

ca. 2 m (about three paces) to repeat the count, centered on the same distance from the shoreline. All sample sites were similar in microhabitat, but varied in depth from ca. 5 to 15 cm. The second count was located over the second Wood Frog egg cluster, but eggs were found at no other site around the pond. Our larval counts were 25, 25, 2, 0, 0, 4, 3, 3, 5, 9, and 7. The mean larval count away from the egg masses (3.3; $N = 10$) was nearly an order of magnitude fewer than at the egg masses, confirming that Marbled Salamander larvae were strongly associated with Wood Frog eggs. Although we did not sample quantitatively the distribution of Marbled Salamander larvae before Wood Frogs began laying eggs, during our general amphibian surveys at this pond (and others) during November, December, and early March over more than a decade we never found Marbled Salamander larvae concentrated at particular sites along the shoreline prior to Wood Frog breeding. We presume that this larval concentration is facilitated by olfactory cues, and that the association is diet related (references above).

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CRYPTOBRANCHUS ALLEGANIENSIS ALLEGANIENSIS (Eastern Hellbender). TERRESTRIAL MOVEMENT. In the Toccoa River (Ocoee River) drainage, a tributary to Blue Ridge Lake, Fannin Co., Georgia, USA, a larval hellbender (evident external gills present; 7 cm TL) was observed moving terrestrially over fine sand and gravel substrate along the margin of a stream ca. one hour before sunset on 16 July 2012. This individual appeared to be emerging from a cover rock (55 cm x 25 cm) with a small, shallow (barely deep enough for submergence) puddle underneath. The cover rock was located adjacent to a riffle of a 5-m-wide stream and was 50 cm from flowing water and 30 cm from open standing water. Terrestrial movement of adult hellbenders has been observed in captivity and in the wild, but to our knowledge this is the first observation of the terrestrial movement of a larval hellbender. Diurnal terrestrial movements have been observed by captive hellbenders at Riverbanks Zoo and Gardens (Columbia, South Carolina) on several occasions, where hellbenders are maintained in captivity within a 2.5 m x 1.5 m x 3 m exhibit that contains a coldwater-flowing stream as well as planted, dry land areas with a soil and leaf litter substrate. Multiple individual hellbenders have been observed exiting the stream and walking along the rear wall of the exhibit and then reentering the water. All of these observations have been made during daylight hours and the hellbenders could be moving on land at night without being observed. In North Carolina, local fishermen have reported observing hellbenders moving on land some distance from the water. Beck (1965. *Field and Stream* 69:64-66,109-113.) reported catching hellbenders < 1 m from the water's edge with meat-baited mammal traps on more than one occasion along the Allegheny River in Pennsylvania. Terrestrial movement may support biogeographic theory in explaining the distribution of hellbender populations within portions of drainages upstream of apparent barriers to movement (e.g., a hellbender population found upstream of a ca. 35 m waterfall within the Nottely River watershed in Georgia).

Species identification of the larval specimen from this observation was verified from a voucher photograph (K. Krysko and M. Nickerson, University of Florida, Florida Museum of Natural History).

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CRYPTOBRANCHUS ALLEGANIENSIS ALLEGANIENSIS (Eastern Hellbender). CANNIBALISM. Although cannibalism in *Cryptobranchus alleganiensis* has been previously reported (Nickerson and Mays 1973. *The Hellbenders: North American Giant Salamanders*. Milwaukee Public Mus. Press; 106 pp.; Petranka 1998. *Salamanders of the United States and Canada*. Smithsonian Institution Press, Washington, D.C. 587 pp.; Phillips and Humphries 2005. *In Lannoo [ed.], Amphibian Declines: The Conservation Status of United States Species*, pp 648-651. Univ. California Press, Berkeley, California), additional cases are worthy of note, since only a few specific reports of this behavior have been recorded from wild caught hellbenders, and there has been no discussion on the possible causes of this behavior. Cannibalism was first reported in *C. a. alleganiensis* by Reese (1903. *Sci. Monthly* 62:526-531). In captivity, he observed a larger hellbender consuming a smaller conspecific. He was able to remove the ingested smaller specimen with forceps, and it swam away unharmed when released in its enclosure. Smith (1907. *Biol. Bull.* 13:5-39) reported a two-year-old hellbender in northwestern Pennsylvania, that when placed in quiet water after capture, regurgitated a partly digested 6-cm larval conspecific. The size of the larger specimen was between 12.0 cm and 12.3 cm. The only other reported observation of cannibalism in this species from a wild specimen is that of Humphries et al. (2005. *Herpetol. Rev.* 36:428) who reported that a larger, wild caught, adult male *C. a. alleganiensis* (37.2 cm TL) regurgitated a smaller individual (18.5 cm TL) in the field. The North Carolina population where this occurred is very dense and comprised of all size classes (J. Humphries, pers. comm. and L. Williams, pers. obs.). Here we report another field case of cannibalism from a North Carolina population.

On 29 June 2010, an adult female (39 cm TL) *Cryptobranchus a. alleganiensis* was collected from a fast riffle, in a section of the French Broad River, Transylvania Co., North Carolina, USA (specific locality is recorded with the North Carolina Wildlife Resources Commission and is withheld to protect the population). After data collection, the specimen was held in a mesh bag and lowered into the water in strong, swift current in preparation for its release. During this process and after being subjected to the strong current, it regurgitated a smaller hellbender (21 cm TL) while still in the mesh bag. The consumed hellbender was decaying, and there was a strong odor of rotten flesh (Fig. 1). From our observations and photographs of the carcass, it appears that the adult hellbender grasped the smaller hellbender laterally on its right side (tooth marks identified on dorso-lateral surface of body confirmed by North Carolina Zoo pathologist, Bridgid Trovan). Unfortunately, this regurgitated hellbender was not saved due to its advanced state of decay. The locality where this observation was made contains a robust, reproductively active population of hellbenders of all age classes.

In a similar example, Max A. Nickerson (pers. comm. 2012) informed us of wild-caught Ozark Hellbenders (*C. alleganiensis bishop!*) eating smaller conspecifics from the North Fork of the White River in Missouri when they were placed in coolers under crowded conditions. On 12 March 1972, two Ozark Hellbender gilled larvae (9.5 and 13.0 cm TL) were cannibalized when placed