



TROUBLED TRIBUTARIES: ALBERTA ANGLERS, FISH FIGHTS, AND THE RACE TO SAVE MOUNTAIN COLDWATER STREAMS, 1900-1930

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The Great Arbitrator: The Banff Hatchery

Serving as an arbitrator in the developing debate over conservation was the hatchery built in Banff in 1913 by the Dominion government. Like many other hatcheries across the country, its purpose was to boost failing streams and lakes with fry and fingerlings. The practice of pisciculture was by no means new. Confident that natural waterways could be “improved” by the addition of fish cultivated at facilities built for that purpose, France had introduced modern techniques by applying Napoleonic-era science. By the mid-nineteenth century, British and American hatcheries likewise churned with fry. In the United States, the state backed these fish-generating facilities to restock streams and lakes damaged by industrialization, agricultural development, and deforestation—forces that had by that time ruined, almost wholesale, many streams in the midwestern and eastern states.¹ In that country, with its abiding distaste for state limits over individual rights, hatcheries offered a means of superabundantly filling damaged and overfished streams so that people would be free to fish to their heart’s content.² All of these matters resonated in the fishing controversies developing in Alberta in the 1920s, particularly those surrounding the choice between protecting native species and introducing new, and presumably better, exotics in order to create a western trout kingdom.

Pisciculture Comes to Western Canada

The need to supplement what nature itself provided was amply evident in colonial Canada, given the rapidity with which fisheries were being exhausted along the Atlantic seaway and in the Great Lakes owing to the accelerating growth of the commercial fishing industry during the latter half of the nineteenth century. Integral to this growth was the

industrialization of fishing through the widespread adoption of mass harvesting techniques such as gill netting, coupled with a newfound ability to preserve the fish that had been caught by canning or refrigeration and to ship them long distances by rail. The “spirit of aggressive entrepreneurship” fuelled all of this with an emerging merchant class of fish dealers, many of them based south of the border.³ Although Toronto and Montréal were major markets, Canada’s population was far smaller, and a large-scale commercial fishing industry was slower to evolve. British colonists from central Canada to Nova Scotia had been completely caught off guard when, in mid-century, merchants began supporting industrialized fishing to cater to burgeoning southern markets in sprawling cities like Chicago and New York, causing a rapid decline in Canada’s lake and coastal salmon, shad, herring, and lake whitefish populations.

By the time of Confederation, Samuel Wilmot—a farmer who had become concerned about dwindling salmon runs in local streams—had pioneered some early hatchery work near Lake Ontario’s Bay of Quinte. In 1876, Wilmot was appointed as the Dominion’s fish culturist, charged with expanding hatcheries for whitefish, salmon, and other fish to supply not only Ontario, but also the Atlantic region, Québec, Manitoba, and British Columbia. These facilities were devoted to restoring commercial stock, but, in 1894, the fisheries department bowed to the pressure of recreationists and ordered that “certain waters resorted to by anglers be restocked and new hatcheries built for that purpose.”⁴

As we saw in chapter 2, at the time of the 1910–11 Alberta and Saskatchewan Fisheries Commission hearings, the Alberta Fish and Game Protective Association was already pushing the idea of a hatchery in Banff, as were fish and game associations in British Columbia. In addition, the Calgary Board of Trade mounted a campaign asking Ottawa to establish a hatchery in what was then Rocky Mountains Park—an idea that Howard Douglas, the park superintendent, also firmly supported.⁵ After considering the possibility at some length, the Department of Marine and Fisheries finally approved Banff as the location for the facility by December 1912. The explicit purpose of the hatchery was to sustain the sport fishery. At the time, however, the department still had some concern that the freezing winter temperatures and high mineral content of Banff’s waters would pose a threat to newly hatched fish.⁶

The plan was to place the hatchery conspicuously close to the Banff Springs Hotel, obviously as a tourist draw, and to tap the town's water main sourced from distant Forty Mile Creek. While acknowledging the existence of a "strong desire" to see a hatchery established in Banff, which would be "of interest to tourists" and an "addition to the attractions" in the park, the Dominion's hatchery superintendent, Alex Finlayson, seriously doubted the soundness of the plan. For one thing, he argued, local trout such as the cutthroat could not be had in sufficient quantity to supply eggs, and even if they could be found, they would need to be eyed at a nursery pond where they were found before transporting the eggs to Banff, sloshing in tin cans. However, with even that laborious work providing so few eggs, the hatchery, once built, would still require large supplies of eastern trout eggs to raise as fry for release in Lake Minnewanka and other smaller lakes nearby by rail car.⁷

Given the local fishing situation, there was some urgency to the idea of locating a hatchery in Canada's first—and, eventually, most visited—national park. In 1897, Howard Douglas had inquired about how to make the park "more attractive to sportsmen" after it was discovered that Lake Minnewanka and many streams within the park near Banff had been devastated by railway and mining work. Construction crews had fished the lake intensively; coal dust and chemicals washed into the Bow and Cascade Rivers from coal towns like Anthracite, Bankhead, and Canmore, poisoning the fish. In a March 1897 letter to Douglas, one angler reported that, on a visit to Minnewanka a decade earlier, he had landed thirty to forty trout in a day, averaging fifteen pounds, with some as heavy as forty-five. Now, he said, he was lucky to catch four or five in one day, and then rarely exceeding ten pounds.⁸ Conditions were no better farther afield in the park. A British angler who headed out from the Banff Springs Hotel to Spray Lakes for five days of what proved to be unsuccessful fishing, saw miners ("Italian I think, from the Canmore coal mine") dynamiting the lake by day, spearing fish by night, and netting bays and creeks, "a regular practice of these men." Later, when "fine trout" were found littering the lakeshore, some miners were arrested.⁹

In May 1911, with the goal of preserving the country's natural heritage for the enjoyment of all, the Laurier government passed the Dominion Forest Reserves and Parks Act. The Act established the



FIGURE 5.1

Railway workers enjoying a day's catch at Lake Minnewanka, 1890s. NA-237-38, Glenbow Library and Archives.

Dominion Parks Branch (now Parks Canada), which fell under the purview of the Department of the Interior and was responsible for overseeing park waters. Recognizing that measures were desperately needed to supply visitors to Rocky Mountains Park with adequate fishing and to allay the effects of pot fishers, the department scrambled to lay down some ground rules. In addition to setting a seven-inch minimum for cutthroat, it imposed conservative season dates in the park. Pressure from Calgarians had initially prompted a generous, early season opening on Banff waters. However, in the war years, park administrators started pushing forward the season opening date, from May 16 to June 15, and finally to July 1. With the later fall closures, the park gave as its priority the protection of spring-spawning cutthroat in the area.¹⁰

All the same, the need for more fish to please tourists made the park anything but peaceful. Seeing the emptied lakes and streams in the park,

the angler who wrote to Douglas in 1897 pressed for the introduction of brook trout from Ontario into Banff's streams and of smallmouth black bass (*Micropterus dolomieu*) into its lakes.¹¹ In 1900, the fisheries department, with the support of the CPR (which had of its own stake in tourism), embarked on what proved to be an unsuccessful attempt to transplant black bass.¹² In 1904, again with the aid of the CPR, the park arranged for brook trout from Ontario's Lake Nipigon to be freed into the Bow River at Banff.¹³ These legendary prize-fighting trout had been recommended to the superintendent of Rocky Mountains Park as a good alternative to native fish, which "offered no good sport in catching them."¹⁴ Those sent by railcar to the park waters were immediately popular, "thriving splendidly here," a local angler gushed, calling them "by far the best fish in these waters, being much handsomer and gamier than any native trout."¹⁵ Moreover, because, unlike the native cutthroat, brook trout are fall spawners, they would not be curtailed by an earlier season opening date, which would appeal to park tourists.

The rewards for bringing in such transplants were potentially fantastic. A local hatchery could breed what came to be known as Nipigon trout in massive quantities, since it was much easier, ironically, to obtain fish from the Lake Nipigon district of Ontario and ship it to Banff than to procure cutthroat nearby. But as early as 1909, the park began curtailing the fish's further spread in cutthroat waters, despite many Banff residents, as well as the Banff Board of Trade, backing the Nipigon's widespread introduction.¹⁶ Banff park promoter and local businessman Norman Luxton certainly wanted the fish. In 1915, he went on a holy crusade for Nipigon in park waters in his *Crag and Canyon*, publishing a front-page article celebrating the fish, while also seizing the opportunity to savage Euston Sisley, the Calgary physician who had served on the 1910–11 Alberta and Saskatchewan Fisheries Commission. In his capacity as commissioner, Sisley had championed the cause of hatcheries, but not at the expense of native game fish. Indeed, he had pointed to the "disastrous results" that attended extensive restocking of waters with exotics in the United States.¹⁷ Luxton was not convinced. "For some unaccountable reason," the paper declared, Sisley "has taken a most horrible dislike to this much-prized fish of the Banff fishing fraternity." Regardless of the views of Sisley and officials in Ottawa, "the Banff fishermen are of an entirely different opinion. One and all who have had any experience with the Nipigon speak strongly in its

favor.” The article went on to point out that, “These fishermen are men who fish the streams for ten miles around Banff, are men who study the habits of the different trout and can tell you each month of the year where each particular fish can be found.” Sisley simply did not know the mountain waters the way that Banff residents did: “Surely the doctor as an authority on fish in Banff is a joke, always was, and always will be.”¹⁸

While opinion was divided about the introduction of brook trout, transplanting fish posed nevertheless certain practical dilemmas. After the black bass shipped to Banff in 1900 failed to arrive in good condition, the Department of Marine and Fisheries helped the CPR to design a better shipping car for another experiment in 1902, with fish sent first to Buffalo Lake and then to a number of other lakes in the province.¹⁹ However, the logistical challenges of shipping live, fully grown fish quickly became evident. Among them were delayed starts, a long transcontinental journey, equipping a car fitted out with a giant water tank with a special aerator, and shipping in October, when it was none too warm.²⁰ Even though the Buffalo Lake residents were “greatly pleased at getting the bass,” Harrison Young, who oversaw the introduction, thought it was an “object lesson” about “the trouble and expense of transporting these fish.”²¹

Despite the difficulty in transporting them, black bass were followed up with more introductions. Almost annually from 1904 to 1908 about 1,000 Nipigon and 2,000 Wisconsin brook trout were introduced into Banff waters, together with another 900 mature lake trout, 750 two-year-olds, 4,000 fry, and 10,000 fingerlings from the town of Osceola, in western Wisconsin.²² The black bass plantings continued in 1908, when breeders from North Carolina, Wisconsin, and California sold 5,000 smallmouth bass to the federal government for introduction into Pine Lake, Sylvan Lake, and, again, Buffalo Lake.²³

In the meanwhile, parks in the United States had also launched restocking programs, thereby keeping their waters “much more attractive to tourists desiring fish,” as the CPR’s William Whyte fretted in 1908.²⁴ He pointed out that in 1906, Yellowstone National Park had embarked on a colossal stocking program, releasing almost half a million brook, rainbow, and black-spotted cutthroat trout into its “natural” waters.²⁵ That put pressure on Banff to improve its own rivers and lakes, at a time when both fish and game associations and the Calgary Board of



FIGURE 5.2

Collecting cutthroat spawn (“stripping”) at Spray Lakes, 1932 or 1933. This photo was taken after fisheries management was transferred to Alberta in 1930 and appeared in the Department of Lands and Mines Annual Report for 1936. A7051 Provincial Archives of Alberta.

Trade were urging the Department of Marine and Fisheries to build a hatchery in Banff. Added to this was the political influence of the well-known A. E. Cross, a ranching scion and now celebrated as one of the “Big Four” founders of the Calgary Stampede. Cross wanted the facility in Banff to transform what he saw as the sucker-ridden, pike-infested waters of the Eastern Slopes into trout paradises. He even offered to drive fry to the headwaters of Mosquito Creek himself if the department built the hatchery. His overall goal was to “get all the streams running east of the Rockies on the Canadian side filled with trout.”²⁶

The Banff Hatchery

Alex Finlayson’s concerns about a sufficient supply of cutthroat eggs were borne out, however, soon after the Banff hatchery was constructed in 1913. Quite apart from the fact that producing fish artificially from spawn was no simple matter, Jumpingpound Creek, the main source of cutthroat ova, could not produce enough fish for the growing needs of Alberta’s bustling sporting streams.²⁷ R. T. Rodd reported that, in June 1914, he collected spawn from both Jumpingpound Creek and Pirmez

Creek, but he also had to release seventy female fish “as we could not get the male fish for fertilizing the eggs.”²⁸ Although, during the war years, hatchery staff expanded the output at the facility, cutthroat spawn proved stubbornly difficult to procure, despite all the efforts of staff working booms and beds high in Bow tributaries and the Kananaskis Lakes. Just where to get more supply proved difficult. In 1921, while staff collected half a million eggs at the Spray Lakes, they only successfully eyed 200,000 of them to transfer to Banff. The hatchery had to get another 200,000 cutthroat from Yellowstone National Park, in exchange for returning the same number of Atlantic salmon eggs. R. T. Rodd, who had had some success getting eggs from Highwood tributaries, that year noted that “trout were extremely scarce and nowhere found in sufficient numbers” in the area to warrant building booms.²⁹

In addition to the problem of ensuring adequate supply of cutthroat, the hatchery faced pressure from anglers themselves, many now growing impatient with the native fish. By the late nineteenth century in the United States, many anglers in mountain stream areas had largely given up on cutthroat as “inferior in gaminess to the eastern brook trout.”³⁰ Although, south of the border, brook trout had lost ground in eastern waters—where land clearing, timber cutting, and industrialization had produced what one late nineteenth century US government report described as “changed conditions in and along the waters not agreeable to the brook trout’s wild nature”—it remained a favourite as an introduced species in western mountain rivers.³¹ Brook trout was, in fact, the fish of choice for many American newcomers to Alberta at the turn of the century, which is probably why it headed the list of possible fish to introduce into depleted streams, even at the expense of cutthroat.

When it came to introductions, however, the preference of the Banff hatchery was for rainbow trout, a tidy but aggressive snapper that, in contrast to brook trout, spawned in the spring. The rainbow trout is a West Coast native. In Canada, indigenous rainbows are almost exclusively confined to British Columbia, where they are primarily found to the west of the continental divide. East of the Rocky Mountains, native rainbow occur in only three rivers, the Peace and the Liard, whose headwaters lie in British Columbia, and, in Alberta, along the upper Athabasca River and its tributaries.³² Somewhat ironically, though, the rainbow that entered Southern Alberta waters did not come from the



FIGURE 5.3

The Banff Hatchery ca. 1920, postcard image. The *Calgary Daily Herald* reported on 22 December 1928 that the hatchery's show pond attracted "many thousands of visitors during the summer months." NC-7-868, Glenbow Library and Archives.

Athabasca River basin. Originally transplanted from California into the eastern United States to fill industrialized, polluted, and seriously damaged water basins, rainbow trout were introduced into the Great Lakes in the 1870s. By 1887, Wilmot, the Dominion's hatcheries expert, was raising them at the hatchery in Newcastle, Ontario. By 1900, rainbow populations in the Great Lakes were self-sustaining. It was from Ontario hatcheries, then, that teeming rainbow populations were introduced into the streams of Alberta's Eastern Slopes as it became increasingly clear that the supply of cutthroat could not keep up with demand.³³ In the long term, the large numbers of rainbow introduced through hatcheries would rival the cutthroat and its various subspecies up and down the cordilleran watersheds of the Rockies.

In its early years, the Banff hatchery, with its three troughs plus a bedroom and kitchen for the attendant, may have looked like a modest enterprise, but it was soon to become a veritable fish factory of exotic varieties.³⁴ The growing number of anglers during the war years forced critical changes in the composition of native and transplanted varieties

at the Banff hatchery. In 1918, some 84,000 cutthroat ova were brought to maturity, along with 64,000 Atlantic salmon and 196,000 “Great Lakes trout.”³⁵ As yet, no rainbow trout were in production, but in 1919, what with the drought conditions that were ruining many fishing holes and returned soldiers now adding to fishing pressures, rainbow production abruptly shot from nothing to almost 167,000. The output of lake trout also increased, to 154,000, while that of cutthroat declined. The following year, the hatchery engaged in a concerted effort to collect cutthroat ova and was able to increase production significantly, to some 278,000. Far more dramatic, however, was the rise in the output of rainbow, with numbers rocketing to 600,000.³⁶

Anglers adored the rainbow. Less wary than the brook trout and generally regarded as much sportier than the cutthroat, the rainbow was also more readily adaptive—a species admirably able to keep pace with a rapidly changing pioneer landscape. Crucial to the rainbow’s proliferation in North America (and virtually the entire world) was the ease with which the fish could be bred in hatcheries for qualities that made it more attractive for angling, such as colour and overall “sportiness,” as well as resistance to disease, and that would allow it to thrive in particular streams.³⁷ In 1919, when the Banff hatchery began rainbow production, the *Calgary Daily Herald*—where staff writers, almost to a soul, were ardent anglers—excitedly reported that these newcomers were now darting about in the upper reaches of the Bow, “the first of these game fish east of Banff.” The *Herald* writer asked fishermen near Banff to give the rainbow on the Bow a few years before landing them, as “they will reproduce many more of their species and will provide a fighting demon of a game fish for the Bow River Waters between here and Banff.”³⁸

As the *Herald* article noted, High River holdouts learning of the rainbow sighting protested “against alien fish being placed in Alberta.”³⁹ But, in fact, as R. T. Rodd pointed out, the paper had got it wrong: the fish sighted east of Banff were not rainbow but Nipigon brook trout, introduced to Banff in the early years of the century.⁴⁰ High River anglers who voiced concerns about rainbow introductions were nevertheless clearly in the minority. But even they followed suit in 1922, when none other than W. D. Elliott, of the Highwood River Angling Protective Association, finally requested rainbow for Highwood tributaries. After George Lane’s request for cutthroat from the hatchery in

1919 returned only rainbow to Pekisko Creek and Elliott's own protective association's request for cutthroat in 1920 returned only rainbow, Elliott likely understood it was the only option available. Without at least rainbow, the Highwood would be "so far depleted that fishermen will lose their interest and one of the main drawing cards for tourists to this beautiful natural playground will be lost." He added that "we are informed that tourists and the money they spend in the country is worthy of real consideration."⁴¹

Many of the province's anglers believed that it was only because of the hatchery output that streams remained fishable at all. In 1920, J. J. Gillespie, secretary of the newly formed Pincher Creek Anglers' Association, begged the hatchery for fifty thousand rainbow fry for beleaguered local streams.⁴² But the Banff hatchery was hard-pressed to serve all the needs in Southern Alberta. In such circumstances, in 1920, the US parks administration began lending a hand to help. It magnanimously donated 200,000 rainbow fry from its Bozeman facilities to restock the Belly and Waterton Rivers. Unfortunately, most of the fish were dead when they arrived. The milk cans they had been shipped in were without ice on a particularly hot day.⁴³ In 1922, the Montana Fish Commission offered more foreign aid, this time working with the Lethbridge Rod and Gun Club whose members would plant the donated fry in the Waterton and Oldman Rivers. "These trout," the US Bureau of Fisheries wrote to its Ottawa counterpart, "will be our delegates to Canada. . . . We are joining hands with you in planting along the world's greatest border line these evidences of our mutual good sportsmanship."⁴⁴

Just getting the fry to their park destination proved expensive and time-consuming. American officials generously covered the fishes' transport charges to Canada. But it was the Lethbridge Board of Trade that picked up the costs of their travel from the border to Lethbridge, the fishes' feeding and change of water at a local garage there, and then their dispatch to Pincher Creek. Calgary and Pincher Creek angling associations, meanwhile, had to raise a public subscription to pay for other costs of the project.⁴⁵ To say the least, it was "an achievement" to successfully undertake the planting. Within Waterton Lakes National Park, mostly at Cameron Lake, the planting involved "a long and tedious journey of three days by rail, a forty-mile trip by motor transport, a ten-mile motor boat ride, final repackaging on the saddle ponies and

transport over seven miles of mountain trail to the headwaters of the Waterton Lakes,” the *Lethbridge Daily Herald* reported.⁴⁶

The American donation that year was not all what it seemed from Ottawa’s perspective. In 1925 J. Gillespie, of the Pincher Creek Anglers’ Association, referred to the 1922 gift from “our American cousins” in a letter to the federal director of fisheries and mentioned something the fisheries department had no knowledge of: Americans had included eastern brook trout in the shipment. Gillespie now asked for more brookies from the Banff hatchery.⁴⁷ The federal fisheries superintendent, W. A. Found, sternly rebuked the request. Introducing these fish in spring-spawning waters, he stated to Gillespie, was “not desirable.” The Bozeman donation had violated the law prohibiting “the introduction of non-indigenous fish alive . . . except by special permission of the Minister.”⁴⁸

Whether these infusions of fish were a matter of good sportsmanship or simply of necessity, most towns well understood the precariousness of their situation. Banff hatchery supply remained limited, a situation that sometimes pitted one town against another. Some communities lost out to the complicated logistics and heavy costs of transport. Bar U owner George Lane, with his considerable political pull, could ensure that Highwood tributaries were better served than, for example, Stavely’s starving streams. Logistically, too, the Highwood was more feasibly stocked. R. T. Rodd, for instance, found it much easier to deliver to the Highwood than to the streams at Stavely. To get to the Highwood, he could leave Banff by night train. Then he waited with his fish for six hours in Calgary, and arrived at Aldersyde, just north of High River, by 2:00 p.m. Fry bound for Stavely, however, had to wait again at the Aldersyde station a full evening before continuing their journey, which included a thirty-mile trip by auto or truck to their stream destinations.⁴⁹

The fact was, too, that High River anglers were well organized to support plantings, and Highwood ranchers donated the labour of ranch hands and vehicles. George Pocaterra’s spread at the Buffalo Head typically provided the meeting place for High River volunteers to bring fry up by wagon and truck, while its own ranch hands helped move them along to their tributary destinations, with fish guardian Sam Smith co-ordinating everything. The “annual stocking of the Highwood was always good for a lively day,” R. M. Patterson recounted in his memoir

The Buffalo Head. Smith would organize the ranch hands with pack-horses to meet the tank wagons. “The fry would be transferred into cans with ice containers and with wire-gauze, sacking-covered lids to allow the passage of air, and the horses would stand quietly while these were loaded on to them and secured,” Patterson wrote.⁵⁰ But inevitably it all became a “circus” when the parties moved on: “the unaccustomed glugging of the water in the fish cans never failed to alarm and excite the horses who would tear around in circles on the end of their lead ropes with a horseman hanging on to each side, pivoting on his horse and trying to quieten him.”⁵¹

The Loch Leven Comes to Alberta

In 1924, in a significant departure from previous policy, the Banff hatchery added Loch Leven to its production program. The Department of Marine and Fisheries had held firm after World War I against the CAA’s lobbying to have brown trout introduced into Southern Alberta, including the Loch Leven.⁵² But the department’s Winnipeg-based superintendent, George Davidson, and the local Calgary overseer, meanwhile, were having difficulty satisfying the needs of anglers in the Red Deer River basin. In 1920, when the department agreed to close tributaries in Southern Alberta, it had included the tributaries of the Red Deer River on the assumption that trout worthy of protection swam in those streams.⁵³

That raised the hackles of numerous anglers in Red Deer and other towns to the north of Calgary. They pointed out that stream closures served only to save bull trout and what they regarded as other coarse fish. The Red Deer Board of Trade, formally protesting these closures, pointed out that “no sporting fish are found in the Red Deer River or its tributaries for many miles on each side of Red Deer.” It demanded its waters, then, be reopened and permits be waived for the fishery, “which furnishes food and recreation for many people.”⁵⁴ The Board of Trade even arranged for a local authority on fish and insects to meet the Department’s inspector and convince him that no “sporting fish” worthy of stream closure existed in its watershed.⁵⁵

Red Deer angling interests contributed to a change in the department’s stance on Loch Leven. It was mainly A. T. Stephenson, of the Red Deer Board of Trade, who organized the town’s anglers and led the movement to reopen their river’s tributaries and see Loch Leven

introduced into them.⁵⁶ As Davidson explained to his superiors in the fisheries department, Stephenson had made it clear that he and most Red Deer anglers still did not recognize the bull trout as a genuine trout, nor were they interested in measures that would protect it.⁵⁷ Faced with little by way of community support for the native bull trout, the department had to find a suitable fall-spawning trout to serve as a substitute, and the Loch Leven seemed to meet that need.

The first Loch Leven produced at Banff, in 1924, were destined for the Raven River in the Red Deer River basin.⁵⁸ That same year, however, anglers in Red Deer, Olds, Innisfail, and Didsbury requested a wider distribution of the fish in their waters. They found a Loch Leven champion in Garfield Thompson. Thompson had immigrated in 1906 from Montana to the Mound district northeast of Sundre, and had seen Loch Leven doing well as a species in his home state. The Red Deer River catchment seemed ideal for the trout, and he pitched the idea of widely stocking tributaries of the Red Deer and Clearwater Rivers. In 1926, the Banff hatchery, together with the booms at Spray Lakes, produced some 750,000 cutthroat, but they were now troughed alongside half a million Loch Leven brown trout.⁵⁹

In 1926, with the Banff hatchery now producing a great number of Loch Leven, the federal government hired Thompson to do the legwork of distributing the fry. By the following year, he was planting them in tributaries of the Red Deer, including Grant and Schrader Creeks, thus laying the basis for one of the most stable Loch Leven populations in the province.⁶⁰ Over the next few years, Thompson expanded his plantings into an area covering 3,000 square miles. With so few roads in the region to the west of Red Deer, he used horse and wagon. Interviewed at the age of seventy-seven, he recalled that, in 1928, he had to undertake a seven-mile packhorse trip to plant his fish at Eagle Lake, well to the east of Edmonton, near the Saskatchewan border. On another trip, along a better travelled route to Moose Creek, his automobile broke down, and he had to plant all his fish at Swan Creek. Many of the streams he stocked later became famous in the province for brown trout, with anglers at Fallentimber Creek, Raven River, Dogpound Creek, Stony Creek, and Prairie Creek, as well as Eagle Lake, still “pulling fat loch leven from many of these places,” as a bulletin of Alberta’s Department of Lands and Forests reported in 1959.⁶¹ All the same, anglers unfamiliar with these trout could find them difficult to catch.

Fishing enthusiasts in the foothills town of Nordegg complained, for example, that Thompson's plantings had failed, many of them insisting that only one trout survived. That lone survivor kept putting in an appearance here and there, as if to taunt their efforts. When Thompson visited the streams, however, he could see that trout were plentiful: the problem was simply that locals had not yet learned the trick to bagging them.⁶²

Thompson did his work as a paid government employee. However, for the most part, hatcheries depended on local angling associations to help millions of fry find their homes in streams. Like the High River anglers who helped plant rainbow trout in Pekisko Creek in 1919, members of small-town angling associations provided critical labour by transporting fry and distributing them along streams.⁶³ Only when such an organization was on hand to provide help, and to supervise streams after they were restocked, would the fisheries department open a region to its stocking program. Writing to a new employee in March 1925, the federal superintendent of hatcheries, J. A. Rodd, advised him that he should "not fail" to enlist the support of members of angling associations "while you are responsible for the Banff distributions," adding that "there are associations in almost every town."⁶⁴ As hatchery output increased, so did the responsibilities borne by these associations. Given that fry could easily be killed in transit by spikes in temperature, transporters worked under severe time constraints. As Thompson's auto mishap suggests, fish "plantings" were sometime messy and hastily undertaken.

Hatcheries were trying to achieve a difficult balance in those years: putting fish into streams and lakes as quickly as anglers took them out. The American donations of fry in 1920 and 1922 (the latter resulting in an embarrassing introduction of brook trout) only underlined the need for a government hatchery in Southern Alberta. For these anglers, such a facility should provide exotics. A Taber angler, writing to the *Lethbridge Daily Herald*, witnessed year after year Waterton Lakes fish "being depleted to an alarming extent" and he pushed for a hatchery at Waterton. The *Herald* agreed with the writer that the great attraction in "modern pisciculture" was the ability to introduce fish "into some locality where they were not previously found." Americans had used hatcheries to introduce the "whitefish, the California trout, the brook char, the shad and various other fishes." A Waterton hatchery could

likewise be the source for such exotics and at the same time remedy the effects of overfishing.⁶⁵ Certainly, the Banff hatchery was barely able to keep up with local demand in Southern Alberta. In 1924, anglers' requests for larger portions of Banff fish stock for the south had been turned down by the department because it was diverting most of its fry to more immediately accessible streams in Banff National Park streams and to the west and south of Calgary.⁶⁶ That initiated a campaign by J. J. Gillespie, the secretary of the Pincher Creek Anglers' Association, and now one of the most influential conservation groups in the Oldman watershed. Gillespie wrote to the fisheries department to request 250,000 rainbow and cutthroat fry and 25,000 eastern brook trout fry for tributaries of the Oldman and Waterton Rivers.⁶⁷ Joining his request were petitions from boards of trade in Fort Macleod, Bassano, Lethbridge, and Calgary.⁶⁸ The Pincher Creek Anglers' Association, with the support of the Lethbridge Board of Trade, volunteered to help disburse 250,000 rainbow and cutthroat in Crowsnest stream if the government provided them with the fry.⁶⁹

There was some urgency in these communities' requests. With anglers from Saskatchewan and as far away as Minneapolis and Chicago using streams in the district, Gillespie saw it imperative to receive rainbow and cutthroat stock; but he was also keenly interested in eastern brook trout, apparently because it appealed to these visitors' tastes in sport. He suggested that a good source of supply could be from Yellowstone hatcheries.⁷⁰ The department rejected Gillespie's idea of introducing the fish of his choice,⁷¹ but did send rainbow trout for streams close to Pincher Creek.⁷² Other Southern Alberta anglers pressed the department for eastern brook trout. During the meeting to create the Claresholm Fish and Game Protective Association in 1925, apparently reviving the association created in 1921, members of the new organization asked for 50,000 brookies to stock Trout Creek as well as others in the eastern block of the Crowsnest Forest Reserve.⁷³ Learning that a hatchery was going to be built at Waterton, the Lethbridge Rod and Gun Club secretary, W. M. Harris, requested that facility produce British Columbia steelhead, eastern brook trout, Ontario lake trout, and Loch Leven and German brown trout for nearby streams.⁷⁴ R. T. Rodd was maybe willing to consider steelhead, but he was firmly opposed to any of the favoured fall-spawning exotics. The Waterton hatchery, he wrote, would only stock rainbow in streams where cutthroat resided:



FIGURE 5.4
The Waterton Hatchery. NC-7-868 Glenbow Library and Archives.

brown and brook trout were “fall spawners and cannibals” and would ruin the chances for cutthroat in its native waters in Southern Alberta.⁷⁵

At the same time, fishing was one of the great attractions to Waterton Lakes National Park, making it a “holiday playground,” according to the Lethbridge Board of Trade’s H. W. Crawford.⁷⁶ Located due south of Pincher Creek, at the border with the United States, the park formed a convenient northern extension of Montana’s Glacier National Park. In view of the growing pressure on local streams, and cognizant of the need to keep Canadian park visitors happy, especially in view of competition from south of the border, the Department of Marine and Fisheries resolved to construct a second hatchery, at Waterton. The new facility, built in 1928, was intended to stock streams in the park as well as to support fisheries in the coal mining and ranching areas of the Oldman watershed. Although anglers in the area clamoured for fry of any sort, their preference was still for eastern brook trout. R. T. Rodd instructed G. E. Bailey, the hatchery’s overseer, to hold firm to the department’s dictum that local waters be stocked with cutthroat, supplemented with rainbow in areas where cutthroat populations were insufficient to meet demand. “There is a growing desire on the part of the general public,” Rodd wrote (not really explaining where he was seeing it), “to reserve

certain areas so far as feasible in their natural state.” To that end, the hatchery should supply these waters with fish native to them or, failing that, at least with fish in sync with their spawning times.⁷⁷

Tourist promoters and town boards of trade understood that better local fishing would attract outsiders and their cash. To this end, broad sections of the angling community continued to urge for species of fish they preferred to be distributed in southern waters of the province. To a writer for the *Blairmore Enterprise* in 1929, the steelhead fit the bill, “a fighting devil” that would “take fly, spinner or live minnow,” as well as the spring-spawning Athabasca River Arctic grayling (*Thymallus arcticus*).⁷⁸ In Calgary, even Dr. Euston Sisley promoted the introduction of Arctic grayling to Southern Alberta waters, convinced that “they would flourish here.”⁷⁹ Farther north, in the Red Deer area, townsfolk lauded the German brown trout or, as we have seen, the Scottish variety, the Loch Leven, in particular. But also did the 125 members of the newly formed Claresholm Fish and Game Protective Association, who requested 50,000 brook trout “of two or three varieties” to restock nearby tributaries.⁸⁰ Some anglers believed that brookies grew more quickly than native cutthroat, the very reason they should be released alongside them. W. M. Harris, championing the Loch Leven and German brown trout and writing to the fisheries department on behalf of the Lethbridge Rod and Gun Club, reported that, “it was the general opinion of the meeting [of the club in Lethbridge] that the Cut-Throat variety take too long to mature,” and the brown trout could grow to as much as a pound after a single year.⁸¹ In the eyes of the fisheries department, however, in waters that were the natural home of cutthroat, the spring-spawning rainbow was the exotic of choice.

This principle held in 1928, when the Banff hatchery was producing 2.2 million cutthroat, rainbow, Loch Leven, and German brown trout fry.⁸² In addition to a sizeable production of pickerel, the total number of fish from hatcheries had climbed to approximately 3.7 million fry to supply a total forty-one tributaries and lakes in Alberta. About 1.5 million cutthroat and 1.7 million rainbow trout were distributed to southern spring-spawning rivers. Tributaries of the North Saskatchewan River received roughly 135,000 Wisconsin-imported German brown trout. Tributaries of the Red Deer, where the only native trout was the bull trout, were receiving about 360,000 Loch Leven a year—in hopes

that these hefty, tourist-pleasing brown trout would supplant the bull trout and other fall-spawning populations.⁸³

Exotics in Alberta's Mountain Streams and Lakes

As for the fond hopes placed in stream plantings, the success of many fry was by no means certain. The volunteers who poured countless thousands of fry out of milk cans into tributary waters had faith that the fry released would yield, with time, a bounty of landed beauties—more so if the streams in question were closed. In 1928, Dave Blacklock, then living in Longview and reporting on the 100,000 cutthroat fry that his fellow anglers had helped to plant in Highwood tributaries that year, confidently claimed that the mortality rate was only 12 percent.⁸⁴ R. M. Patterson, remembering the plantings on the Highwood, also believed that, despite the difficulty in delivering fry to the river's tributaries, "strange to say, the mortality amongst the fry was never great. After two or three miles of some foothill pack trail the fish cans would be decanted into a likely looking pool. A few tiny bodies would float to the surface—but a brown cloud of swarming, active life would show for a moment in the clear water and then vanish, seemingly none the worse for their wild ride."⁸⁵ In all likelihood, these were rosy estimates. By the 1940s, fisheries managers in Alberta had begun to suspect that hatchery fry in fact suffered terrific mortality rates once released into streams.⁸⁶

Their suspicions were confirmed by studies conducted by Richard Miller in the early 1950s at Gorge Creek, a tributary of the Sheep River. As these studies revealed, resident trout are fiercely territorial, making claim to stream locations as their home, with the result that hatchery fry, once introduced into streams, struggle to find a place not already occupied by residents. Fry have difficulty feeding and, in their search for space, they must fight water currents to the point that they exhaust themselves and elevate the levels of lactic acid in their blood. If these tiny fish do not die in the first months of their release, their search for food and constant exertion leave them seriously weak and underweight by fall. As few as 3 percent of hatchery fry survive to the spring of their second year.⁸⁷ Miller's studies had a profound impact on Alberta's fisheries management. Because even a stream that appears "fished out" may have enough resident fish to out-compete with hatchery fry, Alberta managers began planting instead in lakes or only in streams where a

severe winter had killed off all resident trout.⁸⁸ Moreover, in the 1950s, it was becoming apparent that the very idea of a stream being “fished out” was often related more to anglers failing to land fish rather than the reality of fish populations themselves. A stream might have a lot of trout, but the conditions are such that very few are caught, save small numbers by very skilled anglers. More commonly, a “fished out” stream contains a lot of small fish that have “become too wary and wise to be catchable.”⁸⁹ The freeing of tens of thousands of fry and fingerling competitors into streams only complicated stream ecology, encouraged hybridization of native fish with exotics introduced alongside them, or perhaps simply changed a stream or river’s carrying capacity for its resident fish.⁹⁰

More problematic in the long term, however, was the genetic mixing that followed the introduction and survival of exotics in streams. The native bull trout had to fight for habitat with exotics, many of which were aggressive and adaptable. With their familiar waters staggering under the impact of forestry activity, ranch-related disturbances, especially soil erosion, and, on the Bow, hydroelectric damming, the bull trout was often pushed out of certain locations. It seems certain, now, that Bow River dams favoured the more adaptable German brown trout, which later introduced out-competed native species. Indeed, stream damming and diversions, which changed flow rates, rendered key bull trout and cutthroat spawning areas uninhabitable. Meanwhile, the cutthroat’s hybridization with introduced rainbow trout further imperilled that species in its native space.⁹¹

The upper reaches of the Red Deer River, once the haunt of the bull trout, similarly became a zone contested by new species. Elsewhere, the season dates worked against the bull trout’s chances for victory, as anglers waged an unofficial war on the fish, weeding it from streams as a pest. In 1930, the Canadian National Railway reported transporting 5.3 million fry or eggs, including Loch Leven, German brown trout, and eastern brook trout, as well as rainbow trout, for deposit in likely a lot of bull trout territory. These were destined for Jasper National Park and foothills waters.⁹² Wherever the “nuisance” bull trout existed, other fall-spawning species were introduced as an alternative—varieties that were, in the opinion of many, an improvement on nature’s original design.

Problems grew with these plantings, in large measure because they drew on a relatively simple understanding of streams and lakes as aquatic gardens into which a crop of fish could be planted, grown, and harvested by rod and reel. Ecological relationships were rarely considered or even perceived; instead, the main consideration was whether a particular stream or lake was good for angling. Some fish varieties were commonly seen as “weedy” or “coarse,” and some, such as those that were cannibalistic or predatory, were even referred to as “noxious.” For many angling enthusiasts, the logic was simple: clearing a river of the less preferred coarse varieties would leave more room for preferred ones. Others adopted a slightly more nuanced position, arguing that some coarse varieties were needed to provide a competitive environment to keep more sporty fish in “fighting” condition for the angler.⁹³

Aquaculture programs had consequences that were never anticipated or even imagined. In addition to stream plantings, the Banff hatchery was responsible for the annual restocking of numerous lakes: Bruce, Crimson, Boyne, Hazelwood, Crowsnest, Big Iroquois, Sylvan, Ministic, Cooking, Hastings, Beaverhill, McGregor, Leedlaw, Fish, Jasper, and Little Vermilion as well as the lakes in the Stoney Reserve west of Calgary. By 1922, these lakes were being stocked with everything from rainbow to pickerel and lake trout.⁹⁴ But key changes brought about by restocking were occurring at high altitude, in Rocky Mountain lakes. Many of these lakes, created during deglaciation tens of thousands of years ago, were originally empty of fish: they were oligotrophic environments, with very low levels of naturally occurring nutrients. Tourists arriving in the mountain park were disappointed to find many of these lakes barren of sporting opportunities. Many erroneously blamed railway construction crews for wiping out fish populations in these lakes.

In 1921, the superintendent of what was then known as Jasper Forest Park, S. Maynard Rogers—who had designed his administrative office to accommodate a fish hatchery in the basement—asked James B. Harkin, the commissioner of the Dominion Parks Branch, to take the “necessary steps” to stock glacial mountain streams and lakes with food suitable for fish to “prepare the way splendidly for the reception of fish fry at a later date.”⁹⁵ R. T. Rodd, at the Banff hatchery, agreed on the need to stock these high-elevation lakes with fish. In 1922, Rogers experimented with introducing fish into Maligne Lake, admitting that the

limited food in its waters would likely stunt their growth, “but inferior growth would be better than none as Nature in time may supply the deficiencies especially with the aid of a small start.”⁹⁶ As hatchery output increased, many more high-elevation lakes were planted with mountain whitefish, rainbow, and brook trout. To be sure, some of the lakes have never recovered from this unnatural intrusion. Fish introduced to oligotrophic waters probably disrupted their special zooplankton and crustacean communities and, in cases where the fish populations became self-sustaining, continued to do so even after stocking programs were stopped. According to some studies, efforts to return lakes to their original state by removing the introduced fish have proven failures.⁹⁷

The annual mixing of hatchery harvests each year also indelibly marked Alberta’s streams for the long term. Well suited to waters that were rapidly being altered by human development, the rainbow would live up to its reputation as a “fighting demon,” crowding the cutthroat out of its native haunts, as well as interbreeding with cutthroat to create hybrids. Indeed, of the fourteen subspecies of cutthroat that once swam in Rocky Mountain waters, two (the yellowfin and Alvord) are now extinct, another (the Paiute) is endangered, and five more are threatened.⁹⁸ In Alberta, as exotics introductions ramped up after the transfer of fisheries to the province, brook trout began out-competing cutthroat juveniles, while brown trout and lake trout also mercilessly preyed on native species, with the result that, over time, exotics have tended to displace or replace the native cutthroat. A 1996 study of the Bow River system in Banff National Park estimated that 36 percent of the original range of westslope cutthroat had already been occupied by rainbow.⁹⁹ In a more recent, comprehensive report by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in 2016, the cutthroat’s status has become truly dire. In the Bow drainage, truly native cutthroat populations are “generally small and restricted to the extreme headwaters of a few major tributaries and upper mainstem, occupying less than 5% of the native range outside Banff National Park.”¹⁰⁰ There are remnant populations in very high headwaters of the Spray and Cascade rivers, and in only three small tributaries of the Kananaskis River. There are some still found in the upper reaches of the Ghost River and a few of its tributaries. For all of the love and protection High River anglers devoted to safeguarding the Highwood’s cutthroat populations, they can now only be found high up in five

tributaries of the Elbow River, above the Forest Reserve boundary on the Highwood mainstem and a few, short sections of isolated reaches of a few of its tributaries. Within its native range, many of the Bow drainage's subpopulations are, in fact, hybridized.¹⁰¹ Fisheries biologists now recognize the problem of trying to "balance" overfished waters with new varieties, especially in human-altered environments.¹⁰²

All of this modified both nature and perceptions of nature. As quickly as fish ecologies and fish populations changed, so did the larger angling experience. What seemed at stake in hatchery work was not just fish, but fishing. The growing popularity of angling that relied on the use of an automobile brought with it a shift in the philosophy of fishing, one that transformed the ways in which anglers understood and interacted with nature and, in the process, the very relationship of human beings and fish themselves.



*Hiawatha Brand Silk Line Reel, Jean Rozon Collection,
Collection of Glenbow (8810), Photograph by George Colpitts.*