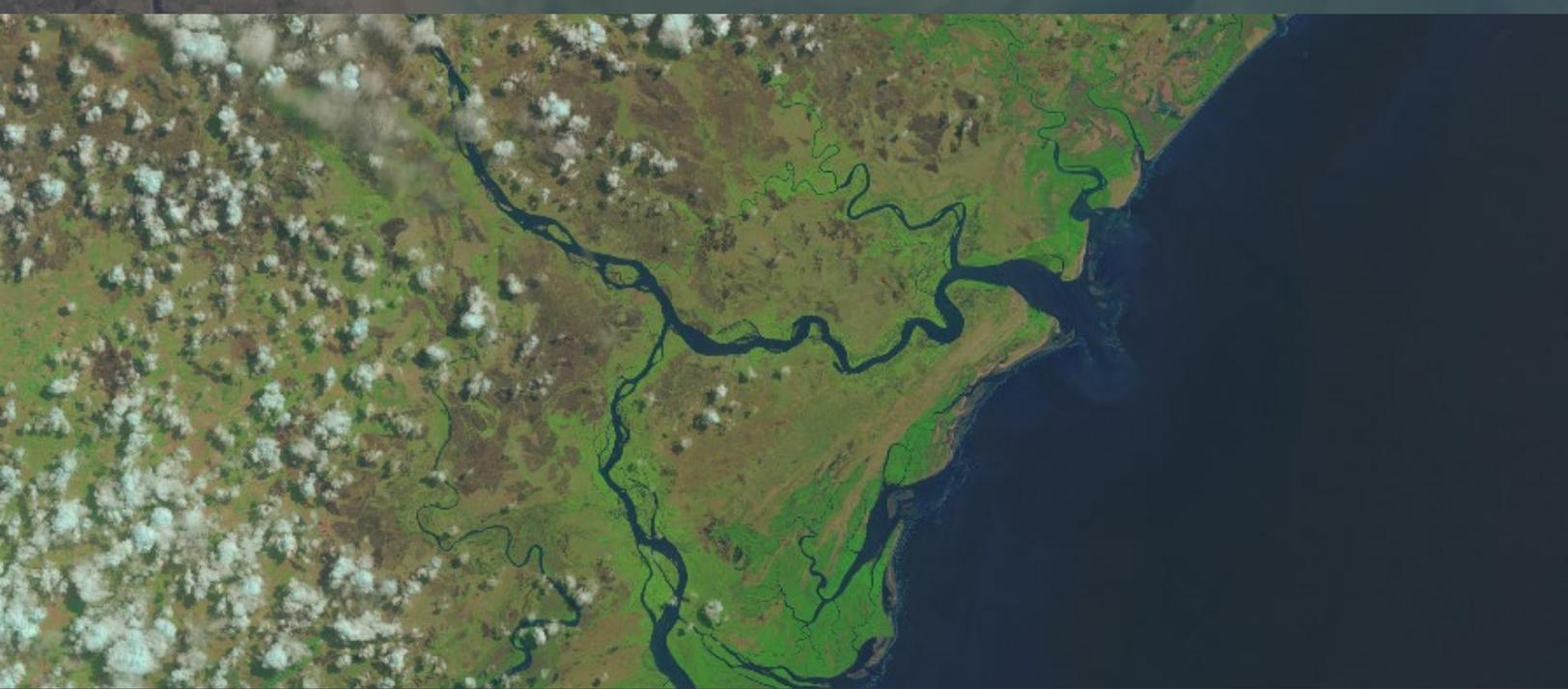




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**GRASPING WATER**



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The cover image is of Delta of the Yellow River, China (top) and Delta of the Zambezi River, Mozambique (bottom). Landsat imagery courtesy of NASA Goddard Space Flight Center and U.S. Geological Survey.

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# “C-ING” THE RIVER: FROM COMPANIONSHIP TO CONTROL TO...CATASTROPHE OR COMPROMISE?

By Stevan Harrell



*Fishing at Celilo Falls, early twentieth century. Image courtesy of The Oregon Encyclopedia.*

What humanity needs to do in the coming decades is back off. In our quest for comfort, consumption, stability, and security in our lives, we have done too much with the earth. Thomas Malthus warned us about this over two hundred years ago, when he described soil as “a fund, which from the nature of all soils, instead of increasing, must be gradually diminishing” (Malthus 1798, Book 1 Chapter 1 Paragraph 17). As it is with soil, so it is with all other natural resources, including water. The [Global Footprint Network](#), which measures how much of the planet’s resources we can use without depleting our stock, “celebrates” Earth Overshoot Day each year, the date on which we have used up our yearly share of the world’s resources. This year, 2017, Overshoot Day fell on August 2, meaning that we are using our resources at almost double the sustainable rate.

Still, despite the dire warnings that one or another resource—water or soil or oil, timber or rare earth minerals or salmon—will run out, no irreplaceable resource has run out yet. Instead, what we’re running out of is the resilience of our ecosystems, their ability to absorb disturbance.

Already in the twenty-first century, we have Hurricanes Katrina, Harvey, Irma, and Maria; almost annual floods in Bangladesh; some of history’s worst fire seasons in Portugal and British Columbia; and bigger and bigger chunks of Antarctica’s and Greenland’s ice falling into the sea. The biggest problem is not that we don’t realize what’s happening—we do. It’s not even that we are ruled by hypocrites who realize it but won’t do anything about it—even though we are. Rather, the problem is that we, as a society, refuse to recognize our own hubris; we refuse to admit that there are things on this Earth that we can’t control; we refuse to accept limits on the degree to which we can modify the Earth without severe adverse consequences.

Nowhere is our problem with ourselves and our Earth more evident than in our approach to rivers. We channel them, dam them, pollute them, pump them dry, all in the name of comfort, convenience, and control. As a result, they not only support fewer biological resources than they previously did; they also burst their (often artificial) banks, flood surrounding areas, dry up, or even catch fire.

## The Case of the Columbia River

It wasn’t always so. For hundreds of generations, the Columbia, the Great River—*N’chi Wána* in the Ichishkiin or Sahaptin language—was a companion, a source of livelihood, for the first peoples of the interior of what is now Washington State (Hunn and Selam 1991). Both the archaeological research (Butler and O’Conner 2004) and the oral traditions of the Yakama, Nez Percé, Umatilla, Cayuse, Walla Walla, and other tribes document human salmon fishing at Celilo Falls near the present Dalles Dam for at least 9,000 years.

Nez Percé fisherman and scholar Allen V. Pinkham, Sr. recounts his childhood memories of fishing for salmon at Celilo Falls in the 1940s

and early 1950s. “The air at the falls above Chinook Rock would be filled with three or four salmon jumping at the same time. The Salmon people were gathering to offer themselves to their relatives, the human beings. The men at Chinook Rock would be catching a salmon at nearly every dip of their nets. The men at the hanging scaffolds just below the falls would be catching two or three fish at a time when the fish ran heavy” (Pinkham 2007, 588).

The five species of salmonids native to the Pacific Northwest did not stop at Celilo Falls; they continued up the Columbia and its tributaries past its junction with the Snake, and up the Snake



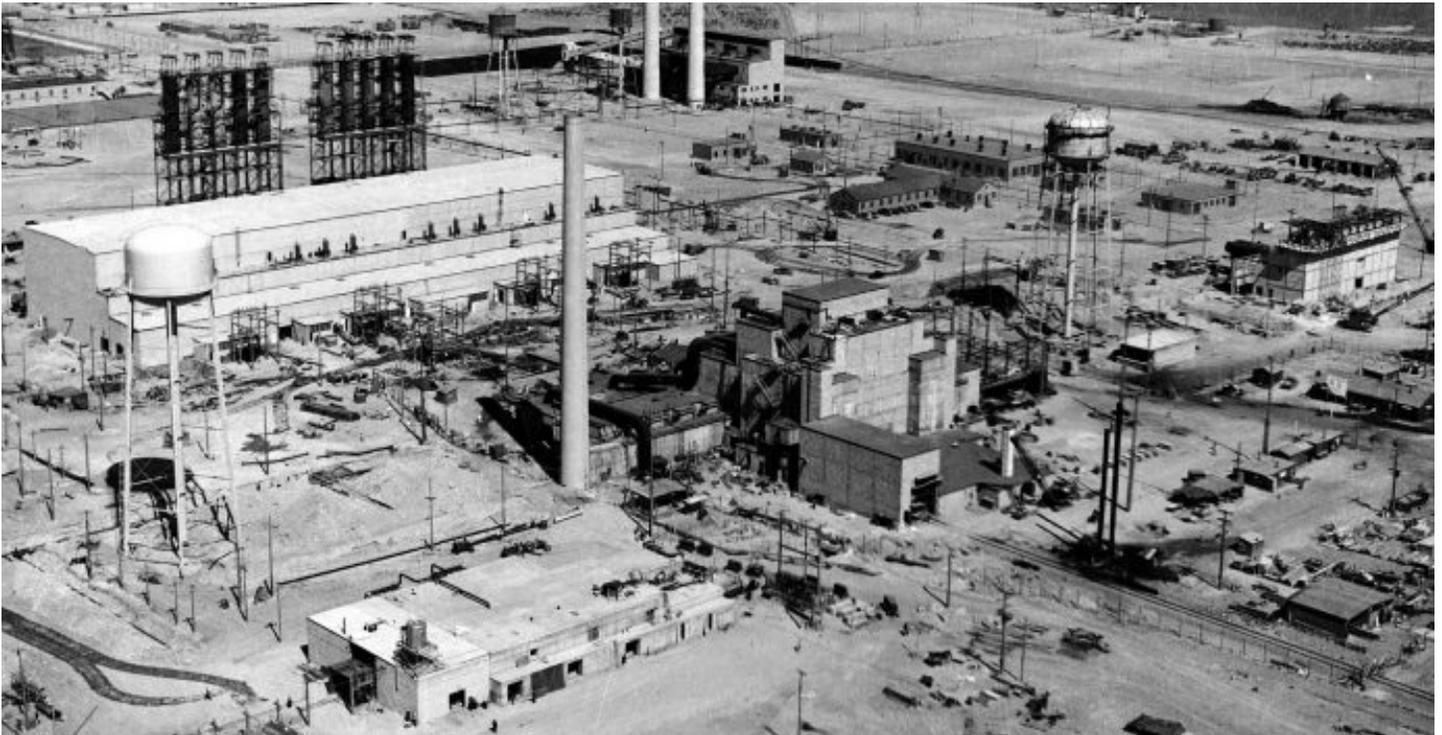
Map of the Columbia River Basin via USACE.

into Idaho. Not just salmon, but trout, lampreys (commonly called “eels”), and sturgeon were important food resources that the river provided. The small fish called eulachon came into the river at the end of the lean season in the winter; in hard years they were “salvation fish” for hungry people; because they were so oily, they could not only provide much-needed calories, but their oil was a favored condiment, and they could even be used as lamps—hence the name “candlefish.”

When White settlers moved in, they, too, wanted the fish, but even so, the treaties that Governor Isaac Stevens of Washington Territory forced upon the native peoples, already decimated by smallpox and other diseases, nevertheless guaranteed the Indians the “right to take fish.” In the

ensuing 120 years, the governing authorities and the courts often shamelessly denied the native peoples these rights, but as Allen Pinkham’s account shows, even in the 1940s there were still fish, and sometimes in abundance.

The very strength of the river, however, was its downfall as a companion. The Columbia Basin in central Washington had fertile soil, but lacked water because the Cascade mountain range to the west blocked most of the rainstorms coming from the Pacific Ocean. In order to “make the desert bloom,” irrigation was necessary; in order to power the emerging industries of the Pacific Northwest, cheap electricity was imperative. The solution to both these needs was dams.



*The Hanford B Reactor, near Richland, Washington, under construction, 1943. Image courtesy the US Department of Energy, Hanford Collection (HASI.1996.001.1350).*

The Rock Island Dam was completed in 1933, the Bonneville Dam in 1937, and the gigantic Grand Coulee Dam was the world's largest when it was completed in 1941. All in all, 13 dams rose across the main stream of the Columbia, and over 50 more on its major tributaries. The desert greened with wheat fields, and hydroelectric generation gave the Pacific Northwest the cheapest power in the United States.

So cheap, so abundant, in fact, were both the water of the river and the electricity produced by the dams that the Manhattan Project chose the Hanford Reach, well above Celilo, as the place to build a whole complex of reactors to make plutonium and win the Second World War, and to continue producing the fissile material until the end of the Cold War in the 1980s. Now, however, 30 years after the last reactor shut down, no one lives there, and the Office of Environmental Management in the Department of Energy has spent tens of billions in an effort that is still projected to last another few decades and cost over 100 billion more. The cleanup does employ about 11,000 people, and if you're a U.S. citizen, you can take a guided tour.

In 1957 the construction of the Dalles Dam ended Celilo Falls; it blew it up and drowned it under the placid, nearly salmon-free waters of Lake Celilo. Yes, there were fish ladders in some of the dams, and yes, many hatcheries produced fish that would partially replace naturally spawning populations, but they didn't work very well, and soon there were many fewer fish left to take, the fewer the farther up the river system you went. Almost all species on the Columbia have been listed as endangered or threatened under the Endangered Species Act.

Of course, the river has other uses. I once visited one of the world's largest carrot farms, close enough to the river that a system of huge pumps could irrigate its 2,000 acres of carrots and its 72 irrigation circles; its \$600,000 carrot harvesting machine was one of 20-some in the world. And the dams have locks that allow the wheat-bearing barges to pass by Portland and ship the valuable grain to the Pacific and beyond. We have successfully controlled the river.

## Complex issues and solutions

Except... The issues and solutions are complex and people are fighting over the river. To have enough water for the few remaining fish to pass, farmers must accept limits on irrigation withdrawals. Navigation also requires high water. The dams on the Snake impede fish passage to the point that environmentalists for years have advocated removing them, stirring up fierce opposition among other groups. The cheap hydroelectricity makes wind and solar generation less economical, and the government has to subsidize the development of renewables. And there are innumerable lawsuits over medical and environmental costs of Hanford.

Is this a catastrophe? Maybe not entirely, but we need to back off. In some ways we have. The Hanford cleanup has allowed wildlife to flourish in the less-contaminated areas of the former nuclear site, still off limits to humans. The Yakama Nation has a successful sturgeon-breeding program. It has purchased formerly White-owned wheat farms along a tributary of the Yakima River (itself a major tributary of the Columbia) and turned them back to wetlands where long-disappeared crops have started growing again. In addition, it has partnered with federal, state, and local governments and environmental organizations to adapt our use of the Yakima River to anticipated climate change. Many efforts are underway to

restore or at least prevent the further decline of the salmon runs. Maybe the four dams on the lower Snake will eventually be removed. But the best we can do, as we retreat from our delusion that we can control the river, is avoid catastrophe and achieve compromise. We will never go back to the days when thundering Celilo Falls yielded up more fish than anyone needed, and gave the First Peoples an opportunity to gather, harvest, and celebrate together during the salmon season. Perhaps Shoshone-Bannock poet Ed Edmo described best what is irretrievably lost, in “Celilo Fishermen” (used with permission of the author).

## Celilo Fishermen

you made your nets  
& tested the knots  
seeing that they held.  
little did you know  
what was to hold you  
after the sound of  
water falling  
over what  
used to be.

## Resources

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## About the Author

Stevan Harrell recently retired after 43 years teaching anthropology and environmental studies at the University of Washington. Most of his recent work deals with the relations between people and environments in China, Taiwan, and the Pacific Northwest. He lives in Bellingham, Washington.