Learn More About the Species Along the River

Arkansas River Shiner *(Notropis girardi)*

Status — Federally Threatened

In the last 45 years, this small, fresh-water fish has disappeared from over 80% of its historic range. As its name implies, the Arkansas River shiner was historically found throughout the Arkansas River drainage, which includes several prairie rivers that flow through Oklahoma, Arkansas, Kansas, Texas, and New Mexico. Now, however, the shiner is no longer found in the Arkansas River, North Canadian River, or Salt Fork of the Arkansas River. The species appears to be stable in the Canadian River; however, river flow over the years has declined. An extremely small population may still persist in the Cimarron River. Primary threats to the species include groundwater pumping, diversion of surface water, and impoundments, all which affect surface water flows and water quality.

The Arkansas River shiner is about 5 cm long and is very difficult to distinguish from other minnows found in prairie rivers. They primarily eat small aquatic invertebrates found in the shifting sand shallow of shadeless creeks and river channels. This species reproduces during the late spring and summer. Females release eggs and males simultaneously release sperm; this is called broadcast spawning. The fertilized eggs travel with the current for many miles before hatching after one or two days. Because of this unique life history pattern, the species needs long stretches of naturally flowing river for its reproduction and survival. The larvae can live on the nutrition they gained from the yolk of their egg for a few days before having to find food on their own.

Photo: Daniel Fenner
U.S. Fish and Wildlife Service, Oklahoma Field Office
www.fws.gov/southwest/es/oklahoma/

Big-Eyed Toad Bug *(Gelastocoris oculatus)*

Status — Apparently Secure

Big-eyed toad bugs live along the water's edge by lakes, ponds, and streams. They get their name because they have warty skin, hop, and feed on smaller insects… just like a toad! They are very small, oval bugs, about 5-9 mm — about half the size of a thumb nail. They are well camouflaged with a bumpy yellowish-brown exoskeleton and are hard to spot until they move.

To capture prey, toad bugs pounce onto small invertebrates and latch on with their front legs. They have bulging eyes on the side of their head for spotting their prey and for spotting things that may eat them, too! Toad bugs are "true" bugs, because they have a tiny piercing straw-like mouth part that enables them to suck. This beak-like mouth is what they use to pierce their prey, inject digesting enzymes, and suck up their food. This type of mouth also allows toad bugs to give you a painful poke if you pick one up! "True" bugs also have wings that are half hardened and half membrane.

Toad bugs can be found near the water's edge of rivers, creeks, or ponds on mud or sand. In addition to their feeding habitat, these are also suitable locations for them to lay eggs in the substrate. These bugs have a large range, from New England to Virginia, west to Manitoba and Oregon, and south to Mexico.

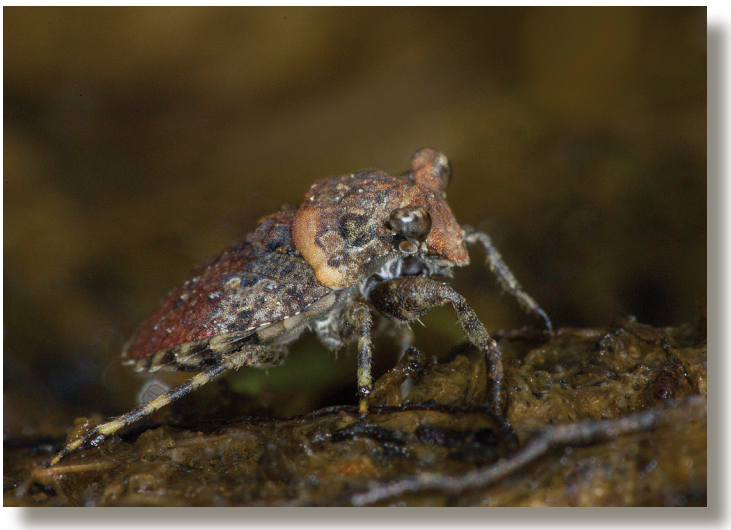

Photo: Tam Stuart
www.tamstuart.com

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Common Sanddragon *(Progomphus obscurus)*

Status — Apparently Secure

This dragonfly is in the family of clubtail dragonflies, so called because the end of its abdomen is enlarged and appears club-like. However, some refer to these dragonflies as burrowing dragonflies because the larvae, which live underwater, burrow into the substrate. The common sanddragon has widely spaced eyes, are 4-7 cm long, and, like all dragonflies, hold their paired wings flat out and to the sides of its body. The adult common sanddragon can be seen perching along the edges of sandy-bottomed rivers across Oklahoma and much of the eastern U.S.

Both the larvae and adults are carnivorous predators. Generally the larvae eat aquatic insects, but large dragonflies have been known to eat small fish and tadpoles. The adults like to eat mosquitoes, gnats, mayflies, and other small flying insects. The dragonfly uses its legs, which form a basket, to catch insects while flying.

Females lay eggs into the water by quickly flying low over the water's surface and tapping their abdomens on the water. This is one of the few dragonflies where the male mate guards the female while she lay eggs.

Photo: Victor W. Fazio, III
aves.net

Diamondback Water Snake *(Nerodia rhombifer)*

Status — Secure

As the name implies, this species is primarily aquatic, living in and near rivers, lakes, ponds, and riparian areas. Although called "diamondback," the dark markings that extent the length of the snake are slightly irregularly shaped forming a chain-like pattern.

Diamondback water snakes generally eat fish, but will occasionally consume large tadpoles (such as bullfrogs), frogs, reptiles, mammals, and some large invertebrates (such as crayfish). Most activity, including hunting, occurs just before dark and at night (diurnal), except during very hot weather, when it is nocturnal.

These live-bearing snakes produce young from mid-August through early October. Very large females can give birth to as many as 48–50 young, but fewer offspring is more typical. As an adult, this species of snake can reach up to 1.2 m, but because they are heavy-bodied they can appear much bigger.

These conspicuous snakes can be easily observed along shorelines and on branches that overhang water. Frequently basking on top of branches, they drop into the water when approached. In Oklahoma, this species is found statewide except the panhandle. Within North America, the distribution extends from east Texas to eastern Alabama and from central Illinois south into Mexico. This species is common in the wild, but is also found in farm ponds, streams flowing through towns, and urban lakes and ponds. In fact, they may be more common now due to the abundance of ponds in residential and commercial developments.

Diamondback water snakes are non-venomous and generally harmless, but they may bite if handled.

Photo: Laurie J. Vitt
Sam Noble Oklahoma Museum of Natural History
www.snomnh.ou.edu/personnel/herpetology/vitt

Eastern Cottonwood *(Populus deltoides)*

Status — Secure

As one of the biggest eastern hardwoods, the eastern cottonwood can grow to up to 30 m with a massive truck that can be over 1 m in diameter. This member of the willow family is one of the fastest-growing trees native to North America with an average of 1.5 m growth in one year. When trees are several years old, they can produce flowers. Male and female flowers are produced on separate trees. The flower cluster of both male and female flowers are called catkins. Catkins are not showy and the flowers have extremely small or no petals. The flowers do not attract pollinators, but are instead wind pollinated. Seeds are produced by trees with female flowers; male flowers release the pollen. The cottonwood is named for its cottony seeds that are wind dispersed in early summer. Seeds may be carried hundreds of feet by wind or may fall in the water and be carried even farther from the parent tree before being deposited on land.

The eastern cottonwood grows across North America, including Canada and Mexico, except in the far western U.S. states of California, Oregon, Washington, Nevada, and Idaho. In Oklahoma, you can find them growing along any waterway or body of water or in wet soils of valleys.

Photo: Priscilla H. C. Crawford
Oklahoma Biological Survey
www.biosurvey.ou.edu

Festive Tiger Beetle *(Cicindela scutellaris)*

Status — Apparently Secure

This attractive and brightly colored insect has been called the butterfly of the beetle world. However, they are more ferocious than this description implies. Their veracious appetite for other insects has earned them the name "tiger" beetle. These metallic colored beetles are 11-13 mm long with bulging eyes and long green legs.

Festive Tiger Beetles reproduce in the spring. The larvae live under the sand in burrows that can be up to 2 feet deep. At the top of the burrow, the larvae catch prey in their powerful jaws, holding on to sides of the burrow with special hooks on their abdomen. The beetle then drags its prey to the bottom of the burrow to eat. The larvae eat ants, spiders, and other small crawling invertebrates it can grab near the entrance of the burrow. Adult tiger beetles are fast runners and fliers. Their speed enables them to catch both crawling and flying prey, which they grasp in their sickle-shaped jaws.

Their range extends through the central and eastern regions of the U.S. and in southeastern and south-central Canada. In general tiger beetles can be found in a variety of bare, open habitats, including river sandbars, ocean beaches, mud-flats, dunes, and rocky outcrops. However, this particular species prefers deep, dry sand in which they can dig temporary burrows to spend the night and to escape the heat of the day.

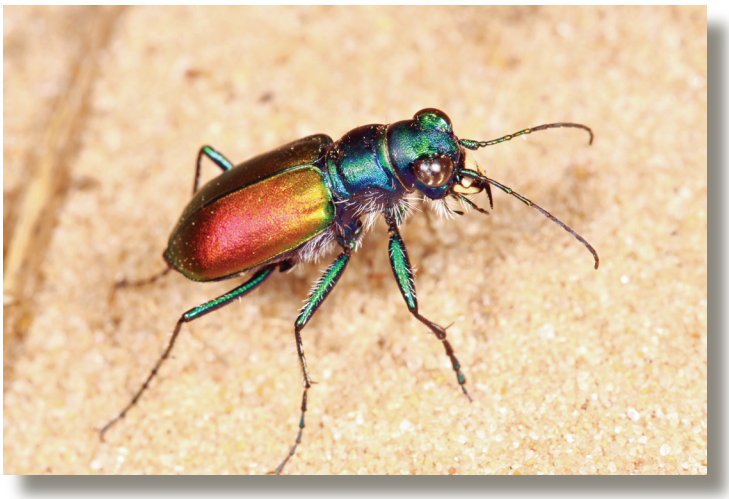

Photo: Ted C. MacRae
beetlesinthebush.wordpress.com

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Fourpoint Evening Primrose *(Oenothera rhombipetala)*

Status — Secure

As a biennial, this plant produces a rosette of leaves during its first growing season, then produces flowers during the following year. In the second year the plant will grow to 0.3 - 1 m tall with large spikes of flowers. The yellow flowers are 5-8 cm wide with diamond shaped petals. In fact, diamond petal primose is another common name for this showy flower. The flowers open around sunset and wither the following morning. Being open at night allows moths to drink nectar from the long floral tube and as a result pollinate the flower. These flowers will bloom from June to October.

You can see fourpoint evening primrose on sand dunes, sandy prairies, river valleys, and roadsides. This plant is common and lives across Oklahoma, except in the far eastern region, where deciduous forest dominates. In the appropriate habitat, this species can be found throughout central North America.

Herbivorous mammals, such as white-tailed deer, will eat fourpoint evening primrose, as well as herbivorous insects, like grasshoppers and caterpillars. Humans have used the oil from this family of plants to make lotions and creams because it has emollient properties that may hydrate and soften the skin.

Photo: Priscilla H. C. Crawford
Oklahoma Biological Survey
www.biosurvey.ou.edu

Great Blue Heron *(Ardea herodias)*

Status — Secure

With its long legs and neck, the Great Blue Heron is a tall, bluish-grey wading bird standing 1.5 m high. When flying, the long neck is folded in an s-shape, the long legs extend along the body, and the long, rounded wings make slow wing-beats. This heron nests mostly in colonies, sometimes with several hundred other pairs. Colonies are often located on islands and in wooded swamps; these isolated locations discourage nest predation by snakes and mammals. The great blue heron eats mostly fish, but also amphibians, reptiles, birds, mammals, and invertebrates. During the winter it may hunt in upland fields for rodents. However, these herons typically hunt fish and other aquatic animals while wading in shallow water.

The Great Blue Heron is one of the most widespread and adaptable wading birds in North America. Found year 'round throughout the U.S., some will migrate north in summer to southern Canada, and migrate south to Central and South America in the winter. This heron lives in both coastal and fresh water habitats. In Oklahoma, you are likely to observe herons in and along any body of water: rivers, lakes, wetlands, and even in roadside ditches and suburban ponds.

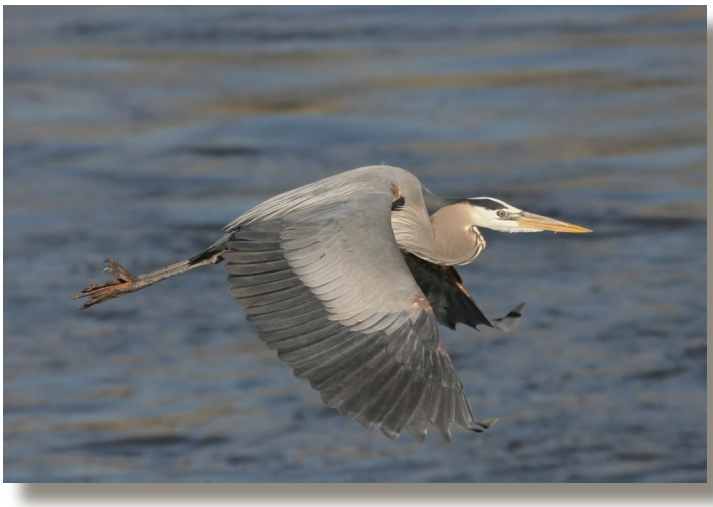

Photo: Jim Arterburn
www.pbase.com/oklahomabirder

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Indigo Bunting *(Passerina cyanea)*

Status — Secure

Indigo buntings are small migratory songbirds (12 cm from head to tail) that prefer to live on the edge of forests, in brushy thickets, and within old fields during their summer breeding season. The vegetation around prairie rivers is great habitat for nesting buntings. Adult males are brilliant blue, while females and juveniles are brown with light streaks on the breast. As a migratory bird, the indigo bunting arrives in Oklahoma in mid-April and nests May through July. They usually raise two broods during that time. In a cup-like nest of leaves, grasses, stems, and bark, the bunting lays 3-4 bluish white eggs. The female is the primary care giver and will protect and feed the chicks for about three weeks after the eggs hatch.

Their bright blue coloring and cheerful song make them easy to find in the breeding season, but the males' plumage changes to brown and their vocalizations are fewer during the winter. Being a long-distant migrant, the indigo bunting travels about 2,000 km from its wintering ground to its breeding ground. It breeds throughout the eastern U.S. and parts of Arizona and New Mexico and winters primarily in southern Florida, Mexico and Central America, and on islands in the Gulf of Mexico. Indigo buntings can be observed across Oklahoma, but are rare in the extreme western edge and panhandle where trees, their preferred nesting locations, are scarce.

Photo: Steve Metz
www.pbase.com/stevemetz

Least Tern *(Sterna antillarum athalassos)*

Status — Federally Endangered

Interior least terns are a subspecies of the least tern that live in the Great Plains and Mississippi Valley. Other least tern subspecies live on the Gulf, Atlantic, and California coasts. Least terns are the smallest member of the gull family of birds. In Oklahoma they can be found along the large prairie rivers and Great Salt Plains from May to September. During this time they court mates and set up nesting colonies. Typically, people think birds nest in trees, but least terns (and many other species) nest on the ground. They scrape away the ground to form a shallow bowl in bare sand, gravel, or shells on dry mudflats, salt plains, or in sand and gravel pits. Both the male and female sit on the nest of two or three speckled eggs for about three weeks. After hatching, the chicks are tended by both parents. They can fly at three weeks old, but remain dependent upon the adults for food. Least terns eat primarily small fish, but may also eat aquatic invertebrates.

Preparation for migration begins in mid-July and birds have left Oklahoma by early September. During this time, terns congregate in large flocks and fuel up for the long trip to South America. Juvenile terns are able to practice their fishing skills and learn to become independent during pre-migration. Little is known about their life in South America during the winter.

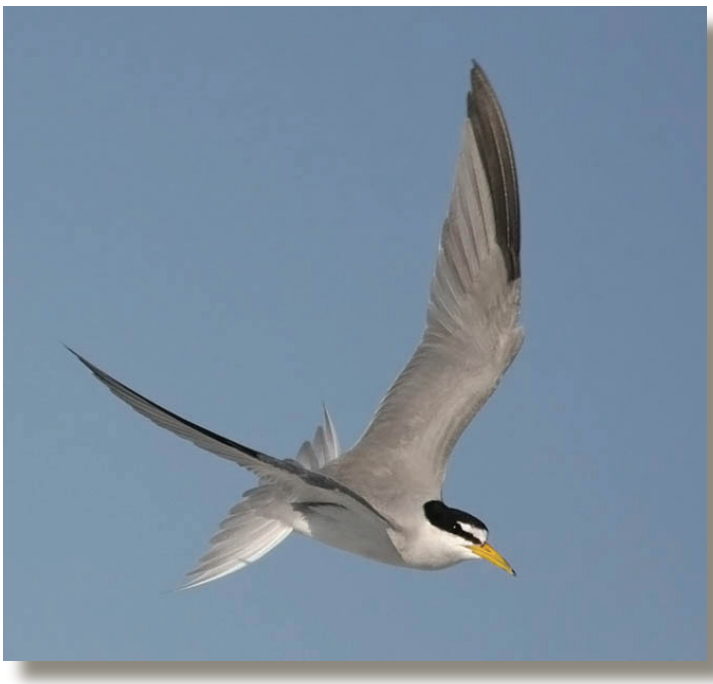

Photo: Jim Arterburn
www.pbase.com/oklahomabirder

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North American River Otter *(Lutra canadensis)*

Status — State Species of Greatest Conservation Need

These playful mammals are returning to America's rivers after being extirpated from many of their original native areas. Being sensitive to environmental pollution, their populations had dwindled. In recent years, biologists have reintroduced them to several river and wetland systems across the country, including Oklahoma. These transplanted otters are doing well and the species is recovering. They now can be found throughout Canada and the U.S.

River otters construct dens from burrows abandoned by other animals or they use natural hollows. They are semi-aquatic and streamlined with short legs ending in webbed claws. They have thick tapering tails and long whiskers. Their long whiskers allow them to sense prey in these aquatic habitats where their other senses may be diminished. If you are looking for otter tracks, look for tracks that have five webbed, clawed toes and probably some of the tracks are rubbed out by their dragging tail.

River otters can weigh more than 20 pounds and are about 1-1.25 m long. Typical habitats are lakes, rivers, coastal habitats, marshes, and swamps. These agile swimmers are able to stay under water for up to eight minutes. They mainly eat other aquatic animals such as fish, turtles, and amphibians, but have been known to eat birds and other small terrestrial animals. River otters typically live eight or nine years in the wild. They usually live alone except for females and their young, who stay together until the pups are about six months old.

Photo: Dustin Holmes
www.flickr.com/photos/dustinholmes

Ord's Kangaroo Rat *(Dipodomys ordii)*

Status — Secure

Ord's kangaroo rat is widely distributed, occupying the short grass prairie of the Great Plains and living in a variety of habitats where there is fine sandy soil. In fact, this animal is one of the few able to make burrows in loose sand, making sandy banks and sandbars of prairie rivers good habitat. Including their long tail, Ord's kangaroo rat is usually 24-36 cm long. With a superior sense of smell, excellent hearing, and marvelous night vision, kangaroo rats are active on cloudy nights. Bad weather keeps them in their burrows and moonlit nights expose them to predators, such as owls and coyotes. When escaping a predator, this species can jump up to 2 m in a single bound. If the rat cannot immediately flee, it can use their back legs to kick sand into the predator's face.

Being nocturnal, you may have a difficult time observing kangaroo rats, but can observe their tracks in the sand. When traveling, they hop on their hind legs leaving tracks of only two feet. They move on all four feet and drag their tail when feeding. Ord's kangaroo rats eat mostly seeds, which are collected in fur-lined cheek pouches and taken back to their burrows for storage. During the summer these rats may also eat insects, such as grasshoppers and moths. Kangaroo rats rarely drink water, instead they use water, which their body produces when breaking down food.

Photo: Nicholas J. Czaplewski
Sam Noble Oklahoma Museum of Natural History
www.snomnh.ou.edu

Ornate Box Turtle *(Terrapene ornata)*

Status — Secure

Box turtles are terrestrial and their high, domed shell, or carapace, and unwebbed feet are adapted for life on land — not water. Box turtles get their name from their hinged shell that allows them to close up like a box, pulling in their head, tail, and legs. The carapace of the ornate box turtle is dark with many yellow lines, which in older turtles may become dull. Although box turtles are not aquatic, they can be found along prairie rivers in the open sandy habitat. Their tracks are easy to spy and if followed you may find the animal that made them. Ornate box turtles also can be found in a variety of open, sandy habitats, such as prairies and woodlands. There, box turtles can find their preferred prey of insects, namely grasshoppers, beetles, and caterpillers.

Adult male turtles have red eyes and more colorful heads and forelimbs compared to females. Females generally have brown irises. Box turtles can live for several decades. Each scale, or scute, of a box turtle's shell has an annual growth ring. For turtles up to ten years old, the rings are easily counted, but older turtles's rings may be worn away and not visible. Box turtles mate in the spring and females lay two to eight white eggs. Hatchlings emerge in two to three months; however, some clutches laid in summer may not hatch until the following spring. Box turtles have a small home range of about two to five acres. However, juvenile turtles may travel, and these are the turtles you see crossing roads in the spring.

Photo: Priscilla H. C. Crawford
Oklahoma Biological Survey
www.biosurvey.ou.edu

Spiny Softshell Turtle *(Apalone spinifera)*

Status — State Species of Greatest Conservation Need

Softshell turtles have smooth and leather-like shells. The spiny softshell has distinct spines or bumps at the front and back of the shell. Mature female spiny softshell turtles can grow to 40 cm in length, but the males are much smaller. They are about half the size. Spiny Softshells are totally aquatic and are common in Oklahoma's rivers, streams, and lakes. May through July, they lay their eggs in sandbars in clutches of 3–40 eggs. They may lay eggs once or twice each breeding season. The eggs hatch in August and September. Spiny softshell turtles eat mostly insects and aquatic invertebrates (like snails and crayfish), but are considered omnivorous and will eat plants.

They live throughout most of Oklahoma. The only place you can't find them is part of the panhandle. Softshell turtles are powerful swimmers and can move quickly on land, too. Their sharp beaks and powerful jaws encourage you to handle them with care. These turtles can be seen sunning themselves on sandbanks of prairie rivers and on logs and beaver dams in connected waterways. Although common, these turtles may difficult to spy because they bury themselves under the sand on the river bottom.

Photo: Laurie J. Vitt
Sam Noble Oklahoma Museum of Natural History
www.snomnh.ou.edu/personnel/herpetology/vitt

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Paddlefish *(Polyodon spathula)*

Status — State Species of Greatest Conservation Need

Paddlefish are the oldest surviving animal species in North America. Fossil records indicate that it is older than dinosaurs (300 million years). The species is distinguished by their large mouths and a long paddle-shaped nose, or rostrum, which is about 1/3 their entire length. That is a pretty long nose considering the fish can reach a length of 1.5 m and weigh about 27 kg on average. This makes them one of the largest fresh water fish in North America.

The large rostrum has given them the nickname of the spoonbill. It was originally thought that they used their rostrum to dig up food from the bottom of a river, but we now know they eat zooplankton by swimming with their mouths open and filtering the organisms with tiny structures called gill rakers. Their rostrum has sensitive electroreceptors on its paddle, which is believed to help the fish to find their prey. Like sharks, paddlefish have skeletons made entirely of cartilage, not bone. Also, paddlefish have no scales.

To reproduce, females release many sticky eggs that attach to gravel and rocks. Several different males will swim by and fertilize the deposited eggs. Both male and female paddlefish must be several years old before reproducing. Hatchlings are self-sufficient and receive no parental care. By the end of the first year, paddlefish can reach 25 cm in length. Biologists believe paddlefish can live more than 50 years. Living in large, deep, slow moving rivers, paddlefish are now found only in the Mississippi drainage system. Primary threats to the species include impoundments and habitat modification.

Photo: Tom Stailey
Tennessee Aquarium
www.tnaqua.org