

A history of fires at Kulbäcksliden

Photo: Historical forest image archive, SLU



◀ The fires at Kulbäcksliden follow the same pattern as in the rest of Sweden, which means that forest fires increased in scope and number up to the mid-1800s, at which point the economic value of forests increased. There were 23 forest fires between the great fire of 1694 and the last fire in 1895. The fires were mainly caused by human activities, such as grass burning and accidental fires.

Clearcut burning at Kulbäcksliden Experimental Forest, 1929.

The history of fires in the Kulbäcksliden area was investigated by Professor Lars Tirén, who was science director at Kulbäcksliden Experimental Forest at the beginning of the 1900s. The ages of the trees and how the forest had grown revealed that it had burned. By locating fire-damaged trees with fire scars, Tirén could date the fires and compare these findings with written sources.

Fire-damaged forest

Lars Tirén investigated the history of fires in the area during the first half of the 1900s. Tirén describes the forest as an old spruce forest with much hanging lichen dominated by old and large-diameter pine trees. In some areas old pine trees with fire-scars were surrounded by young forest comprised of birch, pine and spruce.

The fires created a dynamic forest landscape, with fire-damaged areas differing according to their particular fire histories. In some areas there was a mix of younger pine forest and older, large-diameter so-called predominant trees, in other areas the forest was more varied, encompassing different tree species such as pine, birch and spruce, and in yet other areas that had seldom burned older spruce dominated. Tirén inventoried the forest and mapped the trees with fire scars. He was one of the first people to map the fire history of a landscape.



Photo: Historical forest image archive, SLU

▲ Regeneration stand after forest fire, area 13, Kulbäcksliden Experimental Forest.

Fires at Kulbäcksliden before the 1600s

Just outside the Kulbäcksliden area, trees with fire scars dating back to 1510 have been found and the same fire probably spread into Kulbäcksliden Experimental Forest. Tirén stated that the young age of the trees damaged by the forest fires of 1619 and 1694 would indicate another forest fire incident in the 1570s. There were also fires in the surveyed area in 1641 and 1667.



Photo: Historical forest image archive, SLU

▲ Lars Tirén counted the trees' growth rings to determine the dates of the forest fires at Kulbäcksliden Experimental Forest. Sections where the tree no longer grows are called fire scars and are formed when a tree is damaged by fire.

The great fire of 1694

Dendrochronological studies have shown that there was a great forest fire between Kulbäcken and the Ume River in 1694. Since many trees had fire scars caused by this forest fire, it has also been possible to estimate the extent of the affected area. The fire engulfed about 6,500 hectares of forest and even crossed wetlands, indicating a very severe fire (compare with the 2014 Västmanland Wildfire, which engulfed 13,800 hectares). No forest fire is mentioned in the 1694 writings of King Charles XI of Sweden. As Charles XI passed through Umeå on 9 and 23 June, the great fire must have started shortly thereafter.

A history of fires 1694-1895

Forest fires became more common when settlers arrived in the area. There were quite simply more people and so more human activities that could cause fires. Although fires were more common, they were not as extensive as before. Between the great fire of 1694 and the fire of 1887, there were 22 other fires. In 2016, the history of fires at Kulbäcksliden was complemented with the fire of 1895. According to Lars

Tirén, the last fire should have been in 1887, but a group of students from the Swedish University of Agricultural Sciences (SLU) found a tree with fire scars near Flakastugan that Tirén had overlooked, making this the last documented fire. Forest fires became less common throughout Sweden as of the mid-1800s, a result of the increased economic value of the forests. Firefighting became more effective and fires were extinguished faster thanks to improved transportation in the forests.

The causes of the fires at Kulbäcksliden

Since Lars Tirén used dendrochronology to date the fires and then analysed written records and maps, he was able to trace the causes of the fires at Kulbäcksliden. Most of the fires were caused by people who had been active in the area.

- Slash-and-burn agriculture came into use after the Middle Ages in Sweden and entailed burning the forest either to clear it or to improve grazing and cultivation conditions. Burning the forest releases additional nutrients into the soil for the crops which are then cultivated. Slash-and-burn agriculture was a common cause of forest fires in Sweden, but was phased out at Kulbäcksliden as early as the beginning of the 1800s.
- Older texts from Degerfors Parish (became Vindeln Municipality in 1971) mention forest fires that caused conflicts between settlers and Sami. When settlers burned the land for various reasons, reindeer lichen were lost as well. Since this important reindeer food source was destroyed, the Sami could not remain in the area.

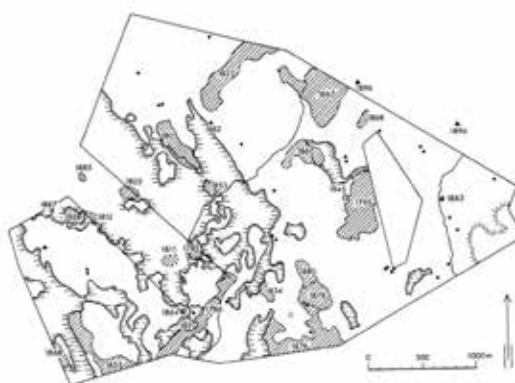


Figure: Lars Tirén

▲ Identified forest fires at Kulbäcksliden Experimental Forest after 1694. Tar and charcoal pile remnants are marked on the map.

- At Storkåatjärn and Degeröskiftet you can see traces of forest fires adjacent to what used to be meadows, indicating human activity. The forest fires are dated to 1785, 1786, 1795 and 1827. Many smaller fires have been started on and adjacent to Degerömyren, a mire that was previously home to many hay barns. The fires have been dated to 1811, 1812, 1820, 1851, 1864, 1885 and 1887.
- Farmhands who herded livestock used fires to deter mosquitoes and sometimes these fires spread. The fires of 1805, 1853 and 1868 can all be attributed to farmhand fires, with local stories having the 1868 fire causing the 'burned islet' north of Kåtaåsen.
- Fire-damaged wood was sold cheaper, so there are said to have been cases where fires were started by the people who then bought the wood. Those who started fires without being caught could also get paid for harvesting the trees. According to forester G.O. Söderhjelm, the forest fire of 1876 was arson. Söderhjelm refused to sell wood from two later fires in 1878 and 1880 because he suspected the buyers to also be the arsonists.
- Tar boiling and potash burning were common during the 1800s and were also common causes of fires. Lars Tirén found two trees engraved with initials and years, IFIB 1841 and OJM 58. Nearby forest fires caused by potash burning had been dated to the exact same years as the engravings. The potash fires that spread could have been due to poor supervision and a few of the fires have been dated to 1867, 1868 and 1845.



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