

“Ghost River”: The Columbia

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Abstract

This perspective piece examines the history and geography of the Columbia River and some current ecosystem management issues related to hydroelectric development on the river. Once the greatest salmon producer in the world, the Columbia has, according to the author, become a “ghost river,” with its salmon runs reduced to remnants, and its ecological integrity hanging in the balance. The author suggests that British Columbians have much to lose, both biologically and culturally should this river ecosystem collapse. While the river will probably never flow freely again, the author maintains that it will be a test of our commitment to energy conservation and of our biological ingenuity, to bring the Columbia back from its current “ghost” status.

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Evidence of Past Greatness

In 1999, archaeologist Rod Heitzmann was excavating along the banks of a river near Invermere in southeastern British Columbia. Together with members of the local Tribal Council, Heitzmann and his crew slowly worked down through layer after layer of heavy river silt until they hit a stratum containing abundant evidence of long-term aboriginal use of the area. Along with fire pits and stone tools, the crew also found the reason for the permanent use of that particular site. Mixed in with the artifacts were the bones of salmon. Lots of them.

That river is the mighty Columbia, and the salmon were Chinooks. Those fish had ascended the river's entire 2000 kilometre length—from Astoria to Invermere—to spawn. The bones belonged to fish that had navigated one of the mightiest rivers in North America, one that is intimately bound to British Columbia's history and identity—the river that gave our province its name. But the Columbia has always been an elusive river, coursing through isolated and sparsely settled tracts of wet forest, mountain range, interior desert, and coastal lowland. We rarely see this watercourse, perhaps only as we cross it on the Trans-Canada Highway at Donald or Revelstoke, or follow its course briefly on the road between Castlegar and Trail.

Now this elusive river, once the greatest salmon producer in the world, has become a “ghost” river, with much of its original course submerged beneath reservoirs, its once majestic salmon runs reduced to pathetic remnants, and its ecological integrity hanging in the balance. British Columbians have much to lose, both biologically and culturally, should this river collapse. At the same time, regional droughts such as the one that happened in the spring and summer of 2001 make us realize how dependent we are on the river's hydroelectric resources.

A River Willed into Existence

The idea of the Columbia has always burned in the hearts of men. The first European explorers and mapmakers literally willed it into existence. Throughout the 1700s, they were obsessed with finding a water route west from Hudson Bay to the Pacific; their dream was to eliminate the hazardous sea passage around Cape Horn, and cut months off the profitable trade route to the Orient. They gave this mythical passage hopeful

names—the Gulf of De Fonte, the Straits of Anian, Riviere Longue, Ouracan, the River of San Roque. But the yet-uncharted Columbia eluded them. Time and again early sailing expeditions up the West Coast missed the river's oblique and constantly fog-shrouded mouth. When the first land-based explorers crossed the southern Rockies to discover the Columbia's headwaters, they cursed it, sure that its initial northward course meant that it flowed into the Arctic Ocean, not the Pacific.

Captain Robert Gray finally found the river's mouth in 1792, and bestowed its resonant name. Fifteen years later Lewis and Clark provided the first written descriptions of the lower Columbia, from its junction with the Snake down to the mouth. They arrived at the river during the fall spawning runs, and were appalled by the vast numbers of dead and dying salmon. Thinking they were diseased, the exploring party refused to eat the salmon, and bought dog meat from the local Indians instead.

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David Thompson's name and life is permanently entwined with the upper Columbia. A surveyor for the Hudson's Bay Company, he first located its headwaters in 1808. After a series of arduous explorations, Thompson finally reached the mouth in 1811, the first person to navigate the river's entire length. Cruel disappointment awaited Thompson at the mouth though—John Jacob Astor's seagoing party had arrived and claimed the river for the United States just five weeks before Thompson's arrival.

The aboriginal history of the Columbia is not one of exploration and discovery, since those peoples have known the river all along. I will leave the rich and textured aboriginal knowledge of the Columbia to other voices, but I am responsible for my own culture's view of the river. It is, after all, my culture that has chosen to turn the Columbia into a series of industrial reservoirs (to call them “lakes” is a grievous misuse of the word) and then play God with its salmonid ecology.



A Geography of the “Dammed”

The geography of this ghost river is complex. Its source is Columbia Lake, an azure jewel set among dry bluffs and Douglas-firs, between Canal Flats and Fairmont. The tiny stream that issues from the lake wanders northward beside the weekend condos of Calgarians and the golf courses of Invermere and Windermere. Gathering both speed and tributaries, the young river hugs the west slope of the Rockies as it passes the ski community of Golden. Below Golden, the Columbia is now transformed from river into “reach,” as it feels the effects of the massive Mica Creek dam downstream. Near Mica, at the junction of the Canoe and Wood rivers, the Columbia makes the first of its five “big bends.” At this unique three-river junction is a historic site known as Boat Encampment, a favoured liaison point for generations of early travellers on the upper Columbia. We know Boat Encampment now only from historical record, since it lies at the bottom of Mica’s reservoir.

Winding southward now, the Columbia encounters its next dam at Revelstoke, and then enters into Upper Arrow Lake at Galena Bay. Many assume that Upper and Lower Arrow Lakes were created by dams, but these were actually slow-moving lakes prior to hydroelectric development. At Castlegar, the river encounters its third dam, the Keenleyside. Then it turns south, making its run for the American border as it passes by Trail. The fast-moving, rock-strewn stretch between Trail and the border is said to be the only remaining section of the lower Columbia that resembles the original river. The vegetation along this stretch is radically altered, however, after enduring the decades of acid and heavy metal precipitate that once belched from the Cominco smelter’s smokestacks.

Once into Washington, the river carves a great loop through the Columbia Basin, knifes through the Rattlesnake Hills, and then doubles as the Oregon–Washington border as it heads west through the Cascade Mountains to the coast. This journey is interrupted time and again by more dams.

The upper Columbia’s fate is intimately linked to a sister river, the Kootenay, which originates high in the Rockies near Banff and then joins the Columbia at Brilliant. At a point near Canal Flats, the two water bodies pass within a few hundred metres of each other. In the 1880s, megalomaniac British entrepreneur Adolph Baillie-Grohman actually dug an ill-conceived canal between the two, temporarily making the Kootenays the largest freshwater island on the continent.

The Northwest Habitat Institute in Corvallis, Oregon, has produced a stunning map of the Columbia River watershed. A copy hangs on the wall of my office, and I often marvel at the vast and complex swath of geography that this watershed embraces. Eastern Oregon and the Willamette Valley. Eastern and southwestern Washington. Southeastern British Columbia. Western Montana, all of Idaho, and significant chunks of Wyoming, Utah, and Nevada. No person could ever experience all of this geography in a single lifetime, but an attempt is a way of honouring the river.

A River Harnessed: Ecosystem Management Implications of Hydroelectric Development

If the early history of the Columbia was all about transportation, the modern story is about hydroelectric power. With thirteen dams—ten American, three Canadian—on its main stem and dozens more on its tributaries, “the Columbia River does not flow, it is operated,” says American writer Blaine Harden, author of *A River Lost: The Life and Death of the Columbia*. Massive Grand Coulee Dam, completed in 1933, inaugurated a protracted frenzy of dam building on the river. This era ended fifty years later, with the completion of the Revelstoke Dam. The complex and far-reaching Columbia River Treaty, signed in 1961, committed British Columbia to building Mica, Revelstoke, and Keenleyside in order to provide water storage for the Americans. Many analysts consider the Treaty to be a kind of resource colonialism, putting us in a subservient position to the United States.

In 2001, a combination of low water flows and burgeoning power demand threw California and the Pacific Northwest into an energy crisis. Although we were insulated from that power crunch, longer-term water worries are on the horizon for us. Eighty percent of the Columbia’s late summer flows originate from glacier meltwater, and the Canadian glaciers within the river’s drainage are shrinking rapidly, as our climate warms up.

While providing massive quantities of cheap, reliable electricity and eliminating disastrous flooding, the Columbia’s dams have also sounded the death knell for its salmon runs, and put many of its resident fish species, including the endangered white sturgeon, in grave danger. Ecologists are beginning to understand that spawning salmon were a vital mechanism for returning



nutrients from the sea back into the Interior through bears, eagles, and ospreys, and finally into terrestrial plants and other animals.

We are accustomed to thinking of nutrient cycling on the modest scale of a pond or a forest, but the Columbia salmon runs represent nutrient cycling on a global scale, between whole oceans and entire continents. If we are unable to restore the salmon cycle we have broken with our dams, we will eventually witness a progressive biological impoverishment of both the lands and waters of the Columbia Basin.

“Your power is turning our darkness to dawn, roll on Columbia, roll on.” The stirring words of Woody Guthrie’s 1930s song about Grand Coulee Dam ring a bit hollow now, as we enter a new era—that of dam impact mitigation. It is doubtful that any more major impoundments will ever be built on the Columbia River network. Like nuclear power generating stations, big power dams now seem to have a kind of Jurassic quality about them. There are even rumblings of dam removals on the Columbia’s largest tributary, the Snake, whose salmon runs are on the verge of total collapse.

Dams are not the only threat to the Columbia, which must also reckon with thermal and chemical pollution from smelters in Trail and Wenatchee, pulp mills at Castlegar and Kennewick, and radioactive leaks from Washington’s infamous Hanford plant. Extensive road building and logging along the river’s banks and tributaries have also increased the sediment load the river is forced to carry.

Hatcheries were once seen as the technological fix that would allow us to keep both the salmon and our dams. But after repeated failures involving disease, genetic inbreeding, “dumb” hatchery fish, spiralling expense, and high mortality amongst young fish making the downstream trip, the hatchery option is no longer

discussed. There are alternatives for making dams more “salmon friendly,” but all of them entail some loss of hydro-generating capacity.

Creating a Positive “Basin Culture”

The Columbia has always been British Columbia’s “other river,” even though it is a third longer than the Fraser. The Columbia does not form part of British Columbia’s contemporary cultural fabric the way the Fraser does (both, however, share the distinction of being the only two major rivers in Canada that flow in a southward direction). Roughly one-third of the Columbia’s length is in the province, but compared to the Fraser, it is not a river we are comfortable with. Only recently have we begun to talk about “the Canadian Columbia Basin” as a cultural and geographical entity in its own right. The Columbia Basin Trust, a regional organization funded by Columbia River Treaty monies, has spearheaded an attempt to create that regional awareness. But, like the river itself, a “basin identity” is elusive. In the strict sense, the Canadian Columbia Basin includes both the East and West Kootenays, but also the Boundary region (because the Kettle River flows into the Columbia), the Okanagan (another river that flows into the Columbia), and the Similkameen (yet another Columbia-bound stream). Geography, borders, and regional cultures all conspire to make the Columbia Basin as complex as the Balkans.

The Columbia River will probably never flow freely again, but it will be a test of our commitment to energy conservation and of our biological ingenuity, to see if we can bring it back from its current “ghost” status. To do that, we need to rebuild our relationship with the Columbia, and create a positive basin culture. To once again celebrate the arrival of Chinooks in Invermere would be a great day for the river, and for us as well.

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