



# An Elegy for the Crownsnest Bull Trout

BY LORNE FITCH, P. Biol.



*Bull trout from Allison Creek circa 1920.*  
PHOTO: COURTESY OF THE FITCH FAMILY

“Did they beat the drum slowly; did they play the fife lowly? Did the rifles fire over you as they lowered you down?” I put this rhetorical question to the ghosts of the bull trout who once thrived in the upper Crownsnest drainage of southwestern Alberta. The murmur of the river whispers “no;” I cannot help but wonder why. Bull trout existed for more than a geological epoch there; they slipped through the cracks in our careless world in just one human lifetime and no one paid attention. This

mystery merits exploring and that journey asks us to consider geology, hydrology, ecology, history and, inevitably, the human mind.

## **Bull Trout - Accidental Tourists**

The bull trout landscape is, geologically speaking, relatively new. Up to roughly 13,000 years ago, the Cordilleran ice sheet covered Alberta’s Eastern Slopes while the plains were under the mile thick Laurentide sheet. Alpine and continental glaciations

then shaped the watershed in an epoch that lasted another thousand years. From then until a century ago climate, erosion, fire, drought, floods and grazing combined with plant growth, movement and succession to mold the bull trout’s habitat.

Bull trout are hardy. They may have ice water in their veins. They were among Alberta’s first explorers and pioneers. Maybe they began as tourists who became marooned in a new environment. A dozen millennia ago bull trout queued up at the edge of mountain and continental ice masses waiting to test the waters for new opportunity. Glacial refuges for fish existed in the Columbia watershed, the Missouri/Mississippi watershed and in the Yukon. Bull trout probably crossed the continental divide at low spots like the Crownsnest Pass to occupy new waters.

Imagine what these fish found – a raw landscape recently chiseled out of rock and empty of many other fish. Southern Eastern Slope streams were dominated by just three species – bull trout, westslope cutthroat trout and mountain whitefish. How did these fish make a go of it in a changing, dynamic environment?

The operative words to explain their success have to be adaptability and flexibility. Like the India rubber man of circus fame bull trout display an astonishing elasticity in their ability to take advantage of the wide variety of habitat choices their island-like ecosystems offer them. In the Crownsnest they encountered a lake gouged out by glaciers and larger at one time with an ice dam downstream. These pioneers formed a unique, lake dwelling population that spawned in several of the tributaries to the Crownsnest River and reared in these streams and in the river. Some of them shook the evolutionary dice and took up a riverine lifestyle. As some journeyed downstream they plunged over Lundbreck Falls, never to return to the upper Crownsnest.

The key to their survival was the annual return home to small tributaries to spawn. These streams harbour special places where water bubbles up through the gravels, signaling to bull trout that eggs lain there will survive and hatch. Not many of these places exist. These upwellings are of ground water, captured as surface flow possibly kilometres away from the spawning site. We still don’t

understand much about ground water, hidden as it is from our inspection. It could be related to old growth forest. Old growth forests are good sponges; they capture, store and slowly release water. If so then the Crowsnest bull trout survival depends on the health of the entire landscape, the sum of all of the parts, not just a few specific to the water.

### **The Times They Are A-Changin'**

By the 1880s changes in landscape and fish abundance were already evident. North West Mounted Police records from the Pincher Creek post note concerns about declining fish populations. "If only we had been here a few years ago when fish were plentiful," wrote one of the officers. The Crowsnest Pass might have remained a backwater had it not been for the discovery of coal that coincided with the need of a rail line for its transportation. The coming of the Crowsnest Pass Railway in 1898 was the beginning of the end for bull trout. Easier access led to more settlers which begat more human endeavours which further increased access and encroached on native flora and fauna.

As we nudge the time machine dial forward to 1898 the rail line has blocked Blairmore Creek to upstream fish passage. Crowsnest Creek starts to feel the pressure of development as limestone quarrying begins in 1903. Over time the quarry's activities blanket the stream bottom and part of the substrate of Crowsnest Lake with limestone fines and dust. Later the stream suffers channelization, major channel shifts and culvert crossings. Coal mining fines and sediment are added to those from the quarries. Around 1910 a dam is built to control York Creek and for a municipal water supply. Concerns about forest fires lead to extremely high levels of livestock grazing to reduce fuel loads. Suspect grazing practices in the Crowsnest Pass, coupled with overharvest of timber for mine props and railway ties, contribute to a number of serious floods in the Crowsnest Pass in the 1920s and 1930s. Nez Perce and McGillivray creeks are channelized after severe flooding in Coleman in 1923. Later, McGillivray Creek receives coal mine effluent in the form of red ferrous oxide which coats the stream bottom. Gold Creek is dammed. The list of human impacts on the tributaries grows with each passing decade.

The Crowsnest River suffered from similar changes and impacts. The most severe were those from the coal mines along the river's banks. Coal fines, dust and sediment poured into the river, off and on for about 75 years. People recall the Crowsnest River running black with coal fines and sediment during spring runoff and after every rainstorm. Slack coal was dumped directly into the river, as an effective though devastating way to flush it away. Duane Radford, a provincial biologist born in the Pass, recalls the river being a "veritable wasteland" for nearly 30 kilometres from Coleman to Passburg.

This can be an issue for fish that are sight feeders; the greater impact was on juvenile bull trout. Juveniles hide under and behind rocks and can even overwinter within the gravel of an apparently dry streambed. Accumulating sediments have a tendency to cover and cement stream bottom materials together smothering everything under this aquatic mudslide. There is no place left for the juvenile trout to feed, to survive.

Hungry people filled the Crowsnest Pass, especially in the days of stingy mine owners. During strikes at the mines people turned to hunting and fishing to survive. Angling pressure was very high,

not least from using the "CIL wiggler", a euphemism miners used for fishing with dynamite. This appalled my uncle, an avid outdoorsman and a miner, but, as was often the case then, he said nothing.

Eighty years of angling took its toll on bull trout. But development in the Crowsnest Pass watershed sounded the trout's death knell. Coal mining and logging affected virtually every portion of the watershed. Those land uses combined with residential development meant that by the 1950s only one spawning tributary in the upper watershed didn't have a dam or a barrier to upstream movement across it. Bull trout that run into dams or other obstructions when homing in on their natal streams cannot make other travel plans.

Females will deposit thousands of eggs in a depression excavated in the gravels of a stream bottom. Not all will survive to hatch, let alone reach maturity. But in some years, when things are just right, more will survive to create what fish biologists call a "strong year class." This added bench strength will carry the population through the bad times when the numbers of recruits are low. Our development ambitions insured that this vital bull trout survival mechanism would vanish. To paraphrase Pogo: "They met



*McGillivray creek/settling ponds, 1979.*

PHOTO: © L. FITCH



*Crowsnest valley upstream of Coleman, 2007.*

PHOTO: © L. FITCH

the enemy and it was us.”

### **Slip Sliding Away**

The last hope for the Crowsnest bull trout was Allison Creek. Gordon Kerr, a biologist and former Assistant Deputy Minister of Alberta’s Fish and Wildlife Division whose family has a long history in the Crowsnest witnessed what was probably the final act in the bull trout tragedy. Gordon remembers, as a teenager, watching the Highways Department straightening out all the meanders of his favorite trout stream not more than a few fly casts from his parent’s home. The rifle-shot straight channel was designed to protect a new bridge over Allison Creek; it’s a pity no one knew enough then to protect the bull trout. Unwinding the stream unleashed a massive amount of erosion that formed an impassible gravel bar at the mouth of the creek. That condition persisted for years after the channelization in 1953. With this last door closed, 10,000 years of bull trout prosperity and survival in the upper Crowsnest watershed ended.

Perhaps the bull trout might have survived there if we had valued them decades ago. We never really did. Their carnivorous habits (and their size) fuelled the sentiment that bull trout were

undesirable since they competed with the “nobler” trout. An attitude prevailed then (and still does amongst some) that bull trout should be eliminated. A passage from a southern Alberta newspaper, circa 1926, uses chilling language to describe the prevailing attitudes towards bull trout: “the association is also urging government to take steps to destroy the enemy of rainbow trout... It is suggested the fish be destroyed by dynamiting the places they are known to infest”. Kevin Van Tighem, in his poignant essay “My Grandfather’s Trout,” writes, “In the 1950’s bull trout were easy protein at best, and junk fish at worst.” How could such a rational species as ourselves protect that which we denigrated?

If we had valued bull trout highly I’m skeptical that such an attitude could have triumphed over our pattern of propping up and defending economic interests often at the expense of everything else. When local sportsmen’s clubs complained about water pollution no local politicians had the spine to stand up to mining and other business interests. The mine owners simply threatened to close the mines and go elsewhere to quiet any opposition. Industry’s defenders sometimes grasped at the slimmest of

straws to protect the economic status quo. One local politician suggested coal dust was good for trout because it warmed up the water and allowed trout to move further upstream.

No one really knows when the last, lonely bull trout succumbed. The loss is unrecorded. So, what did we lose? Sadly, we will never know if the Crowsnest bull trout were the ancestors to populations in the Oldman and Castle watersheds, separated as they had been by Lundbreck Falls. Loss of genetic diversity hampers attempts at restoration. We lost an ancient neighbor with an enviable survival record. Anglers lost an opportunity to pit themselves against a fish that grew to sizes large enough to frighten small children. The ecosystem lost a precious, perhaps vital, cog. Bull trout are to the aquatic world what the grizzly bear is to the terrestrial one. But, mostly, we don’t know what we lost because our understanding and comprehension of aquatic systems is so rudimentary. We don’t measure, we don’t monitor, and we don’t pay attention. When we don’t pay attention, things go missing.

It took just seven decades, roughly a person’s lifespan, to wipe out these



*Crowsnest Lake, 2007.*  
PHOTO: © L. FITCH

fish. We can criticize the ignorance and actions of people in the past, of corporate greed, of individual apathy and of institutions not keeping watch over the natural resources entrusted to them. If only they had connected the dots and implemented a strategy for protecting and preserving some of the unique pieces of biodiversity. One can't condemn, out of hand, the actions of people bettering themselves in the Crowsnest Pass 50 to 100 years ago. However, their efforts to better their lot are also those that contributed to depriving later generations of bull trout. Today, we should see this history as a cautionary tale, of what the future may well deliver if we let our passion for economic growth blind us to other important values.

### **Requiem for the Bull Trout**

Perhaps a memorial to the bull trout is of little consequence now. We do not feel the need to mourn that which we do not understand enough to miss. Tourists might read the inscription, but their thoughts will not flow from the plaque to the fish that no longer exists. The wonder isn't that the bull trout disappeared, but that they survived as long as they did in the Crowsnest. Bull trout were very

good at what they did – survival – despite the odds. We were very good at what we still do – cause things to disappear – even though we should know better. Perhaps that is what should be writ large in a prominent spot as a reminder not to do it again (and again). Fish and wildlife are part of our myths, history, lives and

landscape; sadly they can slip away and become only a part of our memory, and worst, we may forget them altogether. If a worse thing could be imagined than losing something of value, it must be to forget that something irreplaceable has been lost.

Requiescat in pace, the bull trout of the Crowsnest. 🍄



*Intersection Mtn. -Willmore Wilderness, Cassket Lake*  
40"x30", acrylic on canvas  
© EILEEN RAUCHER-SUTTON