

Gray-banded kingsnakes have a gentle disposition and make good pets.

# GRAY-BANDED

# Beauty

Captive care for the king—the gray-banded kingsnake.

ARTICLE AND PHOTOS BY  
GEROLD AND CINDY MERKER

Most of us have been there—we see a kitten or a puppy, a baby tortoise or a snake, and we just have to have it. Not a lot of thought goes into the future needs of the animal or the amount of time and expense that will be involved in keeping it in captivity. That being said, once we experience pet ownership, decency demands that we provide that pet with all of its requirements to the best of our ability. Over the years, we have gained a lot of knowledge with regard to the care requirements of gray-banded kingsnakes (*Lampropeltis alterna*). Here, we share some of that knowledge so that other snake owners may avoid the pitfalls we have endured.



Two baby gray-banded kingsnakes born from adults found in the eastern part of their range. Although these babies appear to be light-phased as hatchlings, they may turn a darker shade of gray as they mature.

### Escape-Proof Caging Options

Caging can be as simple or elaborate as you desire. We have used aquaria to rack systems without any health concerns or problems. Essential to any enclosure is ensuring that the cage is escape proof. Even caging that looks escape proof can have small imperfections that will allow the snake to get out. We have experienced seemingly escape-proof cages 'leak' snakes because of small imperfections! The snakes escape the enclosure from even the smallest openings only to reappear (hopefully!) months later, crossing the floor. There are so many different types of caging specifically designed to prevent escape; it is prudent to invest in these types of enclosures.

A general rule of thumb for cage size is that the perimeter of the cage should be approximately twice the length of the snake. For example, a 2-foot kingsnake should have a cage that has a perimeter of approximately 48 inches. So, a cage measuring 18 inches long, 18 inches wide and 6 inches tall would be an appropriate-sized enclosure for this snake. Height is not as important as width. We have used 10-gallon aquaria for many years with excellent results. They are easy to clean and great for setting up thermal gradients that are beneficial to the captive gray-banded

kingsnake. When our collection grew in size, we started utilizing one of the many rack systems available. These turned out to be a space saver and worked very well for maintaining our colony.

Substrate is also another important consideration. Various substrates work well, including paper towels, shavings (not too dusty) and CareFresh. It is important to keep the cage clean and your substrate should help you accomplish that goal. We have used CareFresh for more than 20 years with very good success. It does cost more and has dehydrating characteristics, but overall it has proven to be a safe product. Avoid products such as recycled newspaper, especially ones that include dehydrating agents in them. We learned this the hard way a few years back when we decided to change over to this type of substrate. The drying agent caused tremendous problems in our collection; so much so, that about 15 snakes died because of this substrate.

Snake enclosures should be kept clean. This may involve spot cleaning at least twice weekly and changing the entire substrate in the enclosure up to six times yearly. Dirty substrate leads to bacteria build up, which can be harmful to the cage inhabitant. A suitable cleanser is soap and 5-percent bleach solution. Rinse out the cage, the water bowl and the hide area with generous



A general rule of thumb for cage size is that the perimeter of the cage should be approximately twice the length of the snake.



Snake enclosures should be kept clean. This may involve spot cleaning at least twice weekly and changing the entire substrate in the enclosure up to six times yearly.

## In Nature

Gray-banded kingsnakes (*Lampropeltis alterna*) are native to West Texas, New Mexico and Northern Mexico. They frequent rocky areas found throughout the Chihuahuan Desert. These kingsnakes are thought to utilize the intricate passageways deep under the Chihuahuan Desert, only infrequently venturing onto the surface in search of food and mates. Temperatures and rainfall amounts can vary widely over the range of these kingsnakes. Summers are usually hot and dry, except for the occasional thunderstorms. Winters can be cold and dry.


Gray-banded kingsnakes have a gentle disposition, and as adults, they feed readily on domesticated mice. Hatchling gray-banded kingsnakes are usually lizard-feeders but can usually be switched over to a pink mouse diet with a few tricks mentioned in this article.

amounts of clean water to ensure all the cleanser is removed from the cage. Dry the cage, water bowl and hide, and then place fresh substrate inside.

We provide two different hide areas—one on the warm region of the cage and one on the cooler region of the cage. Then the animal can choose the temperature it prefers. We also provide a damp area by cutting a hole twice the diameter of the snake in a plastic box that we place in the enclosure. Inside this box we place dampened paper towels. This is useful for our captives, especially if they are getting ready to molt.

### Optimal Temperatures

One of the most important aspects in cage design is creating a thermal gradient so that the snake has a range of temperatures from which to choose. Warmth is necessary for proper digestion of food, growth and reproduction in ectotherms. To achieve a proper thermal gradient, place a heater under one side of the cage. One of the most commonly available cage heaters, the heat tape, can be purchased from a reptile supply store. To ensure that the heat tape maintains a constant temperature, a good pulse-proportional thermostat is essential. Pulse-proportional thermostats maintain a constant temperature (+/- 1 degree), thus preventing the cage bottoms from becoming overly warm. A temperature from 65 degrees



Gray-banded kingsnakes typically reach lengths of 30 to 36 inches as adults. The record is an individual from the eastern part of the range that measured 48 inches.

Fahrenheit at the cool end to 88 degrees at the warm end is a good starting temperature range. Adjust this gradient if you notice your kingsnake constantly moving about the cage, as it could be too warm. Our animal room is at 50 to 60 percent relative humidity, which does not seem to cause problems. High humidity may cause respiratory problems)

### **Brumation**

A good strategy for maintaining the general health of a snake is to provide a winter cooling, or brumation, period. This simulates what the animal would normally be doing and is helpful to establish a good feeding response in the spring. Winter cooling is accomplished by turning off the heat tapes during winter and allowing the cages to cool to 55 degrees. Prior to this cooling, the snakes should be maintained at active temperatures without food for 14 days in order to clear their intestinal tract. Failure to do this sets up a potentially lethal situation, as cool temperatures inhibit digestion. This can result in undigested food rotting in the snake's

gastrointestinal tract, perhaps causing the animal's demise. Snakes can be cooled in their individual cages, to which clean cage substrate has been added. During brumation, the snakes are checked weekly and provided with fresh water. The cool down can help tremendously with their feeding response the following spring. Reluctant feeders usually come out of brumation with a great feeding response. This is especially helpful for baby gray-banded kingsnakes that are not strong feeders in the fall. Provided they have adequate body weight, a short brumation period is helpful for inducing these snakes to start feeding on pink mice. As with the baby snakes, adult animals should be in good health prior to a cool down.

### **Feeding**

Feeding adult gray-banded kingsnakes rarely presents a problem. Well-established kingsnakes are generally strong feeders on appropriately sized rodents. We feed our colony both mice and rats. Most individuals readily feed on these food



An adult from the eastern part of their range. This captive-bred individual was a light-phase neonate that turned darker as it matured.



Gray-banded kingsnakes (*Lampropeltis alterna*) are native to West Texas, New Mexico and Northern Mexico.



A typical gray-banded kingsnake from the Davis Mountains.

items. We often use frozen then thawed rodents, which our animals seem to relish. There are occasional specimens that will only feed on live rodents; likewise, others only feed on the thawed frozen rodents.

Baby kingsnakes can be a different story. Often, baby *L. alterna* only want lizards, a hard-to-obtain food item. This translates to going out and catching small feeder lizards or purchasing a stockpile from a supplier, both of which can be difficult. We have a series of strategies, obtained from various sources

and from our own experimentation that we employ to get those hard-to-feed neonates feeding on small pink mice.

These strategies include the following:

(1) Just trying a live newly born pink mouse on the snake (placing both the food item and the neonate snake in a deli cup with lid and holes). Keep the animal in this situation overnight, and it may feed.

(2) Using a lizard to scent a washed live newborn mouse. This is done by gently rubbing the cloacal region and/or chin of the lizard on the pink mouse.

We also have a container with lizard sheds and feces that we use to scent washed pink mice. Then we use the deli cup again.

(3) Using a small piece of lizard skin on the pink mouse. We live in an area where we come across freshly road-killed lizards. We freeze these lizards and then cut off small (2 millimeter by 2 millimeter) pieces of skin. Thawing the skin and using water makes the skin adhere to the pink mouse. We then use the deli cup again.

(4) We offer the baby snake a thawed frozen pink mouse. Sometimes, simply freezing the food item does something to the odor of the item and the snake finds it irresistible. This can be further enhanced by cutting open the brain case of the pink mouse with a sharp razor. Breeders often refer to the latter technique as the split-brain technique.

(5) We wait the little buggers out. Sometimes, they just have to get hungry and they will start feeding.

(6) We brumate the babies for a month and try again with strategies one through four.

If a baby snake still refuses to feed and is losing body weight, we resort to force-feeding. The food item of preference for us is the mouse tail. We simply cut the tails off of frozen mice and soak them in clean warm water for 15 minutes. Because of their serpentine



These snakes frequent rocky areas found throughout the Chihuahuan Desert and are thought to utilize the intricate passageways, only infrequently venturing onto the surface in search of food and mates.



An almost-patternless gray-banded kingsnake from the Davis Mountains. This animal is heavily speckled with the bands somewhat obscured.

shape, the mouse tail can be gently pushed into the gullet of the animal, and the neonatal snake usually takes it down the rest of the way. Please note that this is a temporary fix; it is far better to get the baby snake to feed on a pink mouse or even a frozen and then thawed lizard for proper nutrition. Our most successful strategies have been numbers five and six. Approximately 90 percent of all our baby gray-banded kingsnakes start feeding on their own by the following spring.

### Medical Concerns

Gray-banded kingsnakes can have a number of diseases, including upper respiratory tract infections, internal parasites and bacterial and/or fungal stomatitis. If health problems are noted, the keeper should seek the assistance of a qualified reptile veterinarian. The Association of Reptile and Amphibian Veterinarians ([arav.org](http://arav.org)) is the premier resource when looking for a nearby reptile veterinarian.

Upper respiratory tract infections



**Feeding adult gray-banded kingsnakes rarely presents a problem. Well-established kingsnakes are generally strong feeders on appropriately sized rodents. The authors feed their colony both mice and rats.**

appear to be the most common ailment experienced by captive gray-banded kingsnakes. If a snake brumates

under too moist of conditions, they occasionally come out of the cooling period with a respiratory infection. The

keeper may observe bubbles in the oral cavity or around the nares, sometimes accompanied by exaggerated distention of the neck during breathing. Usually, a respiratory disease indicates an issue with cage design, such as temperatures that are too cool or substrate that is too moist. Occasionally, URIs will resolve spontaneously once these conditions are remedied, but in most cases, the snake benefits from appropriate antibiotic therapy.

Internal parasites can also cause problems. This is rarely a problem in captive-bred snakes, but wild-caught animals can be afflicted with a variety of endoparasites. Animals that are losing weight or having diarrhea should be taken to a veterinarian, who will perform a fecal exam and determine an appropriate course of medication to treat any underlying issues with parasites.

As with other reptile species, stomatitis, or mouth rot, is encountered



**A morph from the western part of the range in Texas.**



If your snake develops mouth rot, address any cage-design issues, such as a rough top the snake may be rubbing against, and apply antibiotic or antifungal medication prescribed by your veterinarian.

occasionally in gray-banded kingsnakes. This may also indicate a problem with cage design, such as too rough of a top where the snake could rub its mouth or snout. This infection usually resolves with a course of an appropriate antibiotic (or occasionally antifungal medication). Severe cases may warrant bacterial or fungal culture of the affected area(s) in order to determine the appropriate medication.

Ecdysis, or shedding, can occasionally cause problems. This is often the result of faulty cage design and/or the use of especially drying substrates. If a snake has problems shedding, a useful strategy is to allow that animal access to a container of moist paper towels. This will often remedy the problem. If you note your animal is getting ready to molt, you may want to supply the shedding container with moist paper towels.

## In Conclusion

In the world of snakes, gray-banded kingsnakes appear to be quite intelligent. They will find the weaknesses in your cages. This past summer, we changed the water in one cage and then were unable to close it. Upon reopening the cage, there was no snake! We rolled the shelves away from the wall and there was the gray-banded kingsnake, laying behind the cage. That one successful escape on the part of the snake created repeat performances each time the cage was opened. Apparently, there was a small separation between the lid and the

cage when the cage was opened, and the snake figured it out and amazingly remembered. Her needs are met and she is healthy and seems content, so this must just be her way of laughing at us. However, should we not find her, it could prove disastrous. It is important to us and our other gray-banded kingsnakes that she remain part of our breeding program, and it is important to her because she would probably die without our care. We bred this animal in 2005 and kept her with the goal of caring for and breeding her, and we hope she lives to a ripe old age. We would not want to let this snake, or any of our other animals, down in our commitment to meeting their needs.

*The authors would like to acknowledge Walter Merker and Colin Smith for providing useful information for this article. Walter also kindly lent his editing skills on this article.* **REPTILES**

**GEROLD AND CINDY MERKER** have decades of experience keeping and breeding reptiles and amphibians. Gerold has a bachelor's degree in zoology from the University of California, Davis, and a master's in biology from U.C. Riverside. A teacher and photographer, he has authored or co-authored numerous reptile and amphibian articles, many of them appearing in **REPTILES** and *Reptiles USA*.



**Want to  
Breed  
Kings?**

**Learn how to breed  
gray-banded kingsnakes by visiting  
[ReptilesMagazine.com/BreedKing](http://ReptilesMagazine.com/BreedKing)**