

# NATURAL RESOURCE ASSESSMENT AND AQUATIC RESOURCES DELINEATION

WINGATE SUBSTATION

PIKE PROJECT NO. 24-35601-000-05

UNION COUNTY, NC



FEBRUARY 2025

*Prepared For:*



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## Abbreviations

|       |   |
|-------|---|
| CCA   | Candidate Conservation Agreement                              |
| CDP   | Census-designated Place                                       |
| CWA   | Clean Water Act   |
| DBH   | Diameter Base Height  |
| DHEC  | South Carolina Department of Health and Environmental Control |
| DWM   | North Carolina Division of Waste Management                   |
| DWR   | North Carolina Division of Water Resources                    |
| EPA   | U.S. Environmental Protection Agency                          |
| FEMA  | Federal Emergency Management Agency                           |
| FIRM  | Flood Insurance Rate Map                                      |
| IPaC  | Information Planning and Conservation Service                 |
| JD    | Jurisdictional Determination                                  |
| NCDEQ | North Carolina Department of Environmental Quality            |
| NRA   | Natural Resource Assessment                                   |
| NRCS  | Natural Resource Conservation Service                         |
| PSA   | Project Study Area  |
| RHA   | Rivers and Harbors Act  |
| ROW   | Right-of-way  |
| SCNHP | South Carolina Natural Heritage Program                       |
| Str   | Structure   |
| USACE | U.S. Army Corps of Engineers                                  |
| USDA  | U.S. Department of Agriculture                                |
| USFWS | U.S. Fish & Wildlife Service                                  |
| WOTUS | Waters of the U.S.  |

## 1 INTRODUCTION

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On behalf of Union Power Cooperative ("Union Power"), Pike Engineering ("Pike") conducted a Natural Resource Assessment (NRA) and Aquatic Resources Delineation for a project known as "Wingate Substation". The NRA included an office review of natural resource databases, Federal- and State-listed species databases, and field surveys to determine the extent of jurisdictional aquatic resources and the presence or absence of potentially suitable habitat and occurrences of federal- and state-listed species.

Field surveys were conducted in January 2025 by Pike staff. Aquatic resources were sequentially flagged by feature type, with blue and yellow flagging representing stream centerlines. The extent of aquatic resources was documented using a GPS unit with sub-meter accuracy, such as a Trimble GeoExplorer 3000 Series or similar device.

## 2 LOCATION OF THE PROJECT STUDY AREA

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For the purpose of this report, the Project Study Area (PSA) consists of an approximate 19-acre site, as depicted in **Appendix A, Figure 1**. The PSA lies in Wingate in eastern Union County, North Carolina.

## 3 EXISTING CONDITIONS

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### 3.1 Vegetation

The PSA contained several different vegetation communities. These include forested areas and monocrops. Based upon the Classification of the Natural Communities of North Carolina – Fourth Approximation (Schafale, 2012), forested portions of the site can be characterized as Mesic Mixed Hardwood (Piedmont Subtype).

The forested areas were composed of loblolly pine (*Pinus taeda*), eastern red cedar (*Juniperus virginiana*), sweetgum (*Liquidambar styraciflua*), tulip poplar (*Liriodendron tulipifera*), red maple (*Acer rubrum*), winged elm (*Ulmus alata*), willow oak (*Quercus phellos*), hackberry (*Celtis occidentalis*), and Chinese privet (*Ligustrum sinense*).

### 3.2 Topography

Pike utilized the United States Geological Survey (USGS) topographic quadrangle information to evaluate naturally occurring topographic characteristics of the greater region and elements occurring within the PSA. Frequently, tributaries have been historically identified and are represented on topographic quadrangles with flow regimes determined at the time the maps were produced; this information can be utilized to track changes to hydrology in the region and within the PSA. Often, local or state buffers utilize USGS topographic quadrangles to apply buffers to tributaries. In instances where flow regimes depicted on USGS topographic quadrangles are inconsistent with flow regimes determined during a field assessment, the data obtained during a field assessment is generally more accurate in representing existing conditions. **Appendix A, Figure 2** shows the mapped USGS topographic quadrangle relative to the PSA.

### 3.3 Soils

Pike utilized the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) web soil survey and 'National Hydric Soils List' (USDA Natural Resource Conservation Service) to determine soil types mapped as occurring within the PSA (**Appendix A, Figure 3**). Table 3-1 shows soil map

units, a description of the map unit, their hydric status, the area covered by a particular map unit, and the percentage of the PSA covered by the map unit.

Table 3-1 Soils within PSA.

| Map Unit Symbol | Description  | Hydric Status | Area (ac) | Percentage |
|-----------------|--|---------------|-----------|------------|
| CmB             | Cid channery silt loam, 1 to 5 percent slopes            | Nonhydric     | 5         | 26.6       |
| GoC             | Goldston very channery silt loam, 4 to 15 percent slopes | Nonhydric     | 3         | 16.1       |
| GsB             | Goldston-Badin complex, 2 to 8 percent slopes            | Nonhydric     | 10.7      | 57.3       |
| <b>Totals</b>   |  |               | 18.7      | 100.0      |

### 3.4 Federal Emergency Management Agency (FEMA) Flood Hazard Layers

Flood hazard areas identified on the Flood Insurance Rate Map are identified as a Special Flood Hazard Area (SFHA). SFHA are defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood. SFHAs are labeled as Zone A, Zone AO, Zone AH, Zones A1-A30, Zone AE, Zone A99, Zone AR, Zone AR/AE, Zone AR/AO, Zone AR/A1-A30, Zone AR/A, Zone V, Zone VE, and Zones V1-V30. Moderate flood hazard areas, labeled Zone B or Zone X (shaded) are also shown on the FIRM, and are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood. The areas of minimal flood hazard, which are the areas outside the SFHA and higher than the elevation of the 0.2-percent-annual-chance flood, are labeled Zone C or Zone X (Federal Emergency Management Agency, 2020). FEMA mapped flood hazard areas are shown on **Appendix A, Figure 4**.

### 3.5 Water Quality

The North Carolina Surface Water Classification and Water Supply Watershed databases were used to determine surface water classifications and water quality concerns within the PSA. The site is entirely contained in the Yadkin Pee Dee Basin (Hydrologic Unit Code 03040105). The North Carolina Surface Water Classification states Jacks Branch, located just west of the study area, is classified as a Class C surface water. These waters are protected for uses such as aquatic life propagation, survival and maintenance of biological integrity (including fishing and fish), wildlife, secondary contact recreation, and agriculture. Secondary contact recreation means wading, boating, other uses not involving human body contact with water, and activities involving human body contact with water where such activities take place on an infrequent, unorganized, or incidental basis.

According to the Water Supply Watershed, none of the streams contained within the PSA are classified or fall within a water supply watershed. None of the surface waters are identified as being 303(d) impaired waters, waters of concern, or subject to water advisories. Based on those factors, no known water quality concerns occur in the PSA.



## 4 JURISDICTIONAL WETLANDS AND WATERS

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### 4.1 Methodology

A delineation of wetlands and other surface waters was performed within the PSA to identify aquatic features that may be subject to the jurisdiction of the United States Army Corps of Engineers (USACE) as “Waters of the United States” (also known as “waters of the U.S.”, or “WOTUS”), in accordance with the Federal Clean Water Act, 33 U.S.C. § 1251 et seq. (CWA), and Section 10 of the Rivers and Harbors Act (RHA) of 1899, 33 U.S.C. 401 § 403. Section 404 of the CWA authorizes the USACE to regulate, which includes permitting, temporary and permanent discharges of dredged or fill material into WOTUS.

Wetlands are described by the USACE (33 C.F.R. § 328.3) and the United States Environmental Protection Agency (USEPA) (40 C.F.R. § 230.3) as “those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (33 C.F.R. § 328.3; 40 C.F.R. § 230.3). From this regulatory definition, a three-parameter approach (i.e., vegetation, soils, and hydrology) was developed by the USACE to identify and delineate wetlands for purposes of Section 404 of the CWA and Section 10 of the RHA (33 U.S.C. 403). This approach requires positive verification of the presence of wetland hydrology, hydrophytic vegetation, and hydric soils as precursors for an area to be determined a wetland.

The field evaluation was conducted using methods consistent with those described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (U.S. Army Corps of Engineers, 2012); and *Corps of Engineers Wetlands Delineation Manual* (U.S. Army Corps of Engineers, 1987). Where differences occur in the two documents, the regional supplement takes precedence over the 1987 Manual for applications in the Eastern Mountains and Piedmont region. This delineation, and the associated data collected, supports a request for a Jurisdictional Determination (JD) to USACE if project-related impacts to WOTUS are required.

The North Carolina Department of Environmental Quality (NCDEQ) Division of Water Resources (DWR) stream evaluation methods described in *Methodology for Identification of Intermittent and Perennial Streams and Their Origins* (Version 4.11), effective September 1, 2010, were used to conduct stream flow regime assessments of tributaries identified within the PSA. Stream evaluations included a qualitative review of channel characteristics for purposes of documenting ephemeral, intermittent, or perennial flow regimes, and assessing their jurisdictional status accordingly.

### 4.2 Delineation Results

Pike conducted a delineation of streams, wetlands, and open waters within the PSA in January 2025. Green and blue flagging was used to identify streams. **Appendix A, Figure 5** illustrates the results of the delineation. Photographs documenting aquatic resources are included in **Appendix B**.

#### 4.2.1. Wetlands

No areas within the PSA met the three wetland criteria of vegetation, hydric soils, and hydrology; therefore, wetlands are not present within the PSA.

#### 4.2.2. Streams

One stream was identified within the PSA (**Appendix A, Figure 5**). Streams exhibited well-defined channel bed and bank with consistent ordinary high-water mark indicators.

Table 4-2 lists streams by their corresponding unique identification used during the field survey, including average width at ordinary high-water mark (OHWM) and flow regime. Streams are depicted on **Appendix A, Figure 5**.

Table 4-1 Streams Identified within the PSA.

| Stream ID    | Approximate Reach in PSA (Linear Feet) | Flow Regime  | Average Width at OHWM (Feet) | Latitude     | Longitude    |
|--------------|--|--------------|------------------------------|--------------|--------------|
| Stream 1     | 1,073                                  | Intermittent | 3                            | 35.0194336°N | 80.4104388°W |
| <b>Total</b> | <b>~1,073 linear feet</b>              |              |                              |              |              |

#### 4.3 Jurisdictional Assessment under Clean Water Act Section 404

“Waters of the United States” is a threshold term used in the CWA and establishes the geographic scope of federal jurisdiction under the Act. Sections 404 and 401 of the CWA regulates the discharge of dredged or fill material into “Waters of the US”; therefore, aquatic resources assessed as meeting the definition of WOTUS are subject to the regulations and permitting requirements set forth within the Act. USACE is the permitting authority for implementation of the CWA and administers the permitting program that regulates permanent or temporary discharges of dredged or fill materials into WOTUS (U.S. Environmental Protection Agency, 2023).

Pike believes each of the aquatic resources identified in the delineation are jurisdictional under the current definition of WOTUS and are therefore subject to regulation under CWA Sections 404 and 401. All features are relatively permanent waters, which are consistent with the current definition of regulated WOTUS.

Findings assessing the jurisdictional status of potential Waters of the U.S. are subject to verification and modification by USACE and are subject to change based on the Clean Water Act rules, amendments, and guidance effective at the time of site development. The findings within this report can be used to support a Jurisdictional Determination or Delineation Concurrence to USACE, should one be requested or required.

## 5 FEDERAL PROTECTED SPECIES

### 5.1 Methodology

Species with the federal classification of endangered, threatened, proposed endangered or threatened, and final (or proposed) designated critical habitat are protected under the Endangered Species Act of 1973, 16 U.S.C. §§ 1531-1544 et seq. No activity can be authorized by a federal permit or action if the continued existence of a federally-listed species would be jeopardized, or its critical habitat destroyed or adversely modified, by the proposed activity or action.

Pike used the USFWS Information Planning and Conservation System (IPaC) tool to identify federally protected species that may occur within the PSA, and a species list was generated for the proposed project (**Appendix C, USFWS Species List**).

The IPaC report identifies three Endangered species and one Proposed Threatened species that may occur within the PSA. The IPaC report identified no Designated or Proposed Critical Habitats within the PSA.



Table 5-1 lists species identified by the USFWS IPaC tool as potentially occurring in the PSA or within a one-mile radius of the PSA, and that were included in the site evaluation.

Table 5-1 Threatened and Endangered Species that May Occur Within the PSA

| Listed Species   | Protection Status (T, E, P, C) | USFWS Optimal Survey Window <sup>1</sup> |
|--|--------------------------------|--|
| Carolina Heelsplitter<br>( <i>Lasmigona decorata</i> )       | E                              | N/A                                      |
| Monarch Butterfly<br>( <i>Danaus plexippus</i> )             | P                              | N/A                                      |
| Michaux's Sumac<br>( <i>Rhus michauxii</i> )                 | E                              | May-October                              |
| Schweinitz's Sunflower<br>( <i>Helianthus schweinitzii</i> ) | E                              | Late August-October                      |

E Federally Endangered  
P Proposed for Listing in Federal Register

## 5.2 Species and Habitat Descriptions

### 5.2.1. Carolina Heelsplitter (*Lasmigona decorata*)

The Carolina heelsplitter is a rare species of freshwater mussel endemic to the Carolinas. Preferred habitat consists of well-oxygenated water with low pollutant levels. It is thought that stable stream bottoms area critical to the species. Stable populations have been found in streams where banks are stable and well vegetated with trees and shrubs.

### 5.2.2. Monarch Butterfly (*Danaus plexippus*)

The monarch is a large-winged invertebrate. Most of the wings are bright orange edged by black borders and veins on top, and pale orange underneath. Within the black border are two rows of white spots. Bodies of Monarchs have black and white markings. Monarchs reach approximately three to four inches in width and length. Monarchs undergo a complete metamorphosis, from egg, to larva (caterpillar), to pupa (chrysalis), and then to adult (butterfly). Adult Monarchs lay their eggs exclusively on milkweed (*Asclepias* spp.) species. These eggs hatch after three to five days and the larva feed on the leaves of the host plant (milkweed). The monarch's preferred habitat is within sufficiently large populations of milkweed to support host and feeding groups. The milkweeds grow in a variety of habitats, swamps and uplands, with adequate sunshine and minimal physical disturbance (such as mowing or plowing) (U.S. Fish & Wildlife Service, 2023).

### 5.2.3. Schweinitz's Sunflower (*Helianthus schweinitzii*)

Habitat for Schweinitz's Sunflower includes clearings and edges of upland woods, thickets, and pastures. The species is found along roadsides, powerline clearings, old pastures, and woodland openings. Schweinitz's Sunflower requires disturbance (blowdowns, storm, or fire) to create open areas for full sunlight, but may also grow in open stands of trees with minimal shade. Soils may be either shallow, sandy with high gravel content, or a clayey hardpan. The sunflower may prefer soils derived from basic material (Krings, Goyette, Suiter, & Samuels, 2021).

<sup>1</sup> Refer to <https://www.fws.gov/story/2022-06/south-carolinas-federally-threatened-endangered-and-risk-plant-species>

#### 5.2.4. Michaux's Sumac (*Rhus michauxii*)

Michaux's Sumac grows in sandy or rocky open woods on sandy or sandy loam soils with low cation exchange capacities and appears to depend on some form of disturbance to maintain the open quality of its habitat. This disturbance may be in the form of fire, wind throws, or openings created by roads, railroads and utility rights of way (U.S. Fish & Wildlife Service, Southeast Region, Raleigh Ecological Services Field Office, 2021).

### 5.3 Habitat Evaluation and Species Survey Results

#### 5.3.1. Carolina Heelsplitter

There are no perennial streams located within the PSA, therefore suitable habitat for Carolina heelsplitter is not present.

#### 5.3.2. Monarch Butterfly

Potentially suitable habitat is present within unmanaged grassland and prairie areas of the PSA (i.e. early successional growth areas, and areas generally maintained in herbaceous conditions with minimal management within existing ROW). If disturbance to potentially suitable habitat is necessary, targeted surveys for the species and/or coordination with USFWS to determine potential species effects may be needed should the species become uplisted to federally Threatened status.

#### 5.3.3. Schweinitz's Sunflower

Areas of open habitat within the existing ROW and along the forest edges contain marginally suitable habitat for Schweinitz's Sunflower, specifically those areas with lower density of competing species. No varieties of *Helianthus* were observed during the field evaluation. Because marginally suitable habitat is present, but the field evaluation yielded negative survey results, Pike believes there will be no effect to this species.

#### 5.3.4. Michaux's Sumac

Areas of open habitat within the existing ROW and along the forest edges contain marginally suitable habitat for Michaux's sumac, specifically those areas with lower density of competing species. No varieties of *Rhus* were observed during the field evaluation. Because marginally suitable habitat is present, but the field evaluation yielded negative survey results, Pike believes there will be no effect to this species.

Table 5-2 Habitat and Species Survey Results

| Listed Species        | Designated Critical Habitat?<br>(Y, N) | PSA Inside Designated Critical Habitat?<br>(Y, N, N/A) | Suitable Habitat Present in PSA?<br>(Y/N) | Species Identified in PSA?<br>(Y, N, N/A) |
|-----------------------|--|--|---|---|
| Carolina Heelsplitter | Y                                      | N  | N   | N   |
| Monarch Butterfly     | N                                      | N/A  | Y   | N   |
| Michaux's Sumac       | N                                      | N/A  | Y   | N   |

| Listed Species         | Designated Critical Habitat?<br>(Y, N) | PSA Inside Designated Critical Habitat?<br>(Y, N, N/A) | Suitable Habitat Present in PSA?<br>(Y/N) | Species Identified in PSA?<br>(Y, N, N/A) |
|------------------------|--|--|---|---|
| Schweinitz's Sunflower | N                                      | N/A  | Y   | N   |

Potential impacts of a proposed project must be reconsidered if new information reveals that those impacts may affect any listed species or critical habitat in a manner not previously considered, if the proposed project is modified in a manner that was not considered in the effect determination, or if a new species is listed or critical habitat is designated that may be affected by the proposed project.

## 6 RECOMMENDATIONS

On behalf of Union Power, Pike Engineering has completed a Natural Resource Assessment, including an aquatic resources delineation and protected species assessment, for a project known as Wingate Substation. A delineation of the Project Study Area resulted in positive identification of aquatic resources. Pike's assessment is that the aquatic resources identified are subject to regulation by the U.S. Army Corps of Engineers under Sections 404 and 401 of the Clean Water Act. A protected species and habitat survey of the PSA identified potentially suitable habitat for species known to occur in the county, but no occurrences were identified. Comprehensive surveys for Monarch Butterfly were not performed.

Pike's general recommendation is to avoid and minimize impacts to jurisdictional aquatic resources to the maximum extent practicable. Should temporary or permanent impacts be necessary, it is possible the project can utilize a Nationwide Permit 57 (Electric Utility Line and Telecommunications Activities) if project construction and design efforts implement measures consistent with the Nationwide Permit General and Regional Conditions.

If the proposed project requires acquisition of a federal permit, targeted surveys for monarch butterfly may be needed, particularly if the species is formally uplisted from "Proposed Threatened" to "Threatened" under the Endangered Species Act. Given the pending uplisting of the species, Pike may recommend proactive coordination with USFWS to evaluate potential presence/absence survey options, depending on project timelines.



Pike is pleased to present the results of our Natural Resource Assessment and Aquatic Resources Delineation for the Wingate Substation. Please do not hesitate to contact us should you have questions or concerns regarding the report.

Sincerely,

A handwritten signature in black ink that reads "Megan Bollero".

Megan Bollero, PWS  
Senior Environmental Scientist  
[mbollero@pike.com](mailto:mbollero@pike.com)  
(757) 576-6433

A handwritten signature in black ink that reads "Meagan Jolly".

Meagan Jolly, PWS  
Senior Environmental Scientist  
[kjolly@pike.com](mailto:kjolly@pike.com)  
(704) 681-3479

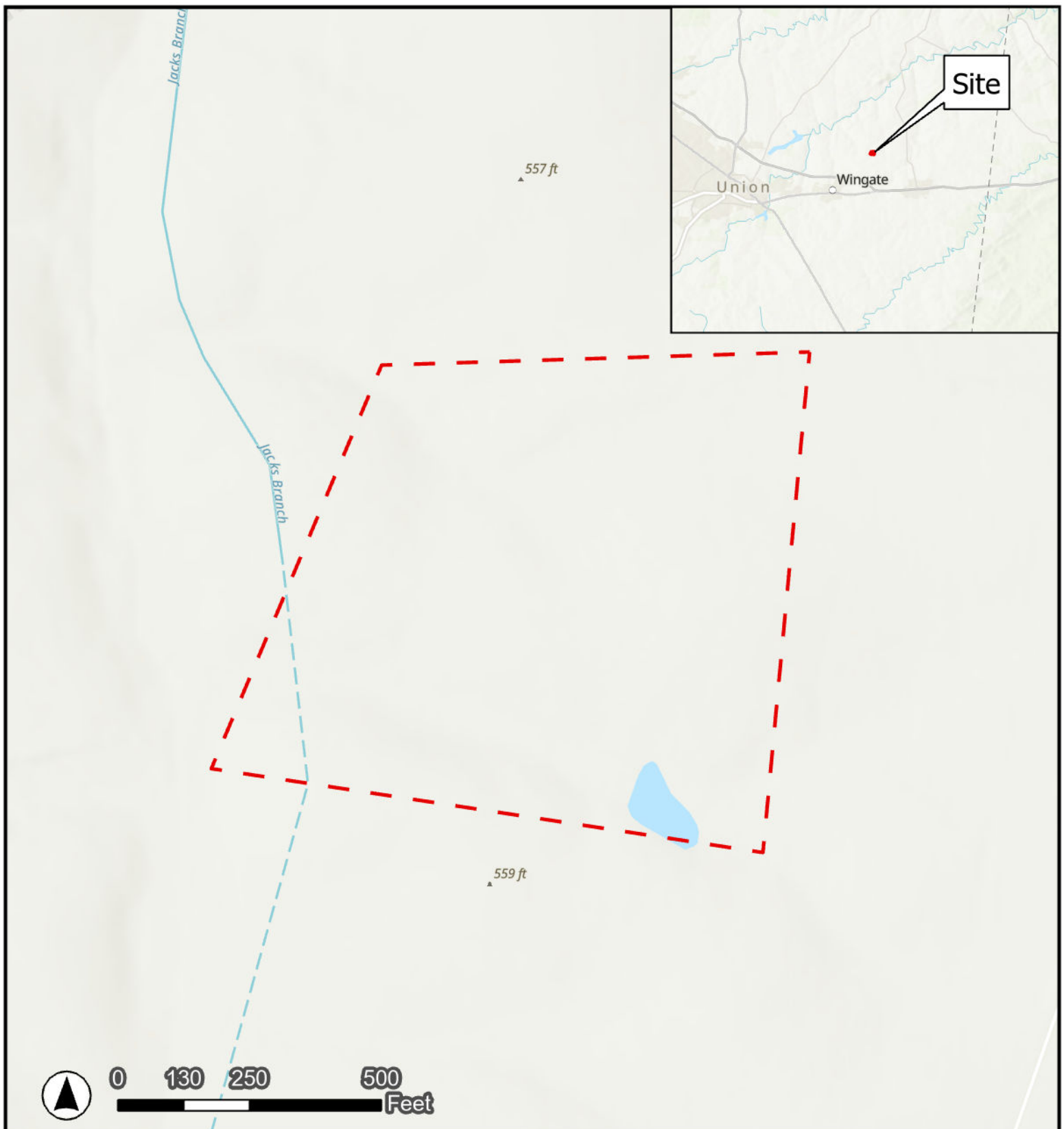
## 7 REFERENCES

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## **Appendix A**

### **Figures**





# Figure 1. Site Location Map

Natural Resource Assessment and  
Aquatic Resources Delineation

## Legend

--- Project Study Area

This map is for graphical purposes only and does not represent a legal survey. It is strictly for use with Pike Engineering (Pike Job No. 24-35601-000). Pike assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.

Project Name:  
Wingate Substation

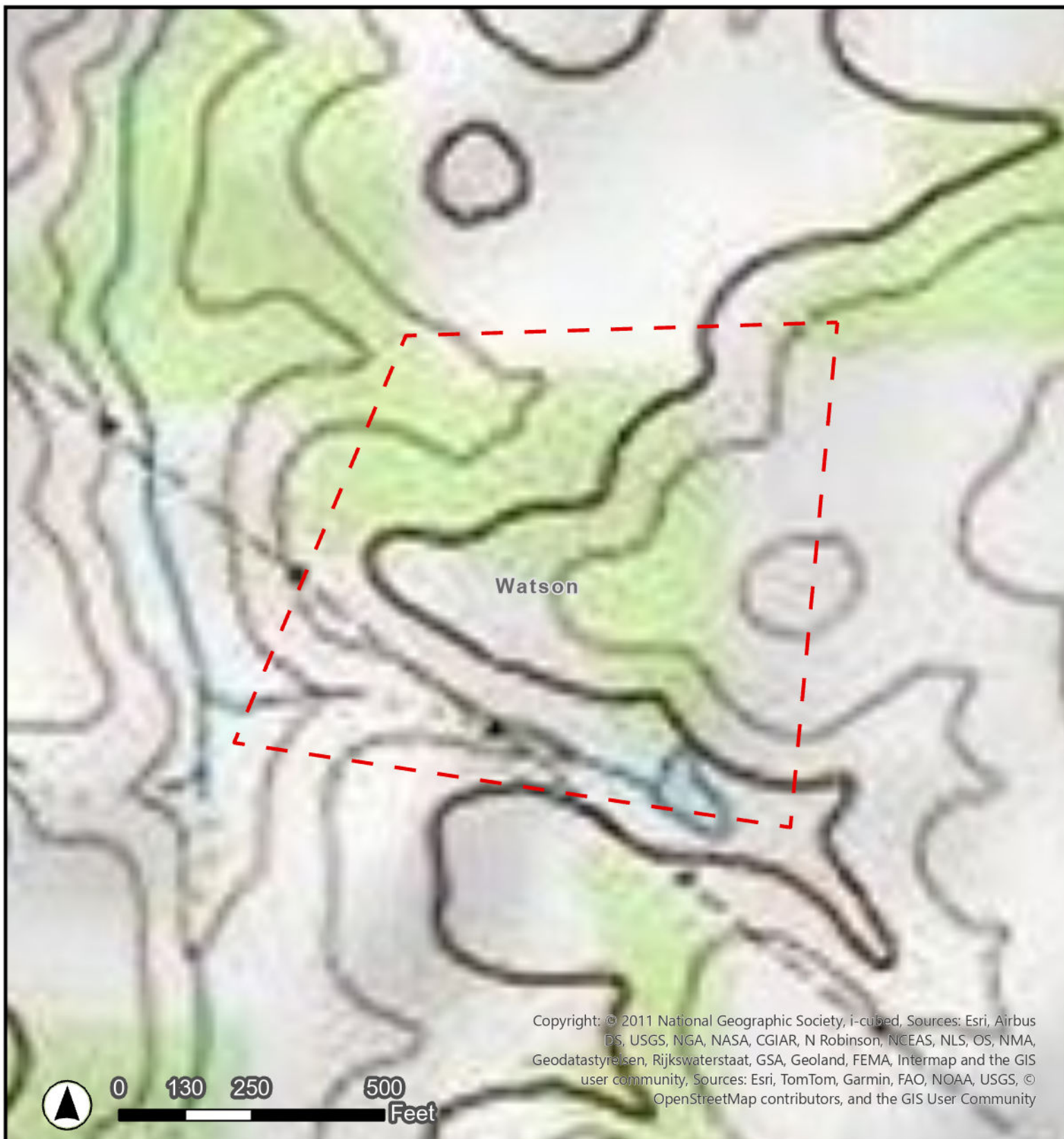
Drawn by: W. Johnson

Reviewed By: M. Bollero

Date: 2/13/2025

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**ENGINEERING**  
123 N White Street  
Fort Mill, SC 29715



## Figure 2. USGS Topographic Quadrangle

Natural Resource Assessment and  
Aquatic Resources Delineation

### Legend

 Project Study Area

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Project Name:  
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Drawn by: W. Johnson

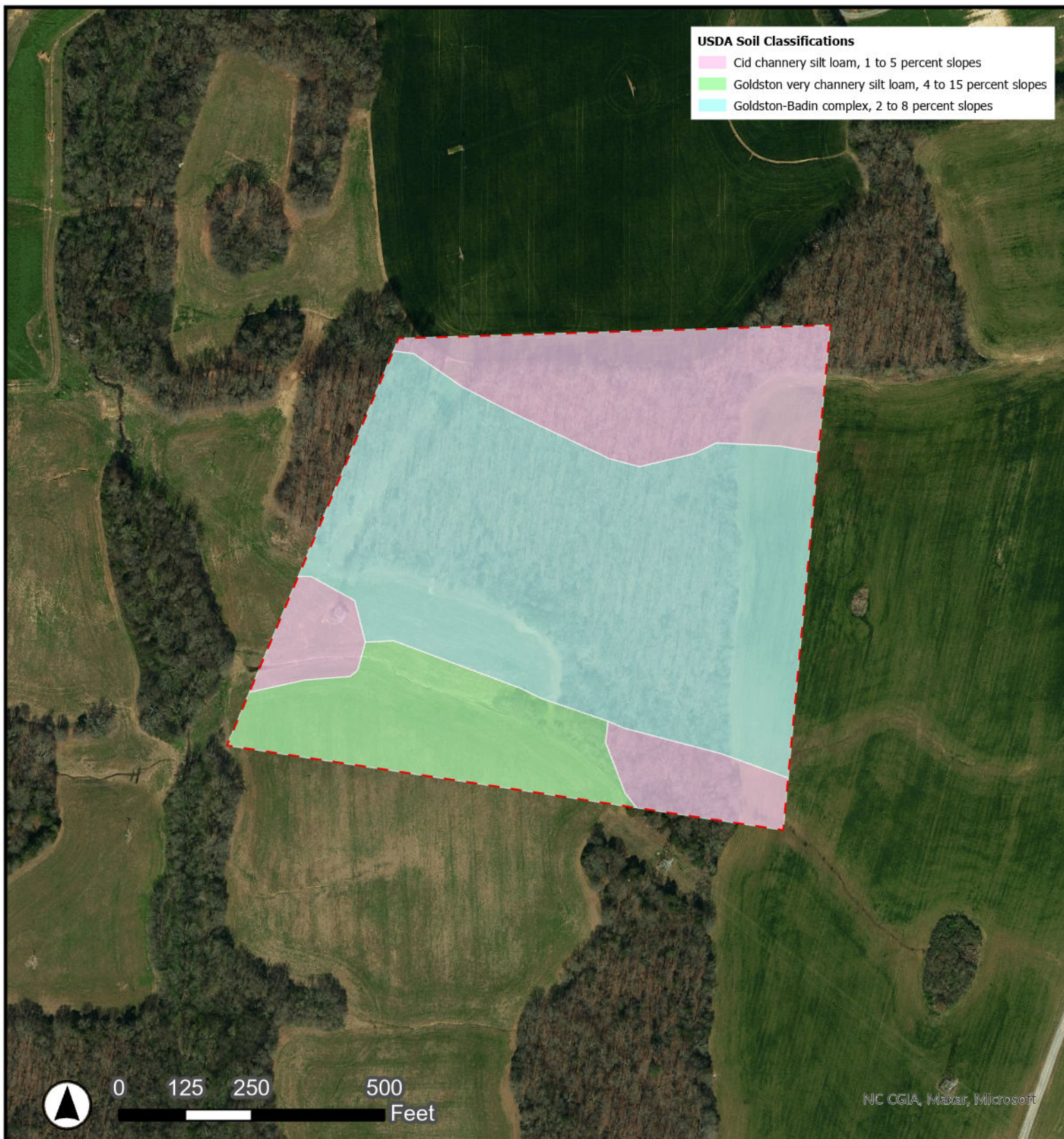
Reviewed By: M. Bollero

Date: 2/13/2025

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### Figure 3. NRCS Web Soil Survey

Natural Resource Assessment and Aquatic Resources Delineation

#### Legend

  Project Study Area

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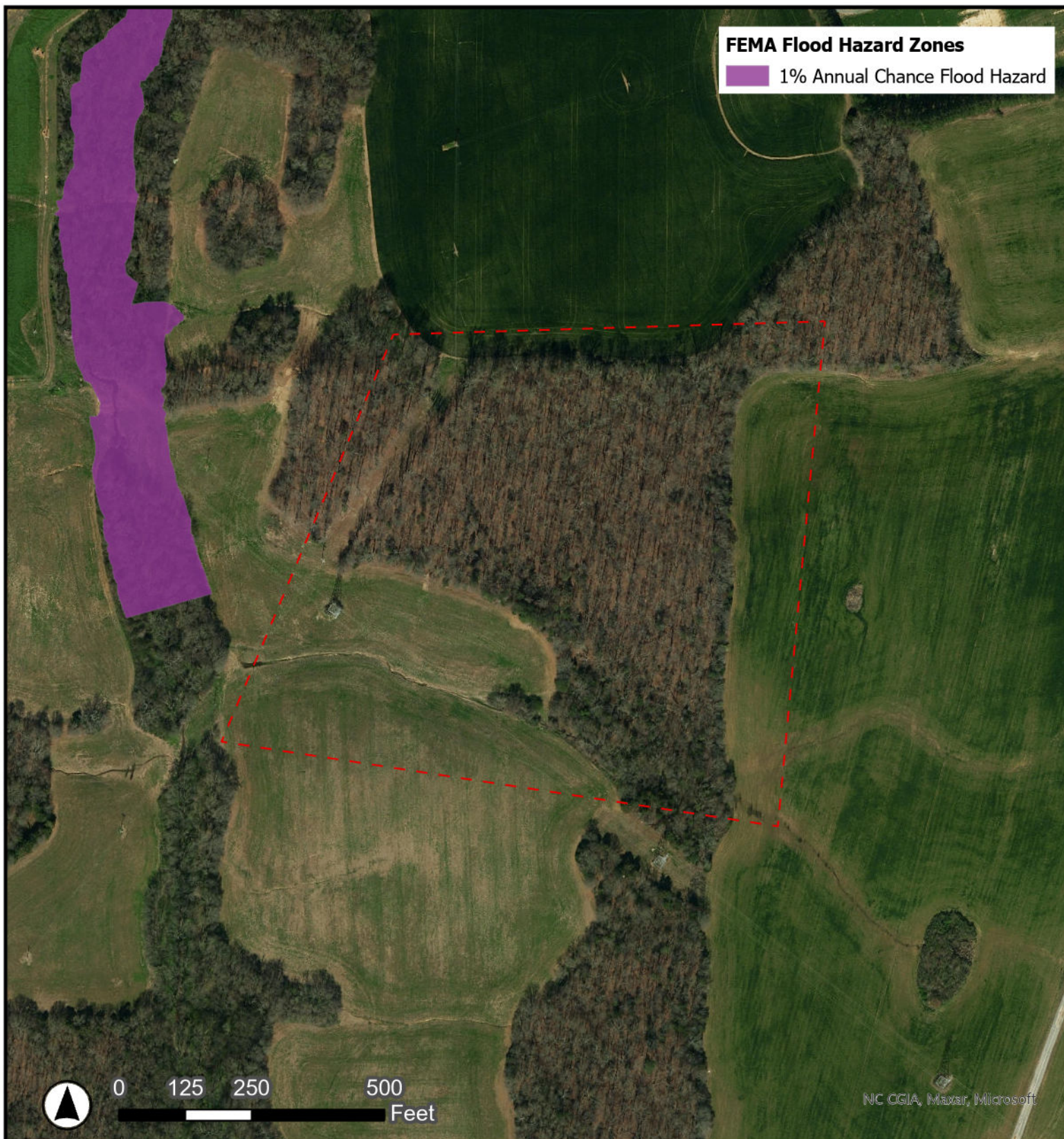
Reviewed By: M. Bollero

Date: 2/13/2025

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## Figure 4. FEMA Floodplain Panel

Natural Resource Assessment and  
Aquatic Resources Delineation

### Legend

  Project Study Area

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Project Name:  
Wingate Substation

Drawn by: W. Johnson

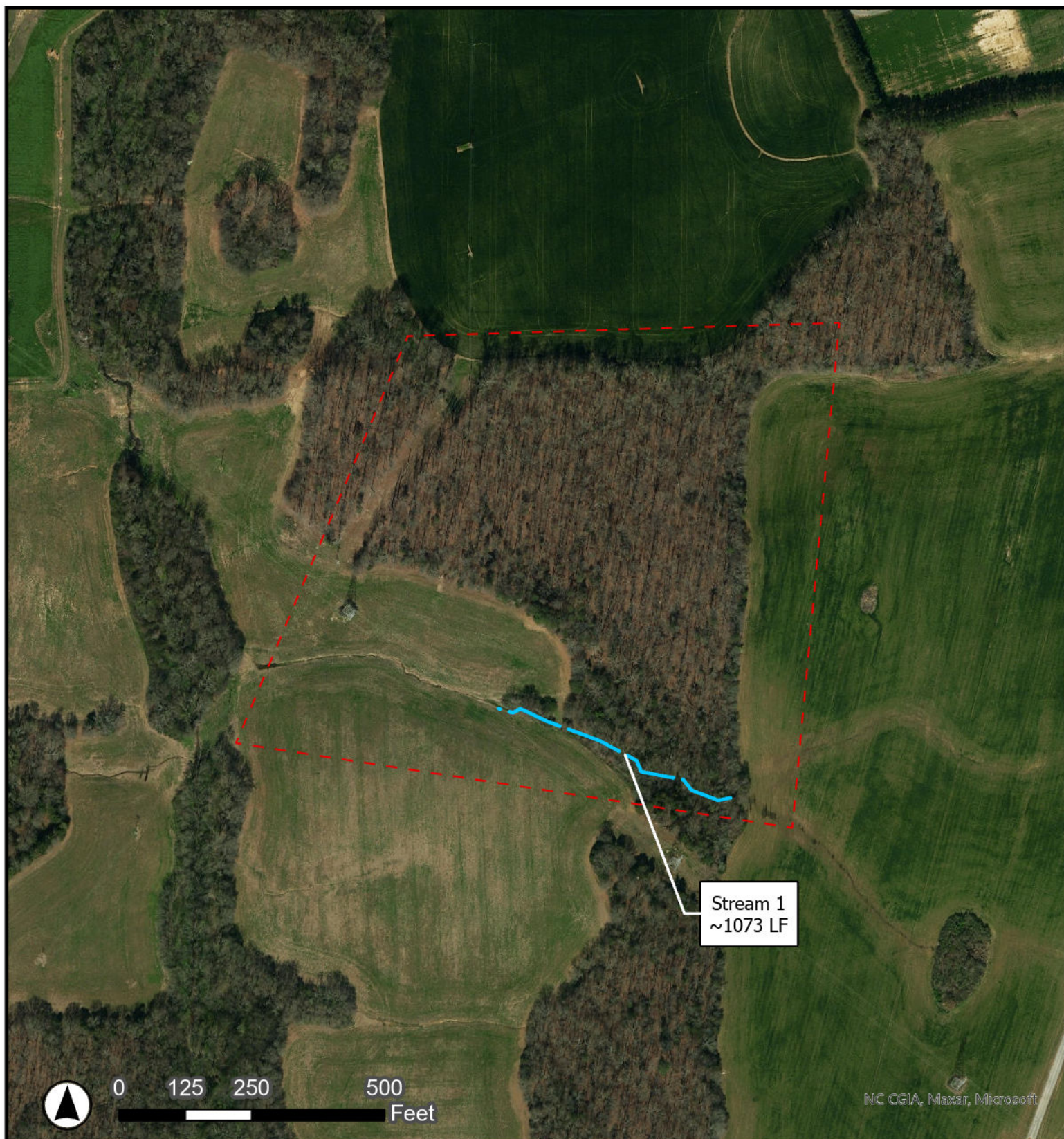
Reviewed By: M. Bollero

Date: 2/13/2025

**UnionPower  
Cooperative**  
*A member-owned energy provider*

**PIKE**  
**ENGINEERING**  
123 N White Street  
Fort Mill, SC 29715





## Figure 5. Delineation of Wetlands and Waters

Natural Resource Assessment and  
Aquatic Resources Delineation

### Legend

- Project Study Area
- Intermittent Stream

This map is for graphical purposes only and does not represent a legal survey. It is strictly for use with Pike Engineering (Pike Job No. 24-35601-000). Pike assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.

Project Name:  
Wingate Substation

Drawn by: W. Johnson

Reviewed By: M. Bollero

Date: 2/13/2025

**UnionPower  
Cooperative**  
*A member-owned energy provider*

**PIKE**  
**ENGINEERING**  
123 N White Street  
Fort Mill, SC 29715

**Appendix B**  
**Photographs**





NC CGIA, Maxar, Microsoft

## Photo Log

Natural Resource Assessment and  
Aquatic Resources Delineation

## Legend

- Project Study Area
- ➔ Photo Reference Points

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Project Name:  
Wingate Substation

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Reviewed By: M. Bollero

Date: 2/13/2025

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**ENGINEERING**  
123 N White Street  
Fort Mill, SC 29715



# Wingate Substation Photo Log

## Stream Photos



Photo 1 - View of Stream 1, looking upstream of flag 4.

## Existing Conditions



Photo 2 – View of existing conditions at the location of the proposed substation, facing southeast.



Photo 3 – View of existing conditions in the southern portion of the site, facing southeast.



Photo 4 – View of existing conditions in the western portion of the site, facing northeast.



Photo 5 – View of existing conditions in the northern portion of the site, facing northeast.

## **Appendix C**

### **U.S. Fish & Wildlife Service (USFWS) IPaC Species List**

# 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

Union County, North Carolina



## Local office

Asheville Ecological Services Field Office

☎ (828) 258-3939

📅 (828) 258-5330

160 Zillicoa Street, Suite B  
Asheville, NC 28801-1082

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 species<sup>1</sup> 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 Fisheries<sup>2</sup>).

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:

## Clams

| NAME  | STATUS     |
|---|------------|
| Carolina Heelsplitter <i>Lasmigona decorata</i><br>Wherever found<br>There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat.<br><a href="https://ecos.fws.gov/ecp/species/3534">https://ecos.fws.gov/ecp/species/3534</a> | Endangered |

## Insects

| NAME   | STATUS              |
|--|---------------------|
| Monarch Butterfly <i>Danaus plexippus</i><br>Wherever found<br>There is <b>proposed</b> critical habitat for this species. Your location does not overlap the critical habitat.<br><a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a> | Proposed Threatened |

## Flowering Plants

| NAME  | STATUS     |
|---|------------|
| Michaux's Sumac <i>Rhus michauxii</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/5217">https://ecos.fws.gov/ecp/species/5217</a>                 | Endangered |
| Schweinitz's Sunflower <i>Helianthus schweinitzii</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/3849">https://ecos.fws.gov/ecp/species/3849</a> | Endangered |

## 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 Act <sup>2</sup> and the Migratory Bird Treaty Act (MBTA) <sup>1</sup>. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

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-incidental-take-migratory-birds>
- Nationwide avoidance and minimization 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 Eagles and/or Golden Eagles in your [project](#) area.

### Measures for Proactively Minimizing Eagle Impacts

For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the [National Bald Eagle Management Guidelines](#). You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

If disturbance or take of eagles cannot be avoided, an [incidental take permit](#) may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the [Do I Need A Permit Tool](#).

For assistance making this determination for golden eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

### Ensure Your Eagle List is Accurate and Complete

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

### Review the FAQs

The FAQs below provide important additional information and resources.

| NAME  | BREEDING SEASON        |
|---|------------------------|
| <b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i><br>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.<br><a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a> | Breeds Sep 1 to Jul 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 ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "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 (|)

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.

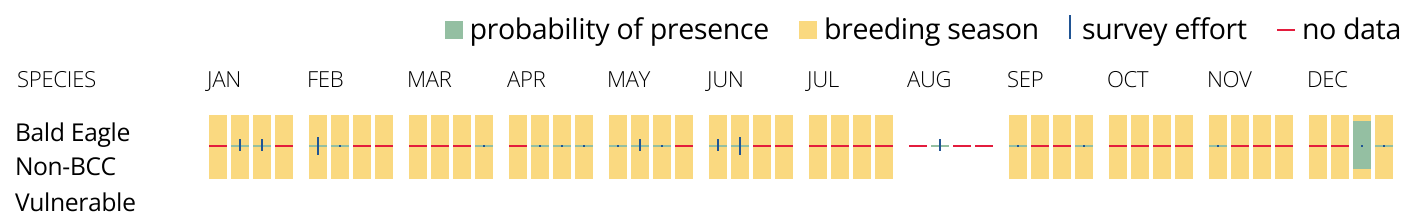
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

### 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.



## Bald & Golden Eagles FAQs



## 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 an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply).

### Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). 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 line or no data line (red horizontal) 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 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 and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

### How do I know if eagles are 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 resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), 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.

### Interpreting the Probability of Presence Graphs

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 taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

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

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.

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  $0.05/0.25 = 0.2$ .

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.

### 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 ()

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.

### 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.

## Migratory birds

The Migratory Bird Treaty Act (MBTA)<sup>1</sup> prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

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-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- 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>

### Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases [birds of concern](#), including [Birds of Conservation Concern \(BCC\)](#), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the [Nationwide avoidance and](#)

[minimization measures for birds](#) document, and any other project-specific avoidance and minimization measures suggested at the link [Measures for avoiding and minimizing impacts to birds](#) for the birds of concern on your list below.

## Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles document](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

## Review the FAQs

The FAQs below provide important additional information and resources.

| NAME  | BREEDING SEASON         |
|---|-------------------------|
| <b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i><br>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.<br><a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a> | Breeds Sep 1 to Jul 31  |
| <b>Chimney Swift</b> <i>Chaetura pelagica</i><br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.   | Breeds Mar 15 to Aug 25 |
| <b>Eastern Whip-poor-will</b> <i>Antrostomus vociferus</i><br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  | Breeds May 1 to Aug 20  |
| <b>Rusty Blackbird</b> <i>Euphagus carolinus</i><br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA   | Breeds elsewhere        |



# 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 ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "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 (|)

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.

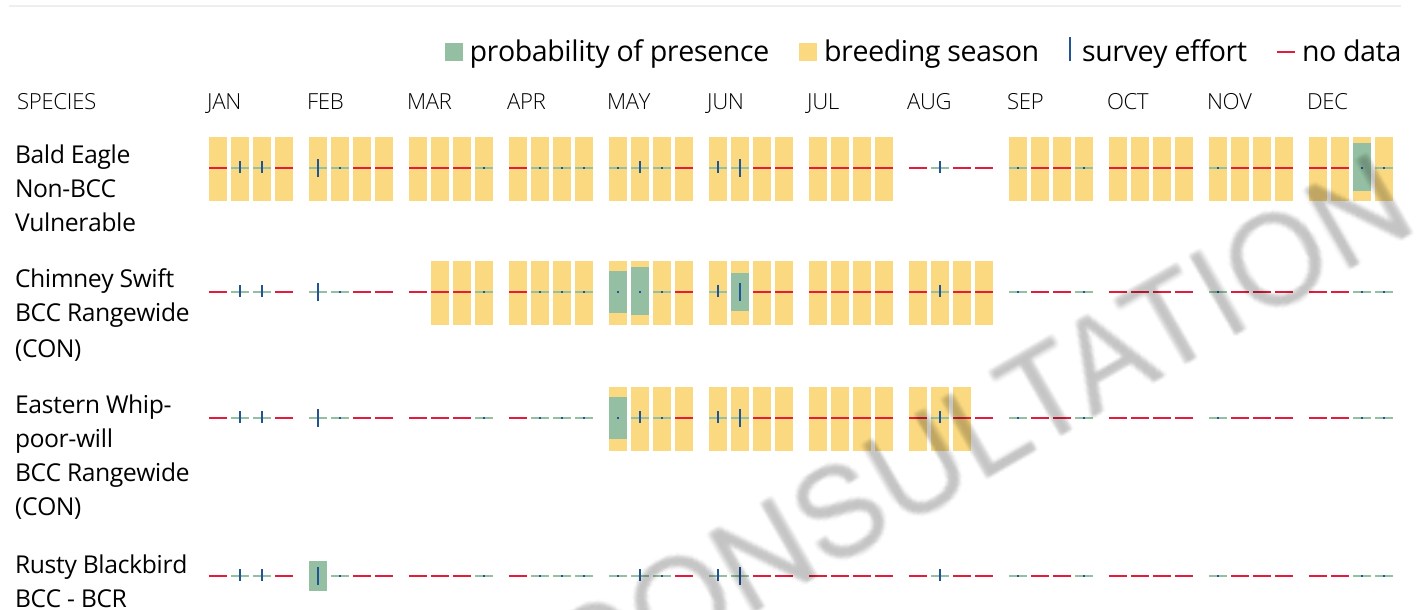
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

### 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.



## Migratory Bird FAQs

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

[Nationwide Avoidance & Minimization Measures for Birds](#) describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed 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 [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the [Bald and Golden Eagle Protection Act](#) and those species marked as "Vulnerable". See the FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

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) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle ([Bald and Golden Eagle Protection 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, and to verify survey effort when no results present, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

### **Why are subspecies showing up on my list?**

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

### **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 resident), you may query your location using the [RAIL Tool](#) and view 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 IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), 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 [Bald and Golden Eagle Protection 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 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 BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

### **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.

### **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 look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). 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 does not represent all birds present in your project area. 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 and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

### **Interpreting the Probability of Presence Graphs**

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 taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

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

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.

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  $0.05/0.25 = 0.2$ .

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.

#### **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 ()**

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.

#### **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.

## Facilities

### Wildlife refuges and fish hatcheries

Refuge and fish hatchery information is not available at this time

## 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](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.



This location overlaps the following wetlands:

RIVERINE

[R4SBC](#)

[R5UBH](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

**NOTE:** This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

#### 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.