

# The Kings of Mexico

## Care guide for the colorful Mexican kingsnakes.

ARTICLE AND PHOTOS BY  
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### *Lampropeltis mexicana mexicana* (San Luis Potosi kingsnake/Mex-Mex)

The first of these Mexican kingsnakes was collected by E. Palmer near the city of San Luis Potosi in the Mexican state of the same name in 1879. Later, in 1884, S. Garman identified this kingsnake as *mexicanus*. Since then, what is now known as *L. m. mexicana* has been found

in the Mexican states of San Luis Potosi, Aguascalientes, Zacatecas and Guanajuato, but specimens are predominantly in and near the Valle de los Fantomas (Valley of the Ghosts) in San Luis Potosi. Most of the captive Mex-Mex originated from wild-collected animals from the now-famous Sierra Madre Oriental Valley and nearby Alvarez. A San Luis Potosi kingsnake may have a ground color that is light gray, dark gray (to nearly black) or brown. These Mexican kingsnakes have dorsal markings that



San Luis Potosi kingsnake, also called Mex-Mex (*Lampropeltis mexicana mexicana*).

Over the years, Mexican kingsnakes have been somewhat of a problematic taxonomic subject. Currently, there are three identified subspecies of *Lampropeltis mexicana*: *Lampropeltis mexicana mexicana* (San Luis Potosi kingsnake, also called Mex-Mex), *Lampropeltis mexicana leonis* "thayeri" (Nuevo Leon kingsnake or variable king) and *Lampropeltis mexicana greeri* (Durango Mountain kingsnake). *Lampropeltis alterna* (the gray-banded kingsnake) and *Lampropeltis ruthveni* (the Queretaro Mountain or Plateau Mountain king) were once included as subspecies of *L. mexicana*, but they have since been given full-species status. However, all of these Mexican kingsnakes make up what is referred to as the Mexicana Complex. Many believe that in the near future each one of the *mexicana* subspecies will have full-species status.

Many are not aware of the fact that other than being naturally variable, there are both banded (tricolor) and saddled morphs of all *L. mexicana* subspecies, very similar to *L. alterna*, documented in the wild, with the two most commonly known being the Blair's and *alterna* phases of the gray-banded kingsnakes and the *leonis* and milk snake phases (MSPs) of the Nuevo Leon kingsnakes. The lesser-known banded morphs recently discovered were kingsnakes of the *greeri* and *mexicana* (Mex-Mex) subspecies. Interestingly enough, it is common to find banded morphs of each Mexican kingsnake in the more humid, eastern ranges of each subspecies. The only Mexicana Complex kingsnake that does not exhibit this polymorphic trait is *ruthveni*, but mitochondrial DNA data shows some evidence that *ruthveni* and *greeri* are rather closely related, even though they are classified as separate species of *Lampropeltis*.



consist of red/orange blotches or saddles that taper toward the ventral scales. These red blotches are outlined in black. Many San Luis Potosi kingsnakes have an elongated nuchal blotch, often with a central opening. Each head pattern and nuchal blotch configuration combine to make each snake distinguishable. From the original captives, some striking morphs have emerged into the hobby, and granite, black phase, hypoerythristic (reduced red pigmentation) and striped San Luis Potosi kingsnake morphs are now available. In their natural form, Mex-Mex are stunning animals, but some interesting multi-homozygous morphs emerged during the past decade.

***Lampropeltis mexicana leonis***  
**"thayeri"** (Nuevo Leon kingsnake)  
 In 1893, not long after Garman

described *mexicanus*, a German-born British biologist by the name of A. C. Gunther described the second known Mexican kingsnake, collected by W. Taylor in Nuevo Leon, Mexico. Gunther named this kingsnake *L. leonis* after the state of its origin. In 1924, Colonel John Eliot Thayer of Boston presented the Museum of Comparative Zoology (MCZ) a collection of reptiles from Miquihuana, Mexico. In this collection, A. Loveridge described the first *L. thayeri*, not recognizing the connection between Gunther's *leonis* kingsnake and *thayeri*.

The Nuevo Leon kingsnake has been the subject of a taxonomic battle since it was discovered, and many people have misused the *thayeri* nomenclature over the years. Currently, the name *leonis* has more validity because it was

the earliest described name accompanied by a valid description. It seems, however, that the *thayeri* label has stuck.

Nuevo Leon kingsnakes have been found in the northern portion of the Sierra Madre Oriental, mostly in the states of Nuevo Leon and Tamaulipas, and in extreme eastern Coahuila on both edges of the Sierra Madre. *Leonis*, tricolored and melanistic morphs of the Nuevo Leon kingsnake are found throughout the snake's range, but the tricolors or milk snake phase (MSP) morphs seem to be more prevalent in the humid and subtropical region on the eastern flank of the Sierra Madre.

A typical wild Nuevo Leon kingsnake has a tan or gray ground color with narrow red saddles outlined in black. Line

## Lampropeltis mexicana leonis Variations



Yellow leonis phase *L. m. leonis* with hallow/ghost saddles.



Orange milk snake phase of *L. m. leonis*.



Melanistic *L. m. leonis*.



Yellow leonis phase *L. m. leonis*.



Reduced-black buckskin leonis phase *L. m. leonis*.



Tan leonis phase *Lampropeltis mexicana leonis* "thayeri."



Orange leonis phase *Lampropeltis mexicana leonis* "thayeri."



Hallow or ghost-saddled leonis phase *L. m. leonis*.



A gravid, reduced-black leonis phase *L. m. leonis*.





Tangerine milk snake phase of *Lampropeltis mexicana leonis*.



Mex-Mex variations.



An aberrant Tapalpa, Mexico, *L. ruthveni*.

breeding during the last two decades has produced many Nuevo Leon kingsnakes that do not resemble their wild parental stock. Other than the simple recessive melanistic gene, there are no known recessive, dominant or co-dominant morphs, but morphs are not needed for a variable, unpredictable clutch of neonates. Leonis, MSPs and melanistics have been known to hatch out of one clutch of eggs. Many captive Nuevo Leon kingsnakes resemble their wild descendants, but through line breeding, captive *leonis* express very clean and bright coloration. Recently, there have been a number of aberrant neonates resulting from line breeding and selective propagation.

***Lampropeltis ruthveni*** (Queratero Mountain kingsnake or Plateau Mountain kingsnake)

More than two decades after the *leonis* was described, Frank Blanchard described the first *ruthveni* or Queratero Mountain kingsnake in 1920 from a single preserved specimen found in 1892, from Potrenaro, Michoacan, Mexico. These banded tricolored Mexican kingsnakes have since been found in the Mexican states of Jalisco, Michoacan, Guanajuato, Queretaro and Hidalgo. Captive stock originated from *ruthveni* kingsnakes collected in Amealco, Tapalpa and Jalpan, Mexico localities, but the specimens found in these localities weren't always thought to be Queretaro kingsnakes. Many mislabeled them as milk snakes

due to their banded/tricolored appearance. Some were thought to be *nelsoni*, *arcifera*, *smithi* or *dixoni*. Wild specimens found in the Jalpan area were thought to be Mex-Mex. These Plateau Mountain kingsnakes have been lumped at one time or another with *mexicana*, *pyromelana* or *triangulum* over the years. In 1982, B. Garstka resurrected *ruthveni* from *L. triangulum* and gave them full-species status. Queretaro kingsnakes from the Amealco locality produced the first-ever captive amelanistic (albino) tricolored kingsnake in 1987 from some wild specimens that Garstka collected. Since then, many hybrid albinos have been created from importing the amel *ruthveni* gene. Other mutations from the Amealco locale, such as striping and super-striped, have also emerged through selective propagation. Through line breeding, captive Queretaro Mountain kingsnakes tend to be cleaner and brighter, and they are less likely to exhibit ontogenetic speckling as adults.

***Lampropeltis mexicana greeri*** (Durango Mountain kingsnake)

In 1958, 30 years after *ruthveni* was described, the latest of the *mexicana* kingsnakes was collected by J. Keever Greer in Rancho Santa Barbara, west of the city of Durango in the Mexican state of Durango. In 1961, R. B. Webb described this newest Mexican kingsnake as *greeri* or the Durango Mountain kingsnake. Webb placed *greeri* with other species of the *mexicana* group based on color pattern elements. Most captive Durango Mountain kingsnakes derive from the original locale of Rancho Santa Barbara, but they have been found throughout the eastern part of the Sierra Madre Occidental in west-central Durango, Zacatecas, Aguascalientes, Jalisco and Nayarit at relatively high elevations above 2,000 feet. The typical ground color of a



Yellow amelanistic of *L. ruthveni*.



Hypoerythristic (reduced-red) Mex-Mex.

Durango Mountain kingsnake is greenish/gray to tan. It typically has narrow red saddles outlined in black. They have a distinct nuchal blotch that distinguishes them from *thayeri* as well as a head coloration that is the same as their ground color. The only variations from the Rancho Santa Barbara captive stock are a light phase and hypomelanistic morph. One *greeri* breeder produced a striped neonate but was never able to prove out the striped gene as a genetic trait. It was declared an anomaly resulting from temperature and humidity fluctuation.

#### ***Lampropeltis alterna*** (gray-banded kingsnake)

In 1901, E. Meyenburg collected the first recorded kingsnake from the Davis Mountains in Jeff Davis County, Texas. The following year (1902), A. E. Brown, the general superintendent of the Philadelphia Zoological Society, classified it as a new species of *Ophibolus* from West Texas, commonly known as the Davis Mountain kingsnake. Currently, there are two recognized phases of gray-banded kings: the *alterna* phase and the Blair's phase. We know now that first Davis Mountain kingsnake was an *alterna* phase. A half a century later, in 1950, A. Flury found a "new" DOR kingsnake in west Texas, nine miles west of Dryden. Flury named this kingsnake *Lampropeltis blairi* because the specimen had a phenotypic pattern different than that of the Brown specimen, which was later named *Lampropeltis alterna*. Two decades later, in 1970, E. Tanzer made the connection between *alterna* and *blairi*. In 1969, a gravid female *alterna* phase was found in Val Verde County near Comstock, Texas. The gravid female laid five eggs. Three neonates that emerged were Blair's phase, and two were *alterna* phase. They were then declared to all be *L. m. alterna* and the two phases were

just polymorphic variations of a single subspecies of the *mexicana* kingsnake species. In 1982, B. Gartska classified *L. alterna* as its own species and removed its subspecific status under *L. mexicana* at the same time *L. ruthveni* was given full-species status. *Alterna* is one of the most variable kingsnakes in the United States. Given that there is such a huge following, the gray-banded kingsnake and its geographical variations are well-documented in the U.S., but not so much in Mexico.

#### **Intergrades and *Lampropeltis webbi*** (Webb's kingsnake)

Throughout the years, there have been a few Mexican kingsnakes found outside of the known ranges and in now-known overlapping ranges. These have yet to be recognized as anything other than natural intergrades. To date, none of these intergrades have been advertised in the hobby. In 2005, *L. webbi* was recognized as the newest Mexican kingsnake by Bryson, Dixon and Lazcano. It is not publicly known to be in U.S. captive collections at this time.

### **Husbandry**

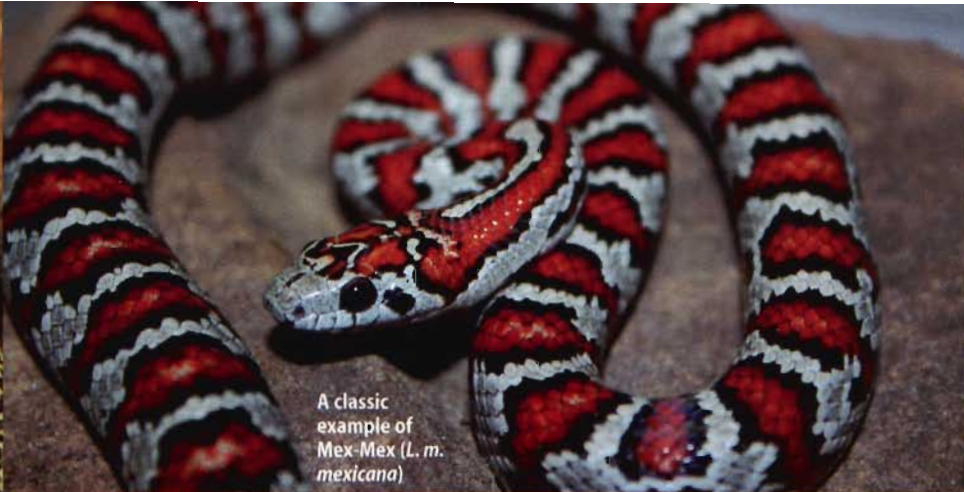
All Mexican kingsnakes require the same captive requirements to enable them to thrive and reproduce in captivity.

Before ever bringing a snake home, it is essential that your enclosure be escape proof. A kingsnake will find any flaw in its security and will escape. A hatchling can live in a shoebox-sized enclosure for its first year, depending on frequency of feeding and growth rate. Once the snake is longer than half of the perimeter of the enclosure, increase the caging size. Typically, a 15-quart tub or 10-gallon aquarium will house a yearling to sub-adult for the second year of its life, but again this all depends on the snake's growth rate. Adults will comfortably live





Ultra-granite Mex-Mex



A classic example of Mex-Mex (*L. m. mexicana*)

the rest of their life in a 20-gallon aquarium or 28- to 32-quart tub.

A captive Mexican kingsnake will benefit from having a 3- to 4-inch-deep aspen shavings substrate. This substrate creates "hides" throughout the enclosure, but a conventional hide should also be used. Provide a water bowl large enough for the snake to submerge its entire body without spilling water. Offer clean water on a weekly basis, but change it immediately when defecated in or when substrate is floating in it.

Young kingsnakes can consume other snakes, including other kingsnakes. Keep them separate. Adults can be housed together only if there is a single male in a breeding group. Never house multiple males together. The recommended time to put your breeding colony together is just prior to brumation. I separate adults for feeding, wait a few hours and then place them back together. Many keep kingsnakes separate their entire lives.

### Offer Choices

There is a difference between just living and thriving in captivity. Kingsnakes thrive with a temperature and humidity gradient. When you provide a range of temperatures and humidity levels, you can learn from the snakes by observing which they choose and when. Snakes have adapted to live in diverse conditions. Providing areas that are humid, dry, hot, cool, light, dark and a combination of each is the optimal way to keep a kingsnake thriving.

One way to achieve a thermal gradient is to cool the snake room down to around 72 degrees Fahrenheit and then utilize a heating pad, heat tape or a heat cable to provide a hotspot of 85 to 90 degrees. By providing them with a hotspot and also with a cool end of 72 degrees, you give them the opportunity to thermoregulate as needed.

Placing a piece of newspaper or a plastic plate or lid on top of the substrate

serves two different purposes. Placing prey items on top of the newspaper, plate or plastic lid allows the snake to feed without swallowing substrate. It also allows for thermal regulation from the bottom to the top of the enclosure, not just from the back to the front. To accomplish this, I use back heat and a deep, shredded aspen substrate. When using back heat instead of belly heat, I can easily create a thermal gradient while the herp room is kept at 70 degrees, plus or minus. The aspen acts as an insulator and "isolates" a hotspot. Heat rises, so the hottest spot will be on top of the lid/paper in the back of the enclosure. It will be coolest under the aspen in the front of the enclosure. There is a three-dimensional gradient this way, unlike with an under-the-enclosure heating pad and newspaper substrate. With belly heat and no insulating substrate, the heat source heats the entire enclosure and will not allow a cool spot.

Many will ask how a kingsnake can show what it needs; here are some examples: If your snake hides under the water bowl or in very tight places, it is protecting itself, not just from would-be predators or from you, but also from dry air. A kingsnake can dehydrate very fast if humidity levels are too low. Soaking in the water bowl all the time is a sure sign of a low humidity level, as well. A box of damp sphagnum moss in the enclosure will fix this. The snake will have a warm/wet area and a cool/wet area if the box of sphagnum moss is placed in a manner that it straddles the hot and cool areas. If your snake is mostly on the cool side of its enclosure, it is escaping the heat to conserve energy. Check your temperatures to make sure that they are within the acceptable range. If not, a temperature that is too hot may also be the reason your snake spends a lot of

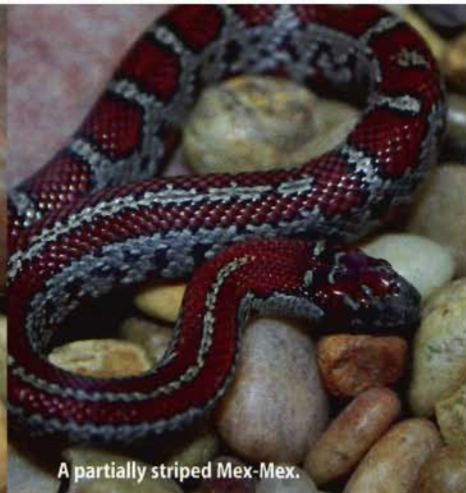
## Pure Blood Lines

**Given that there haven't been many new introductions of wild blood because of collection and import laws, many keepers strive to keep pure lines uncompromised and believe hybridizing brings no value. There is a need to further investigate Mexico's wildlife. Range maps are either outdated or do not reflect complete data. There is a great probability that "new" species and/or subspecies of *Lampropeltis* have yet to be found. With continuous drug war outbreaks, it seems that there is little to no opportunity to safely study Mexico's flora and fauna. The Lacey Act also makes it unlawful to import, export, transport, sell, receive, acquire or purchase these snakes in interstate or foreign commerce. Before the 100-year-old Lacey Act was amended to include the enforcement of foreign laws and regulations, including Mexico's, herpetologists could collect kingsnakes for research and/or personal collections. Since then, there have been no publicly known, legally imported Mexican kingsnakes into the hobby. Thus, there have been no new bloodlines introduced into private collections for nearly three decades, except for the occasional smuggled or confiscated animal.**





A classic leonis phase  
*L. m. leonis*.



A partially striped Mex-Mex.

time in the cool end. If there is a suitable thermal gradient and your snake is doing this, it is expressing the need to eat.

## Feeding

There is a common opinion that Mexican kingsnakes should not be given a set feeding schedule. Set schedules are more advantageous for the keeper and not for the captives. The common, once-a-week feeding is not incorrect, though. Many have great success with a once-a-week feeding schedule, especially if they are keeping the kingsnakes as pets and have no plans to breed them.

If the previously mentioned options are provided, kingsnakes will show the keeper when they are hungry. Typically, the time to feed is after the snake clears its stomach or when the keeper sees the snake conserving energy on the cool side of its enclosure. Keepers will typically find themselves feeding their growing Mexican kingsnakes two or three times a week. Adult snakes usually only want to eat once a week, sometimes more and sometimes less.

Offer appropriately sized rodents that are equal to or slightly larger than the diameter of a snake's girth. Many kingsnake keepers believe in offering many smaller prey items rather than one large prey item. A Mexican kingsnake will consume these prey items and then find the hotspot in its enclosure to digest the meal. Defecation could happen within four or more days. It depends on the snake's age, the enclosure's temperature and the meal's size. After this point, the snake will await its next meal by sitting on the cool side of the enclosure. If the snake regurgitates, check the temperature gradient. If the gradient is fine, then there is the possibility that the snake suffers from parasites, a respiratory

infection or another illness.

There will be times when your kingsnake wants to eat more than usual. Adult females just out of brumation will want to be fed multiple prey items often. This high-caloric intake will help the female in the production of egg follicles. Once an adult female lays her eggs, she will want to be fed. This will rejuvenate her depleted reserves and often will result in a second clutch.

Many males will go off feed during the typical breeding season, which is late spring and early summer. Don't be alarmed. If the male snake has good weight prior to brumation, he will be fine, especially if he feeds well out of brumation. After breeding, he will want to eat often to prepare for another cold season. All this can be achieved successfully if husbandry is optimal.

## Colorful Captives

Mexican kingsnakes make terrific captives. Overall, they are docile, rarely defensive unless cornered or threatened, and are far less flighty than milk snakes and common kingsnakes (*L. getula*). They rarely surpass 4 feet in length, with males being larger than females, and typically range between 3 to 4 feet. These easy-to-care-for snakes are both colorful and a pleasure to keep. **REPTILES**

**JOHN LASSITER** has been a herpetoculturist, field herper and snakekeeper for more than 20 years, with his main passion being the Mexican Complex *Lampropeltis*. He has been working on some interesting Mexican projects with some of the best stock available. To learn more, visit him at [coastalbendcaptivebreeding.com](http://coastalbendcaptivebreeding.com).



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