

ARKANSAS TURTLES

by Dr. Michael V. Plummer



KEITH SUTTON

Common Snapping Turtle

Some of my fondest childhood memories concern turtles. I was lucky enough to grow up where I could roam at will through acres of forests and follow streams for what seemed like endless miles. On my wanderings, I was constantly alert for turtles. My imagination would soar when peering through the vegetation on the creek bank I'd see

huge turtle heads protruding from the water. What monstrous bodies must be hidden beneath the surface! Ecstasy, for me, was catching one of those water turtles while it wandered on land. Agony was releasing it after a summer's captivity so it could find a place to hibernate for the winter. Ecstasy was convincing my parents to stop the car so I could

catch a box turtle as it crossed a road. Agony was watching another car swerve and hearing the turtle "pop" under its wheels. Ecstasy was finding an egg in one of my turtle pens! Agony was finding out that it was only a bantam hen's egg placed there by my uncle as a joke. That's enough nostalgia. My childhood fascination gradually grew into serious

adult study that I occasionally feel compelled to share.

Of the world's approximately 240 species of turtles, North America has 48 species and Arkansas has 16 species. While differing in size and shape, the unique structure of turtles is familiar to everyone. The shell, which readily identifies all turtles, is composed of a thick inner layer of bone and a thin outer layer of scales, which itself is composed of material much like that of our fingernails. Technically, all species may be referred to as turtles, but the name tortoise is given to certain species that are entirely terrestrial (land-dwelling), and the name terrapin is applied to a particular species inhabiting the shallow waters of our eastern coastlines. Turtles are found in diverse habitats throughout the warmer regions of the world, including the oceans. Both the terrestrial and aquatic (water-dwelling) species range in size from a few inches to giants weighing hundreds of pounds. Turtles roam forests and fields, swim in lakes and streams, climb trees, traverse oceans, burrow in the soil, run over sandbars, live in sewage lagoons, and even wedge themselves in rock crevices by inflating their flexible shells. The only



Alligator Snapping Turtle

major habitat that they have not invaded is the air (Can you imagine a "frisbie" turtle).

Because a turtle's body temperature is determined by environmental temperature, turtles are active only when environmental temperatures permit. In Arkansas, a turtle's greatest activity extends from late April through September. Other times are spent burrowed in pond bottoms, soil, a rotten stump, or similar retreats.

Reproduction is a major concern during the activity season. Courtship and mating occur in the spring and fall. In at least some species, sperm may be stored in the female's body, so fertile eggs can be laid for several years after one mating.

All turtles lay eggs in nests that are dug on land. This is an annual affair and sometimes, as in the case of sea turtles, involves migrations covering hundreds of miles to nesting beaches. Raccoons, dogs, foxes, opossums, skunks and many other animals, including man, dig up the nests and eat eggs, so relatively few actually hatch.

In many species, the hatchlings' sex is determined by the incubation temperature. Higher temperatures produce females and lower temperatures produce males. Most of the hatchlings are doomed to die an early death. Those that make it through their first and second years are lucky, and will probably live to a ripe old age. Turtles are long lived, but the ages often ascribed to them based on captive specimens (50-100+ years) are probably attained rarely in nature. Maximum ages of 10-20 years would be more realistic for most turtles.

Turtles, like many other co-inhabitants of the earth, are commercially exploited by man. The existence of diamond-backed terrapins was threatened at the turn of the century by the tremendous demand for "terrapin stew" in elegant northeastern restaurants. Likewise, the green sea turtle and alligator snapping turtle have suffered because of man's exotic culinary tastes. Fashion, too, has taken its toll. The demand for "tortoise shell" jewelry has been detrimental to the hawksbill and other sea turtles.

Many Arkansans know turtles only from an occasional glimpse in

the borrow ditches along the highway or as tugs at the end of a fishing line by these accomplished bait stealers. The following briefly introduces the turtles of our state. These Arkansas reptiles can be divided into four groups — the bottom walkers, baskers, softshells and box turtles.

BOTTOM WALKERS

Bottom walking turtles include five species of drably colored, frequently nocturnal (night-active) turtles. Even though most are highly aquatic, they are poor swimmers and get around by walking on the bottom and labored swimming. They may have thick growths of algae on their shells. These characteristics, combined with the fact that basking is rare, result in turtles rarely seen by humans. The main exception to this is large snapping turtles (8-15"), sometimes called "loggerhead," which often roam on land during the spring. Aptly named, the big-headed snapping turtle has a vicious disposition and is a formidable opponent on land. Extreme care should be taken with these turtles. The neck is very long, and they strike amazingly fast. Its behavior is in direct contrast to what Dr. Archie Carr, a famous turtle biologist, terms a "philosophy of meditation and passive resistance," which characterizes most turtles. Bottom walkers include Arkansas' smallest species, the nondescript mud turtle (3-5"), as well as North America's largest freshwater turtle, the alligator snapper (over 30" and 250 lbs.). This huge turtle resembles the snapping turtle, but it has three large ridges running down the length of the upper shell. It has a unique method of supplementing its diet. On the floor of its mouth is a small fleshy projection which can be engorged with blood. This pink "worm" can be waved back and forth as the mouth is held open. Any small unsuspecting fish lured to the bait is quickly eaten.

The small musk and keeled musk turtles (4-5"), named because of their musky odor, round out the five species of bottom walkers. The musk turtle often goes by the unglamorous name of "stinkpot." Although musk turtles are best known for this odor, all bottom walkers have this trait to some degree.

Common Snapping Turtle

Chelydra serpentina serpentina

This is a common turtle in Arkansas and one of the most abundant turtles in the eastern United States. Of all turtles, the snapping turtle is probably the most abominated and condemned by fishermen and hunters. Their appearance is sinister, and their nasty disposition certainly does not help their reputation. They may take an occasional game fish or waterbird, but snapping turtles play

an important part in the ecology of the ponds, lakes, bayous and streams they live in, probably doing more good than harm by acting as bottom-prowling carrion eaters. Contrary to popular belief, snappers are more scavengers than predators, feeding on both animal matter and aquatic plants. Snappers are a food source and are often fried, stewed and used in soups.



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Alligator Snapping Turtle

Macrolemys temmincki

The alligator snapping turtle is the largest freshwater turtle in the United States. A fully grown specimen can exceed a shell length over two feet and reach weights in excess of 200 pounds. Some folks believe the alligator snapping turtle originated from a freak of nature when an alligator and a common snapper mated, thus producing the alligator snapper. This, of course, is not true. The "loggerhead", as it is known locally, is distinguished from the

common snapper by its extremely large head, strongly hooked beak and three prominent keels extending along the full length of the upper shell. This species eats mostly fish and small turtles which it attracts using a wormlike lure on the tongue in the floor of its mouth. Preferred habitat of the alligator snapping turtle includes deep rivers, sloughs, and oxbow lakes. This huge reptile has declined in Arkansas waters and is becoming increasingly rare.

Stinkpot

Sternotherus odoratus

This is the smallest turtle found in Arkansas. Such malodorous monikers as stinkpot and "stinking-jim" derive from their ability to produce a strong, unpleasant smelling secretion from their musk glands when captured or handled. There are normally two thin, yellow stripes on each side of the head and neck. Green algae grow on the backs of many specimens. Still waters are preferred. If a turtle ever falls on your head or into your boat, this is probably the culprit. Stinkpots are known to bask in trees as high as six feet above the surface of the water. Most fishermen are familiar with them, because they are often caught while trying to steal bait from their hooks.



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Mississippi Mud Turtle

Kinosternon subrubrum hippocrepis

The mud turtle is closely allied to the stinkpot, differing from it by having a double — rather than single — hinged lower shell, which permits some species to close up as completely as a box turtle. In color, the mud turtle matches the muddy ponds, ditches and generally stagnant water it inhabits. The only relief from its dull brown color is two light irregular stripes on the head and neck. These turtles are often mistaken for young snapping turtles, but the snapper has a long tail with saw-toothed projections on top. The shy and secretive mud turtles commonly have short tails.



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Map Turtles

Graptemys

Three species of map turtles occur in Arkansas. They are the Map Turtle (*Graptemys geographica*), the Mississippi Map Turtle (*G. kohni*) and the Ouachita Map Turtle (*G. pseudogeographica ouachitensis*). This group of turtles shows great disparity in size between the sexes, the female being much larger. Map turtles are so named because their shells are adorned with beautiful, bright map-

like patterns and colors. Some have high, knobby back ridges and are known locally as "sawbacks." The yellow stripes, whorls and curlicues on the head are useful in identifying the different species. These are lake and river turtles, shy and quick to dash into the water at the slightest disturbance. Food includes snails, dead fish, insects, crawdads, worms and aquatic plants.

Southern Painted Turtle

Chrysemys picta dorsalis

As the name implies, the southern painted turtle is adorned with bright colors. The bottom shell is yellow or orange, and the top is divided lengthwise by a broad red stripe. Painted turtles are avid sun-lovers and often spend several hours a day on their favorite basking sites enjoying the sun. In Arkansas, this species occurs in ponds, ditches, sloughs, lake edges and stream backwaters. They favor shallow waters with soft, muddy bottoms and an abundance of aquatic vegetation. Painted turtles are omnivorous feeders, eating many types of aquatic plants and animals.



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Red-eared Slider

Chrysemys scripta elegans

This is perhaps the most common semi-aquatic turtle in Arkansas. Unfortunately, people continue to use sliders and other basking turtles for target practice. Killing an animal just for having something to shoot, shows a lack of conscience and proper outdoor ethics. These turtles are no threat to fish populations and play an important role in nature's system of checks-and-balances in our lakes and streams. The red-eared slider was also exploited by the pet trade for many years. They are now protected by laws which restrict their sale. This species is the only Arkansas turtle with a distinct red or orange stripe present on each side of the head behind the eye. Red-eared sliders live in virtually any freshwater habitat and both aquatic plants and animals are eaten by this turtle.



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Slider

Chrysemys concinna hieroglyphica

Like other basking turtles, sliders slide into water at the least sign of danger. Sliders "haul out" and sun by the hour on stumps, snags, logs and rocks during warm weather. If basking sites are at a premium, they pile themselves two and three high as the late-comers climb atop their neighbors. In parts of the Southeast, sliders go by the name "cooter," derived from "kuta," a word meaning

turtle in several African dialects and brought to America during early slave days. Adult males have extremely long nails on their front feet, and their shells are rather flat compared with the well-arched shells of females. Females grow larger. The slider is largely vegetarian, and rivers constitute their chief habitat, but this turtle is also found in ditches and ponds.



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Western Chicken Turtle

Deirochelys reticularia miaria

Little is known about the status of this turtle in Arkansas. The name is derived from its long "chicken" neck and the flavor of its flesh. The extra-long, strongly striped neck and vertically striped rump ("seat of the pants") are good field identification marks. Also look at the forelegs; each one has a broad yellow stripe along its front surface. The chicken turtle lives in calm to slow-moving waters, including sloughs, oxbow lakes and irrigation ditches. It spends much time basking with its long neck stretched out. This species is known to wander about on land. Due to limited numbers and a reduction of habitats, this species deserves further study in our state.



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Three-toed Box Turtle

Terrapene carolina triunguis

The box turtle is a familiar sight to Arkansans, particularly in the spring when thousands of the awkward creatures are crossing highways. Unfortunately many are killed by careless motorists. It is aptly named, because it has a crosswise belly-hinge allowing it to shut its shell tightly after pulling in its head and legs. In this manner, all the soft body parts of the slow-moving "dry-land" turtle are protected by a layer of hard shell. Although most have three toes on each hind foot, don't depend on

them for identification. It sometimes has four. The box turtle's long claws serve as shovels to dig up grubs, worms and salamanders — animal food which supplements a diet of mushrooms, berries and other plant material. The claws also prove helpful when some mischance causes the animal to "turn turtle." Extending its neck and reaching backward over its shell, the turtle is usually able to hook its claws into the ground and quickly right itself.



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Ornate Box Turtle

Terrapene ornata ornata

This turtle is a resident of the relict prairie areas of Arkansas. The species is declining throughout its range due to agricultural land modifications and the ever-expanding highway system where motorists take their toll on hundreds each year. In most cases, male box turtles have red eyes and females tend to have brown or yellow eyes. The upper shell of the ornate box turtle is normally brown with many yellow lines radiating from the center of each segment. There are

normally four toes on each hind leg. Habitat will often separate it from the three-toed box turtle, ornates most often occurring in open treeless areas and the three-toed in mature forests and thickets. Since existing populations of ornate box turtles in Arkansas appear limited to prairie areas, complete protection of these areas with their unique flora and fauna is the only way to prevent their extirpation in the state.



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Softshell Turtles

Trionyx

These turtles are often referred to as "pancake turtles" because of their shape and color. They are round, flat turtles with a soft, leathery shell-like covering that lacks scales or shields entirely. The neck is extremely long and the snorkel-type nose allows it to breathe while exposing only its tubular nostrils above the water's surface. There are two species of softshells in Arkansas: the Smooth Softshell (*Trionyx muticus*) and the Spiny Softshell (*T. spinifer*). They are large aquatic turtles which show a preference for streams with soft sand, mud, or gravel bottoms where they spend much of their time well concealed. They belie the traditional slowness of turtles, being powerful swimmers and running on land with startling speed and agility. Softshells are largely meat-eaters feeding on crawdads, insect larvae and fish and are, themselves, considered quite tasty by many Arkansans.



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BASKERS

In contrast to the bottom walkers, the seven species of baskers are conspicuous, often brightly colored, and generally social creatures. They are good swimmers and live near the water. These are the turtles most frequently seen basking on logs or rocks, where they may pile up several turtles deep when basking sites are in short supply. Most are small to moderately sized and generally some shade of green or brown with contrasting lighter head and neck markings.

The shy map turtles, consisting of the map, Mississippi map, and Ouachita map turtles are a distinctive, handsome group. The details of the brilliant yellow head and neck markings are used to distinguish among the three species. Map turtles get their name from the intricate pattern of light lines on the upper shell.

Female basking turtles are larger than males, but this phenomenon is most pronounced in map turtles (males 3-5", females 6-10"). Map turtles often eat snails and clams, animals which serve as intermediate hosts to parasites which infect us and our domestic animals. Some young map turtles have a very pronounced saw-toothed ridge down the middle of their backs, hence the name "sawback."

The colorful painted turtle (4-5") does indeed appear to be "painted." An uncommon turtle in the South, it is the most common turtle in the northern states. Painted turtles have long attracted the attention of biologists. As a result, it probably has been studied more than any other fresh water turtle in the world.

The slider (9-13") and red-eared slider (5-9") get their names from a habit shared with other basking turtles of sliding quickly off their basking sites into the water when disturbed. The red-eared slider, probably the most abundant turtle in Arkansas, has a distinctive wide red stripe behind the eye. Old males, however, sometimes become very dark due to the accumulation of black pigment which obscures the red "ear." Literally thousands of red-eared sliders are killed on roads in the Delta region each year. Before turtles were banned in the pet shop trade, red-eared sliders were



BARRY MILTON

Western Spiny Softshell

probably the most popular of all pet turtles. This species grows extremely fast in the heated waters of nuclear power plant effluents. Males of both slider species have greatly elongated front claws with which they "caress" the female's head and neck during courtship.

The last basker species, the chicken turtle (4-6"), gets its name from the extra long striped neck and the taste of its flesh. Although abundant in most southeastern states, it is rare in Arkansas.

SOFTSHELLS

The two species of softshells found in Arkansas are the most unturtle-like of our turtles. The flattened shell is soft and leathery and the feet are paddlelike. These animated "pancakes" spend large amounts of time buried in mud or sand at the water's edge where the long tubular nose is used to snorkle air. Oxygen also is absorbed from the water through a thin skin allowing the turtle to remain submerged for long periods. This adaptation also makes softshells more susceptible to water pollution. Take your binoculars if you want to see softshells. Extremely wary, basking individuals will scamper into water at the slightest disturbance.

Softshells are rarely very far from water. Basking is usually within a few feet of the shoreline. Even though they are locally abundant, they are rarely seen because of their shyness. Softshells are excellent swimmers and can move swiftly on land or water. When captured, the long neck, sharp beak, and lightning-like strike make softshell turtles animals to respect. The two species are identified by the presence or absence of small spiny projections along the front edge of the upper shell. The smaller smooth softshells (males 5-7", females 7-14") are found mainly in large rivers while the larger spiny softshells (males 5-7", females 7-18") are found in virtually any body of water.

BOX TURTLES

The box turtles include two terrestrial species which can completely withdraw into a high domed shell and close it up like a box by virtue of a hinge in the lower shell. Commonly kept as pets, these terrapins roam the forests and fields throughout Arkansas and are even known to city folk who see them crossing roads. The more common species, the three-toed box turtle (4-5"), usually has three toes on each hind foot. It is brightly colored as a youngster but usually changes to a drab, olive-tan

color as an adult. The uncommon ornate box turtle (4-5") has four toes on each hind foot and is much more restricted in its distribution and abundance in the state. It retains its colorful pattern throughout life. In both species, males usually have reddish eyes and females have yellowish-brown eyes.

Box turtles' shells have remarkable regenerative powers. They survive being hit by cars, mowed by lawnmowers, trampled by cattle, cut and crushed by farm implements and being thrown against rocks by mischievous boys. The healed and sometimes grotesquely deformed bodies are amazing. Sometimes box turtles eat poisonous mushrooms which temporarily taints their flesh. People have become sick after eating such turtles. In central Missouri two researchers used trained Labrador retrievers to find and catch several thousand three-toed box turtles.

ARKANSAS TURTLES AND CONSERVATION

The course toward extinction seems especially tragic for animals like turtles which have been roaming the earth for 200 million years. Despite the popular "sport" of shoot-

ing turtles off logs or running over them with cars, most turtle populations in Arkansas seem to be in fairly good shape. There are a few, however, which deserve special recognition.

The alligator snapping turtle has recently been proposed as a federally threatened species. While no official action has yet been taken on this proposal, the potential problem at least has been recognized. In Arkansas this highly aquatic, rarely seen giant unfortunately falls prey to trotline fishermen. I have seen as many as three rotted, bloated adult specimens on one trotline. Morbid scenes such as this could be prevented if fishermen would check their lines frequently as mandated by law.

Chicken turtles are also rare in Arkansas, but the reason is unknown. They are known to occur in less than a dozen localities statewide. The status of razorback musk turtles, likewise, is largely unknown. The ornate box turtle, while common in states west of Arkansas, exists only in remnant natural prairies within the state. Conservation efforts needed here are clear — preserve natural prairies.

Arkansans may be reluctant to grant turtles any conservation concern for several reasons, some of which are due to misinformation. For example, many believe turtles prey on game fish populations. Despite this frequent allegation, research doesn't support the contention. Adults of our most abundant turtles are almost entirely herbivorous (vegetarians). Even alligator snappers and common snappers, which are the most likely to consume fish, do so in an indiscriminant manner.

It is important that Arkansans be aware of wildlife found in the state. It is equally important that we understand the long-term consequences caused by indiscriminant killing, habitat destruction and general lack of concern for wildlife. As Arkansas grows, the conservation problem grows. If we want our children and grandchildren to enjoy our state's wildlife, then we need to be concerned and informed. This article has informed you of only a small portion of the natural history of turtles. If you would like to learn more, read "Turtles of the United States," by C. H. Ernst and R. W. Barbour (1972, University Press of Kentucky). ■



Spiny Softshell

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