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CARING FOR YOUR TORTOISE

Tortoises are land dwelling turtles from various parts of the world; they are variable in size and habitat requirements. Most tortoises sold today were raised in captivity. They tend to be mild mannered and shy. Tortoises are not native to Oregon and do not survive long term if released here. Some, like Sulcata tortoises, become very large and require a tropical environment, making them difficult to care for in the Pacific Northwest. Others, such as Russian tortoises, are small and have more temperate habitat requirements, making them easier pets. When you obtain a “wild pet” you must try to duplicate that animal’s natural conditions.

FOOD: Tortoises are slow moving and can’t chase fast prey. Their diet is mostly vegetables, especially leafy greens, but they may occasionally eat invertebrates. A good simple diet would be 85-95% vegetables & fruit, and 5-15% tortoise food. Vegetables should include leafy greens such as mustard greens, collards, kale, lettuces, and dandelions; avoid iceberg lettuce as it is nutritionally poor. Fruits can be used sparingly. Ideally use a nutritional guide to choose veggies with good calcium content. Variety helps minimize risk of nutritional deficiencies; ideally the turtle should regularly eat at least 8-10 different veggies and fruits. Various dry and canned tortoise diets are available; the best are probably the pelleted foods which are bright colored and smell fruity. These should contain no more than 8-10% protein. Pretty Pets is one of the more palatable brands; T Rex is similar. The pellets can be offered dry, or softened with water, or crushed/ground up and sprinkled on dampened veggies as a powder daily. A diet which includes a good variety of veggies and commercial food is complete and balanced, and does *not* need additional supplementation. *Avoid* high protein foods such as meats, dog food, cat food or monkey chow.

If you can’t use a commercial tortoise diet, then protein and vitamins need to be provided in other ways, although achieving a good nutritional balance is more difficult. Protein sources include tofu, beans (various types), silkworms, earthworms (use nightcrawlers, *not* redworms or compost worms), and slugs. Minimize crickets, mealworms & waxworms. Protein sources should always be used *sparingly*, as less than 5% of the total food intake. Without a tortoise food, vitamins & minerals should be provided via a single powdered multivitamin-mineral supplement such as Reptocal or Reptivite; use a *tiny* pinch on the food once weekly, no more. Overdosing is easy with supplements, and some products are toxic; it is safer to use a commercial diet which has a balanced supplement included. Avoid supplements that contain only calcium, or calcium + vitamin D.

Water should be provided at all times. Use a small low bowl which is too heavy to easily tip over; a ceramic ashtray is adequate. Ideally the bowl should be small enough to prevent the tortoise from soaking and defecating in the water. Baths are unnecessary, but if elected they should be done in a separate container with very shallow warm water and should be brief (20-30 minutes maximum). Some tortoises may drink very little, preferring to obtain their water from the vegetables they eat.

HOUSING: A terrarium is usually needed to provide good housing, although the turtle can exercise in the house daily (up to 30 minute intervals). The terrarium walls and top should be mostly solid, not screen, to trap heat & humidity. A minimum size would be 3 ¾ to 4 square feet of floor space for a small tortoise (equivalent to an 18x 30 inch or 24x24 inch enclosure.) Cage height is less important as the turtle lives on the cage bottom. (Large tortoises may need several hundred square feet or more of living space, requiring large habitat setups). Artificial turf makes good flooring as it can be cleaned and reused, and it can’t be

eaten. Sand, gravel, corn cob, wood chips, etc may be eaten and cause bowel blockages; if used they must be changed regularly when soiled. Air temperature (measured in the shade) should be 75-85°F in the day for temperate species, 80-95°F for tropical species, and ideally at least 70°F even at night. Use a good mercury or dial-type thermometer which can be moved to check temperature in various locations at the cage bottom; avoid color strip thermometers which stick on the cage wall as these are inaccurate. A reptile heat pad beneath the cage is one heating method; hot rocks can be used but should be covered (with turf or other rocks) to prevent burns from direct contact. Heat lamps inside the cage should be at least 18 inches above the turtle to prevent burns. Heat lamps used at night should produce minimal light; lightless ceramic-coated bulbs, dim purple or red night lights can be used. Tortoises are shy and the cage should be in a quiet area. They need hiding places to feel secure, but you should try to avoid using dark caves or hiding boxes which block exposure to UV light. Instead provide objects such as plants or rocks to hide *behind*, or use paper to cover the cage glass in one corner, creating a private area which remains well lighted.

Lighting should be provided 12-14 hours daily, with the remainder being dark. You must provide white (visible) light and ultraviolet light in the 280-320 nm wavelengths (called UV-B). This mimics basking in the open sunlight. Our climate provides too little sun, and window glass or plexiglass filters out most of the UV light, so you need to provide sunlight artificially. The best lighting for most terrariums is fluorescent full spectrum bulbs; incandescent "screw type" round bulbs are not adequate. Some good brands include Reptisun by Zoomed, Reptile D-Light, Reptasun by Flukers, Reptiglo, or Reptile Daylight by Energy Savers Unlimited (ESU). These bulbs won't burn the pet and need to be close to the turtle to be effective; in general the effective distance is less than the bulb length. For instance, a common 24 inch tube should be within 18 inches of the turtle. The light should run the entire cage length. Bulbs smaller than 24 inches (including coils) are usually too weak. Avoid glass or plastic barriers between the bulb and the pet (these block UV). Change these bulbs every 6-8 months, as they produce less UV light over time.

NOTE: a few incandescent "screw type" bulbs exist which *do* produce UV-B; these look like typical bulbs but are actually mercury vapor lamps. They produce both UV and strong heat, so should be kept at least 18 inches from the turtle. They should be replaced yearly. These devices cost \$45-100 and when turned off must have a "cool down" period before they can be restarted. Incandescent bulbs which cost less and do not require a cool down period are simple light bulbs and do *not* produce adequate UV-B. Vapor bulbs are best used to light very large habitats or rooms.

Cool climate tortoises may be allowed to hibernate in the winter in an unheated garage or greenhouse; the temperature needs to be below 55°F ideally, and day length should be short (winter hours). Healthy hibernation can be difficult to achieve indoors, and you may elect to keep a turtle active in the winter. Never hibernate a sick turtle.

COMMON DISEASES:

Respiratory Infections: Common among stressed tortoises, especially new pets which were recently captured and shipped. Poor diet or environment also stress the turtle and allow infection. Symptoms: crusty or runny eyes, swollen eyes, runny nose (often with bubbles out the nostrils), and mucus in the mouth. They often will not eat, and if untreated may progress to pneumonia and die. Treatment: antibiotics daily, correct the environment, and force feed if needed.

Vitamin A Deficiency: Uncommon these days; mimics respiratory infection but not as severe, mostly eye swelling and discharge. Often the turtle is still eating. This condition only develops if the turtle has been on a Vitamin A deficient diet (or not eating at all) for *months*. Treatment: Vitamin A orally (not injectable; the injectable forms are easily overdosed and potentially toxic to turtles). Good sources: commercial tortoise foods, some greens, papaya, yellow vegetables, carrots (limited amounts, due to low calcium content).

Middle Ear Infections: Visible as a swelling on the side of the neck where the ear should be. Usually results from a respiratory infection. Treatment: Surgical drainage of the infection, antibiotic injections, and correction of the diet and environment.

Calcium Deficiency/ Shell Deformity: More common in large fast growing tortoises such as Sulcatus, this condition results in soft deformed shells, with the underside being flexible instead of rigid, and the upper shell having raised “domed” segments resembling pyramids instead of flat, smooth normal growth. Russian tortoises may grow too large, with flattened wide shells. This condition can be caused by too little dietary calcium, or too much phosphorous, or too little ultraviolet light, or too much protein intake. Correction of diet and environment is essential, and sometimes careful calcium supplementation may be used for a short time to speed recovery.

Shell Rot: Infection of the shell (usually bacterial) which causes pitting, discoloration or softness of the shell surface. If untreated the lesions can deepen and spread, eventually causing death. Treatment: Removal of the infected areas of shell, topical disinfectants applied daily, keep the shell dry and give injectable antibiotics in severe cases.

Intestinal Parasites: Tortoises may carry a variety of worms and other parasites of the digestive tract. Symptoms: Diarrhea, poor weight gain, lethargy; worms may be present without obvious symptoms. Treatment: Bring a fecal sample and/ or worms (if seen) to a veterinarian for identification, so proper medication may be used.

Appetite Loss: Tortoises easily lose appetite if their environment stresses them; cool temperatures, low UV levels, a cramped cage, lack of hiding places, and excess noise or disturbance may all cause the turtle to stop eating. Any illness such as an infection usually causes appetite loss as well. If your pet stops eating for more than a few days (except when hibernating) you should seek veterinary advice.