



March 25, 2015

Reference: **Protected Species Assessment**
Capps II Industrial Park Site
Mark Author Road
Mullins, Marion County, South Carolina
S&ME Project No. 4263-15-023

S&ME, Inc. (S&ME) is pleased to submit this report detailing our Protected Species Assessment for the above-referenced subject property (i.e. the Property) located in Marion County, South Carolina. This work was performed in accordance with S&ME Proposal No. 42-1400259r1, dated February 11, 2015. This report and the on-site pedestrian survey have been conducted to assess the potential for the presence of protected species as part of the South Carolina Department of Commerce Industrial Site Certification Program.

The Property totals approximately 168 acres, and is located west of and adjacent to Mark Author Road, in Mullins, South Carolina. Exhibit 1 of this report presents the approximate location of the Property. The Property is identified on a portion of the United States Geological Survey (USGS) 7.5-minute Mullins, S.C. topographic quadrangle map, dated 1981. Exhibit 2 of this report depicts the approximate location of the Property overlaid on the referenced topographic quadrangle.

1.0 SITE/HABITAT DESCRIPTIONS

The site is located in northeastern Marion County within the Coastal Plain Physiographic Province of South Carolina. The majority of the Property has historically been used for agricultural purposes, with the remainder of the Property consisting of timberland. The surrounding properties consist of residential developments to the east, with agricultural fields and forestlands to the north, south and west. This Property is divided from north to south by a railroad line.

Approximately 70% of the Property is comprised of agricultural fields that are currently being farmed. The remaining 30% of the Property is comprised of densely-vegetated forested areas and wetlands that are dominated by mixed hardwoods and pine including species such as red maple (*Acer rubrum*), water oak (*Quercus nigra*), willow oak (*Q. phellos*), and loblolly pine (*Pinus taeda*). The understory in these areas is dominated by a dense layer of fetterbush (*Lyonia lucida*) and ink-berry (*Ilex glabra*).

2.0 PROTECTED SPECIES

The U.S. Fish & Wildlife Service (USF&WS) *South Carolina List of At-risk, Candidate, Endangered, and Threatened Species – Marion County* (dated February 24, 2015), South Carolina Department of Natural Resources (SCDNR) *Rare, Threatened, and Endangered Species and Communities Known to Occur in Marion County, SC* (dated June 11, 2014) and the SCDNR Heritage Trust Program (SCDNR HTP) *Rare, Threatened & Endangered Species Inventory Species Inventory, Mullins, S.C. Quadrangle Map* (updated on January 17, 2006) were consulted regarding current federally protected species within Marion County. The information was reviewed prior to conducting the site visit, to determine if known locations of protected species were located on or near the Property. The referenced databases have six federally protected species listed for Marion County, South Carolina. These species include:

Common Name	Scientific Name	Status*
Bald eagle	<i>Haliaeetus leucocephalus</i>	BGEPA
Red-cockaded woodpecker	<i>Picoides borealis</i>	E
Wood stork	<i>Mycteria americana</i>	T
Atlantic sturgeon	<i>Acipenser oxyrichus</i>	E
Shortnose sturgeon	<i>Acipenser brevirostrum</i>	E
Pondberry	<i>Lindera melissifolia</i>	E

*E = Endangered, BGEPA = Bald and Golden Eagle Protection Act

A pedestrian field review was performed for protected species and suitable habitats to support protected species on March 18, 2015, by Mr. Charles Oates, of S&ME. Mr. Oates has over fifteen years of conducting protected species and critical habitat assessments. The results of the pedestrian field review are included in the following sections of this report, as well as a discussion of the above species, where applicable.

Plants:

No Effect

Pondberry is a deciduous shrub that has pale yellow flowers that occur in the spring before the leaves emerge. This species is typically found in wetland areas such as bottomland hardwood swamps, and the margins of sinks, ponds, and other depressions in the coastal areas of South Carolina. This species flowers from February through mid-March. During the site reconnaissance, no specimens of pondberry, or suitable habitat to support this species were observed on the Property.

Vertebrates:

No Effect

Birds:

Even though the bald eagle was taken off of the threatened species list, it is still offered protection under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), enacted in 1940. The bald eagle requires mature trees for nesting that are in close proximity to large bodies of water to feed. Site observations revealed that the suitable nesting and/or foraging habitat does not exist on or adjacent to the Property.

The red-cockaded woodpecker requires mature longleaf pines (*Pinus palustris*) or loblolly pine with an open understory that does not exceed 15' in height, and evenly spaced trees with an open, park-like stand. Site observation revealed that suitable nesting and/or foraging habitat does not exist on or adjacent to the Property.

The wood stork typically requires coastal areas, tidal waters, marshes, swamps, streams and mangroves for nesting and feeding. The wetlands on the Property are comprised of dense area within loblolly pine monoculture. Site observation revealed that suitable nesting and/or foraging habitat does not exist on or adjacent to the Property.

Reptiles & Amphibians:

There are no federally protected species of reptile or amphibians listed for Marion County.

Fish and Marine Species:

The Property does not border a large river system or the Atlantic Ocean, and there is no habitat to support protected the Atlantic or shortnose sturgeon.

Mammals:

There are no federally protected species of mammals listed for Marion County.

Invertebrate:

No Effect

Freshwater Mussels:

There are no federally protected species of freshwater mussel listed for Marion County.

3.0 METHODOLOGY

S&ME reviewed the SCDNR and the USF&WS databases for records of protected species known to occur within Marion County, S.C. The purpose of the search was to identify current and historic documented occurrences of protected species located within this county. Additionally, S&ME personnel reviewed available supporting information including the USGS Mullins, S.C. Topographic Quadrangle and applicable soil survey data. The purpose of reviewing this supporting information was to identify drainage features and soil types in the site area that may be suitable habitat for protected species. During field reconnaissance, S&ME personnel integrated the information obtained from

this supporting documentation with field evaluation for the presence of protected species or potential protected species habitat.

4.0 SUMMARY AND CONCLUSIONS

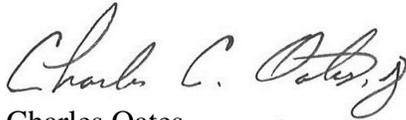
Based on the literature review, habitat assessment, and pedestrian field review of the Property, it is our opinion that future development of the Property will have no effect on federally listed protected species for Marion County.

5.0 CLOSURE

S&ME appreciates the opportunity to be of service to you by performing this Protected Species Assessment for the site. Please contact us at (843) 347-7800, with questions regarding this report, or if you require additional information.

Sincerely,

S&ME, Inc.

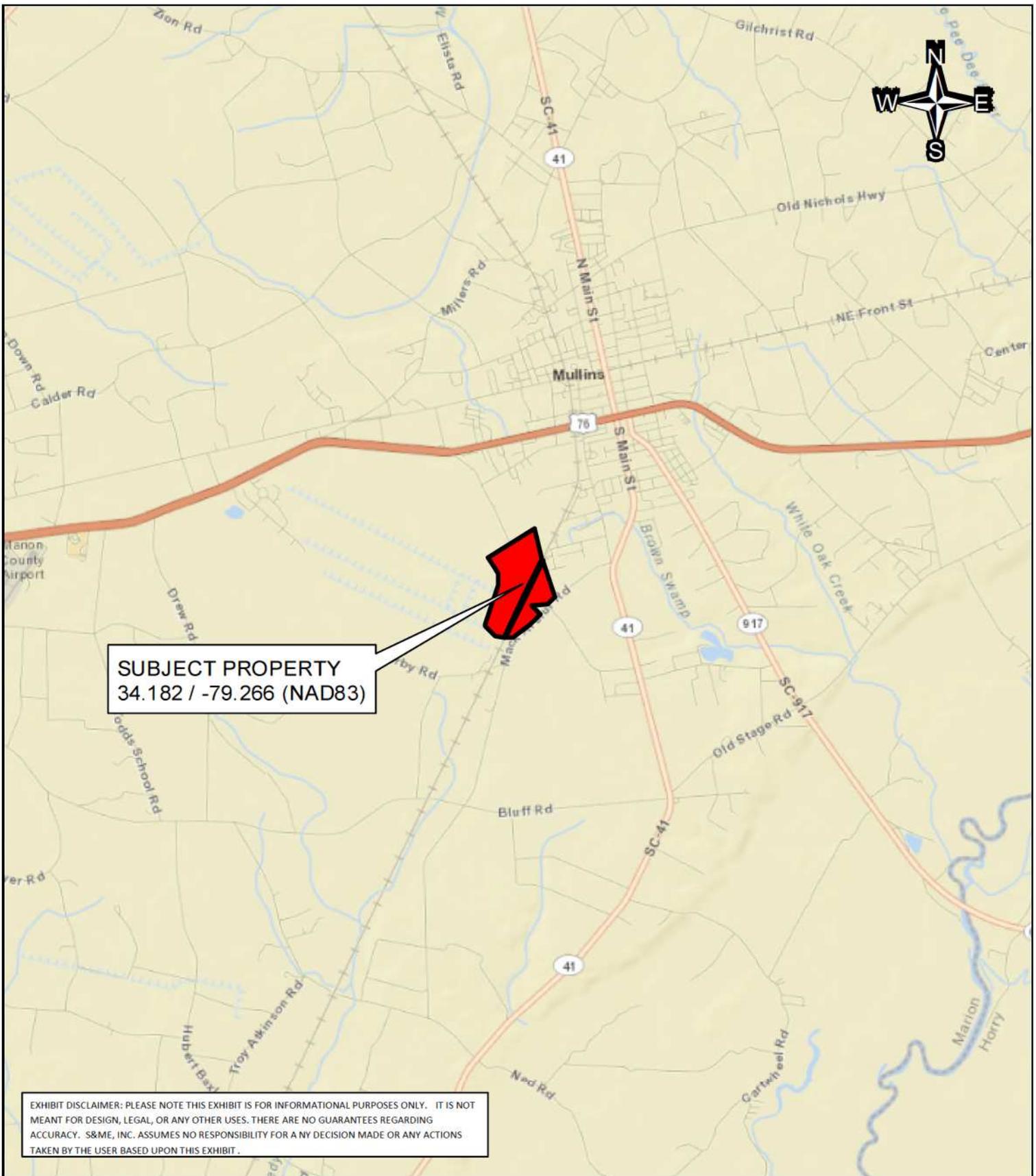


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Attachments: Exhibit 1: Project Area
Exhibit 2: Topographic Exhibit
Exhibit 3: Aerial Photograph
Exhibit 4: Soils Survey Exhibit
Site Photographs
USF&WS and SCDNR Database Information



SCALE:	1"= 1 MILE
SOURCE:	ESRI
SOURCE DATE:	2010
DATE:	FEBRUARY 2015

PROJECT AREA
CAPPS II INDUSTRIAL PARK SITE
MARION COUNTY, SC

S & ME PROJECT # 4263-15-023



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FIGURE #
1



PORTION OF THE USGS 7.5-MIN. MULLINS, S.C. TOPOGRAPHIC QUADRANGLE



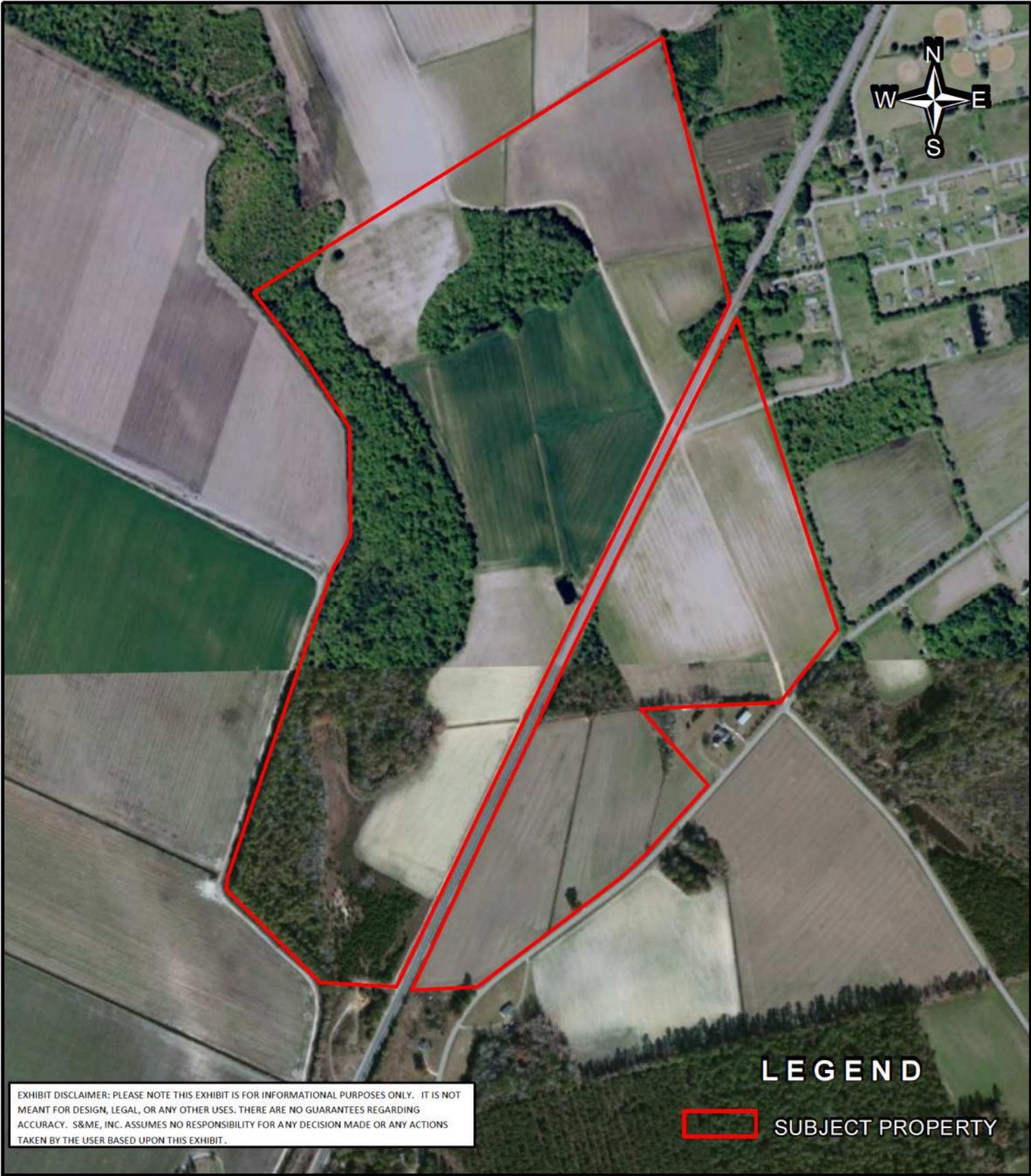
SCALE:	1"= 1,000'
SOURCE:	USGS
SOURCE DATE:	1981
DATE:	FEBRUARY 2015

**TOPOGRAPHIC EXHIBIT
CAPPS II INDUSTRIAL PARK SITE
MARION COUNTY, SC**

S & ME PROJECT # 4263-15-023



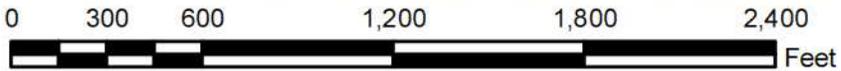
FIGURE #
2



LEGEND

 SUBJECT PROPERTY

EXHIBIT DISCLAIMER: PLEASE NOTE THIS EXHIBIT IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT MEANT FOR DESIGN, LEGAL, OR ANY OTHER USES. THERE ARE NO GUARANTEES REGARDING ACCURACY. S&ME, INC. ASSUMES NO RESPONSIBILITY FOR ANY DECISION MADE OR ANY ACTIONS TAKEN BY THE USER BASED UPON THIS EXHIBIT.



SCALE:	1"= 600'
SOURCE:	ESRI
SOURCE DATE:	2010
DATE:	FEBRUARY 2015

**AERIAL PHOTOGRAPH
CAPPS II INDUSTRIAL PARK SITE
MARION COUNTY, SC**

S & ME PROJECT # 4263-15-023



FIGURE #
3

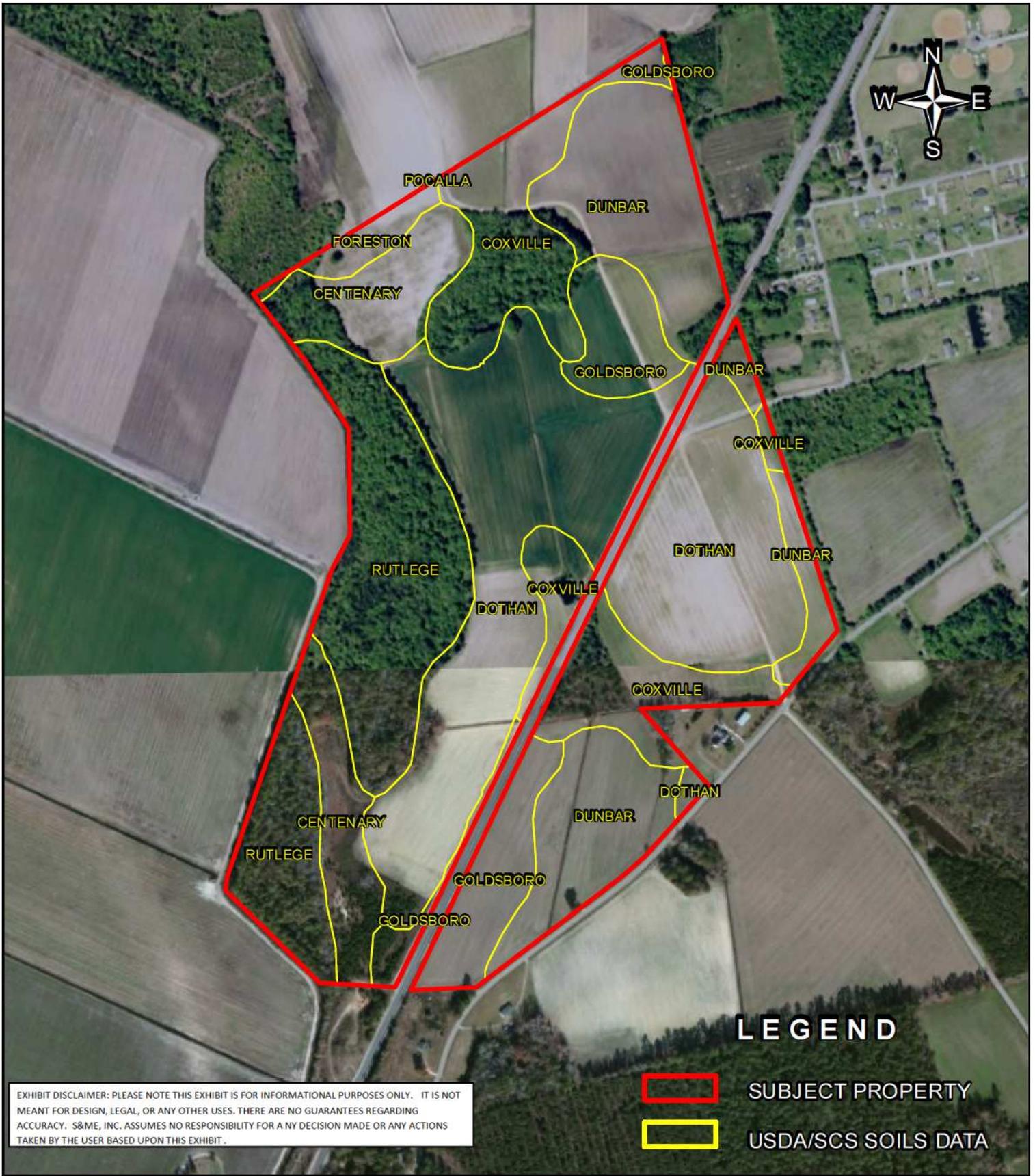
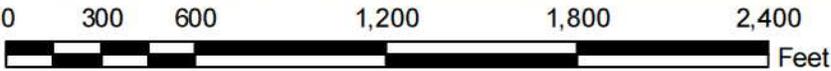


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- SUBJECT PROPERTY
- USDA/SCS SOILS DATA



SCALE:	1" = 600'
SOURCE:	SCDNR GIS SITE
SOURCE DATE:	1974
DATE:	FEBRUARY 2015

**SOIL SURVEY EXHIBIT
CAPPS II INDUSTRIAL PARK SITE
MARION COUNTY, SC**

S & ME PROJECT # 4263-15-023

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FIGURE #	4
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Rare, Threatened, and Endangered Species and Communities Known to Occur in Marion County, SC
June 11, 2014

Scientific Name	Common Name	USES Designation	State Protection	Global Rank	State Rank
<u>Vertebrate Animals</u>					
<i>Clemmys guttata</i>	Spotted Turtle		ST: Threatened	G5	S5
<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat		SE: Endangered	G3G4	S2?
<i>Haliaeetus leucocephalus</i>	Bald Eagle		ST: Threatened	G5	S2
<i>Heterodon simus</i>	Southern Hognose Snake			G2	SNR
<i>Picoides borealis</i>	Red-cockaded Woodpecker	LE: Endangered	SE: Endangered	G3	S2
<i>Pituophis melanoleucus</i>	Pine or Gopher Snake			G4	S3S4
<u>Animal Assemblage</u>					
Waterbird Colony					
<u>Vascular Plants</u>					
<i>Burmannia biflora</i>	Northern Burmannia			G4G5	S2
<i>Carex cherokeensis</i>	Cherokee Sedge			G4G5	S2
<i>Carex crux-corvi</i>	Ravenfoot Sedge			G5	S2
<i>Carex socialis</i>	Social Sedge			G4	S1
<i>Eupatorium recurvans</i>	Coastal-plain Thorough-wort			G3G4Q	S1?
<i>Ilex amelanchier</i>	Sarvis Holly			G4	S3
<i>Isoetes riparia</i>	River Bank Quillwort			G5	S2
<i>Juncus abortivus</i>	Pinebarren Rush			G4G5	S2
<i>Lachnocaulon beyrichianum</i>	Southern Bog-button			G4	S2
<i>Lindera melissifolia</i>	Pondberry	LE: Endangered		G2G3	S2
<i>Macbridea caroliniana</i>	Carolina Bird-in-a-nest			G2G3	S3
<i>Peltandra sagittifolia</i>	Spoon-flower			G3G4	S2
<i>Rhexia aristosa</i>	Awned Meadowbeauty			G3G4	S3
<i>Scleria reticularis</i>	Reticulated Nutrush			G4	S1
<i>Thalia dealbata</i>	Powdery Thalia			G4	S2
<u>Communities</u>					
Bay forest					
Bottomland hardwoods					
Pocosin					
Pond pine woodland					

Scientific Name	Common Name	USES Designation	State Protection	Global Rank	State Rank
Swale pocosin				G2?	S2?
Upland pine - wiregrass woodland				G3	S3
Xeric sandhill scrub				G5	S3
<u>Ecological</u>					
Carolina bay				GNR	SNR

South Carolina List of At-Risk, Candidate, Endangered, and Threatened Species - Marion County

CATEGORY	COMMON NAME/STATUS	SCIENTIFIC NAME	SURVEY WINDOW/ TIME PERIOD	COMMENTS
Amphibian		None Found		
	American wood stork (T)	<i>Mycteria americana</i>	February 15-September 1	Nesting season
Bird	Bald eagle (BGEPA)	<i>Haliaeetus leucocephalus</i>	October 1-May 15	Nesting season
	Red-cockaded woodpecker (E)	<i>Picoides borealis</i>	April 1-July 31	Nesting season
Crustacean		None Found		
	American eel (ARS)	<i>Anguilla rostrata</i>	March 1-May 30; October 1-December 15	Temperature dependent: normally (17-20°C); can be found between 13-25°C
Fish	Atlantic sturgeon* (E)	<i>Acipenser oxyrinchus*</i>	February 1-April 30	Spawning migration
	Blueback herring (ARS)	<i>Alosa aestivalis</i>	Mid-January-mid May	Peak: March-April
	Robust rehorse (ARS)	<i>Moxostoma robustum</i>	Late April-early May	Temperature dependent: 16-24°C
	Shortnose sturgeon* (E)	<i>Acipenser brevirostrum*</i>	February 1-April 30	Spawning migration
Insect		None Found		
	Rafinesque's big-eared bat (ARS)	<i>Corynorhinus rafinesquii</i>	Year round	Found in mines, caves, large hollow trees, buildings, and bat towers
Mammal	Tri-colored bat (ARS*)	<i>Perimyotis subflavus</i>	Year round	Found in mines and caves in the winter
Mollusk		None Found		
	Carolina-birds-in-a-nest (ARS)	<i>Macbridea caroliniana</i>	July-November	
Plant	Pondberry (E)	<i>Lindera melissifolia</i>	February-October	
	Yellow pond lily (ARS)	<i>Nuphar lutea ssp. sagittifolia</i>	April-October	
	Southern hognose snake (ARS)	<i>Heterodon simus</i>	Most of the year	
Reptile	Spotted turtle (ARS)	<i>Clemmys guttata</i>	February-mid April	

** The U.S. Fish and Wildlife Service (FWS) and NMFS share jurisdiction of this species

ARS Species that the FWS has been petitioned to list and for which a positive 90-day finding has been issued (listing may be warranted); information is provided only for conservation actions as no Federal protections currently exist.

ARS* Species that are either former Candidate Species or are emerging conservation priority species

BGEPA Federally protected under the Bald and Golden Eagle Protection Act

C FWS or NMFS has on file sufficient information on biological vulnerability and threat(s) to support proposals to list these species

CH Critical Habitat

E Federally Endangered

P or P - CH Proposed for listing or critical habitat in the Federal Register

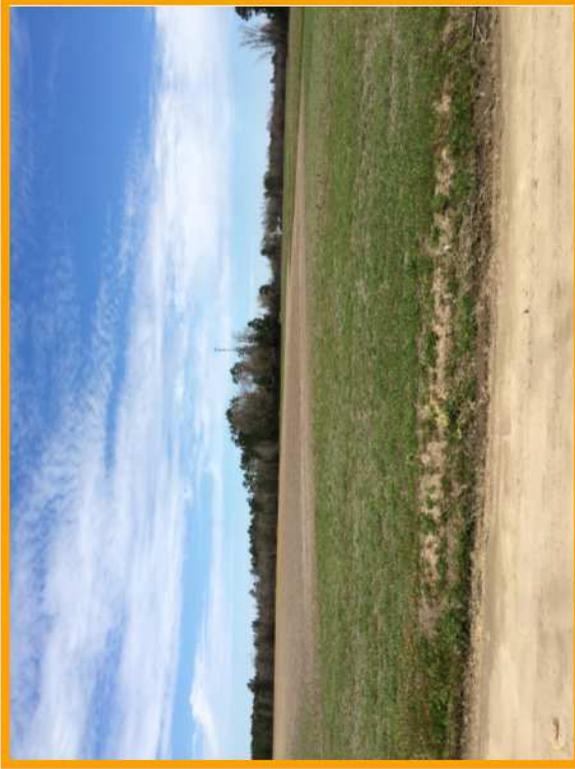
S/A Federally protected due to similarity of appearance to a listed species

T Federally Threatened

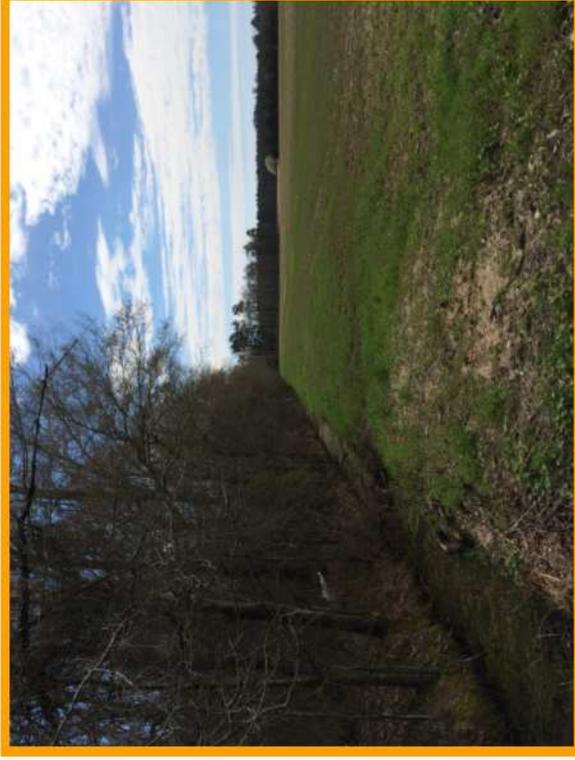
These lists should be used only as a guideline, not as the final authority. The lists include known occurrences and areas where the species has a high possibility of occurring. Records are updated as deemed necessary and may differ from earlier lists.

For a list of State endangered, threatened, and species of concern, please visit <https://www.dnr.sc.gov/species/index.html>.

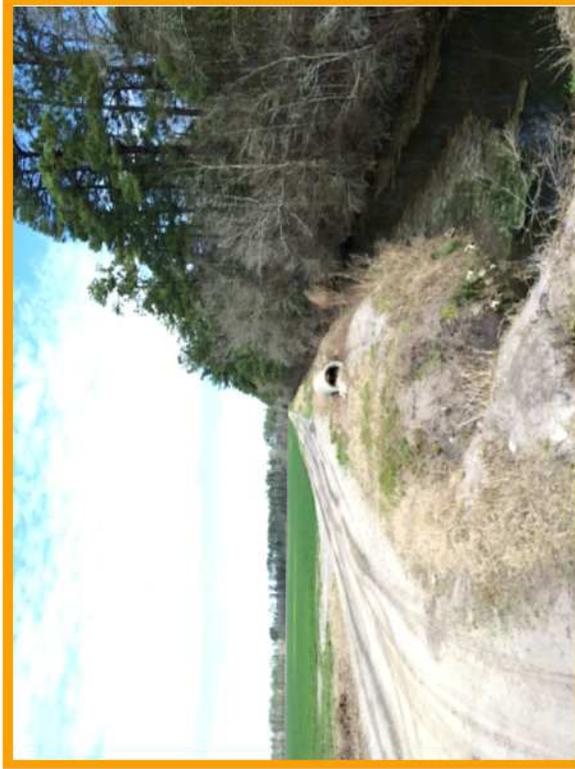
2/24/2015



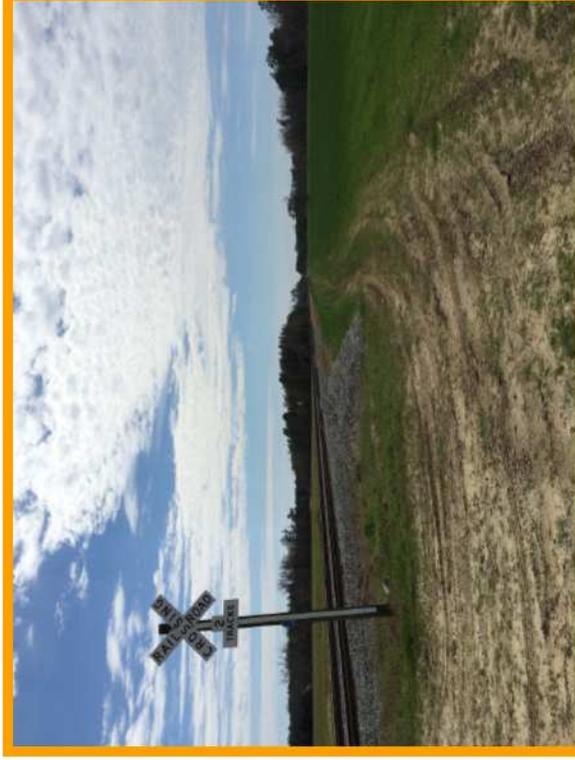
1 Typical agricultural field on the Property.



2 Typical transition from forested wetland areas to agricultural fields.



3 Typical transition from forested wetland areas to agricultural fields.



4 Railroad line that transects the Property from north to south.



Site Photographs Capps II Industrial Park Site

S&ME Project No.: 4263-15-023

Taken by: CO

Date Taken: 3/18/15