Common Name: SOUTHERN HOGNOSE SNAKE

Scientific Name: *Heterodon simus* Linnaeus

Other Commonly Used Names: puff adder, spreading adder

Previously Used Scientific Names: none

Family: Colubridae

Rarity Ranks: G2/S2

State Legal Status: Threatened

Federal Legal Status: none

Description: This is a short, stout-bodied snake with a sharply upturned snout. The maximum total length for this species is 61 cm (nearly 2 feet). Females are larger and have comparatively shorter tails than males. The scales are keeled and the anal plate is divided. Background color is light brown, tan, yellowish, or gray, but never black (melanistic). A series of 20-28 dark brown, squarish, mid-dorsal blotches alternates with similarly colored, though smaller, dorsolateral blotches. Interspaces between mid-dorsal blotches are often light reddish-brown, forming a broken stripe along the length of the back. A pair of large, elongated, dorsolateral blotches is present on the neck. Brown bands (lighter in color than the blotches) partially ring the tail, not extending dorsolaterally. A diagonal, dark brown stripe extends from the top of the head, past each eye, and to the corner of the jaw. The belly is whitish, often mottled with gray or brown; the underside of the tail is similarly colored. The coloration and pattern are fairly uniform among individuals, including hatchlings, which are 13 – 17 cm (about 5-6½ inches) total length. This species has rear fangs but does not inject venom.

Similar Species: The larger eastern hognose snake (*Heterodon platirhinos*) is extremely variable in coloration and pattern, and some individuals are completely black. Additionally, their snouts are pointed, though not noticeably upturned, and the ventral portion of the tail is obviously lighter in color than the belly. Pigmy rattlesnakes (*Sistrurus miliarius*) are similar in size to the southern hognose and have a very similar pattern, including the stripe along the back. However, pigmy rattlesnakes have a tiny rattle, vertical pupils, and a small pit between the eye and nostril.

Habitat: Southern hognose snakes are most often associated with well drained, xeric, sandy soils where longleaf pine and/or scrub oaks (especially turkey oak) are the characteristic woody vegetation. Wiregrass is often a significant component of the groundcover. Such habitats are necessarily fire-maintained. Ruderal habitats, including fallow fields, may also be used.

Diet: This species eats almost exclusively toads, both eastern spadefoots and those of the genus *Bufo*.

Life History: Very little is known about this harmless and secretive snake, in part because of its fossorial habits. Southern hognose snakes burrow both for cover and to unearth toads, their preferred prey. Surface activity is strictly diurnal and is apparently reduced during the middle of summer. Mating has been observed in the spring, and nests of 6-14 eggs are likely deposited in late spring or summer. However, natural nests have yet to be observed. The incubation period of eggs in captivity ranges 56-70 days. Hatchlings emerge between mid-September to mid-October. Age at maturity is not known. When molested, southern hognose snakes will hiss, blow, and flare their neck and head like a cobra, but will not bite. Although some individuals will follow up by rolling over and feigning death, this behavior is not as frequently demonstrated as it is by its congener, the eastern hognose snake.

Survey Recommendations: This species is so infrequently observed that dedicated surveys to find it are rarely successful. Instead, most individuals are found while crossing roads, or

unfortunately, lying dead on roads. Drift fences equipped with pitfall, funnel, or box traps may intercept and capture southern hognose snakes, but this has not proven to be a very effective technique.

Range: Southern hognose snakes are primarily found in the Coastal Plain from southeastern North Carolina south and westward to the Pearl River in southern Mississippi, including much of peninsular Florida. A portion of Alabama's Ridge and Valley region, noted for a unique assemblage of otherwise primarily Coastal Plain endemics, also harbors southern hognose snakes, at least historically. This species is widely distributed in the Coastal Plain of Georgia but tends to occur in small, disjunct populations that are sometimes isolated by several miles from the closest neighboring one. A single specimen from near Lake Jackson represents the only Piedmont record of this species in Georgia.

Threats: Over thirty years have gone by since the last observation of this species in Alabama and it may be extirpated there. The last observation reported from Mississippi was 1981. Decline or apparent disappearance has been noted in other portions of its range, including Georgia, as well. However, some areas of Georgia, peninsular Florida, and the Carolinas still have regular reports of encounters. Causative factors responsible for the declines or disappearances are unknown. The destruction and alteration of longleaf pine-wiregrass and other xeric habitats has been implicated in the decline of many associated species; however, southern hognose snakes have apparently disappeared from some of the best examples of these habitats. Further, the species persists in areas of other states where the native habitat has been highly altered. Non-native invasive predators (especially red imported fire ants), road mortality, and human persecution have also been implicated, but no evidence of such threats can be clearly linked to the declines and disappearances at this time.

Georgia Conservation Status: Public lands known to harbor populations of southern hognose snakes include Ft. Benning , Ft. Stewart , and Ft. Gordon Military Reservations, Eufaula National Wildlife Refuge's Kimbrell Tract, and Fall Line Sandhills Natural Area. A protected population also occurs on Joseph W. Jones Ecological Research Center at Ichauway.

Conservation and Management Recommendations: Biologists and naturalists that work at or frequent lands with suitable southern hognose snake habitat should familiarize themselves with the species' defining identification features, and properly document (exact date, exact location) and photo-verify any potential individuals observed. Research into the species' habitat requirements, life history, and vulnerabilities, as well as effective survey techniques, is desperately needed.

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Date Compiled or Updated:
J. Jensen, Dec. 2007: original account
K. Owers, Sept. 2009: updated status and ranks, added pictures