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Discovering the Underworld of Crayfish

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By R. Kelley Coffee

images/voice_uploads/C.-chasmodactylus.gif">You get a line
and I'll get a pole;
We'll all go down to the crawdad hole,
Ho-ney, ba-by, mine.
"The Crawdad Song," southern American folk song

Growing up in western North Carolina, I have two distinct memories related to crawdads- The Crawdad Song, a popular children's tune sung by family members; and the fun of exploring creeks with my cousins on hot summer days to catch the creatures. Though popularly associated with Louisiana swamps, the crayfish actually is widespread throughout North America, including species found only in the Appalachians.

The names "crayfish," "crawfish," and "crawdad" can be used interchangeably and refer to the same animal, although "crawdad" is perhaps more common in the Appalachians. The names evolved from a medieval origin in the French word ecrevisse, referring to its habit of hiding in crevices.



Crawdads live in a wide variety of aquatic environments, from deep, swift-flowing rivers to dry land next to streams. Some species can be found in almost any of these habitats, while the range of others tends to be more limited. Several crawfish species dig streamside holes leading to labyrinths of burrows, tunnels, and underground nooks. These species push dirt outside as they excavate, creating exterior “chimneys”.

Crawdads play a critical role in the ecosystem of streams and streamside habitats. Simply put, they’ll eat anything—plants, insects, small fish— and are themselves eaten by lots of creatures. They are also scavengers, feeding on dead plants and animals. In this way, crayfish help cycle nutrients and make them available to other animals. Birds, reptiles, and many mammals consume crawdads. Fish seemingly benefit the most from crawdads, eating well over half of all hatched each year. Crayfish are especially susceptible to being devoured whenever they shed their exoskeleton, leaving a soft exterior that takes awhile to harden.

The fact that fish thrive on crawdads makes them especially desirable as bait, which The Crawdad Song above describes in detail; i.e. the line and pole will be used for fishing, and the pair is heading to the crawdad hole to catch fishing bait. Using nonthreatened native crawdads for bait is a good practice, because if exotic crawfish are released (or escape) they can overrun native species and otherwise disrupt aquatic environments by upsetting the existing prey/predator balance.

Appalachian crawdads

My childhood experience of crawdads was seemingly limited to one brownish species that lived under creek rocks. Crawdads, though, are found in a wide variety of habitats, and vary a great deal in color, even within the same species.

The creature is distributed over much of the planet, except Africa. The greatest variety of species (over 250), however, is found in the southeastern United States; which is not surprising given the animal's prominence in southern culture. The geographic distribution of several species is specific to the Appalachians. The Appalachian brook crayfish (*Cambarus (Cambarus) bartonii*) is perhaps the most widely distributed in the mountains, being found from Canada to Georgia. It lives in most types of aquatic habitats- streams, ponds, streamside burrows, and seeps. The big river crayfish (*Cambarus (Puncticambarus) robustus*) covers a similar geographic area but prefers the large streams, as its name implies. The New River crayfish (*Cambarus (Hiaticambarus) chasmodactylus*) is limited to the New River basin and parts of eastern West Virginia, and prefers larger, swift-flowing streams as well. Blue and orange hues are common on this species. A rust-colored species with no common name (*Cambarus (Hiaticambarus) longulus*) lives in the Piedmont and the eastern slopes of the Blue Ridge in Virginia and North Carolina. It, too, inhabits bold streams, but reproduces in burrows where the young live until fully grown. Another no-common-name species widely distributed in the Appalachians (*Cambarus (Jugicambarus) dubius*) is found almost exclusively in streamside burrows, although a couple of crawdad biologists have curiously noted it "walking in grass in rain." Its blue and red coloring makes it interesting as well. The orangish *Cambarus (Jugicambarus) asperimanus* is a southern Appalachian inhabitant, living in the highlands of the Carolinas and Georgia, and more frequently found in quieter headwaters and seepage areas than deep streams and rivers.

Crawdad census

As this sampling of Appalachian crawdads implies, the seemingly simple crayfish is really a complex group of aquatic creatures with numerous geneses, species,

colorations, geographic distributions, and habitats. Ironically for such a common critter, many gaps exist in crayfish knowledge. For example, biologists are not in agreement on how to classify certain species. The geographic distribution of some varieties is not fully known. Because of so many crayfish mysteries, the state of North Carolina’s Wildlife Resources Commission inaugurated a statewide comprehensive crayfish survey. Surveying has just been completed in the mountains, with the agency intending, among other objectives, “to document life history information for species whose biology is poorly known, to establish a baseline for future monitoring efforts, and to provide an updated conservation status review for all species occurring in this region”, according to biologist Jeff Simmons. Crayfish conclusions drawn from the North Carolina mountains will likely be applicable elsewhere in Appalachia.

The unpretentious crawdad is a reminder that the natural world is much more nuanced than we usually realize. It brings to mind Annie Dillard’s observation in *Pilgrim at Tinker Creek* that “Creation carries on with an intricacy unfathomable”; even along an ordinary Appalachian stream.

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[Cliff](#) • 2 years ago

Excellent article. We came across a large (by my estimate) Crayfish in our hike / wade today while exploring a creek and I'm curious what species it was. If I were to send you a picture, would you be able to possibly help in identifying the species? We were curious, because we've never seen one that big before. I'm guessing he was 7-8" in length, with VERY large upper claws and very small lower ones. He stood out to me because I'd never actually seen a Crayfish of that size before. He was not pleased with us being there either as he seemed to put on a threat display when we photographed him. We were in a creek in Surry County,

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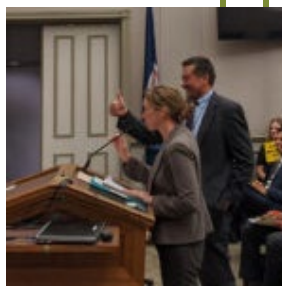
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