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Box Turtle: Care and Husbandry

Box turtles are land turtles found in the eastern and central United States and northern parts of Mexico. They are six to eight inches long with varying shell patterns and colors. There are a number of species of box turtles; the Eastern, the Three-toed, the Gulf Coast and the Ornate which are seen most commonly in the United States pet trade. The top shell (the carapace) of the box turtle is dome shaped and the bottom shell (the plastron) has a flexible hinge that allows the shell to completely close, fully hiding the turtle's legs and head. Box turtles can live over 50 years making them a long-term commitment.



A box turtle will need a large enclosure of at least forty gallons (about five to six square feet) with a screen lid for ventilation. Substrate for the bottom of the enclosure can include paper towels, newspaper, butcher paper, terrarium liners, rabbit alfalfa food pellets or recycled paper products. Calcium sand is not a good choice because it can be ingested which may cause intestinal impaction. Wood shavings, walnut shells and sand are all inappropriate choices as these can be harmful if ingested, can carry parasites and irritating dusts and oils. The box turtle will also need a hiding area or small house in the enclosure. Artificial plants and decorations may be used to create a more natural looking habitat as long as the turtle is not ingesting these decorations. The enclosure should be cleaned regularly usually once weekly will suffice; with water and a mild soap.

A clean water source should be provided in the enclosure. The water dish needs to be large enough for your turtle to be able to soak in and climb out of themselves. The water should be shallow enough that your turtle is not completely submersed since they are not good swimmers.

A heat lamp, ceramic heat emitter is important to maintain the appropriate temperature. The ideal temperature for box turtles is 85-88 degrees Fahrenheit with one side being slightly cooler (about 5 degrees) than the other. This difference in temperature allows your turtle to cool off and avoid overheating. These temperatures are monitored with two thermometers, one on each side of the cage. Your box turtle should have 12 hours of daylight (white light) and 12 hours of darkness for its natural biorhythms. A timer purchased from a pet supply store or hardware store can be utilized to maintain this twelve hour light cycle. At night, the temperature in the enclosure should drop slightly, about 10 degrees, as it would in their natural habitat. Night temperatures should also be closely monitored and ceramic heat emitters, red, blue or purple reptile night bulbs can aid in increasing

night temperatures if needed. Always use reptile specific heat bulbs which have modifications that benefit the reptile and helps stimulates eating.

An ultraviolet light is essential for the health of box turtles. This reptile specific bulb produces UVA and UVB rays and is purchased from your local pet supply store. The UVB rays are important for the natural production of vitamin D which helps the turtle absorb calcium from its diet. Without the UV bulb your turtle cannot properly absorb calcium which leads to metabolic bone disease. UV bulbs for reptiles come in two different forms the compact (coil) bulb and the linear florescent tube. While there are many companies that produce UV bulbs, Zoo Med and Zilla are recommended. Follow manufacturer recommendations to determine the type of UV bulb you purchase, and the distance to place the bulb from your box turtle. All UV bulbs need to be changed every 6-12 months based on manufacturer's recommendations. After that time, even if the bulb still turns on it is not producing the vital rays your turtle needs for calcium metabolism. Plastic and glass windows are designed to block UVB rays so keeping the tank by a window will not provide essential UVB rays. It is ideal to provide monitored time outside on a warm day in an escape proof enclosure with access to shelter. Natural sunlight is the best source of essential UV rays.

Heat rocks should not be used as they can cause burns since reptiles do not sense a "localized" temperature. Heating pads under the tank may be used with supervision. Place your hand on the area of the tank with the heating pad; if it is too hot for your hand to rest on for long periods of time then it is too hot for your turtle.

Hibernation can be dangerous to your box turtle if not done properly and therefore should only be attempted by an experienced keeper with aid from your veterinarian. Hibernation is an instinctual act, usually during the cooler months, during which your turtle's appetite and activity will drastically decrease. This act is stimulated by your box turtle's natural instincts along with differences in the temperature of the environment and the shortening of days. Maintaining the same temperature and light cycle in your enclosure during the winter months will help prevent hibernation.

Box turtles are omnivores and eat both vegetation and meat. It is important to vary the diet so the reptile receives proper nutrition. The diet should include 50-70% insects and meat with 30-50% greens and vegetables. 10% of the greens portion of the diet can be fed as fruit. The best time to feed a box turtle is in the morning after it has a few hours to warm up. Safe foods include; gut loaded crickets, mealworms, and hornworms. Earthworms and slugs may be offered to adults. Wax worms are fattening and superworms are hard to digest so these should be offered less frequently as a treat. Insects should be gut loaded, meaning they are fed nutritious foods before being fed to a turtle. Gut loading products for insects are available at most pet supply stores. Only offer as much live food as the turtle will eat at one time; an insect left in the cage may get hungry and harm your turtle. Avoid feeding bugs from outside as these may be contaminated with pesticides, parasites or disease. A commercial box turtle food may also be fed and can be found at most pet supply stores.

Greens that may be offered include; dandelion greens, collard greens, chicory greens, turnip greens, escarole, endive, romaine, mustard and turnip greens. Other healthy vegetables include green beans, peas, cucumber, zucchini, green peppers, and bell peppers. Orange vegetables such as sweet potato, carrots, and squash are very good sources of vitamin A. Some fruits to add to the diet include strawberries, cranberries, cherries, raspberries, blackberries, apples, grapes, cantaloupe, papaya, mango, melon, blueberries, and bananas.

Iceberg lettuce has no nutritional value and should not be fed. Spinach, broccoli, cauliflower, cabbage, and other cruciferous vegetables cannot be fed as they contain oxalates that bind calcium intake.

Types of flowers that are safe to feed are geraniums (*Pelargonium* species), Chinese lantern (*Abutilon hybridum* not *Physalis* sp.), borage, hyssop, hosta, hibiscus, carnations, daylilies, petunia, pansies, chives, dandelion, rose petals, rose hips, and nasturtiums. Any plants or fruits that are fed to a reptile should be free of pesticides and fertilizers.

Box turtles do not produce enough calcium themselves and therefore it must be supplemented in their food. This can be done by purchasing a calcium D3 powder from your local area pet store. This powder is sprinkled on food 3-4 times a week for juvenile turtles (under one year old) or breeding females and 2-3 times a week for adult turtles.

When picking up your turtle be sure to support its body with both hands. Your box turtle will feel more comfortable and secure with something under its feet. Falling can be fatal to your turtle so a two-handed carrying technique is recommended. It is also important to thoroughly wash your hands after handling.

An annual examination with a qualified veterinarian is important to ensure your turtle is in good health. Some health issues affecting box turtles include bacterial infections, respiratory infections, eye or ear infections, skin or shell infections, and metabolic bone disease. If needed, a nail trim or beak trim may be performed by a veterinarian. A healthy box turtle that has the proper environment will wear the nails down naturally. The beak will need attention if the turtle has suffered an illness or injury that has caused a malformation. Proper husbandry may decrease the incidence of some ailments.