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# NESTING HABITAT AND BEHAVIOR OF SPINY SOFTSHELL TURTLES *APALONE SPINIFERA HARTWEGI* IN THE MISSOURI RIVER, MT

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Little is known about the nesting behavior and habitat of the western spiny softshell (*Apalone spinifera hartwegi*) in Montana where they are at the northern extent of their range and are a state Species of Concern. Our objective was to document nesting behavior, habitat, and timing in a 97-kilometer reach of the Missouri River. We radio-tagged 47 female turtles and attempted to locate nesting areas using telemetry, visual surveys from jet boat and on foot, and by observation from shore-based blinds. We located 27 nests; 15 were on islands, 12 were aggregated, and 2 were depredated. Nesting occurred following the peak river stage from about July 7 to July 28. Twenty-three nests were in mixed gravel and 4 nests were in sand substrates. Distance from water's edge to the nest ranged from 1.9 m to 27 m and height of nest above the water surface elevation ranged from 0.25 m to 1.9 m. Vegetation at nest sites was sparse, ranging from 0 to 15 percent vegetative cover. Emergence of hatchlings was documented for 17 nests and occurred from about September 1 to September 20. All 17 successful nests were in gravel substrate; we did not document any emergence from nests in sand. Lack of emergence from sand nests may be related to the cumulative thermal regime in the nest chamber during the period from peak discharge until the onset of freezing in autumn. In 2012, we will investigate the thermal environment in gravel and sand nesting substrates.