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CRYPTOBRANCHUS ALLEGANIENSIS (Hellbender). PREDATION. Predation on all life stages of *Cryptobranchus alleganiensis* by *Lontra canadensis* (River Otter) has been assumed, but evidence of predation has not been published (Briggler et al. 2007. Hellbender Population and Habitat Viability Assessment. IUCN/SSC Conservation Breeding Specialist Group, Apple Valley, Minnesota. 46 pp.). *Lontra canadensis* was presumably common in many *C. alleganiensis* localities, but was largely extirpated in many sites by the early 1900s due to the fur trade. River Otters have been reestablished through reintroduction efforts in many parts of the eastern USA. The effects of reintroductions on *C. alleganiensis* has been of concern due to potential for predation, disease introductions, and food competition (Nickerson et al. 2011. PLoS ONE 6:e28906). On 23 October 2013, one of us (RV) was traveling westbound on State Rt. 73 along the East Prong of Little River in the Tennessee portion of Great Smoky Mountains National Park (precise locality withheld due to conservation concerns). At 1230 h, RV pulled over to observe three *L. canadensis* in the river and photographed the predation of an adult *C. alleganiensis* by an adult *L. canadensis* for approximately four minutes. The *L. canadensis* was originally near the north river bank with the tail of the *C. alleganiensis* in its mouth. The *L. canadensis* carried the *C. alleganiensis* to the middle of the river and climbed on to a large rock where it began to consume it beginning at the tail. The *L. canadensis* went back into the water and climbed onto a second rock further upstream, where it continued feeding on the *C. alleganiensis* (Fig. 1). It stayed there briefly before reentering the river, with the *C. alleganiensis* still in its mouth, and continued upstream until no longer in view. At that time the back portion of the *C. alleganiensis*, including the entire tail, rear legs, and part of the rear body cavity, was mostly consumed. The two other *L. canadensis* were further upstream during the observation. Due to the appearance of the body and skin of the *C. alleganiensis* and changes in the position of the *C. alleganiensis* in photographs, it seems likely that it was alive during the predation event.

We thank Erik Cooper, Tiffany Beachy, and Dana Soehn for providing information about this event.

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FIG. 1. Adult *Lontra canadensis* (River Otter) feeding on an adult *Cryptobranchus alleganiensis* (Hellbender) in Little River, Tennessee.

CRYPTOBRANCHUS ALLEGANIENSIS ALLEGANIENSIS (Eastern Hellbender). INTRASPECIFIC AGGRESSIVE BEHAVIOR. Males of *Cryptobranchus alleganiensis* are known for their aggressive behaviors during the breeding season, especially defending nesting sites (Bishop 1941. The Salamanders of New York. New York State Museum Bulletin. No. 324. Albany, New York. 365 pp.; Nickerson and Mays 1973. The Hellbenders: North American Giant Salamanders. Milwaukee Public Museum, Milwaukee, Wisconsin. 106 pp.; Smith 1907. Biol. Bull. 13:5–39). Such male-to-male intraspecific aggression sometimes inflicts considerable injury to an opponent; resulting in scrapes, gashes, fresh wounds to the limbs, head, flank or tail, and most injuries are likely associated with the breeding season (Hiler et al. 2005. J. Arkansas Acad. Sci. 59:88–94; Miller and Miller 2005. Southeast. Nat. 4:513–520; Pfingston 1990. Herpetol. Rev. 21:48–51). Herein we report two observations of aggressive behavior during the breeding season in male hellbenders, and one of these observations resulted in mortality of a conspecific. To our knowledge, this is the first reported observation resulting in mortality.

While conducting surveys for hellbender nests at 1115 h on 02 October 2008 on the Big Piney River, Missouri, USA (specific locality withheld due to conservation concerns), we encountered a large amount of hellbender slime scattered on the river bottom within an approximately 3 x 3 m area. A hellbender was seen lying within this area on the river bottom with its head poked into a hole under a large rock (mean rock length and width 130 and 210 cm, respectively). Upon grabbing and removing the hellbender from the hole, we observed that another hellbender had its mouth engulfed over the nostrils and half of the head. The hellbender within the hole immediately released the other hellbender and retreated slightly backward within the hole of the large rock. The hellbender that was captured was covered with large amounts of whitish skin secretions, was only slightly active, and was immediately placed in a container with water for short-term observation. The hellbender was an adult male (SVL = 34.0 cm; total length = 46.0 cm; mass = 610 g) and died within 15 minutes of capture. We were unable to remove the adult that was under the rock, but it appeared to be larger in size (i.e., larger head) and was likely a male based upon its behavior of defending the entrance tunnel of a potential nesting site. Based upon copious amounts of whitish skin secretions on the river bottom, it appears that aggressive fighting had occurred in the general area of the rock, but what happened and the length of the fighting is unknown. The animal that died had two snout wounds resembling bite-marks and fresh lacerations on the front and back left limbs indicative of bite marks by another hellbender. Necropsy was performed on the dead body and nothing else unusual was found.

At 0900 h on 24 September 2013, another similar encounter occurred between two adult male hellbenders on the Gasconade River, Missouri, USA (specific locality withheld due to conservation concerns). We observed a hellbender (SVL = 31.2 cm; total length = 47.3 cm; mass = 515 g) with its tail and partial body lying parallel to a rock (mean rock length and width of 86 and 66 cm respectively) and its head under the rock. When the hellbender was grabbed and pulled from the rock, another hellbender (SVL = 29.6 cm; total length = 46.1 cm; mass = 535 g) was immediately removed with its jaws clasped over the upper jaw and head of the visible hellbender. The hellbender released the other and both were alive and in good body condition. Upon inspection of the body, both hellbenders had characteristic snout wounds resembling bite-marks on the head.