

## Russian Tortoise (*Testudo horsfieldii*)

### Difficulty: Intermediate

Russian tortoises are 5-10" long terrestrial reptiles with a somewhat flattened, oval shell, enlarged scales on the tail and thighs, four toes on each forefoot, and a clawlike spur on the end of the tail. Coloring is generally olive or yellow-brown with a dark blotch on each scute. Males are typically smaller than females.

Russian tortoises are native to central Asia, where they can be found in Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan, Afghanistan, and the northeastern edge of Iran. They have adapted to a range of habitats, but their preferred habitat is dry steppe/rocky desert with sandy soil and sparse vegetation. They are most likely to be found near sources of water where vegetation is relatively abundant.

If you pay attention to providing excellent Russian tortoise care, your pet is likely to live up to 50 years, or possibly more. Although this species is fairly hardy, their lifespan and care requirements make them a fairly high-commitment pet.

### Shopping List

The following recommendations are for housing a >4" Russian tortoise indoors.

- 8'L x 4'W x 2.5'H enclosure
- 46" T5 HO forest UVB bulb
- 48" T5 HO fixture with reflector
- 34" T5 HO 6500K LED lamp, x2
- 90w PAR38 halogen flood bulbs, x2
- Dual dome heat lamp fixture
- Handheld pressure sprayer
- Digital probe thermometer/hygrometer, x2
- Digital light timer power strip
- 16 ft<sup>3</sup> 60:40 sand/soil mix
- Misc. décor (cork flats, flagstone, edible plants, etc.)
- Shallow feeding dish
- 12" plant saucer
- Herbivore multivitamin supplement
- Cuttlebone

### Housing

Russian tortoises, like other reptiles, require an enclosure that is large enough to give them adequate opportunity to explore, forage, thermoregulate, and generally exercise natural behaviors. They are also terrestrial, which means that they are a ground-dwelling species, so floor space is more important than vertical space.

A good rule of thumb for housing tortoises is to use the following formula, based on the tortoise's expected adult length: *Length = 10x adult length, Width = 5x adult length, Height = 3x adult length*

Considering that Russian tortoises generally max out around 10"/25cm, and the smaller males are more active than females, the minimum recommended enclosure size for one Russian tortoise is **8'L x 4"W x 2.5'H, or 32 square feet of floor space**. In metric, that's 2.5m x 1.25m x 0.75m, or 3.25 square meters.

While this means that you will need a large pen rather than enclosure for housing an adult Russian tortoise, young tortoises can be temporarily housed in a 4'L x 2'W x 2'H enclosure until they reach 4"/10cm long.

### Indoors or Outdoors?

It's generally agreed by tortoise experts that it's ideal to house your tortoise outdoors whenever possible. The tortoise pen should be placed in a location that is not too wet, with access to both shade and sunshine, and it

should have well-draining soil. The wall must be smooth enough to discourage climbing (concrete blocks work well), sunk at least 12" into the soil to discourage burrowing escapes, and the top of the pen should be covered with wide mesh to keep out potential predators.

If you live in an area where it's not safe to house your tortoise outdoors year-round, you will need to have an appropriately-sized enclosure at the ready indoors. While you can buy an appropriately-sized enclosure custom, it's most cost-effective at this point to build your own. I recommend checking out the Facebook group [DIY Reptile Enclosures](#) for advice.

If you are not using a pen, your enclosure must have a 4-5" tall opaque barrier on the front to discourage pacing.

### **Can multiple Russian tortoises be housed in the same enclosure?**

To house multiple Russian tortoises together, you will need to add an extra at least 10 square feet (1 square meter) per additional tortoise. Avoid housing multiple males together, and note that housing males and females together will most likely result in eggs. Fortunately, Russian tortoises are not a particularly social species, and can be housed individually without negatively affecting their mental health.

## **Lighting & UVB**

Russian tortoises are diurnal, which means that they are most active during the day. This also means that they need exposure to bright light and UVB during the day to maintain good mental and physical health. **Light sources should be left on for 14 hours/day during summer and 10 hours/day during winter** to replicate natural seasonal rhythms. If you are housing your pet outdoors, artificial lighting of any kind is not necessary.

### **UVB Lighting**

UVB lighting can be tricky, because in order to get the right strength of UVB (measured by UV Index, or UVI), distance must be considered. To provide appropriate UVB to a Russian tortoise, you will need one [Arcadia T5 HO 6%](#) or [Zoo Med T5 HO ReptiSun 5.0](#) in a reflective T5 HO fixture (preferably [Arcadia](#) or [Vivarium Electronics](#) brand for best performance). This bulb should be roughly **half the length of the enclosure** and **placed on the warm side**, close to the heat lamp(s).

If there is mesh between the lamp and your tortoise, the basking area should place its back 13-14"/33-36cm below the lamp. If there is no mesh, the distance must be increased to 17-18"/43-46cm.

*(This recommendation is an approximation. It is strongly recommended to use a Solarmeter 6.5 to determine the best placement to achieve a UVI of around 3.0 – 4.0 in the basking area.)*

### **Daylight Lighting**

A UVB bulb isn't bright enough to replicate daylight. To get a little closer to this goal, you will need to supplement with a bright, 6500K T5 HO fluorescent or LED lamp, long enough to span 3/4 to the full length of the enclosure. This is particularly important if you are using live plants, but it is also valuable for supporting your tortoise's general wellbeing. I prefer the [Arcadia Jungle Dawn LED Bar](#) and the [Bio Dude Glow & Grow](#).

## **Heating**

Humans are *warm-blooded*, which means that our body temperature is regulated automatically. Tortoises, however, are *cold-blooded (poikilothermic)*, which means that they have to move between areas of different

temperatures to regulate their body temperature. In the wild, Russian tortoises warm up by basking in a sunny spot.

Indoors, you will need at least one halogen heat lamp to properly heat your tortoise. If you are housing your pet in an outdoor pen, artificial heating should not be necessary. However, if nighttime temperatures dip below 50°F/10°C, you will need to provide a shelter with lightless heating such as a ceramic heat emitter or radiant heat panel set to 60°F/16°C. You will also need to bring your turtle indoors for part of the year if you live in an area with winter temperatures below 25°F/-4°C.

- **Basking area temperature:** 95°F / 35°C
- **Cool zone temperature:** 75-85°F / 24-29°C
- **Nighttime temperature:** 70-75°F / 21- 23°C

To create an evenly-heated basking area, you will need a 90w Philips PAR38 Halogen Flood Bulb (one for juveniles, at least two for adults) and one or two Zoo Med Deluxe Porcelain Clamp Lamp fixtures. If you notice that the basking area is too warm, dial it down with a plug-in lamp dimmer. If your basking area is too cool, you will need a higher-wattage bulb.

To measure the temperature of the basking area, you will need a digital probe thermometer with the probe placed on the basking surface. There should be another digital probe thermometer on the other side of the enclosure to monitor the cool end of the temperature gradient.

## Humidity

Russian tortoises may be native to a dry habitat, but they actually spend a lot of their time in burrows, which have much higher humidity levels than the surrounding environment. This holds especially true for juveniles, as they are particularly vulnerable to dehydration.

Whether you are housing your tortoise indoors or outdoors, it must always have access to a humid hideout. This should be a cave or hide box placed on the cool end of the enclosure and lined with moistened substrate to create a humid microclimate.

For juvenile Russian tortoises, the entire enclosure should be kept more humid than required for an adult. Target humidity should be **between 40-75%**, lower during the day and higher at night. You can monitor humidity levels with a digital probe hygrometer with the probe placed in the middle of the enclosure.

To increase humidity levels in the enclosure, use a handheld pressure sprayer to moisten the substrate first thing in the morning. Juvenile tortoises also need to be soaked in shallow, lukewarm water for 10-15 minutes 2x/week to make sure that they are adequately hydrated.

## Substrate

For Russian tortoises, it's best to use a well-drained, naturalistic substrate that is similar to what is found in their native habitat. This substrate should be layered at least 4" deep to allow for burrowing behavior for juveniles, and 6" for adults.

Here are a few options:

- DIY arid mix: 40% organic topsoil, 40% play sand, 20% Zoo Med Excavator Clay
- Zoo Med ReptiSand
- Exo Terra Desert Sand

New Russian tortoises should pass quarantine *before* naturalistic substrate is added to their enclosure.

Feces and urates should be removed daily, and contaminated substrate should be scooped out and replaced. Indoor substrate should be completely replaced once every 3-6 months, depending on how diligent you are about daily cleaning.

## Décor

Decorations play a vital role in your Russian tortoise's enclosure as environmental enrichment. Enrichment items encourage exercise, stimulate your pet's natural instincts, and help promote overall wellbeing. And, of course, they make the enclosure look nicer! Without décor, your tortoise's enclosure is just a big box of dirt.

Hollow logs, cork flats, flat stones, dirt mounds, and edible, drought-resistant plants work well as décor in a Russian tortoise enclosure. To determine what plants are safe to use in your enclosure, [The Tortoise Table](#) is an excellent resource. [Tortoise seed mixes](#) are also a good way to stock your enclosure with appropriate plants.

Arrange these items in a way that encourages your tortoise explore, and provides a variety of places to sleep or shelter in during the day.

## Food

Russian tortoises are *herbivores*, which means that they eat plants. Young and growing Russian tortoises should be given as much as they can eat every day. Once they near adulthood, this should be reduced to a limited quantity (roughly the same size as their shell) daily to prevent obesity. Food should always be offered on a plate or tray to prevent unnecessary ingestion of substrate.

**Here is a starter list of appropriate plants for Russian tortoises:** alfalfa, aloe vera, bermuda grass, carrot, celery, chicory, clover, daisy, dandelion, endive, escarole, geranium, grape leaves, hibiscus, honeysuckle, mallow, mulberry leaves, nasturtium, opuntia cactus, petunia, plantain leaves, pumpkin, romaine lettuce, sweet potato, thistle, timothy grass, violet, watercress, wild mustard

**Feed the following foods only rarely, and in small quantities:** beet greens, spinach, cabbage, chard, collards, kale, broccoli

The key to providing your pet with balanced nutrition is VARIETY! So provide as many different kinds of foods to your pet tortoise as possible. Certain commercial diets such as [Mazuri Tortoise LS Diet](#), [Zoo Med Natural Grassland Tortoise Food](#), and [Repashy Grassland Grazer](#) can make good additions. Fruits and feeder insects can also be offered as nutritious occasional treats.

## Supplements

To make sure your tortoise is getting the right nutrients in its diet, it's a good idea to sprinkle its food with [Repashy Superveggie](#) supplement powder. You will also need to provide a [cuttlebone](#) in the enclosure. Aside from being a good source of calcium, it also helps keep your tortoise's beak trimmed!

## Drinking Water

Your tortoise should have access to clean drinking water at all times. They tend to foul the water quickly, so you will need to replace the water daily and give it a good scrub with animal-safe disinfectant weekly. A large [flower pot saucer](#), sunk into the substrate for easy access, makes for a good water dish. The water should be no deeper than your tortoise's knees.