Pet Hospital of Peñasquitos

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BOX TURTLE CARE (rev 11/25)

Box turtles are a common reptile pet that with proper care can live 30 to 50 years and perhaps much longer. Several species are common including the eastern box turtle, *Terrapene carolina carolina,* the Gulf Coast box turtle, *Terrapene c. major,* the three-toed box turtle, *Terrapene c. triungius,* the ornate box turtle, *Terrapene ornata ornata* and the desert box turtle, *Terrapene* o. *luteola.* The Florida box turtle, *Terrapene c.* *bauri* is not available for sale anymore.

Box turtles do best outdoors, in a secure back yard or fenced enclosure. If there is any opening in the perimeter the turtle will exploit it to escape. Box turtles can dig under fences, so bury fencing or install solid boards along borders to prevent escape. Fencing should be 18 inches high (box turtles are good climbers), or 12-inch boards. The outdoor quarters should have some shade in dense shrubbery or grasses, with dry leaves and wooden shelter so the turtles can escape the hot sun when needed. Make as large an enclosure as possible. Dirt and grass make suitable substrates; avoid using sand or gravel in the enclosure, as these can be ingested.

Indoors, the bigger the cage the better. You can use 50-gallon aquariums or larger containers, Vision tubs from Vision Products, large concrete mixing bins, galvanized watering troughs, or big wooden cages. The bottom of the cage should be filled with humid substrates such as medium to large wood chips mixed with peat moss. Drier substrates promote skin cracking and poor health. Substrates should be fully replaced every few months, while waste should be removed frequently to maintain cleanliness. A hide box that the turtle can get out of sight is important. Many turtles prefer to sleep in them. Loose leaf litter can be spread over the substrate.

Indoors it is best to provide a temperature gradient so that turtles can regulate their own body temperature. Basking spots can be created using a ceramic infrared heater or a PowerSun UV light (ZooMed), both equipped with reflectors and positioned at least 12 inches away from the turtle. Box turtles require UV light so it makes sense to use one that provides heat & UV light, such as the PowerSun. The cage should get no colder than 60°F at night and gradually warm to 80 to 85°F during the day. During nighttime, lights ought to be switched off. If temperatures fall below 60°F, you can use reptile heating pads under half of the cage to offer extra warmth. The ambient temperature in the background should remain within the range of 70 to 80°F.

An easy to clean shallow water dish big enough that the turtle can get into, should always be available. Water depth should be no deeper than the turtle's chin when its head is partially retracted. Turtles typically defecate in their water bowl, which should be cleaned promptly when soiled and maintained at a minimum of several times per week.

Dogs are fond of chewing on turtles and can wreak havoc just a few minutes. Small box turtles can be devoured without a trace. Do not leave box turtles alone with dogs unless the dog has previously demonstrated no interest in the turtle. Raccoons and opossums will enter yards

at night to prey on box turtles. Secure caging with a screened top is strongly recommended if you have raccoons or opossums in your area.

Box turtles are much more carnivorous than most people realize. Adult eastern box turtles are opportunistic omnivores consuming land snails, beetles, sowbugs or pillbugs, millipedes, slugs, earthworms, spiders, carrion, small mammals, birds, crayfish, frogs, tadpoles, salamanders, lizards, snakes, smaller turtles, and plant material such as mushrooms, strawberries, raspberries, mulberries, and tomatoes. Youngsters are primarily carnivorous. Ornate box turtles are primarily insectivorous consuming dung beetles, caterpillars, cicadas, and grasshoppers, but they also eat mulberries, leaves, tender shoots, and carrion. Unlike other box turtles ornates frequently utilize burrows and prefer more arid habitat such as open prairie.

In captivity long term nutritional problems are typical for most box turtles and often not appreciated by owners. Keep in mind that different species have different dietary preferences, for instance ornates are much more carnivorous and thus less interested in plant material.

Majority of Diet – Good quality commercial box turtle or aquatic turtle pellets should make up most of the diet. Good pellets include Flukers, Mazuri, Exoterra, Zoo Med. Be sure to use box turtle or aquatic turtle pellets and not tortoise pellets which are too low in protein. Do not add multivitamins to pellets. Other foods include earthworms, crickets, grasshoppers, cicadas, slugs, snails, tomato hornworms, mealworms, superworms, silk moth larvae, other insects, and baby mice (pinkies or fuzzies). Canned diets for box turtles usually lack sufficient protein and contain excessive sugar, so they are generally not advised. Dry chows should be soaked in just enough water to cover them for several minutes to soften them. Avoid cat or dog food because it is too high in fat and protein for reptiles. Feed a wide variety foods, however good quality pellets can make up the majority of the diet. Insects are calcium deficient and should be fed insect gut loading diets and dusted with powdered calcium carbonate, just prior to offering them to the turtle (see handout on **Feeding Insectivorous Reptiles and Amphibians**).

Minority of the Diet – Dark leafy greens (mustard, collard, radish, beet and turnip greens or tops, kale, cabbage, spinach, red leaf or romaine lettuce, dandelions (leaves, stems and flowers], Bok-choy, Pak-choi, broccoli rabe), squashes, thawed frozen mixed vegetables (peas, corn, carrots, green beans, and lima beans), carrots (shaved, not chopped), alfalfa, radish, clover or bean sprouts, mushrooms, red, green or yellow bell peppers, broccoli, green beans, peas in the pod, okra, and prickly pear cactus pads (shave off spines). Occasional fruits such as tomatoes, strawberries, raspberries, and other fruits can be offered as treat but should not make up a large portion of the diet.

Adults should be fed three times per week in the morning and juveniles daily. Every feeding dust food with a light sprinkling of calcium carbonate (much like how you would use salt on your food). If your pet doesn't eat vitamin-fortified pellets, lightly sprinkle multivitamins on their food every two weeks.

Hibernation is recommended for temperate northern box turtles such as *Terrapene carolina carolina, Terrapene c. triunguis, Terrapene omata omata,* but not *Terrapene bauri* or *Terrapene c. major.* Keep in mind that within a given species animals from warmer areas may not hibernate at all. Some box turtles may skip hibernation in captivity, especially if the conditions stay warm and the day length remains artificially long. Others may stop eating in the early fall regardless of artificial conditions. Hibernation is recommended for healthy specimens in good body weight. Veterinary examination several weeks prior to hibernation is advisable. Convalescing, underweight, or sick turtles (evidenced by swollen eyelids, sunken eyes, nasal discharge, laborious or gurgling respiration) should not be hibernated! Weight gain over the summer is a prerequisite for hibernation.

Most hibernating turtles noticeably decrease their food intake as winter approaches. Water should be constantly available prior to hibernation, soaking encourages drinking. In September, October or November, or as soon as the turtle's appetite noticeably decreases in early fall, withhold food (but not water) for several weeks but keep the turtle between 70 to 80°F. This gives the turtle time to clear its gastrointestinal tract. After this, remove external heat sources and allow the turtle to acclimate to room temperature of 60 to 70°F. After a week at room temperature, the turtle should be ready to enter the hibernaculum.

Box turtles can be hibernated indoors or outdoors. To hibernate indoors, choose a location where temperatures remain below 55°F throughout winter, such as a basement, garage, back porch, crawl space, or wine cellar. Use a minimum-maximum thermometer to check temperatures several weeks before hibernation. Persistent temperatures above 60°F are not cool enough for hibernation, and the turtle's metabolism will be high enough that it will slowly starve. Extended exposure to temperatures under 41°F is too cold, and temperatures at or below freezing should be avoided.

A hibernaculum can be set up with a large box, crate, cooler, or aquarium with a foot of slightly humid peat-based potting soil and a three- to six-inch layer of shredded newspaper or dried leaves. The turtle should burrow into the soil and remain inactive. The soil should be humid, but not wet, so that the turtle does not dehydrate. Low humidity can be a problem indoors. To keep box turtles properly hydrated, it's important to wake them up every two or three weeks and let them soak in shallow water at 75°F for about two hours. The turtle's eyes should open within two hours of soaking. If the turtle appears healthy, let it dry off then return it to the hibernaculum. If any signs of illness are present warm the turtle up to 80°F and seek veterinary attention as soon as possible. Contrary to popular belief disturbing turtles during hibernation is not harmful.

For outdoor hibernation select an area sheltered from the wind with several feet of loosened soil, loose soil near a foundation works well in colder areas. Spread a foot or two of loose leaves or hay over the soil. Be sure the area drains well and is not prone to flooding. The turtle will burrow into the soil and if all goes well should emerge in the spring. Do not disturb it while hibernating. Hibernation typically lasts two to four months. Once spring comes and the turtle starts moving about, you should place it in warm water daily until it resumes eating on its own—which typically occurs within a week. If your pet refuses to eat, consult your veterinarian.

Most species lay two to eight (normally four to six) eggs, from May through July. Multiple clutches are possible. Females can store sperm and lay fertile eggs for up to four years after fertilization. Females excavate nests with their hind legs from late afternoon to early evening and carefully bury their eggs. When taking eggs out of nests for artificial incubation, make sure to keep them oriented with the same side facing upward as they were when first laid.

The most widely used incubation medium is vermiculite, available from most commercial nurseries, or plant sections of some grocery stores. Combine vermiculite and water in equal proportions by weight, then transfer the mixture into sealable containers—such as plastic shoe boxes or Tupperware containers ranging from two quarts to one gallon—to prevent evaporation. Eggs should be half buried in the incubation medium and the container opened briefly weekly to facilitate air circulation. An incubator is essential to provide stable warm incubation temperatures. You can create a basic incubator by placing a Styrofoam box on top of a heating pad, adjusting it until you reach the right temperature. An aquarium with water can maintain a steady temperature using a submersible heater. You can buy or make different kinds of incubators. A safe incubation temperature range for most species is 82 to 86°F.Eggs hatch in two to three months.