

# **SNAKES OF ILLINOIS**

## **2014 Eco-Meet**

### **Junior Varsity**



“SNAKE!” The mere mention of the word evokes an emotional response. It may be wonder, exhilaration, shock, or even fear. Many of these responses occur because snakes appear and behave unlike any other animal we know. Other responses are deeply rooted in tales and myths that give snakes extraordinary powers and abilities.

Regardless of their source, misconceptions about snakes have made them among the most persecuted of all animals. A common reaction to a snake is to kill it on sight whether or not it poses a danger. However, the fact is that most snakes are harmless, and even dangerous ones would rather flee than fight. Once we begin to learn about snakes, we can replace our misconceptions with facts, our fears with curiosity, and we can begin to appreciate the important role of snakes in our environment.

The following is an excerpt from an essay written by University of Georgia ecology professor, Whit Gibbons for the University of Georgia publication, EcoViews, entitled “People Have Many Views About Snakes.”

“Snakes are a maligned group of animals. Part of their problem stems from being misunderstood; that is, most people know little about the basic biology of snakes. Understandably, being unfamiliar with something you think could hurt you leads to distrust and ill feeling.”

“Indeed, most Americans grow up with some mixture of fear and fascination about snakes. But I disagree with anyone who claims that humans have an innate or instinctive fear of snakes. Irrational fear of snakes is almost certainly taught, not inherited. Children can be taught to fear anything. Knowledge is the best cure of fear caused by ignorance.”

“Snakes are more commonly seen in the fall than in any other season because most U.S. snakes are born from July through September. Baby snakes often make their debut in carports or on patios in search of their first meal in early fall. The prevalence of snake sightings in the fall is further increased as the adults move around more in search of suitable hiding places prior to hibernation. Hence, they are more likely to be seen.”

The following are frequently asked questions during Mr. Gibbon’s presentations.

“How long do snakes live? Zoo records exist of snakes living more than twenty-five years, and ten-year records are very common. Although captive snakes can live for many years in a protective environment, no one really knows how long they normally live in the wild. One reason is that scientists have not discovered a way to tell the age of a live snake.”

“Do snakes have ears? No. Snakes do not hear the way most animals do. They do have a mechanism to sense vibrations on the ground, such as an animal walking, but presumably snakes cannot hear airborne sounds at all.”

“Will snakes chase people? Many species of snakes, both venomous and non-venomous, will defend themselves or not move out of the way when approached. But no U.S. snake will chase a person in an effort to hurt them.”

“I do not claim that all snakes are completely harmless. Clearly some can injure a person under certain circumstances, but so can some dogs. And I can safely say, for snakes and dogs that people usually have no cause for alarm. Snakes, like most animals, just want to be left alone and are not trying to injure anyone. They never come looking for you.”

“Because of people's fascination with and fear of snakes, they serve as a barometer of the public's sensitivity toward wildlife and natural habitats. Attitudes about snakes are one measure of the extent of environmental education in a region.”

“The simplest rule for those who don't like snakes is to leave them alone, even better get to know a herpetologist. Most herpetologists are nice people who can tell you many facts about snakes. We should be teaching and learning about wildlife facts, not promoting the continuation of ignorance and irrational fears.”

“Snakes are reptiles, which means that their body temperature is determined by their environment. In cold weather, their blood moves slowly, and they are sluggish and inactive. To make the stunt visually fun, as well as challenging, we needed to keep our snakes warm. Prior to the stunt, we kept all of the snakes in a heated van. We also lined the bottom of the pit with an electric blanket. The heat of the blanket, combined with the body heat of the contestant was enough to keep the snakes from catching a chill or staying clumped together in a big mass. In fact, the snakes were very active, some began to get ambitious and consider climbing out of the pit. It's not like you can give snakes direction. Although we were pretty sure that the snakes wouldn't bite, we still had a medic standing by and we equipped all of the contestants with goggles to avoid snakebite to the eye.”

According to the National Wildlife Federation, at least 20% of the U.S. population suffers from some degree of ophidiophobia, fear of snakes. Many of these fears come from misinformation or lack of information. Some people have such fear of snakes that they actually avoid outdoor situations if there is a remote chance of a snake encounter. People who spend a lot of time in the great outdoors know that snakes are not lurking under every rock and behind every tree. In fact, encounters with snakes are infrequent if not rare.

Snakes are reptiles – a group that includes lizards, crocodiles and turtles. Snakes and other reptiles are ectothermic, or cold blooded. This means that their body temperature is the same temperature as their surroundings. They get their body heat from external sources. Endothermic animals, such as mammals and birds, regulate their body temperature internally. The temperature of the air and the ground controls a snake’s body temperature, and its level of activity. A snake will try to maximize body heat, by basking in the sun or lying on or near warm surfaces such as nighttime roads or even, on occasion, household water heaters. Two other terms, poikilothermic and heterothermic also refer to reptiles that have a body temperature that varies according to their environment.

In cold areas of Illinois, snakes hibernate during winter. However, in the more temperate climate in the extreme southern part of the state, they shelter in rock crevices and logs during cold weather and come out on warm days to soak up the heat of the sun. During cold weather, snakes are less active and therefore hunt less. In the winter their metabolisms slow down, and they use up body fat which has been stored up during the warmer months of the year.

The bodies of reptiles are covered with scales. Even though they are cold to the touch, snakes are not slimy. The dry scales reduce moisture loss through the skin. Depending upon the species, scales are either keeled or smooth. The outer scales of a snake do not grow, so it becomes necessary to shed it periodically. A snake sheds its skin between one and four times each year depending on how much food it eats. It does this by rubbing the front of its head on a rough surface until the skin splits. The snake then slowly sloughs out of the skin, turning it inside out as it does so. In all snakes the new skin, with the same colors and patterns as the old, is underneath, and when shed, the old skin is almost transparent.

Snakes have no eyelids and therefore cannot close their eyes. A clear scale, that is part of the skin and functions like a spectacle, protects the eyes of a snake. Many snakes have excellent eyesight, particularly some of the daytime predators. Most snakes have good eyesight at least over short distances. When a snake is about to slough, or shed, the scale forming the spectacle over its eye will become “milky,” affecting its vision. During this time the snake will refrain from eating.

Snakes do not have outer ears – instead they “hear” with inner ears which pick up vibrations from the ground through the head and belly scales. Some nocturnal snakes, such as

pythons, also have heat sensory pits to help them locate the warm-blooded birds and animals they prey on.

The snake's tongue is used in the sense of smell. By flicking its forked tongue out of the mouth, a snake can pick up chemical particles from the air around it. When the tongue is pulled back into the mouth, the fork tips are placed into the Jacobson's organ, located in the front part of the roof of the mouth. The snake detects odors by analyzing the particles with



its nervous system. The sense of smell is important to this animal for recognizing prey, enemies, and a mate. In the photograph a black king snake flicks its tongue to pick up chemicals from the air. A snake's nostrils are only used for breathing.

Snakes do not have legs, yet they can move quickly and easily in a variety of habitats. Their flexible movements are the result of their reduced skeletal system, which is composed of a skull, many vertebrae, and many ribs. The skeletal and muscular systems, along with the plate-like scutes on the belly, work together to allow a snake to move swiftly, pushing off of surface irregularities in the places it crawls.

The male snake has paired reproductive organs called hemipenis stored in the base of the tail, one part along each side. They are used to transfer sperm to the female. Only one hemipenis is used at any time. The one used depends on which side of the female's body the male snake is crawling along.

For snakes, catching and eating food has to be a very specialized activity: they have no claws with which to grab, tear or hold their food, and they are unable to chew because their teeth and hinged jaws aren't designed for that purpose.

Most venomous snakes grab their prey by striking suddenly and biting while they inject venom into the victim. Some species will often strike three or four times. The toxins produced by the venomous snakes act to paralyze the victim, so that it dies or is unable to move before the snake tries to eat it. These toxins also assist the snake's digestive processes, beginning by breaking down the victim's blood and other tissues.

Constrictors have no venom and use their strong bodies to immobilize their victims. Having first grabbed the prey with its mouth, a constrictor coils its body tightly around the victim. As the coils are progressively tightened, the prey is suffocated.

Other snakes grab the prey in their mouth and start swallowing immediately so that the animal is eaten alive. The teeth in these snakes are arranged so as to resist escape of an animal once grabbed in the mouth. Sometimes both venom and constriction are used to kill and hold the prey.

Snakes have teeth that are curved toward the back of the mouth so that prey items cannot easily escape once they are in the mouth. The lower jaws are movable which allows the snake to take in large food items. A snake is able to dislocate its upper and lower jaws and separate the two sections of its lower jaw. This allows it to move each jaw independently, and to spread open its mouth and throat to swallow prey much larger than the usual diameter of its mouth. Digestion takes place in the stomach, with the aid of very strong digestive juices. Unlike endothermic animals, external temperatures influence a snake's digestion rate. Therefore, a snake will not eat unless the temperature is warm enough for digestion.

Snakes play an important role in many different types of ecosystems. They are very beneficial in keeping rodents and some insect pests under control. An average sized snake can eat nine pounds of rodents a year. Unfortunately, the numbers of snakes are generally declining.

Habitat alteration and loss are major factors in the declining populations of snake species. Many people do not consider snakes beneficial. Developers and builders are destroying forests, grasslands, swamps, and sloughs where snakes live. Another factor, in Illinois, is the illegal trade of reptiles. There are several laws designed to protect all snake species native to Illinois. However, selling reptiles can be profitable and is tempting to some people even though it is illegal. The killing of snakes because of misinformation, lack of information, and irrational fears has also affected populations. Habitat preservation, law enforcement, and education are the keys to conserving Illinois snakes.

Eleven Illinois snake species are listed (as of 2011) as either state endangered or state threatened. Endangered Illinois snakes include the coachwhip (*Masticophis flagellum*), the broad-banded water snake (*Nerodia fasciata*), the eastern massasauga rattlesnake (*Sistrurus catenatus*), and the Great Plains rat snake (*Elaphe guttata emoryi*). Illinois threatened snakes include Kirtland's snake (*Clonophis kirtlandii*), the timber rattlesnake (*Crotalus horridus*), eastern ribbon snake (*Thamnophis sauritus*), the western hognose snake (*Heterodon nasicus*), the Mississippi green water snake (*Nerodia cyclopion*), lined snake (*Tropidoclonion lineatum*), and the flathead snake (*Tantilla gracilis*). Several of these species are at the edge of their

geographic range in Illinois, occurring in only a few counties and having never been present in large numbers. Kirtland's snake, the eastern massasauga rattlesnake and the timber rattlesnake, however, are sharply declining over a large area of the United States.

Snakes of Illinois

Scientific Name	Common Name
<b>Squamata</b> Suborder: <b>Serpentes</b>	<b>Snakes</b>
<a href="#"><i>Agkistrodon contortrix</i></a>	Copperhead
<a href="#"><i>Agkistrodon piscivorus</i></a>	Cottonmouth
<a href="#"><i>Carphophis amoenus</i></a>	Worm Snake
<a href="#"><i>Cemophora coccinea</i></a>	Scarlet Snake
<a href="#"><i>Clonophis kirtlandii</i></a>	Kirtland's Snake
<a href="#"><i>Coluber constrictor</i></a>	Racer
<a href="#"><i>Crotalus horridus</i></a>	Timber Rattlesnake
<a href="#"><i>Diadophis punctatus</i></a>	Ringneck Snake
<a href="#"><i>Elaphe guttata</i></a>	Corn Snake
<a href="#"><i>Elaphe obsoleta</i></a>	Rat Snake
<a href="#"><i>Elaphe vulpina</i></a>	Fox Snake
<a href="#"><i>Farancia abacura</i></a>	Mud Snake
<a href="#"><i>Heterodon nasicus</i></a>	Western Hognose Snake
<a href="#"><i>Heterodon platirhinos</i></a>	Eastern Hognose Snake
<a href="#"><i>Lampropeltis calligaster</i></a>	Prairie Kingsnake
<a href="#"><i>Lampropeltis getula</i></a>	Common Kingsnake
<a href="#"><i>Lampropeltis triangulum</i></a>	Milk Snake
<a href="#"><i>Masticophis flagellum</i></a>	Coachwhip
<a href="#"><i>Nerodia cyclopion</i></a>	Mississippi Green Water Snake
<a href="#"><i>Nerodia erythrogaster</i></a>	Plainbelly Water Snake
<a href="#"><i>Nerodia fasciata</i></a>	Southern Water Snake
<a href="#"><i>Nerodia rhombifer</i></a>	Diamondback Water Snake
<a href="#"><i>Nerodia sipedon</i></a>	Northern Water Snake
<a href="#"><i>Opheodrys aestivus</i></a>	Rough Green Snake
<a href="#"><i>Opheodrys vernalis</i></a>	Smooth Green Snake
<a href="#"><i>Pituophis melanoleucus</i></a>	Bull Snake
<a href="#"><i>Regina grahamii</i></a>	Graham's Crayfish Snake
<a href="#"><i>Regina septemvittata</i></a>	Queen Snake
<a href="#"><i>Sistrurus catenatus</i></a>	Massasauga
<a href="#"><i>Storeria dekayi</i></a>	Brown Snake
<a href="#"><i>Storeria occipitomaculata</i></a>	Redbelly Snake

<a href="#"><i>Tantilla gracilis</i></a>	Flathead Snake
<a href="#"><i>Thamnophis proximus</i></a>	Western Ribbon Snake
<a href="#"><i>Thamnophis radix</i></a>	Plains Garter Snake
<a href="#"><i>Thamnophis sauritus</i></a>	Eastern Ribbon Snake
<a href="#"><i>Thamnophis sirtalis</i></a>	Common Garter Snake
Subspecies: <i>Thamnophis sirtalis sirtalis</i>	Eastern Garter Snake
<a href="#"><i>Tropidoclonion lineatum</i></a>	Lined Snake
<a href="#"><i>Virginia valeriae</i></a>	Smooth Earth Snake

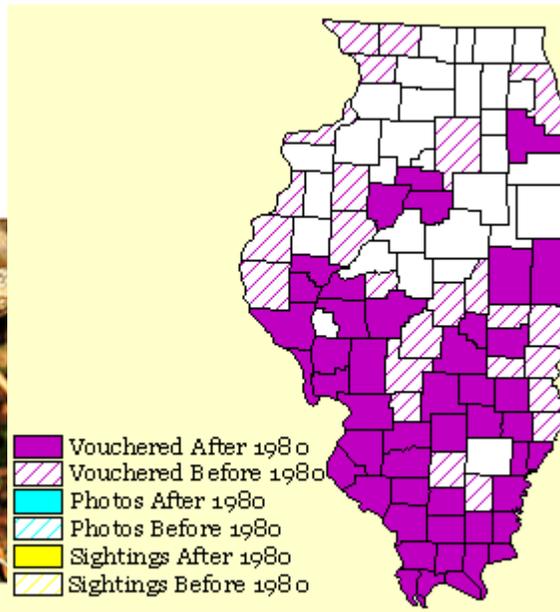
The snakes pictured on the following pages will be included in the identification part of the test.

All photographs and identification information comes from the Illinois Natural History Survey  
[www.inhs.uiuc.edu](http://www.inhs.uiuc.edu)

## **Black Rat Snake**



Alexander County, IL; photo by [Mike Redmer](#)



**Key Characters:** Sides unusually straight, forming a sharp corner with the belly; back scales weakly keeled; anal plate divided. Juvenile distinctly marked with dark back and side blotches on a white or gray background.

**Similar Species:** Racer, common kingsnake, plainbelly water snake. Juvenile resembles many blotched snakes: milk snake, young of prairie kingsnake, racer, coachwhip, and water snakes.

### Black Rat Snake photo



Large (up to 175 cm TL), dark snake with a highly variable pattern that ranges from a series of light blotches to completely black. The groundcolor between blotches darkens with age, obscuring most of them by 80 cm TL, except in extreme southern counties where the subspecies *E. o. spiloides* retains remnants of the juvenile pattern throughout life. Belly black-and-white-checked. Adults have white, orange, or red skin between the dark scales.

**Habitat:** Variety of forest, shrub, and edge habitats. Common around farm buildings and abandoned houses.

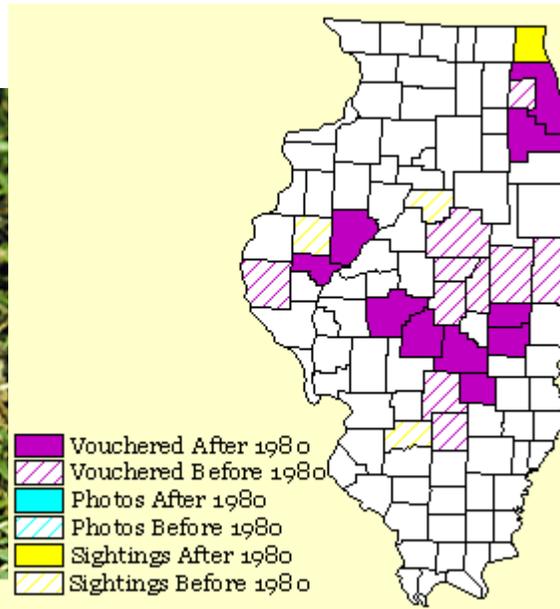
**Natural History:** This arboreal constrictor often suns and prowls on tree limbs and rock outcrops where it feeds on birds, their eggs, and small mammals. Mates in April or June and 10-20 eggs between early May and July. Young hatch late July to September. Large adults have few predators other than humans. Carnivorous mammals and raptors are the main predators of juveniles.

**Status:** Locally common, especially in southern counties (see distribution map).

## Kirklands Snake



Sangamon County, IL; photo by Scott Ballard



**Key Characters:** Red or orange belly bearing a contrasting row of black spots along each side; keeled scales; divided anal plate.

**Similar Species:** Brown snake, redbelly snake.

**Description:** Small (up to 47 cm TL), stout snake with gray or brown back sporting four rows of 46-57 rounded black blotches. Belly bright red to faded orange and distinctively marked by two rows of dark spots. Juvenile darker on the back and sides and less conspicuously blotched.

**Habitat:** Prairie wetlands, wet meadows, and grassy edges of creeks, ditches, and ponds, usually in association with crayfish burrows. Has been found in damp habitat remnants in vacant lots of urban settings.

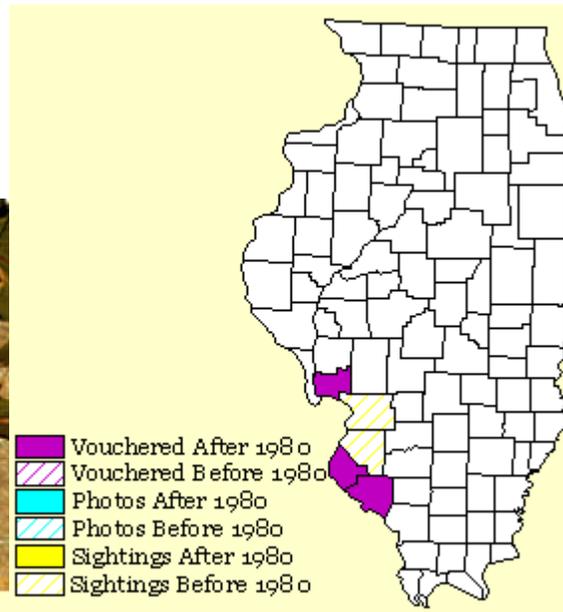
**Natural History:** Secretive and nocturnal, it shelters beneath logs and surface debris, or in crayfish burrows, by day. When threatened, it flattens its body and becomes rigid. This viviparous snake mates in May and gives birth to 4-15 young in August or September. Newborn are 10-17 cm TL. Diet includes earthworms, leeches, and slugs. Predators include other snakes and birds.

**Status:** Threatened in Illinois. Threats include drainage of wetlands, destruction of native prairie marshlands, and reduction of earthworm populations by herbicides and pesticides. Known from only a few isolated populations scattered through central and northeastern counties (see distribution map, above).

## Great Plains Rat Snake



Monroe County, IL; photo by [Mike Redmer](#)



**Key Characters:** Spear-shaped pattern on top of head; body scales keeled; anal plate divided.

**Similar Species:** Prairie kingsnake, milk snake, fox snake, rat snake.

**Description:** Moderately large (up to 120 cm TL), blotched snake with gray or light brown back sporting 25 to 50 black-bordered, nearly square, dark brown or red-brown blotches. Tail with 8-20 dark spots or bands. Belly checkered black and white.

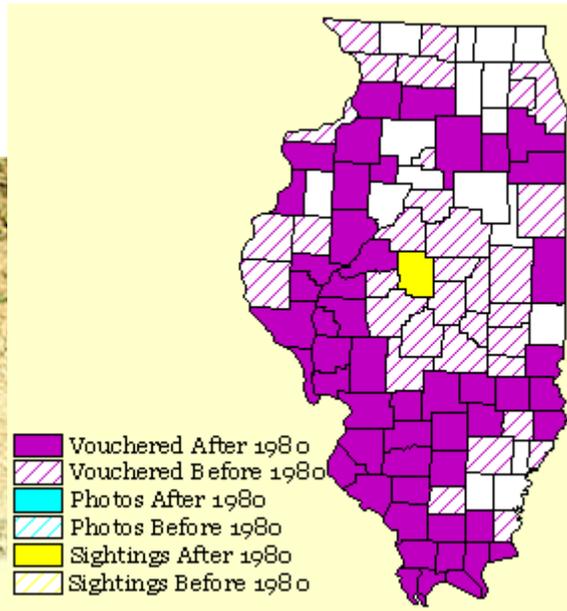
**Habitat:** Rocky, wooded hillsides, hill prairies, bluffs, and adjacent brushy fields.

**Natural History:** This nocturnal snake mates in April or May and lays 3-30 eggs a few weeks later. The young hatch in August. Diet includes mammals, birds, and bird eggs. Medium-sized mammals and raptors are the main predators.

**Status:** Threatened in Illinois. Found only along the Mississippi River bluffs from Jersey to Randolph counties, where its main threat is highway traffic (see distribution map, above).

We have included this snake even though it is not commonly found in Shelby County because a Great Plains Rat Snake was donated to us and is a resident at Lake Shelbyville.

## Eastern Blue Racer



**Key Characters:** Plain black or bluish black; smooth scales; divided anal plate; juveniles heavily marked with small blotches.

**Similar Species:** Adults resemble the rat snake, coachwhip, and plainbelly water snake; juveniles resemble young of rat, coachwhip, fox, prairie king, milk, and water snakes.

**Description:** Adult long (up to 150 cm TL) and slender with shiny, uniformly blue, blue-green, or black back. Belly yellowish white to slate gray. Throat distinctly lighter (yellow in northwest, white elsewhere). Hatchling and juvenile blue-gray with 55-85 reddish brown blotches on back that become less distinct toward tail, and small dark spots along sides and belly.

**Habitat:** A variety of habitats including forests, open areas, and edges of forests near open fields.

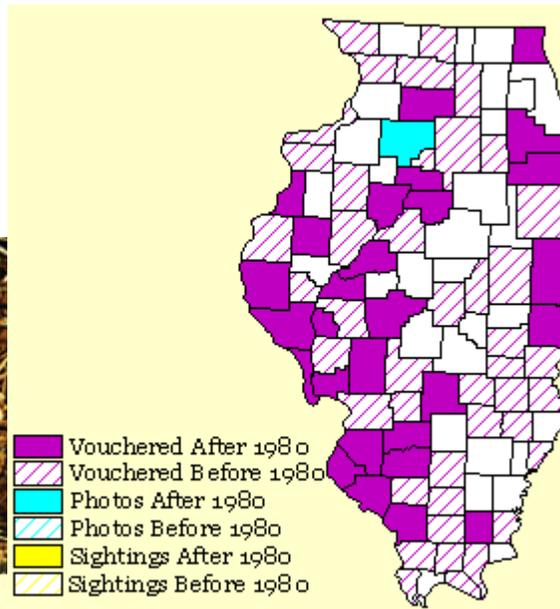
**Natural History:** Alert and agile, often raises its head above the ground to look around, and reacts to disturbance by moving away quickly. If cornered, vibrates the tail tip and can be counted on to strike repeatedly. Mates in May and June and female lays 10-20 eggs in late June or July. The young hatch in September. Eats a variety of animals, including arthropods, worms, amphibians, reptiles, birds, and small mammals. Main predators are other snakes and raptors.

**Status:** Locally common in some parts of the state (see distribution map, above).

## Eastern Hognose



Jackson County, IL; photo by [Mike Redmer](#)



**Key Characters:** Enlarged upturned plate at tip of nose; underside of tail light; back scales keeled; anal plate divided; prefrontal scales contact each other.

**Similar Species:** Western hognose snake.

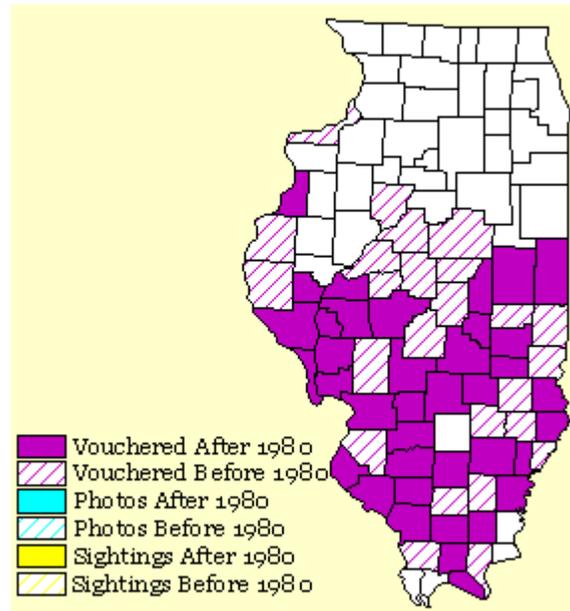
**Description:** Medium-sized (up to 90 cm TL), stout-bodied snake highly variable in coloration and pattern. Usually gray, tan, or brown back with 20-30 dark blotches. Some individuals are olive, brown, or black with no blotches. Belly light or dark, but underside of tail always lighter than belly. Tail short, less than 22% of body length.

**Habitat:** Forest-edge habitats and dry, open woods on clay or sandy loam; sand areas of northern counties.

**Natural History:** This is the "puff adder" or "hissing viper" of folklore. Defensive behavior resembles that of western hognose snake. When first encountered, it commonly flattens the head and neck, hisses, feigns strikes (striking to the side rather than biting), releases feces and foul-smelling musk, then rolls onto its back with mouth open and appears to have died. If righted, it rolls over again. Mates in spring and lays 8-20 eggs in June, July, or August, the number depending on size of the female. Hatchlings range from 17 to 25 cm TL. Food consists mainly of frogs and toads. Main predators are raptors and other snakes.

**Status:** Common in regions of major sand deposits. Rare in Grand Prairie (see distribution map, above).

## Prairie Kingsnake



**Key Characters:** Brownish back and sides marked with dark blotches; head not much wider than neck; back scales glossy smooth; anal plate not divided.

**Similar Species:** Milk snake, rat snake, Great Plains rat snake, fox snake.

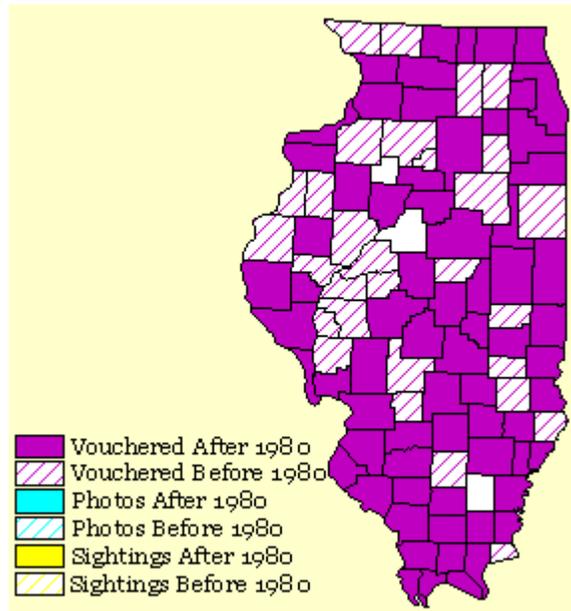
**Description:** Long (up to 130 cm TL), slender snake with gray to brown back, and 40-64 brown or reddish brown blotches that have dark borders. Two alternating rows of dark spots on sides (some blotches may fuse). Some individual's uniform olive brown, a few striped. Belly cream or yellowish gray with dim dark markings. Young are more distinctly blotched and their bellies more clearly marked with black.

**Habitat:** Grasslands from high-quality remnant prairie to degraded brushy fields. Less common in heavily farmed black-soil prairie.

**Natural History:** May become active on warm days even in November and December. Active by day during spring and autumn, but becomes nocturnal during hot summer months. Mates soon after emerging from hibernation in April or May. Clutches of 7-20 eggs laid in midsummer hatch in August and September. Hatchlings are 25-30 cm TL. Diet includes small mammals, birds, amphibians, reptiles, and insects. Main predators are mammals and other snakes.

**Status:** Locally common in prairie remnants of the Southern Till Plain counties (see distribution map, above).

## Northern Watersnake



**Key Characters:** Dark body bands anteriorly, blotches posterior; back scales strongly keeled; anal plate divided.

**Similar Species:** Broad-banded water snake, juvenile plainbelly water snake, cottonmouth, and copperhead.

**Description:** Large (up to 120 cm TL), stout snake with highly variable dorsal coloration. Back light brown, gray, or tan with about 30 reddish brown or dark brown crossbands and blotches (northern subspecies has more than 30, midland subspecies fewer than 30). Crossbands wider on back than on side, and usually wider than intervening paler areas. Belly light yellow with many red or brown half-moons.

**Habitat:** Streams, lakes, ponds, and ditches. Commonly seen basking on rocks and logs or foraging in the water. Takes shelter under rocks, logs, and other debris along shore.

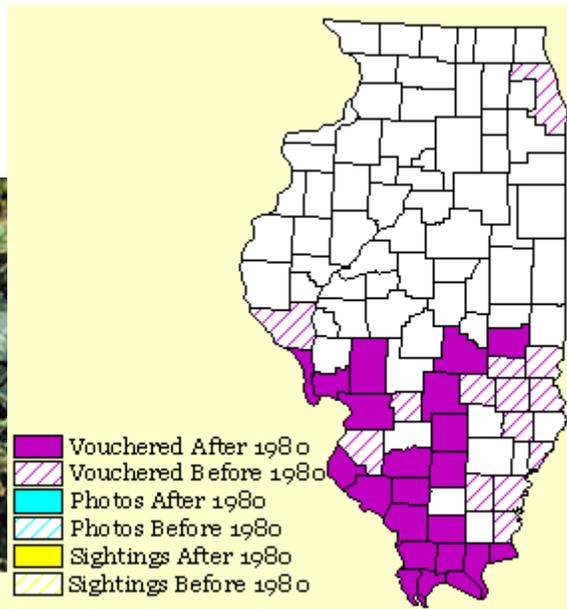
**Natural History:** Like most other water snakes, it readily bites and voids feces when handled. Mates in May and gives birth to 20-50 young in late July or August. Newborn are 15-25 cm TL. Diet consists mainly of fish and amphibians. Predators include other snakes and large shore birds. Many Northern Watersnakes are killed by people who mistake them for cottonmouths (even hundreds of miles north of the range of cottonmouths) or copperheads.

**Status:** Abundant throughout Illinois in both natural and man-made bodies of water (see distribution map, above).

## Rough Greensnake



Jackson County, IL; photo by Scott Ballard



**Key Characters:** Seventeen rows of keeled scales at midbody; divided anal plate.

**Similar Species:** Smooth Greensnake.

**Description:** Slender bright green snake up to 85 cm TL with a white or yellowish white belly. Underside of head is light yellow. Head is large compared with slender neck. Long slender tail is over one-third of TL.

**Habitat:** Inhabitants of small trees, bushes, and vines, especially near lakes and streams along forest edges.

**Natural History:** Active by day and sleeps at night perched in bushes and shrubs. Well camouflaged against predators on green branches, and transpiring leaves may reduce rate of cutaneous water loss. Moves quickly when disturbed and may open its dark-lined mouth threateningly, but rarely bites. Mates in spring and lays 4-6 elongated, thin-shelled eggs in June and July in rotting logs and stumps, and under flat rocks and other cover. Young 18-21 cm TL hatch in late August or September. Stalks crickets, caterpillars, grasshoppers, spiders, and other soft arthropods by moving slowly along leaves and branches. Main predators are other snakes, birds, and mammals.

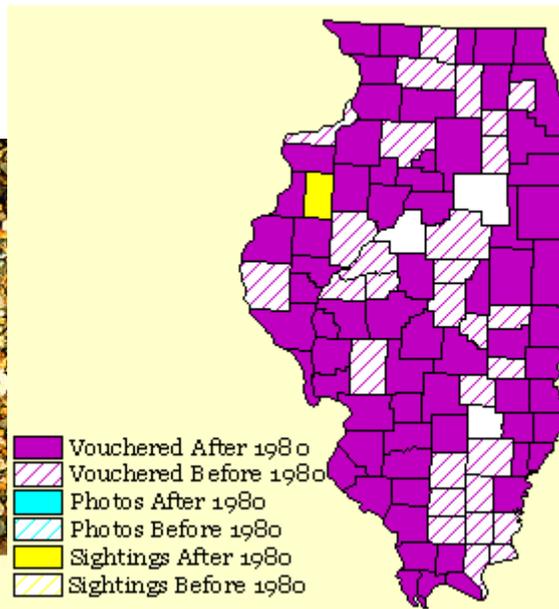
**Status:** Locally abundant in the southern half of the state. May be reduced in some areas where insecticides are applied (see distribution map, above).

## Common Garter Snake

Subspecies: Eastern Garter Snake



Saline County, IL; photo by Chris Phillips



**Key Characters:** Side stripes on scale rows 2-3; yellow or gray mid-back stripe; black bars on margins of labial scales; back scales strongly keeled; anal scale not divided.

**Similar Species:** Eastern ribbon snake, western ribbon snake, plains garter snake, lined snake.

**Description:** Medium-sized (up to 100 cm TL) dark brown or black snake with a yellow or gray midback stripe and a yellow stripe on each side. Belly gray-green with dark spots on edges of most belly scales. The head is usually without parietal light spots. Some individuals have red coloring between side scales. In *T. s. semifasciatus*, the side stripe near the head is broken into a dashed line by black crossbars.

**Habitat:** Forests and edge habitats, commonly near water. Vacant lots in cities.

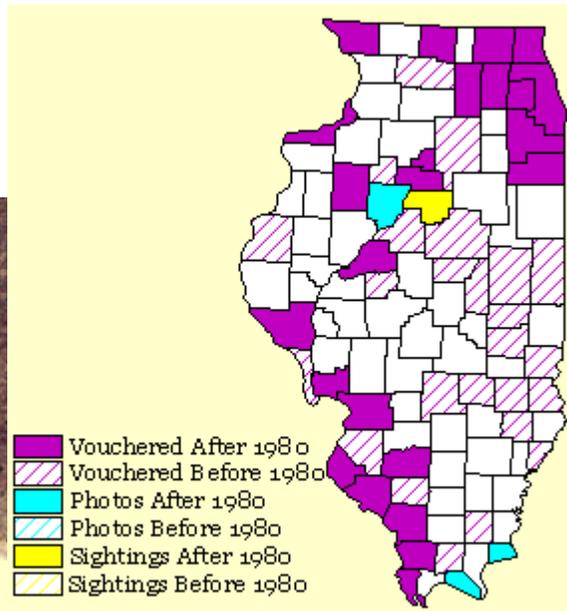
**Natural History:** Cold-tolerant snake that occasionally emerges from hibernation to bask on warm winter days. Mates immediately after emerging from hibernation, as early as March in southern counties. Females give birth to 15-80 young from July through early October that are 15-20 cm TL. Diet includes fish, amphibians, young birds, and a variety of invertebrates. Eaten by a wide variety of predatory vertebrates; people needlessly kill many.

**Status:** Common throughout the state (see distribution map, above).

## Red Milk Snake



Monroe County, IL; photo by [Mike Redmer](#)



**Key Characters:** Black-bordered red or brown blotches or rings; belly white with sharply contrasting black spots; back scales smooth; anal plate not divided.

**Similar Species:** Prairie kingsnake, Great Plains rat snake.

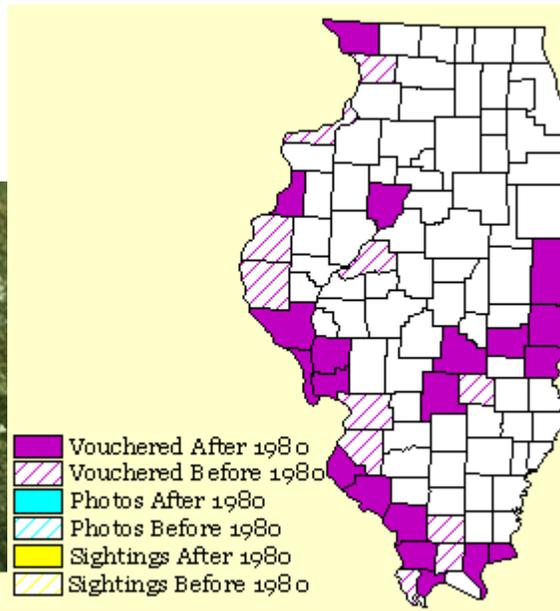
**Description:** Medium-sized (up to 110 cm TL) snake with variable color pattern. The less brightly colored *L. t. triangulum* has 33-46 brown blotches on the back alternating with 1-2 rows of spots on the side. The brighter *L. t. sispila* has 19-26 red blotches on the back and 4-8 red rings on the tail.

**Habitat:** A variety of habitats from rocky wooded hillsides and glades to old fields and wetlands.

**Natural History:** Usually found in rotting logs, under bark of stumps, or under logs, rocks, and other surface debris. Mates in spring and lays 8-20 eggs in June in rotting logs, tree stumps, or other rotting vegetation. The young hatch in August or early September at 20-25 cm TL. Diet includes small mammals, birds and bird eggs, reptiles and reptile eggs, frogs, and fish. Predators include birds of prey and mammals, but many more probably are killed on roads by vehicles.

**Status:** Not commonly seen, except perhaps in the Chicago region and portions of the Shawnee Hills, because of its secretive nature. Red milk snakes may be over-collected for the pet trade at some localities (see distribution map, above).

## Ring Necked Snake



**Key Characters:** Yellow or cream-colored ring around the neck; dorsal scales smooth; anal plate divided.

**Similar Species:** No other small snake in Illinois has a ring on the neck and smooth scales.

**Description:** A small (up to 40 cm TL), wormlike, burrowing snake with a blue-gray to black back. The belly is yellow or orange, possibly scattered with black spots or bands. Juvenile may be darker above than adult. The three subspecies differ in the extent and location of ventral spots: the prairie ringneck has numerous irregularly placed spots, the Mississippi ringneck has paired dark spots down the middle of the belly, and the northern ringneck's belly has a few black dots or is unmarked.

**Habitat:** Hill prairies, bluffs, and open forests.

**Natural History:** Usually found under rocks or debris. Mating may take place in spring or fall with eggs laid in June. Clutch size is normally 3-4 eggs and hatching takes place in August or September. Hatchlings range from 8 to 11 cm TL. Ringnecks feed on earthworms, small insects, and salamanders. The main predators are other snakes and birds.

**Status:** Locally abundant in the Shawnee Hills and along the southern Mississippi River bluffs (see distribution map, above).

## Corn Snake



**Introduction:** Corn snakes, also known as red rat snakes, are a large, powerful, and non-venomous constrictor in the genus *Elaphe*. All snakes, including the corn snake, have been persecuted by man out of justifiable fear but also ignorance. The corn snake is a prime example of this latter case, as they are often killed because they resemble a copperhead (a very venomous species). But the more we learn about snakes the less needless fear we will have, and the more we can appreciate their beauty and usefulness. Corn snakes, other rat snakes, and even copperheads are beneficial predators of rodents, which can spread diseases and damage food crops. In fact corn snakes got their name both from the pattern on

their belly, which looks like Indian corn, and from old southern farmers who stored their harvested corn in wooden buildings called cribs. Rats and mice were attracted to the cribs to feed on the corn, and corn snakes were attracted to the cribs to feed on the rodents, much to the delight and appreciation of the farmers.

**Size:** The average adult corn snake will grow to be about 3 to 5 ft. long in a period of about four years. However they are always growing. The longest corn snake on record was 6 ft. long.

**Color:** Vivid colors of red, orange, or brownish blotches edged with black and a grayish to orange background tinged with yellow, characterize the glossy coat of an adult corn snake. They're usually 25 to 38 of these dorsal blotches with a corresponding number of lateral blotches. The dorsal blotches are usually wider along the snake's length. There are 27 to 29 dorsal scale rows around the circumference of the snake at the middle of the body. These scales are weakly keeled. The ventral scales (the snake's belly) usually consists of alternating rows of black and white (though orange may also be present), resembling maize corn. Corn snakes are easily bred in captivity. Many with striking color patterns and variations, which would not normally occur in the wild. There are more captive bred species of corn snakes than any other reptile, so here are only a few of them.

Amelanistic -- This red albino corn snake is the oldest captive bred strain of corn snake. Characteristics are a lack of black pigment.

Anerythristic -- This breed of corn snake lacks red pigment in its color. There are two types of Anerythristic corn snake, Type A which has a little yellow, and Type B which does not have any yellow.

Motley -- Irregular fusion of blotches.

Snow -- This is a combination of Amelanistic and Anerythristic corn snakes.

**Behavior:** Corn snakes are very shy, and usually most active at night, however this varies with temperature. In cold regions corn snakes will hibernate during the winter. Open forests, overgrown fields, and abandoned or seldom used buildings are their favorite haunts. Corn snakes are also accomplished climbers, able to scale vertical pine trees by clinging to the rough bark surface. When threatened, corn snakes will often strike repeatedly while vibrating their tail. In dry vegetation the vibration of the tail is similar to the sound of a rattlesnake.

**Habitat:** Corn snakes prefer terrestrial habitat, near pinelands, hardwood hemlocks, swamps, agricultural fields, and residential areas.

**Natural Diet:** Their list of prey items include most any small lizard, rodent, or bird and their eggs, that are the same diameter, or close to the same diameter as the snake's body. Corn snakes are non-venomous. Corn snakes like most other wild snakes will often go for days or weeks between meals.

**Reproduction:** Corn snakes usually breed in the spring from April to June. During the first part of summer, females lay 3 to 40 eggs. Newborns hatch in 2 to 3 months, from July to September.

**Juvenile Corn Snakes:** Young hatchling corn snakes range from 8 to 14 in. in length when they hatch. The coloring of hatchling corn snakes is similar to adults but duller in coloration and brightness.



Four native Illinois snake species are venomous: the copperhead, the cottonmouth, the timber rattlesnake, and the eastern massasauga. Venom is a toxin for subduing prey. It is delivered through a pair of hollow fangs in the front, upper mouth that fold up when the mouth is closed and drop into place when the snake bites. The fangs are shed and replaced periodically. Venomous snakes strike, inject venom, and then pull away. They find and eat the prey after it dies. Illinois' venomous snakes produce venom that affects the blood of the prey. Juvenile snakes have venom equal in potency to that of the adult, but they produce lesser amounts.



Illinois' venomous snakes are pit vipers, having a large opening, or "pit," on each side of the head between the eye and nostril. It is used to detect heat emitted by potential warm-blooded prey. Besides the pit, venomous snakes can be recognized by the elliptical pupil in the eye. With the exception of the timber rattlesnake, the tip of the tail is bright yellow in all-juvenile Illinois venomous snakes.

The head of a timber rattlesnake shows the characteristics of a pit viper. Note the elliptical pupil in the eye and the heat-sensing pit, which is seen just above the upper lip, between the eye and the nostril.

Venomous snakes tend to be restricted to specific habitats. Copperheads occur in the southern one-third of Illinois, south of Route 16, and in the lower Illinois River valley. They prefer upland forests or river bluffs with limestone or sandstone outcroppings. Cottonmouths live in swamps and wet bottomlands in southern Illinois, south of Route 13. Timber rattlesnakes may be found in the southern one-fourth of the state (south of Interstate 64), in the lower Illinois River valley, in the Mississippi River valley and in a few other locations. These snakes prefer heavy timber with rock outcrops and bluffs. Eastern massasaugas live in scattered locations within the counties of Madison, Clinton, Piatt, Knox, Warren, Will, Cook, and Lake. Their habitats are prairie wetlands and river floodplains.

While venomous snakes are not aggressive and tend to bite people only when stepped on, picked up, or cornered, their bite is a serious matter. Even freshly killed snakes can bite. These snakes should be avoided and precautions taken (wear leather boots, do not reach under rocks or logs, do not step over rocks or logs, look around before you sit) if you are entering an area possibly inhabited by venomous snakes. Although usually not deadly, the bite is painful and can cause swelling, nausea, and the risk of infection. If you are bitten, go to a hospital for treatment immediately.

## Copperhead

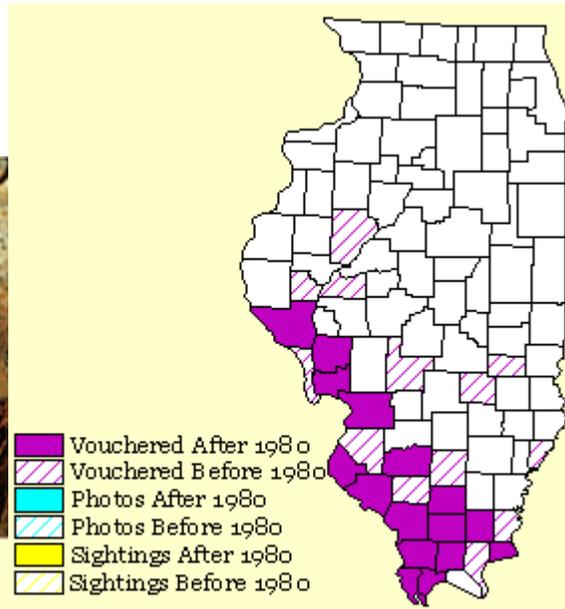
VENOMOUS

VENOMOUS

VENOMOUS



Jackson County, IL; photo by [Mike Redmer](#)



**Key Characters:** Nine large symmetrical plates on top of head; elliptical pupil; pit between eye and nostril; back with hourglass-shaped crossbands; back scales strongly keeled; anal plate not divided.

**Similar Species:** Cottonmouth, fox snake, northern water snake.

**Description:** Large (up to 135 cm TL), stout-bodied venomous snake. Back yellowish brown or rusty brown with 10–20 reddish brown hourglass-shaped, dark-margined crossbands that are narrow across the back and wider on the sides. Belly yellow to brown with brown blotches near the edges. The top of the head is red-brown. A thin dark line extends from the eye to the jaw. The sulfur yellow tail tip of newborn darkens with maturity.

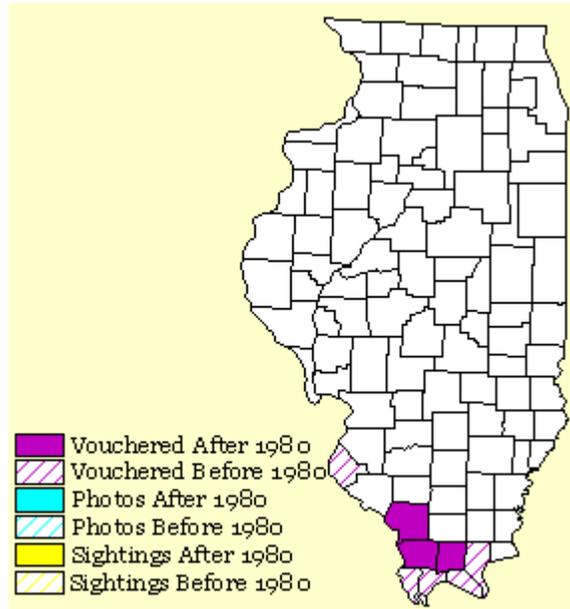
**Habitat:** Wooded, rocky hillsides and forest edges, sometimes in meadows and fields during summer.

**Natural History:** This shy snake is active April through October. Often seen around old, abandoned buildings where it feeds on rodents. Mates in April and May or September and October. Three to 10 young, 20–25 cm TL, are born in late August or early September. Predators include other snakes, birds of prey, and medium-sized mammals.

**Status:** Although probably reduced by habitat destruction and wanton killing by people, it remains locally abundant in the Shawnee Hills and the bluffs along the southern Mississippi River (see distribution map, above).

## Cottonmouth “Water Moccasin”

**VENOMOUS      VENOMOUS      VENOMOUS**



**Key Characters:** Nine large symmetrical plates on top of head; elliptical pupil; pit between eye and nostril; back uniformly black or with ragged dark crossbands; back scales strongly keeled; anal plate not divided.

**Similar Species:** Copperhead, northern water snake, Mississippi green water snake.

**Description:** Large (up to 159 cm TL), stout-bodied venomous snake. Juveniles and young adults have 12-18 dark crossbands on an olive or dark brown back and a dark stripe from snout through eye and upper lip. With age, adults become uniformly dark olive or black. Belly tan to gray and heavily marked with black. The sulfur yellow tail tip of newborn darkens with maturity.

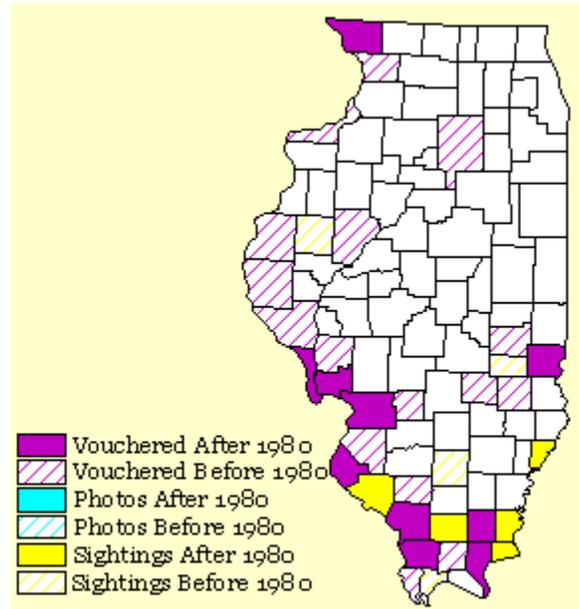
**Habitat:** Cypress-tupelo swamps, sloughs, and oxbow lakes of extreme southern counties.

**Natural History:** Active April through October, often sunning on logs extending into water. When threatened, the mouth is opened in an exaggerated manner to expose the starkly contrasting white mouth lining. Opportunistic predators of fish, amphibians, other reptiles, and small mammals. Three to eight young born in late August or early September. Newborn 20-30 cm TL. Adults have few enemies other than human beings, but large fish, snapping turtles, other snakes, wading birds, and mammals eat the young.

**Status:** Has declined with draining and clearing of bottomland swamps and sloughs, but remains abundant in relatively undisturbed habitats (see distribution map, above).

## Timber Rattlesnake

**VENOMOUS      VENOMOUS      VENOMOUS**



**Key Characters:** Small asymmetrical head scales; elliptical pupil; pit between eye and nostril; back with jagged dark bands; rattle or button on tail tip; back scales strongly keeled; anal scale not divided.

**Similar Species:** Massasauga.

**Description:** Large (up to 180 cm TL), stout-bodied venomous snake. Back gray, light yellow or greenish white with 20-25 black, jagged crossbars or blotches. Sometimes an orange or rust stripe down mid-back. Head clearly larger than slender neck. Dark stripe behind each eye. Tail tip uniformly black in adults. Belly pink, white, cream, or gray, with dark stippling toward sides.

**Habitat:** Heavy forest along rocky outcrops and bluffs.

**Natural History:** Active April through October, often seen sunning on rock ledges near winter dens. Forages during summer in upland forests and some border and disturbed habitats where rodents are abundant. Diet mainly small mammals, such as mice, squirrels, and chipmunks. Usually mates July and August with 6-10 young born late summer or early autumn of following year. Newborn 25-35 cm TL. Predators of young include hawks, coyotes, skunks, foxes, and common king snakes. Most adult mortality caused by vehicles and wanton killing by humans.

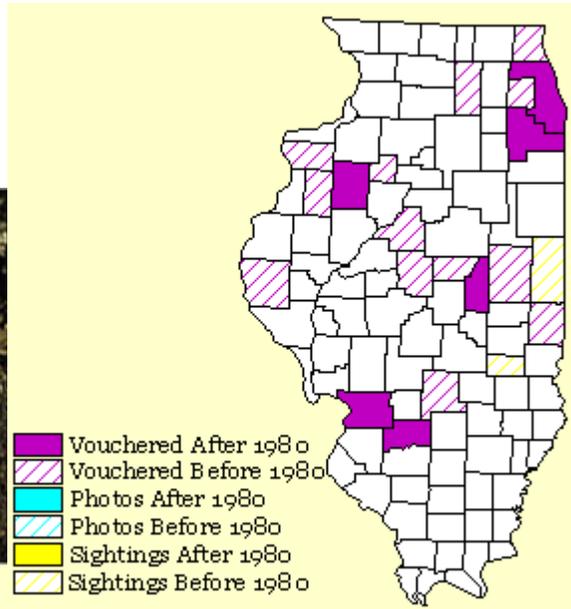
**Status:** Threatened in Illinois. Threats, besides indiscriminate killing by people, include vehicles and clearing of forest. Previously more widespread, now probably occurs in moderate numbers only in the Shawnee Hills. (see distribution map, above).

## Eastern Massasauga Rattlesnake

**VENOMOUS      VENOMOUS      VENOMOUS**



Clinton County, IL; photo by Scott Ballard



**Key Characters:** Nine large symmetrical plates on top of head; elliptical pupil; pit between eye and nostril; light-edged dark blotches on back and sides; rattle or horny button on tail tip; 4 head stripes; back scales strongly keeled; anal plate not divided.

**Similar Species:** Timber rattlesnake, fox snake.

**Description:** Medium-sized (up to 100 cm TL) venomous snake. Back gray to light brown with 29-40 light-edged dark brown or black blotches down the middle. Three rows of smaller, alternating dark blotches along each side. One black head stripe behind each pit, two on top. Belly black with irregular white or yellow markings. Newborn tail tip yellow, but darkens with age.

**Habitat:** Old fields, floodplain forests, marshlands, and bogs.

**Natural History:** Active April through October, often suns on clumps of grass, in branches of small shrubs, or near crayfish burrows. Feeds on small rodents. Breeds spring and autumn with 4-20 young born late summer or early autumn. Newborn 20-30 cm TL. Main predators are hawks, predatory mammals, and other snakes.

**Status:** Endangered in Illinois. Formerly common over northern two-thirds of the state, prior to drainage of prairie marshes and intensive agriculture. Once known from 24 widely scattered relict populations, now thought to occur at only 6-8 (see distribution map, above).