

The Hell's Gate Disaster

Carelessness, greed nearly destroyed salmon run: Rock slides caused by railway construction blocked the Fraser River at Hell's Gate.

by Stephen Hume

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HELL'S GATE — The Fraser River drains a watershed the size of Britain and the crumpled, convoluted topography of British Columbia funnels all that runoff to this single deafening point. Each minute at Hell's Gate, 850,000 cubic metres of water are forced through a keyhole barely the width of a city street.

And it is here, in the thunder and spindrift that surrounds the meeting of irresistible force and immovable object, that one finds the tangled roots of the present conflicts over what share of "our" fish American and aboriginal fishers deserve to catch.

The 18.2 million sockeye salmon believed to be homing in on the Fraser River for 1997 are now being described as one of the biggest runs since 1913. And this abundance exists in part because aboriginal people once carried them, fish by fish, past Hell's Gate to continue their trek to distant spawning grounds.

If forecasts are accurate, over the next three months more than eight million sockeye permitted to escape fishers' nets will now pass through this tiny slit in the mountain wall on the way to their spawning grounds.

These runs, once the most abundant in the world, were nearly extinguished in an ecological catastrophe 84 years ago that was caused entirely by Canadian carelessness, incompetence and greed.

Ed Sparrow, a former elected chief of the Musqueam Band who was born while Queen Victoria still reigned, was one of those fishing on the Fraser that languid, tawny summer of 1913.

It was a year of unbelievable bounty. The catch was the richest ever recorded. A silver torrent of Fraser River sockeye—more than 32 million—poured into the canneries.

By comparison, that catch was more than three times the Canadian catch of 10 million planned for this summer's run.

Despite the frenzied fishing, an estimated nine million sockeye escaped up the Fraser to spawn in 1913.

Sparrow, still alert and aware of the current controversies despite the infirmities that come of surviving 98 years, remembers how sinister whispers began to swirl along the

Vancouver waterfront in the early fall of that year. A slide was rumoured to have blocked the Fraser at Hell's Gate.

The rumours were true. And the slide was man-made.

Construction of the Canadian Northern Railway, later to become the Canadian National Railway, had proceeded at a feverish pace in 1912.

BC was in the grip of a tremendous boom and the railway would give Vancouver a second transcontinental link to compete with the four terminating at arch-rival Seattle. Contractors were desperate to meet the 1915 deadline for driving the last spike.

The last great obstacle was the precipitous Fraser Canyon.

The Canadian Pacific Railway had already drilled and blasted a route down the opposite bank. Talus slopes marked the places where debris slid into the torrent below.

Now, highballing CNR construction crews were ignoring federal law governing waterways and dumping thousands of cubic metres of rock into the canyon just above Hell's Gate.

Geoff Meggs, a former editor of the United Fishermen and Allied Worker's Union trade publication *The Fisherman*, documents the story in his meticulously-researched history, *Salmon: The Decline of the British Columbia Fishery*.

In 1913, just as the largest sockeye run in the history of industrial fishing was moving into the mouth of the Fraser, the rubble, debris and slides had already narrowed Hell's Gate. The laws of physics determined the consequences. The velocity and turbulence of the current increased.

Meanwhile, crews pressed ahead with rock cuts that seriously destabilized the entire canyon face.

In addition to rubble deliberately tipped into the river in 1912 and 1913, a mountain-side of granite dynamited loose during tunnel building was now teetering above the railbed. It, too, would fall into the narrow canyon during February rains a few months later—creating an even bigger obstacle.

Aboriginal bands who had come to the site at the beginning of the 1914 fishing season then began a desperate race against time to save that year's runs. A rickety wooden flume the length of a football field was built

around the chute at Hell's Gate. Dipnetting salmon below the white water, they carried sockeye to the flume and safe passage.

To fully comprehend the nature of the 1913-14 catastrophe in which today's salmon dispute has its roots, one must try to understand the complicated nature of the Fraser's ecology.

Since the last ice age retreated 10,000 years ago, Fraser River salmon had successfully navigated the kilometre-deep canyon between Lytton and Hope by developing some remarkable strategies.

Their bodies were perfectly shaped to reduce friction in the fast current. They carried a heavy load of fat and oil, the adaptation that made them essential to the winter diet of aboriginal peoples in BC's harsh, cold Interior. And they had devised behavioral adaptations to the rigors of the passage.

To get through Hell's Gate, the salmon would string out in a long narrow column, sometimes travelling single file, hugging the canyon sides. This enabled them to find spots behind bulges in the sheer walls where they could take respite from the relentless current.

The sockeye would wait in a pool below Hell's Gate, expend themselves in a brief, intense fight through the rapids, then rest up again once through, taking refuge in a large backeddy above the fast water.

And this strategy was highly successful. In its pristine state, the Fraser produced salmon in mind-boggling abundance.

Some experts now believe that prior to European industrialization of the fishery and the destruction of spawning habitats by dams and development, sockeye runs to the Fraser averaged up to 50 million in dominant years of their spawning cycle.

One paper published in the *Canadian Journal of Fisheries and Aquatic Sciences* speculates that under optimum conditions the pre-European Fraser produced 100 million sockeye salmon.

The first hints in 1913 that the golden goose was being strangled came from worried aboriginal bands upriver. They relied on the salmon for winter survival. Late in the season, no fish were showing up. They sent scouts downriver to find out why.

Meanwhile, BC's deputy fisheries commissioner, J.P. Babcock, was sent to investi-

gate the rumors now sweeping the Steveston docks. Babcock's first sense of the appalling magnitude of the disaster came when he climbed down to the river below Hell's Gate.

What he found was a school of sockeye milling below the narrows. It extended 16 kilometres downstream and it was growing by the hour as more fish arrived. Soon it was joined by millions of pinks.

Babcock quickly determined the cause.

"Immense masses of rock from the railroad cut above had slid into the channel, constituting a great wing-dam," he wrote. "The rapid currents striking those two rock projections were deflected violently towards the centre of the stream."

"Upon attempting to pass around these two points, the sockeye were obliged to jump at right angles to the current and were swept away from the shore out to the channel, where the major portion disappeared from view beneath the chocolate colored water."

Now the strategies devised over millennia were useless. Only the strongest, luckiest few were able to navigate this suddenly transformed riverscape.

But to make things worse, railway crews had systematically filled the large pool above the rapids with construction debris. This meant that even those fish making it through the rapids had nowhere to recover. Most would be swept back down the river by the current. What took place next laid the foundations for the sense of anger and alienation from an insensitive central Canada that still characterizes politics in the westernmost province.

Premier William Bowser wired Ottawa for immediate help. It took two months for a federal inspector to make the journey from Victoria, only a day's travel away by boat and train.

A difficult passage was belatedly blasted through the blockage in the fall of 1913, but it was too late. The salmon had been in the river too long to continue their arduous journey.

Unspawned salmon died by the millions. The stench hung like a vast miasma over Hell's Gate and the lower canyon. It was estimated that 90 per cent of the salmon run was prevented from reaching 80 per cent of the watershed.

In 1909, the Anstey River on Shuswap Lake was described as red with spawning sockeye. In 1913 an old settler rowed 140 kilometres to the river to salt down his winter food supply but he reported finding only eight fish.

In north central BC, hunger stalked remote aboriginal settlements. Women and

children driven off by famine perished in the attempt to reach places where they could obtain relief.

There was worse to come. Early in 1914, after a tunnel was blasted through an outcrop, another 100,000 cubic metres of rock crashed into Hell's Gate, blocking the river to salmon once again.

While Ottawa dithered and the railways made excuses, desperate aboriginals from BC's Interior, faced with a social catastrophe if the salmon were wiped out, came down to the site to transport fish across the blockage.

Another make-shift route was blasted through and once again a pathetic relic of the once-teeming runs made its way upstream to spawn. But catches on the BC coast soon collapsed from the abundance of 1913, never to recover.

And then, in what now seems like an act of insane greed, industry fished the dwindling survivors of that 1913 disaster to the brink of extinction. Some years the rate of harvest reached 94 per cent.

In 1917, 7.8 million sockeye—the run spawned by the survivors of 1913 and a testament to the species' fertility and resilience—returned to the Fraser. The commercial fishing industry caught and canned 7.2 million, 92 per cent of the run.

Four years later, the run was less than two million fish, virtually non-existent by standards of sockeye abundance.

In 1945, federal experts calculated the cost of this disaster at \$300 million—\$2.9 billion in 1997 dollars—in foregone revenue.

"For the Fraser," Meggs writes, "the golden age of salmon canning was over. Sockeye were scarce. Someone would have to be sacrificed to make ends meet."

"The Hell's Gate blockade initiated an era of expulsions from the salmon fishery, the forced exile first of native people and then of Japanese. The native people were driven out of the fishery because whites wanted their fish; the Japanese because whites wanted their jobs."

Sparrow was one of those driven from his livelihood. Eighty years later, the taste is still bitter. "If our people up the country didn't pack sockeyes over the slide there'd be no fish," he says.

"They packed those fish over that slide by hand, one by one. Now if you put a net in the water you get arrested."

His last summer fishing on the Fraser in the aftermath of the 1913-14 catastrophe, he says, he caught only 150 fish. Later he found work in a sawmill, and then, in 1924, began making the arduous, dangerous journey up-coast to fish the rich sockeye runs of the Skeena. He would not return to fishing the

Fraser River runs for almost half a century.

When he did, it was largely thanks to an accord with the United States in 1930. The International Pacific Salmon Commission was created to manage what was left of the Fraser River sockeye runs. That treaty, the forerunner of today's coast-wide Pacific Salmon Treaty, was ratified in 1937.

Under it the commission began construction of fishways at Hell's Gate, specially designed at the University of Washington using a meticulously detailed scale model that recreated the complex river currents at Hell's Gate.

Like large concrete stairways about six metres wide and up to 140 metres long, the six fishways now at Hell's Gate divert part of the current and then break its velocity with a series of baffles that create resting pools for the migrating fish.

Begun in 1944, the first two fishways were finished in 1946. Thirty-two years after the 1913 catastrophe, returning salmon were able to pass through Hell's Gate almost as easily as they had before human meddling had come within a few metres of sending them to oblivion.

The long, painful task of rebuilding Fraser stocks began and its fruits are what some are now calling "the biggest run since 1913"—a run, it is worth noting, that is still less than half what it was before Europeans got involved.

"The Hell's Gate Slide" is how Canadians prefer to speak of the disaster that rendered the Fraser virtually impassable for salmon returning to spawn, Meggs points out.

This choice of language is revealing, he observes. It implies an evasion of responsibility, suggesting that some arbitrary act of God brought down the thousands of tonnes of rock which choked the Fraser Canyon.

"In fact, the disaster resulted from deliberate and illegal construction techniques of the [Canadian Northern] railway and should really be called a blockade," Meggs writes.

"The magnitude of the disaster was covered up by officials who allowed fishing to continue even when they knew every spawner was required for survival of the runs. When the tremendous losses became obvious, these same officials attempted to eliminate aboriginal fishing above the slide rather than ameliorate the slide's effects or crimp the profits of the canners. The price of building the [CNR] was the destruction of the largest sockeye run the world has ever known," Meggs concludes.

And part of the price of attempting to restore that run has been to provide a share of the harvest to the Americans and aboriginals who helped to make it possible.