



Post-fire hydrologic response in Central Portugal. A four years study at microplot scale.

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Wildfires are a natural phenomenon in regions with a Mediterranean-type climate. However, their present-day widespread occurrence in southern Europe is unprecedented and strongly reflects human activity such as ignition, land-use changes, land abandonment and introduction of highly flammable plantations. Besides wildfires, post-fire management practices such as plowing, terracing, clearcutting and logging should also be considered, since their occurrence is getting increasingly common. And, in a long-term period these practices seem to be executed intercalated with repeated fire occurrences in the same site, sharing the impacts together with fire in an escalated degradational effect.

In this sense, the work presented here concerns four years of runoff and erosion data at microplot scale after the wildfire, comparing different land management practices that occurred before the fire.

Preliminary results indicate that in four years of monitoring, runoff is constantly higher in plowed sites than in the unplowed ones, with the exception of the first year. Regarding soil losses the plowed plots present always higher sediment rates than the unplowed ones. The comparison between two unplowed sites with different land uses, indicate higher runoff and erosion risk for pine comparatively to the eucalypt ones, however the reduced soil depth in the first can have an important role in these differences.

Following these facts, the aim of the present work is to answer the following research questions: i) Do these four years of observations fit with the window of disturbance model presented by Prosser and Williams (1998), or the alternative version by Wittenberg and Inbar (2009)?; ii) Does pre-fire disturbances (wildfire, land use changes and land management practices) still have repercussions after wildfire?; In what sense does four years of intensive monitoring provides that one year couldn't provide?