

DeKay's Brownsnake (*Storeria dekayi*)

Family Colubridae (Natricinae)

Subspecies: None currently recognized

Updated 2025



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Description/Identification: DeKay's Brownsnakes are a small species of somewhat thick, or heavy-bodied fossorial snake usually measuring a total length of about 8.6 to 12.9 inches in length, but can have a maximum length of up to 15.0 inches. The scales are roughly keeled, and are arranged in about 17 scale rows in total. The anal, or ventral scale is divided, and the head is somewhat larger, round, and blunt, being distinct from the neck and rest of the body. They are named after the early New York naturalist James E. DeKay. The pupils are normally round, and are on a golden-yellow, yellow-brown, or brownish color of the eyes. DeKay's Brownsnakes have 2 rows of subcaudals on the underside of the tail past the ventral opening, comprising of about 18 to 36 rows. On the inside of the mouth, DeKay's Brownsnakes 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 too small to easily or effectively puncture human skin.

The dorsum atop the head may be a darker brown or rusty red-brown from the rest of the body, and there are dark brown or black blotches on the rear of each side of the quadrates, as well as on each side of the neck. A similarly colored, dark "teardrop" shaped blotch is also usually present below each eye. Besides these markings, the head is otherwise unmarked or unpatterned. DeKay's Brownsnakes can be quite variable in their ground color over the rest of the body, ranging from grayish or grayish-brown, to light brown, tan, or reddish-brown. A wide, thick, lighter brown to tan mid-dorsal stripe occurs throughout the body from the base of the neck (which can also have a very faint bluish tinge in some individuals), to the tail. Their tongues are forked, and usually a black to dark reddish in color.

Surrounding this lighter middorsal stripe are (usually) two rows of small, darker black "pencil-point" spots on each side of the dorsal stripe, which may connect with one another over the middorsal stripe to form a "chainlink" pattern or "crossbarring" on some individuals. A second row of spots between the

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laterals and the mid-dorsal stripe interspersed with white flecks may also be present in some specimens. The underside, or ventral surface is usually a plain, uniform white, cream, or light pinkish, with or without small pencil point spots along the margins of the underside and/or scattered throughout. Newborn and juvenile DeKay's Brownsnakes have a darker brown to olive-brown or blackish dorsum ground color with less evident spots and patterning, and a much wider, thick, white or cream (or sometimes pale yellow) colored band around their napes (or necks), and darker heads. They can commonly be confused with Ring-necked snakes (*Diadophis punctatus*), which have smooth scales, and more well-defined neck ring.

Male and female DeKay's Brownsnakes are similar to one another in appearance, aside from being slightly dimorphic in size; the females are somewhat larger, heavier-bodied, and have proportionately shorter tails than do males. No subspecies of the DeKay's Brownsnake are currently recognized. For comparison, Red-bellied Snakes (*Storeria occipitomaculata*), usually have much brighter red or orange undersurfaces, and lack occipital and facial markings of the Brownsnake, and some Common Gartersnakes (*Thamnophis sirtalis*) with absent or inconspicuous dorsal stripes may also be commonly confused with DeKay's Brownsnakes, but have undivided anal plates, narrower dorsal stripe (if present), and presence of larger loreal scales and less shortened, rounded heads.



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Range and Distribution: DeKay's Brownsnakes have a wide range from southern and southeastern Canada, from Ontario, and Quebec, throughout most of the New England states of the United States, southeast throughout the eastern U.S. to the Gulf of Mexico in Louisiana and eastern Texas, and west and north through Oklahoma, Kansas, Nebraska, and South Dakota.

In Wisconsin, DeKay's Brownsnakes can be found throughout the southern three-quarters of the state, but are most common and abundant in the southern half of Wisconsin, and much more uncommon to absent in north-central Wisconsin.

Habitat: DeKay's Brownsnakes are secretive, largely fossorial snakes, spending much of their time underground or within and underneath debris and surface litter in somewhat moist areas, but are by no means aquatic. They are most often found within, or under rocks, logs or railroad ties, boards, stumps or fallen bark, human generated trash or debris, leaf litter, mulch, or other vegetative debris or cover.

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Prairies, old fields, oak savannahs, southern lowland or floodplain forests, old woodlots, along the margins of marshes, more open grasslands, city parks, gardens, backyards, and vacant lots, particularly with ample cover or trash and debris, can all be favorite haunts for DeKay's Brownsnakes. These small secretive snakes can often even persist in urban and suburban areas.

Feeding and Diet: DeKay's Brownsnakes are primarily insectivorous, eating a number of soft bodied insects or insect larvae, or other invertebrates such as slugs, snails, earthworms, or arachnids. More rarely, larger specimens may eat small fish or amphibians. As with other small natricine snakes, DeKay's Brownsnakes feed primarily by chewing and ingesting their prey live without venom or constriction.

Natural History: Adapting well to urban and suburban areas, DeKay's Brownsnakes are less of a woodland or forest dwelling snake than the related red-bellied snake belonging to the same genus, *Storeria*, but oftentimes, both species of *Storeria* may be found within the same areas or habitats. These small snakes emerge from overwintering on warm days anywhere from late March or throughout April, where they may be seen basking or can be found underneath debris near their hibernaculums. Breeding and copulation probably occur shortly thereafter during this time.



Ventral/Belly View. © Herps of Arkansas.

Later in the spring and fall, DeKay's Brownsnakes can often be found in large numbers crossing roads, sidewalks, trails, or other open areas while travelling to or from their overwintering areas, which may include old stone foundations of houses or other buildings, rock crevices, or ant mounds. They often will overwinter with many other DeKay's Brownsnakes, as well as other small snake species in the area such as Gartersnakes, Red-bellied Snakes, Smooth Greensnakes, and/or juvenile Northern/Common Watersnakes or Eastern Foxsnakes. They are active throughout the year until late October or early November, when peak numbers of these small snakes are most often found, in May or late September or October, especially during or after warm, rainy, or stormy nights.

After mating, DeKay's Brownsnakes disperse throughout the area for the summer. These small snakes are ovo-viviparous, giving birth to live young anywhere from late July or mid-August, through September. The tiny neonates, usually ranging in number from 5 to 24, range from about 3.74 to 4.13 inches in

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length, and fend for themselves with no parental care after being born. For the rest of the year, adults remain secretive, foraging and basking, usually deeper underneath or within cover.

DeKay's Brownsnakes are small, inoffensive snakes which rarely attempt to bite when handled or picked up. Upon being uncovered, they may quickly attempt to flee or dart away into thicker cover. However, these small snakes can put on a significant bluff by flattening their heads and bodies when disturbed or grabbed. They may gape open their mouths, but seldom try to bite, and even in cases where one does bite, their mouths and teeth are much too small to break the skin. As with many snakes, DeKay's Brownsnakes will also emit a foul, bad-smelling musk when handled as well. These small snakes, however, are very beneficial to have around the home, garden, and backyard, however.

Small snake species such as DeKay's Brownsnakes can be predated upon by many different species of birds (such as crows, turkeys, cranes, kestrels, hawks, and other small birds of prey), other larger snakes, and a number of different carnivorous or predatory mammals including domestic cats, foxes, skunks, shrews, raccoons, moles, and opossums.

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