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Sulcatas

Natural Habitat

The sulcata, or African spurred tortoise (*Geochelone sulcata*), is originally from sub-Saharan Africa but is now found commonly in the North American pet trade. It can grow to be up to 27 inches long and can weigh up to 80 to 110 pounds. In the wild, these tortoises roam and graze in grassland savannahs and forests. As terrestrial grazers, they prefer large spaces full of grasses, dandelions, and edible weeds through which they can travel as they forage.

Housing

Sulcatas require a large amount of space to live comfortably, so a large pen or enclosure is necessary. Smaller sulcatas can be kept in a pen around 16' × 8', but larger sulcatas will need a space at least 16' × 16'. Sulcatas can be housed outdoors only if they are provided dry, heated housing, into which they will retire at night and during inclement weather. If they will not use the housing on their own, they will have to be directed or physically moved. This may not be an issue when your tortoise weighs less than 25 pounds, but it can become quite problematic if it reaches 90 pounds or more. In sufficiently dry areas protected from predators and humans, sulcatas may be kept outdoors at night, with living in-ground trees and shrubs providing the required shelter over their pallets. Some owners recommend using opaque fencing around the compound; if sulcatas can see through the fencing, they will try to plow through or burrow under it.

Animals such as raccoons and opossums may prey upon sleeping tortoises. Dogs and cats may harm tortoises just by being inquisitive or playful...small tortoises look, smell, and taste too enticing to not be a chew toy! Tortoises kept in front yards and in easily accessible side yards may be at risk: Many tortoises have been abducted out of their yards by humans and animals. Make sure all fencing is secure, both to prevent the tortoise from escaping and to prevent unwanted visitors from coming in or accidentally letting the tortoise out.

Given the tremendous amount of room that these tortoises need to roam, maintaining them inside year round is not advised. However, temporary indoor housing for hatchlings or sick individuals or for use during inclement weather can be set up. Such indoor housing must include both basking and cooler retreat areas, as well as a den box for burrowing. A feeding area and a shallow water dish must also be provided. Ultraviolet (UV)B lighting must be provided, as well as suitable temperature ranges during the day (27°C [85°F]), along with a basking area (39°C [100°F]), and at night (22°C [72°F]).

Information cited from:

Mayer, J and Donnelly, T., eds. Clinical Veterinary Advisor: Birds and Exotic
Pets. Elsevier, Philadelphia, PA. 2013. ISBN: 9781-4160-3969-3

Temperature

Failure to maintain sulcatas at a sufficiently warm temperature is a major contributing factor in the development of many diseases (such as respiratory infection and shell deformity). In captivity, sulcatas must be provided with a hot and dry environment year round. Unlike California desert tortoises, sulcatas do not hibernate. Although they can tolerate some surprisingly low temperatures, they cannot be allowed to get both chilled and wet, or kept outdoors in chill, damp weather. Daytime temperatures should range from 29°C to 40°C (85°F to 105°F). At night, temperatures can drop into the 21°C to 26°C (70s F) in their enclosure. Sulcatas must be kept dry.

Your tortoise needs direct sunlight or a suitable UVB-producing fluorescent light. Plant grow lights and most so-called "full-spectrum lights" do not produce UVB light. UVB light must emit wavelengths in the 290- to 320-nm range. Several UVB lamps are available on the market, such as the ZooMed ReptiSun 5.0 fluorescent reptile Bulb, or the ZooMed ReptiSun 5.0 compact fluorescent bulb. (These two lights need to be changed every year and should be placed at a maximum distance of 12 inches from the animal, with no plastic or glass screen in between.) If you want a lamp that provides UVB and heat (which is ideal), T-Rex Active UV Heat and ZooMed Powersun UV are good options. They need to be changed every 3 years and should be placed at a maximum distance of 6 feet from the animal, with no plastic or glass screen in between.

Diet

Three of the most important factors in constructing tortoise diets are the calcium-to-phosphorus ratio of the food and supplements ingested, the amount and type of protein eaten, and roughage—lots and lots of roughage. Too much phosphorus or too little calcium will cause softening and deformity of bones and shell, and can impair metabolism and organ function. Too much protein—the wrong kind of protein (vertebrates, invertebrates, and commercial mammal foods)—or too much of certain proteins (legumes, soy and alfalfa hay products) will cause too rapid growth, kidney failure, shell deformities (such as pyramiding), and decreased lifespan.

Feeding excessive quantities of goitrogenic vegetables such as broccoli, brussel sprouts, kale, cabbage, and bok choy can impair thyroid function and cause goiter. Excess goitrogen intake should not be a problem if these vegetables and greens are given only occasionally as treats.

In captivity, sulcatas should be allowed to freely graze on grasses and weeds in their enclosure, and this grass along with hay and other sources of roughage should be the mainstay of their diet. If you are considering using commercial tortoise food products, check the ingredients. The main ingredient in most of them is soy. Most commercial foods also contain a lot of corn because it is cheap. Foods that have fats added and fatty foods (including soybean derivative) should be avoided. Fat impedes calcium metabolism, generally is not well metabolized by herbivores, and can result in liver damage and an inability to retain vitamin A.

Care must be taken when feeding greens high in calcium oxalate (parsley, spinach, rhubarb, beet greens, collards, carrots tops, etc.) because the oxalic acid they contain binds calcium, preventing its absorption. Fed in high enough quantities, it can lead to metabolic bone disease and/or visceral gout (mineralization of soft tissues and internal organs).

Cactus fruits, plantain, and desert mallow are plants favored by California desert tortoises; they may be well received by sulcatas. Other California/southwestern native plants that seem to be preferred by desert tortoises include red-stem fialree, threeawn, red gramma, rattlesnake weed, six weeks fescue, and flower buds and stem tips of pencil cholla. However, the bulk of the overall

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diet should be derived from flake hay, pesticide- and herbicide-free grass and grass cuttings, cheat grass, clover, and edible flowers (nasturtium, geraniums, hibiscus, rose petals, and shrubs).

Fruits are very high in moisture and should be fed in moderation to sulcatas, which require little such free moisture from plants they eat in the wild. Occasional small servings of fruits such as strawberries, chunks of organically grown bananas with skin, cantaloupe with rind attached, berries, peaches (no pits), apricots (no pits), pears, and apples (no seeds) may be offered. Oranges and tomatoes may be fed, but not to hatchlings. Figs are a great source of calcium, but they must be rehydrated if you cannot get them fresh.

Sweet and colorful treats, such as fruit and edible flowers, are a great way to lure your sulcata to go where you want it to go, once it becomes too heavy to be carried easily.

Sulcatas respond to bright colors, so it is important to keep brightly colored, inedible things away from them! You will have to block their access to ornamental flowering and fruiting plants: A motivated sulcata literally will move walls and support posts embedded in concrete to get to something that interests them. This includes plowing through a screen door if they want to get inside the house...do not assume that a few steps between the yard and the deck will stop them once their legs are long enough to reach the bottom step.

Handling

When sulcatas are young (and small), they can be lifted up by their carapace and moved around. However, because many sulcatas can reach 80 to 110 pounds, lifting and carrying around a sulcata can pose health hazard to its owners. It is useful to train your sulcata to follow you around by luring it with brightly colored edibles such as fruits and edible flowers (just remember that fruits should be fed in moderation).

Behavior

Sulcatas can be housed singly or in groups. They do not hibernate as California desert tortoises do. Sulcatas always need areas in which they can feel secure; bushes that they can hide beneath, modified dog houses, and turned on their side, half-buried garbage cans and flower pots make great hiding places for your pet. Sulcatas seem to prefer shrubs and bushes that brush against the top of their carapace as they move beneath them. Sulcatas are from the arid desert, and they tend to search out moisture in the environment. This may mean that your sulcata will burrow and dig under its substrate to find moistened dirt and mud in which to lay. Be wary of providing your sulcata with too much environmental moisture and access to water because skin, shell, kidney, and other health problems may result.

Lifespan

The oldest recorded sulcata was 56 years old; however, it is theorized that sulcatas can live to be about 80 years old.

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Common Medical Conditions

- *Dietary management.* As has been mentioned, a well-formulated diet is crucial for the health and well-being of your sulcata. Inappropriate amounts of calcium and phosphorus can lead to metabolic bone disease, incorrect protein amounts can lead to kidney disease and shell pyramiding, and too many goitrogenic vegetables can cause thyroid problems.
- *Predator attacks.* Because most sulcatas are housed outdoors, they are susceptible to predatory attacks. Dogs, cats, opossums, and raccoons are just a few examples of predators that can harm and/or kill your sulcata. It is imperative that enclosures be designed that can protect your tortoise and keep out unwanted predators. It is also recommended that your sulcata be put in a secured enclosure (such as a dog house or a screened-in area) at night. If your sulcata falls prey to an attack, it is wise to have the location and phone number of an emergency veterinary clinic in your area on hand.
- *Respiratory infection.* All tortoises are particularly prone to the development of respiratory infection. If your sulcata develops nasal discharge or raspy breathing, or seems to have trouble breathing, veterinary treatment should be sought. Although your veterinarian may prescribe antibiotics for your sulcata, it is imperative that the environment be cleaned and disinfected as much as possible.

More information is available at www.anapsid.org/sulcata.html.

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