



Snakes

Family Colubridae

Most of the snakes in the area belong to a single family, Colubridae. In New Mexico, there are 36 species of 31 genera that make up 78% of the entire snake fauna of the State. In Los Alamos County and surrounding areas there are 13 species. This family of snakes is sometimes called “harmless.” A few have toxins that they inject into their prey but are not a threat to humans. Some kill the prey by constriction. Snakes like the hognose are slow moving, and others such as whipsnakes move very rapidly. Most are secretive and often not seen during the day.

- Ringneck snake (*Diadophis punctatus*)
- Great Plains rat snake (*Elaphe guttata*)
- Western hognose (*Heterodon nasicus*)
- Night snake (*Hypsiglena torquata*)
- Common kingsnake (*Lampropeltis getula*)
- Milk snake (*Lampropeltis triangulum*)
- Smooth green snake (*Liochlorophis vernalis*)
- Coachwhip (*Masticophis flagellum*)
- Striped whipsnake (*Masticophis taeniatus*)
- Gopher snake (*Pituophis melanoleucus*)
- Blackneck garter snake (*Thamnophis cyrtopsis*)
- Western terrestrial garter (*Thamnophis elegans*)
- Common garter snake (*Thamnophis sirtalis*)
- Mountain patchnose snake (*Salvadora grahamiae*)

Family Viperidae—Vipers

There are two species in the Viper family occurring in the area: western diamondback rattlesnake and the western rattlesnake. Most of the vipers can vibrate the tail rapidly, making a rattling sound, only rattlesnakes have a resonator or rattle to amplify the vibrations. These snakes have a highly evolved injection system for venom, acting much like a hypodermic needle. These snakes are very poisonous, and if you are bitten, measures must be taken to neutralize the toxins.

- Western diamondback rattlesnake (*Crotalus atrox*)
- Western rattlesnake (*Crotalus viridis*)



Ringneck Snake

Family Name: Colubridae
Common Name: Colubrids
Scientific Name: *Diadophis punctatus*
Common Name: Ringneck Snake

The range of the ringneck snake stretches south from Nova Scotia to the Florida Keys and west to the Pacific Coast. However, parts of the Continental US are not included in the range because moist conditions are required. In New Mexico this snake can be found all over except in some northwest and north-central areas. Our specimen was found under a log in Ancho Canyon along the stream channel.

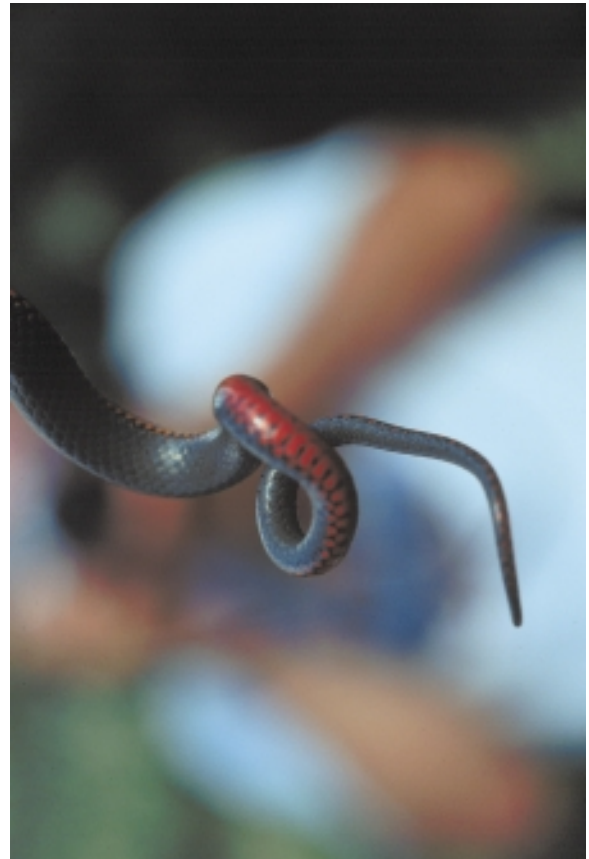


This slender snake is between 20 and 75 cm (8 to 30 in.) in length. It is grayish to black on top with a bright yellow, red, or orange underbelly—usually with black spots—and a yellow, cream, or orange ring around its neck. This species is sometimes called a “thimble snake” because it has a habit of coiling the tail when threatened.

This snake is rarely seen during the day. It can be found under flat rocks or other items that are used for cover and to help keep it cool. When this snake is held, it will release musk, feces, and uric acid. In some populations, rough handling can cause the snake to perform a sequence of actions designed to affect its release. The snake will energetically twist and contort. It will hide or cock its head and rotate its eyes. Finally, it will suddenly go limp into an upside-down position that exposes its bright-colored underside.

The female produces eggs in early June and lays them in mid-June to late July. However, the timing is dependent on the weather patterns of its home range. Egg numbers can range from 1 to 10 with an average of four.

Food sources include small invertebrates and vertebrates. Earthworms and salamanders are generally the principle diet.



Coiled tail of ringneck snake



(Clockwise from upper left): ring around neck of the ringneck snake is characteristic; colored underbelly of the snake; ringneck snake; ringneck snake hiding under debris.



Great Plains Rat Snake

Family Name: Colubridae
Common Name: Colubrids
Scientific Name: *Elaphe guttata*
Common Name: Great Plains Rat Snake

The range of this species includes all of Texas and Oklahoma, most of Kansas, Missouri, and Arkansas, the eastern half of New Mexico, and the southeastern portion of Colorado. In New Mexico this species occurs at elevations up to 2200 m (7260 ft) that include two important components—a constant water source and good daytime cover.

This long slender snake—from 60 to 180 cm (24 to 72 in.) in length—has grayish or brown patches outlined in black on a light gray background. Its belly has black squares. One clear identifying feature is a spear-point pattern between the eyes.

Great plains rat snakes are powerful constrictors and good climbers. They search for small mammals, lizards, birds, and bird eggs, sometimes in barns and abandoned structures, but usually on the ground or in trees and shrubs.

When first captured the Great Plains rat snake will vibrate its tail, bite, void feces, release contents of anal scent glands, or any combination of these, but will quiet with handling.

This species mates from March to May. Three to thirty eggs that are white, smooth-shelled, and usually adhesive are laid from July to September.



Note the spear-point pattern on the forehead.



Western Hognose Snake

Family Name: Colubridae
Common Name: Colubrids
Scientific Name: *Heterodon nasicus*
Common Name: Western Hognose Snake



Note the upturned snout.

The western hognose snake has a range that stretches north to south along the Great Plains of the central US from southeast Alberta, Canada, to northern Mexico. Its distribution in New Mexico is widespread, but it has not been reported for Los Alamos County even though it may occur here.

This husky snake can grow to 90 cm (36 in.) in length. It has a broad neck and upturned snout that it uses for digging. Dark patches extend from the back of the head to the tail. The underside is white with black on the body and tail.



Snake playing "possum"

Hognose snakes will sometimes pretend to be incapacitated when they are disturbed. They will turn up the belly and writhe violently. They will then lay still with an open mouth and lolling tongue. The tail will coil tightly giving the appearance of a head. Other times the snake may expand the head and neck and strike with an open mouth. For this reason it is sometimes called a "puff adder" or "blow snake."

These snakes normally hunt during the day when the soils are warm. They eat frogs, salamanders, lizards, snakes, turtles, and reptile eggs. The enlarged teeth at the rear of the upper jaw are used to hold or deflate toads and inject toxic salivary secretions into the prey.



Night Snake

Family Name: Colubridae
Common Name: Colubrids
Scientific Name: *Hypsiglena torquata*
Common Name: Night Snake

The range of the night snake begins in the north at central Washington and extends south and east, encompassing the southwestern US, Baja California, and central Mexico. In New Mexico, this species is found throughout the state but is more numerous in the desert lowlands. In this area, the night snake is found in montane woodland habitat.

Unlike many other snakes in this area, the night snake is almost exclusively nocturnal. As a result, physical characteristics are conducive to nighttime activities. Its eyes have elliptical pupils. Body colors are pale gray, light brown, or beige with dark gray or brown patches on the back and sides and possibly on the neck. The belly is yellowish or white. The adults measure 4.8 to 10.5 cm (12 to 26 in.) in length.

The species is found in a variety of habitats including forest and woodlands. They can be found in rocky areas—cracks in outcrops—or areas with surface debris, either natural or human-produced. This snake will not defend by biting but does have enlarged rear teeth and mild venom used for subduing prey. They feed mainly on lizards, small snakes, and amphibians.

These snakes are egg layers, laying a clutch of 3 to 9 eggs from April to August.



Mostly nocturnal, this snake is not brightly colored.



Common Kingsnake

Family Name: Colubridae
Common Name: Colubrids
Scientific Name: *Lampropeltis getula*
Common Name: Common Kingsnake

This snake ranges from the Pacific to the Atlantic in the southern half of the US into Baja California and Zacatecas, Mexico. In New Mexico, the common kingsnake has been found throughout except at elevations above 2070 m (6900 ft). This snake has not been reported for Los Alamos County but it has been found at lower elevations in Santa Fe and Rio Arriba counties.

This snake may grow up to 205 cm (82 in.) in length. Its unique pattern consists of alternating bands of plain black or dark brown and white or pale yellow resembling the links of a chain. This pattern and coloration should not be confused with any other species in this area.

This species is chiefly terrestrial but may climb. They are active in the morning and late afternoon except in hot periods of the summer. When disturbed they may strike, hiss, and vibrate the tail. They will roll up in a ball with the head at the center.

Kingsnakes eat lizards, small turtles, reptile eggs, frogs, birds, and bird eggs. They kill their prey by constriction. They are immune to snake venom and are known for subduing and eating venomous snakes.



No other snake in this area looks like the kingsnake.



Milk Snake

Family Name: Colubridae
Common Name: Colubrids
Scientific Name: *Lampropeltis triangulum*
Common Name: Milk Snake

The milk snake has a fairly extensive distribution all up and down the East Coast of the US west to the Rocky Mountains and south through Mexico and Central America into Columbia and Venezuela. In New Mexico, this snake has not been reported west of the Rio Grande except in Sandoval and Rio Arriba counties. It has not been reported in Los Alamos County.

This secretive snake can grow to 195 cm (78 in.) long and is found under rotting logs, stumps, and damp trash. The body has alternating red and cream bands with a black band in between—having similar coloration as the venomous Arizona coral snake (*Micruroides euryxanthus*) but slightly different placement of the bands. The snout is black but may be spotted with white.

This species got its name from the old belief that the snake would milk the cows in the barn. The snakes are definitely more interested in the natural prey that will congregate around these types of structures including lizards, small snakes, and rodents.



This snake looks like the venomous Arizona coral snake, which does not occur in this area.

To remember the difference between this snake and the Arizona coral snake, here's a rhyme:

*Red touch yellow
Kill a fellow
Red touch black
Friend of Jack*



Smooth Green Snake

Family Name: Colubridae
Common Name: Colubrids
Scientific Name: *Liochlorophis vernalis*
Common Name: Smooth Green Snake

The distribution of this snake is widespread throughout the US. However, only in the northeast is its range continuous. In the southwest—Utah, Colorado, and New Mexico—its range is discontinuous with isolated populations occurring where suitable habitat exists—open grassy areas with water or adjoining rocky slopes at elevations from 1525 to 2450 m (5032 to 8086 ft). In New Mexico, the presence of this species has been reported in the Sangre de Cristo, Jemez, Manzano, and Sacramento Mountains.

This plain green snake has an underbelly of white or yellow. Its scales are smooth as opposed to the rough green snake (*Ophedryx aestivus*) that has scales that are rough. Adult snakes can range from 30 to 65 cm (12 to 26 in.) in length.

This is a gentle species that will be active in the warmest part of the day. Individuals may climb into low vegetation for sunning or foraging—mostly on terrestrial small-bodied insects and spiders—where ground vegetation is dense.

Two to eighteen eggs are laid in July and August. Females may nest communally where green snakes are abundant and the nest site is optimal. Eggs are white, thin-shelled, and mostly oval, although they may vary in size and shape. Sometimes the embryos have developed inside the shell to such an extent before being laid that they hatch after a couple of days rather than a couple of weeks.





Coachwhip

Family Name:	Colubridae
Common Name:	Colubrids
Scientific Name:	<i>Masticophis flagellum</i>
Common Name:	Coachwhip

This species, comprised of seven subspecies, ranges widely coast to coast in the southern half of the US and into central Mexico and the southern end of Baja, California. Two of the subspecies—central (or western) coachwhip (*M. f. testaceus*) and lined coachwhip (*M. f. lineatulus*)—can be found throughout New Mexico except in mountainous terrain above 2200 m (7260 ft). On occasion, here in Los Alamos County, people have reported seeing a long slender snake that moves quickly, sometimes climbing trees. They have probably encountered the coachwhip.

This slender snake is one of the longest and fastest snakes found in New Mexico. Its length varies between 90 and 255 cm (36 and 102 in.), and it has been clocked at 5.75 km/h (3.6 mi/h). Body coloration varies from tan, gray, pink, reddish brown, or almost black. Young coachwhips are strongly marked with dark crossbars, which fade with age.

When cornered, coachwhips will defend offensively by advancing towards the threat. When grasped, it will thrash and twist and bite, causing lacerations as it maintains a hold on the skin—a characteristic that is unlike most snakes. Whipsnakes climb into bushes and heavily-branched trees—preferring piñon-juniper woodland and sagebrush in this area—to forage, escape predators, or cool down above the hot ground. The snake preys mostly on vertebrates, including lizards, snakes, small mammals, birds, frogs, young turtles, eggs, carrion, grasshoppers, and cicadas.



Note the various colorations.



Striped Whipsnake

Family Name: Colubridae
Common Name: Colubrids
Scientific Name: *Masticophis taeniatus*
Common Name: Striped Whipsnake

The range of this species begins in the northwest—the southeastern corner of Washington—and extends diagonally to the southeast encompassing most of Nevada and the four corners area through New Mexico into southwest Texas and northern Mexico. In New Mexico, only the eastern edge and the higher elevations do not contain this species. Locally, it may be found within the piñon-juniper woodland and occupies rocky and brushy habitats.

This slender snake has a background color of black, dark brown, or dark gray with four light lines on the sides. Underneath, the snake is white to yellow with pink at the tail. This is an alert, fast-moving species—most active in the morning and late afternoon—that will sometimes bask in shrubs after emerging from their nighttime retreats. They are known to share dens with rattlesnakes.

Egg clutches of 3 to 12 eggs are laid in June and July. The eggs are nonadherent and leathery with a rough surface resembling sandpaper.

Prey for this species includes lizards, snakes, small rodents, birds, frogs, and insects. Since they are climbers, they also forage for birds in shrubs and trees.





Bullsnake, Gopher Snake

Family Name: Colubridae
Common Name: Colubrids
Scientific Name: *Pituophis melanoleucus*
Common Name: Bullsnake, Gopher Snake

This snake is distributed throughout the continent from southwestern Canada and southern New Jersey to Mexico, Guatemala, and the southern tip of Baja California. In New Mexico it is the most widespread and abundant snake species. It is commonly found on the Pajarito Plateau and has been reported from a variety of habitats. They are most commonly found within the canyons where rodent activity is abundant.

This snake, large and slow moving, may exceed 250 cm (100 in.) in length. The body color is cream or yellow with large light brown to dark brown patches or saddles. A dark band usually extends from the eye to the angle of the jaw.

When confronted this species will display defensive actions that mimic the actions of a rattlesnake. It will flatten its head to a triangular shape, coil and puff up its body, vibrate the tail, hiss loudly, and strike repeatedly. Other times the snake is very docile and can be easily handled.

This snake is most active during the day but will become more active at night under hot and/or dry conditions. They are good at climbing trees and shrubs. They also burrow, sometimes sharing dens with rattlesnakes and other species. Gopher snakes do not eat or drive away rattlesnakes as commonly believed, although they may compete for the same prey. Both of these species are important to rodent control.

This species lays clutches of 3 to 19 eggs, depending on the body size of the adult.



Note the similarity of appearance to rattlesnakes but without rattles on the tail.



Blackneck Garter Snake

Family Name: Colubridae
Common Name: Colubrids
Scientific Name: *Thamnophis cyrtopsis*
Common Name: Blackneck Garter Snake

The distribution of this species ranges from southern Colorado and Utah through Arizona, New Mexico, and Texas into Mexico and northern Guatemala. This species can be found in all of New Mexico at elevations from 1125 to 2400 m (3712 to 7920 ft). However, on the Pajarito Plateau the blackneck garter snake is less common than the western terrestrial garter snake (*T. elegans*).

This snake normally ranges from 40 to 70 cm (16 to 28 in.) in length. The most striking characteristic is a white or yellow stripe running down the vertebra; the stripe becomes orange behind the head and separates a black patch on the neck. The head is always gray. There are two rows of alternating dark spots, resembling a checkerboard pattern, between less-prominent stripes along each side of the body. The belly can be brown but is usually white with a light greenish or bluish coloration.

Quiet and shallow rocky pools along watercourses are preferred by these snakes and also by the tadpoles that serve as their favorite prey, although small fishes, skinks, crustaceans, and earthworms are readily eaten when available. This species is generally found near water in the daytime but may also be active at night. Overnight cover sites include exposed roots and crevices along stream banks, rodent holes, and vegetative debris created by flooding. When disturbed they may take cover in grassy areas or swim away.

These snakes are viviparous, that is, the young are born alive, usually in or near water and can number from 3 to 22.

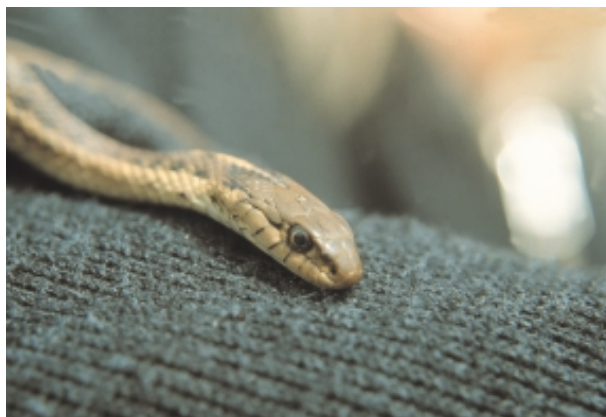


Note how the dorsal stripe splits the black coloration behind the head.



Western Terrestrial Garter Snake

Family Name: Colubridae
Common Name: Colubrids
Scientific Name: *Thamnophis elegans*
Common Name: Western Terrestrial Garter Snake



Head of western terrestrial garter snake

This species is one of the most widespread and frequently encountered snakes where moist habitats exist in western North America from southern Canada to northern Mexico. In New Mexico, this snake can be found in the mountains and the high river valleys. On the Pajarito Plateau, it is the most common garter snake.

The adults range from 45 to 75 cm (18 to 30 in.) in length. The coloration of the back varies from dark brown to greenish brown to tan to gray. The stripe along the vertebra is always well defined, narrow, and white to yellow. The stripes along each side are dull yellow to tan. Two rows of alternating rounded spots lie between the stripes.



Snake swimming on surface of water

This is the most terrestrial of the New Mexico garter snakes. It is often found close to surface water, but is commonly found many miles away. Even when this snake is near water, it will often try to escape to dense vegetation on land. When captured, this species typically voids excrement and anal gland secretions. This garter snake may attempt to bite, but its small size makes this defense ineffective against large predators and humans.

Garter snakes are mainly active in the daytime, but will forage at night when weather conditions and food availability is right. They will hibernate in the same dens as the western rattlesnake (*Crotalus viridis*), but enters later and leaves earlier.

Young are born in July through September and number 3 to 21. However, this species may not reproduce each year.

This species has the most general feeding habits of all garter snakes. It is carnivorous, with fishes, tadpoles, salamanders (including Jemez Mountains salamander), lizards, birds, mice, shrews, chipmunks, earthworms, slugs, snails, leeches, and insects being recorded as prey.



Common Garter Snake

Family Name: Colubridae
Common Name: Colubrids
Scientific Name: *Thamnophis sirtalis*
Common Name: Common Garter Snake

Stebbins (1985) states that the common garter snake can claim the northernmost distribution boundary—central Canada—of any reptile of the Western Hemisphere. This range also extends coast to coast. However, this species is excluded from much of the arid southwestern US. In northern New Mexico, this species is primarily located along the Rio Grande and tributaries. Locally, the common garter snake has been found in Santa Fe and Rio Arriba counties but not Los Alamos County.

This is the largest garter snake found in New Mexico and can grow to 130 cm (52 in.) in length. It can be identified as a garter snake by distinctive stripes down the back and sides and distinguished from other garter snakes by red markings between the stripes and bigger eyes.

Generally, this species can be found where permanent water—natural or constructed—is close by. They have been found along rivers, marshes, ditches, farms, and city lots where food is not scarce.



Note the red coloration below the stripe.



Mountain Patchnose Snake

Family: Colubridae
Common Name: Colubrids
Species: *Salvadora grahamiae*
Common Name: Mountain Patchnose Snake

The mountain patchnose snake is found from Arizona across New Mexico into central Texas and south into northern Mexico. It is widely distributed in New Mexico except in the northern corners and along the eastern border of the state. The distribution is spotty and is rarely below 1370 m (4500 ft).

This species is slender, measuring between 55 and 75 cm (22 and 30 in.) but occasionally up to 90 cm (48 in.). The body color is pale gray or olive with two wide dark stripes extending from head to tail. Underneath, the venter is cream or white.

This snake is most often found in rough terrain, along arroyos, in canyons, or along rocky flats at the base of mountains in the foothills where trees and shrubs are abundant. It is similar to whipsnakes with constant, fast-moving activity. It is most active during the morning hours and is usually ground dwelling, but will climb vegetation to forage, bask in the sun, or escape predators. Its diet consists of lizards, lizard eggs, and small mammals.





Western Diamondback Rattlesnake

Family Name: Viperidae
Common Name: Vipers
Scientific Name: *Crotalus atrox*
Common Name: Western Diamondback Rattlesnake

This species ranges to the west from southeast California to Arkansas and east Texas and to the north from central Mexico through Arizona, New Mexico, and Oklahoma. It is commonly found in White Rock Canyon. On one field week we encountered 13 individuals from 0.6 m (2 ft) to over 1.2 m (4 ft) long.

The western diamondback is the largest of all southwestern rattlesnakes. The snake is easily recognized by the conspicuous black and white band on the tail, thus the origin of the common name “coon-tail” rattler. Overall, the colors are muted with a background color from light to dark gray or tan to reddish or pink. There are 24 to 45 brownish, light-bordered, diamond-shaped patches on the back that tend to become obscure toward the tail. There is a lateral stripe behind the eye that ends near or well in front of the corner of the mouth.

This venomous snake will try to escape when threatened but will quickly defend itself if escape is impossible. The snake will coil, remaining in place, and will raise the head and front part of the body well above the ground. Bites are very serious and may be fatal even when treated.

These rattlesnakes frequently congregate in winter den sites on rock hillsides. These dens are usually permanent structures and may include abandoned mines, small caves, or deep cracks in the rock that may also be occupied by other species.

This viviparous species bears young in late July or August. Females may exhibit parental care of their young for a short time after birth. The newborn snakes can range from 20 to 33 cm (8 to 13 in.).

The snake eats a wide variety of vertebrate prey. They will lay in wait along rodent trails and ambush their prey. Rattlesnakes forage mostly at night but can forage in the day in spring and fall. Prey is detected by smell or infrared reception. Woodrats and pocket mice are the most common prey, but rock squirrels, pocket gophers, and rabbits may also be taken. A prey quantity equivalent to 93% of the body mass of this rattlesnake is sufficient for annual energy requirements (Beck 1995). This requirement translates to two or three large meals a year.



Note the diamond shaped patches and the black and white coon tail.



Western Rattlesnake

Family Name: Viperidae
Common Name: Vipers
Scientific Name: *Crotalus viridis*
Common Name: Western Rattlesnake

The western rattlesnake has the most extensive range of any North American rattlesnake. From north to south the range extends from southwest Canada to Baja California and east to west from western Iowa and central Kansas to the Pacific coast. It is found statewide in New Mexico from 900 to 2600 m (2970 to 8580 ft) in elevation and is common in the ponderosa pine forests and piñon-juniper woodlands. In Los Alamos County, we have encountered it in the rocky slopes of canyons, in cattail marshes, and on the grassy canyon floor.

The light brown to greenish brown color provides a good camouflage. There are 35 to 55 dark brown patches along the back of the body that are bordered in white. The patches gradually elongate from mostly oval in shape to narrow cross bands on the rear third of the trunk not including the tail. Two white lines are on the side of the head; the one behind the eye passes above the corner of the mouth. The belly is white and unspotted.

The species is mostly nocturnal, seeking shelter in rodent burrows or rocky retreats during the hotter parts of the day. They may be seen on warm blacktop roads shortly after sunset.

The species hibernates in rodent burrows or communal rocky den sites that may be occupied by other species of snakes.

This live-bearing snake may have an average of nine young; the size of the litter is related to the size of the adult.

Active foraging around rodent burrows is common. They use a sit-and-wait tactic along rodent trails and may also occasionally eat carrion. Their diet may include birds, bird eggs, lizards, frogs, and insects.



This snake is common in ponderosa pine forests and piñon-juniper woodland.

7.0 Myths about Amphibians and Reptiles

Amphibians and reptiles have fascinated people from the beginning of time. Stories told around campfires contained animals portrayed as people. The anthropomorphic depiction of animals was partly because people lived close to the earth and valued all living creatures. But the storyteller used lessons through the voice of the animal. Animals solved problems, metamorphosed from animal to human, were involved in creation, and presented lessons about right and wrong, the wise, and the foolish. Frogs, toads, snakes, and even salamanders became embedded in folklore, myths, and legends of various cultures. These themes were picked up by writers such as Aesop, Mark Twain, and many writers for children.

Interesting stories about amphibians and reptiles include

- “Sun-boy and the Monster Frog” from the Jicarilla Apache (Edmiston 1998)
- “The Woman Who Married a Frog” from the Tlingit (Caduto and Bruchac 1992)
- “The Boy and the Rattlesnake” from the Apache (Caduto and Bruchac 1992)
- “Coyote Takes Water from the Frog People” from the Kalapuya (Erdoes and Ortiz 1984)
- “The Girl Who Married Rattlesnake” from the Pomo (Erdoes and Ortiz 1984)
- “The Artists and the Snakes” from the Hopi (Applegate 1988)

Here are some old beliefs that are not true.

- *Rattlesnakes always rattle when disturbed.*
- *Gopher snakes eat rattlesnakes.*
- *Gopher snakes scare away rattlesnakes.*
- *The rattles on a snake can tell its age.*
- *Rattlesnake bites always kill!*
- *Snakes will “chase” you.*

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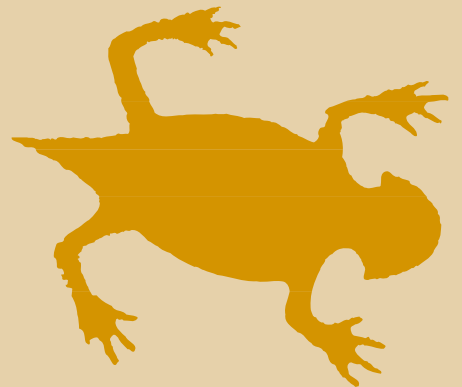
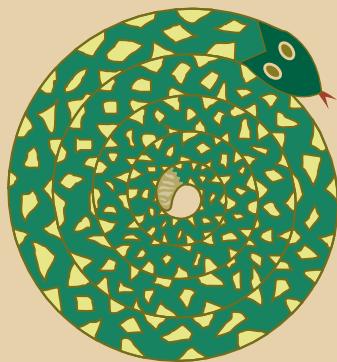
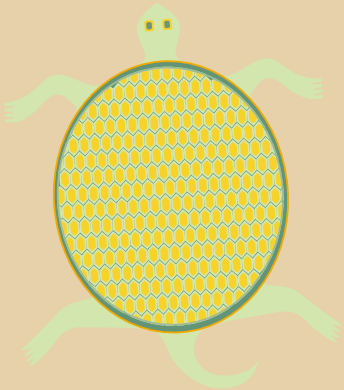
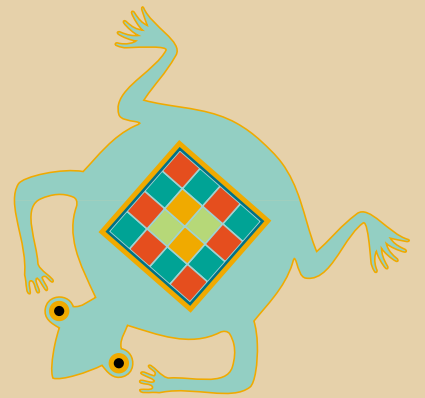
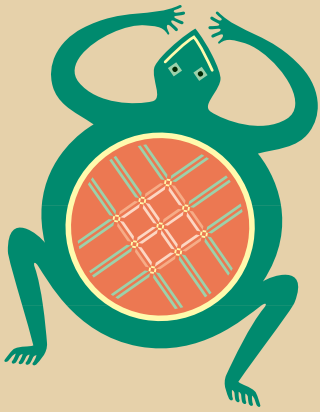
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