

Re: Fire ecology N and S of the Alps since the last ice age

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- *From:* Eric Stevens <eric.stevens@xxxxxxxxxx>
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On Wed, 10 May 2006 20:32:18 +--0200, "Peter Alaca" <P.Alaca@xxxxxx> wrote:

Fire ecology north and south of the Alps since the last ice age
Tinner, W; M. Conedera, B. Ammann & AF Lotter
The Holocene, 15(8) 2005, pp. 1214–1226
<http://tinyurl.com/g4zos>
(contents page, the pdf is 13 pp, 1.14 mb)

Abstract: Wildfires are very rare in central Europe, which is probably why fire effects on vegetation have been neglected by most central European ecologists and palaeoecologists. Presently, reconstructions of fire history and fire ecology are almost absent. We analysed sediment cores from lakes on the Swiss Plateau (Lobsigensee and Soppensee) for pollen and charcoal to investigate the relationship between vegetation and fire.

Microscopic charcoal evidence suggests increasing regional fire frequencies during the Neolithic (7350–4150 cal. BP, 5400–2200 BC) and the subsequent prehistoric epochs at Lobsigensee, whereas at Soppensee burnings remained rather rare until modern times. Neolithic peaks of charcoal at 6200 and 5500 cal. BP (4250 and 3550 BC) coincided with declines of pollen of fire-sensitive taxa at both sites (e.g., Elm, Lime, Ivy, Beech), suggesting synchronous vegetational responses to fire at regional scales.

However, correlation analysis between charcoal and pollen for the period 6600–4400 cal. BP (4650–2650 BC) revealed no significant link

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heat. C. Schuchhardt said of these: 'They occur everywhere where the wall of a fortress or a palace was built both of timber and stone such as basalt, and then burnt' (1941, p. 237f.).

The forests of Europe also burned. For instance, in the sphagnum bogs of the eastern Alps, which lie 2600m above sea level, the remains of burnt trees have been found. And regularly in these high mountain bogs a 'burning horizon' is found, which by pollen analysis can be dated to 'about 1000 BC' (Wilthum 1953, p. 83).

The situation is the same in the sphagnum bogs of the Black Forest, where Karl Müller, Professor at the University of Freiburg, examined burnt strata which he found to lie between the pollen maxima of fir and beech, and which he placed at 'about 1000 BC.' In the burnt strata in both these areas are the remains of mountain pines.

Pollen analysis shows that in the Black Forest, after a long period of warmth and favourable climate, in which the mountains were covered with beech woods, a time of drier weather followed, in which the beech woods were replaced by mountain pines characteristic of such a period. It was these mountain-pine forests that burnt up. They were followed, in about 1000 BC, by coniferous forest, which is indicative of a colder and damper climate. K. Müller wrote: 'Since it is unknown, so far as I am aware, for mountain-pine forests to catch fire by lightning, these burnings must have been deliberately caused. However, as far as we know the upper slopes of the northern Black Forest were not inhabited at that time, and so it is hard to understand the purpose of such a burning. The problem of how the burnt stratum occurred is therefore still unsolved.' (1953.)

This burning horizon with its evidence of terrible fires that raged 3000 years ago is found in all the bogs of Holland, North Germany and Scandinavia. It regularly occurs just above the 'boundary horizon' which, as mentioned above, marks the long period of drought in the thirteenth century. Clearly, the dried-out bogs burned for a long time.

In Scandinavia the same sequence is found. Here the Bronze Age was the time of 'climatic optimum' and the country was thickly forested as far as the Arctic Circle. Warmth-loving deciduous trees were present in many places up to the northern coasts. Towards the end of the Bronze Age, these deciduous woods burnt up, as the burning horizon, which is found everywhere, attests.

J.G. Andersson said: 'It must have been by fire that the people of this time began the destruction of nature. But it is hard to know how far the prehistoric forest fires, whose traces we find constantly, are to be attributed to human agency, and how far to lightning.' (1914, p. 16.)

So Andersson attributed the destruction of the forests and bogs of

