

## REWILDING THE POTOMAC: THE RETURN OF THE SHAD

By Eric Dinerstein



If the previous month's article focused on the ecological harm caused by non-native, invasive crayfish, this column highlights an example of ecological remedy: rewilding through the return of a native, the American shad. Aside from being an ecological success story, the shad has a glorious role in American history. It was once one of the most abundant fish species in eastern North America and was even described as "the fish that fed the nation's founders." Adult shad are no minnows: they weigh between three and eight pounds, so George Washington might have split his order with John Adams.

An interesting aspect of the shad's biology is that it's an ocean-dwelling fish. They spend their life in the Atlantic before heading back to their spawning grounds among the rivers of the eastern seaboard. The term that biologists used to describe this behavior is "anadromous," a pattern characteristic of various species of salmon and eels and among lesser known fish that live in the oceans but return to breed in freshwater on the east and west coasts of the United States. Shad vary in what they do after they breed; in the northern part of their range—up to Canada—they will breed and return to the ocean and repeat this circuit of their life history several times before they die. But in the southern part of the range—from the Carolinas down to Florida—shad breed once when they return to their spawning grounds, and that's the end of the story.

The name shad comes from "sceadd," the old English term for herring. The shad is indeed a form of herring and, like the common herring, it used to be abundant in the Potomac. But with overfishing, along with increasing pollution and sedimentation during the 20th century, shad all but disappeared from the Potomac and many other East Coast rivers. The rewilding of the Potomac, you could say, began around 1982 when a moratorium on harvesting shad from the river was enacted and an effort to reduce pollution and improve water quality began in earnest. But the numbers of American shad in the river still remained low. Sometime thereafter the Interstate Commission of the Potomac River Basin (ICPRB) stepped in and, beginning in 1995, inaugurated a program to restock American shad. The trick was to release fingerling shad in strategic locations in the river, thereby allowing them to imprint to their historic spawning and nursery waters and help stocks reestablish themselves. Each spring, as adult shad returned from the ocean to the Potomac River, ICPRB teams collected eggs and fertilized shad roe to be

raised in fish hatcheries. The released fingerlings in the Potomac were carefully monitored, and the survival rate of each year's class was recorded in the sampling surveys for juvenile shad. By stocking with fingerlings in the right places, the numbers of shad rose rapidly.

### SHAD

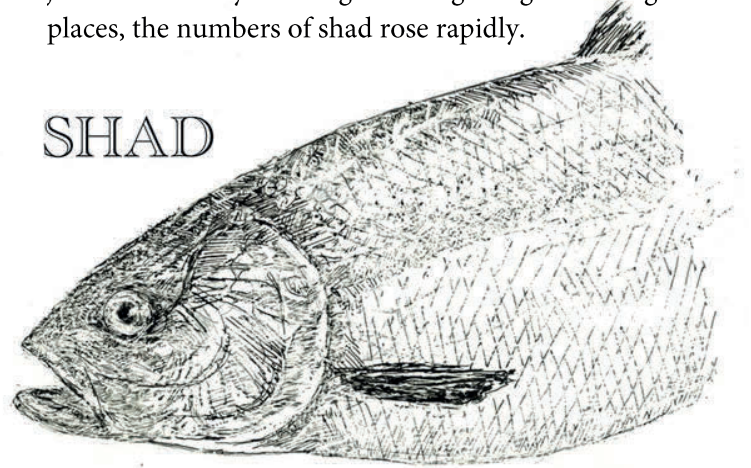


Illustration by Trudy Nicholson

Great story so far, but only half complete. The migratory shad, eager to return further up river and find historic spawning areas, met a roadblock in the form of the Little Falls Dam located between Locks 5 and 6. While a fishway was under construction to assist the adult shad to maneuver upstream beyond the dam, stocking continued and then extended after the fishway was opened; the annual additions of more fingerlings helped propel the shad's recovery even more. By 2014, when the project ended, the American shad was home again in our area, thriving in the Potomac. An even more encouraging footnote is that since 2002, Potomac shad have become what biologists term a "source population" for eggs to boost restoration efforts in other river systems where recovery has been slower than in the Potomac. These include several other streams in Maryland, the Rappahannock River in Virginia, the Susquehanna River in Maryland and Pennsylvania, and some of Delaware's rivers.

The process of "rewilding" requires source populations, safe, expanding populations that allow high recruitment to jump-start new satellite populations within the former range. It's the same process of first finding a stable population from which to recruit candidates to repopulate a depleted area that is driving the restoration of black rhinos and white rhinos in Africa, although moving rhinos is a bit more of a logistics issue than catching and shipping around shad fingerlings. The principle and the inspiration are the same, though: to right ecological wrongs and restore ecological systems with the species that once defined them before our species decimated those populations.

Let's hope humans can learn lessons of restoration from the natural world. If in 2024 the effects of the recovery of shad can somehow wash downstream to the seat of government, and help us recover our democratic traditions, that would be a restoration that would affect not just the Potomac, but the future of life on Earth.