

Care of Freshwater Turtles

All Creatures Animal Hospital

Water Quality

The inherent difficulty with keeping water turtles is in maintaining healthy water quality. Even the smallest pond that supports wild turtle populations is vastly larger than the aquaria that are used for captive housing of turtles. These ponds have larger volumes to dilute out the waste products of the various inhabitants. In addition, there are well-developed biological systems to detoxify wastes. In contrast, captive turtles live in their own toilets.

To maintain decent water quality for captive turtles, a powerful filtration system is important. Because turtles produce a large amount of waste, undergravel filters are too difficult to keep clean. Power filters (box filters) are recommended for water turtles.

Even with a good filter, the water should be changed on a regular basis. Water changes can be partial or complete, depending on the size of the tank. New water should be the same temperature as the tank water.

Water for turtles does not necessarily have to be dechlorinated like it does for fish, or even amphibians. Since they do not breathe the water, or absorb directly through the skin, the chlorine in tap water does not bother water turtles. In fact, the chlorine can inhibit bacterial growth.

A slightly acidic pH (6.7-6.9)



Any aquarium is much smaller than any pond that a turtle would live in.

may help prevent shell rot. The pH can be lowered using products from a specialty aquarium dealer.

Feeding turtles in a smaller tub of water, rather than the main tank can reduce the organic load and improve overall quality. This tub can be changed after each feeding.

Herp Packet Aquatic Turtles

New Turtle Exam

- Examination
- Parasite evaluation
- Discussion of habitat
 - Water
 - Temperature
 - Diet
 - UVB
- Hibernation plan

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Water Temperature

Water retains heat much more effectively than air. In general the larger the volume of water, the longer it takes for the temperature to change.

Most aquatic animals tolerate rapid changes in temperature poorly. Generally, a temperature

similar to tropical fish aquaria (76-78°F) is appropriate for fresh water turtles.

If needed, an aquarium heater can be used to get the water to the correct temperature. Some aquarium heaters have to be vertical, and since the water level in turtle

tanks is lower, these types should not be used. Submersible heaters are available for this purpose.

When the water is changed, the new water should be close to the same temperature as the discarded water.

Land Ho

Water is the sactuary for freshwater turtles. However, the ability to get onto solid ground is critical. Turtles breath air and they need to leave the water occasionally for rest. There are a few species (snapping turtles, soft-shelled turtles) that rarely leave the water. These turtles will not be harmed by having access to land in the habitat.

Most turtles bask to some extent. Basking warms the body, allows for absorption of UVB light, and dries the shell and skin, which can reduce the bacterial population.

The amount of dry land needed for turtles

varies considerably with the species, age, size, and population density. There will be competition for basking spots, so there should be enough for all of the turtles.

It should be easy for the turtles to climb out of the water on to the dry land. In very small set-ups, the “haul-outs” may just be stones or a floating island. In others, the habitat can be divided more evenly into land and water.

There may be times when a water turtle should be kept on dry land for a period of time. In these cases, other hiding areas should be provided.



Water turtles need to leave the water at times.

Diet

Most freshwater turtles are omnivorous, however, they vary greatly in the specific diets. Most of the common pet turtles (red-eared sliders, painted turtles) will do well on a combination of commercial turtle pellets, fish pellets, gut loaded insects, earthworms, small fish (goldfish, guppies, and minnows), greens, and water plants. Most water turtles will only eat when in the water. Snapping turtles are largely carnivorous, eating a variety of fish, invertebrates, birds, and small mammals. Most water turtles will not eat when they are on dry ground, so the food should be offered in the

water. This limits the use of foods that will break up in water easily. As discussed in the section on water quality, it is best to use a separate feeding tank or bucket. This will minimize the waste food left in the primary habitat.

Live food items can be purchased at pet stores, bait shops, or can be collected from the environment. When live foods are used, parasite control is more important since some of these prey items can serve as intermediate hosts for some parasites.

“The diet may contain commercial turtle pellets, fish pellets, gut-loaded insects, earthworms, small fish, greens, and water plants.

Discuss the specific diet for your turtle with our veterinarians.

Basking

Many freshwater turtles bask in sunlight. There are several advantages for the turtle when they do this. First, basking allows the turtle to absorb heat. Heat allows the body to work at maximum capacity. Generally a basking spot should reach about 90-92 degrees in the daytime. The second



Basking serves many purposes for freshwater turtles.

benefit of basking, is the ultra-violet light. Ultraviolet B light (in the 290-310 nm) range allows the turtle to synthesize its own vitamin D3. Vitamin D3 is critical for calcium absorption. Therefore, captive turtles should have access to lights that have about 5-10% of their output in the UVB range. The light should be within a foot of the

basking spot, and should not have any glass or plastic between the light and the turtle.

Finally, the ultraviolet light and the drying that basking provides kills and inhibits some of the bacteria and fungi that can grow on the shell. This helps reduce the risks of shell rot, which is one of the most common health issues with freshwater turtles.

Both an incandescent lamp for heat and a UVB tube should be provided to replicate sun basking.

Breeding

While breeding is a fairly advanced topic for a basic care brochure, a few things are important for the average pet owner to know. The first is how to determine the sex of a turtle. This does vary to a great degree, but there are a few basic guidelines that will usually work. First, is to look at the tail. The tail of a male turtle is generally bigger than that of a female. This is due to the presence of the male phallus within the tail. The opening of the cloaca is also further back on the tail. In the majority of species, the cloaca is before the end of the upper shell in females and past the end of the upper shell in males. In some species, such as the red-eared slider, the front claws of the male are elongated in an exaggerated way. These claws are used in the courtship ritual with the female. The knowledge of the gender may be important for a few reasons. First, males of many species are smaller than the females. If two turtles kept together grow differently, it may be due to the sex. If not, there may be social stresses, health problems, or other causes. Secondly, it is important to know that female turtles may develop eggs within their bodies, whether or not they have had access to a male turtle. The male is needed only for fertilization. Some species can lay fertile eggs

for an extended period following a single mating. Egg laying typically occurs in the spring. A gravid female will try to leave the water and search for a place to bury her eggs. Often, the activity level increases while the appetite decreases. Adult female turtles should be provided areas to dig in order to prevent egg retention. If a suitable location is not found, some turtles will retain eggs for prolonged periods of time with serious health consequences. A plastic box with moist sand, vermiculite or potting soil makes a good spot for a turtle to lay eggs.

Incubation of turtle eggs is beyond the scope of this article. However, there are some interesting things about turtle incubation. First, turtle eggs are very metabolically active. They breathe air and absorb water from the environment. Secondly, many turtles exhibit temperature-dependent sex determination. What this means, is that the ratio of males to females within a clutch is determined not by chromosomes, but by the incubation temperature. At high temperatures, a high proportion of the hatchlings will be one

gender, while at low temperatures, they will be the other gender. This will vary with species.

Anyone contemplating the breeding of turtles should research the individual requirements of the species in question. In addition, it is im-

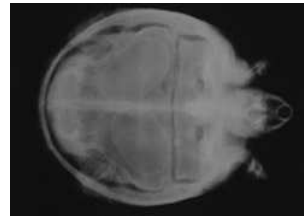
portant to determine what will be done with the hatchlings.

Turtles are not legal to sell until they reach four inches wide.

This is to assure that children do not put them into their mouth, risking Salmonella infections. It takes considerable time for turtles to attain four inches in width, so it may be necessary to house and feed the offspring for a long time. With successive

years of breeding, it would be easy to over-populate.

Male turtles have a few health problems of their own. Occasionally the phallus will prolapse out of the cloaca and may be unable to retract. This can compromise the blood supply and medical attention for this condition is required.



Egg laying can occur with or without the presence of a male turtle.

Salmonella

It has long been known that water turtles carry Salmonella bacteria. This bacteria does not generally cause illness in the turtle. However, in humans, particularly very young people, very old people, and those with compromised immune systems, severe illness can occur. Salmonella is transmitted to humans by ingesting it. Generally a person will not contract the illness simply by being around the turtle. However, if they touch the turtle directly, or indirectly by handling things the turtle has been in contact with, and put their hands to the mouth, severe illness



Water turtles commonly carry Salmonella bacteria which can cause serious illness in humans.

can occur. Salmonella is expected to occur in these turtles, and so testing the turtles has no real benefit. If we do not find it, we still cannot assume that it is not there, and if we do find it, we cannot eliminate it with antibiotic therapy. In fact, antibiotic therapy is only likely to make the Salmonella antibiotic resistant. The best course of action is to assume that all turtles (and other reptiles for that matter) are carriers of this bacteria.

The best way to avoid contracting this disease is by following strict hygiene practices.

- Always wash hands following handling turtles, their equipment, or their wastes.
- Wash and disinfect sinks and counters after cleaning turtle supplies.
- Sanitize the habitat frequently.
- Do not allow turtles on the kitchen counters, sinks, or other food preparation.
- Do not eat, drink, or smoke while handling or caring for the turtle.
- Never kiss or nuzzle turtles.

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Hibernation

Many of the most commonly kept species of freshwater turtles are from temperate zones. In the wild, these turtles, by necessity hibernate during the winter months. This puts them in a dormant state, where they can conserve energy during a time when they will not eat, reduces their oxygen intake, and keeps them from freezing.

During the waning weeks of summer, the turtle eats voraciously to store adequate energy for the winter months. When the temperatures start to drop at night, the turtle will stop eating to allow for the digestive tract to empty. If food is present during hibernation it will



To hibernate or not to hibernate, that is the question.

not digest and may cause illness.

In the fall, the turtle will go below the frost line and become dormant for the winter months. They may awaken and move a bit at times when the temperatures are warmer, but this is minimal.

In captivity, many of these turtles retain the instinct to hibernate. Cooler nights and later cooler days, along with shortened day length clues them that winter is coming.

Hibernation is difficult to accomplish. Turtles must be in excellent condition to survive hibernation. In

addition, it can be difficult to find an area that maintains the proper temperature.

The necessity of hibernation is controversial. Some maintain that since it is the most natural method, it is required. It does seem very important for breeding. If done improperly however, it can result in the death of the turtle.

If hibernation is to be attempted, the turtle should be examined for fitness. Once this is done, the food should be withheld for about 2 weeks. After this the turtle can be brought to the hibernation temperature of 45-55 degrees. This may be done gradually or suddenly. It is important that the temperatures do not drop to freezing.