

# Care of the Box Turtle

Box turtles are one of the most common reptile pets in the United States. There are many subspecies of box turtle, with the Eastern box turtle and three-toed box turtle being most commonly kept as pets.

- The Eastern box turtle (*Terrapene carolina carolina*) is found from Maine south into Georgia and west to Michigan, Illinois & Tennessee
- The Gulf Coast box turtle (*Terrapene c. major*) is the largest of the group with an upper shell that flares outward at the end. This subspecies ranges from the Florida panhandle into eastern Texas.
- The Florida box turtle (*Terrapene c. bauri*) is found throughout Florida down into the Florida keys.
- The three-toed box turtle (*Terrapene c. triunguis*) is found from Missouri down into parts of the Southeast and eastern Texas. This subspecies has a dull olive shell plus red, orange, or yellow scales on the head and forelimbs. There are generally (but not always) three toes on the hind limbs.

North American box turtles spend much of their time burrowing in the mud or hiding beneath rocks. Chinese and Malayan box turtles have slightly different requirements. The Malayan or Amboina box (*Cuora amboinensis*) is more aquatic than the North American box, requiring a large area of water covering at least 50% of total enclosure size. Chinese box turtles (*Cuora flavomarginata*) are more aquatic than American species, but less aquatic than Malayan species. Adult box turtles typically range from 4.5-8 in (11-20 cm) in length. With proper care, box turtles can live for 30 to 40 years or even longer, in captivity.

## DIET

Box turtles are omnivores. The adult diet consists primarily of vegetables with a small amount of protein.

**60-80% vegetables** (by volume): Approximately half of the vegetables offered should consist of a wide variety of dark, leafy greens such as collard greens, mustard greens, turnip greens, kale, escarole, spinach, Swiss chard, romaine, watercress, as well as parsley, carrot tops and beet tops. Unsprayed dandelion leaves and flowers, nasturtium, and hibiscus blossoms are also excellent treats.

Bulk vegetables offered can include fresh or thawed frozen vegetable mixes, as well as broccoli, peas, beans, carrots, beets, corn, squash, and sweet potatoes are a special favorite of most box turtles. Avoid canned vegetables.

Wash and chop all vegetables into appropriately sized bites.

**10-20% fruit** Papaya, melon, berries, kiwi, mango, oranges, peaches, pears, tomatoes, figs & grapes. Turtles are especially fond of red food items. Wash and chop all fruits into appropriately sized bites.

**10% insects:** Think of insects as a treat that can be offered sporadically to adult box turtles. Mealworms, waxworms, bee moth larvae, and earthworms are all good protein sources; however offer earthworms less frequently (no more than once weekly).

Growing turtles require a higher proportion of protein. Consult your reptile veterinarian for specific recommendations.

**Mineral supplementation:** Pet box turtles require calcium supplementation. Select a calcium supplement containing no phosphorus or vitamin D3. Lightly sprinkle the turtle's food with the supplement 2 to 3 times weekly.

## HOUSING

Box turtles can be kept in enclosures with tall sides and no top. At minimum, house one adult in a 20-gallon (75-L) aquarium.

- Include a large area of dry land for basking with a **substrate** like woodchips that is at least 2-3 in (5-8 cm) deep for burrowing. Do not use gravel, sand, potting soil, crushed walnut shells, or cat litter because they can cause intestinal blockage if ingested. Spot clean the substrate regularly and change it out completely every few weeks.

Newspaper or butcher block paper can be used the line the cage if the shelter (*see below*) is filled with substrate.

- Provide a full-spectrum **ultraviolet light source** 12-14 hours daily for optimal absorption of dietary calcium. Replace the bulb every 6-12 months.
- Box turtles also require a **hiding area or shelter** like a wooden box, cork bark, or a cardboard box with a cut out doorway.
- Daytime cage **temperature** should range between 75-85°F (24-29°C). Use two heating sources:
  - Create the baseline temperature with an under-tank heating source like heat tapes.
  - Use an overhead heating lamp to provide a warm basking area that reaches 85-90°F (29-32°C).
  - Maintain room temperature between 70-80°F (21-30°C).
  - Measure cage temperature using two **thermometers**. Place one thermometer at the cool end of the cage, another underneath the basking area.
- Box turtles require a relative **humidity** of 60% to 80%. Liberally mist the enclosure once or twice daily with water, and measure humidity with a humidity gauge or hygrometer.
- **Water** should always be available for soaking and swimming. North American box turtles are not good swimmers so use a flat pan as the makeshift pool for easy entry and exit.
- Scrub water dishes and spot clean feces daily. Completely replace substrate every 2-3 weeks, and clean and disinfect the entire enclosure including hide boxes every 2-3 months.

During warm weather months (>60°F or 16°C), many turtles do well in a fenced, outdoor enclosure or yard.

- Provide an easy to clean, shallow water dish large enough for soaking.
- Make sure the enclosure has some shade. Your turtle will need an area of dense shrubbery or dry leaves to burrow during the warmest part of the day. A wooden shelter can serve as a less ideal burrowing area.
- Bury rocks or bricks under fencing or bury fencing 8-12 in (20-30 cm) to prevent the turtle from digging out.
- Ensure the fence is greater than 12 in (30 cm) in height.
- Protect turtles from domestic pets like dogs and wildlife predators (raccoons, opossums, other mammals, and birds). Dogs will readily chew on box turtles, and raccoons and opossums will eat them.

## HANDLING YOUR TURTLE

Reptiles are often asymptomatic carriers of **Salmonella**. Thoroughly wash your hands after handling your turtle.

## COMMON HEALTH PROBLEMS

Common health problems in box turtles are often the result of poor husbandry and include swollen eyelids, ear infection, metabolic bone disease, flystrike or maggot infestation, retained eggs, penile prolapse, and intestinal parasites.

## REFERENCES

Bartlett PB, Griswold B, Bartlett RD. *Reptiles, Amphibians, and Invertebrates: An Identification and Care Guide*, 2<sup>nd</sup> ed. Hauppauge, NY: Barron's Educational Series; 2010.

Boyer TH. Box turtle care. *ARAV* 2(1):14-17, 1992.

Boyer TH, Boyer DM. Turtles, tortoises, and terrapins. In: Mader DR, ed. *Reptile Medicine and Surgery*, 2<sup>nd</sup> ed. St. Louis; Saunders Elsevier; 2006. Pp. 696-704.

de Vosjoli P. *The General Care and Maintenance of Box Turtles*. Lakeside, CA:Advanced Vivarium Systems; 1991.

Maas A. Box turtle care sheet. The Center for Bird & Exotic Animal Medicine website. Available at <http://theexoticvet.com/care-sheets/box-turtle-care-sheet/>. Accessed July 13, 2013.