

HABITAT DESCRIPTIONS

Federally Endangered and Threatened and Candidate Species of Mississippi

*Use these habitat descriptions and the county list to aid in your project planning. Please note that the listed species described in this document could be affected by any **habitat disturbing** activities. All of these species are very sensitive to human disturbance. Therefore, before the use or transportation of any heavy construction equipment, or the removal of any vegetation **within potential habitats**, the Service recommends a qualified biologist conduct a visual survey for these species. Areas surveyed should also include ingress and egress areas, equipment storage areas, and staging areas.*

Plants

The threatened plant **Price's potato bean** (*Apios priceana*) is an herbaceous, twining vine that belongs to the pea family. It is often found in wooded areas that grade into creek and river bottoms. Surveys need to be conducted when species is in flower or fruit, typically mid-July into October. It is best to confirm flowering/fruitletting of the species at a nearby known site prior to initiating surveys.

The endangered plant **Louisiana quillwort** (*Isoetes louisianensis*) is a nonflowering grasslike plant that lives in water or in very wet habitats. Mature plants are six to ten inches long, mostly evergreen, with spore-bearing structures below ground. Surveys need to be conducted during the appropriate field season when the plants are visible, typically November into May. Timing varies depending upon rainfall, as plants completely die-back and are not visible when the intermittent streams, which are habitat for this species, have dried-up.

The endangered plant **pondberry** (*Lindera melissifolia*) is a member of the Lauraceae family and is a deciduous aromatic shrub that averages 0.5 to 2 meters tall. It occurs in seasonally flooded wetlands, sandy sinks, pond margins, and swampy depressions. It is best to conduct surveys for this species during the flowering season, when the species is highly visible (February to March); however surveys are still possible later in the season following leaf-out and into the fruiting season (late summer-fall). Since pondberry is a deciduous shrub, it is necessary that a nearby known site be visited prior to initiating any surveys, to confirm adequate visibility of the species for a determination of its presence or absence at a project site.

Terrestrial Animal Species

The threatened **gopher tortoise** (*Gopherus polyphemus*) inhabits well-drained sandy soils, especially in areas of longleaf pine but also occupies a wide range of upland habitat types. The general physical and biotic features thought to characterize suitable adult tortoise habitat are a presence of well-drained, sandy soils, which allow easy burrowing; an abundance of herbaceous ground cover; and generally open canopy and sparse shrub cover, which allows sunlight to reach the ground floor. The gopher tortoise digs a burrow used as a shelter and nesting area. Groups of these tortoises dig burrows in the same location forming a colony. Gopher tortoises are attracted to the low growing vegetation normally found on utility ROWs. In addition, the threatened **Eastern indigo snake** (*Drymarchon corais couperi*) is known to inhabit gopher tortoise burrows, although there are no verified records of this snake in Mississippi for over 25 years.

The endangered **red-cockaded woodpecker** (*Picoides borealis*) excavates nesting cavities in mature pine trees (60+ years old). A mated pair of birds and all helper birds forms a clan. A cluster of cavity trees where the clan nests and roosts is called a colony. All cavity trees, active and inactive, are important to the colony and should therefore be avoided. Also, older (30+ years) pine stands within a half-mile of a colony should be considered foraging habitats and should not be disturbed.

The federally listed threatened **Louisiana black bear** (*Ursus americana luteolus*) occurs primarily in bottomland hardwood and floodplain forests along the Mississippi River and the southern part of the state. Although the bear is capable of surviving under a range of habitat types, some necessary habitat requirements include hard mast, soft mast, escape cover, denning sites, forested corridors, and limited human access. Forest management practices, agricultural, commercial and industrial development, and highways can cause adverse impacts to bear habitat by increasing human disturbance, fragmenting forests, and removing den trees.

Two species of endangered bats, the **gray bat** (*Myotis grisescens*) and the **Indiana bat** (*Myotis sodalis*), are historical residents in the northeastern county of Tishomingo. Activities that impact forested areas or areas with caves could adversely affect these species.

The **black pine snake** (*Pituophis melanoleucus ssp. lodingi*), a Candidate Species*, prefers uplands with well-drained sandy soils in areas of longleaf pine and hardwood tree species. This snake requires dry sandy soils for burrowing and spends a good amount of time underground in root channels of rotting pine stumps. Forest management strategies that suppress fires, increase stocking densities, and removed downed trees and stumps continue to degrade preferred habitats. In addition, construction of roads and developments fragment habitat and increase the likelihood of road mortality and direct persecution. *Candidates are those species currently under review for possible addition to the federal listed of threatened or endangered species. All efforts should be made to avoid harm or harassment to this species.

Wetland/Riverine/Aquatic or Coastal Animal Species

The endangered **Mitchell's satyr butterfly** (*Neonympha mitchellii mitchellii*) is a medium sized butterfly with an overall rich brown color. A distinctive series of orange-ringed black circular eyespots with silvery centers are located on the lower surfaces of both pairs of wings. This butterfly is one of the most geographically restricted eastern butterflies. It is restricted to wetlands where low nutrient systems receive carbonate-rich ground water from seeps and springs. In Mississippi this butterfly has been found only in the northeastern counties of Prentiss and Tishomingo but may occur in appropriate habitat elsewhere. The greatest threat to the Mitchell's satyr is habitat destruction caused by draining and filling of wetlands, invasion from exotic weeds, and contamination of wetlands by pesticides, fertilizer, and nutrient runoff from adjacent agriculture.

Even though the **bald eagle** (*Haliaeetus leucocephalus*) was taken off of the Endangered Species List, eagles are still afforded protection under the Bald and Golden Eagle Act and the Migratory Bird Act. The bald eagle is the only species of sea eagle regularly occurring on the North American continent. The bald eagle is predominantly a winter migrant in the southeast; however, increasing occurrences of nesting have been observed. Eagles occur statewide in Mississippi but are usually found near large bodies of water like reservoirs, lakes, and rivers

and along the coast. Eagles require tall trees and snags along the water's edge for perching, roosting, resting, loafing, feeding and nesting sites. The bald eagle nests in the transitional area between forest and water. Dominant living pines or bald cypress trees are often used as nesting trees but other tree species are used such as wild pecan, oak, and sycamore as seen in the Yazoo Delta. Nest sites typically include at least one perch with a clear view of the water or area where the eagles usually forage. Eagles will often use the same nest every year but sometimes eagles will use alternate nests in different years. Courtship and nest building activity begins as early as September and by December or January the nest construction is completed and breeding begins. Young are usually fledged by midsummer. Bald eagles are vulnerable to disturbance during courtship, nest building, egg laying, incubation, and brooding.

The endangered **interior least tern** (*Sterna antillarum*) migrates up the Mississippi River and lays its eggs directly on sandbars associated with the river. Hundreds of these birds may nest together to form a colony. The nesting/breeding season for terns is approximately May through July. Avoidance of these areas during this time would prevent adverse impacts to the interior least tern. Terns nesting sites may change nesting/spawning areas from year to year depending on river levels, so an onsite survey for terns just before start of construction is recommended.

The endangered **pallid sturgeon** (*Scaphirhynchus albus*) is found in the lower Mississippi River, although it is rare throughout its range. These fish require large, turbid, free-flowing riverine habitats, and feed mainly on other fish. Sturgeons are usually found near the bottom of streams or lakes in sand flats or gravel bars. Little information is known on spawning or migration habits of these fish. Although the spawning season for sturgeons is likely to occur May through July. Avoidance of these areas during the above time would prevent adverse impacts to this species. Sturgeon spawning areas may change from year to year, so an onsite survey for this species just before start of construction is recommended.

The endangered **fat pocketbook mussel** (*Potamilus capax*) is found in the Mississippi River and associated tributaries. It is a broad, rounded, and slightly angular mussel with a smooth, yellowish, and frequently clouded with brown, exterior color. Fat pocketbooks occur primarily in sand and mud substrates, although the species has been found in fine gravel and hard clay occasionally. Water depth ranges from a few inches to several feet. The fish host for this species is primarily freshwater drum.

The threatened **Bayou darter** (*Etheostoma rubrum*) is found only in Bayou Pierre and its tributaries: White Oak Creek, Foster Creek, and Turkey Creek. The darter prefers stable gravel riffles or sandstone exposures with large sized gravel or rock. Habitat loss or degradation has been a major contributor to the reduction in bayou darter numbers.

The threatened **yellow-blotched map turtle** (*Graptemys flavimaculata*) is found in the Chickasawhay, Leaf, and Pascagoula Rivers. The yellow-blotched map turtle prefers river stretches with moderate currents, abundant basking sites, and sand bars. Stream modification has significantly contributed to the decline of the species.

The threatened **ringed map turtle** (*Graptemys oculifera*) is found in the Pearl River. It prefers river stretches with moderate currents, abundant basking sites, and sand bars for nesting. Stream modification in the Pearl River, such as flood control and urban development, has significantly contributed to the decline of the species. Also, water quality degradation poses a serious problem for the turtle.

The threatened **Gulf sturgeon** (*Acipenser oxyrinchus desotoi*) is found in the Pearl, Leaf, and Pascagoula Rivers. Gulf sturgeons are primitive, anadromous fish that annually migrate from the Gulf of Mexico into freshwater streams. Subadults and adults spend eight to nine months each year in rivers. Although Gulf sturgeon activity is not well documented, the species has been found in the Pearl River as far north as the Jackson metropolitan area. The decline of the Gulf sturgeon is primarily due to limited access to migration routes and historic spawning areas, habitat modification, and water quality degradation.

Seven federally listed **mussel species** are found within top bank of the Tombigbee, Luxapallila, and Buttahatchie Rivers, and Bull Mountain Creek. The endangered **heavy pigtoe mussel** (*Pleurobema taitianum*), the endangered **southern combshell mussel** (*Epioblasma penita*), the endangered **southern clubshell mussel** (*Pleurobema decisum*), the endangered **ovate clubshell mussel** (*Pleurobema perovatum*), and the endangered **black clubshell mussel** (*Pleurobema curtum*), the threatened **Alabama moccasinshell** (*Medionidus acutissimus*), and the threatened **orange-nacre mucket** (*Lampsilis perovalis*) require clean, swiftly moving waters with pools and riffles. Work activities that increase sedimentation and water turbidity could have adverse impacts on these species. Also, be advised that in-stream activities can affect aquatic habitats up and downstream.

The endangered **Cumberlandian combshell mussel** (*Epioblasma brevidens*) and the Candidate Species **slabside pearlymussel** (*Lexingonia dolabelloides*) are found in the Bear Creek watershed of Tishomingo County. Work activities that increase sedimentation and water turbidity could have adverse impacts on these species.

The threatened **inflated heelsplitter mussel** (*Potamilus inflatus*) is found in the lower Pearl River basin. It inhabits areas with moderate to swift currents, and prefers riffle or shoal areas with stable bottoms composed of sandy gravel or gravel and cobble. Work activities that increase sedimentation and water turbidity, or alter stream flows could have adverse impacts on this species.

The **pearl darter** (*Percina aurora*), a Candidate Species, is found only in the Pascagoula River system. The darter prefers stable gravel riffles or sandstone exposures with large sized gravel or rock. Habitat loss or degradation has been a major contributor to the reduction in pearl darter numbers. Candidates are those species currently under review for possible addition to the federal listed of threatened or endangered species. All efforts should be made to avoid harm or harassment to this species.

The threatened **Piping Plover** (*Charadrius melodus*) does not nest in Mississippi but winters along the coastal beaches and barrier islands. These feeding areas have been threatened by urban development. Hence, Critical Habitat has been designated along several areas of the Mississippi Gulf Coast.

The endangered **Mississippi Sandhill Crane** (*Grus canadensis pulla*) is found only in a small area west of the Pascagoula River in Jackson County. Cranes may be found feeding in wet meadows and wetland savanna habitats. Critical Habitat has been established on and adjacent to the Mississippi Sandhill Crane National Wildlife Refuge.

The endangered **Mississippi gopher frog** (*Rana capito sevosa*) historically was found along the Mississippi and Louisiana Gulf Coast, however, the last known population of the frog is in

Glen's Pond in Harrison County, MS. The endangered **Mississippi gopher frog** (*Rana capito sevosa*) historically was found along the Mississippi and Louisiana Gulf coast, however, only small populations remain in Harrison and Jackson Counties. Mississippi gopher frog habitat includes both upland sandy sites historically forested with longleaf pine and isolated temporary wetland breeding sites embedded within the forested landscape. Adult and subadult Mississippi gopher frogs spend the majority of their lives underground. Breeding sites are small, relatively shallow, isolated, depressional ponds (not connected to any other water body) that dry completely on a cyclic basis. Emergent herbaceous vegetation is important for egg attachment. The dominant source of water to the ponds is rainfall within small, localized watersheds.

The endangered **Alabama red-bellied turtle** (*Pseudemys alabamensis*) is found in the lower Pascagoula River and its tributaries: Bluff Creek and the Escatawpa River. It is also found in Old Fort Bayou, the Tchoutacabouffa River, the Biloxi River, and the Back Bay of Biloxi. This turtle nests along river banks and feeds on submerged aquatic vegetation. Destruction of nesting and feeding areas and reduced water quality has impacted this species.

There are five species of endangered sea turtles that inhabit the Gulf of Mexico waters along the Mississippi coast: the **leatherback** (*Dermochelys coriacea*), the **loggerhead** (*Caretta caretta*), the **green** (*Chelonia mydas*), the **hawksbill** (*Eretmochelys imbricata*), and the **Atlantic ridley** (*Lepidochelys kempi*). Although these are predominantly marine animals, they can come ashore to nest on the beaches of the barrier islands. Mortality due to fishing nets and trawls, ingestion of inedible objects, and nest predation have reduced these species numbers.

The endangered **West Indian manatee** (*Trichechus manatus*) is an aquatic mammal that occurs in rivers, estuaries, and coastal areas of the Gulf of Mexico. The manatee is an occasional/accidental visitor to Mississippi.

January 2010