

AFRICAN SPURRED TORTOISE (GEOCHELONE SULCATA) CARE & INFO SHEET

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This care sheet is a good beginner's reference and might help to explain, in layman's terms, some of the more technical jargon of the tortoise world. Sulcatas are not tortoises to commit to lightly! If they grow and remain healthy, that commitment is a lifetime one. In order to see what you are up against, or to dispel all myth and maybe some bad advice or information you might have been given, please take a moment to visit the Turtle Homes website and take the Sulcata Challenge: <http://www.turtlehomes.org/usa/test.shtml>.

Medical, and Veterinary Information: Upon first introducing your new tortoise into your home, you should immediately have the tortoise examined by a qualified reptile vet, preferably one who is familiar with treating terrestrial tortoises like the Sulcata. Don't be afraid to interview the vet, make sure the vet has treated these types of tortoises before, and question any medications the vet wants to give. Many regular vets that don't treat a lot of reptiles are quick to want to give Vitamin A injections and blame illnesses on Vitamin A deficiencies, as that was something seen very frequently many years ago. Many tortoises appear ill due to improper housing and incorrect temperature gradients and/or dehydration. Many tortoises (especially new ones) that are, in fact, ill, are often times infested with parasites and/or worms requiring deworming or antiparasitic therapy, or have respiratory illnesses that require antibiotic therapy. Many vets will use Panacur to treat worms, Flagyl to treat parasites, and Baytril to treat respiratory illnesses. Even with these medications, make sure your vet fully explains the reasoning behind any medication and don't be afraid to do your own research. The majority of small animal **vets** have had experience only with common water turtles and box turtles, if at all. The vet should perform a thorough examination, as well as a complete fecal culture (direct smear as well as flotation) to check for all worms and parasites, including Giardia, Hexamita Parva, etc. If your tortoise is wild caught (which you should try to avoid), it will probably have internal parasites. Captive bred tortoises are less likely to have worms and/or parasites than wild caught specimens, however, these organisms are common. If your tortoise is diagnosed with any, treatment is usually routine, if caught in time. If you do not have a reputable reptile vet in your area, or are not sure where to go, begin by accessing the Association of Reptile and Amphibian Veterinarians (ARAV) website at: www.arav.org/memberdirintro.html. You will want to make certain your vet records an accurate weight and write that down for your own personal records. Then, every few months, you should return to have your tortoise weighed. It is good to keep a running tally of your tortoise's weight from hatchling stage to adult. Your vet may not charge you to weigh the tortoise. If your vet does, in fact, charge for weigh-ins, you can purchase a gram scale of your own and perform this routine task at home.

Heating and Housing: To begin with, never use a hot rock as a heat source. Hot rocks are the worst, especially for a tortoise! Your tortoise (particularly a hatchling) has very a sensitive shell and skin, and any contact with the hot rock can cause severe skin and/or shell burns, which could be, in a worse case scenario, fatal! The very best ground heat source for all reptiles is an under-tank heater or heat pad. However, tortoises do best with basking heat from above, as it replicates the natural heat from the sun. You want to be sure that your basking heat source is not of too high a wattage for the enclosure size and type. As a precautionary note, it is important to remember that most of these heaters raise the temperature 15 degrees F (8 degrees C) or so above ambient temperature. In the event that the temperature of your home rises over 80 degrees F (27 degrees C), this heat source should be shut down until the room temperatures drop back to normal. The enclosure size should be as large as you can make it to start out with, but minimally, about 2 feet long and 1 foot wide for a hatchling, nothing smaller than that. It should be noted that this tortoise (and tortoises in general) are not suited for a "vivarium-type" enclosure such as a fish tank or glass aquarium, and should be housed in an open enclosure-type environment. It isn't difficult to build a tortoise table. A link to a good turtle table can be found at www.unc.edu/~dtkirkpa/stuff/table.html. You can vary from that model to a similar pen or enclosure to suit your space and, more specifically, the needs of the Sulcata. This turtle table is suitable for many kinds of tortoise. Another good link to instructions on how to build a juvenile Sulcata pen is at a wonderful and recommended site called Sulcata Station. THIS is the very best *sulcata-specific* website I have found on the Internet thus far. The direct link for the juvenile tortoise pens is: www.sulcata-station.org/housing.html. After you are finished looking at the building plans for the juvenile enclosure you should browse the entire Sulcata Station website for ideas. Many people house their hatchlings in the smaller enclosure that I described above for the first few months to a year of age, after that, a larger pen or enclosure is a must. If you are just starting out with a hatchling or yearling, you can even use a Rubbermaid tub for housing. Most Wal-Marts or Home Depots will have a nice selection, and even plastic is recommended over a glass fishtank or glass enclosure. Glass is the very poorest choice of enclosure for a sulcata, and should only be used as a "hospital tank" in the event of illness, or for emergencies.

Lighting: If regular or daily outdoor time under direct sunlight is not provided (or cannot be provided due to weather), a fluorescent full spectrum UVB bulb is necessary for the proper development of your tortoise, from the hatchling stages through adult, and UVB lighting should always be provided, along with a basking bulb for heat. You cannot provide these UVB rays by placing your enclosure near a window for sunlight. Sunlight filtered through most regular window glass will filter out all beneficial rays, including UVB, leaving you with just another light source. UVB is necessary for the animal to produce Vitamin D3, which aids in calcium utilization for healthy shell growth. Remember, all so-called "full spectrum" lights do not provide UVB rays. Most incandescent or "reptile heat bulbs" will state that they are full spectrum and may even say they are "full spectrum UV bulbs", but do not have UVB rays, they only have UVA rays. Many reptile fluorescent full-spectrum bulbs will look deceptively like the one you might need. If the box of bulb does not specifically state "UVB" it is not the one you need. Please don't get confused between a heat/basking bulb

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and a fluorescent bulb. The bulb that you need is long, skinny, fluorescent bulbs, not screw in light bulbs. One of the best fluorescent bulbs specifically for tortoises on the market is the ZooMed's ReptiSun 5.0 bulb, but I have heard good things about the Desert 7% bulbs as well. You will want to make sure that the UVB bulb you choose has a *minimum* of 2.0% UVB output. Please be advised that most UVB output diminishes from about 6 months to a year. After one year of use, your bulb will still probably shed light but the UVB rays will be gone. Therefore, you should replace your UVB bulbs each year on schedule. You may still find a use for the old bulb around your home, possibly for growing plants or graze mix for your tortoises. There has been some research that indicates that if a calcium supplement that contains Vitamin D3 is used the UVB is not necessary, I use both as I consider the added light to be necessary for the proper behavior of the animal. Online, there are several retailers who carry these bulbs, along with other supplies.

Temperature: It is extremely important to create a correct temperature gradient in your tortoise's pen...and to thereafter monitor temperature. Temperature that are too high or too low can cause symptoms of illness, lethargy, and dehydration. Get one or two good thermometers and mount it/them to the enclosure. Do not use the stick-on reptile thermometers, they are not accurate. I like Radio Shack's indoor/outdoor digital thermometer. Make sure you are able to accurately calculate the floor temps with all heating and lighting on so you can be sure the floor temperature, where your tortoise resides, is not too hot. If the thermometer is just mounted on the wall without first checking the floor temperature, it can deceptively appear as if the temperatures are in a good range when really they may be too hot. I have two of the Radio Shack brand indoor/outdoor digital mountable thermometers. They run about \$10 each, and are excellent and extremely accurate. They are backed with velcro and can be mounted to the side of the enclosure, but the actual thermometer section can be removed and moved around to monitor all pen temps, which is a great feature. For a small, hatchling-sized enclosure, one should suffice. However, move the thermometer around to make sure it is not too hot right under the heat lamp, in the middle, and in the cool zone. For a small enclosure, it is difficult to make a hot zone and a cool zone. In a larger enclosure, you should have the heat lamp in one area. Then, nothing in the cool zone. In my large enclosure, I only have one large basking bulb at one end suspended from a lamp stand. For floor pens, the ZooMed lamp stand is a lifesaver. You can get them online at www.beanfarm.com. The ceramic bulbs are very good and long-lasting but you must make sure if you use one that you use a dome lamp with either a porcelain or ceramic socket. A regular dome lamp with a plastic socket will melt and can be a fire hazard. The room my pen is in never goes below 73 degrees Fahrenheit. I find I am able to maintain the proper temperatures with just one heat bulb. If you find that you don't need much heat to maintain proper temperatures, do not go overboard...overheating is as bad as underheating. The only light source that is necessary is the UVB lighting, so you can use the non-light producing ceramic bulb for heating effectively. ***Important: many people recommend keeping G. sulcata at very high temperatures. NOT TRUE! A good temperature zone is 85 degrees in the hot zone and 72-75 in the cool zone. Exposure to consistently high temperatures, i.e, 90-100 degrees F (32 - 37 degrees C) can cause your tortoise to become very dehydrated; it can then experience loss of appetite, develop bladder stones, or have other additional problems.*** I listened to all the conflicting information and made it too hot for the first few months I had my hatchling. I did not realize have the correct information and the importance of soakings, and consequently, my tortoise developed a bladder stone due to dehydration, which I treated with lowered temperatures and frequent soakings...and the stone was luckily and eventually passed. Don't make the same mistake!

Soaking: Soak your juvenile at least 3 times per week without fail. For hatchlings, all newly acquired tortoises, and yearlings, I even recommend every day or every-other-day soakings. Your tortoise will be considered a juvenile and no longer a hatchling after about 1 year of age. A juvenile can be soaked about 3 times per week. An adult Sulcata should be still be soaked 1 time per week for the rest of its life. The water should be lukewarm and no deeper than the bottom shell (plastron). I use a plastic kitty-litter pan as a "bath tub", which is good, as the tortoise likes to see out over the rim, and it makes for an easy clean-up. My dirty "bath water" goes right into our toilet bowl. You should soak for 5-10 minutes each time and make sure the tortoise is clean and dry when he goes back in his enclosure, or for a walk around. Large tortoises should be provided a shallow outdoor pool for soaking and wading. Further reading on proper soaking techniques can be found at www.home.earthlink.net/~rednine/soak.htm.

Substrate: Also, it is important for your tortoise to be able to burrow. In the wild, Sulcatas spend 85% of their time in scrapes and burrows. They maintain the proper humidity balance in their own created microclimates this way, and retain the necessary moisture to live. Make certain you have a good substrate in your enclosure. I currently use CareFresh® which you can obtain at www.beanfarm.com if you are not able to obtain it at your local reptile or pet shop. You can also use timothy hay, aspen bedding or Lizard Litter...find the one that works best for you. However, you should **avoid the following substrates:** plain coarse or fine sand, crushed oyster shells, crushed walnut shells, corncob, and especially pine or cedar shavings. The oils in those woods are toxic to your tortoise. You should put about two to four layers of newspaper on the bottom of the enclosure under any substrate. This way, any urine or water can soak through the substrate, not sit in it. It also makes for a quick clean-up and is safe for the reptile. A really good substrate for a Sulcata is a 50/50 mixture of sterile soil (topsoil) and soft sterile playground sand. It is also important to provide a hide box or area for your tortoise, as they feel most comfortable when surrounded on at least 3 sides by their environment. You must place the hide box in the "cool zone" of the enclosure and not near the heat sources. A hide box need not be anything more than a cardboard box with an appropriate-sized opening for the tortoise. I personally use a few pieces of newspaper, tented, on one side of the enclosure with one opening facing the enclosure and one opening facing a wall. My tortoise retains that shape for a day or two before completely shredding the tent in favor of a pile of newspaper particles which he then burrows into. I prefer the neater tent shape, but it's the tortoise's house not mine. If the tortoise is happy, I'm happy! You might find your tortoise "hiding" a lot. This is normal so

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do not be alarmed. My tortoise spends a large part of his day in its hide area, frequently coming out to eat or walk, but always going back to the hide area. The Sulcata is an active tortoise during the day though and should be provided enough space in the enclosure for it to exercise and walk. My tortoise comes out for supervised romps in my kitchen every afternoon where it proceeds to do “laps” for at least an hour. Although, sometimes it just crawls head-first into a corner and “meditates”. In the wild, they spend a lot of time hiding, this is normal anti-predator behavior for young animals.

Feeding: Food is an important factor in healthy growth. It is crucial NOT to overfeed your tortoise. One feeding per day is plenty. ¼ cup for the first six month of hatchling stage (0-12 months of age). After one year, a juvenile should get no more than ½ to 1 cup of loosely packed greens per day. If you aren’t sure, always use less. Adults, of course, get larger rations. If juveniles are overfed, or fed as much as they will eat, they can grow far too quickly, causing shell problems, bone problems, and mineral deficiencies. *Slow, Steady, growth is the key.* I use the flat lid of a Tupperware for feeding and easy cleaning. Make sure your tortoise can easily access its food bowl. The food bowl should be flat. If the food bowl is slightly elevated, it might help to sink it into the substrate slightly. If the tortoise has to climb or reach to get at its food, it might tip itself upside-down and not be able to right itself. If this happens and goes undiscovered, the tortoise can suffocate, or overheat and die. Make it a habit of checking on your hatchling tortoise periodically when you are home. With very small hatchlings, be cautious of what you put in the enclosure for furnishings or decorations. I didn’t put any “pen furniture” in with my Sulcata until after he was at least 1 year old. The reasoning behind this is that when they are very small and light, simply climbing up on a rock or wood can cause them to tip themselves, whereas if everything is relatively flat, they have nothing in the enclosure with which to tip themselves. After the hatchling stage, you should decorate the environment to be stimulating, adding areas where they can hide, bask, rocks and wood to climb on or walk over or through. Keeping your tortoise interested in it’s environment will keep it happier and make it more enjoyable when you are watching.

Diet: The majority of the Sulcata’s diet intake should be from a variety of grasses, weeds, and clovers. NEVER offer iceberg lettuce as it is 90% water and presents no nutritional value. A Sulcata tortoise has a high fiber requirement in its diet. To get a better idea of what I mean, think of the Sulcata as a cow, they are natural grazing animals. Approximately 75% of the diet should be comprised of graze such as the grasses, weeds, and clovers. The best way to offer this type of food is to grow it yourself in dish gardens, planters, or in your yard. Please visit The Turtle Café at www.turtlecafe.net where you can order a few pounds of a great pasture seed mix which is low in cost and specifically pre-mixed and specially formulated for grazing tortoises. Full growing instructions are shipped with the seed mix and are also available on the site. Another great site with even more choices is Turtle Stuff dot com at www.turtlestuff.com. These tortoises are grazing animals in the wild, and a graze type of diet is the very best you can provide for them. If you do not have the yard space to grow graze at your home, you can use dish gardens or planters to grow it inside, and then clip from it for feedings. Do not offer fruits. In place of fruits as a treat, you can offer Opuntia cactus and berries (seasonal). Opuntia cactus is also known as "Prickly Pear Cactus" or “Nopales”. Opuntia cactus is high in fiber and contains nutrients needed for a healthy digestive tract. You can also order organically-grown spiny or spineless Opuntia cactus pads from The Turtle Café website. You can plant these pads either outdoors if you live in a warm climate or in a large planter if you live in a cold climate. You will need to use a well-draining cactus or succulent soil which you can either get at your local garden store or make yourself by using 1 part organic potting soil and 1 part coarse washed playground sand. DO NOT just buy a cactus from your local garden store without first making sure it is untreated with pesticides and that is is, in fact, Opuntia. There are about 200 varieties of Opuntia, but they are all edible. The remaining 25% of the diet can from mixtures of dark, leafy greens such as turnip greens, mustard greens, collard greens, chicory, watercress, hibiscus leaves and blossoms, mulberry leaves, grape leaves, dandelion greens and blossoms (untreated with pesticides). If you feed kale and collard greens, only do so once in a while in small portions. Do not offer items such as chard, spinach, broccoli, cabbages, cauliflower, green beans or beans of any kind, corn, sprouts of any kind, tomatoes...or any legume or high-protein vegetable. You can get great untreated hibiscus plants from A.J. Calisi at T&C Terrariums at <http://home.att.net/~a.j.calisi/>. A.J. also has other wonderful and naturally-grown terrarium plants if you keep chameleons, or other vivarium reptiles. Shake up the tortoise’s diet and give a variety of foods that are acceptable to keep your tortoise interested in meals. Each tortoise is different and each tortoise has different food preferences, just like people!

Supplementation: It is important to use supplements to maintain proper health. I use Tri-Cal 2:1 ratio phosphorous-free calcium supplement. I also use Nekton-Rep multi-vitamins. Rep-Cal calcium and Herptivite vitamins are also good choices and probably easier to find or order online. You should use 2 parts calcium supplement to 1 part vitamin supplement. You can mix up your own pre-rationed calcium/vitamin mixture in a empty salt shaker if you want, to avoid having to open and sprinkle from two different containers all the time. Since you are using such a small amount, I just do one big sprinkle of calcium powder and one smaller sprinkle of vitamin powder. You should sprinkle the 2:1 ratio mixture on the food at least twice weekly for optimum vitamin supplementation. I supplement almost every single day, which works well for me. If the supplements are too powdery on top of the food and the tortoise seems wary of eating with all that white stuff on their greens (and you know how tortoises can be), just spray with a little water to dissolve the powder into the greens. I use a regular plant mister filled with water, which I keep on hand near my enclosure.

Outdoor Housing: If you eventually do keep your tortoise in your yard, you want to make sure that your grass is natural, and not sprayed with any pesticides or fertilizing agents if possible. If you have a flower or vegetable garden that needs to be fertilized or sprayed, you should fence that particular area in. You must take precautions to ensure your fence is sturdy enough to withstand the

digging and burrowing that may take place at an early age, but definitely will take place later in life, which may mean you need to have the fence sunk into the ground a few inches. Many people do this now for their dogs that tend to dig, so I'm sure you won't be the first to ask your local fence company to sink a fence. Also, be sure to furnish your yard with plants and grasses that are edible for the tortoises. For a detailed list of which plants are edible for the tortoises, the California Turtle & Tortoise Club link is a good place to start, and is at www.tortoise.org/general/edibplan.html. For a detailed list of which plants are poisonous or toxic, use the following link: www.tortoise.org/general/poisonp.html. The Turtle Café website also has some good resources, and the owner of that website is a good resource as well. Additionally, you should make sure your tortoise has adequate shelter in case of inclement or cold weather. These tortoises can tolerate light, warm rain, it is even good for them to be stimulated by their changing environment. However, the Sulcata cannot be left outside for long periods of cold, damp, rainy weather, or in the cold falls and winters of northern areas. You can provide an insulated shed with an access ramp for shelter. You should also provide heating in this shed with Kane pads (pig farrowing heat pads), and heat lamps, which can be found at www.beanfarm.com. You can find some great pictures and ideas for building an outdoor tortoise enclosure at the Tortoise Country web site as well in my links section below. As this care sheet is geared mainly toward the new owner, you will need to do a bit of research for your eventual adult tortoise housing. There are also great pictures and ideas and information in the links I have provided further below in this care sheet. My hatchling was in a small enclosure for 1 year, then a larger enclosure for the next year, now he is in a 3'x3'x6' indoor enclosure. After a few years in different sized enclosures, your Sulcata will outgrow any enclosure altogether and be better suited in an indoor pen, outdoor pen, or in your yard (depending on the temperatures and weather where you live). If you are able to provide housing in a larger enclosure right away, that is the optimum way to go.

Tortoise Community: There are some great tortoise and reptile organizations to be involved with. Interaction with other owners and experts will only serve to increase your knowledge and enjoyment of your tortoise. You can also join email communities to interact with others in the turtle and tortoise world. Go to <http://groups.yahoo.com> and type *tortoises* into the search box to find tortoise-related lists. Page down and subscribe to whichever list or as many lists as you like. Subscription to these lists is free and they all work through your email inbox. You will only be required to register at this website one time and then any further subscriptions take only a minute to accomplish. It is also a great idea to join your local reptile or turtle/tortoise club. This will allow you to meet in-person with other local keepers. You will be surprised at how many reptile enthusiasts there are out there! Below are links to some of my favorite tortoise and reptile websites on the Internet. Some are large reptile and informational websites, and some are personal home pages of other tortoise owners. My organization, Turtle Homes (www.turtlehomes.org), has a great interactive list you can join, and we specialize in rescue and adoption so you might want to think about opening your home to a tortoise as well. All are worth a browse, so happy reading!

www.sulcata-station.org/ ♦ www.tortoisetrust.org/ ♦ www.home.earthlink.net/~rednine/ ♦ www.turtletimes.com/ ♦
www.tortoiseaid.org/ ♦ www.geocities.com/Heartland/Meadows/4159/beasley.html ♦ www.tortoise.org/ ♦
www.kingsnake.com/forum/tortoise/ ♦ www.slowcoach.org.uk/ ♦
www.geocities.com/Yosemite/Falls/8551/tortoisechoice.htm

I hope this information helps you. If you follow my advice and browse these links and information pages to increase your own knowledge, your tortoise will have the best care possible. You may have encountered some questionable or incorrect information and advice either online or from your local pet shops and "reptile experts". This is a common situation, so you need to research everything you hear and read very carefully so you can be sure you are taking proper care of your tortoise. This care sheet will get you started and the links and organizations I have provided will help you develop your tortoise husbandry techniques and increase your knowledge. Use these resources and make sure your tortoise has everything it needs to grow and remain healthy.

IF YOU ARE CONFUSED, OR STILL HAVE QUESTIONS!!!

Feel free to contact me anytime at zooglet@yahoo.com for additional help or personal assistance or evaluation of your husbandry. In your email to me, please describe how you are caring for your tortoise, including enclosure setup, lighting, heating, feeding, soaking regimen, temperatures, and history or background on the tortoise(s) etc. (or as much as you can think of) so that I can accurately assess your situation and provide you with the correct and relevant advice.