S
ome things stick in your mind. That day on the Watauga River near Boone in April of 1982 was well over half my life ago, but I remember it well. I remember the guys in my herpetology class at N.C. State (no idea where most of them are today) and the half-eaten whip-poor-will I found on a rock in the river (a mink’s dinner, maybe, I speculated). But mostly, I remember why Wayne Van Devender took us to that spot. While some sought sundry small salamanders along the river bank, Van Devender, a professor of herpetology at Appalachian State, and one or two others waded midstream with a heavy rake and a large dip net. Soon their net was straining under the weight of a creature I had previously seen only in books. Nearly two feet long it was, writhing and slime-coated, with gray-brown wrinkled skin, stubby limbs, a large flat head and tiny eyes. God, it was beautiful.

Also known as “waterdog” and “mud puppy” (these two names correctly apply to another, unrelated salamander group), “snot otter,” “devil dog,” “Alleghany alligator” and some even less elegant names, the Eastern hellbender (Cryptobranchus alleganiensis alleganiensis) is one of North America’s most spectacular amphibians. The origin of the term “hellbender” is unclear. It also refers to a drunken binge. Since some have traditionally regarded hellbenders as impossible, nightmarish creatures, perhaps the name arose in reference to something best visualized only during alcoholic delirium. Even the occasional herpetologist apparently finds hellbenders less than appealing.

When the first edition of “Amphibians and Reptiles of the Carolinas and Virginia” was published in 1980, the hellbender account began: “Ugly, slimy, and large best describes this grayish brown salamander.” When, nearly 30 years later, fortune dictated my working on an updated second edition, one of my very first revisions was replacing those first three adjectives with “impressive.” Because while hellbenders are indeed large (as salamanders go) and slimy (like most other amphibians, fishes and many people I’ve known), the idea of humans calling other species ugly was just too ironic for me. And because impressive is just what hellbenders are.

Hellbenders inhabit clean, cold rivers and larger streams. The eastern subspecies originally ranged from southern New York to extreme northern Georgia, Alabama and Mississippi, and westward into Missouri and southeastern Kansas. A separate subspecies, even in a state famed for its salamander diversity, the snot otter stands out.
the Ozark hellbender (C. a. bishopi), inhabits the Ozarks of Missouri and adjacent Arkansas. In North Carolina, hellbenders originally occurred in most larger streams in the French Broad, Hiwassee, Little Tennessee, New and Watauga systems. In the east, hellbender habitat has shrunk considerably.

Fully aquatic, they never willingly leave the water. The name Cryptobranchus literally means “hidden gills.” Larval hellbenders do have small visible external gills, but by the time the salamanders are four or five inches long, the gills become covered by skin and are evident only by a small slit on each side of the head. A hellbender breathes mostly through its skin, the folds and wrinkles provide abundant surface area for oxygen exchange.

The largest hellbender on record measured just over 29 inches, but lengths of 12 to 20 inches are more typical. Although the hellbender is occasionally touted as North America’s largest salamander, the two-toed and three-toed amphiumas (Amphiuma means and A. tridactylum) and the greater sirens (Siren lacertina) all grow considerably longer. Even the lesser siren (S. intermedia) may challenge most hellbenders in terms of length. Hellbenders, however, are proportionally heavier and bulkier than any of these more slender, eel-like salamanders.

In most salamanders, breeding is accomplished by males packaging sperm in neat capsules called spermatophores. These are picked up by the females—a sort of indirect internal fertilization. Hellbenders, however, spawn externally, in the same “primitive” fashion as most fishes: the female lays eggs and the male dumps sperm over them. They face a mountain of threats. The greatest is undoubtedly poor water quality, mostly due to siltation resulting from agriculture, logging, urbanization and other land-clearing activities. Chemical pollutants, including some pesticides that may act as endocrine disrupters, are also a threat. As hemlocks fall to the introduced hemlock woolly adelgid, streams whose banks were shaded by these trees may see deadly temperature increases. Chytrid fungus and perhaps another disease have hammered the Ozark hellbender. Even though hellbenders make poor captives, some populations may have been impacted by collecting for the pet trade. And some anglers still illegally and unethically torture and kill hellbenders out of fear, ignorance or belief that they are trout predators.

Ironically, it’s the other way around—brown and rainbow trout, muskellunge and other non-native fishes represent yet another threat to hellbenders. Hellbenders actually eat mostly crayfish. They also take aquatic insects, worms and amphibians—including smaller hellbenders. Rarely they may eat small fishes, or dead ones, and may even attempt to scavenge fish on a stringer. But they don’t take healthy trout, and are in fact excellent trout predators. Hellbenders have hampered the Ozark hellbender. Even though hellbenders make poor captives, some populations may have been impacted by collecting for the pet trade. And some anglers still illegally and unethically torture and kill hellbenders out of fear, ignorance or belief that they are trout predators.

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Hellbenders are declining in number throughout their range. Biologists continue to monitor the population and health of North Carolina’s hellbenders in an effort to ensure the survival of these incredible salamanders for generations to come.

“Hell Week”—several days of intensive monitoring of the hellbender population in New River State Park in Alleghany and Ashe counties. But his team does well to find one or two animals a day. Hellbenders are apparently not doing well in the New River, Humpries believes. There is relatively high, he believes recreational use is impacting the river. I wonder if any of the other people in the river ever even noticed the hellbenders. Surely the canny, focused fly-fishermen must see them often. Did they experience the same exhilaration I did when I saw one creeping along the bottom? As I watched a big, blotted male nudge a small, salmon-pink one away from his rock, while a third bite-scarred veteran rested quietly a few feet away, I wondered how many places were left where such could still be witnessed and if I would ever get to see it again. That may depend partly on the handful of people who care about hellbenders, and who are working to save a future for them. But mostly it will depend on our species as a whole—whether we can adopt values focused on respect for all life and long-term sustainability of all resources.

As for me, I don’t find time to work with hellbenders much, nor do I feel compelled to seek them out often. Just knowing they’re there usually suffices. But some things stick in my mind. And every so often, a condition best described as snot otter withdrawal might find me gravitating toward some montane river, more hopeful than hell bent, anticipating reconnecting with one of the true ancient wonders of Appalachia, and grateful to live in a world where such can still be found.

Jeff Beane is a herpetologist and regular contributor to Wildlife in North Carolina.