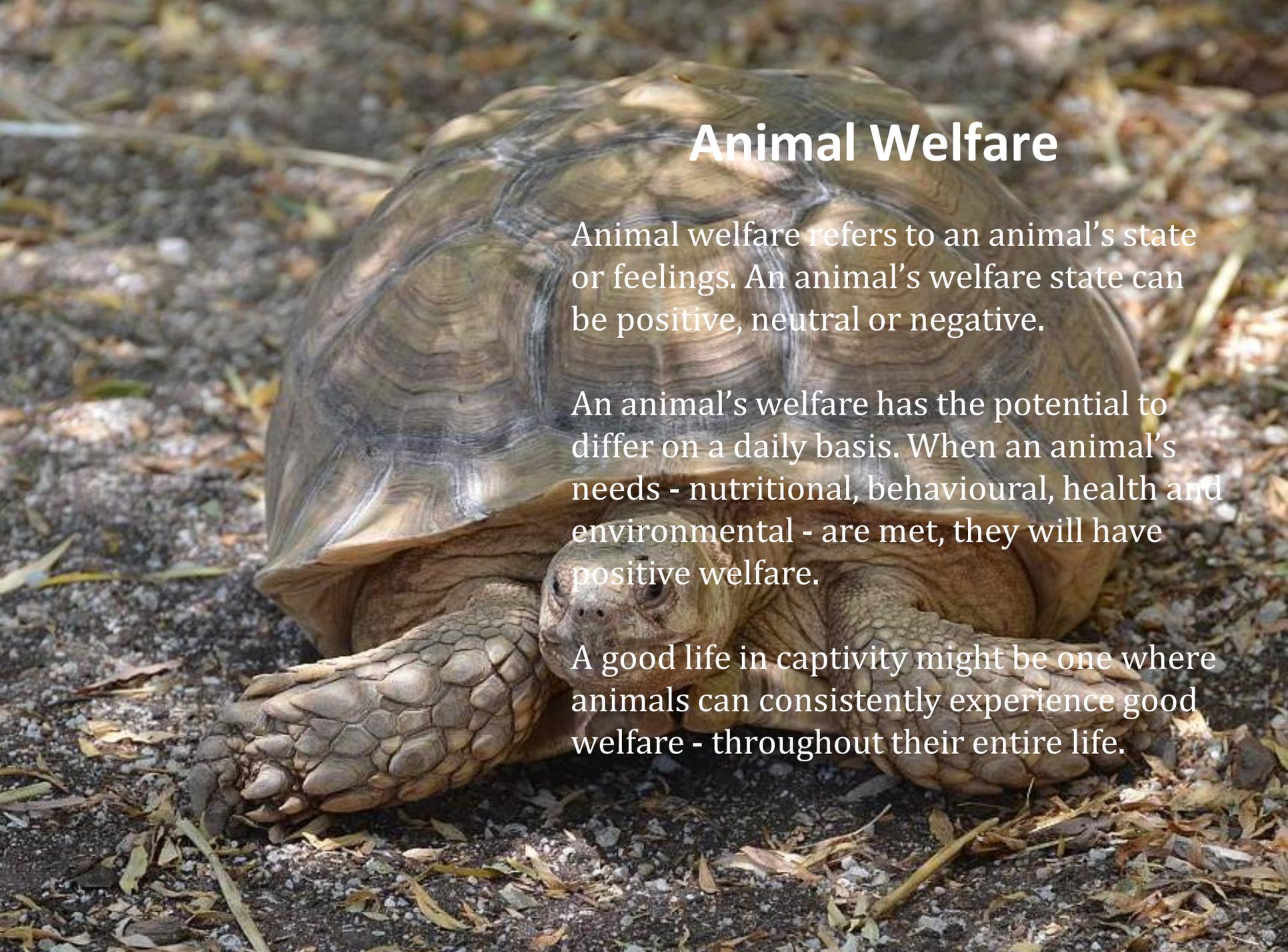




# *Care For Us*

African spurred tortoise  
*(Centrochelys sulcata)*

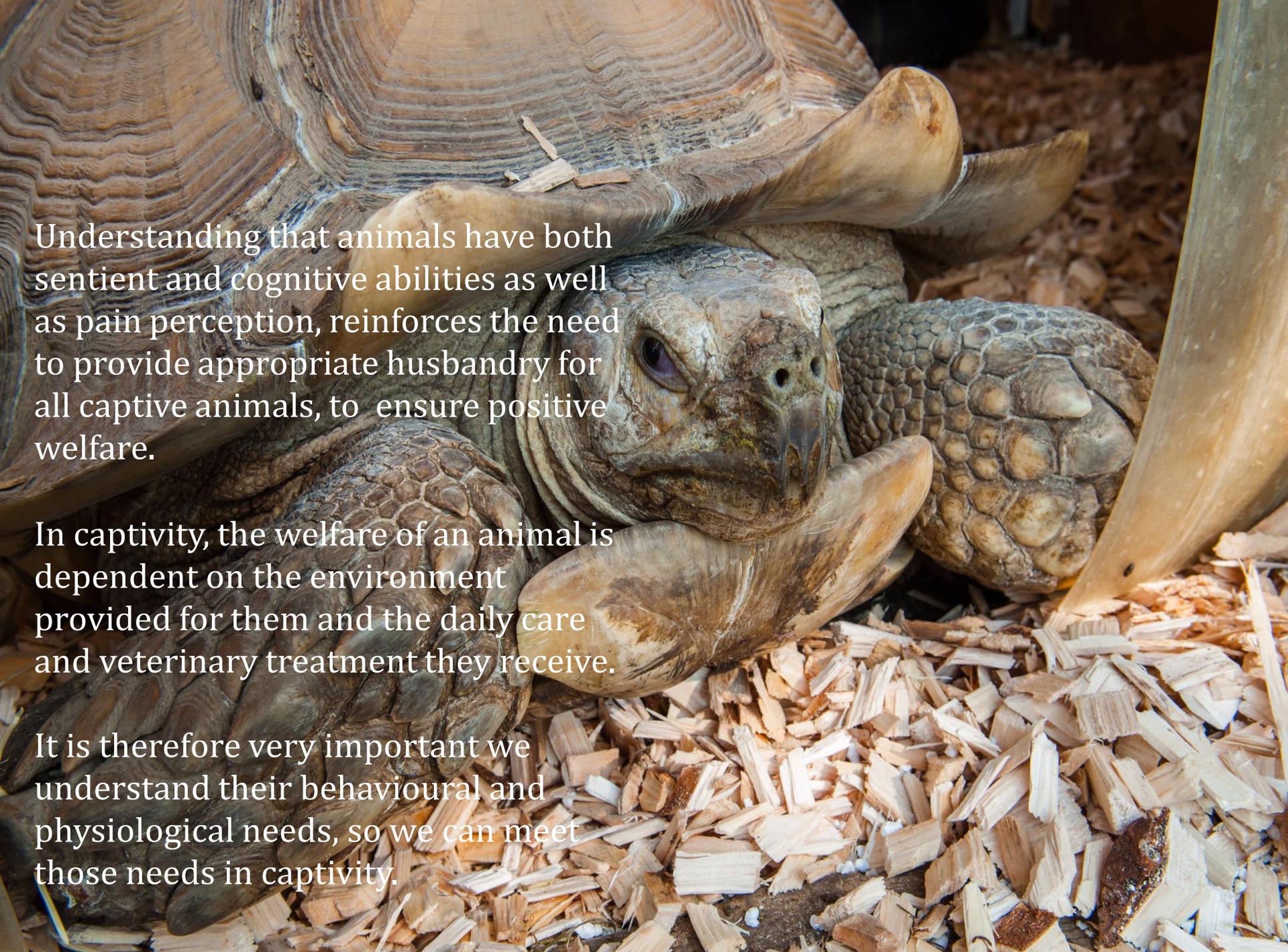
A large tortoise, possibly a Galapagos tortoise, is shown resting on a ground covered with dry leaves and twigs. The tortoise's shell is a mix of brown and tan colors with distinct scutes. Its head and front legs are visible, and it appears to be looking towards the camera.

# Animal Welfare

Animal welfare refers to an animal's state or feelings. An animal's welfare state can be positive, neutral or negative.

An animal's welfare has the potential to differ on a daily basis. When an animal's needs - nutritional, behavioural, health and environmental - are met, they will have positive welfare.

A good life in captivity might be one where animals can consistently experience good welfare - throughout their entire life.



Understanding that animals have both sentient and cognitive abilities as well as pain perception, reinforces the need to provide appropriate husbandry for all captive animals, to ensure positive welfare.

In captivity, the welfare of an animal is dependent on the environment provided for them and the daily care and veterinary treatment they receive.

It is therefore very important we understand their behavioural and physiological needs, so we can meet those needs in captivity.

The African spurred tortoise is also sometimes called the Sulcata tortoise, taken from the Latin word sulcus meaning 'furrow' and referring to the furrows on the tortoise's scales.

They inhabit the southern edge of the Sahara Desert and the Sahel, a transitional ecoregion of semiarid grasslands, savannas, and thorn-scrub in the African countries of Burkina Faso, Chad, Eritrea, Ethiopia, Mali, Mauritania, Nigeria, Senegal, and Sudan.

The third largest tortoise species in the world and the largest species of mainland tortoise, adults can reach 83cm in carapace length and can weigh up to 105kg. They are known to live more than 70 years. The IUCN Red List of Threatened Species classifies them as vulnerable.



# Tortoises Need to Thermoregulate

Tortoises are reptiles so have an ectothermic metabolism. They rely on external sources to acquire heat and regulate their body temperature by exchanging heat with their surrounding environment. If natural sunlight is not available, other sources of heat should be supplied, these can be heat lamps and substrate heaters, but to regulate their body temperature, tortoises also need to be able to lose heat as much as gain it.

Ensure tortoises are provided with a 'thermal gradient' or 'thermal mosaic' with warm and cool areas within their enclosures. Cool spots of not less than 15 degrees centigrade and hot spots that do not exceed 38 degrees centigrade should be provided so they can choose what temperature they want to be at and when.

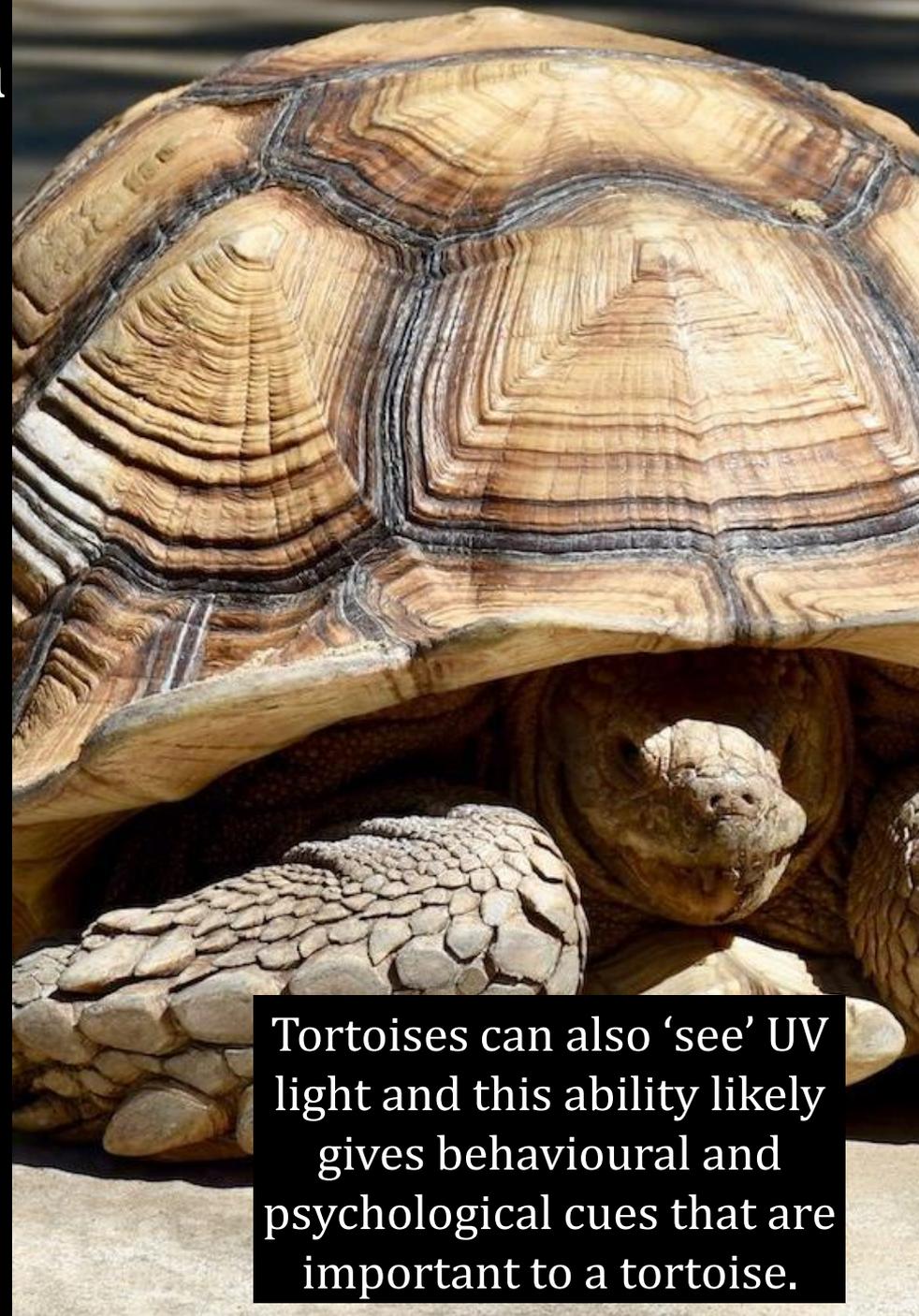
## **Positive Behaviours to Encourage**

In the wild the spurred tortoise digs burrows up to three metres long to shelter from extreme heat and to prevent dehydration. Enclosures should contain structures such as pipes or boxes that mimic these burrows and cater for their behavioural requirement to shelter and the physiological need to retain water.

# Tortoises Need the Sun

Careful provision of lighting is essential for a healthy tortoise. In tropical and subtropical climates, spurred tortoises are best kept outdoors in large paddocks with access to natural sunlight, shade and shelter. No artificial light sources can completely replicate natural sunlight, so if kept indoors, tortoises must have regular exposure to natural sunlight.

The different wavelengths of light from ultraviolet (UV) to infrared, have very specific effects on a tortoise's skin. UVB has a direct effect upon immune system and is best known for its role in vitamin D3 production - essential as it controls calcium and phosphorus uptake from the intestines.



Tortoises can also 'see' UV light and this ability likely gives behavioural and psychological cues that are important to a tortoise.



# Enclosure Design

In the wild, spurred tortoises live in highly complex and dynamic environments and this needs to be replicated in captivity.

An enclosure with natural vegetation is best, with plantings of low shrubs and tussock grass for them to shelter beneath. Inclusions such as rocks and logs are important too – both as partial visual barriers and as obstacles to be negotiated or pushed around.

Provide artificial burrows, or the opportunity to burrow as this is a significant behavioural occupation, items such as piles of cut grass or straw make for good burrowing.

Provide a pond, with shallow sides for tortoises to climb in easily and immerse themselves, and ideally offer a mud wallow.

# Spurred Tortoises Need Space

A large spurred tortoise is shown resting on a sandy, reddish-brown ground. The tortoise's head is on the left, and its body extends towards the right. The shell is a light brown color with distinct scutes. The background is a blurred natural setting.

This species grows very quickly, reaching full size within 15 to 20 years. They can also be quite aggressive, with both sexes inclined to ram each other. Therefore, the numbers of tortoises kept together becomes a factor as aggression can cause physical injury and acute and chronic distress.

In the wild, tortoises are mostly solitary, occupying quite large home ranges, only meeting up to mate. Every effort should be made to avoid overcrowding tortoises in captivity as this is highly stressful and opens up opportunities for disease and parasite transmission.

## Positive Behaviours to Encourage

Keep multiple adult males in the very largest of enclosures - an ideal enclosure can be free-range within a spacious hoofed-stock habitat. Do not keep large numbers of tortoises – of any species – in restricted spaces.

Try to give tortoises as much space as possible, in large, open areas with low shrubs and long grass for shelter, rocks and logs, artificial burrows, shallow-sided ponds and areas for mud wallowing.



# Tortoises Like a Varied Diet

Tortoises will consume anything of an organic nature they come across, including insects, snails and carrion. They mainly like to graze however, and if kept outside with access to a well-planted lawn are content to graze on grass and broad-leafed weeds.

Their diet should include plenty of dark, leafy greens, such as romaine lettuce, escarole, endive, green-leaf lettuce, kale, and occasional vegetables such as carrots, broccoli, bell peppers and squash, among others, prickly pear cactus is also an excellent food source. Fruits such as apples, pears, melons, bananas and berries (for example strawberries, blackberries, blueberries) should only be offered in small quantities at irregular intervals.

## **Positive Behaviours to Encourage**

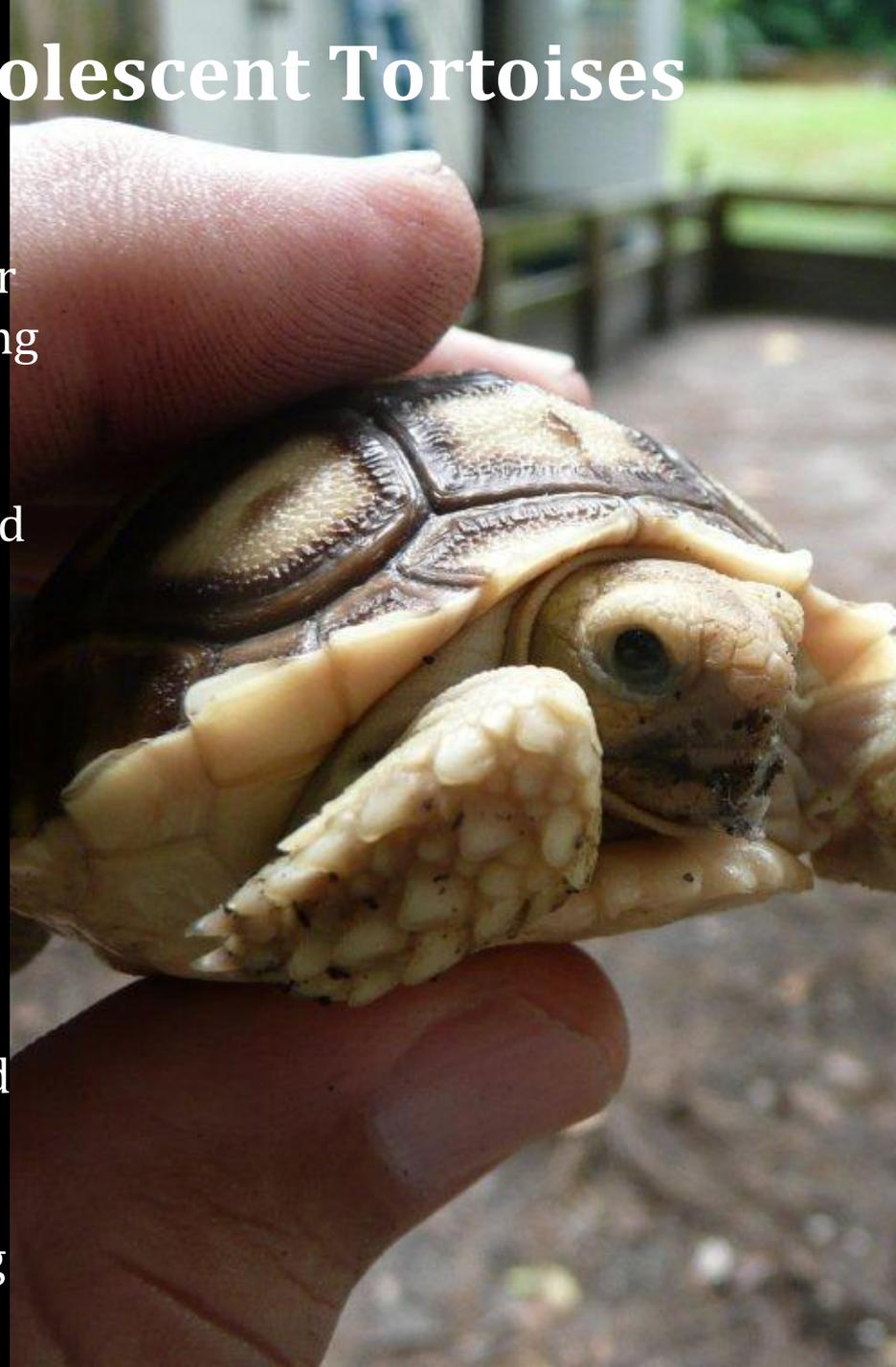
You can change the size and shape of the pieces of food you give to add variety. As tortoises are natural grazers, provide food in a variety of places in their enclosure, and if this includes growing plants, moving the position of these regularly to change the environment will provide varied eating opportunities.

# Hatchling and Adolescent Tortoises

Offering fruits (apples, pears, melons, bananas, strawberries, blackberries, blueberries) in small quantities at irregular intervals is especially important in hatchling and adolescent tortoises.

Foods containing sugars and protein should be very carefully regulated in growing tortoises, as too much of either will lead to abnormal shell (carapace) development, a condition known as tenting, which is an irreversible malformation.

Hydration is also crucial for growing tortoises as they are highly susceptible to renal failure. To ensure good hydration and no excessive loss of moisture through respiration, provide a constant source of accessible water and hiding places offering good microclimate humidity.





# Tortoise Healthcare

Tortoises live so much longer than other types of animals and have an incredible facility for conserving energy resources, so they may take months or even years, to manifest disease or ill-health.

A good health indicator is weight, so captive tortoises should be regularly weighed and appropriate records kept of each individual.

# Tortoise Enrichment Ideas

Food enrichment is always welcomed but do be careful not to offer too much fruit or sugary foods. Change the size and shape of the pieces of food you offer to add variety, stack foods, hang foods (not too high) and partially hide foods around the enclosure under items tortoises can easily move to recover. As tortoises are natural grazers, ensure food is provided in a variety of places and if there are growing plants that are easily moved, move them regularly for variety.

Tortoises enjoy a good mud wallow, so make provision for this regularly if not provided in their enclosure all the time, they also enjoy being sprayed with warm water.

## Positive Behaviours to Encourage

Ensure tortoises are housed in enclosures that are natural, spacious, full of varied vegetation, shelters and obstacles, to encourage the expression of natural wandering, grazing and exploring behaviours. Monitor enclosures to make sure they do not become overgrazed and barren. The spurred tortoise, like all tortoises, is highly intelligent so also responds very well to operant conditioning and target training.



# Tortoises Enjoy...

Having lots of space to roam, grazing on a variety of foods and basking in the sun.

In captivity we should always try and replicate their natural and normal behaviours, so they are happy and healthy throughout their lives.

**WILD**  
WELFARE

