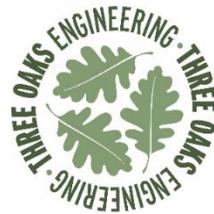


# LISTED SPECIES SURVEY REPORT

**Rock Hill Quarry  
York County, South Carolina**



**Prepared By:**



**Prepared For:**



**September 2024**

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## EXECUTIVE SUMMARY

Martin Marietta Materials, Inc. (MMM) proposes to continue developing a granite quarry within the current boundaries of the company-owned property in Rock Hill, York County, South Carolina (Appendix A: Figures 1-2). The property is approximately 825 acres in size, 406 of which were included in this assessment and comprise the Project Study Area (PSA). The PSA reflects the areas of land that MMM will add to its existing mine permit.

Three Oaks Engineering, Inc. was contracted to conduct listed species surveys within the PSA. During surveys in May and August 2023, no federally-listed species were identified.

Several State-listed species were identified, including:

- four mussel species in Taylor Creek and one of its tributaries;
- eight plant species found within or immediately adjacent to the large power line right-of-way that bisects the northern section of the PSA;
- and eight bird species that are either generalist species that prefer closed canopy forests (six) or early-successional specialists (two).

## **1.0 INTRODUCTION**

Martin Marietta Materials, Inc. (MMM) proposes to continue developing a granite quarry within the current boundaries of the company-owned property in Rock Hill, York County, South Carolina (Appendix A: Figures 1-2). The property is approximately 825 acres in size, 406 of which were included in this assessment and comprise the Project Study Area (PSA). The PSA reflects the areas of land that MMM will add to its existing mine permit.

To comply with a request from the South Carolina Department of Health and Environmental Control (SCDHEC), in connection with MMM's pending mine permit amendment application, MMM retained Three Oaks Engineering, Inc. (Three Oaks) to complete: (i) federally-listed species surveys and habitat assessments and (ii) surveys for State-listed species known from York County, both within the PSA.

## **2.0 METHODOLOGY AND QUALIFICATIONS**

For all species except for the Bald Eagle, surveys/habitat assessments were entirely conducted within the PSA described in Section 1.0. Additional assessments for Bald Eagles outside of the PSA were completed to satisfy United States Fish and Wildlife Service (USFWS) Bald and Golden Eagle Protection Act (BGPA) survey protocols. These additional survey limits and protocols are described below in Section 3. Golden Eagles do not nest in South Carolina; as such, surveys and habitat assessments for them were not required.

Habitat and structure assessments for the Tricolored Bat followed USFWS-approved protocols.

Federally-listed plant surveys were completed using opportunistic surveys (i.e., traversing areas without following formal transect paths) within areas of suitable habitat. Surveys/habitat assessments for State-listed species were also completed using opportunistic surveys within areas of suitable habitat. Aquatic species surveys were also completed for the project, following State- and/or federally-recommended protocols.

Three Oaks staff members completed field work on the following dates: May 11 and 25, and August 29, 2023. Bat assessments were completed during the May site visits. Bald Eagle surveys were conducted during both May visits. Aquatic species surveys were completed on May 25, 2023 and totaled approximately 8.3 survey hours. Species survey efforts on May 11 and 25, 2023 centered on dwarf-flowered heartleaf and totaled approximately 16 survey hours. Species survey efforts on August 29, 2023 centered on Schweinitz's sunflower and totaled approximately 7 survey hours.

State-listed species surveys and habitat assessments were completed during all the above-described dates.

A list of the principal Three Oaks personnel contributing to the field work and document and their qualifications is provided in Appendix B.

### 3.0 LISTED SPECIES

#### 3.1 Endangered Species Act Listed Species

The USFWS Information for Planning and Consultation (IPaC) site identified four federally-listed species which may potentially be affected by disturbance-related activities within the PSA (Table 1). For each of the species listed, a discussion of the presence or absence of habitat is included below, along with the Biological Conclusion (BC) rendered based on survey results in the PSA.

**Table 1. ESA Federally-listed Species for PSA<sup>1</sup>**

Scientific Name	Common Name	Federal Status <sup>2</sup>	Habitat Present	Biological Conclusion <sup>3</sup>
<i>Perimyotis subflavus</i>	Tricolored Bat	PE	Yes	MANLAA
<i>Hexastylis naniflora</i>	Dwarf-flowered Heartleaf	T	Yes	No Effect
<i>Helianthus schweinitzii</i>	Schweinitz's Sunflower	E	Yes	MANLAA
<i>Lasmigona decorata</i>	Carolina Heelsplitter	E	Yes	No Effect

<sup>1</sup> USFWS IPaC data checked on August 27, 2024.

<sup>2</sup> E – Endangered, PE – Proposed Endangered, T - Threatened

<sup>3</sup> MANLAA – May Affect, Not Likely to Adversely Affect

#### Tricolored Bat

USFWS Optimal Survey Window: May 15 – August 15 (Structure Checks)

Biological Conclusion: May Affect, Not Likely to Adversely Affect

Tricolored Bats are generally associated with forested landscapes. In summer, they will roost in tree foliage, or sometimes in buildings. They are also known to roost in culverts. Forested areas for roosting and foraging were identified within the PSA during the 2023 site visits. Man-made structures, such as bridges or culverts, are not present within the PSA; therefore, structure surveys are not necessary for this site. Tricolored Bat was proposed for listing on September 14, 2022. Currently, no information regarding the listing decision, or when it may be final, is available for Tricolored Bat.

Tree-clearing and percussive activities will occur as part of this project. If tree-clearing activities occur prior to the official listing of the species, then no restrictions on tree clearing will be required. After listing, USFWS may require conservation measures to minimize potential take of Tricolored Bat, such as:

- tree clearing recommended between February 16 – March 31 or July 16 – December 14 to minimize impacts to roosting Tricolored Bats
- no percussive activities during the bat pup season (May 1 - July 15)

If these recommended restrictions cannot be adhered to, coordination with USFWS may be required.

After submitting the PSA to the South Carolina Department of Natural Resources (SCDNR) Natural Heritage Program (NHP) for review, the output report identified no known Tricolored Bat occurrences within 1.0 mile of the PSA.

Due to the presence of suitable foraging and roosting habitat within the PSA, the BC for this species is May Affect, Not Likely to Adversely Affect if either tree clearing is conducted prior to the species becoming federally listed and/or if USFWS-recommended conservation measures can be followed after federal listing.

### **Dwarf-flowered Heartleaf**

USFWS Optimal Survey Window: March - May

Biological Conclusion: No Effect

Suitable habitat for Dwarf-flowered Heartleaf is present within the PSA (Appendix A: Figure 3). This habitat consists of forested, mesic, lower slopes surrounding headwater drainages. Three Oaks staff conducted surveys for Dwarf-flowered Heartleaf on May 11 and 25, 2023. Dwarf-flowered Heartleaf was not identified during these survey efforts. After submitting the PSA to the SCDNR for review, the output report identified no known Dwarf-flowered Heartleaf occurrences within 1.0 mile of the PSA. Due to the absence of Dwarf-flowered Heartleaf within 1.0 mile of the PSA, negative survey results, and lack of *Hexastylis* species within the *virginica* group within the survey area, the BC for this species is No Effect.

### **Schweinitz's Sunflower**

USFWS Optimal Survey Window: late-August - October

Biological Conclusion: May Affect, Not Likely to Adversely Affect

Suitable habitat for Schweinitz's Sunflower is present within the PSA (Appendix A; Figure 3). This habitat consists of roadside and utility rights-of-way, interior forest roads and edges, canopy gaps in dry upland forests, and clearcut margins. Much of the northern PSA unit was recently clearcut and floristic diversity within the clearcuts and around their margins was low. Blackjack Oaks Heritage Preserve, a known site for Schweinitz's Sunflower, abuts the PSA along the northwest boundary.

After submitting the PSA to the SCDNR for review, the SCNHP identified 31 Schweinitz's Sunflower Element Occurrences (EO) within 1.0 mile of the PSA (Appendix A; Figure 5). Two of these occurrences are located within the PSA, along the powerline corridor, northwest of the existing pit. The small population along the northern edge of the powerline was last observed in 1986. The larger population consisting of a series of circular and rectangular polygons running along the southern edge of the powerline corridor did not have a "last observation date" attributed to it, but it is presumed to also be from 1986-early 2000's (Joe Lemeris [SCNHP] pers. Comm.).

Three Oaks staff conducted surveys for Schweinitz's Sunflower on August 29, 2023. Schweinitz's Sunflower was not identified during this survey effort. Due to the presence of multiple Schweinitz's Sunflower EO's within 1.0 mile of the PSA, an abundance of suitable habitat within the PSA, but negative survey results, the BC for this species is May Affect, Not Likely to Adversely Affect.

### **Carolina Heelsplitter**

USFWS Optimal Survey Window: March 1 – November 1

Biological Conclusion: No Effect

Potentially suitable habitat for Carolina Heelsplitter is present within the PSA. This habitat consists of Taylor Creek and an unnamed tributary to Taylor Creek. Three Oaks staff conducted surveys for Carolina Heelsplitter on May 25, 2023. Carolina Heelsplitter was not observed during this survey effort. After submitting the PSA to the SCDNR for review, the output report identified no known Carolina Heelsplitter occurrences within 1.0 mile of the PSA. Although potentially suitable habitat is present within the PSA and Carolina Heelsplitter is known within the Fishing Creek basin (which Taylor Creek is located), due to the negative survey results for this project and the fact that no impacts (direct or indirect) to Taylor Creek or its tributary will result from this project, the recommended BC for this species is No Effect. This BC assumes that standard sediment and erosion control measures will be implemented for the project.

### **3.2 Bald and Golden Eagle Protection Act**

The BGPA is enforced by the USFWS. Golden Eagles do not nest in South Carolina; therefore, assessment of this species is not required. Habitat for the Bald Eagle primarily consists of mature forests in proximity to large bodies of open water for foraging. Large dominant trees are utilized for nesting sites, typically within 1.0 mile of open water.

Per survey protocols developed as part of the BGPA, a desktop-GIS assessment of the PSA, as well as the area within a 1.0-mile radius of the project limits, was performed on May 4, 2023, using the most recent color aerials. Water bodies large enough or sufficiently open to be considered potential feeding sources were identified. Since foraging habitat is present within the review area, a survey of the PSA and the area within 660 feet of potential habitat within the PSA (even if that area fell outside of the PSA) was conducted on May 11 and 25, 2023. No Bald Eagles or nests were observed during these survey efforts. After submitting the PSA to the SCDNR for review, the output report identified no known Bald Eagle EO's within 1.0 mile of the PSA. Due to negative survey results, the absence of nearby known Bald Eagle occurrences, and the minimal impact anticipated for this project, it has been determined that this project will not affect this species and no Bald Eagle Permit is required.

### **3.3 SCNHP State-listed Species for York County**

The SCNHP tracks State-listed species that are not currently listed by the USFWS under the Federal Endangered Species Act, but are tracked by the State due to their rarity. These species may be found using the South Carolina Heritage Trust's interactive county viewer and dataset

([Species by County \(arcgis.com\)](#)). Currently, the SCNHP identifies 137 tracked species for York County.

Table 2 includes all State-listed animal and plant species currently tracked by SCNHP in York County that were identified by Three Oaks staff within the PSA. A full list of State-listed animal and plant species known from the county can be found on the South Carolina Heritage Trust's website. All eight tracked plant species were found within or immediately adjacent to the large powerline right-of-way that bisects the northern section of the PSA (Appendix A: Figure 4). The eight tracked bird species were observed throughout the PSA in appropriate habitats. Six of the eight birds are generalist species that may be found in closed-canopy forests throughout the State. Prairie warbler and white-eyed vireo are also common species but require some form of early-successional habitat.

**Table 2. State-listed Species Identified Within the PSA**

Taxonomic Group	Scientific Name	Common Name	S-Rank <sup>1</sup>	SC Status	Federal Status <sup>2</sup>	Last Observed
Bird	<i>Buteo lineatus</i>	Red-shouldered Hawk	S5	N/A	MBTA	Current (2023)
Bird	<i>Piranga rubra</i>	Summer Tanager	S4	N/A	MBTA	Current (2023)
Bird	<i>Poecile carolinensis</i>	Carolina Chickadee	S5	N/A	MBTA	Current (2023)
Bird	<i>Setophaga discolor</i>	Prairie Warbler	S4B	N/A	MBTA	Current (2023)
Bird	<i>Setophaga pinus</i>	Pine Warbler	S4	N/A	MBTA	Current (2023)
Bird	<i>Sitta pusilla</i>	Brown-headed Nuthatch	S4	N/A	MBTA	Current (2023)
Bird	<i>Thryothorus ludovicianus</i>	Carolina Wren	S5	N/A	MBTA	Current (2023)
Bird	<i>Vireo griseus</i>	White-eyed Vireo	S4?B	N/A	MBTA	Current (2023)
Freshwater Mussel	<i>Elliptio complanata</i>	Eastern Elliptio	S5	N/A	N/A	Current (2023)
Freshwater Mussel	<i>Villosa vaughaniana</i>	Carolina Creekshell	S1	N/A	N/A	Current (2023)
Freshwater Mussel	<i>Villosa delumbis</i>	Eastern Creekshell	S4	N/A	N/A	Current (2023)
Freshwater Mussel	<i>Utterbackia imbecillis</i>	Paper Pondshell	S5	N/A	N/A	Current (2023)
Vascular Plant	<i>Allium cernuum</i>	Nodding Onion	S2	N/A	N/A	Current (2023)
Vascular Plant	<i>Helianthus eggertii</i>	Eggert's sunflower	S1	N/A	N/A	Current (2023)
Vascular Plant	<i>Ratibida pinnata</i>	Grey-headed Coneflower	S1	N/A	N/A	Current (2023)

**Table 2. State-listed Species Identified Within the PSA (continued)**

<b>Taxonomic Group</b>	<b>Scientific Name</b>	<b>Common Name</b>	<b>S-Rank<sup>1</sup></b>	<b>SC Status</b>	<b>Federal Status<sup>2</sup></b>	<b>Last Observed</b>
Vascular Plant	<i>Ruellia humilis</i>	Low Wild Petunia	S1	N/A	N/A	Current (2023)
Vascular Plant	<i>Silphium terebenthinaceum</i>	Prairie-dock	S1	N/A	N/A	Current (2023)
Vascular Plant	<i>Solidago ptarmicoides</i>	White Prairie Goldenrod	S2	N/A	N/A	Current (2023)
Vascular Plant	<i>Solidago rigida (jacksonii)</i>	Prairie Goldenrod	S1	N/A	N/A	Current (2023)
Vascular Plant	<i>Verbena simplex</i>	Narrowleaf Vervain	S1	N/A	N/A	Current (2023)

<sup>1</sup> S1 – Critically Imperiled, S2 – Imperiled, S4 – Apparently Secure, S4?B – Apparently Secure? [Breeding], S4B Apparently Secure [Breeding], and S5 - Secure

<sup>2</sup> MBTA – Migratory Bird Treaty Act

#### 4.0 REFERENCES

Lemeris, Joe. South Carolina Natural Heritage Program. Pers. comm.

North Carolina Department of Transportation (NCDOT). Standard Operating Procedures (SOP): NCDOT Preliminary Bat Habitat Assessments (Structures, Caves & Mines). <https://connect.ncdot.gov/resources/Environmental/EAU/BSG/Documents/Bats/NCDOT%20SOP%202023%20Prelim%20Bat%20Habitat%20Assessment%20Struc%20Cave%20Mine.pdf>.

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## **Appendix A**

### **Figures**

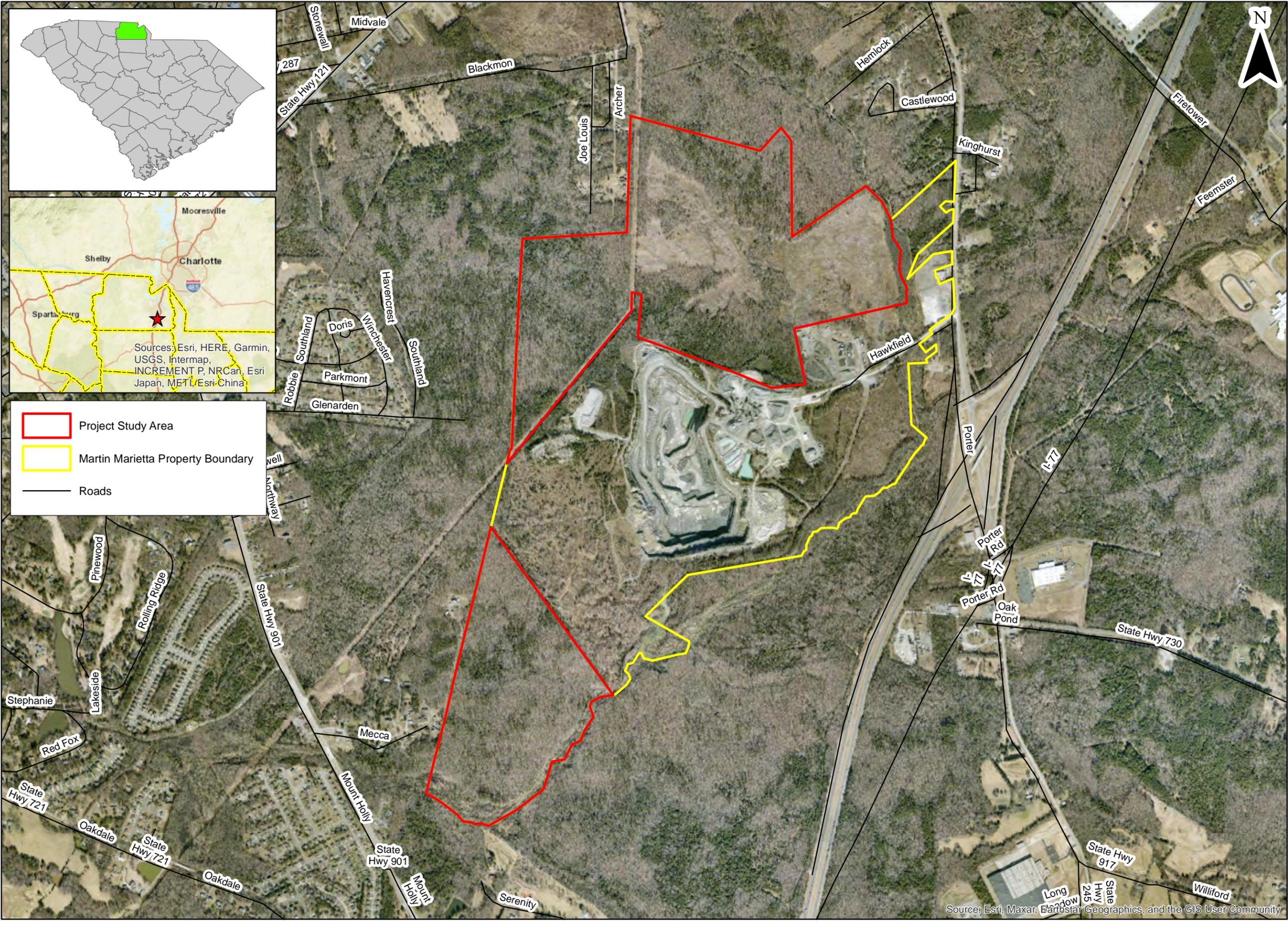


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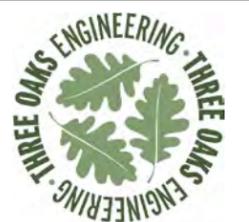
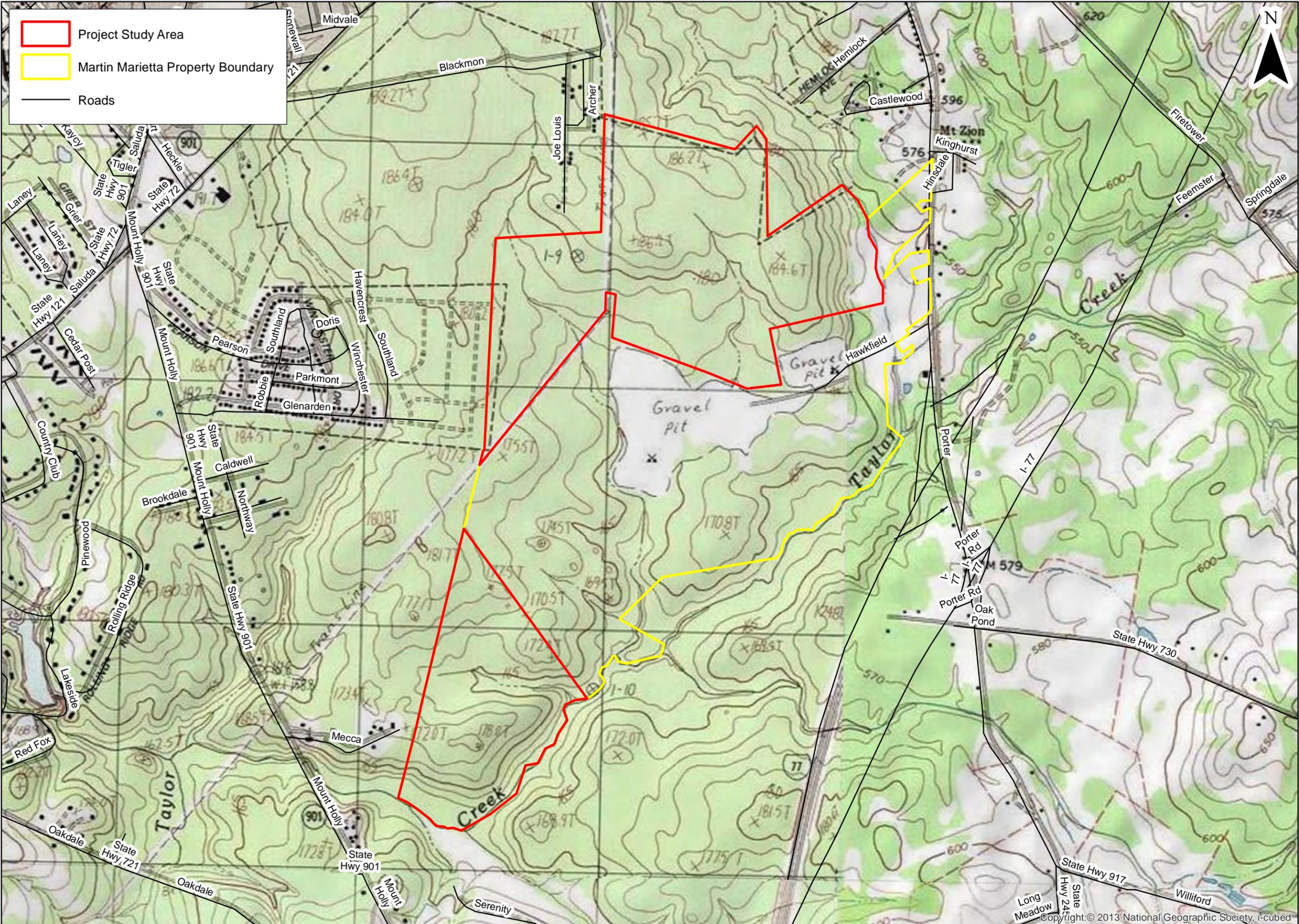
Martin Marietta  
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Rock Hill Quarry  
Proposed  
Development  
  
Project  
Vicinity  
Map  
  
York County  
South Carolina

Date: October 2023  
Scale: 0 500 1,000 Ft  
Job No.: 23-619  
Drawn By: NDH  
Checked By: JSM

Figure  
**1**



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Prepared For:



Martin Marietta  
Materials  
Rock Hill Quarry  
Proposed  
Development

Topographic  
Map

York County  
South Carolina

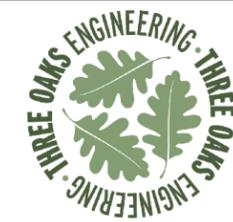
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Scale: 0 500 1,000 Ft

Job No.: 23-619

Drawn By: NDH	Checked By: JSM
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Figure  
**2**



Prepared For:



Martin Marietta  
Materials

Rock Hill Quarry  
Proposed  
Development

Suitable  
Federally Listed  
Plant Species  
Habitat Map

York County  
South Carolina

Date: November 2023

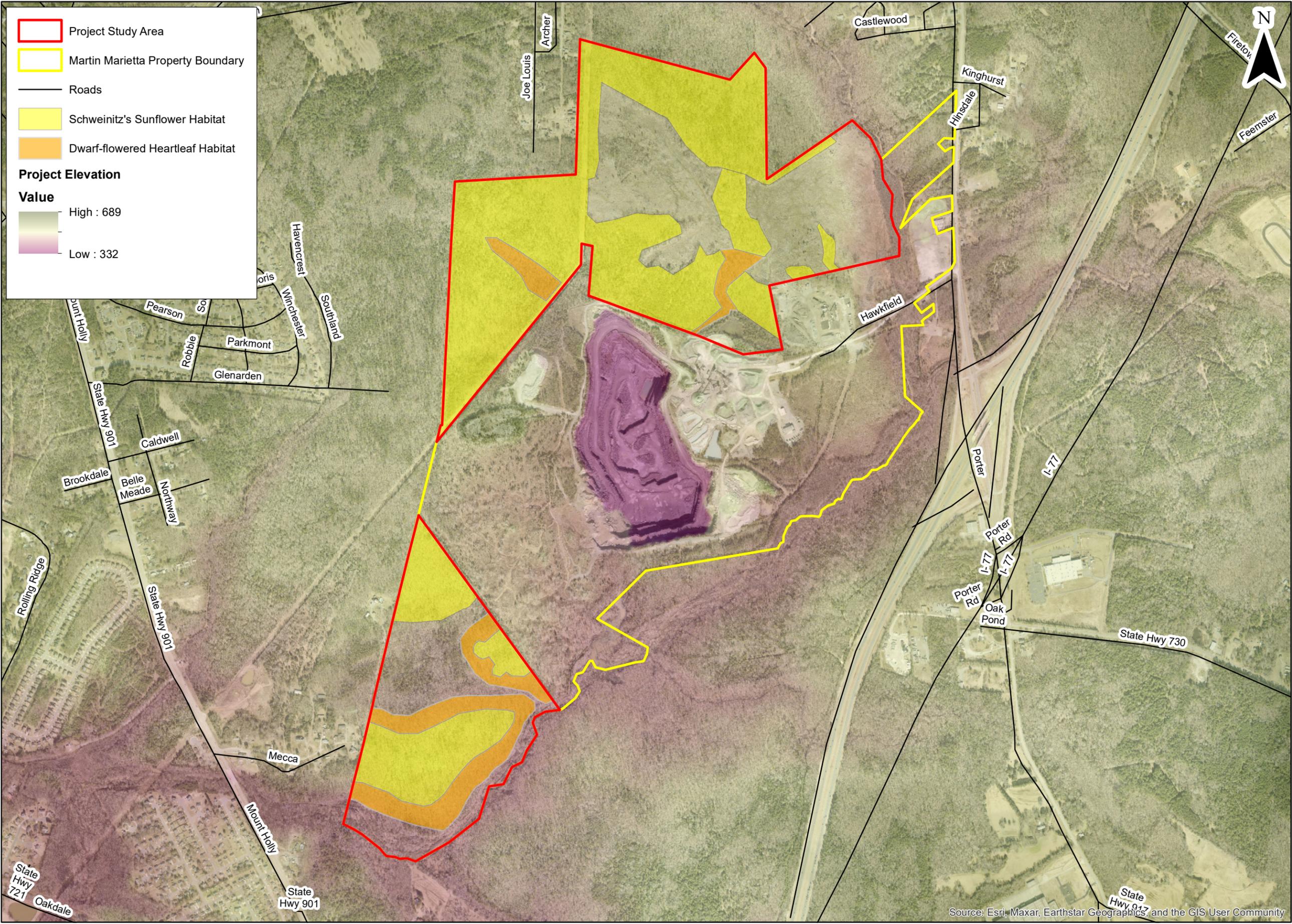
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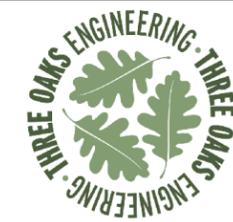
Drawn By: NDH  
Checked By: JSM

Figure

3



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Prepared For:



Martin Marietta  
Materials

Rock Hill Quarry  
Proposed  
Development

Suitable  
Federally Listed  
Plant Species  
Habitat Map

York County  
South Carolina

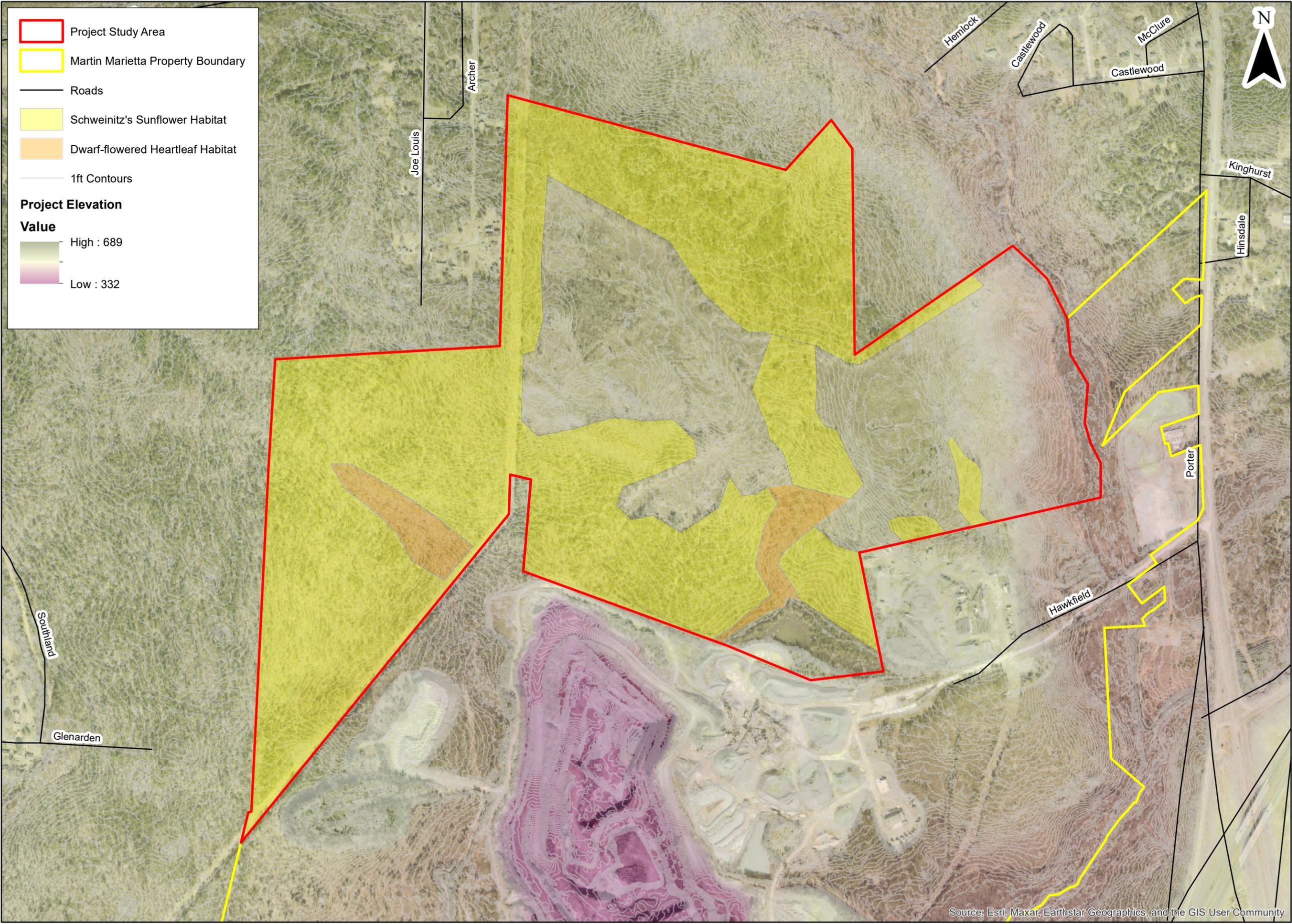
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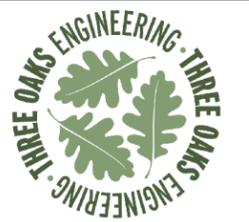
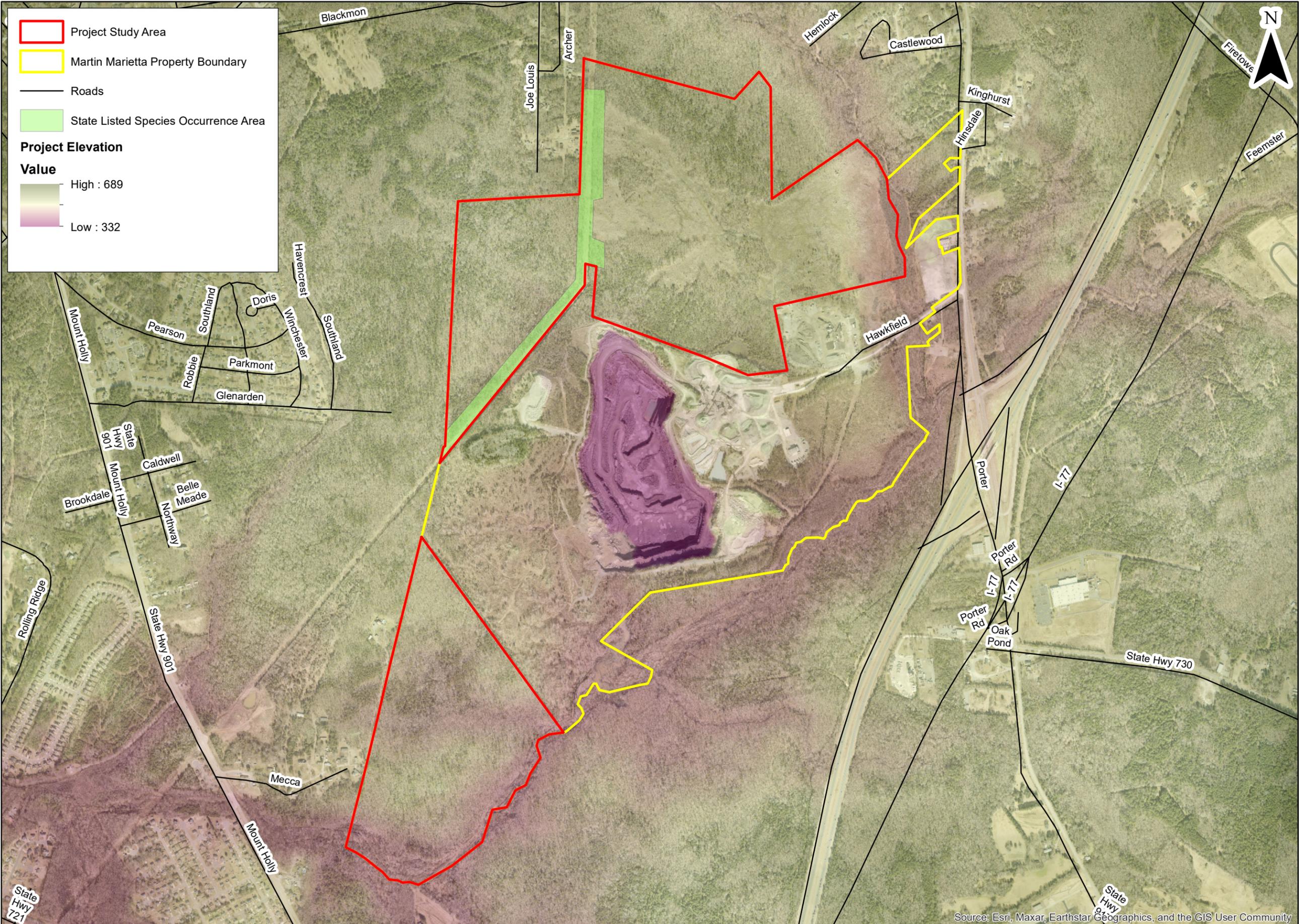
Drawn By: NDH  
Checked By: JSM

Figure  
**3B**



- Project Study Area
- Martin Marietta Property Boundary
- Roads
- Schweinitz's Sunflower Habitat
- Dwarf-flowered Heartleaf Habitat
- 1ft Contours
- Project Elevation**  
**Value**  
High : 689  
Low : 332

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Prepared For:



Martin Marietta  
Materials

Rock Hill Quarry  
Proposed  
Development

York County  
State Listed  
Plant Species  
Occurrence Map

York County  
South Carolina

Date: November 2023

Scale: 0 500 1,000 Ft

Job No.: 23-619

Drawn By: NDH	Checked By: JSM
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Figure

4

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Prepared For:



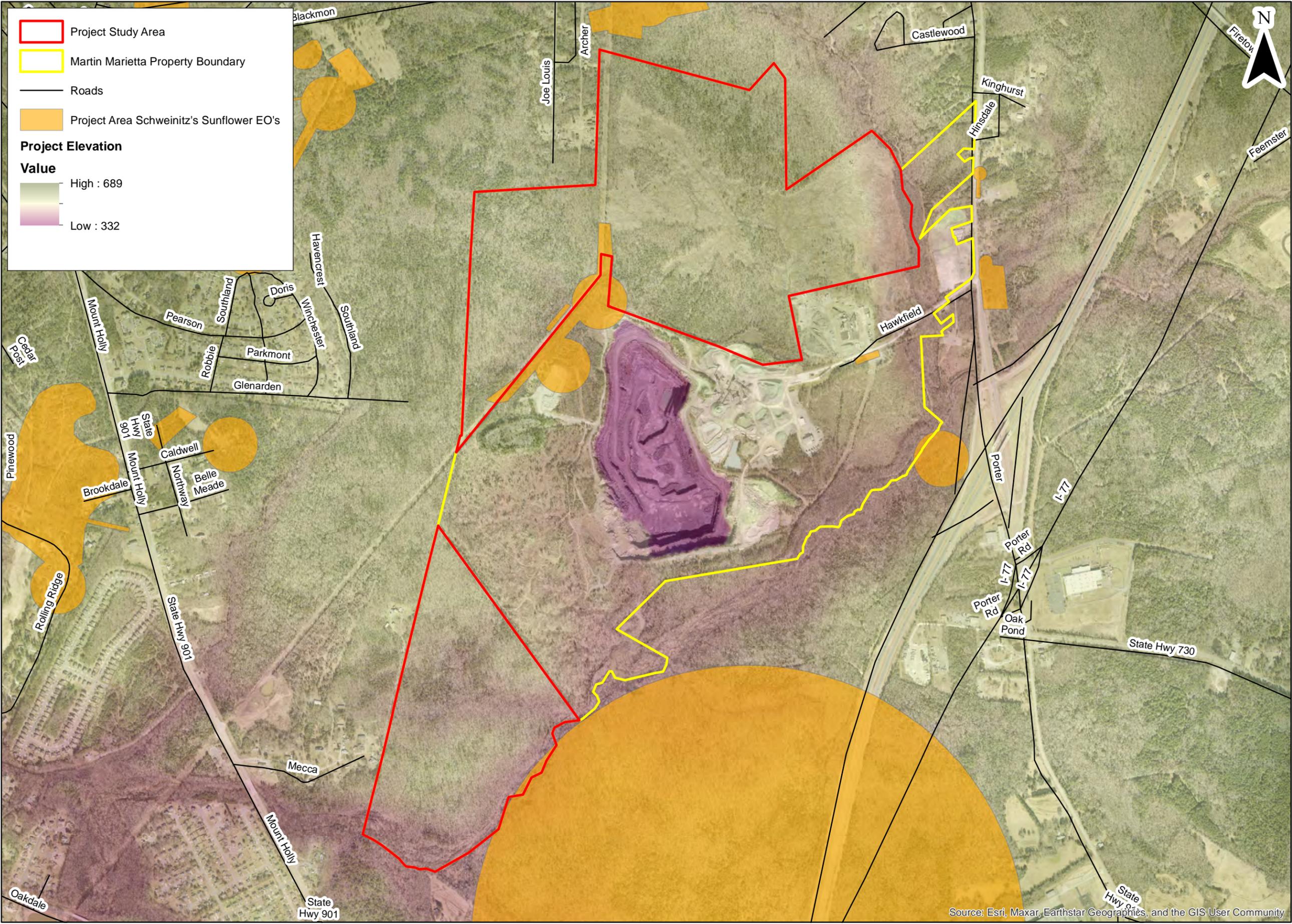
Martin Marietta  
Materials  
Rock Hill Quarry  
Proposed  
Development

Project Area  
Schweinitz's  
Sunflower  
Element Occurrence  
Map

York County  
South Carolina

Date:	November 2023
Scale:	0 500 1,000 Ft
Job No.:	23-619
Drawn By:	NDH
Checked By:	JSM

Figure  
**5**



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

## Appendix B

### Qualifications of Contributors

Investigator:	Wade Biltoft, PWS
Education:	MEERM (Master of Earth and Environmental Resources Management) University of South Carolina, 2018 B.S. Environmental Science, University of South Carolina, 2016
Experience:	Environmental Scientist, Three Oaks Engineering, 2018-Present
Responsibilities:	Aquatic Species Surveys, Listed Species Survey Report Review, Aquatic Species Survey Report Development and Review
Investigator:	Mark Guerard
Education:	Coursework, Jurisdictional Waters Delineations
Experience:	Environmental Technician, Three Oaks Engineering, May 2022-Present
Responsibilities:	Listed Species Surveys
Investigator:	Trevor Hall, PWS
Education:	B.S. Environmental Science: Ecology and Organismal Biology, University of Delaware, 2016
Experience:	Environmental Scientist, Three Oaks Engineering, July 2021-Present Jr. Environmental Scientist, NV5 Consultants and Engineers, April 2019 – July 2021 Senior Fisheries Technician, North Carolina State University, October 2018-April 2019
Responsibilities:	Aquatic Species Surveys, Aquatic Species Survey Report Development and Review
Investigator:	Tom Dickinson
Education:	B.S. Forestry/Natural Resources, Sewanee: The University of the South, 2001
Experience:	Environmental Supervisor/Aquatic Biologist, Three Oaks Engineering, June 2015-present Environmental Scientist, The Catena Group, June 2003-June 2015
Responsibilities:	Aquatic Species Surveys, Aquatic Species Survey Report Development and Review
Investigator:	Nathan Howell, PWS
Education:	M.S. Plant and Microbial Biology, North Carolina State University, 2015 B.S. Fisheries, Wildlife, and Conservation Biology, North Carolina State University, 2013
Experience:	Environmental Scientist, Three Oaks Engineering, 2015 – Present
Responsibilities:	Listed Species Surveys, Document Preparation and Review, Aquatic Species Survey Report Development and Review, GIS Mapping

Investigator: Byron Levan  
Education: M.F.W. Fisheries, Wildlife, and Conservation Biology, North Carolina State University, 2019  
B.S. Fisheries, Wildlife, and Conservation Biology, North Carolina State University, 2011  
Experience: Environmental Scientist, Three Oaks Engineering, July 2021-Present  
Junior Environmental Scientist, NV5 Global Inc., 2019-2021  
Responsibilities: Listed Species Surveys; Document Review

Investigator: James Mason, PWS  
Education: M.S. Biology/Ecology, UNC-Charlotte, 2004  
B.A. Biology, Colby College, 2000  
Experience: Senior Environmental Scientist, Three Oaks Engineering, April 2018-Present  
Environmental Program Consultant, NCDOT, 2006-2018  
Responsibilities: Document Preparation and Review

Investigator: Tim Savidge  
Education: M.S. Marine Biology/Biological Oceanography, University of North Carolina – Wilmington, 1998  
B.S. Biology, Guilford College, 1987  
Experience: Environmental Manager & Aquatic Biologist, Three Oaks Engineering, June 2015-Present  
Environmental Specialist, NCDOT, 1992-2002  
Responsibilities: Aquatic Species Surveys, Aquatic Species Survey Report Development and Review

Investigator: Annie Dahlem (nee Welch)  
Education: M.S. Natural Resources, North Carolina State University, 2022  
B.S. Natural Resources, North Carolina State University, 2020  
Experience: Environmental Scientist, Three Oaks Engineering, 2023-present  
Environmental Scientist, NV5 Engineers and Consultants, 2023-2023  
Environmental Scientist, Moffatt & Nichol, 2021-2022  
Responsibilities: Listed Species Surveys