

Threatened & Endangered Species Survey

Leake County EDD – Site 2 - Northeast

Carthage, Leake County, Mississippi

November 13, 2023 | Terracon Project No. EB237180



Prepared for:

Mississippi Department of Environmental Quality
Jackson, Mississippi



Prepared by:

Terracon Consultants, Inc.
Ridgeland, Mississippi



Nationwide
Terracon.com

- Facilities
- Environmental
- Geotechnical
- Materials



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November 13, 2023

Mississippi Department of Environmental Quality
Groundwater and Remediation Department
P.O. Box 2261
Jackson, Mississippi 39225

Attn: Mr. Thomas Wallace
E: twallace@mdeq.ms.gov
P: (601) 961-5117

RE: Threatened and Endangered Species Survey
Leake County EDD – Site 2 - Northeast
Carthage, Leake County, Mississippi
Terracon Project No. EB237180

Dear Mr. Wallace

Terracon Consultants, Inc. (Terracon) is pleased to submit the enclosed Threatened & Endangered Species Survey report for the above-referenced site. This assessment was performed in accordance with the Mississippi Department of Environmental Quality (MDEQ) work order No: 1865-237149-3 dated August 24, 2023.

We appreciate the opportunity to be of service to you on this project. If there are any questions regarding this report or if we may be of further assistance, please contact us at (601) 956-8750.

Sincerely,
Terracon Consultants, Inc.

A handwritten signature in blue ink that reads "Spencer J. McQuaig for:".

Spencer J. McQuaig
Staff Geologist

A handwritten signature in blue ink that reads "Jim Baxter for:".

Jim Baxter
Regional Ecologist Specialist

Explore with us

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- Mississippi Department of Wildlife Parks and Fisheries Rare Species and Mississippi Natural Heritage Program – State Listed Species

APPENDIX C

- Site Photographs

1.0 INTRODUCTION

The following report details methodology and an assessment of survey results for the threatened and endangered species survey completed in October 2023 for the project site described below and depicted in Appendix A. This threatened and endangered species survey was conducted within the site boundaries and immediate vicinity of the site to determine the occurrence of, or potential for occurrence of animal and plant species recognized as threatened or endangered within the boundaries of the referenced site. Completion of this survey was directed by and complies with the Federal Endangered Species Act (ESA) of 1973. The scope of services includes a habitat assessment for suitable habitat for applicable species and observations for individuals; however, full presence/absence surveys are not included.

1.1 Site Location

The approximate 23.06-acre site is located north of the city of Carthage, Mississippi located in Leake County, Mississippi. The approximate center of the site is located at 32.46.14N / 89°31.40W.

The project site is located within the Southern Hilly Gulf Coastal Plain (65d) Ecoregions of Mississippi. The dissected irregular plains and gently rolling low hills of the Southern Hilly Gulf Coastal Plain developed over diverse east-west trending bands of sand, clay, and marl formations. The region extends from Mississippi through Alabama and into the eastern edge of Georgia and has more rolling topography, higher elevations, and more relief than 65a, 65b, and 65f. Natural vegetation is oak-hickory-pine with a gradual transition to southern mixed forest in the south. Land cover is mostly forest and woodland, with some cropland and pasture.

1.2 Existing Conditions

At the time of the site reconnaissance, land cover primarily consisted of open pastureland and a small area of a mixture of hard wood and pine. The site boundary is located northeast of Carthage, Mississippi. The adjoining properties generally consist of wooded, and grassed land, existing roadways, commercial, and residential structures. The general existing conditions are depicted on Exhibit 1 in Appendix A, and photos of the site taken during the field visit are included in Appendix C.

1.3 Proposed Project

Terracon understands the proposed project consists of redevelopment of the site for light industrial use. This survey was conducted during the beginning stages of the project planning. Therefore, the extent or type of Federal action(s) involved as a part of the project, if any, is unknown at this time. If Federal action(s) are involved in the project and impacts to T&E species occur, formal Section 7 consultation is required. If Federal action(s) are not involved and impacts to T&E species occur, Section 10 consultation would apply.

2.0 RECORDS REVIEW

The following federally threatened, and endangered species are listed by the United States Fish and Wildlife Service (USFWS) Mississippi Ecological Services Field Office as potentially occurring within the project boundaries based on the information obtained from the Information, Planning, and Conservation (IPaC) search engine (Table 1).

Table 1. USFWS IPaC Official Species List

Class	Listed Species	Federal Status
Mammals	Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	Endangered
Reptiles	Alligator Snapping Turtle (<i>Macrochelys temminckii</i>)	Proposed Threatened
	Ringed Map Turtle (<i>Graptemys oculifera</i>)	Threatened
Insects	Monarch Butterfly (<i>Danaus plexippus</i>)	Candidate

Sources: USFWS – IPaC Official Species List October 23, 2023

2.1 Federal Status Explanation

According to the ESA, threatened species are those species “which are likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range”. Species listed as endangered are considered to have a higher risk of extinction and are defined by the ESA as “any species which is in danger of extinction throughout all or a significant portion of its range”.

2.1.1 Critical Habitat

On October 23, 2023 Terracon utilized the USFWS IPaC search engine to identify critical habitat that may occur on the site. According to IPaC (project code: 2024-0007864), there are no critical habitats, national wildlife refuges or fish hatcheries documented within or adjacent to the project boundaries. A copy of the USFWS IPaC Report is included in Appendix B.

2.2 State-Listed Species

The Mississippi Department of Wildlife, Parks, and Fisheries (MDWPF) through the Mississippi Natural Heritage Program (MSNHP) Rare Species by County listed 21 state protected species as potentially occurring in Leake County, Mississippi. The Leake County list was reviewed as applicable to the project location (Table 2).

Table 2. MDWF State Listed Species for Leake County, MS

Class	Listed Species	Federal Status
Mammals	Louisiana Black Bear (<i>Ursus americanus luteolus</i>)	Endangered

3.0 HABITAT ASSESSMENT

A field survey was conducted in October 2023 by Terracon personnel to identify suitable habitat for federally threatened and endangered species protected by the ESA. During the field survey, plant communities and habitats were observed and noted to determine if they matched habitat types where the listed species have the potential to occur. The existing site conditions are depicted in Appendix A Exhibit 5. The habitat classifications and associated descriptions are discussed below.

3.1 Pastureland and Forested Pines

The majority of the site was found to be open vegetated pastureland with a mixture of hardwoods and pines to the south and southeast portion of the site. The canopy primarily consisted of loblolly pine (*Pinus taeda*), the midstory primarily consisted of a mixture of hardwood pine forest and cleared areas.

4.0 EFFECT DETERMINATIONS

The following determinations were made for each species, based on the likelihood of that species occurring on the site, or being impacted by development of the site. These effect determinations are listed in order of priority from lowest to highest and are based on USFWS standard language implemented for Section 7 Consultation.

- “No effect” – will not affect listed species
- “May affect, not likely to adversely affect” (MANLAA) - effects are expected to be completely beneficial, discountable, or insignificant
- “May affect, likely to adversely affect” (MALAA) - adverse effects to listed species may occur

The following is a brief description of each federally and state listed species located on the IPaC Official Species List and the Mississippi Natural Heritage Program for the site. The site was surveyed for each of the species and its recognized habitat. Comments are provided regarding results of the onsite survey with regard to habitat and occurrence.

Table 3: Species Effect Finding

Species	Status ¹	Habitat	Finding
Ringed Map Turtle (<i>Graptemys oculifera</i>)	LT	The ringed sawback prefers a riverine environment with moderate current, sandbars for nesting an abundance of logs, snags, and downed treetops on which it can bask. River must be wide enough to allow for sunlight for multiple hours a day.	No Effect
Alligator Snapping Turtle (<i>Macrochelys temminckii</i>)	LT	Alligator snapping turtles are generally found in deeper water of large rivers and their major tributaries; however, they are also found in a wide variety of habitats, including small streams, bayous, canals, swamps, lakes, reservoirs, ponds, and oxbows (a lake that forms when a meander of a river is cut off)	No Effect
Monarch Butterfly (<i>Danaus plexippus</i>)	C	Found in a variety of habitats throughout North America. This species needs milkweed (<i>Asclepias</i> spp.) for breeding.	No Effect

Species	Status ¹	Habitat	Finding
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	LE	Found primarily in forested habitats, especially boreal forests, and typically roost in hardwood trees during the summer.	MANLAA
Louisiana Black Bear (<i>Ursus americanus luteolus</i>)	LE	Found primarily in the forested wetlands of the Mississippi Alluvial Valley; however, have been sighted in almost every parish in Louisiana. Range has expanded into upland areas including piney woods habitat west and east of the Mississippi River. Generally, require the dense cover and diversity of food resources that healthy forests provide	No Effect

¹Species Status: FE= Federally Endangered; FT= Federally Threatened; PT=Proposed Threatened, FC=Federal Candidate Species, SE=State Endangered, ST=State Threatened, SR=State Restricted

5.0 FINDINGS AND CONCLUSIONS

A “No Effect” determination was given to the Ringed Map Turtle, Alligator Snapping Turtle, and Louisiana Black Bear based on the lack of suitable habitat noted onsite. A determination key was conducted for the Northern Long Eared Bat and an effect finding of “May Affect Not Likely to Adversely Affect” was the result. Upon client review and approval, Terracon will provide this report to USFWS and MDWPF NHP for comment and concurrence of effect determinations for federal and state listed species, if requested by the client.

6.0 GENERAL COMMENTS

This survey was performed in accordance with generally accepted practices of this profession undertaken in similar studies at the same time and in the same geographical area. This report is for the exclusive use of the client for the project being discussed. No warranties, either expressed or implied, are intended or made. It should be noted that USFWS has specific survey windows and time periods established for surveys of listed species. The findings of this survey are constrained by the project schedule, which may not coincide with the applicable survey windows. USFWS may require species to be reevaluated within the established surveys windows. In conducting the limited scope of services described herein, certain sources of information and public records were reviewed, and Terracon cannot

guarantee the accuracy of the information. No biological assessment can wholly eliminate uncertainty regarding the potential for concerns in connection with a project.

7.0 REFERENCES

Information, Planning, and Conservation (IPAC) online screening tool (March 2023).

“Mississippi Department of Wildlife Parks and Fisheries Rare Species and Mississippi Natural Heritage Program”

accessed in October 2023 and retrieved from

<https://www.mdwfp.com/media/301899/this-is-the-print-version-of-endangered-species-of-mississippi-as-it-went-to-print-may-through-june-2014.pdf>

APPENDIX A

Exhibit 1 – Site Location Map

Exhibit 2 - Topographic Map

Exhibit 3 - USFWS NWI Map

Exhibit 4 - NRCS Soils Map

Exhibit 5 - Habitat Map



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Legend

— Site 2 NE Study Area



0 250 500 1,000
Feet

DATA SOURCES: MSDEQ, © OpenStreetMap (and contributors, CC-BY-SA, Esri, HERE, Garmin, IPC, Maxar
ESRI - Basemaps

Project No.:	EB237180
Date:	Sep 2023
Drawn By:	NRM
Reviewed By:	DB



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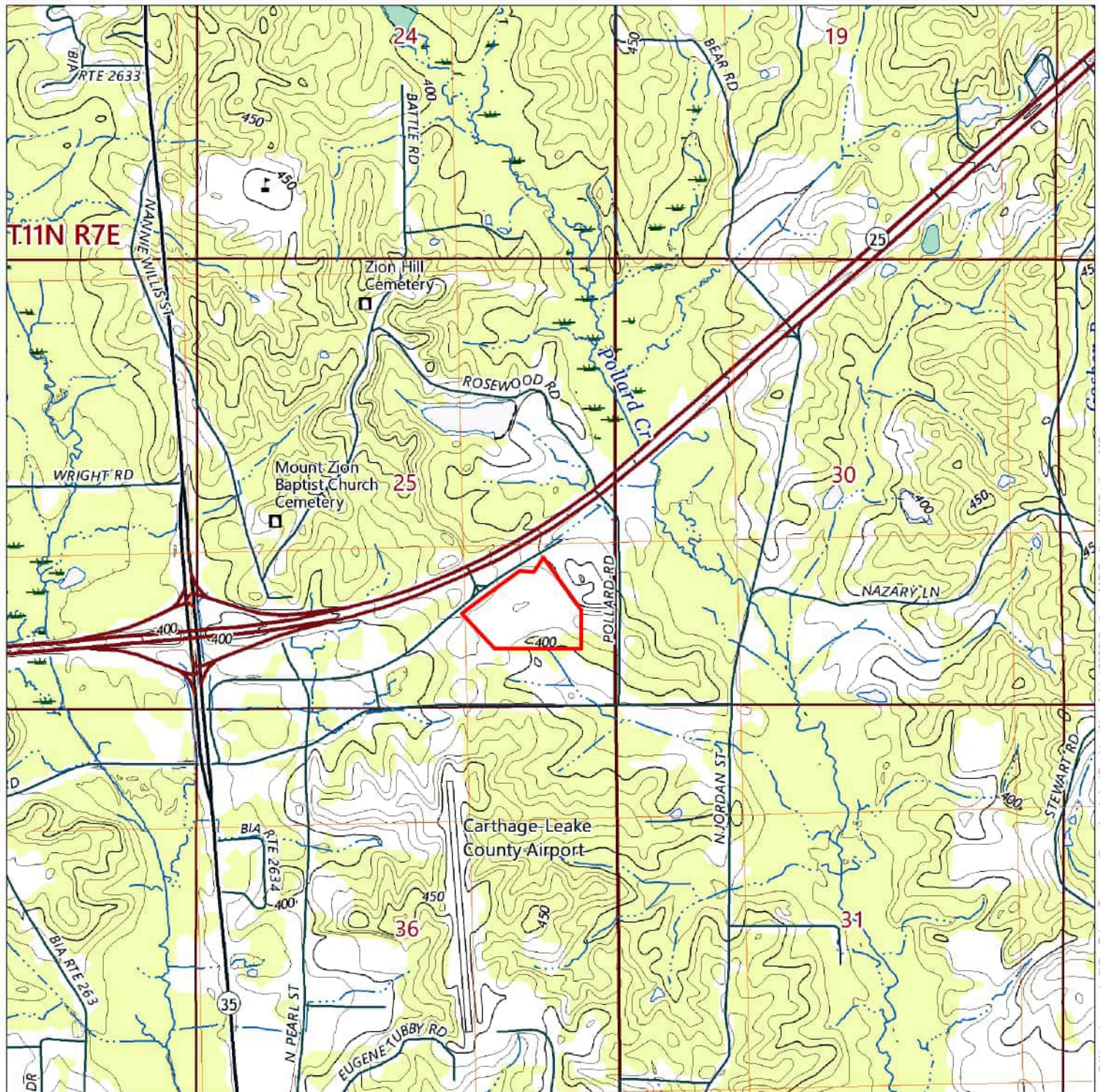
terracon.com

Vicinity Map

MS Department of Environmental Quality
Leake County EDD Site 2-NE
Carthage, Leake County, MS
89°31'40"W 32°46'14"N

Exhibit

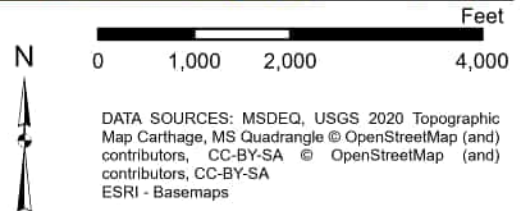
1.0



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Legend

— Site 2 NE Study Area



Project No.:	EB237180
Date:	Sep 2023
Drawn By:	NRM
Reviewed By:	DB



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USGS Topographic Map

MS Department of Environmental Quality
Leake County EDD Site 2-NE
Carthage, Leake County, MS
89°31'37"W 32°46'24"N

Exhibit

2.0



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Legend

- Site 2 NE Study Area
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine



DATA SOURCES: MSDEQ, USFWS NWI, © OpenStreetMap (and) contributors, CC-BY-SA, Esri, HERE, Garmin, IPC, Maxar, ESRI - Basemaps

Project No.:	EB237180
Date:	Sep 2023
Drawn By:	NRM
Reviewed By:	DB



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National Wetlands Inventory Map

MS Department of Environmental Quality
Leake County EDD Site 2-NE
Carthage, Leake County, MS
89°31'40"W 32°46'15"N

Exhibit

3.0



SmF2: Smithdale fine sandy loam, 15 to 35 percent slopes, eroded
 OrC: Ora fine sandy loam, 5 to 8 percent slopes, eroded
 SmD2: Smithdale fine sandy loam, 8 to 15 percent slopes, eroded

Legend

- Site 2 NE Study Area
- Soil Map Unit Symbol
- Hydric Soil Rating
- Water



DATA SOURCES: MSDEQ, USDA NRCS WSS@
 OpenStreetMap (and) contributors, CC-BY-SA, Esri,
 HERE, Garmin, IPC, Maxar
 ESRI - Basemaps

Project No.:	EB237180
Date:	Sep 2023
Drawn By:	NRM
Reviewed By:	DB



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 Ridgeland, MS
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USDA Soil Survey Map

MS Department of Environmental Quality
 Leake County EDD Site 2-NE
 Carthage, Leake County, MS
 89°31'40"W 32°46'15"N

Exhibit

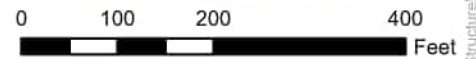
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Legend

- Study Area
- Pine-Hardwood Mixed Forest
- Pasture



DATA SOURCES: MS DEQ
 ESRI WMS - World Aerial Imagery, OpenStreetMap

Project No.:	EB237180
Date:	Nov 2023
Drawn By:	REG
Reviewed By:	DB



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Landcover Map

MS Department of Environmental Quality
 Leake County EDD Site 2 NE
 Leake County, MS
 Center 89.528°W 32.7715°N

Exhibit

5.0

APPENDIX B

USFWS IPaC Report

Mississippi Department of Wildlife, Parks and Fisheries through Natural Heritage Program by County



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Mississippi Ecological Services Field Office
6578 Dogwood View Parkway, Suite A
Jackson, MS 39213-7856
Phone: (601) 965-4900 Fax: (601) 965-4340

In Reply Refer To:
Project Code: 2024-0007864
Project Name: Carthage - NE Section

October 23, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office. Please email consultation requests to MSFOSection7Consultation@fws.gov.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Mississippi Ecological Services Field Office

6578 Dogwood View Parkway, Suite A

Jackson, MS 39213-7856

(601) 965-4900

PROJECT SUMMARY

Project Code: 2024-0007864
Project Name: Carthage - NE Section
Project Type: Power Gen - Solar
Project Description: Proposed solar farm in Carthage, MS.
Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@32.7719821,-89.52763436683045,14z>



Counties: Leake County, Mississippi

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [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.

MAMMALS

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/P44HROKQ2VAJLP3CEKOEMB254U/documents/generated/7127.pdf	Endangered

REPTILES

NAME	STATUS
Alligator Snapping Turtle <i>Macrochelys temminckii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4658 General project design guidelines: https://ipac.ecosphere.fws.gov/project/P44HROKQ2VAJLP3CEKOEMB254U/documents/generated/7127.pdf	Proposed Threatened
Ringed Map Turtle <i>Graptemys oculifera</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2664 General project design guidelines: https://ipac.ecosphere.fws.gov/project/P44HROKQ2VAJLP3CEKOEMB254U/documents/generated/7127.pdf	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743 General project design guidelines: https://ipac.ecosphere.fws.gov/project/P44HROKQ2VAJLP3CEKOEMB254U/documents/generated/7127.pdf	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

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

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

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

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

-
1. The [Bald and Golden Eagle Protection Act](#) of 1940.
 2. The [Migratory Birds Treaty Act](#) of 1918.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

THERE ARE NO BALD AND GOLDEN EAGLES WITHIN THE VICINITY OF YOUR PROJECT AREA.

MIGRATORY BIRDS

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

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

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

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

NAME	BREEDING SEASON
Brown-headed Nuthatch <i>Sitta pusilla</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9427	Breeds Mar 1 to Jul 15
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

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

Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

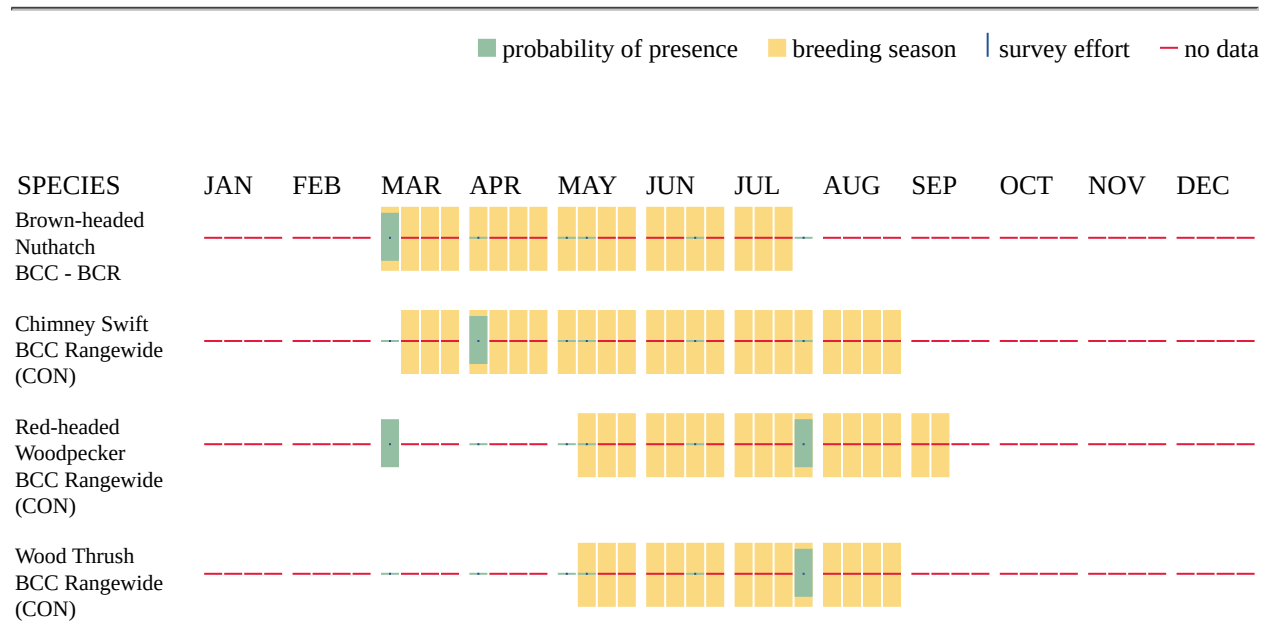
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)

Vertical black lines; 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.



Additional information can be found using the following links:

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

IPAC USER CONTACT INFORMATION

Agency: Terracon Consultants
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United States Department of the Interior



FISH AND WILDLIFE SERVICE
Mississippi Ecological Services Field Office
6578 Dogwood View Parkway, Suite A
Jackson, MS 39213-7856
Phone: (601) 965-4900 Fax: (601) 965-4340

In Reply Refer To:
Project code: 2024-0007864
Project Name: Carthage - NE Section

October 23, 2023

Federal Nexus: no
Federal Action Agency (if applicable):

Subject: Technical assistance for 'Carthage - NE Section'

Dear Melissa Savoy:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on October 23, 2023, for 'Carthage - NE Section' (here forward, Project). This project has been assigned Project Code 2024-0007864 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project is not reasonably certain to cause incidental take of the northern long-eared bat. Unless the Service advises you within 15 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Alligator Snapping Turtle *Macrochelys temminckii* Proposed Threatened
- Monarch Butterfly *Danaus plexippus* Candidate
- Ringed Map Turtle *Graptemys oculifera* Threatened

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species and/or critical habitat listed above. Note that if a new species is listed that may be affected by the identified action before it is complete, additional review is recommended to ensure compliance with the Endangered Species Act.

Next Steps

Coordination with the Service is complete. This letter serves as technical assistance. All conservation measures should be implemented as proposed. Thank you for considering federally listed species during your project planning.

We are uncertain where the northern long-eared bat occurs on the landscape outside of known locations. Because of the steep declines in the species and vast amount of available and suitable forest habitat, the presence of suitable forest habitat alone is a far less reliable predictor of their presence. Based on the best available information, most suitable habitat is now expected to be unoccupied. During the interim period, while we are working on potential methods to address this uncertainty, we conclude take is not reasonably certain to occur in areas of suitable habitat where presence has not been documented.

If no changes occur with the Project or there are no updates on listed species, no further consultation/coordination for this project is required for the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place before project implements any changes which are final or commits additional resources.

If you have any questions regarding this letter or need further assistance, please contact the Mississippi Ecological Services Field Office and reference Project Code 2024-0007864 associated with this Project.

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

Carthage - NE Section

2. Description

The following description was provided for the project 'Carthage - NE Section':

Proposed solar farm in Carthage, MS.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@32.7719821,-89.52763436683045,14z>



DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of “may affect, but not likely to adversely affect” for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

No

2. The action area does not overlap with an area for which U.S. Fish and Wildlife Service currently has data to support the presumption that the northern long-eared bat is present. Are you aware of other data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed NLEB acoustic detections. Data on captures, roost tree use, and acoustic detections should post-date the year when white-nose syndrome was detected in the relevant state. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

No

3. Does any component of the action involve construction or operation of wind turbines?

Note: For federal actions, answer ‘yes’ if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

No

PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

Agency: Terracon Consultants
Name: Melissa Savoy
Address: 2822-B O'Neal Lane
City: Baton Rouge
State: LA
Zip: 70816
Email: melissa.savoy@terracon.com
Phone: 2252392639

<u>CONAME</u>	<u>NAME_CAT_1</u>	<u>SNAME</u>
Leake	Vertebrate Animal	<i>Alosa alabamae</i>
Leake	Invertebrate Animal	<i>Anodontoides radiatus</i>
Leake	Invertebrate Animal	<i>Elliptio arcata</i>
Leake	Vertebrate Animal	<i>Graptemys pearlensis</i>
Leake	Vertebrate Animal	<i>Macrochelys temminckii</i>
Leake	Invertebrate Animal	<i>Obovaria unicolor</i>
Leake	Vertebrate Animal	<i>Perimyotis subflavus</i>
Leake	Vertebrate Animal	<i>Graptemys oculifera</i>
Leake	Vertebrate Animal	<i>Ammocrypta meridiana</i>
Leake	Vascular Plant	<i>Botrychium lunarioides</i>
Leake	Vascular Plant	<i>Carex crinita</i> var. <i>brevicrinis</i>
Leake	Vertebrate Animal	<i>Corynorhinus rafinesquii</i>
Leake	Invertebrate Animal	<i>Cyclonaias refulgens</i>
Leake	Vascular Plant	<i>Cyperus retrofractus</i>
Leake	Vascular Plant	<i>Epigaea repens</i>
Leake	Vertebrate Animal	<i>Eumeces anthracinus pluvialis</i>
Leake	Invertebrate Animal	<i>Hobbseus attenuatus</i>
Leake	Vascular Plant	<i>Lilium superbum</i>
Leake	Vascular Plant	<i>Lobelia appendiculata</i>
Leake	Vertebrate Animal	<i>Myotis austroriparius</i>
Leake	Vertebrate Animal	<i>Ophisaurus attenuatus</i>
Leake	Invertebrate Animal	<i>Pleurobema beadleianum</i>
Leake	Vertebrate Animal	<i>Pseudotriton ruber</i>
Leake	Vascular Plant	<i>Ptelea trifoliata</i>
Leake	Vertebrate Animal	<i>Rana areolata</i>
Leake	Vascular Plant	<i>Rhynchospora rariflora</i>
Leake	Vertebrate Animal	<i>Ursus americanus luteolus</i>
Leake	Vascular Plant	<i>Verbesina walteri</i>
Leake	Vascular Plant	<i>Veronicastrum virginicum</i>

<u>SCOMNAME</u>	<u>G_RANK</u>	<u>S_RANK</u>
Alabama Shad	G2G3	S1
Rayed Creekshell	G2G3	S2
Delicate Spike	G2G3Q	S1
Pearl River Map Turtle	G2G3	S2
Alligator Snapping Turtle	G3	S3
Alabama Hickorynut	G3	S1S2
Tri-colored Bat	G2G3	S3S4
Ringed Map Turtle	G2	S2
Southern Sand Darter	G4	S3
Winter Grape-fern	G4?	S2
Short Hair Sedge	G5T5	S3S4
Rafinesque's Big-eared Bat	G3G4	S3
Purple Pimpleback	G3G4	S3S4
Rough Flatsedge	G5	S2S3
Trailing Arbutus	G5	S3
Southern Coal Skink	G5T5	S2S3
Pearl Rivulet Crayfish	G2	S2
Turk's-cap Lily	G5	S3S4
Ear-flower Lobelia	G4G5	S3
Southeastern Myotis	G4	S3S4
Slender Glass Lizard	G5	S2S3
Mississippi Pigtoe	G3	S3?
Red Salamander	G5	S3
Common Hoptree	G5	S3S4
Crawfish Frog	G4	S2
Few-flowered Beakrush	G5	S3S4
Louisiana Black Bear	G5T2	S1
Carolina Crownbeard	G4	S3S4
Culver's-root	G4	S3S4

Fed_Status

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APPENDIX C

Site Photographs

Reference Photos



RPP 1—Facing East



RPP 1—Facing North



RPP 1—Facing West



Forested area located on southern portion of the site



RPP 2—Facing South



RPP 2—Facing East

