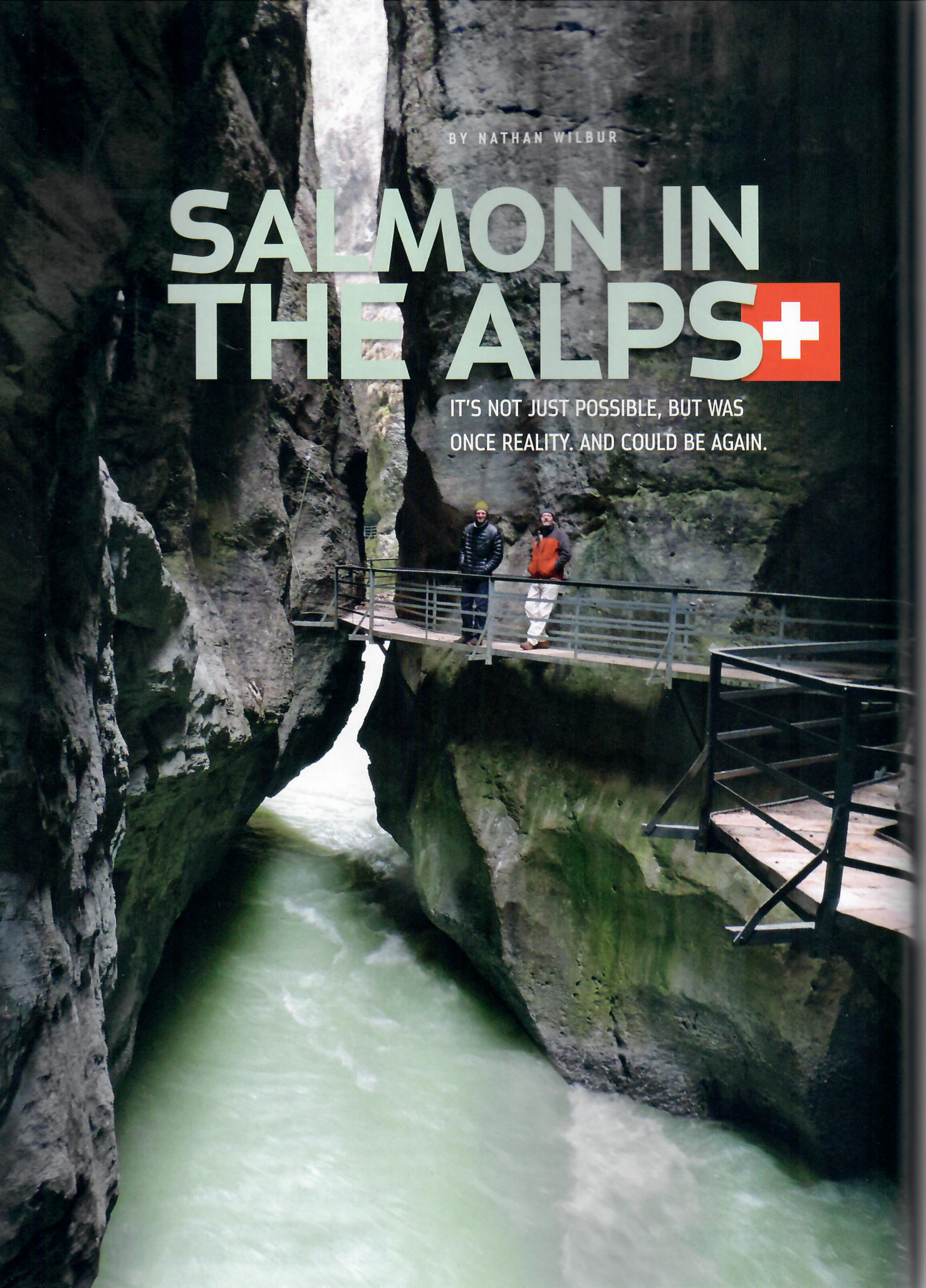


BY NATHAN WILBUR

# SALMON IN THE ALPS

IT'S NOT JUST POSSIBLE, BUT WAS  
ONCE REALITY. AND COULD BE AGAIN.



# T

## HE VILLAGE OF MEIRINGEN,

Switzerland, which incidentally lays claim to inventing the Meringue, was not on my original travel itinerary for a trip I took to Europe during the spring of 2015 with a couple of friends and my future (and now) wife. Near the village, the Aare River Gorge passes through a limestone ridge and this on its own deserves a detour. The one and a half kilometer passage is spectacular, bordered by sheer cliffs up to 50 metres high on either side. The gorge varies in width from some 30 metres at its widest to its narrowest point where my outstretched arms could touch both sides. But most of all, and what initiated our change in travel plans, was that there is a history of Atlantic salmon in the Aare Gorge, and perhaps, incredibly, history yet to be made.

The idea for the detour began with a short news item that an Atlantic salmon had been caught in the Rhine. Atlantic salmon, as we all know, are synonymous with a clean, pristine environment. How could a polluted, heavily controlled and channelized, inhospitable ecosystem like the Rhine sustain *Salmo salar*?

As it turns out, historically, wild Atlantic salmon once thrived in the Rhine which was highly valued for its salmon fishery. Records indicate that as recently as the late 19<sup>th</sup> century, about 250,000 salmon were caught annually in the river, *caught*. Mostly netted at the river's mouth, they were also captured nearly all along its 1,230 km length and in many tributaries, even in Switzerland in high mountain valleys..

In eastern Canada and the northeastern U.S., it took just a little over 100 years of industrial development and expansion—including log drives, sawmills and their small dams—to ruin many salmon runs. When pollution from pulp mills or other factories, changes in ocean conditions, aquaculture, overfishing and poaching are factored in, we're lucky that we still have so many rivers that hold great habitat and potential for *Salmo salar*.

On the other side of the Atlantic, however, humans have been altering the environment for much longer. Most rivers and streams in Europe have been very heavily manipulated to accommodate shipping. They have armored banks and straightened channels with few natural meanders. The myriad hydro dams, some with fish passage and some

NATHAN WILBUR



The Aare River Gorge near Meiringen, Switzerland (facing page). The Aare is fed from tributaries that flow from mountains high in the Swiss Alps such as these near the alpine village of Gimmelwald, Switzerland.

without, have sealed off rivers to migrating fish. National borders and private ownership of lands, dating back centuries, have also impacted the river courses and conditions. The Rhine, for example, has its source in the Swiss Alps and flows through Switzerland, Austria, Lichtenstein, France, Germany, and the Netherlands before meeting the salt in the North Sea, east of the English Channel.

During the 1800s, many of these countries engaged in attempts to curb overfishing via a comprehensive salmon “conservation” treaty. By the time any significant protection measures could be agreed upon, however, the salmon were well into decline and hydro electric development was already contributing heavily to further losses. Fragmentation and pollution became too much for *salar* and sometime in the 1950s it was completely extirpated from the Rhine River.

Yet, here was an article announcing the King of Fish was once again swimming in the Rhine. Was this natural recolonization as had already been reported in the Seine, where the waters of this famous French river have responded to cleanup efforts? Or was there a concerted restoration effort to clean up the Rhine and bring back the Atlantic salmon that historically filled the waters of this renowned European watershed?

Salmon in the Rhine today are not what they used to be. The original strain has been extinct for almost 70 years. In Canada, a hundred years of heavy human development has wrought substantial damage to river ecosystems, yet much salmon habitat remains relatively pristine. The Rhine has seen hundreds, even thousands, of years of human impacts. Mitigating this kind of damage to an ecosystem takes a huge commitment to clean up the river, in addition to solving fish passage issues.

Sadly, it took a terrible environmental tragedy—a fire at the Sandoz agrochemical plant in Basel, Switzerland in 1986—to instigate such a cleanup. Millions of litres of pesticides spilled into the river, turning the water red, and killing fish for hundreds of kilometres downstream. There



NATHAN VIEBURG (3)



When the Aare River, so channelized where it exits the Gorge (above, right), is compared with the natural streambed and banks of the Nashwaak in New Brunswick (above), it's easier to understand the massive challenges that face those who wish to bring salmon back to the Rhine. Inside the Gorge, some natural habitat does remain (right).

was much anger and even suspicion that the spill had been the work of Russian spies to divert attention from the Chernobyl disaster. These intense feelings expressed themselves politically and the public outcry resulted in the Rhine Action Programme of 1987, sometimes known as "Salmon 2000" because its stated target was to see the return of salmon to the river by the year 2000.

With the public shocked by this tragedy, governments were motivated to begin an environmental cleanup that rendered the river habitat suitable for *Salmo salar* once again. In 1998, non-profit organizations along the Rhine began stocking juveniles that were a mixture of genetic stock taken from Ireland, France, Scotland and Scandinavia. Some 10 million have been put in the river since then, generating a few adult survivors, 200-300 annually returning to the tributaries where they were released. A drop in the bucket, perhaps, compared to historic numbers, but with salmon in the river came greater community awareness and engagement. Without this public engagement on fish passage and river health, there likely wouldn't be €10 million (\$14 million CAN) spent on fish passage at the major hydro electric facilities along the Rhine, and certainly not the €20-25 billion (\$30-35 billion CAN) it cost to complete the environmental cleanup.



The very concept of "salmon in the Alps" seemed almost mystical to me. I studied watershed maps to determine how Atlantic salmon might have actually been able to swim up the Rhine all the way into the Alps. There is what appears to be a natural barrier to fish passage—the 23-metre high Rhine Falls—which would make it impossi-

ble for salmon to gain access to the Alps region along the mainstem of the river. Not far downriver of Rhine Falls, however, is the confluence with the Aare River. Following this major tributary upstream, salmon would have been able to reach the Alps. And thus, our original travel route detoured to the home of the meringue, and the impressive Aare Gorge, on the hunt for alpine salmon waters.

Atlantic salmon once passed through what is essentially an underground river, through the Aare Gorge into the Swiss Alps, to ancient spawning grounds, some 1,000 km from salt water. It is possible to view the gorge by following a network of boardwalks.

Unfortunately, when we contacted the boardwalk operators, it turned out the gorge would be closed to visitors at that time of year. Via email, I explained that I was coming from Canada and interested in exploring where Atlantic salmon may have once swam. The very mention of salmon seemed to pique the interest of Kurt Zumbrunn, who helps run the tourist operation. As luck would have it, he was also the vice-president of the local angling association, and operates a fly shop where, in addition to selling the usual gear, he makes split bamboo fly rods. He offered to not only allow us access to the boardwalk through the gorge, but also to give us a personal tour.

Once we arrived in Switzerland, it didn't take long to observe that every little river and stream, even in the remotest mountain villages, had been straightened, altered, or manipulated in some way. These man-made

changes had continued over generations to accommodate a wide range of human activity including navigation, flood control, agriculture and urban development. As we approached the gorge, we saw that the Aare River was no different; here too, it had been straightened and there were no pools or signs of spawning habitat for any migratory fish such as Atlantic salmon.

Zumbrunn greeted us warmly at the gift shop at the downriver entry to the gorge. We made our way into the chasm, where the river had carved its natural path through the bedrock. The network of boardwalks, which clung onto the side of the sheer rock faces, was an engineering marvel. Built over 100 years ago, it first opened in 1888, and now welcomes as many as 180,000 visitors each year.

Within these confines, at last, was the first sign of natural river processes I had seen on our trip. Where the gorge widened, gravel transported from high in the Alps had the opportunity to deposit, forming riffles, runs, and pools. For the first time since arriving in Europe, I could envision Atlantic salmon in these waters. I asked Zumbrunn about the history of salmon in the Aare River and whether they ever passed through the Gorge. He stopped on the boardwalk, turning to look me in the eyes, then he paused before saying, "it's been a long time." I could sense a certain feeling in his words, as if he'd been waiting for them to come back.

We continued through the gorge, eventually ending up back at the gift shop. Zumbrunn was curious about Atlantic salmon in North America and I filled him in, also outlining our conservation efforts. I, in turn, pressed him for more information on the ongoing restoration projects on the Rhine. Significant progress has been made, he told me, but there were several more dams that needed fish passage, particularly on the portion of the Rhine that runs through France. An organization called "Salmon Come Back!" is dedicated to restoring *Salmo salar* on the Rhine, which was historically the largest producer of salmon in Europe. The group was pressuring France to install fishways at eight French dams near Strasbourg. Further upstream, fishways already provided fish passage around dams in tributaries in the Black Forest and to historic spawning areas upstream of Basel in Switzerland. With adult salmon returning to the lower part of the river and restoration efforts continuing, Zumbrunn was optimistic that Atlantic salmon might once again reach the Aare River, the gorge, and the Swiss Alps.

We continued down the river to Zumbrunn's fly shop in the village. Had I won the lottery before leaving Canada, I might have bought one of his beautiful split bamboo fly rods. Like any little fly shop, there were plenty of fishing pictures around. We exchanged a few fish stories (Zumbrunn is a guide and fishes for brown and brook trout), but all too soon, it was time to resume our original route through to Austria and Hungary. As a parting gift, I gave Zumbrunn an ASF hat and a copy of the *Atlantic Salmon Journal*. I also promised to share his hope with Atlantic salmon conservationists back home, that one day *Salmo salar*

would return to the Rhine in great numbers, like they once did over a century ago.

Our detour to the Swiss Alps, especially to the Aare Gorge, had certainly been worthwhile. I had seen first-hand the challenges and potential for restoring salmon to one of the world's great river systems. The devastation humans have wrought on this once mighty Atlantic salmon river made the task seem astronomical. I'd seen how salmon, albeit very few, still make their way toward what spawning grounds remain in the severely altered aquatic habitats of the Rhine River. Just as importantly, I saw how Atlantic salmon intrigue people throughout its historic range, even in places like the upper Rhine where one hasn't been seen in decades. Still, the inherent tendency is to help recover a lost salmon run.



NATHAN WILBUR



The author, (middle) and his travel companions (l-r), Andy Miller, Julia Carpenter and Jill Miller, with Kurt Zumbrunn (right) in his split bamboo fly rod shop in Meiringen, Switzerland.



Back home now, I often find myself along salmon rivers in southern New Brunswick such as the Kennebecasis, Nashwaak and Petitcodiac or occasionally further south on rivers like the Penobscot in Maine. For the most part, these, and many other rivers, still run wild and clean, yet I can't help but think, "there should be more salmon here, this beautiful river used to be full of fish, and should be again."

Those involved in salmon conservation on the Rhine, I imagine, also stand on its banks with similar thoughts. While it is uplifting to see this engagement, restoration, and signs of salmon on a river that has seen such hardship, it puts into perspective how much potential we have in our rivers at home. And that's why we must redouble our efforts to protect, restore and enhance salmon runs in this part of the world. So that we will know not sadness, regret, and longing for days gone by, but understand and experience the joy derived from seeing our rivers filled with silver treasure. 🐟

---

Nathan Wilbur is the Director of New Brunswick Programs for the Atlantic Salmon Federation and lives in Fredericton, NB. He hopes to one day own a Swiss bamboo fly rod.