



Eastern Box Turtle

Terrapene carolina

The colorful box turtle is the familiar “land” turtle of fields and woodlands. Turtles are ancient creatures and shared the earth with the great dinosaurs. The box turtle is unique among North American turtles in having a hinge on the bottom shell which allows it to close tightly against the upper portion thus completely sealing the animal from the outside world.

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Natural History

Eastern Box Turtles are in the class of animals known as reptiles and they share the unique characteristics of reptiles: scaly skin; dependent on external sources of heat to regulate body



temperature, i.e., they cannot regulate their temperature internally as all mammals do; and they lay eggs as most reptiles do. The Eastern Box Turtle has a high, domed upper shell (carapace) with patterns of red, yellow or orange. These colors may also extend to the legs and head. Adult box turtles are 4-8” long, weighing an average of one pound (454g). They are terrestrial, spending most of their time on land or soaking in shallow puddles. Males usually have red eyes and a slight depression in the rear portion of the lower shell (to accommodate mating). Females have brown eyes. Box turtles are among the most long lived of animals, some having surpassed 100 years of age. They have changed little since the days of the dinosaurs; their formula for survival having proved effective. They evolved approximately 250 million years ago, their ribs fused to a shell to produce a unique design in the natural world. The shell afforded these creatures a great deal of protection and indeed, they watched the arrival of the dinosaurs and watched them disappear.

Natural History, Continued...

Box turtles prefer moist meadows and pastures with woodland borders. They are most active in early morning and a few hours prior to sunset. Large numbers may be on the move during or after heavy rains. During the hot days of summer, they prefer to burrow under wet leaves and vegetation. As with all northern reptiles, they escape the harshness of winter by hibernating. If conditions remain constant a box turtle may spend its entire life in an area less than one acre in size. Studies have shown that box turtles remain in a defined area known as a home range. This range can vary from one to twenty acres. However, some individuals spend their lives wandering with no home range. This exception could be a way to keep the genetic pool diverse and to counteract inbreeding within a given population. All exceptions considered, generally it is unwise to relocate any turtle out of its home range as they will know they have been displaced, and their lives may be endangered as they attempt to return to their home.

Young turtles are mostly carnivorous, feeding on earthworms, slugs and various insects. Adults become omnivorous, adding berries, mushrooms and some vegetative matter to their diet, although the preference for earthworms and slugs remains. Curiously, a box turtle can ingest poisonous mushroom with no ill effect. The flesh of the turtle, however, retains the poison and can kill a predator who makes a meal of that particular animal.

Box turtles do not normally bite when disturbed but may respond by struggling to get free or retreating inside their shells. They are capable of sealing themselves so tightly that a knife blade cannot fit between the upper and lower shell. The turtle may remain sealed in its shell for hours before peeking out. This defense mechanism deters many predators because the shell is virtually impenetrable to the

claws and teeth of most animals. Unfortunately, the shell is no match for an automobile and many turtles are crushed while attempting to cross busy streets.



Breeding occurs during the spring through mid-summer. Males reach sexual maturity at about 7 years of age; females at about 10 years. Fe-

males have the remarkable ability of retaining sperm cells until egg production is advantageous. Sometimes conditions may not be suitable for 2-4 years after mating. This has its distinct advantages. If mating occurs too late in the season when the weather may be too cool, the female can wait until next spring before laying eggs. Also, if the weather is too hot, egg-laying may be stalled. Under normal circumstances, with temperatures ranging 75 to 90 F, nesting takes place in June and July. The female uses her hind legs to dig a nest in moist soil. She will then lay 2-7 eggs, cover them, and leave the nest on its own. Very dry or very wet weather conditions can destroy the eggs as can predators such as raccoons, opossums and other animals. Obviously, clearing of land for housing or commercial development is also a threat.

Eggs normally hatch in 60 - 80 days. The turtle is born with an "egg tooth", which is a projection on the upper jaw. It allows the hatching turtle to cut its way through the shell. This disappears within a couple of days. It also has a yolk sack, which is a small supply of nutrients attached to the bottom shell. Hatchlings are much flatter than adults and lack the hinge that is present in adults and allows them to fully close themselves within their shell. Young turtles are independent from the moment they hatch, and as such, there is not such thing as an orphaned baby turtle.

Box turtles are 1 1/8" to 1 1/4" long when newly hatched. As the turtle matures, the carapace (upper shell) becomes more domed and the plastron (lower shell) develops a functional hinge. An adult measures 4 1/2' to almost 8" in length. Each section of a box turtle's shell is called a scute. Each year growth occurs while the turtle is active. The growth stops when the turtle is hibernating, it is at this time that a ring forms around that growth on the scute. This is similar to the way rings form in trees. So, theoretically, the age of a box turtle can be calculated by counting the rings around each scute. But as the turtle ages, the rings may become very crowded or begin to wear away.



During late summer and early fall, the box turtle concentrates on eating to fatten up for the upcoming hibernation. The turtle will dig a burrow when the days become shorter and cooler, eventually hibernating. While hibernating,

the body processes slow down dramatically and the animal remains in a dormant state until the warmth of spring awakens it. Evidence suggests that it is a combination of the shorter days (photo period) and the lower temperatures that cause a turtle to hibernate. Many turtles emerge from hibernation during a warm spell in winter. If freezing weather follows and the turtle cannot return to sufficient cover, it will perish.

How To Help Turtles

If a box turtle is encountered in the wild, enjoy observing it and leave it on its own. These are wild animals and they are protected by law. If you find a baby box turtle, remember, it is not an orphan. They are left to fend for themselves from the time the eggs are laid and require no parental care.

If a turtle is found in the middle of a street, or attempting to cross one, help the animal by picking it up and moving it to the other side. **DO NOT ATTEMPT THIS** if there is any danger to you from oncoming traffic. If the way is clear, move the turtle in the same direction it was headed. If you bring it back the other way, it will simply turn around and cross the street again. Once it is brought to the other side, release the animal. If the location is unsuitable however, such as a city street, active construction site or any area that has no fields or woodlands for some distance, contact Volunteers for Wildlife for assistance at (631) 423-0982. As previously mentioned, box turtles do have a home range in which they can spend their entire lives. It is important not to relocate the animal.

Legalities

In New York State, wild turtles are protected by Environmental Conservation law (article 11, title 5, section 11-0511). It is illegal to keep a wild turtle in captivity as a pet without the proper state and/or federal permitting. If you have been caring for a turtle and need to return it to the wild, please contact a wildlife rehabilitator for assistance. Please do not attempt to raise a young turtle in captivity. They have very specific nutritional needs which are difficult to replicate in captivity. Turtles raised in captivity frequently develop irreversible deformities to their shells, and they may become very ill or die as a result of being fed an inadequate diet in captivity.

Quick Facts

Eastern Box Turtles can live to be over 100 years old.

Female Eastern Box Turtles have brown eyes, and males have red eyes.

Baby turtles are completely independent from the moment they hatch, so there is no such thing as an orphaned turtle.

Box Turtles have a home range of 1-20 acres. If they are removed from this area, they will do all they can to find their way back to it, often putting themselves in great danger by attempting to cross busy roads.

If you find a turtle attempting to cross a road, you may move the turtle to safety in the direction it was heading. If you bring it back the other way, it will simply turn around and cross the street again.

Box turtles can seal themselves within their shell to protect them from predators.

Box Turtles are often injured when they are hit by cars, run over by lawnmowers, or picked up by dogs. They are also in danger of habitat loss due to new building construction and development.



About Volunteers for Wildlife

Volunteers For Wildlife is a non-profit, volunteer organization, founded in 1982 and dedicated to preserving Long Island, New York's wildlife and natural habitats. We operate a Wildlife Hospital and Education Center at Caumsett State Historic Park in Huntington, NY. We accept and rehabilitate sick, injured, and displaced young wildlife. Our Wildlife Advisory telephone and email services assist the general public in need of information and help with distressed wild animals. Last year, we received over 3,000 requests for help.

We have wildlife education programs for Long Island schoolchildren and adults. The participation of our permanently non-releasable birds, animals, and reptiles make these programs an exciting way to learn about Long Island's wildlife.

Volunteers for Wildlife has members all over Long Island and the New York area. We have a network of cooperating veterinarians, who provide initial emergency care to injured and displaced wildlife, and independent licensed wildlife rehabilitators throughout the New York area.

For more information on our organization and contributing your time or making a donation to our cause, visit our website: www.volunteersforwildlife.org.

Eastern Box Turtles are brought to our hospital throughout the year. Many are injured after being hit by a car or caught by a dog. The average cost of care for a turtle in our hospital is \$100, and many are left without a donation to support our efforts. You can contribute to the care of any animal in our hospital through our "Help Our Wildlife" program, and animal sponsorships make a great gift! For more information, visit our website, email, or call us at (631) 423-0982.