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The River Returns: An Environmental History of the Bow. By Christopher Armstrong, Matthew Evenden and H.V. Nelles. (Montreal /Kingston: McGill-Queen's University Press, 2009. xi + 488 p., ill., tab., maps, notes, bibl., index. ISBN 978-0-7735-3584-8 49.95$ hc.)

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Aller au sommaire du numéro

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and podcasts attest to the outreach attempts being made by working scientists. But as Chotkowski makes all too clear: good intentions are not enough. To communicate effectively, to reach a broader audience, scientists have to understand their audience and the constraints of their medium, be it radio, television or the Internet.

As Edward R. Murrow famously commented in 1958 about television (but could have applied just as well to radio two decades earlier), "This instrument can teach, it can illuminate; yes, and it can even inspire. But it can do so only to the extent that humans are determined to use it to those ends. Otherwise it is merely wires and lights in a box." LaFollette's book gives us a glimpse of those humans who were determined to use the new media to teach, illuminate and inspire. In the end both radio and television ended up little more than wires and lights in a box. But as LaFollette makes clear, it was not the fault of the early popularizers. Rather it was the audiences who voted for lighter fare, and the radio and television producers, faced by commercial considerations, who gave it to them. To quote Murrow again, this time from his famous *See It Now* broadcast on the McCarthy hearings, "The fault, dear Brutus, is not in our stars, but in ourselves."

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Environment / Environnement

The River Returns: An Environmental History of the Bow. **By Christopher Armstrong, Matthew Evenden and H.V. Nelles.** (Montreal /Kingston: McGill-Queen's University Press, 2009. xi + 488 p., ill., tab., maps, notes, bibl., index. ISBN 978-0-7735-3584-8 49.95$ hc.).

The authors of this book have undertaken the challenging task of charting the temperamental and wide-flowing waters of a single river, the Bow River in western Alberta, over the course of its human history. This is a formidable task and the authors should be congratulated on following up a tantalizing direction in research, particularly for environmental history. They indeed provide better understandings of the historical relationships between rivers and their tributary, adjacent and downstream human watersheds. In doing so, they have also bucked the well-worn channels of older approaches to the topic, Canadian histories that use rivers as a central theme to water their fur trade, staples and shield narratives. The writers consistently argue that this river's long history sloshed back and

forth in its channels between human intentions and unintended outcomes: humans interacted with and redirected Bow River waters, contributing to an ongoing story that, in effect, does not end with a typical heroic or declentionist ring but one that nevertheless poses questions about the larger sustainability of humanity so dependent on such a critical natural resource.

The book divides up into chapters devoted, for the most part, to intrinsic and often competitive uses of Bow River water. After discussion of the longer prehistory of the river and its Native and European contact around its valleys (the river's "homeland and margin" history), the book addresses the urgent matters for pioneers and boosters: the river's use for ranchers, loggers, town and city builders, irrigators and recreationists. Some of its most impressive analysis falls on competing interests among ranchers, who viewed the river as a valley and watering spot, and CPR railway promoters who spurned its confines to locate rails more cheaply and closer to its highlands properties; hydro promoters like Max Aitken who imagined the river's electric potential, entrepreneurs like Isaac Kerr (who expanded the Eau Claire lumber company up the river's length) who raised, stored and ran logs on it; and irrigation developers, like William Pearce, who envisioned the river creating a garden in semi-arid lands. Urbanites and anglers met their needs along the Bow River and quickly exploited waters both within and outside Rocky Mountains (Banff) National Park in its upper sections and alongside and downstream the rapidly growing boom-town of Calgary. Throughout, irony informs analysis: ambitious schemes to harness the river often failed or resulted in unintended consequences that deflected the river and its history into what William Cronan might term a "Second Nature." The water still, quite miraculously, flowed but in a new reality. The competing uses and understandings of river water at certain points converged and the Bow now can be studied as "one of the most thoroughly engineered and regulated rivers on the continent." (p.21)

Human-natural interactions are nicely captured in the hydroelectric history of the river, one of the finest chapters of the book. Calgary Power, forming to master the mountain river to cater to and stimulate Calgary's electric needs, faced the capricious will and at times stochastic winter and summer flooding along the river's length. Winter draw-down posed its own challenges. The company barely forced the Bow to provide. It never fully tamed its waters, and generations of investors found the flagship project, the Horseshoe Dam, built on insufficient understandings of seasonal flow rates in 1911, requiring follow-up with costly capacity building and storage projects to raise load. No less than eight other dams or expansions followed before 1951, the cost alone never anticipated by Calgary Power planners. Further, the placement of these massive

structures, such as at Kananaskis Falls and Spray Lakes, Barrier and Ghost Lakes, and the iconic Minnewanka storage, often deep within upper tributary mountain park areas, shaped Canadian understandings of wilderness afterwards. All the same, dams built upstream and mid-stream, storage ponds sunk for the Eau Claire lumbermills in Calgary and urban use and pollution changed the nature of the river, and, in places, its vegetation and character of fishery.

Rivers are perilous entities to float upon. The authors have run this one to gain an arguably important historical perspective: by focusing on the linear flow of water through time, the authors identify interconnections between upstream and downstream users, their different material, economic and social wants, and their ultimately incompatible understandings the river's very nature. Irrigators in the semi-arid expanses of the mixed grass prairie, ironically, created farms out of near-desert conditions only to see upstream weedy plants and riverine animals like muskrat invade once parched prairie soils. Calgary's downstream anglers benefited from the boosted productivity of Bow River waters below Calgary—and the reputation of the Bow River as a great sporting stream—but found their prized catches inedible because of sewage smell. Upstream damming reduced native fish species and encouraged invasions of heartier exotics which in all likelihood genetically defiled the region's venerated cut throat trout. Meanwhile, economic contenders and nature recreationists of all stripe lined the river's banks. One senses the makings, never realized, of a Bugs Bunny/Black Jacques Shellac standoff, where ranchers, farmers, anglers, irrigators, loggers and "wilderness" preservationists should have come to blows. Instead, as the authors assert, much of the history of the river is one of compromise between interests, individuals, provinces, and intergovernmental agencies and regulators, all of whom continued to draw what they wanted and could, from the river.

Almost every generation of humans living along the river's floodplains have reinvented its meaning. They have also, with time, come to realize or at least conceive of the river's absolute limitations. The river is now certainly reaching its load capacity, whatever its intrinsic uses, with its waters manipulated, stored, diverted and imagined in almost every conceivable way. Now, with climate change raising questions about the river's capacity to "return" as it always has, the authors end their narrative suggesting that the river's real history, one more desperate between contending interests, will likely unfold.

The authors should be applauded for providing such a solid Canadian study along the lines attempted in other river histories by Donald Worster, Marc Cioc and, especially, Richard White, the latter inspiring their bid to view the Bow as a "part-human, part-natural creation." (p.19)

To a great extent, they succeed. They also offer avenues for further research, one being the change in public attitudes, policies, ecological considerations and priorities emerging with the Peter Lougheed provincial government's election in the mid 1960s. However, there are weaknesses. The length of the book is daunting and the level of detail in many areas would have benefited from considerable pruning, although this might have reflected the very difficulty of handling watery history. Where to limit historical discussion of an ecologically cycling element like water is, of course, hard to say. The authors seem to tarry, for instance, in the river's lower reaches where it joins the South Saskatchewan and broils with the water politics that flow between Alberta and Saskatchewan. They provide minutiae of national park history that range from the triumph of the automobile in the park to the Banff Springs Hotel's guests. They quite exhaustively chronicle changing federal and provincial regulation and regulatory bodies. All the same, this is indeed a small criticism. The research backing this work is impressive and the length and breadth of the narrative, in the end, is certainly worthy of the river itself.

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***The Industrial Transformation of Subarctic Canada*. By Liza Piper.** (Vancouver: UBC Press, 2009. 424 p., ill., tab., maps., bibl., index. ISBN 978-0-7748-1532-1 85$ hc. ISBN 978-0-7748-1533-8 32.95$ pb.).

Liza Piper justifies her exploration of industrial development in subarctic Canada with a classic defense of the value of history; the study of history is worthwhile because lessons learned can guide us in the present and future. Canadians may have forgotten the lessons that history can teach about subarctic industrialization, at least partly because the first large wave of development there took place early in the twentieth century and largely died out by the 1960s. In recent decades, controversy, mostly motivated by environmental concerns, has slowed and sometimes blocked northern industrial projects. The author believes that looking back at early subarctic industrialization will help inform current debates.

The title of Piper's book suggests that readers can expect a broad examination of the industrialization of the vast subarctic region that covers much of Canada. In reality, the author studies a relatively small portion of Canada's subarctic. Omitted from this study of industrialization are the subarctic portions of Atlantic and Central Canada, British Columbia, and Yukon Territory as well as much of the subarctic that falls within the