PORT BIENVILLE RAILROAD

COMBINED FINAL ENVIRONMENTAL IMPACT STATEMENT AND RECORD OF DECISION

APPENDIX G: REVISED DEIS SECTIONS

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Federal Rail Administration

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APPENDIX G
REVISED DEIS SECTIONS

- Chapter 3.0 Alternatives Analysis: Section 3.2.3.2 Evaluation of the Southern Alternatives (Alternative D section only)
- Chapter 4.0 Affected Environment:
  - Section 4.15.4 Threatened and Endangered Species
  - Section 4.15.4.1 Potential of Listed T&E Species to Occur in the Survey Corridor
  - Section 4.18.3.4 Passenger Rail
- Chapter 5.0 Environmental Consequences:
  - 5.14.2 Effects on Federally Listed Species
  - 5.14.2.1 Birds of Conservation Concern **(NEW)**
  - 5.14.4 Threatened and Endangered Species Effects/Impacts Summary **(NEW)**

Revised DEIS Section: Chapter 3.0

3.2.3.2. Evaluation of the Southern Alternatives

Alternative D – Compared to the other three options, this alignment would have the lowest estimated cost. From an operational standpoint, it would tie into the PBRR's switch at the greatest distance providing operational benefits. It also would have lower wetland impacts than the other three options. This alignment parallels the Colonial Pipeline corridor and would also follow the former rail bed for over half its length. However, this option would have the potential to impact one to two residences with noise and vibration impacts and a new at-grade crossing would be introduced through the existing paved section of Old Lower Bay Road. This at-grade crossing would potentially impact the existing South Hancock Elementary School bus route increasing concerns for bus operations and safety. The two residences closest to Alternative D (on Old Lower Bay Road in the southern part of the project area) are 205 and 632 feet away. Results of the vibration assessment (see Appendix D, Noise Vibration Report, from the DEIS) indicate that vibration impacts are projected to occur 169 feet from the proposed rail line. All the vibration impacts are at the northern-portion of the study area, near Nicholson. No vibration impacts are anticipated in the southern end of the project or at the two residences on Old Lower Bay Road. Severe noise impacts due to locomotive horns were determined based on the FRA locomotive noise model. From Lower Bay Road, severe impacts can be felt at 703 feet away from the proposed crossings; therefore, the two residences that are located 205 and 632 feet away from Alternative D would experience severe noise impacts. The alignment would also impact 16th Section Land. The 16th Section Land was established from the Land Ordinance of 1785 to help fund public schools. The Project team recommended that this alternative be eliminated due to potential residential impacts and additional safety concerns associated with a new at-grade rail crossing and because of the additional travel time and distance associated with the longer alternative. MDOT, HCPHC, and FRA agreed to eliminate this alternative from further study.

Revised DEIS Sections: Chapter 4.0

4.15.4 Threatened and Endangered Species

Plants and animals with federal and state classifications of Threatened or Endangered (T&E) species are protected under Section 9 of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. § 1539) and Mississippi state law (Mississippi Code 49-5-109).

Section 7 of the ESA requires federal agencies to consult with the United States Fish and Wildlife Service (USFWS) prior to any federal action regarding any actions that may adversely affect listed species or their habitat within the affected environment (87 Stat. 884, as amended; 16 U.S.C. § 1536). In addition, candidate species have sufficient information to warrant listing, but statutory protection is precluded by higher listing priorities. Although not afforded statutory protection, given the typically long schedules of many proposed projects, a project lead agency should initiate an informal conference with the USFWS if a candidate or proposed species may be affected. Mississippi state-listed species are managed through the Mississippi Department of Wildlife, Fisheries, & Parks (MDWFP).

The 1988 amendment to the Fish and Wildlife Conservation Act mandates USFWS to "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973." Birds of Conservation Concern 2008 is the most recent effort to carry out this mandate. The overall goal of the Birds of Conservation Concern is to accurately identify the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent our highest conservation priorities.1

The affected environment for T&E species are described in the following sections. A desktop survey was conducted for the Study Area, which for T&E includes the entirety of Hancock and Pearl River Counties. For further evaluation of potential T&E habitat, a 200-foot corridor that buffers the preferred project (rail) alignment was surveyed in the field. For additional information on the field surveys, refer to the *Wetlands and Threatened and Endangered Species Report* (**Appendix C**).

The USFWS's Information Planning and Conservation (IPaC) online database and the Mississippi Natural Heritage Program (MNHP) online database, which contain publicly available information regarding federal and state protected species, were queried in June 2016 for the Study Area. The database queries identified 30 federally and/or state-listed plant and animal species with the potential to occur within Hancock and Pearl River Counties. One additional species was added to the IPaC database after publication of the DEIS. The Eastern black rail (*Laterallus jamaicensis jamaicensus*) was proposed for listing as a federally threatened species on October 5, 2018.[2]

[1] USFWS. 2015. Birds of Conservation Concern. https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php; accessed 2/15/2019.

[2] USFWS. 2018a. Eastern black rail, LATERALLUS JAMAICENSIS JAMAICENSIS. https://www.fws.gov/southeast/wildlife/birds/eastern-black-rail/#laterallus-jamaicensis-jamaicensis-section; accessed 10/5/2018.

USFWS's IPaC database also lists USFWS Migratory Birds of Conservation Concern (BCC). These species represent the highest conservation priorities of USFWS beyond those currently designated as threatened or endangered.[3,4] The database queries identified 50 migratory BCC listed for Hancock County, 16 migratory BCC listed for Pearl River County, and 24 BCC listed with the potential occur in the project specific survey corridor.[5]

Based upon a review of the USFWS Critical Habitat Mapper, no record of critical habitat has been designated for any of the protected species within the Study Area. As defined in the ESA, critical habitat is any habitat given special protection for the benefit of the survival of a listed species.

Based on literature review and the report entitled *Endangered Species of Mississippi*,[55] no documented occurrences, except for the rainbow snake, of any state or federally listed threatened or endangered species or candidate species have been recorded within the Survey Corridor.

4.15.4.1 Potential of Listed T&E Species to Occur in the Survey Corridor

For each of the 31 federal and state T&E, and federal candidate plant and animal species, and migratory B listed within Hancock and Pearl River Counties, species habitat requirements, literature reviews, field observations, aerial photographs, and street level views (Google Maps) were reviewed to determine if potential suitable habitat exists within the Study Area. Migratory BCC were evaluated based on results of the field surveys and habitat requirements listed by All About Birds[6] and the Cornell Laboratory of Ornithology eBird Database[7] for the Project.

No protected species were observed during field reconnaissance. Habitats observations from the field survey were used to evaluate whether the 31 listed species would have the potential to occur in the Survey Corridor.

Table 4.24 provides a summary of the 31 federal and state species and summarizes the findings for each, including brief habitat descriptions; whether suitable habitat exists within the Survey Corridor (Yes/No); whether there are known occurrences (Yes/No); whether critical habitat exists (Yes/No); and the potential for occurrence (High/Low/Not Likely to Occur).

[3] USFWS. 2018b. IPaC for Hancock County, MS, Pearl River County, MS, and the Port Bienville Survey Corridor. https://ecos.fws.gov/ipac/; accessed 11/27/2018.

[4] USFWS. 2008. Birds of Conservation Concern. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, Virginia. 85pp. www.fws.gov/migratorybirds; accessed 2/5/2019.

[5] USFWS. 2018a. Eastern black rail, LATERALLUS JAMAICENSIS JAMAICENSIS. https://www.fws.gov/southeast/wildlife/birds/eastern-black-rail/#laterallus-jamaicensis-jamaicensis-section; accessed 10/5/2018.

[6] The Cornell Laboratory of Ornithology. 2019a. All About Birds. https://www.allaboutbirds.org/; accessed 2/11/2019.

[7] The Cornell Laboratory of Ornithology. 2019b. eBird. Database of hotspots near Port Bienville, MS. https://ebird.org/hotspots; accessed 2/11/2019.

Table4.24: Evaluation of T&E Species in the Survey Corridor

Common Name/Scientific Name	Federal Listing Status[1]	State Listing Status[1]	Habitat Description[2]	Suitable Habitat[3] (Yes/No)	Known Occurrences[4] (Yes/No)	Critical Habitat[5] (Yes/No)	Potential to Occur[6]
Alabama (=inflated) heelsplitter *Potamilus inflatus*	T	E	Inhabits slow- to moderate-flowing rivers with stable sand, mud and/or silt bottoms. In Mississippi, the heelsplitter still occurs in part of the Tombigbee River drainage.	Yes	No	No	Not Likely to Occur
Crystal darter *Crystallari a asprella*	–	E	In Mississippi, occurs in Bayou Pierre, Homochitto, Pearl River and Tombigbee watersheds; inhabits large creeks and rivers with clean sand and gravel substrates often near tributary confluences	No	No	No	Not Likely to Occur
Ironcolor shiner *Notropis chalybaeus*	–	E	In Mississippi, it historically occurred along the coastal area of the state in coastal river drainages, Pascagoula drainage and Pearl River systems. Lowland streams with abundant aquatic vegetation, open swamp habitat, and/or areas draining densely canopied woodlands.	Yes	No	No	Low
Pearl darter *Percina aurora*	C	E	It is assumed extirpated from Pearl River drainage, now only occurring in the Pascagoula River drainage and its freshwater tributaries. Prefers slow flowing waters along the downstream edge sandbar point bars, pools and/or deep runs over bedrock substrate.	No	No	No	Not Likely to Occur
Frecklebelly madtom *Noturus munitus*	–	E	In Mississippi, it occurs in major tributaries of the Tombigbee River and lower portions of the Pearl River drainage. Preferred habitat includes stable gravel or rubble riffles and rapids in main river channels and large tributaries	No	No	No	Not Likely to Occur

Common Name/Scientific Name	Federal Listing Status[1]	State Listing Status[1]	Habitat Description[2]	Suitable Habitat[3] (Yes/No)	Known Occurrences[4] (Yes/No)	Critical Habitat[5] (Yes/No)	Potential to Occur[6]
Atlantic sturgeon (Gulf subspecies) *Acipenser oxyrinchus desotoi*	T	E	In Mississippi, previously collected in the Pearl River upstream of Madison County and in the Bogue Chitto River upstream to Pike County; found in all saltwater habitats, except during spawning season when found in major rivers that empty into the Gulf of Mexico, including the Mississippi River and Pearl River.	No	No	No	Not Likely to Occur
Smalltooth sawfish *Pristis pectinata*	E	–	Shallow waters very close to shore over muddy and sandy bottoms. They are often found in sheltered bays, on shallow banks, and in estuaries or river mouths. They prefer warmer water temperature and are known to ascend inland in river systems	No	No	No	Not Likely to Occur
Louisiana quillwort *Isoetes louisianensis*	E	–	Slow-moving freshwater streams	Yes	No	No	Low
Eastern indigo snake *Drymarchon couperi*	T	E	In the Southeast, indigo snakes are restricted to areas of xeric pine-oak sandhills, which are usually inhabited by gopher tortoises. These snakes use gopher tortoise burrows as shelter during the winter and during the warmer months for nesting and refuge from intense summer heat.	Yes	No	No	Low
Southern hognose snake *Heterodon simus*	–	E	Habitat includes open or sparsely wooded dry areas with deep sandy or sandy-loam soils.	No	No	No	Not Likely to Occur
Black pine snake *Pituophis melanoleucus lodingi*	T	E	14 counties in southern Mississippi; inhabits mature longleaf pine forests with sandy soil, an open canopy, moderately fire suppressed midstory, and a thick grassy understory	Yes	No	No	Low
Rainbow snake *Farancia erytrogramma*	–	E	Inhabits rivers, streams, springs, ponds and lakes associated with soils which are sandy enough to allow it to burrow	Yes	No	No	Low

Common Name/Scientific Name	Federal Listing Status[1]	State Listing Status[1]	Habitat Description[2]	Suitable Habitat[3] (Yes/No)	Known Occurrences[4] (Yes/No)	Critical Habitat[5] (Yes/No)	Potential to Occur[6]
Gopher tortoise *Gopherus polyphemus*	T	E	Dry, sandy uplands, such as oak-sandhills, scrub, pine flatwoods and coastal dunes of the southeastern United States.	No	No	No	Not Likely to Occur
Ringed map turtle *Graptemys oculifera*	T	E	Native to the Pearl River watershed of Mississippi and Louisiana; requires structure on which it can safely bask protected from predation and suitable nesting habitat (large, high sandbars adjacent to a river).	No	No	No	Low
Kemp's ridley sea turtle *Lepidochelys kempii*	E	E	Warm bays and coastal waters; tidal rivers; estuaries; sea grass beds; sandy coastal beaches are used for nesting	No	No	No	Not Likely to Occur
Leatherback sea turtle *Dermochelys coriacea*	E	E	Open ocean; deeper waters of the Gulf and coastal bays; coastal beaches and barrier islands suitable for nesting	No	No	No	Not Likely to Occur
Loggerhead sea turtle *Caretta caretta*	T	E	Marine open waters, inshore areas such as bays lagoons, salt marshes, creeks, ship channels, and mouths of large rivers; sandy coastal beaches are used for nesting	No	No	No	Not Likely to Occur
Hawksbill sea turtle *Eretmochelys imbricate*	E	E	Warm bays and shallow portions of oceans; seagrass beds; estuaries; mainland beaches and islands used for nesting	No	No	No	Not Likely to Occur
Peregrine falcon *Falco peregrinus*	DL	E	Known to migrate through inland Mississippi and along the Gulf Coast, occasionally wintering on the coast. Also occurs in a wide variety of habitats including Arctic Tundra, dense forested areas and coastal cliffs.	No	No	No	Not Likely to Occur
Piping plover *Charadrius melodus*	E[7] T[8]	E	Wintering habitat - open, sparsely vegetated coastal beaches and sandy mud flats; in Louisiana, habitat includes beaches and mudflats of barrier islands in southeastern coastal Parishes	No	No	No	Not Likely to Occur

Common Name/Scientific Name	Federal Listing Status[1]	State Listing Status[1]	Habitat Description[2]	Suitable Habitat[3] (Yes/No)	Known Occurrences[4] (Yes/No)	Critical Habitat[5] (Yes/No)	Potential to Occur[6]
Southeastern snowy plover *Charadrius nivosus*	–	E	In Mississippi, nests on the barrier islands and occasionally on mainland beaches in Harrison County. Any plovers breeding in Mississippi are assumed to be year-round residents. Inhabits expanses of flat, dry sand along seacoast beaches and forages at the edge of the water or on sand flats at tidal creeks	No	No	No	Not Likely to Occur
Red knot *Calidris canutus rufa*	T	_	Wintering habitat – intertidal marine habitats, especially near coastal inlets, estuaries, and bays, or along resting formations	No	No	No	Not Likely to Occur
Red-cockaded woodpecker *Picoides borealis*	E	E	Older, mature pine forest	Yes	No	No	Low
Wood stork *Mycteria americana*	T	E	In Mississippi, found along western edge of state in counties bordering the Mississippi River and some along the eastern edge of the state. Freshwater and estuarine wetlands, primarily nesting in cypress or mangrove swamps using sloughs or swamps for foraging habitat.	Yes	No	No	Low
Brown pelican *Pelecanus occidentalis*	DL	E	The brown pelican has been in decline along the Gulf Coast since the 1960s and is now protected. In Mississippi, they are an uncommon but regular visitor. They nest and forage from barrier islands as far as 12 miles from the coastline.	No	No	No	Not Likely to Occur
Black bear *Ursus americanus*	DL	E	In Mississippi, found in counties along the Mississippi River, lower Pearl River and Pascagoula watersheds	Yes	No	No	Low
Florida panther *Puma concolor coryi*	E	E	Presumed extirpated from Mississippi; inhabits mixed swamp forests and hardwood hammocks, less frequently occurring in upland pine forests and pine savannahs.	Yes	No	No	Not Likely to Occur
Fin or finback whale *Balaenoptera physalus*	E		Open Ocean	No	No	No	Not Likely to Occur
Humpback whale *Megaptera novaeangliae*	E	_	Open Ocean	No	No	No	Not Likely to Occur

Common Name/Scientific Name	Federal Listing Status[1]	State Listing Status[1]	Habitat Description[2]	Suitable Habitat[3] (Yes/No)	Known Occurrences[4] (Yes/No)	Critical Habitat[5] (Yes/No)	Potential to Occur[6]
West Indian manatee *Trichechus manatus*	E	E	In Mississippi, observed at a number of sites inshore along the Mississippi coast. Inhabits warm, marine open water, bays, and rivers where submerged aquatic and floating vegetation is found for foraging	No	No	No	Not Likely to Occur
Eastern black rail (*Laterallus jamaicensis jamaicensis***)**	C	–	Preferred habitat for the Eastern black rail is typically salt and brackish marshes with dense cover	No	No	No	Not Likely to Occur

[1] E = Endangered; T = Threatened; C = Candidate species; DL = Delisted; - = not listed
[2] All species descriptions, preferred habitat, and location of known occurrences are summarized from the IPaC database (Federal species) and from a report entitled Endangered Species of Mississippi[56].
[3] Suitable habitat determined based on field observations.
[4] Known occurrences based on desktop literature review for the study area.
[5] Critical habitat based on USFWS IPaC database.
[6] Potential to Occur: This classifies the likelihood of potential to occur within the Survey Corridor. ***Not likely to occur*** *= the Survey Corridor may contain suitable habitat; however, the current known range and distribution data available does not include the Survey Corridor;* ***Low*** *= the Survey Corridor is within the breeding and/or winter range of the species, suitable habitat is present, but there are no documented occurrences of the species within the Survey Corridor; High = suitable habitat is present and occurrence in the Survey Corridor is documented by MNHP or other credible sources*
[7] Only the population within the Great Lakes Watershed
[8] All populations except the Great Lakes Watershed

An initial T&E species field survey was conducted in March 2016. In the days prior to the first field survey, Louisiana and parts of Southwest Mississippi experienced record rainfall and flooding.[57] The Survey Corridor is situated within the Pearl River Basin. Due to flooding, the Pearl River experienced its second highest crest in history of 20.35 feet on March 14, 2016, the day fieldwork began.[58] Flood stage for the Pearl River is 14 feet.[59] The heavy rainfall and flood stage of the Pearl River caused flooding throughout the extent of the survey area and conditions may have been wetter than normal. During a second field survey for the southern portion of the preferred rail alignment in June 2016 under normal conditions, portions of the Survey Corridor were still heavily saturated or ponded with standing water varying between 3 to 12 inches.

4.18.3.4 Passenger Rail

Amtrak, also known as the National Railroad Passenger Corporation, currently operates intercity passenger rail service within Mississippi. Daily passenger rail service between New Orleans and Chicago is provided along Kansas City Southern (KCS) track via the City of New Orleans. Passenger rail service is also provided between New Orleans and New York via the Crescent. The Crescent route runs along NS mainline track within the Study Area. Each of these Amtrak routes consists of one train per day in each direction.

Prior to Hurricane Katrina (August 2005), Amtrak operated intercity passenger rail service between New Orleans and Florida via the Sunset Limited. The route followed CSX's single-track mainline through Mississippi, including a small portion of the study area. Since then, Amtrak has completed several studies (including ridership projections, revenue forecasts and infrastructure improvements) to explore options to resume passenger rail service.

In the Fixing America's Surface Transportation (FAST) Act, Section 11304, Gulf Coast Working Group directed the Secretary of Transportation to convene a Gulf Coast Working Group (GCWG) to evaluate and submit a report to Congress on the restoration of intercity passenger rail service in the Gulf Coast region—FRA served as chair of the GCWG. The restoration of passenger rail service along the Gulf Coast is a key initiative among several states including Louisiana, Mississippi, Alabama, and Florida. On February 18, 2016, representatives from the FRA, Amtrak, CSX, state Departments of Transportation, elected officials, and the Southern Rail Commission, all members of the GCWG, embarked on a two-day Gulf Coast Passenger Rail Train Trip—the first passenger rail service since 2005 (Southern Rail Commission 2016). Starting at the Union Passenger Terminal in New Orleans and terminating in Jacksonville, Florida, thousands of enthusiastic residents and community groups greeted the train at each of the 14 stations along its journey, further demonstrating support for passenger rail service for both mobility and economic reasons.

As stated in the GCWG's July 2017 Report to Congress[8] (GCWG Report), its goal was to "*provide sufficient, reliable information to be the starting point for restoring passenger rail service*", along with the objective of defining "*the restored intercity passenger rail service in a manner that will ultimately achieve a new and improved schedule (timetable), increasing frequency and improving reliability compared to its historic counterpart, and operate without unreasonably impairing CSX's freight operations*." The GCWG Report included a wide range of identified capital improvements from CSX, Amtrak, and FRA. In short, CSX's recommendation included the most significant amount of improvements (including replacing two single-track drawbridges and one two-track drawbridge with new bridges that have an additional track, and approximately 180 miles of additional capacity through new sidings, siding extensions, second main track, etc.), Amtrak recommended a phased approach with capacity improvements in certain locations with notable operations constraints, and FRA identified improvements also in certain locations to benefit rail freight services and accommodate passenger service. Since there are a range of varying recommended improvements, GCWG recognized a critical next step is for CSX and Amtrak, primarily, to verify and detail the recommended improvements,

[8] The GCWG Report is located on FRA's eLibrary website - Report: https://www.fra.dot.gov/eLib/Details/L18769 ; Appendices: https://www.fra.dot.gov/eLib/Details/L18771

especially improvements for the New Orleans to Mobile, Alabama segment due to the higher volume of freight operations between these cities compared to points east. See the GCWG Report for more details.

CSX's route through Mississippi also comprises a portion of the Gulf Coast Corridor that was federally designated as a high-speed rail corridor in 1998 and further extended in 2000. Between Houston and Atlanta, total mileage for this designated corridor is 1,025 miles. FRA's *Vision For High-Speed Rail in America, High-Speed Rail Strategic Plan*[9], dated April 2009, defines emerging and regional high-speed corridor services as those with operating speeds up to 90 to 110 mph and 110 to 150 mph, respectively, on shared and dedicated track in corridors of 100 to 500 miles. The service proposed in the GCWG Report is not high-speed rail, despite operating on a designated high-speed rail corridor, and would therefore not be held to the aforementioned requirements regarding emerging and regional high-speed corridor services.

In April 2018, Amtrak sent a letter to CSX requesting its assistance and engagement in finalizing plans to restore Gulf Coast passenger rail service, starting with the New Orleans to Mobile segment. CSX responded with a letter, also in April 2018, and the parties continue to negotiate. However, as of the date of this final EIS document, the actual restoration of passenger rail service is not imminent because various agreements, including an operating agreement, need to be executed and capital improvements need to be made.

[9] Source: https://www.fra.dot.gov/eLib/details/L18234#p1_z5_gD_kVision%20For%20High-Speed%20Rail%20in%20America

Revised DEIS Section: Chapter 5.0

5.14.2 Effects on Federally-Listed Species

Several of the federally-listed and candidate species would not occur in or near the Study Area due to lack of habitat. These species that have no known occurrences include the pearl darter (*Percina aurora*), Atlantic sturgeon (*Acipenser oxyrinchus desotoi*), smalltooth sawfish (*Percina aurora*), gopher tortoise (*Gopherus polyphemus*), ringed map turtle (*Graptemys oculifera*), Kemp's ridley sea turtle (*Lepidochelys kempii*), leatherback sea turtle (*Dermochelys coriacea*), loggerhead sea turtle (*Caretta caretta*), Hawksbill sea turtle (*Eretmochelys imbricate*), peregrine falcon (*Falco peregrinus*), piping plover (*Charadrius melodus*), ~~and~~ red knot (*Calidris canutus ruga*), and Eastern black rail *(Laterallus jamaicensis jamaicensis*. With the exception of the Eastern black rail, these federally listed species have been dismissed from further discussion since they are not likely to occur within the study area. Since the Eastern black rail was proposed for listing in October 2018, a species assessment has been included as part of the Project. The Project team recommended that the proposed Project would have no effect on the Eastern black rail due to lack of potential suitable habitat in the Survey Corridor.

Consultation with USFWS dated July 15, 2019, confirms that habitat for the eastern black rail does not occur in the project area; therefore, the proposed project will have "no effect" on the eastern black rail or its habitat.

The following seven federally listed species may occur in or near the Study Area and are listed in **Table 5.11**. However, it has been recommended in the *Draft Wetlands and Threatened and Endangered Species Report* that the proposed Project would have no effect on the Alabama (=inflated) heelsplitter (*Potamilus inflatus*). Also, it was determined that the proposed Project may effect, but is not likely to adversely affect the Louisiana quillwort (*Isoetes louisianensis*), eastern indigo snake (*Drymarchon couperi*), black pine snake (*Pituophis melanoleucus lodingi*), red-cockaded woodpecker (*Picoides borealis*), wood stork (*Mycteria americana*), and the Florida panther (*Puma concolor coryi*). The *Draft Wetland and Threatened and Endangered Species Report* is appended to the DEIS as **Appendix C.**

Consultation with USFWS dated July 15, 2019, confirms that the proposed project "may affect, but is not likely to adversely affect" the following listed species: the endangered Louisiana quillwort (*Isoetes louisianensis*), threatened Eastern indigo snake (*Drymarchon couperi*), threatened black pine snake (*Pituophis melanoleucus lodingi*), endangered red-cockaded woodpecker (*Picoides borealis*), threatened wood stork (*Mycteria americana*), and endangered Florida panther (*Puma concolor coryi*).

Table 5.11: Effects on Listed Federal Species with Potential Suitable Habitat in the Survey Corridor

Common Name/ Scientific Name	Federal Status[1]		State Status[1]	Potential Habitat Present?	Anticipated Effects Determination[2]
FEDERAL AND/OR STATE-LISTED SPECIES					
Alabama (=inflated) heelsplitter *Potamilus inflatus*	T		E	Yes	No effect
Louisiana quillwort *Isoetes louisianensis*	E		-	Yes	May affect; not likely to adversely affect

Common Name/ Scientific Name	Federal Status[1]		State Status[1]	Potential Habitat Present?	Anticipated Effects Determination[2]
Eastern indigo snake *Drymarchon couperi*	T		E	Yes	May affect; not likely to adversely affect
Black pine snake *Pituophis melanoleucus lodingi*	T		E	Yes	May affect; not likely to adversely affect
Red-cockaded woodpecker *Picoides borealis*	E		E	Yes	May affect; not likely to adversely affect
Wood stork *Mycteria americana*	T		E	Yes	May affect; not likely to adversely affect
Florida panther *Concolor coryi*	E		E	Yes	May affect; not likely to adversely affect

[1] E = Endangered; T = Threatened; C = Candidate species; DL = Delisted; - = not listed
[2] Federal species = No effect or May affect; Not likely to adversely affect

All species descriptions, preferred habitat, and location of known occurrences are summarized from the IPaC database (Federal species), ~~and~~ from a report entitled *Endangered Species of Mississippi*[104], and from USFWS species descriptions.[10]

Alabama Heelsplitter (Threatened). The inflated heelsplitter has an oval, compressed to moderately inflated, thin shell. The valves may gape anteriorly. The umbos are low, and a prominent posterior wing is present that may extend anterior to the beak in young individuals. The shell is brown to black and may have green rays in young individuals.[11]

The preferred habitat of this species is soft, stable substrates in slow to moderate currents. It has been found in sand, mud, silt and sandy gravel, but not in large gravel or armored gravel. It is usually collected on the protected side of bars and may occur in depths over 20 feet. The occurrence of this species in silt may not indicate that the life cycle can be successful in that substrate. Adult mussels may survive limited amounts of silt where juveniles would suffocate. The heelsplitter has been known to use the freshwater drum as a suitable host for its eggs; therefore, it could potentially be found in any river system the drum inhabits.

During field reconnaissance, the largest stream encountered was Bayou LeCroix, an outlet stream of the Bay St. Louis. The segment of Bayou LeCroix located within the Build Alternative Corridor is relatively narrow, but does have slow to moderate currents and likely a silty/clay substrate. No sand bars are present in this segment and the depth of Bayou LeCroix is less than 20 feet. Although freshwater drum species (host) may be present in Bayou LeCroix, the heelsplitter has not been known to occur in this stream system/area. Recently, this species has only been collected at two locations on the Pearl River in Mississippi and in the West Pearl River in Louisiana. It still occurs in the Amite River in Louisiana and

[10] USFWS. 2018a.Eastern black rail, LATERALLUS JAMAICENSIS JAMAICENSIS. https://www.fws.gov/southeast/wildlife/birds/eastern-black-rail/#laterallus-jamaicensis-jamaicensis-section; accessed 10/5/2018.

[11] USFWS, Environmental Conservation Online System, https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=F01O; accessed 10/06/2017.

parts of the Tombigbee River drainage in Mississippi.[12] It is anticipated that a finding of no effect would be made for the Alabama (=inflated) Heelsplitter.

Louisiana Quillwort. The Louisiana quillwort is a small, semi-aquatic, facultative evergreen plant with spirally-arranged leaves (sporophylls) arising from a globose, two-lobed corm. The pliant, hollow leaves are transversely septate and measure 0.12 inch wide and up to 16.0 inches long. These little plants are valuable indicators of stream health. To date, 8 populations occur in Louisiana, 3 populations in Alabama, and 30 populations in Mississippi. It was not until 1996 that Louisiana quillwort plants were verified in Mississippi. Most Mississippi colonies of quillwort are found in the DeSoto Ranger District of the DeSoto National Forest (Forrest, Perry, Stone, Harrison, and Jackson counties) with a smaller cluster of sites in North-Central Hancock County. One colony is known from Pearl River County.

Louisiana quillworts grow in mineral soil, usually light grey in color, in bottomlands that are periodically washed free of leaves and debris. Overstory trees are typically laurel oak, red maple, tuliptree, and swamp tupelo. Pine trees are only occasionally observed, but they may have been more common, as large old pine stumps are frequently observed around quillwort populations.

The Louisiana quillwort was listed as an endangered species by the USFWS in 1992 before populations were discovered in Mississippi. Although the majority of known Mississippi colonies are found on public land, various land uses, including certain silviculture activities, military training, and some recreational activities, as well as natural alterations arising from impoundment of streams, may contribute to adverse impacts on quillwort habitat. Activities which negatively affect hydrology, water quality, and/or substrate stability could threaten population persistence in its habitat.

Suitable habitat for the quillwort is present within the Survey Corridor; however, the health of the stream segments surveyed were in decline due to silviculture practices, pollution, and debris. Overhead canopy of the streams were primary pine and hardwoods, though not specifically the preferred hardwood canopy species of the quillwort.

The optimal survey window for the Louisiana quillwort is November through May. The T&E survey was conducted in March/April 2016, during the optimal field season for the species, and again in June 2016. The natural hydrology had been heavily altered in the survey area due to silvicultural activities, including ditching, rowing and logging within the numerous pine plantations that account for most of the Survey Corridor. Additionally, while the species lives in water or very wet habitats, due to record rainfall and flooding many of the areas within the Survey Corridor were extremely wet with water as much as three to four feet deep during the March/April species surveys. During the second field visit for the southern alignment in June 2016 under normal conditions, portions of the proposed corridor were still heavily saturated or ponded with 3 to 12 inches of standing water in areas. Due to the site conditions—specifically the silvicultural activities—it is unlikely the Louisiana quillwort inhabits the on-site streams, and no quillwort was observed during field observations. It is anticipated that a finding of may affect, not likely to adversely affect will be made for the Louisiana quillwort. Additional surveys will be

[12] Mississippi Museum of Natural Science. 2014. Endangered Species of Mississippi. Mississippi Department of Wildlife, Fisheries, and Parks, Mississippi Museum of Natural Science, Jackson, Mississippi.

conducted prior to construction during the optimal survey window and in normal site conditions to verify no species are within the construction limits.

Eastern Indigo Snake. The eastern indigo snake is a non-venomous, black snake. It is the longest snake native to the United States, ranging in size from 60 to 84 inches, and is entirely shiny bluish-black color, including the belly. The chin and sides of the head are usually colored reddish or orange-brown. Juvenile indigo snakes look very similar to adults, but have much more red on their heads. Indigo snakes are sexually dimorphic, with males growing to larger lengths than females.

Eastern indigo snakes are restricted to Florida and southern areas of Georgia, Alabama, and Mississippi. Until relatively recently, all indigo snakes in the U.S. were considered to be the same species, D. corais.

In the southeast, indigo snakes are restricted to areas with dry sand ridges and pine-oak sandhills (uplands), dominated by pines (primarily longleaf) and oaks. Gopher tortoises usually inhabit the areas where the eastern indigo snake is found. These snakes use gopher tortoise burrows as shelter during the winter and during the warmer months for nesting and refuge from intense summer heat. During the active season, indigo snakes may move long distances and often forage along wetland margins.

Indigo snakes are active strictly by day. During the summer they prefer wetland edges where prey is abundant, but move to drier habitats in the winter. Indigo snakes breed in the winter and are more active in cold weather than most other snakes. When cornered, they may flatten their heads, hiss and vibrate their tails, which produces a rattling sound. Despite these intimidating acts, the indigo snake rarely bites. Indigo snakes regularly feed on mammals, birds, frogs and other snakes, including rattlesnakes and cottonmouths. Also, these snakes will occasionally feed on young gopher tortoises.

In the past, periodic growing season fires created excellent upland habitat for the gopher tortoise, the presence of which is important to the Indigo snake in Mississippi. In recent years, fires have been excluded from formerly suitable habitat and burning is primarily performed in the dormant season; this sort of burning does not effectively control proliferation of hardwoods and brush. In parts of its range, this species has been adversely affected by the “gassing” of gopher tortoise burrows, a practice illegal in Mississippi. The last specimen actually collected in Mississippi was taken in 1939, and there have been no verified observations of natural populations of the Indigo snake in Mississippi since the 1950s.[13]

Suitable habitat exists for the eastern indigo snake in the Survey Corridor, particularly along wetland edges and in the summer months. They usually prefer pine oak sandhills usually inhabited by gopher tortoises. The eastern indigo snake uses the gopher tortoises’ burrows for shelter during winter. Due to the low probability of gopher tortoises to inhabit the Survey Corridor, the eastern indigo snake may be restricted to the wetland areas where prey is abundant. However, due to lack of observation of the species in Mississippi since the 1950s, it may be extirpated. It is anticipated that a finding of may affect, but is not likely to adversely affect will be made for the eastern indigo snake.

[13] Mississippi Museum of Natural Science. 2014. Endangered Species of Mississippi. Mississippi Department of Wildlife, Fisheries, and Parks, Mississippi Museum of Natural Science, Jackson, Mississippi.

Black Pine Snake. The black pine snake is a large dark brown to black snake that prefers to inhabit mature, longleaf pine forests, similar to the gopher tortoise, with sandy soil, an open canopy, moderately fire-suppressed midstory and a thick grassy understory. Studies have shown that the black pine snake is usually found in rotting pine stumps and are located underground two-thirds of the time. It is considered critically imperiled and in decline along with its preferred habitat of longleaf pine forests due to timbering and conversion to agriculture.

Although the black pine snake has been known to occur in 14 counties within southern Mississippi, (excluding Hancock County) the species is now extremely rare over most of the historic range and has been extirpated from Louisiana and Lauderdale County, Mississippi. It is still relatively common within DeSoto National Forest in Mississippi. A recent study commissioned by USFWS found that 31 percent of historical black pine snake population segments have been extirpated and that another 26 percent are in serious jeopardy; the main reason for the decline being habitat destruction and fragmentation. In recent years, fires (controlled burning) has been excluded from some formerly suitable habitats in Mississippi, resulting in a dense understory of hardwoods and shrubs that prevent sunlight from reaching the forest floor, shading out food sources of the black pine snake.

The majority of the Survey Corridor contains saturated (poorly drained) soil conditions and dense canopy. Open areas of the Survey Corridor are primarily pasture or transmission corridors with emergent wetlands. The black pine snake does have the potential to occur in the few upland areas of the Survey Corridor with sandy soil sand stands of long leaf pine and may have a broader range in during the dry season. Literature also states that the black pine snake may be found within stream or river corridors and near pitcher plant bogs, which were present within the Survey Corridor. While suitable habitat is present for the black pine snake, it is anticipated that a finding of may affect, but is not likely to adversely affect will be made for the Black Pine Snake.

Red-Cockaded Woodpecker. About the size of the common cardinal, the red-cockaded woodpecker is approximately 7 inches long, with a wingspan of about 15 inches. Its back is barred with black and white horizontal stripes. The red-cockaded woodpecker's most distinguishing feature is a black cap and nape that encircle large white cheek patches. Rarely visible, except perhaps during the breeding season and periods of territorial defense, the male has a small red streak on each side of its black cap called a cockade, hence its name. Female red-cockaded woodpeckers lack the red cockade. Juvenile males have a red 'patch' in the center of their black crown. This patch disappears during the fall of their first year at which time their 'red- cockades' appear.

The diet of red-cockaded woodpeckers consists mostly of insects in the egg, larvae, and adult stages. These include beetles, ants, roaches, spiders and other insects found in or on pine trees. Fruits and seeds makeup a small portion of the overall diet. Large, older trees are preferred for foraging. In general, males forage on the limbs and upper trunk while females forage on the trunk below the crown.

The red-cockaded woodpecker makes its home in mature pine forests (60+ years old). Longleaf pines are most commonly preferred, but other species of southern pine are also acceptable. While other woodpeckers bore out cavities in dead trees where the wood is rotten and soft, the red-cockaded woodpecker is the only one that excavates cavities exclusively in living pine trees. Cavities are excavated in mature pines, generally over 80 years old. The older pines favored by the red-cockaded woodpecker

often suffer from a fungus called red heart disease, which attacks the center of the trunk, causing the inner wood, the heartwood, to become soft. Cavity excavation takes from one to six years.

In Mississippi, the red-cockaded woodpecker mainly occurs in the southern two-thirds of the state. It has not been found in the Delta and only sporadically occurs in northern counties. Although listed and protected in Hancock County, Mississippi, given the coastal region surrounding the Survey Corridor, the current land use and silviculture practices, and lack of mature undisturbed pine stands (longleaf and slash pine) make it unlikely that the red-cockaded woodpecker would nest within the Survey Corridor. While some suitable foraging habitat may be present within the Survey Corridor, this habitat is unlikely to be used by red cockaded woodpecker because of the low probability of suitable nesting habitat occurring within 0.5 miles of the Survey Corridor. Thus, impacts to potential suitable foraging habitat are not expected to impact this species. It is anticipated that a finding of may affect, but is not likely to adversely affect will be made for the red-cockaded woodpecker.

Wood Stork. Wood storks are large, long-legged wading birds, about 50 inches tall, with a wingspan of 60 to 65 inches. The plumage is white except for black primaries and secondaries, and a short black tail. The head and neck are largely unfeathered and dark gray in color. The bill is black, thick at the base, and slightly decurved. Immature birds are dingy gray and have a yellowish bill.

Nesting has been restricted to Florida, Georgia, and South Carolina; however, they may have formerly bred in most of the southeastern United States and Texas. A second distinct, non-endangered population of wood storks breeds from Mexico to northern Argentina.

Wood storks from both populations move northward after breeding, with birds from the southeastern United States population moving as far north as North Carolina on the Atlantic Coast and into Alabama and eastern Mississippi along the Gulf Coast, and storks from Mexico moving up into Texas and Louisiana and as far north as Arkansas and Tennessee along the Mississippi River Valley. Occasional sightings are known from all states along and east of the Mississippi River, and sporadic sightings in some states west of the Mississippi and in Ontario, Canada.

Storks are birds of freshwater and estuarine wetlands, including ponds, bayheads, flooded pastures, oxbow lakes, and ditches. They nest primarily in cypress or mangrove swamps. They feed in freshwater marshes, narrow tidal creeks, or flooded tidal pools. Particularly attractive feeding sites are depressions in marshes or swamps where fish become concentrated during periods of falling water levels.

The wood stork is listed as an endangered species by USFWS in only Florida, Georgia, Alabama, and South Carolina because at the time of listing, that was the range of the U.S. breeding population. Birds from Mexican and Guatemalan breeding populations can be found in the U.S. as well, but these birds are not considered endangered. It is assumed birds found in Mississippi came from the non-listed population.

In Mississippi, storks are found on the western edge of the state in those areas bordering the Mississippi River. Nesting wood storks have not been confirmed in Mississippi, although a report of possible nesting was made along the Mississippi River north of Vicksburg. Although storks are not known to nest in Mississippi, the forested wetland habitat, freshwater streams, and location of the Study Area may provide suitable stopover and foraging habitat. It is anticipated that a finding of may affect, but is not likely to adversely affect will be made for the wood stork.

Florida Panther. The Florida panther is tawny, brown on the back and pale gray underneath. It is one of 32 Puma concolor subspecies known by many names – puma, cougar, mountain lion, painter, catamount and panther. Panthers historically ranged across the southeastern United States including Arkansas, Louisiana, Mississippi, Alabama, Georgia, Florida, and parts of Tennessee and South Carolina. Currently, the breeding population of Florida panthers is found only in the southern tip of Florida, south of the Caloosahatchee River. In recent years, young male panthers have traveled north into central and northeast Florida, and one even dispersed to west-central Georgia near the Alabama border. Females do not roam as widely and none has been documented outside of south Florida in decades.

Florida panthers are about 6 to 7 feet long – males are bigger than females. They are carnivores and skilled at hunting white-tailed deer, feral hogs, raccoons, and other medium-sized mammals and reptiles. Florida panthers also stalk birds.

Florida panthers utilize a diversity of warm climate habitats. They live in wetlands, swamps, upland forests, and stands of saw palmetto. Panthers are wide-ranging, secretive, and occur at low densities. They require large, contiguous areas to meet their social, reproductive, and energetic needs. Panther habitat selection is related to prey availability. Dense understory vegetation provides some of the most important feeding, resting, and denning habitat for panthers. The historic range of the Florida panther extended throughout the Gulf Coast from Florida to Louisiana. Florida panthers live alone, unless a pair is mating or a female is raising cubs. Males roam much larger territories than the females. A male can occupy a territory over 200 to 250 square miles in size.

The Florida panther probably once ranged over most of Mississippi. Unconfirmed reports of panthers in Mississippi over the past few years have been concentrated along the Mississippi River and along the lower Pearl River. No records could be located documenting the panther within the vicinity of the Survey Corridor.

The corridor's hardwood forested wetlands and swamp areas provide suitable habitat and food for the Florida panther, although it less frequently occurs in upland pine forests or pine savannahs. The lack of thick understory in most of the Survey Corridor is not suitable for denning. It is anticipated that a finding of may affect, but is not likely to adversely affect will be made for the Florida panther.

Eastern Black Rail. The Eastern black rail is approximately 3.9 to 5.9 inches long with a wingspan of 8 to 11 inches. Its overall color is generally pale to blackish-gray, with a small blackish bill and red eyes. Underparts are uniformly colored but are lighter on the chin and throat. The nape and upper back are chestnut. The remaining back, upper tail feathers, and wing flight feathers are dark gray to blackish with small white spots, sometimes with chestnut-brown. The lower abdomen, under tail feathers, and flanks are streaked with black and white and dark gray barring with chestnut. Eastern black rail chicks are covered in black down with an oily greenish sheen and have dark brownish-olive eyes when hatched. Young are similar to adults, but their plumage is not as dark and has fewer and whiter spots. The eyes of juvenile black rails get lighter with age, changing from dark brownish-olive to eventually changing to red by about 3 months.[14]

[14] USFWS. 2018a. Eastern black rail, LATERALLUS JAMAICENSIS JAMAICENSIS. https://www.fws.gov/southeast/wildlife/birds/eastern-black-rail/#laterallus-jamaicensis-jamaicensis-section; accessed 10/5/2018.

The diet of the Eastern black rail is somewhat unknown. It is thought that they are probably opportunistic feeders. Specimens collected indicate they have a diet comprised of small aquatic invertebrates, small terrestrial invertebrates, and small seeds. Foraging probably takes place on or near the edges of emergent vegetation, above and below the high-water line.[15]

In the region of the proposed project, preferred habitat for the Eastern black rail is typically salt and brackish marshes with dense cover. Variable tidal height and volume contribute to differences in salt marsh cover plants of Eastern black rail habitat. Along portions of the Gulf Coast, Eastern black rails can occur in higher elevation wetland zones that include shrubby vegetation. Impounded and unimpounded intermediate marshes (marshes closer to high elevation areas) also provide habitat for Eastern black rails.[16]

The preferred habitats of salt and brackish marshes with dense cover do not occur within the Survey Corridor. The proposed listing of the Eastern black rail includes a current range map that lists the project area as within the "potential" range for the Eastern black rail. However, between 2010 and 2017, no identifications of Eastern black rails for the state of Mississippi were recorded.[17] Thus, impacts to potential suitable foraging habitat are not expected to impact this species. It is anticipated that a finding of "no effect" would be made for the Eastern black rail.

5.14.2.1 Birds of Conservation Concern

USFWS Migratory BCC are species that represent the highest conservation priorities of USFWS beyond those currently designated as threatened or endangered.[18,19] The 24 BCC species with the potential to occur in the project specific Survey Corridor are listed in Table 5.12 below. Of the 24 BCC species listed by USFWS, 12 have potential habitat present in the Survey Corridor.

[15] ibid

[16] ibid

[17] USFWS. 2018a. Eastern black rail, LATERALLUS JAMAICENSIS JAMAICENSIS. https://www.fws.gov/southeast/wildlife/birds/eastern-black-rail/#laterallus-jamaicensis-jamaicensis-section; accessed 10/5/2018.

[18] USFWS. 2018b. IPaC for Hancock County, MS, Pearl River County, MS, and the Port Bienville Survey Corridor. https://ecos.fws.gov/ipac/; accessed 11/27/2018.

[19] USFWS. 2008. Birds of Conservation Concern. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, Virginia. 85pp. www.fws.gov/migratorybirds; accessed 2/5/2019.

Table 5.12 USFWS Migratory BCC at the Port Bienville Project Site Corridor

Common Name	Scientific Name	Potential Habitat Present?[1]	Anticipated EffectDetermination[1]
American kestrel	*Falco sparverius paulus*	Yes	Temporary minor, no effect long-term
Bald eagle	*Haliaeetus leucocephalus*	Yes	Temporary minor, no effect long-term
Black skimmer	*Rynchops niger*	No	No effect
Cerulean warbler	*Dendroica cerulea*	Yes	Temporary minor, no effect long-term
Clapper rail	*Rallus crepitans*	Yes	Temporary minor, no effect long-term
Common ground-dove	*Columbina passerina exigua*	Yes	Temporary minor, no effect long-term
Dunlin	*Calidris alpina arcticola*	No	No effect
Gull-billed tern	*Gelochelidon nilotica*	No	No effect
Henslow's sparrow	*Ammodramus henslowii*	No	No effect
Kentucky warbler	*Oporornis formosus*	Yes	Temporary minor, no effect long-term
King rail	*Rallus elegans*	Yes	Temporary minor, no effect long-term
Le Conte's Sparrow	*Ammodramus leconteii*	Yes	Temporary minor, no effect long-term
Least tern	*Sternula antillarum*	No	No effect
Lesser Yellowlegs	*Tringa avipes*	No	No effect
Nelson's Sparrow	*Ammodramus nelsoni*	No	No effect
Prairie Warbler	*Dendroica discolor*	No	No effect
Prothonotary Warbler	*Protonotaria citrea*	Yes	Temporary minor, no effect long-term
Red-headed Woodpecker	*Melanerpes erythrocephalus*	Yes	Temporary minor, no effect long-term
Rusty Blackbird	*Euphagus carolinus*	No	No effect
Seaside Sparrow	*Ammodramus maritimus*	Yes	Temporary minor, no effect long-term
Short-billed Dowitcher	*Limnodromus griseus*	No	No effect
Swallow-tailed Kite	*Elanoides forcatus*	Yes	Temporary minor, no effect long-term
Willet	*Tringa semipalmata*	No	No effect
Wood Thrush	*Hylocichla mustelina*	Yes	Temporary minor, no effect long-term

Source: USFWS.2018b. IPaC for Hancock County, MS, Pearl River County, MS and the Port Bienville Survey Corridor. https://ecos.fws.gov/ipac/; accessed 11/27/ 2018.

[1] Based on habitat requirements listed by All About Birds in concert with checking the Cornell Laboratory of Ornithology eBird Database (2019) for Port Bienville.

5.14.5. Migratory Birds of Conservation Concern Effects/Impacts Summary

No-Build Alternative. Since the No-Build Alternative would leave the existing Port Bienville Railroad in its current configuration without a north-south connection to the NS rail and does not include the construction of any new railroad features, it would have no impacts to BCC species.

Build Alternative. The most likely impacts to the BCC species within the proposed right-of-way would be from construction and clearing activities for the new rail line. Construction activities would result in the loss of wildlife habitat, including habitat for BCC species, within the right-of-way limits. However, the right-of-way corridor would be relatively small in relation to the surrounding habitat for BCC species. The new rail corridor is not anticipated to create a barrier that fragments BCC habitat. During final design the Project would be evaluated to see if incorporating specific design features would enhance wildlife crossings along the Project and thereby minimize the impacts from habitat fragmentation.

Effects to wildlife would occur during vegetation removal and disturbance during construction. Grading and construction of the new track would permanently convert wetland habitat within the right-of-way and clearing of pine and hardwood trees would result in loss of habitat for wildlife including BCC species in the area. Since BCC species are mobile, they have the capability to avoid areas of construction and travel to other undisturbed areas surrounding the corridor.

Existing vegetation communities provide habitat for BCC species. Construction activities could cause temporary displacement or stress in local BCC species. Potential effects on BCC species would be short-term because construction disturbance would be temporary.

The future Project Sponsor would be responsible for implementation of minimization and mitigation measures for vegetation and wildlife, including BCC species. Mitigation measures and restoration of disturbed areas would reduce effects to wildlife, including BCC species. BMPs would be used to the extent practicable to further reduce the impact to wildlife and habitat. Vegetation clearing for construction activities would be planned outside of the migratory bird breeding season. In addition, areas disturbed for stockpiling materials or equipment staging yards would be placed in uplands, where possible, and restored to preconstruction elevations and reseeded with native species to re-establish the vegetation community. During construction, sediment run-off would be controlled near streams through the use of silt fencing and other methods to reduce turbidity and any potential effects to aquatic species. All these measures would help limit potential impacts to BCC species.