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Texas Field Notes



Ornate Box Turtle

Terrapene ornata ornata

The ornate box turtle is a species that is so familiar that many people take it for granted. These turtles have been common along the roadsides and common in the pet trade. Like the girl next door, most of us paid them little notice, but they were in great demand outside the U.S. when exporting them was easy. Many of us picked up a few when we were children. In most places today, children find it far less easy to find one. With their charming faces and attractive pattern, they still are likely to be picked up by people with good intentions but little ability to take good care of them. Even when cared for properly, the turtle that is collected is no longer a reproductive member of the

wild population, and those populations are evidently shrinking in many places.

Classification

The ornate box turtle falls within a large family – the Emydidae. The species *Terrapene ornata* is divided into two subspecies, the ornate box turtle (*T. ornata ornata*) and the desert box turtle (*T. ornata luteola*). The name for the genus, *Terrapene*, is derived from a Native American word for turtle. The name for the species and subspecies, *ornata*, comes from the Latin for embellished or decorated, referring to the shell pattern.

Description

These turtles grow to about five inches

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michael@texasherp.org • <http://texasherp.org>

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Ornate Box Turtle (continued)

in carapace length (the “carapace” is the top shell; the “plastron” is the bottom shell). The carapace is dark brown or almost black, with yellow lines radiating out in a sort of starburst pattern on each of the larger scutes. Additionally, there is usually at least a partial or broken yellow line running from the front to the back of the carapace. Compared to the three-toed box turtle that also occurs in our area, the carapace of the ornate box turtle is more flattened and there is almost never a keel (a small lengthwise ridge on the top of the shell).

The plastron is a similar very dark color with a pattern of yellow lines, although the lines tend to radiate from the edge forward and inward and the starburst pattern is less evident. The plastron is hinged so that there are two lobes that can be pulled up against the carapace with the turtle pulled inside.

The turtle’s head is predominately dark above and lighter below. Older males may have a plain greenish head and males

Distribution & Habitat

Found throughout all, or virtually all, of Texas, Oklahoma, and Kansas, this turtle also ranges through most of Nebraska and much of Missouri into parts of Illinois and even into Indiana. There is a small range in Wisconsin and limited areas of other Great Plains states. They are also found in parts of western Arkansas and western Louisiana.

Here in Texas, ornate box turtles have been found in most of the state east of the Pecos River. Beginning west of the Pecos, the desert box turtle replaces the ornate box turtle.

Typical habitats for these turtles are grasslands or grasslands mixed with some deciduous woodland. They can live in arid conditions, as shown by one found between Sanderson and Pandale (in the Chihuahuan Desert) after a rainstorm during the 2004 DFW Herp Society field trip. However, ornate box turtles will soak when

given a chance and are better adapted for prairies with creeks and ponds than for desert habitats. In more arid localities, one way that they may help meet their need for water is by eating prickly pear cactus. Their optimal internal temperature for activity is between 25° and 30°C (that’s 77° to 86°F for those of us who use Fahrenheit), and their habitat must afford some shelter from midday heat – such as shrubs, loose soil, or water.

Diet

Ornate box turtles eat a variety of both plant and animal matter. Insects comprise about 90% of the diet (cited in Ernst, *et al.*, 1994) and dung beetles are a staple. Living in grassland habitats with large mammals, these box turtles have developed a tendency to seek out dung piles and break them up looking for food. Box turtles will also eat carrion. Utilizing

prickly pear cactus for food and water was noted above, and the turtles also eat any available fruit and berries. Additionally, they have been noted to prey on tadpoles in shallow pools.

generally have red eyes. The front legs have large scales on the more exposed surface, and the scales may be yellow or may be colorfully marked in red or orange. Each digit ends in a tough claw. There are almost always 4 toes on each hind foot. There is a short tail which is longer and thicker in males.





Plastron (lower shell)

Behavior

Retracting the head and legs and pulling the hinged plastron closed can be a helpful defense against smaller predators. Individual turtles vary in the likelihood of closing up when picked up by a human; some do not retract at all and struggle or even try to nip while held.

Daytime activity largely occurs in the morning and in the late afternoon to sunset. Ornate box turtles are not active at night except that nesting females are sometimes found wandering after dark, presumably in search of a suitable place to dig a nest.

These turtles dig shallow resting places called “forms” for temporary use. However, in areas with colder winters, ornate box turtles may dig burrows to stay beneath the frost line. When necessary they may dig one or two meters down, digging further as it gets colder.

Box turtles tend to stay within relatively small home ranges, areas within which the turtle moves about for foraging, mating, and hibernation. Data from various studies show home range sizes can vary from 2 or 3 hectares to over 10 hectares. Habitat quality and fragmentation play some role in the size of the home range. Many box turtles show a great deal of “site fidelity,” trying to return to their home range if displaced. When moved a kilometer or so, the turtle may be able to find its way back (the position of the

sun evidently can be one cue used by the turtle). A turtle moved very much further away may not settle down in its new surroundings but may wander in search of “home,” using up energy and running into any number of hazards.

Reproduction

Box turtles take a long time to reach sexual maturity, generally after about 8 to 10 years. After that, adult box turtles remain reproductively active throughout their adult lives.

A study of courtship in the eastern box turtle (Belzer, 2002) showed that males found females not through scent tracking but visually – by spotting a moving female. This suggests that high population densities are necessary so that the odds are high that a male and female will encounter each other. The male turtle mounts the female and holds this very awkward position by hooking his back legs and claws on her shell.

Females then lay only about four to six eggs on average. They hatch in roughly two to two-and-a-half months, assuming that one of the many predators of turtle nests does not eat the eggs.

Abundance

There are stories of how the ornate box turtle used to be extremely abundant, and they seem to have evolved a life history that requires high abundance in order for them to successfully reproduce. Many Texas naturalists have remarked on the apparent decline in box turtle numbers, and studies elsewhere have documented declines. Concern about threats to box turtles in Texas (Smith, 2004) is spurring conservation efforts such as those of the Box Turtle Partnership of Texas.

Box Turtles as Pets

While they are very charming animals, box turtles are not good starter pets and their care requires a fair amount of attention. Many adult box turtles in the pet trade slowly waste away or become ill, often starting while being shipped and held awaiting sale. Taking box turtles out of the population for pets is a contributing factor to their declines, and so people are urged to leave wild box turtles where they are. Captive bred babies are available from breeders, and with some knowledge and skill on the part of the owner, these may do well.

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Ornate Box Turtle (continued)

References & Further Reading

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Juvenile ornate box turtle
(photo-Brian Wallace)

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