Corn Snake

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Natural History

Corn snakes (*Pantherophis guttatus*) are one of the most popular reptiles in the pet trade. These medium sized colubrids are native to the southeastern and central United States and found in forests and fields. Corn snakes get their name from early European settlers who encountered these animals in their corn fields and assumed they were eating their corn. In reality, corn snakes were eating the rodents that were attracted to the corn fields. Corn snakes are crepuscular and terrestrial but perfectly capable of climbing elevated surfaces. These snakes are well adapted to urban environments and are often found in barns or other easily accessible buildings. During the day, they spend time under logs, lumber piles, or in mammalian burrows. Corn snakes are considered “least concern” by the IUCN.

Characteristics and Behavior

Corn snakes are very docile, and tend to be amenable to handling. They come in a wide variety of color morphs (patterns) and rarely bite. Their care requirements are fairly simple, making corn snakes excellent beginner snakes. Check your local laws before obtaining a corn snake as they may not be legal to own in certain states. Corn snakes tend to be hardy and are easily bred in captivity, making them widely available in the pet trade. Corn snakes are in the genus *Elaphe*, along with rat snakes, and generally have similar care requirements.

Lifespan

15-20 years.

Adult Size

3-5 feet. They are slim snakes that don’t tend to be very heavy.

Housing

At minimum, adult corns should be kept in a 48’’x18’’x22’’ enclosure, or about 75gal. Bigger is always better, and individuals over 5’ will need at least 5’ in length, as snakes need to be able to stretch out to their full length. It is a myth that reptiles become stressed by too much space; there is no such thing as too much space, only too much exposure! Warwick et al. in "Spatial considerations for captive snakes" (2019) noted

that, “Extensive natural home ranges...dismiss notions that snakes do not use space. Indeed, were snakes truly both sedentary and agoraphobic then keepers would require no vivaria frontage or lids and could open all enclosures confident that snakes would not leave the proposed security of their cages. However, snakes will freely leave their enclosures when permitted to do so and they are known for their abilities to escape captive environments.” In the same paper, it was also noted that, “Established captivity-stress related behaviors are also commonly associated with snakes in small enclosures.”

Furnishings, such as logs, branches, rocks, plants (live or fake), and ground clutter should also be provided for enrichment and cover. An elevated basking area should be available so the snake can move closer to or farther away from the basking source. Reptiles also need hides on both the warm and the cool side of the enclosure so they don’t have to choose between security and thermoregulation. Corn snakes tend to be fairly active, so providing vertical space for exercise is important for this species. For substrate, Zilla Jungle Mix, cypress mulch, Eco Earth, or coconut shavings (such as ReptiChip) work well for this species. Avoid pine and cedar, as these can cause respiratory irritation. The BioDude’s TerraFirma is also an option, particularly for keepers choosing to go bioactive.

Lighting

Because snakes consume a whole-prey diet, they don’t technically need UVB to synthesize vitamin D and metabolism calcium. However, UVB is beneficial for all species and should be considered a part of best care practices. UVB enhances immune function and promotes normal day/night cycles. Anecdotally, many keepers report more basking activity in their snakes when UVB is provided. The ReptiSun HO T5 5.0 is acceptable, as is the Arcadia T5 6% Forest or Arcadia T5 7% shadedweller, depending on where you put your corn snake’s basking spot. Arcadia provides a guide as to where to place your UVB fixture in relation to your snake’s basking spot. UVB fixtures should be roughly as long as half your reptile’s enclosure length. UVB bulbs should be replaced every 6 months; even if they are emitting light, they may not be emitting adequate UV. It is important to note that UVB cannot penetrate glass, so natural sunlight through a window will not be sufficient. Allowing safe outdoor time is also an excellent source of UVB and visible light. Snakes taken outdoors should be kept in an escape-proof and predator-proof, non-glass enclosure. Provide shade and basking spots so your snake can regulate their temperature. When keeping reptiles, our goal should be to replicate their natural environment as closely as possible, which includes replicating full spectrum lighting (the sun).

Sunlight is made of ultraviolet, near infrared (IR), mid IR, far IR, and visible light. It is our job as keepers to provide full spectrum lighting, which means as close to sunlight as possible. Unfortunately there is not one source for all of these components, so we must provide multiple types of lighting. For visible light, LED or halide bulbs should be provided. Light sources should be turned off at night to promote normal day/night cycles.

Arcadia UVB guide: https://www.arcadiareptile.com/lighting/guide/

Heat

Unlike mammals, reptiles cannot internally regulate their temperature and rely on their environment to heat and cool themselves. Therefore, it is important that we provide captive reptiles with a temperature gradient so they can warm up or cool down as needed. Reptiles have three temperatures to measure: basking spot, warm ambient, and cool ambient. The basking spot is the hottest area in the enclosure where they bask, the warm ambient is the air temperature on the warm side of the enclosure, and the cool ambient is the air temperature on the cool side of the enclosure. Ambient temperatures are best measured with digital thermometers (one on the warm end and one on the cool end), as analog thermometers are often inaccurate. Basking temperatures can be measured with a digital infrared thermometer.

Corn snakes require a basking spot of 88-90F, a warm ambient of 80-85F, and a cool ambient of 75-80F. Any light emitting sources should be turned off at night. Sunlight is made of UV, near IR, mid IR, far IR, and visible light. Flood tungsten-halogen bulbs are the most efficient at producing near IR, which is the most abundant IR in sunlight, and they also produce significant mid IR and some far IR. Far IR is the least abundant in sunlight, but is most often produced in large amounts by sources like ceramic heat emitters, heat pads, and radiant heat panels. Tungsten-halogen bulbs should be the flood type to ensure a wide enough basking site. These heat producing bulbs can be found as reptile specific bulbs or at hardware stores. Avoid hot rocks as these can easily burn reptiles.

Humidity

Ambient humidity should be maintained at 40-60% and measured with a digital hygrometer. Humidity spikes can be achieved with occasional heavy misting. A humidity hide with damp moss or substrate can also be provided to create a humid microclimate

for your corn snake. This can be as simple as a tupperware with a hole cut out, or it can be commercially purchased.

Feeding

Wild corn snakes are primarily rodent eaters, but will also eat birds and eggs in the wild. In fact, wild corn snakes appear to make up more predation events for nestling birds and eggs than originally thought. Mice, rats, chicks, gerbils, small quail, and African soft furred rats of appropriate size are all acceptable food options for corn snakes. Providing dietary variety is important for enrichment and preventing nutritional deficiencies, but the bulk of a corn snake's diet should be rodents. Prey should be no larger than 1.5x the largest part of your snake. Hatchlings and juveniles will need pinkies and fuzzies, whereas larger adults may need jumbo mice or small rats. Multiple small feeders can also be fed instead of one larger feeder to stimulate a "nest raid". Live prey should be avoided, as live animals can seriously injure your snake. It may take time to transition a snake from live to frozen/thawed, but the majority of snakes can make the change with time. Adjustments to your snake's feeding schedule should be made based on their body condition. Do not handle your snake for 24-48 hours after feeding as this can cause regurgitation.

Feeding schedule:
Up to 6 months: 1x/week
6-12 months: Every 7-10 days
>12 months: Every 10-14 days

Water

A dish of clean water large enough for the snake to soak in should always be available.

Sexing

Females tend to be larger than males, but your veterinarian will need to probe your snake to definitively sex them.

Zoonosis

Like other reptiles, corn snakes can carry *Salmonella*. Always wash your hands after handling reptiles or items from their enclosure.

Health

Corn snakes are known for reproductive issues, so it is important to monitor your female corn snake (or corn snake of unknown sex) for anorexia and weight loss. Snakes may go off feed shortly before laying eggs, but they should not lose more than 10% of their body weight while fasting. A lay box with loose substrate can help stimulate normal egg laying. Males do not need to be present for females to lay eggs. Corn snakes are also prone to stomatitis (mouth rot) and scale rot. Corn snakes should be evaluated by your veterinarian every 6-12 months.

Sources and Further Reading:

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- Facebook: Advancing Herpetological Husbandry
- *Mader's Reptile and Amphibian Medicine and Surgery*
- *The Arcadia Guide to Reptile and Amphibian Nutrition*