minor Components

Atkins, frequently flooded

Percent of map unit: 5 percent
Landform: Flood plains, sloughs
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Philo

Percent of map unit: 5 percent
Hydric soil rating: No

30—Atkins-Stokly complex, 0 to 3 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: nk20
Elevation: 800 to 2,130 feet
Mean annual precipitation: 27 to 37 inches
Mean annual air temperature: 36 to 56 degrees F
Frost-free period: 131 to 170 days
Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Atkins, frequently flooded, and similar soils: 45 percent
Stokly, frequently flooded, and similar soils: 35 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Atkins, Frequently Flooded

Setting

Landform: Flood plains, sloughs
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine-loamy alluvium derived from sandstone and shale

Typical profile

H1 - 0 to 8 inches: loam
H2 - 8 to 20 inches: fine sandy loam
H3 - 20 to 65 inches: sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 2.00 in/hr)

Custom Soil Resource Report

Depth to water table: About 0 to 20 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F125XY004WV - Floodplain Alluvium
Hydric soil rating: Yes

Description of Stokly, Frequently Flooded

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-loamy alluvium derived from sandstone and shale

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 35 inches: fine sandy loam
H3 - 35 to 65 inches: sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 12 to 35 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A/D
Ecological site: F125XY004WV - Floodplain Alluvium
Hydric soil rating: No

Minor Components

Grigsby

Percent of map unit: 5 percent
Hydric soil rating: No

Allegheny

Percent of map unit: 5 percent
Hydric soil rating: No

Craigsville

Percent of map unit: 5 percent
Hydric soil rating: No

Pope

Percent of map unit: 5 percent
Hydric soil rating: No

64—Robertsville silt loam

Map Unit Setting

National map unit symbol: 1nrfb
Elevation: 720 to 2,160 feet
Mean annual precipitation: 27 to 37 inches
Mean annual air temperature: 36 to 56 degrees F
Frost-free period: 131 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Robertsville, occasionally flooded, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Robertsville, Occasionally Flooded

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine-silty alluvium derived from shale and siltstone

Typical profile

H1 - 0 to 11 inches: silt loam
H2 - 11 to 22 inches: clay loam
H3 - 22 to 42 inches: loam
H4 - 42 to 65 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 15 to 36 inches to fragipan
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w

Custom Soil Resource Report

Hydrologic Soil Group: D

Ecological site: F125XY005WV - Low Stream Terrace Alluvium

Hydric soil rating: Yes

Minor Components

Atkins, frequently flooded

Percent of map unit: 5 percent

Landform: Flood plains, sloughs

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: Yes

Tyler

Percent of map unit: 5 percent

Hydric soil rating: No

Elk

Percent of map unit: 3 percent

Hydric soil rating: No

Captina

Percent of map unit: 2 percent

Hydric soil rating: No

uAIIc—Allegheny loam, 6 to 12 percent slopes

Map Unit Setting

National map unit symbol: 2qytf

Elevation: 590 to 1,450 feet

Mean annual precipitation: 32 to 58 inches

Mean annual air temperature: 39 to 69 degrees F

Frost-free period: 152 to 245 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Allegheny and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Allegheny

Setting

Landform: Stream terraces

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Fine-loamy alluvium derived from sandstone and shale

Typical profile

Ap - 0 to 8 inches: loam

Bt1 - 8 to 33 inches: loam

Custom Soil Resource Report

Bt2 - 33 to 42 inches: fine sandy loam
BC - 42 to 72 inches: fine sandy loam
C - 72 to 82 inches: sandy loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F125XY005WV - Low Stream Terrace Alluvium
Hydric soil rating: No

Minor Components

Cotaco

Percent of map unit: 8 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Gilpin

Percent of map unit: 5 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Grigsby, occasionally flooded

Percent of map unit: 2 percent
Landform: Flood plains
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

uAlnB—Allegheny loam, 2 to 6 percent slopes, rarely flooded

Map Unit Setting

National map unit symbol: 2msts
Elevation: 720 to 1,100 feet
Mean annual precipitation: 45 to 57 inches
Mean annual air temperature: 43 to 68 degrees F
Frost-free period: 169 to 203 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Allegheny, rarely flooded, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Allegheny, Rarely Flooded

Setting

Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Fine-loamy alluvium derived from sandstone and shale

Typical profile

Ap - 0 to 8 inches: loam
Bt1 - 8 to 33 inches: loam
Bt2 - 33 to 42 inches: fine sandy loam
BC - 42 to 72 inches: fine sandy loam
C - 72 to 82 inches: sandy loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F125XY005WV - Low Stream Terrace Alluvium
Hydric soil rating: No

Minor Components

Cotaco, rarely flooded

Percent of map unit: 6 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Whitley, rarely flooded

Percent of map unit: 6 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Chagrin, occasionally flooded

Percent of map unit: 3 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

uAlnC—Allegheny loam, 6 to 12 percent slopes, rarely flooded

Map Unit Setting

National map unit symbol: 2mstx
Elevation: 720 to 1,100 feet
Mean annual precipitation: 45 to 57 inches
Mean annual air temperature: 43 to 68 degrees F
Frost-free period: 169 to 203 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Allegheny, rarely flooded, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Allegheny, Rarely Flooded

Setting

Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread

Custom Soil Resource Report

Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy alluvium derived from sandstone and shale

Typical profile

Ap - 0 to 8 inches: loam
Bt1 - 8 to 33 inches: loam
Bt2 - 33 to 42 inches: fine sandy loam
BC - 42 to 72 inches: fine sandy loam
C - 72 to 82 inches: sandy loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F125XY005WV - Low Stream Terrace Alluvium
Hydric soil rating: No

Minor Components

Cotaco, rarely flooded

Percent of map unit: 10 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Whitley, rarely flooded

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Chagrin, occasionally flooded

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Hydric soil rating: No

uAnoB—Allegheny-Cotaco complex, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2mstn
Elevation: 720 to 1,100 feet
Mean annual precipitation: 45 to 57 inches
Mean annual air temperature: 43 to 68 degrees F
Frost-free period: 169 to 203 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Allegheny and similar soils: 55 percent
Cotaco and similar soils: 40 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Allegheny

Setting

Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Fine-loamy alluvium derived from sandstone and shale

Typical profile

Ap - 0 to 8 inches: loam
Bt1 - 8 to 33 inches: loam
Bt2 - 33 to 42 inches: fine sandy loam
BC - 42 to 72 inches: fine sandy loam
C - 72 to 82 inches: sandy loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B

Custom Soil Resource Report

Ecological site: F125XY005WV - Low Stream Terrace Alluvium
Hydric soil rating: No

Description of Cotaco

Setting

Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Fine-loamy alluvium derived from sandstone and shale

Typical profile

Ap - 0 to 6 inches: silt loam
BA - 6 to 12 inches: silt loam
Bt1 - 12 to 19 inches: silt loam
Bt2 - 19 to 49 inches: silt loam
C - 49 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: About 12 to 49 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B/D
Ecological site: F125XY005WV - Low Stream Terrace Alluvium
Hydric soil rating: No

Minor Components

Chagrin, occasionally flooded

Percent of map unit: 3 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Cottonbend

Percent of map unit: 2 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear

Custom Soil Resource Report

Hydric soil rating: No

uAnuC—Allegheny-Urban land complex, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2mw64

Elevation: 720 to 1,100 feet

Mean annual precipitation: 45 to 57 inches

Mean annual air temperature: 43 to 68 degrees F

Frost-free period: 169 to 203 days

Farmland classification: Not prime farmland

Map Unit Composition

Allegheny and similar soils: 55 percent

Urban land: 25 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Allegheny

Setting

Landform: Stream terraces

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Fine-loamy alluvium derived from sandstone and shale

Typical profile

Ap - 0 to 8 inches: loam

Bt1 - 8 to 33 inches: loam

Bt2 - 33 to 42 inches: fine sandy loam

BC - 42 to 72 inches: fine sandy loam

C - 72 to 82 inches: sandy loam

Properties and qualities

Slope: 2 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Custom Soil Resource Report

Hydrologic Soil Group: B
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Stream terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Minor Components

Udorthents, unstable fill

Percent of map unit: 10 percent
Landform: Stream terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Cotaco

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Whitley

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Ud—Udorthents soils

Map Unit Setting

National map unit symbol: 1nrww

Custom Soil Resource Report

Elevation: 800 to 2,130 feet
Mean annual precipitation: 27 to 37 inches
Mean annual air temperature: 36 to 56 degrees F
Frost-free period: 131 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Landform: Ridges
Parent material: Loamy mine spoil or earthy fill derived from sandstone and shale

Properties and qualities

Slope: 2 to 65 percent
Depth to restrictive feature: More than 80 inches
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Minor Components

Other soils

Percent of map unit: 15 percent
Hydric soil rating: No

uShrF—Shelocta-Highsplint-Rigley complex, 30 to 50 percent slopes, stony, rocky

Map Unit Setting

National map unit symbol: 2qytd
Elevation: 800 to 2,130 feet
Mean annual precipitation: 27 to 37 inches
Mean annual air temperature: 36 to 56 degrees F
Frost-free period: 131 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Shelocta, stony, and similar soils: 36 percent
Highsplint, stony, and similar soils: 20 percent
Rigley, stony, and similar soils: 15 percent
Minor components: 29 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shelocta, Stony

Setting

Landform: Hillslopes

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Fine-loamy colluvium derived from sandstone and shale over clayey residuum weathered from shale and siltstone

Typical profile

O_i - 0 to 1 inches: slightly decomposed plant material

A - 1 to 3 inches: silt loam

BA - 3 to 7 inches: loam

Bt₁ - 7 to 23 inches: channery silt loam

2Bt₂ - 23 to 34 inches: channery silt loam

2Bt₃ - 34 to 45 inches: very channery silt loam

2C - 45 to 59 inches: very parachannery silt loam

2Cr - 59 to 69 inches: bedrock

Properties and qualities

Slope: 30 to 50 percent

Surface area covered with cobbles, stones or boulders: 0.1 percent

Depth to restrictive feature: 48 to 65 inches to paralithic bedrock

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (K_{sat}): Very low (0.00 to 0.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: B

Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium

Hydric soil rating: No

Description of Highsplint, Stony

Setting

Landform: Hillslopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Head slope

Down-slope shape: Concave

Across-slope shape: Concave

Parent material: Loamy-skeletal colluvium derived from sandstone and shale

Typical profile

O_i - 0 to 1 inches: very channery slightly decomposed plant material

A - 1 to 4 inches: very channery silt loam

BA - 4 to 11 inches: very channery silt loam

Bw₁ - 11 to 28 inches: very channery clay loam

Bw₂ - 28 to 48 inches: very channery loam

Custom Soil Resource Report

BC - 48 to 85 inches: very channery loam

Properties and qualities

Slope: 30 to 50 percent

Surface area covered with cobbles, stones or boulders: 0.1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 0.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium

Hydric soil rating: No

Description of Rigley, Stony

Setting

Landform: Hillslopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Coarse-loamy colluvium derived from sandstone and shale over clayey colluvium derived from shale and siltstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material

A - 1 to 8 inches: fine sandy loam

BA - 8 to 17 inches: loamy sand

Bt1 - 17 to 33 inches: fine sandy loam

Bt2 - 33 to 43 inches: channery fine sandy loam

Bt3 - 43 to 58 inches: fine sandy loam

2C - 58 to 80 inches: silty clay

Properties and qualities

Slope: 30 to 50 percent

Surface area covered with cobbles, stones or boulders: 0.1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Custom Soil Resource Report

Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Minor Components

Clifftop, stony

Percent of map unit: 9 percent
Landform: Hillsides
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Alticrest, stony

Percent of map unit: 7 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Philo

Percent of map unit: 6 percent
Landform: Flood plains
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Ramsey, stony

Percent of map unit: 4 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Sequoia, stony

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Concave
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Landform: Escarpments

uUraB—Urban land-Udorthents complex, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2ndt7
Elevation: 720 to 1,100 feet
Mean annual precipitation: 45 to 57 inches
Mean annual air temperature: 43 to 68 degrees F
Frost-free period: 169 to 203 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 60 percent
Udorthents, unstable fill, and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Hillsides

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Description of Udorthents, Unstable Fill

Setting

Landform: Valleys
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy skeletal mine spoil or earthy fill derived from interbedded sedimentary rock

Typical profile

Ap - 0 to 4 inches: silt loam
2C1 - 4 to 17 inches: channery clay loam
2C2 - 17 to 35 inches: very channery clay loam
3Ab - 35 to 47 inches: loam
3Bwb - 47 to 79 inches: loam

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained

Custom Soil Resource Report

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: C

Hydric soil rating: No

Minor Components

Chagrin, occasionally flooded

Percent of map unit: 5 percent

Landform: Flood plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Cotaco

Percent of map unit: 5 percent

Landform: Stream terraces

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Down-slope shape: Concave

Across-slope shape: Linear

Hydric soil rating: No

Whitley

Percent of map unit: 5 percent

Landform: Stream terraces

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Linear

Hydric soil rating: No

uUraC—Urban land-Udorthents complex, 6 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2qysz

Elevation: 720 to 1,100 feet

Mean annual precipitation: 45 to 57 inches

Mean annual air temperature: 43 to 68 degrees F

Custom Soil Resource Report

Frost-free period: 169 to 224 days

Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 60 percent

Udorthents, unstable fill, and similar soils: 25 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Hillsides

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: No

Description of Udorthents, Unstable Fill

Setting

Landform: Hillsides

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy skeletal mine spoil or earthy fill derived from interbedded sedimentary rock

Typical profile

ACp - 0 to 7 inches: very channery silt loam

C1 - 7 to 33 inches: very channery silt loam

C2 - 33 to 38 inches: very channery silt loam

C3 - 38 to 46 inches: extremely channery loam

C4 - 46 to 80 inches: extremely channery loam

Properties and qualities

Slope: 6 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: C

Hydric soil rating: No

Minor Components

Chagrin, occasionally flooded

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Cotaco

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Whitley

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

uWhtB—Whitley silt loam, 2 to 6 percent slopes, rarely flooded

Map Unit Setting

National map unit symbol: 2msv2
Elevation: 720 to 1,100 feet
Mean annual precipitation: 45 to 57 inches
Mean annual air temperature: 43 to 68 degrees F
Frost-free period: 169 to 203 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Whitley, rarely flooded, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Whitley, Rarely Flooded

Setting

Landform: Stream terraces
Landform position (two-dimensional): Toeslope

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Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Fine-silty alluvium derived from shale and siltstone

Typical profile

Ap - 0 to 11 inches: silt loam
Bt1 - 11 to 31 inches: silt loam
Bt2 - 31 to 46 inches: loam
2Bt3 - 46 to 60 inches: very gravelly loam
2C - 60 to 80 inches: extremely gravelly loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F125XY005WV - Low Stream Terrace Alluvium
Hydric soil rating: No

Minor Components

Chagrin, occasionally flooded

Percent of map unit: 4 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Shelbiana, rarely flooded

Percent of map unit: 4 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Allegheny, rarely flooded

Percent of map unit: 4 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex

Custom Soil Resource Report

Across-slope shape: Convex

Hydric soil rating: No

Holly, frequently flooded

Percent of map unit: 3 percent

Landform: Flood plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Dip

Down-slope shape: Concave

Across-slope shape: Concave

Hydric soil rating: Yes

W—Water

Map Unit Setting

National map unit symbol: 1nry5

Elevation: 800 to 2,130 feet

Mean annual precipitation: 27 to 37 inches

Mean annual air temperature: 36 to 56 degrees F

Frost-free period: 131 to 170 days

Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

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**ENVIRONMENTAL OVERVIEW (EO) – PLANTSIDE DRIVE EXTENSION CORRIDOR STUDY,
JEFFERSON COUNTY, KENTUCKY**

Attachments

ATTACHMENT 5
USGS Topographic Map

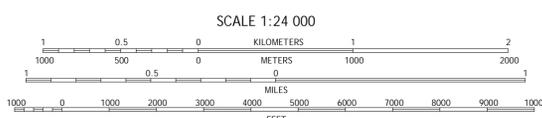




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North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84) Projection and
1 000-meter grid-Universal Transverse Mercator, Zone 16S
Data is provided by The National Map (TNM), is the best available at the time of map
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CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
CONTOUR SMOOTHNESS = Medium



QUADRANGLE LOCATION



ADJOINING QUADRANGLES

ROAD CLASSIFICATION		
	Expressway	Local Connector
	Secondary Hwy	Local Road
	Ramp	4WD
	Interstate Route	US Route
	FS Primary Route	State Route
	FS Passenger Route	FS High Clearance Route

Check with local Forest Service unit
for current travel conditions and restrictions.

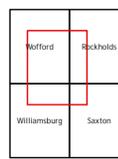
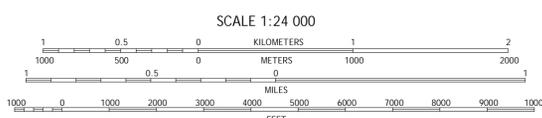
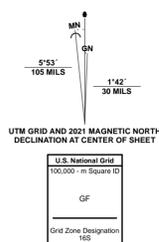
7.5-MINUTE TOPO, KY
2024



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84)
Projection and 1 000-meter grid/Universal Transverse Mercator, Zone 16S
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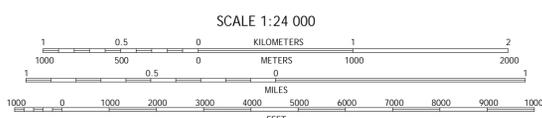
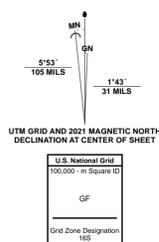
7.5-MINUTE TOPO, KY
2024



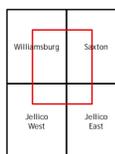
Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84)
Projection and 1 000-meter grid: Universal Transverse Mercator, Zone 16S
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CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
CONTOUR SMOOTHNESS = Medium



Check with local Forest Service unit for current travel conditions and restrictions.

7.5-MINUTE TOPO, TN
2024

ADJOINING QUADRANGLES

Attachments

ATTACHMENT 6

EDR Report

(Provided in separate digital format due to size)

