



## Welcome to Kvarnadalen!

*(The internet signal tends to be next to none by the car park, so please take a photo of the map.)*



Along this brook, there are eight horizontal watermills still standing, which is unique in Sweden. There are also remnants of seven other mills, where several of which are still very impressive.

” We had this type of mill 2,000 years ago”, said a man from Syria who helped us with clearing the thicket. This statement is true as horizontal watermills are said to originate from Asia. The technology was later spread across the world by the Greeks and the Romans.

The oldest written Swedish reference mentioning a mill dates back to the 13th century. Monks are said to have shared this know-how with others or were at least very good at documenting and collecting taxes. Recent scientific research points more and more towards a strong influence from the British Isles.

Could it be that the Vikings who accompanied King Harald Bluetooth were impressed by all the horizontal watermills in the United Kingdom?

The construction of a horizontal watermill is simple, where a horizontal waterwheel has been fitted onto a vertical axis. Contrary to the vertical watermill, the horizontal version lacks gears, so the farmer could often build the mill by himself without any help from a professional craftsman. The ironworks, however, needed a blacksmith.

*Having seen the two mills by the car park, most of our visitors choose to walk upstream to 'Stora Dämm' (Eng. translation: the Big Dam), 1.6 km. First, set off on the 'Hallandsleden' trail (please pay attention to the red markings on the trees), then follow the wooden signs stating 'Kvarnar', i.e. mills. Downstream you will find two mill structures, go down by the sign for 'Kvarn 13' and follow the brook.*

On the signs, the farms that owned the mills are mentioned first, often 2-3 farmers for each mill.

### **Kvarn 12/Mill 12**

The interior is adorned with many carvings, such as "This mill was built in 1819". But on another plank, it says 1763. To the right of the mill, the years 1820 and 1872 are beautifully carved into the rockface. The mills were renovated or improved in intervals of approximately 50 years. You will also find some 'spare parts' on the right-hand side inside the mill. For example, the long iron bar called 'snesen' runs from the waterwheel and carries the weight of the top stone so that the degree of grinding can be adjusted.

The large millstone in front of the building has deep, tangential furrows, a technique used by the Romans. The furrows increased the milling capacity, and the grains did not need to be dried prior to milling. However, the technique with furrows was eventually forgotten and did not reappear until the 17th century, first in Bavaria and eventually in Sweden during the 18th century.

This mill is still functional.





Many volunteers clear the area from grass and thicket.

### **Kvarn 11/Mill 11**

On the door and inside the mill, you can see five-studded stars (pentagrams) carved into the wood. According to the local folklore, these symbols protect you against trolls and other mischiefs.

This symbol dates back to ancient Babylon.

The location of this mill is the oldest location in 'Kvarnadalen', but the original mill is long gone. In the protocol from the mill commission dating back to 1697, the existing mill is said to have been built "40 years ago".

But this particular mill construction was located further down the stream until 1951. At that point, it was moved to a privately owned open-air museum. However, when the owner of that museum passed away, the mill began to fall into disrepair, and in 2001, the local historical society of Veddige-Ås-Sällstorp was able to return the building to this spot.

### **Lilla Dämm**

The number of horizontal watermills decreased significantly in Sweden after the 1850s, but in this geographical area, they kept on investing. This pond was built in 1876, which meant the amount of water that supplied the five mills further down the stream could be fine-tuned. Stora Dämm, located 1 km upstream, contains ten times as much mill water.

### **Kvarn 10/Mill 10 (ruin)**

If you look down, you will spot barely visible remains of a poor attempt at a mill. It was only up and running for a few years. It did not have enough of a drop. 1.2 metres is considered the minimum height, and the farmer should have been well aware of this fact. The older generation in this area still remembers an old rhyme about this lousy mill.



### **Kvarn 9/Mill 9**

Trouts swim all the way up to here. Eels, however, were present until the 1950s but are sadly no longer swimming in these waters.

Kålhage-Anna has shared her experience of eel fishing around 1910:

*”During the summers, the brook dried up and there were only puddles of water in the hollows. Then we could pick eels with our bare hands. Bunches of eels were lying together in the mud underneath the rocks. Mother was very pleased with our big catch.”*

### **Kvarn 8/Mill 8 (ruin)**

During World War I, the authorities tried to gain control of food production. In 1917, Edvard Johansson milled 36 kgs of rye flour and 360 kgs of oats for the cattle, but was all of that documented?

### **Kvarn 7/Mill 7 (ruin)**

50 metres upstream, this sign shows where the ruins of mill number 7 still remain. In 1853, Anders Nilsson (ANS) moved the mill further down the stream, and the newer version is listed as Mill 15.

### **Were the crofters allowed to mill?**

Many crofts have existed in this geographical area. The crofters were not allowed to use the watermills, but they probably had to help the farmers out. On those occasions, the crofters could also mill some of their own meagre harvests.

Before 1840, the mill owner only had the right to mill for his own domestic use; nothing could be sold. The authorities did, however, struggle to control this.





### **Kvarn 6 / Mill 6**

If you have walked up the stream, you have just crossed Kvarnadalsbäcken (The Mill Valley Brook) on a coachman bridge. The coachman could walk across the brook without getting wet, while the horse had to splash through the water. All in all, seven bridges cross the brook in Kvarnadalen (The Mill Valley). The millstones in Kvarnadalen are relatively big; most have a diameter of around 130 cm and weigh approx. 800 kgs. Initially, the stones would have been quarried locally, but towards the end of the 1800s, more effective millstones were bought 50 km away. This heavy transport demanded four horses and a favourable glide on the surface of the snow.

### **Kvarn 5/Mill 5**

As early as 1921, Kvarnadalen was seen as so unique and one of a kind that the Gothenburg Museum sent Gösta Montell over with his camera to document it. Montell was later assigned to accompany explorer Sven Hedin on research trips to Inner Mongolia.





### **Kvarn 4/Mill 4 (ruin)**

The stone chute is very long and still very impressive. One had to make the most of that drop.

*Kålhage-Anna (1905-1990) tells us about illicit milling: "During World War I, after rationing and crop failures, we had used up the last bit of flour in our croft. My younger sister was crying with hunger. Finally, father managed to buy a bag of cheap grain from a kind farmer. That evening, he divided the grain into smaller bags, and during the night, my brother, father and I sneaked up to the top mill. Father had one bag hanging on the front, one on his back, and held a lantern in his hand. He was used to helping the mill farmers at the mill, but this time, everything had to be done in silence. 'Even if I have to go to prison for this, I will not let my children starve', said Father. And the day after, we munched on the tastiest bread ever."*



Milling process in 2021  
in mill no 12.

### **Kvarn 3/Mill 3 (ruin)**

Honest or cunning farmers?

In 1819, the authorities wanted to reinstate the taxation rate on the mill, but the mill could only be used during the autumn and winter, i.e. 112 days. Then 16 Saturdays and Sundays have to be deducted. Water needs to accumulate, and the mills have to be repaired, which would amount to 88 days. That means only 8 days of milling, so once again, the farmer managed to avoid increased tax.

## Kvarn 2/Mill 2

The following sentence can be found inside this mill: "On the 7th of September 1892, this mill was built by several masters."

At this time, about 5 km away, there was a modern mill that produced top-quality, sifted flour. Despite this, the farmers kept investing and developing the old horizontal watermill technology.

If you scan the QR code, you get to see a short film clip about the milling process in mill number 12.

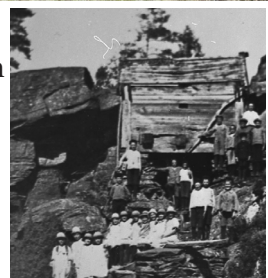


## Kvarn 1/Mill 1 (ruin)

The mill was demolished around 1930. Previously it had been located halfway up the cliff. It has been said that the whole building used to sway when the mill was being used.

The location of this mill is mentioned as early as 1697.

Photo dating back to 1917: Students on a day out.



*Follow the road for another 50 metres, and then you will see the sign*

## Stora Dämm

The drop from here to the bottom of the Sällstorp valley is almost 60 metres.

As they did not want to adversely affect the summer grazing up here and also wanted to avoid flooding the valley, the floodgate was only allowed to be shut between October and April. If all the 14 mills down the stream were in mint condition, the maximum production could amount to as much as 20 tonnes of flour.

*Please retrace your steps to the car park and visit the mills furthest down the stream.*



### **Kvarn 13/Mill 13**

The last bag of grain was milled here in 1944, and an era of milling came to an end.

The year 1789 has been carved into a wall inside the mill, the same year as the French Revolution.

A couple of hundred metres downstream, you will find mill number 15 and the remains of mill 14.

### **Kvarn 14/Mill 14 (ruin)**

The mill that went astray.

It is said to have been built in 1794, later moved in 1951 to a private open-air museum, but now it is back in Kvarnadalen again. You will, however, find it in mill location number 11.

### **Kvarn 15/Mill 15**

This is the last mill before the Ulvatorp Brook runs into the Sällstorp Valley. The inlet channel is unusually long, at least 100 metres.

The mill construction was previously located a kilometre or so away upstream, at mill location 7. It was moved to this new location in 1853 by Anders Nilsson (ANS). His initials are carved into a wall inside the mill and also into the stone by the dam.

Several mill tools and 'spare parts' have been preserved in the mill.

