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# HERMANN AND GREEK TORTOISE CARE GUIDE

## Raising healthy tortoises in Canada

Slow 'N Steady Tortoises - April 20, 2015

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## Table of contents

### RAISING HEALTHY CANADIAN HERMANN AND GREEK TORTOISES

Caring for your tortoise: The essentials- The Care "Cheat" Sheet! .....	3
Caring for your tortoise: Detailed Care Sheet!.....	4
Caring for your hatchling.....	8
Helpful Care Tips.....	10
Determination of healthy size: The Jackson Ratio.....	11
Male or Female? Gender Determination.....	12
Tortoise Diet: Is it SAFE to EAT?.....	13

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## The Care "Cheat" Sheet

Size- Hermanns- 5-7", approx. 750-1000g (2lbs)

Greeks- 5-9", approx. 750-1350g (1.5- 3lbs)

Food- Weeds, Leafy Greens (excluding Iceberg lettuce), commercial food pellets, feed nearly every day.



Water- Clean drinking water dish, Occasional soaking in warm water.

Supplements- Calcium +Vitamin D powder 2x/week. Cuttlebone pieces in enclosure.

Housing- Indoors: 18"x36" minimum. Outdoors: Warm Summer days (>20°C), Secure with drainable bottom and cover, shade and water required.

Substrate- 1-2" of bark mulch, wood chips, or soil (pine, cedar, sand, rabbit pellets, should be avoided)

Temperature- Day: 75°F with 95°F basking spot, Night: >65°F. Day Temps approx 12-14 hrs.

Humidity- No control required

UV Light- Special UV bulb required, changed annually, no further than 8-12" above tortoise.

Hibernation- Not Required

Hatchling Care- More frequent soakings (ideally daily), growing tortoises are particularly sensitive to proper nutrition and supplementation. Warm and humid hiding places may help with healthy shell growth. Should be fed daily.

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## Detailed Care Sheet

**General Info-** These tortoises are from relatively hot dry areas although they often borrow into humid hides. Females tend to be larger than males. Hermanns grow to about 5-7", and rarely will reach 9" (shell length). Greek tortoises grow to around 7-9". Rare specimens will reach 10-11". Both species are vegetarian and reach full maturity after 6-10 years. They are reported to live greater than 30-50 years in captivity. Gender can be determined after 2-3yrs of age.

**Diet-** The diet needs to be high in fibre, calcium, nutrients and vitamins. They should be fed nearly every day. Leafy greens form the staple of their diet in captivity and may be supplemented with pelletized tortoise foods (such as Mazuri chow, Exoterra pellets, or zoo



med grassland tortoise food). It is desirable to provide mixed greens such as salad mix, or romaine lettuce. Too much spinach can reduce calcium absorption, and iceberg lettuce should be avoided completely as it is addictive and offers no nutritional value. Weeds, grass, and clover are the best source of food when available. Dandelion greens are usually a tortoise favourite and

very nutritional. Hay is an excellent source of dietary fibre although is often not favoured by tortoises especially when younger. Food should be offered in an area where the risk of accidental ingestion of substrate is minimized. Feeding on a flat surface such as slate or tile allows an environment that should remain substrate free and will help keep the beak filed short from rubbing on the surface. Fruits should only be offered sparingly, if at all. The gastrointestinal tract is not designed to handle the high amount of sugar in fruit, although tortoises love them for rare treats.



**Water-** Tortoises do drink water from a shallow dish. Tortoises cannot swim. Clean drinking water should be available at all times and care must be taken that the water dish is not a hazard for drowning. Proper hydration is essential for tortoise health and relying on

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sufficient water intake from their food is not advised. They excrete waste called urates (thick white material) along with their urine that can develop into bladder stones if tortoises are chronically under hydrated.

**Supplements-** Tortoises have high demand for calcium and vitamins (including Vitamin D) especially while growing. Powdered Calcium +Vitamin D supplements should be sprinkled on their food at least twice weekly. A light misting of the food will assist with the powder sticking to the food. Also, pieces of cuttlebone (I remove the hard part) should be kept in the enclosure as some tortoises will bite these to regulate their calcium .



**Soaking-** Tortoises cannot swim. However, tortoises also remain hydrated by soaking in warm water. The tortoise should be soaked in a shallow bath, usually once each week. This often stimulates a bowel movement and release of urates (and therefore also serves to keep the enclosure clean longer). Many tortoises will sit in their water dish for purposes of hydration and excreting waste.

## **Housing-**

**Inside:** Adult tortoises can be very active. The larger the environment, the better. Younger tortoises can do well in small enclosures although adults will require a minimum of approximately 12-18" x 36". Ideally, a 2'x4' enclosure can be provided for full grown adults. Many people use large aquariums which will suffice. Lower walls with natural airflow through the enclosure are desired. Tortoise tables are common and are generally a wooden box with walls of approximately 10-12". A 'hide' is often enjoyed by tortoises.



**Outside:** Never leave a tortoise outside that isn't in an enclosure. Almost every turtle/ tortoise owner has spent hours looking for a tortoise that was "right there a second ago!" Many are never found again. Being outside in an 'escape proof' enclosure when the temperatures are above 70-75°F is extremely beneficial to tortoises. The enclosure should have a base that can't be dug through, a wall that can't be slipped through or climbed over,

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and a wire mesh roof that prevents other animals from removing the tortoise. It must be able to drain in case it rains. A shaded area should be provided along with a water dish. Even only a few hours outside provides the best source of ultraviolet light.

**Substrates-** The enclosure base should be covered in at least an inch or two of material such as bark mulch (not pine or cypress, these emit poisonous oils), coco husk chips, plantation soil (no fertilizers or additives such as perlite), or wood chips (aspen, not pine). These



substrates absorb smells and waste. Spot cleaning every few days removing solid waste will keep the substrate clean for long periods. Sand should be avoided (it can cause impaction of the gut and smells bad quickly). Rabbit pellets or newspaper products will get damp and may mold quickly.

**Temperatures and Humidity-** The day temperatures should range from 75-85°F throughout the environment with a basking spot of approximately 95°F provided. The night time temperatures should be around room temperature of 70°F and should not be below 65°F. Often a 60 W incandescent bulb mounted over one end of the enclosure will create a suitable environment. Undertank heaters may be used in addition to overhead spot lights with caution to ensure the temperature doesn't get too high. Heat rocks should be avoided, they are at risk for malfunction and overheating. The humidity does not need to be different than a typical home. These tortoises do not require regular misting machines or high humidity enclosures. Occasional Spraying/Misting of the tortoise is often enjoyed by the tortoise and does help maintain a healthy level of humidity in the environment.

**UV light-** Tortoises require UV lighting in order to produce Vitamin D required for proper Calcium control. There are various methods of delivering UV light. The best is always sunlight but obviously can't be provided for much of the year. UV bulbs (compact or tube fluorescent) should be rated 10.0, and placed less than 16" above the tortoise without any glass between the tortoise and the bulb. These bulbs need to be replaced yearly. Screens can also reduce the UV supplied. Mercury vapour bulbs provide excellent UV light as well as heat.



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**Health issues-** Health problems are generally rare in tortoises, although being familiar with the more common symptoms can be helpful. The most common problems that tortoises experience are Metabolic Bone Disease (MBD), Runny Noses (RNS- Runny nose syndrome) and diarrhea. MBD is caused by poor husbandry and calcium deficiencies. These tortoises will develop abnormal shell shapes (pyramiding, see below) and abnormal bones. Proper care as described above will avoid MBD. RNS is not uncommon and has many different causes. It can often be a sign of not the right balance between humidity and heat. Hotter and drier environments should be the first attempt at curing a runny nose. Only rarely does the RNS indicate something serious like an underlying pneumonia. Diarrhea can be caused by excess fruits although may be an indication of parasites/excess worms if it continues. Serious illnesses can be hidden quite well by tortoises and a tortoise that reduces its activity, stops eating, or stops growing should receive veterinary care by a reptile specialist.

**Pyramiding-** This is the term for the shape of a tortoise shell that appears lumpy (as opposed to smooth). Generally, tortoises kept in captivity grow much faster than those in nature. This leads to scutes that ‘pyramid’ creating a bumpy shell. Many have attempted to reduce this phenomenon and the general recommendations are: maintain a low protein diet, use proper calcium and vitamin D supplementation, adequate UV lighting, and provide growing tortoises with “hot humid hides”. Providing a hiding spot that is warm and humid is now considered the most successful way of reducing pyramiding. Preventing some pyramiding in captivity is near impossible, but severe pyramiding (extreme example seen in this photo) is a sign that the environment and diet need adjusting.



**Salmonella-** Owners of reptiles need to be aware of the potential risks of Salmonella. Tortoises are a reptile and may have salmonella as a normal part of bacteria that grow in their digestive tract. Hand washing after handling any reptile is recommended. Health Canada and Public Health Agency of Canada have published recommendations.

**Hibernation-** Not required for tortoises born and raised in captivity. The tortoises may slow down a little and eat less for several weeks during the winter months. Healthy adult

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tortoises may be hibernated with extreme caution. Hibernation is predominantly done by breeders to reduce cost of care and stimulate breeding activity.

**Hatchling Care-** Refer to the Hatchling Care page. Baby tortoises are not much different than their adult counterparts except they may dehydrate more easily in their first year of life and more frequent soaking is recommended. Ideally, once a day for the first few months of life, hatchlings should be soaked in shallow warm water that is about 1/3 the height of their shell. Nutrients, vitamins and calcium are in higher demand for growing tortoises. Therefore proper care of a growing tortoise is key to the success and longevity of your tortoise.



## Caring for your Hatchling

### CARING FOR YOUR HATCHLING

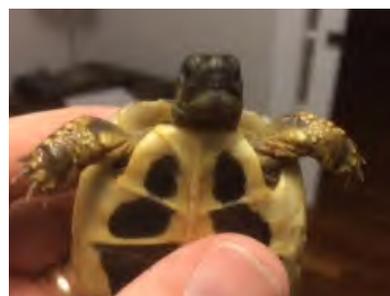
The hatchling care requires proper light, heat, and substrate in addition to nutrition and water. As hatchlings, a small homemade box or aquarium will do fine; 24"x12" is all that would be required for the first couple years.

**HEAT AND LIGHTING-** Daytime UV lighting and a temperature gradient from 75°F to 95°F are required. There are many variations that can be used to accomplish this. I have found it simplest to use two lamps, one with a regular incandescent 60W light bulb and the other with a compact fluorescent 10.0/26W UV bulb. The most common bulb in local petstores, is the ExoTerra ReptiGlo Desert UVB Lamp. For small enclosures, this combination will provide enough UV light, visual light, and heat, although as larger enclosures are used, additional light may need to be added. I do not have experience with Mercury Vapour Bulbs, although they may be used as source of visible light, heat and UV light. I also use an undertank heat pad that I leave on at all times to give the option of a guaranteed warm spot. If the environment does not fall much below 70°F at night, this is optional. Most local petstores sell the ExoTerra undertank heat mats. These are either Desert (Hot) or Rainforest (Medium). When used under glass, the Desert is too hot creating temperatures of 110°F directly over the mat. The Rainforest version is suggested for under glass use and tortoises. If the enclosure

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base is made of a material that does not transmit the heat as readily, the Desert version may be preferred.

To set up, the 60W lamp is generally placed over a desired basking area. The basking area should reach 95°F. Areas furthest away from the basking area should be about 75°F. The tortoise can now thermoregulate itself. The lamp with the UV bulb should be attempted to be placed in an area where the tortoise is most frequently. This can be an area where the tortoise often sleeps or walks, and may often be at the basking spot. Observing your tortoise's behaviour will determine where the UV bulb should be. It should be noted that the UV bulbs must be relatively close to the animal, without glass or screen between the bulb and the animal. The bulb should be less than 8 inches to achieve significant UV exposure. Any distance of 12" or more and the bulb has very little or no effect. These bulbs only emit sufficient UV light for 1 year. As mentioned, an undertank heat pad can be added if desired to further control the heat gradient.



**SUBSTRATE-** As hatchlings, the substrate can last for several months and Plantation Soil is likely the best option. Every substrate has its pro's and con's. Coco Husk by itself is often hard for the little hatchlings to walk through due to the size of the chunks. The Soil is often dry and dusty. I will occasionally spray the substrate with water to keep some humidity in the enclosure and reduce the dustiness. Pine and Cedar emit poisonous oils. Sand does not absorb odors. Aspen is common for reptiles, although the splinters that are present in shavings should not be eaten by small tortoises and it is often difficult to keep the food free of substrate. Spot cleaning of feces is all that is required to keep the substrate clean for several months when hatchlings.

**FOOD & WATER-** I usually feed the tortoises on a piece of flat rock or ceramic tile. Uneaten food should be removed to prevent any rotten organics from accumulating in the enclosure. Water is important to keep clean as the tortoises will often defecate in the water dish. A very shallow dish will do great for the first few months. It evaporates quickly and will last longer if kept in the cooler areas. I often put the water dish on a larger tile or plastic container lid which keeps the substrate further away from the water and keeps it clean longer.



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**HOT HUMID HIDE-** Most research suggests that providing a hiding place that remains warm and humid will allow healthy smooth shell growth with as little pyramiding as possible. This is recommended, although care must be taken to not place the humid hiding area in a cool environment. With tortoises: warm & humid is safe, cool & dry is safe, hot & dry or cool & humid can create health and growth problems.

## Helpful Care Tips

1. Water dishes should be easy to get in and out of. Place the water dish away from walls or ornaments that increase the risk of the tortoise flipping on its back.
2. Keep the "hot spot" away from flipping hazards.
3. Feed the tortoise primarily in the evening, and don't be afraid to skip a rare day. A tortoise searching for food gets lots of exercise!
4. Setting a tortoise down with the intention of watching it is very risky! Especially outside.
5. If your tortoise is not active, check your temperatures.
6. Soaking in shallow warm water is recommended. At least weekly for adults and much more frequently for hatchling.
7. Outside pens need to keep tortoises in and predators out.



## Determination of healthy size: The Jackson Ratio

The Jackson Ratio has been developed as a tool to determine if your tortoise is a healthy weight to hibernate and is only applicable for Greek (*T. graeca*) or Hermanns (*T. hermanni*) tortoises. It also serves as a great indicator of overall health for these two species. Hibernation in these tortoises is optional, but should not be done with underweight tortoises. Hibernation of underweight tortoises poses serious health risks.

The Ratio requires the SCL (straight carapace length) and weight (grams). These measurements may be compared in the charts below. For more information or use of a Jackson Ratio calculator, reference the website for the Tortoise Protection Group.

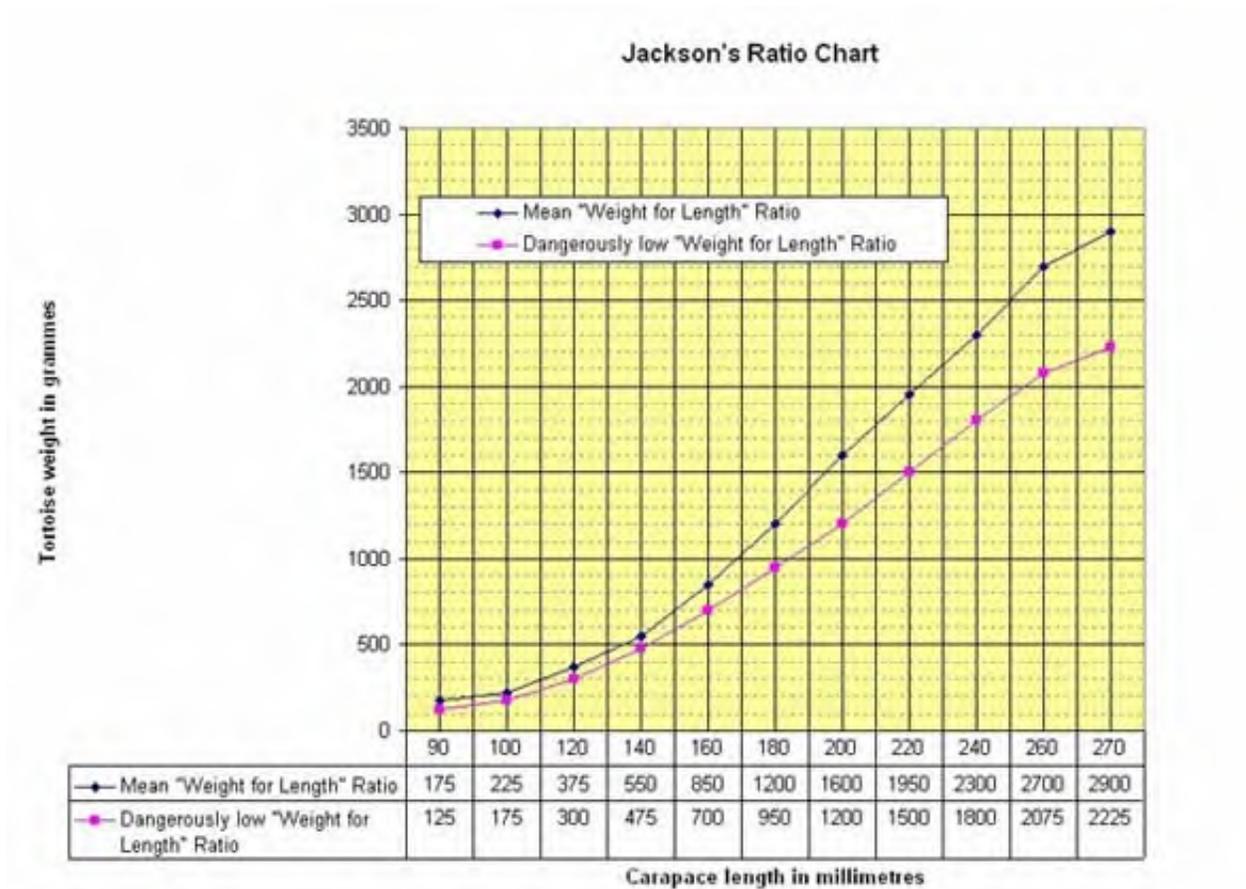


### JACKSON RATIO CHARTS-

Hatchlings:



Adults:



## Male or Female? Gender Determination

Gender determination occurs during incubation of the egg, and is temperature dependent (temperature of incubation determines sex of babies). Slow 'N Steady Tortoises attempts to incubate tortoise eggs at the 'tipping point' so that the babies are equally likely to be either a male or female (Incubation temperatures between 30-31°C). Determination of the gender can only be performed with accuracy once the tortoise is reaching maturity. Sometimes, specimens aged 2-3 yrs old will show enough change, particularly in the tail size/shape, to indicate male or female. In general, males have longer, thicker tails and usually hold their tails to the side. Young tortoises often have the appearance of a female. Many young tortoises, believed to be female by their owners, will eventually grow the characteristic male features as it matures.

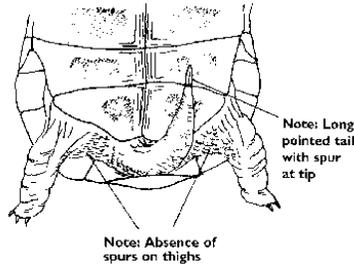
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## MALE HERMANN

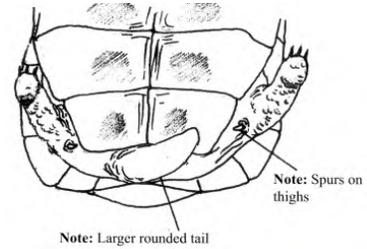


Hermann

MALE



Greek

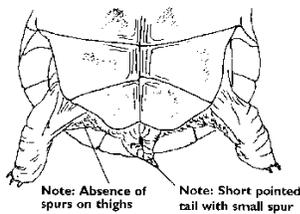


## FEMALE HERMANN

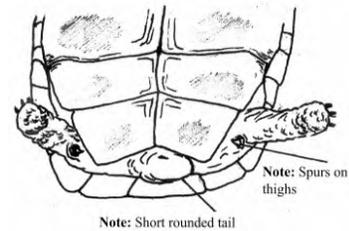


Hermann

FEMALE



Greek



## Tortoise Diet: Is it SAFE to EAT?

We attempt to feed a varied diet of greens throughout the year and supplement Mazuri tortoise chow about once per week. In the winter, we frequently purchase romaine lettuce and spring mix. In the spring, summer and fall, we gather weeds! This means learning about all the weeds in my local area, and learning what is safe and what is not. To keep it simple; dandelion, plantain, and clover are great. Some tortoises enjoy mixing in some hosta. Always avoid Colts foot. "The Tortoise Table" website is a great resource to check the safety of various plants and weeds ([www.thetortoisetable.org.uk](http://www.thetortoisetable.org.uk)). Their online "Plant Database" and "Plant Booklet" are the best resources available for identifying edible foods.

\*\*\*This booklet has been written and designed by Slow 'N Steady Tortoises as a guide for raising healthy Hermann and Greek Tortoises in Canada. It's information is based upon our research of the literature and our personal experiences. It is intended for personal use.\*\*\*