

Hognose

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Natural History

There are three genera of hognose snakes: *Heterodon* (North America), *Leioheterodon* (Madagascar), and *Lystrophis* (South America). This care sheet will focus on the genus *Heterodon*, which includes the western (*H. nasicus*), eastern (*H. platirhinos*), and the southern (*H. simus*). *Heterodon* snakes are native to most of the United States, southern Canada, and northern Mexico. Hognose snakes are considered opisthoglyphous (rear fanged) snakes, although their venom is not medically significant. A hognose's grooved teeth and venom are specialized for amphibians, and it is unlikely to cause more than mild irritation to humans. While hognose snakes are sometimes called puff adders, hissing adders, or spreading vipers, these names are misnomers. Eastern and western hognose snakes are considered least concern, but southern are considered vulnerable. Hognose snakes are sometimes killed when they are mistaken for venomous species like copperheads. As these snakes prey on poisonous toads, they are immune to their toxins. These snakes are diurnal and fossorial, meaning they spend a significant portion of their time underground.

Characteristics and Behavior

North American hognose snakes are relatively popular in captivity, thanks to their unique looks and behaviors. Their upturned noses are used for digging toads out of soil and sand. When threatened, hognose snakes have an elaborate threat display. They will expand the ribs on the front half of their body to look bigger, almost taking on a cobra-hood appearance. They will also hiss, musk from their cloaca, and play dead. It is very dramatic when a hognose plays dead; they will roll over on their backs and open their mouths, and even flip back onto their backs if attempts to right them are made. Hognose snakes are known for being defensive, but they will feign a bite more often than they will actually make contact. Still, because of their defensive nature and fangs, these snakes are better left for intermediate keepers than as a beginner snake. There are a variety of morphs available for these species that make them valuable in the pet trade. Westerns are generally considered to be the most docile, although each animal is an individual. Check local laws before obtaining a hognose, as it may be illegal to own one in your state.

Lifespan

10-15 years.

Adult Size

2-3 feet with females larger than males.

Housing

At minimum, smaller adults can be housed in a 20 gal or 30"x12"x12" enclosure, whereas easterns and females will need a 40 gal or 36"x18"x16". Bigger is always better! As long as there is sufficient cover to make the hognose feel secure, they will not be stressed by a large enclosure. It is a myth that snakes get stressed by too much space. There is no such thing as too much space, only too much exposure. At the bare minimum, snakes should be able to fully stretch out. Snakes unable to fully stretch out have been shown to express stress behaviors.

Logs, branches, ground clutter, rocks, and plants (live or fake) should all be used to create more cover and enrichment for your hognose. In the wild, hognose snakes utilize burrows, logs, and wood piles. Reptiles should have at least one hide on the warm end of their enclosure and one on the cool end of their enclosure so they don't have to choose between thermoregulation and security. It is a good idea for one of these hides to provide a humid microclimate to aid with shedding. The snake should also be able to move closer to or further away from the basking source. For substrate, it is important to provide enough depth for your hognose to dig and burrow. There should be at least 3-6" of whatever substrate you use. Acceptable substrate choices include aspen, Lugarti's Natural Reptile Bedding (a mixture of clay, sand, and sphagnum moss), The BioDude's TerraFirma (a good choice for keepers going bioactive), and coconut husk such as ReptiChip. Avoid cedar or pine as these can cause damage to your snake's respiratory tract.

Lighting

Because snakes consume a whole-prey diet, they don't technically need UVB to synthesize vitamin D and metabolism calcium. However, UVB is beneficial for all species and should be considered a part of best care practices. UVB enhances immune function and promotes normal day/night cycles. Anecdotally, many keepers report more basking activity in their snakes when UVB is provided. The ReptiSun HO T5 5.0 is acceptable, as is the Arcadia T5 6% Forest or Arcadia T5 7% shadedweller, depending on where you put your hognose's basking spot. Arcadia provides a guide as to where to place your UVB fixture in relation to your snake's basking spot. UVB fixtures should be roughly as long as half your reptile's enclosure length. UVB bulbs should be replaced every 6 months; even if they are emitting light, they may not be emitting adequate UV. It

is important to note that UVB cannot penetrate glass, so natural sunlight through a window will not be sufficient. Allowing safe outdoor time is also an excellent source of UVB and visible light. Snakes taken outdoors should be kept in an escape-proof and predator-proof, non-glass enclosure. Provide shade and basking spots so your snake can regulate their temperature. When keeping reptiles, our goal should be to replicate their natural environment as closely as possible, which includes replicating full spectrum lighting (the sun).

Sunlight is made of ultraviolet, near infrared (IR), mid IR, far IR, and visible light. It is our job as keepers to provide full spectrum lighting, which means as close to sunlight as possible. Unfortunately there is not one source for all of these components, so we must provide multiple types of lighting. For visible light, LED or halide bulbs should be provided. Light sources should be turned off at night to promote normal day/night cycles.

Arcadia UVB guide: <https://www.arcadiareptile.com/lighting/guide/>

Heat

Unlike mammals, reptiles cannot internally regulate their temperature and rely on their environment to heat and cool themselves. Therefore, it is important that we provide captive reptiles with a temperature gradient so they can warm up or cool down as needed. Reptiles have three temperatures to measure: basking spot, warm ambient, and cool ambient. The basking spot is the hottest area in the enclosure where they bask, the warm ambient is the air temperature on the warm side of the enclosure, and the cool ambient is the air temperature on the cool side of the enclosure. Ambient temperatures are best measured with digital thermometers (one on the warm end and one on the cool end), as analog thermometers are often inaccurate. Basking temperatures can be measured with a digital infrared thermometer.

Easterns and southerns require a basking spot of 86-88F and westerns require a basking spot of 90-95F. For easterns and southerns, a warm ambient of 80-85F should be provided, and for westerns, a warm ambient of 85-90F. Eastern and southern cool ambient should be 75-80F, and for westerns it should be 77-82F. Any light emitting sources should be turned off at night, but a non light emitting source like a ceramic heat emitter, radiant heat panel, or deep heat projector may be needed to keep the temperature in the low-mid 70s. Sunlight is made of UV, near IR, mid IR, far IR, and visible light. Flood tungsten-halogen bulbs are the most efficient at producing near IR, which is the most abundant IR in sunlight, and they also produce significant mid IR and

some far IR. Far IR is the least abundant in sunlight, but is most often produced in large amounts by sources like ceramic heat emitters, heat pads, and radiant heat panels. Tungsten-halogen bulbs should be the flood type to ensure a wide enough basking site. These heat producing bulbs can be found as reptile specific bulbs or at hardware stores. Avoid hot rocks as these can easily burn reptiles.

Humidity

An ambient humidity of 30-50% for westerns, and 50-60% for easterns and southerners should be provided and measured with a digital hygrometer. Humidity spikes can be accomplished with occasional misting. A humidity hide with moist moss or substrate can be provided to create a humid microclimate for your hognose.

Feeding

Hognose snakes eat a variety of amphibians, reptiles, birds, eggs, and small mammals in the wild, but they are specialized for toad predation. They do not constrict their prey, instead using their venom, delivered via chewing, to aid in restraining their prey. Hognose snakes tend to be voracious eaters, but also have a reputation for being picky when they are first obtained or if their husbandry needs are not being met. Prey should be no larger than the snake's head, as hognose snakes do not seem to "expand" as much as other snakes. Multiple smaller prey items may need to be given rather than one large prey item. Pinky mice and/or rat pups can make up the bulk of your snake's diet, but it is recommended to add variety since these species eat a large amount of amphibians and other animals in the wild. Feeder frogs, toads, salamanders, anoles, or quail eggs can all be offered. Additionally, ReptiLinks provides already processed blocks of bullfrog, iguana, quail, and small mammals that can be used to increase the dietary variety of your hognose's diet. Dietary variety is important for enrichment and preventing nutritional deficiencies. Some keepers have reported digestion problems with haired mammals, so it may be beneficial to use only young mice/rats that are hairless.

Some keepers also choose to do "nest raids", where they provide a larger number of small prey items as enrichment. Live prey should be avoided, as live animals can seriously injure your snake. It may take time to transition a snake from live to frozen/thawed, but the majority of snakes can make the change with time. Adjustments should be made to your snake's feeding schedule based on their body condition score. Do not handle your snake for 24-48 hours after feeding as this can cause regurgitation.

Feeding schedule:

<6 months: Every 3-4 days

6-12 months: Every 4-5 days

>12 months: Every 5-7 days

Water

A dish of clean water large enough to soak in should always be available.

Sexing

Females are larger and have shorter, stubby tails. Males are smaller and have longer, thinner tails.

Zoonosis

Like other reptiles, hognose snakes can carry *Salmonella*. Always wash your hands after handling reptiles or items from their enclosure. The venom of a hognose snake should not cause serious harm, but potentially serious allergic reactions may be possible. If you are bitten and experience any systemic signs, contact a medical professional.

Health

Hognose snakes are generally fairly hardy but may be prone to mites, dysecdysis (difficulty shedding), stomatitis (mouth rot), scale rot, and reproductive issues. Feeding strikes are also not uncommon in hognose snakes, and some will even refuse non-amphibian prey. Your hognose should be examined by your veterinarian every 6-12 months.

Sources and Further Reading:

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- <https://www.thebiodude.com/blogs/reptile-and-amphibian-caresheets-with-cited-veterinary-and-herpetology-sources/western-hognose-care-sheet-and-maintenance>
- <https://reptilerapture.net/western-hognose-snake.html>

- Facebook: Advancing Herpetological Husbandry
- *Mader's Reptile and Amphibian Medicine and Surgery*
- *The Arcadia Guide to Reptile and Amphibian Nutrition*