

**Pancake Tortoise - (*Malacochersus tornieri*)** - Paula Morris  
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This care sheet is intended only to cover the general care of this species. Further research to best develop a maintenance plan for whichever species/subspecies you are caring for is essential.

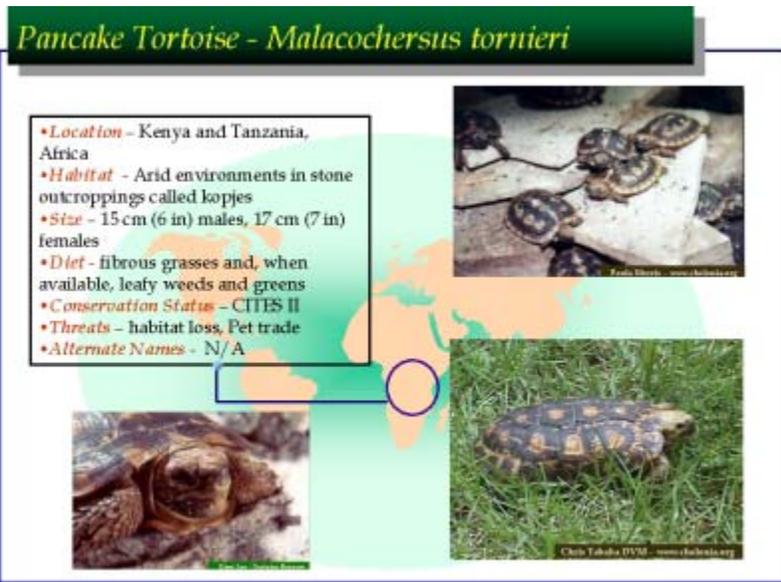
Pancake tortoises possess one of the most unusual survival adaptations within Chelonia. Instead of the usual rounded vault of the carapace, the Pancake tortoise has a flattened shell and non-rigid, hingeless plastron and fenestration (holes) in its skeletal structure. In contrast to most chelonians, the Pancake tortoise has no natural defenses other than its ability to stay hidden or unobserved. It has evolved with fewer bones and uncharacteristic shell flexibility compared to other species.

In the wild, deep, tapering crevices in stone outcroppings called kopjes provide protection and microclimates for the Pancake tortoises, and they have evolved highly articulating limbs that allow them to climb nearly vertical rock surfaces and right themselves should they fall in the process. Captively-bred Pancake hatchlings, although staying largely hidden during the day, nearly immediately exhibit the same climbing ability and articulation as the adult tortoises. Delicately curved and pointed toenails facilitate their rapid retreat to safety. Most captive Pancake tortoises, though, lose the need for these points and the nails thicken and round, and require trimming unless appropriate opportunities to climb are provided.

Individual, unique patterns of alternating radiating cream and brown bars on the carapacial scutes help the tortoises blend into their surroundings while foraging. When startled they will literally run for rocky outcrops; they are considered the fastest moving tortoise of all tortoise species because of their lighter skeletal structure. The flexible plastron allows them to wedge tightly into low spaces where predators cannot pull them out. It was once believed that these tortoises could inflate their lungs to make extraction difficult, but instead it has been shown that they rotate their forelimbs outward and dig in with their claws.

**Pancake Tortoise - *Malacochersus tornieri***

- **Location** - Kenya and Tanzania, Africa
- **Habitat** - Arid environments in stone outcroppings called kopjes
- **Size** - 15 cm (6 in) males, 17 cm (7 in) females
- **Diet** - fibrous grasses and, when available, leafy weeds and greens
- **Conservation Status** - CITES II
- **Threats** - habitat loss, Pet trade
- **Alternate Names** - N/A



Pancake tortoises occur naturally in Tanzania and Kenya, Africa. Due to their locality-specific physical adaptations, they are in particular peril from habitat destruction and overcollection within their natural range. They are currently listed as CITES-II, with CITES-I designation imminent.

*Malacochersus* is a non-hibernating species that has no tolerance for consistently damp or high-humidity environments, nor cold and damp conditions imposed by outdoor weather. If kept outdoors part of the year, they *must* be provided with a protecting shelter warmed with a ceramic heat emitter to dissipate any ambient moisture. Do not allow them to go to ground on cold/damp soil. Ingestion of pathogens during foraging on the ground can lead to a condition called *otitis media*, and presents as a swelling or lump on the tympanic flap; it must then be treated by a veterinarian. Other susceptibilities include viral stomatitis and hexamita. Observe the tortoises as they eat and look for pink, healthy mouth tissue. Use your nose, too! Any foul odor from urine or feces mandates a test by your vet to determine cause.

If you acquire a new tortoise, quarantine for a minimum of six months prior to introduction to the others and get a complete health examination from a veterinarian conversant with reptiles. Chelonians are experts at appearing healthy, even if they're not. A single diseased animal can infect and kill your collection.

**HOUSING PANCAKE TORTOISES INDOORS** - Expert climbers, Pancakes will need to be housed in a habitat with either an inward-facing lip or mesh covering to prevent climb-outs. Communal by evolution, they can be housed in small groups, preferably with a single male presiding over a harem of females. Avoid housing tortoises of disparate sizes together.

Substrate can be anything from newsprint to a packed soil mix tailored for this arid-dwelling species. A mixture of topsoil and children's play sand works well. Scatter slabs/piles of hygroscopic sandstone or patio flagstone to wear down claws and beaks and provide texture and contour. Do not ever place food directly onto particulate substrate; sand, especially, can build up in the tortoises' gastro-intestinal tract and cause impaction and even death. Feed in a separate sand-free area of the habitat.

Avoid any substrate that retains excessive moisture that can breed mold. I do not advise using hay since damp hay can culture dangerous mold. I have had success housing my group on newsprint (easy to change out). For shelter I use chunks of ±2 inch-thick limestone rock to support a large, thin slab of patio flagstone over which I direct a 100-Watt ceramic heat emitter. This warms the slab under which the tortoises congregate so their lungs, at the top of the carapace, stay warm instead heating their plastrons. I also have a ziggurat of stone slabs arranged on top of the main slab so the tortoises can climb around on a textured surface. They appreciate vertical contour, indoors or out, and will happily climb if given the opportunity.

Most references state that the Pancake tortoise doesn't drink much water, but I have found that mine not only drink from the edge of the low dish that I provide, but enjoy sitting in it and often defecating in it, necessitating frequent changing. The water dish also provides a bit of humidity without making the rest of their habitat damp. Hatchlings *must* have access to fresh water at all times; they drink copiously and often. Water level should be kept no higher than the bridge, but be deep enough for the tortoise to lower its head into it for drinking. The nares (nostrils) should never be under water.

Indoors, in one corner of the environment, position a hardware store reflector clip lamp to provide artificial basking facilities and a basking spot of 95 degrees F or so (35 degrees C). Also provide a full-spectrum fluorescent light for UVB. A UVB source is necessary for Vitamin D3 synthesis (needed in calcium metabolism). A mercury vapor bulb may be used that fulfills all requirements. Place any shelter away from the basking spot to allow the animal a cooler dim

retreat. A dry, outdoor habitat during the warmer parts of the year should be utilized for optimum growth/health of the animals, though.

**OUTDOOR HOUSING** - Predator-proof outdoor habitats offer many advantages over indoor accommodations and should be seriously considered as an option during warm weather. In particular, because of their grazing habits, Pancake tortoises should be kept outside when the climate allows it. A well planted outdoor habitat for food, shelter, UV, and natural behaviors is well worth the minimal investment for the sake of your animal. Provide an inward-facing lip to any perimeter to prevent escapes.

**DIET:** The Pancake tortoise is an herbivore. It feeds primarily on large amounts of different fibrous grasses and, when available, leafy weeds and greens. A very high fiber, low protein, and calcium-rich diet will ensure good digestive tract function as well as smooth growth. Avoid overreliance upon 'supermarket' greens, which typically contain vastly inadequate fiber levels, excessive pesticide residues, and are too rich in sugar content as they are designed for human consumption. The Pancake tortoise should not be fed any meat-based protein; they are not equipped to digest it properly and will die from renal failure or from impacting bladder stones of solidified urates. Pancake tortoises are a grazing species; every effort should be made to duplicate this diet in captivity. Do not feed them fruit more than once a month, and then sparingly. My group enjoys a bit of diced tomato and chopped apple, guilty pleasures both.

Optimal diet: Grasses (timothy, bermuda); leafy greens like dandelion, clover, Romaine or other deep green lettuces, grape leaves, mulberry leaves; weeds like plantain, sowthistle, vetch, ajuga, and dandelion; *Opuntia* cactus pads; and non-pesticided lavatera, nasturtium, hibiscus and rose blooms. Additional calcium supplementation is essential. Powdered calcium can be sprinkled on all foods at each feeding. Provision of a cuttlefish bone, which can be gnawed if desired, is also recommended. Because I am fortunate in being able to keep my tortoises outside during the day most of the year, I supplement with Osteoform powdered calcium *without* D3 in the summer when they have access to natural sunlight, and use RepCal *with* D3 in the winter when there's no D3 available for natural calcium synthesis.

**NOTES:** Keeping *M. tornieri* successfully can be a challenge outside its natural climate zone. The species tends to develop respiratory problems if not kept in optimum surroundings. It should be noted that turtle and tortoise care research is ongoing. As new information becomes available we share this on the World Chelonian Trust web site at [www.chelonia.org](http://www.chelonia.org). Serious keepers find it to be a benefit to have the support of others who keep these species. Care is discussed in our free online email community, which may be joined from the web address above. Please contact us about the many benefits of becoming a member of the World Chelonian Trust.

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