

Arkansas' Federally Endangered, Threatened, and Candidate Species



Gray Bat (*Myotis grisescens*) – Gray bats have long, glossy, light to dark brown fur, distinguishing them from other bat species. Gray bats inhabit caves year round. In the winter they hibernate in deep vertical caves found in the karst region of the southeastern US. During the summer they roost in caves near rivers so they have access to prey. They eat flying aquatic and terrestrial insects. They do not inhabit barns and houses.



Indiana Bat (*Myotis sodalis*) – The Indiana bat is a small relative of the gray bat. Their fur is dark-brown to black. They occur in the Ozark, Boston, and Ouachita Mountain region of Arkansas. Indiana bats hibernate in large numbers in only a few caves, making them vulnerable to disturbance. Females may roost in groups up to 100 bats or more, during the summer, under the loose bark of trees. They forage along the forest edge, preying on flying insects. They can eat up to half their body weight in insects each night. Cave and forest habitat destruction and modification were the primary threats that led to this species endangered status. Hibernating bats are dying in record numbers due to a new wildlife health crisis called white-nose syndrome. The affliction was first documented in New York during the winter of 2006-2007 and is rapidly spreading across the eastern US and afflicting numerous bat species, including the Indiana bat. It has not been documented in Arkansas yet, but could affect our bat populations within a couple of years. To learn more about white-nose syndrome go to <http://www.fws.gov/arkansas-es/esday.html>



Ozark Big-eared Bat (*Corynorhinus townsendii ingens*) – The Ozark big-eared bat is a medium sized bat, with reddish fur, very large ears, and a prominent snout. Like gray bats they inhabit caves year round; however, they often use the same cave or mine during the summer and winter. Unlike the Indiana and gray bats the Ozark big-eared bat has a very small range, limited to the karst region of northwest Arkansas, and a few counties in Oklahoma and Missouri. They eat mostly moths, but will prey on other flying insects. This species is intolerant to human disturbance. Disturbance during the summer can cause severe mortality to the young. Disturbance to all bat species during the winter is detrimental. Arousing bats from hibernation causes them to use precious energy reserves. If a bat runs out of reserves, it may leave the cave too soon and die.

White-nose syndrome was first identified in a commercial cave in New York. Since then it's spread throughout the northeast and was recently discovered in Tennessee. WNS is caused by the fungus *Geomyces destructans* (Gd), and is responsible by all estimates for the mortality of 1-2 million bats to date. At this point it appears all cave species are susceptible. No methods are known to slow the spread as bat to bat contact is the primary route of dispersal. One way to help slow the spread of the fungus, is to clean and decontaminate cave gear between trips. Although it has not been found in Arkansas to date, we fully expect it here in the next 2-3 years, especially if gray bats can be infected, as their migration patterns bring them from Tennessee to Arkansas.

Bats are one of the most misunderstood and feared group of species. They are the only mammals that can fly. This diverse group of animals is vital to our ecosystem health and economic welfare. Bats are the only major predator of night flying insects, a single bat can consume between 600 - 1200 mosquitoes and other insects in just one hour. A nursing female can eat more than her body weight in insects in one night, up to 4,500 mosquitoes and other insects. Not only do bats eat insects, but they consume pests, such as the cucumber beetle and corn earworm moth, both of which can damage millions of dollars of crops each year. Other species of bats are important pollinators and seed dispersers. Most species of bats only have one offspring per year, making them highly susceptible to extinction. Although bats do have good eyesight at night they hunt and communicate using echolocation. Echolocation allows them to detect objects as fine as human hair. One common misconception people have is that all bats have rabies, in fact less than ½ of 1% of bats carry the rabies virus.



Florida Panther (*Puma concolor coryi*) – Florida panther, a misleading name for a large cat once found throughout the Southeastern United States; the only current population is in Southern Florida. They were once found throughout the Ozark and Ouachita Mountains and in the bottomland hardwoods of eastern Arkansas. These large cats weigh between 80 – 160 lbs. They are experts at stalking; their main source of food is white-tailed deer. They will eat a variety of other small animals, including squirrels, armadillos, raccoons

and birds. Overhunting, loss of habitat and a reduction in their main prey source, white-tailed deer, led to a severe decline in their numbers.



Whooping Crane (*Grus americana*) – Whooping cranes are the tallest birds in North America, standing up to 4.5 feet tall. This large migratory bird once ranged from the Arctic coast to central Mexico. Today they are reduced to one self sustaining wild population, breeding in Saskatchewan, Canada and wintering on the Texas gulf coast. Their habitat consists of wetland potholes and prairies in Canada and salt marshes in Texas. Whooping cranes feed on a variety of animals, including mollusks, insects, crayfish, snakes and frogs. Overhunting and conversion of nesting habitat to pasture were responsible for the decline of the bird.



Interior Least Tern (*Sterna antillarum athalassos*) – This small tern inhabits the sandbars of the Arkansas and Red Rivers during the summer months, while they nest and raise their young. They nest on the sand/gravel bars throughout these river systems, feeding on small fish in shallow waters. They winter in Central and South America. The least tern is endangered due to destruction, alteration, and curtailment of its nesting habitat.



Red-cockaded Woodpecker (*Picoides borealis*) – This small woodpecker makes its home in live pine trees in the Southeastern United States. It is found in south central Arkansas and Ouachita National Forest in western Arkansas. It is the only woodpecker species to excavate living trees. It can take several years for a bird to create a new cavity; only large mature pines are suitable for cavities. Cavity trees often have a candle-like appearance due to the resin wells the birds create around the cavity keep predators, such as the black rat snake, from eating their eggs and young. They live in groups, made up of a breeding pair and one to two non-breeding birds. They feed mainly on insects found on pine trees. They are dependent on the fire maintained pine ecosystem of the southeast. As the southeast was logged and fire suppressed the birds lost most of their habitat. Old growth open pine-savanna-like flat woods were converted to pine plantations, reducing the amount and quality of habitat necessary for their survival.

Today, biologists are working with landowners to restore habitat through prescribed fire and longer rotations between timber harvests. Biologists are installing artificial cavities to create artificial habitat to help the birds out. While it will be decades before this bird reaches its population recovery goals, populations are once again increasing across the southeastern United States.



Ivory-billed Woodpecker (*Campephilis principalis*) – This large woodpecker was thought to be extinct until an Arkansas discovery in 2004. This elusive bird once inhabited mature bottomland hardwood forests found throughout the southeastern US. The clearing of these forests was the primary cause for the decline; however, the birds were also extensively collected for commercial, recreational, scientific and educational purposes. Their diet consists of wood boring beetles found in dead and dying trees, occasionally supplemented with fruit and vegetable material.



Sprague's Pipit (*Anthus spragueii*) - Sprague's pipit is a small grassland bird that requires large expanses of native prairie for wintering and nesting. In Arkansas they can be found in a few isolated prairie areas during the winter, including Stuttgart Airport and Cherokee Prairie Natural Area. They avoid non prairie features in the landscape, such as wind turbines, buildings, and gas wells. Native prairies are one of the most imperiled habitats in the world. Sprague's pipit suffer from habitat loss through direct conversion of prairies to crop land or pasture and fragmentation of the prairie, especially by energy development (oil, gas, and wind).



Photo by Raema Rotindo

Piping Plover (*Charadrius melodus*) – Piping plovers are small sandy colored shore birds. They breed along rivers, lakes of the Northern Great Plains, Great Lakes, Atlantic and Gulf coasts. They are a migratory bird in Arkansas. They occasionally pass through on their way to wintering or breeding habitat. Habitat alteration and destruction are the primary cause for decline. Piping plovers must compete with people for sandy beaches along the coast to raise their young and winter. Reservoir construction, channel excavation, and modification of river flows have also eliminated sandbar nesting habitat.

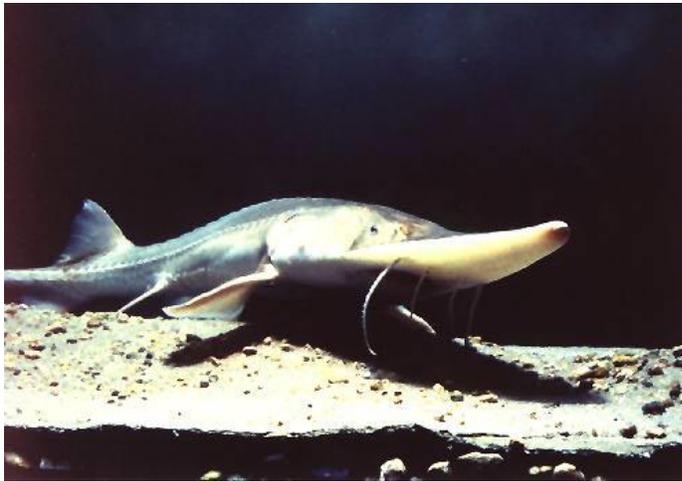


Ozark Cavefish (*Amblyopsis rosae*) – This highly adapted cave species is found only in the Springfield Plateau region of the Ozark Highlands of northwest Arkansas, southeast Missouri, and northeast Oklahoma. It has a translucent appearance due to the lack of pigmentation, a result of life underground. A large cavefish is only three inches long. Two of the primary reasons for listing the Ozark cavefish stemmed from habitat loss and degradation resulting from human activity in caves and from activities above ground that adversely affect ground water.



creation of reservoirs. They are only found within Arkansas and Oklahoma.

Leopard darter (*Percina pantherina*) – The leopard darter is a small fish, rarely larger than three inches, found in medium to large streams in southeastern Oklahoma and southwestern Arkansas. They were listed as threatened due to habitat destruction, alteration, and curtailment from the



Pallid Sturgeon (*Scaphirhynchus albus*) – Pallid sturgeon have a dinosaur-like appearance and can grow up to 80 pounds and 6 feet long. They have a toothless mouth underneath their long snout to suck up small fish and invertebrates. Their habitat is the bottom of large rivers. In Arkansas, they only occur in the Mississippi and St. Francis River. However, river alteration for purposes such as navigation and flood control has led to a loss of habitat and a large reduction in their numbers.

ARKANSAS RIVER SHINER

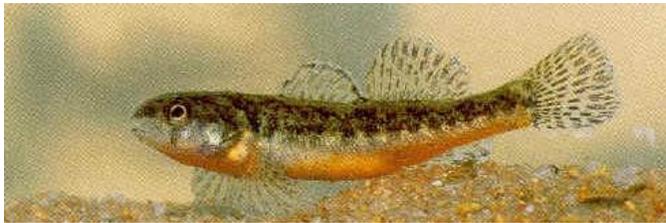


Arkansas River Shiner (*Notropis girardi*) The Arkansas River Shiner is a small minnow, found only in the Arkansas River and its tributaries. However, it is extirpated from Arkansas. The last population in the state was found in 1988. They were listed as threatened due to habitat destruction, alteration, and curtailment from the creation of reservoirs.



Yellowcheek Darter (*Etheostoma moorei*) - The yellowcheek darter is a small fish that inhabits riffles in the four forks of the upper Little Red River watershed in Arkansas. This is the only place this little fish occurs in the world. Loss of habitat resulting from construction of Greers Ferry Reservoir, channelization for flood control, and erosions from a variety of land use practices has

threatened this species.



Arkansas Darter (*Etheostoma cragini*) – The Arkansas darter is another small fish that occurs in Arkansas, Colorado, Kansas, Missouri, and Oklahoma. In Arkansas it is only found in Benton and Washington counties. It inhabits shallow spring branches and spring fed creeks with sandy bottoms

and mats of watercress. They feed on a variety of aquatic insects and some vegetation. Habitat destruction, alteration, and curtailment from urban development, sand and gravel removal, channelization, and other land use practices are the main cause for declines in Arkansas.

Freshwater Mussels - Freshwater mussels are the second most endangered group of animals in North America, second only to freshwater snails. They are indicator species of the health of our streams and rivers. Arkansas has the most species of native freshwater mussels of any state west of the Mississippi River (83 species). They also are the most endangered group of animals in Arkansas. Mussels require fish to complete their life cycle. They clean our water by filtering bacteria, algae, and other small particles. This also makes them susceptible to environmental contaminants and sedimentation in rivers and streams. The greatest threats facing Arkansas' mussels include construction of dams and reservoirs, dredging for sand and gravel, chemical pollution, and erosion from a variety of land use practices. Introduced non-native aquatic species, such as the zebra mussel, also pose a growing threat.

The Plight of the Freshwater Mussel: Canaries of the Deep is a short 12 minute video available for download at <http://www.fws.gov/arkansas-es/esday.html>.



Turgid Blossom (*Epioblasma turgidula*) - The turgid blossom pearly mussel belongs to a group of freshwater mussels (*Epioblasma*) associated with riffle or shoal habitat in streams with sandy-gravel substrate, high water quality, and rapid currents. Unique to this group of mussels, females use a specialized technique to trap the host fish head in the shell while the female releases her young called glochidia that are parasitic on the fish for several weeks before they metamorphosis into juvenile mussels and fall off the fish.



Louisiana Pearlshell (*Margaritifera hemblii*) – Louisiana pearlshell can be found in sand and gravel substrate in small clear flowing streams. It is a medium- sized mussel, growing up to 4 inches long. The only record of this species from Arkansas is from an early 1900's collection from Bayou Dorcheat in southern Arkansas.



Arkansas Fatmucket (*Lampsilis powellii*) – Arkansas fatmuckets is another medium size mussel reaching approximately four inches in length. It only occurs in the Ouachita River and its larger tributaries in the Ouachita Mountain region of Arkansas. The Arkansas fatmucket prefers deep pools and backwater areas that possess sand, sand-gravel, sand-cobble, or sand-rock with sufficient flow to periodically remove organic detritus, leaves, and other debris. It uses largemouth, smallmouth, and spotted bass as its host fish. It is not generally found in riffles nor does it occur in impoundments.



Winged Mapleleaf (*Quadrula fragosa*) - Winged mapleleaf are found in medium to large rivers with clean gravel, sand, or cobble bottoms. In Arkansas they are only found in the Ouachita and Saline Rivers. Channel and blue catfish are the only fish species that are suitable hosts to complete its life cycle. Females mimic a dying or dead mussel to attract the host fish. They can grow up to four inches long.



Pink Mucket (*Lampsilis abrupta*) - This mussel is found in medium to large rivers in gravel with sand substrate. Pink mucket use a variety of sunfish species as its fish host. In Arkansas, this species inhabits the Ouachita, Saline, White, Black, and Spring rivers.



Scaleshell (*Leptodea leptodon*) - Scaleshell is a relatively small mussel that lives in medium-sized and large rivers with stable channels and good water quality. Relatively little is known about the life history of the scaleshell.



Curtis Pearlymussel (*Epioblasma florentina curtisi*) – This very small mussel can be found in large creeks to medium rivers with good water quality. It is only found in Arkansas and Missouri. This mussel prefers riffles within transitional zones of clean streams and rivers, between the swift-flowing headwaters and more leisurely, meandering currents farther downstream. It buries itself in sand or gravel in shallow water. The fish host is unknown. In Arkansas, this species once occurred in the Spring and South Spring rivers, but has not been collected live or dead in over 20 years.



Fat Pocketbook (*Potamilus capax*) - The fat pocketbook prefers sand, mud, and fine gravel bottoms of large rivers and ditches. Fat pocketbooks can grow up five inches in length. This species occurs in the Mississippi, Ohio, Wabash, and St. Francis rivers throughout its range. It is most abundant in the St. Francis River and larger streams and ditches that are tributaries to the St. Francis River in Arkansas. Freshwater drum is the host fish.



Ouachita Rock Pocketbook (*Arkansia wheeleri*) - The Ouachita rock pocketbook inhabits pools, backwaters, and side channels in the Little River and its larger tributaries in southeast Oklahoma and southwest Arkansas. The only confirmed reproducing population left occurs in the Little River in Arkansas, although the species is extremely rare. The species occupies stable substrates containing gravel, sand, and other materials. The Ouachita rock pocketbook always occurs within large mussel beds containing a diversity of mussel species.



Speckled Pocketbook (*Lampsilis streckeri*) - The speckled pocketbook is another species that only occurs in the Little Red River watershed in north central Arkansas. They prefer cobble/gravel with sand bottoms with a constant flow of water. They also use a secondary habitat between and beneath large boulders in pools. It uses primarily green sunfish, but other sunfish species are also suitable hosts. This medium sized mussel reaches 3 inches in length.



Fanshell (*Cyprogenia stegaria*) - Fanshell is a medium-size mussel, growing over 3 inches in length. A very similar species, the western fanshell, is widespread in many Arkansas streams and rivers. This mussel is found in medium to large rivers. It buries itself in sand or gravel in deep water of moderate current. It has been found in deep water in gravel substrate with moderate current. It only occurs in the Black River in Arkansas.



Neosho Mucket (*Lampsilis rafinesqueana*) - The Neosho mucket is associated with shallow riffles and runs with gravel substrate and moderate to swift currents. It also occurs in backwater areas located adjacent to gravel bars. Typically individuals are deeply embedded in the substrate. This species only occurs in Ozark Highland streams located in the Arkansas River basin (Arkansas, Missouri, Kansas, and Oklahoma). It only occurs in the Illinois River in northwest Arkansas. Host fish include primarily bass. Rapid urbanization and clearing of trees adjacent to the Illinois River for pastureland threaten the continued existence of this species in Arkansas.



Spectaclecase (*Cumberlandia monodonta*) – Spectaclecase is found in large rivers with swiftly flowing water, among boulders in patches of sand and gravel where the current is slower. Spectaclecase is a larger mussel that can grow up to 8 inches in length.



Rabbitsfoot (*Quadrula cylindrical cylindrical*) – Rabbitsfoot can reach up to 6 inches in length. The rabbitsfoot is primarily an inhabitant of medium to large streams and rivers. It is widely distributed occurring in 13 of 14 states within its historic range. The most stable and reproducing populations left within its historic range occur in Arkansas. It usually occurs in shallow areas along the bank and adjacent shoals. Specimens may also occupy deep water runs. Bottom substrates generally include gravel with sand. This species seldom burrows but lies on its side instead. It uses shiners, or minnow

species, as its host fish.



Ozark Hellbender (*Cryptobranchus alleganiensis bishop*) – The Ozark hellbender is one of the largest salamanders in the world. It also is the only salamander in the United States that spends its entire life in water. They can grow up to 2 feet long. They live for 40-80 years. They are found only in Ozark spring-fed streams of southern Missouri and northern Arkansas. They spend most of their time beneath rocks in fast flowing streams, but come out at night to

eat crayfish. Increased siltation from a variety of land use practices, over collection for pet trade in Asia, decreased water quality, disease (chytrid fungus), and increased impoundments have caused the hellbenders decline. This species is on the brink of extinction.



Magazine Mountain Shagreen (*Mesodon magazinensis*) – This small ½ inch terrestrial snail is found only in Logan County, Arkansas, near the summit of Mount Magazine. They are found on rugged rocky slopes of Mount Magazine. Its habitat comprises a total of 16 acres. The U.S. Fish and Wildlife Service is currently working a proposed delisting rule because this species has met its recovery goals, meaning that the populations are stable and habitat is fully protected from potential threats. This is another success story for endangered species conservation.



Cave Crayfish (*Cambarus aculabrum*) – This cave crayfish is so rare it is only found in only 4 sites in Arkansas and nowhere else in the world. These crayfish are albino with no pigmentation coloring their body. Only 40 individuals live in the wild. Like all cave species they are very susceptible to pollutants that may contaminate the groundwater and habitat disturbance.



Hell Creek Crayfish (*Cambarus zophanastes*) - is very similar in appearance to other cave crayfish. This cave crayfish also is extremely rare, only occurring in two caves and one spring in Arkansas. Threats are similar to the Benton Cave Crayfish.



American Burying Beetle (*Nicrophorus americanus*) – The American burying beetle is a large beetle, measuring up to 1 ½ inches. American burying beetles are scavengers, dependent on carrion for food and reproduction. They play an important role in breaking down decaying matter and recycling it back into the ecosystem. They bury themselves in the soil to overwinter and upon emerging in the spring they mate and bury a carcass, near which the female lays eggs. Both parents help raise the young, a rarity in the insect world. They are found in open woodlands and grasslands. Habitat loss and fragmentation is thought to be the main cause for their decline. Increased competition from other scavengers and decline in available carrion such as the extinction of passenger pigeon and decline in quail populations also are reasons for its decline. They were once found in the eastern half of North America, now only scattered populations remain. They occur in Sebastian, Scott, Logan, and Franklin counties in Arkansas, with the largest population located on Ft. Chaffee Maneuver Training Center near Ft. Smith, Arkansas.



Photo by Jim Katherer, Missouri Department of Conservation

Missouri Bladderpod (*Lesquerella filiformis*) – It is a small annual plant, growing 4 – 8 inches tall that blooms May to April. Natural habitat for the Missouri bladderpod is open limestone glades; glades are naturally dry, treeless areas with shallow, loose soil and areas of exposed rock. Missouri bladderpod is found only in southern Missouri and northern Arkansas, including a few sites in the Ouachita Mountains.



Photo by U.S. Fish & Wildlife Service; Sarana Selbo

Running Buffalo Clover (*Trifolium stoloniferum*) – Running buffalo clover is a perennial plant that grows 4 to 20 inches tall. Running buffalo clover requires periodic disturbance and a somewhat open habitat to successfully flourish, but it cannot tolerate full-sun, full-shade, or severe disturbance. Historically running buffalo clover was found in rich soils in the ecotone between open forest and prairie. Those areas were probably maintained by the disturbance caused by bison. Today, the species is found in partially shaded woodlots, mowed areas (lawns, parks, cemeteries), and along streams and trails. Habitat loss, competition with non-native invasive species and the disappearance of bison from the landscape have all contributed to the decline of this species. The species is believed to be extirpated from Arkansas, meaning that it no longer occurs in its historic Arkansas habitats.



Harperella (*Ptilimnium nodosum*) – Harperella is an annual herb that grows 6 – 36 inches tall. It blooms in midsummer with inconspicuous white flower clusters, similar to those of Queen Anne's lace. Harperella is found in 2 types of habitat: rocky or gravel shoals and margins of clear, swift-flowing stream sections in the Ouachita Mountains of Arkansas. It also occurs in numerous other states. Erosion leading to sedimentation of stream channels is the primary threat to the continued existence of this species.



Pondberry (*Lindera melissifolia*) – Pondberry is a deciduous shrub that can grow up to 6 feet tall. Pondberry, for the most part, is associated with wetland habitats such as bottomland and hardwoods in the interior areas, and the margins of sinks, ponds and other depressions in the more coastal sites. The plants generally grow in shaded areas but may also be found in full sun. Small yellow flowers bloom very early spring, followed by the red berries in the fall. Habitat loss is the main reason for listing.



Geocarpon minimum – Geocarpon prefers the edge of saline (salt) barrens in grasslands called "slicks" or "slickspots." Geocarpon is a tiny inconspicuous plant, ranging in size from 0.4" – 1.6". Vegetation encroachment, cattle grazing, and landscape alteration are the main threats to this little plant.



Bald Eagle (*Haliaeetus leucocephalus*) – The bald eagle is a success story. No longer listed as endangered it still receives protection under the Golden and Bald Eagle Protection Act and the Migratory Bird Treaty Act. After nearly disappearing from most of the United States decades ago, the bald eagle is now flourishing across the nation and no longer needs the protection of the Endangered Species Act.