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# Chelydra serpentina (Snapping Turtle). Behavior

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**CHELYDRA SERPENTINA (Snapping Turtle). BEHAVIOR.** At approximately 1215 h on 20 May 2016 we captured a *Chelydra serpentina* during a BioBlitz Survey at Marsh-Billings-Rockefeller National Historic Park in Woodstock, Vermont, USA. The individual was walking in the shallow water of Pogue Pond (43.6333°N, 72.5413°W) and we directed it towards shore and lifted it up by the back of the shell to show visiting students. The individual

was a male (maximum carapace length ca. 45 cm). Upon being lifted, the turtle snapped its neck backwards towards us, a common behavior of *C. serpentina*, and began regurgitating over its carapace. The regurgitate was primarily frog eggs and the individual repeatedly struck backwards, projectile vomiting eggs each time. The individual was also displaying its penis and making guttural vocalizations, as is typical upon disturbance (Ernst and Lovich 2009. *Turtles of the United States and Canada*. The Johns Hopkins University Press, Baltimore, Maryland. 134 pp.). Typical defensive behaviors of *C. serpentina* include biting, retraction of extremities into the shell, and release of musk gland secretions (Dodd and Brodie 1975. *Herpetologica* 31:286–288). However, to our knowledge, vomiting has not been recorded as a stress response or defensive behavior in this species. It is possible that the individual had just consumed the eggs and had not fully swallowed them, thus the eggs may have been expelled due to constrictive forces in the throat as the animal snapped defensively. However, we did not observe any eggs or egg deposition on that side of the pond and it also possible that the eggs were eaten earlier at another location.

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**EMYDOIDEA BLANDINGII (Blanding's Turtle). COLD TOLERANCE.** Studies have been conducted regarding thermoregulatory and hibernation site selection of *Emydoidea blandingii* throughout its range (Ross and Anderson 1990. *J. Herpetol.* 24:6–12; Sajwaj and Lang 2000. *Chelon. Conserv. Biol.* 3:626–636). However, in Missouri, USA, *E. blandingii* is listed as state endangered and is only known to occur at three locations across the state (Conant and Collins 1998. *A Field Guide To Reptiles and Amphibians of Eastern and Central North America*. Third edition, expanded. Houghton Mifflin Company, New York, New York. 616 pp.). Little has been published on *E. blandingii* in these isolated populations. In the only hibernation-related study of this species in Missouri, Kofron and Schreiber (1985. *J. Herpetol.* 19:27–40) observed ambient water temperatures in winter ranging from 2° to 7.5°C at hibernation sites.

Less than 20 individual *E. blandingii* have been documented since they were first observed in 1984 at Loess Bluffs National Wildlife Refuge (LBNWR), Holt County, Missouri. LBNWR consists of approximately 1500 ha of wetland habitat divided between 33 managed units. These wetland units are managed primarily for early successional aquatic vegetation as food stores to achieve high duck energy days. The management strategies consist of scheduled flooding and draining around the waterfowl and shorebird migration and peak growing seasons respectively.

A study to determine spatial ecology and habitat selection of *E. blandingii* using radio telemetry was implemented because of this species' rarity, conservation status, and the intensive wetland management of the refuge. Two individual *E. blandingii*, one male and one female, originally captured crossing roads in 2012 and 2013 respectively, were fitted with DS1921G-F5# iButtons (Embedded Data Systems, Lawrenceburg, Kentucky). The current surveying effort consists of radio tracking 1–2 days per week during low activity seasons (October through April) and 3–5 days per week during high activity seasons (May through September). Data collected included dominant vegetation type, water depth, water temperature, and geospatial location. Location data was attained through use of ATS units (Advanced Telemetry Systems,



FIG. 1. *Chelydra serpentina* (Snapping Turtle) with regurgitated frog eggs on ground in front of head.