Cryptobranchus alleganiensis (hellbender) predation.

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CRYPTOB RANCHUS 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 C. alleganiensis 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.

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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.