



## **Fire, humans and landscape. Is there a connection?**

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Fire evolved on the earth under the direct influence of climate and the accumulation of burnable biomass at various times and spatial scales. As a result, fire regimes depend not only on climatic and biological factors, but also greatly reflect the cultural background of how people do manage ecosystems and fire.

A new awareness among scientists and managers has been rising about the ecological role of fire and the necessity to understand its past natural and cultural dynamics in different ecosystems, in order to preserve present ecosystem functionality and minimize management costs and negative impacts. As a consequence we assisted in the last decades to a general shift from the fire control to the fire management approach, where fire prevention, fire danger rating, fire ecology, fire pre-suppression and suppression strategies are fully integrated in the landscape management. Nowadays, a large number of authors recognize that a total suppression strategy, as the one adopted during last decades, leads to a fire paradox: the more we fight for putting out all fires, the more extreme events occur and cause long term damages.

The aim of this review is to provide a state of art about the connection between fire, humans and landscape, along time and space. Negative and positive impacts on ecosystem services and values are put in evidence, as well as their incidence on human aptitude to fire use as to fire suppression. In order to capture a consistent fragment of fire history, palaeofires and related palynological studies are considered. They enable a valuable, even if partial, look at the millenary fire regime. Actual strategies and future directions are described in order to show what are the alternatives for living with fire, since removing completely this disturbance from earth is not a option, nor feasible neither advisable.

Examples from the world, in particular from the Alps and the Mediterranean basin, are shown for better illustrating the signature of anthropogenic fire on landscapes.