

Eastern Foxsnake (*Pantherophis vulpinus*)

Family Colubridae (Colubrinae)

Subspecies: None currently recognized

Updated 2025



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© Tim Borski



© Sarah Viernum



Juvenile, © Mike Day

Description/Identification: The Eastern Foxsnake is a large species of moderately to heavy bodied snake averaging between about 35.5 and 55.1 inches in total adult length. The scales, which are weakly keeled, are arranged in about 21 to 25 scale rows in total at mid-body, and the anal or ventral scale is divided. The head is also somewhat elongated, and slightly wider than the neck and rest of the body. The pupils are normally round, on brownish, golden, or yellowish-brown irises of the eyes. No subspecies of the Eastern Foxsnake are currently recognized. On the inside of the mouth, Eastern Foxsnakes have one to two rows of tiny, recurved teeth on the maxillae and lower quadrate bones of their upper and lower jaws which are normally covered by a fleshy membrane. These teeth, however, are not large enough to cause anything more than a superficial laceration, however.

The dorsum ground color of adult Foxsnakes usually ranges from a straw yellow, yellow-brown, tan, or grayish, with anywhere from 34 to 43 large, dark saddle shaped or rectangular dorsal blotches down the dorsum ranging in color from black, chocolate brown, or reddish brown, and a row of rounded, smaller lateral blotches alternating with the larger dorsal blotches along the sides. On and towards the tail, these dark colored dorsal blotches may form into bands or rings. A pair of large, dark brown or black, occipital blotches on the neck or nape, where the dorsal blotches converge is usually present, and which may be connected or fused with one another. The heads of adult Foxsnakes are usually an unpatterned, or only very faintly mottled solid light brown, copper, reddish, or reddish-orange in color. The occasional individual may have a more aberrant pattern, and some locales have an exceptional red or orange overall hue to them. At least one albino, or amelanistic specimen was found in Wisconsin; however, no specific

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locality information is available aside from Kewaunee County. Eastern Foxsnakes have 2 rows of subcaudals on the underside of the tail, past the ventral opening, comprised of approximately 19 to 32 rows. Individuals from at least one population in eastern/northeastern Wisconsin are especially vibrant golden-orange in color, which appear to be locality specific.

The undersides or ventral surface is usually yellow or cream-yellow or sometimes pinkish-yellow in color with large, dark brown or black, irregular rectangular or “checkerboard” blotches and markings. Hatchling and juvenile Foxsnakes are somewhat ontogenetic in their colors, lacking the reddish-orange heads of adults, and the heads may be more heavily patterned or mottled with a dark transverse ocular band or stripe. Juvenile Foxsnakes also have a lighter tan, gray, or grayish brown ground color with lighter brown or grayish-brown dorsal and lateral blotches bordered in black. Juvenile Foxsnakes also have a dark post-ocular stripe or band on each side of the head angling along their lower quadrate jaws as well. The tongues of Eastern Foxsnakes are usually blackish to dark red or purplish, and are forked.

Male and female Eastern Foxsnakes are similar in overall size and appearance, except for a few dimorphic characteristics. Males are somewhat larger than females, and have proportionately longer, less tapering tails than females, and also can be examined for the presence of hemipenes. Northern/Common Watersnakes (*Nerodia sipedon*) can be confused with Foxsnakes, but are heavier-bodied, and are more strongly keeled in their scalation. Eastern Milksnakes (*Lampropeltis triangulum*) have smooth scales, and a single, undivided anal plate. Bullsnares/Gophersnakes (*Pituophis catenifer sayi*) have proportionately smaller, wedge-shaped and more heavily patterned or mottled heads than Foxsnakes, an undivided anal plate, and a more cornified, upturned rostral scale. Foxsnakes also do not hiss as loudly or as prolonged as Bullsnares/Gophersnakes do. Hybrids between Bullsnares/Gophersnakes and Foxsnakes displaying variable, intermittent physical and/or morphological characteristics casually known as “Bullfoxes” have been documented in Minnesota, Iowa, and Wisconsin. Eastern Hog-nosed Snakes (*Heterodon platirhinos*) also have an enlarged, upturned rostral scale, and more irregular dorsal blotches or patterning than Foxsnakes.

Eastern Foxsnakes are also commonly confused for Eastern Massasauga rattlesnakes (*Sistrurus catenatus*) or Timber Rattlesnakes (*Crotalus horridus*), but do not have rattles on their tails, and are not rattlesnakes.



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Range and Distribution: Eastern Foxsnakes have a comparatively small range in the United States and Canada. They range from Southeastern Ontario Canada, through eastern and the Upper Peninsula of Michigan, Wisconsin, northern two-thirds of Illinois, and northern to northwestern Ohio and Indiana. Populations west of the Mississippi River in Minnesota, Iowa, extreme northern Missouri, Nebraska, and the eastern edges of the Dakotas are now the Western Foxsnake (*Pantherophis ramspotti*).

In Wisconsin, Eastern Foxsnakes can be locally common throughout the state, but are perhaps most common in the western half of Wisconsin, and in the northeast, including being abundant on the Door County peninsula. They are common along the Wisconsin and Mississippi Rivers, Black River, Yellow River, and many other rivers and their backwaters in Wisconsin. They are perhaps most uncommon and localized in southeastern Wisconsin, however. A band of integration between the eastern and western Foxsnake may also occur in the western-most tier of counties in Wisconsin where they likely cross the Mississippi River.



Aberrantly-patterned individual from Wisconsin. Mike Day.

Habitat: Eastern Foxsnakes are habitat generalists, and may be locally common in a wide variety of habitats, but most often are not far from water. Habitats nearby to or adjacent to small to medium sized streams or creeks, marshes, or lakes or flowages are most often frequented. They are also often found near the vicinities of medium to large rivers, where they are sometimes referred to as “river Ratsnakes”. Foxsnake habitats can include dry to dry mesic or wet prairies, grasslands, old fields, oak savannahs, pine barrens, river floodplain or lowland forests, and forest edges or clearings along northern or southern hardwood or mixed forests, agricultural farmlands, and old woodlots. These habitats, particularly with rocky areas nearby for overwintering and as a source of hibernacula, as well as old, abandoned farm and homesteads near water sources are especially favored habitats for Foxsnakes.

Feeding and Diet: Eastern Foxsnakes are carnivorous, and feed on a variety of rodents and other small mammals such as mice, chipmunks, squirrels, and sometimes even young muskrats or rabbits. Small birds, nestling or fledgling birds, or bird’s eggs are also readily eaten by Foxsnakes. Juvenile Foxsnakes may also eat frogs, salamanders, or other amphibians, small lizards, and large insects or other large terrestrial invertebrates. Eastern Foxsnakes are constrictors, grasping their prey with their jaws, and then using their coils to contract them, although smaller prey may simply be ingested and overpowered live without the use of constriction.

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Todd Pierson, 2006



Ventral/Belly Views. © Todd Pierson and Josh Kapfer.

Natural History: Eastern Foxsnakes are perhaps the most common, or at least most “widespread” species of “large snake” in Wisconsin. In central and northern Wisconsin and in the Upper Peninsula of Michigan, they are often incorrectly referred to locally as “Pine Snakes”, presumably due to their being found in or near pine woods and forests, but this name is a misnomer, as “true” “pine” snakes belong to the genus and species “*Pituophis melanoleucus*”, which are not found in or anywhere near Wisconsin. Their reddish-orange colored heads of the adults can also still sometimes lead to them being misidentified as “copperheads”, which are a venomous pit viper species which also do not occur naturally in Wisconsin.

Foxsnakes emerge from their hibernacula by around mid to late April or May, until October or November, where they may overwinter in underground mammal or other animal burrows, old stone or concrete foundations and rock walls or ledges, or deeper in rock fissures and outcrops. They have also been documented to be able to overwinter while submerged underwater in some areas in old wells and other foundations. They are also often found overwintering in basements or cellars, especially of homes or other buildings with older stone foundations. Foxsnakes most often mate and reproduce in the spring or fall, shortly after or before leaving or entering overwintering, but most often in late April or early May before dispersing and leaving their denning areas for the summer. Eastern Foxsnakes are oviparous, laying eggs ranging in clutch sizes from about 8 to 27 usually being laid by mid to late June or early July. These eggs are laid in and under large flat rocks, under or within rotting logs, old stumps, mulch piles, or other piles of humid vegetation debris and hatch in about 60 days thereafter.

Hatchling Foxsnakes measure about 11.0 to 12.2 inches in length, and are given no parental care upon hatching, as with most snakes, and fend on their own immediately upon hatching. Foxsnakes are primarily diurnal snakes, active during the day, but may become more nocturnal or crepuscular during warmer rainy weather in the summer and fall. When they are not otherwise active, they may retreat to underground burrows or rock and foundation crevices, underneath large rocks, sheets of tin, or boards, railroad ties, or large logs and stumps. Foxsnakes are also good climbers and swimmers as well, sometimes being found in rafters or other higher portions of buildings, or crossing rivers or lakes on occasion, but are less arboreal than Central Ratsnakes, the other Ratsnake species in Wisconsin. Juvenile

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Central Ratsnakes (*Pantherophis alleghaniensis*), are somewhat more slender bodied, and have more irregular dorsal and lateral blotches, and juvenile North American Racers (*Coluber constrictor*) have smooth scales, and a non-uniformly patterned tail and posterior third or so of the snake.

Foxsnakes are relatively slow moving snakes which rely first on their cryptic coloration and patterning to evade detection. If disturbed, they may make a bolt for cover, or if cornered, will coil the forward-third or so of their bodies into a strike posture and may attempt to either bluff, or strike and bite. Foxsnakes may make a short, forced hiss or wheeze while they strike, but are also comparatively slow at striking as well. They will also often rattle their tails against objects, or within dry leaves or grass to create a loud and startling buzzing sound similar to that of a rattlesnake. They may also emit a musty-smelling odor or musk which is supposedly said to smell like that of fox dens, hence their name “fox” snakes. More likely, however, are that Foxsnakes were actually first named after Rev. Charles Fox (1815–1854), who first described these snakes.

Some individuals may be placid and docile even after being first picked up, while others may be much more irascible and continue to strike, although in general, Foxsnakes are more mild-mannered snakes. Unfortunately, their reddish-orange colored heads, and defensive behaviors still often lead to them being mistaken for rattlesnakes or other venomous snakes, and are needlessly killed or persecuted due to unwarranted fears. Foxsnakes, however, as well as all other snake species, are very beneficial and harmless components of the environment, acting as natural rodent and small mammal control, keeping their populations in check.

Despite their larger adult sizes, the main natural predators of Eastern Foxsnakes can include a number of large birds such as birds of prey (hawks, owls, eagles), turkeys, some other snake species, and a number of carnivorous or predatory mammals including weasels, skunks, opossums, raccoons, foxes, coyotes, mink, domestic cats, domestic dogs, and bobcats.

Conservation Status: In Wisconsin, Eastern Foxsnakes are listed as “Common”. They are still regulated and protected along with all other of Wisconsin’s herptiles, however under N.R. 16. Eastern Foxsnakes are currently not protected or regulated federally. Eastern Foxsnakes are currently IUCN Red-List Least Concern (LC).