



## **Post-fire mulching and soil hydrological response**

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In general, one of the major threats after a forest fire is the increased erosion. This can occur due to the erosive impact of rainfall after a drastic reduction of vegetation cover or to changes in soil surface properties that contribute to enhanced runoff flow. There is a consensus among researchers that one of the best ways to reduce this risk is to apply a mulch cover (straw, shredded wood or other materials) immediately after fire.

In this study, we studied the effectiveness of various types of mulch materials for the reduction of runoff and soil loss during the first 3 years after a forest fire, in plots of different sizes, with special attention to water repellency and physical properties of the soil surface.

In general, straw mulch reduced both runoff and erosion rate more than other treatments. However, the effect was much more important on larger plots. This may be due to specific processes and impacts on sediment connectivity and surface water flow. Therefore, the effect of the scale seems to be an important factor in the management of burnt soils.