that there is no evidence that *M. iversoni* and *C. serrata* are valid species, and given the propensity of distantly related turtles to hybridize, the authors propose to reconsider the systematic status of the specimens examined. They conclude that investigating the origin and validity of new species of turtles described from pet trade specimens is critical for conservation efforts.

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# ARTICLES

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## Observations on Hibernacula and Overwintering Ecology of Eastern Hog-nosed Snakes (*Heterodon platirhinos*)

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Hibernacula and overwintering ecology of the hognose snake *Heterodon platirhinos* are known only from anecdotal observations and may differ in some respects from that of many snakes (Anderson 1965; Platt 1969). In addition, because overwintering ecology of reptiles may vary geographically (Gregory 1982; Sexton et al. 1992), it is important to study it in various parts of a species' range. In the course of monitoring *H. platirhinos* by radiotelemetry for a study of spatial ecology and survivorship during the activity season (Plummer and Mills 2000), I made observations on individual snakes over the winter months in the south central part of the species' range. These observations contribute to our understanding of the hibernacula and overwintering ecology of this species.

Temperature-sensitive transmitters (Telonics CHP-2P; <5% of snake mass) were implanted into adult *H. platirhinos* following the procedures of Reinert (1992). One male was monitored over winter in 1992, and two females and four males were monitored over winter in 1993. A minimum-maximum thermometer recorded shaded air temperatures 1 m above ground. The study area (N35°16', W91°43') is located in the easternmost part of the Arkansas River Valley subdivision of the Ouachita Mountain region of Arkansas, USA (Foti 1974). Topography is rolling to hilly and varies from approximately 60 m to 120 m above sea level. The sandy soils are thin and often rocky. The occasionally stunted vegetation of the xeric higher areas is upland deciduous woodland whereas that of the more mesic lower areas is upland deciduous forest (Foti et al. 1994). Common trees included oaks, *Quercus stellata* and *Q. marilandica*, hickory, *Carya texana*, and juniper, *Juniperus virginiana*. Natural grassy openings were common, especially in the higher areas. Other grassy openings included roads, trails, abandoned fencerows, pipeline and powerline right-of-ways, pastures, and mowed fields. Burrows of the mole, *Scalopus aquaticus*, were common throughout most of the study area.

The normal activity season for *H. platirhinos* at this locality is mid-April to mid-October during which inactive snakes seek refuge under the cover of grass or surface litter. Snakes typically do not use mole burrows during the activity season (Plummer and Mills 2000). During short periods of cold weather just before and after hibernation (i.e., November and March), *Heterodon* also took refuge under the cover of grass or surface litter. Snakes temporary retreated into mole burrows only occasionally occurred during this time. At this locality, winters are mild and continuous hibernation usually occurred from about December through February. By tracking telemetered snakes, I located individual *H. platirhinos* in 13 different hibernacula from December through February. Snakes were located at irregular intervals (1–4 times per week) in the mid to late afternoon. Transmitters functioned well and without problems at the lower than activity season temperatures.

All *Heterodon* hibernated singly in one or more mole burrows. The hibernacula were distributed throughout the approximate 250 ha study area in open woodlands (N = 8), a fencerow at the edge of a grassy field (N = 3), and a grassy pipeline right-of-way (N = 2). Two snakes changed hibernacula in December–February. One female moved 14 m on 29 December to a new hibernaculum and 24 m on 2 February and 22 m on 6 February to new hibernacula. One male moved 56 m on 7 February to a new hibernaculum. Each hibernaculum shift was preceeded by a period of one or more sunny days when maximum air temperatures ranged from 14 to 21°C.

One male abruptly moved in each of two years from a distant portion of its home range to hibernacula on a power line right-of-way. This snake traversed the same path each year, moving a minimum of 800 m in 3 d (1993) and 700 m in 2 d (1994). Dates of arrival at the hibernacula were 6 October 1993 and 7 October 1994. The two hibernacula were located within 150 m of each other. There were no obvious habitat differences between the location left and the hibernacula sites (both were open woodland habitat with distinct habitat edges). Although movement to and from hibernacula and hibernating singly at this latitude have been reported in other snake species (Gregory 1982; Sexton et al. 1992), migration and fidelity to a distant hibernaculum in snakes most often is associated with communal hibernacula at high latitudes (Gregory 1984).

I excavated one hibernaculum on 22 January 1994 and found the snake in a small chamber located approximately 75 cm from the mouth of the burrow at a depth of 25 cm. The soil temperature of the chamber was 4.5°C (measured with a thermocouple probe) and the body temperature of the snake was 4.7°C (measured with the temperature-sensitive transmitter). In December–February, body temperatures of snakes in their hibernacula averaged 10.1 ± 2.4°C (SD) (range 4.7–13.6°C, N = 16) in 1992 and 11.4 ± 1.3°C (9.8–14.6°C, N = 23) in 1993. These relatively high temperatures were within the normal range of body temperatures for hibernating reptiles (1–15°C; Gregory 1982) and support the notion that hibernating snakes often seek the warmer parts of their hibernaculum (Sexton et al. 1992). During this same period, snakes occasionally basked when maximum air temperatures exceeded approximately 18°C for several consecutive days. Body temperatures of basking snakes in December–February averaged 23.7 ± 3.7°C (21.1–26.3°C, N = 2) in 1992 and 23.1 ± 6.1°C (16.6–32.6°C, N = 6) in 1993.

One male was found dead on 5 December 1993 near the mouth of its hibernaculum where it had been monitored since 17 November. The snake was last observed basking in the same position and location on 28 November. Freezing was the likely cause of death as minimum air temperatures had dropped to at least –6°C during that time and there was no gross physical damage to the body or evidence of disease.

Percent change in the body mass of hibernating snakes determined from measurements taken at highly variable times before and after the December–February hibernation averaged 0.3 ± 9.3% (–11.3% to 11.4%, N = 5). Based on the intensity of monitoring and the times of body mass measurement, body mass change due to overwintering probably was best represented by one female who weighed 244 g on 15 October and 238 g on 2 February. The 2.5% loss in mass during this time was associated with a mean body temperature of 11.4 ± 1.3°C (N = 23), two hibernacula shifts, and at least four bouts of basking in December–February. It is unknown whether the mass loss represented lean mass, lipid, or water loss.

My observations differ from various anecdotal reports on hibernation in *H. platirhinos* because they report histories of individual snakes monitored over extended times. The mole burrow hibernacula described herein as well as various other kinds of hibernacula have been reported previously for *H. platirhinos* (Anderson 1965; Arndt 1980; Neill 1948; Platt 1969). In contrast to opportunistic encounters which limit the discovery of hibernacula to only where one searches (e.g., Neill 1948), telemetric observations should better represent unbiased overwintering "preferences" because, assuming no transmitter effect, they demonstrate choices of hibernacula made by individual snakes (Weatherhead and Charland 1985). Consistent with these results are reports that *Heterodon* usually are absent in hibernacula harboring other snake species (Platt 1969). For example, in Missouri, *Heterodon* are absent in the limestone edge hibernacula used by most other snakes, choosing instead to hibernate in mammal burrows in nearby open fields (Anderson 1965). It is known that *Heterodon* may dig their own hibernacula (Arndt 1980; Platt 1969). The loose, sandy soils on my study area appeared to be suitable for burrowing and I have observed *Heterodon* to dig when foraging (unpubl.). The lack of burrowing for hibernacula at this locality may have resulted from the high availability of natural mole burrows.

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## Update on the List of Reptiles Known from Honduras

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The years that have transpired since we last updated the Honduran herpetofauna (Wilson and McCranie 1994a) have been productive ones, resulting in major additions to our knowledge. Unlike two previous lists (Wilson 1983; Wilson and McCranie 1994a), we treat here only the reptile component of the herpetofauna, inasmuch as the amphibians will be dealt with in McCranie and Wilson (2002). That book treats 116 species of amphibians, including two caecilians, 25 salamanders, and 89 anurans. These figures compare with a total of 89 species, including 3 caecilians (see McCranie and Wilson 2002, for an explanation of the decrease of one species), 17 salamanders, and 69 anurans in the 1994 list.

As with the 1983 and 1994 lists, additions to the reptile fauna have occurred through range extensions or taxa being described as new to science. In addition, a few taxa have been resurrected or added to the reptile fauna as a result of the clarification of the status of some Honduran populations. Currently, the total number of species of Honduran reptiles is 217, up from 188 on the 1994 list, a 15.4% increase. The increase of 29 taxa involved numerous modifications, as detailed below. No changes occurred in the list of crocodilians. Fourteen species of turtles are currently recog-