



# A TRIP DOWN THE REDBANK— *Ruin, Resilience and Remaining Roadblocks*

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*photo-Dakota Raab*





*Plain Pocketbook mussels are sorted for processing on the shore of Redbank Creek at Climax, Armstrong County.*

It's mid-September 2023 as I lay face down in a broad riffle on Redbank Creek. I draw a sharp breath through my snorkel and wonder what I always do when cold water infiltrates my wetsuit—how's this worth it? Grappling with the streambed, I inch forward, scanning pockets of gravel that tuck themselves behind boulders. Before long, a rhythmic motion catches my eye. A freshwater mussel pokes out of the streambed, jiggling a fleshy appendage to lure unsuspecting fish. This humble clam is the first to be seen in the creek in over a century, a testament to the tenacity of Pennsylvania's streams.

Redbank Creek forms in Brookville, Jefferson County, its winding path dividing Armstrong and Clarion counties as it marches west to the Allegheny. Dubbed the “Red River” by French settlers, oxidized iron and red sandstone peek out of the banks, hinting at the underlying geology and resources that drove major changes in the wake of industrialization.

Canoeing through Summerville, our progress is slowed by a shallow riffle. It's difficult to imagine that two centuries ago settlers floated log rafts down this same creek. It's equally difficult to imagine the steep, pine choked hills we've already paddled past stripped of trees; however, in the mid-1800s that was the case. We free our canoes from the riffle and press on, finding few mussels at our periodic stops.

Grinding to a halt on another riffle, our canoe groans, leaving streaks of aluminum glittering on sunbathed rocks. These flakes are harmless compared to the other metals that have been deposited over the years. Just downstream, a tributary spews an acidic orangey plume into Redbank Creek—a reminder of the area's mining legacy. By the early 1900s, toxic, metal laden water ironically stained the valley red, killing mussels and displacing fish. When naturalist Arnold Ortmann surveyed the area, few signs of aquatic life remained. In 1919, he said little of Redbank Creek,

simply lamenting that “the fauna is entirely destroyed.” The 1970s brought improved environmental regulations, and Redbank Creek (mostly) lost its orangey hue. Water quality has improved enough for the Pennsylvania Fish and Boat Commission to stock trout in the upper reaches, and in lower reaches, mussels have begun moving upstream to reclaim their ancestral homes.

In New Bethlehem, Redbank Creek's gentle flow is interrupted by a dam, the sole reminder of a practice that diverted water to power creekside industries. As I take in the sound of water whooshing over the dam, I consider that area residents could pause to do the same nearly 200 years ago. Looking at the cascading fishway on the current structure, I also ponder how dams have affected mussels, imagining myself abandoned by a taxi driver in the median of a gridlocked highway. Freshwater mussels can't swim or hop on their singular feet, making travel difficult and requiring “fishy” transportation. To this end, many mussels have developed lures resembling prey items, tempting fish with illusions of an easy meal before ejecting larvae that hitch a ride upstream by temporarily attaching to their gills or fins. Fish “taxi” work surprisingly well when they can traverse a watershed freely. However, when a host fish's upstream progress is blocked, mussels have no choice but to accumulate below barriers. Fishways may allow strong swimming fish to pass, but some fish will still have trouble getting upstream.

Below New Bethlehem, mussels abound. Near St. Charles, I peer over the edge of my canoe and observe mussels blanketing the streambed amongst discarded refractory bricks. Nosing up to the bank, we don our scuba masks and begin combing the substrate, picking our way around discarded railroad ties, abandoned oil pipelines and the rusted remains of a rail car. Smallmouth Bass loiter around us, snapping up any insects or crayfish unlucky enough to





photos: PTB/C archives

*Plain Pocketbook (left), Black Sandshell (top right) and Flutedshell (bottom right) observed in Redbank Creek.*

be dislodged by our digging. After 30 minutes, we drag our mussel-laden bags to the bank and evaluate our haul. Nearly 300 mussels are counted, among them are the obsidian spearhead-esque Black Sandshell, the intricately corrugated Flutedshell, the brilliantly striped Plain Pocketbook and five other species. With the mussels returned to the streambed, we continue.

Rather than portaging, we run the treacherous rapid downstream of Leatherwood Creek and are rewarded with some excitement. Several launches exist between Brookville and Lawsonham, making floats straightforward when discharge is above 300 cubic feet per second at St. Charles. While a canoe can be dragged out at the mouth with some elbow grease, my aching muscles are glad as we leave the Lawsonham canoe launch, our work concluded for the day. We're tired and smell like creek water but are encouraged by what we've found. We observed 11 mussel species, far from the 49 species historically found in the Allegheny River Watershed, but an impressive tally for a stream devoid of mussels a century ago.

We'll never know what mussels lived in Redbank Creek prior to industrialization but we can take some satisfaction from its recovery so far. A few pollution sources remain, and mussels who use host fish that cannot navigate a fishway may need some extra help, but Redbank Creek has proved its resilience.

How's this worth it? I'll wonder again between sharp breaths and chattering teeth. Maybe, it's in witnessing the recovery of a formerly devastated watershed. Maybe, it's in hoping that we can pass a better resource to our children than the one we inherited. Or maybe, I just like to play in the stream, searching for these cryptic creatures we have long neglected. ☐

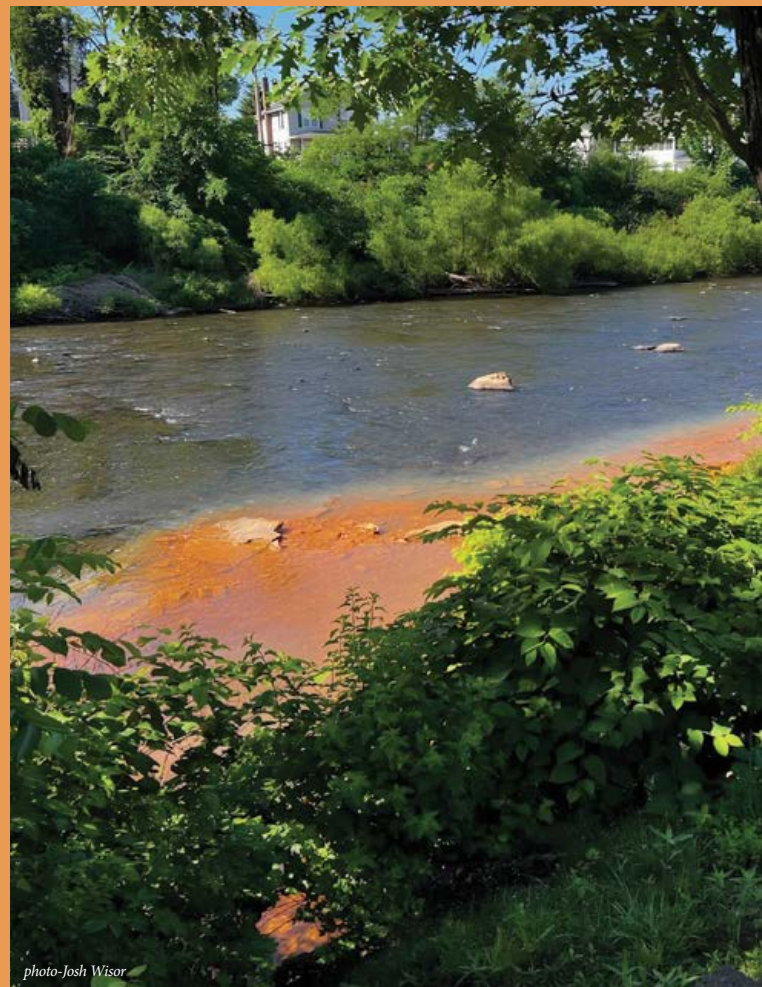


photo: Josh Wisor

*Some untreated tributaries still contribute impaired water to Redbank Creek.*