

Species: **Leopard Tortoise**
 Geochelone pardalis pardalis
 Geochelone pardalis babcocki (most common in the UK)

Description: The Leopard tortoise is the second largest land tortoise in Africa. There are two commonly recognised subspecies, *Geochelone pardalis pardalis* and *Geochelone pardalis babcocki*. The largest ever pardalis recorded according to A Highfield was one weighing 43 Kg. This was a male and the largest female weighed in at 20 Kg.



Photo by T Le Visconte

The pardalis babcocki which is the most common sub species and the one usually kept in the UK and Europe weighs much less the average weight being somewhere between 10 - 14 Kg. In the wild they are found across Southern Africa, inhabiting the grass lands and savannas. Their striking markings make juveniles

instantly recognisable with a number of dark spots on the vertebral and marginal scutes; these spots can vary in number depending upon the sub species. The colouration and pattern is a variety of bands around the scutes ranging from almost cream, through to straw yellow, brown and black.

Are Leopard tortoises for you?

Leopard tortoises are one of the most attractive tortoise species, but to do them justice they will require quite an investment from the keeper both in time, money and space. If their needs cannot fully be met then a Leopard tortoise should not be considered. Providing the correct care can be given and time invested, then when purchasing a tortoise please try to ensure that it is of captive bred origin, or perhaps consideration should be given to rehoming an unwanted tortoise. Never buy from a pet store even if the store owner assures you they are captive bred, as this can mean that they were bred in a captive farmed situation in their homeland where true captive breeding is not always genuine, and animals are often gathered from the wild. Imported leopards often arrive in appalling conditions, are severely dehydrated, and full of internal parasites. **Please make sure that you fully understand the commitment required before deciding to take on a Leopard tortoise.**

General Husbandry Requirements: Leopard tortoises being tropical tortoises have very specific requirements that must be met if they are to thrive in a captive environment. It is true that they will survive in less than ideal conditions, but in these situations the tortoise will potentially suffer never ending bouts of illness and stress related disorders. The outcome possibly being that the tortoise will have a very unhappy existence and a much reduced life expectancy.

General Housing: Being such a large species means that Leopards require quite extensive accommodation. Add to this the fact that they are **a species which does NOT hibernate** then the keeper is left with the problem of providing all year round outdoor accommodation and the added expense of maintaining high temperatures during the winter months.

This is quite easily overcome whilst the tortoises are juveniles; the tortoises can be brought indoors and housed on a tortoise table until the following spring/summer when they can be put back outside. However once they start to grow bringing them indoors for the winter become less

of an option for most people. It is at this stage that the keeper finds out just how expensive it can be to insulate and heat a shed or greenhouse throughout the winter in the UK. Unfortunately it also at this stage when the keeper decides that they can no longer provide appropriate care and the tortoise needs to be rehomed.

Hatchling Care: When a Leopard tortoise hatches out, it is a fully independent miniature of its parents. In the wild it would leave the nest site and start fending for itself immediately. In captivity this is also true and the adult tortoise plays no role whatsoever in the care of the new arrival. However, there is a great deal that a keeper can do to assist the newly hatched in its early stages of development. The general care is the same as that of juveniles and adults, but with the addition of a few precautionary measures.



Hatchlings are very small and do become very quickly dehydrated. To prevent this from happening hatchlings will benefit from being soaked daily in baths of lukewarm water. The water should be shallow enough so that the tortoises can easily keep their head above the surface. It should come up to the chin or where the top meets the bottom shell and the bath should last some 20 minutes.

Because hatchlings grow very fast the diet will require supplementing with a high quality vitamin, mineral and calcium supplements. If they are deprived of the necessary nutrients that they require for steady healthy growth they may succumb to dietary disorders such as Metabolic Bone Disease (MBD). At this stage in their development hatchlings require exposure to as much UVB light as possible; however they should never be left outdoors to fend for themselves. A hatchling tortoise will very quickly lose its core body heat and if it is unable to get back under a heat source to replenish this it could very quickly perish. Hatchlings are also very vulnerable to predation and for all these reasons it is recommended that they only spend time outdoors when there is someone around to observe them and able to bring them back indoors immediately when conditions dictate. Whilst outdoors it is recommended that they are housed in a secure enclosure with a mesh lid to protect them from predators such as foxes, large birds and dogs.

When small leopards are kept indoors for long periods of time consideration should be given to proving them with large trays planted with grasses, (cat litter trays or plant seedling trays are ideal) as they not only provide moisture required in hot environments, but the leopards enjoy pulling on the grass, which helps keep their beaks in trim. If several trays are planted up it will allow them to be interchanged on a regular basis.

Housing Hatchlings/Juveniles: Indoors – young leopards should be housed on an open top tortoise table; the enclosure should be of suitable size so that the tortoise has plenty of room to move around and also with sufficient space so that water bowls, hides, rocks and plants can be used to create a mini habitat. There should be fresh water available at all times. This should be provided in a container of suitable size so that tortoise can gain easy access to it. Leopards not only like to drink but they also like to sit and soak in their water. A large slate tile or flat rock makes the ideal platform for tortoises to feed from as it helps prevent the ingress of the substrate material which would undoubtedly occur if tortoises were fed from the floor of the enclosure. Provision for a number of hides should be provided; these can be placed in different areas around the enclosure giving tortoises a choice of where they sleep and hide. For substrate use 50/50 play sand/topsoil mix or graze on or ReadiGrass or a combination of both.

N.B. Hemp has sharp particles which can easily cause serious damage to tortoises and it can sometimes prove to be fatal especially if ingested and as such is not recommended for use as a substrate.

Outdoors - a safe and secure area for young Leopards is required. They should be allowed outside whenever the weather permits. Part of the garden can be sectioned off to make a small enclosure with a solid and secure boundary. Within the confines of this, an indoor area that has some form of heating controlled by a thermostat will need to be provided. A cold frame is ideal providing a basking lamp can be added, but care must be taken to ensure all electrical fittings and cabling is weather proofed. This is essential as the weather can change so quickly and young leopards will need this area to maintain the body temperature and to provide protection from the elements.



Housing Adults: Adults are housed in the exactly the same manner just on a much larger scale. They will require a large area outdoors where they can graze or bask in the sun and the boundaries must not be see through. Access to shady areas is also necessary. Ornamental grasses such as pampas grass and shrubs such as hebes or lavatera make ideal shelter and hiding places. Adult leopards will also require a heated indoor area generally provided by using something like a large insulated garden shed or greenhouse. This is ideal **only** if built on a base high enough to keep the glass out of reach and sight. Leopards must have access to these at all times, providing them with a safe warm place to sleep at night and also protecting them from any sudden changes in the weather.

Heating and Lighting: Adequate heating and lighting can be achieved in a number of ways but first and foremost natural unfiltered sunlight is far better than any UVB bulb. Even on a cloudy day here in the UK solar radiation is far stronger than the best UVB bulb. It isn't nearly as good as the levels of UVB light leopards would receive in their natural environment in Africa, but it is still better than denying it to them. Leopards should be exposed to as much sunlight as possible.

Indoors the kind of heating element used will depend on personal preference and the area to be heated. Some people prefer to provide UVB lighting using the full spectrum tube type bulbs, and provide heat by means of a basking bulb linked to a thermostat. Others choose to use a combined Heat/UVB bulb. These are suitable for tortoise tables as they provide both the UVB and the heat from one source. They can not be used with a thermostat so the temperature of the hot spot under the bulb is controlled by either raising or lowering the height of the bulb until the desired temperature is achieved.

The heating of large outdoor setups can not be achieved with UVB/Heat bulbs alone. Background heating, by using heat lamps, ceramic heater emitters, and tubular greenhouse heaters, have all been used with varying degrees of success. The UVB and a basking hotspot can then be provided using the combined bulb or UVB tube. Heating needs to be maintained throughout the year and electricity costs can be high.

In all cases the provision of a temperature gradient for the tortoise is paramount. Temperature under the basking lamp during the day should be approximately 30°C (86°F) to 32 (90°F) with a cooler background area of 20°C (68°F) to 21°C (70°F). A drop in temperature during the night is required, but the temperature must be set to no lower than 16°C (60°F). Leopards do not like and cannot tolerate cold and damp conditions and if cared for in this type of environment their resistance to infection and disease will be increased, so it is essential that this part of their care is correct.

Feeding and Dietary Supplementation: Leopard tortoises are strictly herbivores and in the wild are natural grazers, the bulk of their diet being made up of various grasses and hays. In captivity the provision of a diet as close to this as possible is what the keeper should aim for. It is important not to overfeed as even too much of the correct diet can cause growth problems. A good balanced diet containing the correct balance of protein, carbohydrates, fats, fibre, vitamins and minerals is essential and if provided, and free of chemicals, will assist in the development of a healthy immunological system.



Photo by T. Le Visconte

The Leopard tortoises diet should be very high in fibre and made up of about 70% grasses and hay, the remaining 30% should be made up of essential weeds and flowers. Other plant material such as opuntia cactus pads and its fruit is also very high in fibre and can be fed in small quantities.

The following list of food items is intended to assist the Leopard keeper in providing a varied and balanced diet, but is by no means exhaustive. The list also draws attention to some food items that should be avoided and in some cases are particularly dangerous to the tortoise.

Grass: A variety of grasses is best and the Leopard should be allowed to graze freely in warm conditions. Meadow hay, timothy hay and orchard hay are suitable alternatives when grasses aren't readily available. Readi-grass or Graze-On are other alternatives which can be purchased from horse feed suppliers and some pet care outlets.

Essential Weeds: Plantain, both broad and narrow leaf, dandelion leaves and flowers, chickweed, clover.

Suitable weeds and plants: Thistle, hibiscus leaves and flowers, mulberry leaves, tradescantia, opuntia pads and fruit, echeveria, abutilon, kalanchoe, mimula, petunias, viola, flat-leaf watercress (*Rorippa nasturtium-aquaticum*) but not salad cress, American Land Cress (*Barbarea verna*), sowthistle, endive, agave, lavatera flowers and leaves.

Foods to be avoided: Fruit: Leopard tortoises do not eat any fruit in the wild and if given it can cause gastro-intestinal disturbances from increased lactic acid levels and a potential increase in parasitic infestation, potentially resulting in a sterile gut which could be fatal.

Dog and Cat Food:



This type of food is too high in protein and if given will lead to shell deformities, renal disease and ultimately, death of the tortoise.

Brassicas:

As they tie up free iodine and goitres can result if fed in large quantities.

Spinach:

Spinach and chard are high in oxalates, which bind with calcium to give insoluble calcium oxalate and thus interfere with calcium absorption.

Lettuce and some supermarket greens:

E.g. Romaine lettuce, lambs lettuce, radicchio, endive. Although these can be fed to the Leopard tortoise as part of a varied diet they should not be given as the main diet alone, otherwise the tortoise will not be provided with adequate nutrition.

Additional foods which can be used on rare occasions: Cucumber, carrot, zucchini.

Mineral and Vitamin Supplements

UVB levels in the tortoise's natural habitat are vastly higher than anything we experience in the UK, so its food must be lightly dusted with a vitamin and mineral supplement which contains vitamin D3 and calcium, such as Nutrobal.

Hatchling and Juvenile tortoises

In Northern climates a mineral and vitamin supplement such as Nutrobal or Reptavite should be offered to all growing tortoises on a daily basis for the first 3-4 years of life and after this it can be offered three times a week. This should be lightly sprinkled on the tortoise's food.

NB. That if the tortoise is kept outside of the UK, where the climate is similar to its natural habitat, and it is maintained outside where it can synthesise its D3 requirements from the UVB component of solar radiation, then the frequency of additional supplementation of D3 can be reduced.

Adult tortoises

Mineral and vitamin supplementation for adult tortoises in the form of Arkvits or Nutrobal can be lightly sprinkled daily on to the food.

Tortoises of all ages

In addition all tortoises, whatever their age, will benefit by some calcium supplementation in the form of limestone flour (or another form of pure calcium carbonate) and this can be sprinkled lightly on to the daily feed. Limestone flour is available from most equestrian stockists and is recommended due to its high calcium content and the fact that it is easily digested.

Cuttlefish, which contains calcium, should be made available at all times, and although it is not as easily digested as limestone flour, it is a good way of keeping the beak trimmed.



When providing mineral and vitamin supplementation it is important that the manufacturer's instructions be followed to avoid the possibility of over dosing.