# BIOLOGICAL HABITAT ASSESSMENT

## WARRIOR MET COAL BC, LLC

## BLUE CREEK MINE NO. 1

## REVISION R-9

**Prepared For:**

**WARRIOR MET COAL BC, LLC**

**244-acres +/-**
**Sections 27, 34 & 35, Township 16 South, Range 9 West**
**Sections 1 & 2, Township 17 South, Range 9 West**

**ALL IN**
**FAYETTE & TUSCALOOSA COUNTY, ALABAMA**

**September 28th, 2023**

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**Prepared For:**

## WARRIOR MET COAL BC, LLC

## BLUE CREEK MINE NO. 1

## REVISION R-9

**244-acres +/-**
**Sections 27, 34 & 35, Township 16 South, Range 9 West**
**Sections 11, 12, 13 & 14, Township 16 South, Rage 10 West**

**ALL IN**
**FAYETTE & TUSCALOOSA COUNTY, ALABAMA**

Prepared by:

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# Executive Summary

McGehee Engineering Corporation performed a biological habitat assessment for habitat and the possible presence of the species federally listed as endangered, threatened, or of concern in June & July of 2023. The assessment was conducted on the Warrior Met Coal BC, LLC – Blue Creek Mine No. 1 – Revision R-9 project area. The project area consists of approximately 244-acres at the project site as located in Sections 27, 34 & 35, Township 16 South, Range 9 West; Sections 1 & 2, Township 17 South, Range 9 West, all on the Wiley, Alabama U.S.G.S. Quadrangle as found in Fayette and Tuscaloosa County, Alabama.

The project will consist of a conveyor belt line from the existing mining operation. The project area consists of upland access roads, powerline/utility routes, cleared area planted with grasses, planted pine stands, and some mixed pine and deciduous stands. There are no perennial streams located within the project boundary. The project boundary is designed to avoid any and all jurisdictional Waters of the U.S.

The biological habitat assessment survey focused in on T, E & C species listed in Fayette & Tuscaloosa County, as can be found in Table 2.1 along with the Indiana Bat, Northern Long-Eared Bat and Bald Eagle.

**Habitat was not found for the listed, threatened and endangered terrestrial species with exception of approximately 49 acres of potential summer roost habitat for the Indiana and Northern Long-Eared bats. No evidence was found or observed for the presence or possible presence of the other listed terrestrial species.**

**Habitat was not found for the listed, threatened and endangered aquatic species. There are no continuous flowing streams located on site. No evidence was found or observed for the presence or possible presence of the listed aquatic species within the project area.**

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# Chapter 1. Proposed Project Review

## 1.1 Introduction

McGehee Engineering Corporation performed a biological habitat assessment for habitat and the possible presence of the species federally listed as endangered, threatened, or of concern in June & July of 2023. The assessment was conducted on the Warrior Met Coal BC, LLC – Blue Creek Mine No. 1 – Revision R-9 project area. The project area consists of approximately 244-acres at the project site as located in Sections 27, 34 & 35, Township 16 South, Range 9 West; Sections 1 & 2, Township 17 South, Range 9 West, all on the Wiley, Alabama U.S.G.S. Quadrangle as found in Fayette and Tuscaloosa County, Alabama.

The project consist of adding an conveyor belt line to the area identified as Revision R-9. The project area consists of upland access roads, powerline/utility routes, cleared area planted with grasses, planted pine stands, and some mixed pine and deciduous stands. The project boundary is designed to avoid any and all jurisdictional Waters of the U.S.

## 1.2 Project Location

Warrior Met Coal BC, LLC – Blue Creek Mine No. 1 – Revision R-9 project area consists of approximately 244-acres at the project site as located in Sections 27, 34 & 35, Township 16 South, Range 9 West and Sections 1 & 2, Township 17 South, Range 9 West, all on the Wiley, Alabama U.S.G.S. Quadrangle as found in Fayette & Tuscaloosa County, Alabama. The proposed site location is shown below on the attached project area map Figure 1 and (Appendix "A").

**Figure 1. Project Area Map. (1 of 1)** *(not to scale)*

# Chapter 2. Threatened & Endangered Species List

## 2.1 Species Identification

The U.S. Fish and Wildlife Service (USFWS) threatened, endangered, and candidate species list for the project area was reviewed by a qualified biologist in order to determine species potentially occurring in the project vicinity (Table 2.1). In addition, the Alabama Natural Heritage Section Database that contains numerous records of sensitive species in Alabama was queried to provide a list of special status species and habitats that may have been documented as occurring within the project area and/or the project vicinity.

**Table 2.1. List of Threatened, Endangered and Candidate Species**

| **Common Name**<br>*Scientific Name* | **Status** | **General Habitat** |
|---|---|---|
| **Bald eagle**<br>*Haliaeetus leucocephalus* | *BGEPA* | Large open bodies of water where adequate food exist and human disturbance is limited |
| **Alligator Snapping Turtle**<br>*Macrochelys temminckii* | *PT* | Generally found in deeper water of large rivers and associated major tributaries; however, they can also be found in small streams, bayous, canals, swamps, lakes, reservoirs, ponds, and oxbows. This species prefers structures and/or canopy coverage more so than open water. |
| **Indiana bat**<br>*Myotis sodalis* | *E* | Varied summer roost habitat preferring mid-slope to upland closed canopy mixed conifer and deciduous forests of sloughing barked trees and mid decay snags using small forest openings and riparian zones for foraging. Winter roost is exclusive to large caves and abandoned mines with large open passages. Specifically caves that will have constant temperature, high humidity and no air current. |
| **Northern Long Ear Bat**<br>*Myotis septentrionalis* | *T* | Varied summer roost habitat preferring cluttered mid-slope to upland closed canopy mixed conifer and deciduous forests of sloughing barked trees and mid decay snags using small forest openings and riparian zones for foraging. Winter roost is exclusive to large caves and abandoned mines with large open passages. Specifically caves that will have constant temperature, high humidity and no air current. |
| **Ovate clubshell mussel**<br>*Pleurobema perovatum* | *E* | Sand and gravel bottom free flowing streams and rivers with good water quality and stable stream channels |
| **Orangenacre mucket mussel**<br>*Hamiota (=Lampsilis) perovalis* | *T* | Large rivers to small creek habitats swift flowing riffles and gravel-cobble substrates |
| **Alabama moccasinshell mussel**<br>*Medionidus acutissimus* | *T* | Small to mid-sized streams with sandy-gravel and gravel substrates with moderate flow |
| **Triangular kidneyshell mussel**<br>*Ptychobranchus greenii* | *E* | Sand and gravel bottom free drainage courses and rivers with good water quality and stable stream channels |

| | | |
|---|---|---|
| **Dark pigtoe mussel**<br>*Pluerobema furvum* | *E* | Sand/gravel/cobble shoals and rapids in small rivers and large streams; usually highly oxygenated water with moderate flow |
| **Flattened musk turtle**<br>*Sternotherus depressus* | *T* | Free-flowing creek or small river with pools about 1 m deep or more, with rocks, abundant mollusks, low silt load and deposits, moderate temperature rock-bottomed to sandy substrate |
| **Black Warrior waterdog**<br>*Necturus alabamensis* | *E* | Streams with deep pools 1 to 4 meters with reduced sedimentation and large leaf packs supporting mayfly and caddis fly larvae |
| **White Fringeless orchid**<br>*Platanthera integrilabia* | *T* | Wet, flat, boggy areas at the head of streams or seepage slopes. The species is often found in association with Sphagnum species in acidic muck or sand, and in partially, but not fully shaded areas |
| **Mohr's Barbara's buttons**<br>*Marshallia mohrii* | *T* | Moist sandy clay soils, along shale bed streams, road side right-of-ways, seasonally wet low swales around natural springs and seeps |

Key to codes on list:

- **E** – Endangered
- **T** - Threatened
- **BGEPA** - Bald & Golden Eagle Protection
- **C** - Candidate Species
- **PT** – Proposed Threatened
- **PE** - Proposed Endangered

# Chapter 3. Methodology

## 3.1 Methodology

The subject property was surveyed by McGehee Engineering Corp. (MEC) for the occurrence and potential for occurrence for species protected or listed by the U.S. Fish and Wildlife Service (USFWS), based on known habitat preferences and geographical distribution. The principal surveyor for this site was Biologist Wes Lamon of McGehee Engineering Corp.

The study site was surveyed by completely traversing down the center of the linear project area. Survey conditions are described in Table 3.1. Prior to performing the field reconnaissance, MEC performed a review of aerial photographs of the project site and a pedestrian survey was conducted by MEC biologist to identify vegetation communities and land uses, perform general habitat assessment for plants and animals; assess the potential for nesting or roosting activity by birds and/or bats within the general study area. Focused surveys for sensitive aquatic species were not performed since the project is avoiding stream filling activities; however, the potential for habitat for these species was assessed during the field examination.

Plots are characterized using United States Forestry Department guidelines. Individual vegetation plots are assessed by taking random plots within similarly vegetated areas. These areas of similar vegetation are grouped together using aerial imagery and field assessment. Plot size is typically 1/20$^{th}$ acre areas, but occasionally 1/50$^{th}$ acre areas in very dense cover. Each tree of dominance is measured to attain an average DBH of dominant tree species. Special attention is given to trees with loose exfoliating bark, trees with cavities or crevices, and snags over 9 feet in height.

**Table 3.1.1 Survey Conditions**

**Date: April 5$^{th}$, 2023**

| Temperature (°F) | Wind (MPH) | Sky Cover % |
|---|---|---|
| 73° | 0-5 | 0% |

**April 6$^{th}$, 2023**

| Temperature (°F) | Wind (MPH) | Sky Cover % |
|---|---|---|
| 64° | 0-5 | 0% |

**April 10$^{th}$, 2023**

| Temperature (°F) | Wind (MPH) | Sky Cover % |
|---|---|---|
| 56° | 0-5 | 0% |

**April 11th, 2023**

| Temperature (°F) | Wind (MPH) | Sky Cover % |
|---|---|---|
| 56° | 0-5 | 0% |

**June 23rd, 2023**

| Temperature (°F) | Wind (MPH) | Sky Cover % |
|---|---|---|
| 73° | 0-5 | 0% |

**September 7th, 2023**

| Temperature (°F) | Wind (MPH) | Sky Cover % |
|---|---|---|
| 75° | 1-5 | 0% |

**September 11th, 2023**

| Temperature (°F) | Wind (MPH) | Sky Cover % |
|---|---|---|
| 76° | 0-5 | 0% |

**September 12th, 2023**

| Temperature (°F) | Wind (MPH) | Sky Cover % |
|---|---|---|
| 77° | 0-5 | 0% |

**September 14th, 2023**

| Temperature (°F) | Wind (MPH) | Sky Cover % |
|---|---|---|
| 70° | 1-5 | 0% |

As part of the field reconnaissance, MEC also conducted a delineation of potentially jurisdictional wetlands and waters of the U.S. as it relates to Section 404 of the Clean Water Act in accordance to the 1987 *"Corps of Engineers Wetlands Delineation Manual":* Wetlands Research Program Technical Report Y-87-1. Additional Data sources other than mentioned within the report include the following:

| | |
|---|---|
| USGS Quadrangle Map | Wiley, AL Quad Revised 1983 |
| National Wetlands Inventory Map | Wiley, AL Quad Revised 1983 |
| SCS Soil Survey | Fayette & Tuscaloosa County NRCS Web Survey |
| Aerial Photos | 04-2022 |
| Plant Database | United States Department of Agriculture / Natural Resources Conservation Services Web Database |
| FEMA Flood Map | Federal Emergency Mgt. DFIRM Database<br>FIRMettes 01057C0275C Fayette & Tuscaloosa County |

# Chapter 4. Environmental Setting

## 4.1 General Habitat Description

The Warrior Met Coal BC, LLC – Blue Creek Mine No. 1 project area is located east of Fayette County Rd 46 and Brandon School Road in rural Fayette & Tuscaloosa County. The project site of approximately 244-acres mostly consists of the following vegetation species:

**Tree Stratum**

American Beech *(Fagus grandifolia)*
American Holly *(Ilex opaca)*
American Hornbeam *(Carpinus caroliniana)*
Bigleaf Magnolia *(Magnolia macrophylla)*
Bitternut Hickory *(Carya cordiformis)*
Black Cherry *(Prunus serotina)*
Black Willow *(Salix nigra)*
Blackgum *(Nyssa sylvatica)*
Blackjack Oak *(Quercus marilandica)*
Chestnut Oak *(Quercus prinus)*
Eastern Hophornbeam *(Ostraya virginiana)*
Eastern Red Cedar *(Juniperus virginiana)*
Eastern Redbud *(Cercis canadensis)*
Loblolly Pine *(Pinus taeda)*
Mockernut Hickory *(Carya tomentosa)*
Northern Red Oak *(Quercus rubra)*
Pinn Oak *(Quercus phellos)*
Post Oak *(Quercus stellata)*
Red Maple *(Acer rubrum)*
Scarlet Oak *(Quercus coccinea)*
Shagbark Hickory *(Carya ovata)*
Sourwood *(Oxydendrum arboreum)*
Southern Catalpa *(Catalpa bignonioides)*
Southern Red Oak *(Quercus falcata)*
Sugar Maple *(Acer saccharum)*
Sweetgum *(Liquidambar styraciflua)*
Umbrella Magnolia *(Magnolia tripetala)*
Virginia Pine *(Pinus virginiana)*
Water Oaks *(Quercus nigra)*
White Oak *(Quercus alba)*
Winged Elm *(Ulmus alata)*
Yellow Poplar *(Liriodendron tulipifera)*

**Sapling Stratum**

American Beech *(Fagus grandifolia)*
American Holly *(Ilex opaca)*
American Hornbeam *(Carpinus caroliniana)*
Bigleaf Magnolia *(Magnolia macrophylla)*
Bitternut Hickory *(Carya cordiformis)*
Black Cherry *(Prunus serotina)*
Black Willow *(Salix nigra)*
Blackgum *(Nyssa sylvatica)*
Blackjack Oak *(Quercus marilandica)*
Chestnut Oak *(Quercus prinus)*
Eastern Hophornbeam *(Ostraya virginiana)*
Eastern Red Cedar *(Juniperus virginiana)*
Eastern Redbud *(Cercis canadensis)*
Fan-Leaf Hawthorn *(Crataegus flabellata)*
Flowering Dogwood *(Cornus florida)*
Loblolly Pine *(Pinus taeda)*
Longleaf Pine *(Pinus palustris)*
Mockernut Hickory *(Carya tomentosa)*
Northern Red Oak *(Quercus rubra)*
Post Oak *(Quercus stellata)*
Red Maple *(Acer rubrum)*
Scarlet Oak *(Quercus coccinea)*
Shagbark Hickory *(Carya ovata)*
Sourwood *(Oxydendrum arboreum)*
Southern Catalpa *(Catalpa bignonioides)*
Southern Red Oak *(Quercus falcata)*
Sugar Maple *(Acer saccharum)*
Sweetgum *(Liquidambar styraciflua)*
Umbrella Magnolia *(Magnolia tripetala)*
Virginia Pine *(Pinus virginiana)*
Water Oaks *(Quercus nigra)*
White Oak *(Quercus alba)*
Winged Elm *(Ulmus alata)*
Yellow Poplar *(Liriodendron tulipifera)*

**Shrub Stratum**

Chinese Privet *(Ligustrum sinense*
Groundsel Tree *(Baccharis halimifolia)*
Red Buckeye *(Aesculus pavia)*
Smooth Sumac *(Rhus glabra)*
Sourwood *(Oxydendrum arboreum)*
Wax Myrtle *(Myrica cerifera)*

Winged Sumac *(Rhus glabra)*

**Woody Vine Stratum**

Greenbrier *(Smilax* spp.*)*
Japanese Honeysuckle *(Lonicera japonica)*
Muscadine *(Vitis rotundifolia)*
Poison Oak *(Toxicodendron quercifolia)*
Virginia Creeper *(Parthenocissus quinquefolia)*
Yellow Jessamine *(Gelsemium sempervirens)*

**Herbaceous Stratum**

Annual Ragweed *(Ambrosia artemisiifolia)*
BlackWiley *(Rubus betulifolius)*
Bluestem Broom sedge *(Andropogon virginicus)*
Bushy Bluestem Broom sedge *(Andropogon gerardii)*
Canadian Golden rod *(Solidago altissima)*
Canadian Horseweed *(Conyza canadensis)*
Chinese Privet *(Ligustrum sinense)*
Christmas fern *(Polystichum acrostichoides)*
Daisy Fleabane *(Rigeron philidelphicus)*
Dog Fennel *(Eupatorium capillifolium)*
Horseweed *(Conyza canadensis)*
Little Brown Jug *(Hexastylis arifolia)*
Lobed Tickseed/Coreopsis *(Coreopsis auriculata)*
Meadow Fescue *(Festuca pratensis)*
Meadow Fescue *(Festuca pratensis)*
Polk Weed *(Phytolacca americanum)*
Smooth Sumac *(Rhus glabra)*
Tall Fescue *(Festuca arundinacea)*
Yankeeweed *(Eupatorium compostifolium)*

The project area consists of areas of planted pines, powerline/utility routes, natural area of mixed deciduous and pine stands and area planted with grasses. There are no perennial, streams located within the project boundary.

There are multiple soil groups within the project area. The largest type of the soil within the project boundary is the Enders Loam, which is highly eroded soil that is non-hydric which makes up the majority of the project area. The soil identified in the field matched the USDA Soil data profiles in the project areas.

# Chapter 5. Habitat Study Results

## 5.1 Terrestrial and Terrestrial Habitat Species

***a.*** **Bald Eagle** (*Haliaeetus leucocephalus)* – There was no potential nesting habitat for the Bald Eagle. There were no large trees near open water on or near this site.

***b.*** **Indiana Bat** *(Myotis sodalis)* – Potential summer roost habitat for this species exists within the project boundary. Snags in mixed deciduous stands are large enough to meet requirements for potential summer roost habitat. No caves were found within or adjacent to the proposed project boundary for winter hibernation or mating.

***c.*** **Northern Long- Eared Bat** *(Myotis septentrionalis)* – Potential summer roost habitat for this species exists within the project boundary. Snags in mixed deciduous stands meet requirements for potential summer roost habitat. No caves were found within or adjacent to the proposed project boundary for winter hibernation or mating.

***d.*** **Mohr's Barbara's buttons** *(Marshallia mohrii)* – Habitat for this species does not exist. There are no seasonal seeps or wetlands that are adequate habitat for this species, as the small low-grade wetlands in the project area were produced from previous disturbances that were consequences of past exploration activities.

***e.*** **White fringeless orchid** *(Platanthera integrilabia)* – Potential habitat for this species does not exist within the project area. There are no moist areas of flat boggy areas with seepage slopes.

### 5.1.1 Summary

Habitat was not found for the listed, threatened and endangered terrestrial species with the exception of approximately 49 acres of potential summer roost habitat for the Indiana and Northern Long-Eared Bats. No evidence was found or observed for the presence or possible presence of the other listed terrestrial species.

## 5.2 Aquatic and Aquatic Habitat Species

*a.* **Flattened musk turtle** *(Sternotherus depressus)* – Habitat does not exist in the project boundary. There are no streams with sufficient base flow and depth to sustain the listed species.

*b.* **Black Warrior waterdog** *(Necturus alabamensis)* – Habitat does not exist in the project boundary. There are no streams with sufficient base flow and depth to sustain the listed species.

*c.* **Alligator Snapping Turtle** (*Macrochelys temminckii)* – Habitat does not exist in the project boundary. There are no streams with sufficient base flow and depth to sustain the listed species.

*d.* **Ovate clubshell mussel** *(Pleurobema perovatum)* – Habitat does not exist in the project boundary. There are no streams with sufficient base flow and depth to sustain the listed species.

*e.* **Triangular kidneyshell mussel** *(Ptychobranchus greenii)* – Habitat does not exist in the project boundary. There are no streams with sufficient base flow and depth to sustain the listed species.

*f.* **Orangenacre mucket mussel** *(Hamiota (=Lampsilis) perovalis)* -- Habitat does not exist in the project boundary. There are no streams with sufficient base flow and depth to sustain the listed species.

*g.* **Alabama moccasinshell mussel** *(Medionidus acutissimus)* -- Habitat does not exist in the project boundary. There are no streams with sufficient base flow and depth to sustain the listed species.

*h.* **Dark pigtoe mussel** *(Pleurobema perovatum)* -- Habitat does not exist in the project boundary. There are no streams with sufficient base flow and depth to sustain the listed species.

### 5.2.1 Summary

Habitat was not found for the listed, threatened and endangered aquatic species. No evidence was found or observed for the presence or possible presence of the listed aquatic species throughout the project site. All jurisdictional waters identified within the project boundary will be avoided and not receive impacts.

## 5.3 Wetlands and Streams

### 5.3.1 Wetlands

The project areas were evaluated according to the 1987 *"Corps of Engineers Wetlands Delineation Manual"* and the U.S. Army Corps of Engineers. 2010. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region and no wetlands were identified on the project site.

### 5.3.2 Streams

The project area was evaluated for waters. There are no perennial, streams identified within the project boundary. Streams are identified using the North Carolina Method of Intermittent and Perennial Streams. All jurisdictional onsite Water of the U.S. streams will be avoided and not impacted.

# Chapter 6. References


Brinson, M.M. 1993. *A Hydrogeomorphic Classification for Wetlands*. Technical Report WRPDE-4. US Amy Engineers Waterways Experiment Station, Vicksburg, MS.

Cowardin, L.M., V. Carter, F.C. Golet and E.T. Laroe. 1979. Classification of Wetlands and Deep Water Habitats of the United States. U.S. Fish and Wildlife Service. FWS/OBS 79/31.

Environmental Laboratory 1987. *"Corps of Engineers Wetlands Delineation Manual":* Wetlands Research Program Technical Report Y-87-1 (Online Edition) 1987. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS.

Haag, Wendell R. 2004. Alabama Wildlife. Volume 2. Imperiled aquatic mollusks and fishes. The University of Alabama Press, Jefferson, Alabama.

Hudson, M. Keith. 2012. Final Report. Alabama Endangered Wildlife Projects: Project 12. Gray Bat Population Surveys; October1, 2011 through September 30, 2012. Alabama Department of Conservation and Natural Resources; Division of Wildlife and Freshwater Fisheries

Miller, James H. 2003. Nonnative Invasive Plants of Southern Forests: A Field Guide for Identification and Control. Revised. GEN. Tech. Rep.SRS-62. Ashville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station.

"National List of Plant Species That Occur In Wetlands: Southeast (Region 2): U.S. Department of the Interior – Fish & Wildlife Service Biological Report 88(26.2) May 1988

NC Division of Water Quality. 2010. *Methodology for Identification of Intermittent and Perennial Streams and their Origins, Version 4.11.* North Carolina Department of Environment and Natural Resources, Division of water Quality. Raleigh, NC.

Perry, Roger W., Ronald E. Trill. 2007. Forest Ecology and Management 247 (pages 220-226). Roost Selection by Male and Female Northern Long-Eared Bats in a Pine-Dominated Landscape.

U.S. Fish and Wildlife Service, 1980. *Habitat Evaluation Procedures*. Division Ecological Services: Washington, D.C.

U.S. Fish and Wildlife Service, July 2009, Revised December 2009, February 2013. *Range-Wide Indiana Bat Protection and Enhancement plan Guidelines for Surface Coal-Mining operations*.

U.S. Fish and Wildlife Services. June 14, 2023. List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

# Chapter 7. Signatures of Preparers

**Prepared by:**

**Wes Lamon**
*Biologist*

**Reviewed by:**

**L. Stephen Blankenship**
*Environmental Engineering Manager*

# Appendix A — Project Area Map

SCALE: 1" = 2000'
July 13th, 2023
Map Size: 8.5"x11"

# WARRIOR MET COAL BC, LLC
# BLUE CREEK MINE NO. 1
# REVISION R-9

(APPROXIMATELY 244 ACRES)

N
W E
S

## PROJECT AREA MAP

SECTIONS 27, 34 & 35, TOWNSHIP 16 SOUTH, RANGE 9 WEST,
SECTIONS 1 & 2, TOWNSHIP 17 SOUTH, RANGE 9 WEST,
ALL IN FAYETTE & TUSCALOOSA COUNTY, ALABAMA
AS FOUND ON THE WILEY, ALABAMA USGS QUAD

PROJECT BOUNDARY

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Latitude: 33.6082° N
Longitude: -87.4503° W

# Appendix B — Photographic Log

# BIOLOGICAL HABITAT ASSESSMENT PHOTOGRAPHIC LOG

**Prepared For:**

## WARRIOR MET COAL BC, LLC

## BLUE CREEK MINE NO. 1

**244-acres +/-**

**Sections 27, 34 & 35, Township 16 South, Range 9 West**
**Sections 1 & 2, Township 17 South, Range 9 West**

**ALL IN**
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Prepared by:

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| McGehee Engineering | | | Photographic Log |
|---|---|---|---|
| **Client Name:** | | **Site Location:** | ***Blue Creek Mine No. 1*** |
| ***Warrior Met Coal BC, LLC*** | | | |
| **Date:** | ***04-05-2023*** | | |
| **Photo No.** | ***IMG_9580*** | | |
| **Point No.** | ***1*** | | |
| **Description:** | | | |
| **Dominant Vegetation:** | | | |

| McGehee Engineering | | | Photographic Log |
|---|---|---|---|
| **Client Name:** | | **Site Location:** | ***Blue Creek Mine No. 1*** |
| ***Warrior Met Coal BC, LLC*** | | | |
| **Date:** | ***04-05-2023*** | | |
| **Photo No.** | ***IMG_9582*** | | |
| **Point No.** | ***2*** | | |
| **Description:** | | | |
| **Dominant Vegetation:** | | | |

| McGehee Engineering | | | Photographic Log |
|---|---|---|---|
| **Client Name:** | | **Site Location:** | ***Blue Creek Mine No. 1*** |
| ***Warrior Met Coal BC, LLC*** | | | |
| **Date:** | ***04-05-2023*** | | |
| **Photo No.** | ***IMG_9585*** | | |
| **Point No.** | ***3*** | | |
| **Description:** | | | |
| **Dominant Vegetation:** | | | |

| McGehee Engineering | | | Photographic Log |
|---|---|---|---|
| **Client Name:** | | **Site Location:** | ***Blue Creek Mine No. 1*** |
| ***Warrior Met Coal BC, LLC*** | | | |
| **Date:** | ***04-05-2023*** | | |
| **Photo No.** | ***IMG_9590*** | | |
| **Point No.** | ***4*** | | |
| **Description:** | | | |
| **Dominant Vegetation:** | | | |

| McGehee Engineering | | | Photographic Log |
|---|---|---|---|
| **Client Name:** | | **Site Location:** | ***Blue Creek Mine No. 1*** |
| ***Warrior Met Coal BC, LLC*** | | | |
| **Date:** | ***04-05-2023*** | | |
| **Photo No.** | ***IMG_9599*** | | |
| **Point No.** | ***5*** | | |
| **Description:** | | | |
| **Dominant Vegetation:** | | | |

| McGehee Engineering | | | Photographic Log |
|---|---|---|---|
| **Client Name:** | | **Site Location:** | ***Blue Creek Mine No. 1*** |
| ***Warrior Met Coal BC, LLC*** | | | |
| **Date:** | ***04-05-2023*** | | |
| **Photo No.** | ***IMG_9603*** | | |
| **Point No.** | ***6*** | | |
| **Description:** | | | |
| **Dominant Vegetation:** | | | |

| McGehee Engineering | | | Photographic Log |
|---|---|---|---|
| **Client Name:** | | **Site Location:** | ***Blue Creek Mine No. 1*** |
| ***Warrior Met Coal BC, LLC*** | | | |
| **Date:** | ***04-05-2023*** | | |
| **Photo No.** | ***IMG_9609*** | | |
| **Point No.** | ***7*** | | |
| **Description:** | | | |
| **Dominant Vegetation:** | | | |

| McGehee Engineering | | | Photographic Log |
|---|---|---|---|
| **Client Name:** | | **Site Location:** | ***Blue Creek Mine No. 1*** |
| ***Warrior Met Coal BC, LLC*** | | | |
| **Date:** | ***04-05-2023*** | | |
| **Photo No.** | ***IMG_9615*** | | |
| **Point No.** | ***8*** | | |
| **Description:** | | | |
| **Dominant Vegetation:** | | | |

| McGehee Engineering | | | Photographic Log |
|---|---|---|---|
| **Client Name:** | | **Site Location:** | ***Blue Creek Mine No. 1*** |
| ***Warrior Met Coal BC, LLC*** | | | |
| **Date:** | ***04-05-2023*** | | |
| **Photo No.** | ***IMG_9624*** | | |
| **Point No.** | ***9*** | | |
| **Description:** | | | |
| **Dominant Vegetation:** | | | |

| McGehee Engineering | | | Photographic Log |
|---|---|---|---|
| **Client Name:** | | **Site Location:** | ***Blue Creek Mine No. 1*** |
| ***Warrior Met Coal BC, LLC*** | | | |
| **Date:** | ***04-05-2023*** | | |
| **Photo No.** | ***IMG_9630*** | | |
| **Point No.** | ***10*** | | |
| **Description:** | | | |
| **Dominant Vegetation:** | | | |

| McGehee Engineering | | | Photographic Log |
|---|---|---|---|
| **Client Name:** | | **Site Location:** | ***Blue Creek Mine No. 1*** |
| ***Warrior Met Coal BC, LLC*** | | | |
| **Date:** | ***04-05-2023*** | | |
| **Photo No.** | ***IMG_9634*** | | |
| **Point No.** | ***11*** | | |
| **Description:** | | | |
| **Dominant Vegetation:** | | | |

| McGehee Engineering | | | Photographic Log |
|---|---|---|---|
| **Client Name:** | | **Site Location:** | ***Blue Creek Mine No. 1*** |
| ***Warrior Met Coal BC, LLC*** | | | |
| **Date:** | ***04-05-2023*** | | |
| **Photo No.** | ***IMG_9639*** | | |
| **Point No.** | ***12*** | | |
| **Description:**<br><br>Intermittent drain enters boundary in mixed mature deciduous stand<br><br>S-3b | | | |
| **Dominant Vegetation:** | | | |

| McGehee Engineering | | | Photographic Log |
|---|---|---|---|
| **Client Name:** | | **Site Location:** | ***Blue Creek Mine No. 1*** |
| ***Warrior Met Coal BC, LLC*** | | | |
| **Date:** | ***04-05-2023*** | | |
| **Photo No.** | ***IMG_9640*** | | |
| **Point No.** | ***13*** | | |
| **Description:** | | | |
| **Dominant Vegetation:** | | | |

| McGehee Engineering | | | Photographic Log |
|---|---|---|---|
| **Client Name:** | | **Site Location:** | ***Blue Creek Mine No. 1*** |
| ***Warrior Met Coal BC, LLC*** | | | |
| **Date:** | ***04-05-2023*** | | |
| **Photo No.** | ***IMG_9644*** | | |
| **Point No.** | ***14*** | | |
| **Description:** | | | |
| **Dominant Vegetation:** | | | |

| McGehee Engineering | | | Photographic Log |
|---|---|---|---|
| **Client Name:** | | **Site Location:** | ***Blue Creek Mine No. 1*** |
| ***Warrior Met Coal BC, LLC*** | | | |
| **Date:** | ***04-05-2023*** | | |
| **Photo No.** | ***IMG_9648*** | | |
| **Point No.** | ***15*** | | |
| **Description:** | | | |
| **Dominant Vegetation:** | | | |

| McGehee Engineering | | | Photographic Log |
|---|---|---|---|
| **Client Name:** | | **Site Location:** | ***Blue Creek Mine No. 1*** |
| ***Warrior Met Coal BC, LLC*** | | | |
| **Date:** | ***04-05-2023*** | | |
| **Photo No.** | ***IMG_9657*** | | |
| **Point No.** | ***16*** | | |
| **Description:** | | | |
| **Dominant Vegetation:** | | | |

# Appendix C — Photo Log Point Location Map

SCALE: 1" = 1500'
September 11th, 2023
Map Size: 8.5"x11"

# WARRIOR MET COAL BC, LLC
# BLUE CREEK MINE NO. 1
# REVISION R-9

(APPROXIMATELY 244 ACRES)

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## PHOTOGRAPHIC LOG POINT LOCATION MAP

(Photo Date: 04-2022)

SECTIONS 27, 34 & 35, TOWNSHIP 16 SOUTH, RANGE 9 WEST,
SECTIONS 1 & 2, TOWNSHIP 17 SOUTH, RANGE 9 WEST,
ALL IN FAYETTE & TUSCALOOSA COUNTY, ALABAMA
AS FOUND ON THE WILEY, ALABAMA USGS QUAD

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telephone: (205) 221-0686 fax: 221-7721
email: staff@mcgehee.org

PROJECT BOUNDARY

1 PHOTOGRAPHIC LOG POINTS

Latitude: 33.6082° N
Longitude: -87.4503° W

# Appendix D — Soil Map

Soil Map—Fayette County, Alabama, and Tuscaloosa County, Alabama
(Warrior Met Coal BC, LLC - Blue Creek Mine No. 1 - Revision R-9 Soil Map)

Map Scale: 1:22,700 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 300 600 1200 1800

Feet: 0 1000 2000 4000 6000

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 1:20,000.

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: Fayette County, Alabama
Survey Area Data: Version 17, Sep 14, 2022

Soil Survey Area: Tuscaloosa County, Alabama
Survey Area Data: Version 17, Sep 14, 2022

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: Oct 26, 2021—Dec 22, 2021

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 |
|---|---|---|---|
| At | Atkins soils, local alluvium | 0.6 | 0.3% |
| EcB3 | Enders clay loam, 2 to 6 percent slopes, severely eroded | 4.3 | 1.8% |
| EcC3 | Enders clay loam, 6 to 10 percent slopes, severely eroded | 9.4 | 4.0% |
| EcD3 | Enders clay loam, 10 to 15 percent slopes, severely eroded | 0.1 | 0.1% |
| EdB | Enders loam, 2 to 6 percent slopes | 2.4 | 1.0% |
| EdB2 | Enders loam, 2 to 6 percent slopes, eroded | 37.0 | 15.9% |
| EdC | Enders loam, 6 to 10 percent slopes | 10.5 | 4.5% |
| EdC2 | Enders loam, 6 to 10 percent slopes, eroded | 36.1 | 15.5% |
| EdD | Enders loam, 10 to 15 percent slopes | 1.5 | 0.6% |
| EdD2 | Enders loam, 10 to 15 percent slopes, eroded | 9.2 | 4.0% |
| MoC3 | Montevallo channery silt loam, 6 to 10 percent slopes, severely eroded | 1.0 | 0.4% |
| MoD3 | Montevallo channery silt loam, 10 to 15 percent slopes, severely eroded | 0.0 | 0.0% |
| MoE | Montevallo channery silt loam, 15 to 50 percent slopes | 21.2 | 9.1% |
| MoE3 | Montevallo channery silt loam, 15 to 50 percent slopes, severely eroded | 6.6 | 2.8% |
| Ph | Philo soils, local alluvium | 3.6 | 1.6% |
| Rd | Rock land | 1.9 | 0.8% |
| Sn | Stendal soils, local alluvium | 2.6 | 1.1% |
| TmB2 | Townley loam, 2 to 6 percent slopes, eroded | 5.7 | 2.5% |
| TmD2 | Townley loam, 10 to 15 percent slopes, eroded | 6.3 | 2.7% |
| TnC3 | Townley silty clay loam, 6 to 10 percent slopes, severely eroded | 8.8 | 3.8% |

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| TnD3 | Townley silty clay loam, 10 to 15 percent slopes, severely eroded | 4.3 | 1.8% |
| **Subtotals for Soil Survey Area** | | **173.1** | **74.2%** |
| **Totals for Area of Interest** | | **233.3** | **100.0%** |

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| 22 | Montevallo-Nauvoo association, 10 to 45 percent slopes | 16.7 | 7.2% |
| 23 | Nauvoo fine sandy loam, 4 to 10 percent slopes | 43.5 | 18.6% |
| **Subtotals for Soil Survey Area** | | **60.2** | **25.8%** |
| **Totals for Area of Interest** | | **233.3** | **100.0%** |

# Appendix E — Potential Summer Roost Map for Indiana and Northern Long-Eared Bats

**SCALE: 1" = 2000'**
**July 13th, 2023**
**Map Size: 8.5"x11"**

# WARRIOR MET COAL BC, LLC
# BLUE CREEK MINE NO. 1
# REVISION R-9

**(APPROXIMATELY 244 ACRES)**

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## POTENTIAL SUMMER ROOSTING HABITAT MAP

**(Photo Date: 04-2022)**

**SECTIONS 27, 34 & 35, TOWNSHIP 16 SOUTH, RANGE 9 WEST,**
**SECTIONS 1 & 2, TOWNSHIP 17 SOUTH, RANGE 9 WEST,**
**ALL IN FAYETTE & TUSCALOOSA COUNTY, ALABAMA**
**AS FOUND ON THE WILEY, ALABAMA USGS QUAD**

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jasper, alabama 35502-3431
telephone: (205) 221-0686 fax: 221-7721
email: staff@mcgehee.org

**PROJECT BOUNDARY**

**POTENTIAL SUMMER ROOSTING HABITAT (~58 acres)**

**Latitude: 33.6082° N**
**Longitude: -87.4503° W**