

“Salmon on the Rough Edge of Canada and Beyond”



This series of 10-short stories has been written to honour the salmon, the beautiful rivers that they exist in and some of these memorable people who have worked tirelessly over the past decades on the task of conserving and restoring these iconic species.



The author, Matt Foy, as a biologist with the Fisheries and Oceans Canada (DFO), Salmonid Enhancement Program(SEP) for 35 years (now retired), has tried to capture small glimpses into their world and the world of salmon.

The House of the Salmon People



Spawning Sockeye Salmon Upper Chilliwack River, BC, Canada (Photo: Courtesy Joe Foy)

People have always used stories to pass on important information. When these stories are lost, learning collected over many generations is also lost. As modern science struggles to better understand salmon ecology and life history, there is growing recognition that past human experiences and the relationship developed over millennia with these species can often provide guidance on how to move forward in wise management of these fish into an uncertain future.

Imagine a time when the annual salmon return into rivers along the west coast of Canada, meant the difference between a year of feasts and storytelling to a year of famine and heartbreak. First Nation communities relied on the annual salmon run and had intimate knowledge of when the salmon came into the rivers, how large the runs were in specific locations, what kinds of salmon came to what places, where to collect them in the lower rivers as they migrated upstream and where to harvest them as they moved onto their spawning grounds.

All along the Pacific Coast of North America from the Klamath River in northern California up through Canada and into Alaska, the indigenous nations of the salmon cultures all celebrated, **as was their custom**, the arrival of the first salmon of the season. These cultural practices, while all different, had a similarity that indicated common ancient roots. In the south coastal British Columbia, the celebration of the first salmon caught of the season acknowledged through ritual and stories on how the salmon came to return each year to feed the people.

“The “Salmon People” lived far out in the ocean in their longhouses on an island. They were tied by kinship to the people of the land. When their relations that lived on the mainland complained they were hungry and needed food for their children, Kos, the Chief of the Salmon People ordered the young men and women from his village to leap into the sea to be transformed into salmon of various types. They swam into the many rivers along the coast and into the fish traps where they were captured and killed to provide much needed food to their relations on the land.

All Kos required for this act of sacrifice was for the people of the land to acknowledge and honour the gift the salmon people made each year. The bones of the first salmon were to be carefully returned to the water so the salmon of the year could be transformed back into salmon people so they could return to their families on the island. The salmon would run to the accustomed places again next year, if the people of the land did not waste salmon and treated them with the respect they deserved. This is a lesson that still has universal application today.

Abundance

No matter if we are scientists, professional biologists, indigenous elders, anglers, conservationists, or fishermen; each of us makes sense of salmon through our own stories and beliefs regarding these iconic species. The power of the entire human experience is only made clear when these individual stories are shared collectively. A true understanding often is the result.

Imagine a place, the village of the Ch'iyaqtel (Tzeachten), on the banks of the lower Ts'elxweyeqw (Chilliwack) River. The days were the longest of the season now and life everywhere was re-asserting its dominance over the world. The first salmonberries were being picked in the sunny patches among the cedar trees of the primeval forest and the first sockeye salmon of the season had just been caught.

Each year, the village known, as a place of weirs, would place traps in special locations in the river. Placed at the appointed time, an elaborate system of woven sapling fences that would guide the upstream migrating salmon into these traps where they could be captured by spear or dip net. As the first salmon was caught, **as was their custom**, the important first salmon ceremonies would have been meticulously carried out, so as to not offend their relations the "salmon people".

In the very last days of spring, the children of the village would have sensed the excitement of their elders, who knew that a strong run of fat, rich, silver sockeye salmon were now entering their traps. Many would be captured for feasts, many would be processed and kept for winter food and some would be given for trade. With the main summer fishing season on the Sto:lo (Fraser) River, still ahead of them, there would be enough to trade a few of the fresh sockeye salmon to the Hudson's Bay men, the Xwelitem (the hungry ones) who resided in their village on this great river, downstream.

If more salmon were needed for the winter food supply, the second run of the red sockeye salmon could be harvested in the upper river by their relations in the village on the lake (Chilliwack). With less fat in their bodies these fish were coveted for air drying in the hot August sun, as had been their custom for generations.

Chief Factor Archibald McDonald, posted to the Hudson's Bay Company, Fort Langley, three years before, sat quietly thinking about the day's events and what to put in the company journal. He reflected on the daily struggle to ensure there were sufficient stores of food to sustain the company of men stationed at the lower Fraser's River trading post.

Their location was at the very edge of HBC and British supply lines, meaning they were always at risk of running out of food. This year was no different. Even though the company gardens had been planted, the harvest would be months off. Last year's stores of smoke or salt dried salmon, and peas and grains from their garden, were of poor quality by this time of year, mouldy due to the damp and wet conditions of the west coast winter. So, **as was his custom**, he chose the most important event of the day and filled out his journal accordingly.

"Thursday June 24th, 1830. Had fifteen fine Salmon from the Chilkhook River where the natives now take them in abundance".

By this simple notation, of a typical trade event, the HBC Chief Factor recorded important knowledge that no doubt was fully understood by the people of the Chilkhook (Chilliwack) River. What was known for millennia would elude fisheries

scientists, for the next 170 years. That being, salmon were being captured in the Chilliwack River by mid- June, which we now know to have been sockeye, and they were captured in abundance, bound for upriver spawning grounds.

“That does not sound right”

The upper Chilliwack River flows into the south end of Chilliwack Lake and then the Chilliwack River flows out of the north end of the lake and runs for about 50 km to its confluence with the mighty Fraser River. The confluence of these two rivers is about 100 km from the sea.

The Lower Fraser Valley supports one of the fastest growing metropolitan regions in Canada. This region is home to over 2.5 million people. There has been a DFO sockeye salmon research lab located at Cultus Lake, which lies within the Chilliwack River watershed, since the 1920's. The large federal, Chilliwack River Salmon hatchery constructed in 1981, is located along the banks of this river. The lower Chilliwack River supports the second most intensive freshwater recreational fishery in BC (after the Fraser River) with over 200,000 angler hours of effort each year. DFO has undertaken annual angler surveys on the river since the early 1990's. In short, by the late twentieth century, there was no other river in BC that was so well known by the angling and DFO community than the Chilliwack River, and yet what had been known, had become unknown, and the stories lost to time.

Late in the year 2000, I was in conversation with Ken Peters, veteran DFO technician responsible for the annual count of sockeye salmon at the Chilliwack Lake.

“That does not seem right “ was Ken's response when I mentioned to him what my brother had told me. He went on to recount the present status of sockeye in the watershed, from his experience and- **as was the DFO custom-** written records passed on to him from previous researchers.

From what he told me and what I could gather from the DFO Stream Catalogue, a summary of Fisheries Officers(FO) observations and counts going back into the 1940's, Chilliwack Lake sockeye salmon spawned almost exclusively along the beaches of the lake. Some might be spawning at depth in the lake and only a few would be seen in the bottom section of the Upper Chilliwack River. In 1948 for instance the FO recorded 25 spawning sockeye in the upper Chilliwack River. After that there is no record of sockeye spawning in the upper river up to at least the 1980's when the FO's discontinued their stream walks. The peak spawning was recorded to occur around mid-September.

Ken recounted how they would normally take a boat up into the lake and count all the dead salmon along the shore. Then they would multiply the number of dead spawned out salmon observed, by an expansion factor, to estimate total spawning sockeye population. The expansion factors used for this calculation are based on past research

studies in similar lakes in BC, that looked at the relationship between observed dead and actual population abundance. This was pretty basic fisheries science.

From the written records and Ken's experience, the Chilliwack Lake was a very small producer of sockeye salmon. If you look back into DFO official records as far back as 1948, the estimated average sockeye spawning run is around 500 and, in some years, DFO observed no dead salmon. The best year was 1982 when an estimated 4000 sockeye salmon were estimated to have spawned in the Chilliwack Lake watershed.

Cathedrals and Longhouses

Ken looked at me and asked: **“You sure you got your brother's story straight?”**

Growing up in the suburban bush lands of Surrey in the BC Lower Mainland during the 1960's was a good time to be a kid. Parents did not feel obliged to entertain their children and every morning rain or shine the two brothers were pointed to the door and told to be back to the house by lunch time. Behind the house were acres and acres of second growth alder and cottonwood bush lands, which were interspersed with massive Red Cedar tree stumps left over from the logging of the original forest.

These great, fire blackened stumps, usually hollowed out in the centre, became their forts and castles and later, their cathedrals. Sitting in the dry hearts of past giants, as the rains fell outside, they imagined what it would have been like when the tall cedars stretched up into the sky in the primeval forest.

As childhood gave way to adult hood this love of forests, and in particular the original forests of Red Cedar, Western Hemlock, Sitka Spruce and Douglas fir led the brothers to explore the side valleys of the Fraser Valley. On a four-day, Easter school break canoe trip to the Chilliwack Lake in April 1970, they came upon the one significant watershed left within the entire lower Fraser Valley that remained untouched by the modern industrial economy

The upper Chilliwack River hidden away in the mountains at the border of Canada and the US was unmarked by what we like to call “progress”. They had finally found their cathedral, with the choir still in residence. This river valley would become their muse and their medicine for the rest of their lives.

The upper Chilliwack River rises in the mountains of the Cascade Range, in northern Washington State and then flows down into Canada and ultimately into the southern end of Chilliwack Lake. Most of the watershed is located in remote wilderness areas protected within the USA North Cascades National Park with the lower three kilometers in Canada, now protected in a BC Ecological Reserve.



. Upper Chilliwack River flowing into Chilliwack Lake

This magical watershed, with undisturbed river floodplain and mountain slopes, is a mosaic of wetlands, salmonberry patches, beaver ponds, willow thickets and extensive groves of ancient trees.

The floodplain groves of Red Cedar rise up straight from their fluted feet. Their branches and canopy block out the sky, creating spacious, shaded openings on the forest floor. Standing among these groves, brings to mind the house posts and the soaring gable roof of the traditional First Nation longhouses, where stories of the interconnections between humans, animals and the natural world have been repeated for generations.

For some thirty seasons, when time from busy adult lives could be found, the brothers would try and make an annual pilgrimage into this river valley, to reconnect with the imaginations of their youth. During one hot August foray seeking out new groves of undiscovered large trees, one of the brothers explored the river valley much farther upstream than in years past.

The date was August 2000 and he saw something he had never seen before. Around every bend of the river, he saw sockeye salmon spawning from bank to bank, in abundance, in abundance, oh sweet abundance.

“Look Ken, that’s what my brother told me. He said it looked like a miniature Adam’s River Run, that famous BC sockeye salmon spawning spectacle” I said.

I recall Ken thought there might be something to this, as no one he knew had ever gone that far upstream into the US before. He figured it might be difficult for them to do, because of the border. He was going to check with Brad Fanos, their new DFO Stock Assessment Biologist and see what he thought.

Brad was relatively new to the assessment group which did sort of work in his favour, he was not burdened as much by the way things had always been done. Coming into the job he had questioned some of his colleagues about the possibility of salmon in the upper river in areas not surveyed. No one seemed to know much about it.

Brad was the type of guy that was always open to new ideas. He had a great rapport with his salmon enhancement colleagues who were at the time doing active habitat restoration work in the lower Chilliwack River in partnership with the BC Watershed Restoration Program (WRP). Brad recalled a conversation about some work being done at the outlet of Chilliwack Lake.

One of the SEP-WRP habitat projects a few seasons before had been to lay a bed of gravel across the entire outlet of the Chilliwack Lake to improve conditions for spawning salmon and steelhead. Bruce Usher WRP Project Manager, DFO restoration engineer, Harold Beardmore and Cy Walsh, engineering technician had directed the placement of more than one hundred and fifty truckloads of spawning gravel across the lake outlet. This new gravel pad would provide an even base that could allow for a counting fence and tower to be installed relatively easily. This got Brad to thinking. He needed to talk to Ken some more.

He tracked me down and asked me for more details on what my brother had observed and when he had observed it. These reports of spawning salmon in the upper watershed increased his suspicion that there could be some truth that a significant population of spawning sockeye might have been missed all these years. International borders do tend to stop people from freely wandering where they might normally go.

Found, Once Again

In the summer of 2001, DFO field technicians erected a counting tower and partial fence at the outlet of Chilliwack Lake to get an accurate count of the number of salmon migrating into the lake for the very first time. They wanted to know if some of what they had been told might be true.

The tower was placed in the lake outlet in the first week of July. This would give lots of time to work out any technical issues with its operation, since the fish did not spawn until September.

That first night the tower was in operation, hundreds of sockeye salmon were counted migrating into the lake. By the end of the month over 30,000 sockeye salmon were counted moving upstream, to points unknown. This was a both a surprise and a problem. No one was certain where they were all heading.

Brad, after hurried discussions with and approvals from our American friends, was granted permission to fly in a chartered aircraft beyond the International border to

locate and count any sockeye salmon that might be spawning in the upper Chilliwack River within the USA North Cascades National Park wilderness.

That year, of the 30,000-sockeye salmon counted into the lake, up to 27,000 were found to be spawning far upstream in the upper river. The sockeye salmon were also spawning a month early, in August, in places where experts from both countries had not expected. The big question that year was: is the run of 2001 an anomaly or could this really be something that had been missed for so long?



Upper Chilliwack River

In the fall of 2012, over 120,000 sockeye salmon returned to the watershed, the vast majority heading for spawning grounds in the upper Chilliwack River. The Chilliwack Lake produces what is now recognized one of the more abundant sockeye salmon runs in the lower Fraser Valley. The main spawning grounds are located within the upper Chilliwack River. The heaviest use areas are found within the USA North Cascades National Park.

Knowing how many salmon could be expected to return each year, when they would come and where they could be trapped, would have been critical knowledge for Sto: lo

peoples well-being for generations. This knowledge had been misplaced for almost two centuries, while the world was being transformed and the story telling broken.

What was known and had become unknown but was now found once again, by people doing what they have always done. We seek out new places to simply find out what is there and then share these experiences with others. The sharing of stories helps us to better understand some of the mysteries surrounding these iconic species. Through these experiences we all are richer and in the case of this priceless river, the salmon resources better served.

Walk like a bear

The long, dusty gravel road around the east shore of Chilliwack Lake had taken a toll on us. My hiking partner and wife, Odette and I had suffered through ten kilometers of dodging potholes as deep as my knees and as wide as our little car. We had finally reached the end of the line as we arrived at the big yellow gate, blocking our way forward.

After walking around the gate, we began our hike along an old logging road. In our first half hour we had passed a number of new forest clear cuts. This forest had been previously logged or burned, 70 or so years before and now was being neatly shorn of all its merchantable timber, in carefully shaped patches.

The trees seemed so small to be harvested but I have been told this maximizes the wood production from these managed forests. This is our concept of sustainable forest management and what we do to make a living in our modern world.

We continued to walk for not quite an hour through this well used and human altered landscape. My mind wandered to what lay ahead. I looked forward to entering that place of refuge and reflection that provides a contrasting experience to the one I live in for the vast majority of my life. It provides a quiet space to ponder what it means to be a sustainable society and what value we place on conserving truly wild places.

My brother had been up to the river valley with his son the week before to film the spawning sockeye and show him some of the old growth cedar groves in the valley. It was August 2016 and he told me that the trail was now brushed over at certain places with only the movement of animals, keeping the trail open. But the river was still there and that was all that mattered.

We finally arrived at the end of the road and came up against the dark welcoming edge of the Upper Chilliwack River valley. Where was that trail head?



The trail into the valley was off to our left and led up onto the side hill. It had been a hot, cloudless, summer day with very little breeze. The bright sun with no shade on the open access road meant we were sweating pretty heavily by the time we had got to the entrance of the forest trail.

As we left the heat of the old road and found the trail, we entered through the high green door that led us into the dark, cool and quiet of the primeval forest. Quiet, quiet, so quiet, we came upon the first of the ancient Red cedars and Douglas firs. We let the scene settle into ourselves and said little, it just felt right.

As we walked deeper into the valley we soon arrived at the nave of the cathedral grove. There we were greeted by the assembled congregation of patriarch trees with their long flowing beards of green lichens and the matriarch trees with their strong and open limbs, passing high above our heads, keeping us safe from the bright sun above. Their branches pointed the way forward, to the sanctuary down by the river.

As we passed through this green aisle, the colour of jade, we settled down from the hillside onto the floodplain of the river and

re-entered the sunlight. We walked through open thickets of willow, and red osier dogwood, ninebark and salmonberry. With a hint of a cool down-valley breeze on our face and to the sound of native bees flying, we moved through this sunny oasis. The plants, after a summer of rampant growth, leaned heavily across the trail.

My brother had told me, **“Walk like a bear and the trail, that wasn’t a trail, would not seem so bad.”** Bowing, with our heads down, we passed with silent respect under the salmon berry bushes that had fallen across the trail moving forward toward the river.

Up ahead and to the right, we could hear the salmon splashing. I looked down at the fresh bear prints between my feet and knew we were not alone. As we made the crossing through the last of the salmonberry patch, just ahead we saw the cool shaded sanctuary, and became aware of the slight sound of the choir, the hymn of the river just beyond. We had arrived.

The trail was now a clear, thin, ribbon meandering through the shady moss and fern covered forest floor, encircled by a grove of ancient cedars, growing at the river's edge. These trees, great moss-covered trunks rose up high and tapered into fluted columns holding up the green gabled roof of the house. So, it has been since time immemorial.

Looking down, the dark soil of mother earth.

Looking up, the cedars held up the roof under the sky.

Looking forward, I could see a small window of light where the river flowed past the grove.

Looking through that window of light and colour,

I could see the blue of the water, the gold of the gravel and the red movement of salmon.

I stepped forward.

As was my custom,

I had returned to the "House of the Salmon People" to be reborn.



<https://www.youtube.com/watch?v=ffHJ03XRpNk>