

Box Turtles

Genus *Terrapene* and *Cuora*



****Many subspecies of box turtle are protected and are illegal to own in many states without special license to keep. If one of these turtles are indigenous to the state you live in, chances are high that it is illegal to keep as a pet.**

NORTH AMERICAN SUBSPECIES: Florida box turtle (*Terrapene carolina bauri*) Gulf Coast box turtle (*Terrapene carolina majoro*), Three-toed box turtle (*Terrapene carolina triunguis*), Eastern box turtle (*Terrapene carolina carolina*) Coahuilan Box Turtle (*Terrapene coahuila*), Spotted Box Turtle (*Terrapene nelsoni*), Desert Box Turtle (*Terrapene ornata luteola*) Ornate Box Turtle (*Terrapene ornata ornata*) ****Ornate box turtles are an extremely delicate species and are not recommended for hobbyists.**

ASIAN SUBSPECIES (COMMON): Chinese box turtle (*Cuora flavomarginata*) and Malayan (Amboina) box turtle (*Cuora amboinensis*), Yellow-margined box turtle (*Cuora (Cistoclemmys) flavomarginata*), Flowerback Box Turtle (*Cuora (Cistoclemmys) galbinifrons*), Three-striped box turtle (*Cuora trifasciata*), Keeled box turtle (*Pyxidea mouhotii*). **Four additional Asian species exist but are extremely rare:** (*aurocapitata*, *mccordi*, *pani*, and *yunnanensis*)

This care sheet gives general care recommendations for all box turtles

NOTE: It is against federal law for turtles and tortoises under 4 inches in length (from front of shell to back of shell) to be sold in pet stores.

Many of these turtles are wild caught, and usually suffer some stress from being caught and from traveling. Because of this, they generally suffer from a heavy bacterial and protozoan load, which can result in infections. Be sure to see your exotic pet veterinarian soon after purchasing your new turtle. He or she will perform a complete physical exam and then de-worm your new pet. (Be sure to take a fresh stool sample along with you!)

LIFE SPANS: 40 – 50 years +

AVERAGE SIZE: 4 - 8 inches

CAGE TEMPS: Daytime / 68-72 degrees

HUMIDITY: 60 – 80 %

Daytime Basking / 85 degrees maximum

Nighttime temps / 60-75 degrees

- If temp falls below 60° at night, may need supplemental infrared or ceramic heat.

PHYSICAL CHARACTERISTICS: Box turtles are mainly terrestrial reptiles, but do spend some time in the water. The Malayan (Amboina) is more aquatic than the others. They have soft, bodies incased in a top, bony shell (carapace) and a lower bony shell (plastron), which protects them from predators.

The geometric shaped scale sections of the shell are called “scutes”. The scutes cover up the seams between bone plates underneath, making the shell stronger. The ribs, backbone, hip bones and shoulder bones are attached to the upper and lower shells.

Box turtles have stout, club-like feet for walking and long claws for digging. Males generally have longer claws than females. Box turtles are unique among other turtles and tortoises as they can retract their legs and head completely into their shell. The plastron of the box turtle shell is hinged and can close tightly against the carapace, enclosing the box turtle tightly inside. Box turtles have beaks, not teeth, and they do not have external ears although they can hear just as well as animals that do. The box turtle tail is short and stubby, the male’s tail being longer and slightly wider than the female’s.

NORMAL BEHAVIOR & INTERACTION: Box turtles are happy to live along with other box turtles, given that there is enough space for everyone (see Housing & Environment). However, there is no guarantee that everyone will get along fine. DO NOT mix different turtle and tortoise species together. Each species may also harbor different parasites/protozoans/bacteria (even a healthy reptile harbors a small amount at all times), which may make each other ill.

FEEDING: Box turtles are omnivorous; which means they eat both meat and vegetables. Meals should be comprised of approximately 50% vegetation and 50% protein. Feed your turtle in a natural way on a flat rock, which will help keep the beak worn down a bit. Do not feed your turtle the same meal every time, this will create a picky eater and your pet will not receive a well-rounded diet with a variety of nutrients. Use a variety of fruits, vegetables and proteins.

Feed your box turtle every day. Box turtles are private eaters; provide a place to eat where he will feel secure.

NOTE: Turtles & tortoises see in color and are attracted to orange and red colors. UV light enhances visual perception of their food! (see UVB section below)

VEGETABLES: Dark leafy vegetables such as collard and mustard greens, kale and red tip leaf lettuce are good for a box, as are alfalfa pellets, clover, parsley, and broccoli, mushrooms, dandelion, green beans, peas, squash, grated carrots and sweet potatoes. Spinach and iceberg lettuce should never be fed.

Fruits such as figs, kiwi, apples, raspberries, strawberries and melons will also be appreciated.

Remember to wash vegetables thoroughly, then cut or shred to make it easier to ingest.

Remove any uneaten vegetables before turning the lights off at night.

PROTEIN: Protein sources such as: gut-loaded crickets, mealworms, cockroaches, kingworms, wax worms, snails, slugs and earthworms dusted with a supplement should also be part of their diet.

Wild caught insects should never be fed, since they can carry disease. All insects should be gut loaded (fed a nutritious diet about 24-hours before being offered to your turtle – see our cricket care sheet).

Be careful to feed the proper size prey for your turtle's size. A good rule of thumb is that a cricket should be never be larger than the distance between the turtle's eyes, or the distance from its eyes to its nose.

When feeding larger insects to your pet, try to make sure the insects have recently molted, as an insect with a large, hard exoskeleton is difficult to digest and may cause impactions.

LIGHTNING BUGS MUST NEVER BE FED, AS THEY ARE POISONOUS.

Commercially prepared box turtle diets are available, but they should NEVER constitute the whole diet of your pet. They can be left in the enclosure (on the cool side) in case your pet is hungry between meals.

Amounts of feed depend on different factors such as enclosure, exercise, heat and lighting. Contact your exotic pet veterinarian for advice on how much to feed YOUR turtle.

SHEDDING: Unlike snakes, box turtles shed their skin in patches, not all in one piece. Your pet's skin may become an overall dull color before a shed. Do not peel off the skin if it is not ready to come off. This can be dangerous and painful.

In the wild, reptiles have a much easier time with their sheds, as they are generally in a more naturally humid environment and have access to pools or bodies of water in which they can soak at will. Even reptiles from arid areas find humid places to go during the shedding process, such as cold, moist burrows under the sand or caves.

The shedding process happens when the turtle's body begins to grow a new layer of skin; that new layer begins to separate from the old and a very thin layer of fluid forms between the two layers. If your pet's enclosure is too dry, this fluid layer will not form properly, making it difficult for your reptile to shed properly.

Turtles will also shed pieces of the "scutes" (patches on the upper shell).

To create more humidity, the entire tank can be lightly spray misted twice a day during shedding time. Spray once in the morning and once later in the day. Make sure the later spray dries completely before lights go off for the night, as the droplets will not have proper time to dry and may contribute to respiratory disease.

A shallow dish of clean water can be kept in the enclosure at all times to help with humidity and shedding. However, if you find your turtle sitting in it constantly, pull the dish out and just place it back in for a few hours a day. A turtle that stays in his water too long is susceptible to shell rot.

SUPPLEMENTS: Dust food with calcium supplement and vitamin supplements. As a rule, a growing juvenile's food (and a pregnant/gravid female's) should be dusted more often than an adult's. Follow your veterinarian's instructions for applying supplements to avoid over-supplementing food.

Our veterinarian recommends dusting insects with a good quality calcium supplement fortified with vitamin D3, 2-3 times a week. (Avoid using a calcium supplement with added phosphorous, unless specifically directed by your veterinarian, since this can promote kidney disease.)

Always consult your veterinarian for specific directions on supplementing your pet's food, since there are many variables that go into determining the best supplementation regimen for each animal.

WATER: A large bowl of clean fresh chlorine-free water must always be available. It should be large and shallow enough for your turtle to climb into and have it cover the bottom half of its body. Place it on the cool side of your reptile's enclosure. Change it daily, or as needed, as your pet will most likely bathe in it as well. All water given to reptiles for drinking, as well as water used for misting, soaking or bathing must be 100% free of chlorine and heavy metals. (Not all home water filtration systems remove 100% of the chlorine and heavy metals from tap water). We recommend that you use unflavored bottled drinking water or bottled natural spring water; never untreated tap water. If tap water is used, you should treat it with a de-chlorinating treatment. De-chlorinator is available in the pet store fish department. If you do not want to chemically de-chlorinate the water, you can leave an open container of tap water out for at least 24 hours. Do not use distilled water, which can cause severe medical problems, since it lacks minerals that are essential to important body functions. If only tap water can be used, at least de-chlorinate the water. A daily misting or two with chlorine-free water will also be appreciated. However, care should be taken not to allow the enclosure to become damp. Also, do not mist less than two hours before turning the heat lamps off for the day.

SOAKING: Turtles can benefit greatly from a good deep-water soak at least once a week. A plastic tub makes a good reptile bathtub. Fill the container deep enough so the entire turtle's body can be submerged under water, but the head can be out of water. The water should be nice and warm (about 68-70 degrees). Soak your tortoise for about a half hour at a time. This is especially helpful during a bad shed or when your reptile might be a bit constipated.

RECOMMENDED SUPPLIES:

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| Cage or enclosure at least 36" x 18" or 40 gallon fish or turtle tank (not high) A larger 75 gallon aquarium or 48" x 18" enclosure is better. | Large heat dome and 75 - 100 watt bulb |
| Human-grade heat pad – placed under same side of cage as basking light – place on low setting | Temperature / humidity gauge – do not stick to side of tank |
| At least one hide house – place over heat pad. | Shredded aspen bedding for the bottom of the cage |
| Large water bowl – big enough to soak in – place on cool side of cage | Fluorescent UVB Bulb and housing |

HOUSING & ENVIRONMENT: Reptiles are ectothermic, or cold-blooded, which means they are dependent on the temperature of their immediate environment to regulate their body temperature. Therefore, we must create an environment with several heat gradients – warm on one end and cool on the other. With this set-up, your pet can go to either end depending on whether he needs to be warmer or cooler.

NOTE: The Malayan (Amboina) box turtle is a much more aquatic species than the other box turtles. The enclosure for this species should follow that of the regular aquatic turtle set-up. If purchasing this species, please request the aquatic turtle care sheet.

ENCLOSURE SIZE: Reptiles are ectothermic, or cold-blooded, which means they are dependent on the temperature of their immediate environment to regulate their body temperature. Therefore, we must create an environment with several heat gradients – warm on one end and cool on the other. With this set-up, your pet can go to either end depending on whether he needs to be warmer or cooler.

ENCLOSURE SIZE: Box turtles should have a home that measures at least 4 feet x 2 feet x 2 feet OR LARGER. Do not force a box turtle to live in a smaller enclosure, or in a glass enclosure, they will become very ill and unhappy. Commercial rabbit cages that meet the requirements of the size above do very well as box turtle cages. Most of these cages have easy to clean plastic bottoms and wire sides and tops. This makes it easy to set up the cage to the proper requirements and place lights directly over the turtle where he needs them.

A hand made cage can also be made and there are many designs on the Internet. Be sure to match the minimum size above, or even better, make the enclosure larger. DO be sure that your pet cannot escape over the sides of the walls. These species are excellent climbers and can escape easily, and despite the fact that they are tortoises, they are NOT slow creatures!

IT IS NOT TRUE THAT A REPTILE WILL ONLY GROW AS LARGE AS ITS ENCLOSURE ALLOWS!!

COVER: Make sure the cage has an escape-proof metal mesh top. It is important that the top is METAL mesh, as you will place the heat lamp directly on top of this cover. The heat lamp can be clamped onto the side of the enclosure. However, DO be sure the cage is covered or has very high sides, as many of these species are excellent climbers.

SUBSTRATE FOR LAND AREA: We recommend a loose coconut fiber substrate, available in the reptile department and made by several companies. It is made from the husks of coconuts. This substrate is ideal for your turtle, as it will help hold humidity in and is perfect for digging.

Place 3-4 inches of substrate in the tank, keep it slightly damp, but not watery.

Small patches of reptile moss and some flat rocks can also be dispersed along the surface of the substrate. The rocks are excellent for keeping the turtle's nails trimmed.

WATER AREA: For the water area, you can use a large ceramic or plastic dish or a new plastic cat litter box. Recess the water container snugly into the substrate. Arrange the substrate so it will not spill into the water container, and push some smooth rocks and moss around the bowl to make it easy to climb into. DO be sure that your turtle will be able to climb in and out of the water area easily.

COVER: Make sure the cage has an escape-proof metal mesh top. It is important that the top is METAL mesh, as you will place the heat lamp directly on top of this cover. The heat lamp can be clamped onto the side of the enclosure. However, be sure your pet cannot escape!

HEAT PAD: A human-grade heat pad may be used on the low to medium setting. Do be sure to allow for proper ventilation for safety reasons. **Be sure to purchase a heat pad without automatic shut-off, which are still available. Leave the heat pad on 24 hours a day for your turtle.

Heat pads specifically manufactured for reptiles and human-grade heat pads are safe to leave on 24 hours a day. DO NOT use reptile heat rocks. They heat unevenly and have caused severe thermal burns in reptiles and amphibians.

HEAT LAMP: Place the heat dome with the basking bulb on top of the cage directly over where the reptile heat pad has been placed on the underside of one end of the tank.

NOTE!! : Follow directions carefully with all products – READ THE INSTRUCTION SHEET!!

Always choose fixtures with ceramic sockets and be careful to choose the socket that is properly rated for the wattage bulb that you will be using. Do not place the fixtures by dry wood or flammable fabrics.

All heaters should be placed out of the reach of children and all pets – including cats and dogs.

Be very careful to make sure that your caged pet cannot reach and touch the heating device in its own cage. A thermal burn to the face or body can be painful and life threatening.

BASKING AREA: A warmer basking area matching the temperature listed at the top of this care sheet must be established on the warm side of the cage. This area is directly under the basking bulb and will be higher in the cage for arboreal species. The basking area should be the warmest area in the enclosure. Maintaining the proper temperature in this spot is extremely important to the health of your pet.

UVB LIGHT: Exposure to UVB (ultraviolet B) light is critical in allowing an animal to synthesize vitamin D₃ in their skin and metabolize calcium in their body.

If an animal is not exposed to an adequate level of UVB light, it will gradually develop physical problems from the result of mineral deficiencies such as low blood calcium (hypocalcaemia), soft eggs (females), stunted growth and metabolic bone disorder, which can be fatal if left untreated. In addition, recent studies have linked sub-optimal vitamin D levels with poor immune system function.

All day-active (diurnal) indoor reptiles, amphibians, birds and hermit crabs should be allowed self-selected exposure to UVB lighting for up to 8-12 hours a day. This means they should be able to bask in the light but also get away if desired, much as they might in the wild. Many twilight-active (crepuscular) and night-active (nocturnal) species do get some exposure to the sun and may also benefit from low levels of UVB, which helps regulate their photoperiod and vitamin D levels as well.

Please see our additional “UVB Lighting for Companion Birds and Reptiles” for specific instructions for your particular pet and the UVB bulb that we recommend for him or her.

HIDE HOUSE: Place a hide house inside the cage directly over where you have positioned the heat pad, and directly under the heat lamp above. Be sure it is large enough for your turtle to walk in, turn around, and walk out.

TEMPERATURES: Cage temperatures should be monitored daily and kept at the temperatures listed at the top of this page. Use your reptile thermometer to check the temperatures in different places in the cage regularly to make sure they continually match the listed proper temperatures.

* If the room temperature falls below 60 degrees at night, a supplemental infrared or ceramic heat fixture may be necessary.

(These fixtures do not emit a light spectrum that is visible to the turtle, so it will not disturb him at night, but they WILL provide the necessary supplemental heat.)

If your tortoise does not receive the proper heat at the proper temperatures along with UVB light, he may become sick with issues such as respiratory disease or MBD and may stop eating, as turtles have a hard time digesting their food without proper heat and light.

DAY/NIGHT LIGHT CYCLES AND HEATING: All reptiles must have distinct day and night periods in their enclosure to maintain their biological rhythms. Your turtle needs 8-12 hours of daytime and 8-12 hours of nighttime. However, as the daylight hours change seasonally outside, daylight hours inside the tank should reflect the same.

The day period must be light, and the night period must be dark.

A timer should be used to set day/night periods.

HABITAT MAINTENANCE: Daily maintenance should consist of spot cleaning by removing soiled substrate, cleaning water bowl thoroughly and wiping glass clean.

The entire tank should be cleaned thoroughly at least once every month with:

- A mild dishwashing liquid (a weak dilution) in warm water,
THEN
- Vinegar & water (1:8)
OR bleach and warm water (1:32)
- Cage “furniture” should also be scrubbed clean with the same dilution.
- RINSE OFF ALL SOAP AND BLEACH THOROUGHLY WITH PLAIN WATER BEFORE RE-INTRODUCING YOUR PET TO ITS ENCLOSURE!!
- NEVER MIX VINEGAR AND BLEACH – IT CREATES A TOXIC SOLUTION
- NOTE: water used for cleaning does not need to be de-chlorinated, as your pet will not be drinking it or bathing in it.

GROOMING & HYGIENE: To reduce the risk of contracting and spreading salmonella poisoning, all handlers should wash their hands after handling any reptile.

SIGNS OF A HEALTHY ANIMAL: smooth, even skin; clear eyes, rounded, full body; strong, even, smooth jaw line; bright eyes. It is very important to keep a journal for each animal that records feeding, refusal, shedding, unusual behavior, changes in behavior and dates of bulb changes. This will help your veterinarian trouble-shoot any health issues.

We recommend physical exams every year or two years with an exotic pet veterinarian for pet reptiles and amphibians. If your vet sees your pet regularly, many common conditions that afflict pet reptiles and amphibians can be caught and treated early. If not caught early enough or if left untreated, many of these conditions can become far worse if not fatal.

SIGNS OF ILLNESS: Irregular skin; excess shedding; irregular jaw line, shell that is soft, or too small for body, cloudy eyes or dull colored body when not in a shed; bloating or thinned body; irregular feeding and defecating habits. Limp, thin body; lethargy, sunken eyes, closed eyes, wheezing, nasal discharge, pinkish patches or spots on belly or sides; obvious wounds from cage mates or prey. Irregular, ill-fitting shell; soft spots or discolored spots on the shell. Failure to eat.

SOME COMMON PROBLEMS INCLUDE:

HEALTH ISSUE:

SYMPTOMS:

TREATMENT:

| HEALTH ISSUE: | SYMPTOMS: | TREATMENT: |
|--|--|---|
| Shell rot, ulcerations, | Soft areas on shell; may be white in color or darker than the rest of the shell. Shell may appear bumpy overall. | See exotic pet veterinarian |
| Bacterial, protozoan and parasitic issues "Worms" | Failure to grow, loss of appetite, abnormal stools | See exotic pet veterinarian (fecal parasite evaluation and appropriate medication) |
| Respiratory Issues | Lethargic, runny or crusty nose, loss of appetite, audible whistle in breaths. | See an exotic pet veterinarian immediately. May need antibiotics. |
| Calcium/phosphorus imbalance | Failure to grow, weakness, limb deformities and fractures, seizures Shell too small for body | See exotic pet veterinarian, ensure optimal diet with proper calcium supplementation and UV light |

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