

Kingsnake/Milk Snake

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Natural History

Kingsnakes are members of the genus *Lampropeltis*, and very commonly kept in captivity. Some of the most commonly kept are the California kingsnake (*L. getula californiae*), Mexican black kingsnake (*L. getula nigrita*), eastern kingsnake (*L. getula getula*) and grey banded kingsnake (*L. alterna*). These snakes are native throughout the Americas from Canada to Ecuador and occupy a wide range of habitats. The “king” part of their name comes from their propensity to eat other snakes.

Milk snakes are also members of the genus *Lampropeltis*, and inhabit similar niches. Some of the more commonly kept species are the Honduran (*L. triangulum hondurensis*), Sinaloan (*L. t. sinaloae*), Pueblan (*L. t. campbelli*), and Nelson’s (*L. t. nelsoni*). There is a common mantra when differentiating venomous coral snakes from non-venomous milk snakes; “red touches yellow, kill a fellow, red touches black friend of Jack”. This mantra isn’t completely accurate, as different species of milk snakes have different color patterns.

Characteristics and Behavior

Kingsnakes and milk snakes are docile, widely available, and relatively easy to keep in captivity. There are a variety of species that come in different colors and patterns that make them desirable pets. Kingsnakes and milk snakes are common in the wild, but captive bred animals are preferred for health, temperament, and conservation reasons. Snakes may be nervous when first obtained, but regular gentle handling tends to tame them down fairly easily. Kingsnakes and milk snakes make excellent beginner snakes.

Lifespan

15-20 years.

Adult Size

Varies by species, with most kingsnakes averaging 3-4 feet and milk snakes 2-3 feet. Over 6 feet has been recorded in kingsnakes.

Housing

At minimum, snakes should be able to fully stretch out, so an average milk snake needs at least a 3'x2'x2' enclosure and an average kingsnake needs at least a 4'x2'x2' enclosure. Larger animals will need more space. It is a myth that snakes get stressed by too much space! There is no such thing as too much space, only too much exposure! 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. For substrate, aspen shavings and 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. Kingsnakes should not be housed with other snakes; they eat snakes as part of their normal diet and may cannibalize each other.

Lighting

Because snakes consume a whole-prey diet, they don't technically need UVB to synthesize vitamin D and metabolize 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 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.

Lampropeltis species require a basking spot of 85-88F, a warm ambient of 80-85F, and a cool ambient of 75-80F. Any light emitting sources should be turned off at night. Comfortable room temperature is sufficient as night temperatures for both species, as this is well within normal temperatures in their natural range. 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

Kingsnakes and milk snakes require a moderate humidity of 40-60%, which should be 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

Both wild kingsnakes and milk snakes are opportunistic and will eat just about anything they can fit in their mouth. Kingsnakes are known to even eat rattlesnakes! The majority of a wild kingsnake's diet consists of mammals and snakes, but they also consume lizards, birds, eggs, and occasional amphibians. Milk snakes primarily consume lizards and small mammals, but will also occasionally consume eggs, birds, and snakes. Mice, rats, feeder lizards, chicks, gerbils, and African soft furred rats of appropriate size are all acceptable food options for *Lampropeltis* snakes. Feeder snakes will likely be difficult to find. Providing dietary variety is important for enrichment and preventing nutritional deficiencies. ReptiLinks also has commercially prepared logs made from frog and rabbit, which can be used occasionally to increase variety.

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

Clean, fresh water in a dish large enough 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, kingsnakes and milk snakes can carry *Salmonella*. Always wash your hands after handling reptiles or items from their enclosure.

Health

Kingsnakes and milk snakes tend to be fairly hardy but may be prone to dysecdysis (difficulty shedding), stomatitis (mouth rot), scale rot, and reproductive issues. Snakes should shed in one piece, not multiple small pieces. No respiratory noise or bubbles should be noted when breathing. Kingsnakes have a peculiar habit of mistaking their own tail for another snake and striking at it to eat it. They have been known to swallow significant portions of their own bodies. Kingsnakes and milk snakes should be examined 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*