

RUSSIAN TORTOISE CARE SHEET
(*Testudo horsfieldii*)

San Diego Turtle & Tortoise Society

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General Information: *Testudo horsfieldii* is known variously as the Russian, the Afgan, the Steepe, and the Horsfield tortoise. This tortoise is found primarily in Pakistan, Afghanistan, Iran, southeastern Russia, and China. Its native environment is harsh and arid, and includes sandy steppes, as well as grassy areas close to springs in arid, rocky, hilly terrain. It is found at elevations as high as 5,000 to 7,000 feet. This tortoise has the northernmost range of any known tortoise.

T. horsfieldii is a great digger and hibernates in deep burrows during the winter, and in the southern parts of its range it aestivates (experiences a dormant period) during the summer. In its native environment, this tortoise is active for only about three months of the year, typically March, April and May.

Description: *T. horsfieldii* averages five to eight inches long with a rather flat, roundish, yellow-green or olive carapace (top of the shell). Males are usually smaller than the females and are most easily sexed by the male's tail, which is longer and thicker than the female's (when withdrawn in its shell, the male's tail will lie against its thigh). The plastron (underside of the shell) is usually blotched with black or may be black all over.

Captive Environment: *T. horsfieldii* is a hardy species, but it does have some specific needs. It requires a very dry, well-drained land area in a secure outdoor enclosure. The enclosure should have appropriate landscaping (see plant list) with a covered, waterproof tortoise house for use in cold and wet weather. *T. horsfieldii* should never be kept indoors for any sustained period of time for it will not do well!

Safety: Tortoises must be protected from all dogs (they tend to see tortoises as one big bone that walks). Raccoons, foxes, rodents and coyotes are also dangers to tortoises, while ravens and blue jays will kill small tortoises unless they are protected with some kind of screening over their outdoor enclosure.

Outdoor Enclosure Guidelines:

Provide an outdoor enclosure as large as you can make it in a bright, sunny location. The bigger the better.

One adult tortoise should have at least a 6 ft x 6 ft enclosure. More tortoises = more required space.

The perimeter of the enclosure should be made of solid fencing at least 12" high. If they can see through it, they want to go through it. Suggestions:

Redwood or cedar planks.

Concrete blocks or bricks.

T. horsfieldii is an excellent digger, so you need to protect the perimeter. Suggestions: Construct a fenced enclosure about 18" high, then backfill the interior with about 6" of loamy or sandy soil.

Dig a narrow trench about 6-8" deep around the perimeter and fill it with concrete.

Dig a narrow trench about 6-8" deep around the perimeter and sink 10-12" wide aluminum flashing into it. Secure the top of the flashing to the base of the fence.

Sink concrete blocks or tiles into the perimeter.

The interior of the enclosure should be interesting and varied. *T. Horsfieldii* should not be kept on damp soil or grass. If kept on damp ground, you can expect skin, shell and respiratory problems.

The soil should be loamy or sandy. Make some gentle mounds in the enclosure and add some rocks. Tortoises like to angle themselves against rocks, mounds of dirt, etc. to catch the rays of the sun.

Plant non-poisonous shrubby vegetation. (The SDTTS has a list of poisonous plants to avoid, as well as a list of edible plants you can use for landscaping.)

Provide shade, using plants and/or a shade box (as simple as a 3-sided wood box, or a concrete block box with a top).

Provide a "house" for use in wet and cold weather.

Build a house out of concrete blocks covered with a board. Stuff Styrofoam or pour sand into the holes in the blocks for added insulation. Cover the doorway with vinyl cut into strips to keep the weather out and heat in (you can use vinyl carpet runner, freezer strips, polyethylene sheeting, etc.)

Use a doghouse and install a door "curtain." Provide a ramp up to the door.

Build a specialty tortoise house. (The SDTTS has guidelines on building a tortoise house.)

*Note: In San Diego County, it is not necessary to provide artificial heating for *T. horsfieldii*, except in the inland areas where temperatures can dip into the 30's or below at night. If providing artificial heat, day temperatures should be set in the*

70° to 80° F range), and nighttime temperatures should be set in the 60's. Put a thermometer at tortoise level.

Provide fresh water on a daily basis. The bowl(s) should be sunk into the ground and shallow enough for a tortoise to climb in and out of. The water should only just cover the lowest edge of the carapace. These tortoises cannot swim and can drown in water that goes over their head. Suggestion:

Buy a large diameter plastic flowerpot saucer from your local nursery. Sink it into the ground so the lip is even with the surrounding soil. It's easy to clean and fill.

Feeding: The tortoise's natural diet consists of herbaceous and succulent vegetation including grasses, twigs, flowers and some fruits. These tortoises DO NOT EAT ANIMAL PROTEIN! The best diet is one that comes as close as possible to their natural diet. Ideally, the tortoise should graze on edible plants in its enclosure. However, you will find that they will eat many plants down to the roots and that's the end of the plant. One way around this is to grow edible plants outside the enclosure, in a totally pesticide-free environment, and give these to the tortoise. Provide a varied assortment.

Also, lightly sprinkle their food with calcium carbonate to provide a good source of calcium needed to help prevent bone problems. The following are some of the best weeds, grasses, and flowers for a healthy tortoise:

Clovers	Grasses (Common Bermuda, Timothy, Rye, Fescue, Bluegrass)
Coreopsis	Hibiscus
Daisy	Honeysuckle
Dandelion	Mallows
Endive	Nasturtium
Escarole	Opuntia cacti
Gazania	Petunias
Geranium	Roses
Grape leaves (not grape ivy!)	Sedums

Just be careful not to overfeed *T. horsfieldii*, as they tend to be overweight in captivity. If they are starting to look chubby when they pull back into their shells, cut back a little on the amount you are feeding.

Common Ailments: Tortoises are especially susceptible to respiratory ailments. Some of the signs to watch for are runny nose, labored breathing/gasping, loss of appetite, and decreased activity.

Calcium deficiency is a major problem, which can cause soft shells, shell and bone deformities, kidney damage, and possibly death. This condition can be prevented with a high quality diet (as recommended above), supplemented with calcium carbonate lightly sprinkled on their food.

Sunken eyes indicate dehydration, which can lead to kidney failure and death. If dehydration is suspected, immediately soak the tortoise in barely lukewarm water covering the edge of the carapace for 30 minutes or so. Soaking tortoises once or twice a week is a good way to keep them properly hydrated.

Internal parasites are common in tortoises, and they should be dewormed on an annual basis or as recommended by your vet. (It's a good idea to wash your hands immediately after handling a tortoise, or any reptile, though most tortoise pathogens are not transmissible to humans.)

Wounds can be caused by aggressive mating behaviors. If found, treat immediately by cleaning the wound and applying an antibiotic ointment. If the wound is open, keep the animal inside until the wound heals to prevent infestation by maggots.

In any case, immediately contact your veterinarian if you suspect your tortoise is ill, or an injury does not heal properly or appears to be severe.

Hibernation: *T. horsfieldii's* body functions start to slow down as colder weather develops and its food intake gradually tapers off. In its native environments, *T. horsfieldii* hibernates from about October through March in deep burrows. Their ideal body temperature during hibernation is 39^o to 41^o F. As their body temperature rises towards 50^o F, their metabolic rate begins to return to normal, and the biological state of hibernation ends. *In warmer climates, such as many parts of San Diego County, temperatures do not stay in the 40^o F range during the winter, so this tortoise may hibernate for a shorter period than it would in its natural habitat.*

Before allowing your tortoise to hibernate:

You must make sure your tortoise is healthy. If a sick tortoise is subjected to hibernation, it will probably not survive. You should regularly check:

The weight: a healthy tortoise feels like the weight of a rock of the same size.

Both eyes for any signs of discharge, inflammation or swelling.

The nose for signs of any discharge.

The tail for inflammation or swelling.

The legs for any unusual lumps or swellings.

Both ears, which should be flat or slightly concave. (Their ears are behind their eyes.)

The mouth for any yellow "cheesy" substance, a deep red-purple tinge, small blood spots, or any other abnormality.

Any abnormalities need to be reported to your veterinarian immediately.

As the tortoise's biological processes slow down, it can take 3-6 weeks for food last eaten to pass through the gastrointestinal tract. It is not advisable to hibernate a tortoise if it has eaten in the last month. Delay hibernation rather than run the risk of undigested food decaying in the stomach.

If your tortoise is healthy, there are basically two methods of hibernating tortoises:

1. Place the tortoise in a newspaper-lined box; cover the tortoise with a few sheets of newspaper or a towel. Put the box in the garage or other cool place.

2. Allow the tortoise to hibernate in its outdoor house. If using artificial heat, turn the thermostat down to maintain temperatures in the 40° range.

Check your tortoise every couple of weeks during hibernation. About once a month, soak your tortoise in barely lukewarm water up to the edge of its carapace for about 30 minutes. Check to ensure tortoise's head is not under water. Dry the tortoise off and immediately return it to its hibernation quarters.

Get your tortoise up and do not return it to hibernation if:

- Your tortoise wakes up and temperatures are approaching or above 50° F.
- The tortoise has urinated in its hibernation quarters.
- You hear the first sounds of movement from the tortoise's hibernation quarters.

When you remove a tortoise from hibernation, first, you must place it in a warm, bright environment. Failure to do so can have dire consequences: the tortoise will refuse to eat, will use up its existing store of fat and energy reserves, and will begin to decline. Tortoises need to raise their body temperature to around 82° F in order to thrive.

If you are bringing the tortoise out of hibernation during sunny, warm/hot weather it should do fine outdoors. If the weather is not very accommodating, use a 150 Watt reflector lamp suspended about 15" above the tortoise to provide both warmth and bright light. Or, you can use a full-spectrum fluorescent light along with a ceramic heater (make sure you carefully install and use ceramic heaters; they are great but they get extremely hot!). Both radiant heat and adequate lighting are essential to get the tortoise functioning properly.

Second, you need to provide the tortoise with water. The best way to do it is to soak the tortoise in just enough barely lukewarm water to cover the lowest edge of the carapace. Leave the tortoise to soak for a half-hour or so.

Finally, provide the tortoise with food one week after emerging from hibernation. If your tortoise doesn't feed, it's either a health problem or a husbandry problem (usually a lack of heat and light). If your tortoise isn't feeding itself within one week of waking up, take it to an experienced vet right away.

References and Resources:

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