Amphibious Anomaly: Conserving Ohio's Hellbender

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Figure 1

The eastern hellbender salamander is a fascinating and unique amphibian, holding a significant place in Ohio's aquatic ecosystems. Often referred to as "snot otters" or " Allegheny alligators" due to their distinctive appearance. These large, fully aquatic salamanders are an indicator species, meaning their presence signifies a healthy and thriving freshwater habitat. Unfortunately, eastern hellbenders in Ohio are facing severe population declines, leading to their classification as an endangered species within the state.

Growing to a maximum of a little over 2 feet long, the eastern hellbender is the largest salamander in the United States. They require clear, clean, fast flowing water with lots of oxygen to thrive in their environment. This is because the hellbender breathes through it's skin! All of the wrinkles allow for more surface area to allow for oxygen absorption (Figure 1). Although they do have lungs, their lungs function as buoyancy devices more so than for breathing. While they have gills when juveniles, around 2 years of age, they will disappear. Their small beady eyes are used for light detection more than forming images. Hellbenders main diet consists of crayfish, small fish, frogs, snails, worms, and aquatic insects. They sit and wait for any unknowing prey small enough to fit into it's mouth. Male hellbenders are responsible for guarding fertilized eggs. I know I wouldn't take an egg from them!

Figure 2

Figure 3 shows the 15 state habitat range of the endangered salamander. The hellbender spends its life entirely underwater hiding under large flat rocks. Monitoring for hellbenders is important but challenging. Their preference for hiding under large rocks makes them difficult to find, but partners have found a way to detect their presence using DNA testing in water samples. If this proves to be accurate, easily detecting the amphibians in the water is a must for conserving current populations.

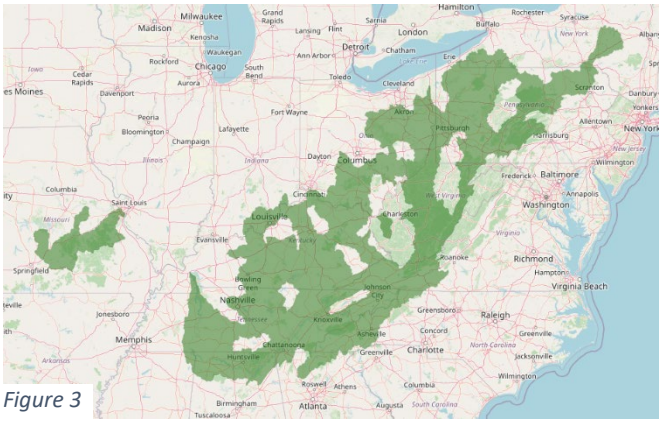

Figure 3

The conservation of hellbenders has been ongoing at least since 1990; when they were added to the endangered species list here in Ohio. ODNR granted the Columbus zoo 500 million dollars in September 2022 to aid in the conservation of wildlife in Ohio. The zoo has been crucial for starting hard work concerning hellbenders. Through this partnership, more than 1,600 three-year-old animals have been propagated for release into ten Ohio watersheds with the goal of delisting this endangered amphibian by establishing multiple self-sustaining populations. The grant to The Columbus Zoo and Aquarium comes from funds ODNR received as part of the legal settlement with Monsanto for damages its chemicals caused to Ohio's fish and wildlife. In more recent times, with funding from Gov. DeWine's H2Ohio Rivers and collaborating with River Rangers International, ODNR's Division of Natural Areas and Preserves coordinated the removal of an illegal dump along the banks of the Little Beaver Creek State and Wild National Scenic River (Figure 4). The site contained trash of all sorts and approximately 300 scrap tires. Cleaning up the site using low-impact methods is key to the continued protection of the state endangered hellbender salamander population living in Little Beaver Creek. Hellbenders can only thrive in unpolluted waters and streams with low sedimentation. Minimizing soil disturbance and ensuring trash does enter the river is critical for habitat protection.

Figure 4

The eastern hellbender salamander and its unique adaptations and role as an indicator species, is a vital component of Ohio's aquatic biodiversity. Despite facing significant threats from habitat destruction and pollution, dedicated conservation efforts offer hope for their recovery. The continued protection of these anonomolous amphibians is not only essential for their survival but also reflects the preservation, health, and integrity of Ohio's precious freshwater ecosystems. Through ongoing research, public awareness, and collaborative conservation actions, we can work towards a future where eastern hellbenders once again thrive in Ohio's rivers and streams.