

SPECIES ANALYSIS SUMMARY
 Project Name: US Highway 69 Corridor: Gateway to the Big Thicket
 CSJ(s): 0200-08-049, 0200-09-069

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect/Take Determination for Federally Listed Species	State Status	Impact Determination for State-Listed Species	Explanation for Effect/Take and/or Impact Determination	Presence/Absence survey conducted?
Hardin, Tyler	Birds	Bachman's Sparrow	<i>Peucaea aestivalis</i>	Occurring in the Pineywoods of east Texas, Bachman's sparrow optimal habitat consists of fire controlled mature southern pine woodland with a well-developed grass and herb layer with limited shrub and hardwood midstory components. Suboptimal habitat known to be utilized by the species includes brushy or overgrown grassy hillsides, overgrown fields with thickets and brambles, grassy orchards, and remnant grasslands in the Post Oak Savannah region of Texas.	N	Although pine woods are abundant within the project area, these communities are either active managed pine plantations or relic pine plantations with dense understory vegetation. No brushy or overgrown grassy hillsides or fields occur within the project area.	—	N/A	T	No impact	No suitable habitat occurs in the project area.	N
Hardin, Tyler	Birds	Bald Eagle	<i>Haliaeetus leucocephalus</i>	The species occurs throughout Texas and is divided into two populations: breeding and non-breeding or wintering birds. Breeding populations occur primarily in the eastern half of the state and in coastal counties from Rockport to Houston. Nonbreeding or wintering populations are located primarily in the panhandle, central, and east Texas, and in other areas of suitable habitat throughout the state. Habitat consists of dense mature coniferous or hardwood trees adjacent to large open bodies of water. Breeding habitat can include any type of wetland habitat such as rivers, marshes, or large lakes with high concentration of prey fish. Trees utilized for nesting are typically over 60 feet tall, have an open structure, and close proximity to habitat edge.	N	No rivers or large lakes occur within the project area. Although large creeks do occur within the project area, the width of the channel and density of streamside vegetation is not conducive to foraging eagles.	—	N/A	T	No impact	No suitable habitat occurs in the project area.	N
Hardin, Tyler	Birds	Least Tern	<i>Sternula (=Sterna) antillarum</i>	The interior population (subspecies <i>athalassos</i>) of the Least Tern nests on bare or sparsely vegetated sand, shell, and gravel beaches, sandbars, islands, and salt flats associated with inland rivers and reservoirs. It occasionally nests on man-made structures such as sand and gravel pits or gravel rooftops. Preferred habitat includes sand and gravel bars within a wide unobstructed river channel, or open flats along shorelines of lakes and reservoirs. Colony sites can move annually, depending on landscape disturbance and vegetation growth at established colonies. It is known to nest at three reservoirs along the Rio Grande River, on the Canadian River in the northern Panhandle, and along the Red River.	N	The species is a potential migrant; the project area contains no coastal marshes or inland rivers with gravel beaches, sandbars, islands, or salt flats.	E	No effect	E	No impact	No suitable habitat occurs in the project area.	N

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Hardin, Tyler	Birds	Piping Plover	<i>Charadrius melodus</i>	This migratory species overwinters in Texas, where it occurs on beaches, ephemeral sand flats, barrier islands, sand, mud, algal flats, washover passes, salt marshes, lagoons, and dunes along the Gulf Coast and adjacent offshore islands, including spoil islands in the Intracoastal Waterway. Algal flats appear to be the highest quality habitat because of their relative inaccessibility and their continuous availability throughout all tidal conditions. Sand flats often appear to be preferred over algal flats when both are available, but large portions of sand flats along the Texas coast are available only during low or very low tides and are often completely unavailable during extreme high tides or strong north winds. Beaches appear to serve as a secondary habitat to the flats associated with the primary bays, lagoons, and inter-island passes. Beaches are rarely used on the southern Texas coast, where bayside habitat is always available, and are abandoned as bayside habitats become available on the central and northern coast.	N	No beaches or bayside mud or salt flats occur in the project area. USFWS only considers affects to this species in the case of wind energy projects.	T	No effect	T	No impact	No suitable habitat occurs in the project area.	N
Hardin, Tyler	Birds	Red Knot	<i>Calidris canutus rufa</i>	The species is a winter resident and migrant in Texas. It is primarily found in marine habitats such as sandy beaches, salt marshes, lagoons, mudflats of estuaries and bays, and mangrove swamps during winter months. It primarily occurs along the Gulf coast on tidal flats and beaches and less frequently in marshes and flooded fields. It has occasionally been observed along shorelines of large lakes and freshwater marshes.	N	No seacoasts on tidal flats and beaches, suitable herbaceous wetlands, or tidal flat/shores occur in the project area.	T	No effect	—	N/A	No suitable habitat occurs in the project area.	N

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Hardin, Tyler	Birds	Red-cockaded Woodpecker	<i>Picoides borealis</i>	The species is a year-round resident of the Piney Woods ecosystem of east Texas. Optimal habitat consists of pine forest with large, widely-spaced trees. It nests in cavities in mature (over 60 years old) longleaf pine (<i>Pinus palustris</i>), when it occurs, but will also utilize shortleaf (<i>P. echinata</i>) and loblolly pine (<i>P. taeda</i>). Relatively younger pines (over 30 years old) can be used for foraging. Nest cavities are excavated from living trees, taking 1 to 3 years to create. As a cooperative breeding species, nest cavities occur in clusters, with 1 to 20 cavity trees occurring over 3 to 60 acres. The clan home range is approximately 200 acres when not nesting.	N	The project area does not contain old growth pine forests with little to no understory vegetation, which is the required breeding and foraging habitat for this species. The majority of the pine woodland has not been managed and has a dense understory component. The loblolly pine plantation areas are young pines, managed for timber production. Additionally, the project occurs outside the currently understood occupied range for this species. An NDD EO is within a 1.5 mile buffer of the proposed project location; with a last observation in 1987.	E	No effect	E	No impact	No suitable habitat occurs in the project area.	N
Hardin	Birds	Reddish Egret	<i>Egretta rufescens</i>	A year-round resident of the Texas Gulf Coast, the species inhabits saline, hypersaline, or brackish coastal habitats including barren sand or mud tidal flats, salt ponds, lagoons, and open mangrove communities. It occurs less frequently in other habitats such as coastal beaches, sparsely-vegetated freshwater marshes, and the shores of lake and reservoirs. It nests on the ground or low in mangroves or other terrestrial vegetation (e.g. mesquite [<i>Prosopis glandulosa</i>], yucca [<i>Yucca</i> sp.], or prickly-pear [<i>Opuntia</i> sp.]) on natural islands or man-made dredge spoil islands, but it also occasionally nests on the coastal mainland. It forages in shallow water usually less than 15 centimeters deep.	N	No brackish marshes, shallow salt ponds or tidal flats within the project area.	—	N/A	T	No impact	No suitable habitat occurs in the project area.	N

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Hardin, Tyler	Birds	Swallow-tailed Kite	<i>Elanoides forficatus</i>	This migratory species breeds in the South Central Plains of east Texas and throughout the southeastern U.S. In Texas, breeding habitat occurs between sea level and 230 meters in elevation in bottomland forests, cypress swamps, pine glades, and freshwater marshes skirting large lakes. It nests near the tops of trees that are higher than the surrounding stand, often near a clearing or the edge of a forest or woodland. It prefers to nest in pines, but occasionally uses species such as bald cypress (<i>Taxodium distichum</i>), water oak (<i>Quercus nigra</i>), or cottonwood (<i>Populus deltoides</i>).	Y	Forested pine areas along large creeks and flooded wetlands occur within the project area.	—	N/A	T	May impact	Suitable habitat occurs within the project area.	N
Hardin, Tyler	Birds	White-faced Ibis	<i>Plegadis chihi</i>	The species is found in the Western Gulf Coastal Plains ecoregion of Texas. Preferred habitat includes freshwater wetlands, marshes, ponds, rivers, irrigated land, and sloughs, but it occasionally forages in brackish or saltwater marshes. It nests in marshes in low trees, on the ground in bulrushes (<i>Scirpus</i> sp.) or reeds, or on floating mats.	N	No marshes, sloughs, or rice fields occur within the project area.	—	N/A	T	No impact	No suitable habitat occurs in the project area.	N
Hardin, Tyler	Birds	Wood Stork	<i>Mycteria americana</i>	The species breeds in Mexico, and nesting sites have not been recorded in Texas since 1960. However, post-breeding migrants disperse into Texas in the summer. Foraging habitat includes freshwater prairie ponds, flooded pastures or fields, ditches, and other shallow standing water with an open canopy, occasionally including brackish wetlands. The species typically roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries).	Y	Although freshwater wetlands occur throughout the project area, these areas are primarily located within the forested areas and do not have an open canopy. There are several roadside ditches and open water features located within the proposed alignment that could provide suitable foraging habitat. The species is a potential migrant throughout Texas in the summer; however, no nesting habitat occurs in the project area.	—	N/A	T	May impact	Suitable foraging habitat occurs in the project area.	N
Tyler	Fishes	Blue Sucker	<i>Cyprinus elongatus</i>	Within Texas, the blue sucker occurs in limited numbers throughout the major streams and rivers within the state, except the Rio Grande. The species inhabits large, deep rivers, and deeper zones of lakes. River habitat is characterized by cobble and/or bedrock substrates. Adults occupy areas with deep riffles, while juveniles are found in shallower, less swift riffles.	N	No major rivers occur within the project area.	—	N/A	T	No impact	No suitable habitat occurs in the project area.	N

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Tyler	Fishes	Paddlefish	<i>Polyodon spathula</i>	The paddlefish is known to occur in the Red River, Toledo Bend Reservoir, the Middle Neches basin, and the West Fork of the San Jacinto River. Habitat for the species includes slow-flowing water of large and medium-sized rivers, river-margin lakes, channels, oxbows, backwaters, and impoundments with access to spawning areas. Spawning occurs in fast shallow water over gravel bars.	N	No large rivers or impoundments occur within the project area.	—	N/A	T	No impact	No suitable habitat occurs in the project area.	N
Hardin, Tyler	Fishes	Western Creek Chubsucker	<i>Erimyzon claviformis</i>	The species is widespread in east Texas from the Red to the San Jacinto Rivers. The species occurs in pools of clear headwaters, creeks, and small rivers with silt, sand, and gravel substrates, and occasionally in lakes. It is frequently found near submergent vegetation. Spawning occurs in river mouths or pools, riffles, lake outlets, or upstream creeks.	Y	This species may occur in the small, vegetated creeks within the project area. An NDD EO from 1979 intersects the proposed project location.	—	N/A	T	May impact	Suitable habitat occurs in the project area.	N
Hardin, Tyler	Mammals	Louisiana Black Bear	<i>Ursus americanus luteolus</i>	Historically, Louisiana black bear occurred in east Texas throughout the Western Gulf Coastal Plains ecoregion and as far west as the San Antonio River drainage basin. Habitat includes bottomland hardwood forest, brackish and freshwater marshes, salt domes, wooded spoil levees along canals, bayous, and agricultural fields. It generally requires areas with large tracts of inaccessible forest.	Y	Large tracts of inaccessible forested areas, such as forests surrounding Village Creek and Hickory Creek, occur within the project area. Additionally, the area south of Village Mills where the Big Thicket National Preserve abuts the right-of-way provides a large tract of contiguous habitat for this species.	—	N/A	T	May impact	Suitable habitat occurs in the project area.	N
Hardin, Tyler	Mammals	Rafinesque's Big-eared Bat	<i>Corynorhinus rafinesquii</i>	This species occurs in the bottomland pine and hardwood forests of east Texas. The species is known to roost in hollow trunks of bottomland hardwoods such as black gum (<i>Nyssa sylvatica</i>), southern magnolia (<i>Magnolia grandiflora</i>), and water tupelo (<i>Nyssa aquatica</i>). It also roosts in caves and man-made structures such as bridges, culverts, and abandoned buildings.	Y	This species could occur within concrete culverts, concrete bridges, and abandoned man-made structures within the project area. Mature bottomland pine and hardwood forest occur along Village Creek, Hickory Creek, and Black Creek.	—	N/A	T	May impact	Suitable habitat occurs in the project area.	N

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Hardin, Tyler	Mollusks	Louisiana Pigtoe	<i>Pleurobema riddellii</i>	Freshwater mussel currently found in the Sabine, Neches, and Trinity River basins in Texas. The species occurs in streams to medium-sized rivers with moderate flow. In Texas, the species has only been documented occurring in relatively shallow lotic waters with preferable substrate being sand and sand with gravel and silt. It is not generally known to tolerate impoundments.	Y	The project occurs within the Neches River basin. Two perennial streams, Village Creek and Hickory Creek, occur within the project area.	—	N/A	T	May impact	Suitable habitat occurs within the perennial creeks (Hickory and Village Creeks) of project area. Construction is proposed in both perennial streams within the project area.	N
Hardin, Tyler	Mollusks	Sandbank Pocketbook	<i>Lampsilis satura</i>	A freshwater mussel that is currently limited to the Upper Trinity, Neches, Sabine, and San Jacinto River basins in Texas. The species occurs in flowing small to large rivers with gravel, gravel-sand, and sand substrates. It has been observed in littoral areas with snags, gravel, or sand substrate with slow to moderate currents, as well as lotic waters in substrates of sand, silty sand, and sand and clay mixture.	Y	The project occurs within the Neches River basin. Two perennial streams, Village Creek and Hickory Creek, occur within the project area.	—	N/A	T	May impact	Suitable habitat occurs within the perennial creeks (Hickory and Village Creeks) of project area. Construction is proposed in both perennial streams within the project area.	N
Hardin, Tyler	Mollusks	Southern Hickorynut	<i>Obovaria arkansasensis</i>	A freshwater mussel that is currently known from the Neches and Sabine River basins in Texas. The species occurs in small to large rivers with medium-sized gravel substrate and low to moderate current.	Y	The project occurs within the Neches River basin. Two perennial streams, Village Creek and Hickory Creek, occur within the project area.	—	N/A	T	May impact	Suitable habitat occurs within the perennial creeks (Hickory and Village Creeks) of project area. Construction is proposed in both perennial streams within the project area.	N
Hardin, Tyler	Mollusks	Texas Heelsplitter	<i>Potamilus amphichaenus</i>	A freshwater mussel currently known from the Trinity, Neches, and Sabine River basins. The species occurs in small streams to medium rivers with sand or mud substrate. It is found in flowing water but not in riffles or shoals. It prefers quiet waters and can be found in reservoirs.	Y	The project occurs within the Neches River basin. Two perennial streams, Village Creek and Hickory Creek, occur within the project area.	—	N/A	T	May impact	Suitable habitat occurs within the perennial creeks (Hickory and Village Creeks) of project area. Construction is proposed in both perennial streams within the project area.	N
Hardin, Tyler	Mollusks	Texas Pigtoe	<i>Fusconaia askewi</i>	A freshwater mussel endemic to the Neches and Sabine River basins in Texas. The species occurs in medium to large rivers with mixed mud, sand, and fine gravel substrate in areas protected from swift currents by fallen trees or other structures.	Y	The project occurs within the Neches River basin. Two perennial streams, Village Creek and Hickory Creek, occur within the project area.	—	N/A	T	May impact	Suitable habitat occurs within the perennial creeks (Hickory and Village Creeks) of project area. Construction is proposed in both perennial streams within the project area.	N

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Tyler, Hardin	Plants	Texas Trailing Phlox	<i>Phlox nivalis ssp. texensis</i>	This perennial herb is endemic to the Piney Woods of east Texas. It is found in relatively open, fire-maintained pine (<i>Pinus</i> spp.) or pine-hardwood forests on soils with a deep, sandy surface layer and clayey subsurface layers. .	Y	Although the majority of the project area does not appear to be regularly maintained with fire, pine and pine-hardwood forests on soils with a deep, sandy surface layer or clayey subsurface layers are present throughout the project area. Several habitat associates were noted during the site visit; no individuals of this species were observed in November 2018 or June 2019, but a targeted species survey was not conducted.	E	No effect	E	No impact	Suitable habitat occurs in the project area. A vegetation survey will be conducted for this species.	N
Hardin, Tyler	Reptiles	Alligator Snapping Turtle	<i>Macrochelys temminckii</i>	Occurs in East Texas where it inhabits perennial water bodies such as the deep water of rivers, canals, lakes, and oxbows, along with swamps, bayous, and ponds near deep running water. Preferred habitat is usually in water with a mud bottom and abundant aquatic vegetation, but the species may use sand-bottomed creeks.	Y	The project occurs within the Neches River basin and includes the Village Creek watershed. Two perennial streams, Village Creek and Hickory Creek, occur within the project area.	—	N/A	T	May impact	Suitable habitat occurs in the project area, and construction is proposed in both perennial streams within the project area.	N

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Hardin, Tyler	Reptiles	Louisiana Pine Snake	<i>Pituophis ruthveni</i>	The species occurs in the pineywoods of east Texas in longleaf pine savannah with substantial herbaceous ground cover, and pine-oak sandhills interspersed with moist bottomlands. Pocket gophers (<i>Geomys breviceps</i>) are an essential component of the snake habitat. They create burrow systems where the snakes are most frequently found and are a major source of food for the species.	N	The project occurs outside the currently estimated occupied range for this species (USFWS, 2018). Additionally, relic longleaf and shortleaf pine woodlands and plantations are not present within the project area. The pine and mixed hardwood forests have been previously cleared and managed for loblolly pine timber, which typically creates unsuitable habitat for this species due to forest floor shading and increased soil moisture. No pocket gopher mounds were observed during field investigations.	T	No effect	T	No impact	No suitable habitat occurs in the project area.	N
Hardin, Tyler	Reptiles	Northern Scarlet Snake	<i>Cemophora coccinea copei</i>	The species occurs in scattered areas across east Texas, occurring in pine, hardwood, or pine-oak forest on well-drained sandy or loamy soils.	Y	Mixed hardwood scrub on sandy soils occurs throughout the project area.	—	N/A	T	May impact	Suitable habitat occurs in the project area.	N
Hardin	Reptiles	Texas Horned Lizard	<i>Phrynosoma cornutum</i>	The species is found in semi-arid open areas with scattered vegetation comprised of bunchgrass, cacti, yucca, mesquite, acacia, juniper, or other woody shrubs and small trees commonly found in loose sandy or loamy soils.	N	No semi-arid open areas with sparse woody shrub or small tree vegetation occur within the project area.	—	N/A	T	No impact	No suitable habitat occurs in the project area.	N
Hardin, Tyler	Reptiles	Timber (Canebrake) Rattlesnake	<i>Crotalus horridus</i>	The timber rattlesnake may be found in swamps, floodplains, upland pine and deciduous woodlands, riparian zones, and abandoned farmland near a permanent water source, such as rivers, lakes, ponds, streams, and swamps where tree stumps, logs, and branches provide refuge. The species generally prefers dense ground cover, such as grapevines or palmetto. The timber rattlesnake occurs widely in eastern Texas.	Y	The species could occur within the floodplains, woodlands, and riparian areas associated with project area. Dense ground cover was present throughout the project area.	—	N/A	T	May impact	Suitable habitat occurs in the project area.	N