



# VINTAGE TORTOISE RESCUE

IF YOU HAVE ANY QUESTIONS OR SOMETHING TO ADD PLEASE CONTACT ME AT [VINTAGETORTOISEDECOR@GMAIL.COM](mailto:VINTAGETORTOISEDECOR@GMAIL.COM)

## Hibernation Information

**Fig 1: Hibernation Behavior of Common Pet Tortoises & Turtles**

<u>Species that Hibernate</u>	<u>Species that DO NOT Hibernate</u>
<ul style="list-style-type: none"> <li>• Desert Tortoise</li> <li>• Russian Tortoise</li> <li>• Hermann’s Tortoise</li> <li>• “Greek” Tortoise*</li> <li>• Marginated Tortoise</li> <li>• North American Box Turtles</li> <li>• Slider Turtles</li> <li>• North American Water Turtles</li> </ul>	<ul style="list-style-type: none"> <li>• Sulcata/African Spurred Tortoise</li> <li>• Leopard Tortoise</li> <li>• Egyptian Tortoise</li> <li>• Golden “Greek” Tortoise*</li> <li>• Radiated Tortoise</li> <li>• Hinge-back Tortoises</li> <li>• Red Footed Tortoises</li> <li>• Yellow Footed Tortoises</li> <li>• Asian Box Turtles</li> <li>• African Side-Neck Turtles</li> </ul>

*\* = hibernation behavior tends to vary depending on subspecies origin, further research is recommended on your particular subspecies to determine if hibernation is appropriate.*

Hibernation is an important part of the natural cycle of desert tortoises, box turtles, and many other turtles and tortoises kept as pets. Make sure you know if your turtle or tortoise is supposed to hibernate or not.

Hibernation, sometimes referred to as brumation, is an adaptation used by many species around the world, including many tortoise species, to survive cold weather. Like all cold-blooded animals, tortoises are unable to produce their own body heat. As the temperatures outside fall their metabolism slows. A slower metabolism means every physiologic activity, from digestion or reproduction, slows too.

Hibernation is natural and recommended for healthy tortoises. However, it's extremely important to point out that not all tortoise species can or do hibernate. Before you prepare your pet for hibernation make sure to establish that it will hibernate. For species that do, hibernation is part of their yearly life cycle and many tortoises can even become ill if prevented from doing so year after year. While hibernation is natural and healthy, **sick tortoises should never be hibernated**. For a sick individual, hibernation can be seriously dangerous and potentially deadly. To survive hibernation a tortoise needs good fat and water reserves. Sick tortoises often aren't eating well and thus not storing the energy they'll need for successful hibernation. In addition, a tortoise's immune system slows during hibernation. A sick tortoise won't be able to adequately fight off any infection.

### **PREPARING FOR HIBERNATION: "As A Precaution"**

#### **NOT ALWAYS NECESSARY**

Before hibernation every tortoise should be examined by a qualified veterinarian to assure they are healthy. Your veterinarian will check for signs of infection (i.e. runny nose or eyes, coughing, respiratory difficulty, etc.) and assess their body condition. Often veterinarians will recommend tests such as checking a fecal sample for parasites, blood work to check for hidden infections and assess overall organ function, and x-rays to check for bladder stones or retained eggs.

Once your pet has passed their physical exam, it's time to prepare them for hibernation. Monitor your tortoise closely as Fall approaches. Usually starting in late September or early October, as the nights start to cool into the 60s, you will notice your outdoor tortoise becoming less active. At this time stop feeding your tortoise any supplemental produce (i.e. Kale, Lettuces, Collard Greens, etc.). A small amount of grass ingested prior to hibernation usually isn't harmful, but a stomach full of food can be. Undigested foods left in the digestive track will not be digested during hibernation and will rot. During this time it is important to soak your tortoise once monthly in a shallow container. This will help them to build up water reserves and stimulate them to empty their bladder and bowels.

As the temperatures continue to drop it will stimulate your tortoise to seek a **hibernaculum**, an appropriate shelter in which to hibernate. You can provide one by constructing an artificial burrow to insulate the tortoise from the cold and protect them from getting wet. Adding hay or straw into the burrow can further increase the insulation. **If a den or burrow will take on water during rain make sure you have proper coverage or the tortoise can either drown or get wet and without body heat possibly freeze or develop a respiratory infection.**

### **HIBERNATION:**

Most tortoises will hibernate once ground temperatures remain below 60 degrees. An easy way to monitor ground temperatures is by using a simple kitchen thermometer stuck into the soil of your tortoise's burrow. It is important to make sure ground temperatures do not exceed 60 degrees for an extended period of time, as these warmer temperatures will cause your tortoise to burn through its fat reserves too quickly. Ground temperatures below 39 degrees are also dangerous and can result in tissue and eye damage and death. If ground temperatures exceed

60 degrees for an extended period or drop below 39 degrees you should bring your tortoise indoors forgoing hibernation, relocate them to a more appropriate area of the yard, move them into an insulated box in a cool area of the house or garage (see below), or hibernate them artificially in a refrigerator (see below).

It is very important to check your tortoise occasionally, at least once a month, to make sure hibernation is going well. Keep a chart of your tortoise's weight using a digital gram scale, your tortoise should not lose more than 1% of its body weight per month. Tortoises should be brought out of hibernation immediately and be examined by a veterinarian if they are losing too much weight, show any signs of illness, are found attempting to bask on cold days, or remain active within their burrow.

**Reasons to Bring Your Tortoise Out of Hibernation:**

- Loss of >1% of body weight per month
- Remaining active within the burrow
- Attempting to bask on cold days
- Signs of illness such as nasal discharge or difficulty breathing
- Urination or emptying of the bladder

While checking your tortoise it is also important to make sure they have not urinated. A tortoise's urinary bladder actually serves as their water storage during hibernation. If you notice your tortoise has urinated they will need to be rehydrated. If not they will easily become dehydrated and die. Warm your tortoise to room temperature slowly and then allow them to soak themselves in shallow water to drink. Before cooling them down again and returning them to their burrow, be aware that urination can be a sign they are remaining active within their burrow. Take a moment to check over their hibernation conditions and remain observant for any other signs of problems.

If you do need to bring your tortoise out of hibernation, warm them slowly to room temperature, do not warm them quickly. Tortoises that can no longer hibernate for medical reasons will then need to be maintained indoors, fed, and housed in an appropriate warm enclosure for the remainder of the winter.

**"ARTIFICIAL" HIBERNATION:**

Hibernating tortoises indoors can be tricky, whenever possible hibernating them outdoors naturally is recommended. Tortoises will not go into hibernation unless the temperatures in the environment cue them to do so. When hibernation outside is not an option, place your tortoise inside in an insulated box and keep him in a part of the house or garage that stays between 50 and 65°F. If it is much warmer, your tortoise may not be able to hibernate properly and become ill. If it drops much below 40°F, your tortoise runs the risk of damage from the cold

temperatures. Alternatively, indoor tortoises you can simulate the drop in outdoor temperatures to initiate hibernation utilizing a refrigerator. Slowly lower the temperature until you reach hibernation temperatures.

Check on your tortoise periodically. Soak it in a room temperature shallow water bath for 15 minutes every 4-6 weeks to prevent dehydration. Most tortoises will hibernate for 4-6 months. If the temperature is much above 65°F, the desert tortoise may be active and use up its energy stores too quickly. If the temperature is much colder, the desert tortoise may develop health problems. Once the overnight temperatures are getting above 65°F and there are warm (85°F) sunny days, your tortoise can be removed from hibernation and placed back into the outside enclosure.

**How Old Should My Tortoise Be Before Hibernating?** This is a contentious one; I personally do not hibernate a tortoise for the first 2 years of life. I personally keep them in temperature controlled enclosures indoors in winter months. I do this because hatchlings - 2 years old are fragile. Consensus seems to be that hibernation from the age of one onwards is not only fine, but vital to the proper development of the tortoise. This is up to the individual however if you choose to not hibernate you will need to provide a species specific enclosure that is heated and has UVB with vitamin D. The argument for hibernating sooner is to prevent the tortoise from growing too quickly. Although this doesn't sound like a problem, it can actually lead to health problems such as metabolic bone disease, symptoms of which can be a soft or deformed shell that doesn't grow quickly enough compared to the rest of the tortoise. This can actually be worse during the early years of the life of the tortoise when they've yet to reach full size. Hibernation allows growth to take place at the correct rate. If you can ensure the correct set-up for hibernation there's no reason not to hibernate a tortoise from the age of 2 years onwards, it will just be for a shorter amount of time than an older specimen. If you're not confident for any reason, keeping your tortoise awake all year round until the age of about 3 is okay, but you'll certainly want to hibernate them the following year.

**The approximate duration of hibernation according to the age of your tortoise should be:**

- **1st year – 3 weeks**      - **2nd year – 6 weeks**      - **3rd year – 10 weeks**
- **4th year – 16 weeks**      - **5th year onwards – 22 weeks**

**What Time of Year Does a Tortoise Hibernate?** Generally speaking tortoises will 'wind down' for winter when the nights grow longer in around **late October and Early November**. Obviously you can have a little bit more influence over when your own tortoise will hibernate, but you'll start to notice them get more lethargic around this time of year, signifying that they're ready for hibernation.

**Preparing For Hibernation** The golden rule when preparing your tortoise for hibernation is to **make sure they have an empty stomach**. If they hibernate with food in their gut it can prove fatal, so it's vital you develop some sort of strategy to mitigate this risk, such as stop feeding a week prior and soak so they can get not only hydrated but also to clean their systems of digested food prior to hibernation. In around mid October you should start to look for signs of lethargy in your tortoise; he'll probably be moving around less, and perhaps eating less food than usual. As soon as this happens you'll need to **cease providing further food for a further two weeks only if the tortoise is under 3 years old**, and **one month if they are over 3 years old**. While food is taken off the menu in the run up to hibernation, **water most certainly is not**. In fact you'll need to make sure your tortoise has a **full bladder before they have their long sleep**, therefore daily bathing is essential to ensure the maximum uptake of water. This also serves the secondary purpose of helping to clear out the gut of any remaining solids.

**Setting Up The Right Location To Hibernate** The difficulty when selecting a location for your tortoise to hibernate is finding a spot where you can ensure the temperature will stay consistently within the 2-10 degree bracket. Lower than zero and

the tortoise could freeze, more than 10 and they could wake up prematurely. The key is placing whatever container you plan to house the tortoise in, in a relatively stable environment such as a garage or shed. This provides shelter from adverse weather and



predators, whilst certainly not getting too warm or freezing. Avoid garages that you use to heat your car up due to toxic fumes. As for the container you plan to place the tortoise in, let me first say that you should avoid insulating this with shredded paper, straw, or anything else that could get wrapped around the tortoise's neck. I've unfortunately known several people to lose a tortoise this way, so I know first hand that it's not a good idea. In any case you should actually use a container within a container, such that any insulating material doesn't actually come into contact with the tortoise at

all. The smaller inner container is where the tortoise will be sat. It's best to use a plastic box of an appropriate size for the tortoise that's also large enough to line the base with a layer of moist sterilized compost (this helps prevent the tortoise from getting dehydrated during hibernation).. The lid will need to have several air holes in it.

The outer box can simply be a cardboard box, or if you prefer a larger plastic container. The smaller box with the tortoise in should be placed in this larger box and insulating material placed between them. This could include shredded paper (as it won't be in direct contact with the tortoise) or polystyrene packing 'peanuts'. Once again this larger box should have air holes in it, and there should be a clear path for the flow of air into the smaller inner box. Having an insulated container arrangement like this should keep the temperature inside consistent for the tortoise, however it's a really good idea to have a digital thermometer with a temperature probe located in the inner box so that you can regularly check the temperature doesn't exceed or drop below the acceptable range.

**Using a Fridge?** This is a slightly more unorthodox method of storage for a hibernating tortoise, and on the surface it seems ideal; you have full control over the temperature of the space, and it's well insulated to maintain said temperature. This is a method I grew up with. My grandparents did this method with success for over 45 years with no problems. I, on the other hand, am not that brave and have not tried this method. My biggest concern over using a fridge is that they are airtight. So if you do choose to use one you'll need to modify it by drilling 2 holes in the fridge door, one to

pump air in, and another to allow return air to come out. An air pump will also need to be used to ensure a positive flow of air. There's also the temptation to use an old fridge instead of a new one, however this is a risky strategy as depending how old your 'old' fridge actually is, the thermostat might not be as reliable as it should be, therefore the danger of the fridge being warmer or colder than it actually should be could prove fatal for the tortoise. The other vital piece of the puzzle is ensuring that the ambient temperature of the room you intend to keep the fridge in remains constant. Although a fridge is indeed designed specifically to insulate the inside temperature from the effects of the outside.

**Waking Up Early** If your tortoise wakes earlier than expected then you shouldn't try and put him or her back to sleep, their metabolism will have switched back into 'walking' mode and it would be dangerous to try and force hibernation again as chances are they wouldn't be able to and you would risk them dying of thirst or starvation. The most common lesson to be learned from a prematurely waking tortoise is that the temperature in or around their hibernation container probably rose too high, prompting them to wake. Therefore the following year you'll probably need to be more attentive at monitoring the temperature.

**Waking As Expected or Up As Prompted By You** When the time comes for your tortoise to come out of hibernation you'll need to move the their hibernation container into a warmer space, typical room temperature (65 - 75) is sufficient to



gradually get them moving again. After an hour or so you can move them out of their hibernation box and back into their tortoise table, vivarium or weather permitting outdoor enclosure. Here they'll get a much needed dose of UV light as well as continued heat. Tortoises will wake up very slowly and sometimes appear to be weak or sick, this is typically not the case. It can take days sometimes every week to be at the energy level they were prior to hibernation.

**Post Hibernation Feeding** As you can no doubt imagine, your tortoise will be pretty famished having not eaten or drunk anything for many weeks! You'll probably even notice they look a bit on the skinny side, but this is usually nothing to worry about, as long as they slowly start eating their food which will increase as the weather warms up and drink soon after waking. Once they've begun to reacclimate and move around a bit you can start to offer food and water. Just as with ourselves, water is more important for survival than food, so bathing your tortoise for 10 minutes rather than simply filling up their water dish will ensure they actually take on some water.