

Federally Threatened, Endangered, and Candidate Species in Mississippi

MAMMALS

Gray and Indiana Bats

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

County: Tishomingo

Louisiana Black Bear

The federally listed threatened Louisiana black bear (*Ursus americanus 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.

Counties: Adams, Amite, Attala, Claiborne, Clarke, Copiah, Covington, Forrest, Franklin, George, Greene, Hancock, Harrison, Hinds, Holmes, Humphreys, Issaquena, Jackson, Jasper, Jefferson, Jefferson Davis, Jones, Lamar, Lauderdale, Lawrence, Leake, Lincoln, Madison, Marion, Neshoba, Newton, Pearl River, Perry, Pike, Rankin, Scott, Sharkey, Simpson, Smith, Stone, Walthall, Warren, Washington, Wayne, Wilkinson, and Yazoo

West Indian Manatee

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 visitor to Mississippi.

Counties: Hancock, Harrison, and Jackson

BIRDS

Bald Eagle

Although the bald eagle (*Haliaeetus leucocephalus*) was officially removed from the List of Endangered and Threatened Species as of August 8, 2007, it continues to be protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (BGEPA). Bald eagles nest in Mississippi from December through mid-May in mature trees (e.g., bald

cypress, sycamore, willow, etc.) near fresh to intermediate marshes or open water. Nest sites typically include at least one perch with a clear view of the water or area where the eagles usually forage. Bald eagles are vulnerable to disturbance during courtship, nest building, egg laying, incubation, and brooding. The Service developed the National Bald Eagle Management (NBEM) Guidelines to provide landowners, land managers, and others with information and recommendations regarding how to minimize potential project impacts to bald eagles, particularly where such impacts may constitute “disturbance,” which is prohibited by the BGEPA. A copy of the NBEM Guidelines is available at <http://www.fws.gov/migratorybirds/issues/BaldEagle/NationalBaldEagleManagementGuidelines.pdf>.

Counties: All

Interior Least Tern

The endangered interior least tern (*Sterna antillarum*) is a migratory shorebird that breeds, nests, and rears its young on sparsely or non-vegetated portions of sand or gravel bars located mid-stream or along the shoreline in the Mississippi, Missouri, Arkansas, Ohio, Red and Rio Grande river systems and the rivers of central Texas. On the lower Mississippi River, the interior least tern is a common summer resident between Cairo, Illinois, and Baton Rouge, Louisiana. The breeding season for terns is approximately May through July. Avoidance of non-vegetated islands or point bars during the breeding season would prevent adverse impacts to this species.

Counties: Adams, Bolivar, Claiborne, Coahoma, DeSoto, Issaquena, Jefferson, Tunica, Warren, Washington, and Wilkinson

Mississippi Sandhill Crane

The endangered Mississippi sandhill crane (*Grus canadensis pulla*) is found only in a small area west of the Pascagoula River in Jackson County. Critical habitat has been established on and adjacent to the Mississippi Sandhill Crane National Wildlife Refuge. Increasing commercial, industrial and residential development in the area surrounding the refuge is limiting the availability of off-refuge habitat for the crane and limiting the ability of the refuge to manage crane habitat through the use of prescribed burning. The increase in motorized vehicular traffic on off-refuge roads, as a result of this development, increases the likelihood that a crane will be hit and killed.

County: Jackson

Piping Plover

The threatened piping plover (*Charadrius melodus*) is a small shorebird approximately seven inches long with sand-colored plumage on their backs and crown and white underparts. The piping plover breeds from central Canada south to Nebraska and Iowa, east along the Great Lakes and Newfoundland, and south along the Atlantic Coast to Virginia. Plovers depart for

the wintering grounds from mid-July through late October. Breeding and wintering plovers feed on exposed wet sand in wash zones; intertidal ocean beach; wrack lines; washover passes; mud-, sand-, and algal flats; and shorelines of streams, ephemeral ponds, lagoons, and salt marshes by probing for invertebrates at or just below the surface. They use beaches adjacent to foraging areas for roosting and preening. Small sand dunes, debris, and sparse vegetation within adjacent beaches provide shelter from wind and extreme temperatures. The piping plover does not nest in Mississippi but winters along the coastal beaches and barrier islands. These feeding areas have been threatened by urban development, recreational beach use, oil spills etc. Hence, critical habitat has been designated along many sand beach areas along the Mississippi Gulf Coast. Major threats to this species along the Gulf of Mexico include the loss and degradation of habitat due to erosion and shoreline stabilization development, disturbance by humans and pets, and predation.

Counties: Hancock, Harrison, and Jackson

Red-cockaded Woodpecker

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.

Counties: Amite, Copiah, Forrest, Franklin, George, Greene, Harrison, Jackson, Jasper, Jefferson, Jones, Lamar, Lincoln, Newton, Noxubee, Oktibbeha, Pearl River, Perry, Scott, Smith, Stone, Wayne, Wilkinson, and Winston

Red Knot

The red knot (*Calidris canutus rufa*), a candidate species, is a medium-sized shorebird about 9 to 11 inches in length with a proportionately small head, small eyes, short neck, and short legs. The red knot can be found in Mississippi during the winter months (generally October through March). In the southeastern United States, red knots forage along sandy beaches, tidal mudflats, salt marshes, and peat banks. Observations along the Texas coast indicate that red knots forage on beaches, oyster reefs, and exposed bay bottoms and roost on high sand flats, reefs, and other sites protected from high tides. In wintering and migration habitats, red knots commonly forage on bivalves, gastropods, and crustaceans. Coquina clams (*Donax variabilis*), a frequent and often important food resource for red knots, are common along many gulf beaches. Major threats to this species along the Gulf of Mexico include the loss and degradation of habitat due to erosion and shoreline stabilization development, disturbance by humans and pets, and predation.

Counties: Hancock, Harrison, and Jackson

FISH

Bayou Darter

The threatened bayou darter (*Etheostoma rubrum*) is found only in the Bayou Pierre River 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. Historical in-stream-bed gravel mining has caused various headcuts throughout the last 50 years. Along with severe erosion rates from adjacent farm fields and bankside collapse, the river is becoming more shallow and wider. Tributaries are less impacted but also have various threats such as gravel mining, stream fords, ATV traffic and non-point and point source pollution.

Counties: Claiborne, Copiah, Hinds, and Lincoln

Gulf Sturgeon

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 to spawn. 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 upper reaches of the Pearl, Leaf, Strong, Bouie, and Chickasawhay Rivers as far north as the Jackson metropolitan area. Adult and subadult holding areas have been identified in the Pascagoula River. 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.

Counties: Clarke, Copiah, Forrest, George, Greene, Hancock, Harrison, Hinds, Jackson, Jones, Lawrence, Marion, Pearl River, Perry, Pike, Rankin, Simpson, Walthall, and Wayne

Pallid Sturgeon

The endangered pallid sturgeon (*Scaphirhynchus albus*) is found throughout the lower Mississippi River. These fish require large, turbid, free-flowing riverine habitats, and feed on aquatic invertebrates and small fish. They are usually found near the bottom of rivers on sand flats or gravel bars. Little information is known on spawning or migration habits of these fish, although spawning likely occurs in the spring and summer months. Pallid sturgeon may be entrained into water intake structures or by dredging.

Counties: Adams, Bolivar, Claiborne, Coahoma, DeSoto, Issaquena, Jefferson, Tunica, Warren, Washington, and Wilkinson

Pearl Darter

The pearl darter (*Percina aurora*), a candidate species historically found in the Pearl and

Pascagoula River systems, is currently found only in the Pascagoula River system. There is potential for re-discovery of the species in certain areas of the Pearl 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. Water quality degradation and increased water turbidity attributed to stormwater runoff from manufacturing are significant threats to the species. Work activities that alter channel geomorphology also have adverse impact to the species.

Counties: Clarke, Copiah, Covington, Forrest, George, Greene, Hancock, Jackson, Jones, Lawrence, Leake, Marion, Pearl River, Perry, Scott, Simpson, and Wayne

REPTILES

Alabama Red-bellied Turtle

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. Destruction of nesting areas along riverbanks; degradation of submerged aquatic vegetation feeding areas; and reduced water quality have impacted this species.

Counties: Harrison and Jackson

Green, Kemp's Ridley, Leatherback, and Loggerhead Sea Turtles

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

Counties: Hancock, Harrison, and Jackson

Black Pinesnake

The black pinesnake (*Pituophis melanoleucus ssp. lodingi*), a candidate species, prefers uplands with well-drained sandy soils in areas of longleaf pine and hardwood tree species. Maintaining an open canopied forest with abundant, diverse groundcover is essential to maintain prey base and basking opportunities; additionally, leaving stumps intact during forestry activities is important so they may naturally rot out and provide the root system refugia that pinesnakes utilize.

Counties: Clarke, Forrest, George, Greene, Harrison, Jackson, Jones, Lamar, Lauderdale, Marion, Pearl River, Perry, Stone, Walthall, and Wayne

Gopher Tortoise

The threatened gopher tortoise (*Gopherus polyphemus*) occupies a wide range of upland habitat types. The general physical and biotic features thought to characterize suitable tortoise habitat are: presence of well-drained, sandy soils, which allow easy burrowing; an abundance of diverse herbaceous ground cover; and an open canopy and sparse shrub cover, which allows sunlight to reach the ground floor. The gopher tortoise digs burrows for shelter, and groups of tortoises dig burrows in the same location, forming a colony. Some of the major threats to the species are habitat degradation (often attributed to fire suppression) and habitat fragmentation (often attributed to urbanization and agricultural/silvicultural conversion), which can result in forage reduction, direct human impacts, and reproductive isolation.

Counties: Clarke, Covington, Forrest, George, Greene, Hancock, Harrison, Jackson, Jasper, Jefferson Davis, Jones, Lamar, Marion, Pearl River, Perry, Smith, Stone, Walthall, and Wayne

Ringed Map Turtle

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. Water quality degradation has also posed a serious problem for the turtle.

Counties: Copiah, Hancock, Hinds, Lawrence, Leake, Madison, Marion, Neshoba, Pearl River, Rankin, Scott, and Simpson

Yellow-blotched Map Turtle

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 and water quality degradation have significantly contributed to the decline of the species.

Counties: Clarke, Covington, Forrest, George, Greene, Jackson, Jones, Perry, and Wayne

AMPHIBIANS

Dusky Gopher Frog

The endangered dusky gopher frog (*Rana sevosa*), formerly called the Mississippi gopher frog, historically was widely distributed in the southern counties of Mississippi. Dusky 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 dusky 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. Approximately 4,933 acres are designated as critical habitat in Forrest, Harrison, Jackson, and Perry Counties, Mississippi.

Counties: Forrest, Harrison, Jackson, and Perry

MUSSELS

Alabama Moccasinshell, Black Clubshell, Heavy Pigtoe, Orange-nacre Mucket, Ovate Clubshell, Southern Clubshell, and Southern Combshell

Seven federally listed mussel species are found within top bank of the Tombigbee, Luxapallila, and Buttahatchie Rivers; and Bull Mountain Creek. Three of these species (Alabama moccasinshell, orange-nacre mucket, and the southern clubshell) may be found in the Noxubee River. 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*), the endangered black clubshell mussel (*Pleurobema curtum*), the threatened Alabama moccasinshell (*Medionidus acutissimus*), and the threatened orange-nacre mucket (*Lampsilis perovalis*) all require clean, swiftly moving stable streams with pools and riffles. Work activities that affect channel geometry (depth, width) or that increase sedimentation and water turbidity could have adverse impacts on these species. Also, be advised that in-stream activities can affect channel geometry both up- and downstream.

Counties: Itawamba, Lowndes, Monroe, and Noxubee

Cumberlandian Combshell, Snuffbox, and Slabside Pearlymussel

The endangered Cumberlandian combshell mussel (*Epioblasma brevidens*) and snuffbox mussel (*Epioblasma triquerta*), along with the proposed threatened species slabside pearly mussel (*Lexingonia dolabelloides*) are found in the Bear Creek watershed. Work activities that alter flow, channel geometry or increase sedimentation and water turbidity could have adverse impacts on these species.

County: Tishomingo

Fat Pocketbook

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 exterior color that is frequently clouded with brown. 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 freshwater drum. Fat pocketbook mussels may be affected by dredging or channel clearing activities, excessive sedimentation, channel erosion, and pollutants.

Counties: Adams, Bolivar, Claiborne, Coahoma, DeSoto, Issaquena, Jefferson, Tunica, Warren, Washington, and Wilkinson

Inflated Heelsplitter

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

Counties: Hancock, Itawamba, Lowndes, Monroe, Noxubee, and Pearl River

Rabbitsfoot

The rabbitsfoot mussel (*Quadrula cylindrica cylindrica*), a proposed threatened species, is a historical resident of the Bear Creek, Big Sunflower River and Big Black River watersheds. Population declines can be attributed to channel erosion, water-quality degradation, loss of stable substrates, sedimentation, channelization, gravel mining, dredging, impoundments, and competition of exotic mussel species.

Counties: Claiborne, Hinds, Madison, Sunflower, Tishomingo, Warren, and Yazoo

Sheepnose

The endangered sheepnose mussel (*Plethobasus cyphus*) is a larger stream species occurring primarily in shallow shoal habitats with moderate to swift currents over coarse sand and gravel. A population of sheepnose survives in the Big Sunflower River, which may be limited to a 12 to 15-mile reach upstream of Indianola in Sunflower County, Mississippi. Although no juvenile mussels have been found in recent sampling efforts, variably sized individuals indicate some, possibly very low, level of recruitment in the population (Jones 2008, pers. comm.). The species is believed to be extirpated from the Hatchie and Big Black Rivers of Mississippi.

Counties: Humphrey, Sharkey, Sunflower, and Washington

INSECTS

Mitchell's Satyr Butterfly

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 occurs in wetlands

where low nutrient systems receive carbonate-rich ground water from seeps and springs. In Mississippi, Mitchell's satyr has been found in small upland wetlands created by beaver dams and in wetlands formed by road culverts. The greatest threat to the Mitchell's satyr is habitat destruction caused by beaver control, draining and filling of wetlands, invasion from exotic weeds, and contamination of wetlands by pesticides, fertilizer, and nutrient runoff from adjacent agriculture.

Counties: Itawamba, Prentiss, and Tishomingo

PLANTS

Louisiana Quillwort

The endangered plant Louisiana quillwort (*Isoetes louisianensis*) is a nonflowering grass-like 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 dieback and are not visible when the intermittent streams, which are habitat for this species, have dried-up. Threats include activities that increase stream sedimentation, reduce stream flow, and reduce the overstory canopy cover.

Counties: Forrest, George, Greene, Hancock, Harrison, Jackson, Jones, Pearl River, Perry, Stone, and Wayne

Pondberry

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. Threats included habitat destruction, population fragmentation, altered hydrologic regimes, competition from encroaching vegetation, and disturbance by wild hogs and domestic cattle.

Counties: Bolivar, Coahoma, Holmes, Humphreys, Issaquena, Leflore, Quitman, Sharkey, Sunflower, Tallahatchie, Tunica, Warren, Washington, and Yazoo

Price's Potato Bean

The threatened plant Price's potato bean (*Apios priceana*) is an herbaceous, twining vine that belongs to the pea family. It is found on slopes or bluffs with open woods that often grade into creek and river bottoms. The species may also be found along forested margins of

power-line and road rights-of-ways. These areas are typically underlain by alkaline soils. Surveys should be conducted when species is in flower or fruit, typically mid-June into October. Price's potato bean is readily confused with its more common relative groundnut (*Apios americana*) and surveys should be conducted by individuals familiar with both species. Threats include excessive shading from forest canopy closure, incompatible right-of-way maintenance, and competition from non-native, invasive plants.

Counties: Alcorn, Chickasaw, Clay, Kemper, Lee, Lowndes, Monroe, Noxubee, Oktibbeha, Pontotoc, Prentiss, and Union