

TRANSCRIPT

The colonization of the Traisen floodplains

Interview with the environmental historian Gertrud Haidvogl

CG (Christina Gruber): Welcome to Fishy Podcasts!

In today's episode, environmental historian Gertrud Haidvogl immerses us in the history of the Traisen.

This insight enables us to better understand the current state of the river and the motivations that led to the respective regulation steps. The progressive settlement of humans almost up to the banks of the once dynamic Danube tributary also led to the steady de-settlement of the Huchen (Danube salmon) and their almost complete disappearance.

Hello Gertrud, I'm delighted that we're going to talk about the Traisen today. You are a researcher at the Institute of Hydrobiology and Water Management at the University for Natural Resources and Life Sciences Vienna (BOKU) and have repeatedly come into contact with the Lower Traisen, the section of the river from Wilhelmsburg to the mouth of the Danube, in the course of your career. What do you find exciting about the Traisen?

GH (Gertrud Haidvogl): The exciting thing for me from an environmental history perspective is that the Traisen is a relatively small river for most of the year. The mean discharge is around 14 m³/sec, which makes the Traisen a rather small tributary of the Danube in Austria. Nevertheless, many aspects of the river's history can be examined and studied on the Traisen. On the one hand the change from a pre-industrial river landscape to a very industrialised river that is massively anthropogenically altered and the fact that the Traisen has always been such a central river, with the city of Sankt Pölten as the cultural, industrial and religious heart.

Perhaps to give an example, what I mean by the change from a pre-industrial to an industrial river before the 19th century was generally characterised by the fact that they had to fulfil a lot of functions for the people living on the river directly on site. I don't think people today realise how important and different the approach to the use of hydropower was. The use of hydropower for mills and for powering various devices was a totally localised affair. It was not yet possible to transmit the energy of water over long distances. Mill wheels were needed directly in the water, which meant that the lower Traisen had been an important river for generating energy since the Middle Ages. I found it very exciting from existing descriptions, some of which date back to the 1930s, how sophisticated this system developed. This is because more or less natural side arms were successively extended with artificial canals to create what we know today as the "Mühlbäche" (mill streams) to the left and right of the Traisen over the course of the centuries it was a very exciting process that was approached with great knowledge of the river.

What is also important, however, is that the Traisen was not only more or less important as an energy supplier, but that fishing was also practised - there are fishing rights for the operation of the

mills from the 15th century, where it is clear that fishing and the use of hydropower had to be coordinated overnight if mills were not in operation water had to be released back into the main river of the Traisen. Since water was so important as a local resource in pre-industrial times, it was also much more important to find compromises between uses that influenced each other in opposite directions, and I think this is a pattern that could be used as an example today. Because that has been completely lost in industrialised times.

CG: That's really interesting, could you narrow it down again to when industrialisation began and especially when the rivers became more and more industrial?

GH: Essentially, you could say from 1830, 1850. this change to industrialisation was actually determined by the beginning of the use of fossil fuels, and coal was the decisive factor here in the 19th century.

You could take the commissioning of a steam mill on the Traisen as a benchmark. But you could also move away from the idea of the river and see the commissioning of the Westbahn railway as a milestone, that is indirectly linked to the Traisen. The Westbahn railway was opened in 1858 and was a key driver for the gradual establishment of industrial companies in Sankt Pölten. Population numbers were rising and new settlements were needed. The new construction of residential buildings, industrial buildings, and commercial enterprises, was initially managed in such a way that the settlements were to take place in the north and south of the city, but they really stayed away from the river. I found that particularly remarkable. There is also a city regulation plan from 1886, where it was precisely determined in which directions the city should expand and it was clearly still kept away from the Traisen.

CG: The dynamics of the river were immense before the regulation; it was not uncommon for the riverbed to shift by up to 150 metres due to flood events. Could this have led to a kind of respect, which was also the reason for keeping the floodplain of the Traisen free?

GH: I think that was one reason, but on the other hand there are certainly examples where watercourses were regulated relatively systematically, stably and technically even before the 1950s. One of the procedures was to cut off the floodplains from the main river with flood protection dams. The Traisen is therefore a special case where this was really explicitly laid down, to maintain a retention area on the left and right river banks to maintain the flooding zones. There are plans and regulations for this from the moment the Traisen was regulated, from 1904 to 1913, and a conscious decision was made to build the flood protection dams in such a way that protection against a 10-year flood event was provided. It was stipulated that a strip along both banks of the Traisen must be kept free for higher discharges. And interestingly enough, there was also a green zone plan from 1929, as well as a plan from 1936, and in both of these plans the remarkable thing was that these green areas were intended for the recreational use of the population, but

at the same time the river was considered to be a drainage area for the Traisen, which was maintained until the 1950s.

CG: What happened then?

GH: In 1959, there was a very large flood on the Traisen and as a result, the first planning for flood protection for a 100-year flood was commissioned. The project was drawn up relatively quickly. It was completed in 1963 and the flood protection project was gradually implemented. However, it took a very long time and the last construction phase was completed in 1990. This led to the final detachment of the floodplains from the river and the loss of the retention areas.

CG: Is this last regulation still visible?

These are precisely the flood protection dams that we still see today, but these are also the riverbed steps (Sohlstufen) that were connected to the regulation of the Traisen from the very beginning. Of particular interest is a second regulation project that was carried out in the 1880s, which is remarkable because it laid many of the foundations for the hydraulic engineering measures that were then implemented in the 20th century.

In 1886, it was decided that the possible slope was around 2%. As the average slope was around 3%, it was decided as early as 1880 that a certain number of invert steps were needed to artificially reduce the slope of the Traisen by means of these structures.

CG: Why is looking back at history important to you?

GH: Looking back is rarely a direct guide or a guideline for the future. But in any case, it shows what options are possible if you look at the history of watercourses over several centuries. From my perspective, history shows that the world looked very different 150 years ago and it will look very different again in the next few years. A look at history certainly shows that we are only able to imagine the future to a certain extent, it shows that you have to be open to many options, that it is very important not to make future options completely impossible. This is part of the sustainability goals and shows how important it is not to adopt a totally narrow development plan.

This was the third edition of the Fishy Podcasts for the project "Huchenhochzeit - The Danube Salmon's Wedding", many thanks to Gertrud Haidvogel for the precise explanation of the history of the river and the special case that the Traisen represents. The different stages of regulation and the underlying plans bear witness to an almost respectful treatment of the river until the middle of the 20th century. As the mechanisation of the Traisen progressed, the open space for the river became ever smaller and the flood protection structures had to be steadily increased in order to protect human settlements. It is time to extend the diversity of uses to the river and its inhabitants in order to preserve this important habitat.

Thank you for reading and have fun on the Traisen!