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Effects of megafires on landscape heterogeneity: lessons from physics and biology

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Understanding the effect of large fires on landscape heterogeneity is important because the amount and spatial distribution of burned and unburned areas may influence the post-fire vegetation dynamics. The effects of fire on landscape structure have been analyzed by several authors, most of which have noted a decrease in landscape heterogeneity after a fire. By contrast, based on the spread dynamics of fire and the biological characteristics of post-fire succession, we hypothesize that, contrary to the current opinion, large fires increase landscape heterogeneity. This hypothesis was tested and verified a posteriori on a large wildfire in Central Italy.