

ALYSSA J. LUTZ, Dept of Biological Sciences, West Liberty University, West Liberty, WV, 26074, JOSHUA G. OTTEN, Dept of Biology, Cornell College, Mount Vernon, IA 52314, & ZACHARY J. LOUGHMAN, Dept of Biological Sciences, West Liberty University, West Liberty, WV, 26074. Growth, age, and maturation estimates of Plains Hog-nosed Snakes (*Heterodon nasicus*) in Iowa.

Understanding snake life history strategies, particularly growth and timing of sexual maturity, is critical for effective conservation management. The Plains Hog-nosed Snake (*Heterodon nasicus*), a state-endangered species in Iowa, remains poorly studied, and growth dynamics have not previously been quantified within the state. This study used mark-recapture methods to estimate growth rates of Plains Hog-nosed Snakes inhabiting a tallgrass prairie ecosystem in southeastern Iowa. Individuals were captured from 2018-2025 using visual encounter surveys and drift fence arrays with funnel and pitfall traps. Growth analyses revealed size-dependent patterns, with smaller individuals growing significantly faster than larger snakes. Females typically exhibited higher growth rates than males, especially between 30-50 cm SVL. Using published estimates of maturity size, we estimated that females reach sexual maturity at 40-46 months of age, delaying reproduction until their fourth or fifth active season. Males matured earlier, potentially producing motile sperm by 22 months and reproducing by their third active season. These results indicate delayed female maturation and relatively slow life-history dynamics, suggesting populations are highly sensitive to adult mortality. Because females require multiple years to reach sexual maturity, conservation efforts should prioritize the survival of mature individuals. Slow maturation also implies that population recovery following disturbance may take several years. This study provides the first growth-based maturity estimates for Iowa populations of Plains Hog-nosed Snakes and contributes demographic information useful for regional conservation planning.