

## Karoo dwarf tortoise (*Chersobius boulengeri*)

Husbandry guidelines, version 6

The following information is based on experience gathered within the studbook coordinated by [Dwarf Tortoise Conservation](#), based on wild-caught adult individuals and captive-bred juveniles.

### Enclosure

Adult Karoo dwarf tortoises show intra- and intersexual aggression, so individuals may need to be kept solitarily for most of the time. Due to their relatively high activity levels in captivity, males and females require at least 0.75–1.00 and 1.00–1.50 m<sup>2</sup> per individual, respectively, and couples require at least 1.50–1.75 m<sup>2</sup>. The minimum sizes in these ranges are for very space-efficient enclosures with opaque sides, sight barriers, and limited unavailable surface area (e.g., no large rocks or logs that tortoises can only walk around, but rather hollow structures that simultaneously act as side barrier and retreat). Inexperienced keepers should use relatively large enclosures. End of August to September, male Karoo dwarf tortoises may be introduced in female enclosures once or twice to mate. Introductions in other seasons will not lead to fertile eggs. From the moment of introduction, couples should be observed and separated immediately after copulation, usually within an hour, to avoid females being wounded by males.

Enclosures should have a firm soil (e.g., sand and loam mixed in a 1:1 ratio and compacted) to avoid sand being ingested, except at egg-laying sites (see below). Ingestion of sand may be further avoided by offering food at a site with a hard bottom (e.g., concrete slab, rubber mat; photo right).

Multiple retreats should be provided for each individual. Retreats should be constructed in such a way that tortoises cannot climb on them and drop down. Retreats constructed from concrete bricks (photos right) are particularly useful, forming >12 cm high vertical sides. Furthermore, concrete bricks enable integration of a heat mat in the structure, using a tempered glass pane to separate the heat mat from the tortoises, simulating radiant heat from rocks that wild tortoises use to thermoregulate. The usable surface of retreats should be 400–600 cm<sup>2</sup> and their internal height should be 5–7 cm.

Enclosure decoration may be completed with wood stumps and (live or artificial) plants.

For adult females, egg-laying sites with a stable soil layer (e.g., sand and loam mixed in a 10:1 ratio, not compacted) of at least 6–8 cm deep should be provided to allow nesting. Nesting sites should provide cover by an overhanging plant, rock, wood, or other structure, because Karoo dwarf tortoises will not nest in an open space. Heated retreats (see above) are typically preferred as egg-laying sites.



Enclosures may be kept dry year-round, or may be lightly sprayed, especially in summer (for instance once every 1–3 weeks). The top layer of the soil (including in retreats) should dry within 24 hours after spraying. Karoo dwarf tortoises do not tolerate permanently damp soils or retreats.

The habitat requirements of Karoo dwarf tortoises are incompatible with outdoor husbandry in Europe, even in summer.

Juveniles are successfully kept in simple enclosures, starting at approximately 0.14 m<sup>2</sup> for 1–3 hatchlings. These enclosures are decorated with the same soil substrate as the adult enclosures and a (natural or artificial) hiding place for each tortoise. Small and simple enclosures allow better observation and therefore increase the chance of survival of the tortoises.

Juvenile Karoo dwarf tortoises are sensitive to dehydration, but do not tolerate permanently damp conditions. In order to avoid dehydration, they require weekly 10-min soaks during the first two years. In addition, enclosures should be heavily sprayed once to twice weekly, drying up within 36 hours. To achieve this, a thin soil layer and proper ventilation are key. Open-top enclosures in a heated room are ideal.



### **Illumination and temperature**

Because the light intensity in the natural distribution range is extremely high, bright illumination should be provided by means of daylight, tube lights, CDM/HQI or HID light bulbs. Led lights lack UVA that tortoises use for colour vision. It is not yet known if UV radiation (natural UV Index 10–15, recommended captive UV Index under a spotlight 6–10) is essential. If it is not provided, sufficient vitamin D has to be added to the diet. One basking spot should be available for each adult tortoise, separated by a visual barrier (e.g., retreat). Photoperiod needs to be adjusted to the natural distribution range. This means 14 hours in summer and 10 hours in winter, with a gradual shift between these two extremes. Climatic cycle can be adjusted to northern or southern hemisphere.

Appropriate ambient enclosure temperature should be provided by means of natural sunlight, heating lamps, infrared panels, central heating systems, soil heating or a combination. Ambient day temperatures need to fluctuate with the season, for instance 30–33°C in summer and 15–20°C in winter. Night temperature should be lower than day temperature. There is no minimum night temperature, as long as the temperature remains above 0°C. The day temperature under spot lights or in sun needs to be higher, for instance 45°C or higher, to allow basking.

### **Diet**

Adult Karoo dwarf tortoises may be finicky about their diet. Excellent results have been obtained using a basis of coarsely cut chicory, mixed with a 1:1 (weight-based) blend of calcium lactate and Calcicare (3% of chicory weight) and a fibrous (Agrobs Prealpine Senior) supplement (5% of chicory volume). This basis was then supplemented (30% of chicory volume) with finely cut green leaves (e.g., *Taraxacum*, *Plantago*, *Trifolium*, *Vicia*, endive, etc.). Once every two weeks, chicory may be substituted by bean sprouts. Occasionally, succulents (e.g., *Crassula*, *Echeveria*, *Haworthia*) that have not been subjected to biocides may be offered. Food should be provided at least four times weekly, but rather daily in the active summer season. Hatchlings should be fed daily during the first year.

Clean drinking water should be provided for all life stages at least once every 1–3 days, as the tortoises drink infrequently.

### **Parasites**

Wild and captive Karoo dwarf tortoises may carry significant loads of nematodes in the intestines. Faecal examinations can help monitor nematode infestations and fenbendazole (e.g., Panacur) can be used to suppress nematode populations upon diagnosed infestations, or in routine administrations (e.g., annually at the end of summer).

### **Incubation of eggs**

The sex of Karoo dwarf tortoise hatchlings depends on incubation temperature. The following incubation regime produces 100% male or female offspring:

- Incubation day 0–22: Diurnal temperature cycle of 31°C and 26°C
- Incubation day 23–43: Constant temperature of 32.5°C (for females) or 30°C (for males)
- Incubation day 44–end of incubation: Diurnal temperature cycle of 31°C and 26°C

Temperatures should be carefully monitored with a calibrated thermometer. Furthermore, incubation substrate humidity should be low to avoid eggs taking up too much moisture and cracking. Substrate-less incubation at a high relative humidity (80–90%) of the air circumvents such problems.

#### **Status in the wild and in captivity**

Karoo dwarf tortoises are endangered in the wild. The only legal Karoo dwarf tortoises in captivity are included in formal scientific studies and conservation breeding.

#### **Literature**

A detailed bibliography can be found at the [website of the Dwarf Tortoise Conservation](#). There is very little published literature available on husbandry or ecology of Karoo dwarf tortoises.

#### **Additional information**

These husbandry guidelines were drawn up in July 2025. Husbandry methods are dynamic and therefore it is recommended to [check for updates](#).